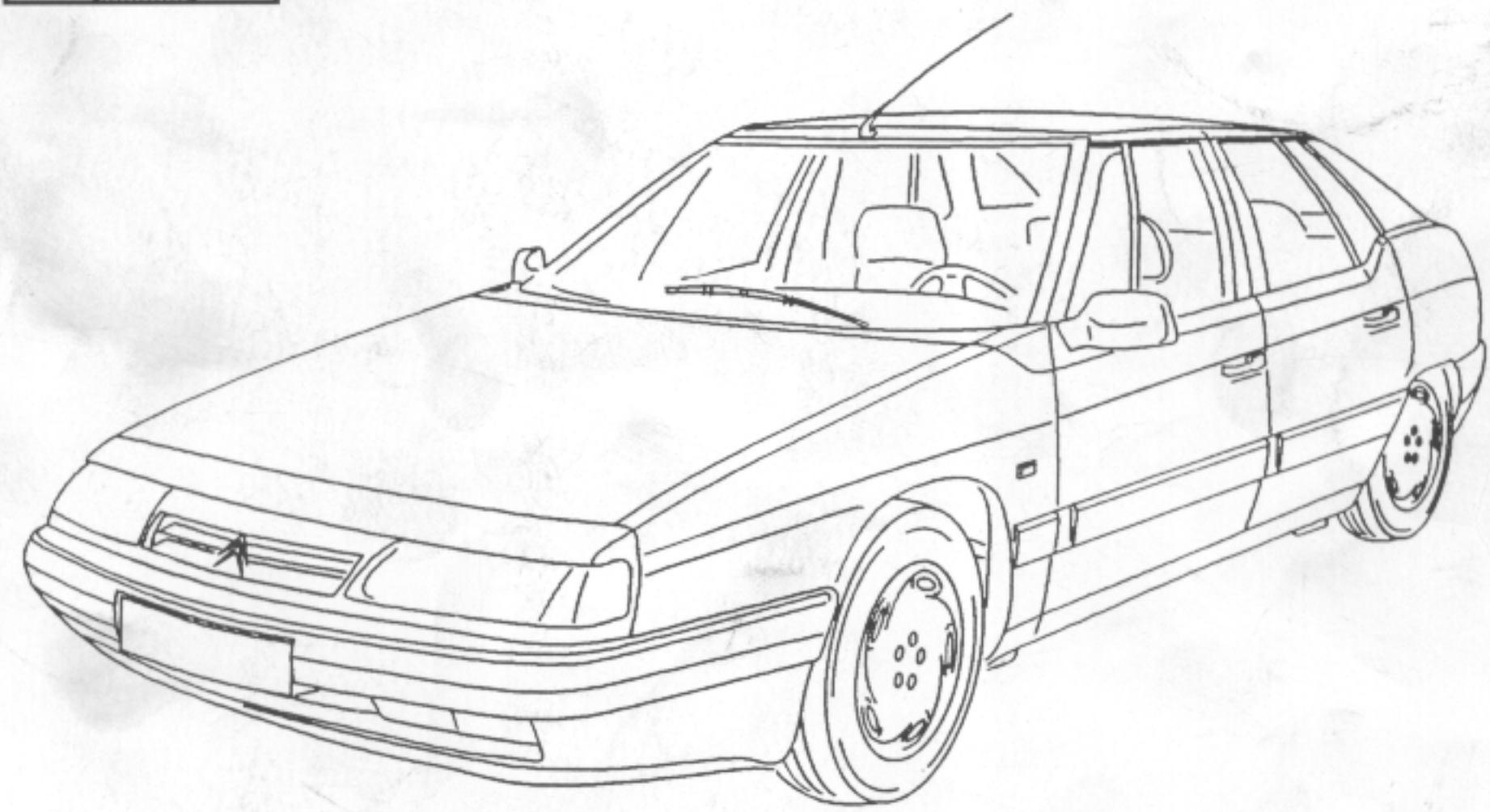
www.WorkshopManuals.co.uk

1



Xm

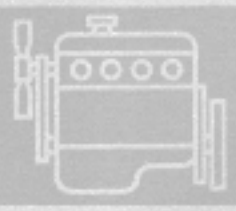
www.WorkshopManuals.co.uk



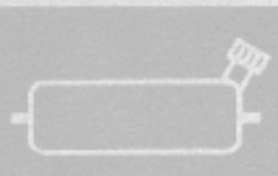
0



1

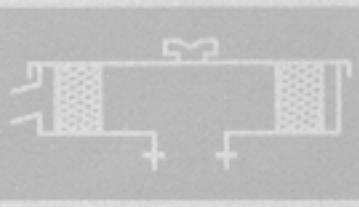


2



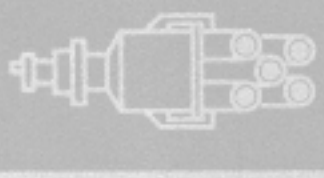






3





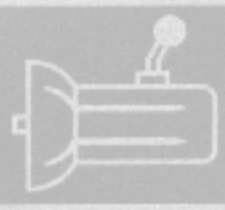


4





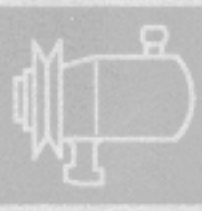
5





6







7



8



9







10



11





12







13







15





www.WorkshopManuals.co.uk



(D) Achtung ! Wichtiger Punkt oder Fehlerquelle

(DK) Pas på ! Vigtigt punkt eller fejlmulighed

(E) Atención ! Punto importante o posible dificultad

(GB) Caution ! Important detail or possible trap

(I) Attenzione ! Punto importante o possibilita di errore

(NL) Let op ! Belangrijk punt, kan gemakkelijk fout gaan !

(P) Atenção ! Ponto importante ou possibilidade de errar

(S) Varning ! Viktigt arbestmoment eller möjlighet till misstag

(SF) Huom ! Tärkeä työvaihe tai virhemahdollisuus

(F) Attention ! Point important ou piège possible



(D) Darauf achten, dass keine Teile herunterfallen oder abspringen

(DK) Risiko for at delene falder ud eller forskubber sig

(E) Riesgo de caida o de proyección de piezas

(GB) Parts may drop or spring out

(I) Rischio di caduta o di proiezione di pezzi

(NL) Kans op naar beneden vallen of wegspringen van onderdelen

(P) Risco de queda ou de projecção de peças

(S) Risk för att delar faller ned eller spritter ut

(SF) Osan putoamisen tai ulosponnahtamisen vaara

(F) Risque de chute ou de projection de pièces



(D) Unbedingt Spezialschrauben verwenden

(DK) Special - skruer skal anvendes

(E) Empleo imperativo de tornillos especiales

(GB) Use of specific fixing - hardware essential

(I) Uso obbligatorio di bulloneria speciale

(NL) Uitsluitend speciale bouten gebruiken

(P) Utilização imperativa de parafusos especiais

(S) Specialskruv mäste ovillkorligen användas

(SF) Käytettävä erikoisruuvia

(F) Emploi impératif de visserie spéciale



(D) Arbeitsvorgang, falls erforderlich durchführen

(DK) Arbejdsoperation der udføres hvis det er nødvendigt

(E) Operación a efectuar si es necesario

(GB) Operation to be carried out if necessary

(I) Operazione da effettuare se necessario

(NL) Indien noodzakelijk handeling uitvoeren

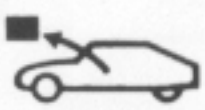
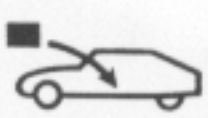
(P) Operação a efectuar se necessário

(S) Arbetsmoment/arbete att utföra vid behov

(SF) Tarvittaessa tehtävä työ

(F) Opération à effectuer si nécessaire

www.WorkshopManuals.co.uk

	D Rechts	I Destro	S Höger
	DK Højre	NL Rechts	SF Oikea
	E Derecho	P Direita	F Droite
	GB Right		
	D Links	I Sinistro	S Vänster
	DK Venstre	NL Links	SF Vasen
	E Izquierdo	P Esquerda	F Gauche
	GB Left		
	D Oben	I Alto	S Uppat
	DK Opad	NL Boven	SF Ylöspäin
	E Alto	P Cima	F Haut
	GB Up		
	D Unten	I Basso	S Nedat
	DK Nedad	NL Onder	SF Alaspäin
	E Bajo	P Baixo	F Bas
	GB Down		
	D Hinten	I Dietro (Posteriore)	S Bak (-at). bakre
	DK Bag	NL Achter	SF Taka
	E Trasero	P Traseira	F Arrière
	GB Rear		
	D Vorn	I Avanti (Anteriore)	S Fram (-at). främre
	DK For	NL Voor	SF Etu
	E Delantero	P Dianteira	F Avant
	GB Front		
	D Ausbau. Ausbauen	I Stacco. Staccare	S Demontering. Demontera
	DK Fjernelse. Fjerne	NL Verwijder. Uitbouwen	SF Purkaminen
	E Quitado. Quitar	P Desmontagem. Desmontar.	F Dépose - Déposer
	GB Removal. Remove		
	D Einbau. Einbauen	I Riattaco. Riattaccare	S Atermontering. Atermontera
	DK Anbringelse. Anbringe	NL Monteer. Inbouwen	SF Kokoaminen
	E Colocacion. Poner	P Montagem. Montar	F Pose - Poser
	GB Fitting. Fit		

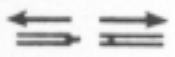
www.WorkshopManuals.co.uk



(D) Zerlegen
(DK) Afmontering. Afmontere
(E) Desmontaje. Desmontar
(GB) Dismantling. Dismantle
(I) Smontaggio. Smontare
(NL) Demontage. Demonteren
(P) Desarmar
(S) Isärtagning - Tag isär
(SF) Irroitus
(F) Démontage - Démonter



(D) Zusammenbauen
(DK) Pämontering. Pämontere
(E) Montaje. Montar
(GB) Assembly. Assemble
(I) Montaggio. Montare
(NL) Montage - Monteren
(P) Armar
(S) Hopsättning. Sätt ihop
(SF) Kiinnitys
(F) Montage - Monter



(D) Lösen
(DK) Adskille
(E) Desconectar
(GB) Disconnect
(I) Disinnestare
(NL) Losmaken
(P) Desligar
(S) Koppla bort
(SF) Irtikytkeminen
(F) Déconnecter



(D) Verbinden
(DK) Samle
(E) Conectar
(GB) Connect
(I) Innestare
(NL) Aan elkaar maken
(P) Ligar
(S) Koppla in
(SF) Yhteenkytkeminen
(F) Connecter



(D) Die Drehung oder Übertragung muss ohne Hartpunkt erfolgen
(DK) Sørg for at drejningen eller bevaegelsen sker jaevnt og ensartet
(E) Asegurarse de que la rotación o la translación se efectua sin punto duro
(GB) Ensure that the rotation or movement is without thight spots
(I) Assicurarsi che la rotazione o la translazione avvenga senza sforzo
(NL) Controleer of het draaien of de overbrenging zonder zwaar punt verloopt
(P) Certificar-se que a rotação ou a translação se efectua sem ponto duro
(S) Kontrollera att runtdragningen eller manövreringen kan ske utan kärvning
(SF) Varmista kitkaton liike
(F) S'assurer que la rotation ou la translation s'effectue sans point dur



(D) Anschrauben. 1 = Anzahl der Umdrehungen. 180° = Einstellwinkel
(DK) Skru. 1 = Antal omdrejninger. 180° = Drejningsvinkel
(E) Roscar. 1 = Número de vueltas. 180° = Angulo que se debe efectuar
(GB) Screw In. 1 = Number of turns. 180° = Angular value
(I) Avvitare 1 = Numero di giri. 180° = Rotazione da effettuare
(NL) Aandraaien. 1 = Aantal slagen. 180° = Hoekverdraaiing
(P) Aparafusar 1 = Número de voltas. 180° = Ângulo a efectuar
(S) Skruva In 1 = Antal Varv 180° = Antal grader
(SF) Kierrä kiinni. 1 = Kierrosluku. 180° = Asteluku
(F) Visser - 1 = Nombre de tours. 180° = Angle à effectuer

www.WorkshopManuals.co.uk

	(D) Losschrauben. 1 = Anzahl der Umdrehungen. 180° = Einstellwinkel (DK) Skrue løs. 1 = Antal omdrejninger. 180° = Drejningsvinkel (E) Desenroscar. 1 = Número de vueltas. 180° = Angulo que se debe efectuar (GB) Unscrew. 1 = Number of turns. 180° = Angular value (I) Svitare. 1 = Numero di giri. 180° = Rotazione da effettuare (NL) Losdraaien. 1 = Aantal slagen. 180° = Hoekverdraaiing (P) Desaparafusar. 1 = Número de voltas. 180° = Ângulo a efectuar (S) Skruva ut. 1 = Antal varv. 180° = Antal grader (SF) Kierrä auki. 1 = kierrosluku. 180° = asteluku (F) Dévisser - 1 = Nombre de tours. 180° = Angle à effectuer
	(D) Verbot. Nicht verwenden oder wiederverwenden (DK) Forbud. Må ikke anvendes eller genbruges (E) Prohibido. No utilizar o volver a utilizar (GB) Prohibited. Do not use or re-use (I) Proibizione. Non usare o riutilizzare (NL) Verboden Niet gebruiken of niet opnieuw gebruiken (P) Proibido. Não utilizar ou reutilizar (S) Förbud Använd eller återanvänd ej (SF) Uudelleenkäyttö kielletty ! (F) Interdiction - Ne pas utiliser ou réutiliser
	(D) Federring (I) Rondella Grower (S) Grower - Bricka (DK) Fjederskive (NL) Veerring (SF) Jousilevy (E) Arandela Grower (P) Anilha de mola (F) Rondelle Grower (GB) Spring washer
	(D) Unterlegscheibe (I) Rondella a Contatto (S) Kontaktbricka (DK) Kontakt Skive (NL) Contactring (SF) Lukituslevy (E) Arandela de Contacto (P) Anilha de Contacto (F) Rondelle Contact (GB) Contact washer
	(D) Zahnscheibe (I) Rondella a Ventaglio (S) Solfjäderbricka (DK) Stjerneskive (NL) Kartelring (SF) Tähtilevy (E) Arandela Estrellada (P) Anilha Recartilhada (F) Rondelle Eventail (GB) Serrated washer
	(D) Flachscheibe (I) Rondella Piatta (S) Planbricka (DK) Flad Skive (NL) Platte Ring (SF) Aluslevy (E) Arandela Plana (P) Anilha Chapa (F) Rondelle Plate (GB) Flat washer

www.WorkshopManuals.co.uk



(D) Anzahl der Schraubelemente : Schrauben, Muttern, Stiftschrauben usw

(DK) Antal dele I skruesamlingen

(E) Cantidad de elementos de tornilleria : tornillos, tuerca, esparrago, etc.

(GB) Number of threaded components : screw, nut, stud, etc.

(I) Numero di elementi di bulloneria, viti, dadi, prigionieri, ecc.

(NL) Aantal : bouten, moeren, tapeinden enz...

(P) Número de elementos de parafusos ou porcas, porca, perno, etc.

(S) Antal förskruvningspunkter : skruv, mutter, pinnbult, etc.

(SF) Ruuvien, mutterien, pinnapulttien ym. lukumäärä

(F) Nombre d'éléments de visserie : vis, écrous, goujons, etc.



(D) Sichern bzw. Entsichern

(DK) Låse eller frigøre

(E) Frenar o quitar el freno, según el caso

(GB) Lock or unlock as appropriate

(I) Bloccare o sbloccare, secondo i casi

(NL) Borgen of borg verwijderen

(P) Travar ou destravar conforme o caso

(S) Las eller avlägsna lasningen

(SF) Lukitseminen tai sen irroitus

(F) Freiner ou défreiner suivant le cas



(D) Unbedingt Neuteile verwenden

(DK) Ny del skal anvendes

(E) Empleo imperativo de una pieza nueva

(GB) Use of new part essential

(I) Uso obbligatorio di un pezzo nuovo

(NL) Noodzakelijk een nieuw onderdeel te gebruiken

(P) Utilizacão imperativa duma peça nova

(S) Ny del maste ovillkorligen användas

(SF) Osa uusittava ehdottomasti

(F) Emploi impératif d'une pièce neuve



(D) Schmieren

(DK) Smøre

(E) Aceitar

(GB) Oil

(I) Oliare

(NL) Oliën

(P) Olear

(S) Anolja

(SF) Öljyä

(F) Huiler



(D) Reinigen... (je nach eventueller Markierung, siehe Tabelle der Kleve -, Schmier-und Dichtmittel)

(DK) Rengøre med... (afhængig af evt. mærkning af produkt)

(E) Limpiar... (siguiendo lo señalado eventualmente, ver cuadro de productos)

(GB) Clean... (according to symbol, if present, see table of recommendations)

(I) Pulire... (secondo eventuale riferimento, vedere tabella ingredienti)

(NL) Reinigen.. (zoals aangegeven, zie lijst met benodigdheden)

(P) Limpar... (conforme marca eventual, ver quadro ingredientes)

(S) Rengör... (enligt eventuell märkning, se listan över olika produkter)

(SF) Puhdista... (kts. materiaaliluettelo)

(F) Nettoyer... (suivant repère éventuel, voir tableau ingrédients)

www.WorkshopManuals.co.uk



(D) Mit... schmieren (gemäss Markierung, siehe Tabelle der Klebe-, Schmier- und Dichtmittel)

(DK) Overstryge med... (afængig af referance produkt)

(E) Untar con... (siguiendo lo señalado, ver cuadro de productos)

(GB) Smear with... (according to symbol, see table of recommendations)

(I) Spalmare di... (secondo riferimento, vedere tabella ingredienti)

(NL) Insmeren met... (zoals aangegeven, zie lijst met benodigdheden)

(P) Untar com... (conforme marca, ver quadro ingredientes)

(S) Bestryk med... (enligt mäkning, se listan över olika produkter)

(SF) Levitä... (kts. materiaaliluettelo)

(F) Enduire de... (suivant repère, voir tableau ingrédients)

OK

(D) Gut (I) Buono (S) Korrekt

(DK) God (NL) Goed (SF) Oikein

(E) Bueno (P) Bom (F) Bon

(GB) Serviceable



(D) Siehe (I) Vedere... riportarsi a... (S) Se... gå tillbaka till...

(DK) Se... henvisning til... (NL) Zie... verwijzen naar... (SF) Katso... varmista...

(E) Ver... dirigirse a (P) Ver...reportar- se a... (F) Voir... se reporter à...

(GB) See... refer to...



(D) Sichtprüfung oder Prüfung mit der Hand

(DK) Kontrollere visuelt eller manuelt

(E) Controlar visualmente o manualmente

(GB) Check visually or physically

(I) Controllare visivamente o manualmente

(NL) Visuele of handmatige controle

(P) Controlar visual ou manualmente

(S) Gör en manuell kontrol eller en okulärkontroll

(SF) Tarkista käsi- tai silmämääräisesti

(F) Contrôler visuellement ou manuellement



(D) Mit einem Messgerät prüfen (NL) Controleren met een instrument

(DK) Kontrollere med måleinstrument (P) Controlar com um instrumento

(E) Controlar con un instrumento (S) Kontrollera med instrument

(GB) Check with a measuring instrument (SF) Tarkista testilaitteella

(I) Controllare con uno strumento (F) Contrôler avec un instrument

www.WorkshopManuals.co.uk







(D) Mehrere Einbaumöglichkeiten (1 - 2 - 3)

(DK) Flere monteringsmuligheder (1 ; 2 ; 3...)

(E) Varios montajes posibles (1. 2. 3)

(GB) Several assembly possibilities (1, 2, 3)

(I) Diversi montaggi possibili (1 ; 2 ; 3)

(NL) Verschillende mogelijkheden voor montage (1 ; 2 ; 3...)

(P) Várias montagens possíveis (1. 2. 3)

(S) Flera monteringsutföranden förekommer (1 ; 2 ; 3)

(SF) Useampia asennusmahdollisuuksia (1 - 2 - 3)

(F) Plusieurs montages possibles (1 - 2 - 3)

(D) Markieren, Beim Wiedereinbau auf Zugehörigkeit der Teile achten

(DK) Afmœrke. Ved genmontering skal delenes rette sammenpasning respekteres

(E) Señalar. Respetar el apareado de las piezas para el nuevo montaje

(GB) Mark. The parts must be kept paired for re-assembly

(I) Segnare. Rispettare l'accoppiamento dei pezzi per il rimontaggio

(NL) Merken. Zorg bij montage dat de onderdelen bij elkaar komen

(P) Marcar. Respeitar o acasalamento das perças para armá-las

(S) Märk ut. Respektera delarnas märkning vid atermonteringen

(SF) Merkitse osien oikea asennusjärjestys

(F) Repérer - Respecter l'appariement des pièces pour le montage



(D) Einstellen (I) Regolare (S) Ställ in

(DK) Justere (NL) Afstellen (SF) Säätö

(E) Regular (P) Afinar (F) Régler

(GB) Adjust



(D) Abstand, Spiel (I) Gioco (S) Spel

(DK) Spil (NL) Speling (SF) Välys

(E) Juego (P) Folga (F) Jeu

(GB) Clearance



(D) Einbau durch Pressen, Vorspannen oder genaues Einpassen

(DK) Montering med forspænding, prespasning eller itryking

(E) Montaje con esfuerzo, precarga o apriete ajustado

(GB) Assembly force fit, with preload or interference fit

(I) Montaggio forzato, precarico o accoppiamento serrato

(NL) Montage onder spanning, voorspanning of klemspanning

(P) Armar em esforço, précarga ou encaixe apertado

(S) Montering med förspänning, presspassning eller ihoptryckt

(SF) Asenna puristamalla, esikireys tai tarkka sovite

(F) Montage sous contrainte, précharge ou emmanchement serré

www.WorkshopManuals.co.uk



(D) Leicht anziehen
(DK) Skrue sammen uden fastspaending
(E) Aproximar sin apretar
(GB) Screw up without tightening
(I) Avvicinare senza serrare
(NL) Aandraaien zonder vast te zetten
(P) Aconchegar sem apertar
(S) Skruva i utan att dra åt
(SF) Kierrä kiristämättä
(F) Approcher sans serrer



(D) Vorgeschriebenes Anziehdrehmoment
(DK) Tilspændingsmoment skal overholdes
(E) Par de apriete que se debe respetar imperativamente
(GB) Observation of tightening torque essential
(I) Coppia di serragio da rispettare obbligatoriamente
(NL) Voorgeschreven aanhaalspanning aanhouden
(P) Aperto a respeitar imperativamente
(S) Åtdragningsmoment som ovillkorligen mäste respekteras
(SF) Kiristystiukkuus ehdoton
(F) Couple de serrage à respecter impérativement



(D) Hartlöten
(DK) Lodde
(E) Soldar con metal
(GB) Braze
(I) Brasare
(NL) Solderen
(P) Soldar a metal
(S) Löd
(SF) Juotos
(F) Braser



(D) Schweissnaht
(DK) Svejsesøm
(E) Cordón de soldadura
(GB) Fillet of weld
(I) Cordone di saldatura
(NL) Lasrups
(P) Cordão de soldadura
(S) Svetssträng
(SF) Hitsaussauma
(F) Cordon de soudure



(D) Lochpunktschweissen
(DK) Stubsvejsning
(E) Soldadura por puntos de ''tapón''
(GB) Plug weld
(I) Saldatura con punti ''a tappo''
(NL) Proplassen
(P) Soldadura por pontos ''tampão''
(S) Pluggsvetsning
(SF) Tulppahitsaus
(F) Soudage par points ''bouchon''

www.WorkshopManuals.co.uk



- (D) Einen Gang einlegen (z.B. 3. Gang)
- (DK) Sæt i gear (f. eks. : 3. gear)
- (E) Poner una relación de velocidades (ejemplo : 3°)
- (GB) Engage a gear (for example: 3 rd)
- (I) Inserire una marcia (esempio : 3°)
- (NL) Schakel een versnelling in (bijv : de 3 de)
- (P) Engatar uma velocidade (por exemplo : 3°)
- (S) Laggi en växel (till exempel : 3 : an)
- (SF) Kytketään vaihde (esim. 3.)
- (F) Engager un rapport de vitese (ex. : 3e)



- (D) Ein- oder Aufüllen (besser Nachfüllen)
- (DK) Fylde eller efterfylde
- (E) Llenar o poner a nivel
- (GB) Fill ore top up to level
- (I) Riempire o effettuare il rabbocco
- (NL) Vullen of bijvullen
- (P) Encher ou pôr a nível
- (S) Fyll eller korrigera nivån
- (SF) Täyttö tai lisäys
- (F) Remplir ou effectuer la mise à niveau



- (D) Kraftübertragung
- (DK) Transmission
- (E) Transmisión
- (GB) Drive Shaft
- (I) Trasmissione
- (NL) Aandrijving
- (P) Transmissão
- (S) Drivaxel
- (SF) Vetoakseli
- (F) Transmission



- (D) Lenkung
- (DK) Styrtøj
- (E) Dirección
- (GB) Steering
- (I) Sterzo
- (NL) Stuurinrichting
- (P) Direcção
- (S) Styrsystem
- (F) Ohjaus
- (F) Direction



- (D) Motor
- (DK) Motor
- (E) Motor
- (GB) Engine
- (I) Motore
- (NL) Motor
- (P) Motor
- (S) Motor
- (SF) Moottori
- (F) Moteur

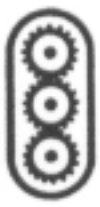


- (D) Zylinderkopf
- (DK) Topstykke
- (E) Culata
- (GB) Cylinder Head
- (I) Testata
- (NL) Cilinderkop
- (P) Cabeça
- (S) Topplock
- (SF) Sylinterikansi
- (F) Culasse

www.WorkshopManuals.co.uk



D	Getriebe	NL	Versnellingsbak
DK	Gearkasse	P	Caixa de velocidades
E	Caja de velocidades	S	Växellåda
GB	Gearbox	SF	Vaihteisto
I	Scotola cambio	F	Boîte de vitesses



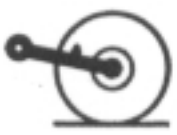
D	Zwischengetriebe	NL	Overbrengingstandwielen
DK	Overførsels - gearhjul	P	Carretos de transferência
E	Piñones de transferencia	S	Överföringsdrev
GB	Transfer gear assembly	SF	Välipyörästö
I	Pignoneria di movimento	F	Pignons de transfert



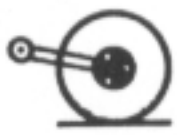
D	Federung und Radaufhängung	NL	Vering
DK	Ophængning eller affjedring	P	Suspensão
E	Suspensión	S	Fjädring
GB	Suspension	SF	Jousitus
I	Sospensione	F	Suspension



D	Bremsen	NL	Remmen
DK	Bremser	P	Travões
E	Frenos	S	Bromssystem
GB	Brakes	SF	Jarrut
I	Freni	F	Freins

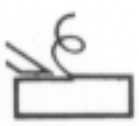


D	Hinterachse : Längslenker	NL	Achterbrug : Draagarm
DK	Bagbro : Bærearm	P	Eixo traseiro : Braço
E	Eje trasero : Brazo	S	Bakvagn : Bärarm
GB	Rear axle: Arm	SF	Taka-akseli : Tukivarsi
I	Assale posteriore : Braccio	F	Essieu arrière : Bras



D	Hinterachse : Radnabe	NL	Achterbrug : Naaf
DK	Bagbro : Nav	P	Eixo traseiro : Cubo
E	Eje trasero : Buje	S	Bakvagn : Nav
GB	Rear axle: Hub	SF	Taka-akseli : Napa
I	Assale posteriore : Mozzo	F	Essieu arrière : Moyeu

www.WorkshopManuals.co.uk

	D Vorderachse : Unterer Querlenker DK Forbro : Nederste bærearm E Eje delantero : Brazo inférior GB Front axle : Lower arm I Assale anteriore : Braccio inferiore NL Voorbrug : Onderdraagarm P Eixo dianteiro : Braço inferior S Framvagn : Undre länkarm SF Etuakselisto : Alatuki F Essieu avant : Bras inférieur
	D Vorderachse : Achsschenkel DK Forbro : Styrebolt E Eje delantero : Pivote GB Front axle : Swivel assembly I Assale anteriore : Pivot NL Voorbrug : Fusee P Eixo dianteiro : Pivot S Framvagn : Pivot SF Etuakselisto : Olka-akseli F Essieu avant : Pivot
	D Klasse DK Klasse E Clase GB Class I Classe NL Klasse P Classe S Klass SF Lasia F Classe
	D Ablassen DK Tømme E Vaciar GB Drain I Svuotare NL Aftappen P Esvaziar S Töm ur SF Tyhjennys F Vidanger
	D Entlüften DK Udlufte E Purgar GB Bleed I Spurgare NL Ontluchten P Purgar S Lufta SF Ilmaus F Purger
	D Bearbeiten DK Bearbejde E Mecanizar GB Machine I Lavorare NL Bewerken P Trabalhar a maquina S Bearbeta, slipa, etc. SF Työstäminen, koneistaminen F Usiner

www.WorkshopManuals.co.uk

Xm

31st MAY 1995

REF. 0 No XM 000-00/8

ABONNEMENT GME

PRESENTATION

- 1995 MODEL YEAR RANGE

MAN 058931

1

GB

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

GENERAL SPECIFICATION

PRESENTATION : 1995 MODEL YEAR RANGE OF VEHICLES 4

PRESENTATION : 1995 MODEL YEAR (SALOON) 6

PRESENTATION : 1995 MODEL YEAR (ESTATE) 10

POWER UNIT ASSEMBLY

PRESENTATION : ENGINE XU10J4R 13

PRESENTATION : DK5ATE ENGINE 19

CLUTCH

PRESENTATION : HYDRAULIC CLUTCH CONTROL 33

GEARBOX

PRESENTATION : GEARBOX MG5TB 40

ROAD WHEELS

SPECIFICATION : WHEELS AND TYRES 44

SUSPENSION

EVOLUTIONS : SUSPENSIONS 46

SOURCE – RESERVE OF PRESSURE

EVOLUTIONS : SOURCE AND RESERVE OF PRESSURE 48

BODYSHELL

EVOLUTIONS : EXTERIOR FITTINGS 49

DASHBOARD – CONSOLE

EVOLUTIONS : INTERIOR EQUIPMENTS 51

PROTECTIONS AND SECURITY SYSTEMS

EVOLUTIONS : PROTECTION AND SAFETY 55

www.WorkshopManuals.co.uk

ELECTRICAL EQUIPMENT

EVOLUTIONS : ELECTRICAL EQUIPMENT 59

PAINT

BODY COLOURS : 1995 MODEL YEAR RANGE OF VEHICLES 71

MAINTENANCE

MAINTENANCE : 1995 MODEL YEAR RANGE OF VEHICLES 73

www.WorkshopManuals.co.uk

PRESENTATION : 1995 MODEL YEAR RANGE OF VEHICLES

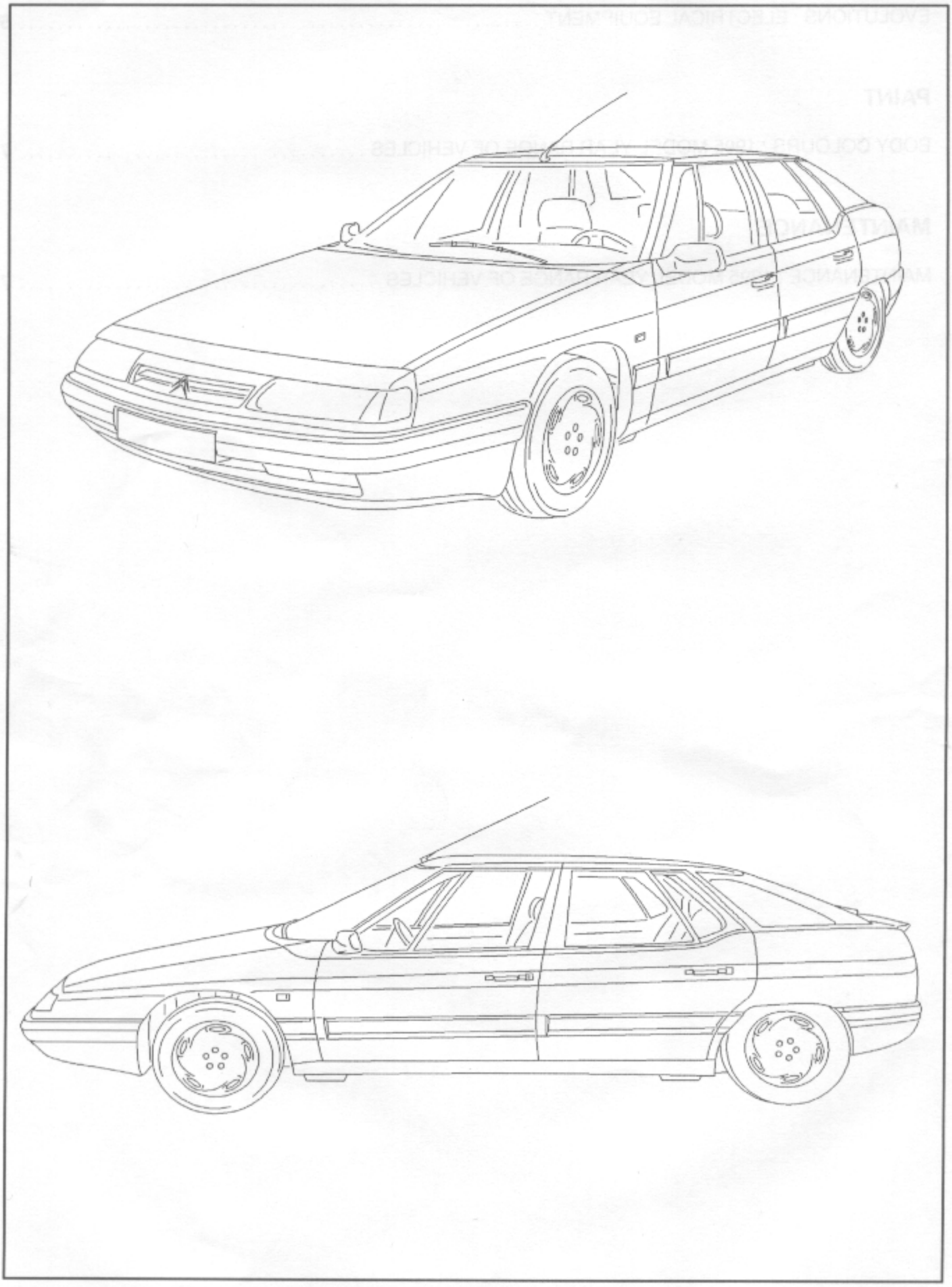


Fig. : E1-R00EP

www.WorkshopManuals.co.uk

The 1995 Model Year is characterised by :
- an exterior and interior restyling
- new equipment
- mechanical modifications among which the introduction of two new engines and a new gearbox
- an evolution of the range of models

1 – EXTERIOR RESTYLING

The restyling involves :
- the front bumper (including the direction indicators and fog lamps)
- the grille with integrated chevrons
- the windscreen wiper
- the direction indicator side repeaters

Improvement of the rear spoiler on the CITROEN XM Saloon.

The tailgate of the CITROEN XM Estate is unchanged.

2 – INTERIOR RESTYLING

The restyling involves :
- the dashboard, instrument cluster with electronic speedometer and air conditioning front panel
- the steering shaft surround
- the 4–spoke steering wheel with AIRBAG and with or without radio controls
- the interior trims

3 – EQUIPMENT

Introduction of new equipments such as :
- AIRBAG and pyrotechnic pre–tensioners fitted to all models as standard
- remote control with high frequency hertzian waves
- deadlocking allied to the High Frequency remote control
- passenger's rear view mirror with setting possible in reverse
- one–touch driver's glass with anti–pinch device
- GSM radio telephone pre–equipment
- alarm on the R.H.D models

New audio system :
- 3040 PHILIPS audio system, composed of a radio cassette and remote control on the steering wheel
- 4040 PHILIPS audio system comprising : a radio cassette, a compact disc changer, remote control on the steering wheel and a dot–matrix message display repeating the radio messages

4 – MECHANICAL EVOLUTIONS

Introduction of two new engines :
- a 16–valve, 1998 cc petrol engine (XU10J4R), producing 135 HP, available with manual and automatic gearboxes
- a 12–valve, 2446 cc turbo Diesel engine DK5ATE producing 130 HP (DK5ATE engine) available with manual gearboxes only

The DK5ATE engine is equipped with an electronic injection system (E.C.U. + injection pump) managing the on–board computer, the coded anti–theft device and the cruise control.

Introduction of a new manual gearbox (MG5T) fitted to the DK5ATE, ZPJ and ZPJ4 engines, in replacement of the ME5T for the ZPJ and ZPJ4.

Introduction of the SC/MAC (CITROEN system for retaining a constant ride height) limiting the settling of the vehicle at rest, with the engine switched off (on DK5ATE and XU10J4R models, only).

Introduction of the 6+2 piston high pressure pump on the DK5ATE and XU10J4R engines.

5 – EVOLUTION OF THE RANGE

The CITROEN XM range comprises 3 trim levels :
- an SX trim level corresponding to an improved "Presence" trim level
- a VSX level, intermediate between the Sensation and Ambiance trim levels
- an "Exclusive" trim level equivalent to the 1994 Model Year "Exclusive" trim level

NOTE : the CITROEN XM Estate is only available in SX and VSX trim levels.

www.WorkshopManuals.co.uk

PRESENTATION : 1995 MODEL YEAR (SALOON)

1 – INDEX

Countries :
- F = France
- D = Germany
- A = Austria
- B = Belgium
- DK = Denmark
- E = Spain
- SF = Finland
- I = Italy
- NL = Netherland
- P = Portugal
- N = Norway
- GB = Great–Britain
- S = Sweden
- CH = Switzerland

References used :
- (a) French fiscal rating in HP
- (b) long gearbox
- (c) level of emission standards : L = EEC93, Z = US83 = US87

2 – PETROL VEHICLES

CITROEN XM 2 I injection (1 998 cc), with manual gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
SX	Y4–TX	RFV XU10J4R /L	97.4 (135)	20CM67 BE3 (b)	X (7)													
	Y4–CZ	RFV XU10J4R /L		20CM36 BE3	X (10)			X		X			X			X		
		RFV XU10J4R /Z				X			X		X				X		X	X
VSX		RFV XU10J4R /L			X (10)					X								
		RFV XU10J4R /Z				X												

CITROEN XM 2 I injection (1 998 cc), with automatic gerbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
SX	Y4–TV	RFV XU10J4R /L	97.4 (135)	20GZ6B 4HP18	X (10)			X					X			X		
		RFV XU10J4R /Z				X			X		X				X		X	
VSX		RFV XU10J4R /L			X (10)													
		RFV XU10J4R /Z				X												

www.WorkshopManuals.co.uk

CITROEN XM 2 I turbo injection (1 998 cc), with manual gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
SX	Y4–GG	RGX XU10J2TE /Z	108 (150)	20GM32 ME5T		X			X		X	X	X		X		X	
VSX					X (9)	X	X	X	X	X		X	X			X		X
Exclusive					X (9)			X				X		X		X		

CITROEN XM 2 L turbo injection (1 998 cc), with automatic gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
SX	Y4–TT	RGX XU10J2TE /Z	108 (150)	20GZ6C 4HP18		X			X		X		X		X	X	X	
VSX					X (9)	X	X	X	X	X			X			X		X
Exclusive					X (9)			X				X				X		

CITROEN XM 6 cylinder (2 963 cc), with manual gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
VSX	Y4–GN	UFZ ZPJ /Z	123 (170)	20KM01 MG5TB	X (16)	X			X	X	X		X		X		X	X
	Y4–GP	UFY ZPJ /Z	120 (166)					X										
Exclusive	Y4–GN	UFZ ZPJ /Z	123 (170)		X (16)	X	X											
	Y4–GP	UFY ZPJ /Z	120 (166)					X										

www.WorkshopManuals.co.uk

CITROEN XM 6 cylinder (2 963 cc), with automatic gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
VSX	Y4–TR	UFZ ZPJ /Z	123 (170)	20GZ1C 4HP18	X (16)	X			X	X	X		X		X		X	X
	Y4–TP	UFY ZPJ /Z	120 (166)					X										
Exclusive	Y4–TR	UFZ ZPJ /Z	123 (170)		X (16)	X	X	X	X			X	X					X
				20GZ3C 4HP18												X		

CITROEN XM 6 cylinder 24 V (2 963 cc), with manual gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
Exclusive	Y4–GU	UKZ ZPJ4 /Z	147 (200)	20KM01 MG5TB	X (16)	X	X	X	X	X		X	X	X				X

3 – DIESEL VEHICLES

CITROEN XM D12 (2 138 cc), with manual gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
For conversion into ambulance	Y4–GV	PJZ XUD11A /L	60 (83)	20CM36 BE3	X (7)													
SX					X (7)			X		X			X					

www.WorkshopManuals.co.uk

CITROEN XM Turbo D12 (2 088 cc), with manual gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
For conversion into ambulance	Y4–GX	P8B XUD11ATE /L	80 (110)	20GM31 ME5T	X (6)													
SX	Y4–GX	P8B XUD11ATE /L			X (6)			X		X		X	X			X		
	Y4–NF	PHZ XUD11ATE /Y				X	X		X						X		X	
VSX	Y4–GX	P8B XUD11ATE /L			X (6)			X		X		X	X			X		
	Y4–NF	PHZ XUD11ATE /Y				X	X											X
Exclusive	Y4–GX	P8B XUD11ATE /L			X (6)									X				

CITROEN XM Turbo D12 (2 088 cc), with automatic gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
SX	Y4–TD	P8B XUD11ATE /L	80 (110)	20GZ1A 4HP18	X (6)			X					X			X		
	Y4–CX	PHZ XUD11ATE /Y				X	X		X						X		X	
VSX						X	X											X
	Y4–TD	P8B XUD11ATE /L			X (6)			X		X			X			X		
Exclusive					X (6)									X				

CITROEN 2.5 l turbo diesel (2 446 cc), with manual gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
VSX	Y4–NX	THY DK5ATE /L	94,5 (130)	20KM02 MG5TB	X (7)			X		X		X	X			X		
		THY DK5ATE /Y				X	X								X		X	X
Exclusive		THY DK5ATE /L			X (7)			X				X				X		
		THY DK5ATE /Y				X	X											

www.WorkshopManuals.co.uk

PRESENTATION : 1995 MODEL YEAR (ESTATE)

1 – INDEX

Countries :
- F = France
- D = Germany
- A = Austria
- B = Belgium
- DK = Denmark
- E = Spain
- SF = Finland
- I = Italy
- NL = Netherland
- P = Portugal
- N = Norway
- GB = Great–Britain
- S = Sweden
- CH = Switzerland

References used :
- (a) French fiscal rating in HP
- (b) long gearbox
- (c) level of emission standards : L = EEC93, Z = US83, Y = US87

2 – PETROL VEHICLES

CITROEN XM 2 I injection (1 998 cc), with manual gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
SX	Y4–GB	RFV XU10J4R /L	97,4 (135)	20GM36 ME5T	X (10)			X					X			X		
		RFV XU10J4R /Z				X			X		X				X		X	X
VSX						X												

CITROEN XM 2 I injection (1 998 cc), with automatic gerbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
SX	Y4–TU	RFV XU10J4R /L	97.4 (135)	20GZ6B 4HP18	X (10)			X					X			X		
		RFV XU10J4R /Z				X					X				X		X	
VSX						X												

CITROEN XM 2 L Turbo injection (1 998 cc), with manual gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
SX	Y4–GM	RGX XU10J2TE /Z	108 (150)	20GM33 ME5T								X					X	
VSX					X (9)	X	X	X	X			X	X	X		X		X
Varebiler															X			

www.WorkshopManuals.co.uk

CITROEN XM 2 L Turbo injection (1 998 cc), with automatic gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
SX	Y4-TS	RGX XU10J2TE /Z	108 (150)	20GZ6C 4HP18													X	
VSX					X (9)	X	X	X	X			X	X			X		X

CITROEN XM 6 cylinder (2 963 cc), with manual gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
VSX	Y4-GR	UFZ ZPJ /Z	123 (170)	20KM01 MG5TB	X (16)	X	X		X	X		X	X					X
				20KM00 MG5TB												X		
	Y4-GS	UFY ZPJ /Z	120 (166)	20KM01 MG5TB				X										

CITROEN XM 6 cylinder (2 963 cc), with automatic gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
VSX	Y4-TN	UFZ ZPJ /Z	123 (170)	20GZ1C 4HP18	X (16)	X	X		X				X					X
				20GZ3C 4HP18												X		
	Y4-TM	UFY ZPJ /Z	120 (166)	20GZ1C 4HP18				X										

3 – DIESEL VEHICLES

CITROEN XM D12 (2 138 cc), with manual gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
SX	Y4-GW	PJZ XUD11A /L	60 (83)	20CM51 BE3	X (7)			X					X					

www.WorkshopManuals.co.uk

CITROEN XM Turbo D12 (2 088 cc), with manual gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
SX	Y4–GY	P8B XUD11ATE /L	80 (110)	20GM31 ME5T	X (6)			X		X		X						
	Y4–NM	PHZ XUD11ATE /Y				X	X		X						X		X	X
VSX						X												
	Y4–GY	P8B XUD11ATE /L			X (6)			X				X	X	X		X		
Varebiler	Y4–NM	PHZ XUD11ATE /Y													X			

CITROEN XM Turbo D12 (2 088 cc), with automatic gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
SX	Y4–CY	PHZ XUD11ATE /Y	80 (110)	20GZ1A 4HP18		X			X						X		X	X
VSX	Y4–NW	PHZ XUD11ATE /L			X (6)			X				X	X			X		
	Y4–CY	PHZ XUD11ATE /Y				X	X											X
Varebiler															X			

CITROEN XM 2.5 I Diesel injection (2 446 cc), with manual gearbox :

Vehicles		Engine		Gearbox	Countries													
Trim level	Official designation	Plate and type (c)	Power in kW (in HP)		F (a)	D	A	B	DK	E	SF	I	NL	P	N	GB	S	CH
VSX	Y4–NY	THY DK5ATE /L	94.5 (130)	20KM02 MG5TB	X (7)			X				X	X			X		
		THY DK5ATE /Y				X	X								X		X	X
Varebiler															X			

www.WorkshopManuals.co.uk

PRESENTATION : ENGINE XU10J4R

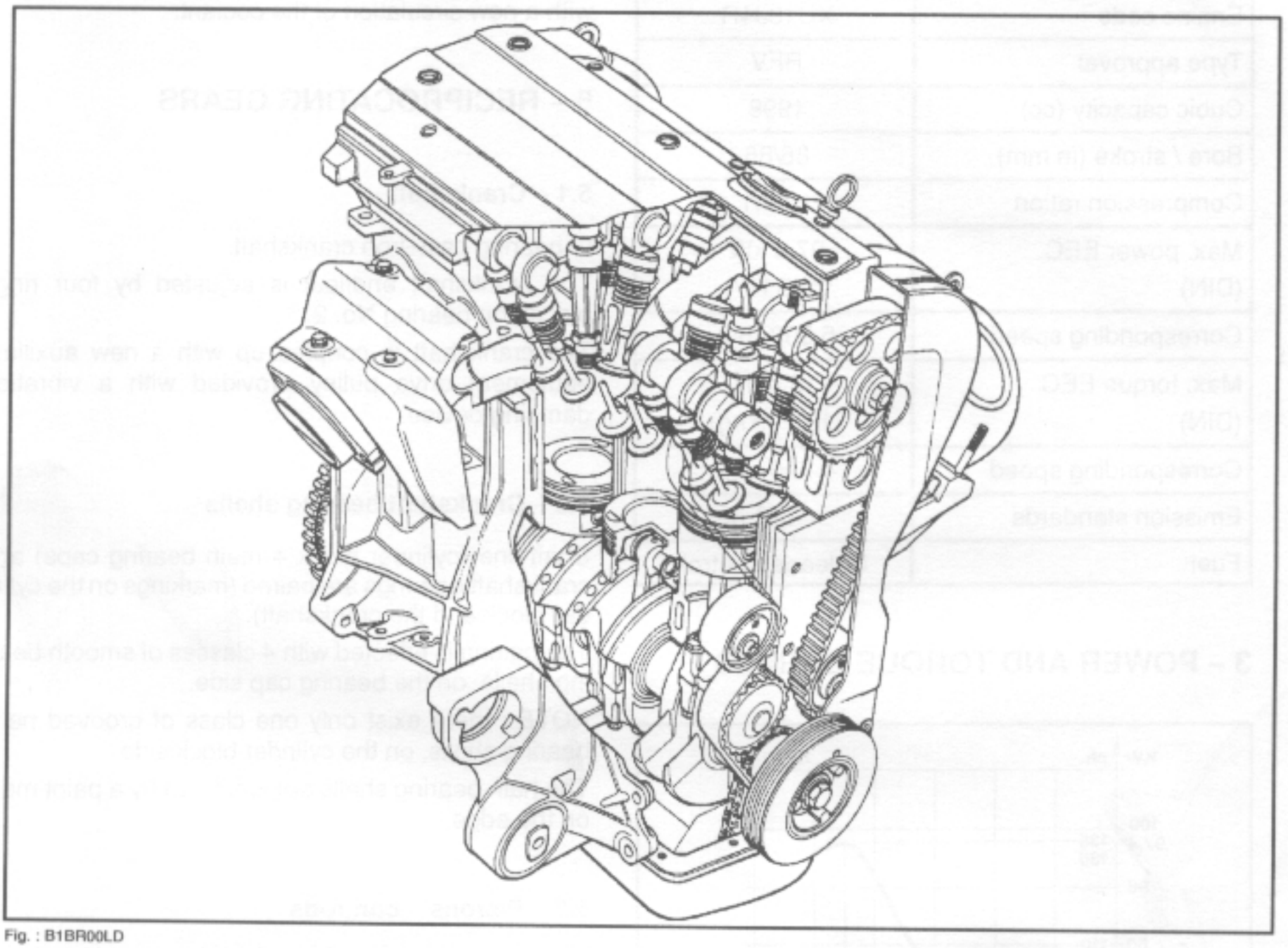


Fig. : B1BR00LD

1 – INTRODUCTION

The CITROEN XM injection is equipped with a new 2 l, 16 valve petrol engine.

This new engine has the following designation :
- XU10J4R (design type)
- RFV (type approval designation)

The 16 valve technology provides :
- improved combustion for a better driveability
- a reduction in exhaust emission to comply with the emission standards

The XU10J4R engine is different from the XU10J2 by :
- the cylinder block
- the cylinderhead assembly
- the valve timing (2 overhead camshafts)
- the reciprocating gears
- the inlet manifold
- the throttle butterfly housing
- the injection E.C.U. (BOSCH MP 5.1.1)

www.WorkshopManuals.co.uk

2 – SPECIFICATION

Engine code	XU10J4R
Type approval	RFV
Cubic capacity (cc)	1998
Bore / stroke (in mm)	86/86
Compression ration	10.4:1
Max. power EEC (DIN)	97.4 kW (135 HP)
Corresponding speed	5 500 rpm
Max. torque EEC (DIN)	18 daN (18.7 m.kg)
Corresponding speed	4 200 rpm
Emission standards	L/Z
Fuel	Unleaded petrol

3 – POWER AND TORQUE CURVES

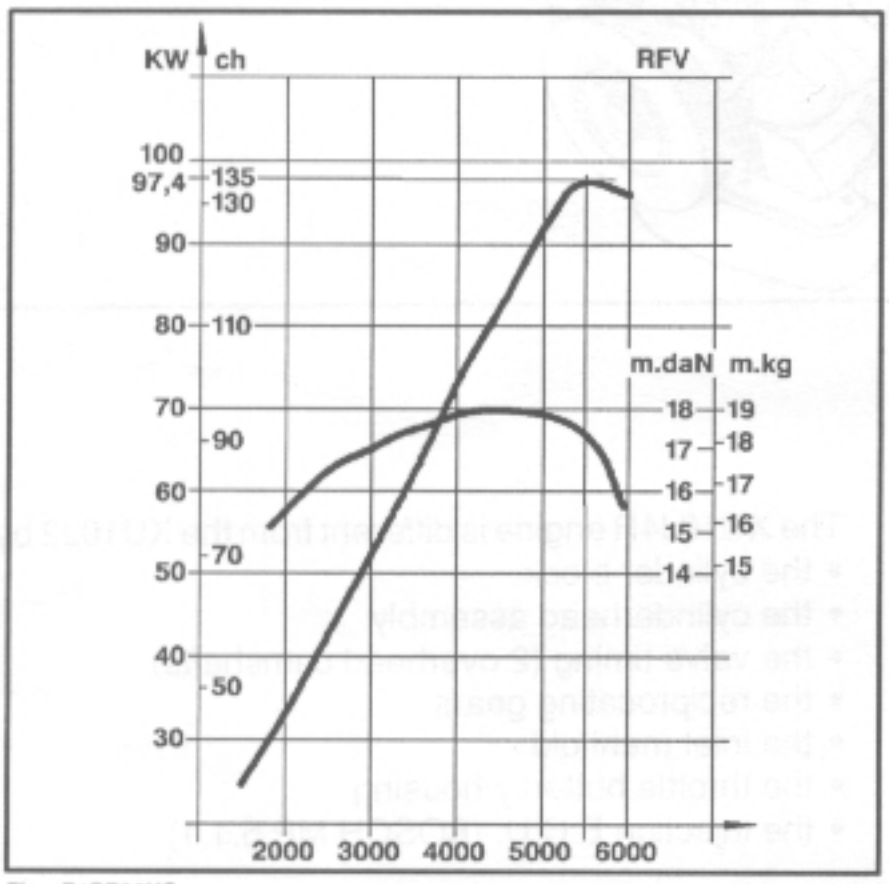


Fig. : B1BR00KC

4 – CYLINDER BLOCK

New cylinder block derived from the XU10J2 engine with a new circulation of the coolant.

5 – RECIPROCATING GEARS

5.1 – Crankshaft

5–bearing cast–iron crankshaft.

The crankshaft endfloat is adjusted by four rings placed on bearing No. 2.

The crankshaft is coupled up with a new auxiliary equipment drive pulley provided with a vibration damping device.

5.2 – Crankshaft bearing shells

Shaft line (cylinder block + main bearing caps) and crankshaft bearings are paired (markings on the cylinder block and the crankshaft).

The pairing is effected with 4 classes of smooth bearing shells, on the bearing cap side.

NOTE : there exist only one class of grooved half–bearing shells, on the cylinder block side.

The half–bearing shells are identified by a paint mark on the edge.

5.3 – Pistons – con.rods

New con.rods (158 mm between centres).

New light alloy pistons with valve recesses.

The piston gudgeon pin is tight fitted in the con.rod small end.

www.WorkshopManuals.co.uk

6 – CYLINDERHEAD ASSEMBLY

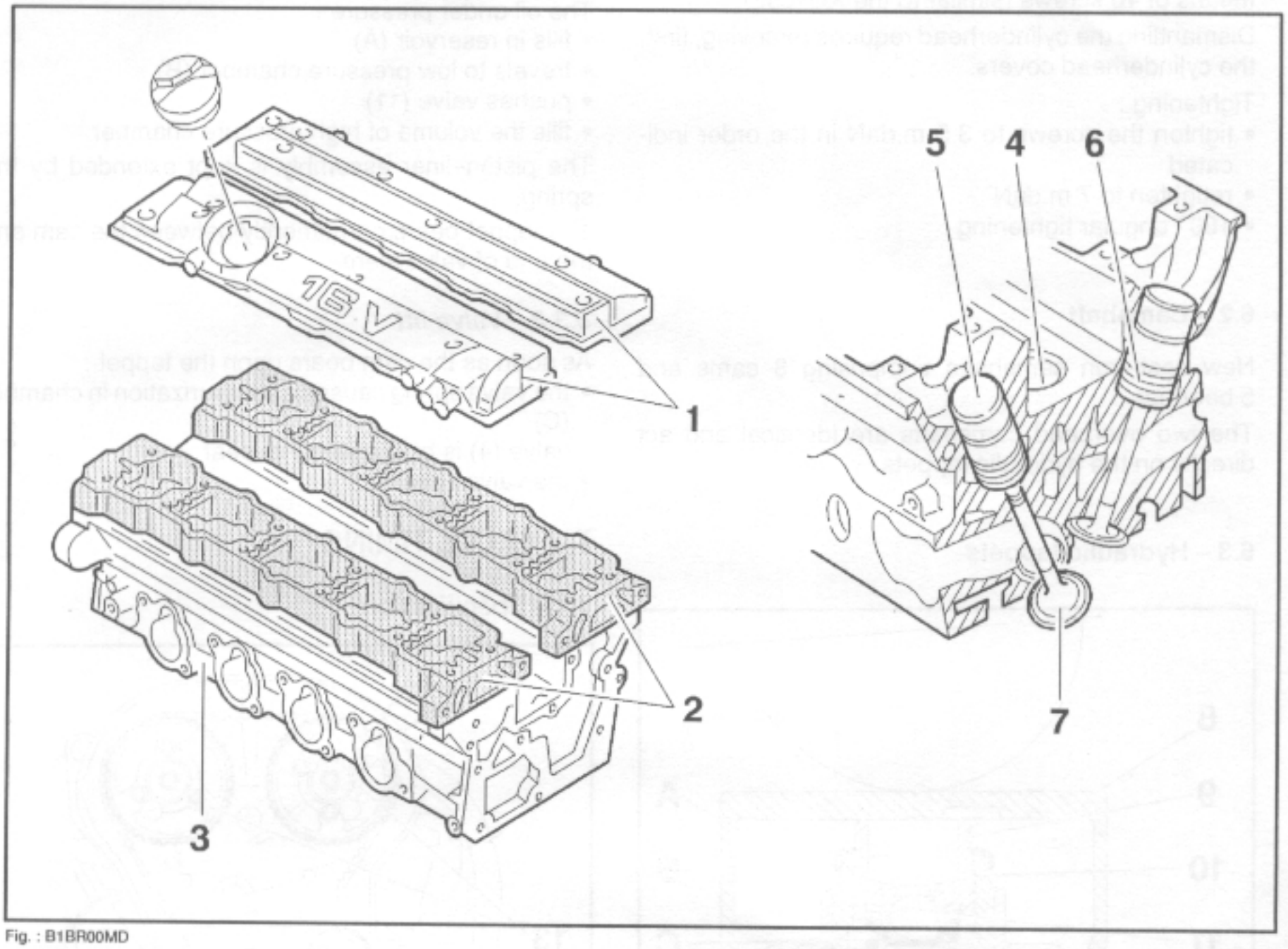


Fig. : B1BR00MD

1 : cylinderhead cover.

2 : camshaft main bearing cap cover.

3 : cylinderhead.

4 : sparking plug location.

5 : hydraulic tappet.

6 : spring.

7 : valve.

The cylinderhead assembly is composed of :
- the cylinderhead covers
- the camshaft bearing cap covers
- the cylinderhead receiving the valve gear

Camshaft bearing cap cover and cylinderhead are made of light alloy.

The sealing between the two cap covers and the cylinderhead is ensured by a sealing compound (on repairs, use LOCTITE Autojoint Or).

6.1 – Cylinderhead

New 16 valve aluminium cylinderhead (4 valves per cylinder, 2 inlet, 2 exhaust).

The sparking plugs are centered in the chambers.

The cylinderhead receives the ignition coil assembly called BBC (compact coil block).

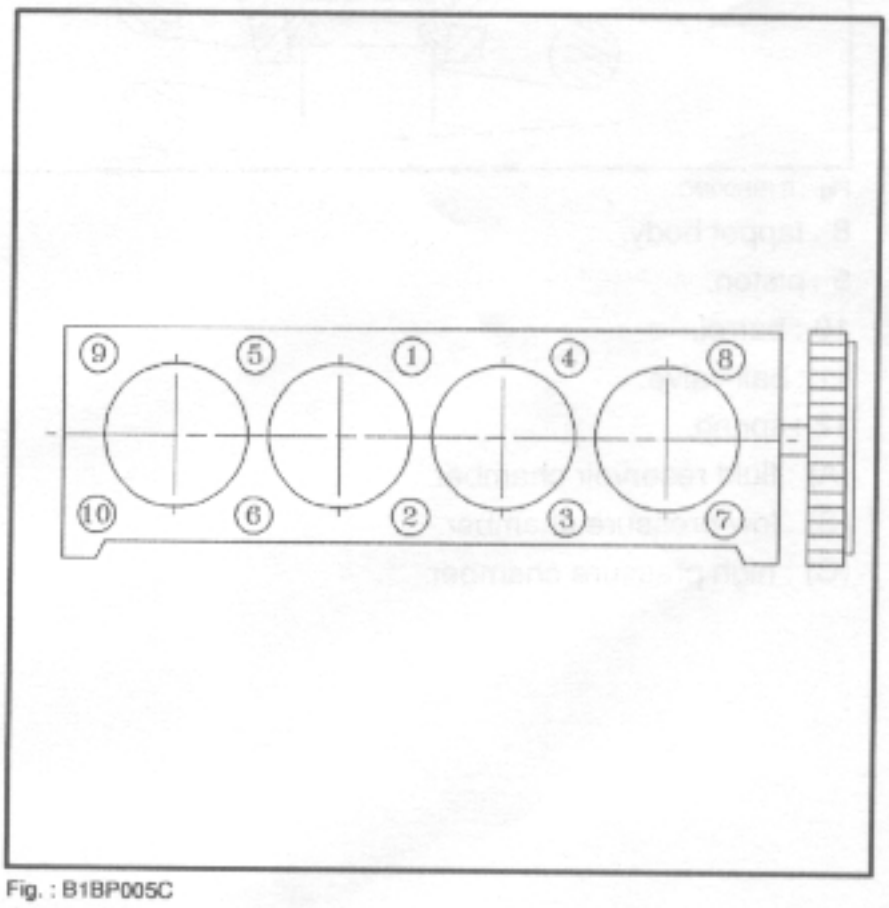


Fig. : B1BP005C

www.WorkshopManuals.co.uk

The cylinderhead is secured to the cylinder block by means of 10 screws (similar to the XU10J2).

Dismantling the cylinderhead requires removing, first, the cylinderhead covers.

Tightening :
- tighten the screws to 3.5 m.daN in the order indicated
- retighten to 7 m.daN
- 160° angular tightening

6.2 – Camshaft

New cast–iron camshafts comprising 8 cams and 5 bearings.

The two overhead camshafts are identical and act directly on the hydraulic tappets.

6.3 – Hydraulic tappets

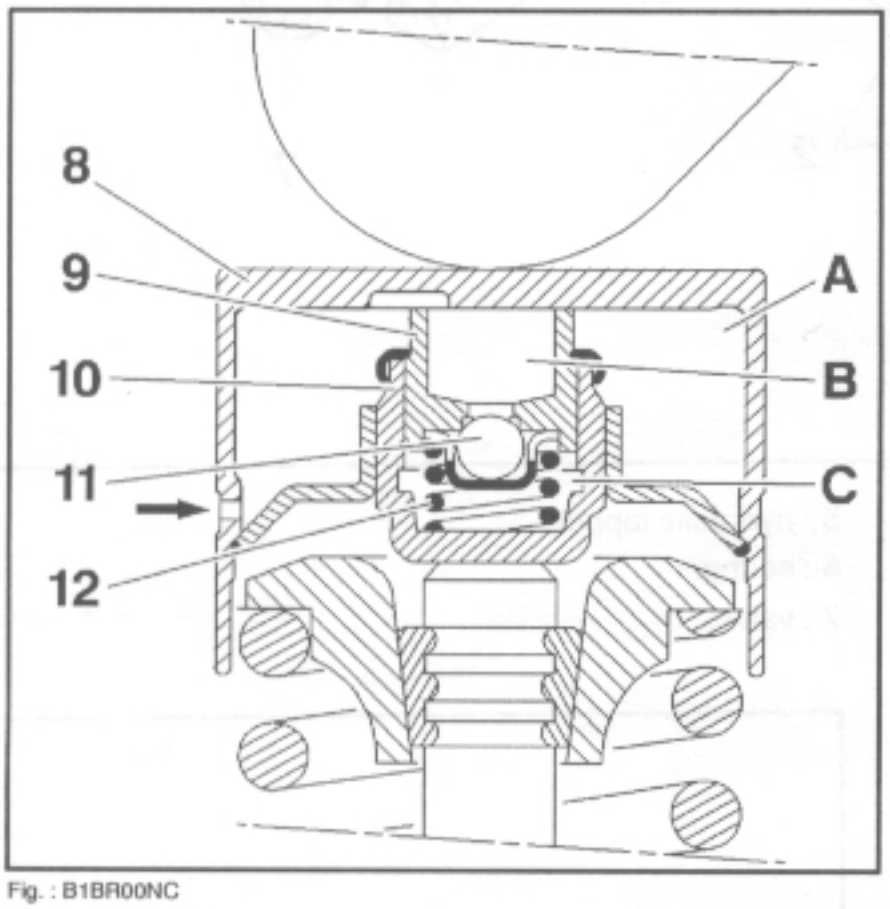


Fig. : B1BR00NC

8 : tappet body.
9 : piston.
10 : barrel.
11 : ball valve.
12 : spring.
(A) : fluid reservoir chamber.
(B) : low pressure chamber.
(C) : high pressure chamber.

6.3.1 – Oil pressure built up in a tappet

The oil under pressure :
- fills in reservoir (A)
- travels to low pressure chamber (B)
- pushes valve (11)
- fills the volume of high pressure chamber

The piston–liner assembly is kept extended by the spring.

The tappet bears permanently between the cam and the end of valve stem.

6.3.2 – Valve lift

As soon as the cam bears upon the tappet :
- the valve spring causes a pressurization in chamber (C)
- valve (4) is held against its seat
- the valve rises

7 – VALVE TIMING

7.1 – Specification

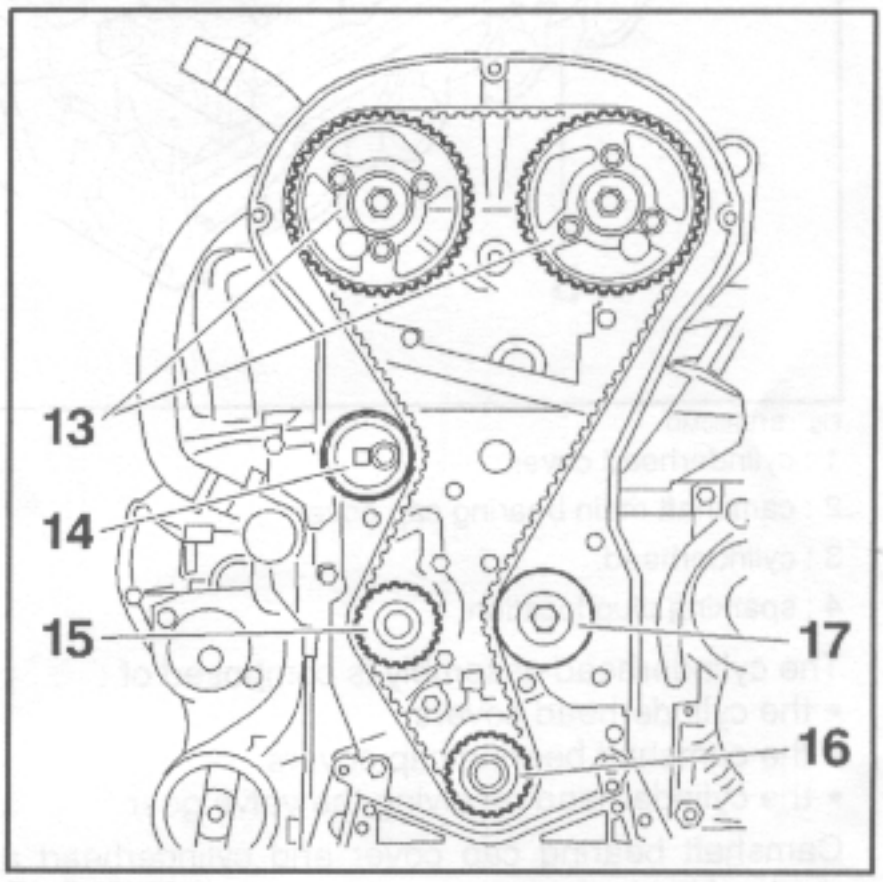


Fig. : B1BR00PC

13 : camshaft gear wheels.
14 : eccentric roller tensioner.
15 : water pump pinion.
16 : crankshaft sprocket.
17 : roller tensioner.

The valve timing arrangements comprises two overhead camshafts with direct action.

The crankshaft, water pump and camshaft pinions have a specific module (noise limiting, special water pump).

www.WorkshopManuals.co.uk

Specification of the timing belt :

Belt width	25.4 mm
Number of teeth	136
Material	HSN

The belt tensioning is ensured by the eccentric roller.

Belt replacement intervals in normal conditions of use : 72,000 miles (120 000 kms).

7.2 – Pinions which can be disengaged

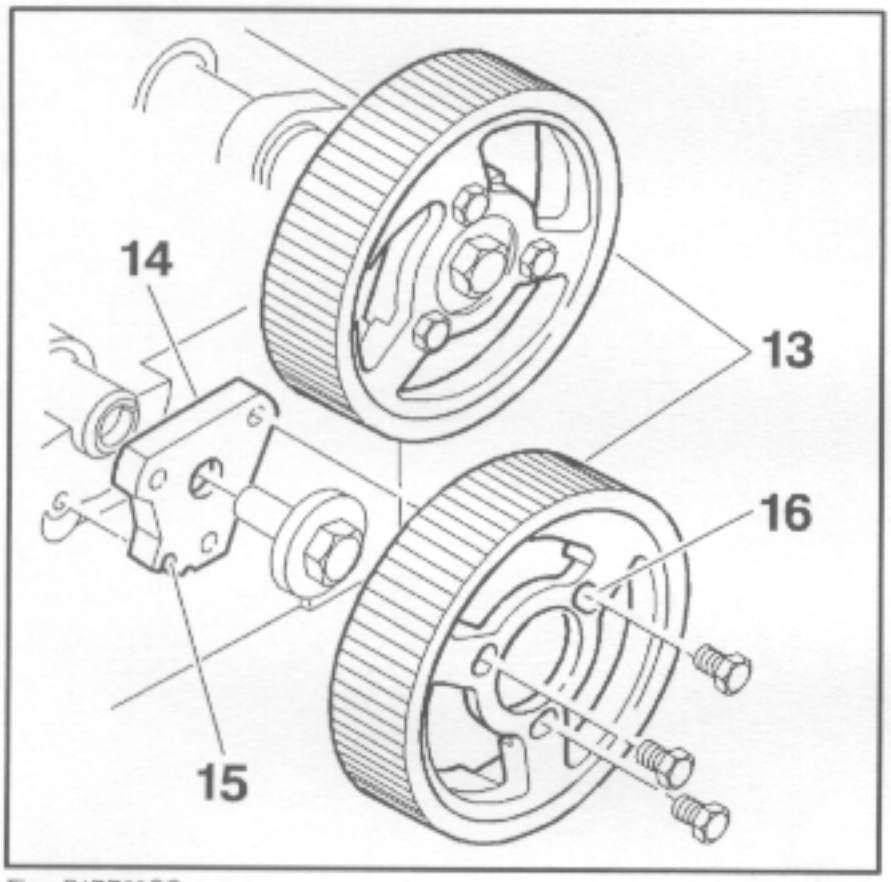


Fig. : B1BR00QC

13 : camshaft gearwheel.

14 : camshaft hub.

15 : notch for pegging.

16 : oblong hole.

The camshaft gear wheels can be disengaged.

The camshafts can be pegged through their hub (keyed on the shaft).

The pinions are attached to their hub by means of three screws.

When the three fixing screws are slackened, the pinions can rotate freely within the limit of the oblong holes.

The two camshaft hubs differ in their geometry.

The hub can be identified by a mark on the tab :
- inlet without marking
- exhaust with marking

This arrangement enables :
- a more precise timing,
- a better distribution of the belt tension between the belt runs to be obtained.

8 – LUBRICATION

8.1 – Specification

Oil capacity :
- without oil filter change : 4 l
- with oil cartridge replacement : 4.3 l
- between the min. and the max. marks on the dipstick : 1 l

Filter cartridge : PURFLUX LS 867A.

8.2 – Lubrication circuit

Lubrication under pressure by a gear type oil pump.

The oil pump is driven by chain.

8.3 – Engine draining

The draining should be carried out while hot, immediately after the engine switch–off.

The engine can be drained by suction.

The end of the dipstick guide is widened to allow connecting a 14 mm Ø nozzle.

It remains possible to drain the engine by taking out the drain plug from the oil sump.

9 – COOLING CIRCUIT

9.1 – Specification

Cooling circuit capacity : 8.5 litres.

Pressure setting of the de–aeration chamber filler plug : 1.4 bar.

Coolant : special CITROEN.

Protection : –37°.

Replacement intervals : every two years.

9.2 – Description

New water outlet housing comprising the water temperature sensors, secured to the cylinderhead, above the clutch bell housing.

The de–aeration chamber is :
- built in the radiator (versions without refrigeration)
- offset on the R.H. front wheelarch (versions with refrigeration)

www.WorkshopManuals.co.uk

10 – AIR SUPPLY

New aluminium induction claw comprising, on the cylinder block side :
- a 1.3 litre capacity
- a pressure sensor

New throttle butterfly housing composed of :
- an idling actuator (stepper motor)
- a heating element
- an inlet air thermal sensor

11 – INJECTION SYSTEM

Supplier : BOSCH.

Injection type : MP 5.1.1 (derived from the BOSCH MP 5.1 injection).

The MP 5.1.1 injection system differs from the MP 5.1 injection in :
- the addition of a knock sensor on the cylinder block
- the addition of a stepper motor to control the idling speed
- the addition of a compact ignition coil block (BBC)

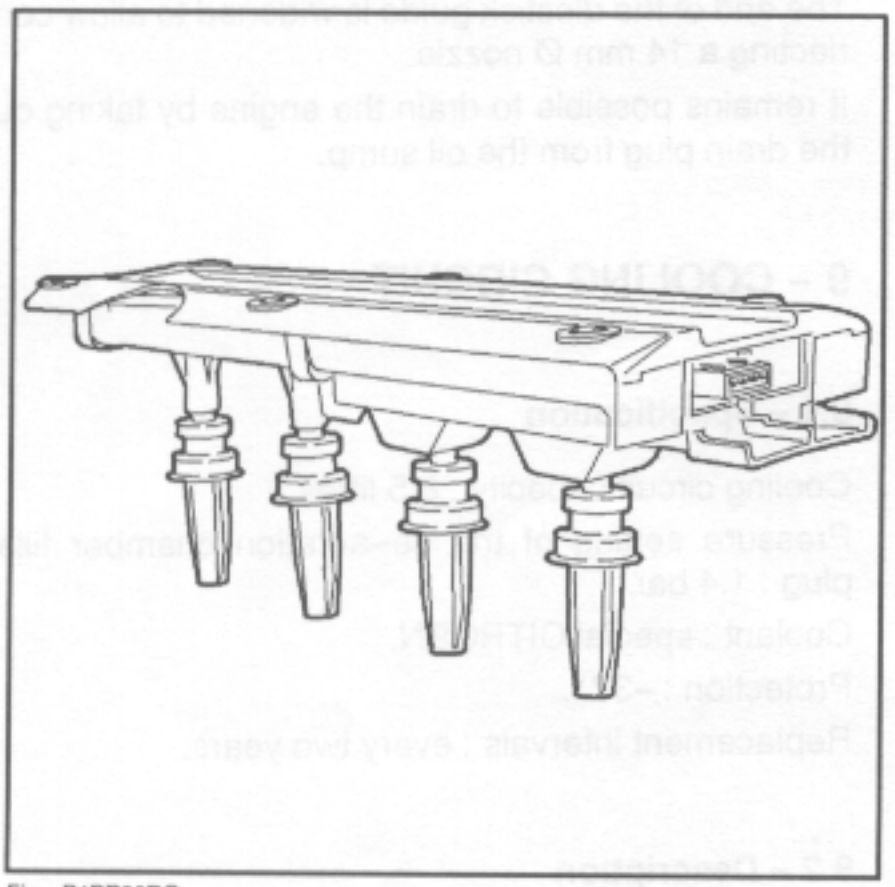


Fig. : B1BR00RC

Compact ignition coil block.

The block is a single-piece assembly placed above the cylinderhead.

It incorporates :
- 2 coils
- 4 high voltage outlets

The ignition is a static twin wasted-spark system.

Each coil output is connected to a sparking plug.

www.WorkshopManuals.co.uk

PRESENTATION : DK5ATE ENGINE

1 – DESCRIPTION

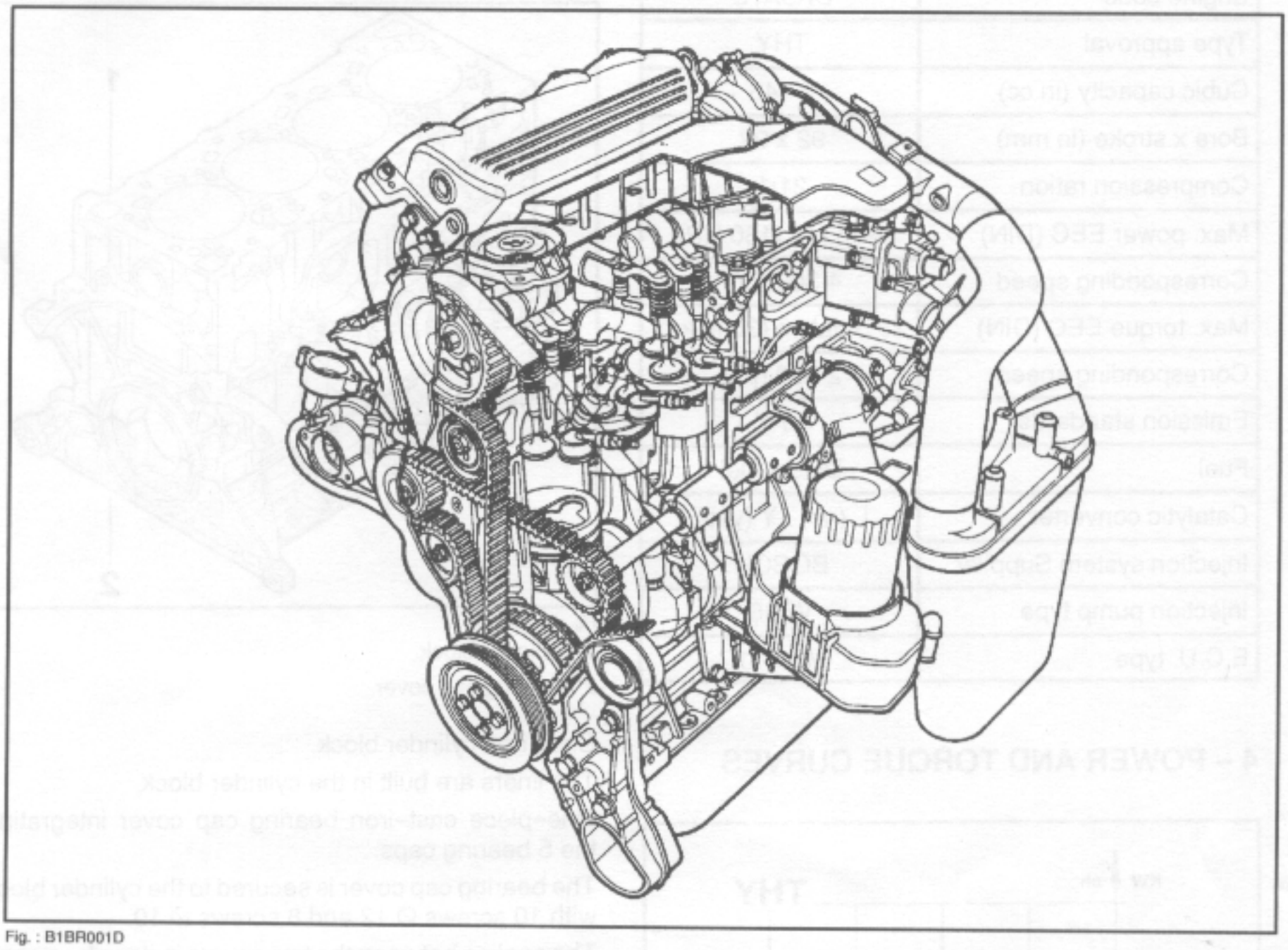


Fig. : B1BR001D

2 – INTRODUCTION

The CITROEN XM is equipped with a new engine : the DK5ATE.

The DK5ATE is a 2 446 cc, 4 cylinder Turbo Diesel with indirect injection.

This engine incorporates :

- a 12 valve technology (three valves per cylinder)
- two balance shafts which provides a reduction in the vibrations caused by the engine
- an electronic management of the injection system (E.C.U. + injection pump)

The electronic management :

- improves the driveability
- complies with the emission standards

In addition the new electronic control system :

- manages the cruise control
- and the coded anti–theft device
- transmits the instantaneous fuel consumption signal to the on–board computer

www.WorkshopManuals.co.uk

3 – SPECIFICATION

Engine code	DK5ATE
Type approval	THY
Cubic capacity (in cc)	2 446
Bore x stroke (in mm)	92 x 92
Compression ration	21:1
Max. power EEC (DIN)	94.5 kW (130 HP)
Corresponding speed	4 300 rpm
Max. torque EEC (DIN)	28.5 daNm (30 m.kg)
Corresponding speed	2 000 rpm
Emission standards	L / Y
Fuel	Diesel fuel
Catalytic converter	L (no) / Y (yes)
Injection system Supplier	BOSCH
Injection pump type	VP36
E.C.U. type	MSA 11

4 – POWER AND TORQUE CURVES

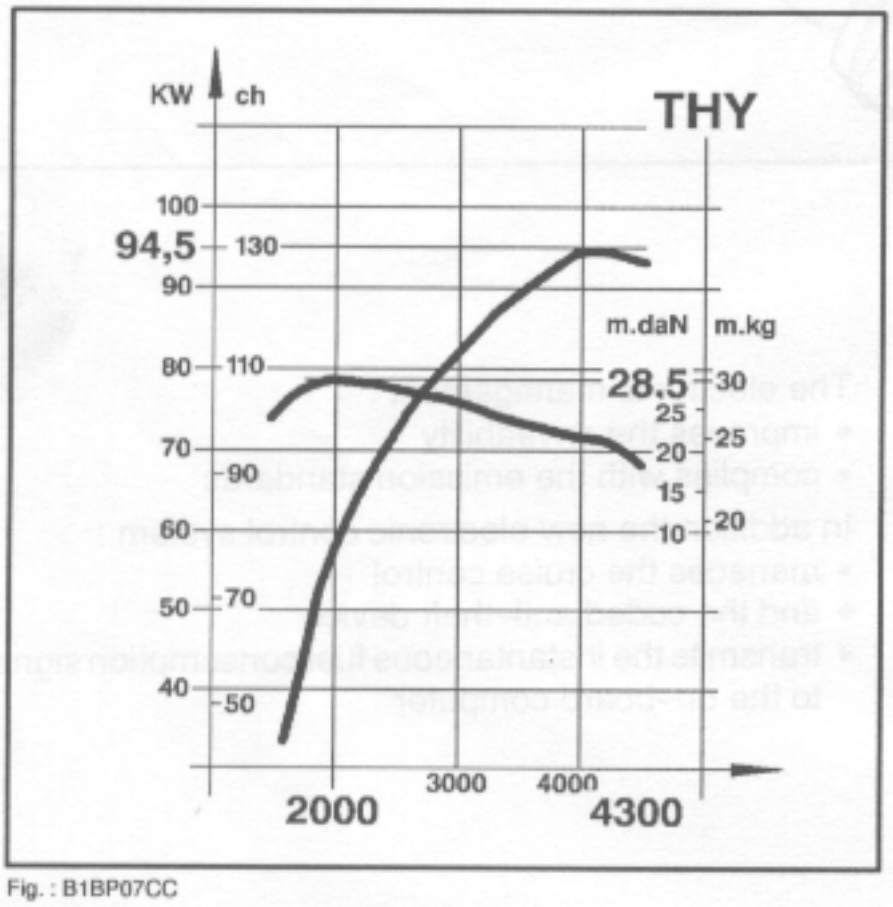


Fig. : B1BP07CC

5 – CYLINDER BLOCK AND MAIN BEARING CAP COVER

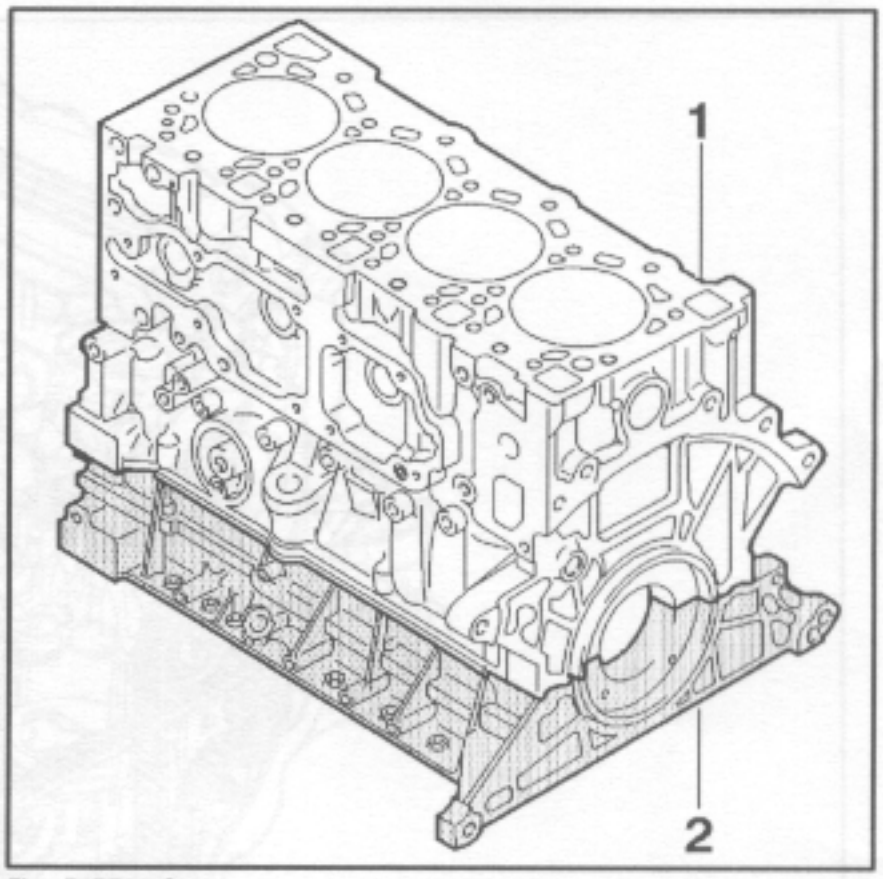


Fig. : B1BR003C

1 : cylinder block.

2 : bearing cap cover.

Cast–iron cylinder block.

The liners are built in the cylinder block.

One–piece cast–iron bearing cap cover integrating the 5 bearing caps.

The bearing cap cover is secured to the cylinder block with 10 screws Ø 12 and 8 screws Ø 10.

The sealing between the two covers is done by a sealing compound (during repairs, use LOCTITE Autojoint Or).

www.WorkshopManuals.co.uk

6 – RECIPROCATING GEARS

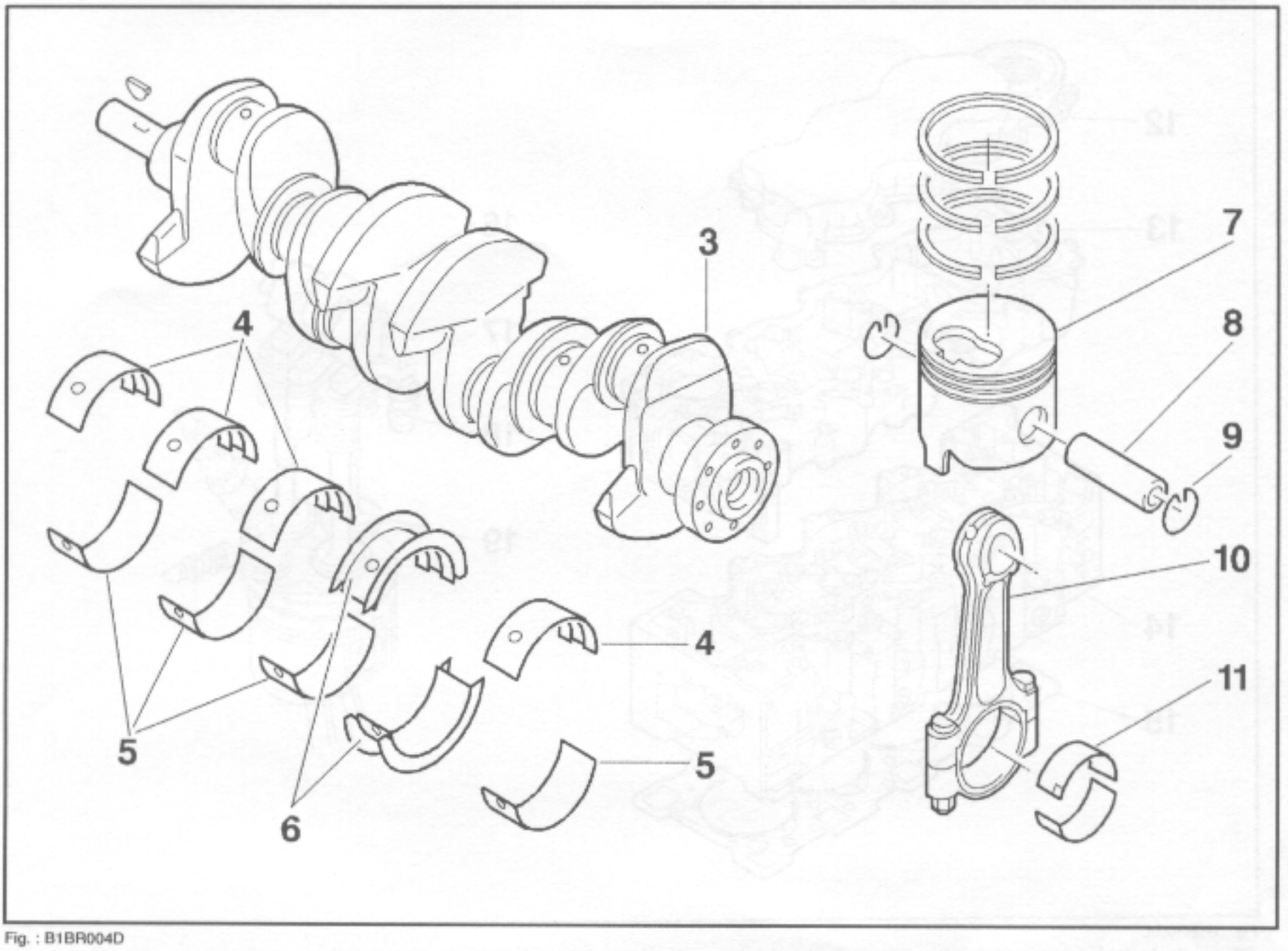


Fig. : B1BR004D

3 : crankshaft.
4 : upper half–bearing shells.
5 : lower half–bearing shells.
6 : bearing 2 half–bearing shells.
7 : piston.
8 : gudgeon pin.
9 : circlip.
10 : con. rod.
11 : con.rod big end half–bearing shell.

6.1 – Crankshaft

Steel crankshaft with 5 bearings balanced by four counterweights.

The crankshaft endfloat is adjusted by the washers incorporated in the half–bearing shells of bearing No.2.

6.2 – Crankshaft bearing shells

The half–bearing shells are :
- grooved on the cylinder block side
- plain on the bearing cap cover side

6.3 – Con. rods

The con.rod small end has a viper head shape.

The con. rod half–bearing shells are lugged.

6.4 – Pistons

Light–alloy pistons with a passage under head allowing them to be cooled by oil spray.

The piston gudgeon pin is :
- loose fitted
- locked by two circlips

www.WorkshopManuals.co.uk

7 – CYLINDERHEAD ASSEMBLY

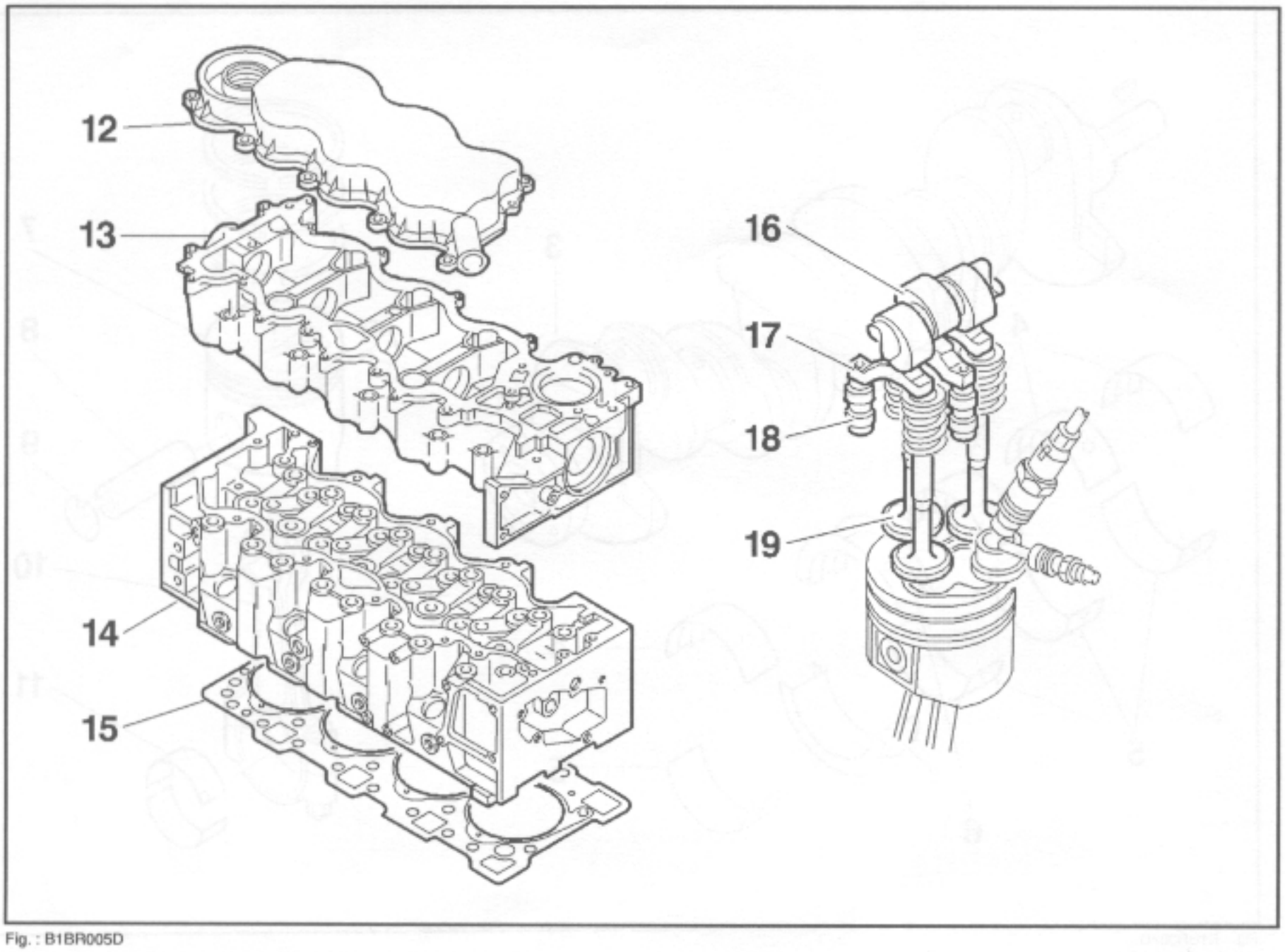


Fig. : B1BR005D

12 : cylinderhead cover (oil filler orifice integrated).
13 : camshaft housing.
14 : cylinderhead.
15 : cylinderhead gasket.
16 : camshaft.
17 : cam follower.
18 : hydraulic tappet.
19 : valve.

The cylinderhead assembly is composed of :
- the cylinderhead cover
- the camshaft housing
- the cylinderhead comprising the valve gear

The camshaft housing and cylinderhead are made of light alloy.

7.1 – Camshaft housing

The housing includes 5 bearings and accepts the 12–cam shaft.
The 5 bearings are lubricated.

7.2 – Cylinderhead

12 valve cylinderhead.
Three valves per cylinder (2 inlet and 1 exhaust).
The technology employed to open the inlet and exhaust orifices is similar to that utilised on the XUD 11.

www.WorkshopManuals.co.uk

7.2.1 – Cylinderhead fixing

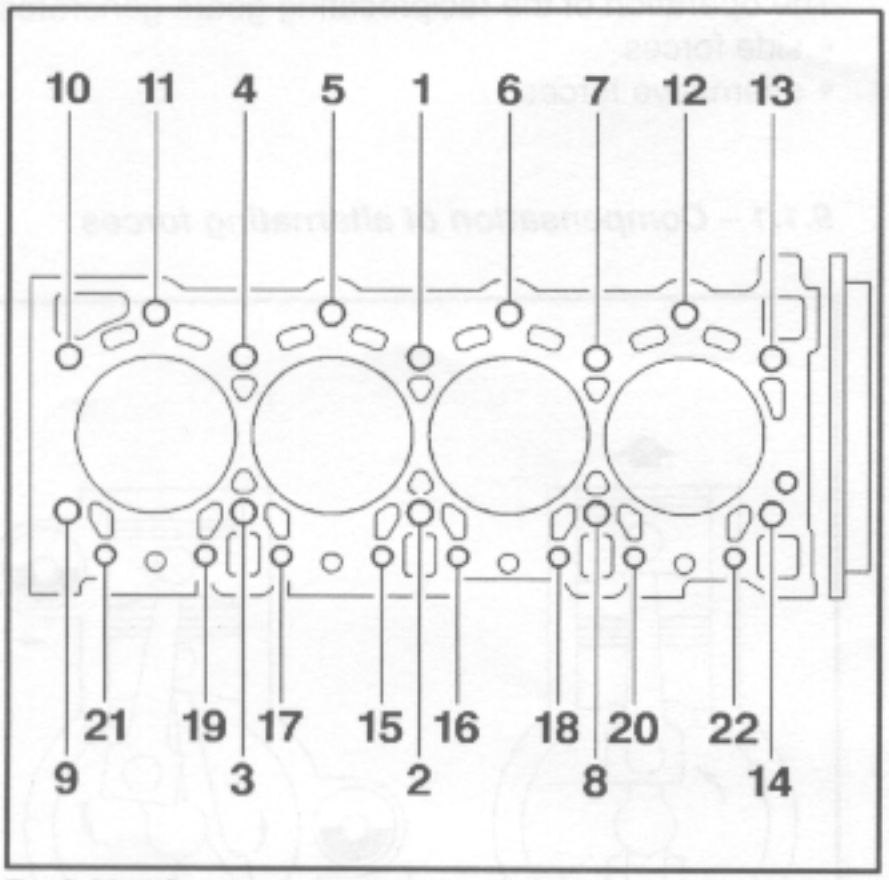


Fig. : B1BP03XC

The cylinderhead is secured to the cylinder block by means of 22 screws :

- 14 screws Ø 12 (ref.1 to 14)
- 8 screws Ø 10 (ref.15 to 22)

The cylinderhead can be removed without having to remove first the camshaft cover.

NOTE : no cylinderhead retightening at the First Service.

7.2.2 – Tightening

This operation must be carried out in 2 stages.

First stage :

- proceed screw by screw in the indicated order (1 to 14)
- tighten the Ø 12 screws to 5 m.daN
- proceed screw by screw in the order indicated (15 to 22)
- tighten the Ø 10 screws to 3.5 m.daN

Second stage :

- proceed screw by screw in the order indicated (1 to 22)
- angular tightening to 120°± 5°

7.3 – Camshaft

12–cam 5–bearing shaft.

The lubrication is ensured by two longitudinal passages.

The oil is directed towards the bearings and cams via side passages.

The camshaft is fitted with a pulley, gearbox side, driving the water pump.

The camshaft comes in touch with the rocker arms which push the valves.

The hydraulic tappets adjust the wear by maintaining a zero clearance between the cam follower and the camshaft (similar operation to the XUD11 engine).

8 – VALVE TIMING

8.1 – Specification

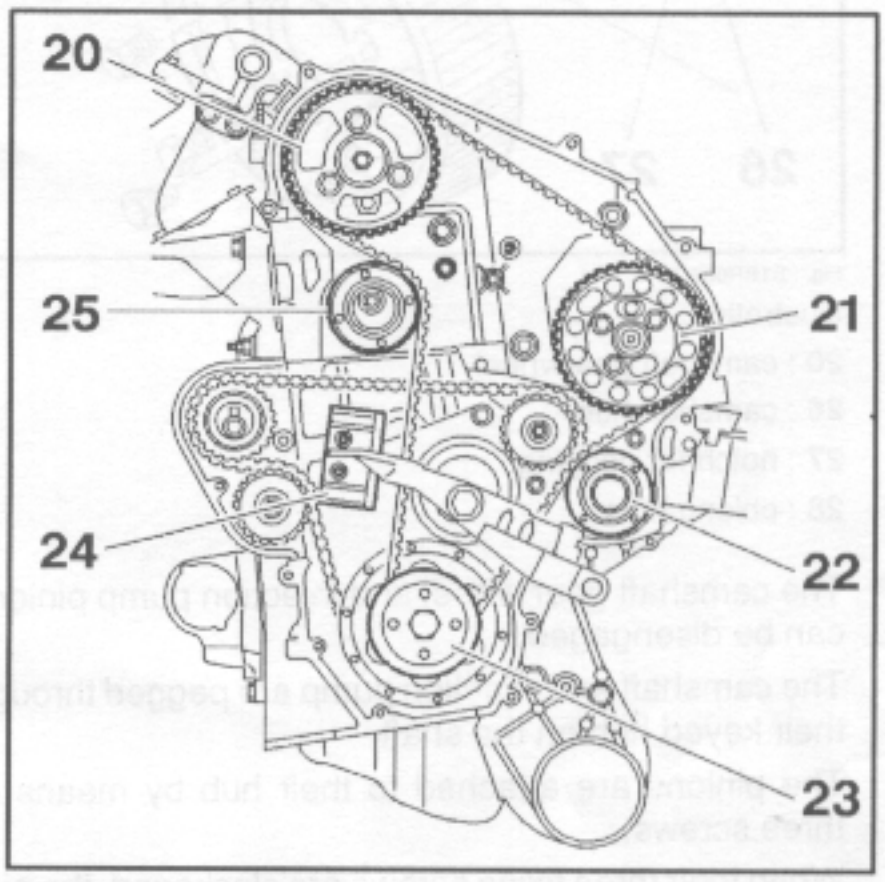


Fig. : B1BR006C

20 : camshaft gearwheel.

21 : injection pump pinion.

22 : roller tensioner.

23 : crankshaft sprocket.

24 : guide limiting the movement of the belt.

25 : eccentric type roller tensioner.

Specification of the timing belt :

Belt width	25.4 mm
Number of teeth	143
Material	HSN

The belt tensioning is ensured by the eccentric roller.

Belt replacement intervals in normal conditions of use : 72 000 miles (120 000 km).

www.WorkshopManuals.co.uk

8.2 – Pinions which can be disengaged

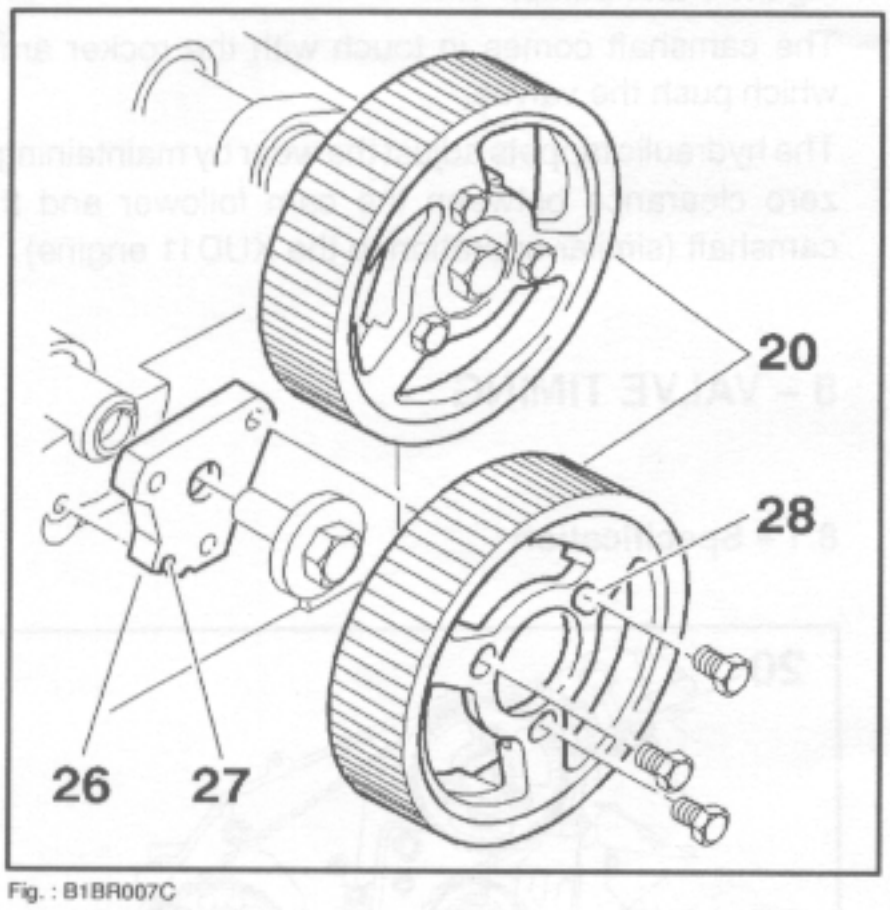


Fig. : B1BR007C

Illustration.

20 : camshaft gearwheel.

26 : camshaft hub.

27 : notch for pegging.

28 : oblong hole.

The camshaft gear wheel and injection pump pinions can be disengaged.

The camshaft and injection pump are pegged through their keyed hub on the shaft.

The pinions are attached to their hub by means of three screws.

When their three fixing screws are slackened, the pinions can rotate freely, within the limit of the length of the oblong holes.

This arrangement enables :

- a more precise timing
- a better distribution of the belt tension between the belt runs

9 – BALANCE SHAFTS

Two balance shafts are fitted on each side of the engine.

The front balance shaft is situated behind the injection pump.

The rear balance shaft is situated close to the turbocharger.

These shafts reduce the vibrations caused by the reciprocating gears of the 4–cylinder engines.

9.1 – Operating principle

The operation of the reciprocating gears generates :

- side forces
- alternative forces

9.1.1 – Compensation of alternating forces

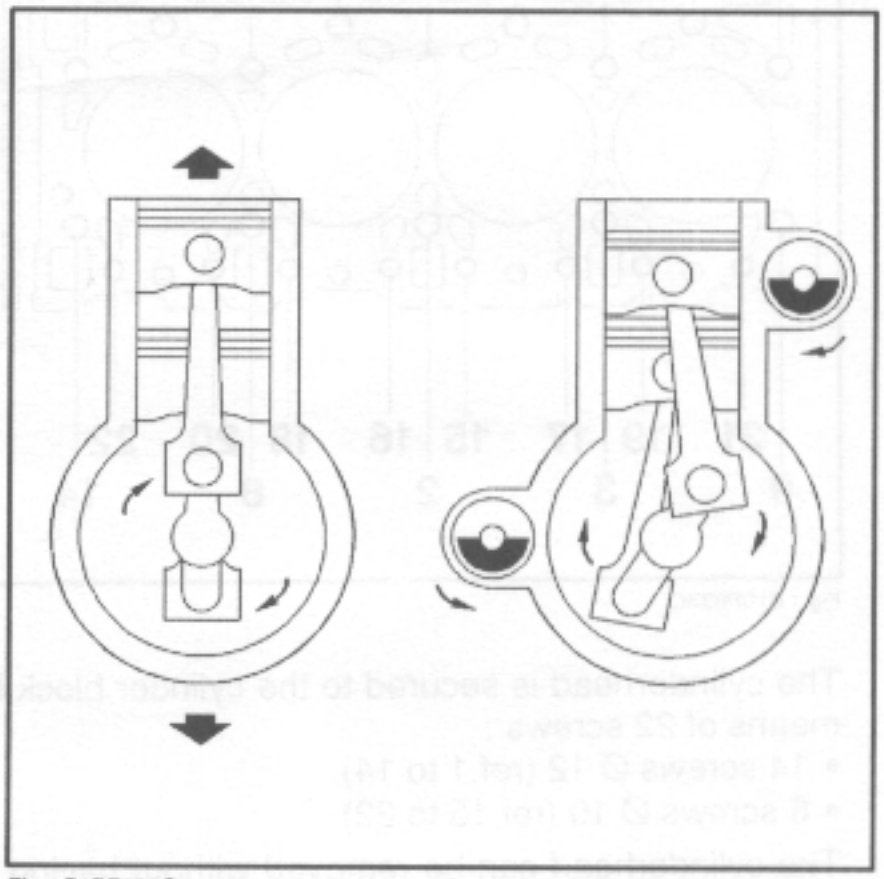


Fig. : B1BR008C

In a 4–cylinder engine, vibrations appear during the alternative displacement of the pistons in pair.

Pistons 1 and 4 are at the Top Dead Centre (TDC) when pistons 2 and 3 are at the Bottom Dead Centre and reciprocally.

The forces developped by the con.rod/piston assemblies are more important during the displacement towards the Top Dead Centre than towards the Bottom Dead Centre, which creates vibrations.

To achieve a balance between these two forces, the force developed in the displacement towards the bottom dead centre is increased by the balance weights of the shafts.

The balance weights should be in the low position whenever a pair of pistons is at the T.D.C..

The balance shafts rotate twice as rapidly as the crankshaft since the piston–con.rods pass twice at TDC per crankshaft revolution.

www.WorkshopManuals.co.uk

9.1.2 – Side forces compensation

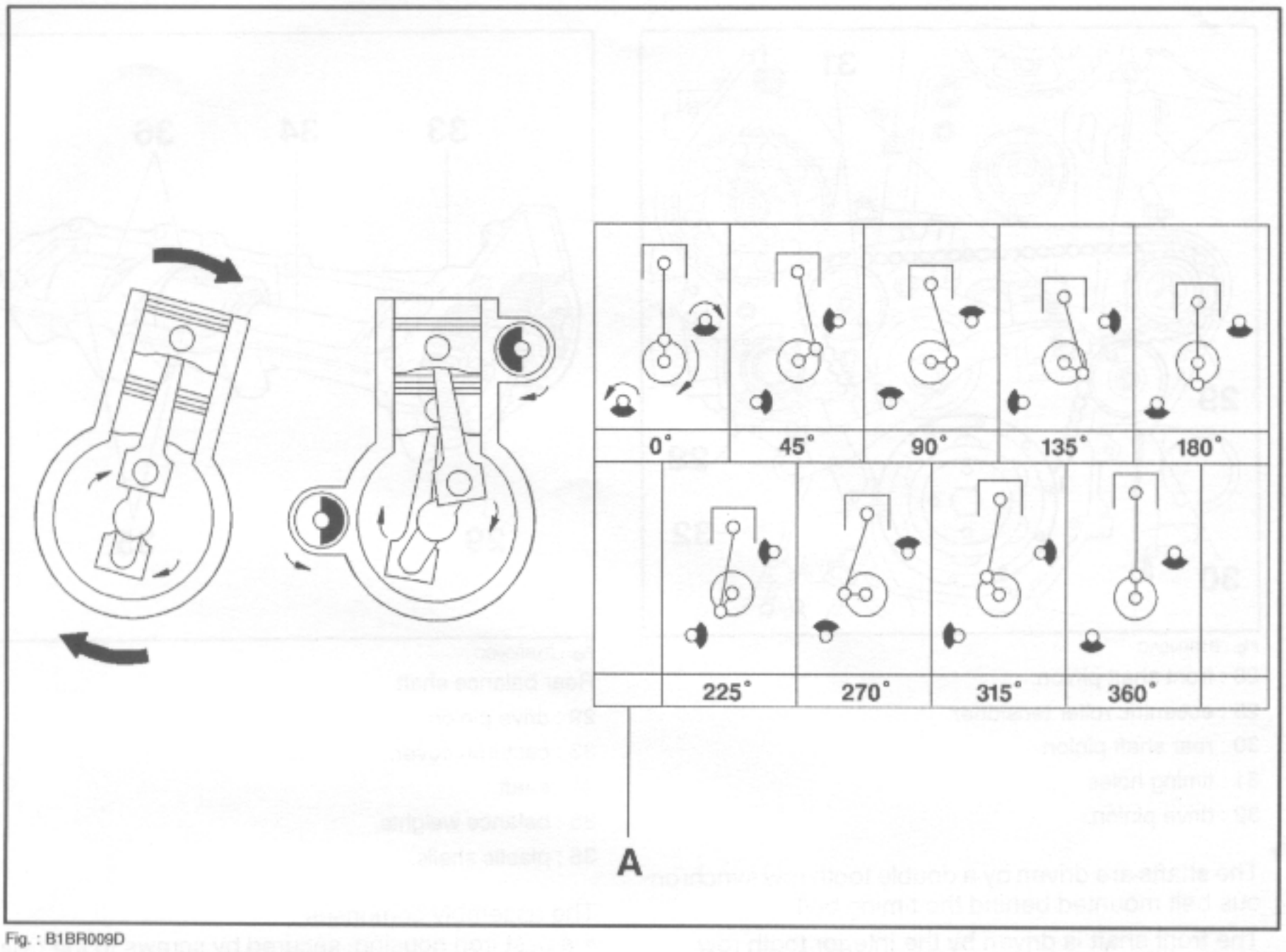


Fig. : B1BR009D
A : position of the weights after a crankshaft turn.

The side forces developed by the piston motions tend to rotate the cylinder block around a centre line.

In order to oppose the forces, the balance shafts are placed at precise heights on the cylinder block and the position of the weights allows adverse forces to be exerted at the exact moment.

To do that, the shafts rotate twice as fast as the crankshaft and in the opposite direction.

www.WorkshopManuals.co.uk

9.2 – Shaft drive

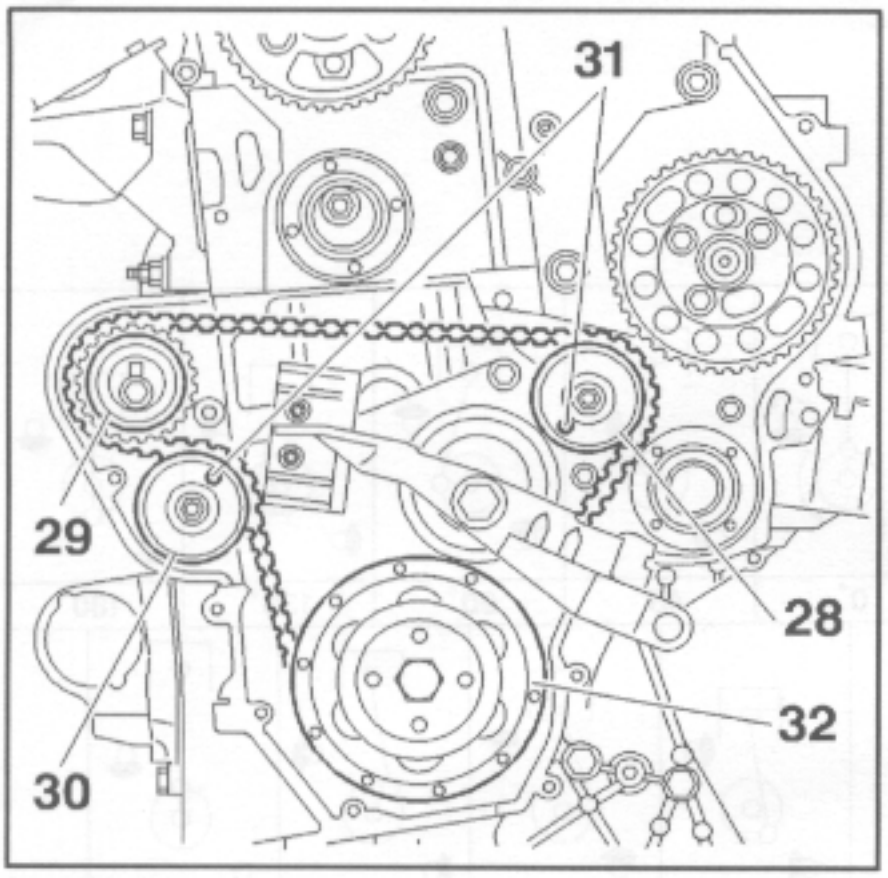


Fig. : B1BR00AC

28 : front shaft pinion.

29 : eccentric roller tensioner.

30 : rear shaft pinion.

31 : timing holes.

32 : drive pinion.

The shafts are driven by a double tooth row synchronous belt mounted behind the timing belt.

The front shaft is driven by the interior tooth row.

The rear shaft is driven by the outer teeth.

Specification of the timing belt :

Belt width	19 mm
Number of teeth on each side	106
Material	HSN

The timing hole in the drive pinions of the shafts are intended to keep a correct weight positioning when removing the belt.

Belt replacement intervals in normal conditions of use : 72 000 miles (120 000 km).

WARNING : a bad positioning of the weights in relation to the reciprocating gears (incorrect pegging) can create major engine vibrations.

9.3 – Constitution of the shafts

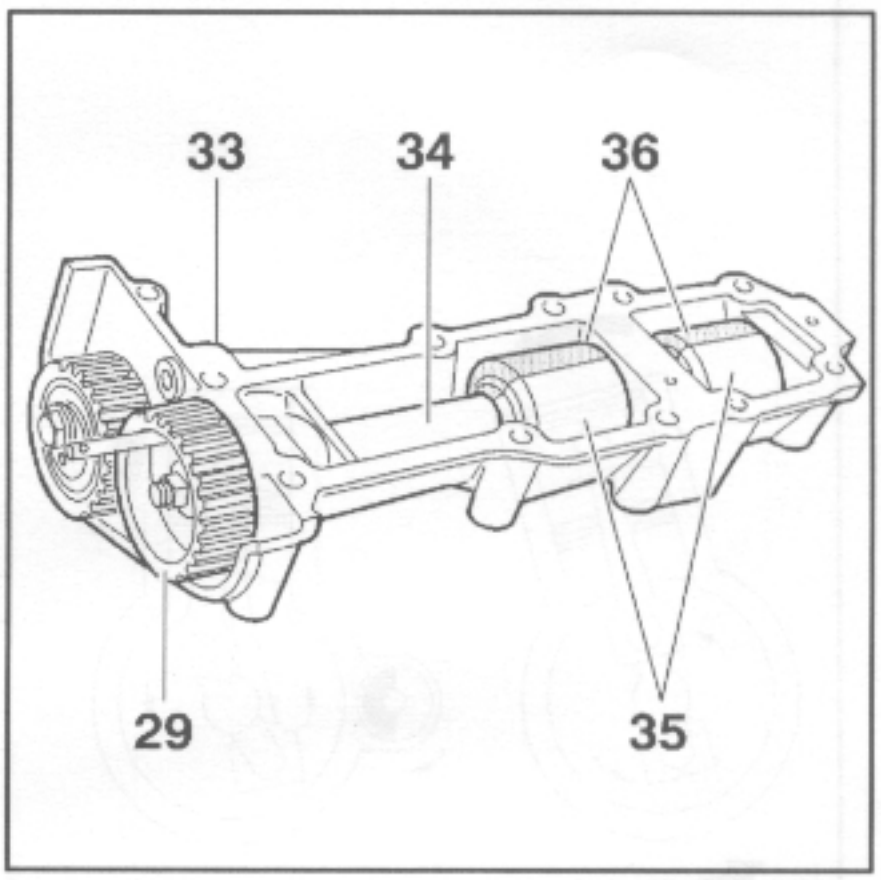


Fig. : B1BR00BC

Rear balance shaft.

29 : drive pinion.

33 : cast iron cover.

34 : shaft.

35 : balance weights.

36 : plastic shells.

The assembly comprises :

- a cast iron housing, secured by screws to the cylinder block
- a driving gear with locating lug secured by a stud
- a shaft with three bearings and a central oil passage
- two weights (secured by two screws)
- two plastic shells eliminating oil pumping and emulsifying

www.WorkshopManuals.co.uk

10 – SUSPENSION OF THE POWER UNIT

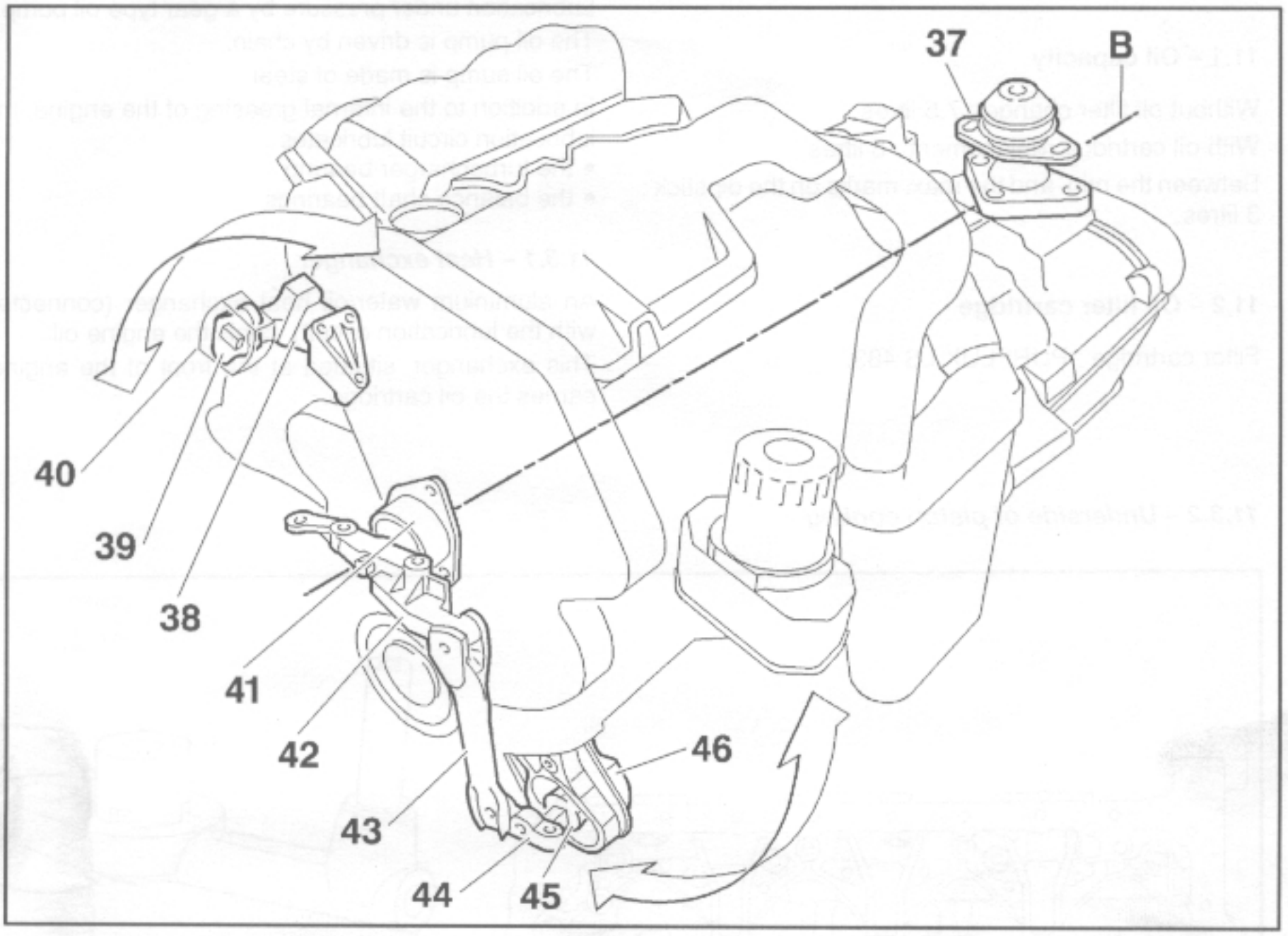


Fig. : B1BR00CD

37 : gearbox hydro–elastic mounting.
38 : cast–iron intermediate bracket.
39 : flexible stop.
40 : steel support welded to the wheelarch.
41 : hydro–elastic engine support.
42 : engine support base.
43 : connecting rod.
44 : flexible torque stay on cradle.
45 : flexible stop.
46 : torque stay on engine.
B : natural roll axis.

The suspension consists in :

- two hydro–elastic supports connecting the extremities of the power unit assembly
- two torque stays bearing respectively upon the R.H. front wheelarch and the cradle

This type of suspension offers the following advantages :

- low vibrations at idle (dead center)
- reduction in the vibrations transmitted to the bodyshell on starting and stopping the engine, or during misfiring

10.1 – R.H. lower engine torque stay (44–45–46)

It consists of :

- the torque stay on the engine
- the torque stay on the cradle
- the flexible stop spindle

10.2 – R.H. upper engine torque stay (38–39–40)

It consists of :

- the steel support welded to the wheelarch
- the intermediate cast iron bracket secured to the cylinderhead
- the shaft carrying the flexible stop

10.3 – R.H. engine mounting bracket (41–42–43)

The hydro–elastic type engine support bracket is placed on the natural roll axis of the power unit assembly.

The support armature is attached to the cylinder block.

The base, connected to the engine mounting bracket by a screw, is fixed under the sill panel.

Con.rod (43) is used :

- for positioning the lower engine torque stay
- for reinforcing the structure of the vehicle

www.WorkshopManuals.co.uk

11 – LUBRICATION

11.1 – Oil capacity

Without oil filter change : 7.5 litres.

With oil cartridge replacement : 8 litres.

Between the min. and the max. marks on the dipstick : 3 litres.

11.2 – Oil filter cartridge

Filter cartridge : PURFLUX LS 483.

11.3 – Lubrication circuit

Lubrication under pressure by a gear type oil pump.

The oil pump is driven by chain.

The oil sump is made of steel.

In addition to the internal greasing of the engine, the lubrication circuit lubricates :

- the turbocharger bearing
- the balance shaft bearings

11.3.1 – Heat exchanger

An aluminium water/oil heat exchanger (connected with the lubrication circuit), cools the engine oil.

This exchanger, situated at the front of the engine, carries the oil cartridge.

11.3.2 – Underside of piston cooling

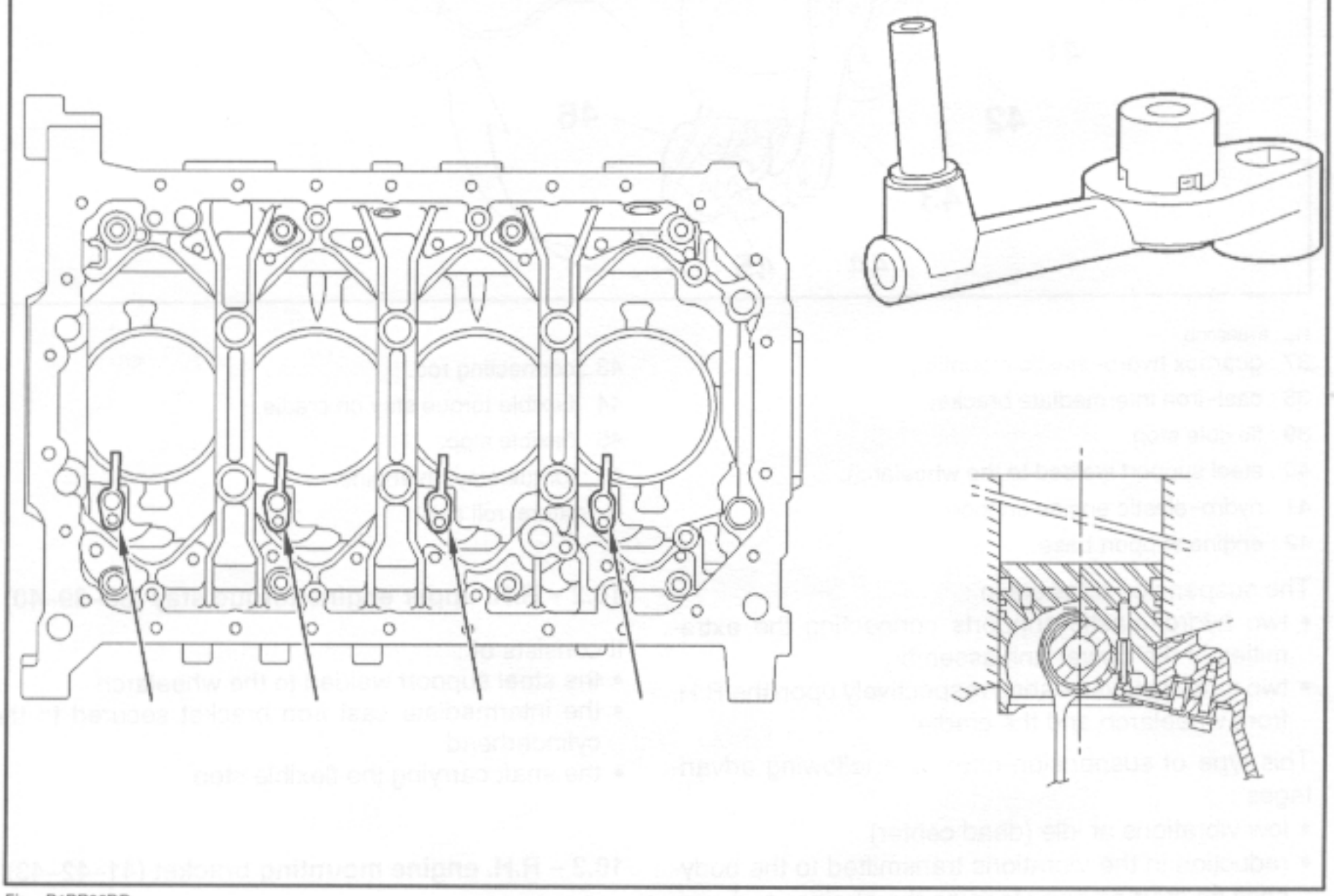


Fig. : B1BR00DD

A few jets, placed on the main oil feed line, ensure the cooling of the underside of pistons.

There is an annular passage under the head of the pistons which facilitates their cooling.

www.WorkshopManuals.co.uk

11.3.3 – Hydraulic tappets

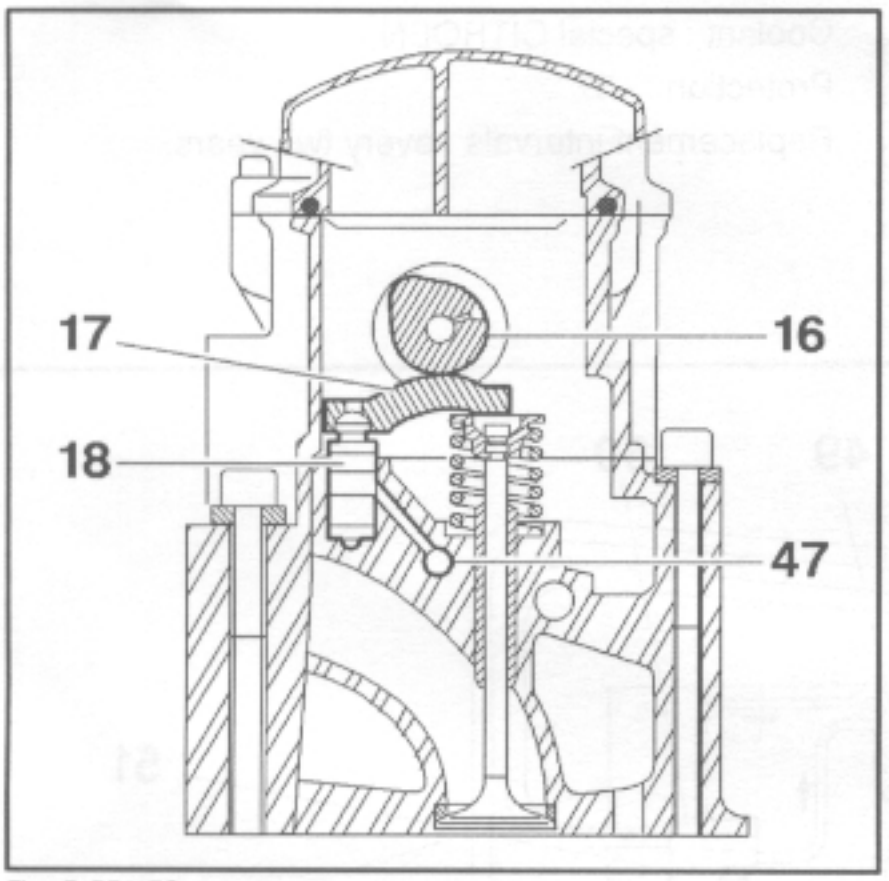


Fig. : B1BR00EC

16 : camshaft.

17 : cam follower.

18 : hydraulic tappet.

47 : tappet oil feed passage.

11.4 – Engine draining

IMPERATIVE : the draining should be carried out while hot, immediately after the engine switch–off.

The engine can be drained by suction.

The end of the dipstick guide has been widened out to allow coupling a nozzle connected to a suction draining equipment.

NOTE : the engine can still be drained by connecting the drain plug of the oil sump.

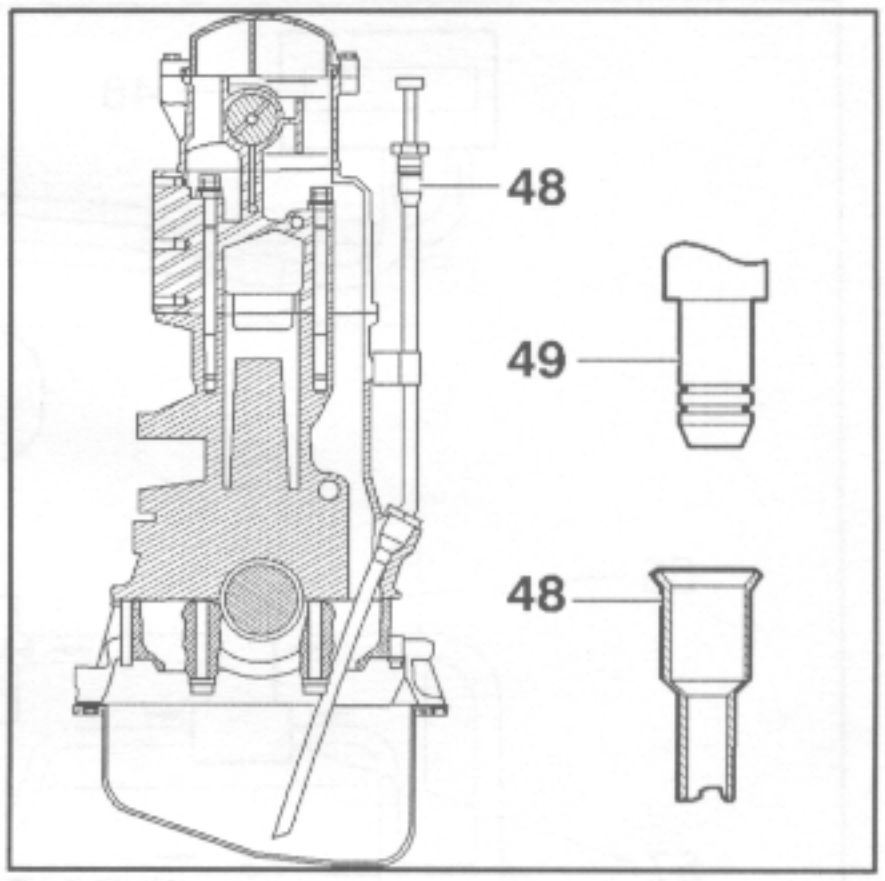


Fig. : B1BR00FC

48 : dipstick guide extremity.

49 : nozzle diameter : 16 mm.

www.WorkshopManuals.co.uk

12 – COOLING CIRCUIT

12.1 – Specification

Cooling circuit capacity : 13 litres.

Pressure setting of the de–aeration chamber filler plug : 1.4 bar.

Coolant : special CITROEN.

Protection : –37°.

Replacement intervals : every two years.

12.2 – Circuit diagram

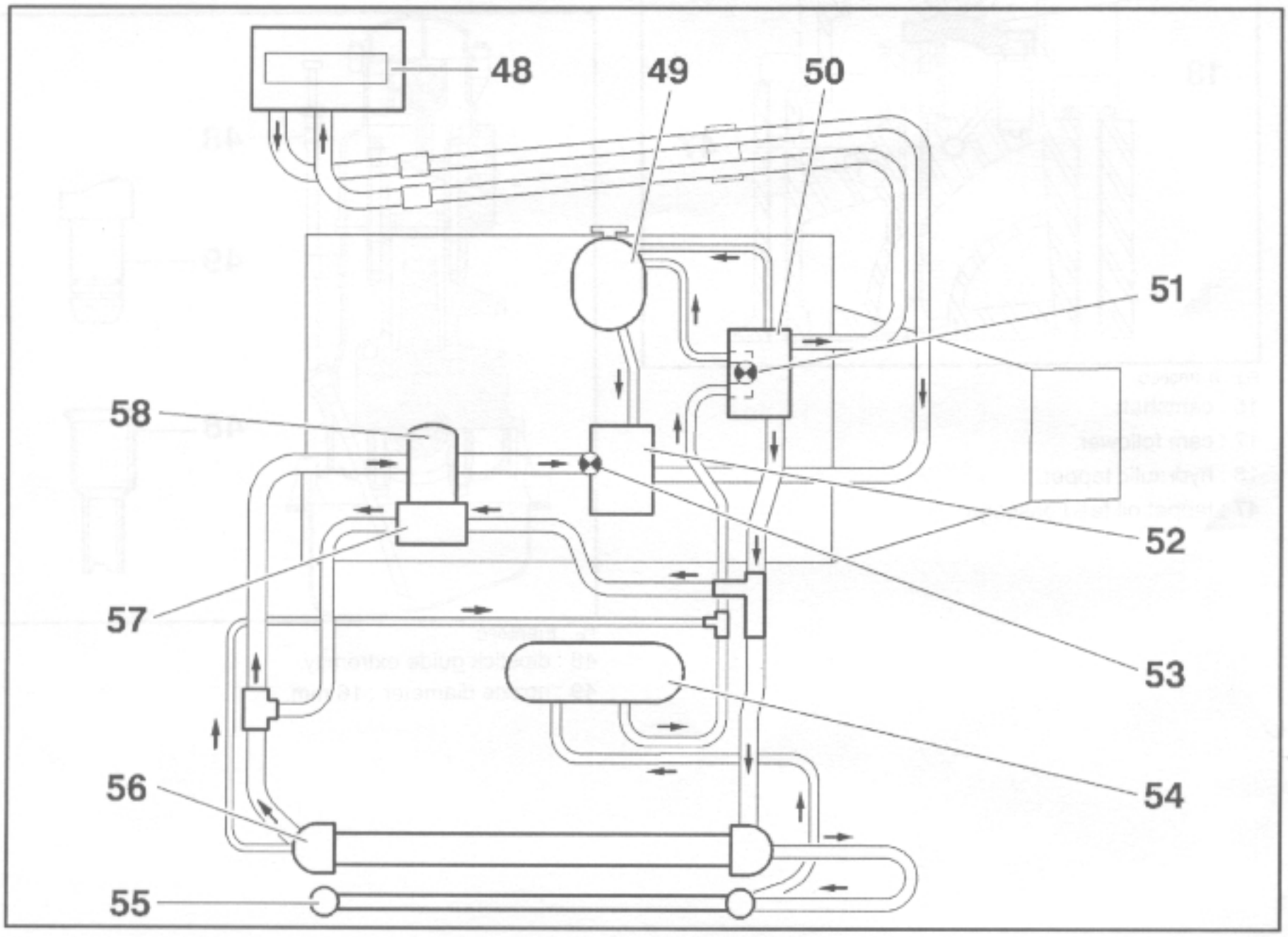


Fig. : B1BR00GD

48 : heater matrix.

49 : de–aeration chamber.

50 : water outlet housing.

51 : thermal switch.

52 : water pump.

53 : thermal switch.

54 : water–to–air heat exchanger.

55 : secondary radiator.

56 : main radiator.

57 : water–to–oil heat exchanger.

58 : filter cartridge.

The de–aeration chamber is located on the engine.

The water outlet housing (comprising water temperature sensors) is secured to the cylinderhead.

The water pump, driven by the camshaft pulley and a belt is located on the cylinder block.

The cooling circuit comprises two radiators :
- the main radiator
- the secondary radiator

The main radiator :
- cools the engine
- provides the secondary radiator with cooled water

The secondary radiator :
- cools the water from the main radiator
- supplies the water–to–air heat exchanger

The compressed air being cooled by a water–to–air heat exchanger, a secondary radiator is necessary.

The water temperature at the water–to–air heat exchanger inlet is around 60° C in normal driving conditions.

www.WorkshopManuals.co.uk

13 – AIR CIRCUIT

The DK5ATE engine is overcharged with air by a turbocharger.

13.1 – Turbocharger

The turbo is situated at the rear of the engine (bulkhead side).

The turbine is driven by the exhaust gases.

13.2 – Inlet air ducts

The air ducts are partly integrated in the protection cover of the camshaft pulley.

13.3 – Water–to–air heat exchanger

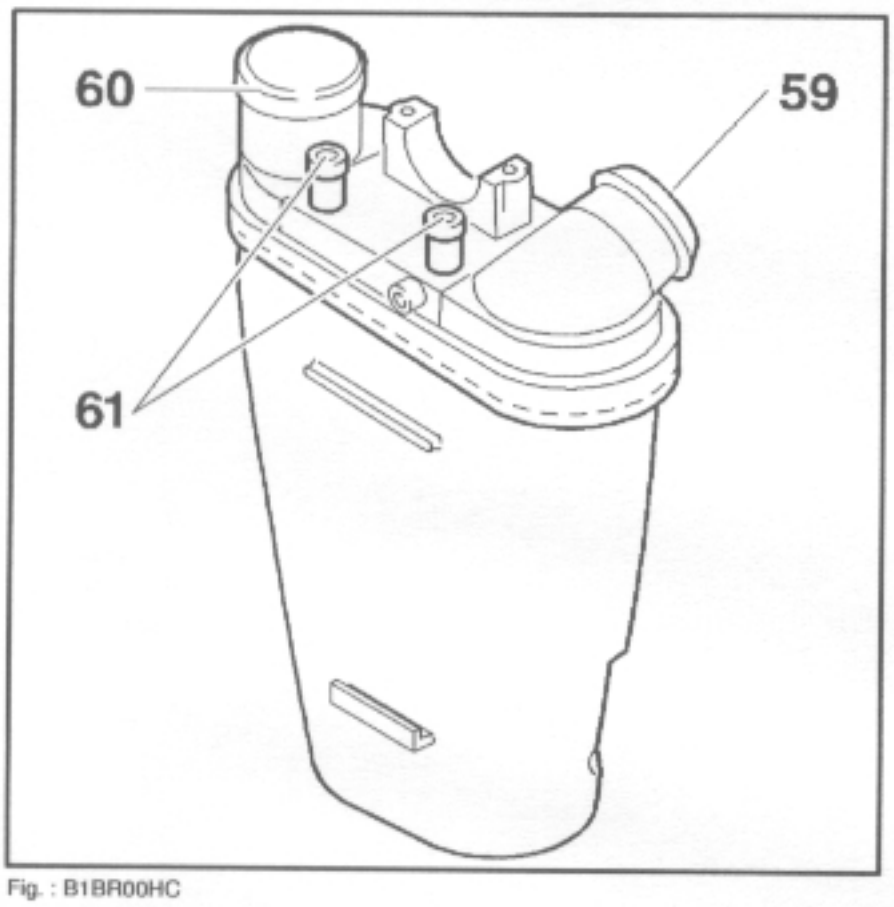


Fig. : B1BR00HC

59 : turbocharger air inlet.

60 : air outlet towards the inlet manifold.

61 : water inlet and outlet.

The compressed air is cooled by an air/water heat exchanger.

The exchanger is fixed at the front of the engine on a bracket fitted to the cylinder block.

The water–to–air heat exchanger allows, compared with an air–to–air heat exchanger :

- improving the inlet air cooling over a large engine operating range
- a reduction of the size of the exchanger

The air temperature in the inlet manifold is around 60 °C in normal driving conditions.

14 – INJECTION SYSTEM

The injection system of the DK5ATE engine is electronic.

The system comprises :

- a new injection pump
- an injection E.C.U.

14.1 – Injection pump

Manufacturer : BOSCH.

Type : VP36.

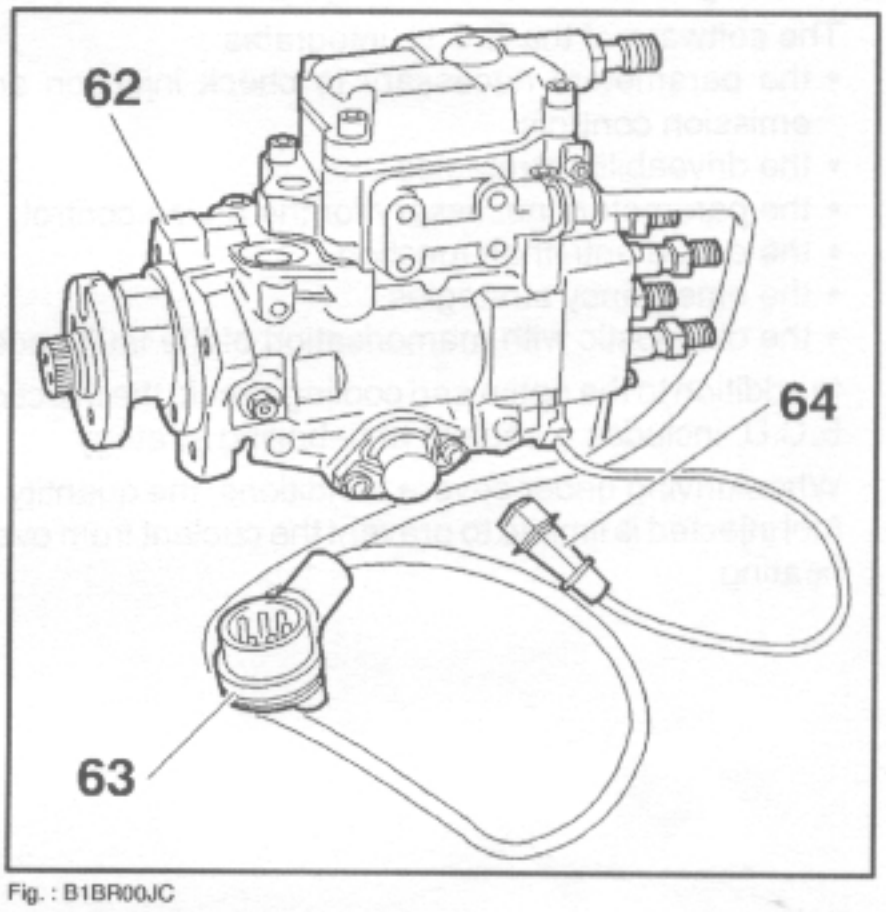


Fig. : B1BR00JC

62 : injection pump.

63 : pump connector.

64 : advance electrovalve connector.

The injection pump is derived from the BOSCH pump type VE.

This pump incorporates :

- the Diesel fuel electric actuator (replacing the load lever, linkage and springs)
- an injection advance control electrovalve

www.WorkshopManuals.co.uk

14.2 – Injection E.C.U.

Manufacturer : BOSCH.

Type : MSA 11.

The E.C.U. checks electrically :

- the injection pump
- the exhaust gas recycling electrovalve
- the pre–post heater control unit

The E.C.U. delivers :

- an engine tachometer signal to the instrument cluster
- the instantaneous fuel consumption signal to the on–board computer
- the signal to cut–off the refrigeration

The software of the E.C.U. integrates :

- the parameters necessary to check injection and emission controls
- the driveability strategies
- the parameters necessary for the cruise control
- the coded anti–theft function
- the emergency strategies
- the diagnostic with memorisation of the fault codes

In addition to the optimised cooling circuit, the injection E.C.U. includes a coolant anti–boiling strategy.

When driving under severe conditions, the quantity of fuel injected is limited to prevent the coolant from over-heating.

www.WorkshopManuals.co.uk

PRESENTATION : HYDRAULIC CLUTCH CONTROL

1 – INTRODUCTION

The CITROEN XM V6, V6.24 and 2.5 l Turbo Diesel are equipped with a hydraulic clutch control.

This type of control improves the convenience : force exerted on the pedal reduced by comparison with a cable–operated clutch.

Pre–filled with a hydraulic brake type fluid (DOT 3 with additives), this sealed and maintenance–free control adjusts the clutch pedal travel automatically (no pedal travel adjustment).

2 – CONSTITUTION

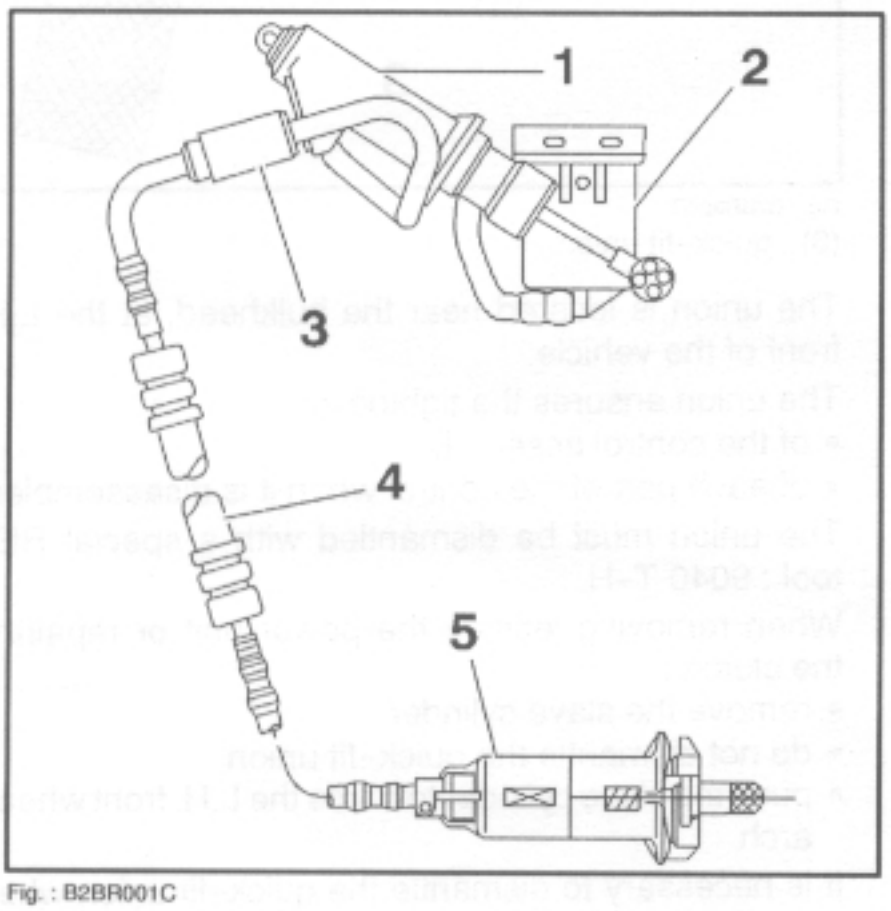


Fig. : B2BR001C

(1) : master cylinder.
(2) : reservoir.
(3) : quick–fit union.
(4) : connecting pipe.
(5) : slave cylinder.

The clutch control is made of :

- a hydraulic pressure master cylinder secured to the pedal gear in the vehicle interior
- a hydraulic fluid reservoir, clipped to the pedal gear, connected with the master cylinder
- a flexible pipe and a quick–fit union connecting the two parts of the clutch control
- a pressure slave cylinder secured to the clutch bell housing allowing for the displacement of the fork

3 – POSITIONING

3.1 – Pedal gear side

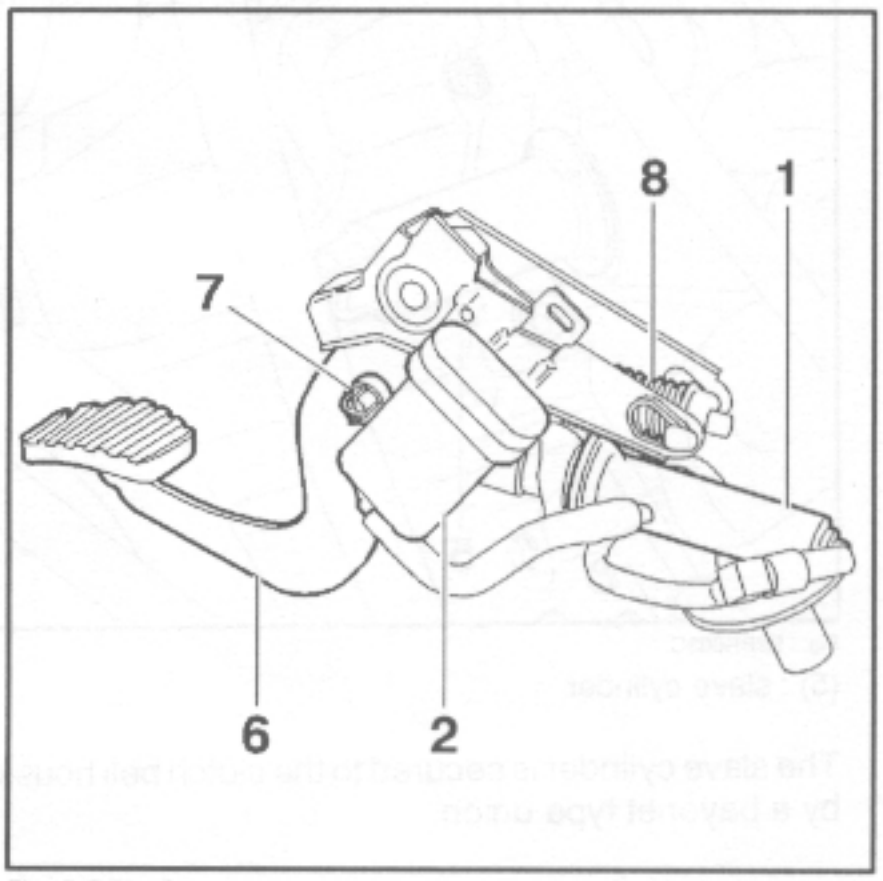


Fig. : B2BR002C

(1) : master cylinder.
(2) : hydraulic fluid reservoir.
(6) : clutch pedal.
(7) : push rod.
(8) : auxiliary spring.

The master cylinder is secured to the pedal gear (inside the vehicle) with a bayonet type union.

The push rod is clip–fastened to the pedal.

The reservoir is retained by a clip on the pedal bracket.

www.WorkshopManuals.co.uk

3.2 – Gearbox side

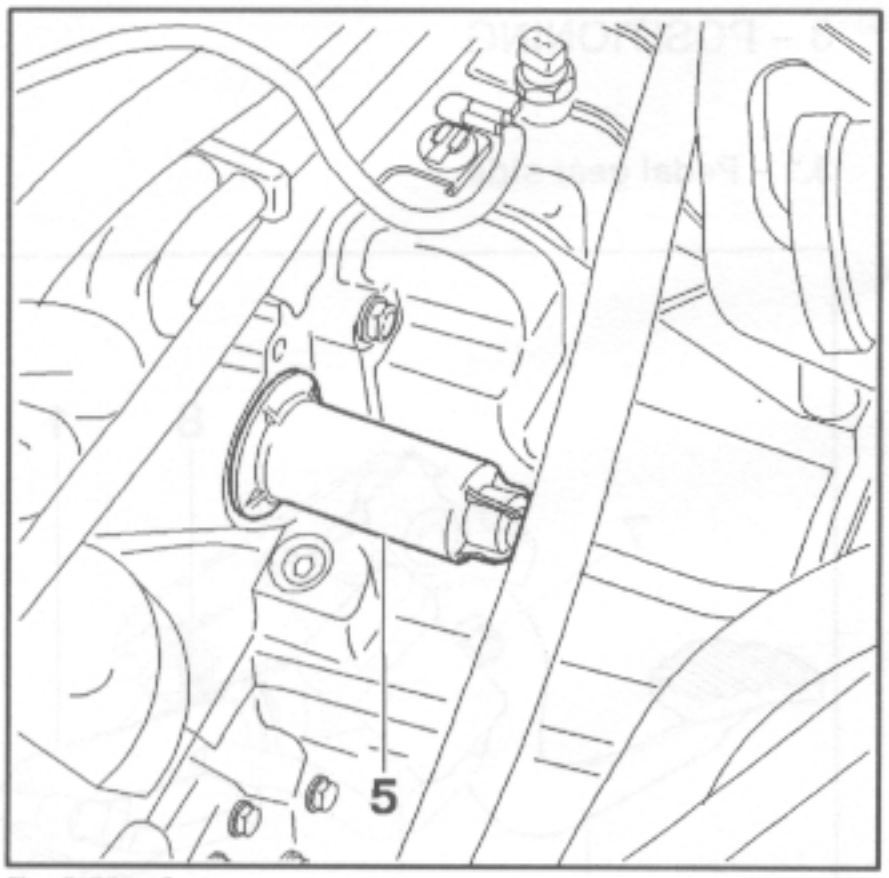


Fig. : B2BR003C

(5) : slave cylinder.

The slave cylinder is secured to the clutch bell housing by a bayonet type union.

3.3 – Quick–fit union

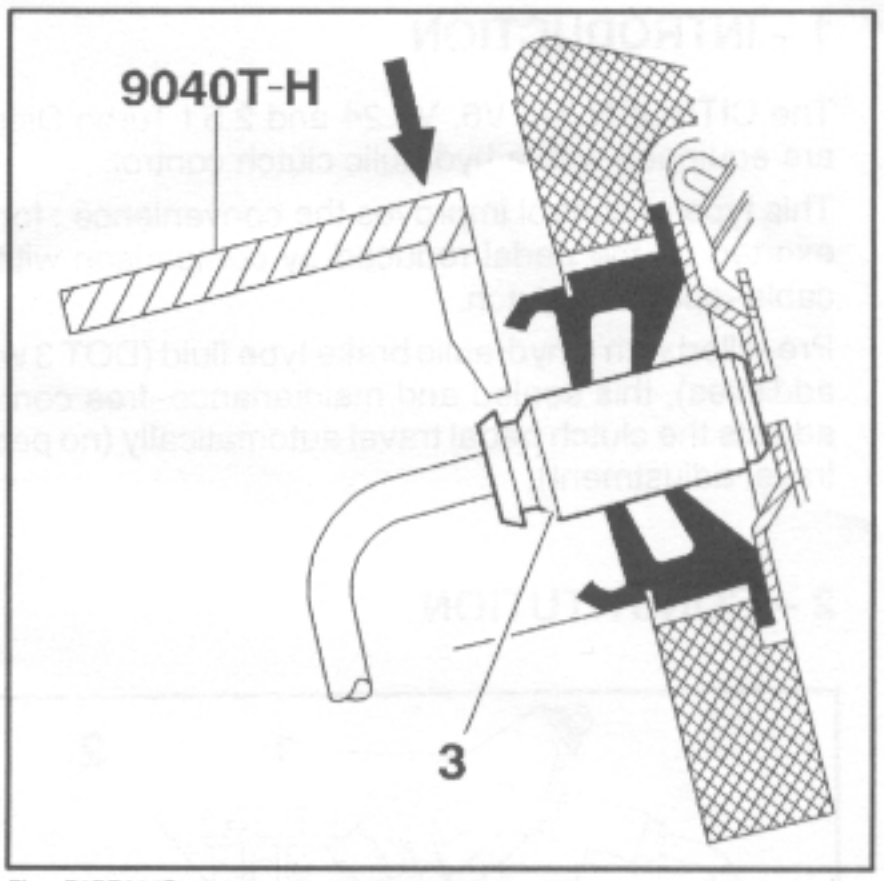


Fig. : B2BR004C

(3) : quick–fit union.

The union is located near the bulkhead, at the L.H. front of the vehicle.

The union ensures the tightness :

- of the control assembly
- of each part of the control when it is disassembled

The union must be dismantled with a special REF tool : 9040 T–H.

When removing/refitting the power unit or repairing the clutch :

- remove the slave cylinder
- do not dismantle the quick–fit union
- push the slave cylinder towards the L.H. front wheel-arch

It is necessary to dismantle the quick–fit union when removing entirely the master cylinder.

WARNING : the union should not be dismantled/ rebuilt more than 4 or 5 times ; do not dismantle it if it is not necessary.

www.WorkshopManuals.co.uk

4 – DESCRIPTION AND OPERATION

4.1 – Pedal gear side

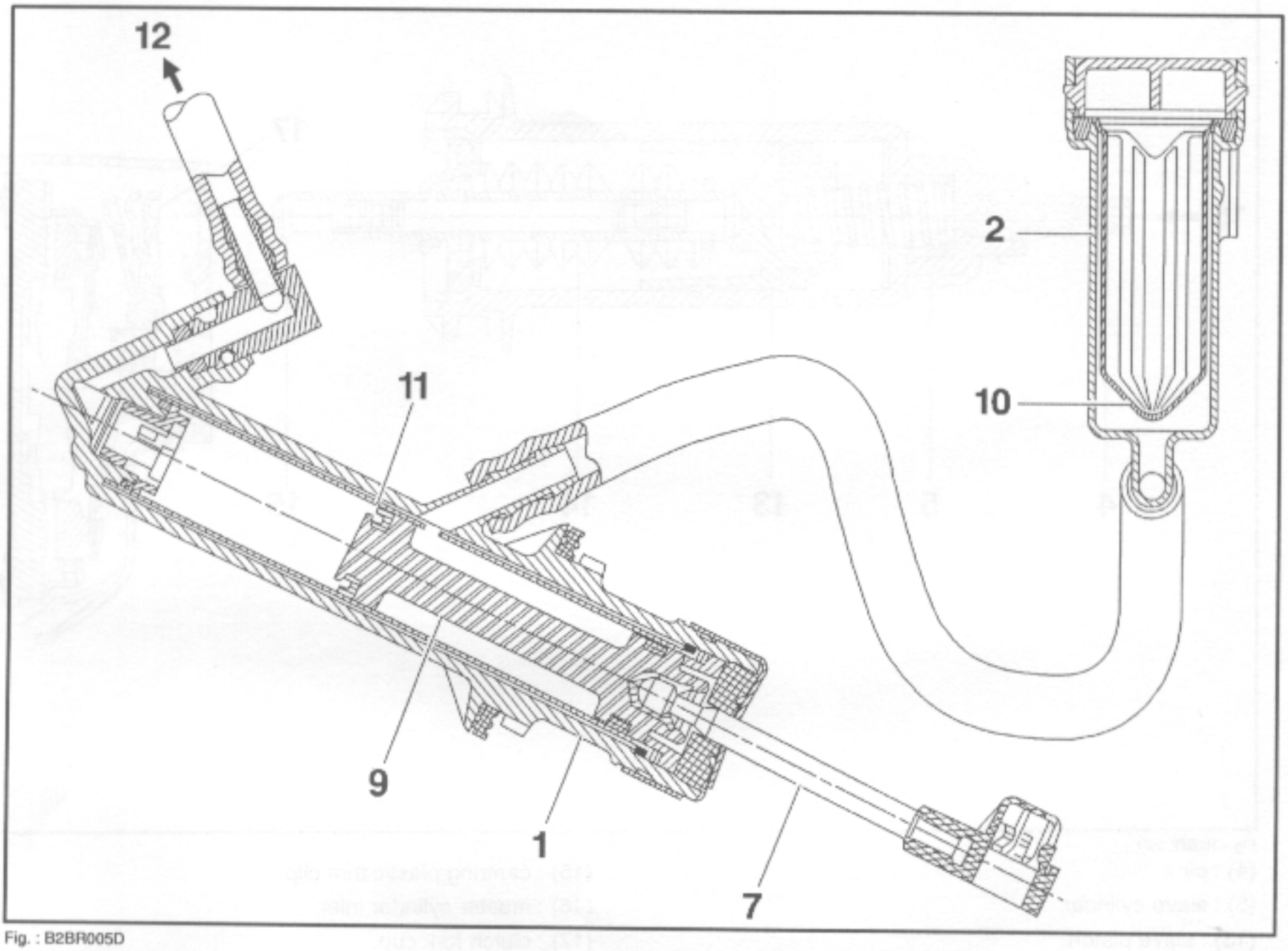


Fig. : B2BR005D

(1) : master cylinder.
(2) : reservoir.
(7) : push rod.
(9) : piston.
(10) : flexible diaphragm.
(11) : hydraulic connection orifice.
(12) : towards the slave cylinder.

When the clutch pedal is depressed, the piston moves via the push rod and pushes the hydraulic fluid towards the slave cylinder.

The hydraulic fluid is under the diaphragm of the reservoir.

The reservoir is connected to the hydraulic circuit via the orifice when the pedal is released, only.

By design, it is not necessary :
- to bleed the clutch control
- to carry out a topping up

www.WorkshopManuals.co.uk

4.2 – Gearbox side

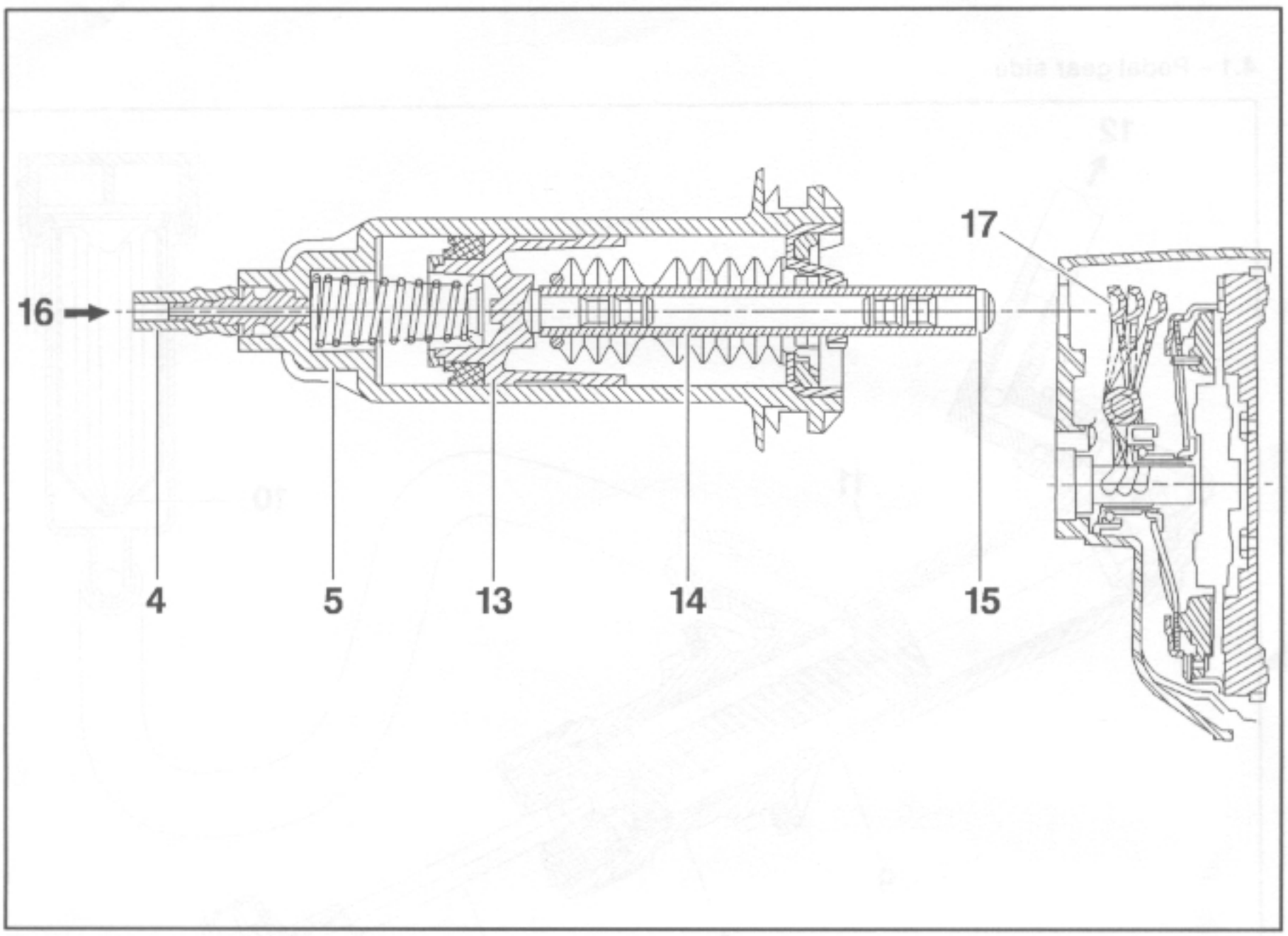


Fig. : B2BR006D

(4) : pipe.

(5) : slave cylinder.

(13) : slave piston.

(14) : push rod.

(15) : centring plastic trim clip.

(16) : master cylinder inlet.

(17) : clutch fork cup.

The gearbox clutch is a pulled type clutch.

When pushed, the cup integral with the fork causes the disengagement of the clutch.

The push rod is centered in the fork cup.

www.WorkshopManuals.co.uk

4.3 – Operation

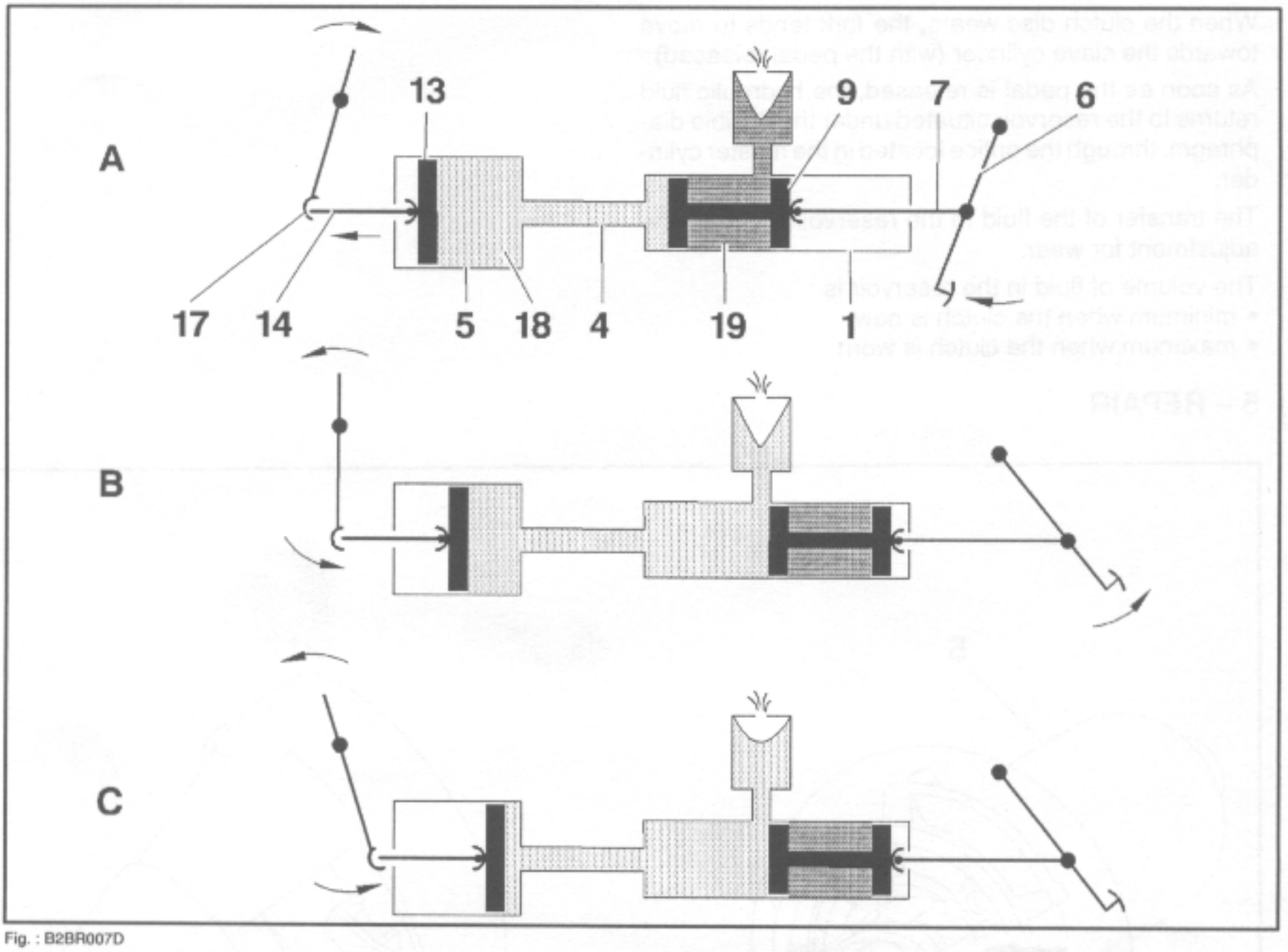


Fig. : B2BR007D

(A) : clutch disengagement.
(B) : clutch engagement.
(C) : clutch disc wear.
(1) : master cylinder.
(4) : connecting pipe.
(5) : slave cylinder.
(6) : clutch pedal.
(7) : push rod.
(9) : master cylinder piston.
(13) : slave cylinder piston.
(14) : slave cylinder push rod.
(17) : clutch fork cup.
(18) : area 1.
(19) : area 2.

The fluid of area 1 participates in the clutch engagement/disengagement.

The fluid of area 2 lubricates the contact surface of the master cylinder piston.

4.3.1 – Clutch disengagement

The clutch release travel is determined :
- by the length of the travel and the diameter of the master or slave cylinder pistons
- the clutch fork lever

When the clutch pedal is depressed, the master cylinder piston is moved by the push rod and pushes the hydraulic fluid towards the slave cylinder.

The clutch release is assisted by the auxiliary spring.

The displacement of the slave piston under the action of the hydraulic fluid causes :
- the push rod and
- the fork to move and reach the disengagement position

4.3.2 – Clutch engagement

The mechanism pushes the hydraulic fluid in the body of the master cylinder (with the pedal released) via the fork, push rod and piston of the slave cylinder.

When the pedal is released :
- the clutch mechanism pushes back the fork and the push rod
- the piston of the slave cylinder moves and expels the hydraulic fluid

www.WorkshopManuals.co.uk

4.3.3 – Clutch disc wear

When the clutch disc wears, the fork tends to move towards the slave cylinder (with the pedal released).

As soon as the pedal is released, the hydraulic fluid returns to the reservoir situated under the flexible diaphragm, through the orifice located in the master cylinder.

The transfer of the fluid to the reservoir provides the adjustment for wear.

The volume of fluid in the reservoir is :
- minimum when the clutch is new
- maximum when the clutch is worn

5 – REPAIR

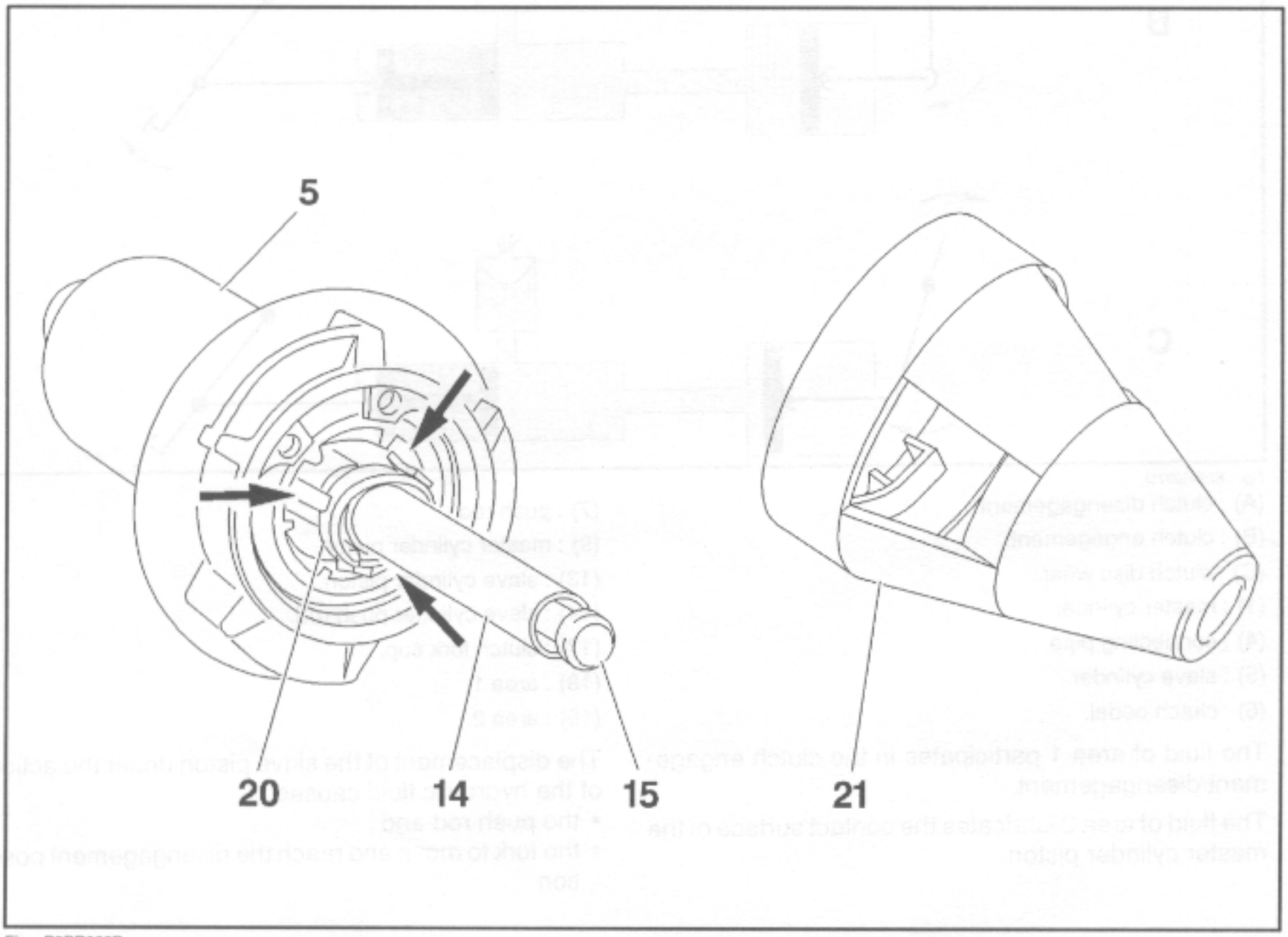


Fig. : B2BR008D

(5) : slave cylinder.
(14) : slave cylinder push rod.
(15) : centring peg.
(20) : push–rod retaining bush.
(21) : protection cone.

www.WorkshopManuals.co.uk

5.1 – Replacement parts

Because of the transfer of the hydraulic fluid between the slave cylinder and the reservoir, only the complete clutch control is available from the Replacement Parts Department.

The control is delivered in two parts (quick–fit union not connected).

IMPERATIVE : in the case of a failure, the complete clutch control is to be replaced.

5.2 – New clutch control

The slave cylinder of the clutch control is supplied with a cone intended to protect the push rod during handling.

The protection cone should not be removed before the slave cylinder attachment : the cone prevents the cylinder from bursting if the clutch pedal is involuntarily depressed.

The plastic ring holds the pushrod of the slave cylinder in place. It breaks at the first clutch disengagement and remains on the push rod.

When first used, the locating peg comes out. It allows centering the slave cylinder push–rod in the fork cup.

During the first clutch disengagement, it will go down into the push rod.

Precautions to be taken :

- do not actuate the master cylinder (whether in situ or not) when the slave cylinder is not in position
- do not actuate the push–rods of the slave and master cylinders when the union is not connected
- do not fit a new clutch control whose plastic bush is broken

For the control to operate, it is necessary to fully depress the clutch pedal several times. Move it upwards by hand, if required.

5.3 – Repairing the clutch

Precautions to be taken :

- each time an operation is carried out on the clutch and the slave cylinder removed, the protective cone REF. : 9040 T–F must be placed immediately
- do not dismantle the quick–fit union

After repairs, it is necessary to fully depress the clutch pedal several times and if need be, lift it by hand.

5.4 – Failure of the clutch control

In the event of a failure of the clutch control, (control leaking, for example), change it entirely both on the pedal gear and gearbox sides.

www.WorkshopManuals.co.uk

PRESENTATION : GEARBOX MG5TB

1 – INTRODUCTION

The CITROEN XM V6, V6.24 and 2.5 l Turbo Diesel are equipped with a new manual gearbox.

This new gearbox is called : MG5TB.

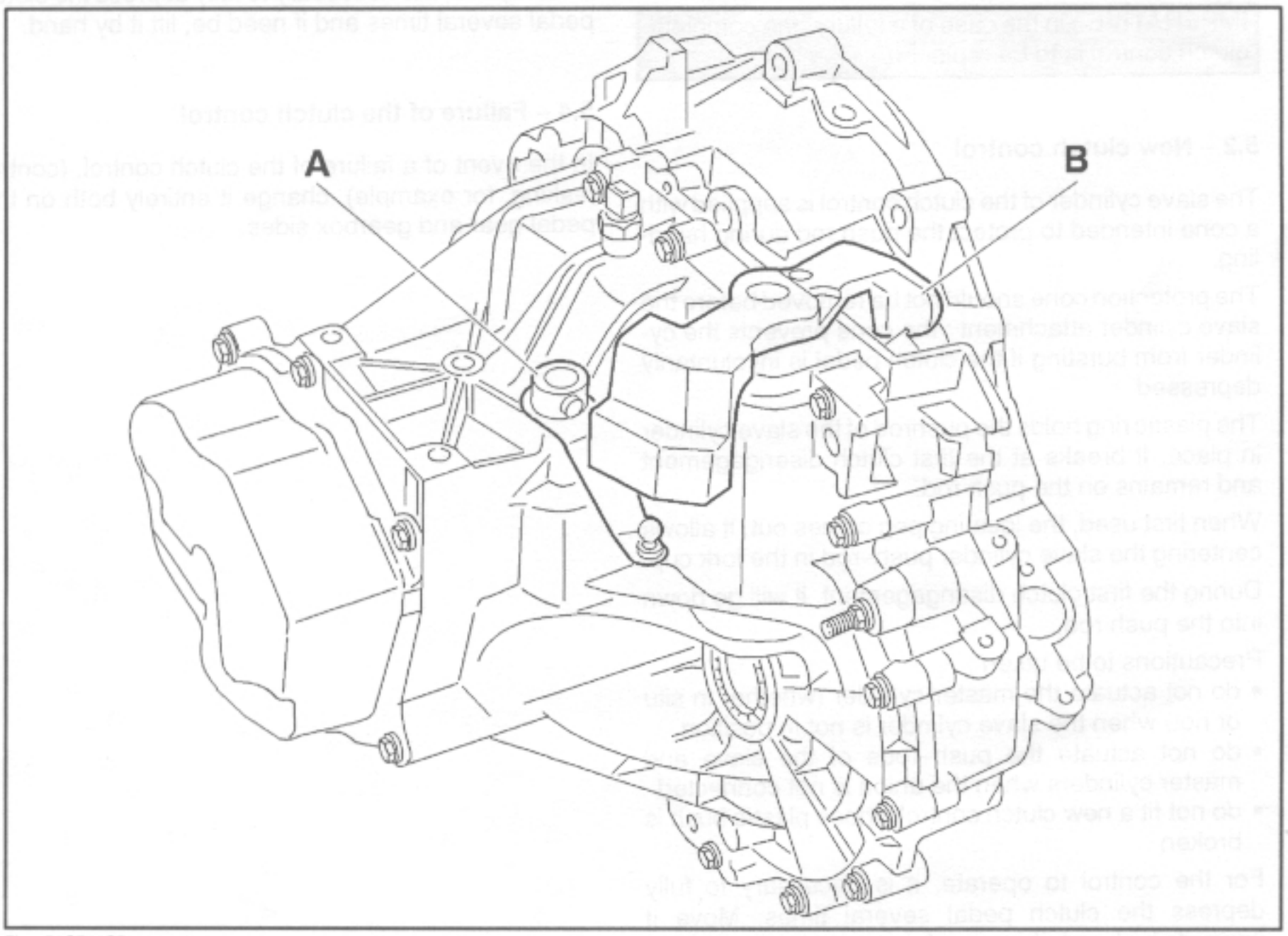


Fig. : B2CR00GD

A : selector lever.

B : engagement lever with anti–vibration weights.

This gearbox comprises 5 synchromesh forward speeds and one reverse.

www.WorkshopManuals.co.uk

2 – CONSTRUCTION

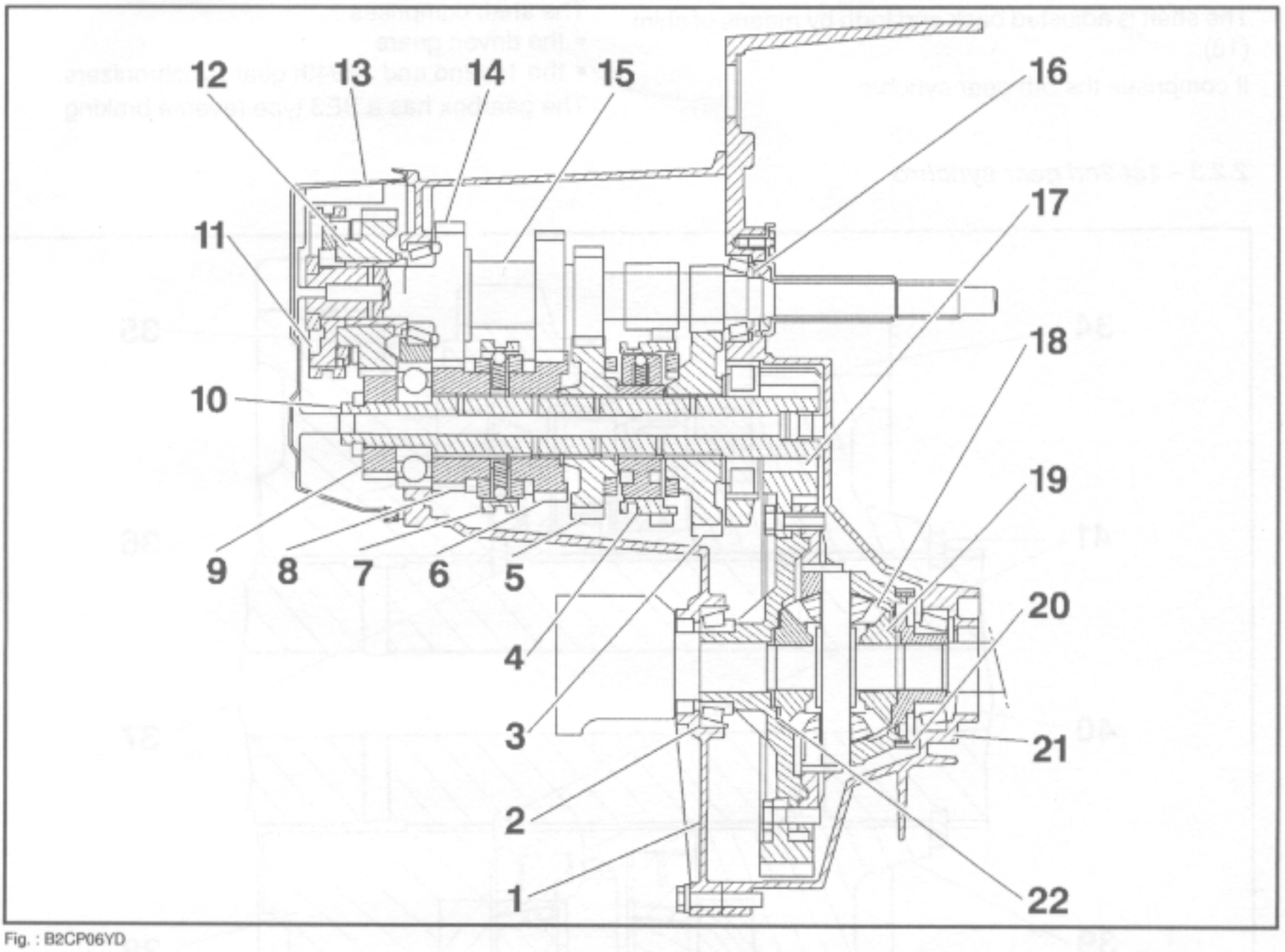


Fig. : B2CP06YD

(1) : gearbox casing.
(2) : differential bearing adjustment shim.
(3) : 1st speed driven pinion.
(4) : 1st/2nd gear synchro.
(5) : 2nd speed driven pinion.
(6) : 3rd speed driven pinion.
(7) : 3rd/4th gear synchronizer.
(8) : 4th speed driven pinion.
(9) : 5th speed driven pinion.
(10) : output shaft.
(11) : 5th gear synchronizer.
(12) : 5th speed driving pinion.
(13) : steel cover.
(14) : 4th speed driving pinion.
(15) : input shaft.
(16) : primary shaft bearing clearance adjustment shim.
(17) : differential crownwheel.
(18) : planet wheels.
(19) : sun wheels.
(20) : speedometer drive gear.
(21) : clutch and differential housings.
(22) : sun wheel adjustment shim.

2.1 – Housings

The gearbox assembly is made up of :
- an aluminium clutch bell housing
- an aluminium gearbox casing
- a steel casing

Changing the clutch bell housing or the gearbox casing, only, is possible but it requires :
- the back and forth adjustment of the primary shaft
- the adjustment of the differential bearings

2.2 – Shafts

The gearbox is constituted of two shafts :
- a primary shaft receiving the engine motion
- a secondary shaft

www.WorkshopManuals.co.uk

2.2.1 – Input shaft

The shaft is adjusted back and forth by means of shim (16).

It comprises the 5th gear synchro.

2.2.2 – Output shaft

The shaft comprises :
- the driven gears
- the 1st/2nd and 3rd/4th gear synchronizers

The gearbox has a BE3 type reverse braking.

2.2.3 – 1st/2nd gear synchro

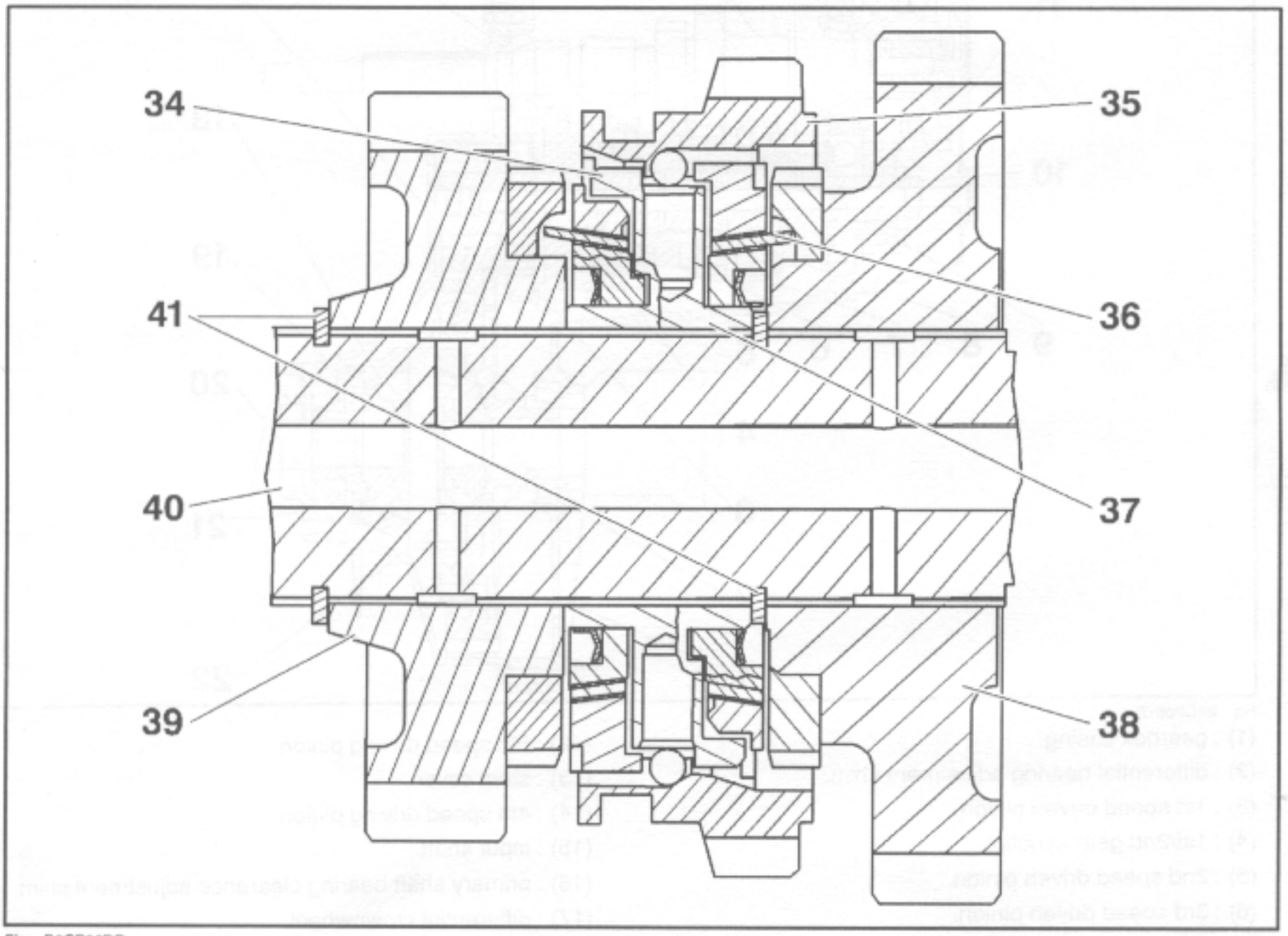


Fig. : B2CP06DD

(34) : double synchro.
(35) : synchro crownwheel.
(36) : synchronizer cones.
(37) : synchronizer hub.

The synchro is of a new type.

This new conception consisting in braking on two conical contact surfaces, provides a better gear change.

They are 7° cones.

NOTE : the 3rd/4th and 5th gear synchronizer cones are 6° cones.

(38) : 1st speed pinion.
(39) : 2nd speed pinion.
(40) : output shaft.
(41) : stop ring.

2.3 – Differential

The open type differential comprises :
- two planet pinions
- two satellite pinions

The crown wheel is screwed to the differential housing.

The speedometer drive gear is fitted to the differential housing.

The planet pinions are adjusted with shims.

The differential housing bearings are slightly tightened.

www.WorkshopManuals.co.uk

3 – LUBRICATION

The gearbox is lubricated for life.
The lubrication is by splash.
Oil capacity : 2.2 litres.
Periodic level check every 36,000 miles (60 000 km).

3.1 – Drain plug

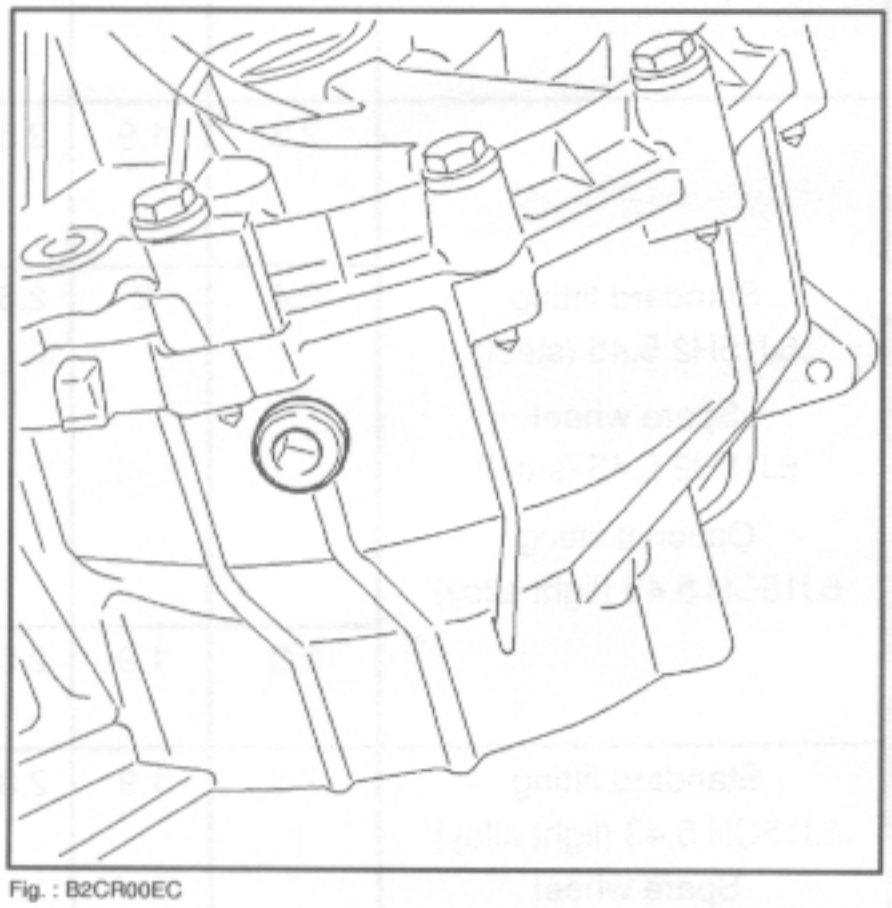


Fig. : B2CR00EC

The drain plug is located on the L.H. driveshaft side.

3.2 – Level/filler plug

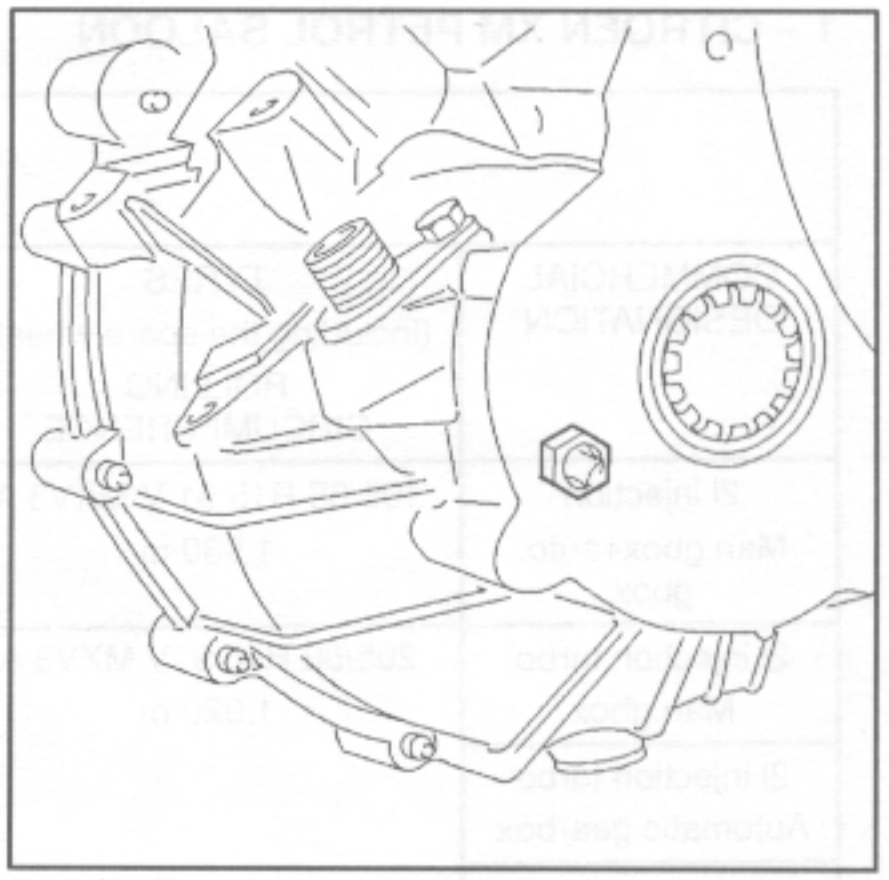


Fig. : B2CR00FC

The plug is located on the R.H. driveshaft side, close to the speedometer drive gear.

www.WorkshopManuals.co.uk

SPECIFICATION : WHEELS AND TYRES

1 – CITROEN XM PETROL SALOON

			INFLATION PRESSURES (in BARS)		
COMMERCIAL DESIGNATION	TYRES (including the spare wheel) ROLLING CIRCUMFERENCE	WHEELS	FRONT	REAR	SP
2l injection Man.gbox+auto. gbox	195/65 R15 91 V MXV3 A 1.930 m	Standard fitting 6J15H2 5.45 (steel) Spare wheel 6J15H2 5.45 (steel) Optional fitting 6J15CH 5.43 (light alloy)	2.3	1.9	2.5
2l injection turbo Man.gbox	205/60 R15 91V MXV3 A 1.920 m		2.4	2	2.6
2l injection turbo Automatic gearbox					
V6 Man.gbox					
V6 Automatic gearbox	205/65 R15 94V MXV3 A 1.970 m		2.3	1.9	2.5
V6 24S Man.gbox	205/60 ZR15 91W MXM 1.970 m	Standard fitting 6J15CH 5.43 (light alloy) Spare wheel 6J15H2 5.45 (steel)	2.6	1.9	2.8

2 – CITROEN XM DIESEL SALOON

			INFLATION PRESSURES (in BARS)		
COMMERCIAL DESIGNATION	TYRES (including the spare wheel) ROLLING CIRCUMFERENCE	WHEELS	FRONT	REAR	SP
Diesel Man.gbox	195/65 R15 91T MXT 1.930 m	Standard fitting 6J15 H2 5.45 (steel) Spare wheel 6J15 H2 5.45 (steel) Optional fitting 6J15 CH 5.43 (light alloy)	2.2	2	2.4
Turbo Diesel Man.gbox	195/65 R15 91H MXV3 A 1.930 m		2.3	1.9	2.5
Turbo Diesel Automatic gearbox	205/65 R15 94V MXV3 A 1.970 m				
2.5l Turbo Diesel Man.gbox					

www.WorkshopManuals.co.uk

3 – CITROEN XM PETROL ESTATE

COMMERCIAL DESIGNATION	TYRES (including the spare wheel) ROLLING CIRCUMFERENCE	WHEELS	INFLATION PRESSURES (in BARS) FRONT	REAR	SP
2l injection Man.gbox+auto. gbox	195/65 R15 91H MXV3 A 1.930 m	Standard fitting 6J15 H2 5.45 (steel) Spare wheel 6J15 H2 5.45 (steel) Optional fitting 6J15 CH 5.43 (light alloy)	2.4	2.4	2.6
2l injection turbo Man.gbox	205/60 R15 91V MXV3 A 1.920 m				
2l injection turbo Automatic gearbox					
V6 Man.gbox	205/60 R15 91V MXV3 A 1.920 m				
V6 Automatic Gearbox	205/65 R15 94V MXV3 A 1.970 m		2.3	2.3	2.5

4 – CITROEN XM DIESEL ESTATE

COMMERCIAL DESIGNATION	TYRES (including the spare wheel) ROLLING CIRCUMFERENCE	WHEELS	INFLATION PRESSURES (in BARS) FRONT	REAR	SP
Diesel Man.gbox	195/65 R15 91T MXT 1.930 m	Standard fitting 6J15 H2 5.45 (steel) Spare wheel 6J15 H2 5.45 (steel) Optional fitting 6J15 CH 5.43 (light alloy)	2.4	2.4	2.6
Turbo Diesel Man.gbox	195/65 R15 91H MXV3 A 1.930 m				
Turbo Diesel Automatic gearbox	205/65 R15 94V MXV3 A 1.970 m		2.3	2.3	2.5
2.5l Turbo Diesel Man.gbox					

www.WorkshopManuals.co.uk

EVOLUTIONS : SUSPENSIONS

1 – INTRODUCTION

The CITROEN XM suspension is modified as a result of :

- the changed dia. of the piston rods in the front suspension units (of certain versions)
- the modified dia. of the pistons in the rear suspension cylinder
- the introduction of the SC/MAC system (CITROEN system for retaining a constant ride height) on the XU10J4R and DK5ATE models, only
- the adoption of a hydractive suspension E.C.U. specific for the DK5ATE versions

2 – FRONT SUSPENSION UNITS

Specification :

	Saloon and Estate
Engine	Piston rod diameter
XU10J2 XU10J4R XUD11A	22 mm
XU10J2TE ZPJ ZPJ4 XUD11ATE DK5ATE	25 mm

The piston diameters of the suspension units are unchanged : 40 mm for the Saloon and Estate versions.

3 – REAR SUSPENSION CYLINDERS

Piston diameter increased from 35 to 37 mm for all the Saloon versions.

42.5 mm piston diameter retained for the Estate versions.

4 – ANTI–ROLL BAR

Secification of the anti–roll bars :

	Saloon		Estate	
Engine	Front	Rear	Front	Rear
XU10J2 XU10J4R XUD11A	23 mm Ø	Ø 21mm	25 mm in Ø	22.5 mm in Ø
XU10J2TE	→ RPO 6415 24 mm Ø RPO 6416 → 23 mm Ø	Ø 22 mm		
ZPJ ZPJ4 DK5ATE XUD11ATE	24 mm Ø			

www.WorkshopManuals.co.uk

5 – CITROEN ANTI–SINK SUSPENSION SYSTEM (SC/MAC)

5.1 – General features

The SC/MAC is a system which limits the settling of the vehicle at rest, with the engine switched off.

This system reduces the rising time of the vehicle.

5.2 – Operating principle

Two valves (one at the front and one at the rear) isolate hydraulically the suspension units. The valves close, preventing the pressure, in the latters, from dropping.

There exist two valve types :

- one type for the hydraulic suspension
- one type for the hydractive suspension

6 – HYDRACTIVE SUSPENSION E.C.U.

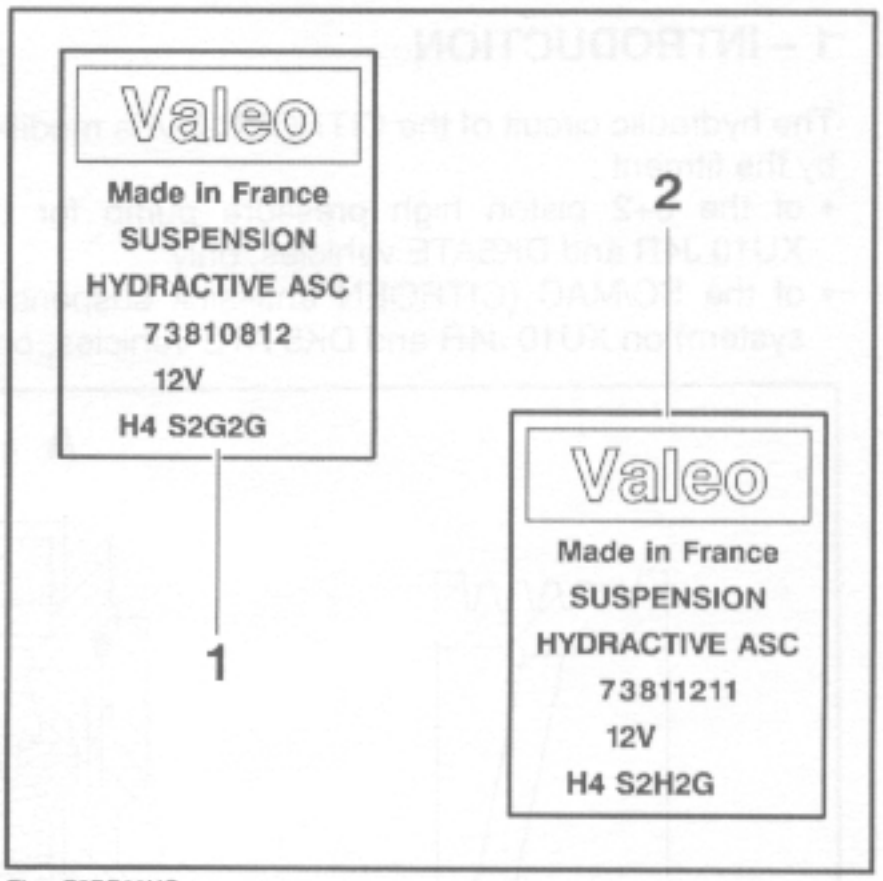


Fig. : B3BR00HC

Introduction of a new E.C.U., specific to the DK5ATE engine, with evolution index H4 S2H2G, ref. 2.

The DK5ATE type E.C.U. differs from the other E.C.U. by the memorised maps defining the transition from the soft to the firm conditions.

E.C.U. with level of modification H4 S2G2G retained for all hydractive fitted vehicles, except those having DK5ATE engines (ref.1).

IMPERATIVE : a DK5ATE type E.C.U. should not be fitted to other engine types and reciprocally.

IMPERATIVE : do not fit a CITROEN XANTIA hydractive suspension E.C.U. to a CITROEN XM and reciprocally.

www.WorkshopManuals.co.uk

EVOLUTIONS : SOURCE AND RESERVE OF PRESSURE

1 – INTRODUCTION

The hydraulic circuit of the CITROEN XM is modified by the fitment :

- of the 6+2 piston high pressure pump for the XU10 J4R and DK5ATE vehicles, only
- of the SC/MAC (CITROEN anti-sink suspension system) on XU10 J4R and DK5 ATE vehicles, only

2 – 6+2 PISTON HIGH PRESSURE PUMP

This high presure pump has two stages :

- a 2-piston stage for the brake and suspension circuits
- a 6-piston stage for the steering circuit

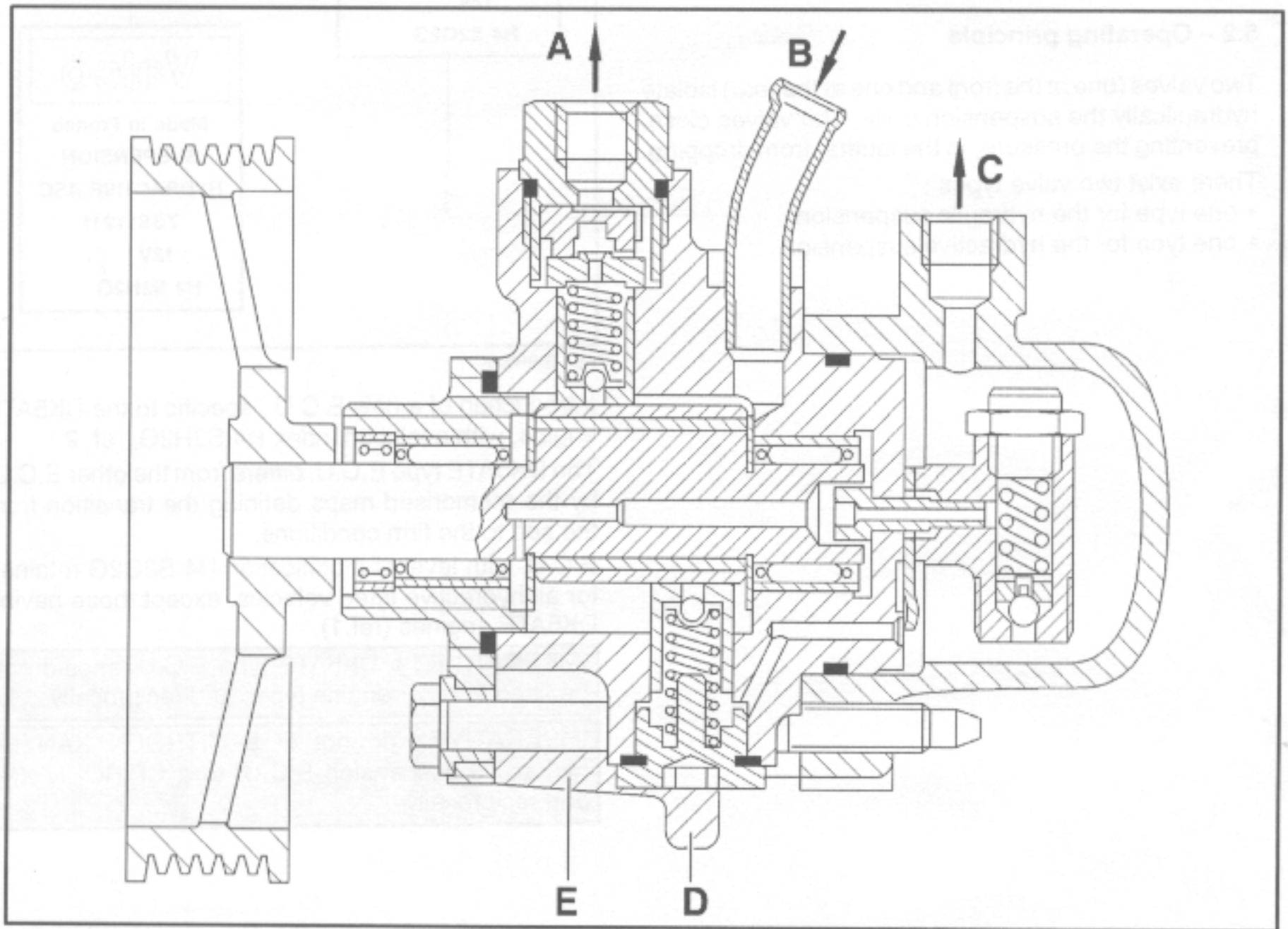


Fig. : B4BR001D

A : output to suspension-braking system.

B : inlet.

C : output to steering system.

D : 6-piston stage.

E : 2-piston stage.

The use of this pump has entailed the deletion of the flow distributor.

The pressure of the suspension and brake circuits is regulated by the pressure regulator.

The pressure of the steering circuit is regulated by the pressure relief valve located in the pump.

www.WorkshopManuals.co.uk

EVOLUTIONS : EXTERIOR FITTINGS

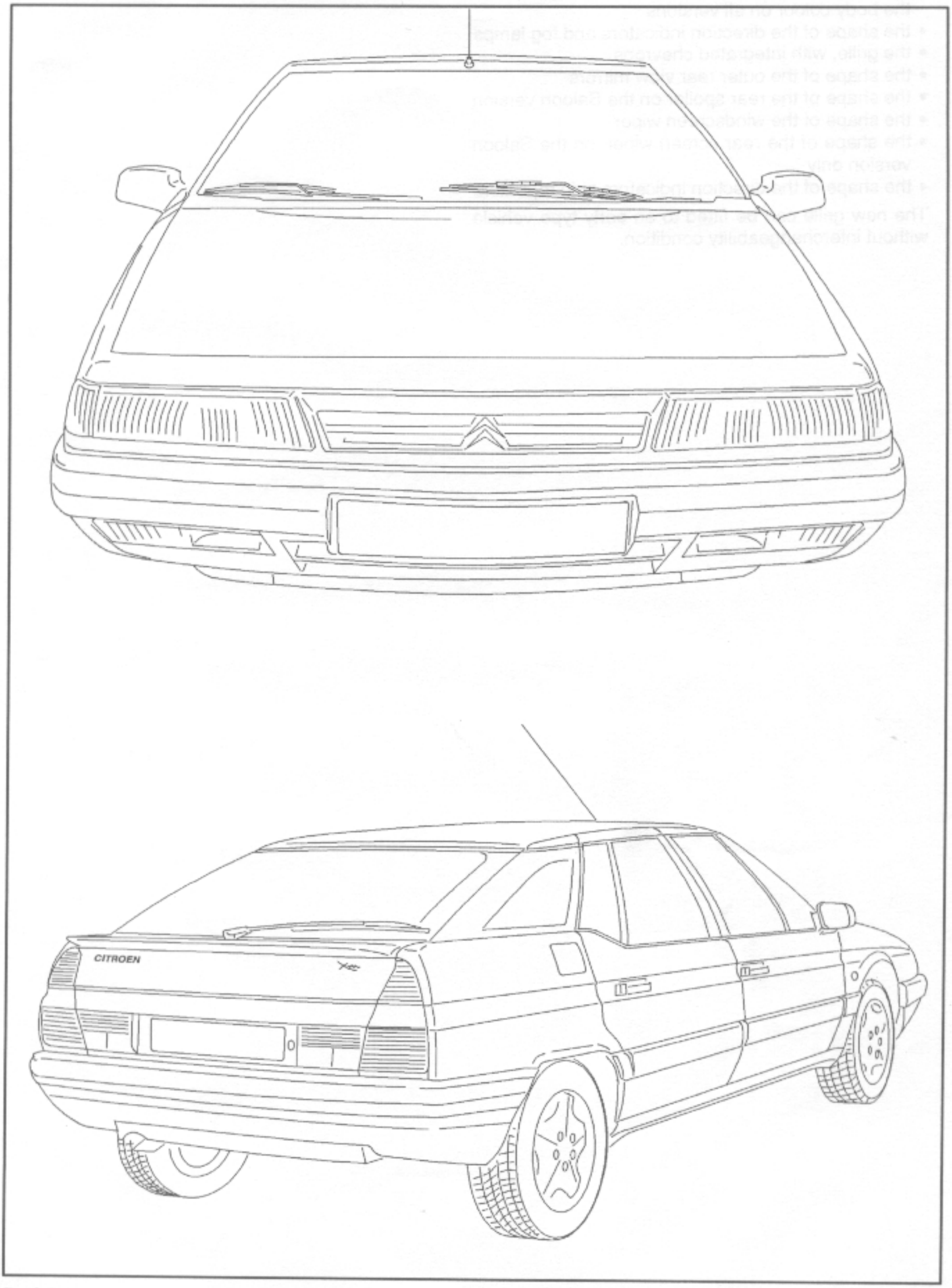


Fig. : C4ER002P

www.WorkshopManuals.co.uk

The restyling of the CITROEN XM involves :

- the front bumper, with the lower section painted in the body colour on all versions
- the shape of the direction indicators and fog lamps
- the grille, with integrated chevrons
- the shape of the outer rear view mirrors
- the shape of the rear spoiler on the Saloon version
- the shape of the windscreen wiper
- the shape of the rear screen wiper, on the Saloon version only
- the shape of the direction indicators side repeaters

The new grille can be fitted to an early type vehicle without interchangeability condition.

www.WorkshopManuals.co.uk

EVOLUTIONS : INTERIOR EQUIPMENTS

Dashboard, instrument cluster and console are the main components of the CITROEN XM interior equipment reshaped for the 1995 Model Year.

1 – DASHBOARD

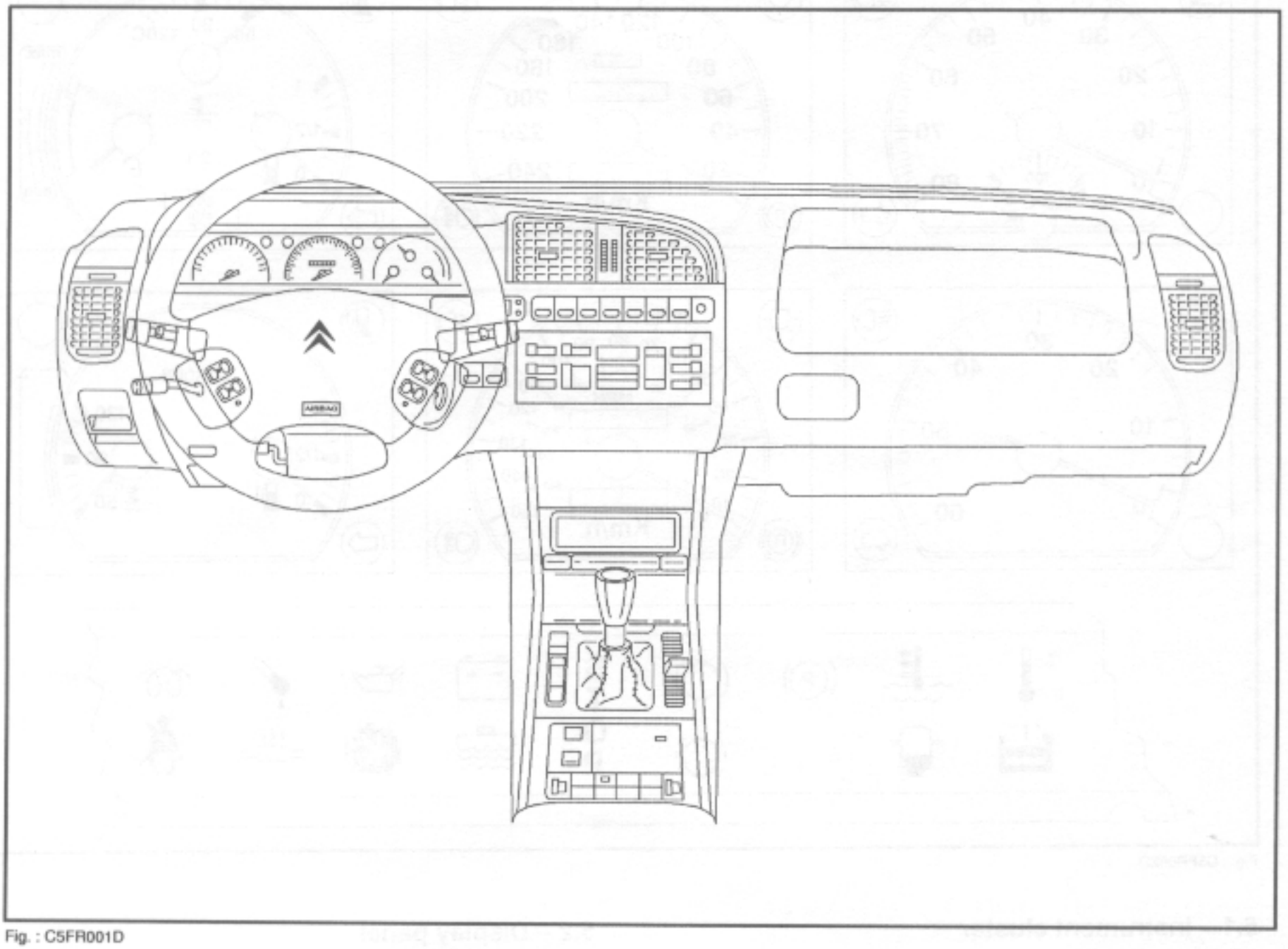


Fig. : C5FR001D

New dashboard with integral instrument cluster visor. The 1995 Model Year dashboard is different from the previous one in :

- the dashboard moulding
- the lower trimming (incorporating a new access flap for the central diagnostic socket)
- the glove box (modified size and location of the lock mechanism)
- the metal tweeter grilles instead of plastic
- the centre and side louvres, operated with a thumbwheel

2 – CONSOLE

Introduction, on the console, of a new flap. The first–fit car radio is no longer concealed by the flap.

Deletion of the cruise control switch located now under the central vents.

3 – STEERING WHEEL

New four branch steering wheel with integrated AIRBAG.

Steering gaiter with illuminated anti–theft device.

New steering column reinforced for the AIRBAG equipment.

4 – CONTROL SWITCHES

Under the centre louvres, the following components are gathered :

- front foglamps switch
- rear fog lamps switch
- rear screen de–frosting switch
- hazard warning device switch
- interior lamp switch
- cruise control switch
- alarm switch
- alarm warning lamp

www.WorkshopManuals.co.uk

NOTE : the CITROEN XM, R.H.D. switches, are positioned symetrically from the L.H.D. switches.

5 – INSTRUMENT CLUSTER AND DISPLAY PANEL

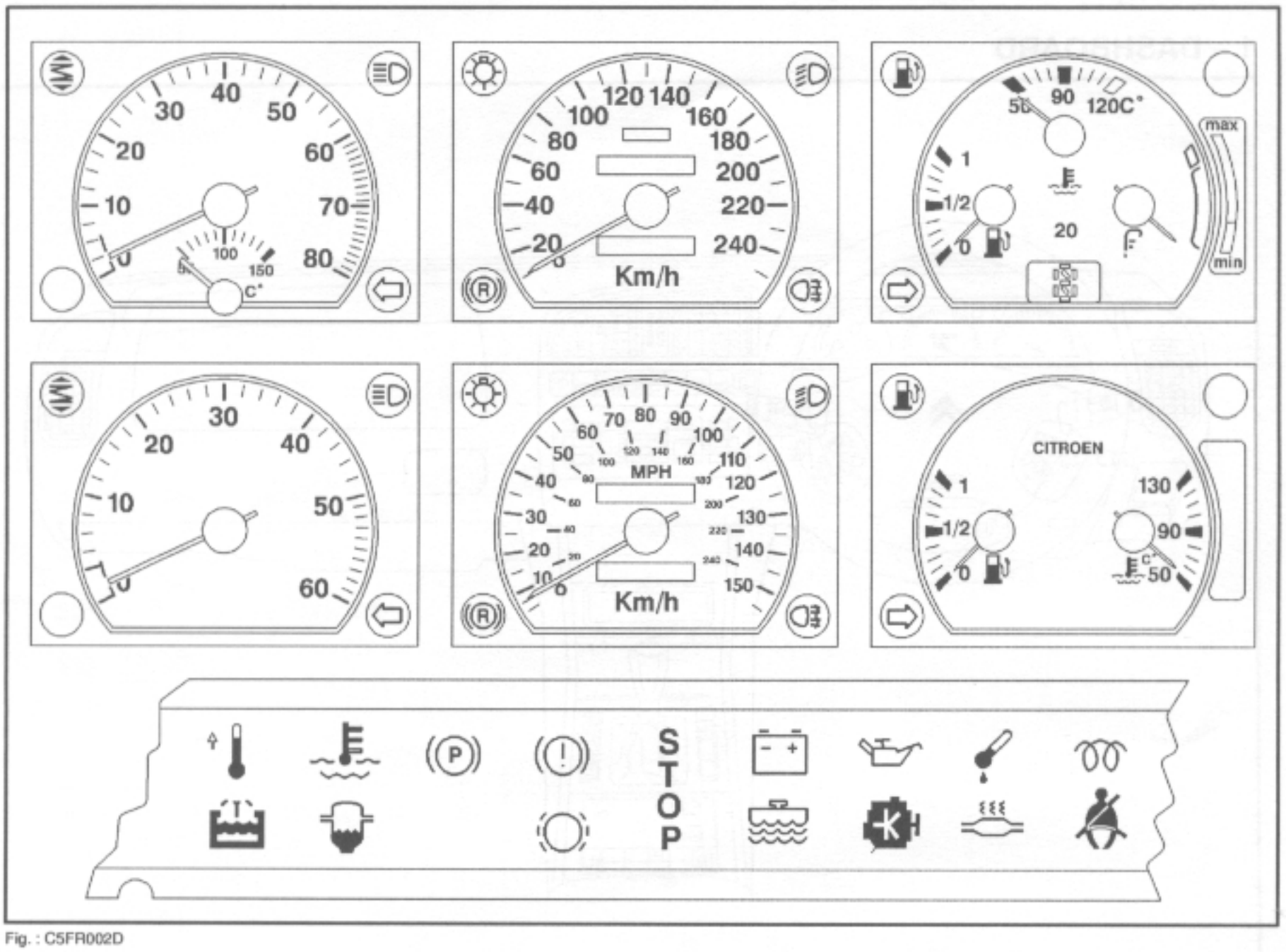


Fig. : C5FR002D

5.1 – Instrument cluster

The modifications involve :
- the shape of the instrument cluster
- the re–allocation of the warning lamps for the main beams, min. fuel level, L.H. and R.H. direction indicators and rear fog lamps
- the introduction of an electronic speedometer
- the deletion of the turbo pressure indicator for the XUD11 ATE

NOTE : dismantling the instrument cluster necessitates the previous disassembly of the fascia.

5.2 – Display panel

The modifications involve :
- different location for the following warning lamps : front brakes pad wear, water temperature alert, water temperature pre–alert, engine oil pressure and diagnostic
- Diesel pre–heater warning lamp added
- the addition of the safety belt warning lamp (for the Distant Export versions)
- addition of the engine oil temperature warning lamp
- new dot–matrix associated with the radio option

6 – HEATER CONTROLS

The modifications to the heater controls involve the location and/or shape of the controls.

www.WorkshopManuals.co.uk

Fig. : C5FR003P

(1) : heating–ventilation controls.

(2) : automatic heater controls.

(3) : automatic refrigeration controls.

(4) : fully automatic refrigeration controls.

www.WorkshopManuals.co.uk

As regards the heating–ventilation version, the vertical ventilation slide control is replaced by a horizontal slide control.

For the versions with heating–ventilation, automatic heater and automatic refrigeration, replacement of the vertical recycling slide control by a horizontal one.

New horizontal slide control for the regulated refrigeration in replacement of the switch situated behind the steering wheel.

www.WorkshopManuals.co.uk

EVOLUTIONS : PROTECTION AND SAFETY

The CITROEN XM has been fitted with new equipments intended to improve the safety of the occupants, such as :
- driver's Airbag (standard)
- pyrotechnic safety belts (standard)
- one–touch electric window with anti–pinch device

1 – DRIVER'S AIRBAG SYSTEM

The 1995 Model Year CITROEN XM vehicles are equipped with the driver's AIRBAG system.

The AIRBAG system is a passive safety device, complementary to the safety belt ; therefore, the belt MUST still be worn.

When a violent frontal impact occurs, the airbag is deployed instantaneously ; it comes between the driver and the steering wheel, thus avoiding an impact of the head and chest against the steering wheel.

The bag deflates after the impact.

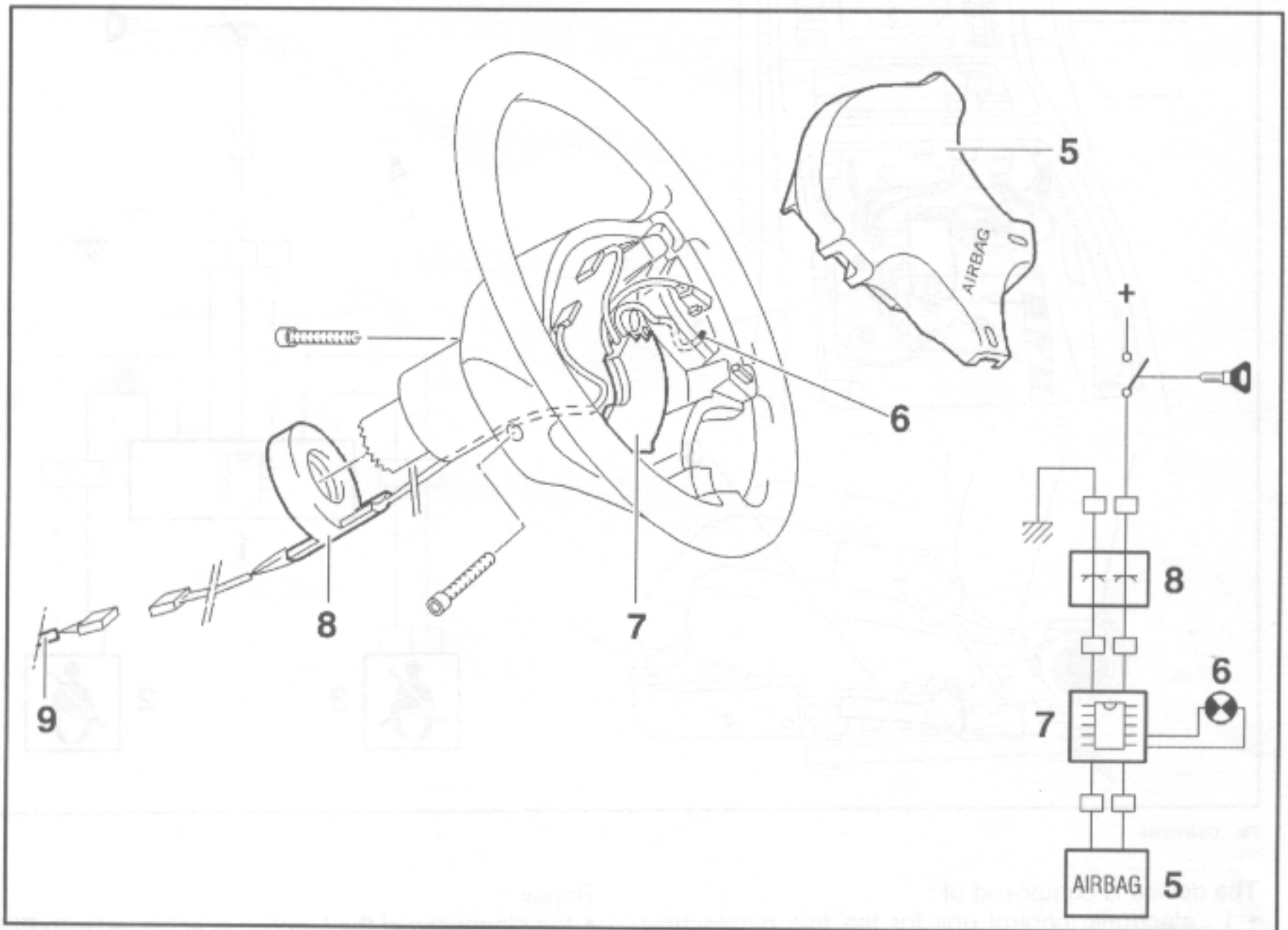


Fig. : C5JR018D

The device is composed of :
- 5 : cushion pad including the airbag and the firing unit
- 6 : diagnostic warning lamp
- 7 : firing unit E.C.U.
- 8 : rotary switch
- 9 : vehicle wiring harness

The firing element, pyrotechnically activated, is connected with the E.C.U. which ensures the following functions :
- impact detection
- storage of the energy required ; so that the firing can operate even if there is a rupture of the electrical supply when an impact occurs
- firing unit triggering
- diagnostic, carried out via the warning lamp situated on the steering wheel

Repair :
- the diagnostic of the function is achieved via the warning lamp
- the AIRBAG system containing an explosive, the necessary precautions must be taken before carrying out an operation : disconnect the battery, avoid impacts, temperature rises, ...
- never throw out an active steering wheel cushion pad ; to destroy the airbag, operate in the vehicle, using the CITROEN tool
- the E.C.U. cannot be separated from the steering wheel

www.WorkshopManuals.co.uk

2 – PYROTECHNIC SEAT BELTS

From the 1995 Model Year, the XM vehicles have been equipped with front safety belts with pyrotechnic pre–tensioners instead of mechanical.

The pyrotechnic pre–tensioner draws in the seat belt in the event of an impact.

The seat belt is drawn in by the firing of an explosive cartridge.

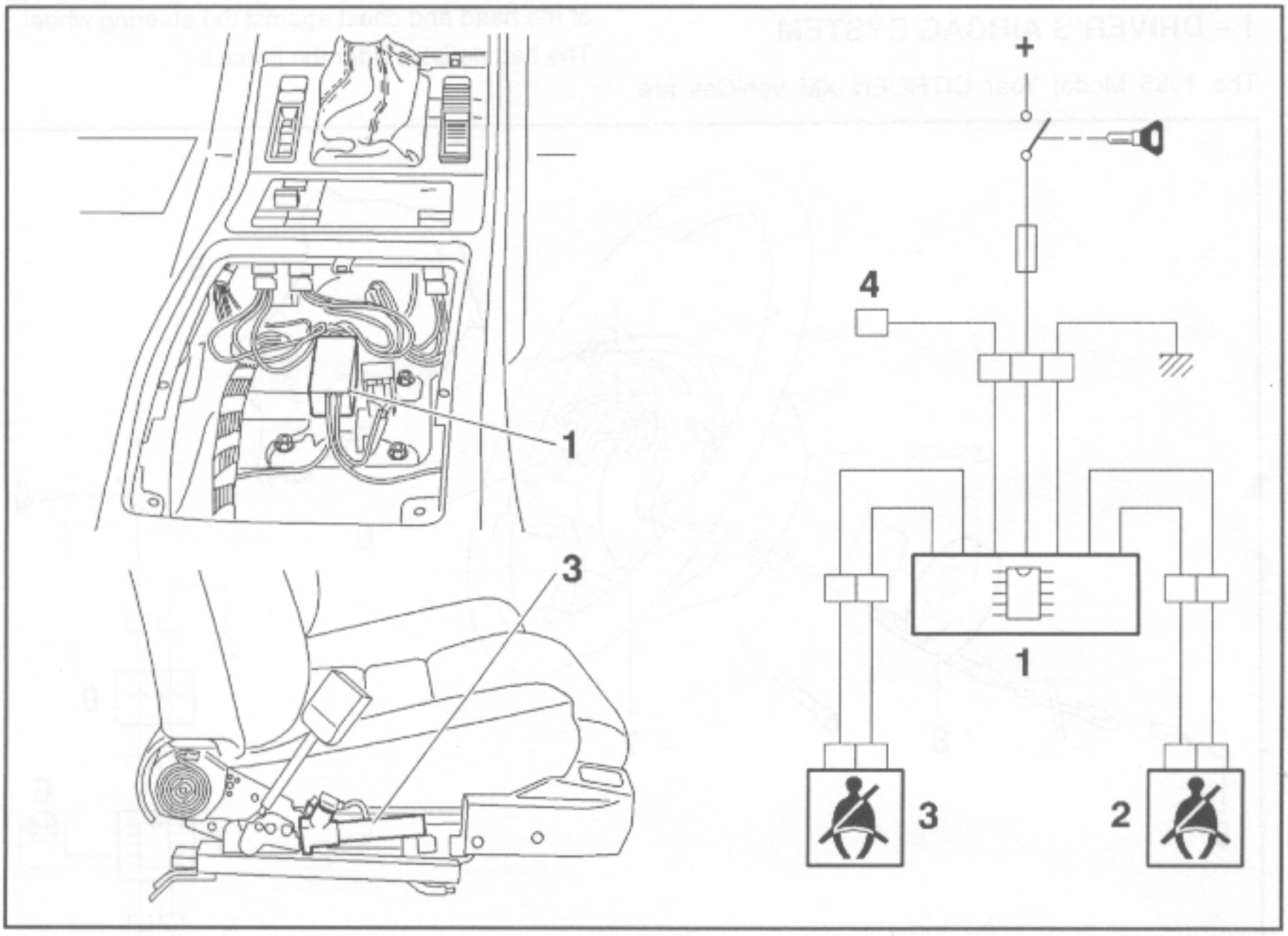


Fig. : C5JR019D

The device is composed of :

- 1 : electronic control unit for the two pyrotechnic pre–tensioners
- 2 : firing unit of the R.H. pyrotechnic pre–tensioner
- 3 : firing unit of the L.H. pyrotechnic pre–tensioner
- 4 : diagnostic socket

The pyrotechnically activated firing units are connected to the E.C.U., which ensures the following functions :

- impact detection
- storage of the energy required to control the firing operations, even if the electrical supply is disconnected during impact
- firing units control
- diagnostic

In the event of an impact, the L.H. and R.H. front pre–tensioner ignition devices of the safety belt are fired simultaneously.

Repair :

- the diagnostic of the function is achieved with ELIT test unit or SOURIAU 26 A station
- the pyrotechnic pre–tensioner containing an explosive, take the necessary precautions before repairs (disconnect the battery, the firing elements ; avoid impacts, heat etc.)
- never throw away an active firing unit ; to destroy the airbag, operate in the vehicle, using the CITROEN tool

www.WorkshopManuals.co.uk

3 – DRIVER'S WINDOW ONE–TOUCH CONTROL

In addition to the one–touch function, the driver's electric window is provided with an anti–pinch device.

This anti–pinch device is only fitted to one–touch electric windows.

This device enables stopping the rise of the window and then its movement down, within its lower protection limit, in the case where the glass would encounter an obstacle in a defined protected zone.

During the whole anti–pinch safety cycle, every action on the control switches is ignored.

3.1 – Protected zone

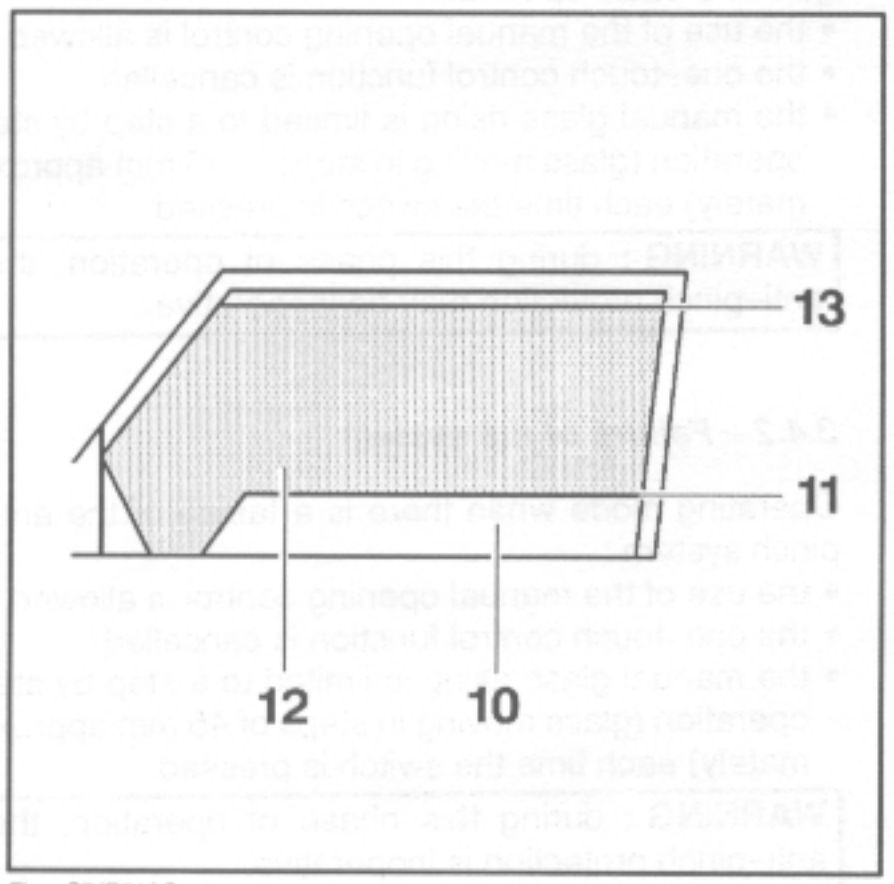


Fig. : C5JR01AC

10 : glass.

11 : lower limit of protection.

12 : anti–pinch detection zone.

13 : upper limit of protection.

The detection area is within :

- the lower protection limit, being approximately 60 mm under the glass
- the upper protection limit, situated 4 mm approx. from the end of travel of the glass (window closed)

NOTE : outside the protected zone, there is no anti–pinch safety.

3.2 – To initialise the system

The anti–pinch detection is achieved by an electronic control unit incorporated in the electric window mechanism.

This control unit keeps in memory the value of the current necessary for a correct operation of the electric window.

If this value is exceeded (over voltage), the system goes into anti–pinch mode.

Whenever the electrical supply is disconnected (battery, for example), there is a loss, by the E.C.U. memory of the reference current value. It is therefore necessary to re–initialise the system ; if not, the system will operate in the back up mode.

To re–initialise the system :

- raise the glass in the manual mode to the fully closed position. The one–touch mode is inhibited ; the glass rises in steps of about 45 mm at each press on the switch
- press the switch to raise the glass for one second approximately

At the end of this procedure, the system is initialised and operates normally.

NOTE : during this phase, the automatic closing and opening controls are ignored.

www.WorkshopManuals.co.uk

3.3 – Cancelling the anti–pinch safety

If the glass is frozen, the anti–pinch system must be over–ridden so as to be able to close the window, the frost causing the system to go into the anti–pinch mode.

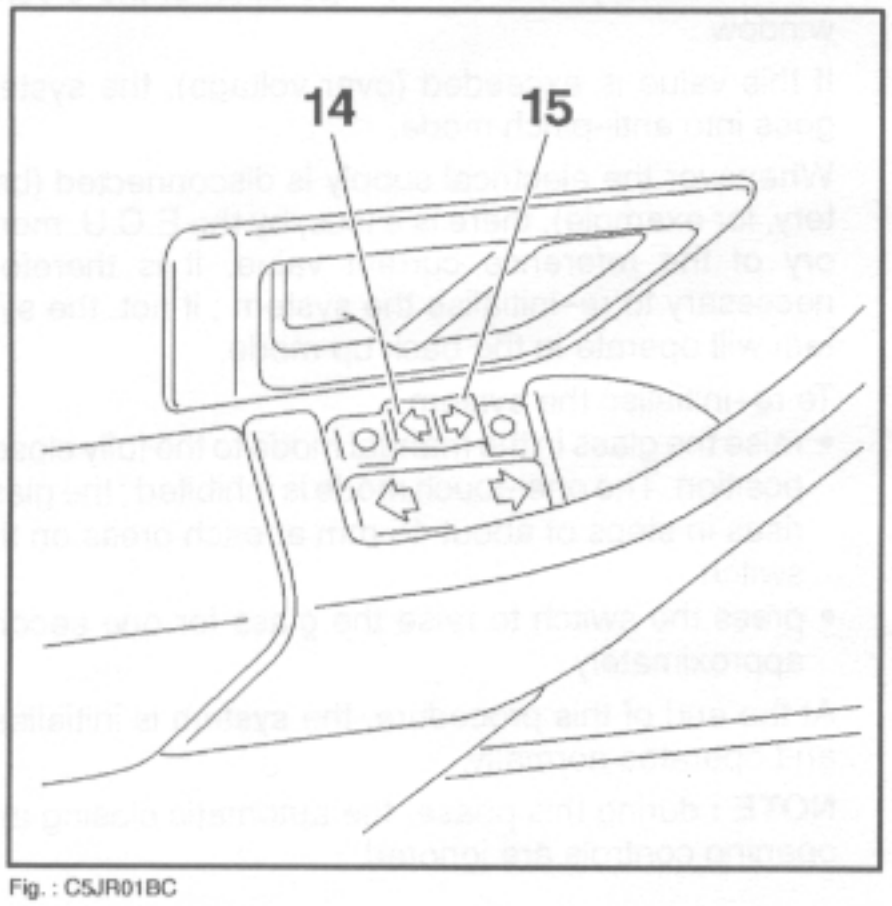


Fig. : C5JR01BC

14 : manual glass opening switch.

15 : manual glass rising switch.

After having passed through the anti–pinch cycle of operation (glass at the lower limit of the protected zone) :

- immediately press the manual switch (ref.14) to lower the glass fully and stop when the relay clicks
- after the relay has clicked, immediately press the switch ref.15 to raise the glass
- only release the switch after the glass has stopped at the fully closed position

WARNING : during this phase of operation, the anti–pinch protection is inoperative.

3.4 – Back up mode

The system is in a back up mode in the following cases :

- the system has not been initialised after the electrical supply has been cut off
- there is a failure of the anti–pinch device

3.4.1 – No initialisation

The protected zone can be offset.

The position of the glass after re–establishing the electrical supply is registered as being the upper limit of the protected zone ; under this limit, the operation of the electric window is normal.

Above this new upper protection limit, the system will go into a back–up mode :

- the use of the manual opening control is allowed
- the one–touch control function is cancelled
- the manual glass rising is limited to a step by step operation (glass moving in steps of 45 mm approximately) each time the switch is pressed

WARNING : during this phase of operation, the anti–pinch protection may be inoperative.

3.4.2 – Failure of the system

Operating mode when there is a failure of the anti–pinch system :

- the use of the manual opening control is allowed
- the one–touch control function is cancelled
- the manual glass rising is limited to a step by step operation (glass moving in steps of 45 mm approximately) each time the switch is pressed

WARNING : during this phase of operation, the anti–pinch protection is inoperative.

www.WorkshopManuals.co.uk

EVOLUTIONS : ELECTRICAL EQUIPMENT

1 – INTRODUCTION

The electrical equipment of the 1995 Model Year CITROEN XM has been modified following :
- the introduction of new equipment
- the evolution of already existing equipments

New equipment :
- deadlocks
- high frequency (HF) remote control
- rear view mirror passenger side, with setting possible in reverse
- electronic speedometer replacing the cable–driven speedometer
- cruise control on vehicles having V6, V6.24 and 2.5 l Turbo Diesel engines and manual gearboxe
- new audio system with radio messages repeated on the dot–matrix
- GSM telephone pre–equipment
- central diagnostic socket
- perimeter and volumetric alarm on R.H.D. models

Evolution :
- of the coded anti–theft keyboard (for certain countries)
- of the electrical harnesses following the introduction of new equipment
- of the instrument cluster further to the repositioning of certain warning lamps and the replacement of the manual speedometer by an electronic speedometer

2 – DEADLOCKING

The deadlocking equipment is allied to the high frequency remote control with two buttons.

This equipment can :
- lock the exterior controls of the vehicle (central door locking)
- lock the interior controls of the vehicle (deadlocking)

The system is composed of :
- four 3–position door actuators (unlocked, locked, deadlocked)
- 2 two–position actuators (unlocked, locked) for the fuel filler flap and the boot
- 1 deadlocking control unit (located under the glove compartment)
- a high frequency remote control system

NOTE : the door actuators are made of two electrical motors, one for locking and the other for deadlocking.

The remote control has two buttons :
- a button for locking and unlocking the doors, boot and bonnet
- one button for deadlocking (after locking, only)

WARNING : when the doors, boot and bonnet are deadlocked,it is impossible to open the vehicle from inside.

3 – HIGH FREQUENCY REMOTE CONTROL

The high frequency remote control ensures the remote control of the car locks. It is allied to the deadlocking equipment.

The introduction of a system for the transmission of messages, the hertzian wave high frequency locking/unlocking signals compared to the infra–red system, makes it possible :
- to improve the range of the remote control (10 metres min. with new batteries), in every direction around the vehicle
- to avoid using the receiver for the orders to be sensed
- to eliminate the shadowed areas where the remote control is inoperative

This equipment comprises two elements :
- a remote control
- a receiver situated in the passenger compartment

3.1 – Remote control transmitter

The remote control is made up of :
- a transmitter
- an integral transmission antenna

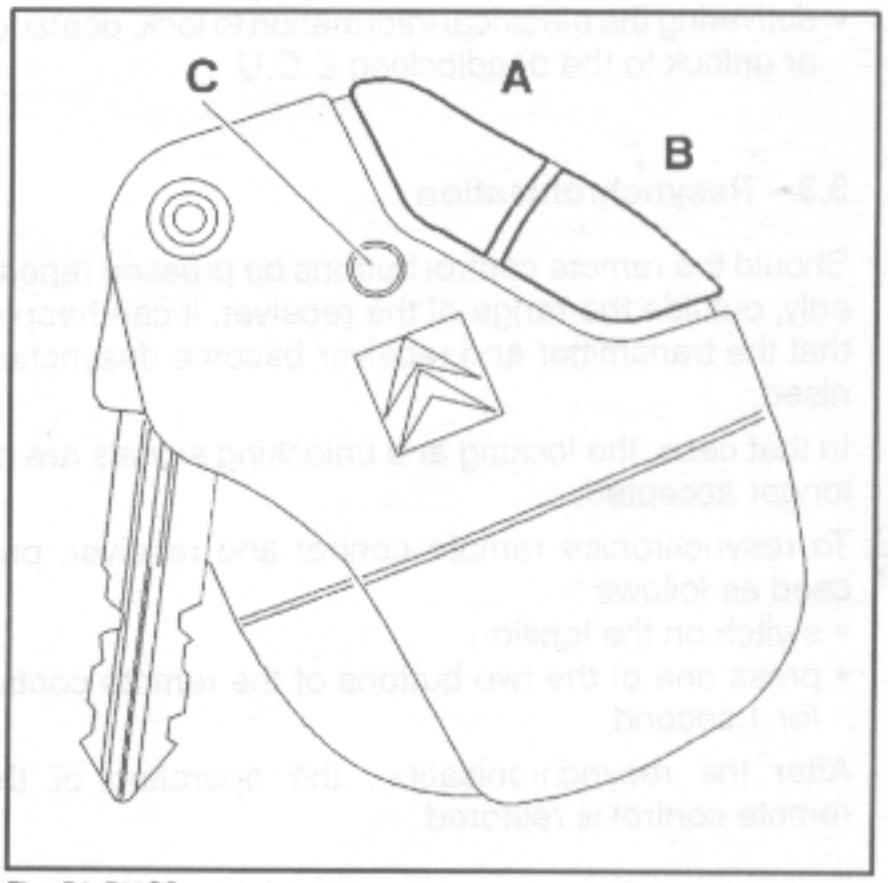


Fig. : D6–R00QC

A : locking/unlocking button.

B : deadlocking button.

C : warning lamp for battery charging.

www.WorkshopManuals.co.uk

This remote control has two buttons :
- a button (A) for locking and unlocking the doors, boot and bonnet
- a button (B) for deadlocking (only after locking)

When button (A) or button (B) is pressed, the red warning lamp (C) illuminates.

A coded message is transmitted each time one of the two buttons of the remote control is pressed.

The emission frequency is about 433 MHz for Europe.

The remote control operates by means of two batteries, type CR 2032 (20mm in dia., 3 mm thick) having a 3–volt nominal voltage.

The red warning lamp (C) indicates the state of charge of the batteries.

The min. range of the remote control is about 10 metres, with new batteries.

WARNING : pressing the remote control placed less than 30 m from the vehicle, can lock, unlock or deadlock the vehicle.

3.2 – Receiver

The receiver with integrated antenna is located under the dashboard armature, beneath the glove box.

It allows :
- converting the hertzian waves received by its aerial into electrical signals
- decoding the signals and verifying their validity
- delivering the electrical information to lock, deadlock or unlock to the deadlocking E.C.U.

3.3 – Resynchronisation

Should the remote control buttons be pressed repeatedly, outside the range of the receiver, it can happen that the transmitter and receiver become desynchronised.

In that case, the locking and unlocking signals are no longer accepted.

To resynchronise remote control and receiver, proceed as follows :
- switch on the ignition
- press one of the two buttons of the remote control for 1 second

After the resynchronisation, the operation of the remote control is restored.

3.4 – Coding

Remote control and receiver are electrically coded.

If the remote control code does not correspond to the receiver code, the signals to lock, unlock or deadlock are ignored.

Should the remote control be lost, apply to the Replacement Parts Department, mentioning the code appearing on the label bonded to the receiver housing.

4 – ELECTRONIC SPEEDOMETER

The mechanical cable–driven speedometer has been replaced by an electronic speedometer on CITROEN XM all types.

4.1 – Description and operation

The system comprises :
- an electric speedometer incorporated in the instrument cluster
- a vehicle speed sensor
- an electrical wiring between the speed sensor and the instrument cluster

The Hall effect type speed sensor delivers electrical signals at a frequency proportional to the speed of the vehicle.

The signals are routed to the instrument cluster via the wiring harnesses of the vehicle.

The electronic control system (built–in the instrument cluster) :
- supplies the galvanometer that moves the vehicle speed needle
- brings a feed to the stepper motor spooling the total or trip mileage recorder

4.2 – Speed sensor

There exist two types of speed sensors :
- an electrical type (a 3–way connector) situated on the gearbox for the versions with power assisted steering
- an electrical type (a 3–way connector) at the end of the ex–speedometer cable for the models with the varipower assisted steering versions

NOTE : the speed interface control unit, fitted on the V6 version, is no longer available.

www.WorkshopManuals.co.uk

5 – CRUISE CONTROL

The CITROEN XM V6, V6.24 and 2.5 l Turbo Diesel with manual gearbox can be equipped with a cruise control.

This device, previously only available on models with the automatic gearbox, is now extended to vehicles fitted with manual gearboxes.

The operation of the device for the user is similar to that on the versions fitted with automatic gearbox ; refer to Technical Bulletins XM 0 No.7 and XM 1 No.15.

On V6 and V6.24 versions, the device is electro–pneumatic.

For the 2.5 l Turbo Diesel version, the device is entirely electronic.

5.1 – Reminder of the necessary parameters

The cruise control maintains the speed of the vehicle at the value programmed by the driver :
- whatever the road
- without action on the accelerator pedal or the brake pedal

The driver can :
- exceed the programmed speed by operating the accelerator pedal
- revert to a conventional operation, without cruise control, by pressing the brake or clutch pedal, the cruise control selector switch or the on/off switch
- modify the programmed speed by acting upon the cruise control switch

NOTE : the cruise control only operates for an engine speed greater than 40 kph.

5.2 – V6 and V6.24 (ZPJ, ZPJ4) versions

The cruise control device is similar to the device fitted to the V6 version with automatic gearbox : it is electro–pneumatic.

5.2.1 – Composition of the system

The device comprises :
- a vehicle speed sensor
- a cruise control switch situated under the lighting switch
- a contact switch under the brake pedal cover
- a switch located under the clutch pedal cover
- an electrovalve/electrical vacuum pump assembly at the front of the R.H. front wheelarch
- a vacuum capsule acting on the throttle butterfly by means of a link rod
- a cruise control on/off switch under the centre vents
- an electronic control unit at the front of the E.C.U.s housing, connected to the various above mentioned components

5.2.2 – Operation

When the cruise control is operating, the E.C.U. permanently compares the programmed speed with the actual speed of the vehicle.

The speed information is transmitted by the speed sensor.

When the programmed speed exceeds the instantaneous speed, the control unit operates the vacuum pump, which increases the vacuum in the capsule operating the throttle housing : the vehicle accelerates until both speeds are equal.

When the speeds are equal, the supply to the vacuum pump is cut–off and the vacuum in the capsule is retained.

When the programmed speed is inferior to the instantaneous speed, the control unit operates the electrovalve, which achieves the capsule venting : the vehicle decelerates.

The more the vacuum pressure increases in the capsule, the more the throttle butterfly housing opens.

Any action on the brake or clutch pedal, or the cruise control switch cancels the cruise control function : the deceleration is very rapid (accelerator pedal released and clutch engaged).

When the control of the speed is cancelled by the switch (behind the steering wheel), the deceleration is slow (accelerator pedal released).

5.3 – 2.5 l Turbo Diesel (DK5ATE) version

The injection system of the DK5ATE engine is electronic.

The injection pump is characterised by the electronic control of the injection advance and quantity of fuel injected functions.

Fuel distributor and timing device incorporated in the pump are operated electronically by the injection E.C.U. according to parameters measured by sensors.

The mechanical connection between the accelerator pedal and the injection pump is no longer existing.

In addition to the injection, driveability and depollution strategies, the E.C.U. has the ability to operate with a cruise control system.

5.3.1 – Composition of the system

The device comprises :
- a vehicle speed sensor mounted on the gearbox
- a cruise control switch situated under the lighting switch
- a contact switch under the brake pedal cover
- a switch located under the clutch pedal cover
- a cruise control on/off switch under the centre vents
- the Diesel fuel injection E.C.U.
- the Diesel injection pump

www.WorkshopManuals.co.uk

5.3.2 – Operation

When the cruise control is operating, the injection E.C.U. compares permanently the programmed speed with the instantaneous speed of the vehicle.

The speed information is transmitted by the speed sensor located under the gearbox.

When the programmed speed exceeds the instantaneous speed, the injection E.C.U. increases the fuel delivery : the vehicle accelerates until both speeds are equal.

When the programmed speed is lower than the instantaneous speed, the injection E.C.U. reduces the Diesel fuel delivery : the vehicle decelerates.

Any action on the brake or clutch pedal, or the cruise control switch cancels the cruise control function : the deceleration is very rapid (accelerator pedal released and clutch engaged).

When the cruise control operation is cancelled by the switch (behind the steering wheel), the deceleration is slow (accelerator pedal released and clutch engaged).

www.WorkshopManuals.co.uk

6 – AUDIO SYSTEM

The XM vehicles can be produced with a car radio.

Good radio performances and acoustics are the objectives of this option.

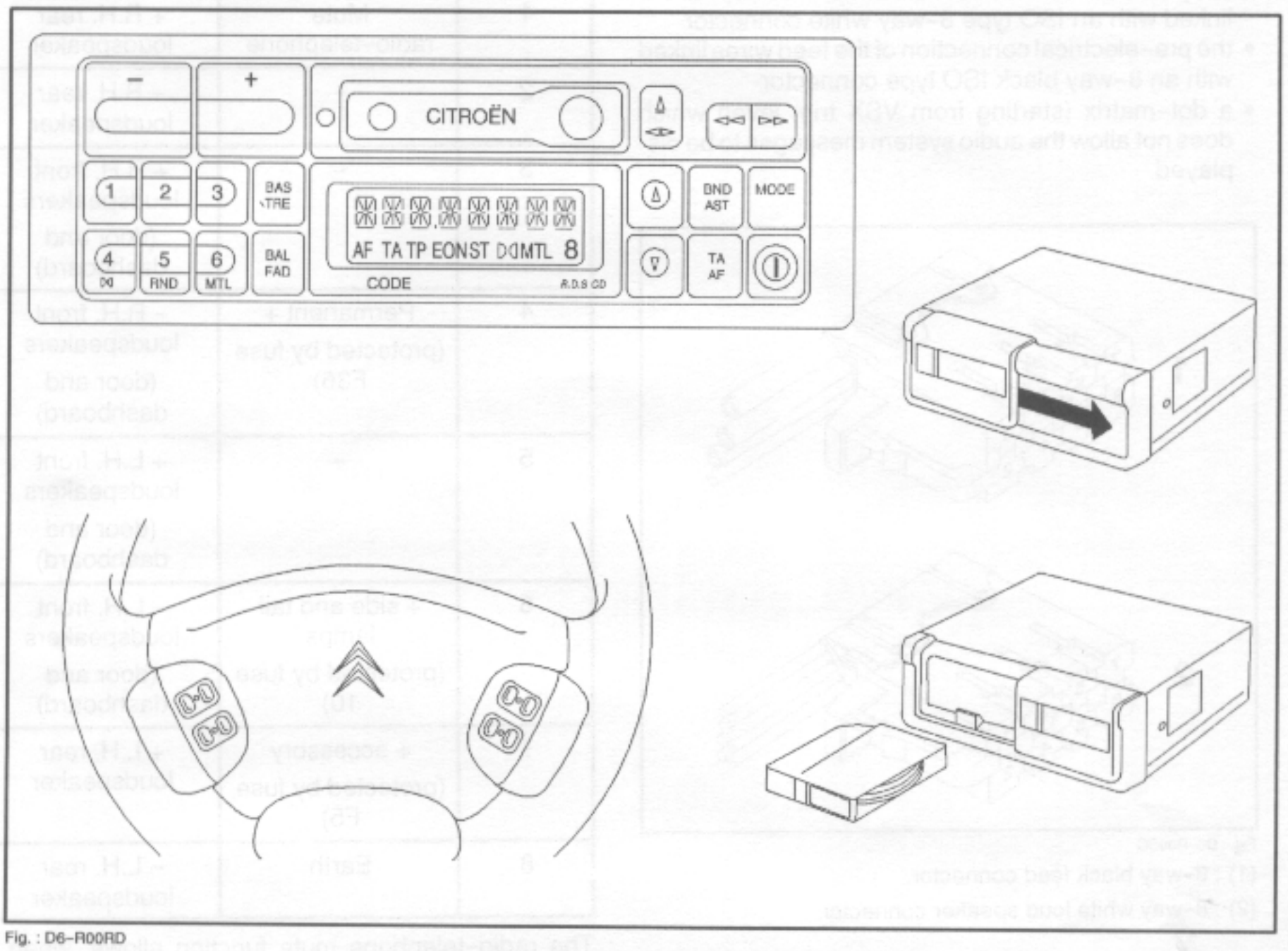


Fig. : D6–R00RD

Two option levels are available :
- the 3040 audio system
- the 4040 audio system

6.1 – Composition of the options

The audio 3040 system comprises :
- a PHILIPS car radio
- a remote control on the steering wheel
- 6 loudspeakers
- a roof aerial
- a specific dot–matrix on VSX and EXCLUSIVE only, allowing the audio system message display to be repeated
- an interference suppressor

NOTE : the compact disc changer of the 4040 audio system option can be fitted.

The audio system 4040 comprises :
- a PHILIPS car radio
- a PHILIPS compact disc changer
- a remote control on the steering wheel
- six loudspeakers
- a roof aerial
- a specific dot–matrix on VSX and EXCLUSIVE only, allowing the audio system message display to be repeated
- an interference suppressor

NOTE : the car radios are identical for both options.

6.2 – Interference suppression

The interference suppressor consists of :
- 2 bonnet earth straps (for the 4 cylinder petrol versions, only)
- 1 2.2 µF capacitor (for the 4 cylinder petrol versions, only)
- a metal cap under the aerial base

www.WorkshopManuals.co.uk

6.3 – Radio pre–equipment

The radio pre–equipment comprises :
- a roof aerial + cable
- an interference suppressor
- the pre–electrical connection of the 6 loud speakers linked with an ISO type 8–way white connector
- the pre–electrical connection of the feed wires linked with an 8–way black ISO type connector
- a dot–matrix (starting from VSX trim level) which does not allow the audio system messages to be displayed

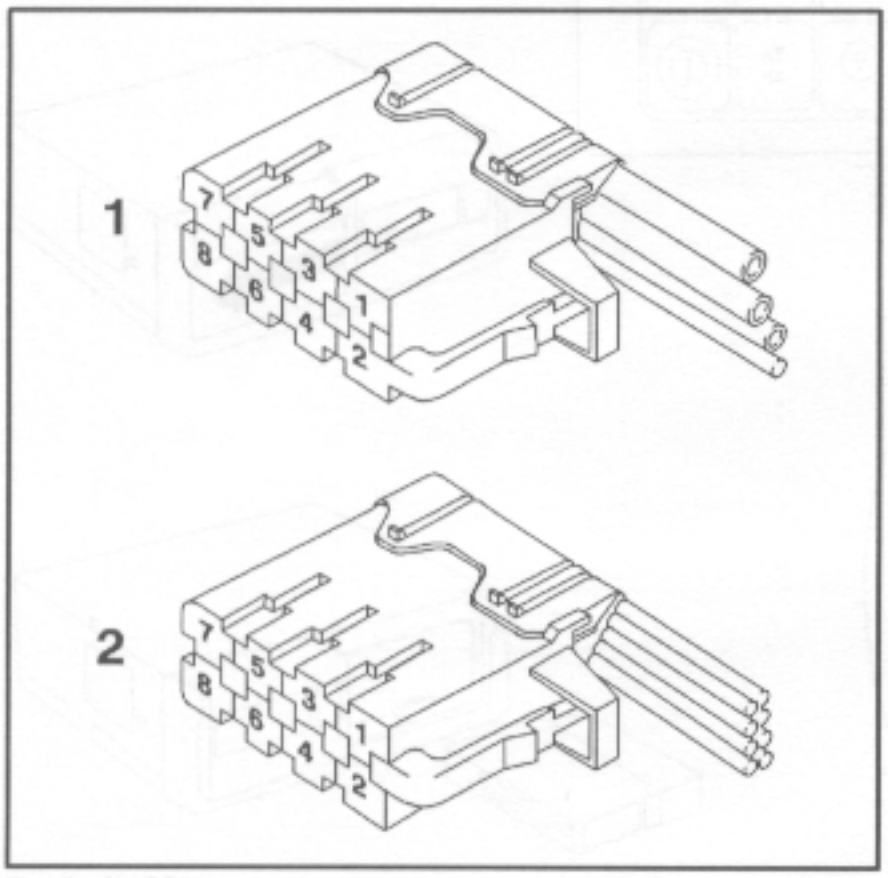


Fig. : D6–R00SC
(1) : 8–way black feed connector.
(2) : 8–way white loud speaker connector.

Allocation of the ways of the connectors :

Channels	Black feed connector	White loudspeaker connector
1	Mute radio–telephone	+ R.H. rear loudspeaker
2	–	– R.H. rear loudspeaker
3	–	+ R.H. front loudspeakers (door and dashboard)
4	Permanent + (protected by fuse F36)	– R.H. front loudspeakers (door and dashboard)
5	–	+ L.H. front loudspeakers (door and dashboard)
6	+ side and tail lamps (protected by fuse 10)	– L.H. front loudspeakers (door and dashboard)
7	+ accessory (protected by fuse F5)	+ L.H. rear loudspeaker
8	Earth	– L.H. rear loudspeaker

The radio–telephone mute function allows, when a radio–telephone is connected and there is a phone call :
- muting the sound in the radio mode
- stopping the cassette or the compact disc spooling

6.4 – Radio functions

The radio comprises a three waveband digital tuner (LW/MW/FM) with RDS system, EON and traffic information.
The radio controls enable :
- the automatic search to be carried out in every direction
- the manual station searching in both directions
- automatically entering in memory the 6 more powerful transmitters
- memorising the stations (FM : 18, MW : 6, LW : 6)

www.WorkshopManuals.co.uk

The RDS, Radio Data System, allows :
- displaying the name of the radio station
- selecting automatically the frequency on which the best reception is achieved
- listening traffic information when playing a cassette or CD

The EON (Enhanced Other Networks) function makes it possible to listen to traffic information in certain conditions, in common network.

6.5 – Cassette functions

The cassette player is autoreverse.

The functions of the cassette player are the following :
- playing
- fast advance and return
- manual metal/chrome selection
- dolby B
- radio monitor (the radio can be heard during the cassette rewind and fast forward winding)

6.6 – Remote control on the steering wheel

Placed on the steering wheel, it enables recalling the main functions :
- increase (+) volume
- decrease (–) volume
- stored radio stations search
- automatic station search in both directions
- manual station search in every direction
- mute (sound muted in the radio mode or cassette or compact disc spooling stopped)
- mode (source changing : cassette, compact disc or radio)

6.7 – Amplification

The amplifier is rated at 4 x 25 watts.

The possible adjustments are the following :
- decrease (–) or increase (+) volume checking
- adjustment of bass
- adjustment of treble
- left/right balance
- front/rear balance (fader)

The loudness function, (which increases the bass levels) is automatic.

6.8 – Loudspeakers

Loudspeakers on dashboard :
- 2 tweeters
- fixing screw dimension between centres : 72 mm
- 2–way white connector with 5 mm clips

Loudspeakers in the front doors :
- 2 boomers
- exterior diameter : 165 mm
- 2–way yellow connector with 5 mm terminals

Loudspeakers on the rear shelf support :
- 2 double cones
- 130 mm exterior dia.
- 2–way yellow connector with 5 mm terminals

6.9 – Radio connections

The car radio is connected to :
- one 8–way black supply connector
- one 8–way white connector for the loudspeakers
- 1 connector for the remote control on the steering wheel (7–way black)
- 1 10–way black connector for the compact disc changer

The car radio is protected by a 10 amperes fuse located near the connectors.

www.WorkshopManuals.co.uk

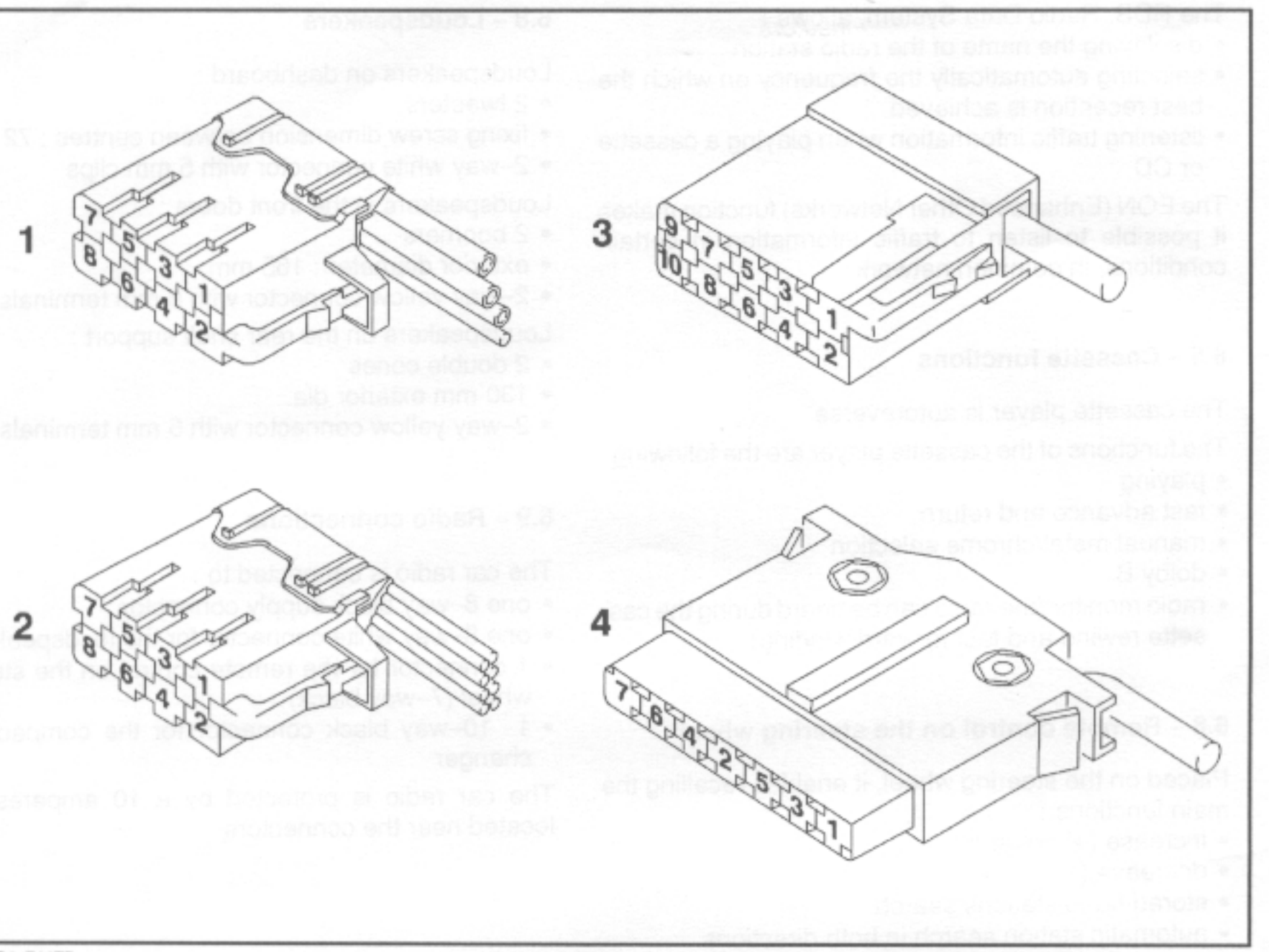


Fig. : D6–R00TD

(1) : black feed connector.

(2) : white loudspeaker connector.

(3) : compact disc changer black connector.

(4) : remote control on steering wheel black connector.

www.WorkshopManuals.co.uk

Allocation of the ways of the connectors :

Channels	Black feed connector	White loudspeaker connector
1	Mute radio–telephone	+ R.H. rear loudspeaker
2	Dot matrix connection	– R.H. rear loudspeaker
3	Dot matrix connection	+ R.H. front loudspeakers (door and dashboard)
4	Permanent + (protected by fuse F36)	– R.H. front loudspeakers (door and dashboard)
5	+ controlled (electrical antenna for example)	+ L.H. front loudspeakers (door and dashboard)
6	+ side and tail lamps (protected by fuse 10)	– L.H. front loudspeakers (door and dashboard)
7	+ accessory (protected by fuse F5)	+ L.H. rear loudspeaker
8	Earth	– L.H. rear loudspeaker

The radio–telephone mute function allows, when a radio–telephone is connected and there is a phone call :

- muting the sound in the radio mode
- stopping the cassette or the compact disc spooling

Applying a 0 V (earth) voltage to the radio–telephone mute connection of the radio mutes the sound.

6.10 – Dot matrix

The dot matrix is specific when the vehicle is equipped with one of the two audio systems (factory option).

The dot matrix can be identified by No. 9615625980 engraved at the rear of the matrix.

NOTE : a SX trim level vehicle is not equipped with a dot matrix.

The radio messages are transmitted via a series VAN (Vehicle Area Network communication protocol, an ISO standard).

This communication protocol is already used on the CITROEN XM MTX (multiplex) vehicles.

The visual messages of the audio system are not given priority over the other messages displayed by the dot matrix (door open, etc.).

WARNING : the dot matrix used on a VSX or EXCLUSIVE vehicle, without audio option, is conventional. The messages could not be repeated if a post–equipment is fitted.

6.11 – Personal code

The car radio has been coded in the factory with a four–figure code.

To enter the code, proceed as follows :

- switch on the radio
- press preset button 1
- press the vertical arrows (to the right of the display unit) to modify the first figure
- press button 1 (the first figure is memorised)
- press the vertical arrows (to the right of the display unit) to modify the second figure
- press button 1 (the second figure is memories)

Continue until the fourth figure of the security code is displayed.

The code should be introduced after the supply has been interrupted, only (battery disconnected, for example).

If you lose your security code, you will be able to find it back by interrogating the card index centre, with the chassis number of your vehicle (upon evidence of proof of purchase : grey card).

6.12 – Compact disc changer

The compact disc changer is a part of the 4040 audio system option, only.

It is a 6–compact disc changer, mounted under the front passenger's seat.

IMPERATIVE : do not place small size compact disc (8 cm in dia.) in the magazine.

The changer is controlled by the radio via a screened cable.

The cable is linked to a 7–way black connector, car radio side and a 13–way round black connector, changer side.

www.WorkshopManuals.co.uk

6.12.1 – Disc loading

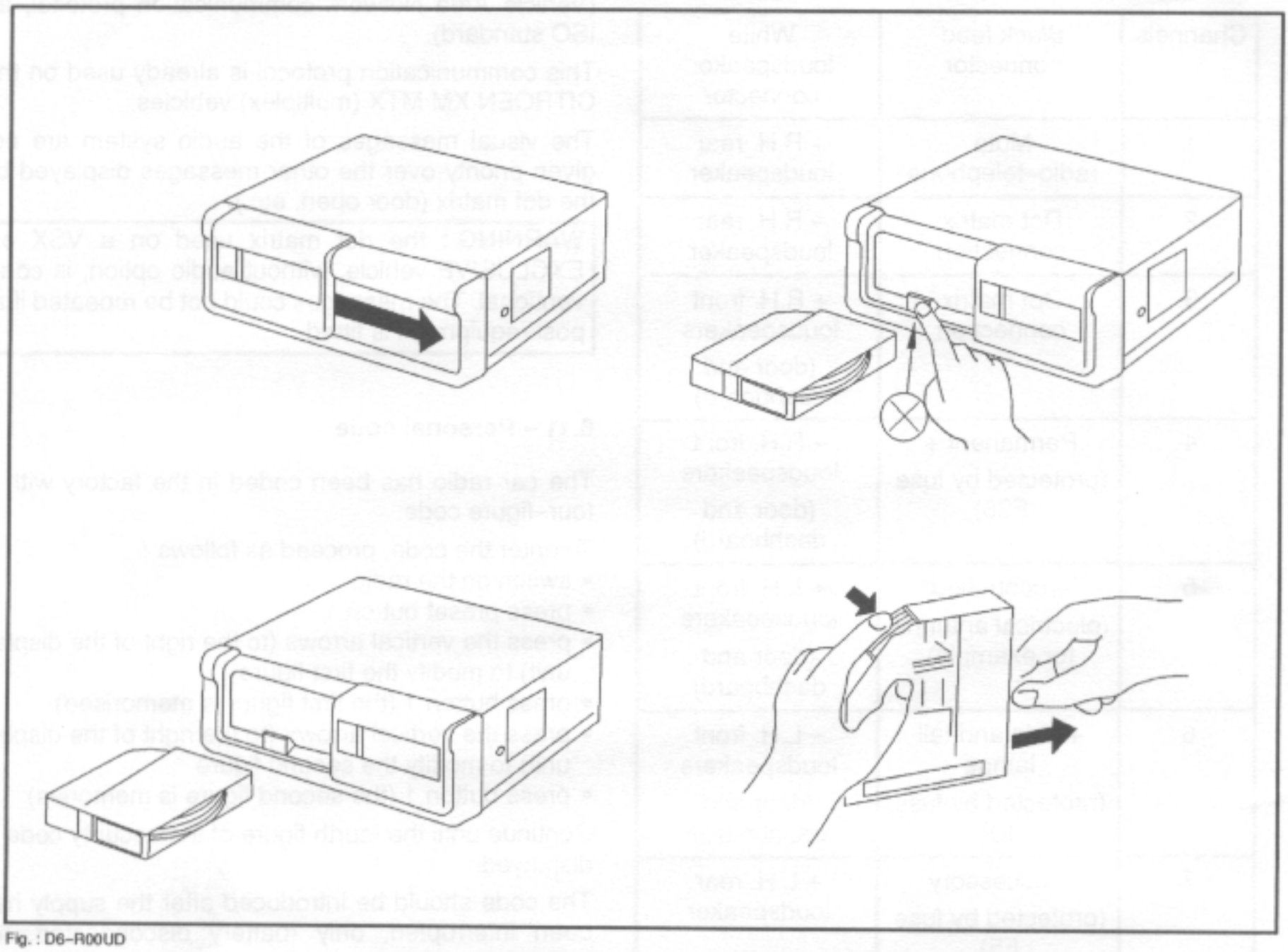


Fig. : D6–R00UD

Loading the CD changer magazine :
- slide the changer door
- place the magazine in the changer
- push the magazine cautiously in until it stops
- close the door of the changer

Withdrawing the disc magazine :
- open the changer door
- press the 'eject' key
- withdraw the magazine

The discs should be placed with the sticker directed towards the top, the magazine being in the same horizontal position as in the changer.

To withdraw the discs from the magazine, it is necessary to depress the lever corresponding to the selected disc.

www.WorkshopManuals.co.uk

6.12.2 – Repair

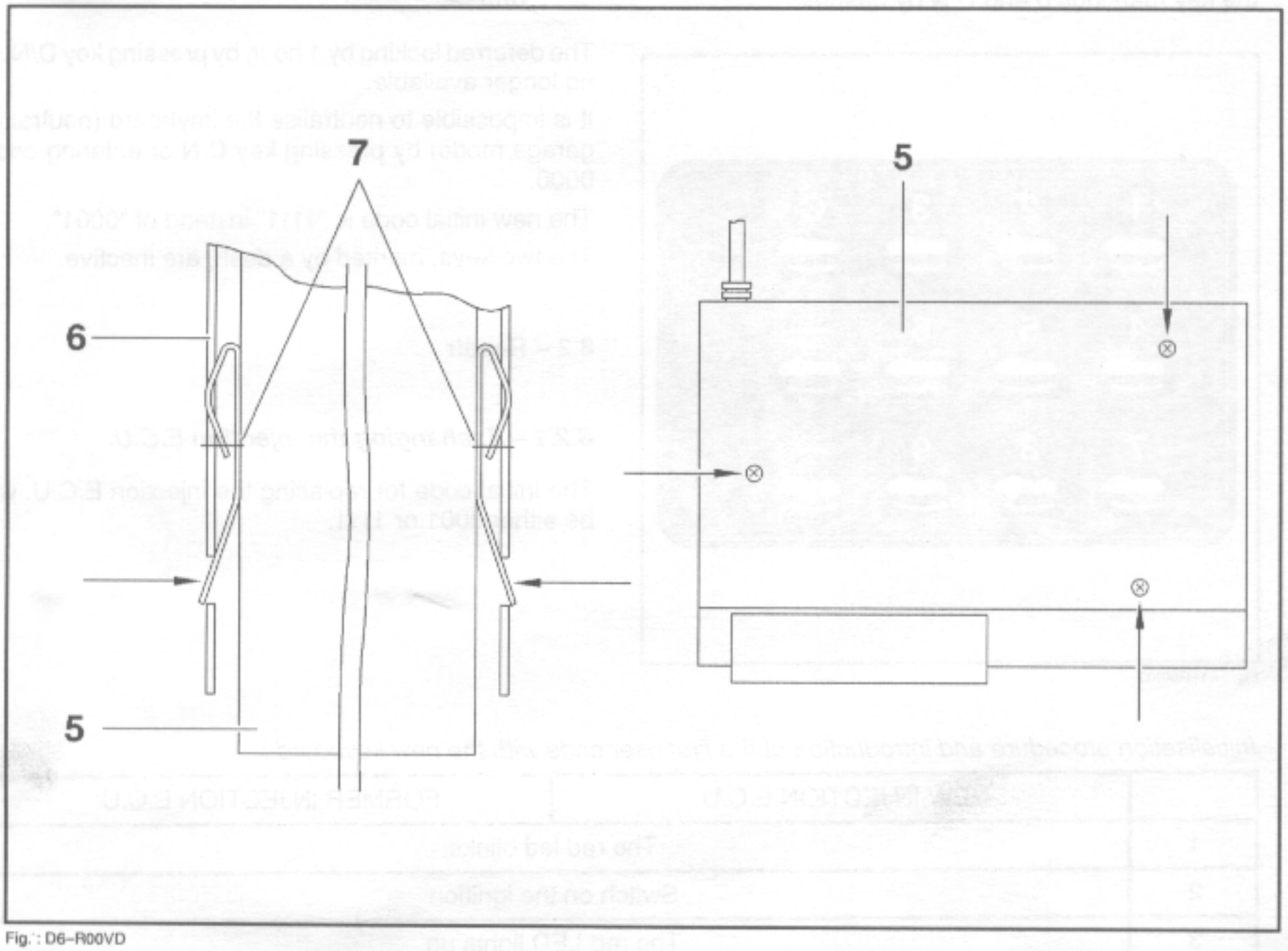


Fig.: D6–R00VD

(5) : compact disc changer.

(6) : changer support.

(7) : changer retaining clips.

The compact disc changer is equipped with clips on each side.

To dismantle the changer :

- clear the clips on each side using a screwdriver, for example
- pull the changer to extract it from its mounting

When the compact disc changer must be transported off the vehicle (parcel post, for example),the internal mechanism has to be immobilised ; otherwise, there is a risk of damage.

The three screws on top of the changer must be screwed in the locations arrowed under the changer.

When receiving a changer from the Replacement Parts Department or returned from guarantee :

- take the three screws out of the arrowed locations
- secure the three screws on top of the changer

IMPERATIVE : only use the screws on top of the changer to immobilise the mechanism.

7 – CENTRAL DIAGNOSTIC SOCKET

The CITROEN XM is equipped with a central diagnostic socket enabling all the components provided with an auto–diagnostic system to be tested.

This socket replaces all the diagnostic connectors present (until the 1994 Model Year) in the E.C.U. housing.

The diagnostic socket is located on the lower trim panel of the dashboard, to the right of the steering wheel.

8 – CODED ANTI–THEFT DEVICE

As from the 95 M.Y., the vehicles marketed in certain countries have a coded anti–theft device without neutralisation or deferred locking.

www.WorkshopManuals.co.uk

The keyboard can be identified by the replacement of the key markings 0 and D/N by dashes.

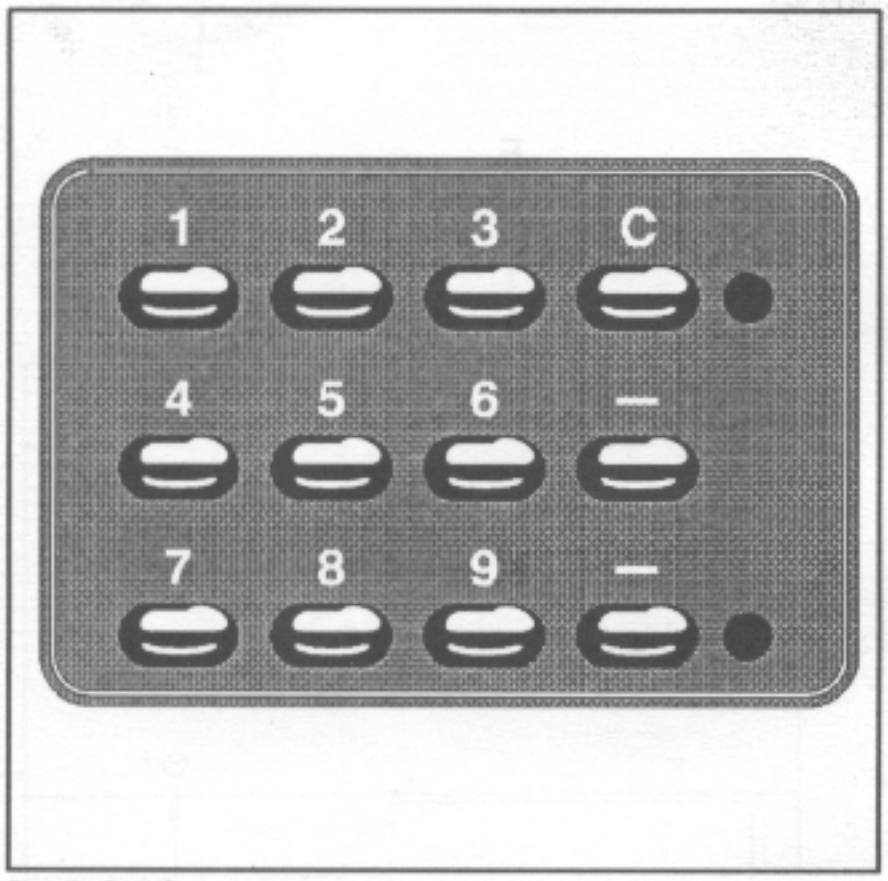


Fig. : E1-R00KC

8.1 – Evolutions connected with the new control unit

The deferred locking by 1 hour, by pressing key D/N, is no longer available.

It is impossible to neutralise the keyboard (neutral or garage mode) by pressing key D/N or entering code 0000.

The new initial code is "1111" instead of "0001".

The two keys, marked by a dash, are inactive.

8.2 – Repair

8.2.1 – Exchanging the injection E.C.U.

The initial code for replacing the injection E.C.U. will be either 0001 or 1111.

Initialisation procedure and introduction of the first user code with the new keyboard :

	NEW INJECTION E.C.U.	FORMER INJECTION E.C.U.
1	The red led blinks	
2	Switch on the ignition	
3	The red LED lights up	
4	Enter code "1111"	
5	The green LED blinks 4 times with 4 audible beeps	The red led stays on
6		Obtain and connect a keyboard having keys "O" and "D/N"
7		Enter code 0001
8		The red LED blinks 4 times with 4 audible beeps
9		Press key C
10		Enter code "1111"
11		Press key C
12		The green LED blinks 4 times with 4 audible beeps
13		Refit the original keyboard
14	Proceed with the initial procedure	

When returned under guarantee, write the code on the E.C.U..

8.2.2 – Exchanging the coded anti-theft keyboard

The two keyboard versions are available from the Replacement Parts Department.

Refit a keyboard corresponding to the original definition.

www.WorkshopManuals.co.uk

BODY COLOURS : 1995 MODEL YEAR RANGE OF VEHICLES

1 – BODY COLOURS

			Allocation per trim level		
			Saloon		Estate
Colour	Colour code	Quality	SX and VSX trim levels	EXCLUSIVE trim level	SX and VSX trim levels
Polar white	EWP	1	•	•	•
Sable	ECZ	3	•		
Tempest	ETK	3	•	•	
Quartz	EYC	3	•	•	•
Silver moss	ERZ	3	•		
Astral blue	KLS	3	•		
Sapphire blue superlustre	ENU	2	•		•
Midnight blue	EPG	4	•	•	•
Forest green	ESY	3	•		•
Emerald	ERY	4	•	•	•
Maple red	EKL	4	•	•	•
Bronze	EEB	4	•	•	•
Black superlustre	EXY	2	•	•	

(1) : solid colour.

(2) : straight superlustre colour.

(3) : superlustre metallic finish.

(4) : superlustre pearl finish.

2 – INTERIOR TRIM

2.1 – CITROEN XM Saloon

Trim level	Standard cloth	Options		
SX	Velvet Megalithe			
VSX	Velvet Louvre	Orage leather	Ouragan leather	Savane leather
EXCLUSIVE	Ouragan leather	Savane leather	Alcantara + Velvet	

www.WorkshopManuals.co.uk

2.2 – CITROEN XM Estate

Trim level	Standard cloth	Options		
SX	Velvet Megalithe			
VSX	Velvet Louvre	Ouragan leather	Savane leather	
		VIP pack Ouragan leather	VIP pack Savane leather	VIP pack Alcantara + Velvet

www.WorkshopManuals.co.uk

MAINTENANCE : 1995 MODEL YEAR RANGE OF VEHICLES

Since July 1994, the maintenance schedule for CITROEN vehicles has been modified as follows.

1 – FIRST SERVICE AT THE 1 000/1 500 MILES (1 500/2 500 KM)

Petrol vehicles, All Types	First technical inspection (no engine oil change) The first technical 1,000/1,500 mile service is entirely free of charge (labour, materials and lubricants)

Diesel vehicles All Types	First service (engine oil change) The labour for the 1st service (1,000/1,500 miles) is free of charges The materials and lubricants, only, are chargeable to the customer

2 – SERVICING SCHEDULE

Vehicle type	Conditions for use	Servicing schedule	
		Service	Maintenance
Private car Petrol	Normal	9,000	36,000
	Severe	6,000	24,000
Utility vehicle Petrol	Normal	6,000	36,000
	Severe	4,500	18,000
Private car Diesel	Normal	6,000	36,000
	Severe	4,500	18,000
Utility vehicle Diesel	Normal	6,000	36,000
	Severe	4,500	18,000

3 – SEVERE DRIVING CONDITIONS

Town use, mainly.
Very hot countries (Distant Export).
Dusty atmosphere (building site).
Short journeys (engine cold).

www.WorkshopManuals.co.uk



OCTOBER 1996

ABONNEMENT GME

REF. 0 No XM 000-00/10

PRESENTATION

● 1997 MODEL YEAR RANGE

MAN 108931

GB

1

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

CONTENTS

GENERAL SPECIFICATION

PRESENTATION : 1997 MODEL YEAR RANGE FOR EUROPE **1**

1 – Index 1
2 – Commercial range of CITROEN XM vehicles – Saloon –
3 – Commercial range of CITROEN XM vehicles – Estate 3

MECHANICAL DEVELOPMENTS : 1997 MODEL YEAR RANGE **4**

1 – Engine types 4
2 – Emission standard L3 –
3 – Evolution of injection E.C.U.'s –
4 – Injection system 5
5 – Engine XU10 J4R (RFV) 6
6 – Engine XUD11 BTE (P8C) 8
7 – Manual gearbox BE3 9
8 – Hydractive E.C.U. II –

MODIFICATIONS TO THE ELECTRICAL SYSTEM : 1997 MODEL YEAR RANGE **10**

1 – Preamble 10
2 – Fuse F10 –
3 – Coded anti–theft device with automatic unlocking by high frequency remote control –
4 – Anti–theft alarm PSA 3 11
5 – Fog lamps 13
6 – Electrical harnesses –

EVOLUTION : AIR CONDITIONING **14**

1 – Description 14
2 – Interchangeability –

PAINTWORK

BODY COLOURS : 1997 MODEL YEAR RANGE **15**

1 – Body colours 15
2 – Interior trim 16

www.WorkshopManuals.co.uk

PRESENTATION : 1997 MODEL YEAR RANGE FOR EUROPE

1 – INDEX

Countries applicable :

F = France	DK = Denmark	NL = Holland	GR = Greece
D = Germany	SP = Spain	P = Portugal	S = Sweden
A = Austria	FIN = Finland	N = Norway	CH = Switzerland
B = Belgium	I = Italy	GB = Great Britain	

Ref. letters used in the tables "range of commercial vehicles" :

(a) = automatic gearbox	(d) = emission standards
(m) = manual gearbox	L = CEE93
(l) = "long" gearbox	L3 = CEE96
(f) = fiscal rating in "HP"	Y = US87
	Z = US83

2 – COMMERCIAL RANGE OF CITROEN XM VEHICLES – SALOON

Vehicle		Engine		Gearbox	Countries applicable														
Official designation	Trim level	Plate (d) Type	Power in kW (in HP)	Reference Type	F (f)	D	A	B	DK	SP	FIN	I	NL	P	N	GB	GR	S	CH
CITROEN XM 2 l injection (1998 cc) :																			
Y4–CZ	SX	RFV (L3) XU10J4R	97.4 (135)	20TA98 BE3 (m)	X (10)	X		X	X	X	X		X		X	X		X	X
	VSX											X					X		
Y4–TV	SX			20GZ1E 4HP18 (a)	X (10)	X			X		X		X		X	X		X	
Y4–TX	SX			20TA09 BE3 (m) (l)	X (7)														
CITROEN XM 2 l turbo – injection (1998 cc) :																			
Y4–GG	SX	RGX (L3) XU10J2TE	108 (150)	20GM32 ME5T (m)					X				X			X			
	VSX				X (9)	X	X	X		X	X	X	X		X	X	X	X	X
	EXCLU-SIVE							X				X		X		X			
Y4–TT	SX			20GZ1D 4HP18 (a)					X				X			X			
	VSX				X (9)	X	X	X			X		X		X	X	X	X	X
	EXCLU-SIVE							X				X				X			

www.WorkshopManuals.co.uk

Vehicle		Engine		Gearbox	Countries applicable														
Official designation	Trim level	Plate (d) Type	Power in kW (in HP)	Reference Type	F (f)	D	A	B	DK	SP	FIN	I	NL	P	N	GB	GR	S	CH

CITROEN XM 6 cylinders (2963 cc) :

Y4-GN	VSX	UFZ (L3) ZPJ	123 (170)	20KM01 MG5TB (m)	X (16)	X			X	X			X					X	X
	EXCLU-SIVE				X (16)	X													
Y4-GP		UFY (L3) ZPJ	120 (166)					X											
Y4-TP				20GZ5E 4HP18 (a)				X											
Y4-TR	VSX	UFZ (L3) ZPJ	123 (170)		X (16)	X			X	X			X					X	X
	EXCLU-SIVE				X (16)	X	X		X			X	X						X
				20GZ7E 4HP18 (a)	X (16)											X			

CITROEN XM 6 cylinders 24V (2963 cc) :

Y4-GU	EXCLU-SIVE	UKZ (L3) ZPJ4	147 (200)	20KM01 MG5TB (m)	X (16)	X	X	X	X	X		X	X	X					X

CITROEN XM turbo D12 (2088 cc) :

Y4-CX	SX	PHZ (Y) XUD11ATE (*)	80 (110)	20GZ7D 4HP18 (a)		X									X			X	
	VSX					X	X												X
Y4-TD	SX	P8B (L) XUD11ATE (*)											X			X			
	VSX				X (6)			X					X			X			
	EXCLU-SIVE				X (6)			X				X				X			
Y4-GZ	SX	P8C (L3) XUD11BTE		20GM31 ME5T (m)	X (6)	X	X	X		X			X		X	X		X	
	SX for conversion into ambulance				X (6)														
	VSX				X (6)	X	X	X				X	X			X			X
	EXCLU-SIVE													X					

Version gradually replaced by XUD11BTE/L3, P8C 44HP18, 20GZ5D automatic gearbox.

CITROEN XM 2,5 l turbo diesel (2446 cc) :

Y4-NZ	VSX	THY (L3) DK5ATE	94.5 (130)	20KM02 MG5TB (m)	X (7)	X	X	X		X		X	X		X	X		X	X
	EXCLU-SIVE				X (7)	X	X	X				X		X		X			

www.WorkshopManuals.co.uk

3 – COMMERCIAL RANGE OF CITROEN XM VEHICLES – ESTATE

Vehicle		Engine		Gearbox	Countries applicable														
Official designation	Trim level	Plate (d) Type	Power in kW (in HP)	Reference Type	F (f)	D	A	B	DK	E	FIN	I	NL	P	N	GB	GR	S	CH

CITROEN XM 2 l injection (1998 cc) :

Y4–GB	SX	RFV (L3) XU10J4R	97.4 (135)	20GM36 ME5T (m)	X (10)	X		X	X		X		X		X	X		X	X
Y4–TU				20GZ1E 4HP18 (a)		X							X		X	X		X	

CITROEN XM 2 l turbo – injection (1998 cc) :

Y4–GM	SX varebiler	RGX (L3) XU10J2TE	108 (150)	20GM33 ME5T (m)											X				
	VSX				X (9)	X		X	X			X	X	X		X		X	X
Y4–TS				20GZ1D 4HP18 (a)	X (9)	X		X	X			X	X			X		X	X

CITROEN XM 6 cylinders (2963 cc) :

Y4–GR	VSX	UFZ (L3) ZPJ	123 (170)	20KM01 MG5TB (m)	X (16)	X				X			X						X
				20KM00 MG5TB (m)												X			
Y4–TN				20GZ5E 4HP18 (a)	X (16)	X							X						X
				20GZ7E 4HP18 (a)												X			

CITROEN XM turbo D12 (2088 cc) :

Y4–CY	SX	PHZ (Y) XUD11ATE (*)	80 (110)	20GZ7D 4HP18 (a)		X									X			X	
	VSX					X	X												X
Y4–MZ	SX	P8C (L3) XUD11BTE		20GM31 ME5T (m)	X (6)	X	X	X		X					X			X	X
	SX – varebiler														X				
	VSX				X (6)	X	X	X					X	X		X			
Y4–NW		P8B (L) XUD11ATE (*)		20GZ7D 4HP18 (a)	X (6)			X					X			X			

Version gradually replaced by XUD11BTE/L3, P8C 4HP18, 20GZ5D automatic gearbox.

CITROEN XM 2,5 l turbo diesel (2446 cc) :

Y4–NY	VSX	THY (L3) DK5ATE	94.5 (130)	20KM02 MG5TB (m)	X (7)	X	X	X				X	X		X	X		X	X
	VSX – varebiler														X				

www.WorkshopManuals.co.uk

MECHANICAL DEVELOPMENTS : 1997 MODEL YEAR RANGE

1 – ENGINE TYPES

Engines no longer fitted :
- engine XUD 11A/L (PJZ) : CITROEN XM 2.1 D12
- engine XU10J2 : CITROEN 2.0 injection, 8(*) valves (ended with Model Year 1995)

NOTE : (*). Vehicles marketed for distant export ; from the 1995 Model Year onwards.

2 – EMISSION STANDARD L3

From 1997 onwards, the emission standard L3 will be mandatory, for petrol and diesel engines, in all the EEC (European Economic Community) countries (European standards EURO 96).

The emission standard L3 is stricter than the Z; L; Y emission standards.

2.1 – Petrol vehicles

Standardization of the L3 emission standards to all vehicles (all countries, all destinations).

Application : all petrol engine types (except XM V6.24S).

Applicable : 1997 Model Year.

WARNING : Only the CITROEN XM V6.24S will be marketed in the version for emission standard Z (American standard US 83).

Specific elements (reminder) :
- injection ECU
- catalytic converter (increased impregnation in precious metals)

2.2 – Diesel vehicles

Standardization of the L3 emission standards to all vehicles (all countries, all destinations).

2.2.1 – Engine XUD 11BTE/L3 (P8C)

Specific elements (reminder) :
- exhaust gas recycling valve
- catalytic converter

2.2.2 – Engine DK5ATE/L3 (THY)

Specific elements :
- injection ECU (not interchangeable with the version L and Y injection E.C.U.'s)
- air pressure sensor
- exhaust gas recycling valve
- catalytic converter
- inlet manifold connection (with throttle butterfly housing)
- electrovalve gradually operating the throttle butterfly housing located on the inlet manifold
- air flow meter (downstream of the air filter)

3 – EVOLUTION OF INJECTION E.C.U.'S

Emission standards (reminder) :
- K = 1504
- L = CEE 93
- Y = US 87
- Z = US 83
- L3 = EURO 96

www.WorkshopManuals.co.uk

4 – INJECTION SYSTEM

4 cylinder injection engine (1998 cc) :

Engine : legislation type. Research type	Gearbox	Emission standards	Coded anti-theft device	Injection system	
				Supplier ; type	E.C.U. references. ("EPROM" reference)
RFV XU10J4R	BVM	L-Z-L3	None	BOSCH MP 5.1.1. Prior to RPO No. 7146	0261200690 (1267358901)
			With		0261204064 (2227355984)
	BVA		None		0261203595 (1267358902)
			With		0261203596 (1267358314)
	BVM. BVA	L3	None	BOSCH MP 5.2. From RPO N° 7147	0251204082
			With		
RGX XU10J2TE	BVM. BVA	L3	With or without	BOSCH MP 3.2	0261200808 (10373552984)

BVM : manual gearbox.

BVA: Automatic Gearbox.

6 cylinder injection engine (2963 cc) :

Engine : legislation type. Research type	Gearbox	Emission standards	Injection system	
			Supplier ; type	E.C.U. references
UFZ UFY ZPJ	BVA	L3	SIEMENS FENIX 3B	S111 700 212E
	BVM			S111 700 112E
UKZ ZPJ4	BVM	Z-L	SIEMENS FENIX 4	S101 800 102F

BVM : manual gearbox.

BVA: Automatic Gearbox.

4 cylinder Turbo Diesel engine :

Engine : legislation type. Research type	Gearbox	Emission standards	Injection system	
			Supplier ; type	E.C.U. references (index label)
P8C XUD11BTE	BVM	L3	LUCAS DIESEL EPIC	XUDLC01 R04010019A (9627453880)
THY DK5ATE		L	BOSCH MSA 11 3.6	0281001212 (L18) (L18)
		L3	BOSCH MSA 11 7.6	0281001336 (L3 16)

BVM : manual gearbox.

www.WorkshopManuals.co.uk

5 – ENGINE XU10 J4R (RFV)

5.1 – Injection system

Applicable since R.P.O. number : 7147.

The BOSCH MP 5.2 injection system replaces the BOSCH MP 5.1.1 injection system.

Specific elements :

- injection E.C.U. equipped with a new generation of "Flash–Eprom" memories replacing the "Eprom" type memories
- engine wiring harness
- oxygen sensor
- canister discharge electrovalve

WARNING : The E.C.U.'s of the two injection systems BOSCH MP 5.2 and BOSCH MP 5.1.1 are not interchangeable.

Special feature of "Flash–Eprom" memory :

- can be erased electrically (without dismantling)
- can be re–programmed electrically (without dismantling)

The memory can be domnloaded by means of a diagnostic tool, through a "DOWNLOADING" procedure.

With this procedure, the contents of the memory of an E.C.U. equipped with this new generation of memories can be modified.

5.2 – Sump

Vehicle concerned : CITROEN XM 2.0 injection, 16 valves (1998 cc). "Saloon" version (vehicle with or without air conditioning).

The oil pans are equipped with 2 ribbed reinforcement pieces which enable the stiffening of the connection between the engine and the gear box.

The oil capacities remain the same.

Oil capacity = 4.25 litres ; oil filter change.

This disposition requires a new tool to block the engine flywheel.

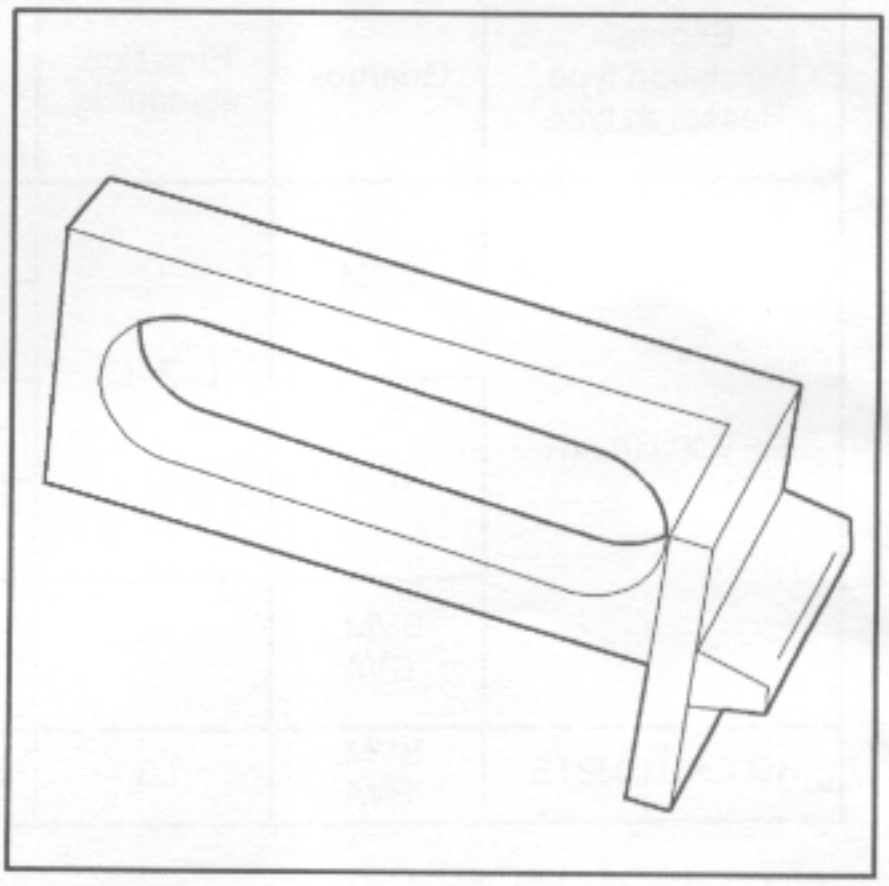


Fig : E5AP03LC

9044–T flywheel stop.

5.3 – Support for auxiliary equipment

Auxiliary equipment support of CITROEN XANTIA XU10 J4R engine now also fitted to CITROEN XM.

This support for auxiliary equipment in cast iron allows the mounting of the alternator with double lug fixing (4 fixing points).

www.WorkshopManuals.co.uk

5.3.1 – Later assembly

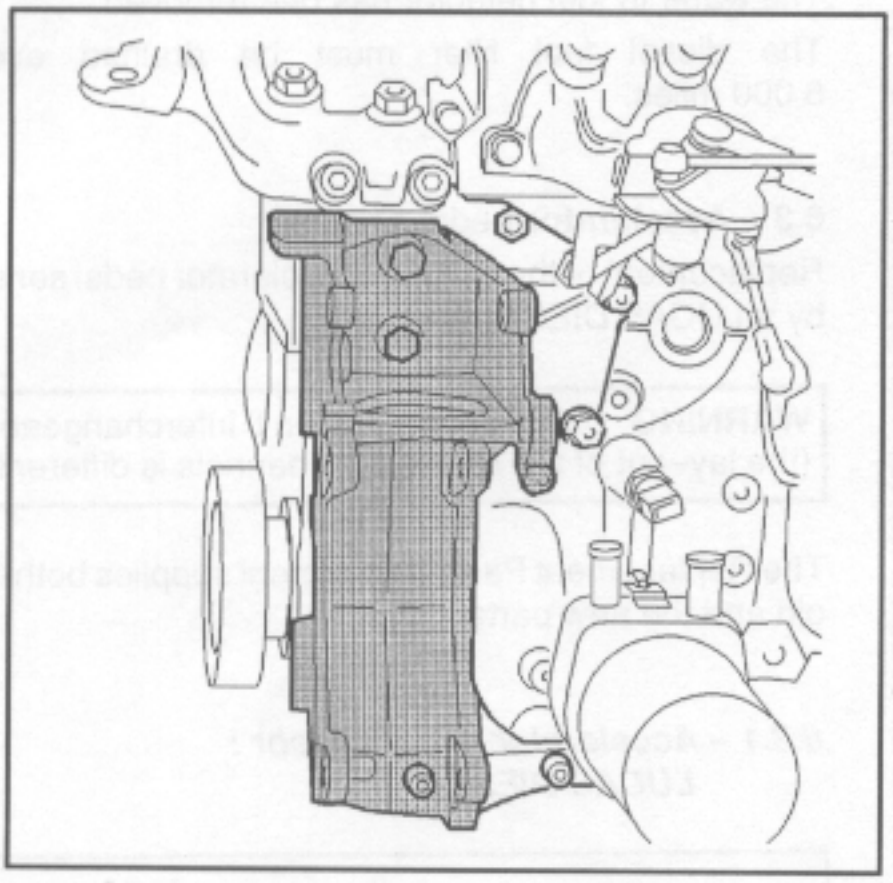


Fig : E1AP033C

Special features :
- single bracket for the high pressure pump and the alternator
- new accessory drive
- 4 fixing point alternator

5.3.2 – Earlier assembly

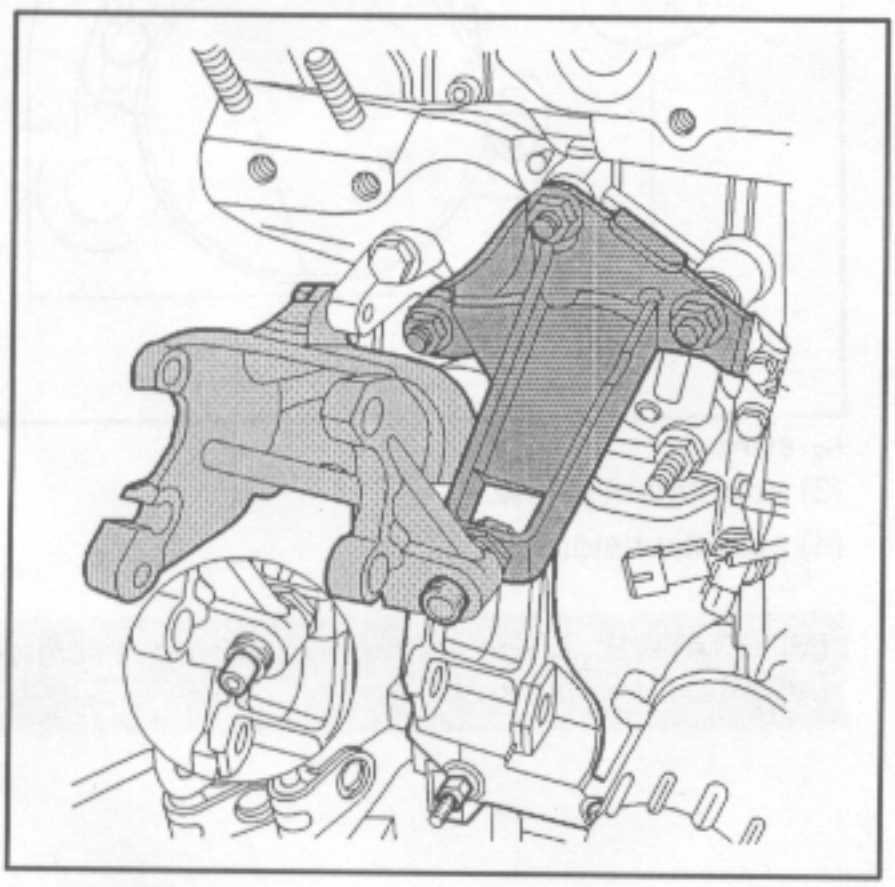


Fig : E1AP034C

Special features :
- support in 2 parts
- 3 fixing point alternator

5.4 – Accessory drive

5.4.1 – Vehicle with air conditioning

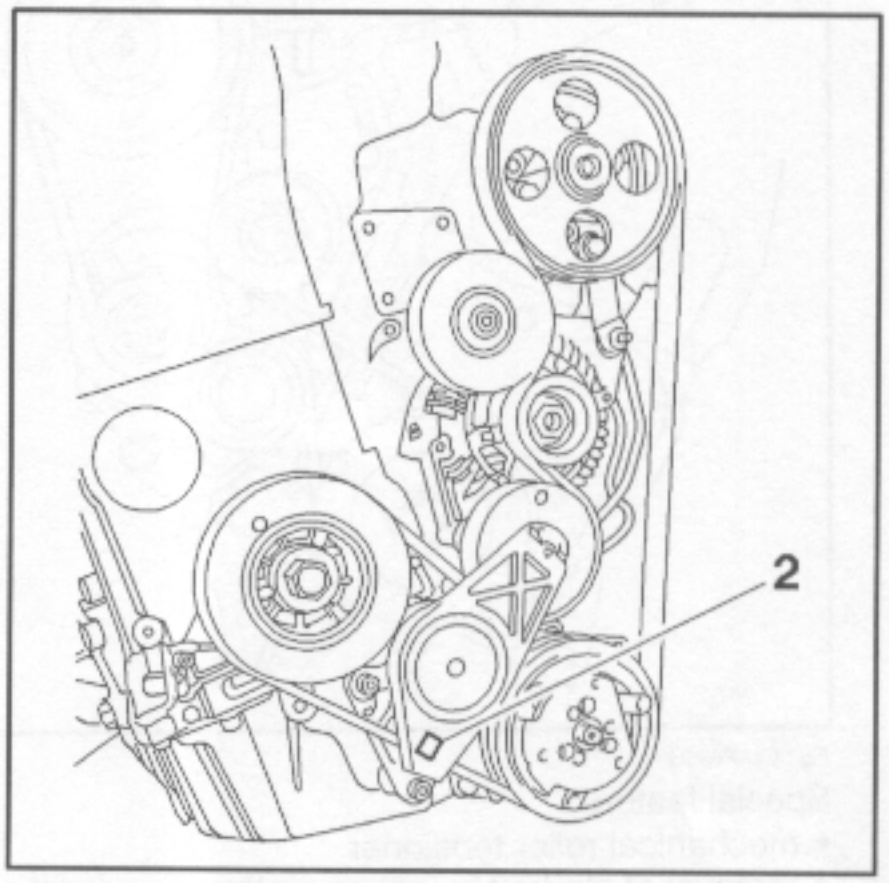


Fig : E1AP036C

Special features :
- automatic tensioner
- removal of the belt by acting on the square drive hole of the roller tensioner (2)

www.WorkshopManuals.co.uk

5.4.2 – Vehicle without air conditioning

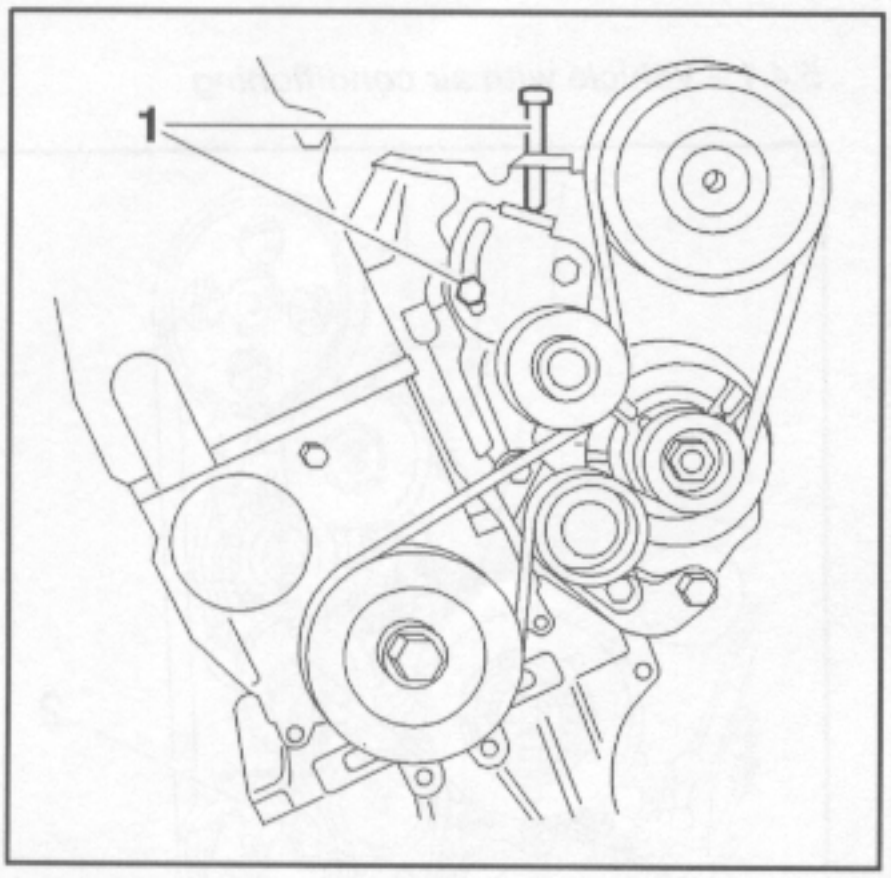


Fig : E1AP035C

Special features :
- mechanical roller tensioner
- removal of the belt by acting on the screws (1)

Tension value (without air conditioning system) :
- used belt, to 50 daN (90 SEEM units)
- new belt, to 75 daN (120 SEEM units)

For the removal refit operation – the auxiliary equipment drive belt : refer to BRE XANTIA.
Engine XU10J4R.

6 – ENGINE XUD11 BTE (P8C)

6.1 – Diesel fuel filter

New diesel fuel filter with increased filtration capacity (modified housing).

Diesel fuel filter reference :
- new part : LUCAS 9001–911 = height 86 mm
- old part : LUCAS 9001–910 = height 60 mm

WARNING : The old and the new diesel fuel filters are not interchangeable.

The filter should be renewed every 18,000 miles.

6.2 – Water in fuel detector

The water in fuel detector has bee removed.

The diesel fuel filter must be drained every 6,000 miles.

6.3 – Accelerator pedal sensor

Replacement of the BOSCH accelerator pedal sensor by a LUCAS DIESEL sensor.

WARNING : The sensors aren't interchangeable (the lay–out of the connector channels is different).

The Replacement Parts Department supplies both the old and the new parts.

6.3.1 – Accelerator pedal sensor :
LUCAS DIESEL

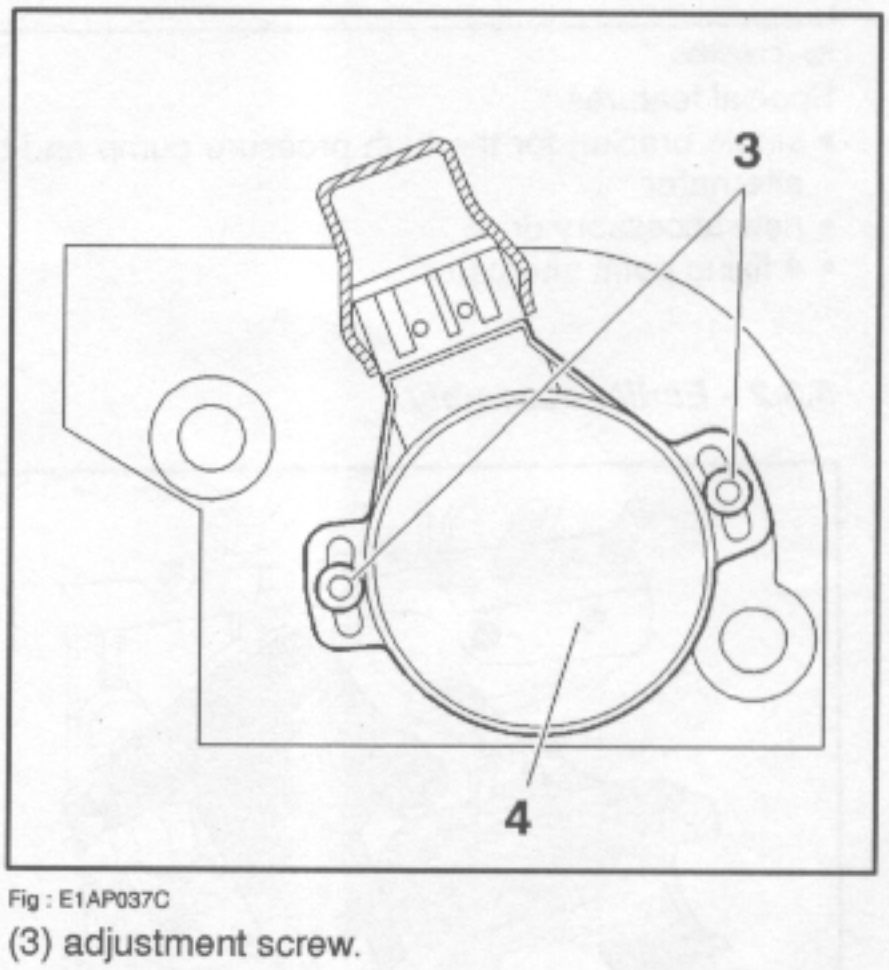


Fig : E1AP037C

(3) adjustment screw.

(4) potentiometer.

IMPERATIVE : Do not touch the adjustment screws (adjustment works set).

www.WorkshopManuals.co.uk

6.3.2 – Accelerator pedal sensor : BOSCH

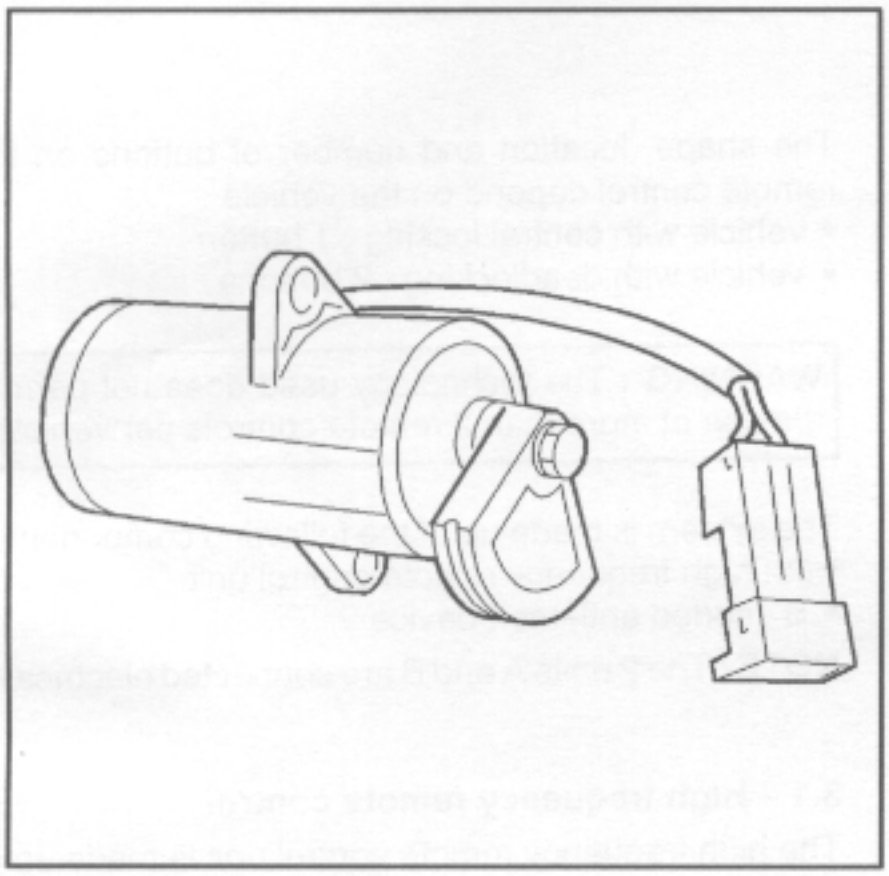


Fig : E1AP038C

7 – BE3 MANUAL GEARBOX

New gearbox references. This change results in a modification of the number of fixings of the clutch housing to the engine (6 points instead of 4).

Vehicle concerned : CITROEN XM 2.0i injection, 16 valves.

Gearbox sequence number :

- "short" gearbox : 20TA08 (instead of 20CH98)
- "long" gearbox : 20TA09 (instead of 20CH78)

WARNING : It is not possible to change only the gearbox or the clutch housing.

The Replacement Parts Department markets both types of assembly possibilities.

8 – HYDRACTIVE E.C.U. II

New : hydractive E.C.U. II with program index label H5 S2J2G (instead of H4 S2J2G) (progressive introduction).

The hydractive electronic control unit has parameter tables which can be selected for each vehicle version (index label H5 S2J2G).

Hydractive E.C.U. II (H5 S2J2G) can replace the hydractive E.C.U.s bearing the program index label H4 S2J2G, H4 S2H2G, H4 S2I2G H4 S2G2G.

WARNING : The programmes of the hydractive E.C.U.s bearing the index label H5 S2J2G H4 S2J2G, H4 S2G2G should be selected when the E.C.U.s are fitted to the vehicle.

NOTE : Once the stocks are exhausted, only the new parts will be available (index label H5 S2J2G).

Procedure of programme selecting :

- at after sales, the programme selection procedure is carried out with a diagnostic tool (SOURIAU 26A station or ELIT test unit)
- refer to the bulletin N° (XM–1 (9) MAN 108931)

www.WorkshopManuals.co.uk

MODIFICATIONS TO THE ELECTRICAL SYSTEM : 1997 MODEL YEAR RANGE

1 – PREAMBLE

The electrical equipment changes after the following modifications :

- generalisation of the high frequency remote control on vehicles with central locking (marketed in Europe)
- coded anti–theft device with automatic unlocking by high frequency remote control
- new alarm control unit and new siren (alarm PSA 3)
- control for the automatic turning–off of the rear fog lamps
- new amperage of the F10 fuse

NOTE : Vehicles marketed for distant export will still have an infra–red remote control.

2 – FUSE F10

New amperage of the F10 fuse : amperage 10A instead of 5A.

The F10 fuse ensures the protection of the lighting circuit of the switches located on the following components :

- console
- dashboard
- doors
- heater control panel

3 – CODED ANTI–THEFT DEVICE WITH AUTOMATIC UNLOCKING BY HIGH FREQUENCY REMOTE CONTROL

Applicable since R.P.O. number : 7084.

Vehicle application : CITROEN XM (all types) (marketed in Europe).

This coded anti–theft device functions with a high frequency remote control permitting :

- the remote control unlocking of the vehicle locks
- the remote control of the alarm (according to equipment)
- the automatic unlocking of the coded anti–theft device (without entering the "user" code on the ADC keyboard

Operating principle : see documentation – all models : coded anti–theft device with automatic unlocking by high frequency remote control.

NOTE : It is still possible for the user to revert to manual unlocking of the coded anti–theft device. In case of a failure of the high frequency remote control, the vehicle can be unlocked with the ignition key, and to unlock the coded anti–theft device unlocked using the ADC keyboard. The commands (locking, unlocking, deadlocking) of the high frequency remote control are displayed by the direction indicators and the side repeaters.

The shape, location and number of buttons on the remote control depend on the vehicle :

- vehicle with central locking : 1 button
- vehicle with deadlocking : 2 buttons

WARNING : The technology used does not permit the use of more than 2 remote controls per vehicle.

The system is made up of the following components :

- A : high frequency remote control unit
- B : coded anti–theft device

NOTE : The 2 units A and B are connected electrically.

3.1 – High frequency remote control

The high frequency remote control unit is made up of the following components :

- 2 remote controls (according to equipment)
- 1 high frequency receiver

Location : under the glove compartment (can be accessed after removal of the dashboard lower trim panel).

The high frequency remote control sends orders through high frequency radio waves.

NOTE : Infra–red remote controls send orders via an invisible (infra–red) light beam.

3.2 – Coded anti–theft device

The system operates thanks to a new ADC keyboard and an engine management system adapted to the following engines :

- petrol engines : injection ECU
- diesel engines (electronic injection) : injection ECU
- diesel engines (mechanically–operated injection) : injection pump equipped with a coded anti–theft device module

The coded anti–theft device is identical to that for the vehicles marketed for the 1996 – 1997 Model Year.

www.WorkshopManuals.co.uk

4 – ANTI–THEFT ALARM PSA 3

Vehicle application : CITROEN XM (all types).

Application : 1997 Model Year.

The PSA 3 type anti–theft alarm replaces the PSA 2 type anti–theft alarm.

4.1 – Special features

New alarm housing.

New compact siren without any remote lock for neutralisation.

It is possible to neutralise the siren from the passenger's compartment, using a specific procedure.

Location of the alarm housing : under the glove compartment.

Location of the alarm siren :

- left hand drive vehicles : in the R.H. scuttle panel aperture
- right hand drive vehicles : in the L.H. scuttle panel aperture

The following operations can be carried out using the alarm switch :

- putting the volumetric protection out of operation
- disarming the alarm in emergency
- neutralising the siren

NOTE : The LED and the alarm switch are located on the dashboard, under the central air vents.

4.2 – Neutralising the siren

Neutralisation procedure (with ignition on) :

- press the alarm switch and keep it depressed until the red alarm LED starts flashing (LED flashing quickly for 5 seconds then extinguishing)
- release the alarm switch

WARNING : The siren is no longer neutralised as soon as the vehicle central locking is released (de–activating the alarm).

4.3 – Disarming the alarm in emergency

When unlocking doors with the key, the alarm siren sounds.

Siren disarming emergency procedure :

- switch on ignition
- press the alarm switch for a minimum of 2 seconds

WARNING : Disarming the siren in an emergency is possible only if it has been sounding for less than 10 seconds and if the alarm switch has been triggered 2 seconds maximum after switching on the ignition.

NOTE : If this procedure is not observed, the siren will sound for 3 cycles of 30 seconds spaced by 5 seconds, then stop.

4.4 – Disconnecting/reconnecting the battery

4.4.1 – Disconnection of the battery

Disconnecting the battery during repairs does not require carrying out any specific operation (alarm de–activated).

4.4.2 – Reconnecting the battery

WARNING : Reconnecting the battery re–activates the alarm.

To avoid any untimely triggering of the alarm, carry out the following operations :

- reconnect the battery (red LED blinking)
- stop the alarm with the remote control (locking/unlocking button)

www.WorkshopManuals.co.uk

4.5 – Reminder of operation

The burglar alarm ensures 2 types of protection :
- a perimeter protection (bonnet, doors, tailgate)
- a volumetric protection of the passenger compartment

NOTE : The volumetric protection of the passenger compartment is operational 45 seconds after having activated the alarm (time required for the air volume inside the vehicle to stabilise).

4.5.1 – Alarm triggering conditions

Alarm is immediately triggered in the following cases (alarm activated) :
- opening or closing of one or several door(s)
- glass breakage
- attempt to neutralise the alarm
- ignition switched "+" occuring

The following actions result from the triggering of the alarm :
- siren operating with a modulated sound (for 30 seconds)
- dipped beams flashing once per second (for 30 seconds)
- memorising of alarm being triggered
- LED flashing rapidly (5 times per second) until ignition is switched on

After triggering, the alarm operates for 30 seconds then shifts to arming mode.

4.5.2 – Neutralising the volumetric protection

The volumetric protection may need to be neutralised in the following cases :
- windows open
- presence of an animal in the vehicle

Neutralisation procedure :
- switch off ignition
- press the alarm switch and keep it pressed down for at least 2 seconds (the red alarm LED lights up but does not flash)

NOTE : The perimeter protection is still active.

4.5.3 – Arming the alarm

WARNING : Locking a vehicle with a key does not activate the alarm.

Vehicle with central locking :
- press the remote control locking button
- the direction indicators will light up (for 2 seconds)
- the red alarm LED will flash at a frequency of once per second

Vehicle with deadlocking :
- press the remote control locking/unlocking button
- press the remote control deadlocking button
- the direction indicators will light up (for 2 seconds)
- the red alarm LED will flash at a frequency of once per second

4.5.4 – De–activating the alarm

WARNING : Opening a vehicle with a key causes the siren to sound.

Press the remote control locking/unlocking button :
- doors unlock
- the direction indicators will flash quickly (for 2 seconds)

4.5.5 – Swiss version

The alarm siren sounds 7 seconds after a break–in.

The dipped beams do not flash after the alarm has been triggered.

The alarm siren emits a sound of fixed frequency instead of variable.

The alarm siren and the vehicle horn operate simultaneously.

The alarm relay is used for controlling the horn of the vehicle instead of the dipped beams.

www.WorkshopManuals.co.uk

4.6 – Fault finding

If the LED lights when ignition is switched on, it means that a faulty connection between the alarm housing and the siren has been detected.

The testing of the function is carried out using the "ELIT" test unit or the "SOURIAU 26A" station (from the self–diagnostic socket).

WARNING : The alarm unit does not memorise faults.

5 – FOG LAMPS

New switch to prevent the rear fog lamps from being left on.

5.1 – Description

New parts :
- rear foglamps switch (one–touch)
- integrated relay control electronic box (green)

Location of the electronic box :
- left hand drive vehicles : on the dashboard frame (remove the glove compartment)
- right hand drive vehicles : near the junction box (remove the lower trim panel of the dashboard)

Location of the control switch : on the dashboard, under the central air vents.

Lay–out of the control box channels :

1	Input : control switch
2	Output : rear foglamps
4	Earth
5	Input : information of state of front fog lamps
6	Input : information of state of dipped beams
8	Input : information of state of side and tail lamps

5.2 – Operation

The rear fog lamps can be turned on when the following lamps are turned on :
- side and tail lamps
- dipped beam
- front fog lamps

The rear fog lamps will be turned off automatically when the following lamps are turned off :
- side and tail lamps
- dipped beam (front fog lamps turned off)
- front fog lamps (dipped beam turned off)

The rear fog lamps are not automatically turned off when the following lamps are turned off :
- dipped beam (front fog lamps turned on)
- front fog lamps (dipped beam turned on)

6 – ELECTRICAL HARNESSES

Modification to the electrical harnesses :
- panel harnesses
- front L.H. harness : location of the alarm siren
- fascia harness : high frequency remote control. Control for the automatic turning–off of the rear fog lamps
- engine wiring harness : BOSCH MP5.2 fuel injection. CITROEN XM 2l 16V (XU10J4R engine)

www.WorkshopManuals.co.uk

EVOLUTION : AIR CONDITIONING

1 – DESCRIPTION

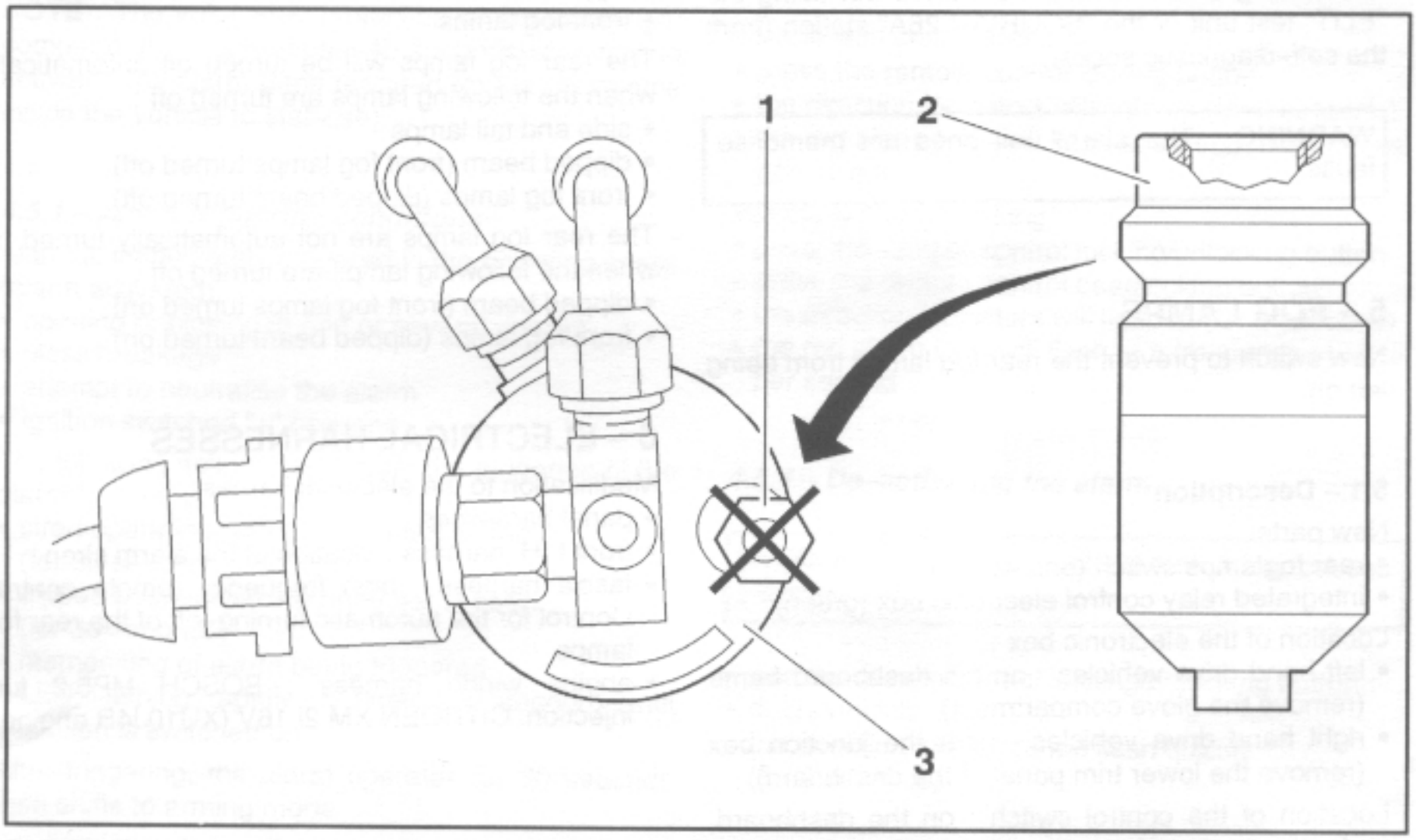


Fig : E1AP02VD

(1) hygrometric warning lamp.

(2) filler valve.

(3) dehydrator reservoir.

Replacement of the moisture warning indicator of the dehydrator reservoir by a high pressure circuit filler valve (all engines except DK5 ATE).

Certain vehicles are equipped with 2 high pressure circuit filler valves :

- one filler valve mounted on the dehydrator reservoir
- one filler valve implanted on the compressor/ dehydrator reservoir junction pipe (this filler valve will eventually be deleted)

NOTE : The high pressure circuit can be filled, with refrigerant fluid, by either one of the two filler valves.

2 – INTERCHANGEABILITY

A new dehydrator reservoir may replace an old dehydrator reservoir, but the reverse operation is prohibited.

Only new dehydrator reservoirs are available from the Replacement Parts Department.

www.WorkshopManuals.co.uk

BODY COLOURS : 1997 MODEL YEAR RANGE

1 – BODY COLOURS

Index :

- 1 : solid colour
- 2 : superlustre solid colour
- 3 : superlustre metallic paint
- 4 : superlustre pearl paint

1.1 – Colours deleted

			Allocation per trim level		
			Saloon		Estate
Colour	Material	Colour code	SX and VSX	EXCLUSIVE	SX and VSX
Tempest	3	ETK	x	x	
Silver moss	3	ERZ	x		

1.2 – Colours retained

			Allocation per trim level		
			Saloon		Estate
Colour	Material	Colour code	SX and VSX	EXCLUSIVE	SX and VSX
Polar white	1	EWP	x	x	x
Pale ivory beige	1	ECC	x		x
Quartz	3	EYC	x	x	x
Stratos blue	4	EPK	x	x	
Fijian blue	3	EMV	x		
Admiral blue	2	ENC	x		x
Midnight blue	4	EPG			x
Forest green	3	ESY	x		x
Emerald	4	ERY	x	x	x
Magenta	4	EKS	x	x	x
Bronze	4	EEB	x	x	x
Superlustre black	2	EXY	x	x	

1.3 – New colours

			Allocation per trim level		
			Saloon		Estate
Colour	Material	Colour code	SX and VSX	EXCLUSIVE	SX and VSX
Mercury	3	ETW	x	x	
Zephyr	3	EDQ	x		

www.WorkshopManuals.co.uk

2 – INTERIOR TRIM

2.1 – CITROEN XM Saloon

Trim level	Standard cloth	Options		
SX	Velour Megalithe			
VSX	Velour Louvre	Ouragan leather	Orage leather	Savane leather
EXCLUSIVE	Alcantara + Tempête leather	Ouragan leather	Savane leather	

2.2 – CITROEN XM Estate

Trim level	Standard cloth	Options		
SX	Velour Megalithe			
VSX	Velour Louvre	Ouragan leather	Savane leather	

© Reproduction ou traduction même partielle interdite sans l'autorisation écrite des Automobiles CITROËN

www.WorkshopManuals.co.uk

Xm

OCTOBER 1997

RPO No. 7511 ⟶

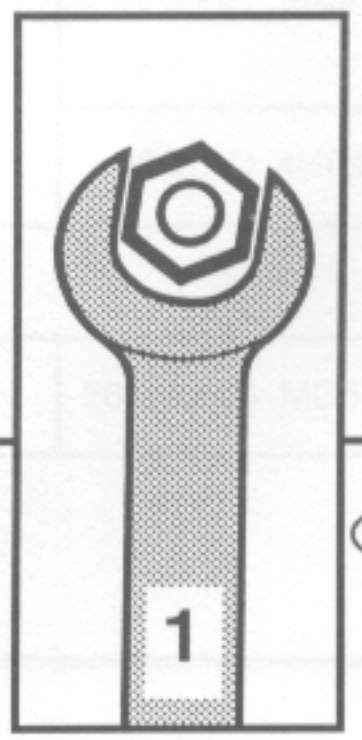
REF. 0 No XM 000-00/11

PRESENTATION

● 1998 MODEL YEAR

MAN 158931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".



GB

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

GENERAL SPECIFICATION

PRESENTATION : EUROPE 1998 MODEL YEAR RANGE 1

1 – Index 1
2 – Commercial range of CITROEN XM vehicles – Saloon –
3 – Commercial range of CITROEN XM vehicles – Estate 2

MECHANICAL DEVELOPMENTS : 98 MODEL YEAR RANGE 3

1 – Engine types 3
2 – Special features of the XM V6 –
3 – ECUs 4
4 – Brakes 5
5 – Pressure regulator 8

MODIFICATIONS TO THE ELECTRICAL SYSTEM : 1998 MODEL YEAR RANGE 9

PROTECTION AND SAFETY SYSTEMS

BODYWORK IMPROVEMENTS : 98 MODEL YEAR RANGE 10

1 – Summary of the evolutions 10
2 – Front grille –
3 – Side airbags 11
4 – Airbag 14

www.WorkshopManuals.co.uk

PRESENTATION : EUROPE 1998 MODEL YEAR RANGE

1 – INDEX

Ref. letters used in the tables "commercial range of vehicles" :

(a) = automatic gearbox	(l) = "long" gearbox
(m) = manual gearbox	(f) = fiscal rating in "HP" (France)

NOTE : All the vehicles meet the emission standard L3 (CEE 96).

2 – COMMERCIAL RANGE OF CITROEN XM VEHICLES – SALOON

Vehicle		Engine		Gearbox
Official designation	Trim level	Plate. Type	Power kW/hp. (f)	Reference. Type
CITROEN XM 2 l injection (1998 cc) :				
Y4–CZ	SX	RFV XU10J4R	97,4/135 (10)	20TA98 BE3 (m)
Y4–TV				20GZ1E 4HP18 (a)
Y4–TX			97,4/135 (7)	20TA09 BE3 (m) (l)
CITROEN XM 2 l turbo – CT (1998 cc) :				
Y4–GG	SX	RGX XU10J2TE	108/150 (9)	20GM32 ME5T (m)
	EXCLUSIVE			
Y4–TT	SX			20GZ1D 4HP18 (a)
	EXCLUSIVE			
CITROEN XM 6 cylinders (2946 cc) :				
Y4–WG	SX	ES9J4 XFZ	140/194 (15)	20LE3 ML5T (m)
	EXCLUSIVE			
Y4–WH	SX		140/194 (16)	20HZ02 4HP20 (a)
	EXCLUSIVE			
CITROEN XM turbo D12 (2088 cc) :				
Y4–GZ	For conversion into ambulance	P8C XUD11BTE	80/110 (6)	20GM31 ME5T (m)
	SX			
	EXCLUSIVE			
Y4–RN	SX			20GZ5D 4HP18 (a)
	EXCLUSIVE			
CITROEN XM 2,5 l turbo diesel (2446 cc) :				
Y4–NZ	SX	THY DK5ATE	94,5/130 (7)	20KM02(*) MG5TB (m)
	EXCLUSIVE			

(*) replaced by 20KM50 gearbox during the model year.

www.WorkshopManuals.co.uk

3 – COMMERCIAL RANGE OF CITROEN XM VEHICLES – ESTATE

Vehicle		Engine		Gearbox
Official designation	Trim level	Plate. Type	Power kW/hp. (f)	Reference. Type

CITROEN XM 2 l injection (1998 cc) :

Y4–GB	SX	RFV XU10J4R	97,4/135 (10)	20GM36 ME5T (m)
Y4–TU				20GZ1E 4HP18 (a)

CITROEN XM 2 l turbo – injection (1998 cc) :

Y4–GM	Varebiler	RGX XU10J2TE	108/150	20GM33 ME5T (m)
	SX			
Y4–TS	Varebiler			20GZ1D 4HP18 (a)
	SX			

CITROEN XM 6 cylinders (2946 cc) :

Y4–WJ	SX	ES9J4 XFZ	140/194 (15)	20LE33 ML5T (m)
Y4–TN			140/194 (16)	20HZ02 4HP20 (a)

CITROEN XM turbo D12 (2088 cc) :

Y4–MZ	Varebiler	P8C XUD11BTE	80/110 (6)	20GM31 ME5T (m)
	SX			
Y4–CW	Varebiler			20GZ5D 4HP18 (a)
	SX			

CITROEN XM 2,5 l turbo diesel (2446 cc) :

Y4–RM	Varebiler	THY DK5ATE	94,5/130 (7)	20KM02(*) MG5TB (m)
	SX			

(*) replaced by 20KM50 gearbox during the model year.

www.WorkshopManuals.co.uk

MECHANICAL DEVELOPMENTS : 98 MODEL YEAR RANGE

1 – ENGINE TYPES

The ES9J4 (XFZ) engine replaces the ZPJ (UFZ, UFY) engine.

For the engine V6, MG5T gearbox is replaced by the ML5T gearbox.

From 01/97, end of production of the ZPJ4 V6.24V engine.

Petrol and diesel engines which are marketed in EEC countries are manufactured in line with emission standard L3 (EURO 96).

Engine characteristics (European standards L3) :
- specific engine ECU
- specific catalytic converter (impregnation in precious metals increased)

2 – SPECIAL FEATURES OF THE XM V6

Vehicle application : XM saloon and estate.

The engine is manufactured from light alloy, mounted transversely and tilted at 0°.

Gearboxes :
- manual gearbox : type ML5T gearbox (that replaces MG5T)
- new automatic gearbox with 4 forward gears and electronic management of gear selection : type ZF 4HP20

Vehicle particular features :
- engine mounting (specific)
- 6+2–piston high pressure pump (specific)
- power assisted steering (all vehicle types; all destinations)
- power steering hydraulic circuit (with pressure regulator)
- SC/MAC : Anti–sink suspension system
- new brake pads with increased surface area

NOTE : The SC/MAC system makes it possible to limit the amount the vehicle sinks when stationary, engine off.

www.WorkshopManuals.co.uk

3 – ECUS

3.1 – Engine management E.C.U.

4 cylinders (1998 cc) :

Engine type	Gearbox	Injection system		
		Supplier. Type	PSA reference. Reference of the Manufacturer	Software version. Index
RFV XU10J4R	Manual. Automatic	BOSCH MP 5.2 (*)	96 309 013 80 0261204694	1037357305 26FM0000
RGX XU10J2TE	Manual. Automatic	BOSCH MP 3.2 (*)	96 304 296 80 0261200808	1037357230 26FM0349

6 cylinders (2946 cc) :

Engine type	Gearbox	Injection system		
		Supplier. Type	PSA reference. Reference of the Manufacturer	Software version. Index
UFZ ES9J4	Manual	BOSCH MP 7.0 (*)	96 255 524 80 2412900159A	1037358699 26FM0376
	Automatic		9625552580 2412900159E	1037355192 26FD0280

NOTE : (*) downloading an update to the ECU.

4 cylinder Turbo Diesel engine :

Engine type	Gearbox	Injection system		
		Supplier. Type	PSA reference. Reference of the Manufacturer	Software version. Index
P8C XUD11BTE	Manual. Automatic	LUCAS EPIC	96 305 092 80 R 040 100 16 C	41502211 0B
	Manual		96 314 459 80 R 040 100 16 C	41501411 0C
THY DK5ATE	Manual	BOSCH MSA 11 7.6	9628607180 00281001336	L3 16

3.2 – Automatic gearbox E.C.U. ZF 4HP20

Supplier : BOSCH (*).
Type : GS10.11.0.
PSA reference : 96 315 901 80.
Software version : PS028C4E.
(*) downloading an update to the ECU.

www.WorkshopManuals.co.uk

4 – BRAKES

Vehicle application : XM V6, XM 2.5TD.

Applicable since R.P. number : 7483.

New components :
- front brake caliper (Saloon and Estate)
- brake pads (Saloon and Estate)
- front brake discs
- rear brake pads with increased surface area
- rear brake discs (Saloons only)

4.1 – Front brakes

Single piston and floating caliper (Saloon and Estate) :
- piston : Ø = 60 mm
- reference : BENDIX 5Z0

Parking brake self–adjusting mechanism.

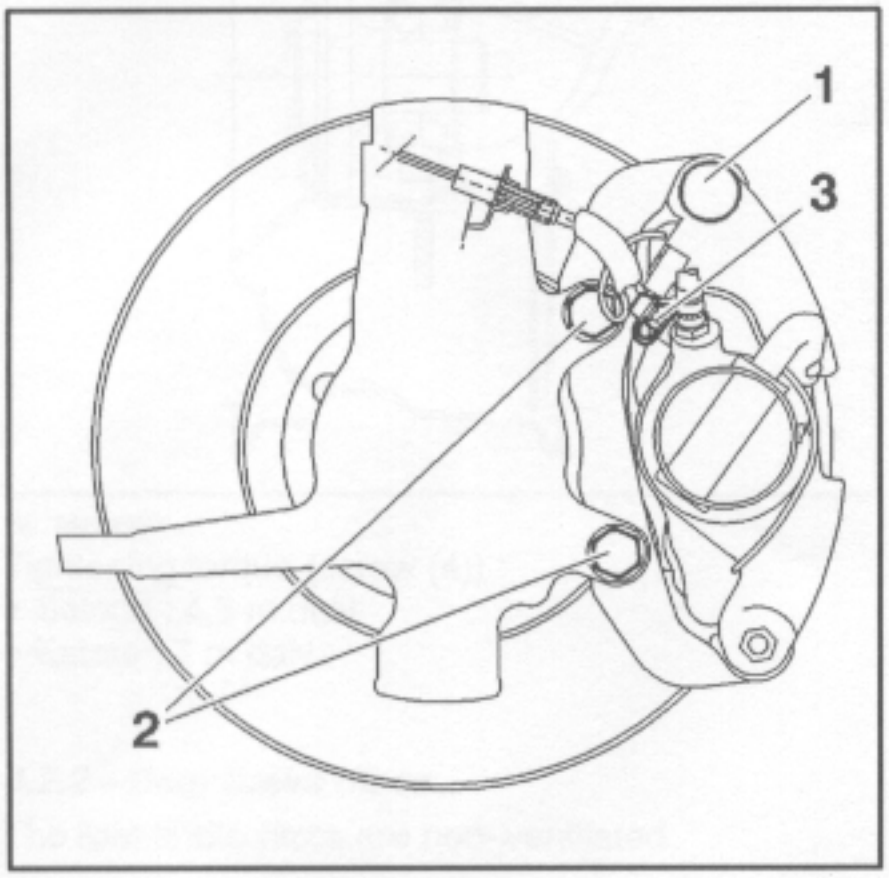


Fig : B3FP107C

Tightening torques :
- (1) guide pin : 2,5 m.daN
- (2) caliper bolt : 10,5 m.daN
- (3) bleed screw : 0,7 m.daN
- floating brake caliper lower bolt : 3 m.daN

www.WorkshopManuals.co.uk

4.1.1 – Front brake discs

Front discs with ventilated discs.

Vehicle		Saloon	Estate
Diameter (mm)		288	
Thickness (mm)	Min.	26	
	Max.	28	
Maximum run out (mm)		0,05	
Max. thickness variation on one circumference (mm)		0,01	

4.1.2 – Front brake pads

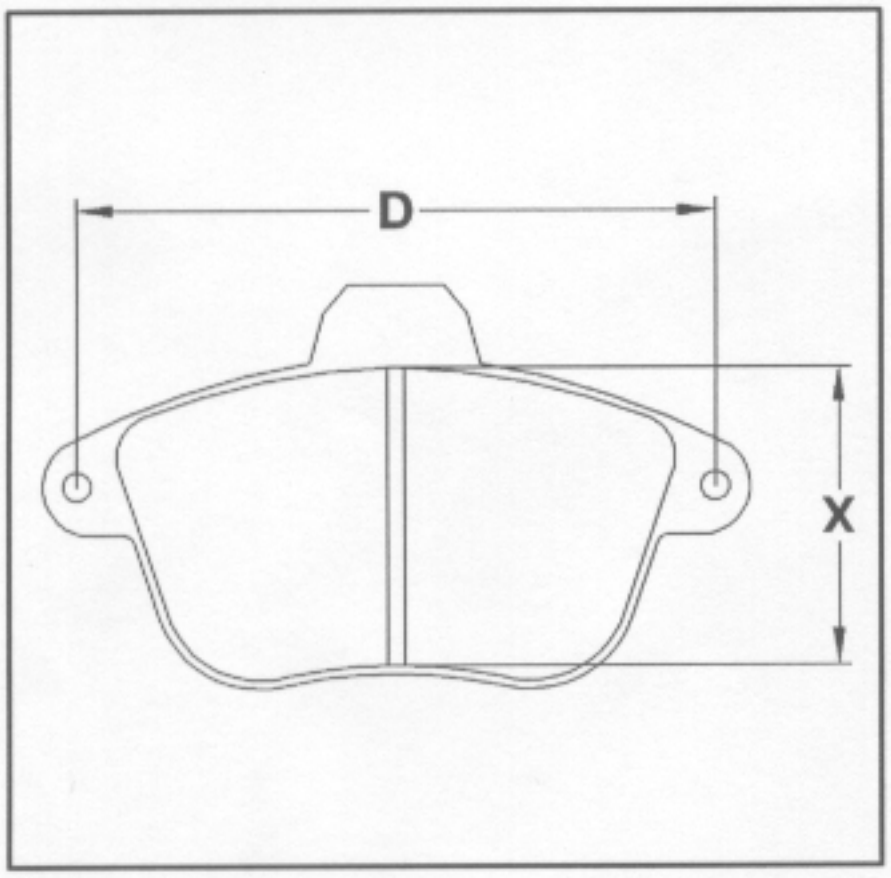


Fig : B3FP108C

Brake pads :

Vehicle		Saloon	Estate
Make		ABEX	
Material		FERF 949	
Width D (mm)		158	
Height X (mm)		59,5	
Thickness (mm)	Min.	2	
	Max.	11,8	
Surface area of each pad		61,5 cm²	

Asbestos free brake linings with wire for wear warning lamp in instrument panel.

www.WorkshopManuals.co.uk

4.2 – Rear brakes

4.2.1 – Rear brake calipers

CITROEN fixed brake calipers fitted with 2 pistons.

Piston dia. (mm) :
- Saloon : 33
- Estate : 40

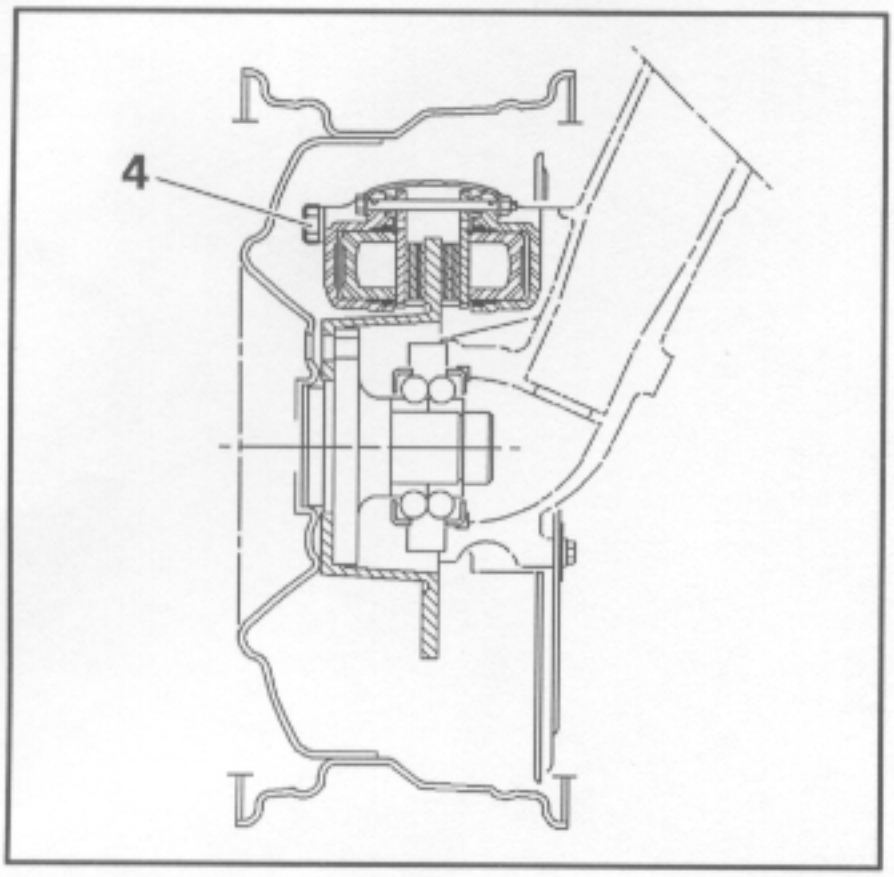


Fig : B3FP109C

Tightening torque (screw (4)) :
- Saloon : 4,5 m.daN
- Estate : 7 m.daN

4.2.2 – Rear brake discs

The rear brake discs are non–ventilated.

Vehicle		Saloon	Estate
Diameter (mm)		232	251
Thickness (mm)	Min.	7	10
	Max.	9	12
Maximum run out (mm)		0,05	
Max. thickness variation on one circumference (mm)		0,01	

4.2.3 – Rear brake pads

Brake pads :

Vehicle		Saloon	Estate
Make		ABEX	
Material		FERF 949 asbestos free	
Thickness (mm)	Min.	2	
	Max.	11,4	
Surface area of each pad		19 cm²	36,25 cm²

www.WorkshopManuals.co.uk

5 – PRESSURE REGULATOR

Vehicle application : all types XM.

Progressively applied from RPO No 7483.

From the 98 Model Year onwards : use of the new CITROEN hydraulic union for the supply to the pressure regulator.

Modified parts :

- pressure regulator : yellow paint mark
- pipe connecting the HP pump and the pressure regulator
- seal

WARNING : Mixing old and new parts is prohibited.

IMPERATIVE : Each time work is carried out, the seal must be replaced.

www.WorkshopManuals.co.uk

MODIFICATIONS TO THE ELECTRICAL SYSTEM : 1998 MODEL YEAR RANGE

The electrical equipment evolves with the following modifications :

- third stop lamp (Saloon and Estate)
- removal of the inertia switch on diesel models
- side airbag (depending on the version)
- seat belt buckle with "seat belt unfastened" detector (warning lamp in the display panel)
- new gearbox ECU protection fuse (*)
- new electrical harness (*)
- new instrument panel (*)
- dashboard and door wiring harnesses modified following deletion of the deadlocking option (except Great Britain)
- tailgate harness adapted for a third stoplamp
- programme selector for automatic gearbox (*)

NOTE : (*). Specific to the ZF 4HP20 gearbox.

www.WorkshopManuals.co.uk

BODYWORK IMPROVEMENTS : 98 MODEL YEAR RANGE

1 – SUMMARY OF THE EVOLUTIONS

Third stop lamp.

Front grille.

Side airbag.

2 – FRONT GRILLE

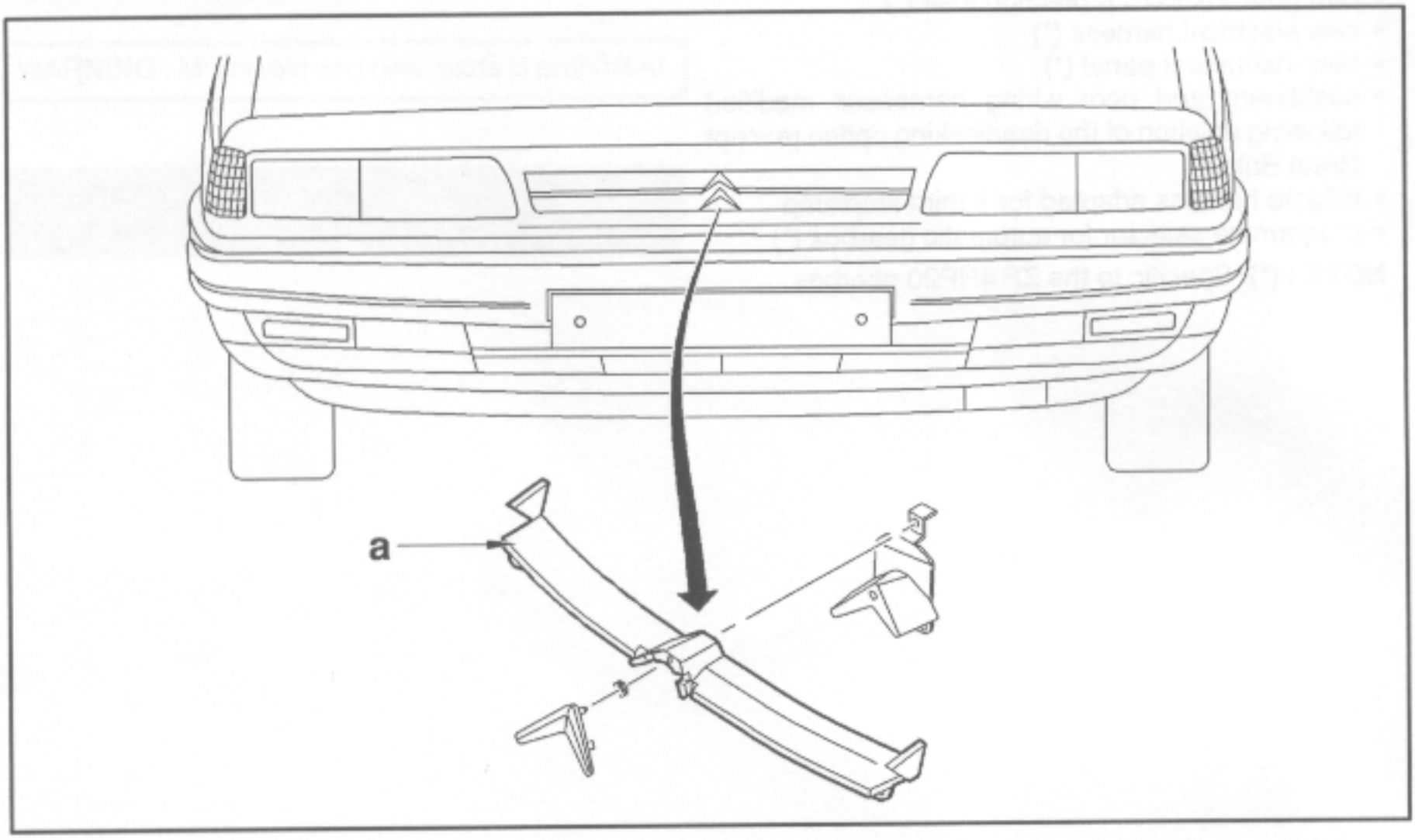


Fig : C4AP10QD

"a" : new central grille bar.

The new central grille bar is equipped with new chevrons.

The new parts can fitted in place of the early parts.

NOTE : The grille remains unchanged.

www.WorkshopManuals.co.uk

3 – SIDE AIRBAGS

3.1 – Preamble

Applicable : 05/97.

Vehicle application : CITROEN XM.

3.2 – Presentation



Fig : C5GP04GC

The side airbags are complementary to the driver and passenger airbags and the pyrotechnic seat belts.

The side airbag does not act as a protective shield but pushes the occupant away imparting an initial lateral speed, significantly reducing the risk of injury.

Airbag capacity : 12 litres.

WARNING : Wearing safety belts remains mandatory.

WARNING : The post–fitting of side airbags is prohibited.

IMPERATIVE : Never fit covers to a seat equipped with a side airbag.

Equipment complementary to the side airbags system :

- a device added to the doors diffuses the residual energy of the impact on the pelvis of the passenger
- seat belt buckle with "seat belt unfastened" detector (warning lamp in the display panel)

3.3 – Identification of the vehicles



Fig : C5JP06AC

(1) diagnostic warning lamp (in instrument panel).

(2) sticker.

Vehicles fitted with side airbags can be identified by the following :

- a specific diagnostic warning lamp in the instrument panel
- a sticker located on the trim moulding of both front seats

www.WorkshopManuals.co.uk

3.4 – Protection zones

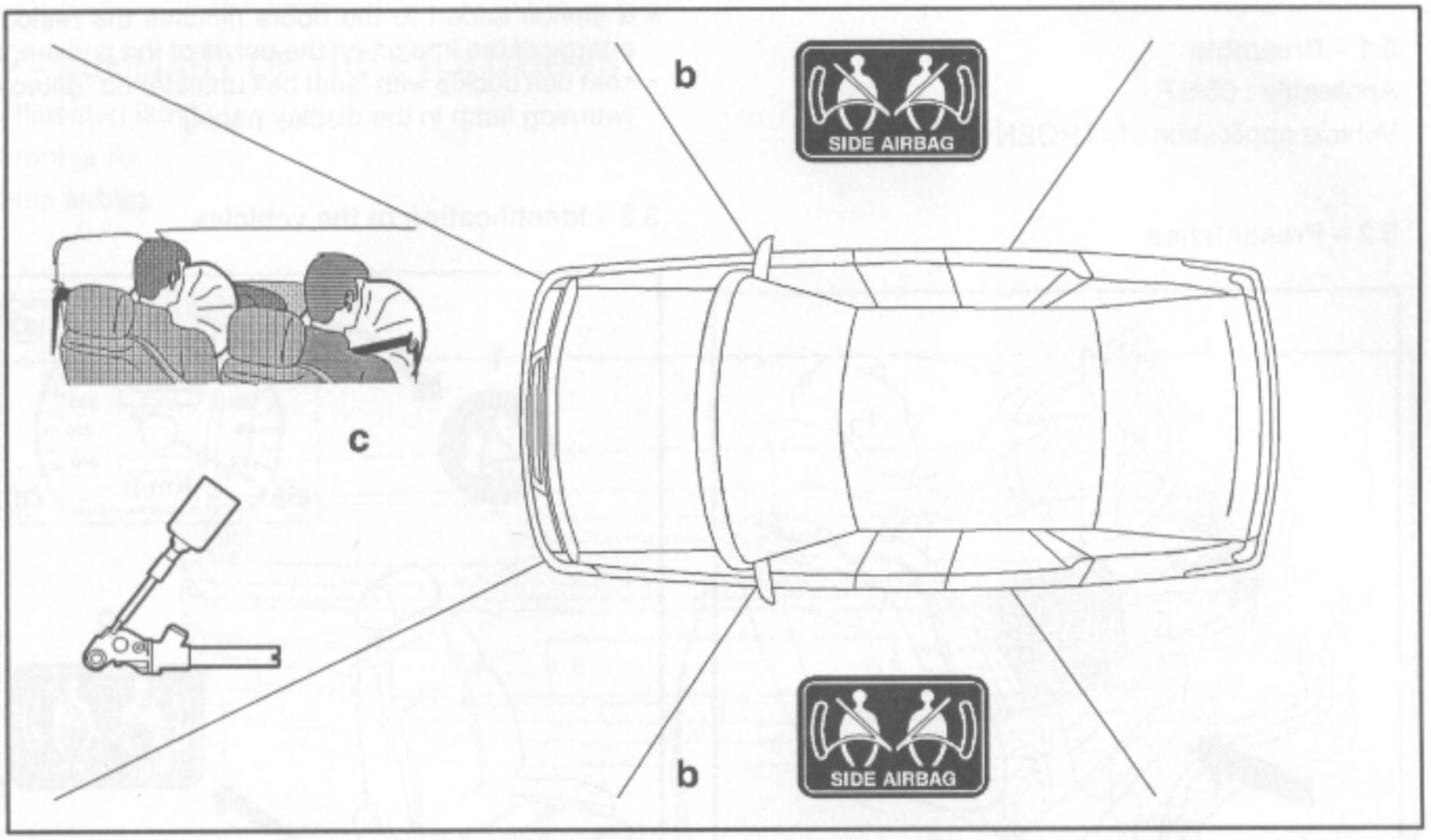


Fig : C5JP06CD

"b" : area of impact in which the side airbag may be deployed.

"c" : area of impact in which the pyrotechnic seat belts and driver's and passenger's airbags may be deployed.

The side airbags will only be deployed in the event of a side impact.

www.WorkshopManuals.co.uk

3.5 – Presentation of the system

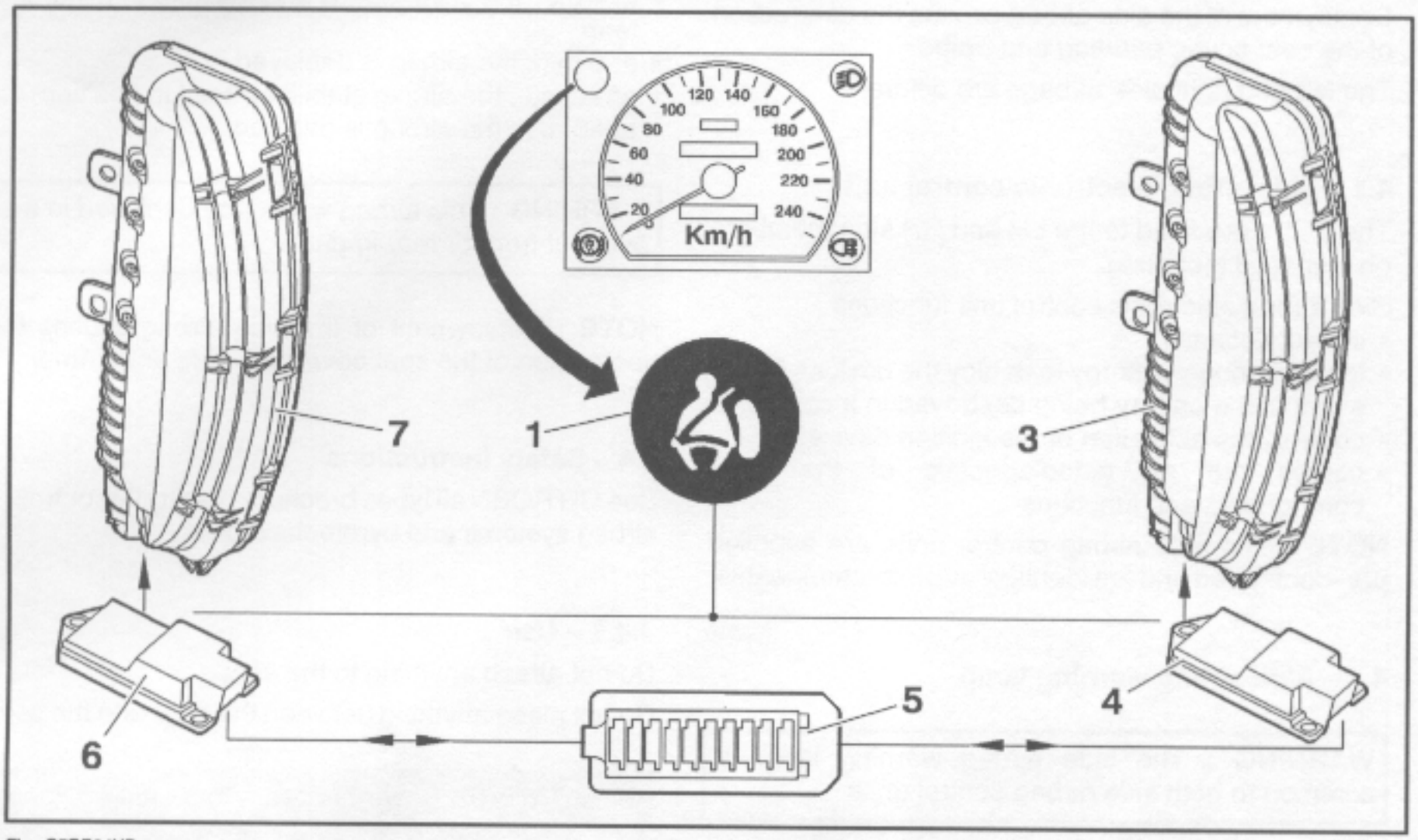


Fig : C5GP04HD

System composition :

- (1) diagnostic warning lamp (in instrument panel)
- (3) right side airbag
- (4) side airbag electronic control unit (R.H. side)
- (5) central diagnostic socket
- (6) side airbag electronic control unit (L.H. side)
- (7) left side airbag
- specific wiring harnesses with red connector beneath the seat (connector located to the side of the centre console)

The diagnosis of the function is effected via the "ELIT" test unit or the "SOURIAU 26A" station.

NOTE : The airbag diagnostic warning lamp is retained (diagnostic check of the driver's airbag, passenger's airbag and pyrotechnic seat belts).

www.WorkshopManuals.co.uk

4 – AIRBAG

Deployment of the side airbag causes the destruction of the seat cover, padding and frame.

The left and right side airbags are different.

4.1 – Side airbag electronic control unit

The ECUs are fixed to the LH and RH side members on a special mounting.

Side airbag electronic control unit functions :
- impact detection
- to store enough energy to deploy the devices (in the event of the battery being destroyed in a collision)
- controls the activation of the ignition devices
- carries out an autodiagnostic of the main components and functions

NOTE : The side airbag control units are supplied pre–configured and are identical and interchangeable.

4.2 – Side airbag warning lamp

WARNING : The side airbag warning lamp is common to both side airbag control units.

4.2.1 – Normal operation of the warning lamp

The warning lamp illuminates for 6 seconds on switching on ignition.

4.2.2 – Abnormal functioning

Various possibilities :
- the warning lamp doesn't light up when ignition is switched on
- the control lamp doesn't go out after delay time of 6 seconds after ignition has been switched on
- the warning lamp blinks during 5 minutes, then remains lit up. The control lamp remains lit up when the ignition is next switched on
- the warning lamp blinks during 5 minutes, then remains lit up. The warning lamp goes off after time delay of 6 seconds when the ignition is next switched on

4.3 – Operating principle of the device

See CITROEN all types brochure : side airbags.

In the event of a major side impact, the electronic control unit triggers the deployment of the side airbag on the side of the impact, which thus acts as a buffer between the occupant and the vehicle side.

Combustion of the propergol generates a gas under pressure within a few milliseconds, which consequently tears the cover and inflates the airbag.

Operation stages :
- at 4 ms : the cover opens and the seat trim starts to tear
- at 6 ms : the airbag is deployed
- at 10 ms : the airbag stabilises itself in position
- at 60 ms : the airbag is deflated

WARNING : This airbag will not be deployed in the event of front or rear impacts.

NOTE : Deployment of the side airbag causes the destruction of the seat cover, padding and frame.

4.4 – Safety instructions

See CITROEN all types brochure : centrally controlled airbag systems and pyrotechnic belts.

4.4.1 – Use

Do not attach anything to the seat.

Do not place anything between the door and the seat.

IMPERATIVE : Never fit covers to a seat equipped with a side airbag.

4.4.2 – Repairs

Before taking any action, the following operations should be carried out :
- switch on ignition
- check the correct operation of the side airbag warning lamp in the instrument panel
- take out the ignition key
- disconnect the battery negative terminal
- wait for at least 2 minutes (wait 10 minutes in case of abnormal operation of the "airbag" warning lamp)

IMPERATIVE : Do not handle an electrically supplied ECU.

IMPERATIVE : The ignition elements are explosives, never try to open an airbag or ignition device with a tool, or by heating it. Never connect wiring harnesses to airbag cushion, other than the ones provided by the manufacturer.

© "The intellectual property rights relating to the technical information contained in this document belong exclusively to the Manufacturer. Reproduction, translation or distribution in whole or in part without prior written authorisation from the Manufacturer is forbidden".

www.WorkshopManuals.co.uk

Xm

JANUARY 1998

REF. 0 No XM 000-00/12

PRESENTATION

- MULTIPLEXING
  - Turbo D 12 (XUD 11 ATE) Batch T1 (chassis n° 00GX5001 ⟼ 00GX5200)
  - Turbo D 12 (XUD 11 BTE) Batch T2 (chassis n° 00WC0401 ⟼ 00WC1000)
  - 2.5 l Turbo D (DK5 ATE) Batch T3 (chassis n° 00NZ6001 ⟼ 00NZ6300)

MAN 158931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

1

GB

www.WorkshopManuals.co.uk

CONTENTS

GENERAL SPECIFICATION

GENERAL : MULTIPLEXED CITROEN XM 1

1 – Identification of the vehicles 1
2 – General 2
3 – Non "multiplexed" functions –
4 – Wiring diagram –
5 – Operating principle –

PRESENTATION : T1 VEHICLES 3

1 – General 3
2 – Equipments –
3 – Changes in multiplexing –

PRESENTATION : T2 VEHICLES 4

1 – General 4
2 – Equipments –
3 – Changes in multiplexing 5

PRESENTATION : T3 VEHICLES 6

1 – General 6
2 – Equipments –
3 – Changes in multiplexing 7

ELECTRICAL EQUIPMENT

SPECIFICITIES : ELECTRICAL EQUIPMENT (ALL TYPES) 8

1 – Battery 8
2 – Alternator –

ADAPTATION : ELECTRICAL ACCESSORIES (ALL TYPES) 9

1 – Caravan tow–hitch 9
2 – Radio telephone 10
3 – Third stop lamp –
4 – Other electrical accessories 11

www.WorkshopManuals.co.uk

GENERAL : MULTIPLEXED CITROEN XM

1 – IDENTIFICATION OF THE VEHICLES

Models marketed	CITROEN XM 2.1l Turbo D (1)	CITROEN XM 2.1l Turbo D (2)	CITROEN XM 2.5l Turbo D (3)
Engine Type	XUD11 ATE/L (P8B plate)	XUD11 BTE/L (P8C plate)	DK5 ATE/L3 (THY plate)
Date of launch	From 1995 Model Year	From 1996 Model Year	From 1997 Model Year
Reserved chassis number sequence	00GX 5001 to 00GX 5200	00WC 0401 to 00WC 1000	00NZ 6001 to 00NZ 6300
Manufacturing batch	T1 batch	Batches T2 and T2b	Batches T3 and T3b

(1). Mechanical injection pump.

(2). LUCAS DIESEL EPIC electronic injection pump.

(3). BOSCH MSA 11 7.6 VP36 electronic injection pump.

NOTE : EPIC : Electronically Programmed Injection Control.
Multiplexed vehicles marketed in 1994 model year (T0 batch) : refer to the manual MAN 008932 (chapter 12).

www.WorkshopManuals.co.uk

2 – GENERAL

The most common current application of the "multiplexing" technology is the telephone.

The principle of "multiplexing" involves sending messages on the same cable (without mixing them up) to the various recipients.

Applied to the aeronautical industry, "multiplexing" technology effectively fulfils the highest reliability and performance levels required, by reducing the length and complexity of the electrical and electronic circuits of aeroplanes.

The "multiplexing" technology applied to the automotive industry offers the following improvements :

- simplification of electrical communication networks
- increased reliability of the electrical communication networks
- new development possibilities : a single electrical harness (BUS) can carry various items of information, orders, commands, measurements and power

2.1 – Multiplexed CITROEN XM

The CITROEN XM MTX has bodywork "multiplexing" which means that a certain number of bodywork components are controlled by "multiplexing" (in particular the headlamps and rear lamps).

A central ECU, at the heart of the "multiplexing", ensures operations are performed correctly.

The central ECU, like a radar, scans the various slave modules connected to the electrical harness (BUS), processes echoes and returns orders.

To reduce the number of connections and improve reliability, several slave modules are incorporated or combined with the components.

NOTE : Slave modules = ECUs specific to "multiplexing", also called stations.

2.2 – Additional functions

"multiplexing" allows new or automatic functions to be made available.

Examples :

- dot matrix with increased number of messages
- safety devices (automatic substitution of bulbs in the event of faulty filaments)
- rear wiper indexed to reverse gear
- diagnostics generalised to all multiplexed functions (aids repairs)

3 – NON "MULTIPLEXED" FUNCTIONS

The following are non multiplexed functions :

- diesel fuel injection
- ABS
- hydractive suspension
- airbag
- pyrotechnic seat belts
- electric windows

4 – WIRING DIAGRAM

Refer to the electricity manual MAN 208935.

5 – OPERATING PRINCIPLE

Refer to the manual MAN 008932 (chapter 12).

www.WorkshopManuals.co.uk

PRESENTATION : T1 VEHICLES

1 – GENERAL

Since 01/95, a limited series of MULTIPLEXED 12 Turbo D CITROEN XM has been marketed.

Trim level : EXCLUSIVE.

Data :
- type code : Y4–GX (saloon)
- engine types : XUD11ATE/L (P8B plate)
- gearbox : ME5T (20GM31 plate)
- marketing country : FRANCE (only)

NOTE : The chassis number is included within the reserved sequence 00GX5001 to 00GX5200.

2 – EQUIPMENTS

Standard equipment :
- ABS
- driver airbag
- inertia switch (fuel cut–off)
- alarm (volumetric and perimeter protection)
- coded anti–theft device (controlled by the central unit)
- pyrotechnic seat belts
- automatic air conditioning
- central locking (with infrared remote control)
- hydractive suspension
- passenger's side mirror indexed to reverse gear

Optional equipment : sun roof.

Options not available :
- automatic gearbox
- heated seats

3 – CHANGES IN MULTIPLEXING

3.1 – Electrical architecture

NOTE : The organisation of the multiplexing buses is the same as for AM 1994 multiplexed vehicles. The multiplexing operating principle remains the same refer to the electricity manual MAN 008932 (chapter 12 N° 510–00/1).

Addition of a specific physical bus connecting the radio to the central unit allowing the following to be displayed on the display grid :
- vehicle function messages (in French only)
- messages specific to multiplexing (in French only)
- audio system messages (in English only)

Inclusion of new electrical components by the multiplexing ECUs.

3.2 – Electronic control units

New ECUs :
- central unit : Mux C 1.2.0 software version for 1995 model year vehicles
- SIMIAC sensor data acquisition
- screen wipe/wash
- passenger compartment
- front LH door
- front RH door
- console
- junction box (4 mm central unit mounting bolt instead of 3.5 mm)
- tailgate

New locations :
- front left hand headlamp (in front of the battery, on the wing inner panel)
- front right hand headlamp (in front of the ECU housing, on the wing inner panel)
- screen wipe/wash (next to the screen washer bottle filler orifice)
- front LH door (on the interior door trim panel)
- front RH door (on the interior door trim panel)

www.WorkshopManuals.co.uk

PRESENTATION : T2 VEHICLES

1 – GENERAL

Since 07/95, a limited series of MULTIPLEXED 12 Turbo D CITROEN XM has been marketed.

2 trim levels :
- from 07/95 : VSX
- from 01/96 : HARMONY – VSX

Data :
- type code : Y4–WC (saloon)
- engine types : XUD11BTE/L (P8C plate)
- gearbox : ME5T (20GM31 plate)
- marketing country : FRANCE (only)

NOTE : The chassis number is included within the reserved sequence 00WC0401 to 00WC1000.

2 – EQUIPMENTS

2.1 – VSX trim level (T2 range)

Standard equipment :
- ABS
- driver's and passenger's airbag (*)
- inertia switch (fuel cut–off)
- alarm (volumetric and perimeter protection)
- coded anti–theft device (controlled by the injection ECU)
- pyrotechnic seat belts
- automatic air conditioning
- central locking (with infrared remote control)
- trip computer
- adjustment of the passenger's side mirror indexed to reverse gear
- hydractive suspension

NOTE : From 01/1996 onwards (batches T2 and T2b).

Optional equipment :
- deadlocks (keyboard with a high frequency remote control)
- sun roof

Options not available :
- automatic gearbox
- heated seats

2.2 – HARMONY

Standard equipment :
- driver's and passenger's airbag
- inertia switch (fuel cut–off)
- alarm (volumetric and perimeter protection)
- coded anti–theft device (controlled by the injection ECU)
- pyrotechnic seat belts
- automatic air conditioning
- central locking (with infrared remote control)
- trip computer
- adjustment of the passenger's side mirror indexed to reverse gear
- hydractive suspension

Optional equipment :
- ABS
- deadlocks (keyboard with a high frequency remote control)
- sun roof
- "AUDIO 3040 RDS" system with radio controls on the steering wheel

Options not available :
- automatic gearbox
- heated seats

www.WorkshopManuals.co.uk

3 – CHANGES IN MULTIPLEXING

3.1 – Electrical architecture

NOTE : The organisation of the multiplexing buses is the same as for T1 multiplexed vehicles. The multiplexing operating principle remains the same : refer to the manual MAN 008932 (chapter 12 N° 510–00/1).

Changes in multiplexing :

- integration of the injection ECU into the vehicle architecture (LUCAS DIESEL EPIC injection)
- coded anti–theft immobiliser managed by the injection ECU
- from 01/96 : integration of the driver's and passenger's airbag and pyrotechnic seatbelts central control system
- integration of the TEVES ABS replacing the BENDIX ABS

NOTE : EPIC : Electronically Programmed Injection Control.

3.2 – Electronic control units

3.2.1 – New ECUs

New ECUs :

- central unit : Mux D 1.3.0 software version for 1996 model year vehicles. Mux D 2.3.0 software version for vehicles with passenger's airbag
- sensor acquisition suited to LUCAS DIESEL electronic injection
- display strip unit

3.2.2 – Location

Unchanged locations (same as 1995 model year 2.1 Turbo D vehicles) (T1 batch).

www.WorkshopManuals.co.uk

PRESENTATION : T3 VEHICLES

1 – GENERAL

Since 07/1996, a limited series of MULTIPLEXED 2.5L Turbo D CITROEN XM has been marketed.

Data :

- type code : Y4–NZ (saloon)
- engine types : DK5ATE/L (THY plate)
- gearbox : MG5T (20KM00 plate)
- marketing country : FRANCE (only)
- trim level : EXCLUSIVE

NOTE : The chassis number is included within the reserved sequence 00NZ 6001 to 00NZ 6300.

2 – EQUIPMENTS

Standard equipment :

- ABS
- driver's and passenger's airbag
- alarm (volumetric and perimeter protection)
- coded anti–theft device (controlled by the injection ECU)
- pyrotechnic seat belts
- automatic air conditioning
- inertia switch (*) (fuel cut–off)
- trip computer
- indexed adjustment of door mirrors on selection of reverse gear
- alarm with deadlocking (*) (keyboard with a high frequency remote control)
- hydractive suspension
- "AUDIO 3040 RDS" system with radio controls on the steering wheel
- automatic windscreen wiper(s)
- driver's seat and side mirrors with memory functions

Option : sun roof.

(*) except 1998 model year.

NOTE : The automatic gearbox option is not available.

2.1 – Automatic windscreen wiper(s)

This device, which is activated using the windscreen wiper control, operates in the following way :

- to ensure the front and rear wipers operate when it is raining
- it continually adjusts the wiper speed according to the amount of rain falling
- it adjusts the rear screen wiping mode according to the operating mode of the front windscreen wiper and the vehicle speed

NOTE : The manual wiper controls are retained (single wipe, normal speed, high speed, intermittent wipe).

Operating principle of the device : refer to the manual MAN 008932 (chapter 12).

WARNING : Only CITROEN XMs with MULTIPLEXING, 1997 and 1998 Model Years, are equipped with this system. This system can not be post–equipped on other vehicles.

2.2 – Driver's seat and side mirrors with memory functions

This system allows two people with different statures, who both regularly drive the vehicle, to immediately reselect their own individual settings after having pressed a specific keypad located on the driver's seat.

The system automatically stores and repositions the following components (for 2 drivers) :

- driver's seat settings (front/rear, backrest angle, front seat height adjuster, rear seat height adjuster)
- two side mirrors (driving and reversing positions)

NOTE : The settings can be modified and stored as desired.

Operating principle of the device : refer to the manual MAN 008932 (chapter 12).

WARNING : Only CITROEN XMs with MULTIPLEXING, 1997 and 1998 Model Years, are equipped with this system. This system can not be post–equipped on other vehicles.

www.WorkshopManuals.co.uk

3 – CHANGES IN MULTIPLEXING

3.1 – Electrical architecture

The following components are incorporated into the electrical architecture :

- rain sensor providing automatic windscreen wiper operation (upon instruction from driver)
- memory unit (driver's seat and side mirrors with memory function)
- new SIMIAC sensor acquisition unit
- new I/S bus type, connecting the SIMIAC sensor acquisition unit to the central unit

NOTE : SIMIAC (sensor data receiver control unit).
I/S (inter–system).

3.2 – Electronic control units

3.2.1 – New ECUs

New ECUs :

- central unit : Mux E software suited to the new management functions of the automatic wiper, driver's seat and side mirrors with memory function
- SIMIAC sensor data acquisition
- front LH door
- front RH door
- rain sensor (automatic wiper(s))
- memory unit (driver's seat and side mirrors with memory function)

The SIMIAC sensor data receiver control unit acquires information from the various sensors located in the engine compartment.

NOTE : SIMIAC (sensor data receiver control unit).

The sensor acquisition unit is connected to the central unit by :

- a normal bus (unchanged)
- a specific fast bus which operates in a specific manner (late type)

3.2.2 – Location of units

New locations :

- rain sensor (on the windscreen)
- memory unit (on driver's seat)

Unchanged locations : all other ECUs.

www.WorkshopManuals.co.uk

SPECIFICITIES : ELECTRICAL EQUIPMENT (ALL TYPES)

1 – BATTERY

12 volt battery (lead battery only).

Allocations :
- XM 2.1l Turbo D : 400 Ah capacity (type L3)
- XM 2.5l Turbo D : 450 Ah capacity (type L3)

Precautions to take with the batteries :
- make sure that the posts and terminals are clean : if they become sulfated, slacken and clean them
- in case of slight overfilling : apply a bead of grease to the base of the battery terminal

WARNING : Do not disconnect the battery terminals while the engine is running. Disconnect the two terminals from the battery before recharging it.

The level of electrolyte in batteries fitted with removable plugs must always cover the elements. If necessary, top up the battery electrolyte level with distilled water.

Disconnecting the battery causes the following to happen :
- the radio is locked (the code must be entered in order to use it again)
- the anti–pinch window mechanism must be reinitialised (driver's side)

2 – ALTERNATOR

2.1 – General

WARNING : The alternators of multiplexed CITROEN XM are specific.

2.2 – Allocations

Vehicle	2.1l Turbo D	2.5l Turbo D
Supplier	MELCO	VALEO
Supplier reference	A004T03793A	None
Class	12	12

NOTE : Part of the protection for the ECUs is provided by the alternator.

A mechanical foolproofing device is fitted to the following components :
- alternator excitation terminal
- excitation circuit terminal

2.3 – Description of the foolproofing device

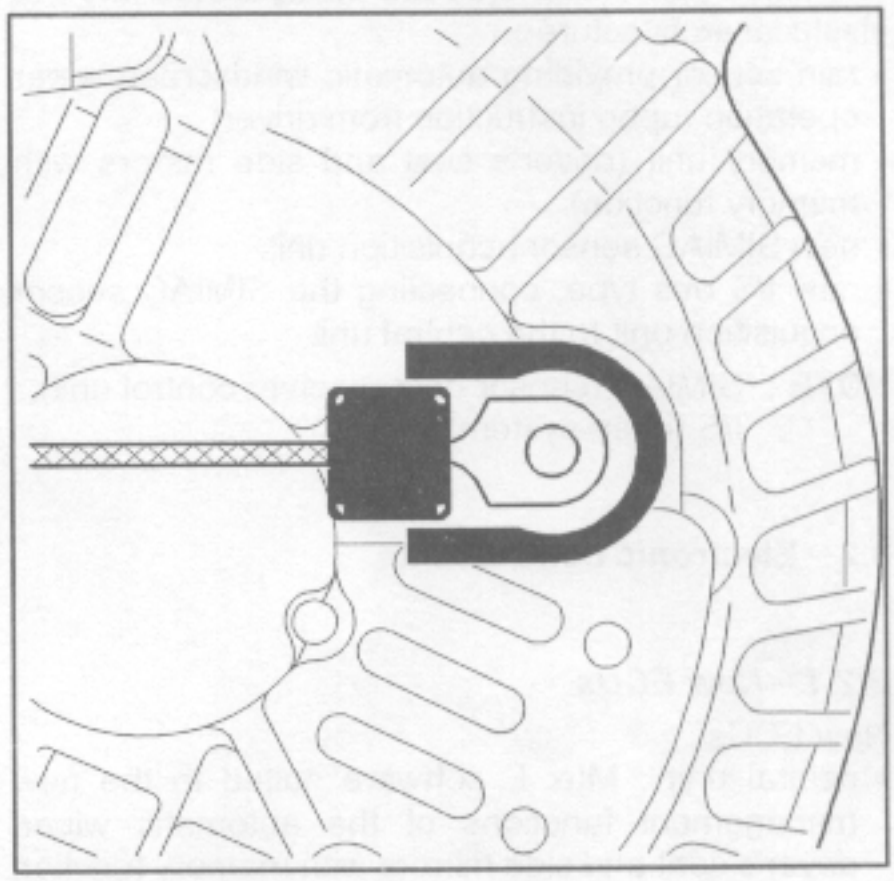


Fig : D6–P006C

The excitation circuit terminal is fitted with a special moulding preventing another type of alternator from being fitted.

WARNING : The excitation circuit terminal must not be separated from the alternator.

IMPERATIVE : When repairing, fitting any other type of alternator is prohibited.

www.WorkshopManuals.co.uk

ADAPTATION : ELECTRICAL ACCESSORIES (ALL TYPES)

1 – CARAVAN TOW–HITCH

Vehicle application : multiplexed CITROEN XM (all types).

1.1 – Pre–equipment

The following components are fitted as standard :
- an ECU (towing unit)
- an electrical harness, routed through the rear cross member, fitted with connectors compatible with the accessories caravan towing harness (7 or 13 pin plug)

NOTE : The ECU provides an interface with the electronic architecture of the vehicle.

1.2 – Connectors available

White 3–way connector (supply to reversing lights and permanent +) : 1 mm^2 wire cross section.

2 4–way blue connectors (supply to stop lamps and indicators).

Brown 5–way connector (fog lamps).

1.3 – Fitting the caravan towing harness

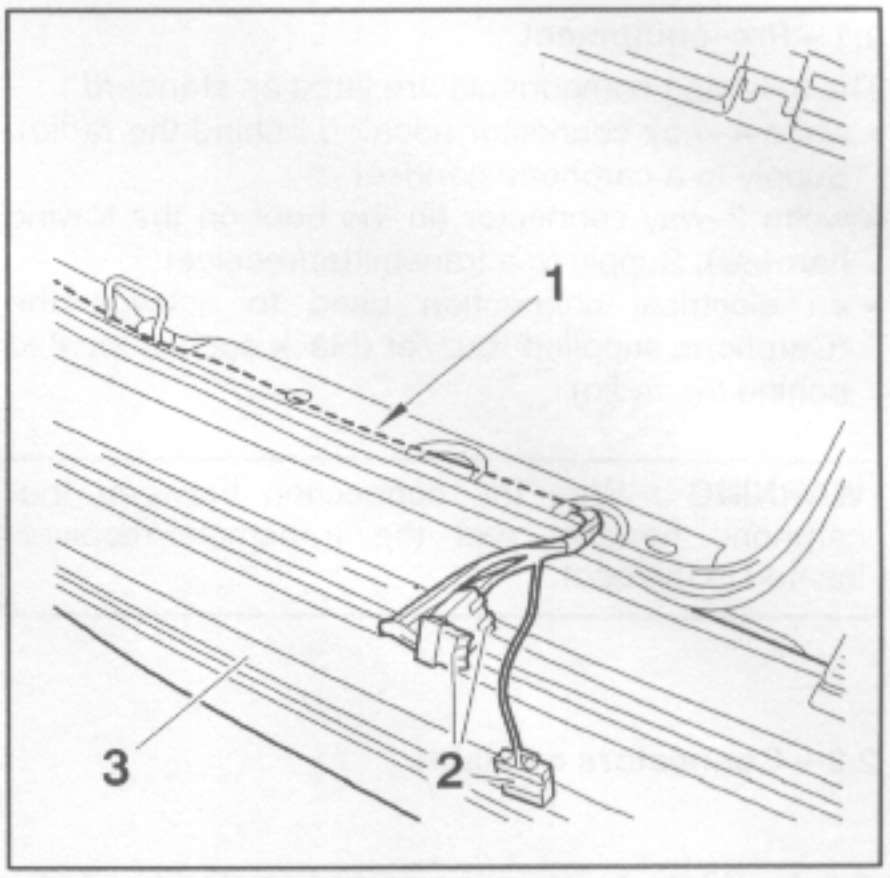


Fig : D6AP01FC

(1) harness routing.

(2) connectors. (compatible with the accessories harness).

(3) rear bumper.

The following operations should be carried out :
- remove the trim from the rear cross member
- connect the accessories harness to the relevant connectors (2) in the hollow part of the rear cross member

www.WorkshopManuals.co.uk

2 – RADIO TELEPHONE

Vehicle application : multiplexed CITROEN XM (all types).

2.1 – Pre–equipment

The following components are fitted as standard :

- white 4–way connector (located behind the radio). Supply to a carphone handset
- white 2–way connector (in the boot on the towing harness). Supply to a transmitter/receiver
- an electrical connection used to activate the "Carphone supplied" buzzer (black socket, located behind the radio)

WARNING : Wire the connection between the carphone handset and the transmitter/receiver located in the boot.

2.2 – Connectors available

2.2.1 – White 4–way connector (located behind the radio)

Allocation of the connector channels :

- channel 1 : radio mute (*)
- channel 2 : ignition controlled +
- channel 3 : permanent +
- channel 4 : earth

2.2.2 – White 2–way connector (in the boot on the towing harness)

Allocation of the connector channels :

- channel 1 : permanent +
- channel 2 : earth

NOTE : (*) function used for muting the sound of the audio system when making a phone call.

2.3 – Operation of the radio mute function

When channel 1 of the 4–way white connector is connected to +12 volts, the audio system mutes the sound (cassette and CD player switched off when using the carphone).

When channel 1 of the 4–way white connector is not connected to the earth, the sound of the audio system is activated.

2.4 – Operation of the buzzer : carphone supplied

When the "carphone supplied" information electrical connection is connected to + 12 volts (ignition on), an audible tone is emitted (buzzer on control panel).

When the "carphone supplied" information electrical connection is connected to + 12 volts, an audible tone is emitted when the ignition is switched on (buzzer on control panel).

When the "carphone supplied" information electrical connection is not connected to earth, no audible tone is emitted.

This function can be used to detect the following cases :

- carphone energised
- carphone on stand–by reminder when the ignition is switched off

2.5 – Fitting

Access to the 4–way white connector requires the radio to be removed beforehand.

3 – THIRD STOP LAMP

Vehicle application : multiplexed CITROEN XM. All types except for : 1998 Model Year.

3.1 – Pre–equipment

There is no pre–equipment for installing a third stop lamp.

A third stop lamp can be connected to the tailgate unit.

www.WorkshopManuals.co.uk

3.2 – Fitting

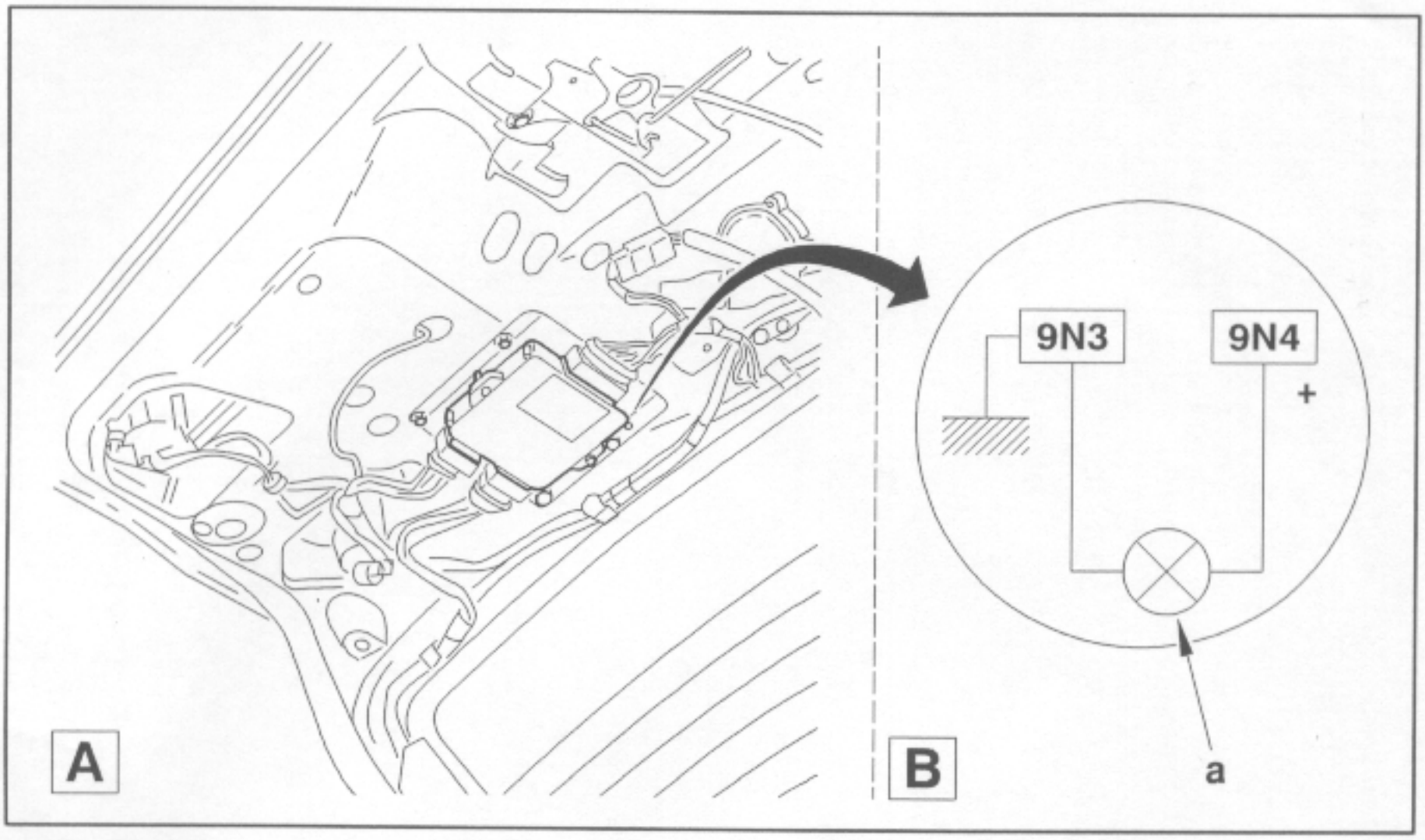


Fig : D6AP01GD

A : location of the tailgate unit.

B : connection diagram.

The tailgate unit is located on the tailgate lining.

Remove the trim panel.

The unit has 3 connectors.

The third stop lamp is connected to the 9–way black connector (see diagram B).

Maximum bulb power : 25 W.

IMPERATIVE : Do not exceed the maximum power allowed by the ECU.

4 – OTHER ELECTRICAL ACCESSORIES

Do not connect to the electrical harnesses for installing any other electrical accessories.

IMPERATIVE : It is forbidden to connect to the electrical harnesses.

www.WorkshopManuals.co.uk

Xm

FEBRUARY 1998

RPO No: 7483

REF. 0 No XM 000-00/13

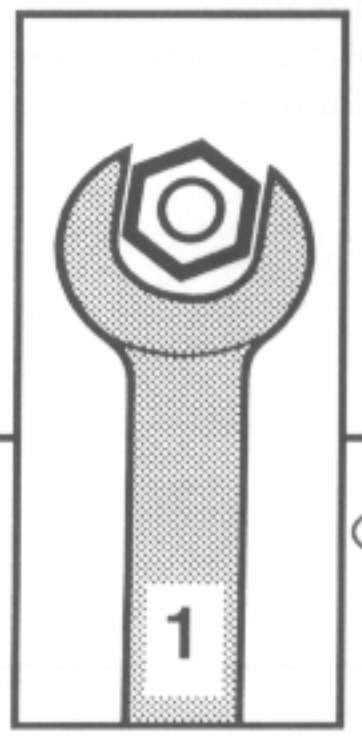
PRESENTATION

XM V6 (ES9J4 engine 2946 cm³)

- GENERAL SPECIFICATIONS
- POWER UNIT
- GEARBOX
- SOURCE-RESERVE OF PRESSURE
- STEERING SYSTEM
- SUSPENSION
- BRAKES
- AIR CONDITIONING

MAN 158931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".



GB

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

CONTENTS

GENERAL SPECIFICATION

GENERAL : CITROEN XM V6 ..... **1**

1 – Marketed range of vehicles 1
2 – General specifications 2
3 – Wheels and tyres 3

POWER UNIT

PRESENTATION : ES9J4 ENGINE **4**

1 – Presentation : ES9J4 engine 4
2 – Principal construction features of the ES9J4 engine 6
3 – Cylinder block 7
4 – Cooling system 10
5 – Fuel supply 13
6 – Induction circuit –
7 – Injection system 14
8 – Exhaust 17

GEARBOX

PRESENTATION : 4HP20 AUTOMATIC GEARBOX **18**

1 – General 18
2 – Identification of the vehicles 20
3 – Difference between ZF 4HP18 and ZF 4HP20 gearboxes 21
4 – Driver information – use 22
5 – Fault management 24
6 – General architecture : ZF 4HP20 automatic gearbox 25
7 – Operating principle 28

PRESENTATION : ML5T GEARBOX **31**

1 – Gearbox 31
2 – Hydraulic clutch control 32

SOURCE – RESERVE OF PRESSURE

SPECIAL FEATURES : PRESSURE SOURCE AND RESERVE CIRCUIT **33**

1 – Preamble 33
2 – 6+2 piston high pressure pump –
3 – Power steering hydraulic circuit 34

www.WorkshopManuals.co.uk

CONTENTS

STEERING SYSTEM

SPECIAL FEATURES : STEERING **36**

1 – Special features 36
2 – Data –
3 – Tightening torques 37

SUSPENSION

SPECIAL FEATURES : SUSPENSION **38**

1 – Suspension components 38
2 – Anti–roll bar –
3 – SC/MAC system 39
4 – Suspension spheres 40

BRAKES

SPECIAL FEATURES : BRAKING SYSTEM **42**

1 – Front brakes 42
2 – Rear brakes 43

AIR CONDITIONING

SPECIAL FEATURES : REFRIGERATION SYSTEM **44**

1 – Synopsis 44
2 – Refrigerant fluid 45
3 – Refrigeration compressor clutch –

www.WorkshopManuals.co.uk

GENERAL : CITROEN XM V6

Vehicle application : XM saloon and estate.

The vehicles in question are fitted with a new 6 cylinder, 24 valve, 3 litre capacity engine : ES9J4 engine type (that replaces ZPJ).

The engine is manufactured from light alloy, mounted transversely and tilted at 0°.

Commercial designation : CITROEN XM V6.

The injection and ignition are "pressure–speed" type with 2 injections and 2 sparks per engine cycle.

Gearboxes :

- manual gearbox : ML5T gearbox (that replaces MG5T)
- new automatic gearbox with 4 forward gears and electronic management of gear selection : type ZF 4HP20 gearbox

Vehicle specific features :

- engine mounting assembly (specific)
- 6+2–piston high pressure pump (specific)
- power assisted steering (all vehicle types; all destinations)
- power steering hydraulic circuit (with pressure regulator)
- SC/MAC : Citroën system for maintaining a constant ground clearance
- new brake fitting surface area of brake pads increased

NOTE : The SC/MAC system makes it possible to limit the amount the vehicle sinks when stationary, engine off.

1 – MARKETED RANGE OF VEHICLES

Ref. letters used in the tables "commercial range of vehicles" :

- (a) = automatic gearbox
- (m) = manual gearbox
- (f) = fiscal rating in "HP"

1.1 – "Saloon" version

Vehicle		Engine		Gearbox
Official designation	Trim level	Plate (d) Type	Power kW/hp (f) (in HP)	Reference Type
Y4–WG	VSX	ES9J4 XFZ	140/194 (15)	20LE33 ML5T (m)
	EXCLUSIVE			
Y4–WH	SX		140/194 (16)	20HZ02 4HP20 (a)
	EXCLUSIVE			

1.2 – "Estate" version

Y4–WJ	SX	ES9J4 XFZ	140/194 (15)	20LE33 ML5T (m)
Y4–TN			140/194 (16)	20HZ02 4HP20 (a)

NOTE : All the vehicles meet the emission standard L3 (CEE 96).

www.WorkshopManuals.co.uk

2 – GENERAL SPECIFICATIONS

2.1 – Performances

	"Saloon" version		"Estate" version	
	Manual gearbox	Automatic gearbox	Manual gearbox	Automatic gearbox
0 to 400 m, standing start (DIN load)	16.1 s	17.2 s	16.5 s	17.6 s
0 to 1000 m, standing start (DIN load)	29.4 s	31.1 s	30.2 s	31.8 s
0 to 100 km/h (DIN load)	8.4 s	10.2 s	8.9 s	10.7 s
Max. speed	233 km/h	230 km/h	228 km/h	225 km/h

2.2 – Consumption (litres per 100 km)

	"Saloon" version		"Estate" version	
	Manual gearbox (litres per 100 km)	Automatic gearbox (litres per 100 km)	Manual gearbox (litres per 100 km)	Automatic gearbox (litres per 100 km)
Urban cycle	15.9	18	15.9	18
Extra–urban	8	8.4	8	8.4
Mixed	10.9	11.9	10.9	11.9

2.3 – Weights (kg)

		"Saloon" version		"Estate" version	
		Manual gearbox (kg)	Automatic gearbox (kg)	Manual gearbox (kg)	Automatic gearbox (kg)
Unladen weight in running order		1625	1666	1690	1730
Gross vehicle weight		2080	2155	2220	2260
Gross train weight		3500	3545	3640	3680
Max. trailer weight	Unbraked	750	750	750	750
	Braked	1500	1500	1500	1500
Max. nose weight		80	80	80	80
Max. roof rack load		80	80	100	100

www.WorkshopManuals.co.uk

3 – WHEELS AND TYRES

	Tyres (rolling circumference)	Wheels	Inflation pressure (in bar)		
			Ft	Rr	Sp
"Saloon" version. Manual gearbox	205/65 R15 V (1.970 m)	Steel wheel : 6J15 H2 5.45	2.5 2.7(1)	1.9 2(1)	2.7
"Saloon" version. Automatic gearbox		Spare wheel : 6J15 H2 5.45	2.5 2.7(1)		
"Estate" version. Manual gearbox		Light alloy wheel : 6J15 CH 5.43	2.5	2.5	
"Estate" version. Automatic gearbox			2.5	2.5	

Ft : front wheel.
Rr : rear road wheel.
Sp : spare wheel.
(1) when the vehicle is travelling at a speed of more than 200 kmh.

3.1 – Snow tyre fitting

First fitting	"Snow" equipment		
205/65 R15 V	XM+S 130 (190 km/h)	XM+S 330 (210 km/h)	XM+S 260 (1) (160 km/h)
Steel wheel : 6J15 H2 5.45 Light alloy wheel : 6J15 CH 5.43 (2)	205/65 R15 94T	205/65 R15 94H	205/65 R15 94Q

Tyres (1) MUST be studded.
(2) : use the bolts adapted to the wheel types (bolts with flat or conical bearing surface).

3.2 – Speeds in km/h per 1000 rpm

	Tyres (rolling circumference)	Vehicle speed (km/h)					
		1st	2nd	3rd	4th	5th	Reverse
Manual gearbox	205/65 R15 V (1.970 m)	8.72	15.9	23.75	31.41	38.65	9
Automatic gearbox		10.95	20.9	29.77	41.36	—	11.59

www.WorkshopManuals.co.uk

PRESENTATION : ES9J4 ENGINE

1 – PRESENTATION : ES9J4 ENGINE

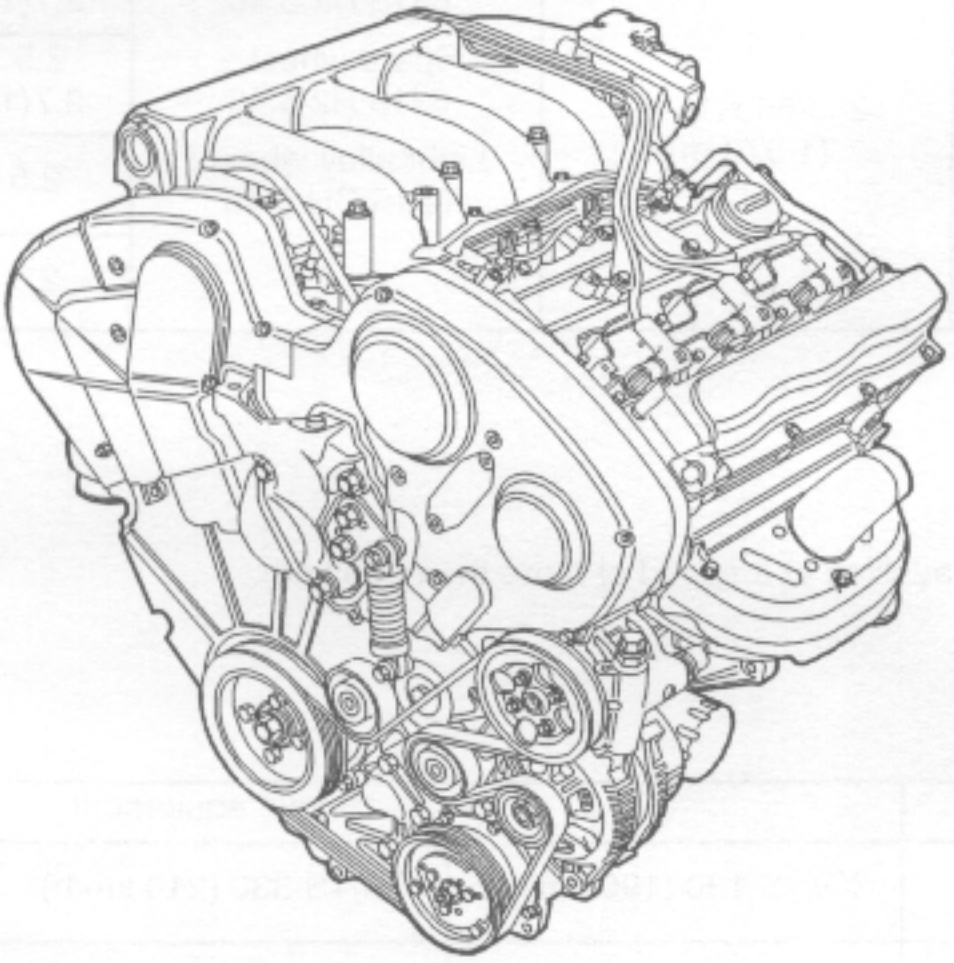


Fig : B1BP1GJD

Principal construction features of the ES9J4 engine :
- petrol engine with 6 cylinders in 60° Vee formation
- 24 valve engine with 4 overhead camshafts driven by a toothed belt

1.1 – Data

Engine code	ES9J4
Legislation type	XFZ
Capacity (cc)	2946
Number of cylinders	6 in V at 60°
Bore x stroke (mm)	87 x 82.6
Compression ratio	10.5/1
Max. power (E.E.C)	140 kW at 5500 rpm
Max. power (DIN)	194 hp at 5500 rpm
Max. torque (E.E.C.)	26.7 m.daN at 4000 rpm
Max. torque (DIN)	27.8 m.kg at 4000 rpm
Emission standard	L3 (EURO 96)
Fuel	Unleaded premium 95 and 98 RON
Catalytic converter	Yes
Injection system	Multipoint injection (semi–sequential)
Supplier	BOSCH
Type	MP7.0

www.WorkshopManuals.co.uk

1.2 – Power and torque curves

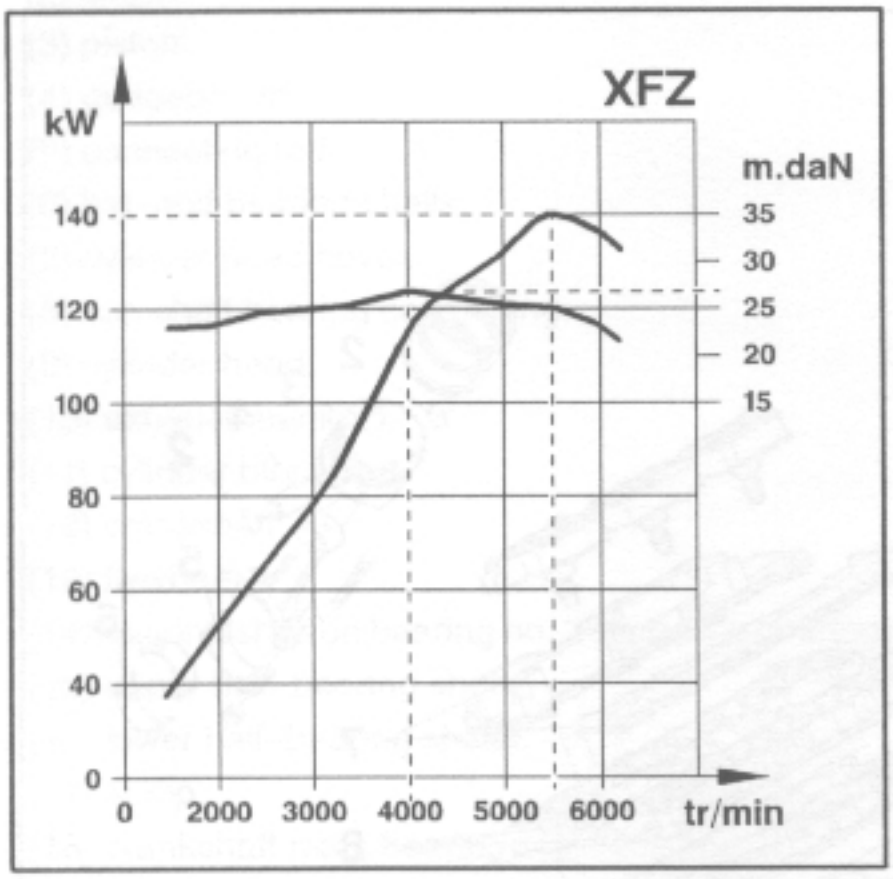


Fig : E1AP046C

www.WorkshopManuals.co.uk

2 – PRINCIPAL CONSTRUCTION FEATURES OF THE ES9J4 ENGINE

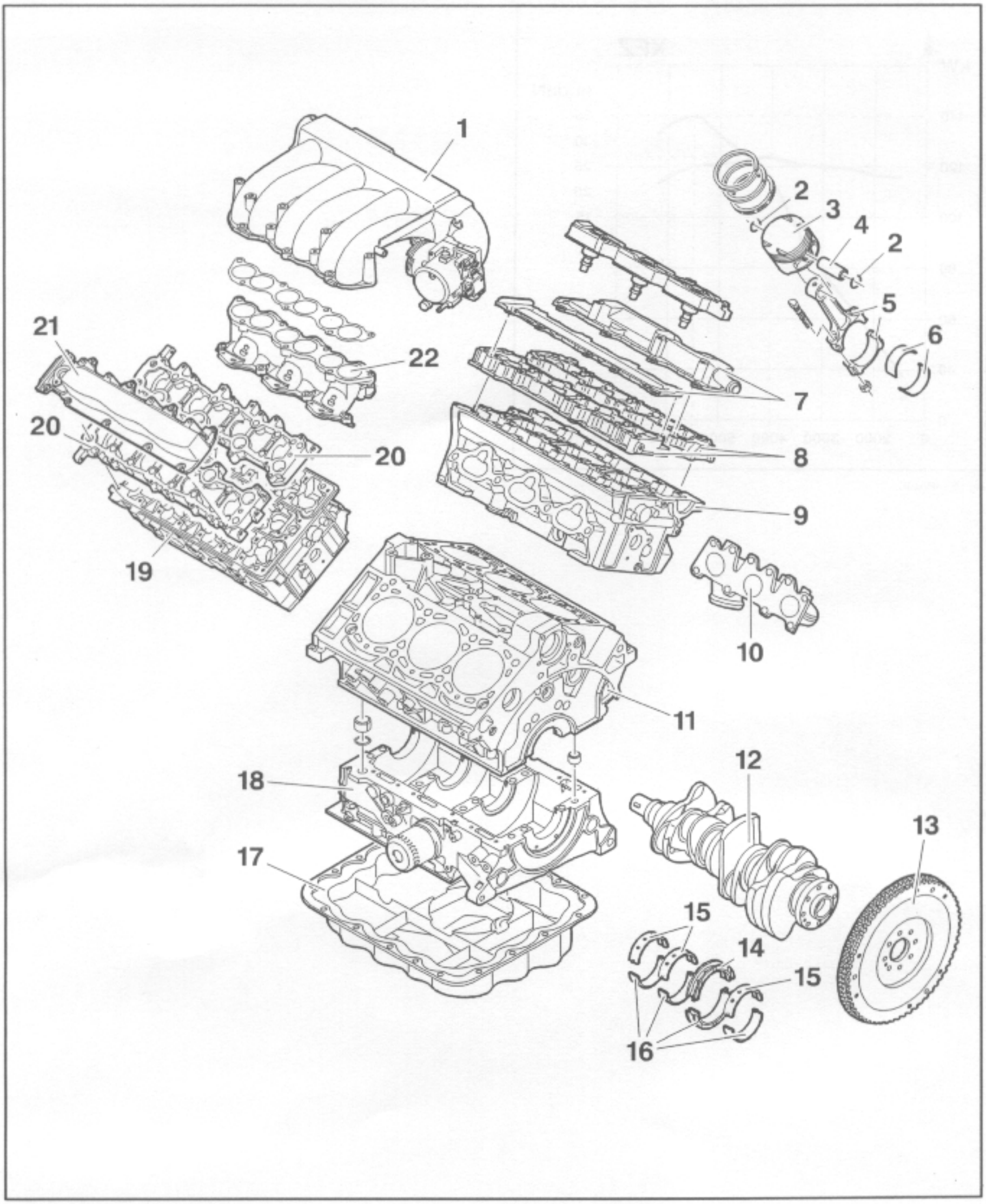


Fig : B1BP1LCP

www.WorkshopManuals.co.uk

(1) inlet manifold.
(2) circlip.
(3) piston.
(4) gudgeon pin.
(5) connecting rod.
(6) big–end bearing shells.
(7) cylinder head cover.
(8) camshaft bearing cap casing.
(9) cylinder head.
(10) exhaust manifold.
(11) cylinder block.
(12) crankshaft.
(13) flywheel.
(14) bearing shell on bearing no. 2 (end stop bearing).
(15) upper half–bearing shells.
(16) lower half–bearing shells.
(17) sump.
(18) crankshaft main bearing cap casing.
(19) cylinder head.
(20) cylinder head cover.
(21) camshaft bearing carriers.
(22) inlet manifold.

3 – CYLINDER BLOCK

The light alloy cylinder block is fitted with cast iron liners on assembly.

The light alloy crankshaft bearing cap casing incorporates the 4 cast iron bearing caps.

3.1 – Reciprocating gear

3.1.1 – Crankshaft

It is a 4 bearing steel crankshaft.

Crankshaft endfloat is controlled by the integral thrust washers of the no.2 main bearing shells.

3.1.2 – Crankshaft bearing shells

Plain shell bearings bearing cap casing side.

Grooved shell bearings (cylinder block side).

The crankshaft and big–end bearings (cylinder block and bearing cap casing) are matched from markings on both the block and crankshaft.

The classing is achieved by 4 different thicknesses of plain shell bearings.

NOTE : There is one class only for the upper grooved half–bearing shells.

3.1.3 – Connecting rods / pistons

New connecting rods with a dimension of 154 mm between centres.

New light alloy pistons with valve recesses.

The gudgeon pins are free in the connecting rod small ends.

3.2 – Cylinder head unit

3.2.1 – Camshaft bearing cap casings

The camshaft bearing cap casings are in light alloy.

The camshaft bearing cap casings house the 4 bearings of the 2 shafts of 6 cams.

The camshaft bearings are lubricated under pressure and the cams by oil baths.

3.2.2 – Cylinder head

New light alloy cylinder heads.

4 valves per cylinder (2 for the inlet, 2 for the exhaust) with automatically adjusted hydraulic cam followers.

The sparking plugs are offset by 3 mm towards the exhaust side of the combustion chambers.

The front cylinder head houses the BBC 3.2 (Compact Coil Unit) ignition coil assembly.

The rear cylinder head houses the ignition HT harness cassette.

The cylinder heads are attached to the cylinder block by 8 bolts.

3.2.3 – The camshafts

The new cast iron camshafts comprise 6 cams and 4 bearings.

The 4 camshafts are specific and act directly on the hydraulic cam followers.

The camshaft is pegged using the keyed hubs on the shafts.

3.3 – Lubrication circuit

The pressure–fed lubrication is provided by a dual eccentric gear type oil pump (inner and outer rotors).

The oil pump is driven on the end of the crankshaft by two lugs (timing side).

www.WorkshopManuals.co.uk

3.4 – Auxiliary equipment drive

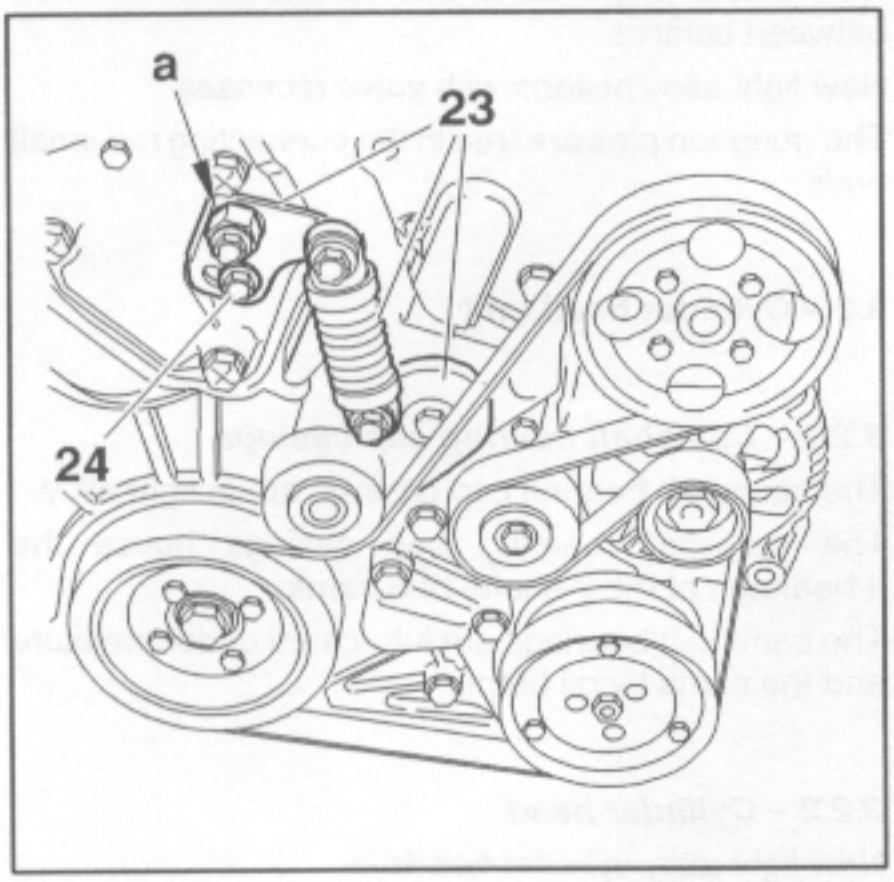


Fig : B1BP1LDC

The auxiliary equipment drive belt is automatically tensioned by a dynamic tensioner (23).

Replacing the belt requires the bolt (24) and nut "a" to be adjusted.

www.WorkshopManuals.co.uk

3.5 – Timing gear

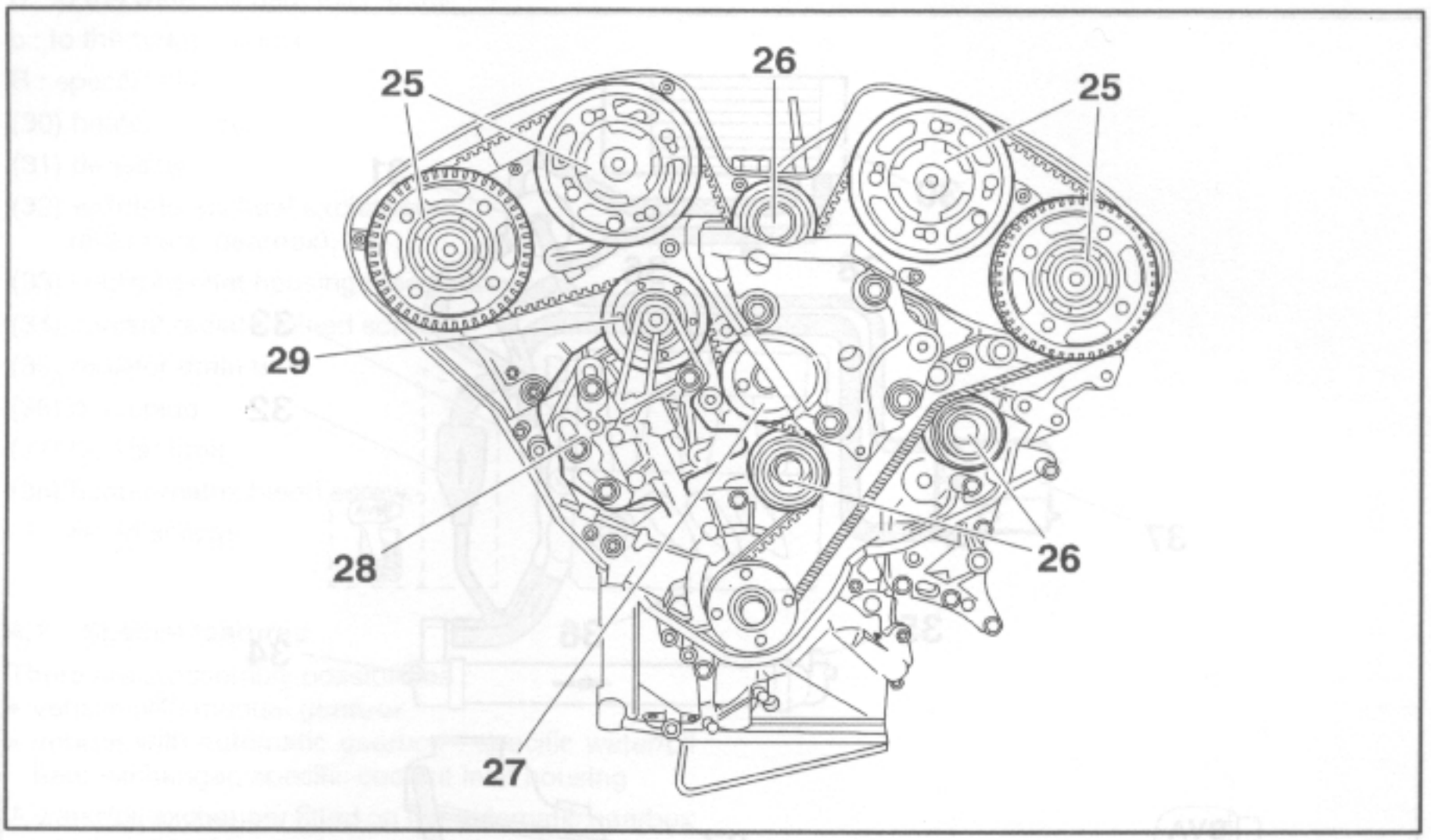


Fig : B1BP1LED

(25) camshaft gear wheel.

(26) roller tensioner.

(27) water pump drive pinion.

(28) dynamic tensioner.

(29) roller tensioner.

The timing gear comprises 4 direct operation camshafts.

The camshaft is pegged using the keyed hubs on the shafts.

When the 4 pinion fixing bolts are slackened, the pinions are free to rotate within the bounds of the elongated holes.

This method of fitting of the pinions allows :

- a more precise setting of the valve timing
- a more evenly distributed tension of the camshaft drive belt between the various belt pulleys

The hubs of the camshafts are identical.

The belt is tensioned by the roller (29) of the dynamic tensioner (28).

www.WorkshopManuals.co.uk

4 – COOLING SYSTEM

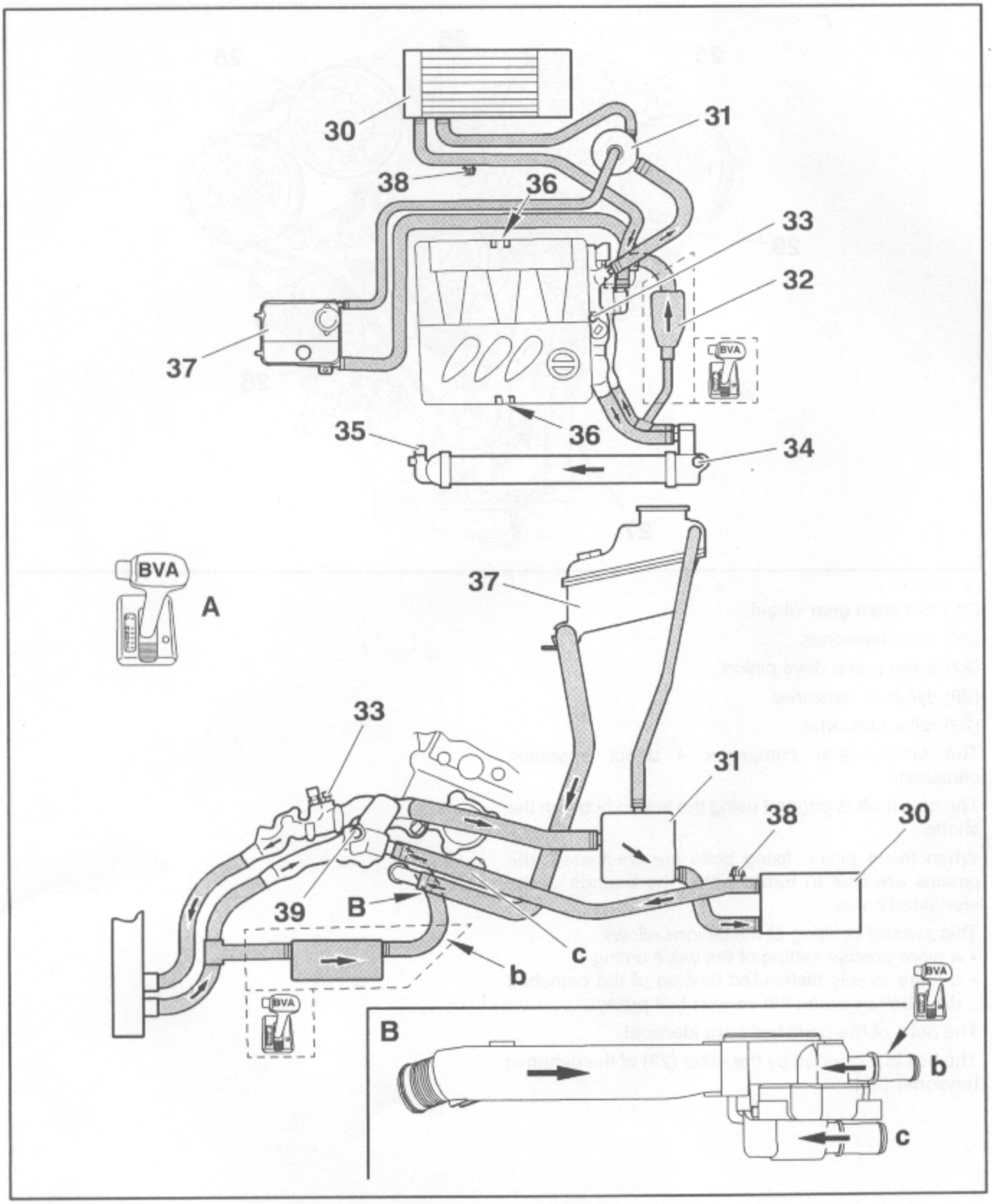


Fig : B1GP05UP

www.WorkshopManuals.co.uk

A : specific 4HP20.
b : to the water/oil heat exchanger.
c : to the heater matrix
B : specific 4HP20.
(30) heater matrix.
(31) degasser.
(32) water–to–oil heat exchanger (automatic gearbox).
(33) coolant outlet housing bleed screw.
(34) coolant radiator bleed screw.
(35) radiator drain tap.
(36) drain plug.
(37) header tank.
(38) heater matrix bleed screw.
(39) bleed screws.

4.1 – Special features

There are 2 assembly possibilities :
- vehicle with manual gearbox
- vehicle with automatic gearbox : specific water/oil heat exchanger, specific coolant inlet housing

A water/oil exchanger fitted on the automatic gearbox cools the oil inside.

The double shell water pump is incorporated into the cylinder block and driven by the timing belt.

The coolant inlets and outlets are grouped together on the clutch side.

4.2 – Data

	Manual gearbox	Automatic gearbox
Total capacity of the system	9.4 litres	
Radiator surface area	25 dm2	
Pressure setting	1.4 bar (purple cap)	
Thermostat opening at	82 °C	

Fans :

	Without air conditioning	With air conditioning
Number x electrical power	2 x 200 W	2 x 310 W

NOTE : The 2 fans are controlled by the coolant temperature housing.

www.WorkshopManuals.co.uk

4.3 – Water temperature sensors

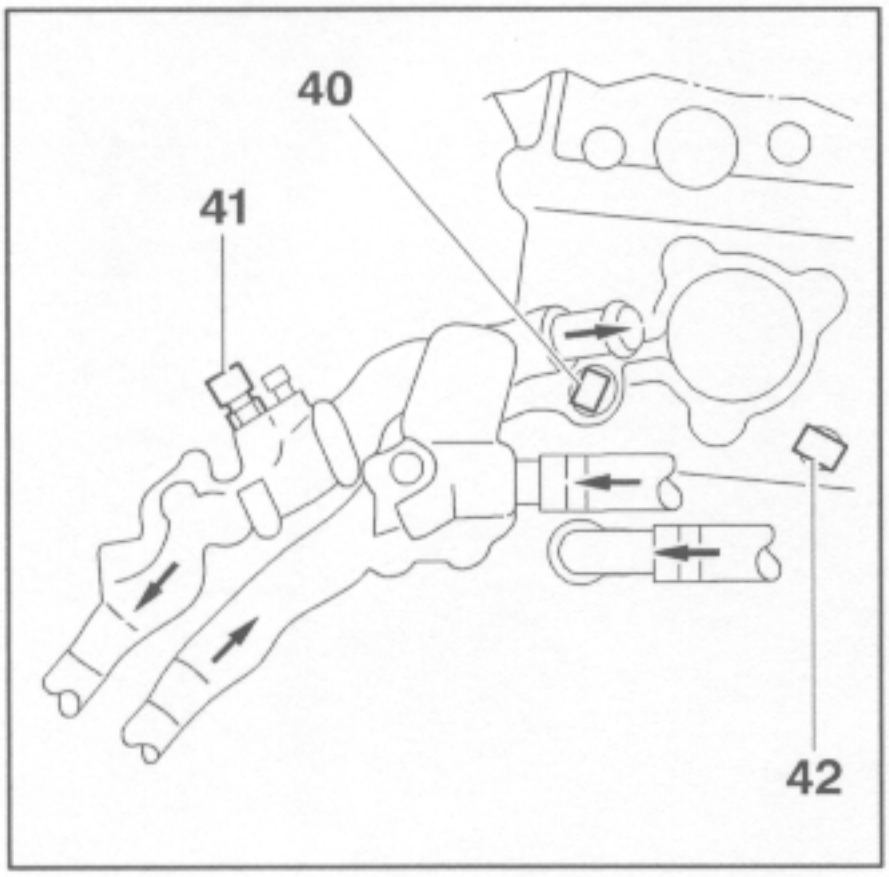


Fig : B1GP05VC

Item	40	41	42
Sensor	Temperature sensor	Temperature sensor	Temperature sensor
Data	Water temperature : BITRON water temperature control unit	Water temperature : injection	Water temperature warning
Connector colour	Brown	Green	Blue
Tightening torque	1.7 m.daN		

4.4 – Water temperature control unit

Vehicle	Without air conditioning	With air conditioning
Colour identification	Brown	Grey
Engine warm information	–	48 °C
Cooling fan unit slow speed	96 °C	
Cooling fan unit fast speed	101 °C	
Air conditioning compressor cut–out		112 °C
Pre–warning		115 °C
Warning	118 °C	
Post–ventilation engagement limit	105 °C	
Post–ventilation duration	6 minutes	

The engine cooling fans are powered for up to 6 minutes when the water temperature exceeds 105°C.

www.WorkshopManuals.co.uk

5 – FUEL SUPPLY

5.1 – Fuel rail

The supply rails are made from plastic.

The fuel pipes and the supply rails are connected with click–fit connectors.

The pulse damper and the "SCHRADER" valve (wheel type valve) are mounted on the front rail.

The pressure regulator is mounted on the rear rail.

Role of the "SCHRADER" valve :
- to bleed the supply system
- to control the flow
- to check the pressure

Twin jet injectors.

5.2 – Fuel filter

Location : on the rear subframe, R.H. side.

5.3 – Fuel vapour recycling (canister)

Location : in front of the front right hand wheel arch, behind the bumper.

The canister is bled in the intake manifold (downstream of the throttle) through the canister electrovalve, piloted by the ECU.

Canister discharge electrovalve :
- location : in front of the ECU housing
- colour : brown

5.4 – Fuel pump

Electric gear fuel pump.

Regulating pressure : 3.5 bars.

6 – INDUCTION CIRCUIT

Dry element air filter.

Idle regulation electrovalve located on the inlet manifold.

Unique throttle housing for the 2 rows of cylinders.

Air temperature sensor :
- location : on the connector between the air filter and the throttle housing
- identification : grey 2–way connector

Aluminium alloy inlet manifold.

The complex internal shape of the inlet manifold allows a high torque at low engine speeds and a progressive torque curve to be obtained.

www.WorkshopManuals.co.uk

7 – INJECTION SYSTEM

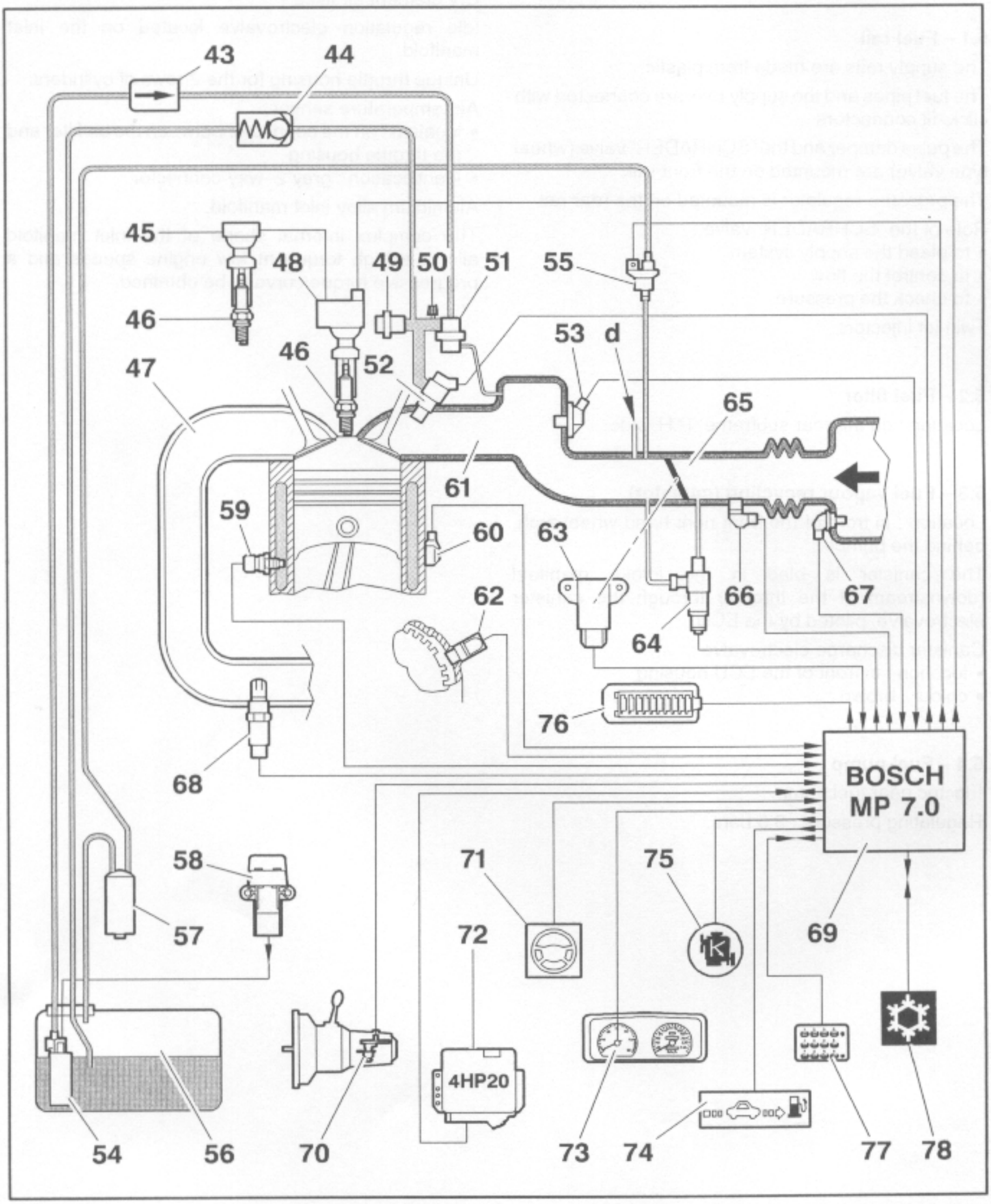


Fig : B1HP0U8P

www.WorkshopManuals.co.uk

(43) fuel filter.
(44) one–way valve.
(45) ignition cassette on the rear cylinder head.
(46) sparking plugs.
(47) exhaust manifold.
(48) block of three coils on the front cylinder head.
(49) pulsation damper.
(50) SCHRADER valve.
(51) fuel pressure regulator.
(52) injectors.
(53) inlet manifold pressure sensor.
(54) fuel pump.
(55) canister discharge electrovalve.
(56) fuel tank.
(57) canister.
(58) inertia switch.
(59) engine coolant temperature sensor.
(60) knock sensor.
(61) inlet manifold.
(62) position and speed sensor.
(63) throttle axle potentiometer.
(64) idling regulation electrovalve.
(65) throttle housing.
(66) throttle housing heating element.
(67) air temperature sensor.
(68) oxygen sensor.
(69) ignition injection control unit.
(70) vehicle speed sensor.
(71) power–assisted steering pressure switch.
(72) automatic gearbox ECU.
(73) tachometer.
(74) trip computer.
(75) diagnostic warning lamp.
(76) diagnostic socket.
(77) coded anti–theft keypad.
(78) air conditioning.

"d" tapping for the oil fumes recycling.

The injection and ignition are "pressure–speed" type with 2 injections and 2 sparks per engine cycle.

7.1 – Ignition system

The BBC 3.2 twin static ignition (lost spark) consists of :

- block of three coils on the front cylinder head
- ignition cassette on the rear cylinder head

Firing order : 1–6–3–5–2–4.

Double electrode resistive plugs.

"semi–sequential" injection BOSCH MP 7.0 (cylinders grouped 2 by 2).

www.WorkshopManuals.co.uk

7.2 – Injection

This ignition injection ECU is equipped with a "FLASH–EPROM" memory :

- this type of memory permits, in the case of a change in calibration, the memory of the ECU to be modified without dismantling or replacing the ECU
- instead of replacing the ECU or the eprom, the operation consists in "downloading" the ECU memory with its program, using an appropriate after sales tool, through the diagnostic socket

Identification of the ECU :

Version	PSA reference	Reference of the Manufacturer	ECU software	
			Version	Indication
Manual gearbox	96 255 524 80	241290159A	1037358699	26FM0376
Automatic gearbox	96 255 525 80	241290159E	1037355192	26FD0280

WARNING : The ECUs for manual gearboxes and automatic gearboxes cannot be interchanged.

7.3 – Operation strategies

Main functions ensured by the injection ECU :

- adjustment of idling speed
- hesitation regulation as a function of load, engine speed and gear engaged
- anti–knock adjustment
- idle regulation as a function of air conditioning, power steering and battery voltage
- air conditioning on/off management
- regulation of coil charging time
- canister bleed

7.4 – Special features : idling speed

The idling speed is regulated from the following information :

- coolant temperature : 1000 rpm at 0 °C, 1200 rpm at –30 °C, 650 rpm the engine must be warm
- battery voltage : up to 1000 rpm
- refrigeration : 700 rpm
- parking

NOTE : The idling speed is not adjustable.

7.5 – Special features : automatic gearbox

The ignition injection ECU communicates with the automatic gearbox ECU to ensure an optimum operation of the gearbox and engine.

Roles :

- to improve the driveability
- increases the mechanical protection of the engine and gearbox : overspeed protection
- increased operating reliability
- to comply with emission standards

The automatic gearbox ECU receives the following information from the injection ECU :

- throttle butterfly position (kickdown)
- engine torque (instantaneous value)
- coolant temperature (only when starting the engine)
- engine speed

The injection ECU receives the gear change information from the automatic gearbox ECU.

The engine torque is reduced by retarding the ignition according to a pre–programmed table.

Idle speed compensation through the information supplied to the injection–ignition ECU.

IMPERATIVE : In the event of abnormal vehicle behaviour and before repairing the injection system, always ensure there are no faults in the automatic gearbox ECU.

www.WorkshopManuals.co.uk

8 – EXHAUST

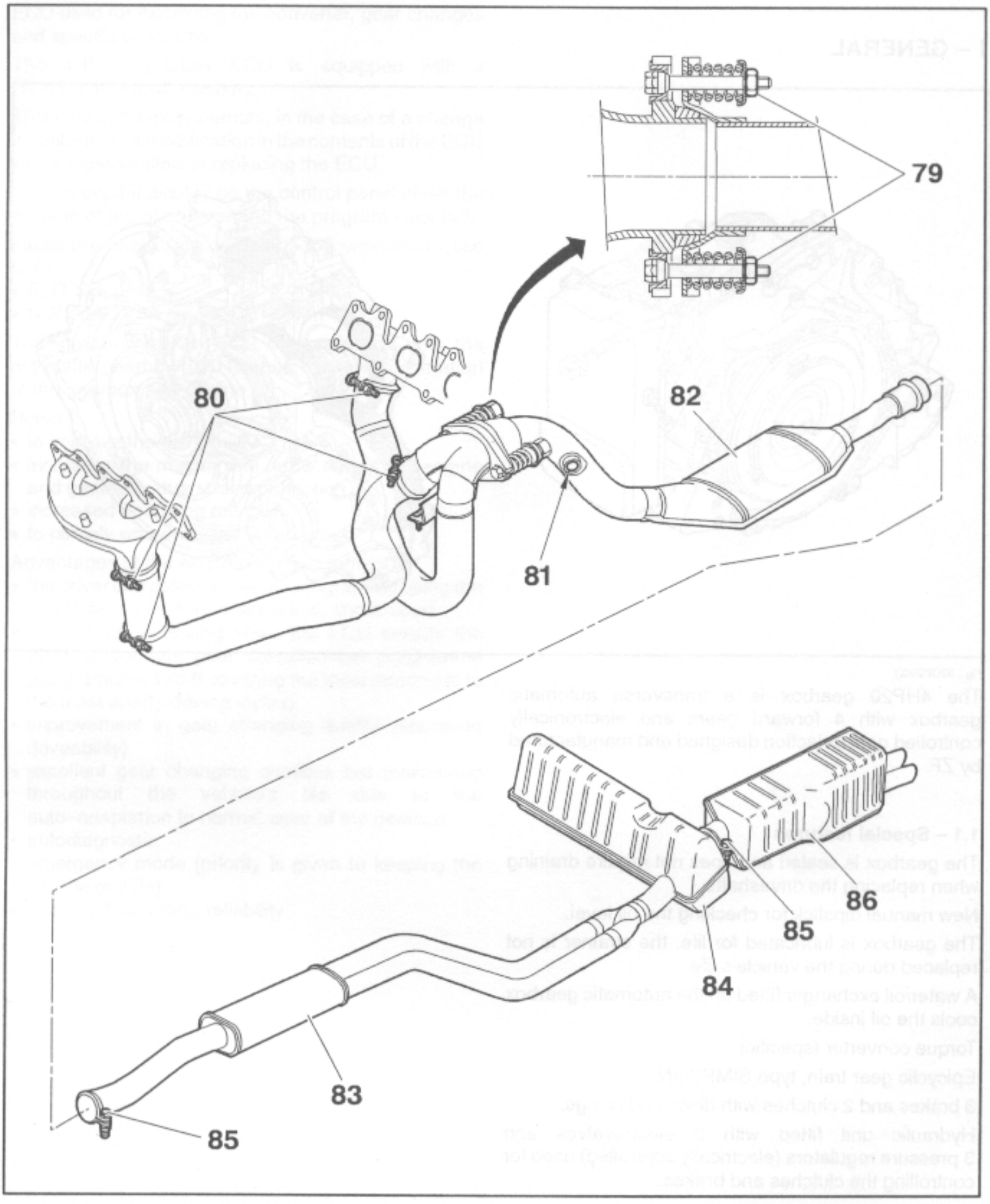


Fig : B1JP01PP

(81) oxygen sensor (PSA).
(82) catalytic converter (PSA 3351).
(83) intermediate silencer (PSA 4122).
(84) transverse silencer (PSA 4123).
(86) double nozzle rear silencer.

NOTE : The rear silencers of saloon and estate vehicles can be distinguished by the length of the outlet pipes.

Tightening torques :
- tighten the bolts (80) and (85) to 2.5 m.daN
- tighten the bolts (79) to 0.9 m.daN

NOTE : The catalytic converter is impregnated with 50 grammes of precious metals.

www.WorkshopManuals.co.uk

PRESENTATION : 4HP20 AUTOMATIC GEARBOX

1 – GENERAL

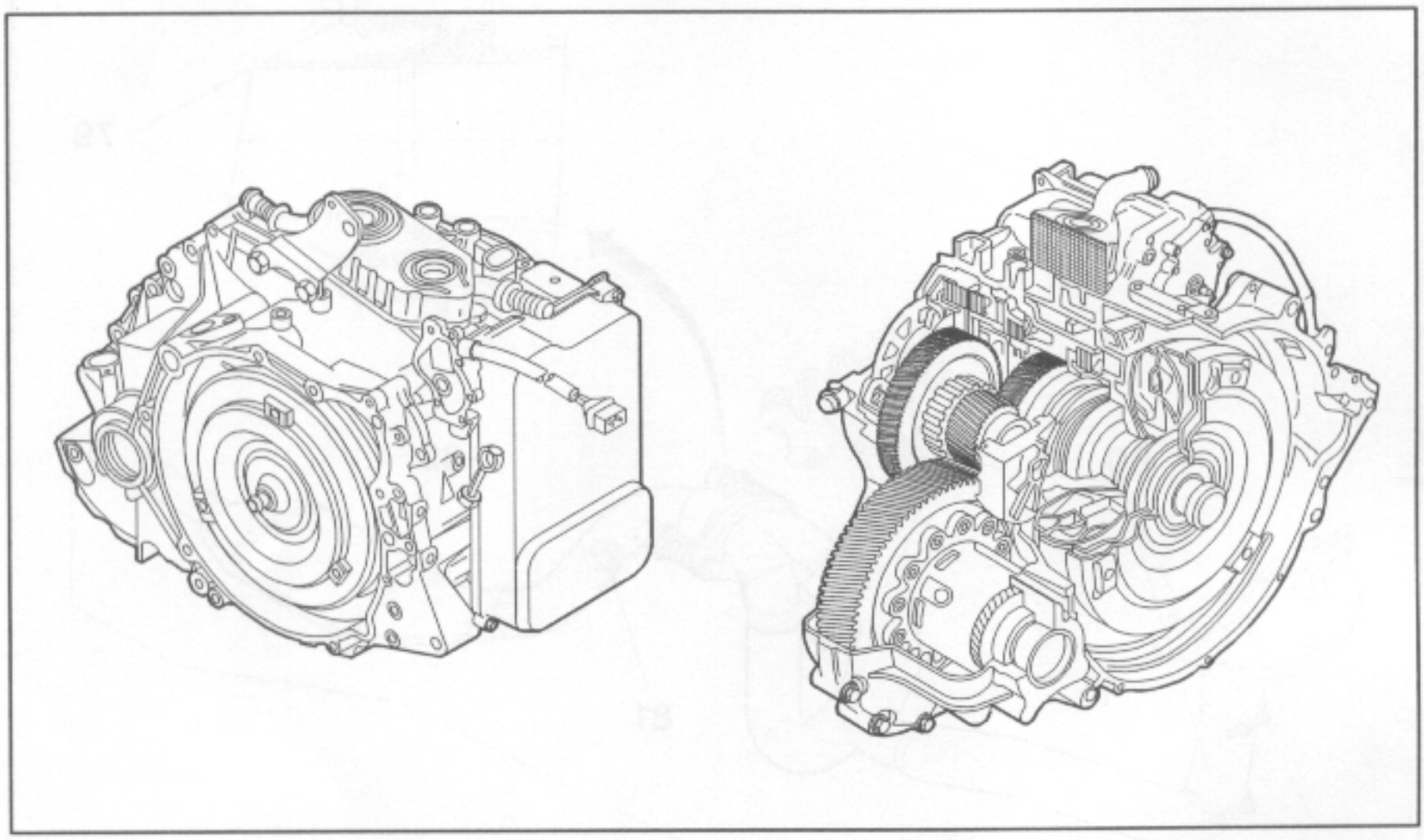


Fig : B2CP290D

The 4HP20 gearbox is a transverse automatic gearbox with 4 forward gears and electronically controlled gear selection designed and manufactured by ZF.

1.1 – Special features

The gearbox is sealed and does not require draining when replacing the driveshafts.

New manual dipstick for checking the oil level.

The gearbox is lubricated for life, the strainer is not replaced during the vehicle's life.

A water/oil exchanger fitted on the automatic gearbox cools the oil inside.

Torque converter (specific).

Epicyclic gear train, type SIMPSON.

3 brakes and 2 clutches with discs and linings.

Hydraulic unit fitted with 2 electrovalves and 3 pressure regulators (electrically controlled) used for controlling the clutches and brakes.

WARNING : The gearbox uses a new type of oil (synthetic).

www.WorkshopManuals.co.uk

1.2 – Electronic gearbox management

The 4HP20 gearbox is fitted with an auto–adaptive ECU used for managing the converter, gear changes and specific programs.

The 4HP20 gearbox ECU is equipped with a "FLASH–EPROM" memory.

This type of memory permits, in the case of a change in calibration, a modification in the contents of the ECU without dismantling or replacing the ECU.

A liquid crystal display on the control panel gives the position of the gear lever and the program selected.

Faults are read using one of the following diagnostic tools :

- ELIT test unit
- SOURIAU 26A diagnostic station

The ignition injection ECU communicates with the automatic gearbox ECU to ensure optimum operation of the gearbox and engine.

Roles :

- to improve the driveability
- increases the mechanical protection of the engine and gearbox : overspeed protection
- increased operating reliability
- to comply with emission standards

Advantages of the electronic management :

- the driver can select a specific programme using the sport/snow selector : economical, snow, sport
- depending on driving style, the ECU selects the most appropriate gear selection law programme (programmes 1 to 6 covering the most economic to the most sporty driving styles)
- improvement in gear changing quality (improved driveability)
- excellent gear changing qualities are maintained throughout the vehicle's life due to the auto–adaptation to normal wear of the gearbox
- autodiagnostic
- emergency mode (priority is given to keeping the vehicle mobile)
- improved operating reliability

www.WorkshopManuals.co.uk

2 – IDENTIFICATION OF THE VEHICLES

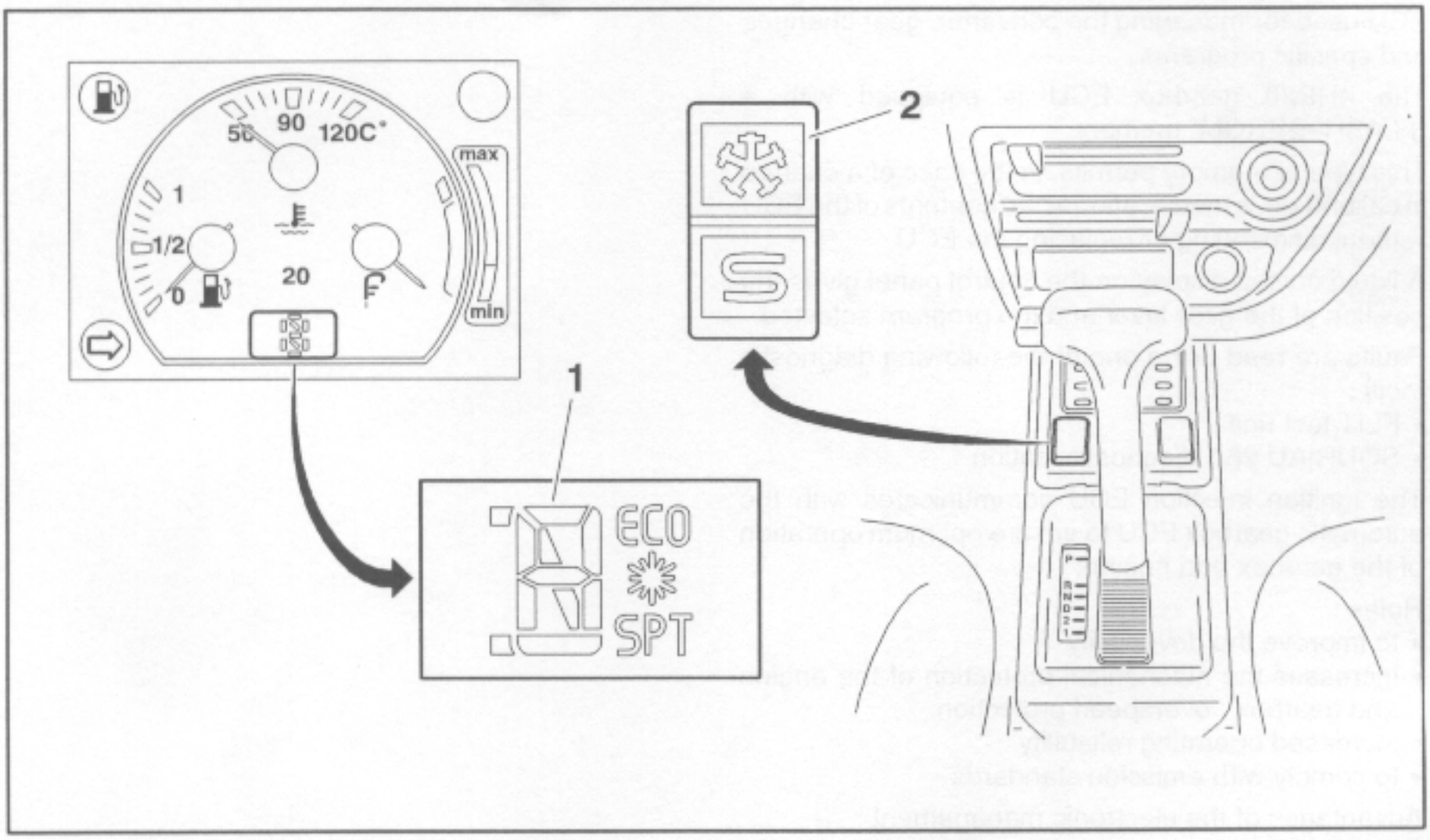


Fig : C5FP048D

(1) liquid crystal display.

(2) programme selector.

Vehicles can be identified by :

- liquid crystal display, in the instrument panel
- programme selector (located in the centre console)

A switch mounted to the left of the lever allows the driver to choose from 3 programs :

- economical (ECO)
- snow (snowflake)
- sport (SPT)

NOTE : The gear selector lever (specific) is of the same type as for vehicles fitted with the ZF 4HP18 gearbox.

www.WorkshopManuals.co.uk

3 – DIFFERENCE BETWEEN ZF 4HP18 AND ZF 4HP20 GEARBOXES

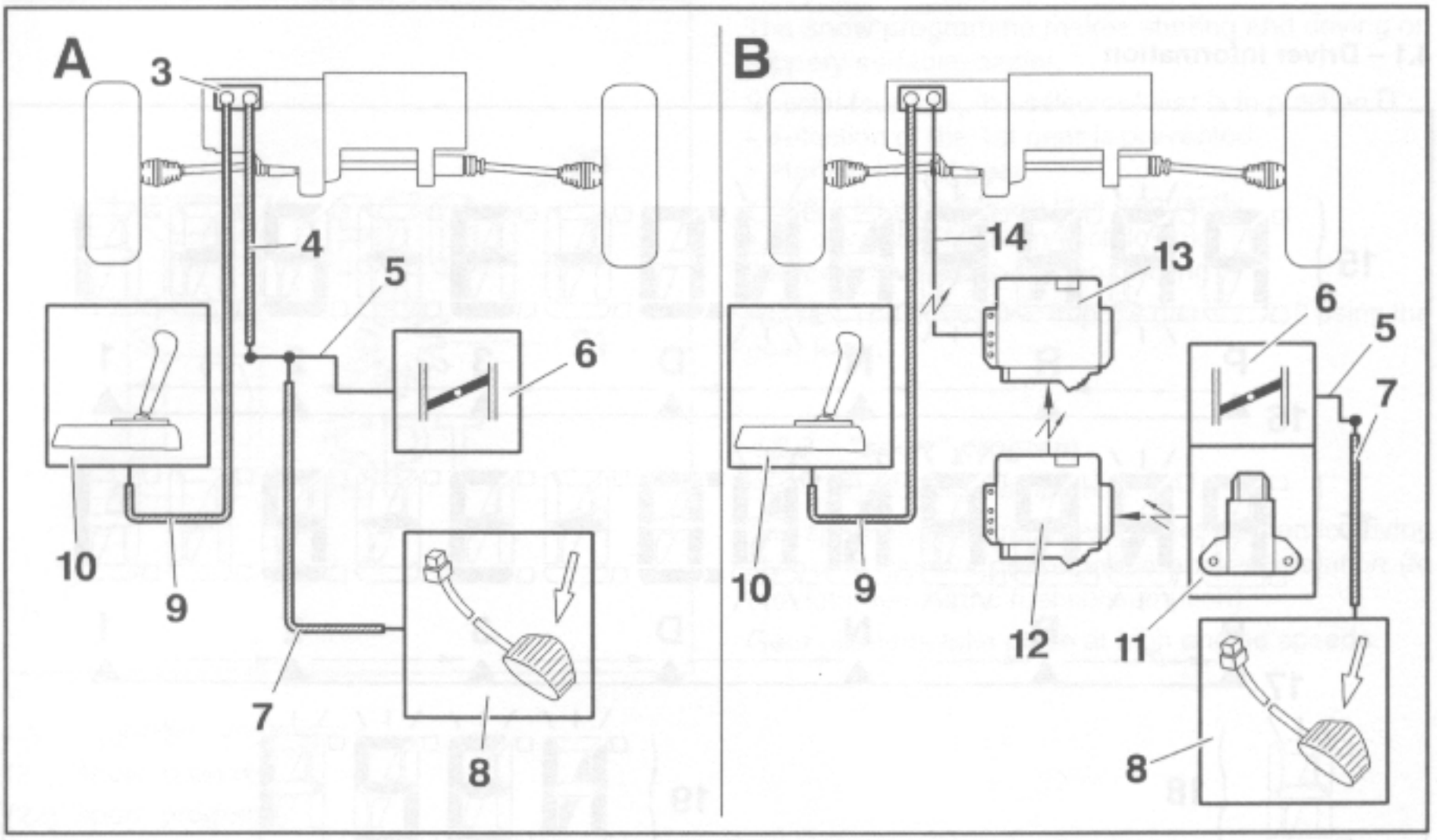


Fig : B2CP291D

A 4HP18 gearbox.
B 4HP20 gearbox.
(3) hydraulic valve block.
(4) cable (kickdown).
(5) throttle flap drive cam.
(6) throttle housing.
(7) accelerator cable.
(8) accelerator pedal.
(9) gear selection cable.
(10) gear lever.
(11) throttle potentiometer.
(12) MP 7.0 multipoint fuel injection ECU.
(13) automatic gearbox ECU.
(14) electrical harness.

Difference between ZF 4HP18 and ZF 4HP20 gearboxes :

	Automatic gearbox	
	ZF 4HP18	ZF 4HP20
Gear selector control	Cable control	
Downshift (kickdown)	Cable–driven control, with hard point (hydraulic control)	Electronic control, without hard point. The kick–down function, informed by the throttle potentiometer, is incorporated into the ECU
Display of gear selected	This information, supplied by the multifunction switch, is independent of the gearbox ECU	The instrument panel display is controlled by the gearbox ECU in accordance with the information received from the "multifunction" switch
Gearchange lever	Gears are changed by the hydraulic valve block, (hydraulic control). Gear changing thresholds determined hydraulically	Gears are changed by the hydraulic valve block, the gearbox ECU controls the electrovalves and regulators incorporated into the hydraulic valve block. Gear changing thresholds determined electronically

www.WorkshopManuals.co.uk

4 – DRIVER INFORMATION – USE

4.1 – Driver information

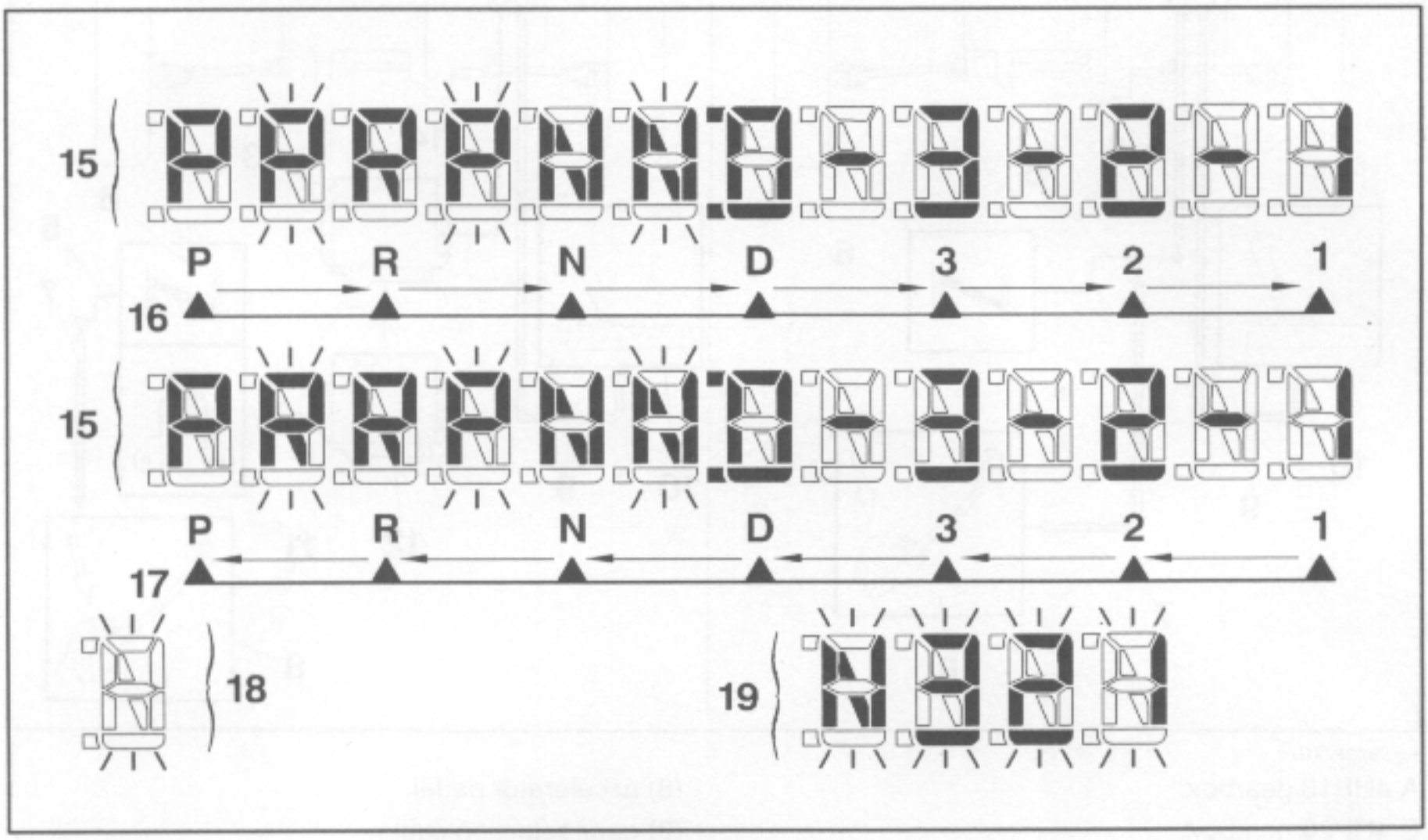


Fig : C5FP049D

(15) display of gear selected.

(16) the selection lever is moved from position P to position 1.

(17) the selection lever is moved from position 1 to position P.

(18) display flashing.

(19) display flashing : gear ratio selected but not engaged.

The instrument panel display is controlled by the gearbox ECU in accordance with the information received from the "multifunction" switch (standard connection).

When the gear lever is between two positions, a specific character is displayed on the control panel.

A gear is only engaged if the vehicle speed is compatible with the gear selected.

If a gear selected is incompatible with the vehicle speed, the gear displayed on the instrument panel flashes.

Gear engagement thresholds :

- reverse : vehicle speed lower than 10 km/h
- 3rd gear : vehicle speed lower than 165 km/h
- 2nd gear : vehicle speed lower than 110 km/h
- 1st gear : vehicle speed lower than 60 km/h

www.WorkshopManuals.co.uk

4.2 – Selection of programs

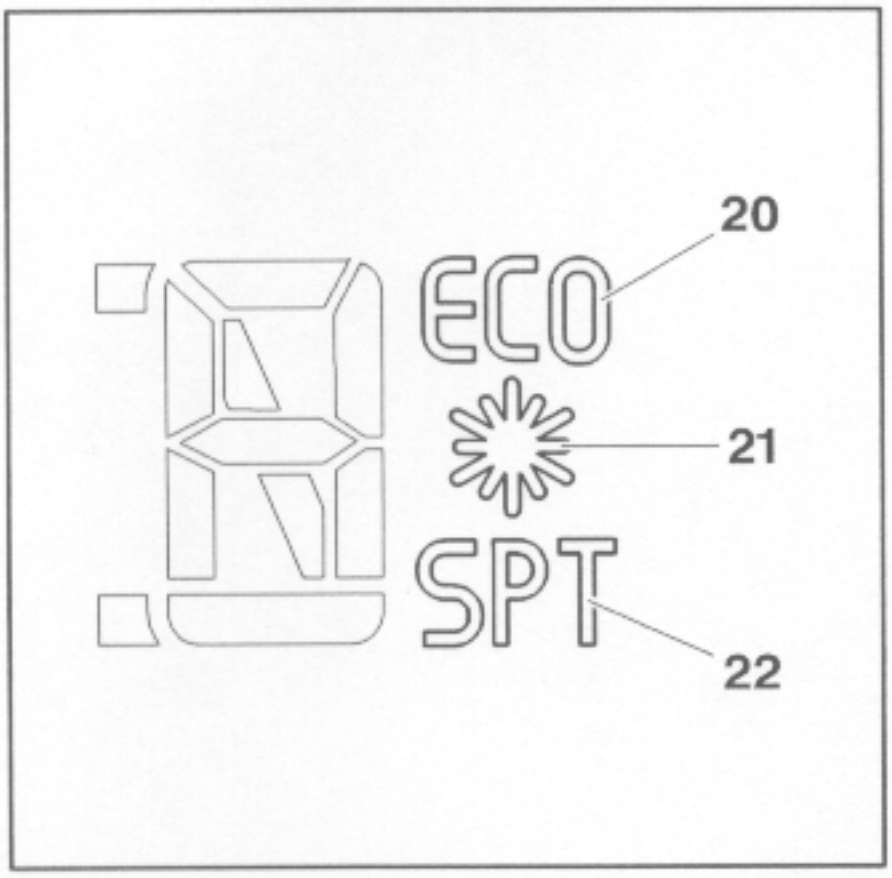


Fig : C5FP04AC

(20) "economic" program.

(21) "snow" program.

(22) "sport" program.

Every time the ignition is switched on, the system automatically selects the economic program.

The driver can select the desired program by pressing the corresponding button.

The selected program is shown on the control panel by the corresponding lamp illuminating.

The economical driving program is selected by pressing the button of the program currently activated.

4.2.1 – "economic" program

ECO (20) indicator lamp on.

Program suited to normal driving (favouring economic fuel consumption).

The ECU adapts the gearbox operation to the road, engine load and driving style.

4.2.2 – "snow" program

Indicator lamp (21) on.

The snow programme makes starting and driving on slippery surfaces easier.

Special features, the selector lever is in position D :

- selection of the 1st gear is prevented
- starting in 2nd gear
- gears changed down less frequently
- no downshift function (kickdown)
- forced downshifting when braking

NOTE : The driver may impose gears 1, 2, 3 using the gear lever.

4.2.3 – "sport" program

SPT (22) indicator lamp on.

The sport programme allows a more dynamic driving style and favours performance and acceleration (to the detriment of the fuel consumption).

Gear changes take place at high engine speeds.

www.WorkshopManuals.co.uk

5 – FAULT MANAGEMENT

5.1 – Faults display

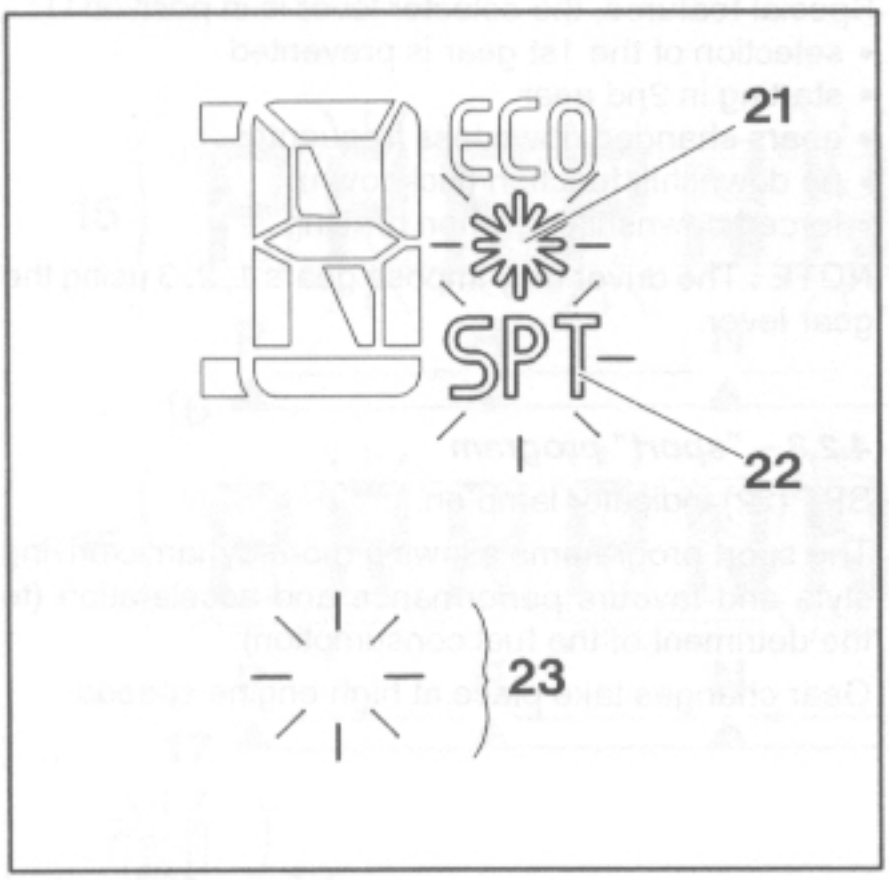


Fig : C5FP04BC

(20) "economic" program.

(21) "snow" program.

(22) "sport" program.

The "sport" and "snow" warning lamps flash simultaneously to indicate a fault.

Possible fault causes :

- break in the connection between the gearbox ECU and the instrument panel
- operating fault in the gearbox management system

5.2 – Back–up mode

In the event of a gearbox malfunction, there exist 2 possible configurations depending on the severity of the fault :

- gearbox in back–up mode with a substitute programme (the default values are used)
- gearbox in back–up mode with an emergency programme

NOTE : The gearbox therefore remains in 3rd or 4th hydraulic.

WARNING : In the emergency programme, significant snatching can be felt when shifting P/R or N/R.

www.WorkshopManuals.co.uk

6 – GENERAL ARCHITECTURE : ZF 4HP20 AUTOMATIC GEARBOX

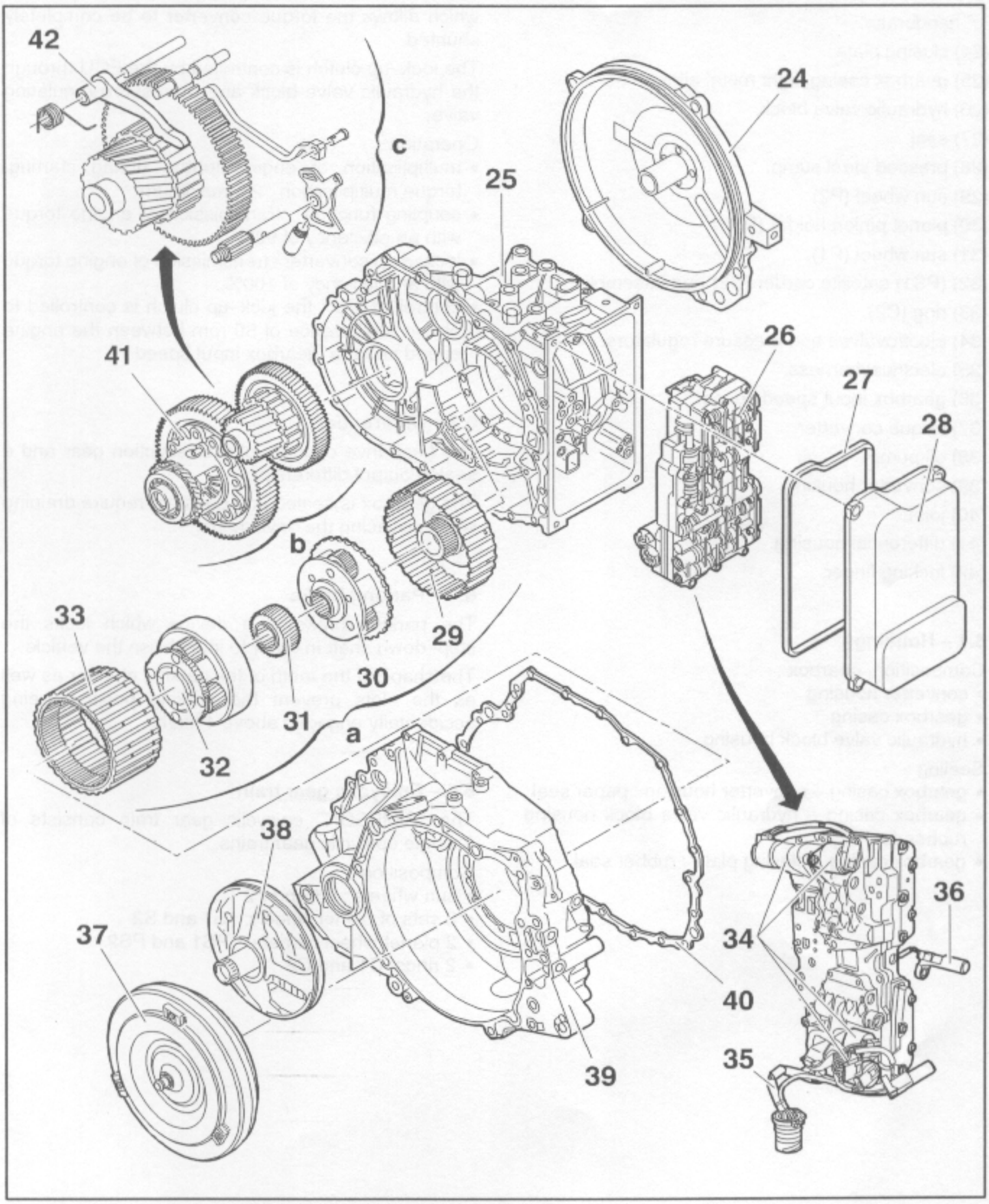


Fig : B2CP292P

www.WorkshopManuals.co.uk

"a" epicyclic gear train.
"b" reduction gear.
"c" handbrake.
(24) closing plate.
(25) gearbox casing, light metal alloy.
(26) hydraulic valve block.
(27) seal.
(28) pressed steel sump.
(29) sun wheel (P2).
(30) planet pinion holder (PS2).
(31) sun wheel (P1).
(32) (PS1) satellite carrier (C2) ring assembly.
(33) ring (C2).
(34) electrovalves and pressure regulators.
(35) electrical harness.
(36) gearbox input speed sensor.
(37) torque converter.
(38) oil pump.
(39) converter housing.
(40) joint.
(41) differential housing.
(42) locking finger.

6.1 – Housings

Composition, gearbox :
- converter housing
- gearbox casing
- hydraulic valve block housing

Sealing :
- gearbox casing – converter housing : paper seal
- gearbox casing – hydraulic valve block housing : rubber seal
- gearbox casing – closing plate : rubber seal

6.2 – Torque converter

The torque converter is fitted with a lock–up clutch which allows the torque converter to be completely shunted.

The lock–up clutch is controlled by the ECU through the hydraulic valve block and a pressure regulating valve.

Operation :
- multiplication of engine torque during starting, torque multiplication : 2.5 maximum
- coupling function : transmission of engine torque with an efficiency of 98%
- locked up converter : transmission of engine torque with an efficiency of 100%
- controlled slip : the lock–up clutch is controlled to obtain a difference of 50 rpm between the engine speed and the gearbox input speed

6.3 – Differential

The final drive consists of the reduction gear and a sealed output differential.

The gearbox is sealed and does not require draining when replacing the driveshafts.

6.4 – Parking brake

The parking brake is a device which locks the step–down shaft in order to immobilise the vehicle.

The shape of the teeth of the parking plunger as well as the slots prevent the parking position being accidentally engaged above 4 km/h.

6.5 – Epicyclic gear train

The "SIMPSON" epicyclic gear train consists of 2 single epicyclic gear trains.

Composition :
- sun wheels : P1 and P2
- 2 sets of planet wheels: : S1 and S2
- 2 planet wheel carriers: : PS1 and PS2
- 2 rings: C1 and C2

www.WorkshopManuals.co.uk

6.6 – Oil pump

Gear type oil pump with half–moon.

The oil pump is driven directly by the vehicle engine through the oil pump shaft that is integral with the converter body.

The oil flow delivered by the oil pump is proportional to the engine speed.

The pump sucks up the oil in the lower casing of the automatic gearbox through the strainer and directs it towards the hydraulic valve block.

The strainer is not replaced during the vehicle's life.

Role :

- to supply the torque converter and the control circuits : hydraulic valve block, pressure regulators, lock–up clutch, brakes and clutches
- to supply the gearbox lubricating circuit
- to cool the gearbox through oil circulation

6.7 – Brakes and clutches

System composition :

- 2 clutches
- 3 brakes

The brakes and clutches enable the selected gear to be obtained by locking or releasing one of the elements of the epicyclic gear train.

The clutches and brakes are controlled by the electrovalves and pressure regulators operated directly by the gearbox ECU.

6.8 – Hydraulic valve block

Using valves and electrovalves, the hydraulic valve block (26) supplies the clutches and brakes, in order to obtain the different gear ratios.

www.WorkshopManuals.co.uk

7 – OPERATING PRINCIPLE

7.1 – Presentation of the system

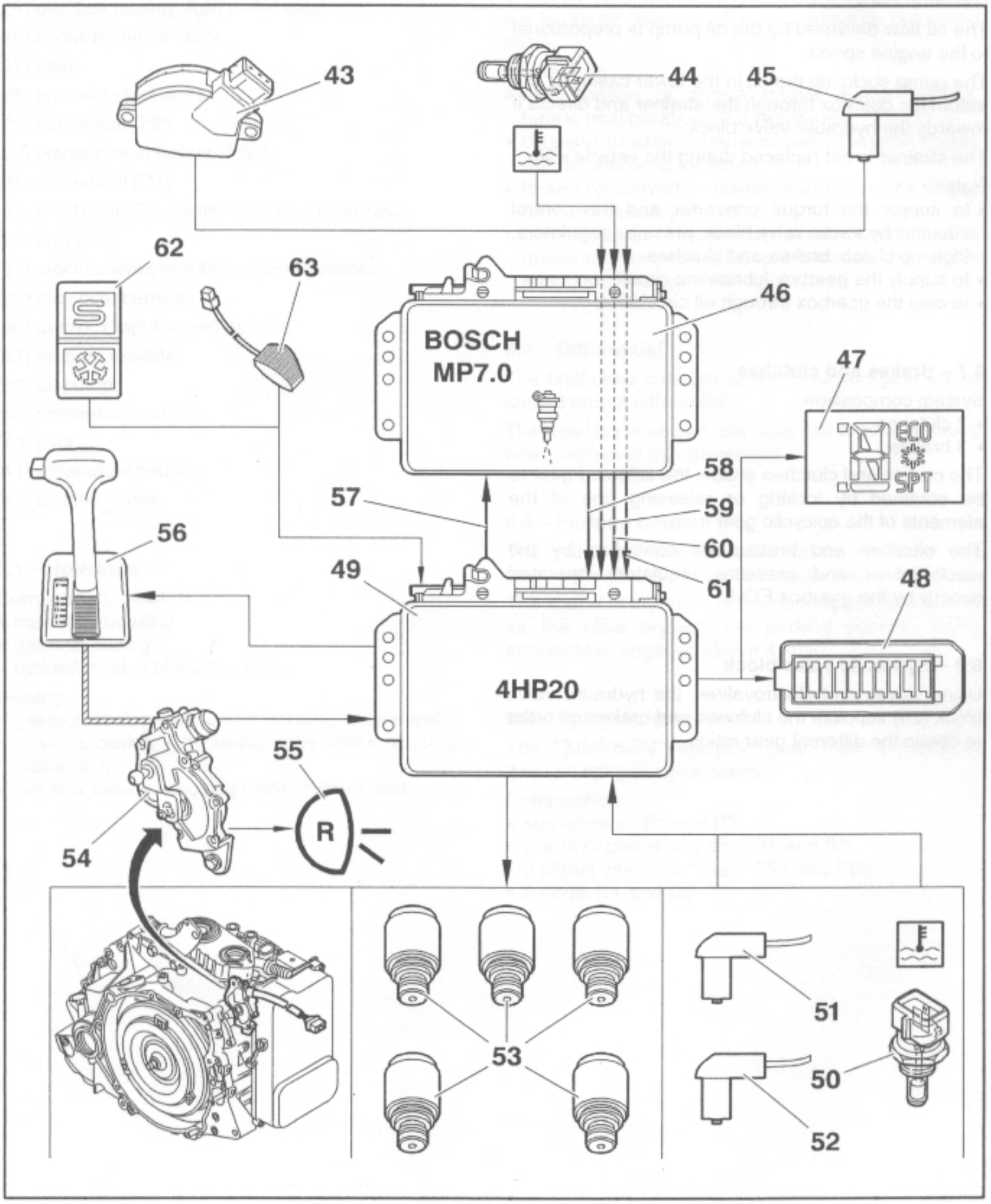


Fig : B2CP293P

www.WorkshopManuals.co.uk

(43) throttle potentiometer.
(44) coolant temperature sensor.
(45) TDC and engine speed sensor.
(46) ignition injection control unit.
(47) liquid crystal display.
(48) diagnostic socket.
(49) automatic gearbox ECU.
(50) gearbox oil temperature sensor.
(51) gearbox input speed sensor.
(52) gearbox output speed sensor.
(53) electrovalves – pressure regulators.
(54) multifunction switch.
(55) reversing lamps.
(56) gear lever.
(57) engine torque reduction signal.
(58) engine torque information via the injection ECU MP 7.0.
(59) throttle position information via the injection ECU MP 7.0.
(60) engine coolant temperature information.
(61) engine speed information.
(62) programme selector.
(63) brake pedal (braking information).

7.2 – Automatic gearbox ECU

The gearbox ECU uses the following information :
- throttle butterfly position (kickdown)
- engine torque (instantaneous value)
- coolant temperature (only when starting the engine)
- engine speed
- gearbox input speed
- gearbox output speed
- gearbox oil temperature
- position of the gear lever ("multifunction" switch)
- programme selector
- braking

ECU outputs :
- controlling the electrovalve and pressure regulators
- torque reduction command to the injection
- management of warning lamps

7.3 – Operation strategies

ECU functions :
- control and autoadaptivity of the gear and programme selection
- autoadaptivity to the vehicle driving style, road conditions and vehicle load
- torque reduction command to the injection
- changing down gears
- kickdown function (kickdown)
- torque converter control
- management of warning lamps
- autodiagnostic
- emergency mode (priority is given to keeping the vehicle mobile)

7.3.1 – Automatic gearbox starter safety device

Prevents the engine from starting in positions other than N or P.

7.3.2 – Control and autoadaptivity of the gear and programme selection

The "gearbox" ECU manages the 3 auto–adaptive programs below (chosen by the driver) :
- "economic" program
- "snow" program
- "sport" program

7.3.3 – Autoadaptivity to the vehicle driving style, road conditions and vehicle load

The ECU adapts gear changes as a function of the following elements :
- driving style
- program selected by the driver
- vehicle : no load, loaded, whilst accelerating, when decelerating
- road profile : adherence to road surface, unevenness of road
- gearbox : oil temperature, wear state
- engine : load, engine speed, temperature

www.WorkshopManuals.co.uk

7.3.4 – Changing down gears

The ECU fully controls downshifting as a function of the following parameters :

- engine load
- vehicle speed
- depending on the driving conditions

In some cases, the ECU can impose a double downshift (from 4 to 2 or from 3 to 1) or a single downshift to increase engine braking.

In some cases, downshifting may be forbidden in order to maintain engine braking.

The kick–down function, informed by the throttle potentiometer, is incorporated into the ECU.

7.3.5 – Torque reduction

The quality of the gear selection is improved by an engine torque reduction order given by the gearbox ECU to the injection ignition ECU (improved driveability).

Operating procedure :

- torque reduction command to the injection ECU
- the engine torque is reduced by retarding the ignition according to a pre–programmed table
- the automatic gearbox ECU checks the torque reduction phase by looking at the engine speed
- gearshift control

7.3.6 – Emergency mode

The "sport" and "snow" warning lamps flash simultaneously to indicate a fault.

Possible fault causes :

- break in the connection between the gearbox ECU and the control panel
- operating fault in the gearbox management system

WARNING : If there is a fault, a snatching may be experienced when engaging the lever in positions "R" or "N".

www.WorkshopManuals.co.uk

PRESENTATION : ML5T GEARBOX

New mechanical gearbox "ML5T".

The new gearbox replaces the previous model (MG5T).

Special features :
- the gearchange control is cable–operated
- hydraulic clutch control

1 – GEARBOX

1.1 – Identification

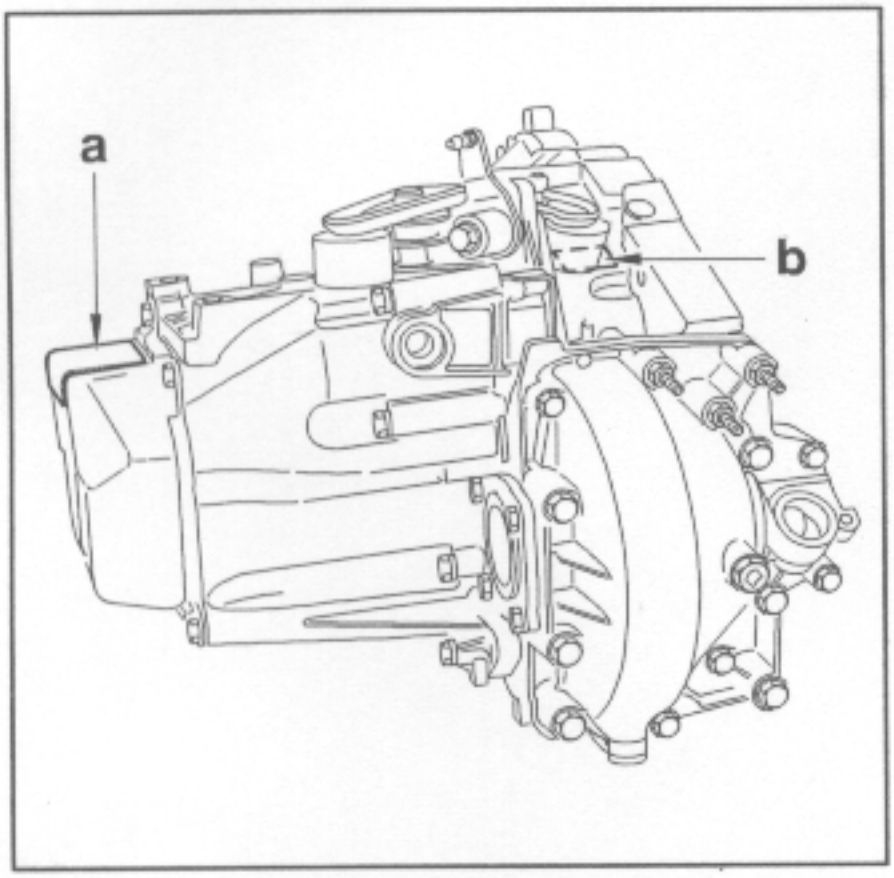


Fig : B2CP14WC

(a) identification label stuck onto cover of 5th speed.

(b) location of engraving of serial and gearbox numbers.

1.2 – Data

Vehicle		XM V6 (Saloon and Estate)
Sequence number		20LE33
Gearbox ratio	1st	12x39
	2nd	23x41
	3rd	31x37
	4th	41x37
	5th	45x33
Reverse		12x26x41
Final drive		17x71
Speedometer drive ratio		25x20

www.WorkshopManuals.co.uk

2 – HYDRAULIC CLUTCH CONTROL

Pre–filled with of hydraulic fluid, this type of control, sealed and without maintenance, allows the automatic adjustment of the clutch pedal movement (no adjustment).

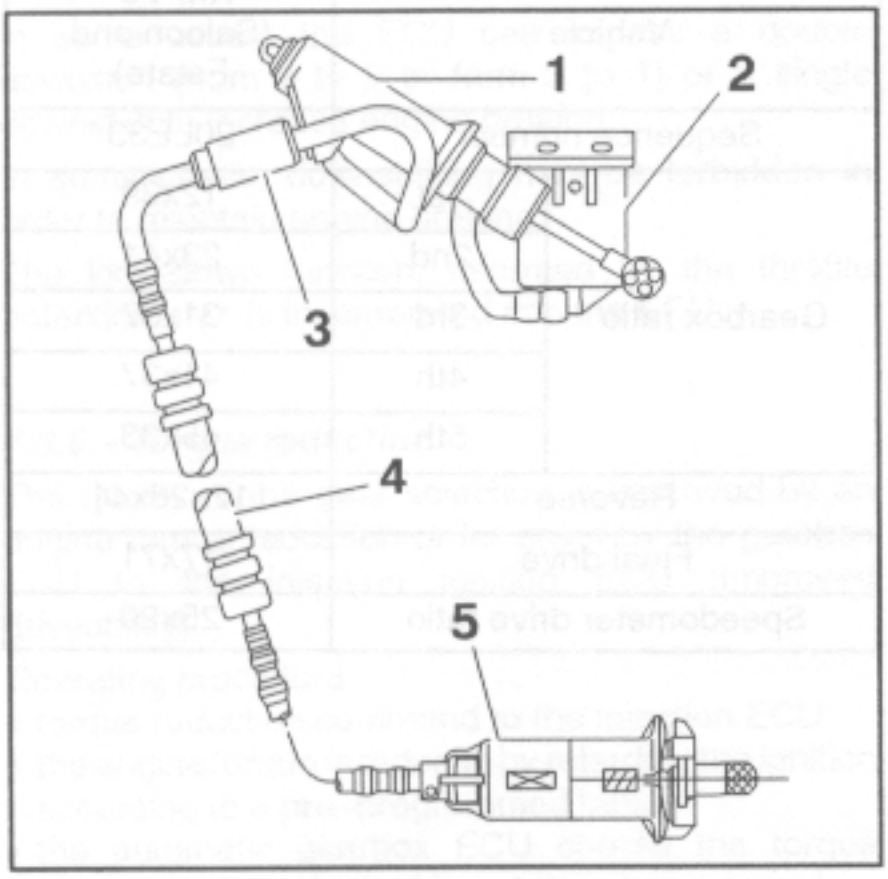


Fig : B2BR001C

Composition :

- (1) a transmitter cylinder controlled by the clutch pedal (located on pedal bracket)
- (2) reservoir (located on pedal bracket)
- (3) a quick–fit union
- (4) a transmitter–receiver connection ensured by hydraulic piping
- (5) a receiver cylinder, fastened on the clutch housing, enabling the change of position of the fork

Removing the union requires the use of a specific tool : 9040 T–H.

WARNING : The union can only be removed 4 – 5 times, do not remove unnecessarily.

Repair recommendations, see chapter :
0, XM 000–00/8, MAN 008931.

www.WorkshopManuals.co.uk

SPECIAL FEATURES : PRESSURE SOURCE AND RESERVE CIRCUIT

1 – PREAMBLE

Special features :

- SC/MAC : Citroën system for maintaining a constant ground clearance
- 6+2 piston high pressure pump (specific)
- pressure regulator
- specific steering hydraulic circuit with pressure switch and pressure regulator
- new CITROEN union on the pressure regulator

Reminder : the SC/MAC system makes it possible to limit the amount the vehicle sinks when stationary, engine off.

Operating principle : refer to the bulletin N° (XM 430–00/3) (chapter 9), MAN 008932.

2 – 6+2 PISTON HIGH PRESSURE PUMP

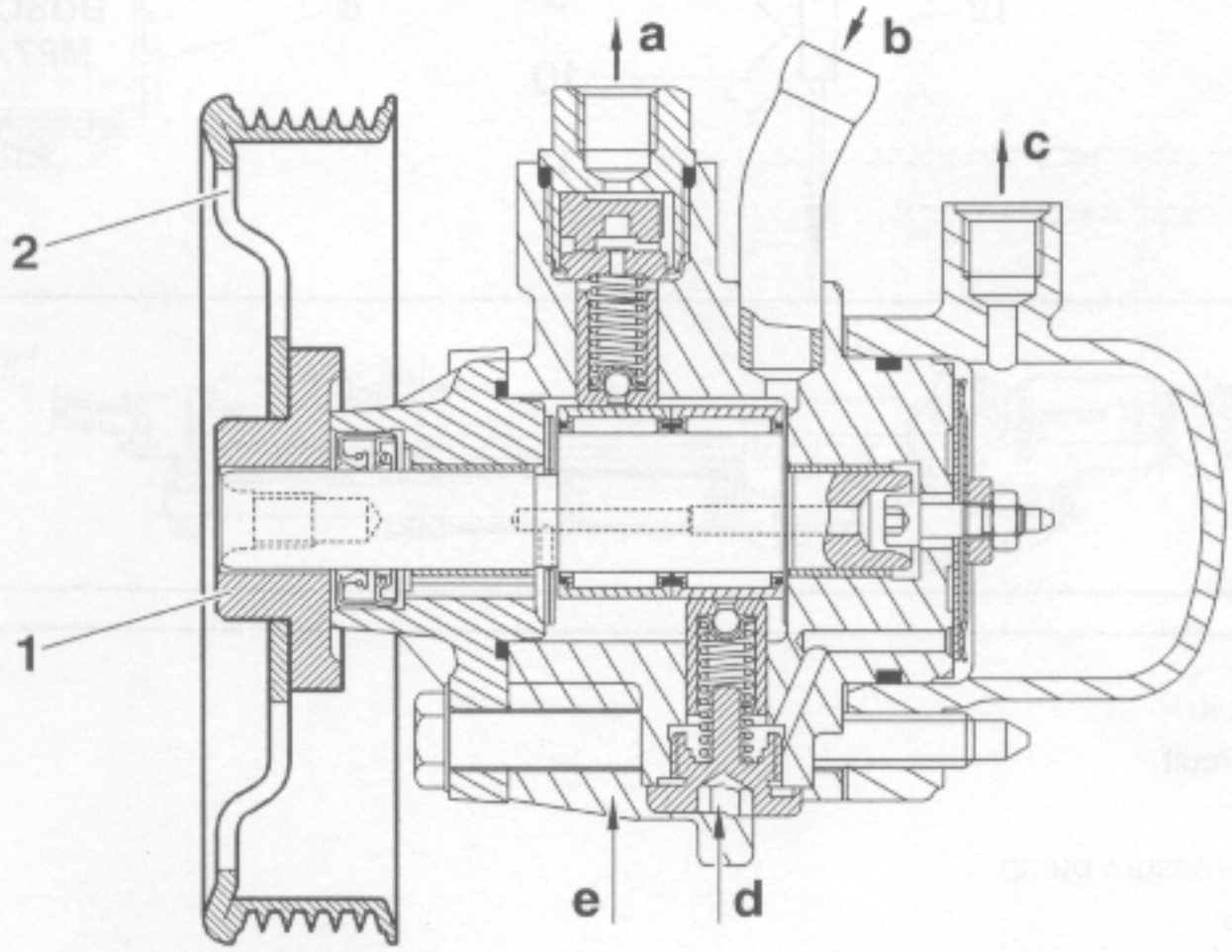


Fig : B4BP013D

"a" "suspension – brakes" outlet.

"b" suction line.

"c" "steering" output.

"d" 6 piston stage.

"e" 2 piston stage.

(1) hub.

(2) drive pulley.

Special features :

- the pulley of the high pressure pump can be removed
- hub pressed onto the pump shaft (can't be removed)
- high pressure pump without pressure regulator
- high pressure pump shaft mounted on a plastic bearing with an eccentric part fitted with needle roller bearings

www.WorkshopManuals.co.uk

3 – POWER STEERING HYDRAULIC CIRCUIT

XM V6 all types : power–assisted steering as standard.

Special features :

- the steering pressure switch allows the engine ECU to increase the engine idling speed when parking
- a pressure regulator is used to limit the pressure in the steering hydraulic circuit

3.1 – Synopsis

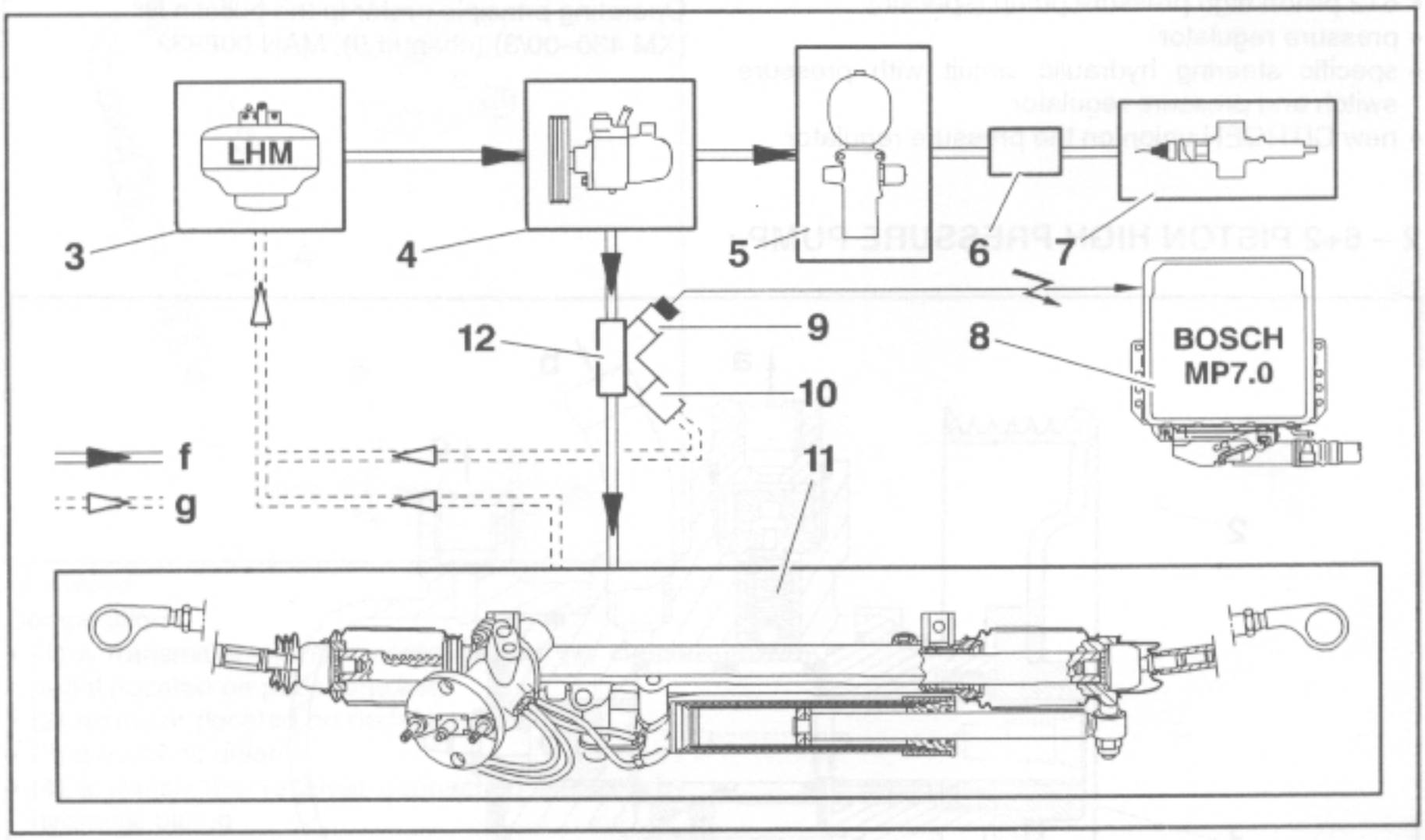


Fig : B4BP014D

"f" high pressure circuit.

"g" reservoir return circuit.

(3) reservoir.

(4) 6+2–piston high pressure pump.

(5) pressure regulator.

(6) 2–way union.

(7) security valve.

(8) ignition injection control unit.

(9) pressure switch.

(10) pressure regulator.

(11) power assisted steering.

(12) 4–way union.

Maximum circuit pressure : 160 bars.

When the steering is turned, the pressure switch informs the ECU of any pressure increase occuring at the end of the travel, in order to make up for the loss of engine speed.

Pressure switch :

- pressure lower than 10 bars : closed
- pressure higher than 20 bars : open

www.WorkshopManuals.co.uk

3.2 – Location : 4–way union

Location : to the front left of the subframe.

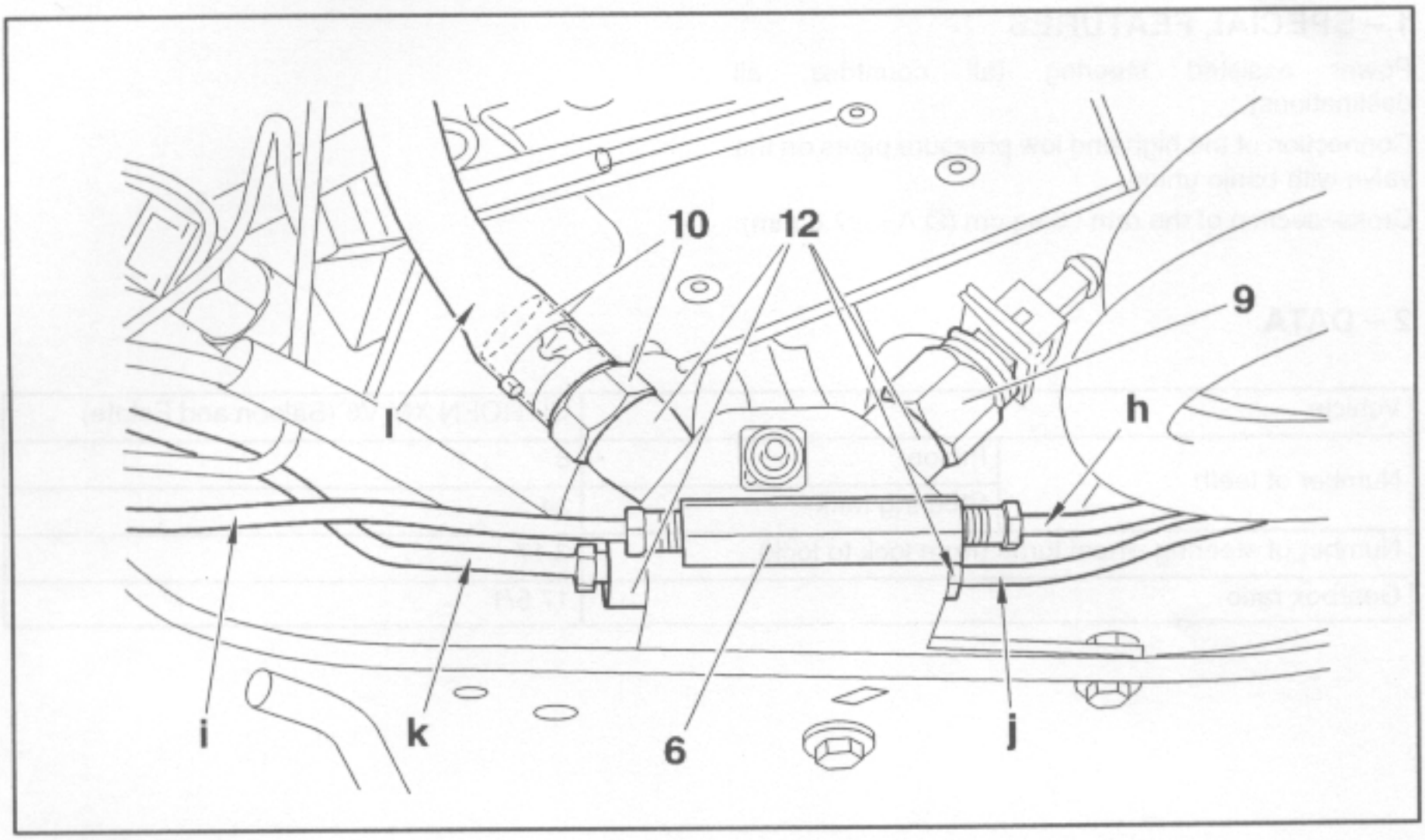


Fig : B4BP015D

"h" to high pressure pump.

"i" to safety valve.

"j" to pressure regulator.

"k" to steering valve.

"l" to reservoir.

(6) 2–way union.

(9) pressure switch.

(10) pressure regulator.

(12) 4–way union.

Tightening torques :

- pressure switch : 1.3 m.daN
- pressure regulator : 1.3 m.daN

www.WorkshopManuals.co.uk

SPECIAL FEATURES : STEERING

1 – SPECIAL FEATURES

Power assisted steering (all countries, all destinations).

Connection of the high and low pressure pipes on the valve with banjo union.

Cross–section of the ram : 6 sq.cm (Ø A = 27,6 mm).

2 – DATA

Vehicle		CITROEN XM V6 (Saloon and Estate)
Number of teeth	Pinion	8
	Steering rack	34
Number of steering wheel turns (from lock to lock)		3.17
Gearbox ratio		17.5/1

www.WorkshopManuals.co.uk

3 – TIGHTENING TORQUES

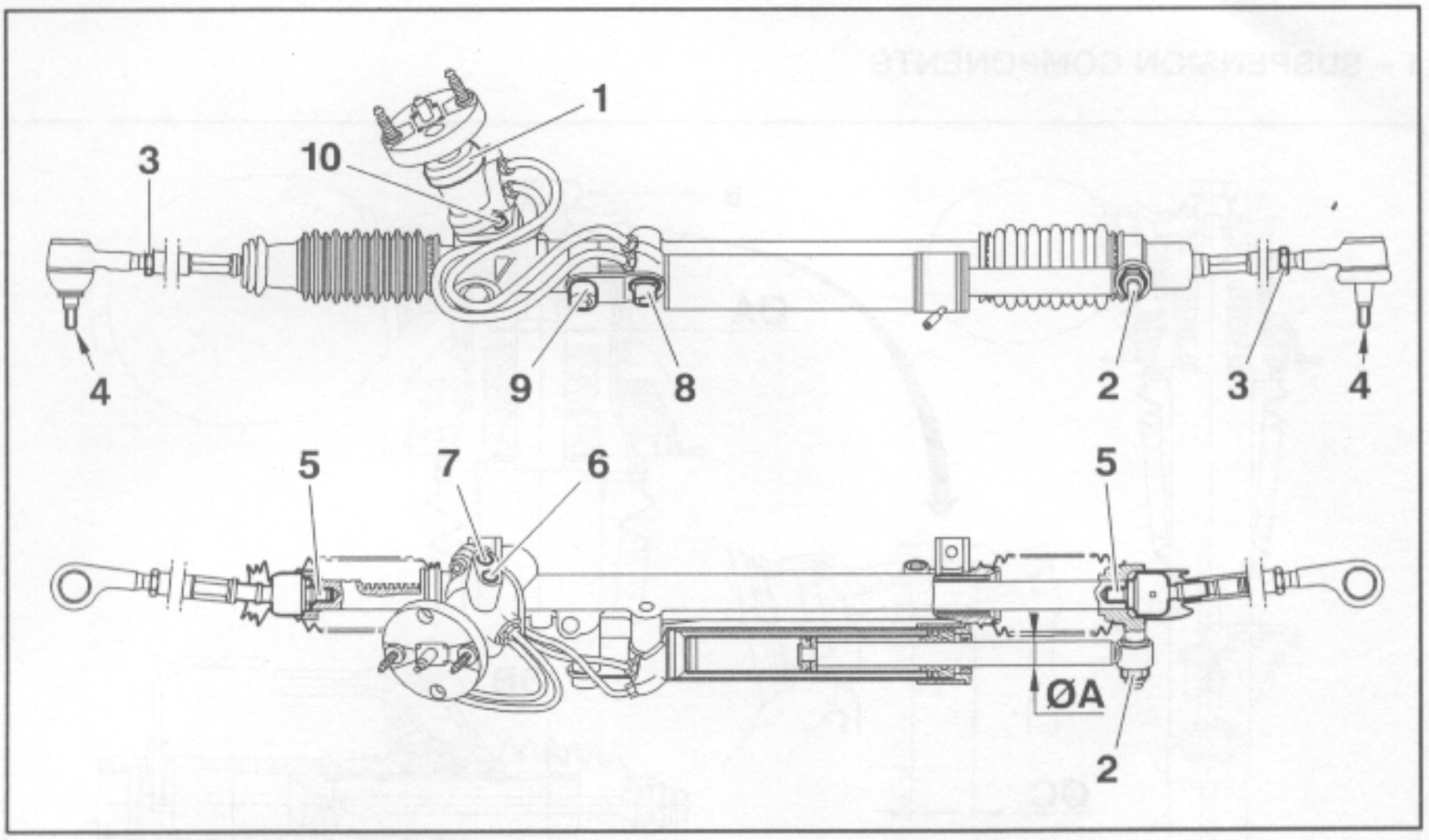


Fig : B3EP098D

(1) steering valve (yellow plastic ring).

(2) steering rack/ram fixing	9 m.daN
(3) lock nut for adjusting the steering track rods	4.5 m.daN
(4) pivot ball–joint nut	4.5 m.daN
(5) steering rack ball–joint	6 m.daN
(6) and (7) hydraulic connector on the valve (banjo union)	2 m.daN
(8) ; (9) steering system/ram fixing	New rack housing : Pre–tighten the screws to 12 m.daN Unscrew Tighten to 9 m.daN
	Reconditioned rack housing : Tighten to 9 m.daN
(10) housing/valve fixing	1.3 m.daN

www.WorkshopManuals.co.uk

SPECIAL FEATURES : SUSPENSION

1 – SUSPENSION COMPONENTS

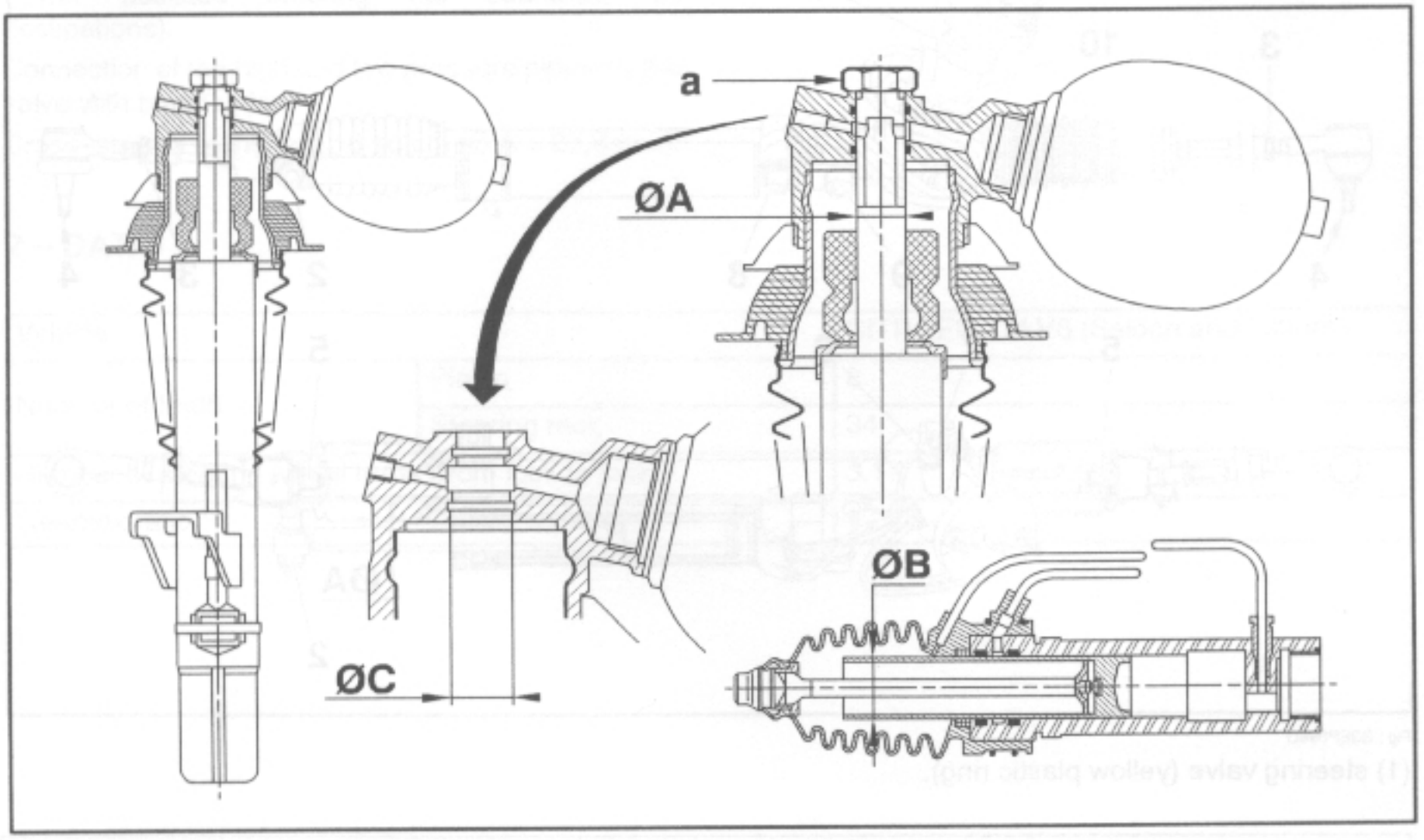


Fig : B3BP11XD

"a" nut, tightening torque : 6.5 m.daN.

1.1 – Front suspension unit

Special features :

- Ø A = 25 mm
- specific sphere support : Ø C = 24 mm (as a guide)

1.2 – Rear suspension

Special features :

- "Estate" version : Ø B = 42,5 mm
- "Saloon" version : Ø B = 37 mm

2 – ANTI–ROLL BAR

Data :

Vehicle type	Front	Rear
Saloon	Ø 24 mm	Ø 22 mm
Estate	Ø 25 mm	Ø 22.5 mm

www.WorkshopManuals.co.uk

3 – SC/MAC SYSTEM

The SC/MAC system makes it possible to limit the amount the vehicle sinks when stationary, engine off.

SC/MAC : Citroën system maintaining a constant ground clearance.

When the vehicle is stopped for a long time, the suspension suffers a loss of pressure through the following components :

- front height corrector
- rear height corrector
- brake control valve

With the SC/MAC device, the suspension is isolated from the rest of the hydraulic circuit when the main pressure is less than that in the suspension.

Operating principle : refer to the bulletin N° (XM 430–00/3) (chapter 9), MAN 008932.

3.1 – SC/MAC valve

Composition, front suspension :

- SC/MAC valve
- height corrector
- suspension cylinders (x2)
- firmness regulator (hydractive suspension)

Hydractive suspension : the regulator is operated by an electrovalve.

Composition, rear suspension :

- SC/MAC valve
- SC/MAC accumulator
- height corrector
- suspension cylinders (x2)
- firmness regulator (hydractive suspension)

Hydractive suspension : the regulator is operated by an electrovalve.

3.2 – Location

3.2.1 – At the front

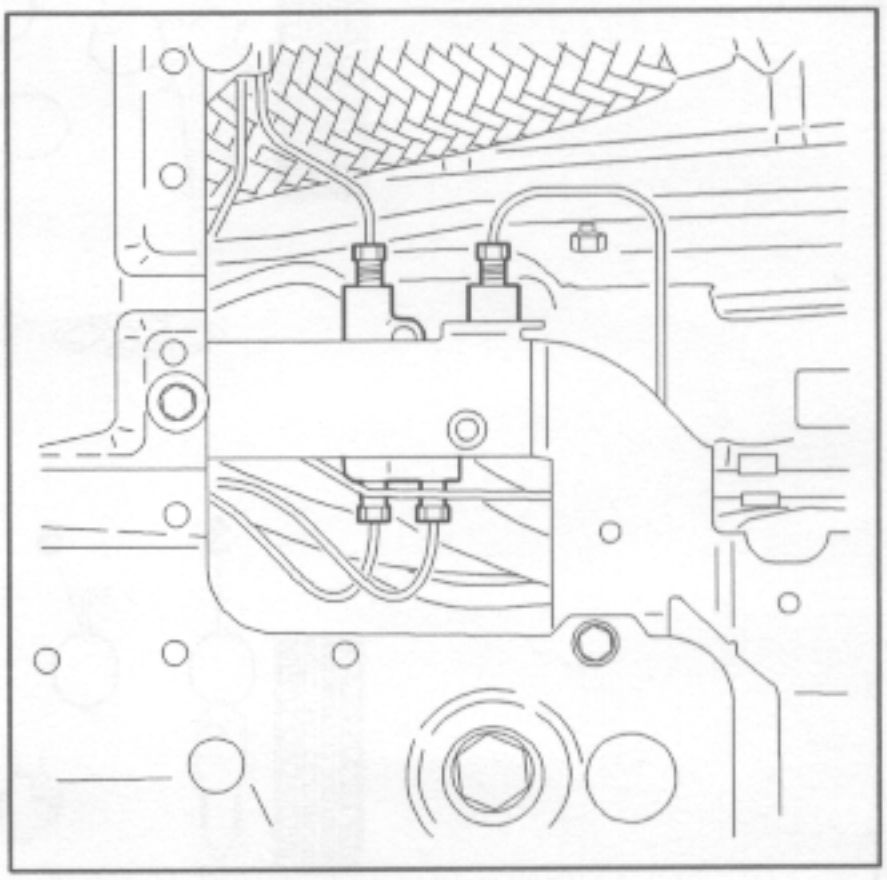


Fig : B3BR00CC

SC/MAC valve : at the front right hand side of the vehicle on the bracket secured to the rear of the subframe.

3.2.2 – At the rear

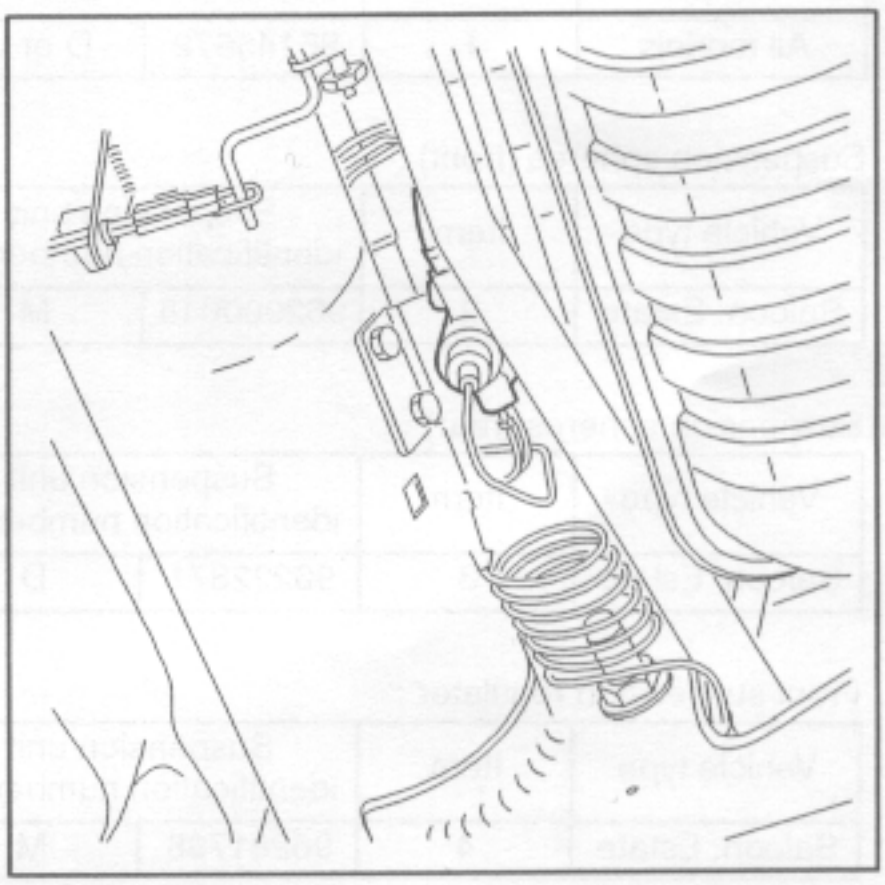


Fig : B3BR00EC

SC/MAC valve, SC/MAC accumulator : on the rear axle cross member.

www.WorkshopManuals.co.uk

4 – SUSPENSION SPHERES

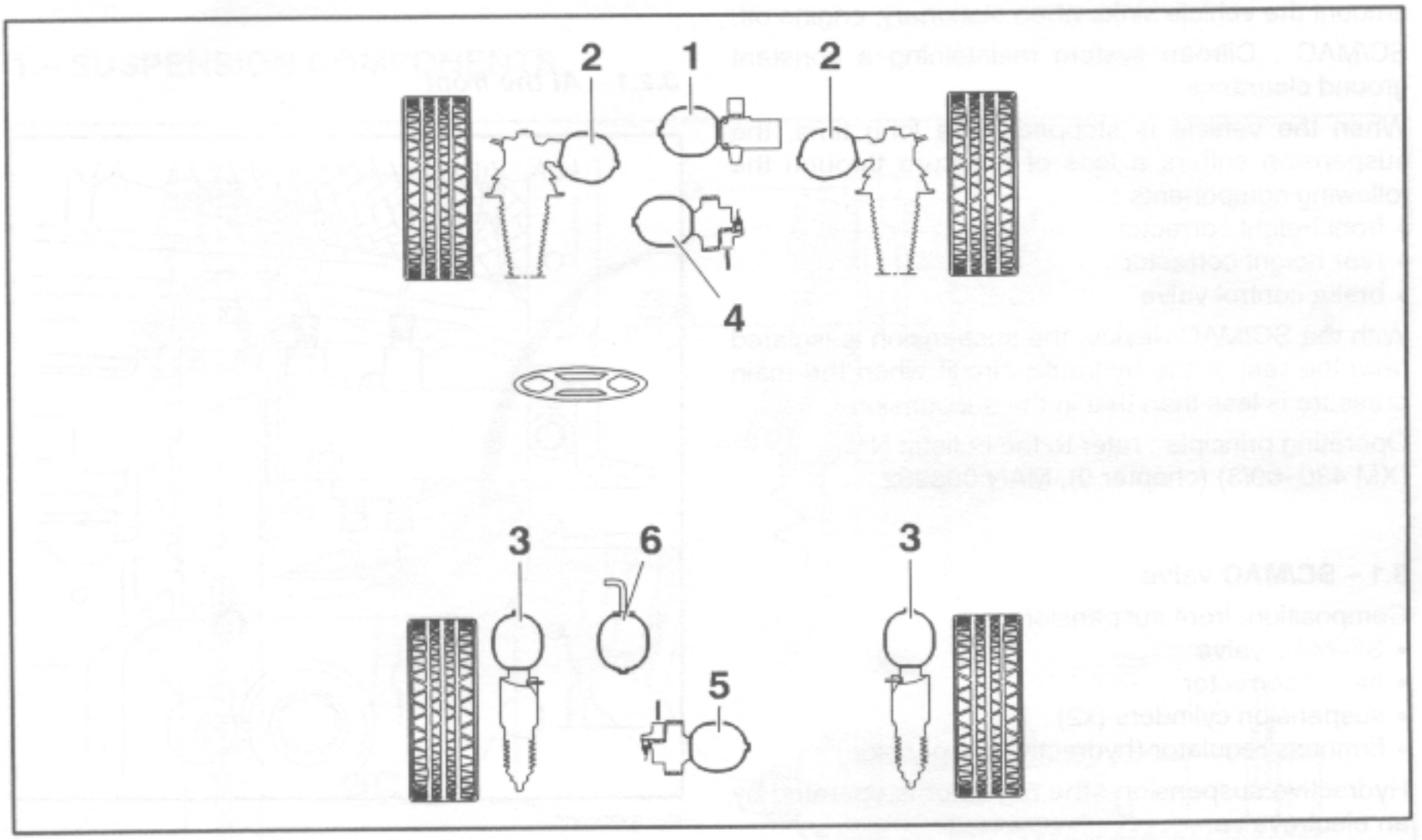


Fig : B3BP11YD

NOTE : CITROEN XM V6 : hydractive suspension standard on the complete Saloon and Estate range of vehicles.

Main pressure accumulator :

Vehicle type	Item	Suspension unit identification number (*)		Volume (cc)	Pressure (bars)	Damper (mm)
All models	1	96145672	D or U	450	62 (+5, –32)	Without

Suspension spheres (front) :

Vehicle type	Item	Suspension unit identification number (*)		Volume (cc)	Pressure (bars)	Damper (mm)
Saloon. Estate	2	962900048	M	450	40 (+5, –15)	0.7

Suspension spheres (rear) :

Vehicle type	Item	Suspension unit identification number (*)		Volume (cc)	Pressure (bars)	Damper (mm)
Saloon. Estate	3	96222871	D	400	30 (+5, –15)	0.6

Front suspension regulator :

Vehicle type	Item	Suspension unit identification number (*)		Volume (cc)	Pressure (bars)	Damper (mm)
Saloon. Estate	4	96281798	M	450	70 (+5, –25)	1.25

www.WorkshopManuals.co.uk

Rear suspension regulator :

Vehicle type	Item	Suspension unit identification number (*)		Volume (cc)	Pressure (bars)	Damper (mm)
Saloon. Estate	5	96238950	D	400	40 (+5, –15)	1.25

SC/MAC accumulator :

Vehicle type	Item	Suspension unit identification number (*)		Volume (cc)	Pressure (bars)	Damper (mm)
Saloon. Estate	6	96198613	D	400	50 (+5, –15)	Without

(*) : D = Desmopan U = Urepan M = Multicouche.

www.WorkshopManuals.co.uk

SPECIAL FEATURES : BRAKING SYSTEM

Vehicle application : XM V6.

Applicable from RPO number : 7483.

New components :

- front brake caliper (Saloon and Estate)
- front brake pads : surface area of brake pads increased (Saloon and Estate)
- front brake discs (Saloon and Estate)
- rear brake pads : surface area of brake pads increased
- rear brake discs (Saloons only)

1 – FRONT BRAKES

1.1 – Front brake calipers

Simple piston and floating caliper (Saloon and Estate) :

- piston : Ø = 60 mm
- reference : BENDIX 5Z0

Parking brake self–adjusting mechanism.

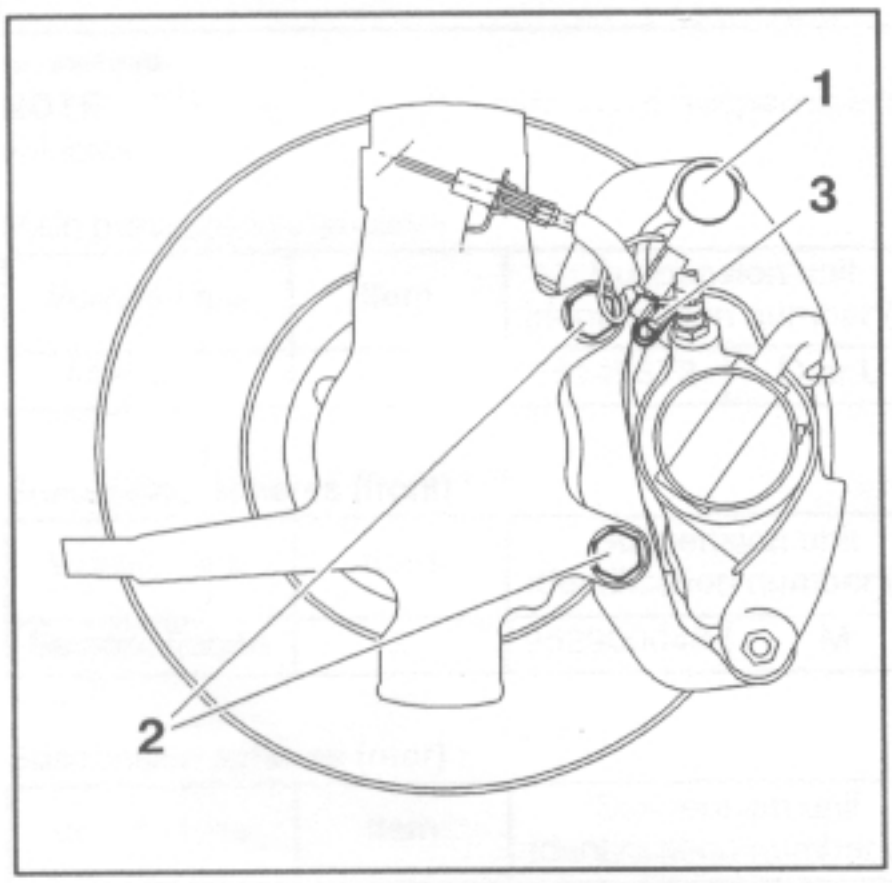


Fig : B3FP107C

Tightening torques :

- (1) stud : 2.5 m.daN
- (2) caliper bolt : 10.5 m.daN
- (3) bleed screw : 0.7 m.daN
- floating brake caliper lower bolt : 3 m.daN

1.2 – Front brake discs

Front discs with ventilated discs.

Vehicle		Saloon	Estate
Diameter (mm)		288	
Thickness (mm)	Min.	26	
	Max.	28	
Maximum run out (mm)		0.05	
Max. thickness variation on one circumference (mm)		0.01	

1.3 – Front brake pads

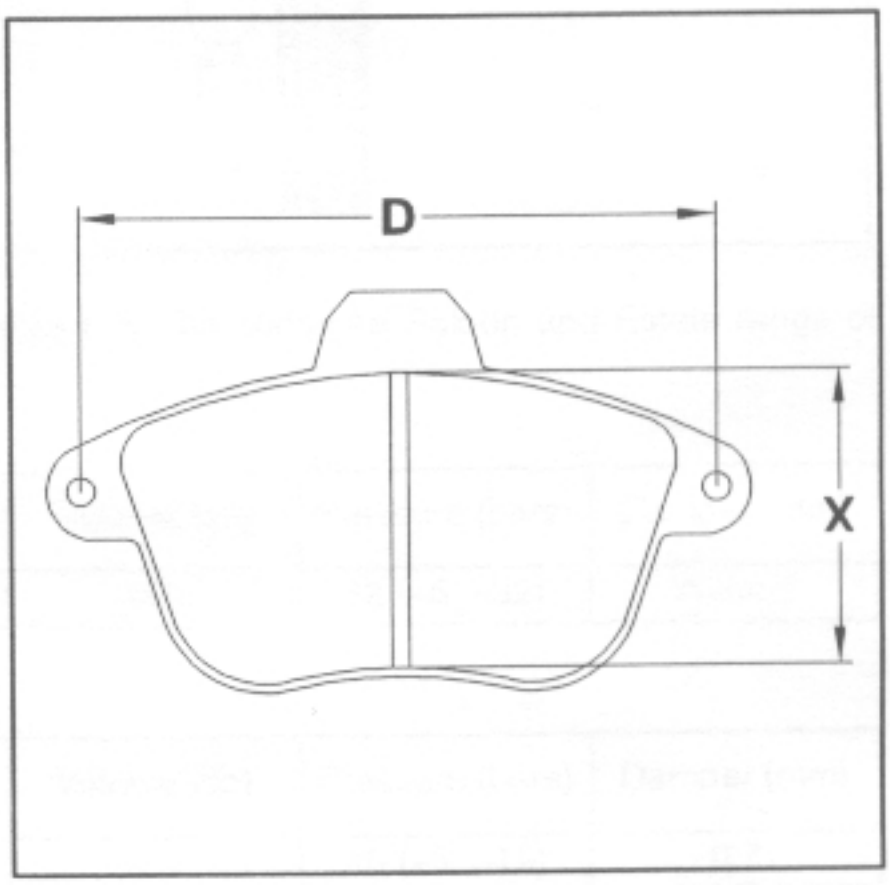


Fig : B3FP108C

Brake pads :

Vehicle		Saloon	Estate
Make		ABEX	
Material		FERF 949	
Width D (mm)		158	
Height X (mm)		59.5	
Thickness (mm)	Min.	2	
	Max.	11,8	
Surface area of each pad		61.5 cm²	

Asbestos free brake linings with wire for wear warning lamp in instrument panel.

www.WorkshopManuals.co.uk

2 – REAR BRAKES

2.1 – Rear brake calipers

CITROEN fixed brake calipers fitted with 2 pistons.

Piston diameter (mm) :

- Saloon : 33
- Estate : 40

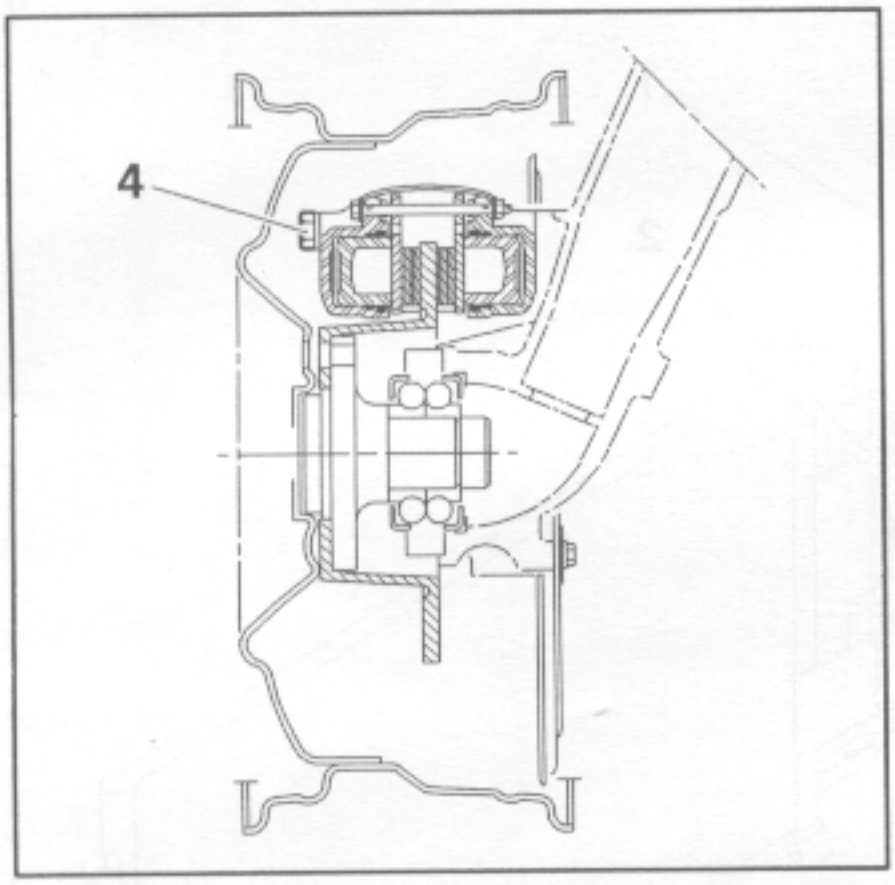


Fig. B3FP109C

Tightening torque (screw (4)) :

- Saloon : 4.5 m.daN
- Estate : 7 m.daN

2.2 – Rear brake discs

The rear brake discs are non–ventilated.

Vehicle		Saloon	Estate
Diameter (mm)		232	251
Thickness (mm)	Min.	7	10
	Max.	9	12
Maximum run out (mm)		0.05	
Max. thickness variation on one circumference (mm)		0.01	

2.3 – Rear brake pads

Brake pads :

Vehicle		Saloon	Estate
Make		ABEX	
Material		FERF 949 asbestos free	
Thickness (mm)	Min.	2	
	Max.	11.4	
Surface area of each pad		19 cm²	36,25 cm²

www.WorkshopManuals.co.uk

SPECIAL FEATURES : REFRIGERATION SYSTEM

1 – SYNOPSIS

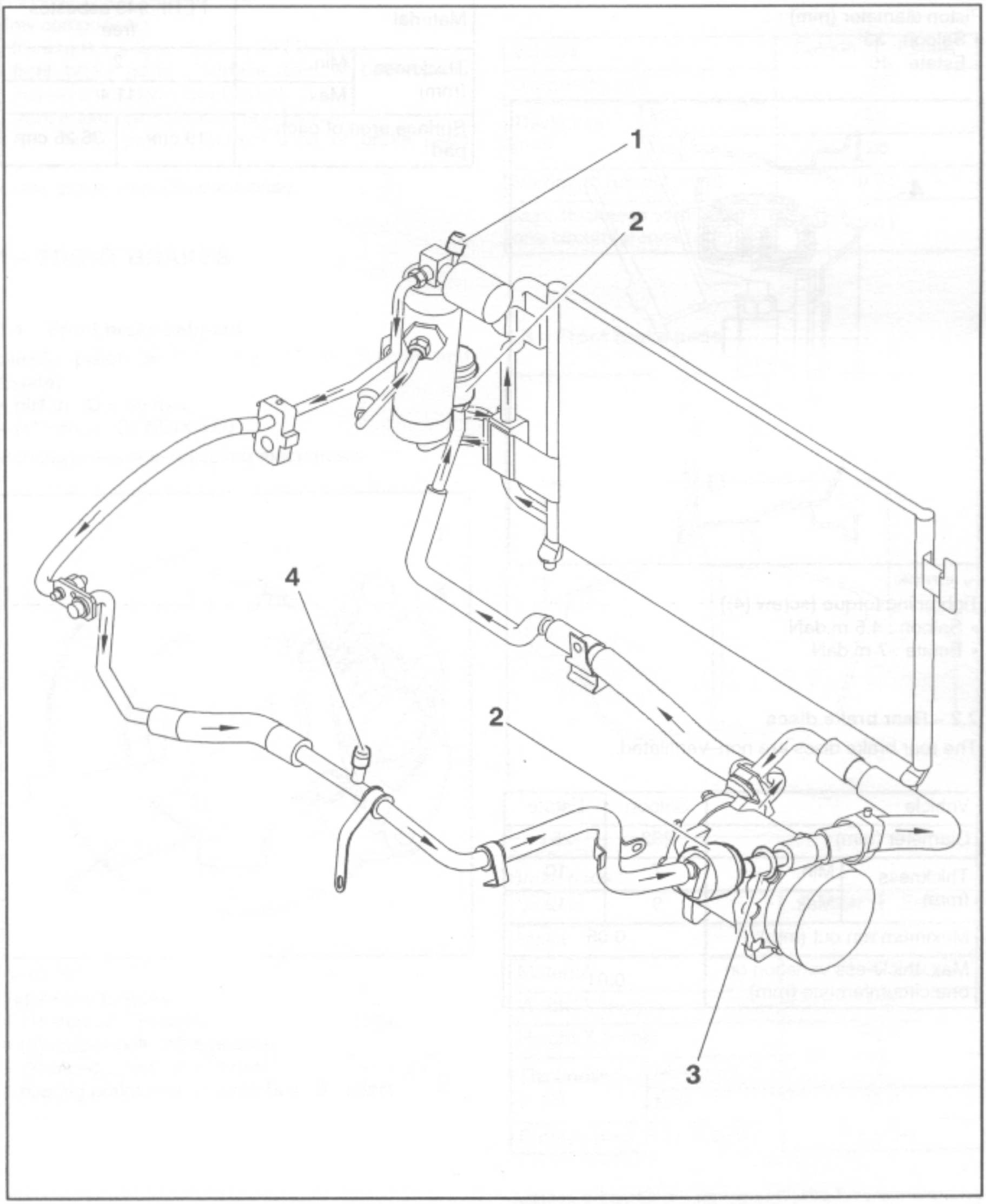


Fig : C5HP08KP

www.WorkshopManuals.co.uk

(1) high pressure charge valve.

(2) buffer volumes.

(3) click–fit connection.

(4) low pressure charge valve.

Special features :

- air conditioning circuit suited to the engine environment (late type)
- 2 buffer volumes are incorporated into the circuit to minimise noise
- the compressor can be removed by removing the compressor + compressor support assembly
- click–fit connector on the low pressure circuit removable using the black ring 8005–TA (5/8")

2 – REFRIGERANT FLUID

Reference : R134a.

Recommended quantity : 875 g ± 25 g.

3 – REFRIGERATION COMPRESSOR CLUTCH

Data :

- variable capacity compressor
- 7 pistons
- 16 cc

Engine types	Type	ES9J4
	Plate	XFZ
Refrigeration compressor clutch	Make	SANDEN
	Reference	SD7V16
	Poly–V belt	6 V belt
Recommended oil	Reference	SP10
	Capacity	135 cc

www.WorkshopManuals.co.uk

Xm

JUNE 1998

RPO No: 7847 ⟼

REF. 0 No XM 000-00/14

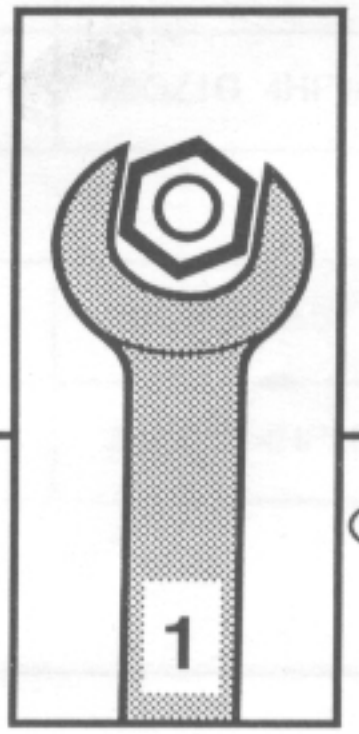
PRESENTATION

- 1999 MODEL YEAR

MAN 108931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE



GB

www.WorkshopManuals.co.uk

CONTENTS

GENERAL SPECIFICATION

PRESENTATION : 1999 MODEL YEAR RANGE 1

1 – Maintenance 1
2 – EUROPE marketed range –

MECHANICAL DEVELOPMENTS : 1999 MODEL YEAR RANGE 3

1 – Electronic control units 3
2 – XUD11BTE/L4 engine 4
3 – DK5ATE engine 7
4 – Wheel bolts and rims 9
5 – Hydractive suspension 11

MODIFICATIONS TO THE ELECTRICAL SYSTEM : 1999 MODEL YEAR RANGE 12

1 – General 12
2 – Electrical harnesses –
3 – Audio system –

www.WorkshopManuals.co.uk

PRESENTATION : 1999 MODEL YEAR RANGE

1 – MAINTENANCE

The 1999 Model Year service schedules are characterised by an increase in the mileage intervals between engine oil changes.

The new service intervals are as follows :

- petrol vehicles (all types) – direct injection diesel vehicles : 12,500 miles (instead of 10,000 miles)
- indirect injection diesel vehicles (Turbo D) (pre–combustion chambers) : 110,000 miles (instead of 6,000 miles)

WARNING : The new mileage intervals are based on using an engine oil, the quality of which meets the performance standards ACEA (A3.96 – B3.96) or API (SJ/CF) (synthetic or semi–synthetic oils).

2 – EUROPE MARKETED RANGE

2.1 – Index

Ref. letters used in the tables "commercial range of vehicles" :

(a) = automatic gearbox	(f) = fiscal rating in "HP" (France)
(m) = manual gearbox	L3 = CEE 95 L3
(l) = "long" gearbox	L4 = CEE 2000 (EURO 2000)

2.2 – Commercial range of CITROEN XM vehicles – Saloon

Vehicle		Engine		Gearbox
Type code	Trim level	Plate. Type	Power kW/hp. (f)	Reference. Type

CITROEN XM 2 l injection (1998 cc) :

Y4–CZ	SX	RFV (L3) XU10J4R	97,4/135 (9)	20TA53 BE3 (m) (*)
Y4–TV			97,4/135 (10)	20GZ5G 4HP18 (a)
Y4–TX			97,4/135 (9)	20TA52 BE3 (m) (l) (*)

(*) gearbox equipped with a new reverse gear brake.

CITROEN XM 2 l turbo – CT (1998 cc) :

Y4–GG	SX	RGX (L3) XU10J2TE	108/150 (10)	20GM32 ME5T (m)
	EXCLUSIVE			
Y4–TT	SX		108/150 (11)	20GZ1G 4HP18 (a)
	EXCLUSIVE			

CITROEN XM 6 cylinders (2946 cc) :

Y4–WG	SX	ES9J4 (L3) XFZ	140/194 (13)	20LE33 ML5T (m)
	EXCLUSIVE			
Y4–WH	SX		140/194 (14)	20HZ02 4HP20 (a)
	EXCLUSIVE			

www.WorkshopManuals.co.uk

Vehicle		Engine		Gearbox
Type code	Trim level	Plate. Type	Power kW/hp. (f)	Reference. Type

CITROEN XM turbo D12 (2088 cc) :

Y4–GZ	For conversion into ambulance	P8C (L3) XUD11BTE	80/110 (7)	20GM31 ME5T (m)
	SX			
	EXCLUSIVE			
Y4–RN	SX		80/110 (8)	20GZ5D 4HP18 (a)
	EXCLUSIVE			
Y4–WE	SX	P8C (L4) XUD11BTE	80/110	20GM31 ME5T (m)

CITROEN XM 2,5 l turbo diesel (2446 cc) :

Y4–NZ	SX	THY (L3) DK5ATE	94,5/130 (9)	20KM50 MG5TB (m)
	EXCLUSIVE			

2.3 – Commercial range of CITROEN XM vehicles – Estate

CITROEN XM 2 l injection (1998 cc) :

Y4–GB	SX	RFV XU10J4R	97,4/135 (9)	20GM36 ME5T (m)
Y4–TU			97,4/135 (10)	20GZ5G 4HP18 (a)

CITROEN XM 2 l turbo – injection (1998 cc) :

Y4–GM	Varebiler	RGX XU10J2TE	108/150 (9)	20GM33 ME5T (m)
	SX			
Y4–TS	Varebiler		108/150 (10)	20GZ1G 4HP18 (a)
	SX			

CITROEN XM 6 cylinders (2946 cc) :

Y4–WJ	SX	ES9J4 XFZ	140/194 (13)	20LE33 ML5T (m)
Y4–TN			140/194 (14)	20HZ02 4HP20 (a)

CITROEN XM turbo D12 (2088 cc) :

Y4–MZ	Varebiler	P8C XUD11BTE	80/110 (7)	20GM31 ME5T (m)
	SX			
Y4–CW	Varebiler		80/110 (8)	20GZ5D 4HP18 (a)
	SX			
Y4–WF	SX	P8C (L4) XUD11BTE	80/110	20GM31 ME5T (m)

CITROEN XM 2,5 l turbo diesel (2446 cc) :

Y4–RM	Varebiler	THY DK5ATE	94,5/130 (9)	20KM50 MG5TB (m)
	SX			

www.WorkshopManuals.co.uk

MECHANICAL DEVELOPMENTS : 1999 MODEL YEAR RANGE

1 – ELECTRONIC CONTROL UNITS

1.1 – Engine management ECU

4 cylinders (1998 cc) :

Engine type	Gearbox	Injection system			Remarks
		Supplier Type	PSA reference Manufacturer reference	Software version Indication	
RFV XU10J4R	Manual	BOSCH	96 309 013 80	1037357305	Improved driving performance
	Automatic	MP 52 (*)	0261204694	26FM435	
RGX XU10J2TE	Manual	BOSCH	96 304 296 80	1037357230	
	Automatic	MP 32 (*)	0261200808	26FM0349	

6 cylinders (2946 cc) :

Engine type	Gearbox	Injection system			Remarks
		Supplier Type	PSA reference Manufacturer reference	Software version Indication	
UFZ ES9J4	Manual	BOSCH MP 7.0 (*)	96 255 522 80	1037357243	Improved driving performance
			0261204412	26FM413	
	Automatic		96 255 523 80	1037358274	
			0261204413	26FM0432	

NOTE : (*) downloading an update to the ECU.

4 cylinder Turbo Diesel engine :

Engine type	Gearbox	Injection system			Remarks
		Supplier Type	PSA reference Manufacturer reference	Software version Indication	
P8C XUD11BTE/L3	Manual Automatic	LUCAS EPIC	96 305 092 80 R 040 100 20 C	41502211 0B	
	Manual		96 314 459 80 R 040 100 16 D	41501411 0C	
P8C XUD11BTE/L4			96 304 668 80 R 040 100 15 D	41501412 0C	New indirect injection diesel engine
THY DK5ATE	Manual	BOSCH MSA 11 7.6	96 286 071 80 00281001336	L3 16	

www.WorkshopManuals.co.uk

1.2 – Automatic gearbox ECU ZF 4HP20

Supplier : BOSCH (*).

PSA reference : 96 328 731 80.

Software version : PS08G03.

(*) ECU updated by downloading.

2 – XUD11BTE/L4 ENGINE

Vehicles fitted with XUD11BTE/L4 engines have been marketed since the 02/1998.

The XUD11BTE/L4 engine replaces the XUD11BTE/L3 engine in countries offering tax incentives.

The new emission standard L4 is stricter than the preceding standard (L3 emission standard) :
- reduction in nitrogen oxide (Nox) emissions
- reduction in soot emissions

2.1 – Principal evolutions

Components integrated in the air inlet system :
- air flowmeter
- throttle housing (on inlet manifold)

Specific elements :
- the catalytic converter is impregnated with 70 g of precious metal
- engine wiring harness
- precombustion chamber (specific cylinder head)
- inlet manifold connection (adapted for the throttle housing)
- diesel fuel injectors (specific rating = 150 bars)
- diesel injection ECU (location of new channels)
- exhaust gas recycling valve
- electrovalve allowing the gradual operation of the throttle butterfly housing located on the inlet manifold

NOTE : The XUD11BTE/L4 engine can only be coupled with manual gearboxes.

2.2 – Main specification

2.2.1 – Vehicle

Type code :
- "Saloon" version : Y4WE
- "Estate" version : Y4WF

2.2.2 – Engine

Engine code : XUD11BTE/L4.

Legislation type : P8C.

Cubic capacity : 2088 cc.

Compression ratio : 21.5/1.

Max. power E.E.C. (DIN) : 80 kW (110 HP).

Corresponding engine speed : 4300 rpm.

Max. torque E.E.C. (DIN) : 25 m.daN (26 m.kg).

Corresponding engine speed : 2000 rpm.

Emission standard : L4 (EURO 2000).

2–way catalytic converter : yes.

Injection system : LUCAS DIESEL.

www.WorkshopManuals.co.uk

2.3 – Description : exhaust gas recycling system

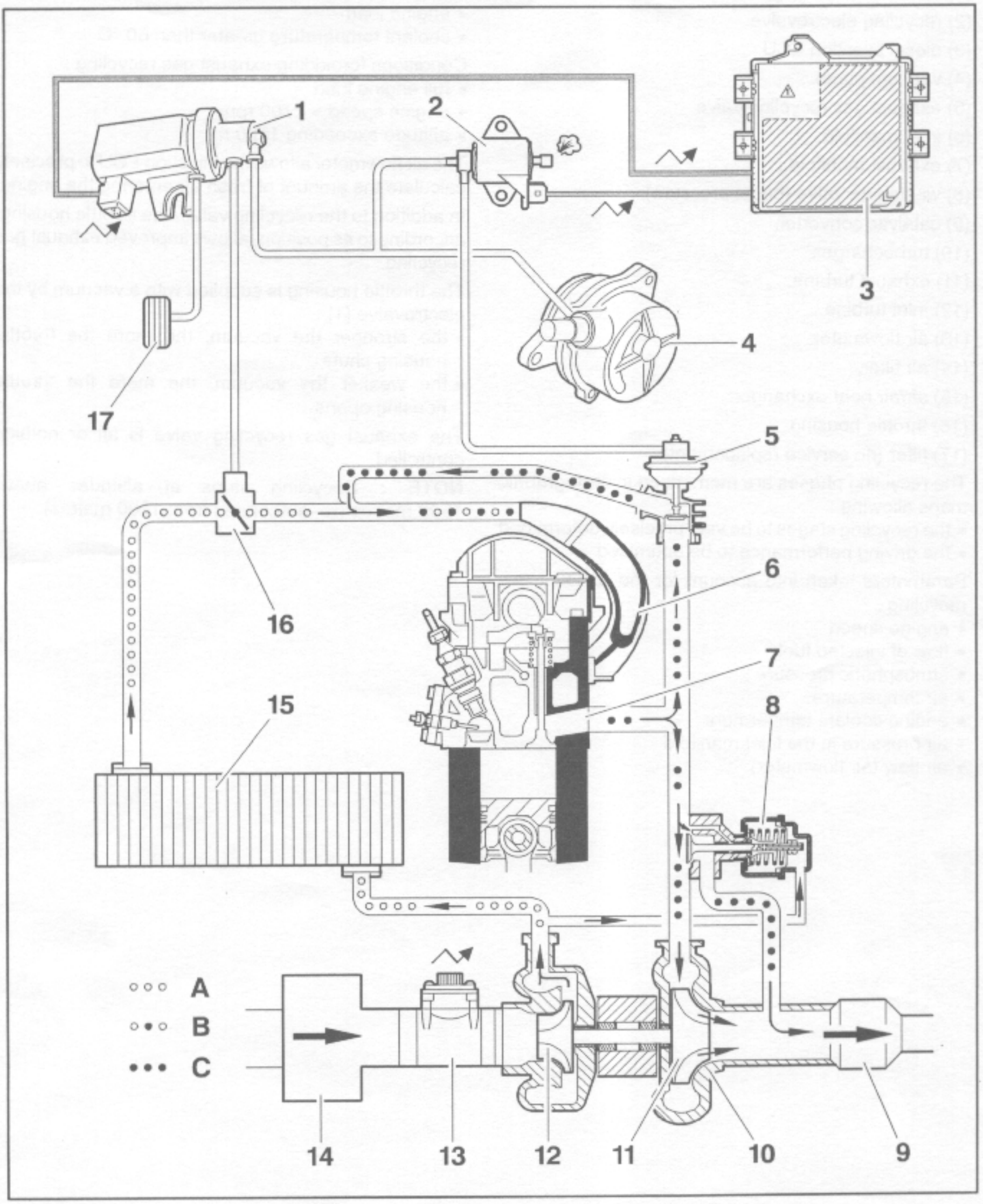


Fig : B1HP0Z8P

Air circulation (in the direction of arrows).

A – air.

B – exhaust gas + air.

C – exhaust gas.

www.WorkshopManuals.co.uk

(1) proportional electrovalve (progressive control of the throttle housing).
(2) recycling electrovalve.
(3) diesel injection ECU.
(4) vacuum pump.
(5) exhaust gas recycling valve.
(6) inlet manifold.
(7) exhaust manifold.
(8) wastegate valve (boost pressure).
(9) catalytic converter.
(10) turbocharger.
(11) exhaust turbine.
(12) inlet turbine.
(13) air flowmeter.
(14) air filter.
(15) air/air heat exchanger.
(16) throttle housing.
(17) filter (no service replacement).

The recycling phases are memorised in cartographic maps allowing :
- the recycling stages to be very precisely determined
- the driving performance to be optimised

Parameters taken into account for the exhaust gas recycling :
- engine speed
- flow of injected fuel
- atmospheric pressure
- air temperature
- engine coolant temperature
- air pressure in the inlet manifold
- air flow (air flowmeter)

Conditions for recycling of exhaust gas :
- engine speed < 2700 rpm
- engine load
- coolant temperature greater than 60 °C

Conditions forbidding exhaust gas recycling :
- full engine load
- engine speed > 2700 rpm
- altitude exceeding 1500 m

The air flowmeter allows the injection ECU to precisely calculate the amount of fresh air entering the engine.

In addition to the recycling valve, the throttle housing, according to its position, allows improved exhaust gas recycling.

The throttle housing is supplied with a vacuum by the electrovalve (1) :
- the stronger the vacuum, the more the throttle housing shuts
- the weaker the vacuum, the more the throttle housing opens

The exhaust gas recycling valve is all or nothing controlled.

NOTE : Recycling stops at altitudes above 1500 metres (re–authorised from 1200 metres)

www.WorkshopManuals.co.uk

3 – DK5ATE ENGINE

Evolutions :
- fuel supply system
- diesel fuel filter

3.1 – Fuel supply system

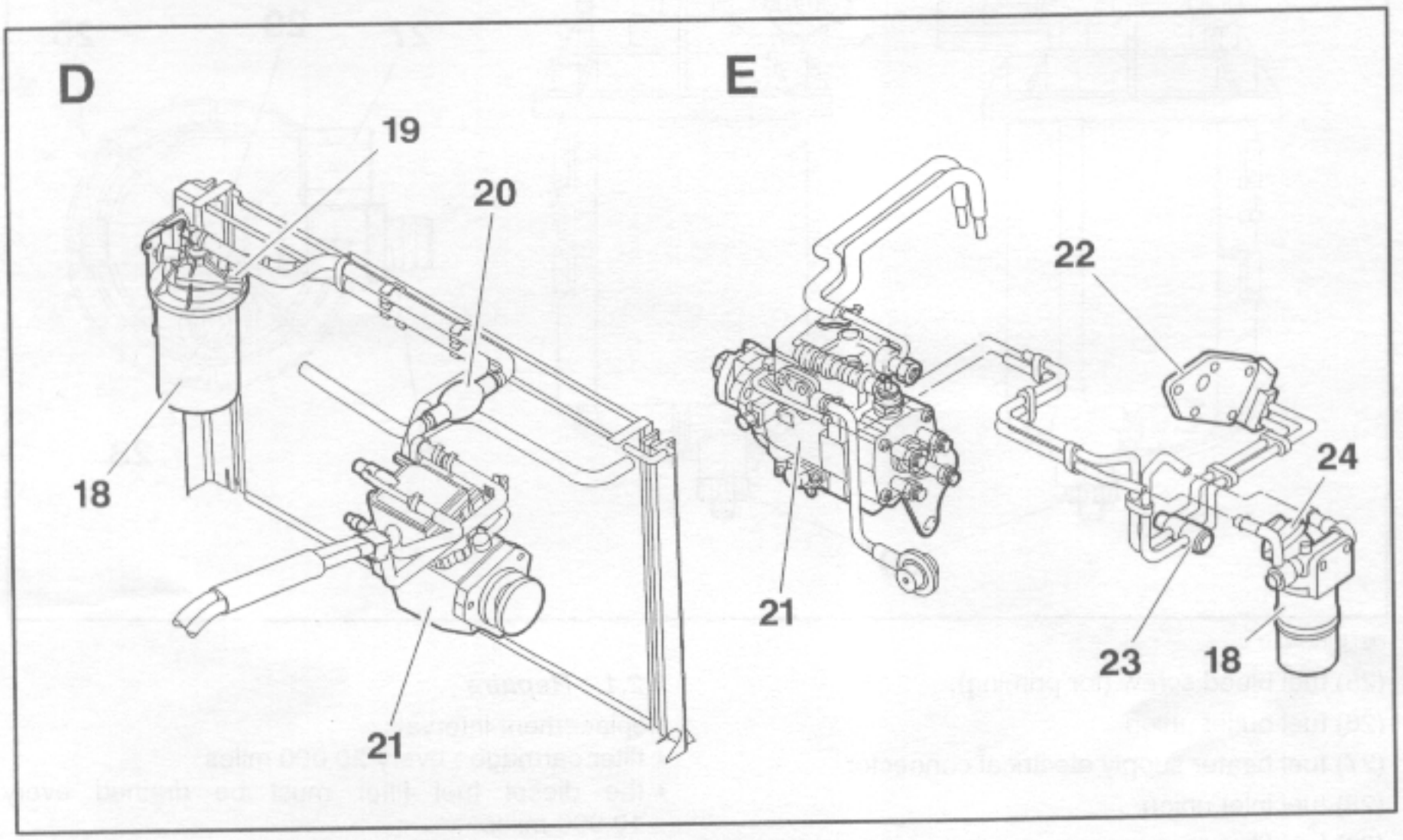


Fig : B1HP0Z9O

D – new arrangement.
E – former arrangement.
(18) diesel fuel filter.
(19) diesel fuel heater (electrical).
(20) bulb type fuel primer.
(21) diesel fuel injection pump.
(22) diesel fuel heater (thermal).
(23) thermostatic regulator.
(24) priming pump.

3.1.1 – Former arrangement

Special features :
- priming pump integrated in the fuel filter
- fuel heater on cylinder head
- fuel filter equipped with a water–in–fuel sensor
- thermostatic valve allowing the fuel temperature to be regulated
- fuel filter with aluminium well

3.1.2 – New arrangement

Special features :
- specific fuel pipes
- priming pump separate from the fuel filter
- new fuel filter with plastic well

www.WorkshopManuals.co.uk

3.2 – Diesel fuel filter

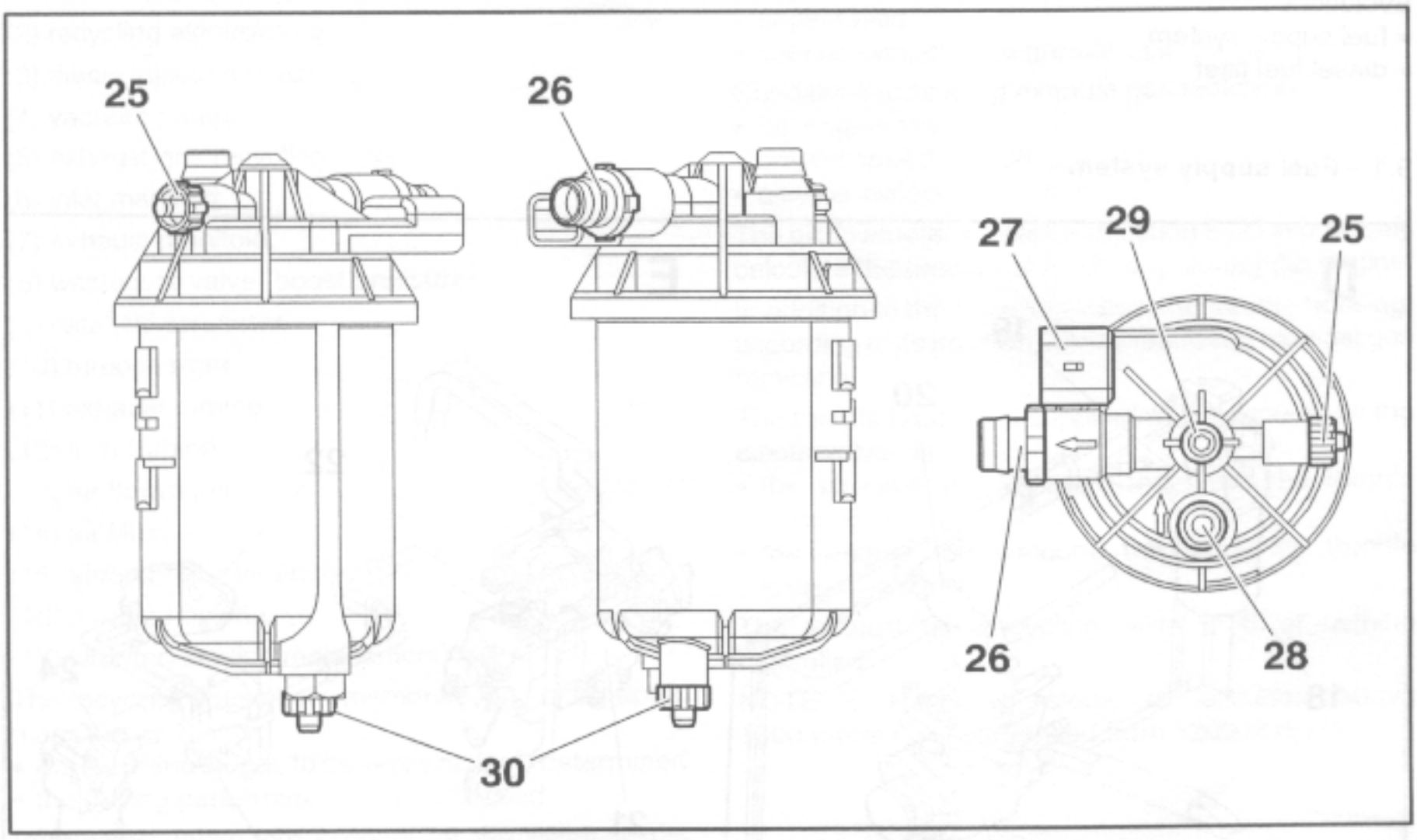


Fig : B1HP0ZAD

(25) fuel bleed screw (for priming).

(26) fuel outlet union.

(27) fuel heater supply electrical connector.

(28) fuel inlet union.

(29) fuel filter cover screw.

(30) coolant bleed screw.

Tighten the bolt (29) to 0,5 m.daN.

Special characteristics of the new fuel filter :
- specific fuel filter cartridge
- incorporation of an electric fuel heater in the fuel filter

NOTE : The fuel filter is not fitted with a water level detector.

Characteristics of the fuel filter cartridge :
- type (: C460)
- diameter : 70 mm
- height : 85 mm

The fuel pipes are connected to the fuel filter by click–fit connectors.

The heater integrated in the fuel filter is electrically supplied after the ignition is switched on.

Fuel heater operating conditions :
- fuel heater is activated :
  when the temperature is < 7°C
- fuel heater stops :
  when the temperature is > 20°C

3.2.1 – Repairs

Replacement intervals :
- filter cartridge : every 20,000 miles
- the diesel fuel filter must be drained every 10,000 miles

3.2.2 – Replacement parts

Both old and new parts are available from the Replacement Parts Division.

www.WorkshopManuals.co.uk

4 – WHEEL BOLTS AND RIMS

NOTE : This evolution concerns vehicles equipped with light alloy wheel rims.

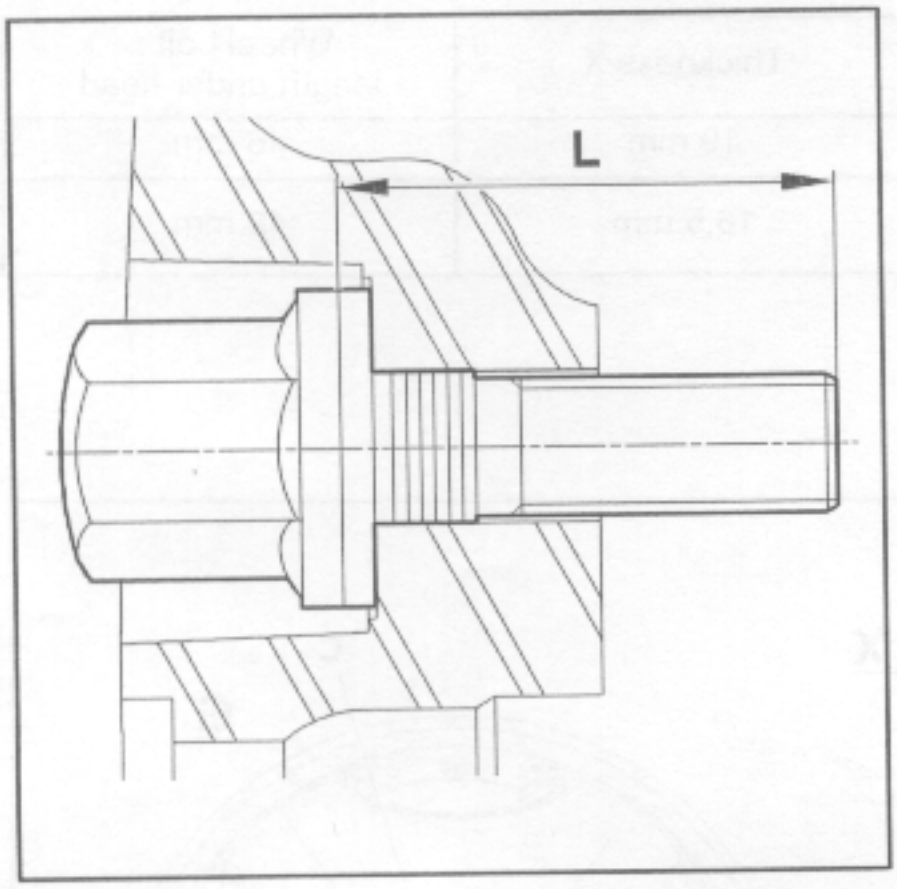


Fig : B2GP00BC

Evolution of the length under the head of the light alloy wheel bolts : L = 42 mm (instead of 46 mm).

NOTE : The spare wheel has not evolved and can use the 2 types of bolt.

4.1 – Identifying the fittings

4.1.1 – "MONTE–CARLO" wheel rim

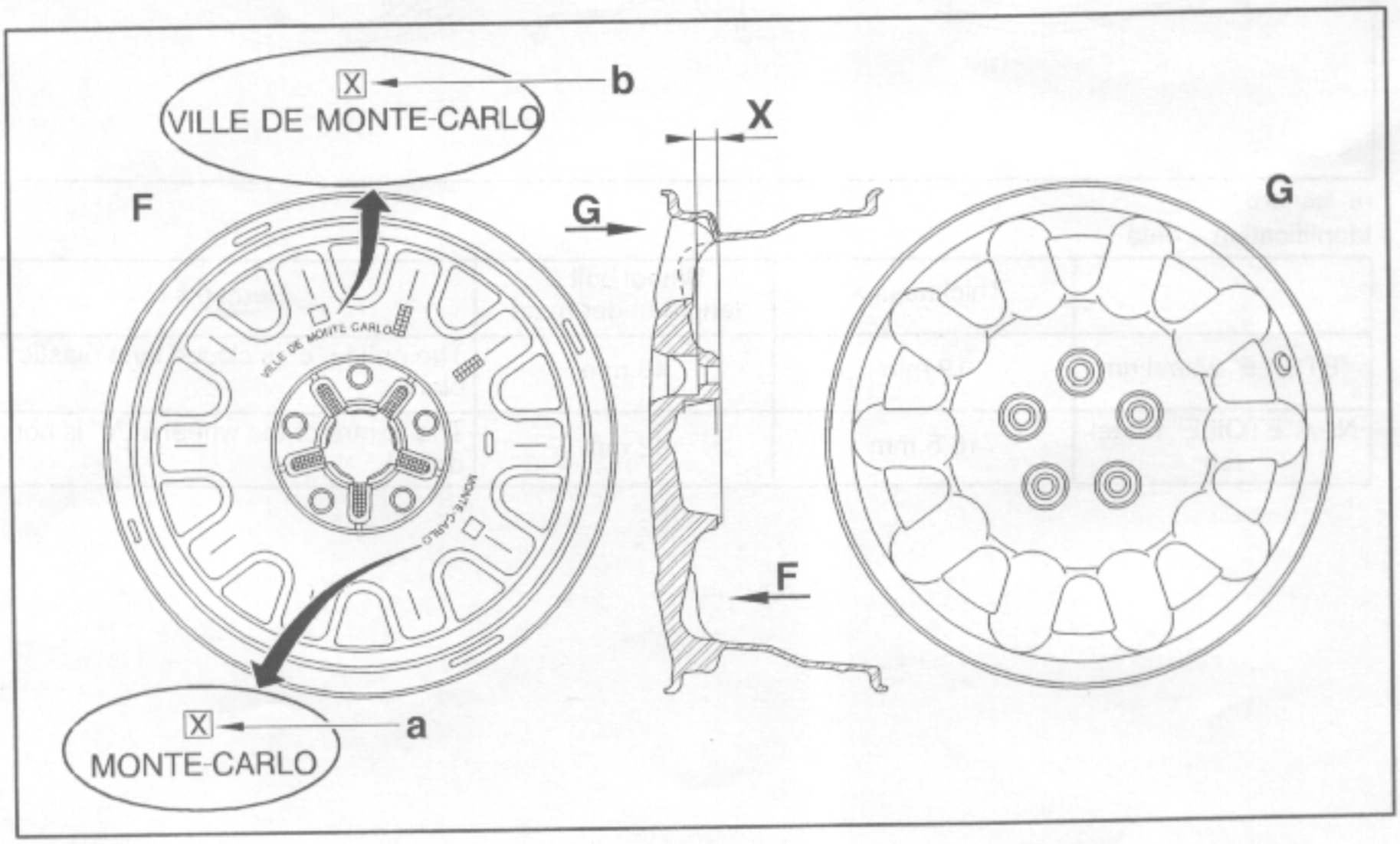


Fig : B2GP00DD

www.WorkshopManuals.co.uk

The "VILLE DE MONTE–CARLO" wheel rims replace the "MONTE–CARLO" wheel rims (identical style, but adapted for the new bolts).

The new wheels carry the markings "MONTE–CARLO" and "VILLE DE MONTE–CARLO" on their inner surface.

Identification – data :

Wheel rims	Identification	Thickness X	Wheel bolt : length under head
MONTE–CARLO	Marking at "a"	19 mm	46 mm
VILLE DE MONTE–CARLO	Marking at "b"	16,5 mm	42 mm

4.1.2 – "ETOILE" wheel rim

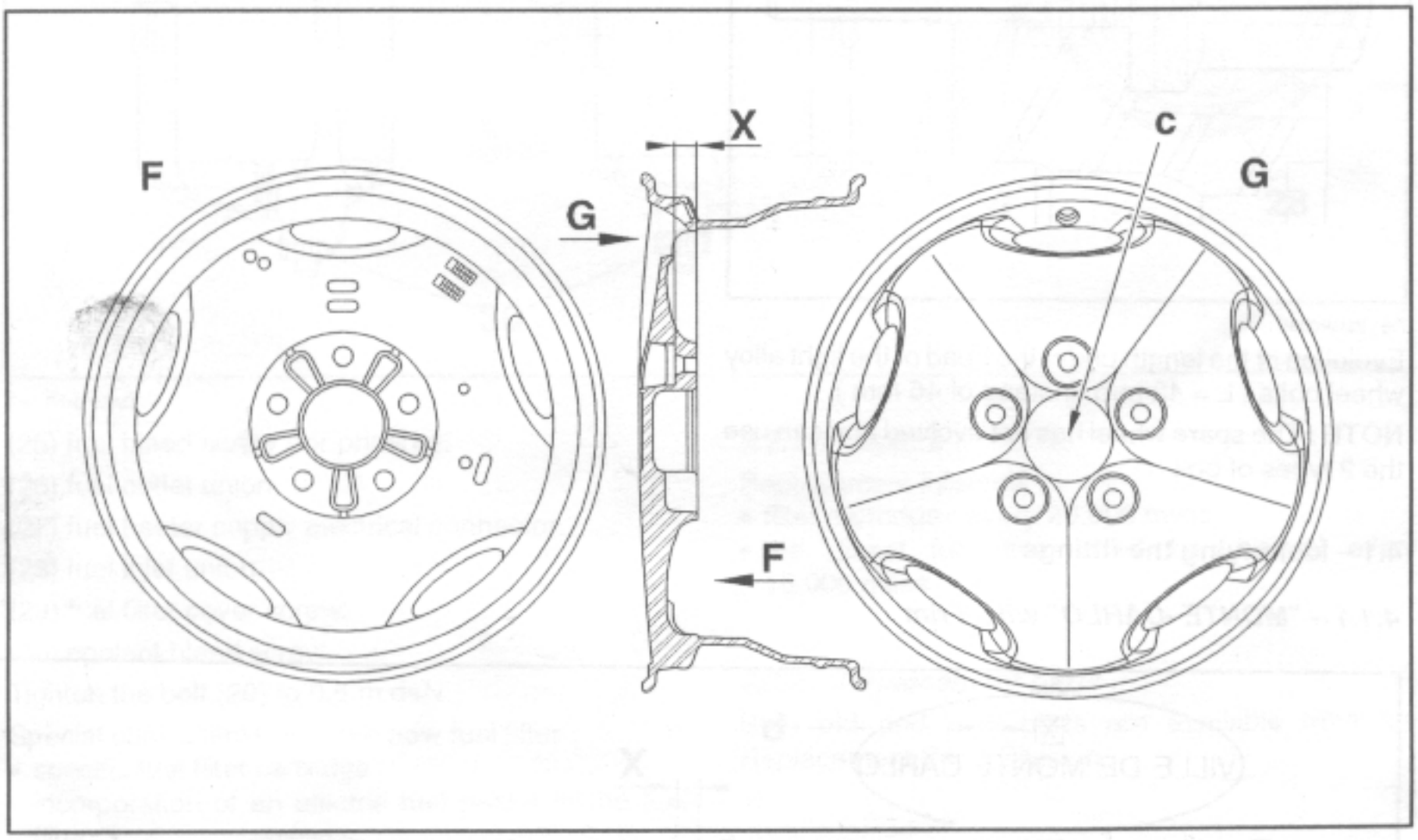


Fig : B2GP00ED

Identification – data :

	Thickness X	Wheel bolt : length under head	Remarks
"ETOILE" wheel rim	19 mm	46 mm	The orifice "c" is closed by a plastic blank
New "ETOILE" wheel rim	16,5 mm	42 mm	The centre of the wheel at "c" is not drilled

www.WorkshopManuals.co.uk

4.2 – Replacement parts

Both old and new parts are available from the Replacement Parts Division.

IMPERATIVE : Respect the pairing of the wheel rim type/length of bolt.

WARNING : The locking wheel nuts should be adapted to the length of the bolts.

Locking wheel nuts :
- earlier kit : reference (ZC 9 863 038 U)
- new kit : reference (9405 06)

5 – HYDRACTIVE SUSPENSION

5.1 – Brake pressure switch

Removal of the brake pressure switch, located in the braking circuit, allowing the hydractive ECU to control the firm state of the suspension during braking.

5.2 – Hydractive II ECU

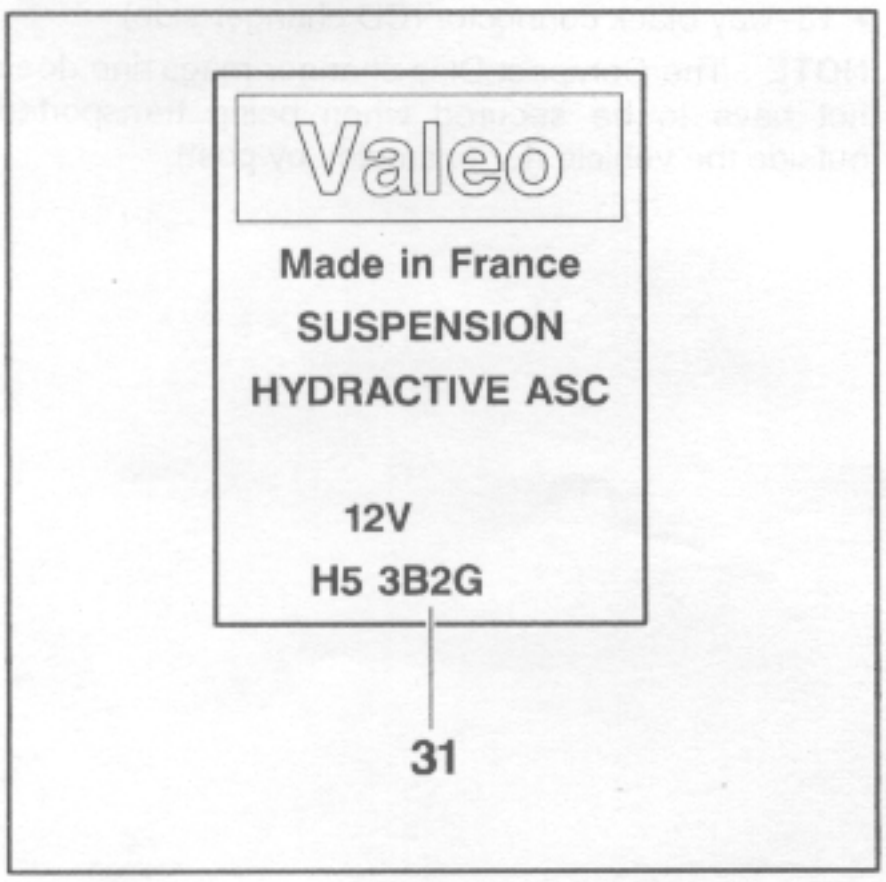


Fig : B3BP13CC

(31) application rating.

New hydractive II ECU with application rating H5 3B2G.

The hydractive ECU controls the suspension's firm state by monitoring the vehicle's speed (vehicle speed sensor).

The hydractive electronic control unit has parameter tables which can be configured for each vehicle version (application rating H5 3B2G).

5.3 – Interchangeability

The hydractive ECU H5 3B2G can replace hydractive ECUs with the following application ratings :
- H5 S2J5G
- H4 S2J2G
- H4 S2I2G
- H4 S2H2G
- H4 S2G2G

IMPERATIVE : The hydractive ECUs bearing the application rating H5 3B2G should be configured when the ECUs are fitted to the vehicle.

5.4 – Replacement parts

Only the new parts will be available from the Replacement Parts Division once stocks have been exhausted (application rating H5 3B2G).

NOTE : Fitting a new hydractive ECU to an old vehicle will render the brake pressure switch inactive (no longer used by the hydractive ECU).

www.WorkshopManuals.co.uk

MODIFICATIONS TO THE ELECTRICAL SYSTEM : 1999 MODEL YEAR RANGE

1 – GENERAL

The electrical equipment changes after the following modifications :

- fitting of a new engine oil pressure switch (all engines except ES9J4)
- brake pressure switch removed (hydractive suspension)

2 – ELECTRICAL HARNESSES

2.1 – Engine electrical harness

New LUCAS DIESEL EPIC electronic injection system (XUD11BTE/L4 engine).

Fitting of a new engine oil pressure switch (all engines except ES9J4).

Removal of the throttle housing electric heater (ES9J4 engine).

Incorporation of an electric fuel heater in the fuel filter (2.5 l Turbo engine).

2.2 – Suspension electrical harness

Removal of the brake pressure switch, located in the braking circuit, allowing the hydractive ECU to control the firm state of the suspension during braking.

NOTE : The hydractive ECU controls the suspension's firm state by monitoring the vehicle's speed (vehicle speed sensor).

3 – AUDIO SYSTEM

Replacement of the 4040 RDS audio system Compact Disc changer.

Reminder : system make (audio system + Compact Disc changer) : Philips.

When replacing the CD changer, the following modifications must be made :

- adaptation of the CD changer mounting under the driver's seat
- adaptation of the harness connecting the audio system and the CD changer

NOTE : The new CD changer can be connected on old vehicles equipped with a first fitting audio system : 3040 RDS and 4040 RDS.

IMPERATIVE : Do not insert a mini Compact Disc into the CD changer magazine (80 mm diameter).

The CD changer is controlled from the audio system via a screened cable.

Screened cable connections :

- 7–way black connector (radio side)
- 13–way black connector (CD changer side)

NOTE : The Compact Disc changer magazine does not have to be secured when being transported outside the vehicle (for example : by post).

© "The intellectual property rights relating to the technical information contained in this document belong exclusively to the Manufacturer. Reproduction, translation or distribution in whole or in part without prior written authorisation from the Manufacturer is forbidden".

www.WorkshopManuals.co.uk

Xm

APRIL 1999

RPO No : 8211 ⟼

REF. 0 No XM 000-00/15

PRESENTATION

● 2000 MODEL YEAR

MAN 108931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

GB

1

www.WorkshopManuals.co.uk

GENERAL SPECIFICATION

PRESENTATION : 2000 MODEL YEAR RANGE (EUROPE) 1

1 – Maintenance 1
2 – Range marketed in Europe –

MECHANICAL DEVELOPMENTS : 2000 MODEL YEAR RANGE 4

1 – Engine 4
2 – Automatic gearbox ECU –
3 – Hydractive suspension ECU 5
4 – Transmission –

BODYWORK IMPROVEMENTS : 2000 MODEL YEAR RANGE 7

1 – Structure 7
2 – Equipment –

www.WorkshopManuals.co.uk

PRESENTATION : 2000 MODEL YEAR RANGE (EUROPE)

1 – MAINTENANCE

CITROëN engines are lubricated on assembly with S.A.E. 5W–30 TOTAL oil (instead of S.A.E. 10W–40).

Using S.A.E. 5W–30 TOTAL oil decreases fuel consumption.

Maintenance : new engine oil meeting standards A1–98/B1–98 and SJ/CF EC.

WARNING : Oils meeting ACEA A1–98/B1–98 and API SJ/CF EC standards can only be used for vehicles manufactured from RPO No. 8211 (2000 Model Year).

Refer to the specific note covering "LUBRICANT MAINTENANCE".

2 – MARKETED IN EUROPE

2.1 – Index

Ref. letters used in the tables "commercial range of vehicles" :

(a) = automatic gearbox	(d) = emission standards
(m) = manual gearbox	(l3) = EEC 95 L3
(f) = fiscal rating in "HP" (France)	(l4) = EEC 2000 (EURO 2000)

2.2 – Range marketed : CITROEN XM, "Saloon" version

Vehicle		Engine		Gearbox
Type code	Trim level	- Typical - Type	Power kW/hp (f)	Reference Type
CITROEN XM 2 I injection (1998 cc) :				
Y4CZ	SX	RFV (L3) XU10J4R	97,4/135 (9)	20TD01 BE3 (m)
Y4TV	SX		97,4/135 (10)	20GZ5G 4HP18 (a)
CITROEN XM Turbo CT (1998 cc) :				
Y4GG	SX	RGX (L3) XU10J2TE	108/150 (10)	20GM32 ME (m)
Y4TT	SX		108/150 (11)	20GZ1G 4HP18 (a)

www.WorkshopManuals.co.uk

Vehicle		Engine		Gearbox
Type code	Trim level	- Plate - Type	Power kW/hp (f)	Reference Type

CITROEN XM V6 (2946 cc) :

Y4WG	SX	XFZ (L3) ES9J4	140/194 (13)	20LE59 ML (m)
	EXCLUSIVE			
Y4WH	SX		140/194 (14)	20HZ02 4HP20 (a)
	EXCLUSIVE			

CITROEN XM turbo D12 (2088 cc) :

Y4GZ	SX	P8C (L3) XUD11BTE	80/110 (7)	20GM31 ME (m)
Y4RN			80/110 (8)	20GZ5D 4HP18 (a)
Y4WE		P8C (L4) XUD11BTE	80/110	20GM31 ME (m)

CITROEN XM 2,5 l turbo diesel (2446 cc) :

Y4NZ	SX	THY (L3) DK5ATED	94,5/130	20KM70 MG (m)
	EXCLUSIVE			

2.3 – Range marketed : CITROEN XM, "Estate" version

CITROEN XM 2 l injection (1998 cc) :

Y4GB	SX	RFV (L3) XU10J4R	97,4/135 (9)	20GM36 BE3 (m)
Y4TU	SX		97,4/135 (10)	20GZ5G 4HP18 (a)

CITROEN XM Turbo CT (1998 cc) :

Y4GM	SX	RGX (L3) XU10J2TE	108/150 (9)	20GM33 ME (m)
	Varebiler			
Y4TS	SX		108/150 (10)	20GZ1G 4HP18 (a)

CITROEN XM V6 (2946 cc) :

Y4WJ	SX	XFZ (L3) ES9J4	140/194 (13)	20LE59 ML (m)
Y4TN	SX		140/194 (14)	20HZ02 4HP20 (a)

www.WorkshopManuals.co.uk

Vehicle		Engine		Gearbox
Type code	Trim level	- Plate - Type	Power kW/hp (f)	Reference Type

CITROEN XM turbo D12 (2088 cc) :

Y4MZ	SX	P8C (L3) XUD11BTE	80/110 (7)	20GM31 ME (m)
	Varebiler			
Y4CW	SX		80/110 (8)	20GZ5D 4HP18 (a)
	Varebiler			
Y4WF	SX	P8C (L4) XUD11BTE	80/110	20GM31 ME (m)

CITROEN XM 2,5 l turbo diesel (2446 cc) :

Y4RM	SX	THY (L3) DK5ATED	94,5/130 (9)	20KM70 MG (m)
	Varebiler			

2.4 – Range marketed : CITROEN XM, other versions

CITROEN XM turbo D12 for conversion into ambulance (2088 cc) :

Y4GZ	SX	P8C (L3) XUD11BTE	80/110	20GM31 ME (m)

www.WorkshopManuals.co.uk

MECHANICAL DEVELOPMENTS : 2000 MODEL YEAR RANGE

1 – ENGINE

1.1 – Oil pump

Vehicle concerned : XM Turbo CT.

Evolution of the oil pumps (see specific evolution note).

1.2 – Engine management ECU

Type		Gearbox	Engine management ECU			
Vehicle	Engine		Supplier Type	PSA reference Manufacturer's references	Software	Remarks
2 l injection	XU10J4R/L3	Manual Gearbox	BOSCH MP5.2 (*)	9630402380 0261204650	26FM0480	
		BVA				
Turbo CT	XU10J2TE/L3	Manual Gearbox	BOSCH MP3.2 (*)	9632569180 0261204654	26FM0493	
		BVA				
V6	ES9J4/L3	Manual Gearbox	BOSCH MP7.0 (*)	9625552280 0261204412	26FM0503	
		BVA		9625552380 0261204413	26FM0504	
Turbo D12	XUD11BTE/L3	Manual Gearbox	LUCAS EPIC	9630509280 R04010020B	41502211 OB	
		BVA		9631445980 R04010015E	41501411 OC	
	XUD11BTE/L4	Manual Gearbox		9633912880 R04010015D	41501412 OD	
2.5 Turbo D	DK5ATED	Manual Gearbox	BOSCH MAS 11 7.6	9628607180 0281001589		

BVA = automatic gearbox.

(*) downloading an update to the ECU.

1.3 – Exhaust

Vehicle concerned : XM 2.1 Turbo D 12.

The intermediate exhaust pipe is discontinued (see specific evolution note).

2 – AUTOMATIC GEARBOX ECU

Vehicle concerned : CITROEN XM V6 – 4HP20 automatic gearbox.

Supplier : BOSCH (*).

PSA reference : 9632873180.

Software version : PS08G03.

(*) : downloading an update to the ECU.

www.WorkshopManuals.co.uk

3 – HYDRACTIVE SUSPENSION ECU

Supplier : VALEO.

Application rating : H5 3B2G.

IMPERATIVE : H5 3B2G hydractive ECUs should be configured when they are fitted to the vehicle.

4 – TRANSMISSION

4.1 – Road wheels

Vehicle concerned : vehicles with light alloy wheels.

New "dual purpose" wheel bolt allowing the following wheels to be fitted :
- light alloy wheels (with flat fitting surface)
- steel spare wheel (with conical fitting surface)

This modification entails the evolution of the following components :
- addition of a recess in the fixing aperture of the light alloy wheels
- discontinuation of the inserts allowing the spare wheel to be fitted using bolts with flat fitting surfaces

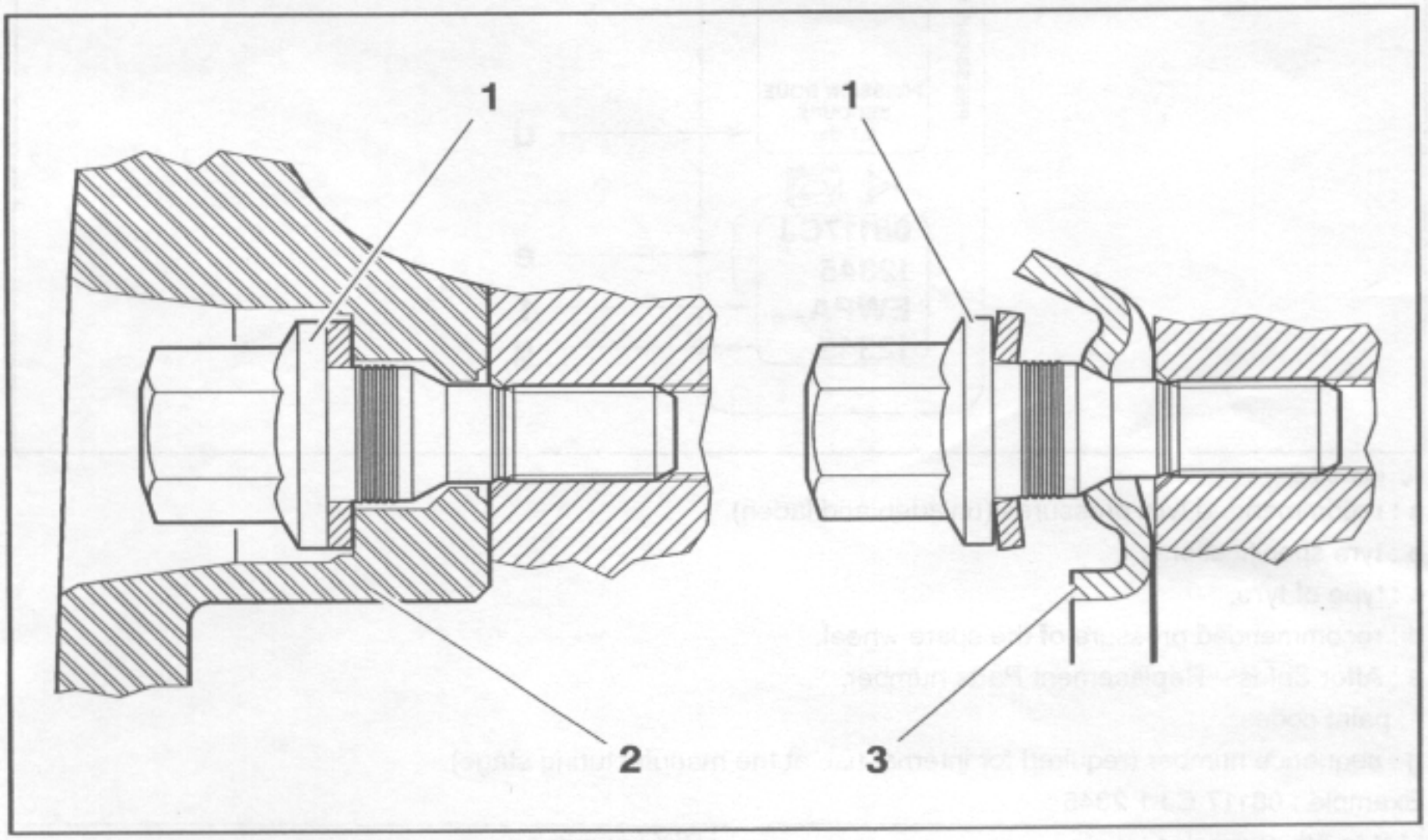


Fig : B2GP00JD

(1) wheel bolt.

New assembly :
- (2) light alloy wheel
- (3) spare wheel

www.WorkshopManuals.co.uk

4.2 – New recommended tyre pressure labels

Vehicle concerned : XM Saloon.

Index :

- RPO = Replacement Parts Organization number
- DAM = Date of Application of a Modification number
- AS–RP = After Sales – Replacement Parts number

The "AS–RP" number (formerly the DAM number) and the paint code are transferred onto the label giving the recommended inflation pressures, which has become the "AS–RP" identification label.

The "AS–RP" identification label is attached, on the driver's side, to the front pillar.

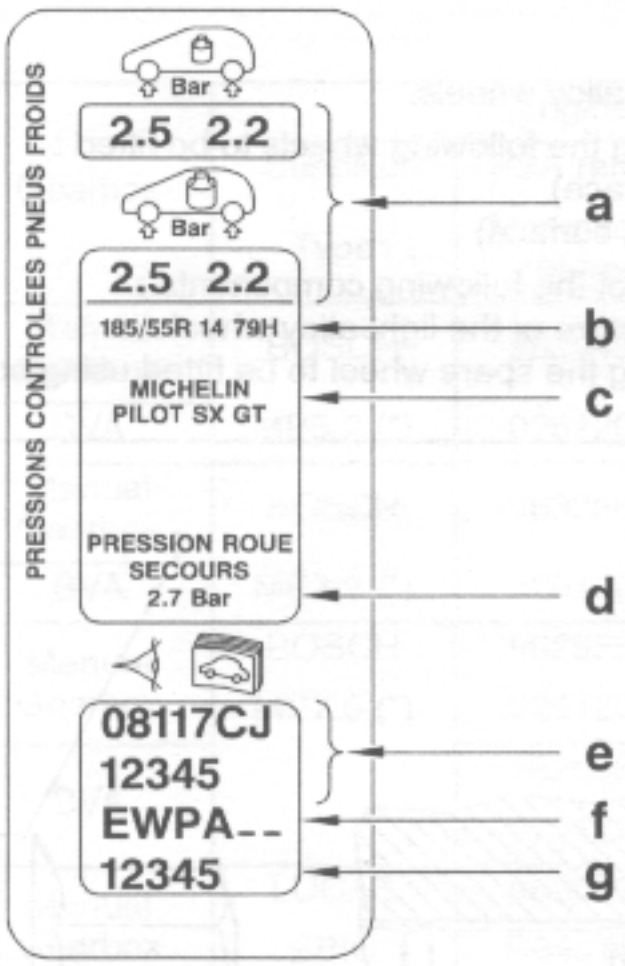


Fig : B2GP00HD

a : recommended tyre pressures (unladen and laden).

b : tyre specifications.

c : type of tyre.

d : recommended pressure of the spare wheel.

e : After Sales – Replacement Parts number.

f : paint codes.

g : sequence number (required for internal use at the manufacturing stage).

Example : 08117 CJ 1 2345 :

1st to 5th character	RPO number
6th to 7th character	Factory code
8th character	Assembly line number
9th to 12th character	Serial number

www.WorkshopManuals.co.uk

BODYWORK IMPROVEMENTS : 2000 MODEL YEAR RANGE

1 – STRUCTURE

Evolution of the front fixing fastening the front subframe to the body : bolt M12 x 150 (instead of M10 x 150).

New chassis member extremity : replacing an old part with a new one requires a specific adaptation (see specific evolution note).

2 – EQUIPMENT

Vehicle concerned : vehicle equipped with a passenger's airbag.

An illustrated label indicating that it is forbidden to fit a child seat is attached to the passenger's side sun visor.

www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk

30th NOVEMBER 1995

ABONNEMENT GME

1 No XM - 1

EVOLUTION

● EVOLUTION : PRESENTATION OF THE XUD 11 BTE ENGINE

MAN 158931

GB

1

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

INTRODUCTION : XUD11 BTE (P8C) ENGINE

1 – PRELIMINARY NOTES

As of January 1995, the XUD11 ATE/Y engine (PHZ identification plate, US 87 strict anti–pollution standard for certain countries) is replaced by the XUD11 BTE/L3 (EEC 96 standard), only for vehicles with manual gearbox.

XUD11 ATE/Y engine is still available for vehicles with automatic gearboxes.

XUD11 BTE engine (P8C identification plate) is based on the XUD11 ATE.

The engine uses electronic injection control (LUCAS DIESEL EPIC system*, E.C.U. + injection pump) which makes it possible :

- to meet emission standards
- to improve the driveability

In addition to the electronic injection, the unit installed manages the coded antitheft device.

* EPIC : Electronically Programmed Injection Control.

2 – COUNTRY IN WHICH IT IS MARKETED

Vehicle		Engine		Gearbox	Countries applicable						
Trim level	Type code	Plate and type(c)	Power in kW (power in HP)		D	A	DK	SF	N	S	CH
SX Saloon	Y4–GZ	P8C XUD11 BTE/L3	80 (110)	ME5T 20GM31	X	X	X	X	X	X	X
VSX Saloon					X	X	X				X
SX Estate	Y4–MZ				X	X	X				X
VSX Estate					X	X	X	X	X	X	X
SX Varebiler									X		

(c) = the last characters in an engine type define the antipollution : L3 = EEC 96.

Countries applicable : D : Germany, A : Austria, DK : Denmark, SF : Finland, N : Norway, S : Sweden, CH : Switzerland.

3 – SPECIFICATION

Engine code : XUD11 BTE.
Legislation type : P8C.
Cubic capacity (cc) : 2,088.
Compression ratio : 21.5:1.
Max. EEC power (DIN) : 80 kW (110 HP).
Corresponding engine speed : 4,300 rpm.
Max. EEC torque (DIN) : 25 m.daN (26 mkg).
Corresponding engine speed : 2,000 rpm.
Emission standard : L3 (EEC 96).
Fuel : DIESEL FUEL.
Catalytic converter : YES.
Injection system supplier : LUCAS DIESEL.

4 – SPECIAL FEATURES

4.1 – Engine basis

Derived from the XUD11 ATE with new cylinder block (surface condition of liners improved).
New cylinder head including a new water outlet casing with built–in Diesel fuel filter (XUD9 type).
Cylinder head gaskets : 5 classes to control compression ratios.
Procedure for tightening cylinder head unchanged (identical to that of XUD11 ATE engine).
Capacities + oil filter unchanged (identical to that of XUD11 ATE engine).

4.2 – Air and fuel supply

New fuel line path adapted to the new water outlet casing.
Priming of Diesel fuel lines with a bulb type pump installed near the timing case.

www.WorkshopManuals.co.uk

New diesel fuel filter (LUCAS 911) installed on water outlet casing.

GARRET type TB 0251 turbocharger (only) with waste gate valve (identical to XUD11 ATE engine).

Full-load boost pressure at 2,500 rpm : 930 ± 50 mbar.

4.3 – Antipollution

EGR recycling valv, type GR 68 (installation identical to XUD11 ATE engine) with control electrovalve located on the bulkhead.

Replacement of electric vacuum pump by a mechanical vacuum pump installed on end of camshaft (gearbox side).

Catalytic converter marking : PSA K076.

4.4 – Timing

Timing method unchanged (identical to XUD11 ATE engine).

5 – INJECTION SYSTEM

The main system components are :
- an injection E.C.U.
- a new injection pump (based on LUCAS DIESEL DPC pump)

Operation of the injection system is explained in a sequence of operations to be issued later.

5.1 – Injection E.C.U.

E.C.U. marking :
- DCU, XUDLC01
- R04010007

E.C.U. inputs :
- accelerator pedal data (sensor near battery tray)
- engine speed (TDC sensor on clutch housing)
- air temperature (probe on intake manifold)
- intake pressure (sensor near battery tray)
- engine water temperature (probe on water outlet housing)
- vehicle speed (sensor on gearbox)
- start-of-injection data (special injector holder No. 4, with needle lift sensor)
- sensors integrated into injection pump

The E.C.U. manages :
- the injection pump (checks the fuel delivery and injection advance)
- the control electrovalve of exhaust gas recycling valve
- the post-heating cut-off
- the coded antitheft function
- emergency strategies
- the diagnostic with storage in memory of fault codes (to be read with ELIT unit or SOURIAU 26A station)
- the engine speed for the instrument cluster
- the air conditioning cut-off signal

5.2 – Injection pump

Pump marking :
- XUDLP01
- R8640A042A

This pump incorporates :
- diesel fuel delivery control electrovalves (replacing load lever, linkage, springs)
- a control electrovalve for the injection advance
- the electric fuel shut-off electrovalve (which cannot be dismantled)
- various sensors (pump temperature, rotor position, cam position, etc.)

5.3 – Injectors

Injector holders placed on cylinders 1 to 3 are identical.

The injector holder placed on cylinder No. 4 is equipped with a needle lift sensor, making it possible for the E.C.U. to know the start of injection.

Cylinders Nos. 1 to 3 :
- type LCR6734302H injector holder
- type RDNOSD6751H injectors
- injector setting pressure 150 (– 5, + 5) bars
- orange mark

Cylinder No. 4 :
- type LDC002R01AD3 injector holder
- type RDNOSDC6751H injector
- injector setting pressure 150 (– 5, + 5) bars
- blue mark

www.WorkshopManuals.co.uk

6 – REPAIRS

6.1 – Diesel fuel filter

Each time the Diesel fuel filter is changed ("rotor position fault" and/or "cam position fault" recorded in the E.C.U.), the faults have to be cleared (SOURIAU 26A diagnostic station or ELIT test unit).

6.2 – Injector holder No. 4

In the case of a failure of the needle lift sensor, the complete injector holder has to be changed.

IMPERATIVE : always refit injector holder No. 4 (with needle lift sensor) to cylinder No. 4 (timing side).

IMPERATIVE : do not modify the setting pressure of the injector holder.

6.3 – Injection pump

WARNING : the injection pump requires timing with a special rod (see the corresponding sequence of operations).

IMPERATIVE : do not tamper with component parts of injection pump.

The connector on the injection pump wiring harness contains a rotary locking device and a return spring.

IMPERATIVE : to unlock the connector, push back the locking tab (on top) toward the middle of the connector.

WARNING : when unlocking, the connector rotates violently under the action of the return spring.

6.4 – Engine speeds

Warm engine idling rpm (with or without refrigeration)	750
Max. no–load engine rpm	5,100 ± 75
Max. on–load engine rpm	5,000

NOTE : the engine speeds are determined by the injection E.C.U. (they cannot be adjusted).

www.WorkshopManuals.co.uk

MARCH 1996

ABONNEMENT GME

REF. 1 No XM - 2

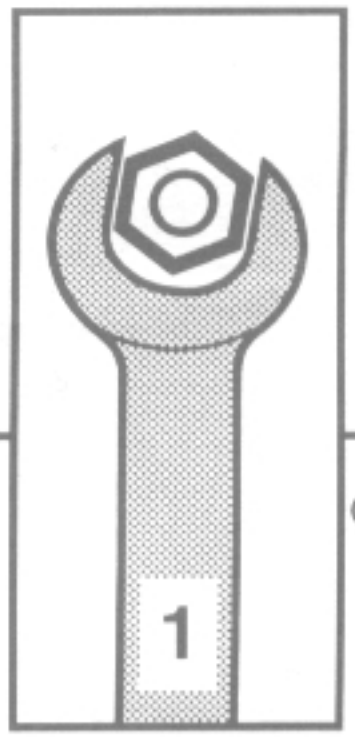
EVOLUTION

XU 10 J4R ENGINE (RFV)

(1998cc 16 Valve)

- CYLINDER HEAD R.P.O. 6779 ⟼ (cylinder head, camshafts, camshaft bearing cap casings)
- TIGHTENING PROCEDURES (camshaft bearing cap casings)
- DIPSTICK GUIDE TUBE ASSEMBLY R.P.O. 6793 ⟼
- RECIPROCATING GEAR R.P.O. 6769 ⟼

MAN 158931



GB

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

EVOLUTION : XU10J4R ENGINE (RFV)

1 – PREAMBLE

Summary of the evolutions :
- cylinder head unit (cylinder head, camshafts, camshaft bearing cap casings)
- tightening method of camshaft bearing cap casings
- dipstick guide tube assembly
- reciprocating gear

2 – CYLINDER HEAD UNIT

Applicable since R.P.O. number : 6779.

Application : engine XU10J4R (all types).

Reduction of width of the camshaft lateral bearing (bearing no. 5, gear side) : 23 mm instead of 24 mm.

This improvement has entailed the modification to the following components :
- cylinder head
- camshaft bearing cap casings
- the camshafts

www.WorkshopManuals.co.uk

2.1 – Identification of the specific parts

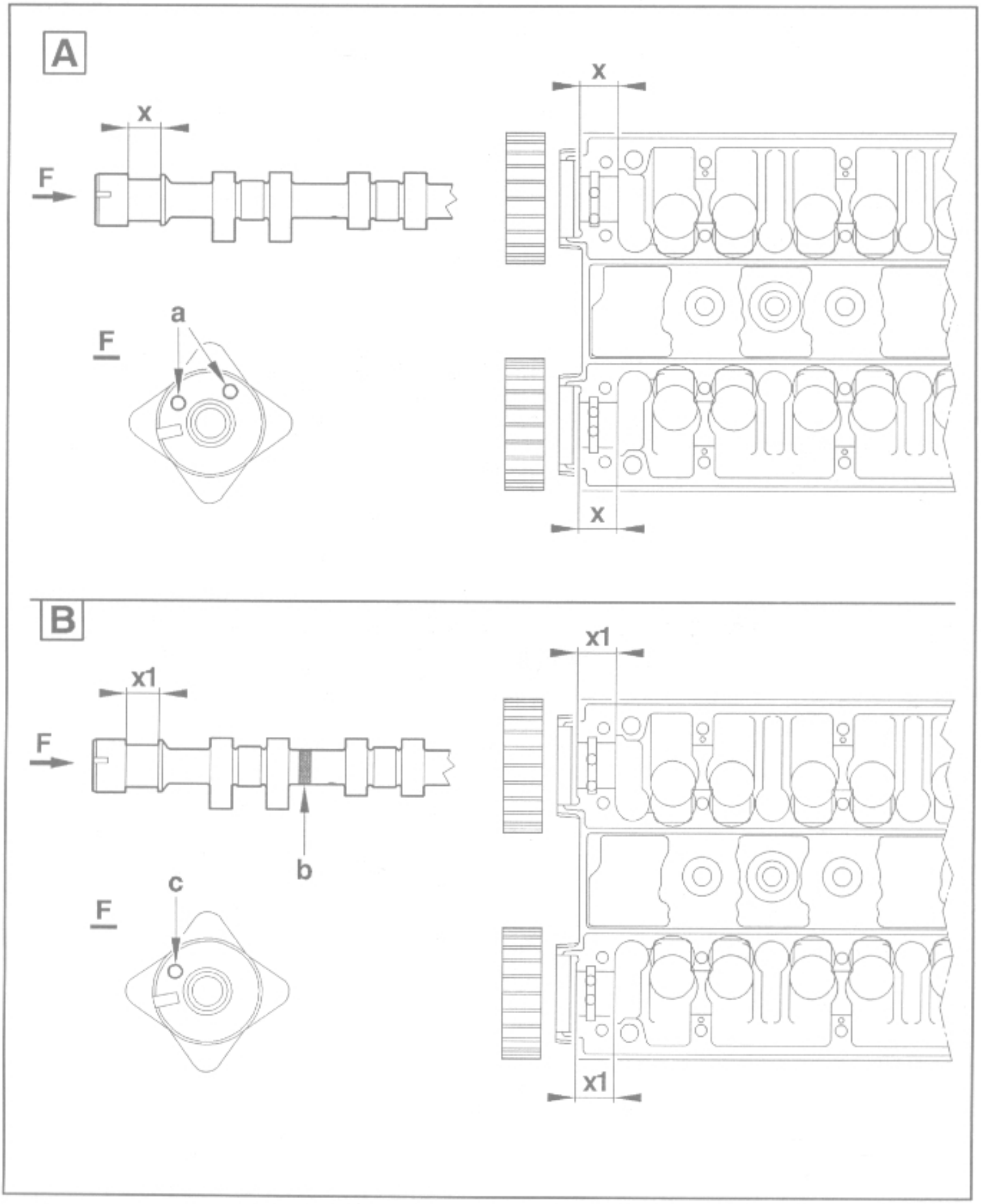


Fig : B1BP10YP

www.WorkshopManuals.co.uk

2.1.1 – Later assembly A

Identification of the cylinder head : width of X = 23 mm.

The camshafts : width of X = 23 mm.

Identification of camshafts : 2 holes "a" on valve timing side (view F).

NOTE : The inlet and exhaust camshafts are identical.

2.1.2 – Earlier assembly B

Identification of the cylinder head :
width of X1 = 24 mm.

The camshafts : width of X1 = 24 mm.

Identification of camshafts 2 possibilities :

- 1 white paint mark item "b"
- 1 hole "c" (depth 10 mm) on valve timing side (view F)

NOTE : The inlet and exhaust camshafts are identical.

2.2 – Interchangeability

The parts of the earlier and later assemblies cannot be interchanged separately.

The early engines can be modified if all the new parts are fitted.

2.3 – Replacement parts

The Replacement Parts Department supplies both the old and the new parts.

NOTE : The cylinder head is supplied with the camshaft bearing cap casings.

www.WorkshopManuals.co.uk

3 – CAMSHAFT BEARING CAP CASINGS

Application : engine XU10J4R (all types).

New tightening method : "U"type tightening instead of "snail" type.

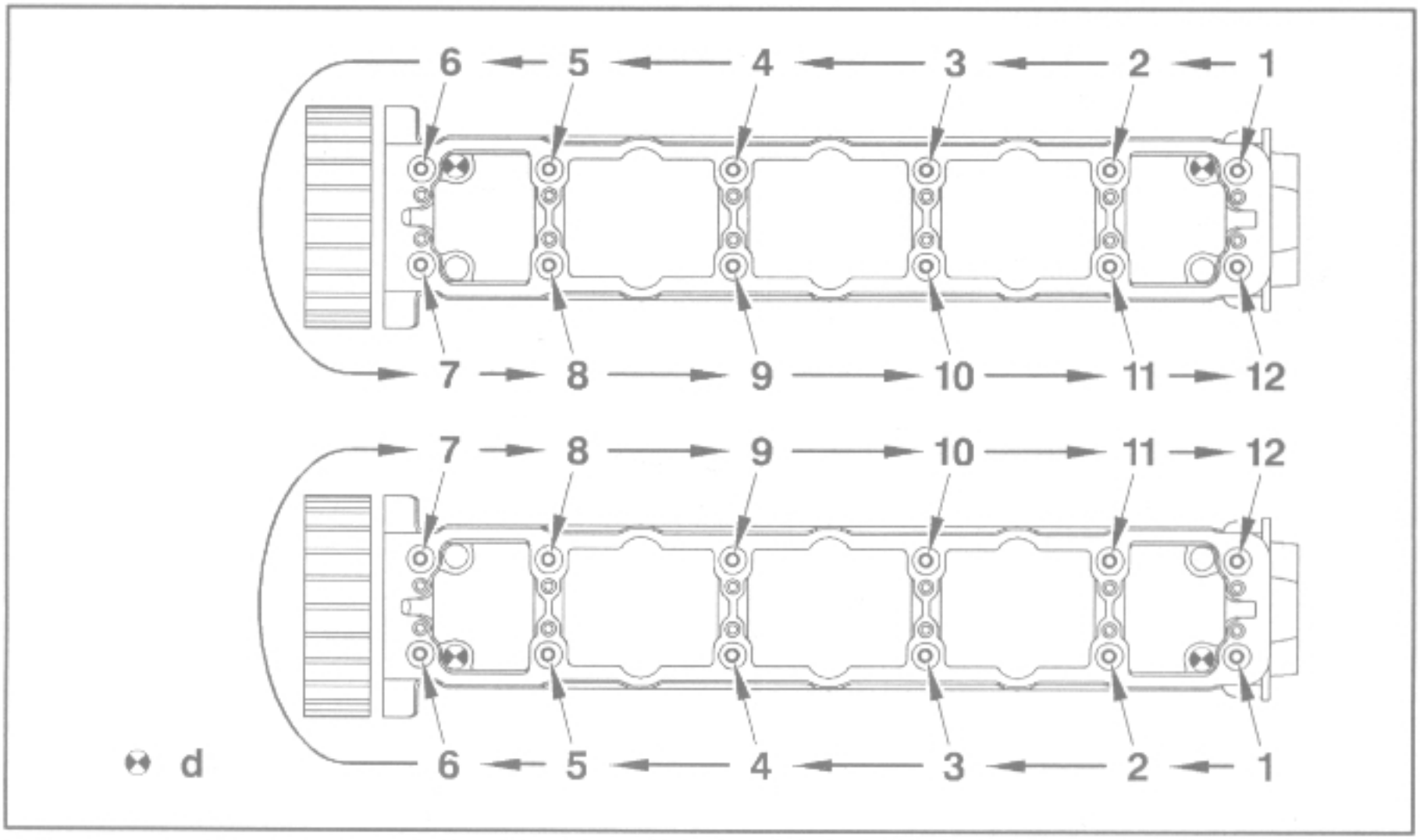


Fig : B1BP10ZD

"d" locating peg on the cylinder head.

Tighten the retaining bolts in the order indicated.

Tightening method :

- pre–tighten the screws to 0.5 m.daN
- tighten to 1 m.daN

IMPERATIVE : Only this new method should be applied.

www.WorkshopManuals.co.uk

4 – DIPSTICK GUIDE TUBE

Applicable since R.P.O. number : 6793.

XU10J4R Engine (all types).

The venting hole has been relocated from position "g" to position "h".

New arrangement :

- upper dipstick guide tube "e" (without venting hole at position "g")
- lower dipstick guide tube "f" (with venting hole at position "h")
- dipstick with O–ring (2)

Former arrangement :

- upper dipstick guide tube "e" (with venting hole at position "g")
- lower dipstick guide tube "f" (without venting hole at position "h")
- dipstick with O–rings (1) and (2)

Diameter of venting holes : 2 mm.

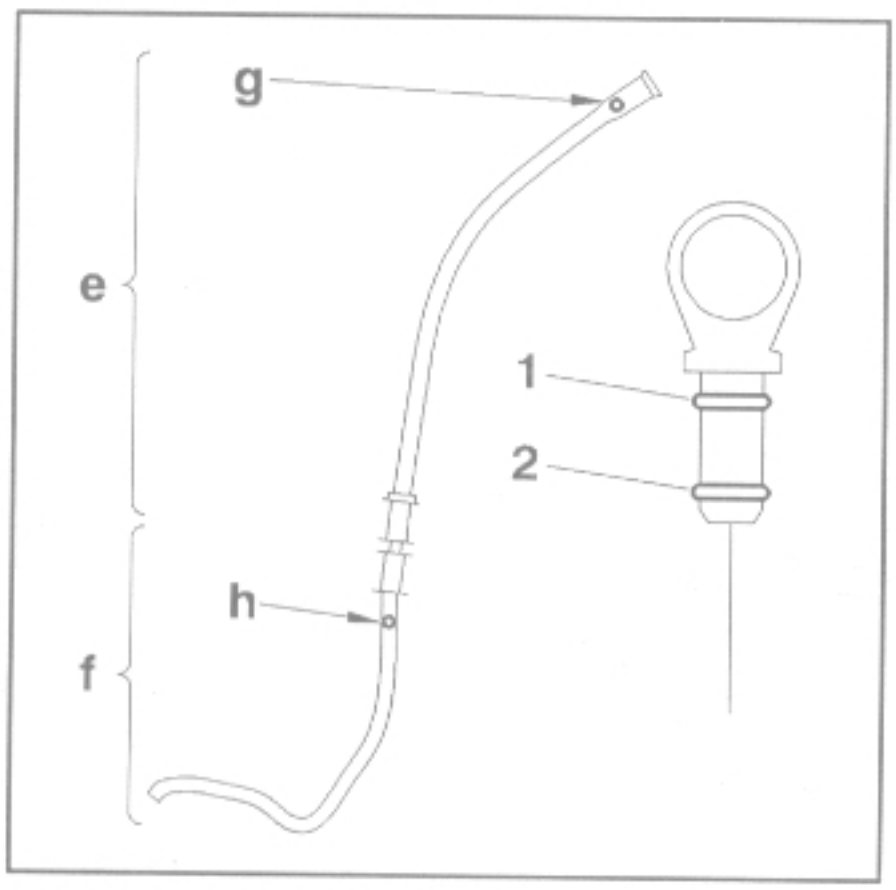


Fig : B1BP110C

Dipstick guide tube assembly.

NOTE : The dipsticks of both assemblies are identical. The oil capacities are still the same.

4.1 – Interchangeability

The dipstick guide tubes of both assemblies are not interchangeable.

A dipstick with two seals can be fitted onto either assembly

The fitting of a dipstick with only one seal on former engines is prohibited.

The early engines can only be modified if all the new parts are fitted.

4.2 – Replacement parts

Former arrangement : only the upper dipstick guide tube is available at the Replacement Part Department.

New arrangement : the upper and lower dipstick guide tubes are available at the Replacement Part Department.

Replacement of the lower dipstick guide tube in engines with former arrangement requires :

- the fitting of a new lower dipstick guide tube (new arrangement)
- the fitting of a new upper dipstick guide tube (new arrangement)

5 – RECIPROCATING GEAR

Applicable since R.P.O. number : 6769.

Since the launch of the XU10J4R engine, the connecting rod – piston – connecting rod bearing shell assembly has been fitted in 3 ways.

www.WorkshopManuals.co.uk

5.1 – Summary of assemblies

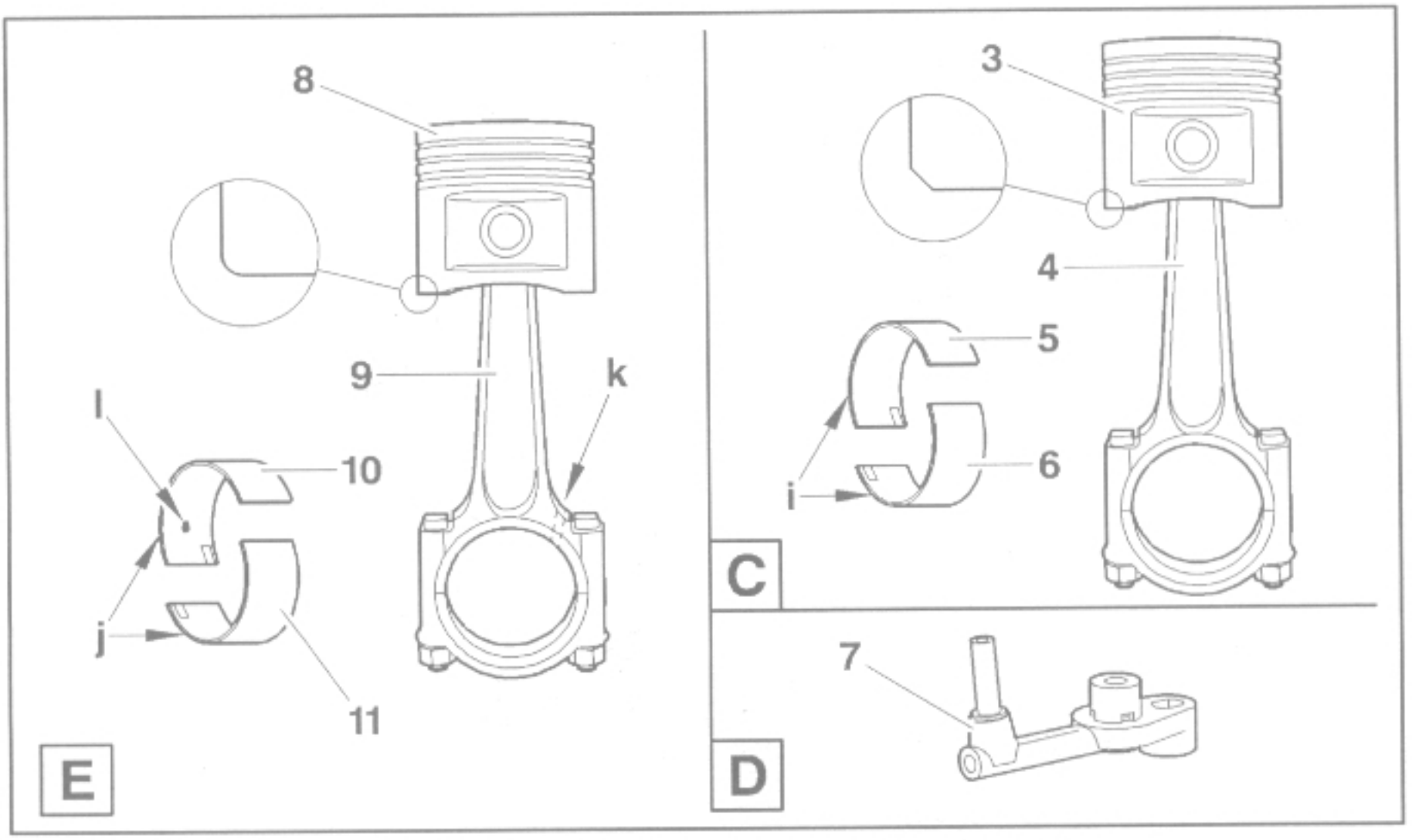


Fig : B1BP111D

Assembly N°1 : C.

Assembly N°2 : C + D.

Assembly N°3 : E.

5.1.1 – Assembly N°1 : C

Original assembly :

Applicable	Code	Part	Data – identification	RP references	Quantity
Prior to RPO No. 6769	(3)	Piston	Letter W on combustion side	0628 81	Set of 4
	(4)	Connecting rod	Not drilled	0603 60	Set of 4
	(5)	Connecting rod upper bearing halfshell	Not drilled yellow paint mark at position "i"	0606 L4 (upper and lower bearing halfshell assembly)	Set of 8
	(6)	Connecting rod lower bearing halfshell	Yellow paint mark at position "i"		
	--	Cylinder block	Not fitted for nozzles	0130 N9 replaced by 0130 Q7 (*)	1

NOTE : (*) the cylinder block is supplied with the pistons (3) and the nozzles (7).

www.WorkshopManuals.co.uk

5.1.2 – Assembly N°2 : C + D

Special features :

- connecting rod, piston, connecting rod bearing halfshell assembly identical to assembly 1
- new cylinder block with nozzles to improve the lubrication of the liners

Applicable	Code	Part	Data – identification	RP references	Quantity
From RPO N° 6770. Prior to RPO No. 6944	--	Cylinder block	Fitted for nozzles	0130 Q7 (*)	1
	(7)	Nozzles	--	0609 05	4

NOTE : (*) the cylinder block is supplied with the pistons (3) and the nozzles (7).

5.1.3 – Assembly N°3 : E

Special features :

- new cylinder block (without nozzles), (improved surface condition of cylinders)
- the nozzles are replaced by a drilled connecting rod and upper bearing halfshell assembly
- new pistons, (improved surface condition of the skirt)

Applicable	Code	Part	Data – identification	RP references	Quantity
From RPO N° 6945	(8)	Piston	Letter W on combustion side	0628 C8	Set of 4
	(9)	Connecting rod	Drilled at position "k"	0603 65	Set of 4
	(10)	Connecting rod upper bearing halfshell	Drilled at position "l" green paint mark at position "j"	0606 N6 (upper and lower bearing shell half assembly)	Set of 8
	(11)	Connecting rod lower bearing halfshell	Green paint mark at position "j"		
	--	Cylinder block	Not fitted for nozzles	0130 R2	1

NOTE : The cylinder block is supplied with the pistons (8).

www.WorkshopManuals.co.uk

5.2 – Interchangeability

5.2.1 – Connecting rods / pistons

Parts	Connecting rod without drilling (4)	Connecting rod with drilling (9)
Former piston (3)	Yes	Yes
New piston (8)	No	Yes

5.2.2 – Connecting rod bearing halfshells

The drilled connecting rod bearing halfshells can replace the bearing halfshells without drilling, but the reverse is prohibited.

5.2.3 – Connecting rods / connecting rod bearing halfshells

Parts	Bearing halfshells without drilling (5 ; 6)	Drilled bearing halfshells (10 ; 11)
Connecting rod without drilling (4)	Yes	Yes
Connecting rod with drilling (9)	No	Yes

5.2.4 – Connecting rod / cylinder block assembly

Parts	Cylinder block (assembly 1) (assembly 2)	Cylinder block (assembly 3)
Connecting rod without drilling (4)	Yes	No
Connecting rod with drilling (9)	Yes	Yes

5.3 – Replacement parts

At the present time, the Replacement Parts Department supplies :

- pistons : former and new ones
- connecting rods : former and new ones
- cylinder block : assembly 2 ; 3

www.WorkshopManuals.co.uk

5.4 – Repairs

5.4.1 – Reminder

The gudgeon pin is a tight fit in the connecting rod small end.

IMPERATIVE : Do not reuse a piston after it has been disassembled with a press.

5.4.2 – Re–assembling of a connecting rod / piston assembly

Refer to RELAY documentation, XU engine reconditioning.

Operation : dismantling – re–assembly : connecting rods / pistons.

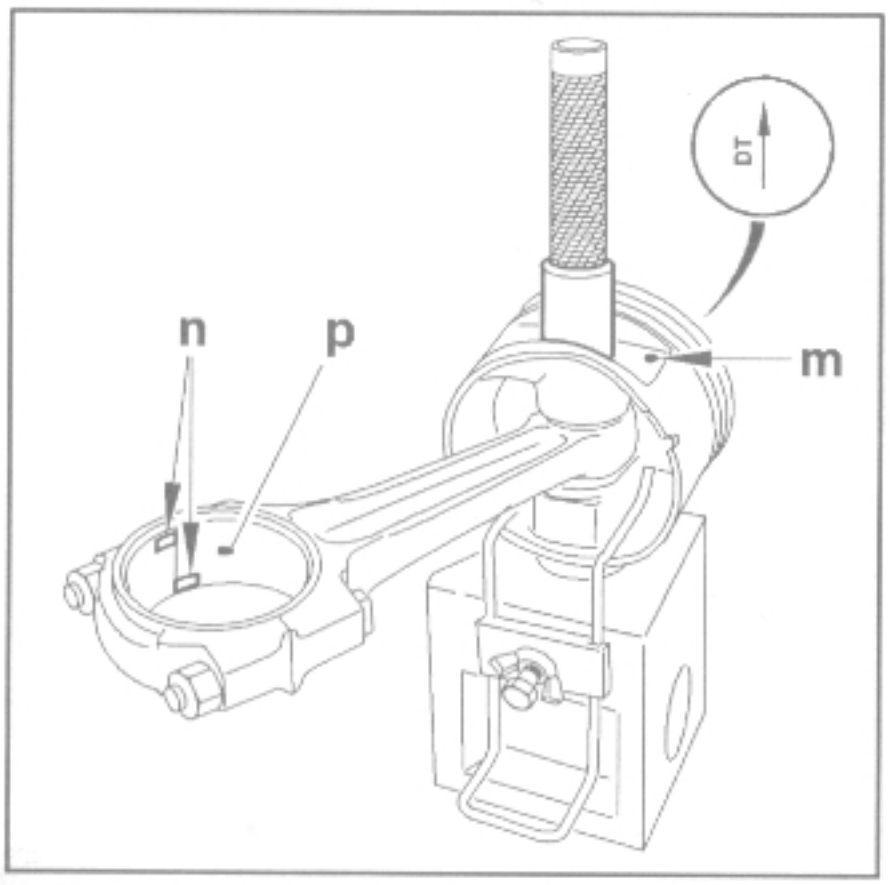


Fig : B1BP112C

IMPERATIVE : Observe the orientation of the connecting rod in relation to the piston.

Checking the correct positioning of the piston, 2 possibilities :

- arrow "DT" positioned on the upper side
- casting spot "m" positioned on the upper side

Checking the correct positioning of the connecting rod : notches "n" on the left side.

When the connecting rod / piston assembly is re–assembled on the engine, make sure that :

- piston : arrow "DT" pointed towards the valve timing side
- connecting rod : hole "p" directed towards the exhaust side

www.WorkshopManuals.co.uk

Xm

FEBRUARY 1998

RPO No: 7665 ⟼

1 No XM - 3

EVOLUTION

XUD11BTE ENGINE

(2.1 Turbo D)

- EVOLUTION : WATER PUMP

MAN 158931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

1

GB

www.WorkshopManuals.co.uk

EVOLUTION : COOLANT PUMP

Vehicle concerned : CITROEN XM.
Engine types : 2.1L turbo diesel.
Application : from DAM number 7665 (CJ).

1 – DESCRIPTION

1.1 – Previous assembly A

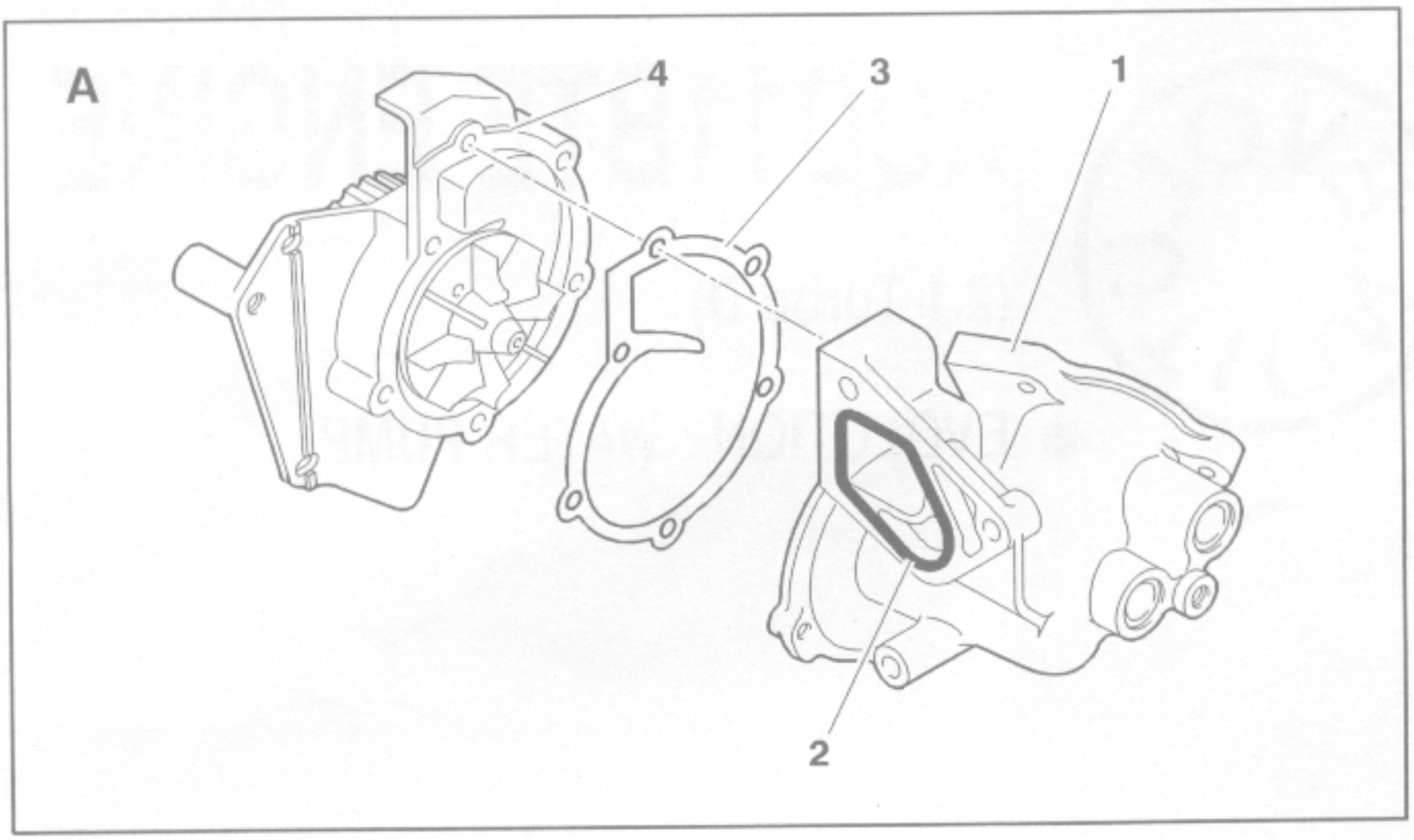


Fig : B1GP070D

Item	Description	Remarks
1	Water pump body	With groove
2	Pump body silicone seal	Applied to the groove
3	Pump cover fibrous seal	Thickness : 1 mm
4	Water pump cover	

www.WorkshopManuals.co.uk

1.2 – New assembly B

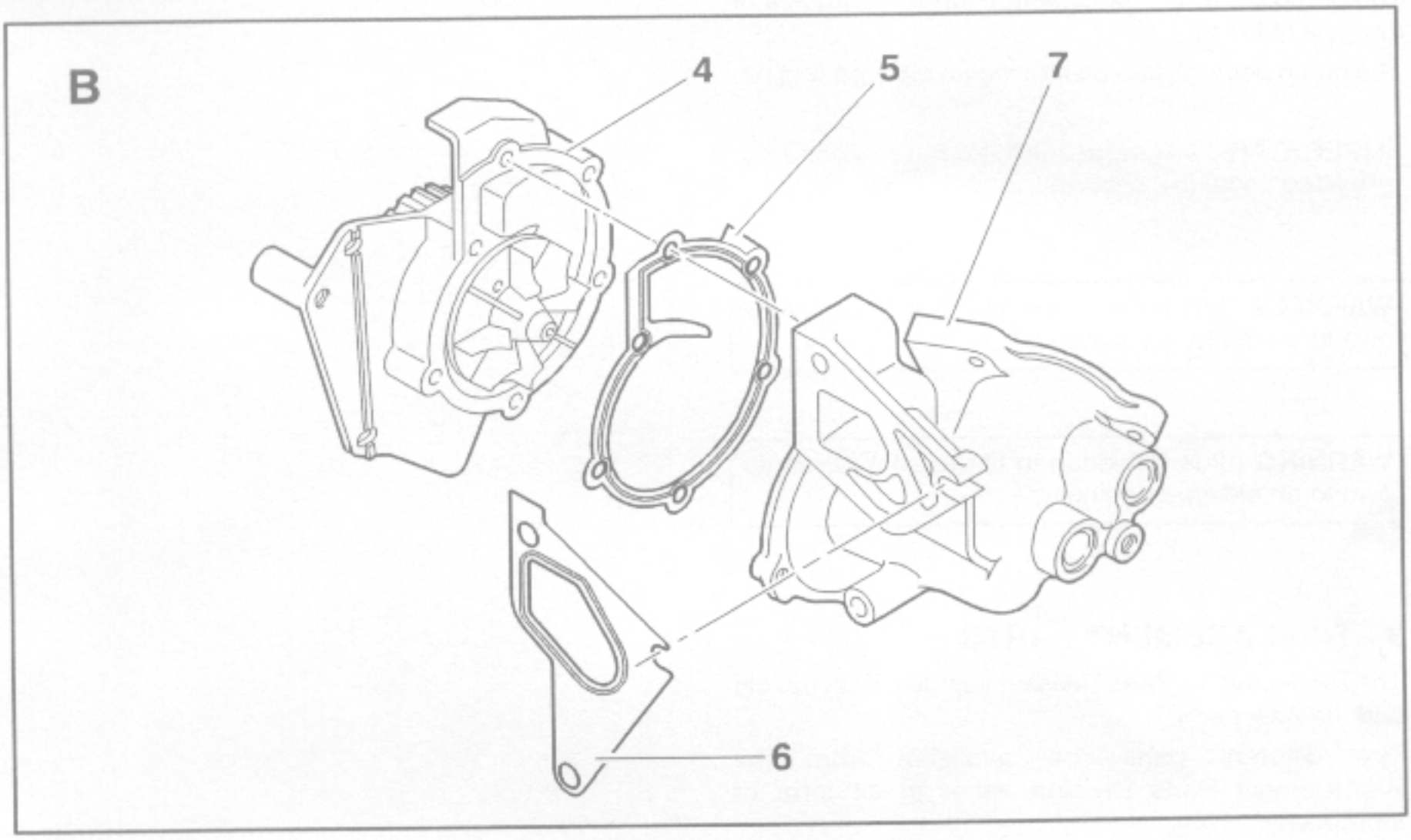


Fig : B1GP071D

The new assembly improves the water pump seal.

New contact faces :

- water pump body – cylinder block
- water pump body – water pump cover

Removal of the groove allowing a silicone seal to be applied to the pump body.

Creation of 2 seals.

Item	Description	Remarks
7	Water pump body	Without groove
6	Pump body elastomer metallic seal (2 surfaces)	Thickness : 0.3 mm
5	Pump cover elastomer metallic seal (2 surfaces)	Thickness : 0.3 mm
4	Water pump cover	

www.WorkshopManuals.co.uk

2 – REPAIRS

The pump cover (4) remains the same regardless of the type of fitting.

The pump body (7) can be fitted to an old type engine.

IMPERATIVE : As long as the following components are fitted : seal (5). seal (6).

WARNING : It is forbidden to fit the seal (6) on its own to an old type engine.

WARNING : It is forbidden to fit the seal (5) on its own to an old type engine.

3 – REPLACEMENT PARTS

The Replacement Parts Division supplies both the old and the new parts.

The different parts are available from the Replacement Parts Division either in kit form or individually.

Only the new parts will be available from the Replacement Parts Division once stocks of the old parts have run out.

3.1 – Old parts

The old parts are still supplied by the Replacement Parts Division :

- water pump body (identified by (1))
- pump cover fibrous seal (identified by (3))

3.2 – New parts

Contents of the kit :

- water pump body (identified by (7))
- water pump cover (identified by (4))
- pump cover elastomer metallic seal (identified by (5))
- 6 screws H RCN M6x100 L45 (mm)
- water inlet manifold cover
- thermostat valve seal
- 3 screws H M6x100 L40 (mm)
- 2 flexible pins M10 L10 (mm)
- pump body elastomer metallic seal (identified by (6))

© "The intellectual property rights relating to the technical information contained in this document belong exclusively to the Manufacturer. Reproduction, translation or distribution in whole or in part without prior written authorisation from the Manufacturer is forbidden".

www.WorkshopManuals.co.uk

Xm

APRIL 1998

RPO No: 7116 ⟼

1 No XM - 4

EVOLUTION

ENGINES ALL TYPES

(Except 2.5 TD)

- EVOLUTION : HEADER TANK

MAN 158931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

1

GB

www.WorkshopManuals.co.uk

EVOLUTION : HEADER TANK

1 – VEHICLE APPLICATION

CITROEN XM (all engines except 2.5 TD).

2 – APPLICATION

Applicable from RPO number : 7116.

2.1 – All models (except 2.0 Turbo CT)

Evolutions :

- 15 mm reduction in the length of the outlet union (3)
- height of the level sensor electrodes (4) 40 mm instead of 30 mm

NOTE : The hose connected to the outlet union (3) remains unchanged (charging the cooling circuit).

2.2 – XM 2.0 Turbo CT (XU10 J2TE engine)

Evolutions :

- 15 mm reduction in the length of the outlet union (3)
- height of the level sensor electrodes (4) 40 mm instead of 30 mm

NOTE : Hose connected to the outlet union (3) extended by 15 mm (charging the cooling circuit).

3 – IDENTIFICATION

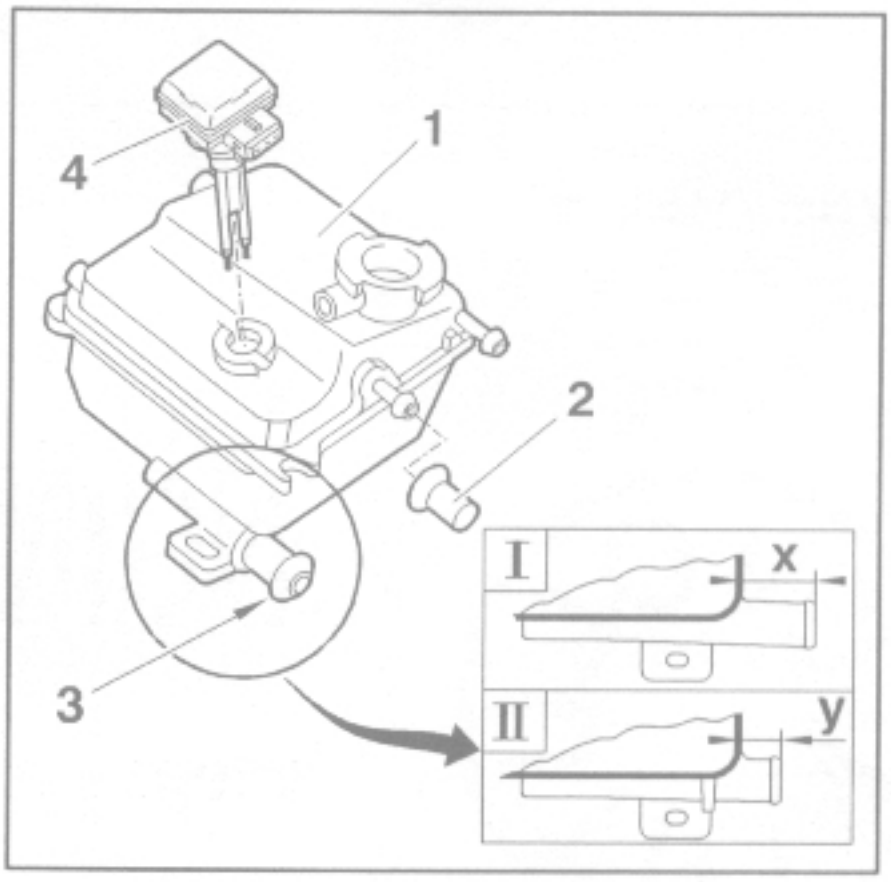


Fig : B1GP04XC

(1) header tank.

(2) plug.

(3) outlet union.

(4) coolant fluid level sensor.

I – previous assembly : X = 26 mm.

II – new assembly : Y = 15 mm.

4 – REPLACEMENT PARTS

At present the Replacement Part Division supplies :

- header tank (new)
- coolant fluid level sensor (new and old)
- connecting hose (new and old)

When ordering a header tank, the following parts must be ordered :

- coolant fluid level sensor (new)
- a plug (2) with its mounting clip (according to model)

www.WorkshopManuals.co.uk

5 – INTERCHANGEABILITY

5.1 – All models (except 2.0 Turbo CT) : prior to RPO No. 6747

The new header tank is fitted instead of and in place of the old one without modifications on the following engines.

Engine	Number of valves	Supply	Engine type
2.0	8	Carburettor	XU102C
2.0	8	Monopoint injection	XU10M
2.0	8	Multipoint injection	XU10J2
2.0	16	Multipoint injection	XU10J4R
2.0 Turbo CT (refer to the Note)	8		XU10J2TE
V6	12	Multipoint injection	ZPJ
V6	24	Multipoint injection	ZPJ4
2.1 D	12	Naturally aspirated Diesel	XUD11A
2.1 Turbo D	12	Turbocharged Diesel	XUD11ATE / XUD11BTE

WARNING : Certain modifications have to be made from RPO N° 6748.

5.2 – XM 2.0 Turbo CT : from RPO number 6748 ; prior to RPO No. 7116

The new header tank can be fitted provided that a thermo–retractable sleeve is added to the cooling circuit charging hose.

5.2.1 – Part required

100 mm thermo–retractable sleeve – 30 mm diameter (sleeve not retracted).

RP reference : 9769 R3.

5.2.2 – Required tools

[1] hot air gun for "RAYCHEM" sleeve (tool box OUT 309 001T).

5.2.3 – Application

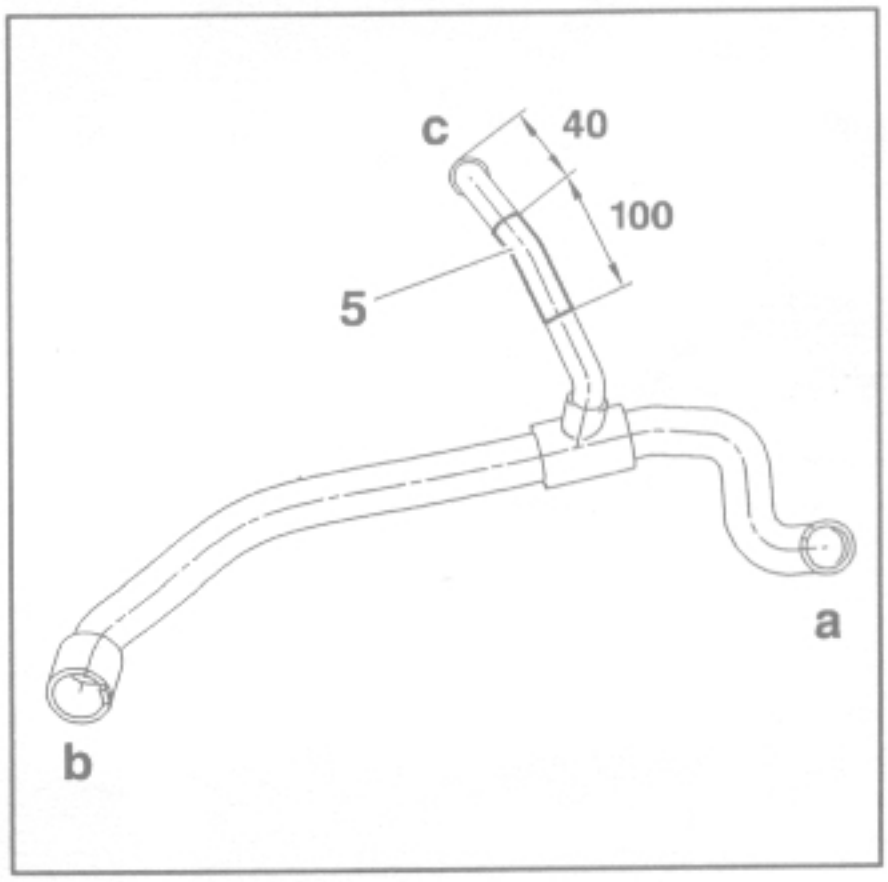


Fig : B1GP04YC

"a" to coolant inlet housing unit.

"b" to radiator.

"c" to header tank.

(5) thermo–retractable sleeve.

Put the sleeve (5) on the cooling circuit charging hose opposite the chassis member.

Heat the thermo–retractable sleeve with the tool [1] taking precautions regarding surrounding items.

www.WorkshopManuals.co.uk

© "The intellectual property rights relating to the technical information contained in this document belong exclusively to the Manufacturer. Reproduction, translation or distribution in whole or in part without prior written authorisation from the Manufacturer is forbidden".

www.WorkshopManuals.co.uk

Xm

SEPTEMBER 1998

RPO No: 6779 ⟶

1 No XM - 5

EVOLUTION

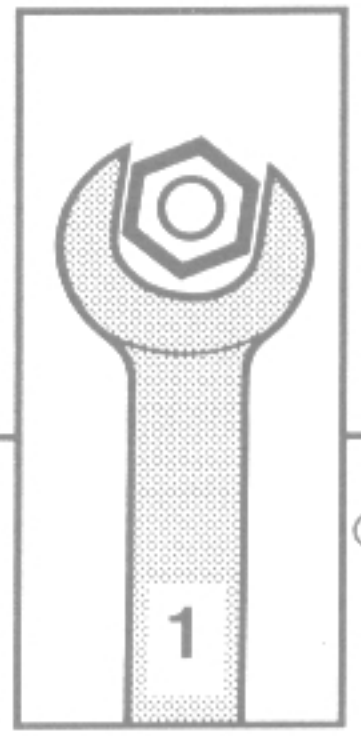
DK 5 ENGINE

(2.5 l Turbo D)

- EVOLUTION : CAMSHAFT

MAN 158931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".



GB

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

EVOLUTION : CAMSHAFT

1 – RECOMMENDED TOOLS

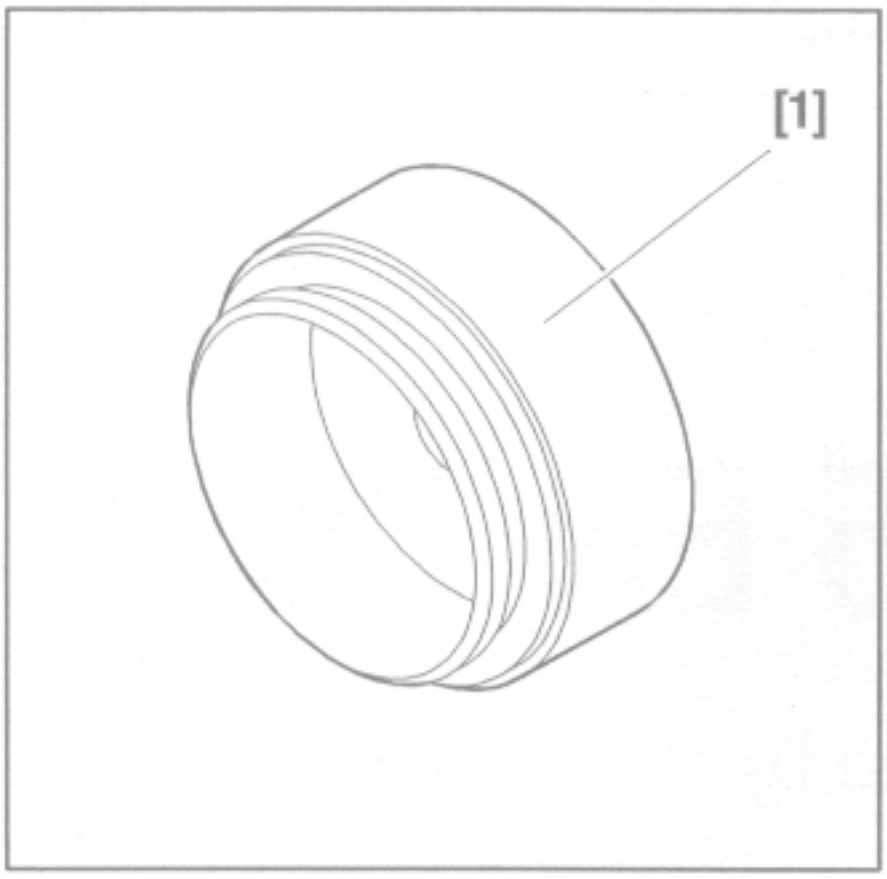


Fig : E5AP18PC

[1] fitting mandrel of the camshaft lipped seal 5711–T.M (clutch side) (tool box 5711–T).

www.WorkshopManuals.co.uk

2 – IDENTIFICATION

2.1 – Prior to RPO N° 6778

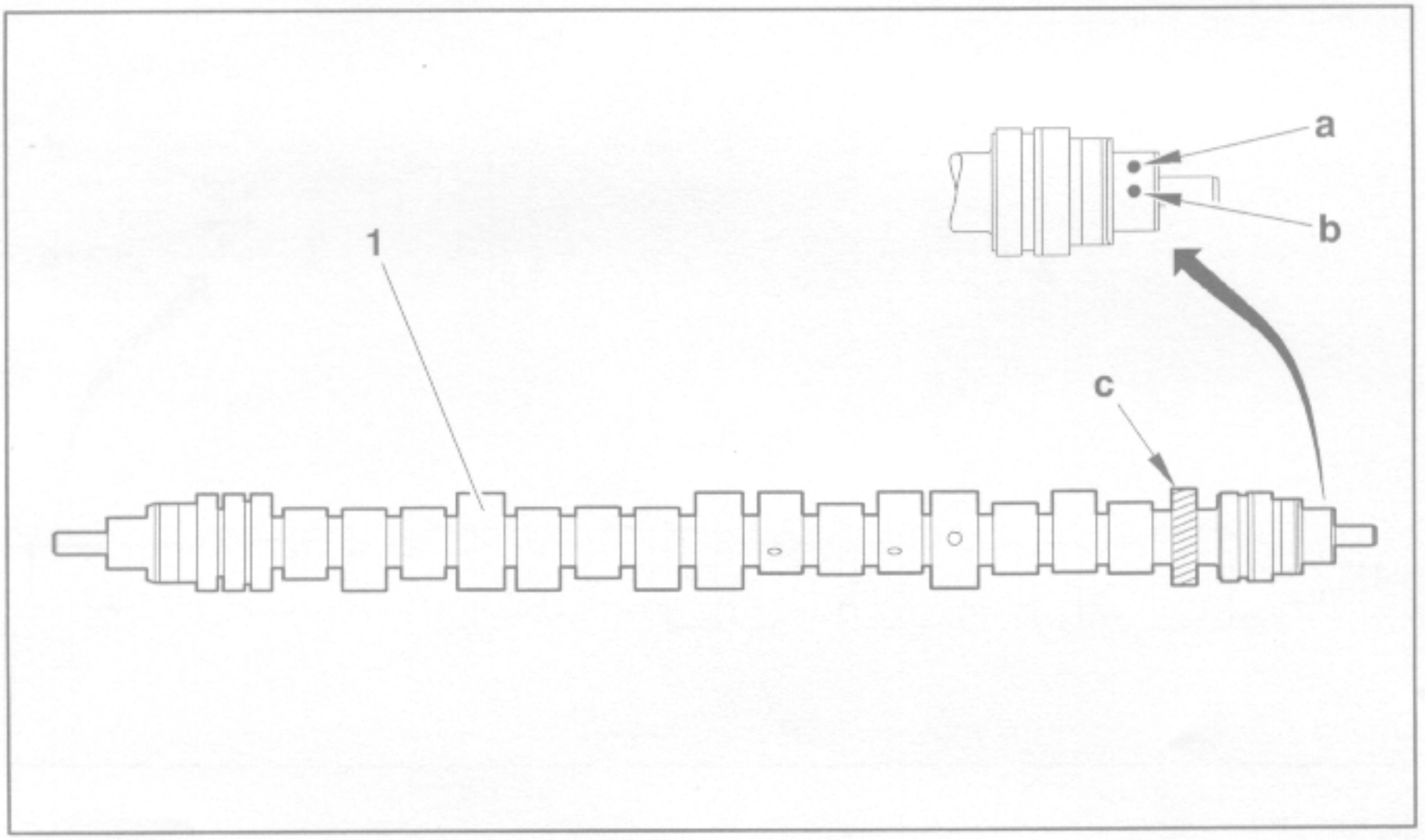


Fig : B1DP15LD

(1) camshaft.

NOTE : This part is no longer available from the Replacement Parts Division.

Referencing of the camshaft : holes at "a" and "b" (flywheel side).

The pinion "c" cannot be removed.

www.WorkshopManuals.co.uk

2.2 – From RPO N° 6779

The camshafts are modified so that they can either drive a vacuum pump or not.

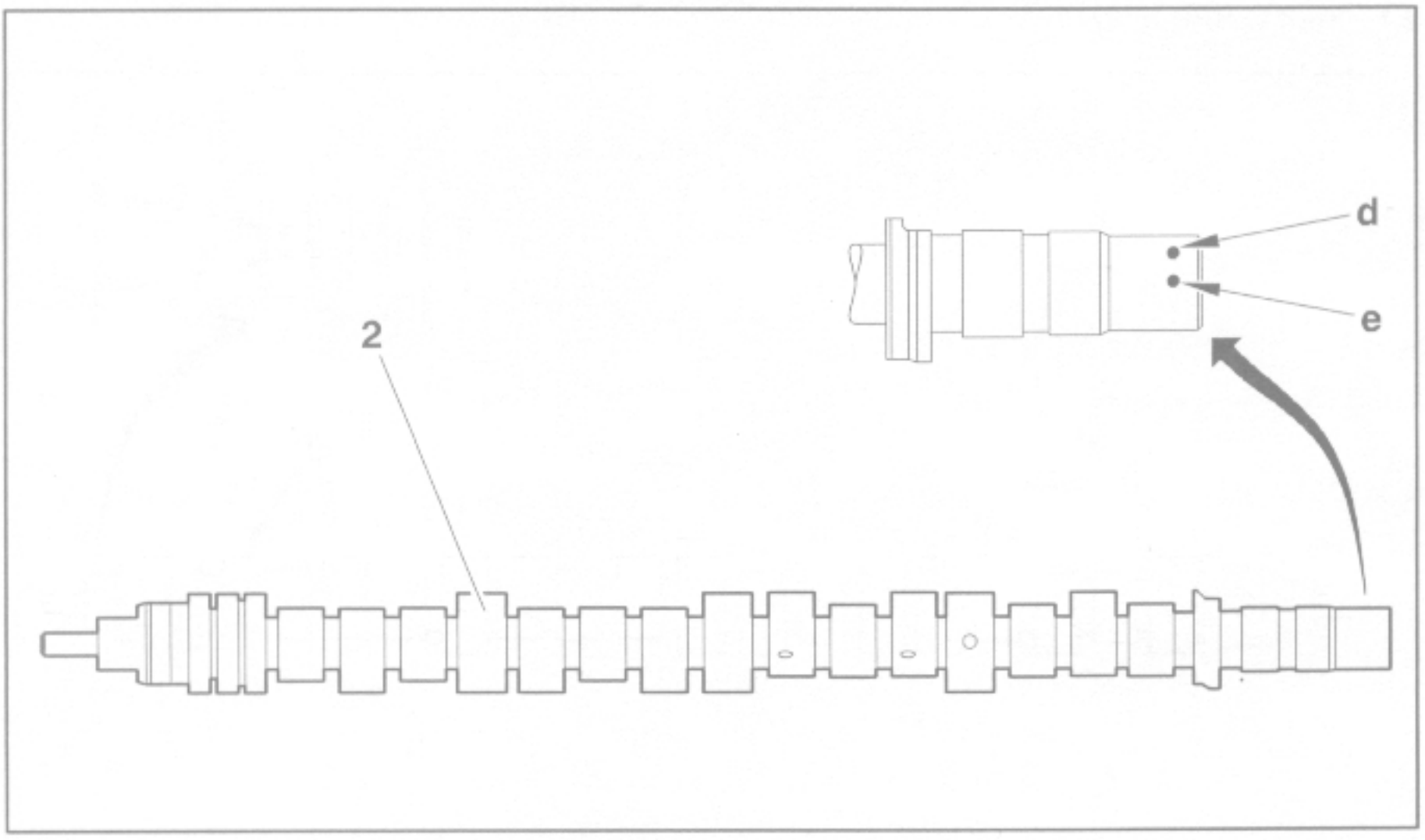


Fig : B1DP15MD

(2) camshaft.

Referencing of the camshaft : holes at "d" and "e" (flywheel side).

www.WorkshopManuals.co.uk

3 – NEW PARTS

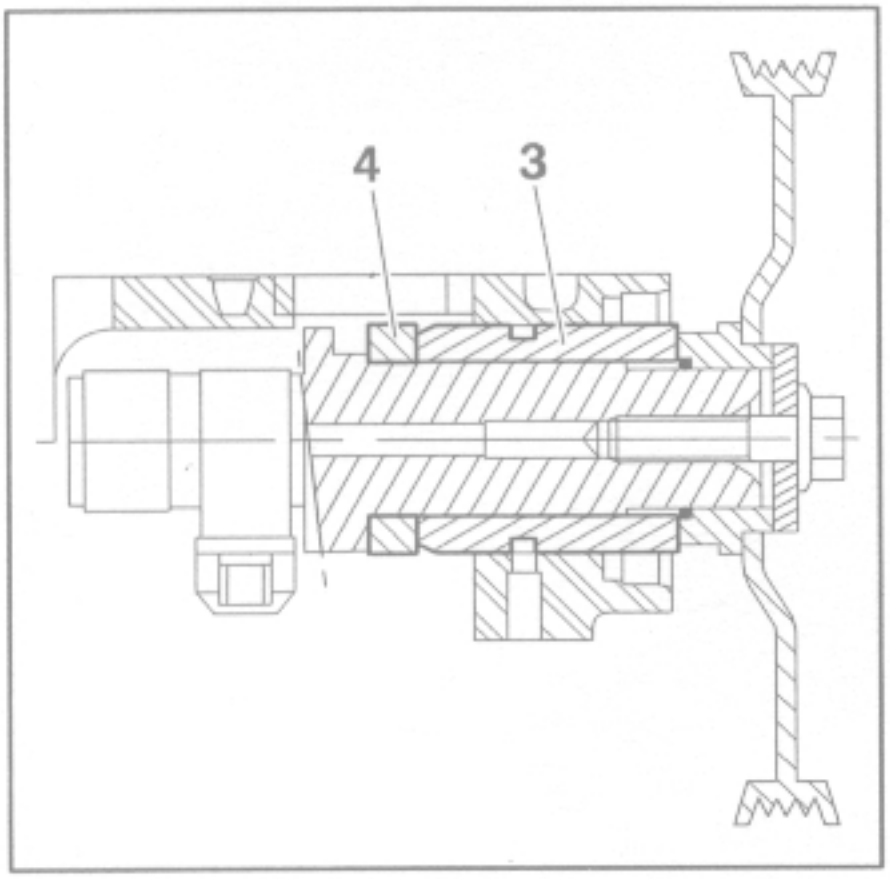


Fig : B1DP15NC

(3) intermediate bearing.

(4) spacer.

NOTE : The Replacement Parts Division sells the various parts in a kit.

4 – FITTING

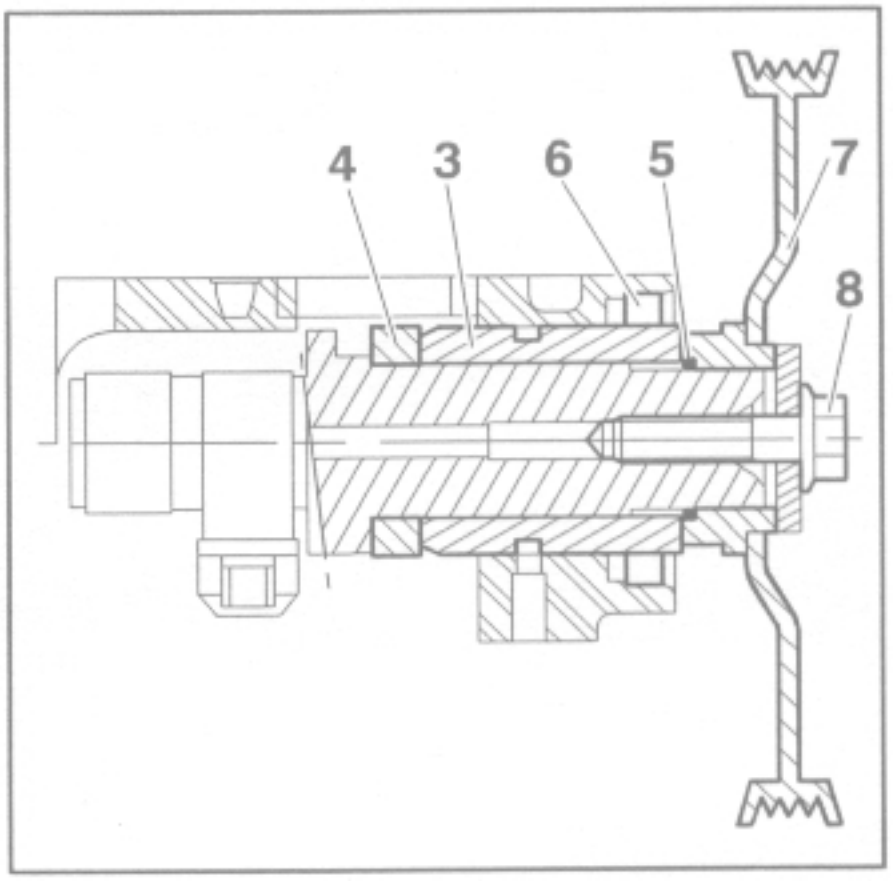


Fig : B1DP15PC

IMPERATIVE : The outer surface of the lip seal must be free from all traces of oil.

Fit :
- the spacer (4)
- the intermediate bearing (3)
- the O–ring (5)
- the lipped seal (6)
- the camshaft pulley (7)
- the screw (8)

Tighten the bolt (8) to 4.3 m.daN.

www.WorkshopManuals.co.uk

Xm

MARCH 1999

RPO No: 8148 ⟼

REF. 1 No XM - 6

XUD11 ENGINE

(2.1 Turbo D)

- EVOLUTION: EXHAUST LINE

MAN 108931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

1

GB

www.WorkshopManuals.co.uk

EVOLUTION : EXHAUST LINE

Vehicle concerned : XM 2.1 Turbo D12 (L3 emission standard).
Applicable from RPO number : 8148.

1 – PRESENTATION

The intermediate pipe of the exhaust pipe is replaced by a pipe without an expansion box.
NOTE : This development does not affect performance (noise, power).

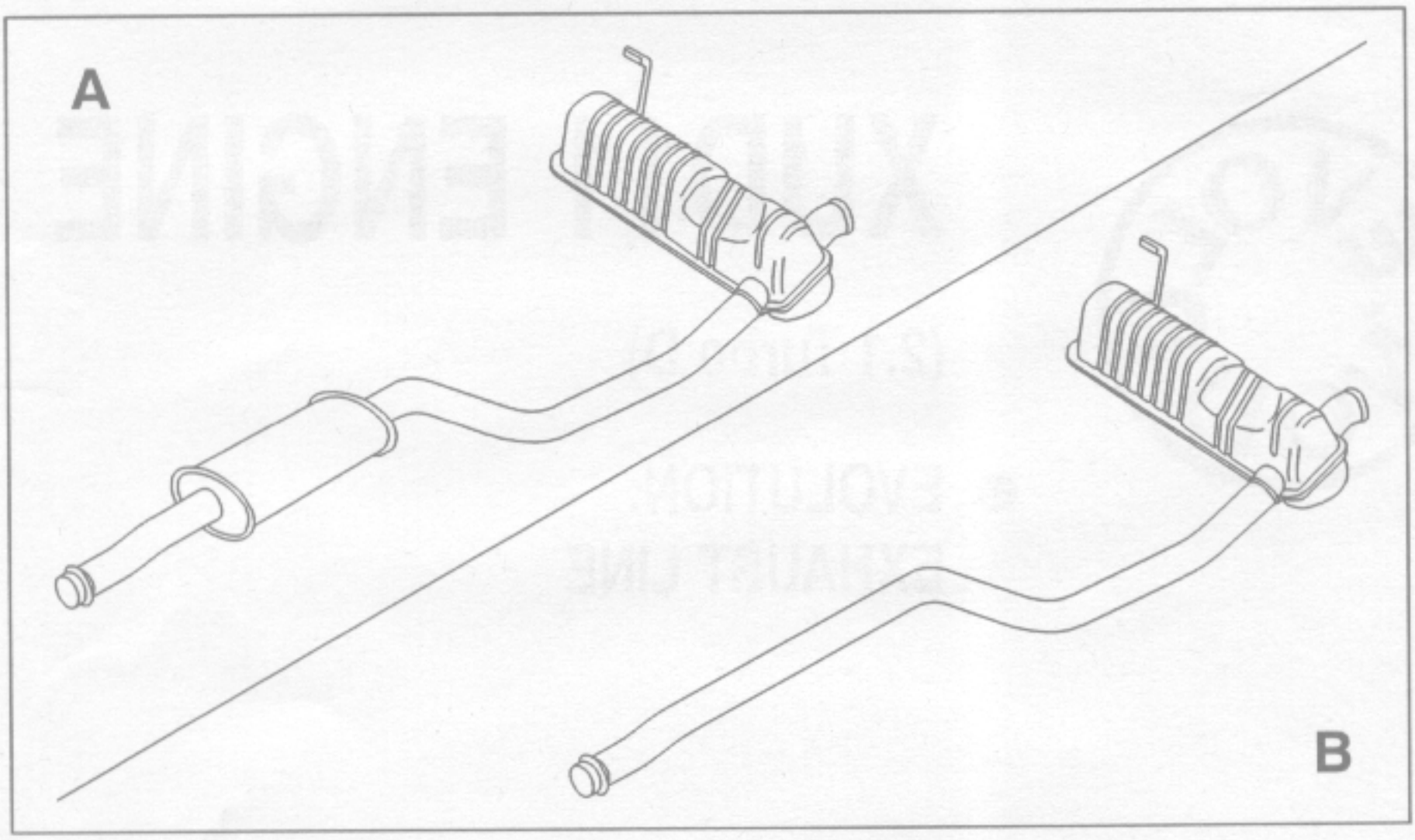


Fig : B1JP027D

A : old part (item "PSA 3340").
B : new part (without make).
The way in which the new part is mounted has not changed.
The other components of the exhaust system have not changed.

2 – REPLACEMENT PARTS

Parts supplied by the Replacement Parts Division : old parts (only).

© "The intellectual property rights relating to the technical information contained in this document belong exclusively to the Manufacturer. Reproduction, translation or distribution in whole or in part without prior written authorisation from the Manufacturer is forbidden".

www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk

JANUARY 1995

REF. 1 No XM 100-00/12

ABONNEMENT GME

XU 10J4R ENGINE

● POWER UNIT

MAN 158931

1

GB

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

POWER UNIT

DATA – IDENTIFICATION : RFV ENGINE 3

REMOVING – REFITTING : ENGINE ASSEMBLY – GEARBOX 8

REMOVING – REFITTING : AUXILIARY EQUIPMENT DRIVE BELT, VEHICLE WITHOUT REFRIGERATION 16

REMOVING – REFITTING : AUXILIARY EQUIPMENT DRIVE BELT, VEHICLE WITH REFRIGERATION 18

REMOVING – REFITTING : SUPPORT FOR AUXILIARY EQUIPMENT 20

www.WorkshopManuals.co.uk

DATA – IDENTIFICATION : RFV ENGINE

1 – DATA

Fuel injection engine :

Engine code	XU10J4R
Legislation type	RFV
Capacity (cc)	1998
Bore x stroke (mm)	86 x 86
Compression ratio	10.4:1
Max. power (E.E.C)	97,4kW
Max. power (HP DIN)	135 HP DIN
Corresponding engine speed	5500 rpm
Max. torque (E.E.C.)	18 m.daN
Max. torque (DIN)	18.7 m.kg
Corresponding engine speed	4200 rpm
Emission standards	L / Z
Fuel	Unleaded premium 95 and 98 RON
Catalytic converter	Yes
Injection system	Multipoint
Supplier	BOSCH
Type	MP5.1.1

2 – POWER AND TORQUE CURVES

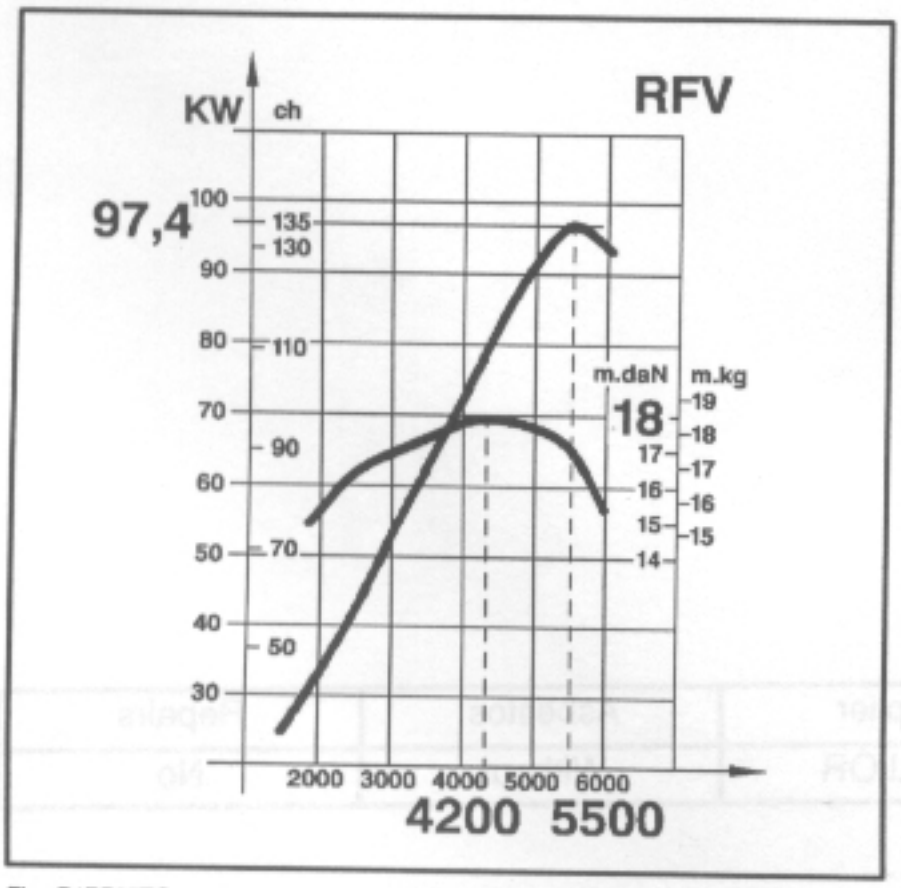


Fig : B1BP07TC

3 – IDENTIFICATION

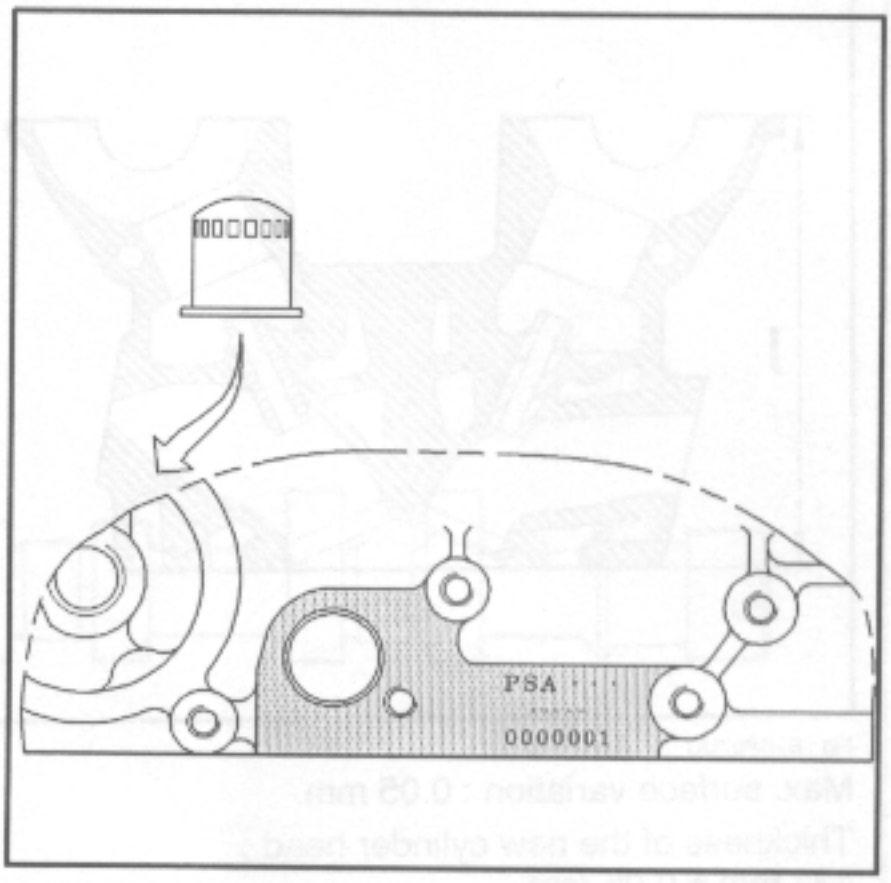


Fig : B1BP027C

4 – CYLINDER BLOCK

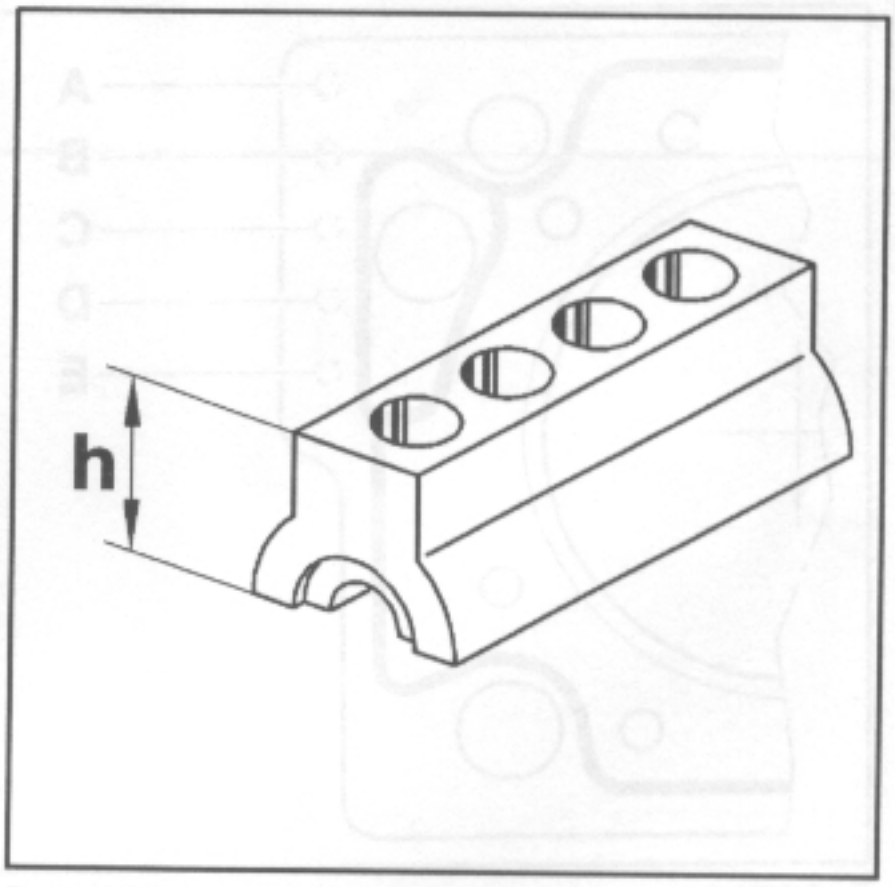


Fig : B1BP003C

h = 235 mm ± 0.05 mm.

Crankshaft endfloat : 0.07 mm to 0.32 mm.

www.WorkshopManuals.co.uk

5 – CYLINDER HEAD

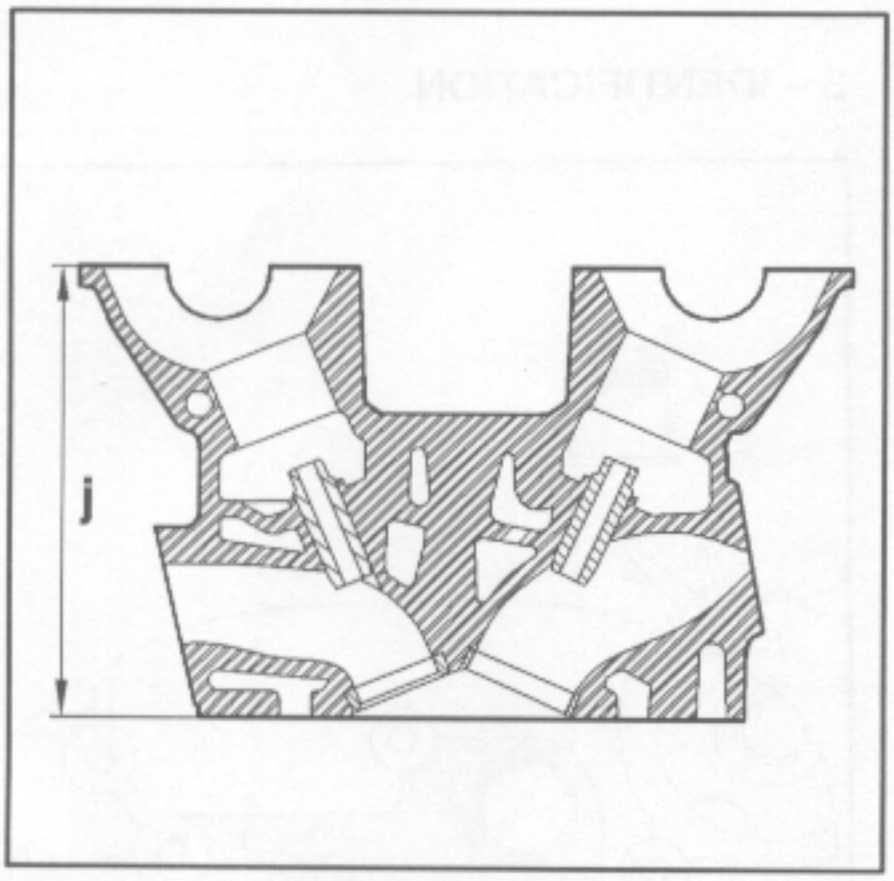


Fig : B1BP07UC

Max. surface variation : 0.05 mm.

Thickness of the new cylinder head :
137 mm ± 0.05 mm.

6 – CYLINDER HEAD GASKET

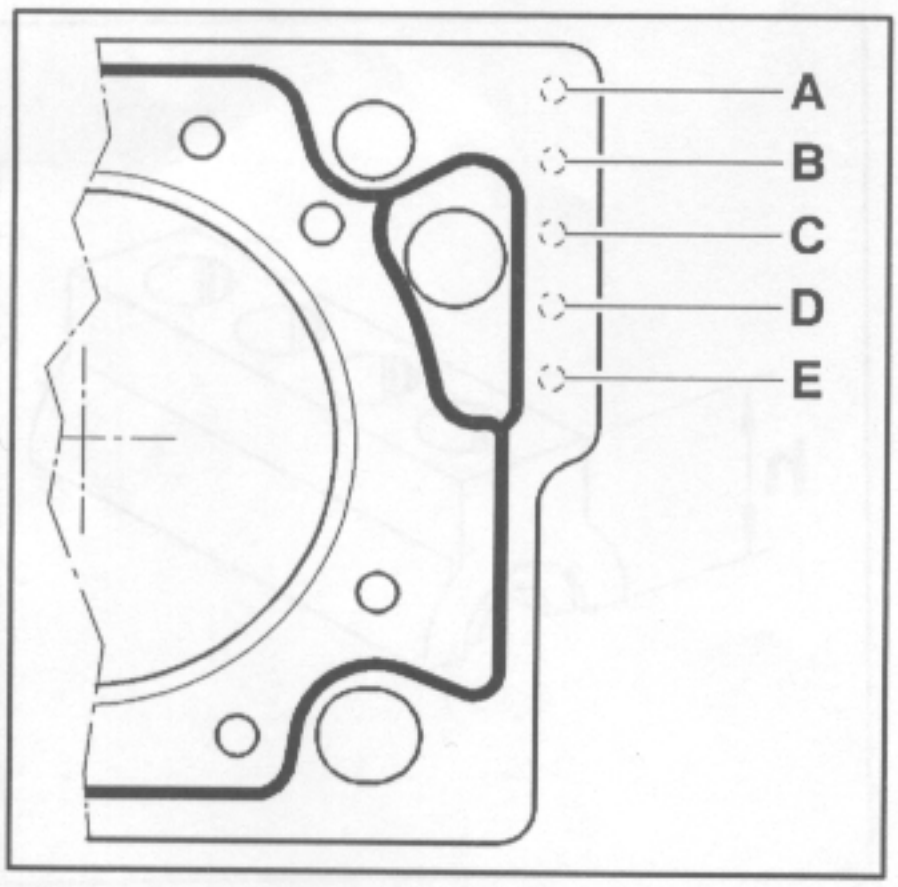


Fig : B1BP004C

Thickness	Code	Supplier	Asbestos	Repairs
1.2 mm	A–C	MEILLOR	Without	No

www.WorkshopManuals.co.uk

7 – TIMING GEAR

7.1 – The camshafts

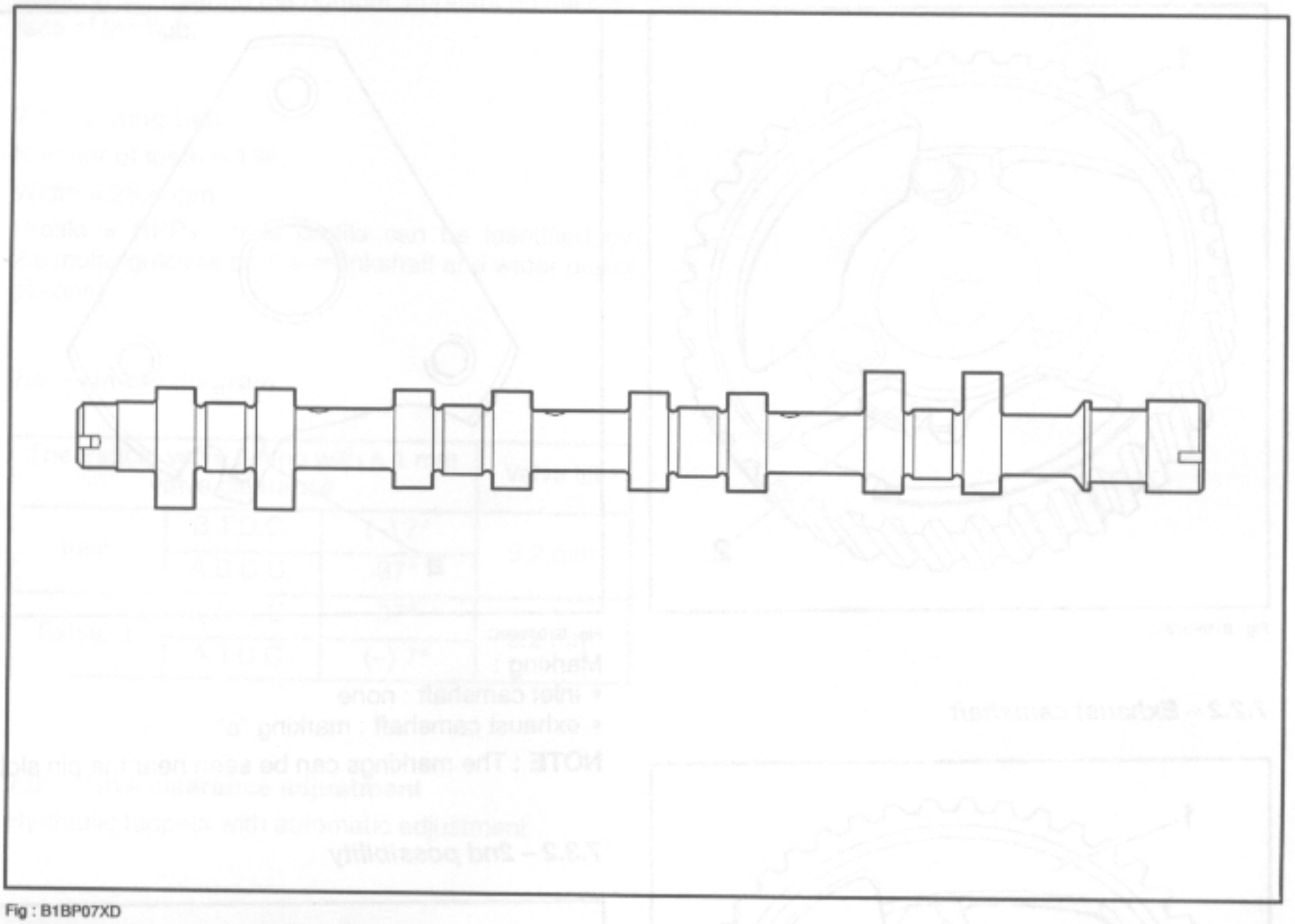


Fig : B1BP07XD

The inlet and exhaust camshafts are identical.

www.WorkshopManuals.co.uk

7.2 – Camshaft pulleys

7.2.1 – Inlet camshaft

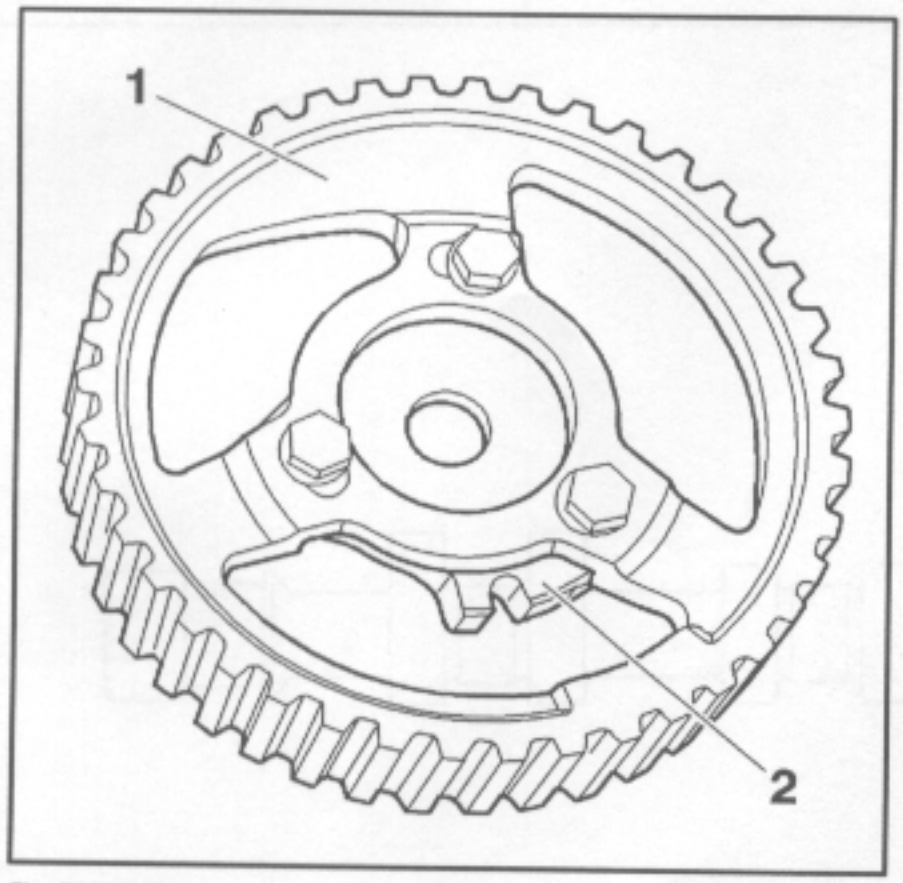


Fig : B1BP07WC

7.2.2 – Exhaust camshaft

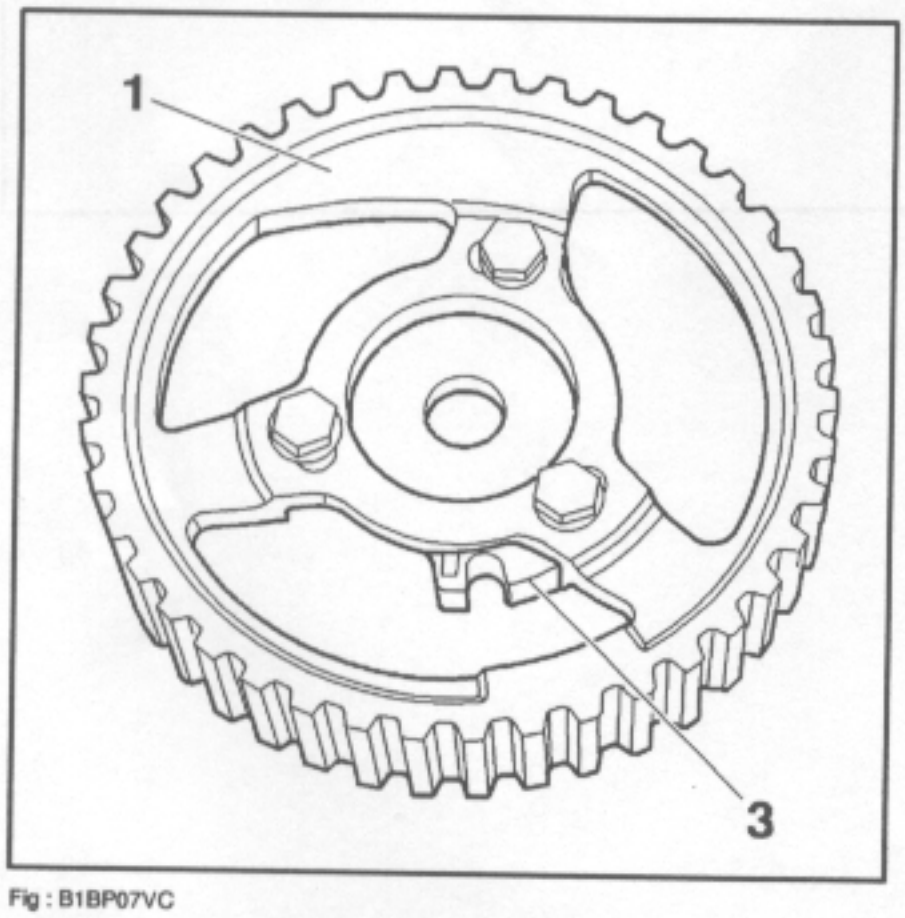


Fig : B1BP07VC

The camshaft pulleys (1) are identical.

The camshaft pulleys are equipped with holes that allow an angular movement of the pulleys in relation to their hubs.

The camshaft hubs (2); (3) are different.

7.3 – Camshaft hubs

7.3.1 – 1st possibility

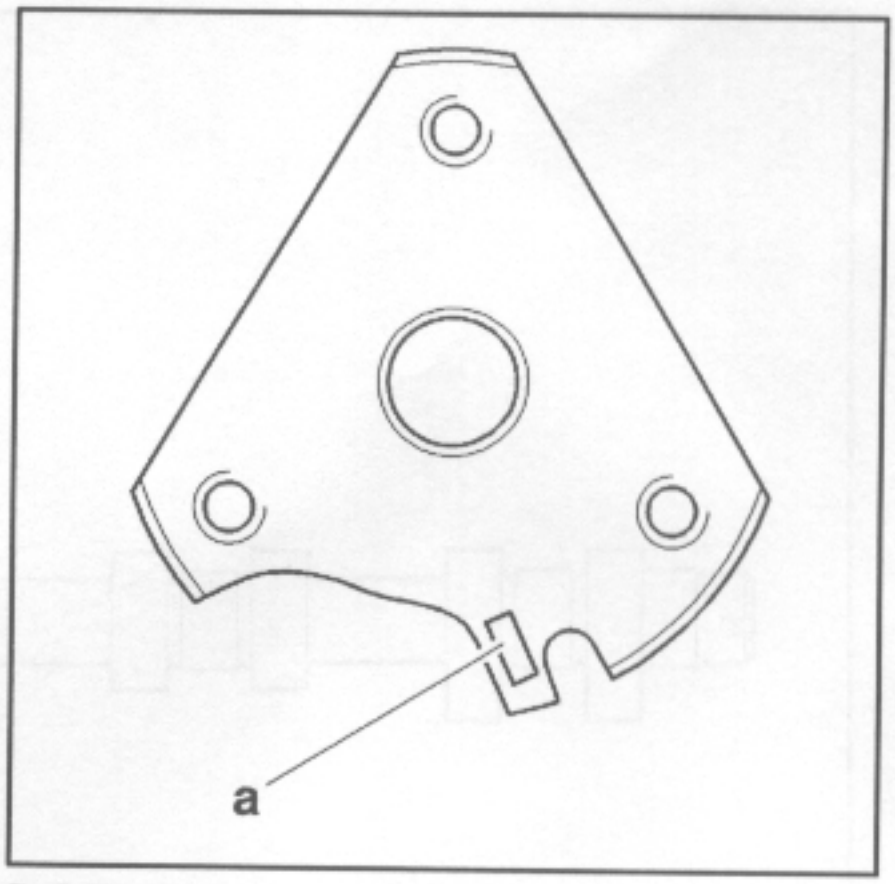


Fig : B1DP020C

Marking :

- inlet camshaft : none
- exhaust camshaft : marking "a"

NOTE : The markings can be seen near the pin slot.

7.3.2 – 2nd possibility

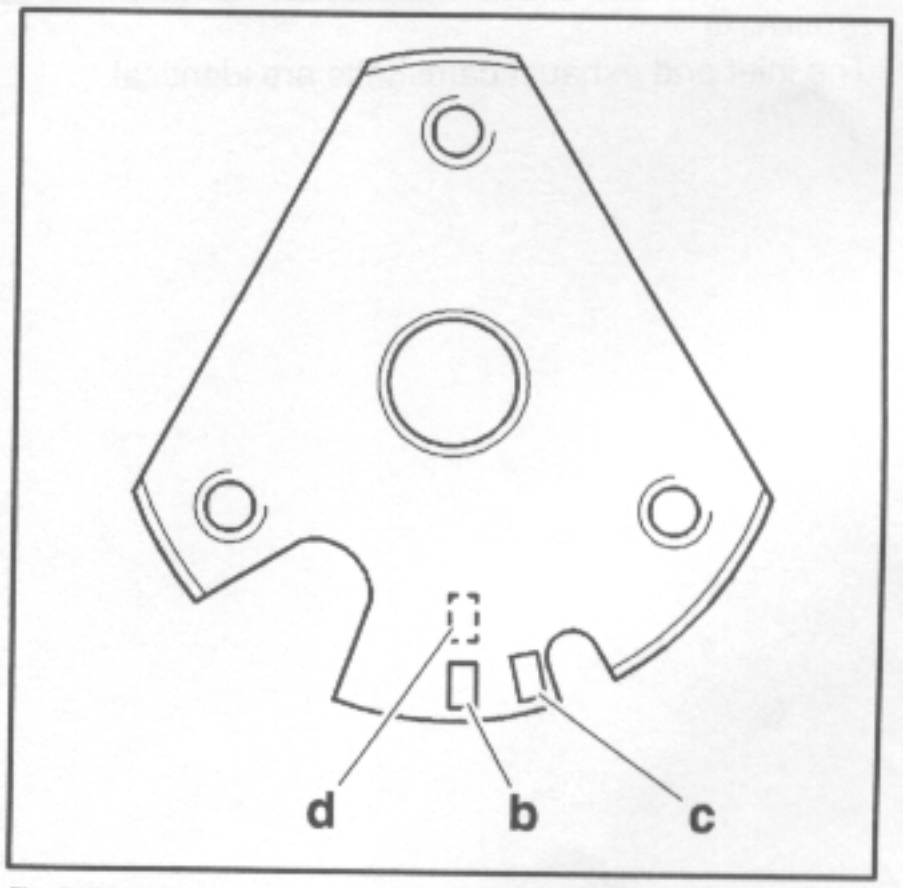


Fig : B1DP03CC

Marking :

- inlet camshaft : marking "b"
- exhaust camshaft : marking "c"

www.WorkshopManuals.co.uk

Number in mark "d" :
- inlet camshaft : number 3
- exhaust camshaft : number 4

NOTE : The markings can be seen near the pin slot. Marking "d", bearing the number, appears on the rear face of the hub.

7.4 – Timing belt

Number of teeth = 136.

Width = 25.4 mm.

Profile = RPP+ (this profile can be identified by 2 circular grooves on the crankshaft and water pump pinions).

7.5 – Timing diagram

Theoretical valve timing with a 1 mm valve clearance			Valve lift
Inlet	B.T.D.C.	(–) 7°	9.2 mm
	A.B.D.C.	37°	
Exhaust	B.B.D.C.	37°	9.2 mm
	A.T.D.C.	(–) 7°	

7.6 – Valve clearance adjustment

Hydraulic tappets with automatic adjustment.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : ENGINE ASSEMBLY – GEARBOX

1 – RECOMMENDED TOOLS

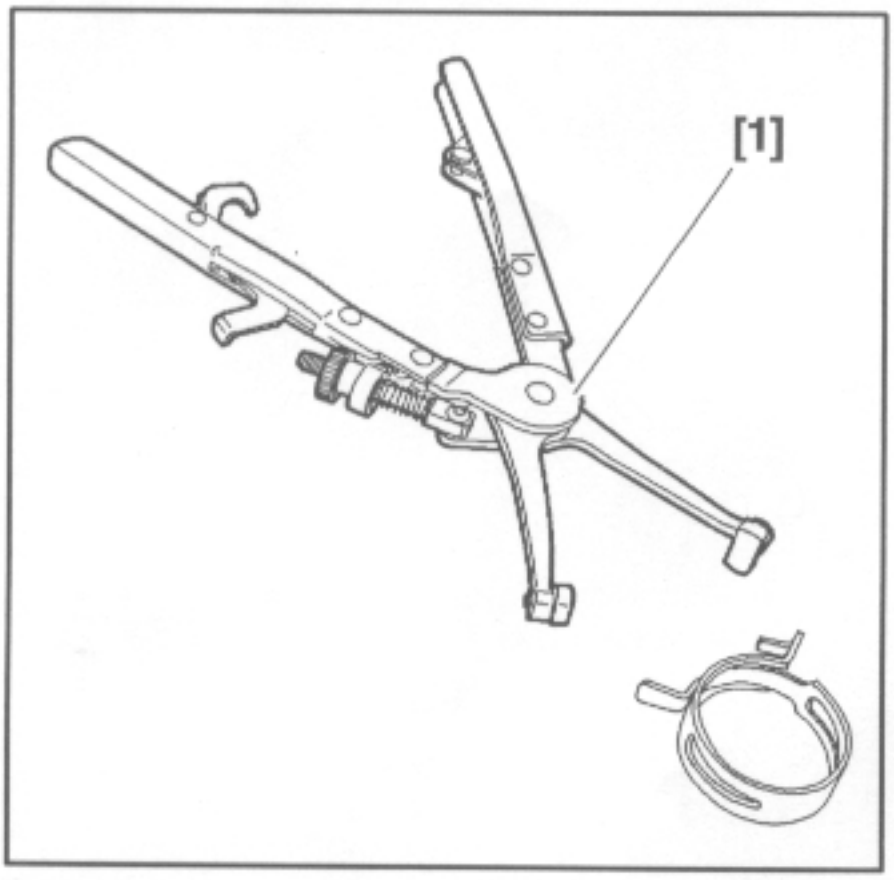


Fig : E5–P059C

[1] 9029–T pliers for removing and refitting hose clips.

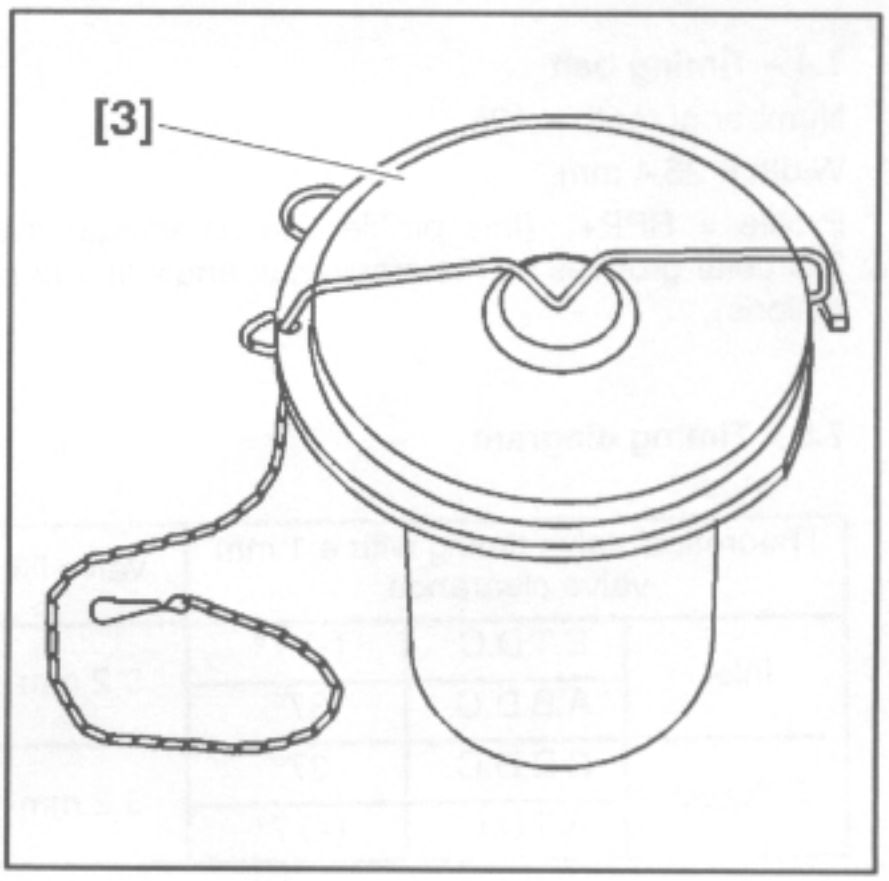


Fig : E5–P073C

[3] LHM reservoir/filter assembly cover 9004–T.

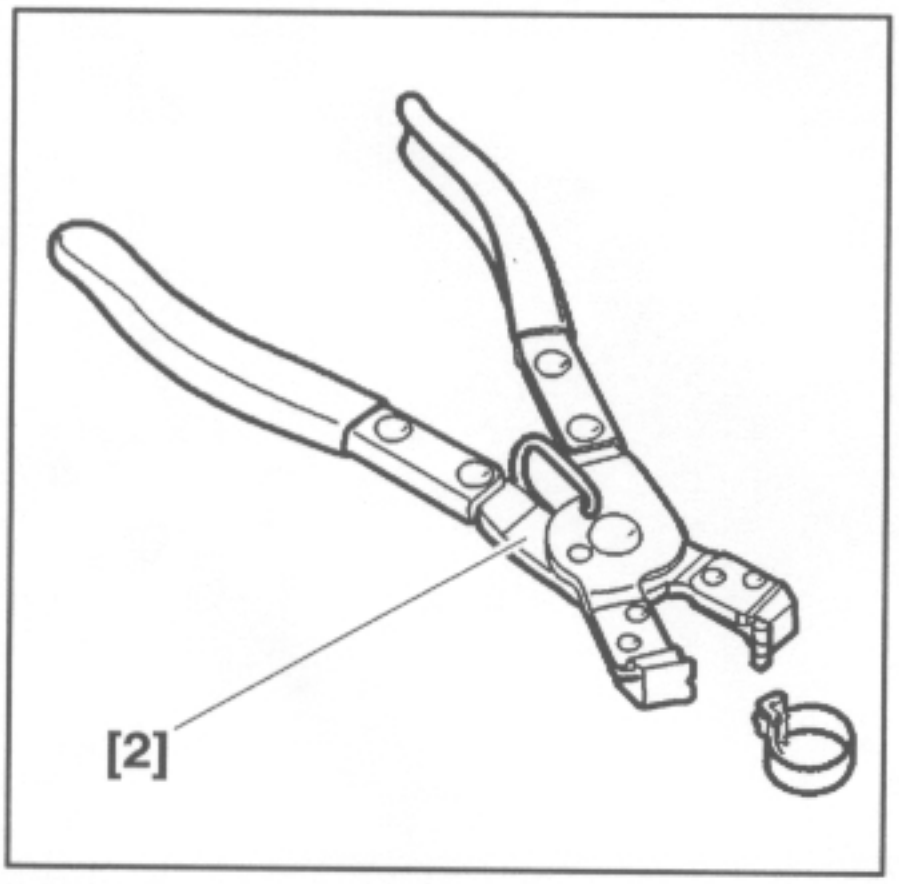


Fig : E5–P072C

[2] CLIC clip pliers 4121–T.

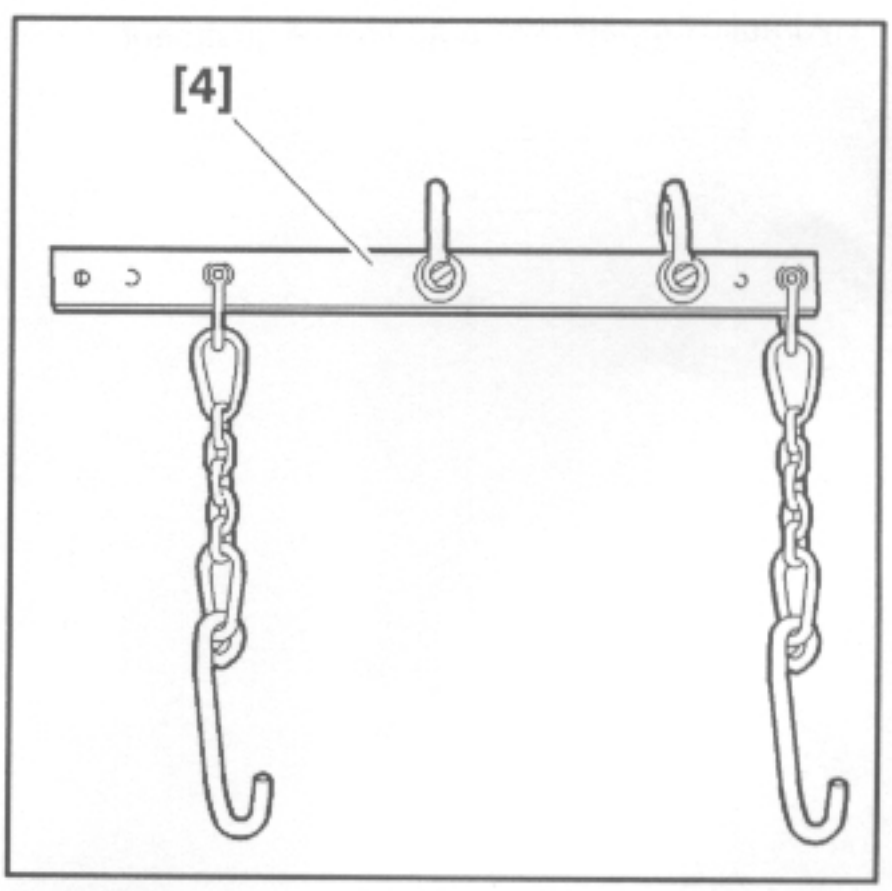


Fig : E5–P074C

[4] sling 2517–T.bis.

www.WorkshopManuals.co.uk

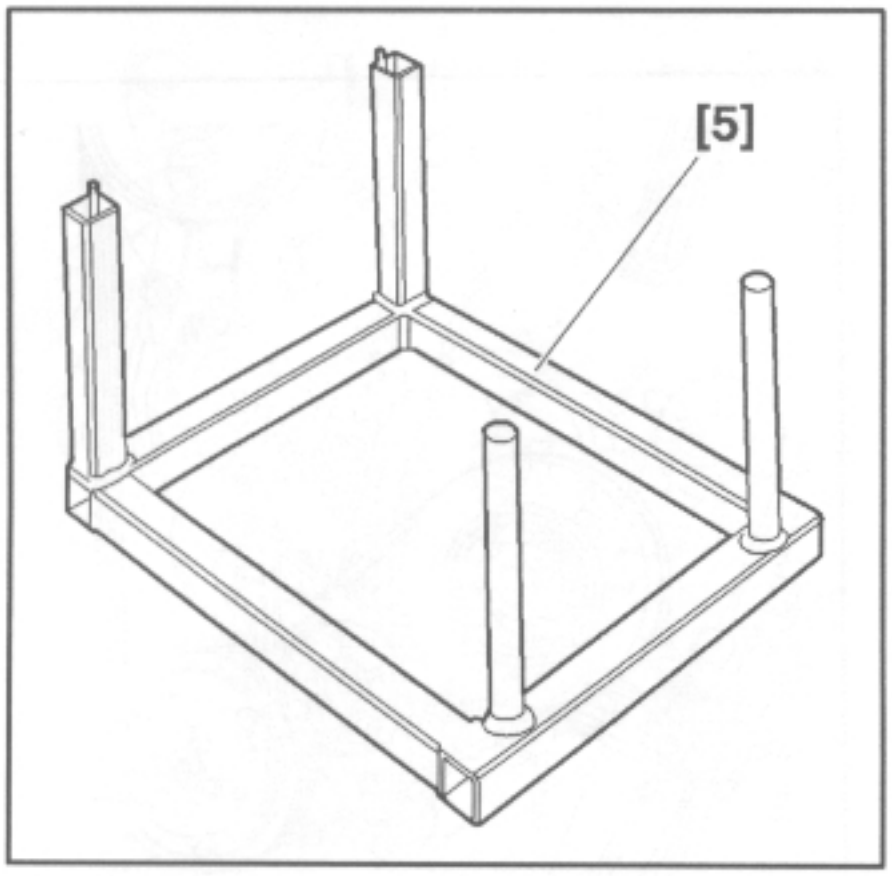


Fig : E5-P075C
[5] engine support 9030-T.

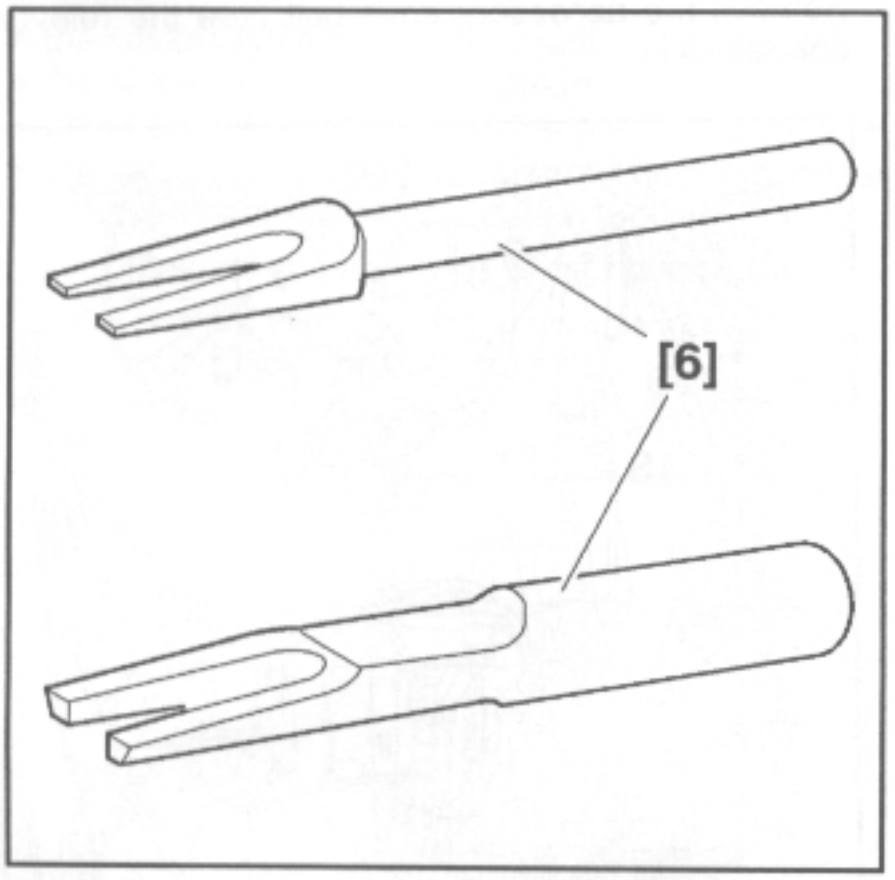


Fig : E5-P076C
[6] ball joint extractor 9040-TG1 + 9040-TG2.

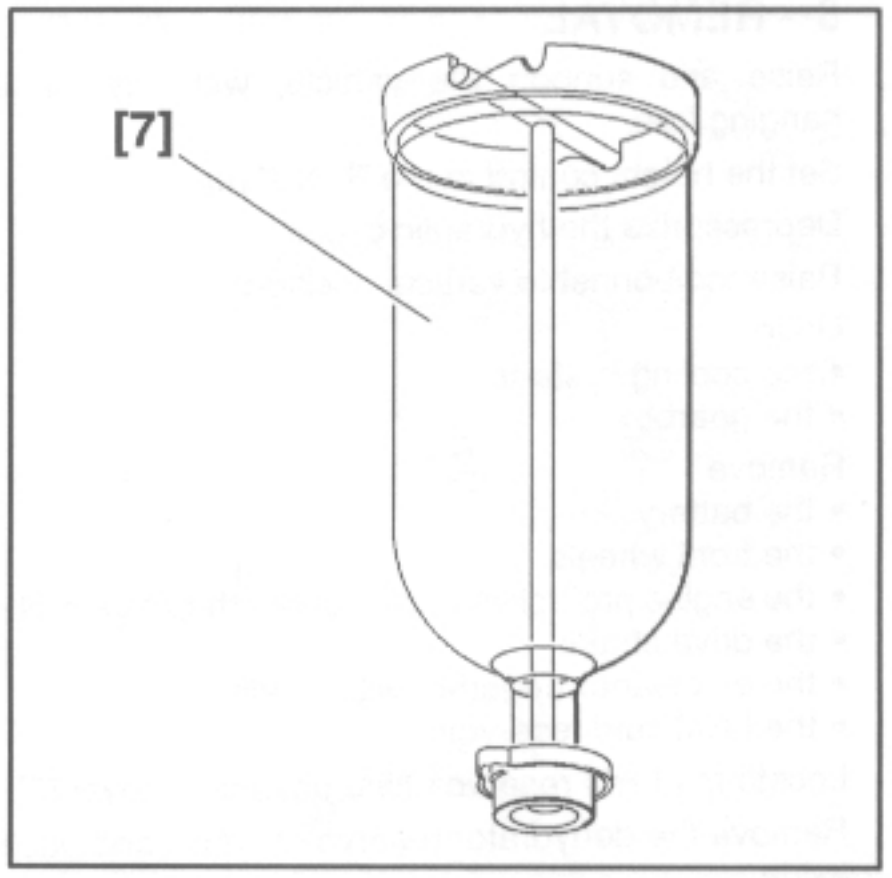


Fig : E5-P077C
[7] filling cylinder 4520-T.

2 - ADDITIONAL TOOLS

Ball joint extractor 6323-T (1892-T).
Hub locking tool 6310-T.
Torque wrench : 40 m.daN.
Socket 35 mm A/F.

3 – REMOVAL

Raise and support the vehicle, with the wheels hanging free.

Set the height control to the "LOW" position.

Depressurize the hydraulic circuit.

Raise the bonnet to vertical position.

Drain :
- the cooling system
- the gearbox

Remove :
- the battery
- the front wheels
- the engine protective panels under the wheelarches
- the drive shafts
- the air cleaner (together with its sleeve)
- the LHM fluid reservoir

Locate the LHM reservoir/filter assembly cover [3].

Remove the dehydrator reservoir screws and push it aside.

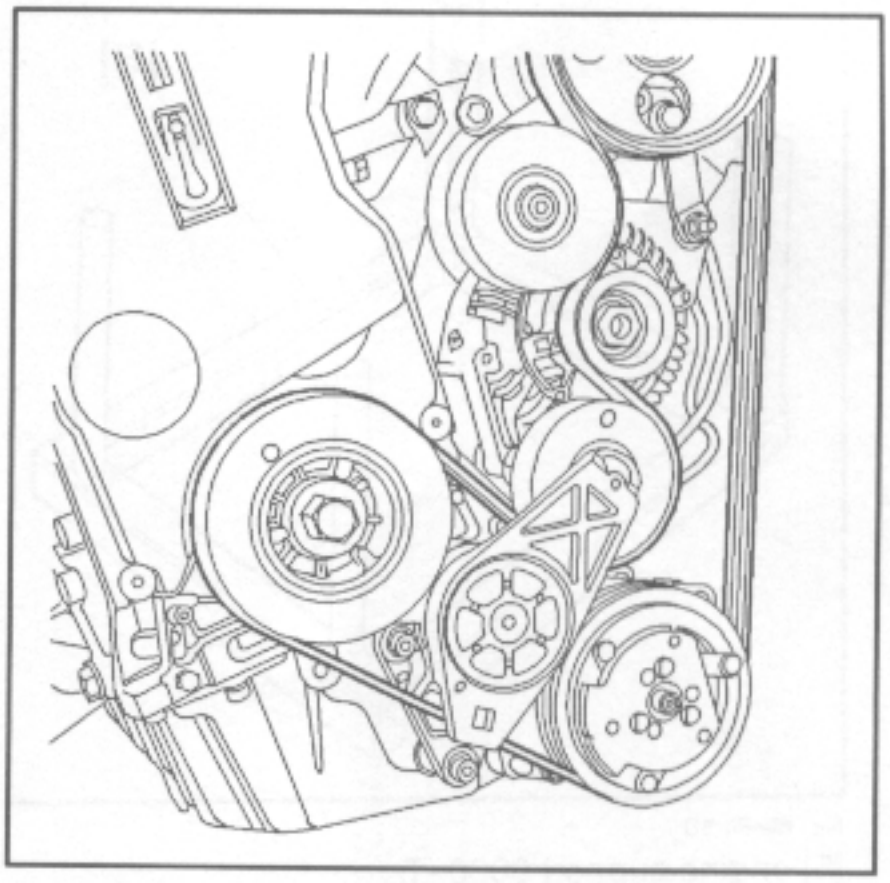


Fig : B1BP07EC

Remove the accessory drive belt (see the relevant operation).

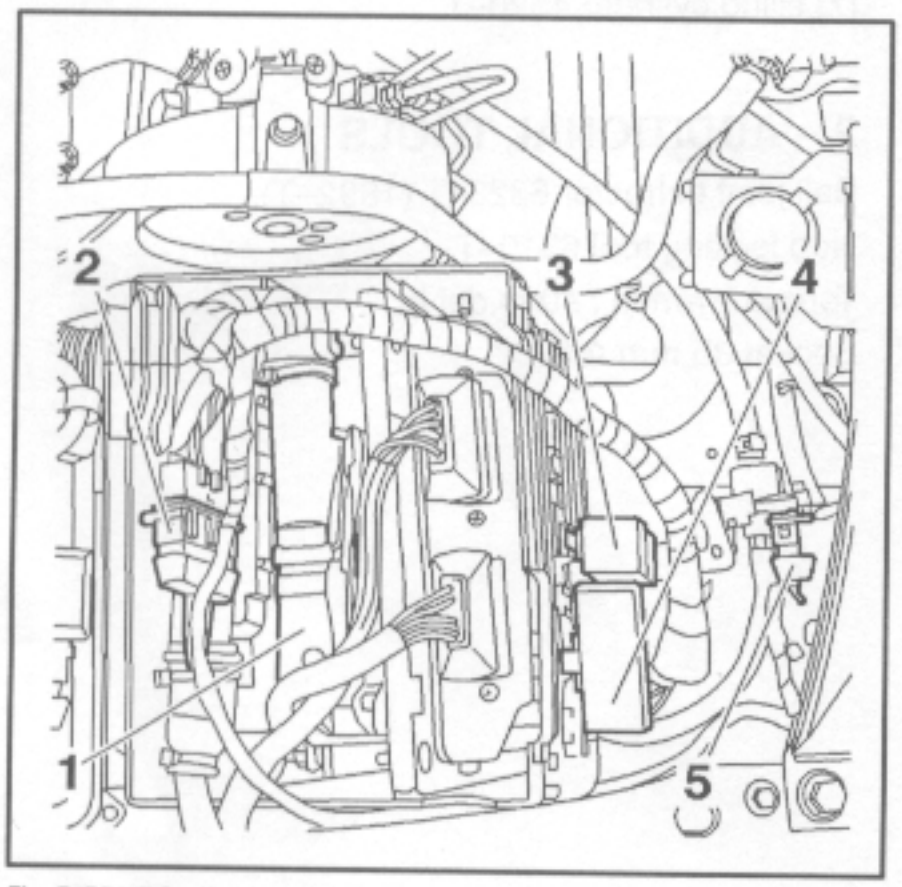


Fig : B1BP07DC

Disconnect :
- the E.C.U. (1)
- the hydractive electrical harness (2)
- relay (3)
- relay (4)
- the electrical harness to the canister valve (5)

Uncouple the pipe from the canister valve.

Unscrew the 2 supplies on the fuse box.



Fig : B1BP07FC

Disconnect :
- the engine harness (6)
- the automatic gearbox electrical harness
- the oxygen sensor electrical harness (8)
- the 2 earth leads on bodywork (7)

www.WorkshopManuals.co.uk

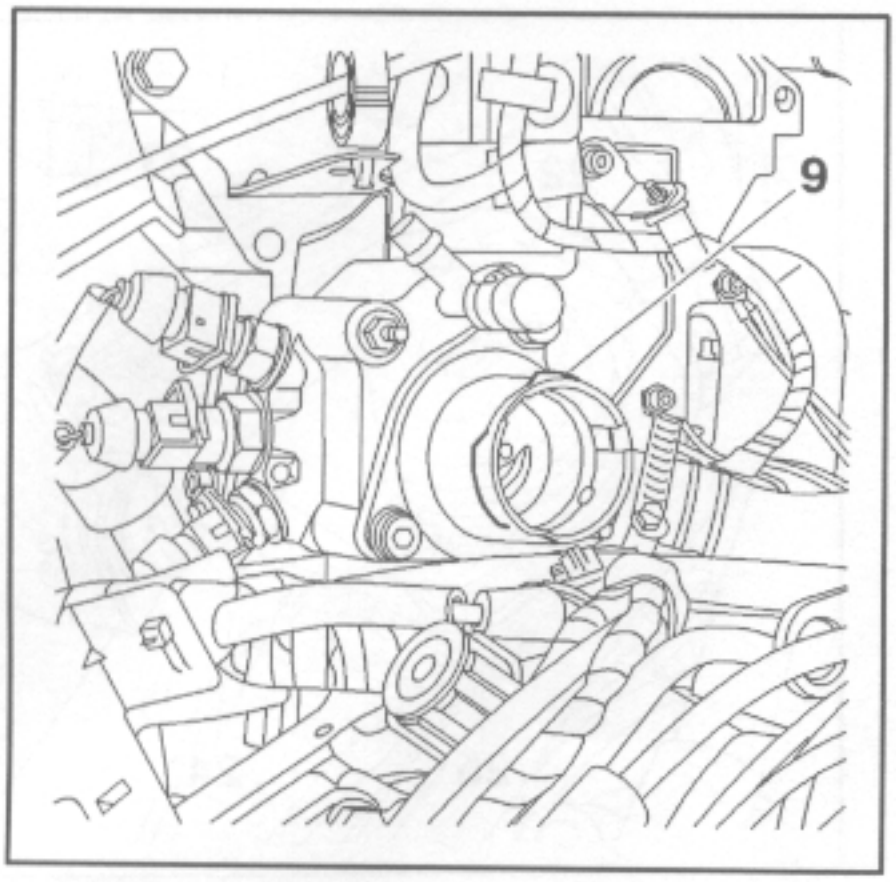


Fig : B1BP07GC

Remove clip (9), by means of a screwdriver.

Uncouple :

- the flexible hose from the coolant outlet housing
- the heater ducts on the bulkhead ; utilising tool [1]
- the hydraulic return pipe on the pressure regulator
- the hoses on the automatic gearbox heat exchanger
- the gearchange control ; utilising tool [6]

Disconnect the speedometer sensor connector.

On the coolant inlet housing, uncouple :

- the flexible pipe ; cooling radiator
- the flexible pipe ; degassing housing

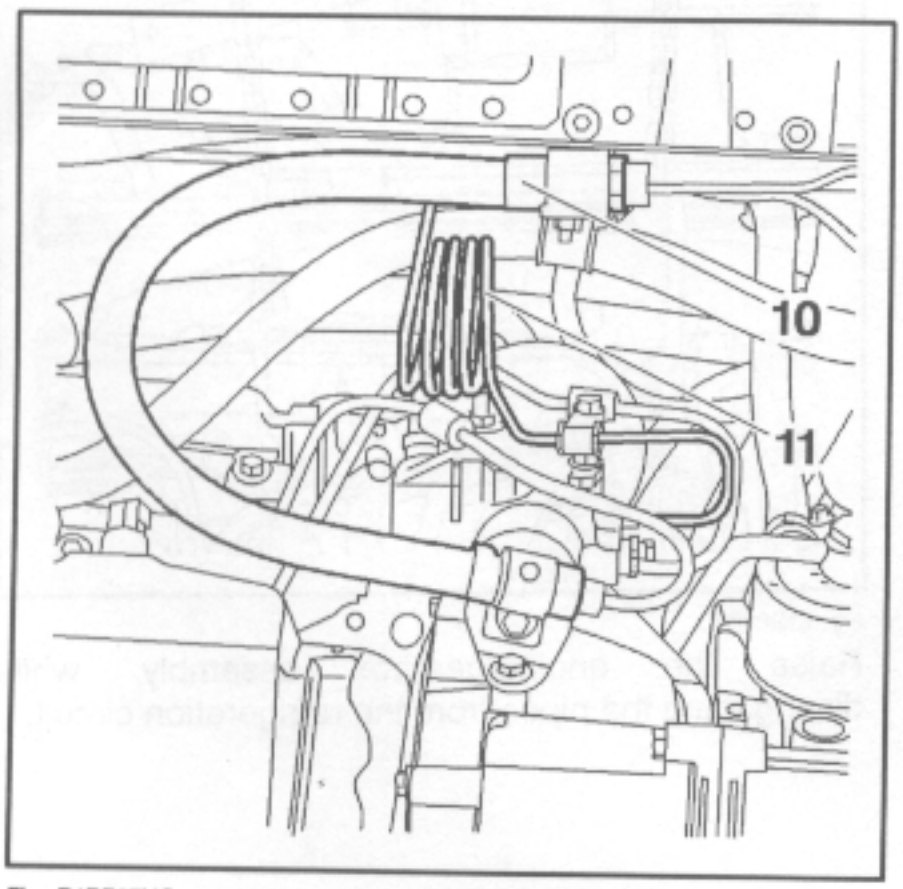


Fig : B1BP07HC

Unclip ; uncouple the pipe (10).

Remove the feed pipe (11).

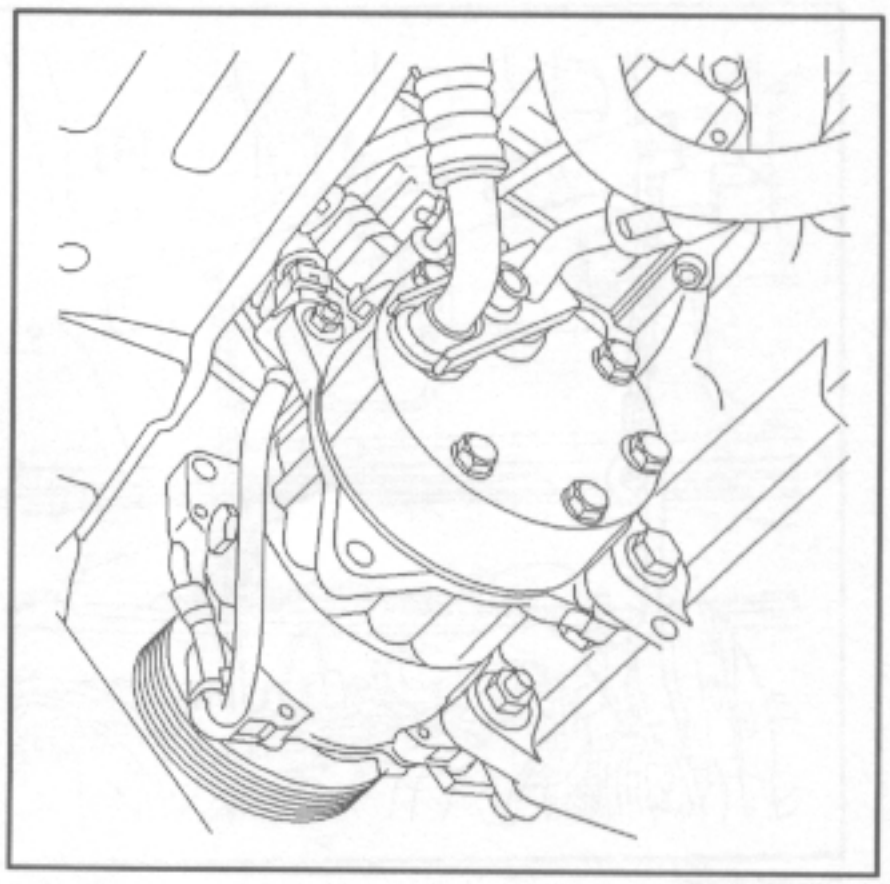


Fig : B1BP07IC

Remove the fixings of the air conditioning compressor.

Suspend the air conditioning compressor from the L.H. side of the vehicle.

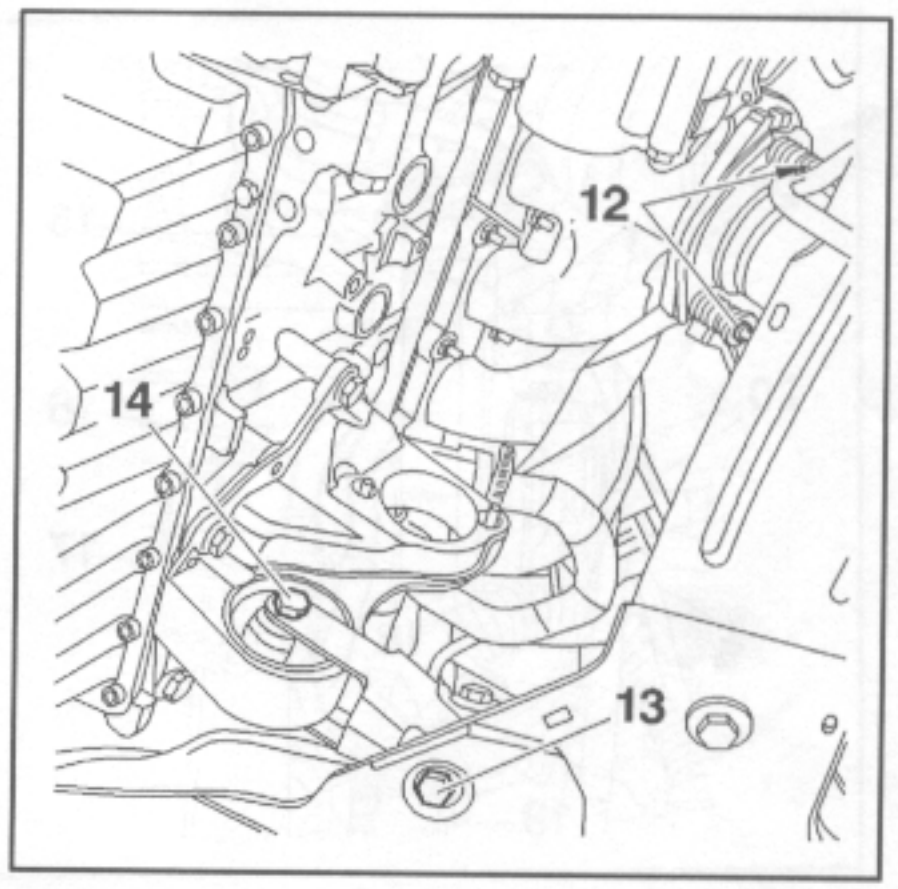


Fig : B1BP07JC

Remove exhaust ball-joint screws (12).

Uncouple the torque rod :

- slacken screw (13)
- remove screw (14)

www.WorkshopManuals.co.uk

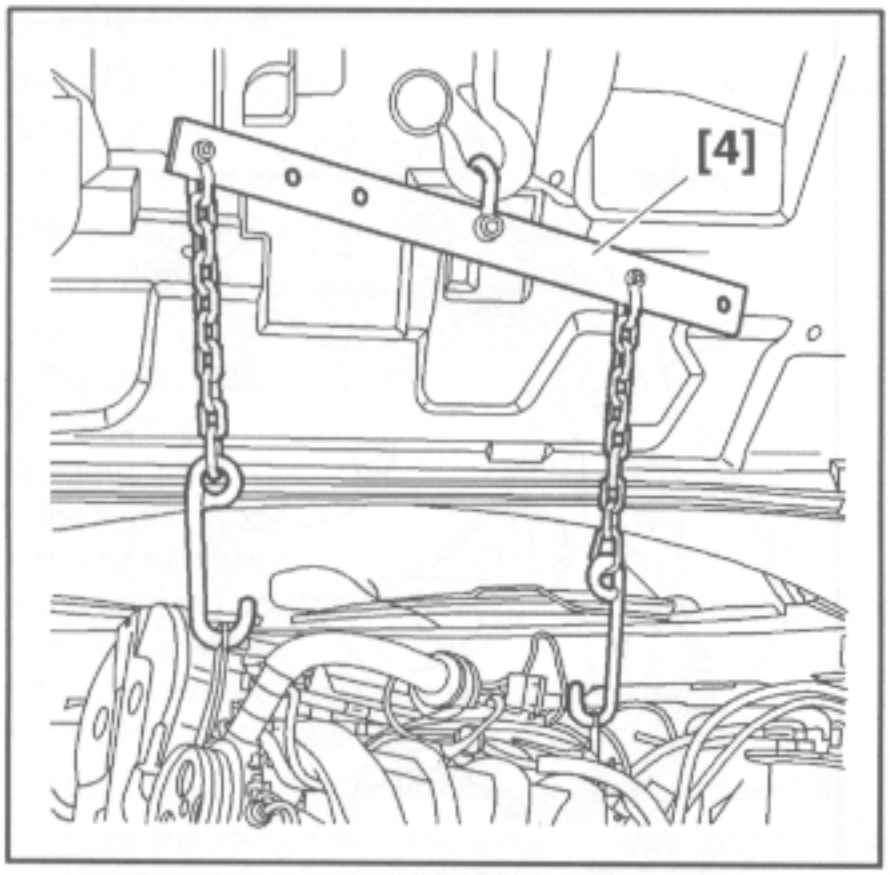


Fig : B1BP07KC

Position a workshop crane.

Support the engine ; utilising tool [4].

Tension tool [4].

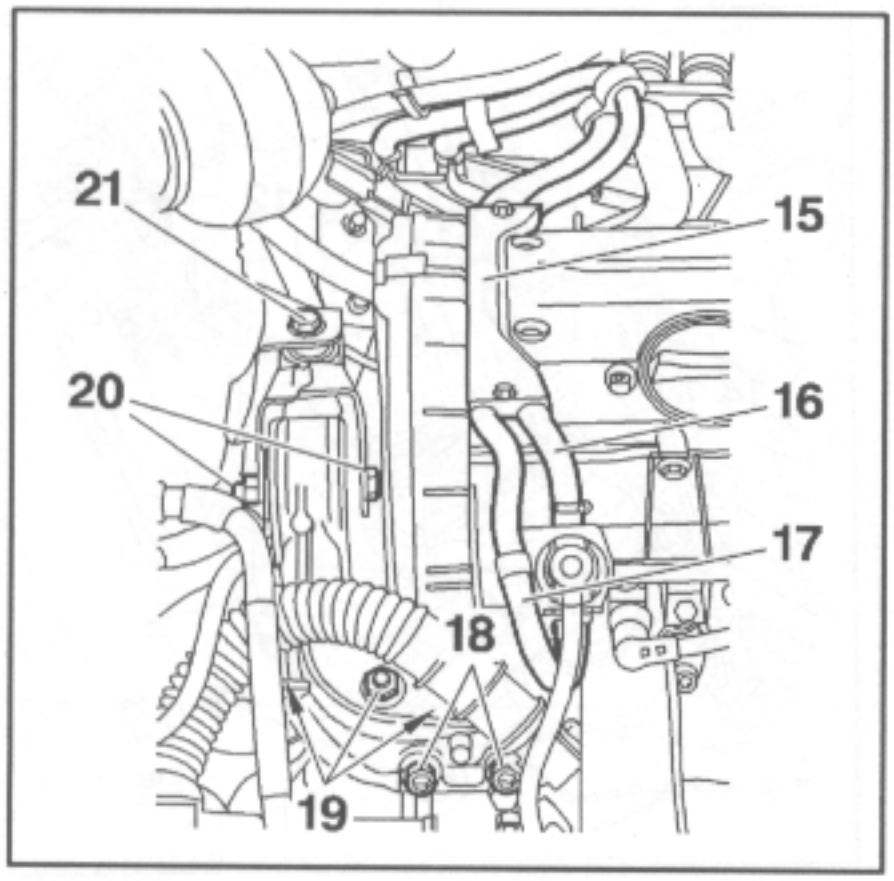


Fig : B1BP07LC

Remove the cover (15) ; fuel pipes.

Uncouple the fuel circuit supply (16) and return (17) pipes ; utilising tool [2].

Slacken screw (20).

Remove :

- screws (18) and (21)
- nuts (19)
- the engine mounting

Place a wooden block between the subframe and the gearbox.

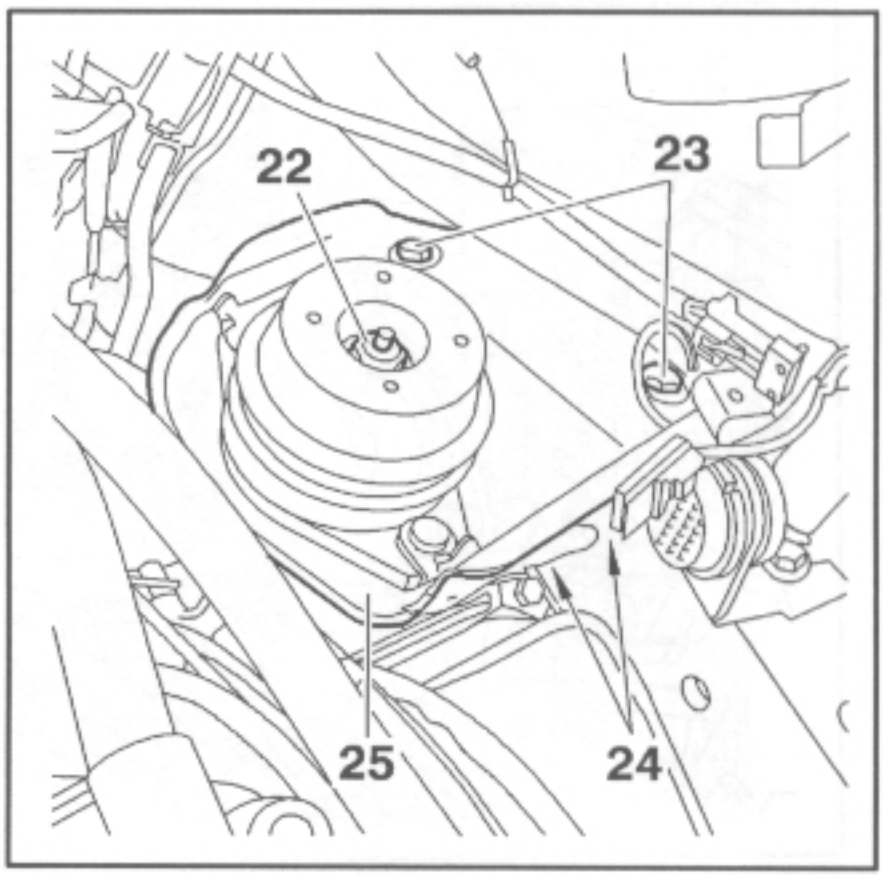


Fig : B1BP07MC

Remove :

- nut (22)
- the 2 screws (23)
- the 2 screws (24) (under the mounting bracket (25))
- mounting bracket (25)

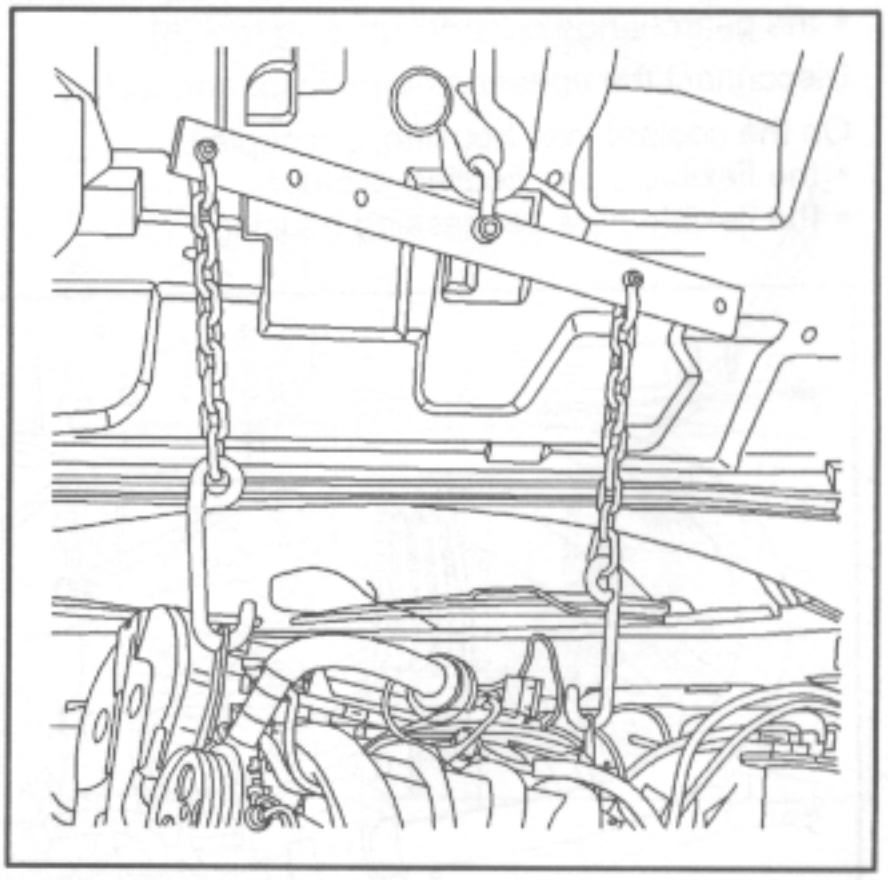


Fig : B1BP07NC

Raise the engine/gearbox assembly, while disengaging the pipes from the refrigeration circuit.

www.WorkshopManuals.co.uk

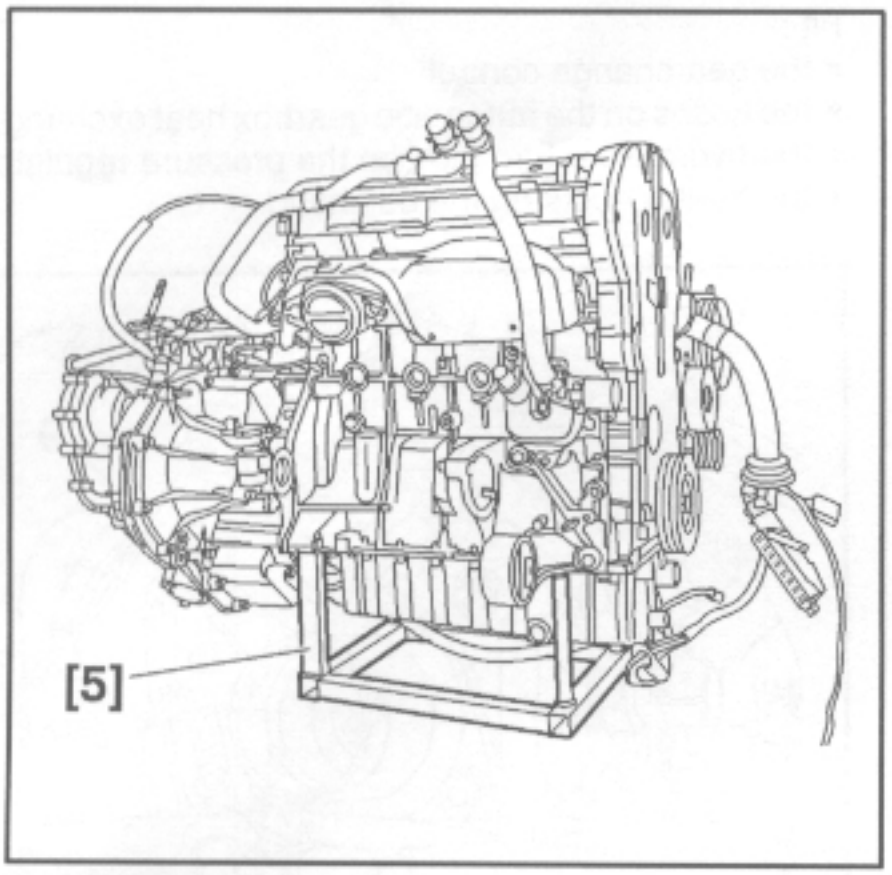


Fig : B1BP07PC

Place the engine–gearbox assembly on the mounting bracket [5].

4 – REFITTING

Offer up the engine/gearbox assembly.

Allow passage for the pipes of the refrigeration circuit.

Place a wooden block between the subframe and the gearbox.

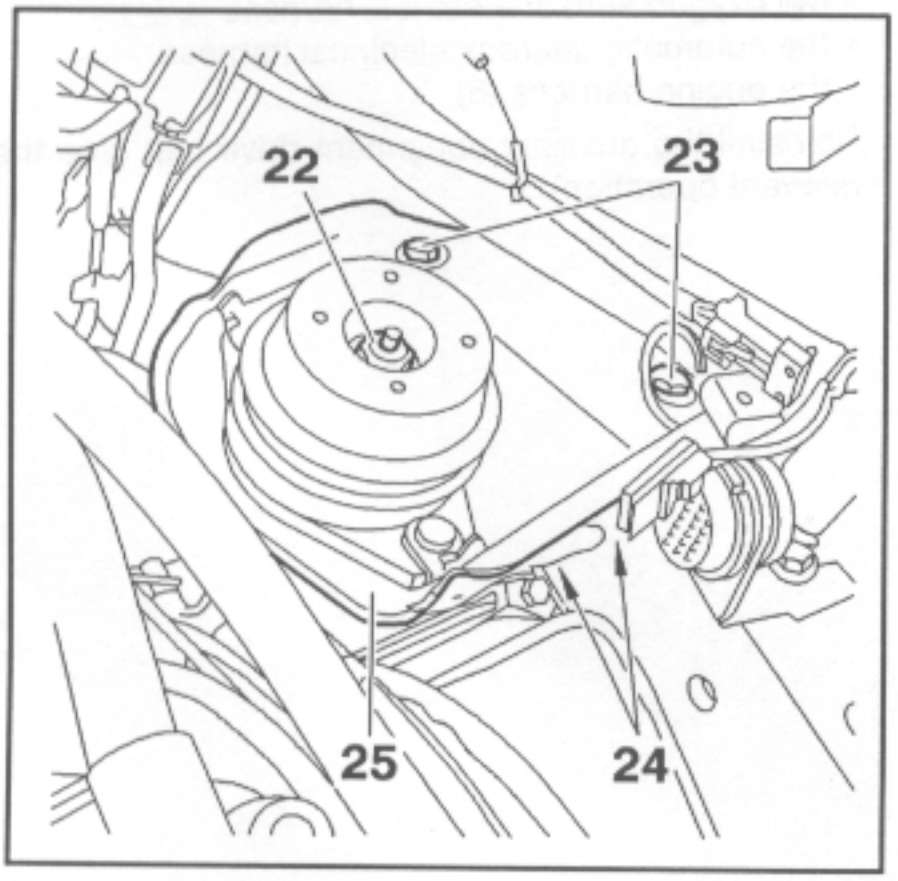


Fig : B1BP07MC

Bring the L.H. engine mounting bracket (25) closer.

Position :

- the 2 screws (23)
- the 2 screws (24)
- nut (22)

Tighten the bolts (23) and (24) to 2.7 m.daN.

Tighten nut (22) to 8 m.daN.

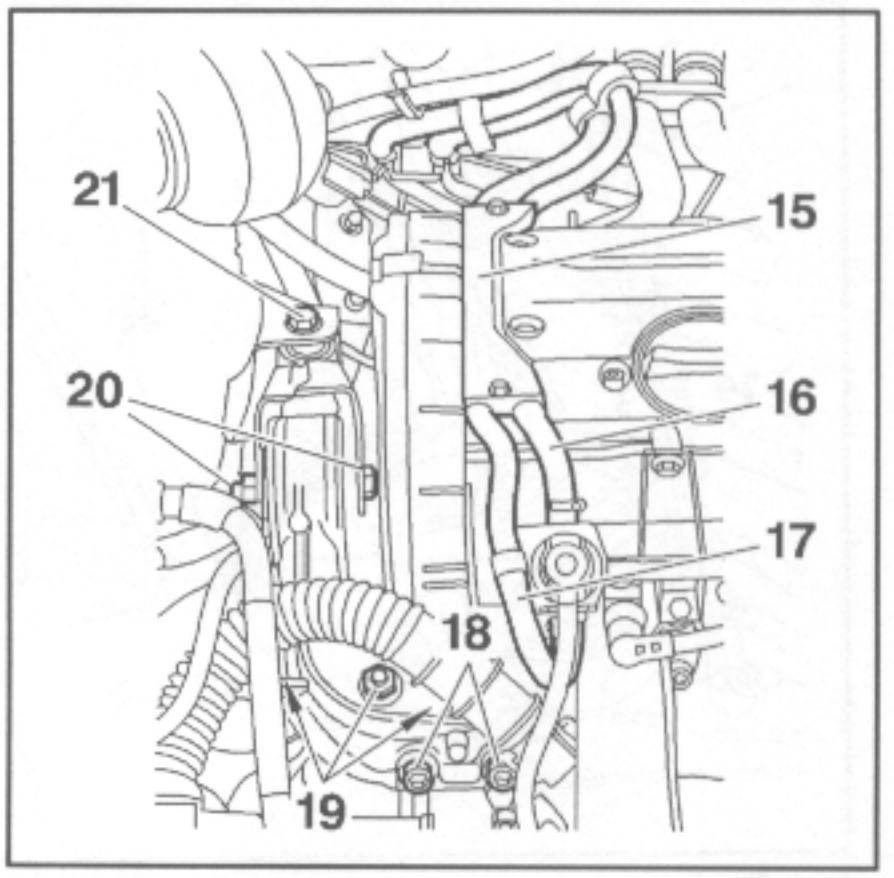


Fig : B1BP07LC

Bring the R.H. engine mounting bracket closer.

Fit :

- nuts (19)
- screws (18)
- screws (20) and (21)

Tighten the bolts (18) to 6 m.daN.

Tighten the nuts (19) to 4.5 m.daN.

Tighten the bolts (20) and (21) to 4.5 m.daN.

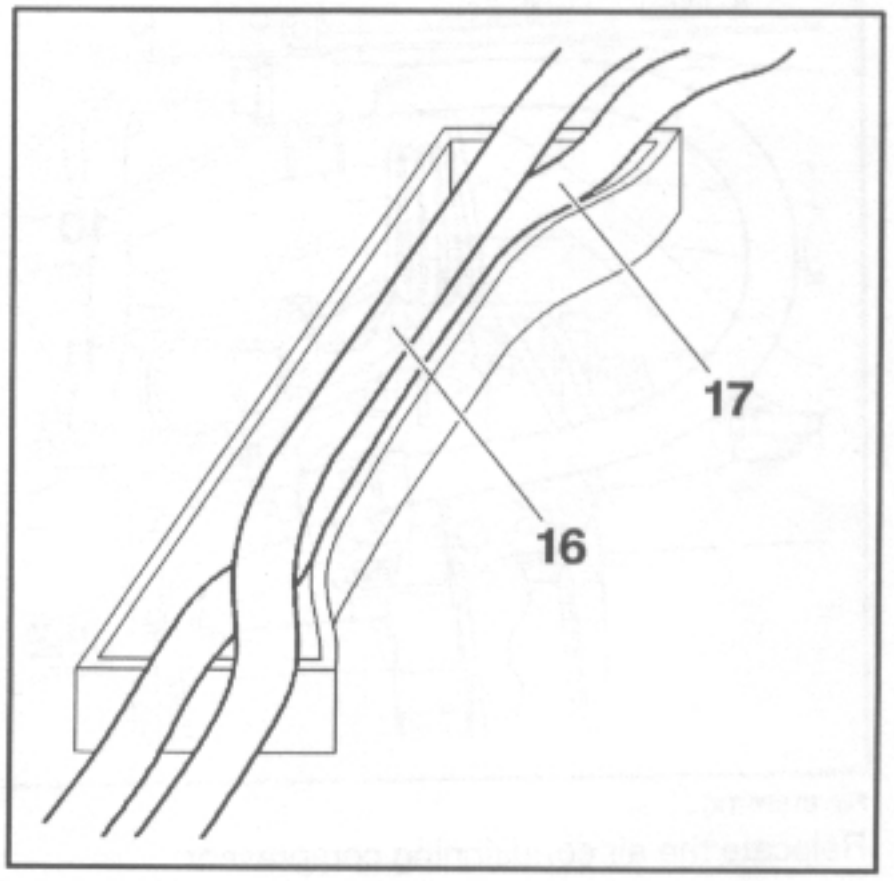


Fig : B1BP07QC

Position pipe (16) on pipe (17).

Fit the cover (15).

Remove tool [4] ; withdraw the workshop crane.

www.WorkshopManuals.co.uk

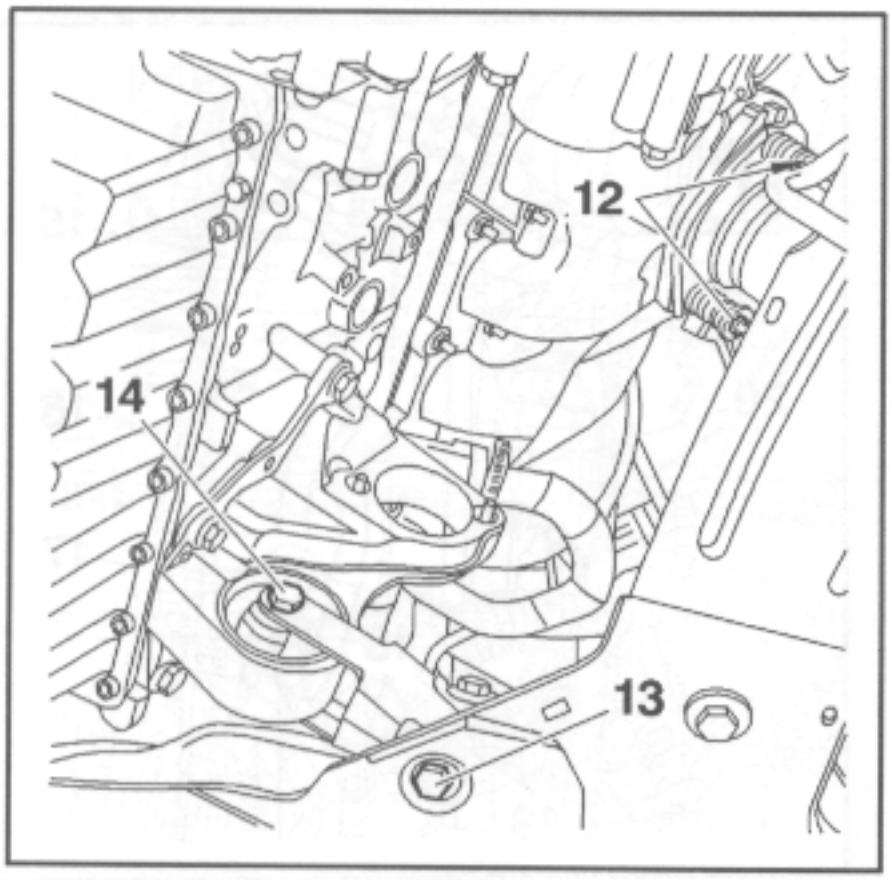


Fig : B1BP07JC

Refit the torque reaction link.

Refit screw (14).

Tighten screw (13).

Tighten the bolts (13) and (14) to 4.5 m.daN.

Fit exhaust ball–joint screws (12).

Tighten the bolts (12) to 1 m.daN.

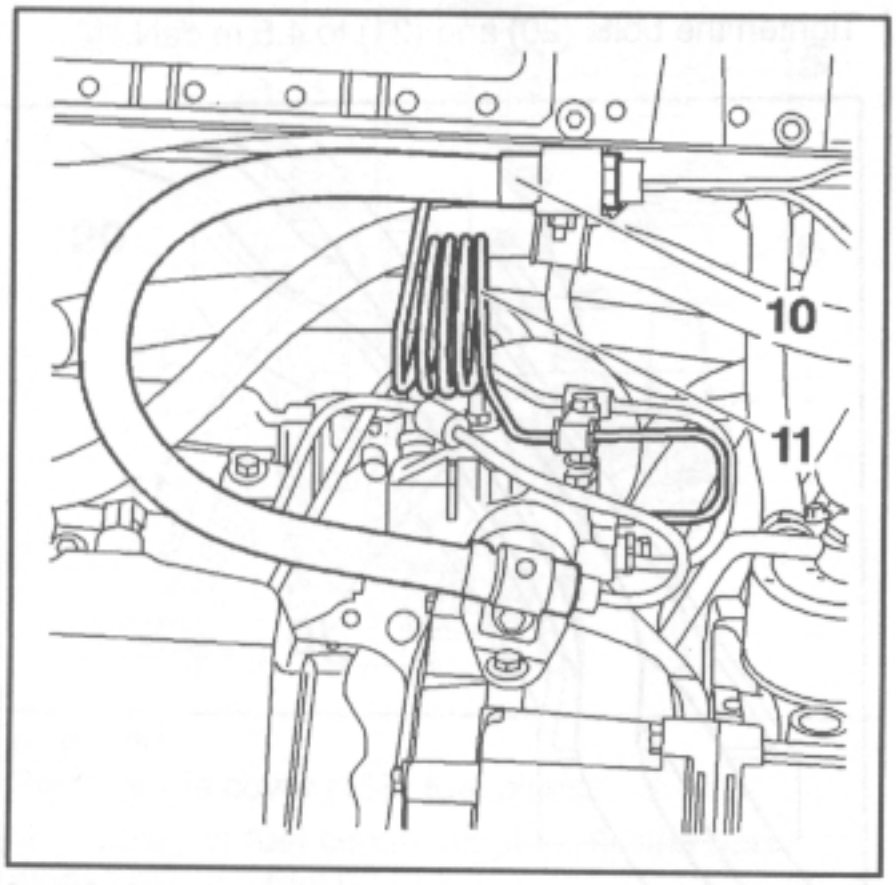


Fig : B1BP07HC

Relocate the air conditioning compressor.

Tighten the bolts to 4.7 m.daN.

Clamp the hydraulic pipe (10).

Relocate the feed pipe (11).

Reconnect (on the coolant inlet housing) :
- the flexible pipe – cooling radiator
- the flexible pipe – degassing housing

Reconnect the speedometer sensor connector.

Fit :
- the gearchange control
- the hoses on the automatic gearbox heat exchanger
- the hydraulic return pipe on the pressure regulator
- the heater ducts on the bulkhead

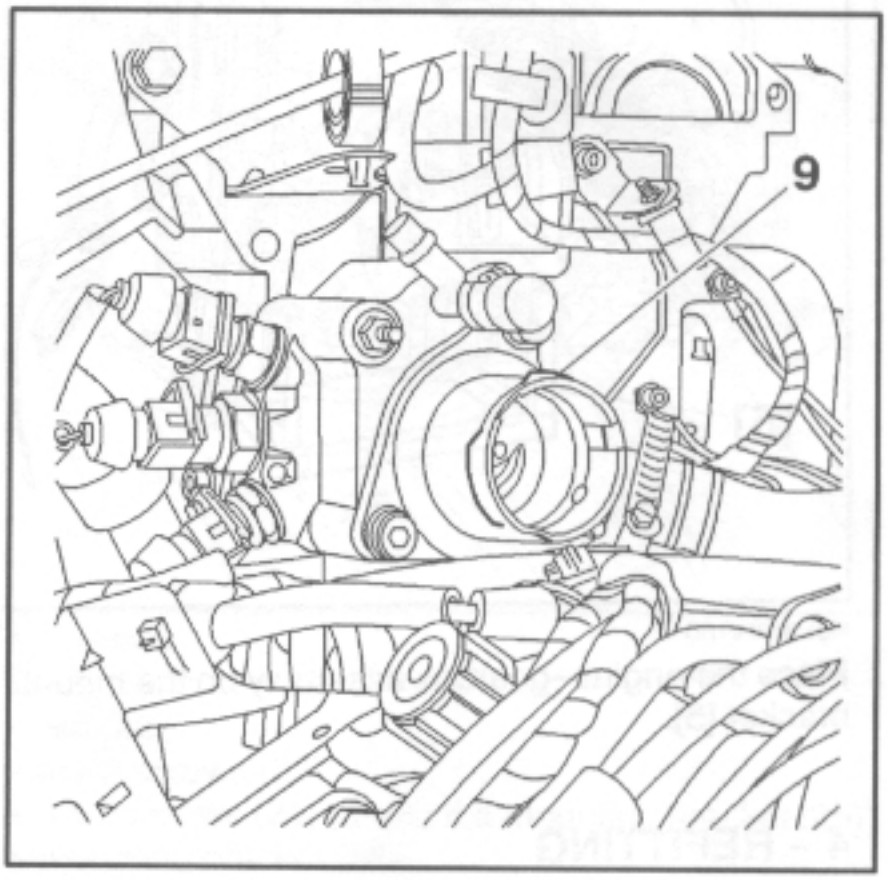


Fig : B1BP07GC

Fit clip (9). Click–fit the flexible pipe to the coolant outlet housing.

Reconnect :
- the 2 earth leads on bodywork
- the oxygen sensor electrical harness
- the automatic gearbox electrical harness
- the engine harness (6)

Reinstall the auxiliary equipment drive belt (see the relevant operation).

www.WorkshopManuals.co.uk

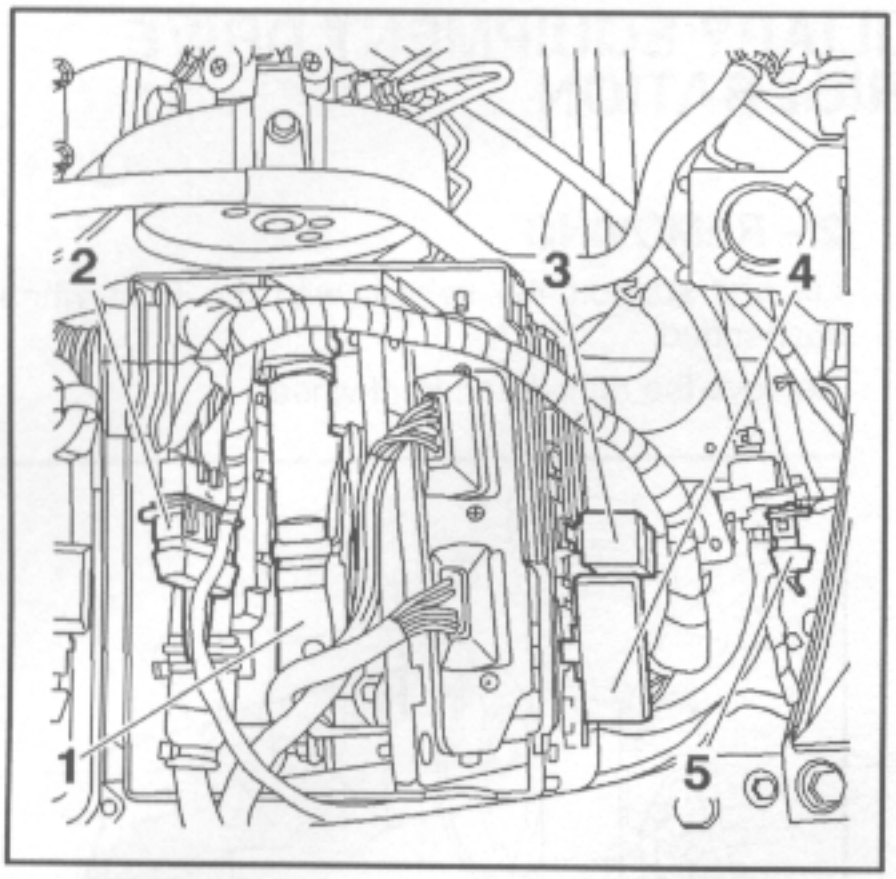


Fig : B1BP07DC

Couple the pipe to the canister valve.

Fit the 2 supplies to the fuse box.

Reconnect :
- the electrical harness to the canister valve (5)
- relay (4)
- relay (3)
- the hydractive electrical harness (2)
- the E.C.U. (1)

Fit :
- the dehydrator reservoir
- the LHM fluid reservoir
- the air cleaner
- the drive shafts
- the engine protective panels under the wheelarches
- the front wheels
- the battery

Refill (and top up to level) :
- the cooling system ; utilising tool [7] (see the relevant operation)
- the gearbox

Return the vehicle to its wheels.

Bleed the hydraulic circuit (see the relevant operation).

www.WorkshopManuals.co.uk

REMOVING – REFITTING : AUXILIARY EQUIPMENT DRIVE BELT, VEHICLE WITHOUT REFRIGERATION

1 – RECOMMENDED TOOLS

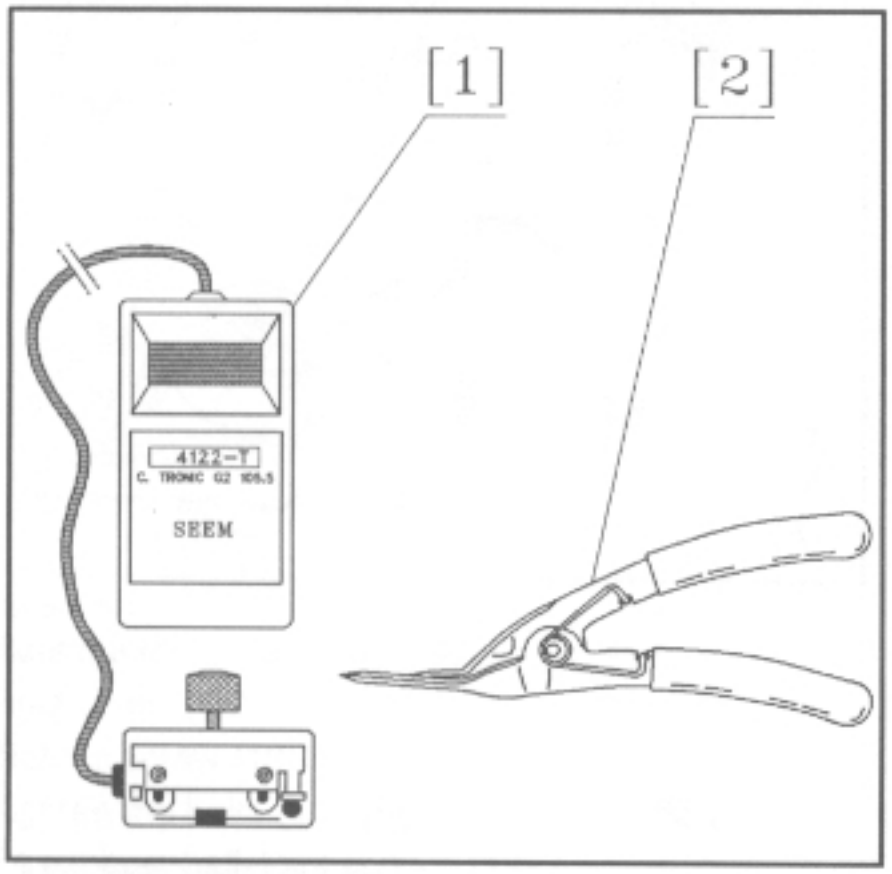


Fig : B1BP00FC

[1] belt tension measuring instrument with digital read out (SEEM) (4122–T) (4099–T).

[2] pliers 7504–T for removing plastic clips.

2 – REMOVING

Lift and support the vehicle with the front wheels suspended.

Remove the right–hand front wheel.

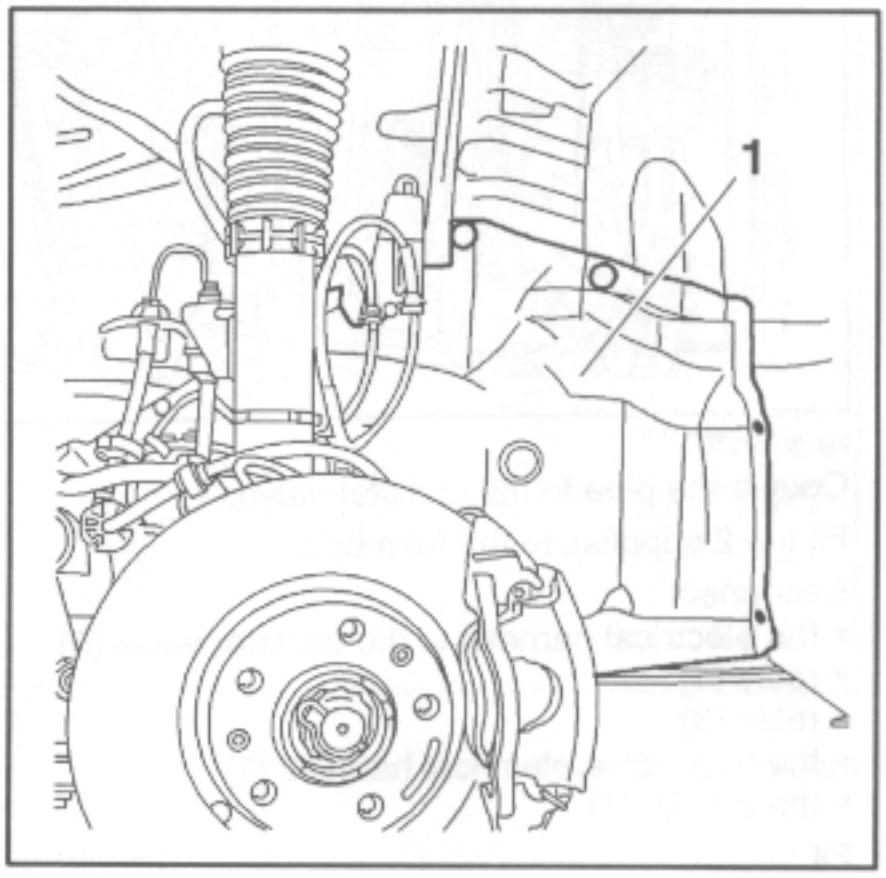


Fig : B1BP05SC

Remove :

- the plastic pegs ; utilising tool [2]
- the splash shield (1)

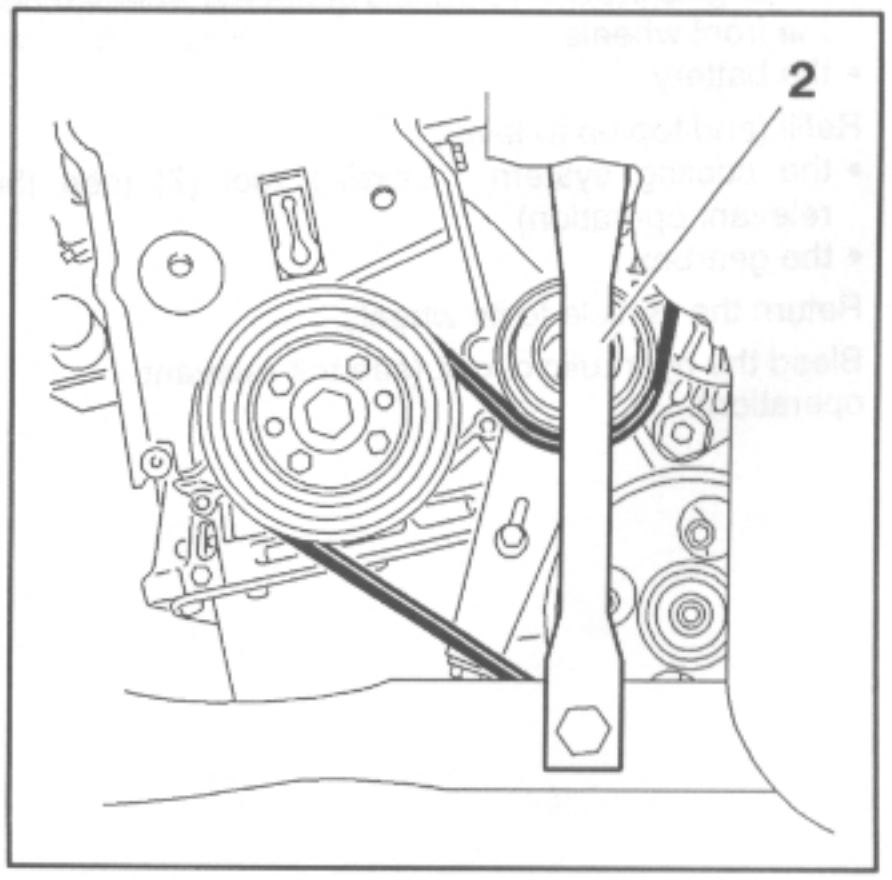


Fig : B1BP05YC

Loosen the tie rod (2) upper screw.

Take off the tie rod (2) lower screw.

Swivel the tie rod (2).

www.WorkshopManuals.co.uk

3 – REFITTING

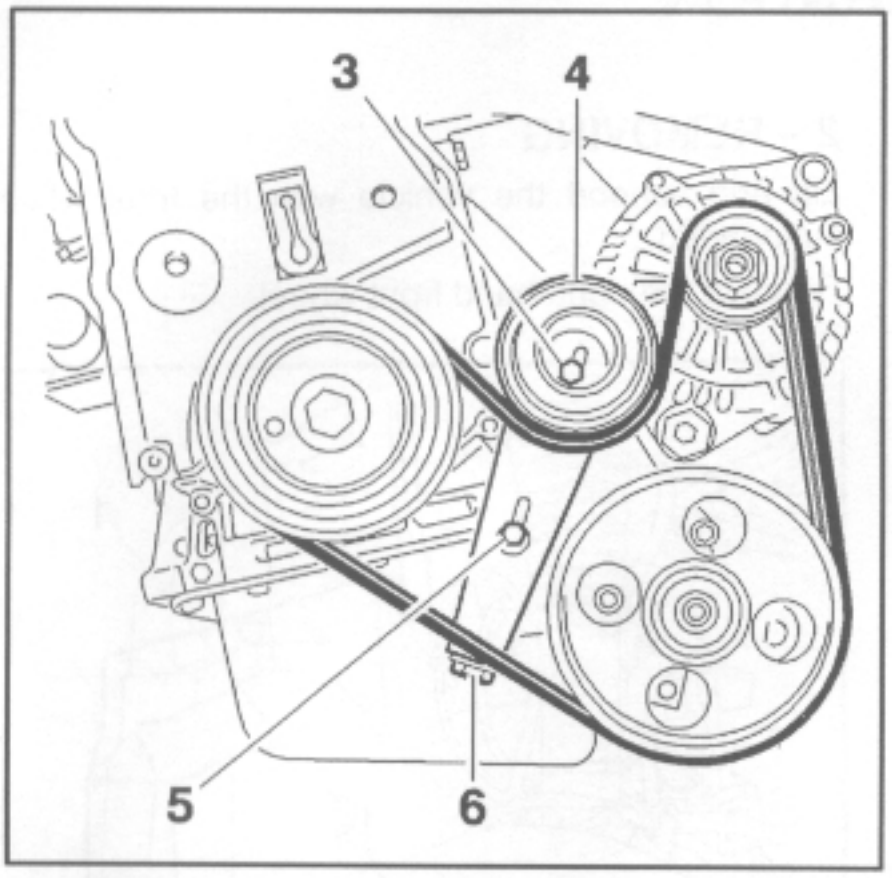


Fig : B1BP05UC

Slacken screws (3) and (5).

Tighten the bolt (6) to its stop.

Remove the belt.

IMPERATIVE : Check that the roller (4) turns freely (no play or tight spot).

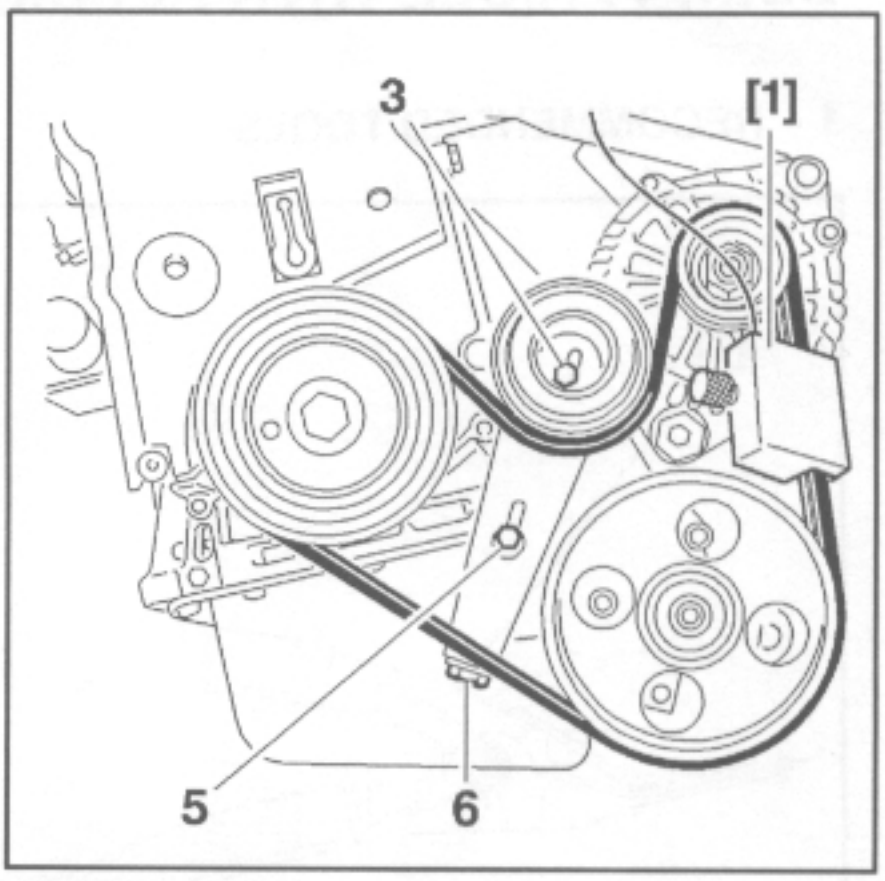


Fig : B1BP05VC

Fit the belt.

IMPERATIVE : Check it that the belt is correctly located in the grooves of the various pulleys.

Tension the drive belt by loosening the screw (6).

Fit tool [1].

Tension the belt to 100 ± 10 SEEM units = 60 ± 5 m.daN, slackening screw (6) (52 ± 5 SEEM units).

NOTE : The figures between brackets apply to former tools.

Remove tool [1].

Retighten screws (3) and (5).

Turn the crankshaft four revolutions in the normal direction of rotation.

Fit tool [1].

Slacken screws (3) and (5).

Tension the belt to 105 ± 10 SEEM units = 65 ± 5 m.daN, slackening screw (6) (53 ± 5 SEEM units).

Remove tool [1].

Tighten the bolts (3) and (5) to 2.2 m.daN.

Swivel the tie rod (2).

Fit the tie rod (2) lower screw.

Tighten the tie rod (2) screws to 4.5 m.daN.

Position :
- the splash shield
- the wheel

Return the vehicle to its wheels.

Tighten the road wheel screws.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : AUXILIARY EQUIPMENT DRIVE BELT, VEHICLE WITH REFRIGERATION

1 – RECOMMENDED TOOLS

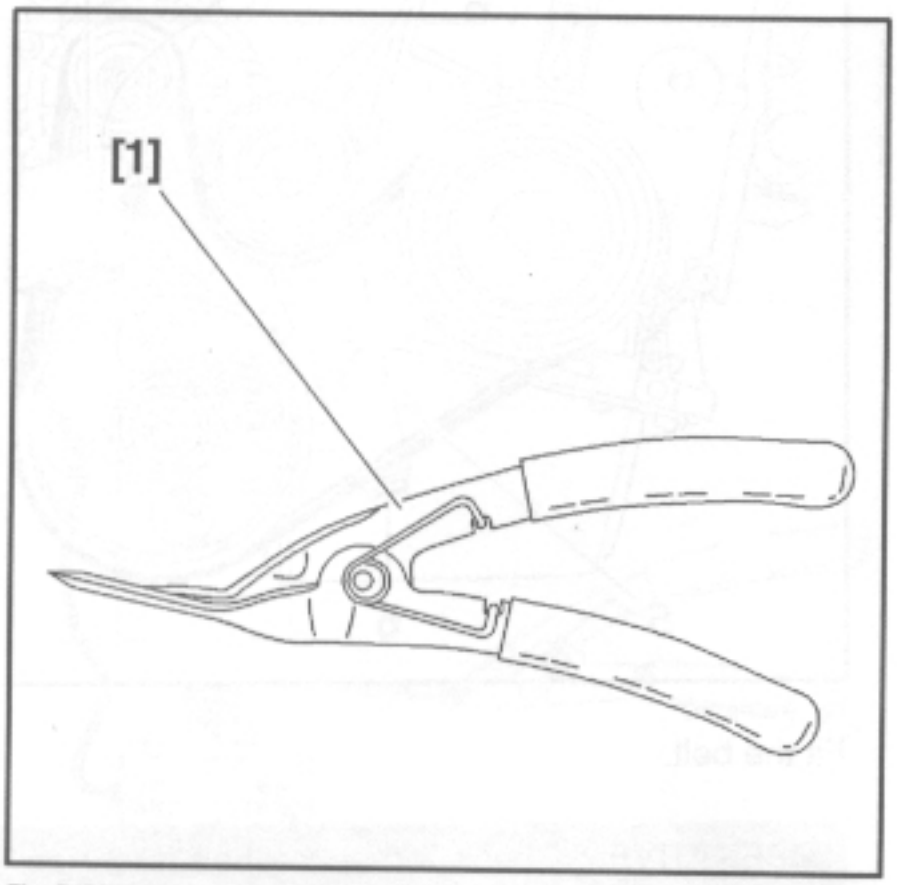


Fig : B1BP00DC

[1] pliers 7504–T for removing plastic clips.

2 – REMOVING

Lift and support the vehicle with the front wheels suspended.

Remove the right–hand front wheel.

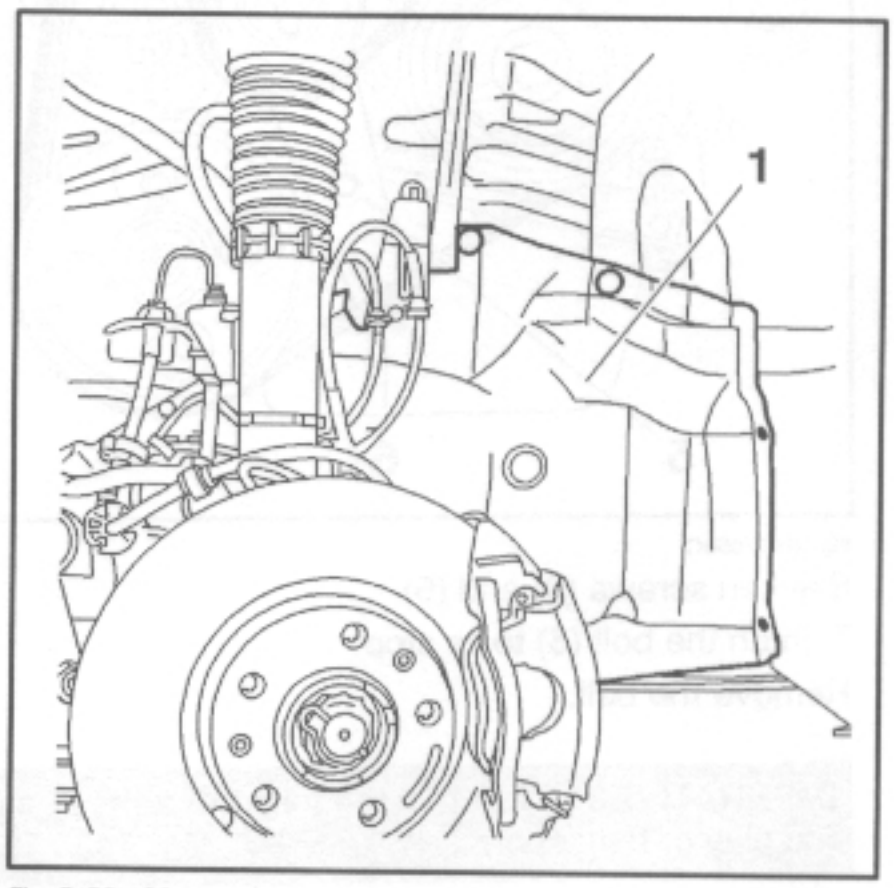


Fig : B1BP05SC

Remove :

- the plastic pegs ; utilising tool [2]
- the splash shield (1)

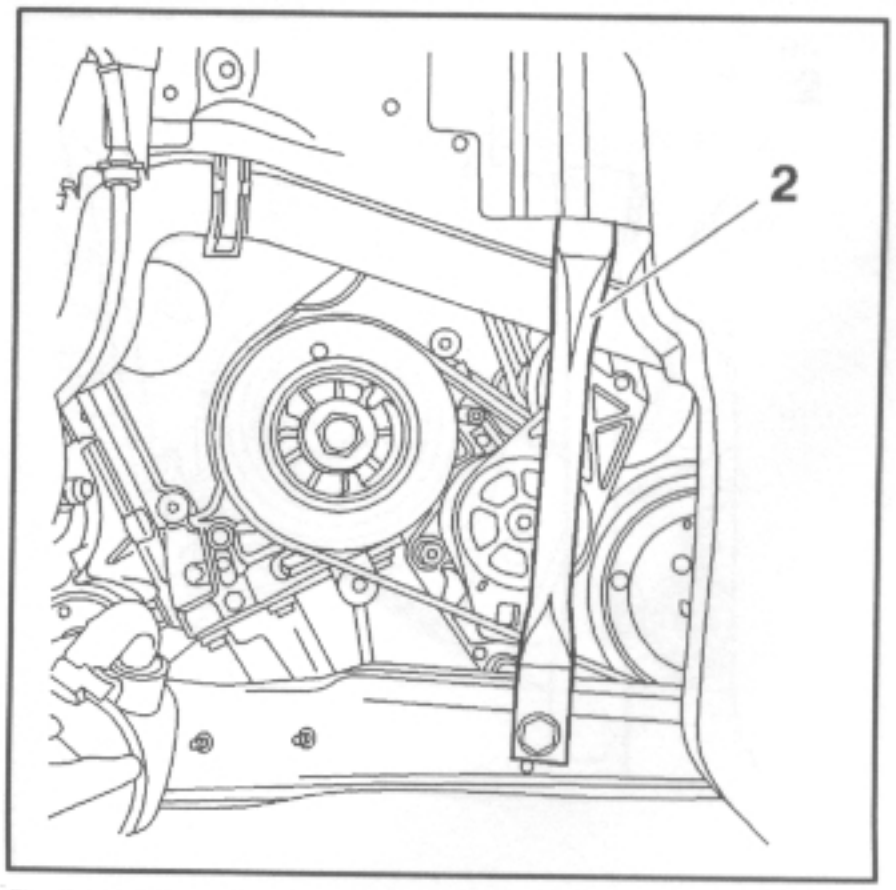


Fig : B1BP05TC

Loosen the tie rod (2) upper screw.

Take off the tie rod (2) lower screw.

Swivel the tie rod (2).

www.WorkshopManuals.co.uk

3 – REFITTING

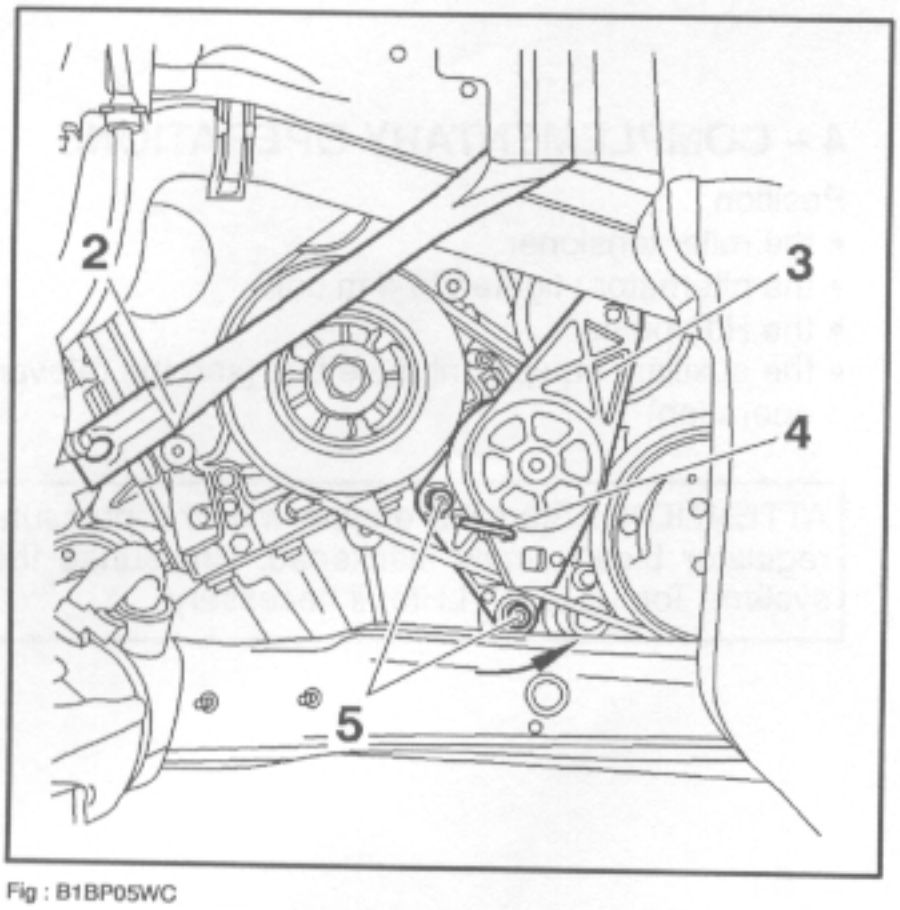


Fig : B1BP05WC

Act upon roller tensioner (3) by means of a 9.52 mm square ended tool (3/8") until a 4 mm dia. tool or locking pin can be engaged in timing hole (4).

Remove :
- screws (5)
- roller tensioner (3)

NOTE : Lift the engine slightly to gain access to the lower screw (5).

Remove :
- the hydraulic pump pulley casing
- the driving belt

IMPERATIVE : Check that rollers (6) and (7) rotate freely (no tight spot).

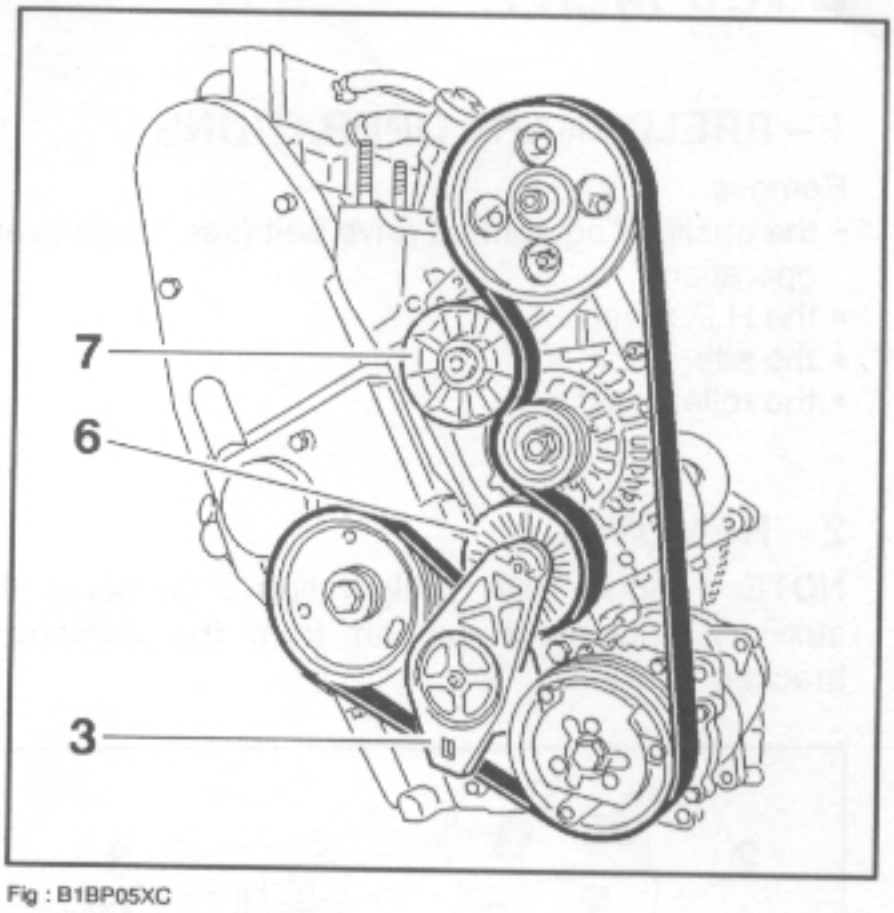


Fig : B1BP05XC

Position :
- the driving belt
- roller tensioner (3) ; tighten the bolts (5) to 2.2 m.daN

IMPERATIVE : Check that the belt is correctly located in the grooves of the various pulleys.

Act upon roller tensioner (3) by means of the 9.52 mm square ended tool (3/8") until either the tool or the locking pin can be disengaged.

Gently release roller tensioner (3) so that roller (6) comes into contact with the belt.

Fit the hydraulic pump pulley casing.

Swivel the tie rod (2).

Fit the tie rod (2) lower screw.

Tighten the tie rod (2) screws to 4.5 m.daN.

Position :
- the splash shield
- the wheel

Return the vehicle to its wheels.

Tighten the road wheel screws.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : SUPPORT FOR AUXILIARY EQUIPMENT

1 – PRELIMINARY OPERATIONS

Remove :
- the auxiliary equipment drive belt (see the relevant operation)
- the H.P. pump
- the alternator
- the roller tensioner

2 – REMOVAL

NOTE : Model with refrigeration : uncouple the auxiliary equipment support from the reinforcing bracket.

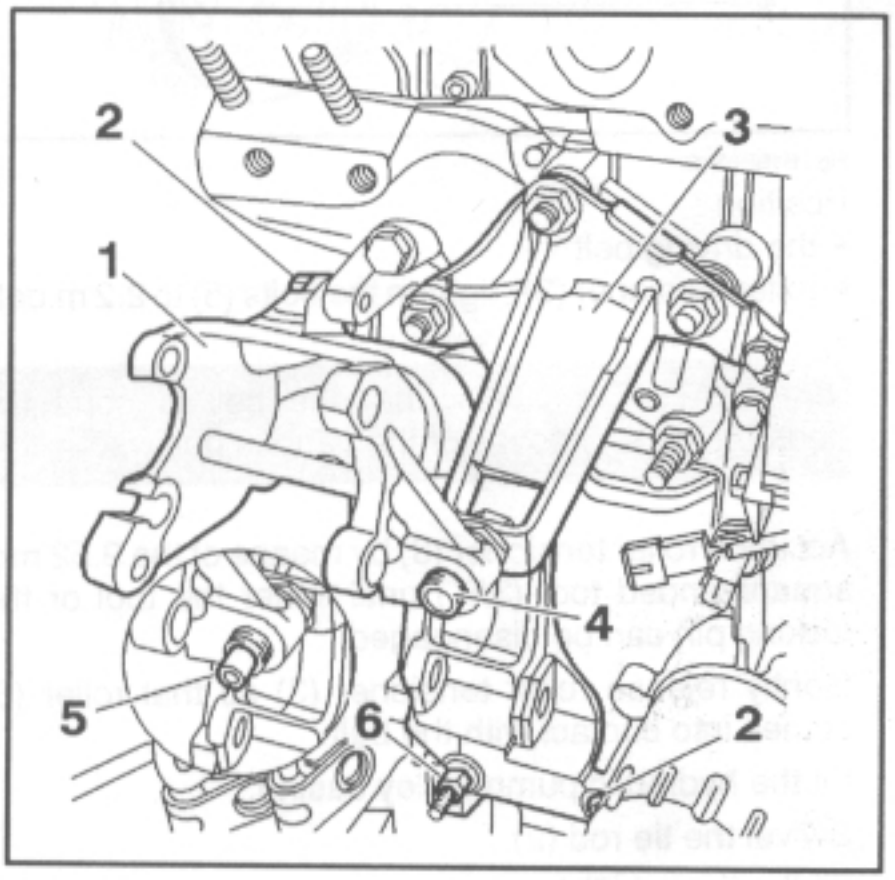


Fig : B1BP07YC

Remove :
- screws (2)
- nut (6)
- screw (5)
- the auxiliary equipment support (1)

3 – REFITTING

Fit :
- the auxiliary equipment support (1)
- screws (2) ; tighten to 2.2 m.daN
- nut (6) ; tighten to 2.2 m.daN

Model with refrigeration : position the spacer dowel (4) so that it contacts the support bracket (3).

Tighten the bolt (5) to 2.2 m.daN.

4 – COMPLEMENTARY OPERATIONS

Position :
- the roller tensioner
- the alternator ; tighten to 4 m.daN
- the H.P. pump
- the auxiliary equipment drive belt (see the relevant operation)

ATTENTION : Start the engine with the pressure regulator bleed screw slackened. Pressurise the system. Top up level (LHM) if necessary.

© Reproduction ou traduction même partielle interdite sans l'autorisation écrite des Automobiles CITROEN

www.WorkshopManuals.co.uk

DATA : ENGINE

1 – IDENTIFICATION

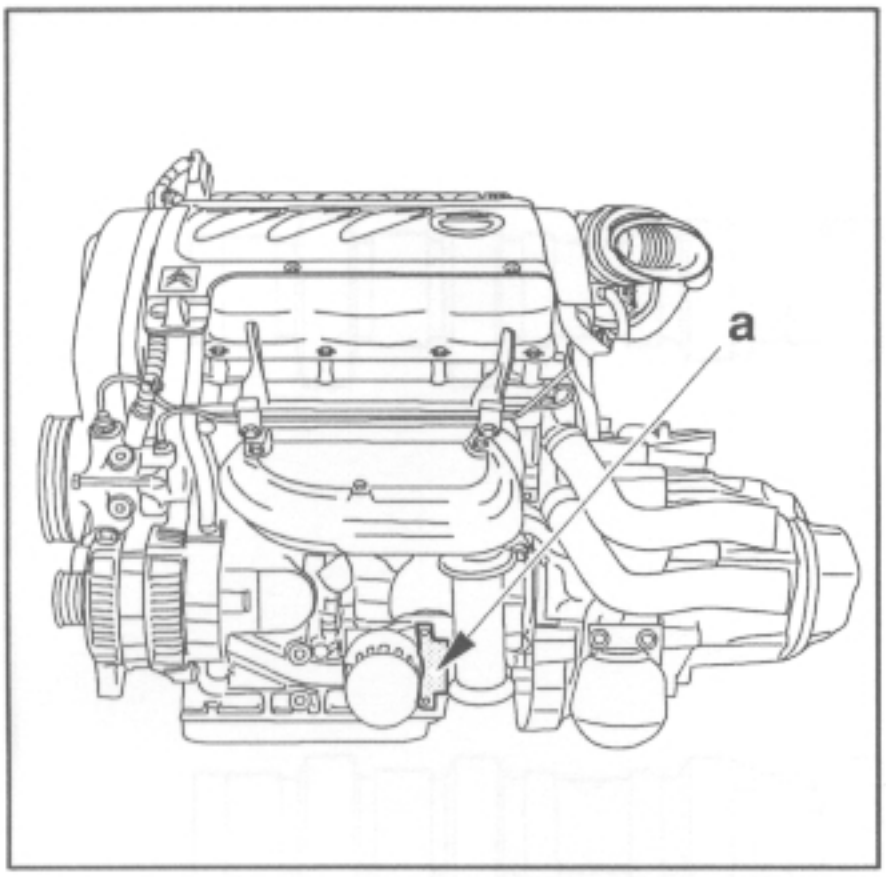


Fig : B1BP1EAC
(a) identification plate.

2 – DATA

Fuel injection engine :

Engine code	ES9J4
Legislation type	XFZ
Capacity (cc)	2946
Bore x stroke (mm)	87 x 82,6
Compression ratio	10.5/1
Max. power (E.E.C)	140 kW at 5500 rpm
Max. power (HP DIN)	194
Max. torque (E.E.C.)	26,7 m.daN at 4000 rpm
Max. torque (DIN)	27.8 m.kg
Emission standards	L3
Fuel	Unleaded premium 95 and 98 RON
Catalytic converter	Yes
Injection system	Multipoint injection
Supplier	BOSCH MP7.0

3 – CYLINDER HEAD GASKET

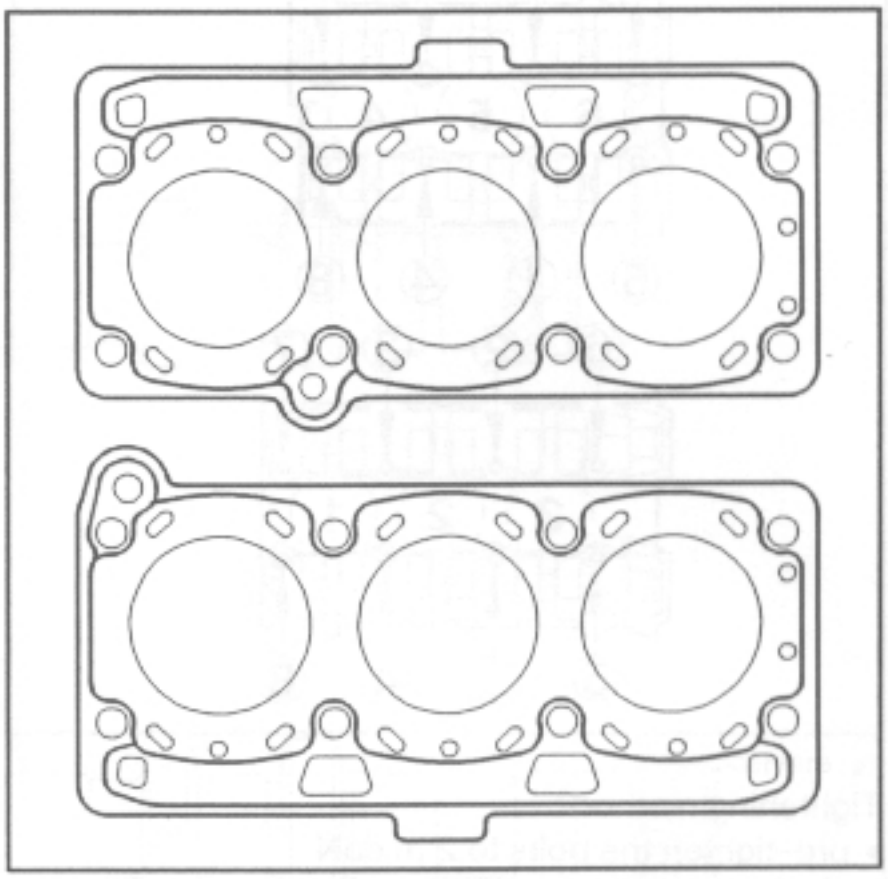


Fig : B1BP1EBC
Cylinder head gasket without asbestos.

Supplier	ELRING
Thickness (standard size)	1,45 ± 0,04 mm
Thickness identification	Central tab on the exhaust side

www.WorkshopManuals.co.uk

Xm

NOVEMBER 1997

SUBSCRIPTION

RPO No: 7511

REF. 1 No XM 100-00/13

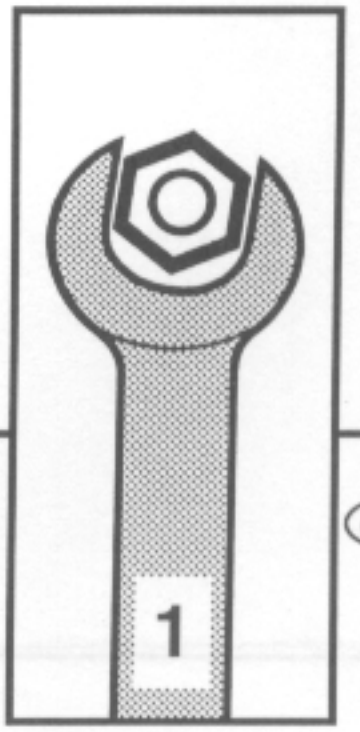
PETROL ENGINE

ES9J4 (2946 cm³. V6)

- POWER UNIT

MAN 108931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".



GB

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

POWER UNIT

DATA : ENGINE 1

1 – Identification 3
2 – Data –
3 – Cylinder head gasket –
4 – Tightening the cylinder heads 4
5 – Timing gear 5

DATA : ENGINE MOUNTING ASSEMBLY 4

1 – Description 4
2 – Tightening torques –

DATA : TIGHTENING TORQUES 6

1 – Engine/gearbox mountings 6
2 – Engine 7

REMOVING – REFITTING : POWER UNIT 13

1 – Recommended tools 13
2 – Preliminary operations 15
3 – Removing –
4 – Refitting 21

REMOVING – REFITTING : AUXILIARY EQUIPMENT DRIVE BELT 24

1 – Removing 24
2 – Refitting –

www.WorkshopManuals.co.uk

4 – TIGHTENING THE CYLINDER HEADS

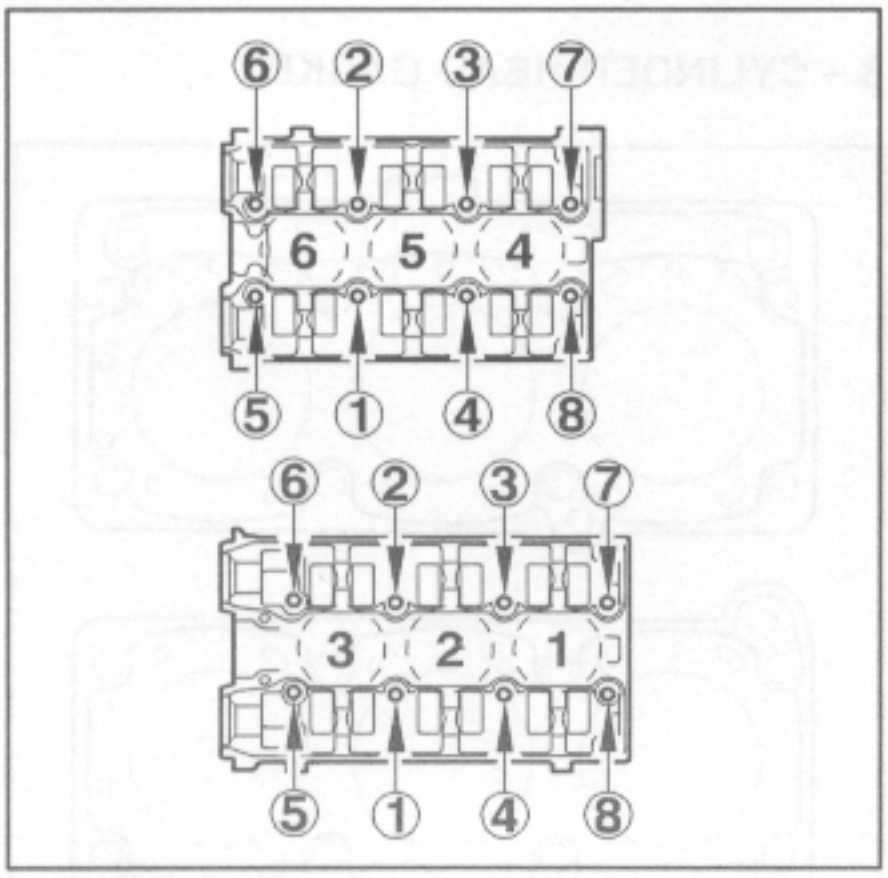


Fig : B1BP1ECC

Tightening method :
- pre–tighten the bolts to 2 m.daN
- slacken
- pre–tighten the bolts to 1,5 m.daN
- finish with an angular tightening of 225 °

www.WorkshopManuals.co.uk

5 – TIMING GEAR

5.1 – The camshafts

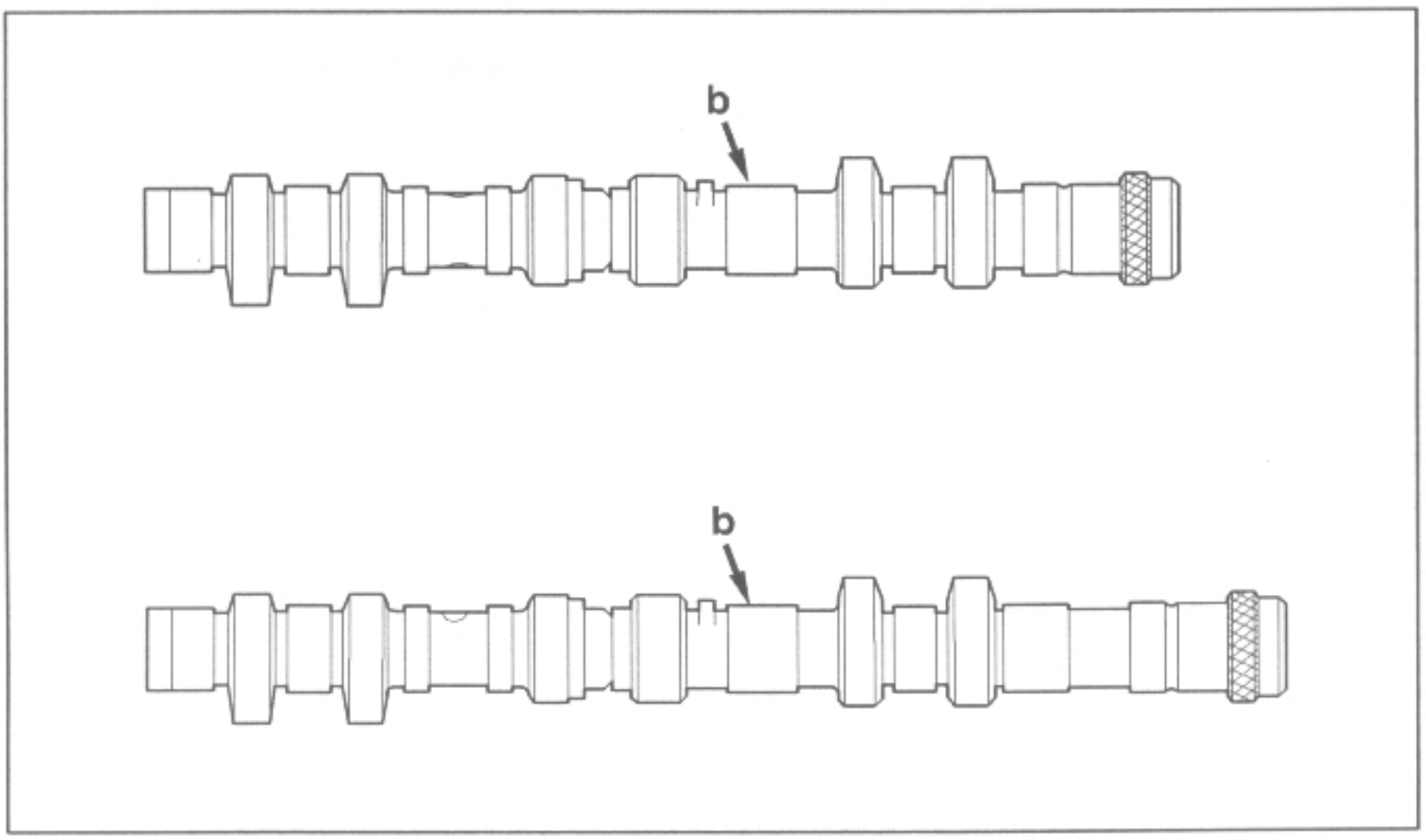


Fig : B18P1EDD

NOTE : The marking is opposite the flywheel.

Marking of the camshafts (at "b") :

- inlet camshaft (L.H.) : A 718
- inlet camshaft (R.H.) : A 717
- exhaust camshaft (L.H.) : E 720
- exhaust camshaft (R.H.) : E 719

5.2 – Valve timing table

Theoretical valve timing with a 1 mm valve clearance :

Inlet	B.T.D.C.	–8°
	A.B.D.C.	38°
Exhaust	B.B.D.C.	38°
	A.T.D.C.	–8°

5.3 – Valve clearances when cold

Hydraulic tappets with automatic adjustment.

www.WorkshopManuals.co.uk

DATA : ENGINE MOUNTING ASSEMBLY

1 – DESCRIPTION

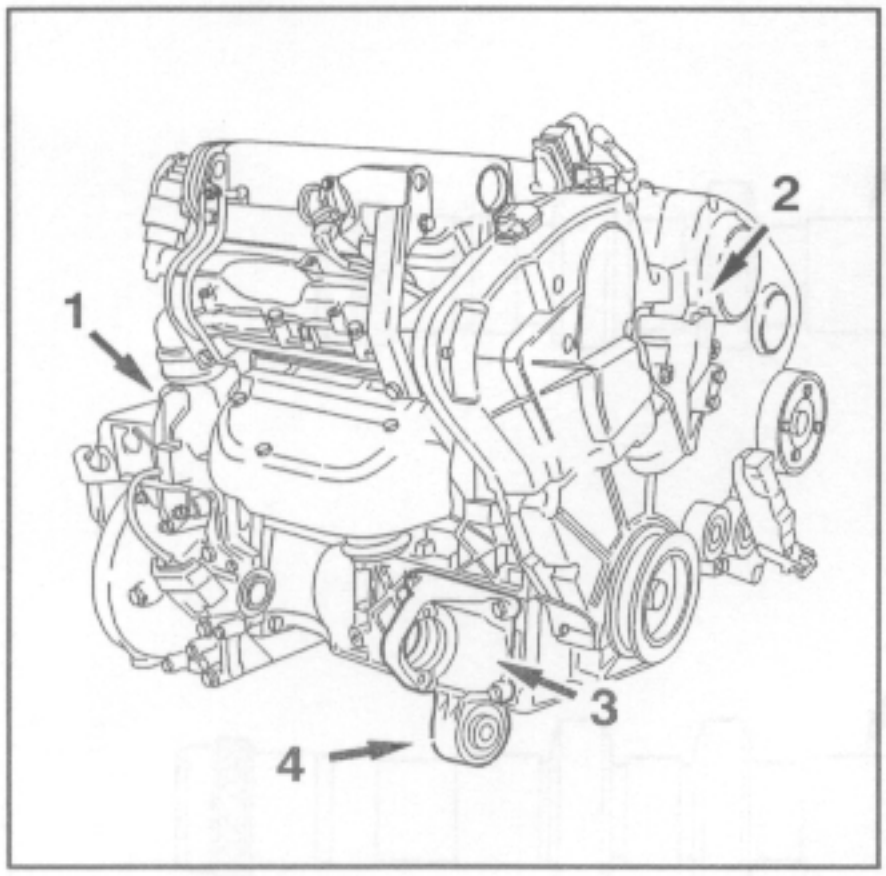


Fig : B1BP1ESC

(1) left hand upper engine mounting.
(2) right hand upper engine mounting.
(3) right hand lower engine mounting.
(4) torque rod.

2 – TIGHTENING TORQUES

2.1 – Left hand upper engine mounting (manual gearbox)

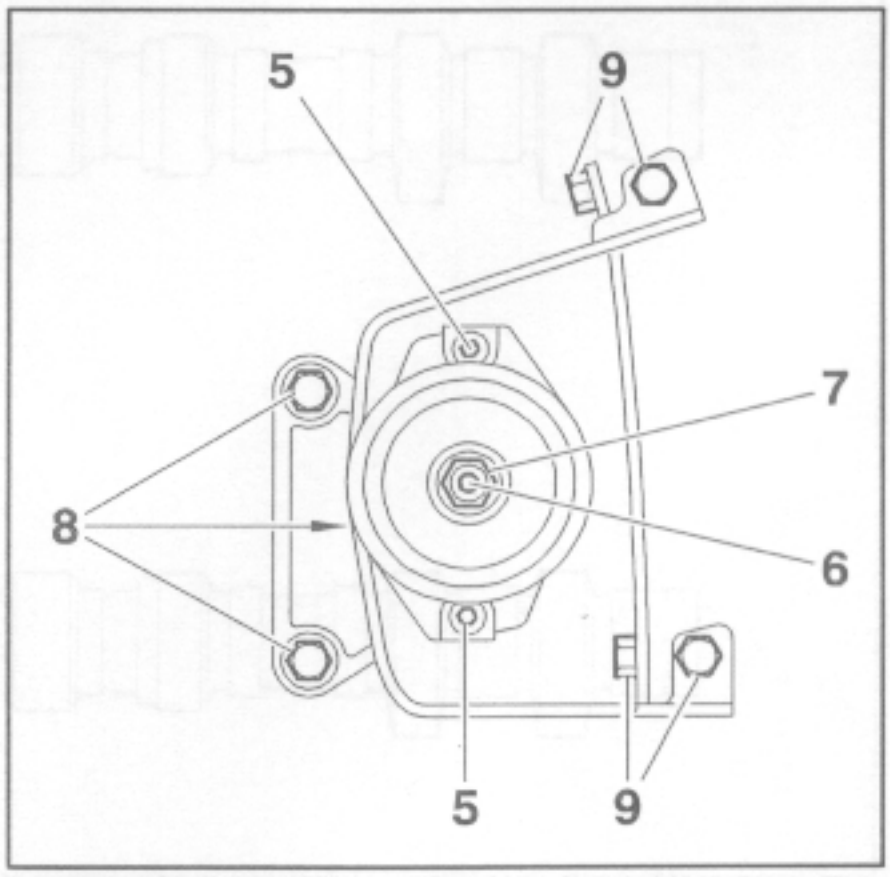


Fig : B1BP1M3C

Tighten :
- nut (7) to 6.5 m.daN
- bolts (5) to 3 m.daN
- bolts (8) to 4.5 m.daN
- the engine support shaft (6) to 5 m.daN
- bolts (9) to 2.7 m.daN

www.WorkshopManuals.co.uk

2.2 – Left hand upper engine mounting (automatic gearbox)

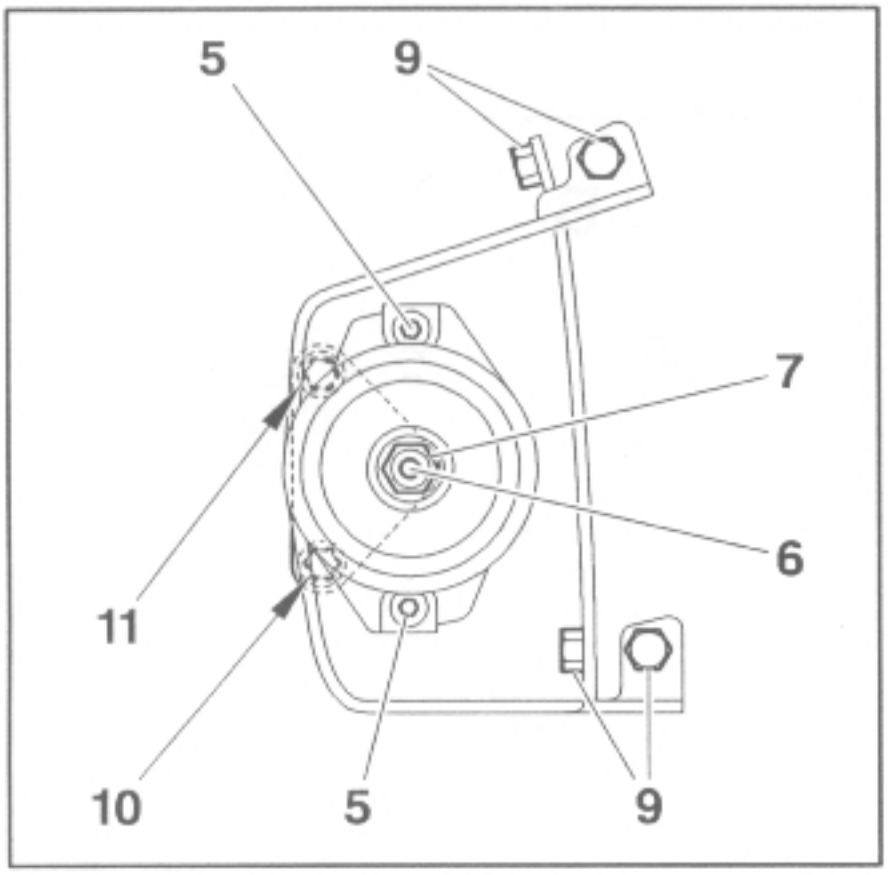


Fig : B1BP1NNC

Tighten :
- nut (7) to 6,5 m.daN
- bolts (5) to 3 m.daN
- bolt (10) to 7,5 m.daN
- bolt (11) to 6 m.daN
- engine support shaft (6) to 5 m.daN
- bolts (9) to 2,7 m.daN

2.3 – Right hand upper engine mounting

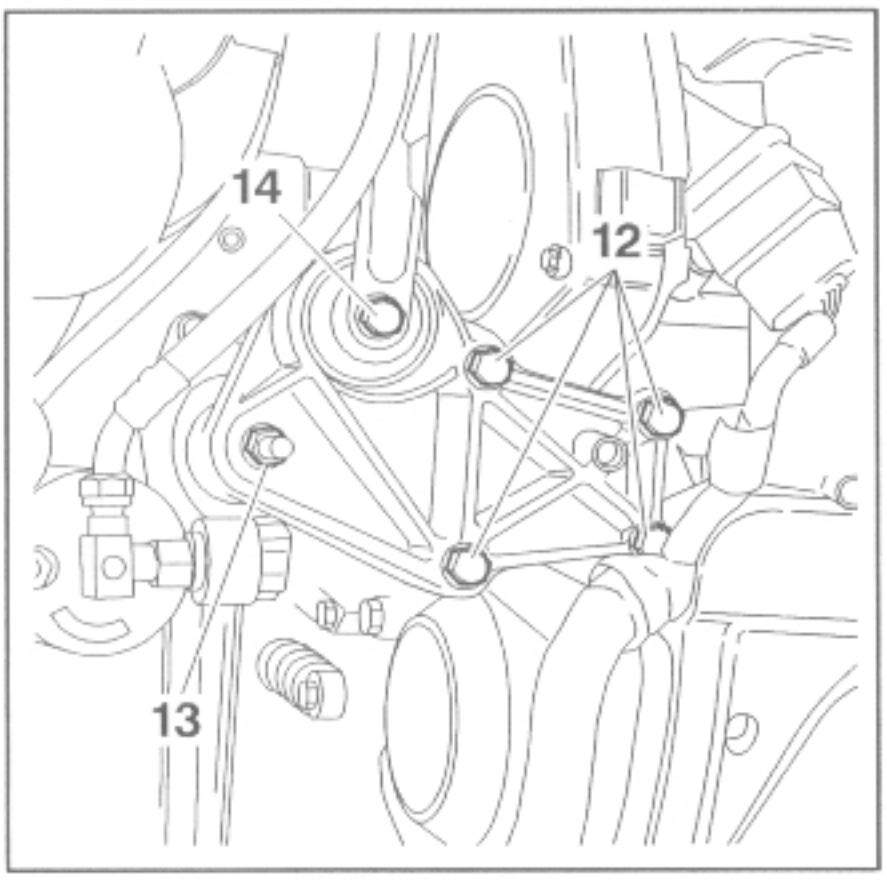


Fig : B1BP1M4C

Tighten :
- bolts (12) to 4,5 m.daN
- nut (13) to 4,5 m.daN
- bolt (14) to 5 m.daN

2.4 – Right hand lower engine mounting

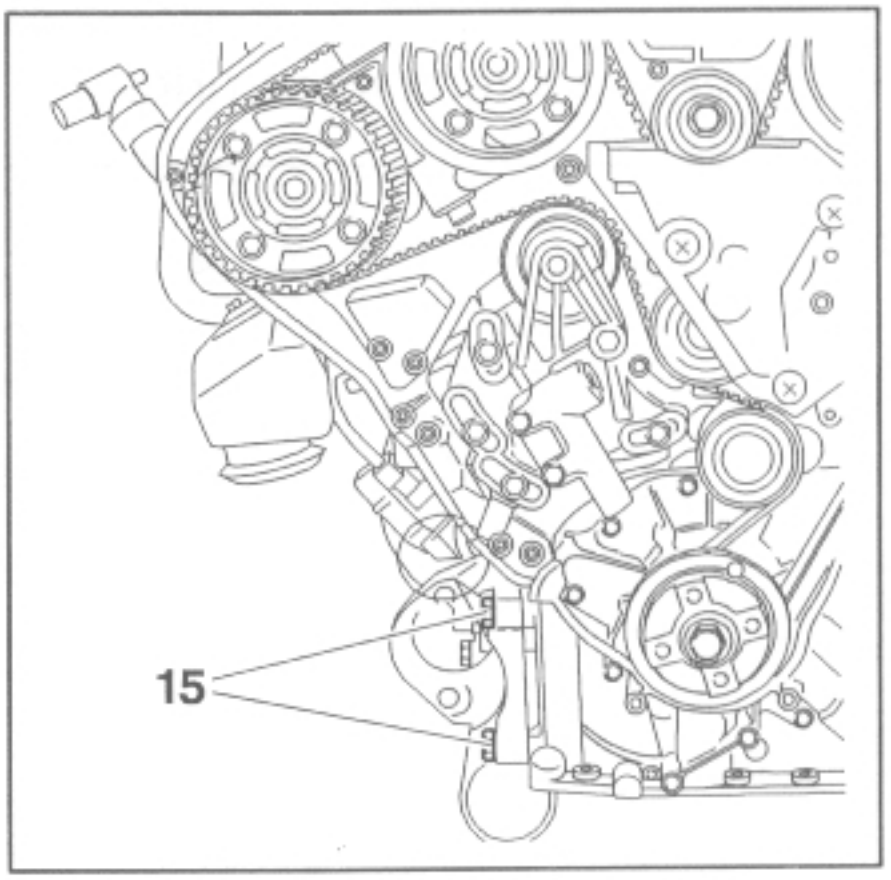


Fig : B1BP1M5C

Tighten the bolts (15) to 4,5 m.daN.

2.5 – Torque rod

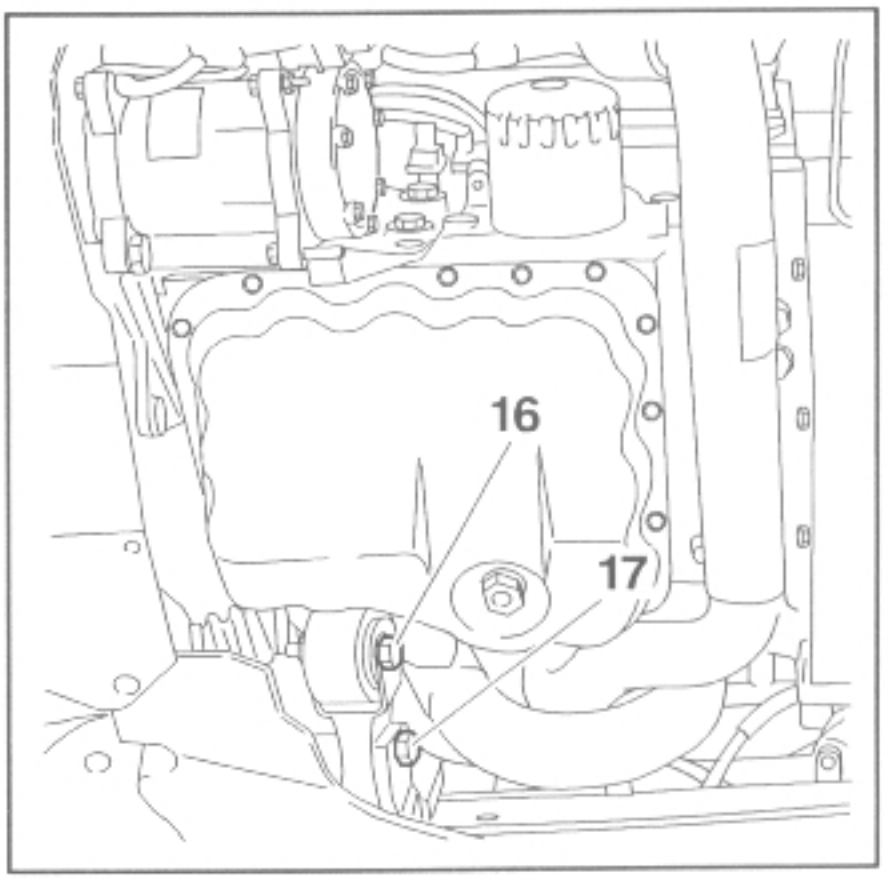


Fig : B1BP1M6C

Tighten :
- bolt (16) to 5 m.daN
- bolt (17) to 5 m.daN

www.WorkshopManuals.co.uk

DATA : TIGHTENING TORQUES

1 – ENGINE/GEARBOX MOUNTINGS

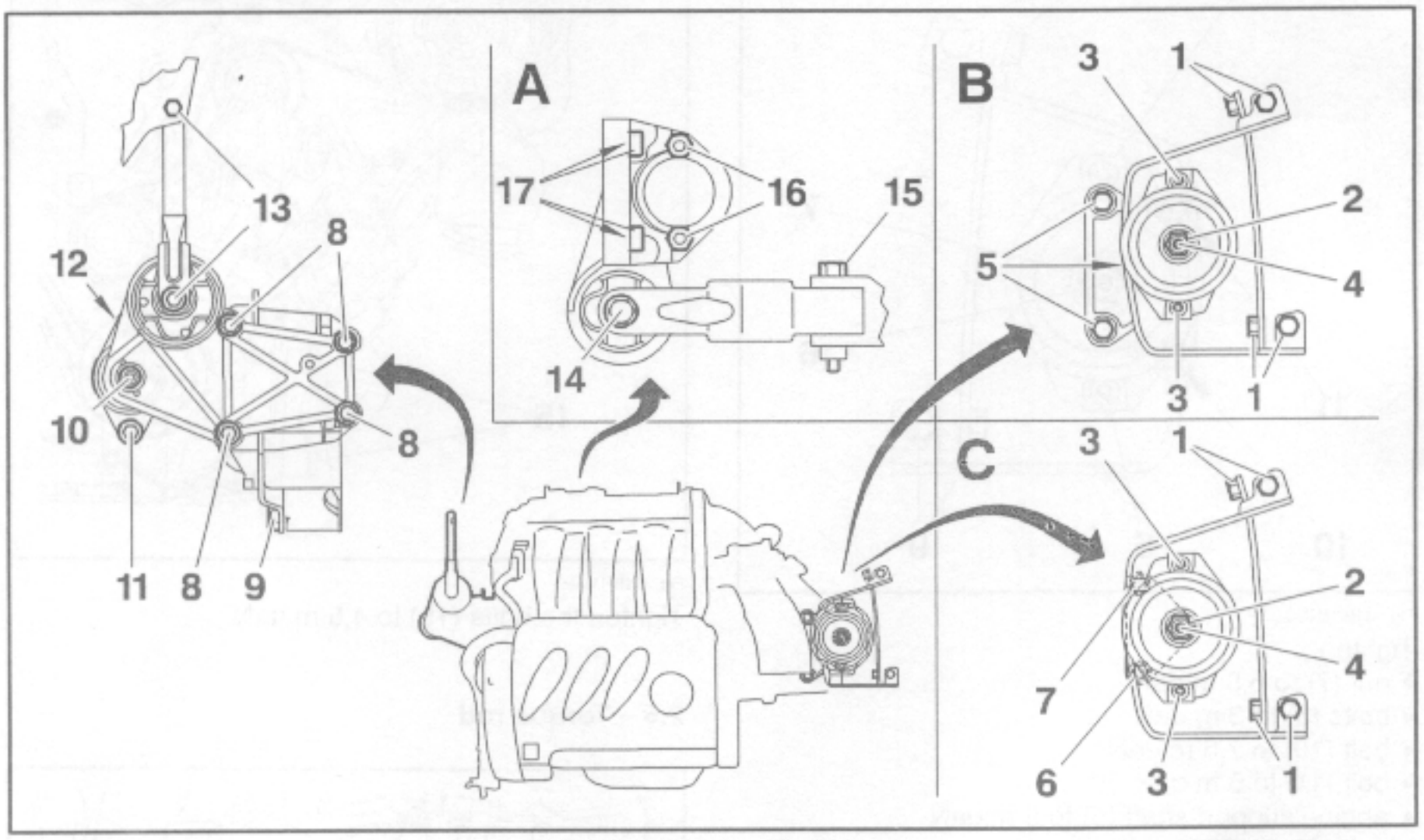


Fig : B1BP1M7D

A : right hand lower engine mounting.

B : manual gearbox.

C : automatic gearbox.

Left hand engine mounting :

Item	Component	Tightening torque (m.daN)
(1)	Bolt	2.7
(2)	Nut	6.5
(3)	Bolt	3
(4)	Support shaft	5
(5)	Bolt	4.5
(6)	Bolt	7.5
(7)	Bolt	6

Right hand upper engine mounting :

Item	Component	Tightening torque (m.daN)
(8)	Bolt	4,5
(9)	Bolt	6
(10)	Nut and stud	4,5
(11)	Bolt	3
(12)	Bolt	3
(13)	Bolt	5

Right hand lower engine mounting :

Item	Component	Tightening torque (m.daN)
(14)	Bolt	5
(15)	Bolt	5
(16)	Nut	1
(17)	Bolt	4,5

www.WorkshopManuals.co.uk

2 – ENGINE

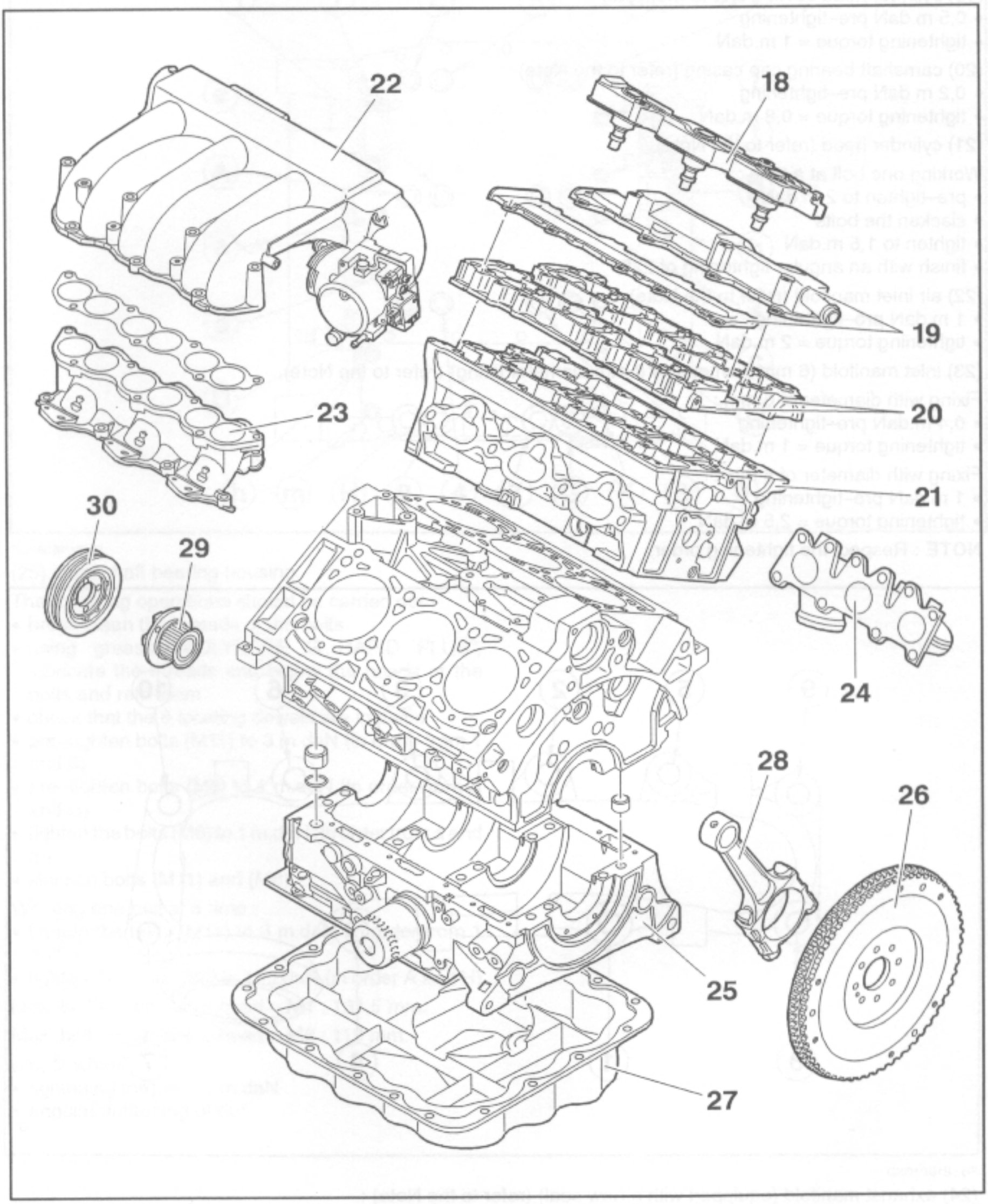


Fig : B1BP1GWP

www.WorkshopManuals.co.uk

(18) compact coil unit : tighten to 1 m.daN.

(19) cylinder head cover (refer to the Note) :
- 0,5 m.daN pre–tightening
- tightening torque = 1 m.daN

(20) camshaft bearing cap casing (refer to the Note) :
- 0,2 m.daN pre–tightening
- tightening torque = 0,8 m.daN

(21) cylinder head (refer to the Note).

Working one bolt at a time :
- pre–tighten to 2 m.daN
- slacken the bolts
- tighten to 1,5 m.daN
- finish with an angular tightening of 225 °

(22) air inlet manifold (refer to the Note) :
- 1 m.daN pre–tightening
- tightening torque = 2 m.daN

(23) inlet manifold (6 mm diameter or 8 mm diameter fixing) (refer to the Note).

Fixing with diameter of 6 mm :
- 0,4 m.daN pre–tightening
- tightening torque = 1 m.daN

Fixing with diameter of 8 mm :
- 1 m.daN pre–tightening
- tightening torque = 2,5 m.daN

NOTE : Respect the tightening order.

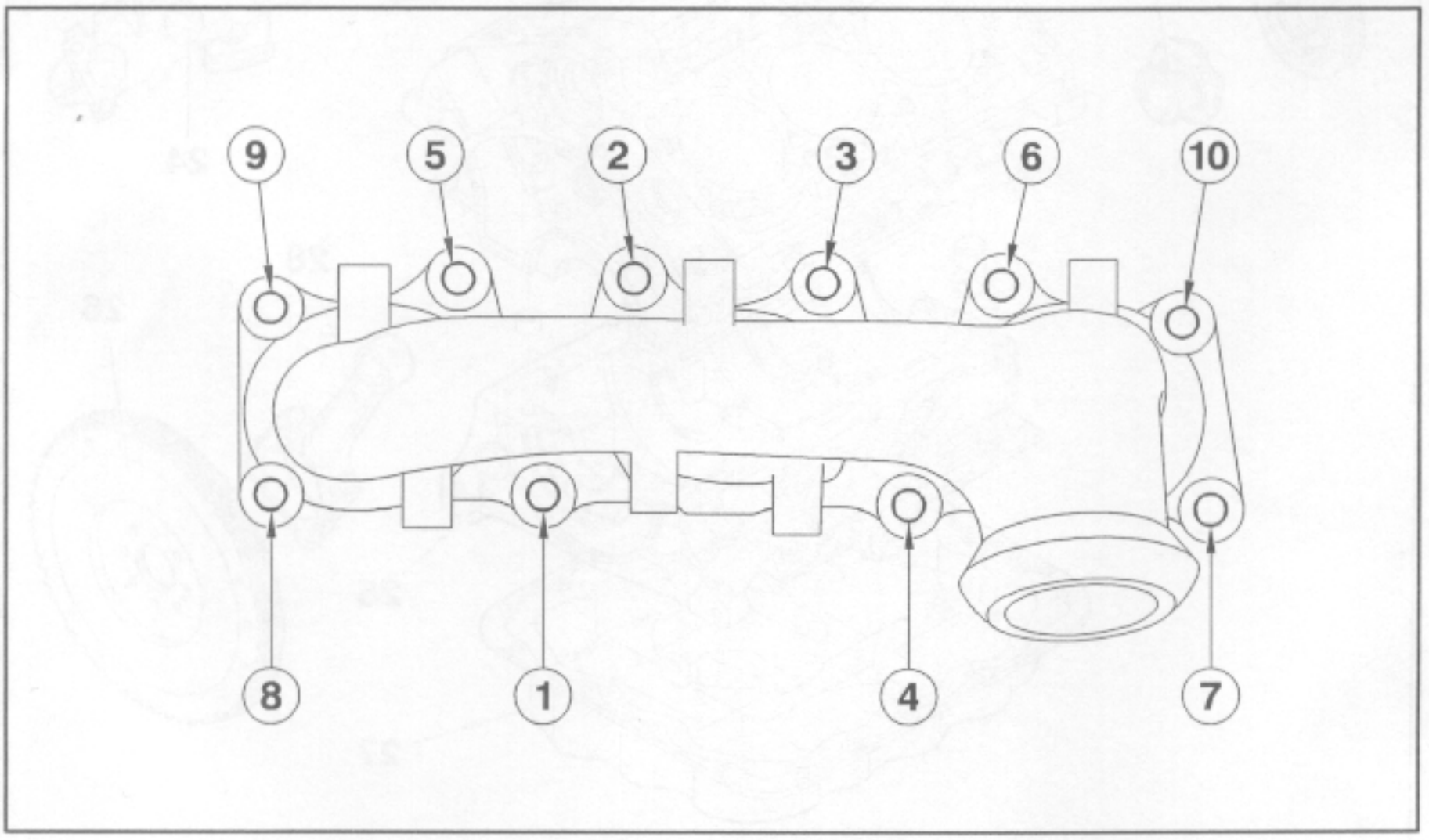


Fig : B1BP1GXD

(24) exhaust manifold (equipped with a new seal) (refer to the Note) :
- 1 m.daN pre–tightening
- tightening torque = 3 m.daN

www.WorkshopManuals.co.uk

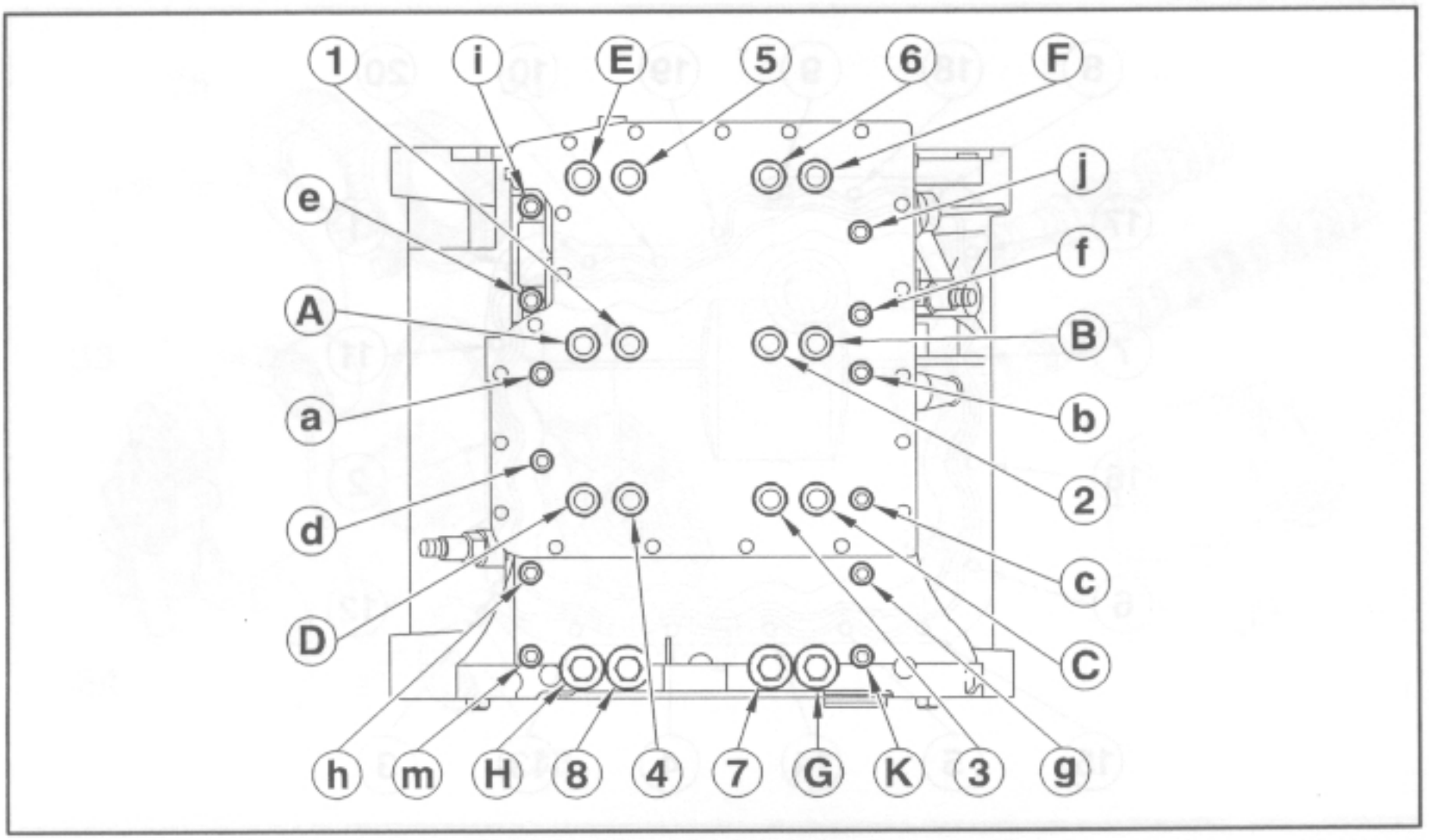


Fig : B1BP1GYD

(25) crankshaft bearing housing.

The following operations should be carried out :

- brush clean the threads of the bolts
- using grease "MOLYKOTE G RAPID PLUS", lubricate the threads and below the heads of the bolts and refit them
- check that the 8 locating dowels are in place
- pre–tighten bolts (M11) to 3 m.daN (in order from 1 and 8)
- pre–tighten bolts (M8) to 1 m.daN (in order from A and H)
- tighten the bolts (M6) to 1 m.daN (in order from a and m)
- slacken bolts (M11) and (M8)

Working one bolt at a time :

- tighten the bolts (M11) to 3 m.daN (in order from 1 and 8)
- tighten the bolts (M8) to 1 m.daN (in order A and H)

Max. bolt length below head = M1 : 131,5 mm.

Max. bolt length below head = M8 : 119 mm.

(26) flywheel :

- tightening torque = 1 m.daN
- angular tightening of 60°

www.WorkshopManuals.co.uk

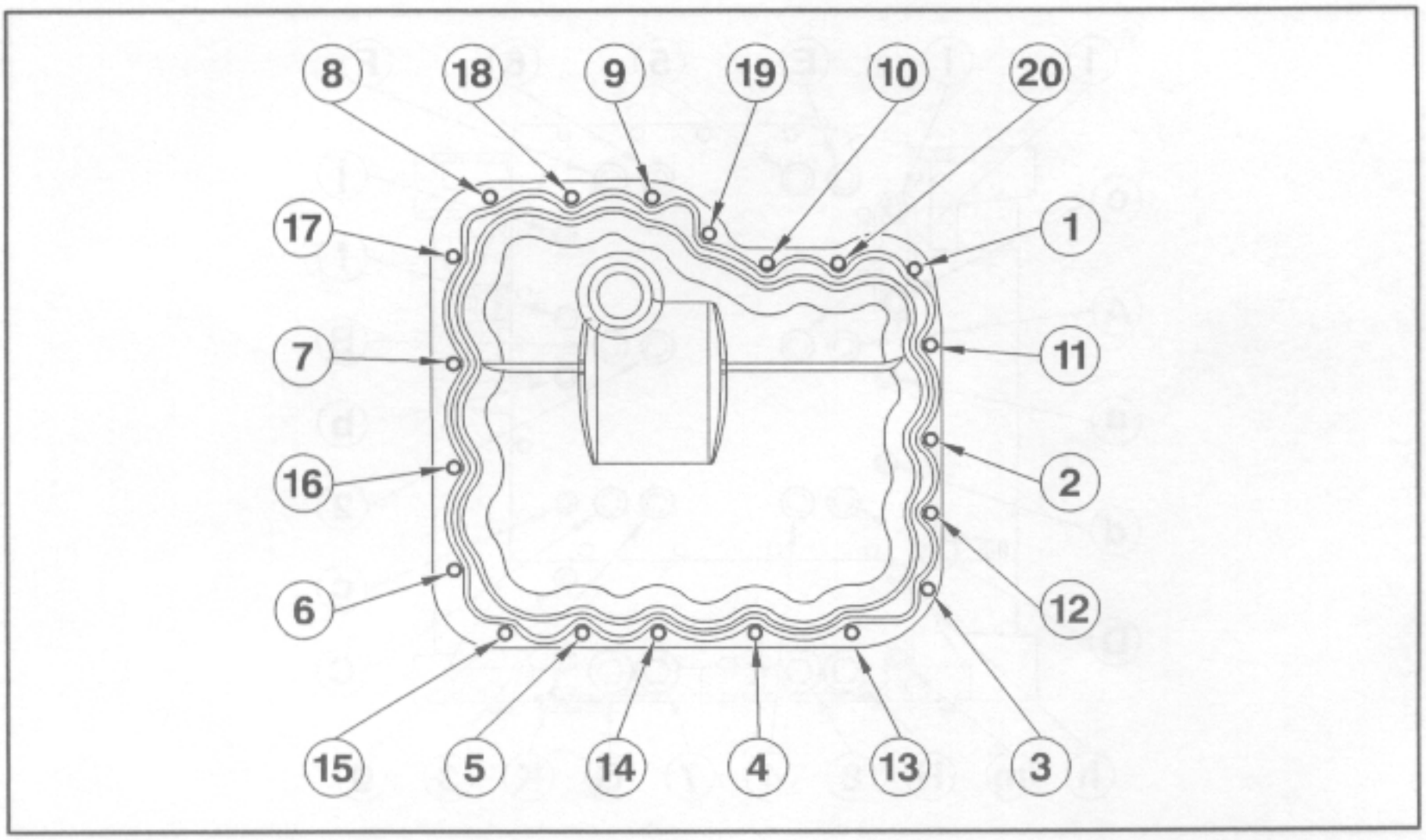


Fig : B1BP1GZD

(27) sump :
- 0,5 m.daN pre–tightening
- tightening torque = 0,8 m.daN

(28) connecting rod caps :
- tightening torque = 2 m.daN
- angular tightening of 74°

(29) crankshaft pulley hub :
- tightening torque = 4 m.daN
- angular tightening of 80°

(30) crankshaft pulley : tighten to 2,5 m.daN.

www.WorkshopManuals.co.uk

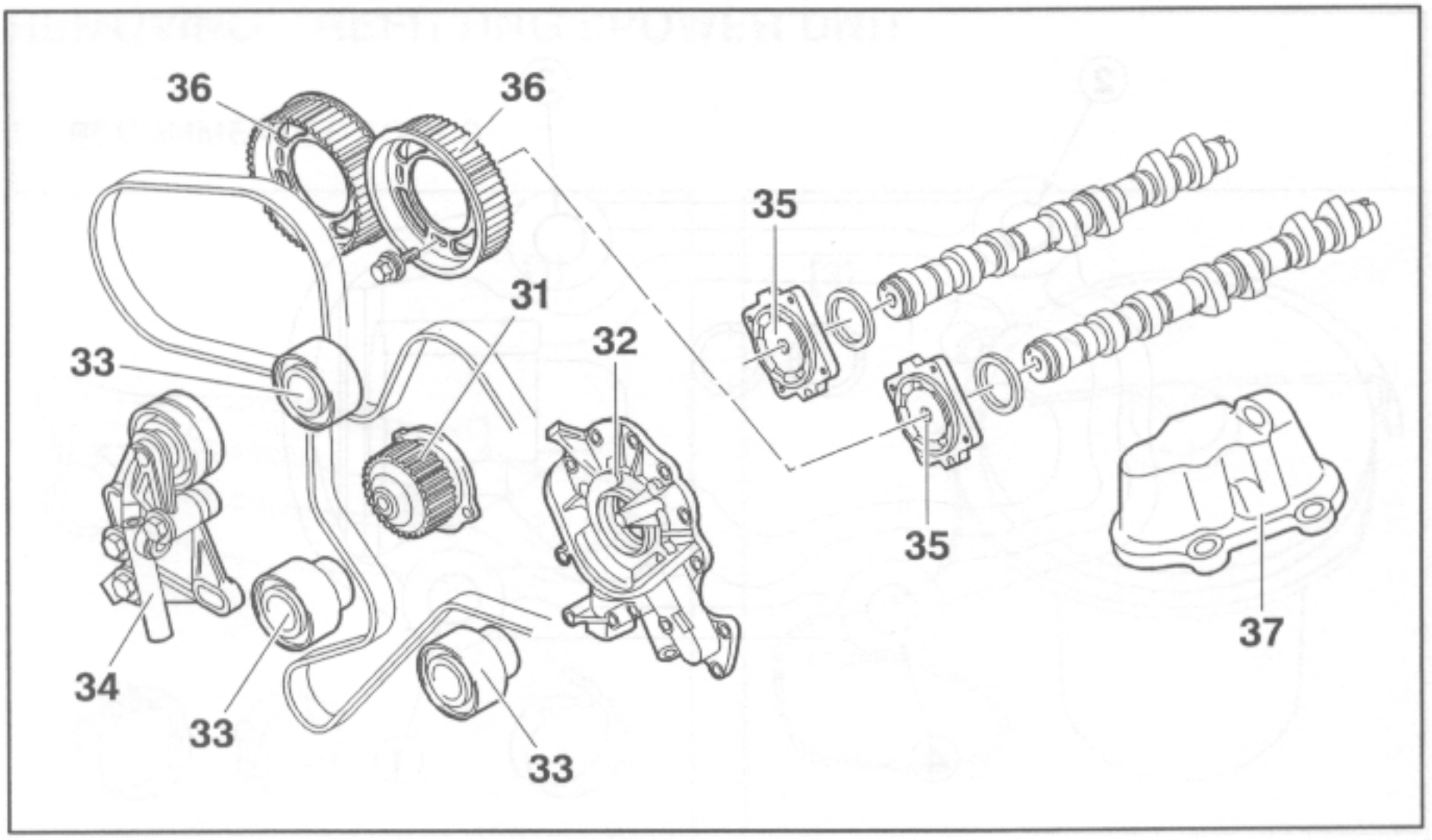


Fig : B1BP1H0D

(31) coolant pump (refer to the Note) :
- 0,5 m.daN pre–tightening
- tightening torque = 0,8 m.daN

(32) oil pump coolant pump (refer to the Note) :
- 0,5 m.daN pre–tightening
- tightening torque = 0,8 m.daN

NOTE : Respect the tightening order.

(33) guide roller : tighten to 8 m.daN.

(34) timing belt tensioner roller : tighten to 8 m.daN.

(35) camshaft hubs.

1st method (recommended method) :
- tightening torque = 2 m.daN
- angular tightening of 57°

2nd method : tightening torque = 8 m.daN.

(36) camshaft pulleys : tighten to 1 m.daN.

www.WorkshopManuals.co.uk

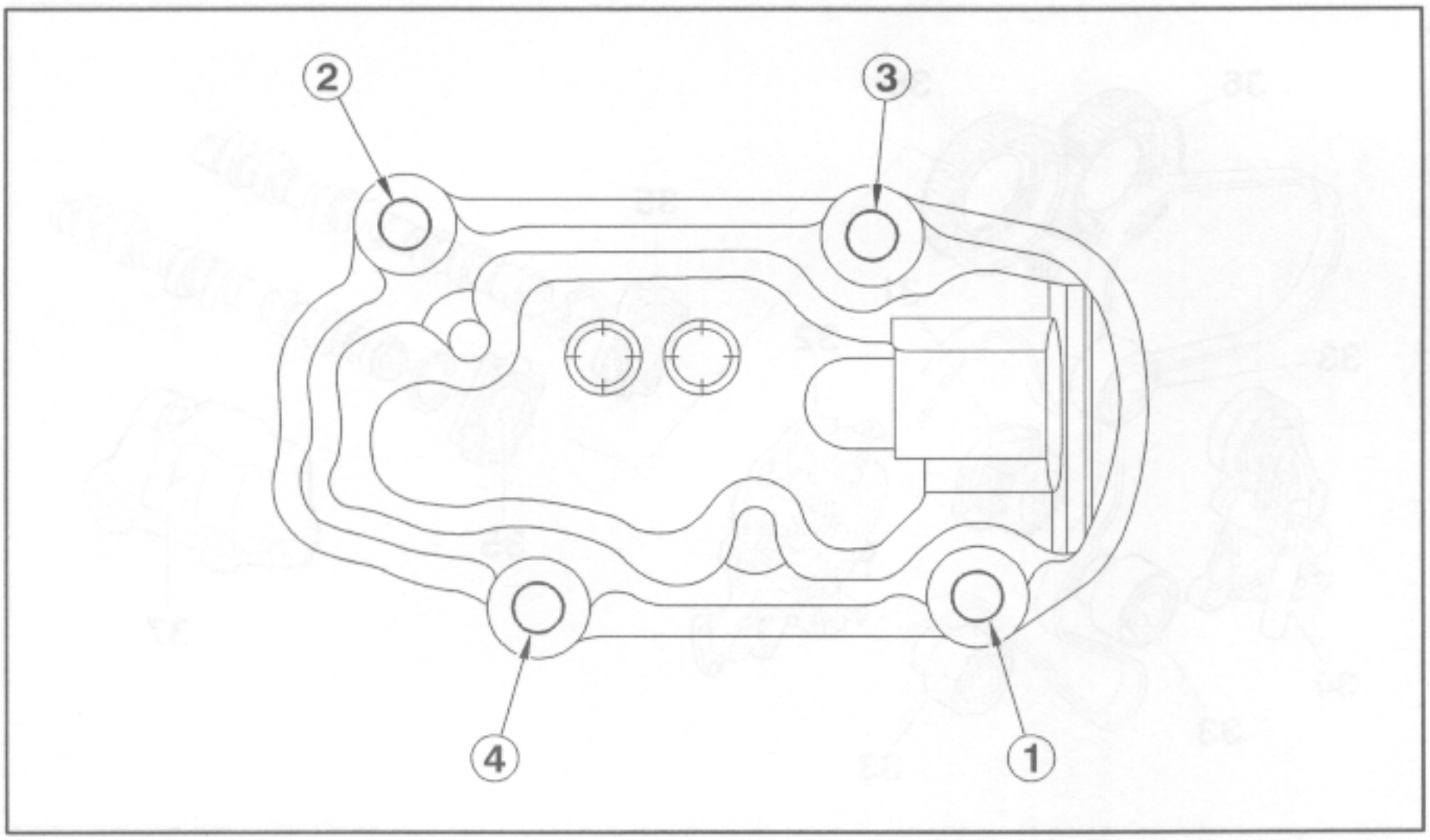


Fig : B1BP1H1D

(37) oil fumes recovery housing (in order from 1 to 4) :
- 0,5 m.daN pre–tightening
- tightening torque = 1 m.daN

www.WorkshopManuals.co.uk

REMOVING – REFITTING : POWER UNIT

1 – RECOMMENDED TOOLS

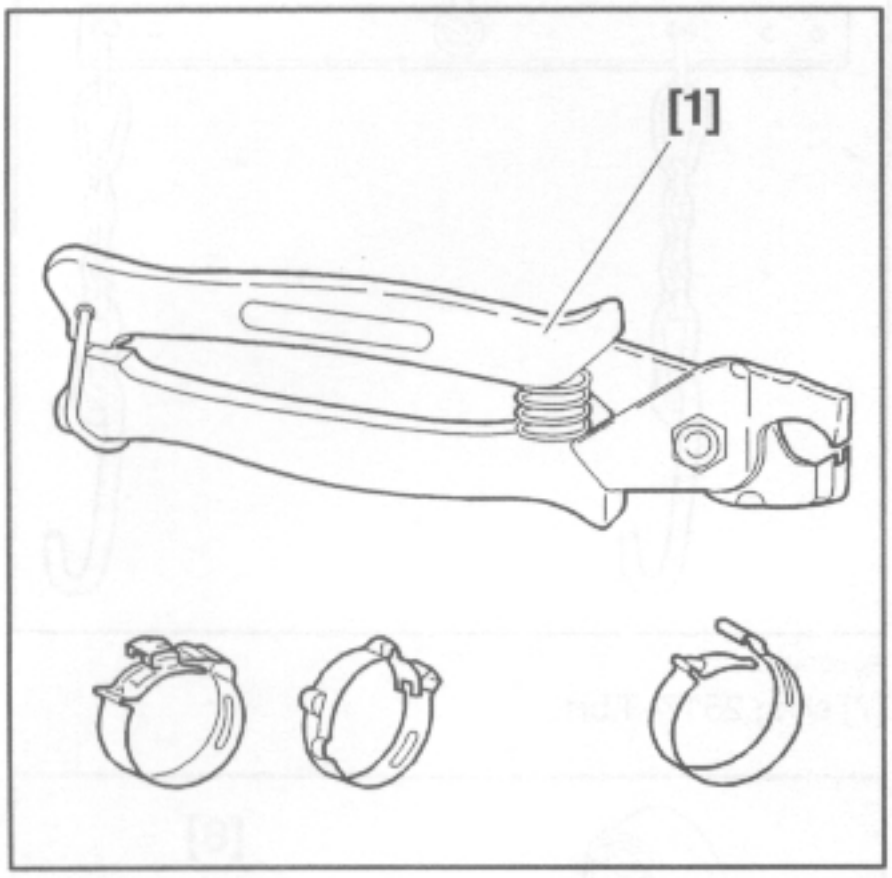


Fig : E5–P088C

[1] pliers to remove "clic" clips 4145–T.

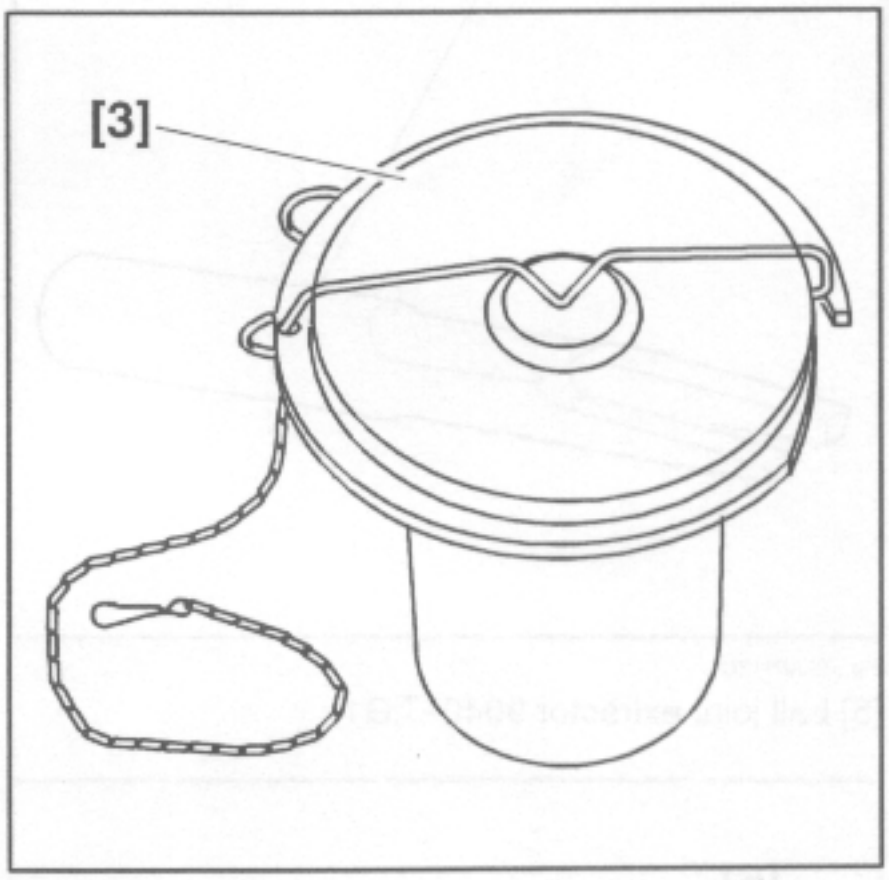


Fig : E5–P073C

[3] LHM reservoir/filter assembly cover 9004–T.

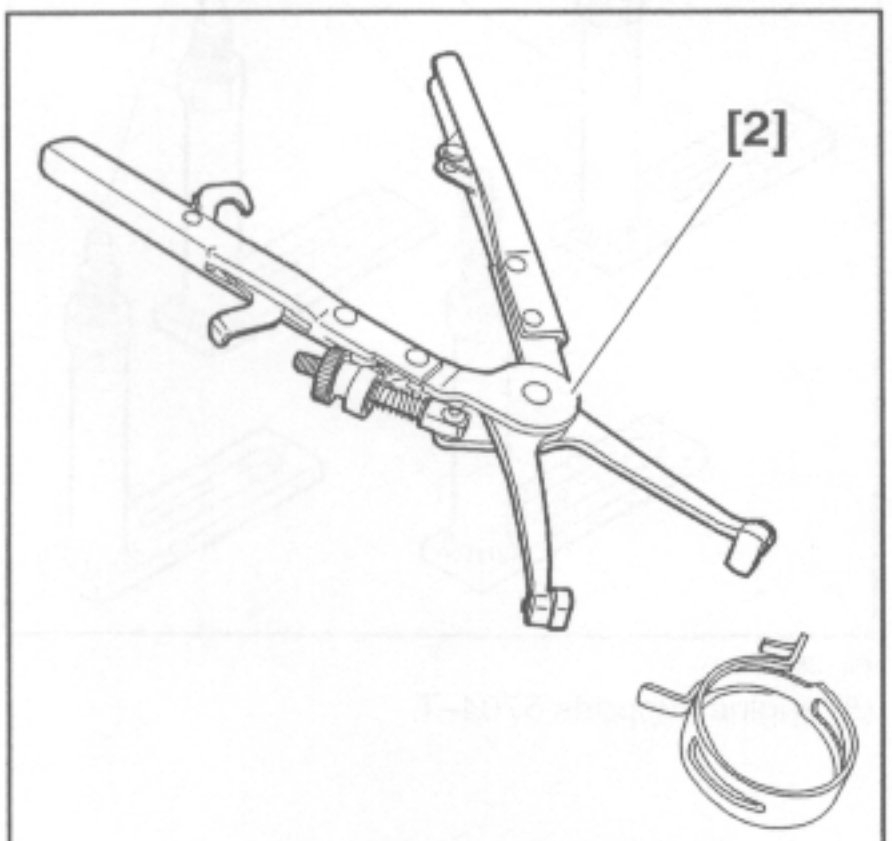


Fig : E5AP02WC

[2] pliers for removing and refitting hose clips 9029–T.

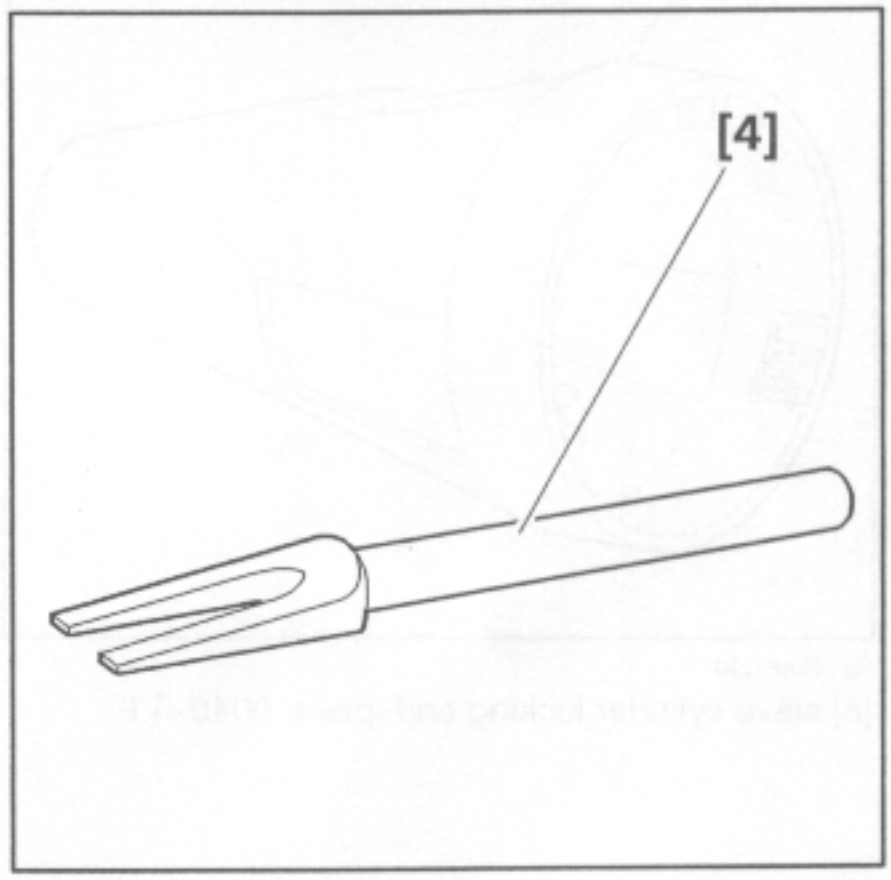


Fig : E5–P060C

[4] ball joint extractor 9040–T.G2.

www.WorkshopManuals.co.uk

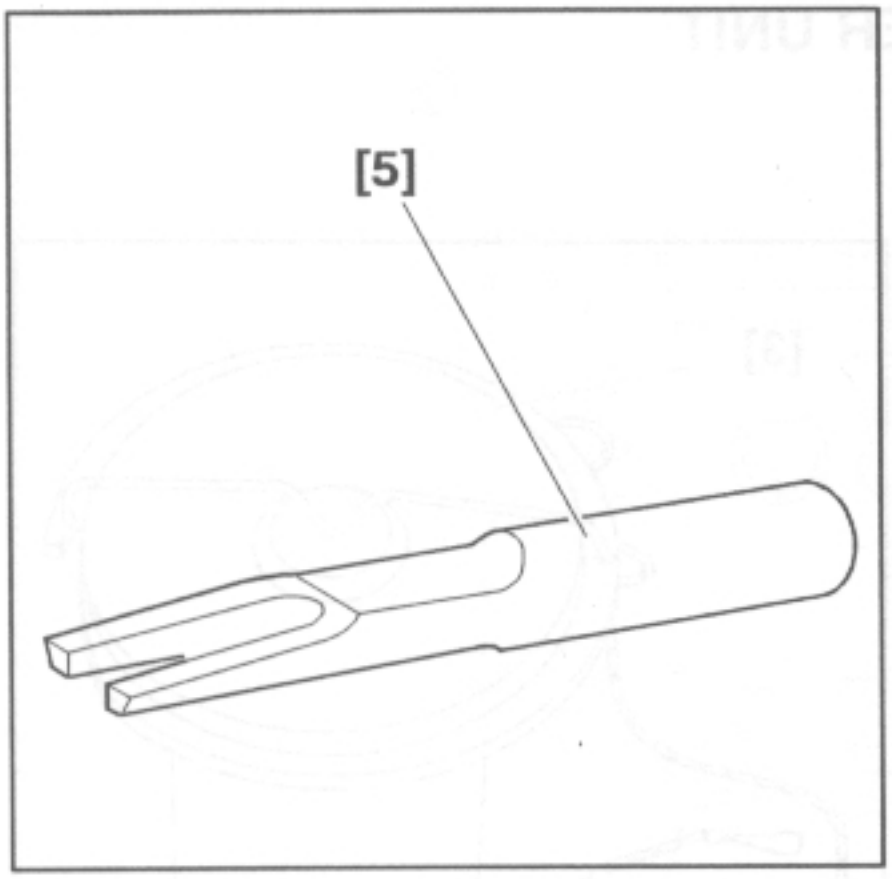


Fig : E5AP11ZC
[5] ball joint extractor 9040–T.G1.

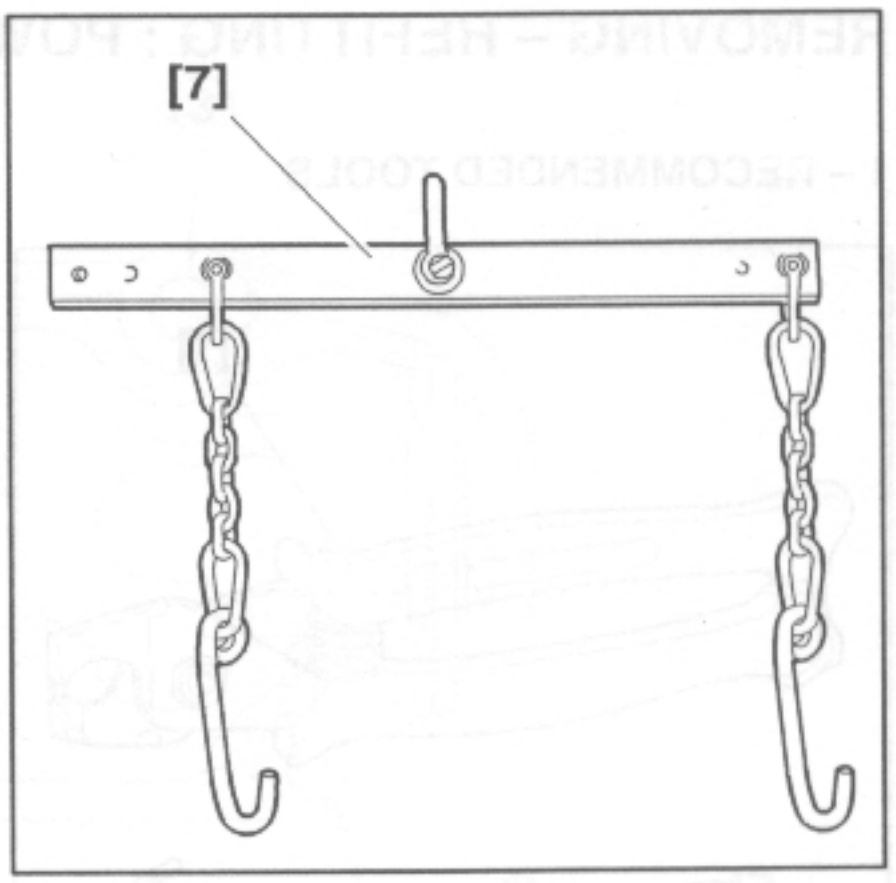


Fig : E5AP121C
[7] sling 2517–T.bis.

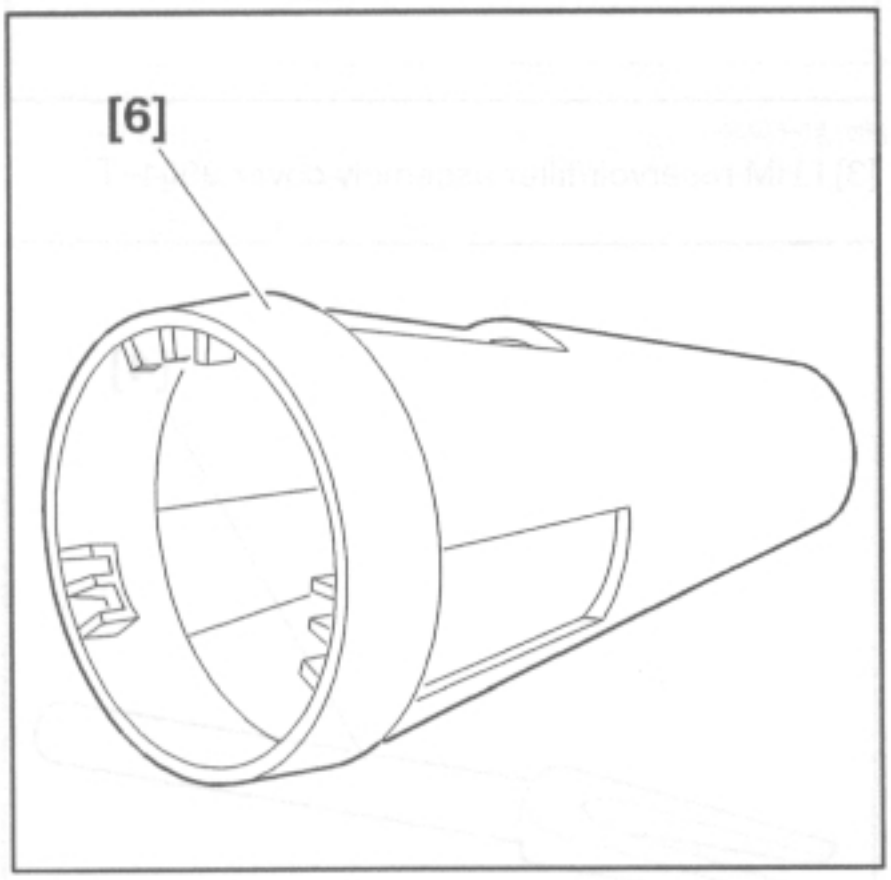


Fig : E5AP120C
[6] slave cylinder locking end–piece 9040–T.F.

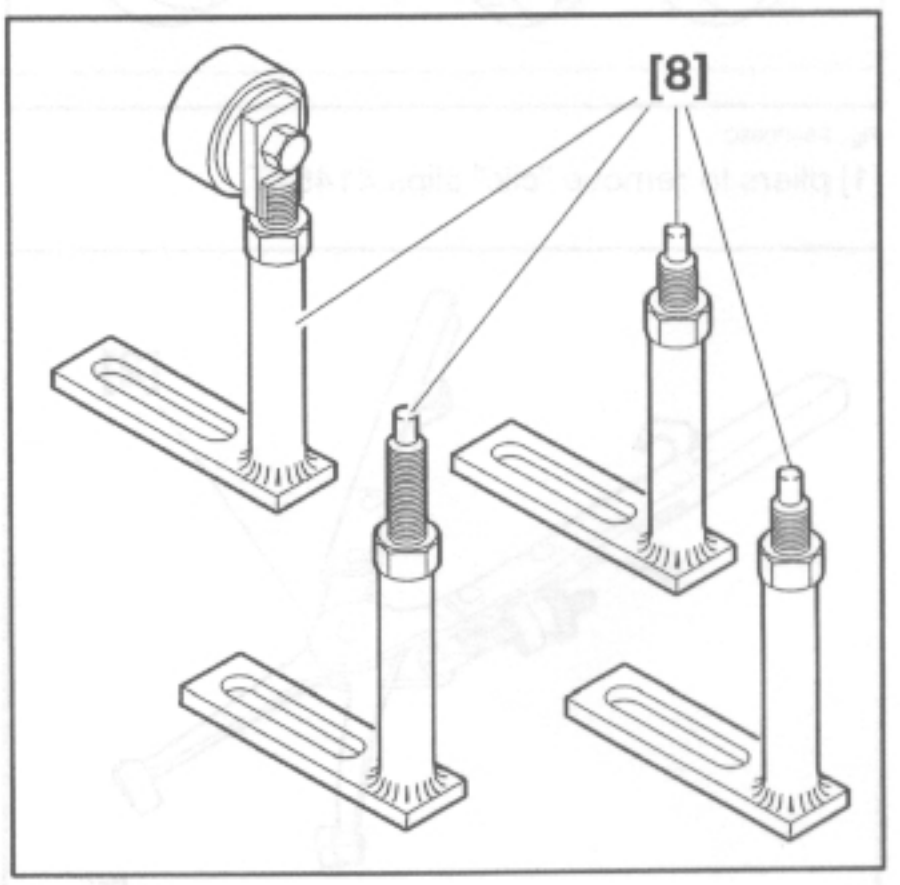


Fig : E5–P14ZC
[8] engine supports 5704–T.

www.WorkshopManuals.co.uk

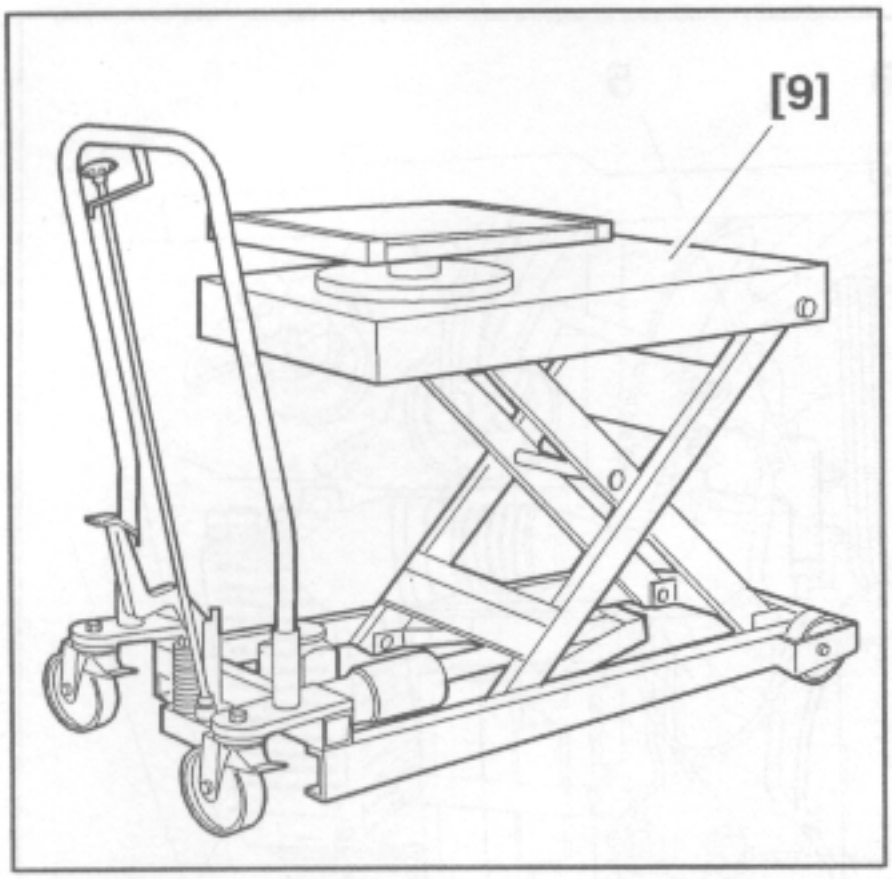


Fig : E5–P150C

[9] lifting table 5702–T.A.

2 – PRELIMINARY OPERATIONS

Disconnect the battery negative terminal.

Depressurize the hydraulic circuit (see the relevant operation).

Drain :

- the cooling system (see the relevant operation)
- the gearbox (manual gearbox)

Remove :

- the driveshafts (see the relevant operation)
- the auxiliary equipment drive belt (see the relevant operation)
- front splash shields

3 – REMOVING

NOTE : Plug the orifices when uncoupling a pipe.

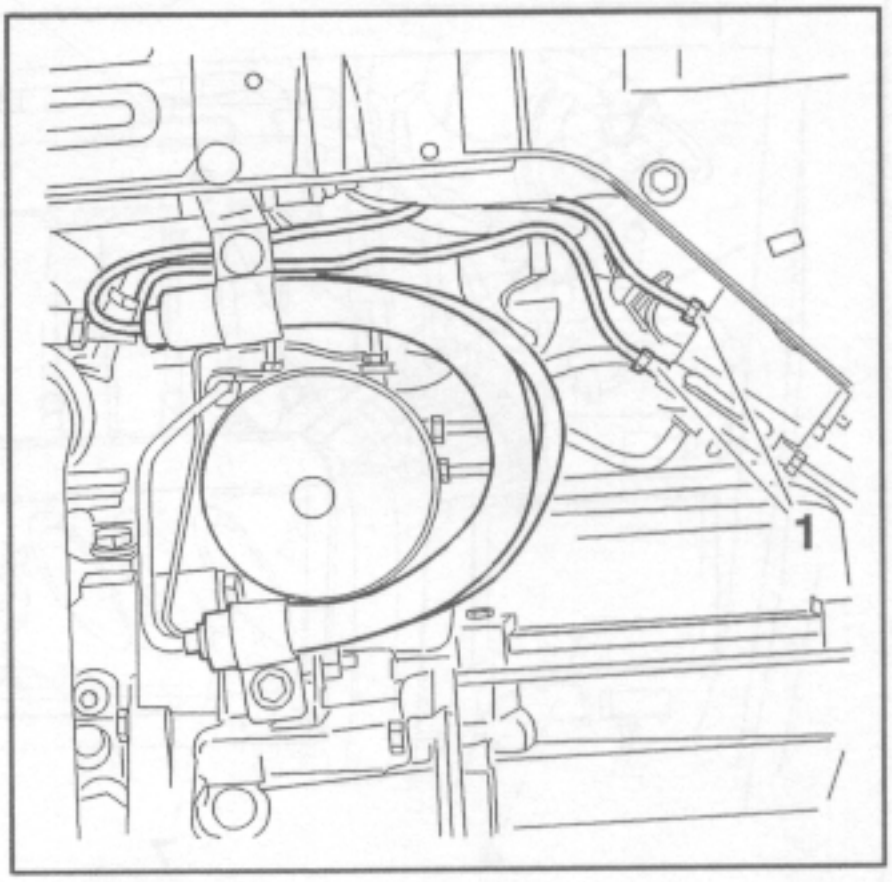


Fig : B3BP121C

Uncouple the pipes (1).

Remove the pipes fixing (1) on the cradle.

WARNING : Do not open the cooling system.

Remove the fixings of the air conditioning compressor (suspend the air conditioner compressor from the bodyshell of the vehicle).

Uncouple :

- the exhaust ball–joint
- the lower torque reaction rod

www.WorkshopManuals.co.uk

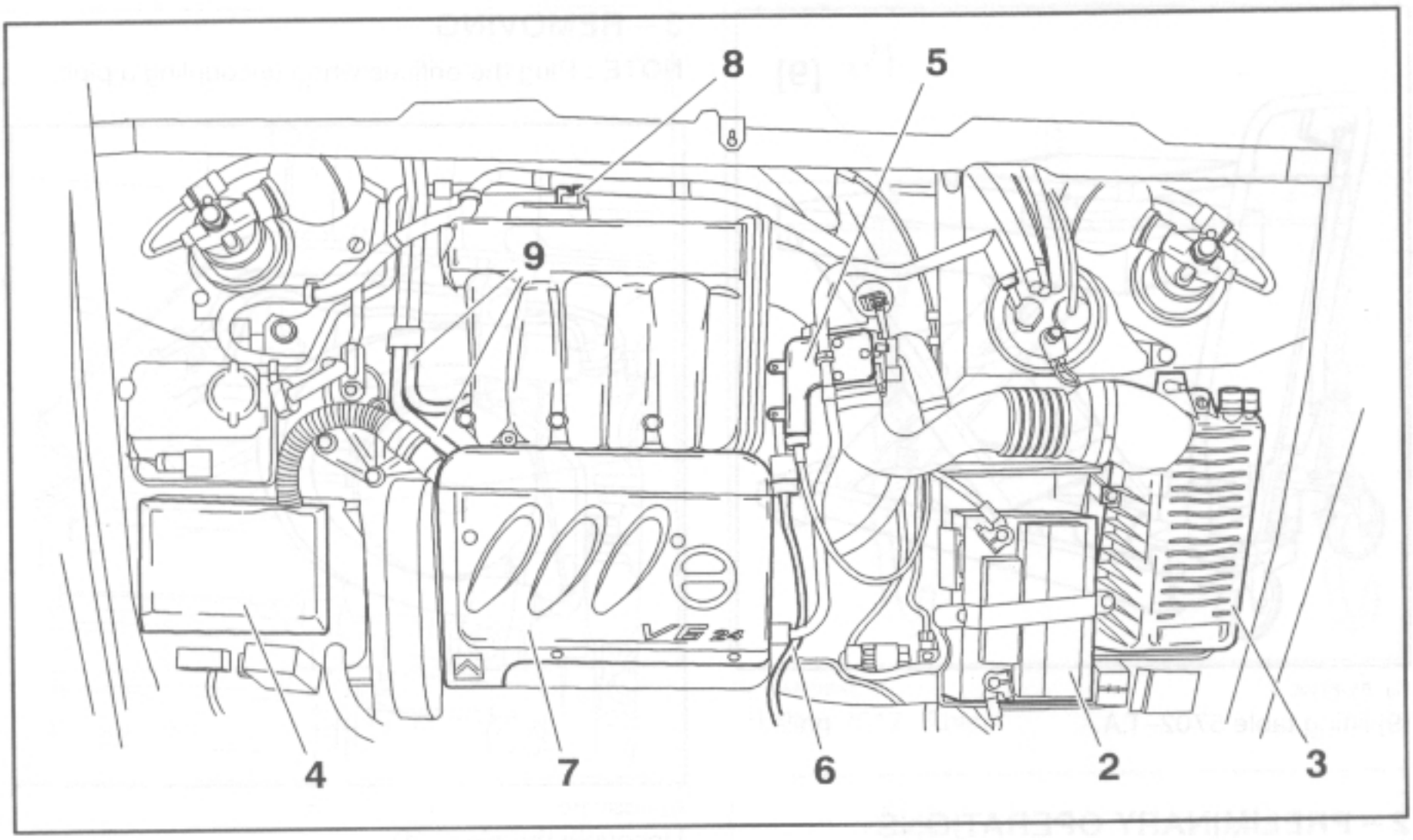


Fig : B1BP1M8D

Remove :
- the battery (2)
- the air filter housing (3)
- the ECU housing cover (4)
- the throttle butterfly housing (5)

Uncouple :
- the accelerator cable
- the flexible hose (6)

Remove :
- the engine cover (7)
- the sensor (8) (integrated pressure sensor)

Release the pressure in the injector fuel rail (see the relevant operation).

Uncouple the click–fit unions of the fuel supply and return pipes (9).

www.WorkshopManuals.co.uk

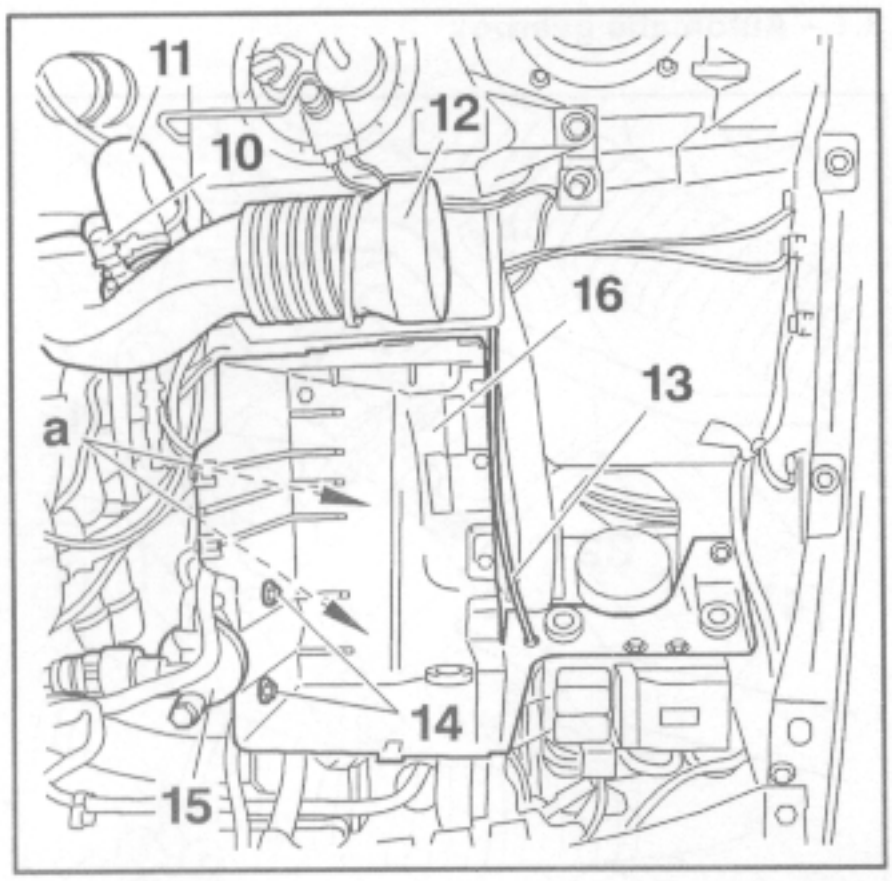


Fig : B1BP1M9C

Disconnect the inlet air temperature sensor (10).

Disconnect the pipe (11) ; by means of tool [1].

Remove the air inlet duct (12).

Uncouple the bonnet opening cable (from the upper front crossmember).

Release the bonnet opening cable (13) from the battery tray.

Remove the 2 screws (14).

Release the drier (15).

Remove :
- the screws at "a"
- the battery tray (16)

NOTE : Mark the routing and fixing points of the harnesses fixed to the battery tray (16).

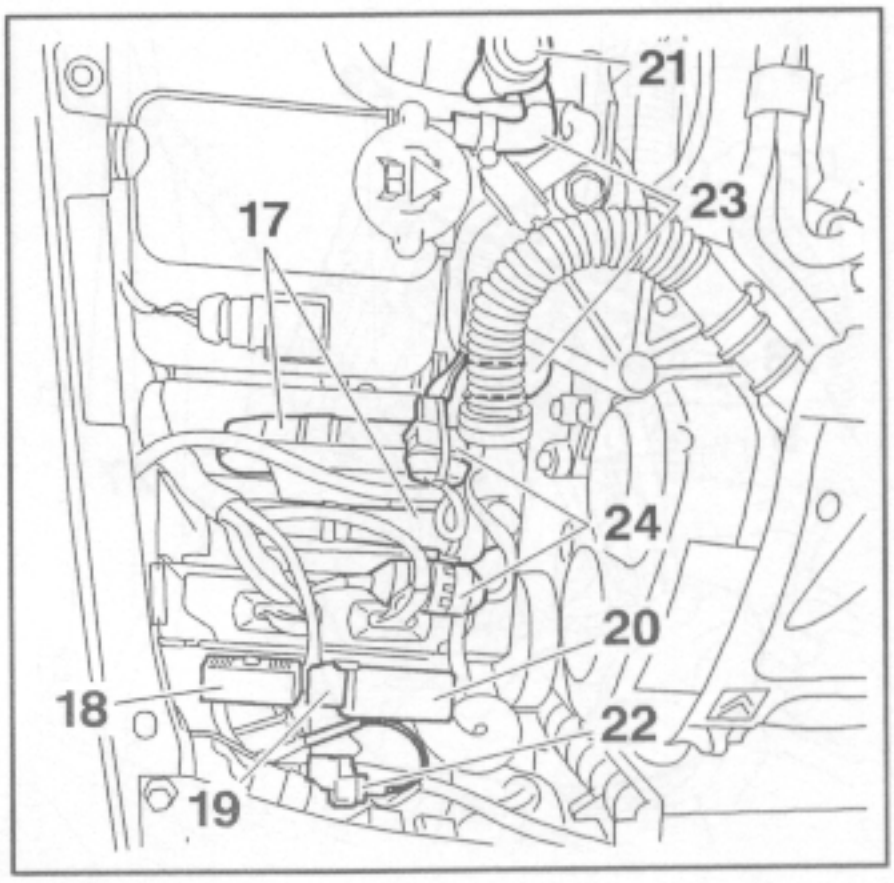


Fig : B1BP1MAC

Disconnect :
- the ECUs (17)
- the housing (18)
- the relay (19)
- the cruise control electronic control unit (20)
- the inertia switch (21)
- the canister bleed electrovalve (22)

Disconnect the hoses (23) ; by means of tool [2].

Disconnect the connectors (24).

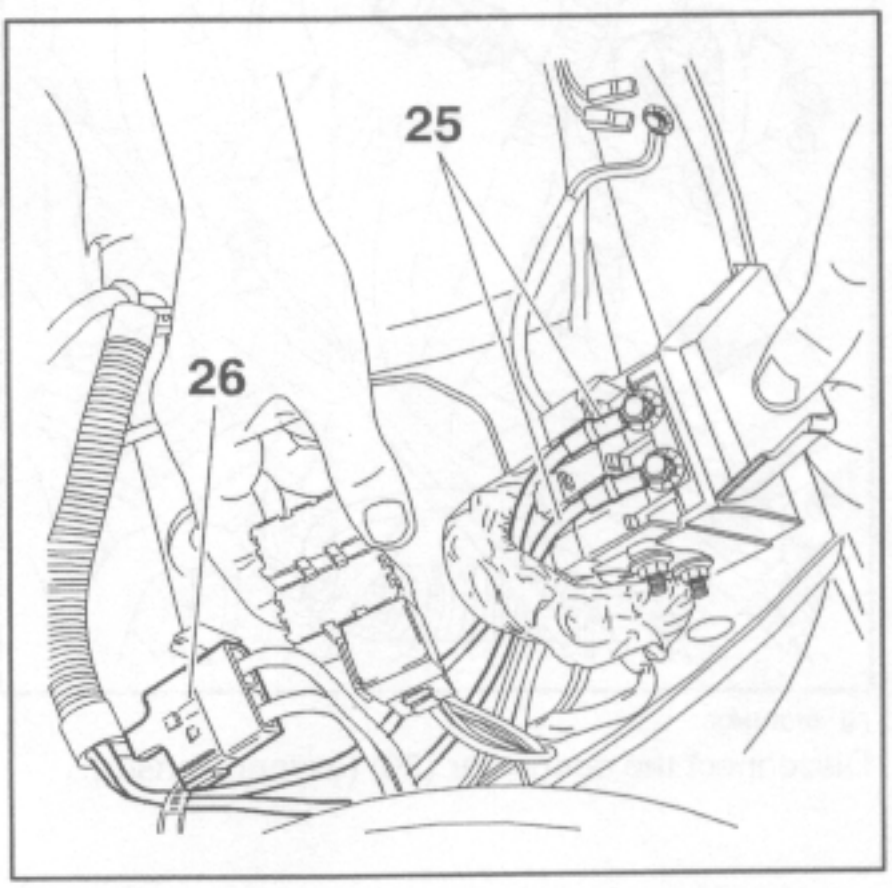


Fig : B1BP1MBC

Disconnect :
- the wires (25)
- the connector (26)

www.WorkshopManuals.co.uk

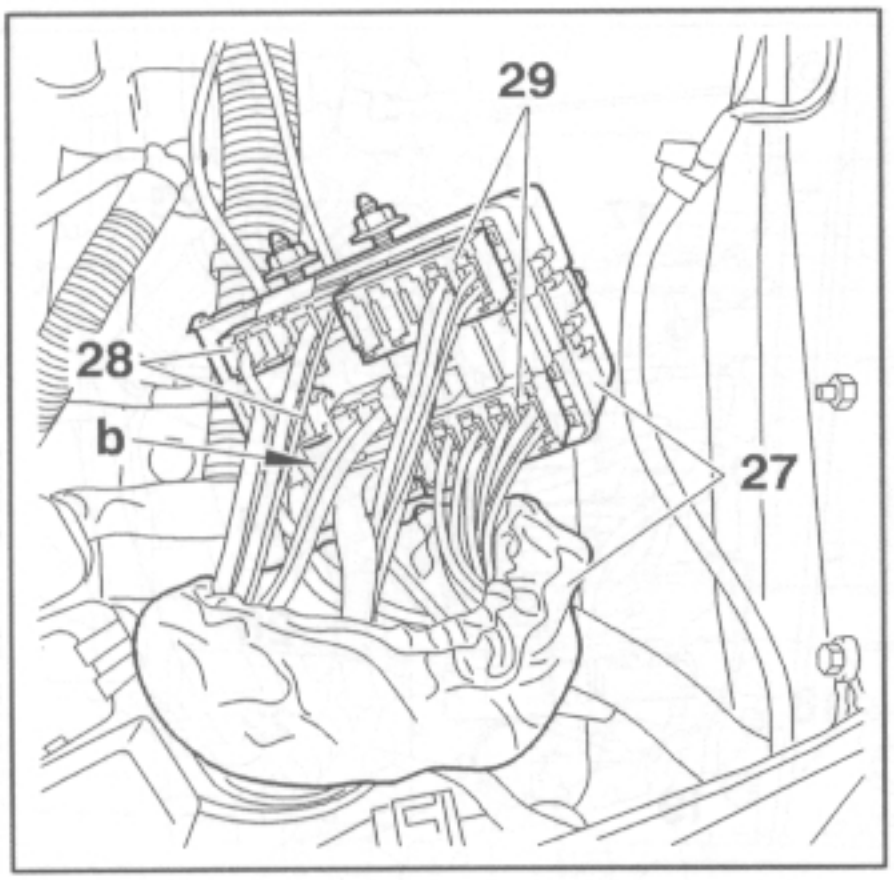


Fig : B1BP1MCC

Release the junction box from its protective cover (27).

Disconnect :

- the connectors (28) and (29)
- the connector at "b"

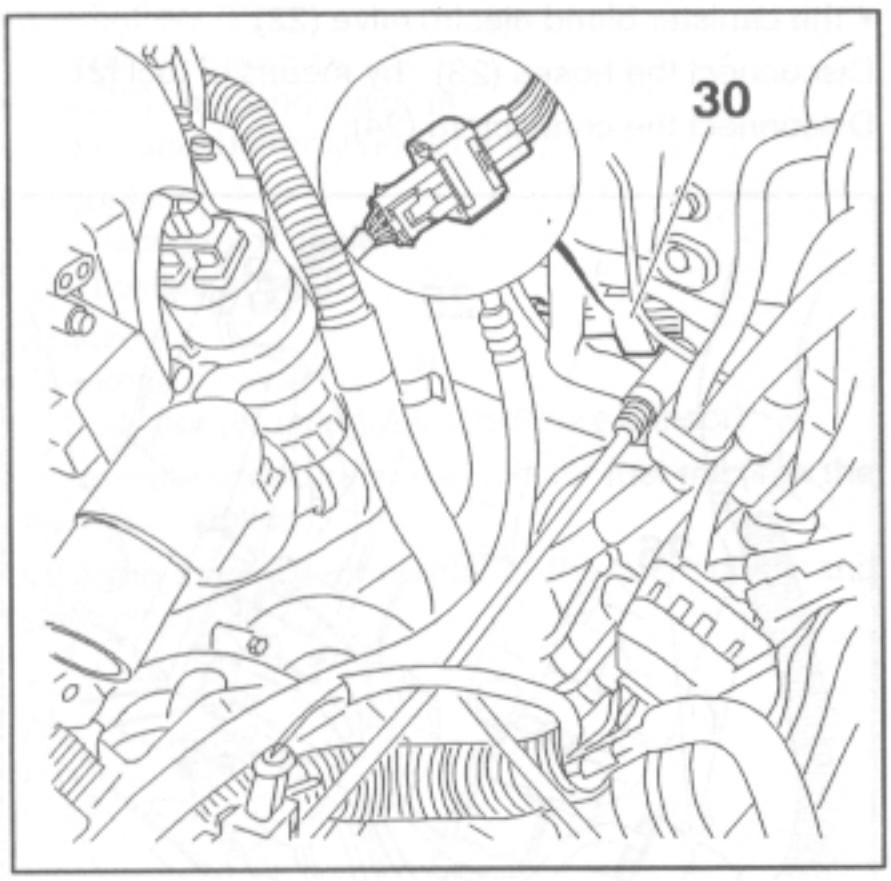


Fig : B1BP1MDC

Disconnect the connector (30) (oxygen sensor).

3.1 – Automatic gearbox

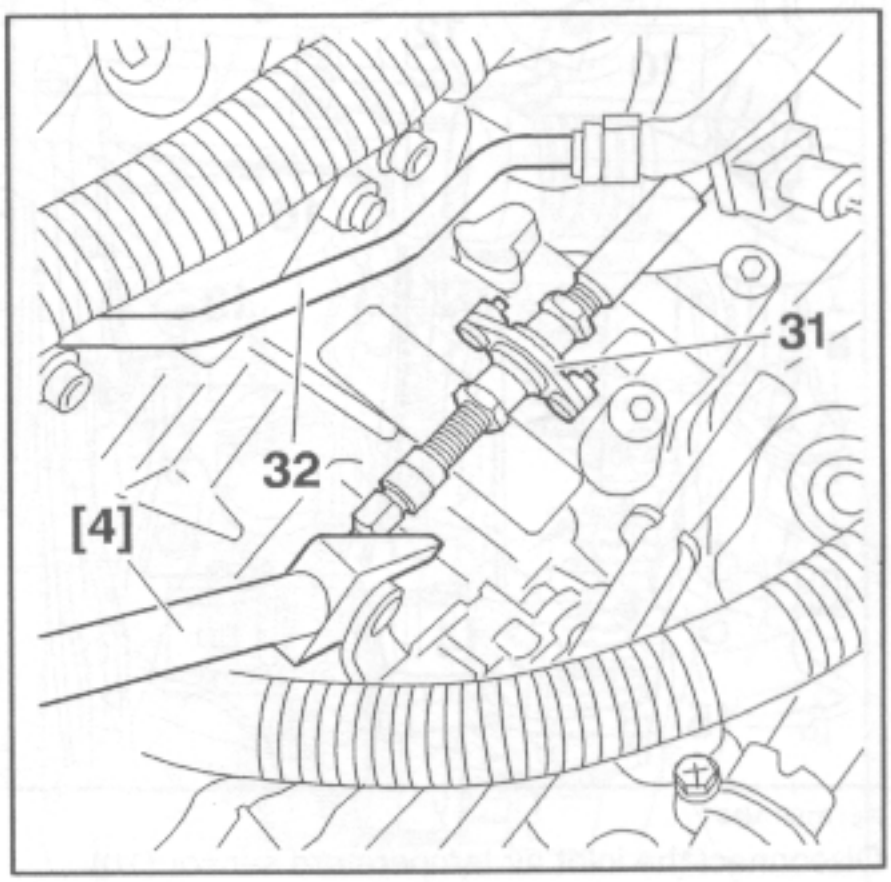


Fig : B2CP30HC

Uncouple the selector cable (31) ; by means of tool [4].

Unclip the gear selection sheath from its mounting.

WARNING : Do not twist the rod of the gear selection cable when uncoupling.

www.WorkshopManuals.co.uk

3.2 – Manual gearbox

Uncouple the control rods for gear selection ; by means of tool [5].

Remove the retaining clips of the gear selector cables.

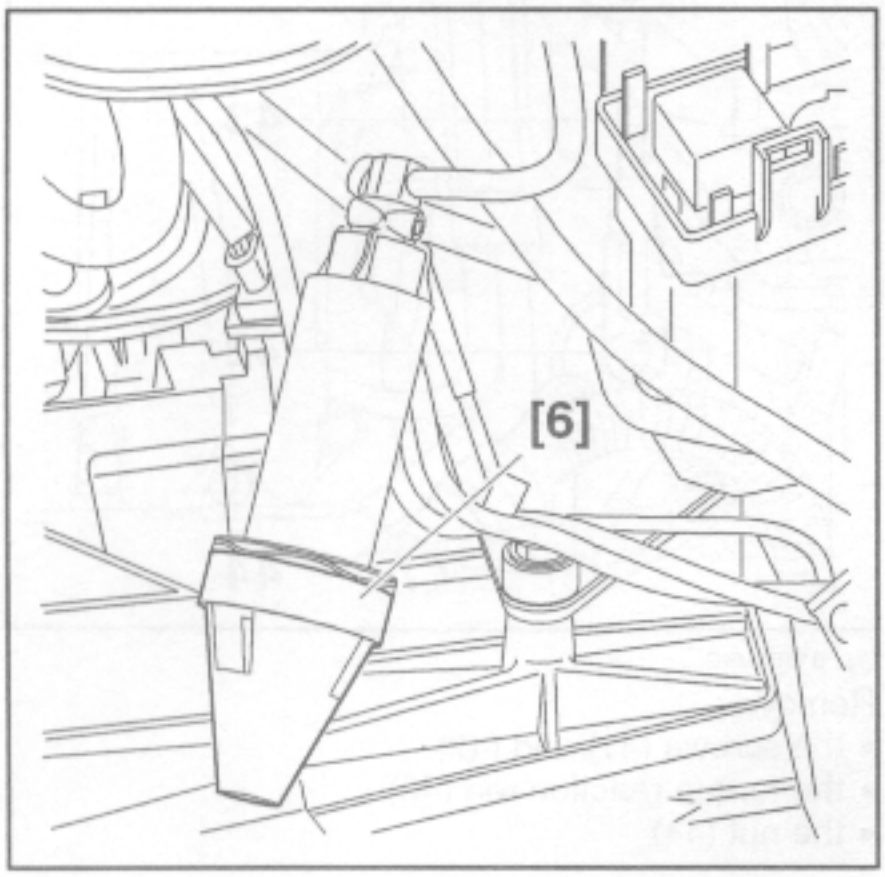


Fig : B1BP1MEC

Disconnect the clutch slave cylinder from the gearbox (by rotation).

Fit the tool [6] to the clutch slave cylinder.

WARNING : Do not drop the clutch push rod into the bell housing.

3.3 – Removing : (continued)

Uncouple the return pipe (32).

Remove :

- the LHM tank fluid pick–up unit
- the LHM tank

Put tool [3] into place.

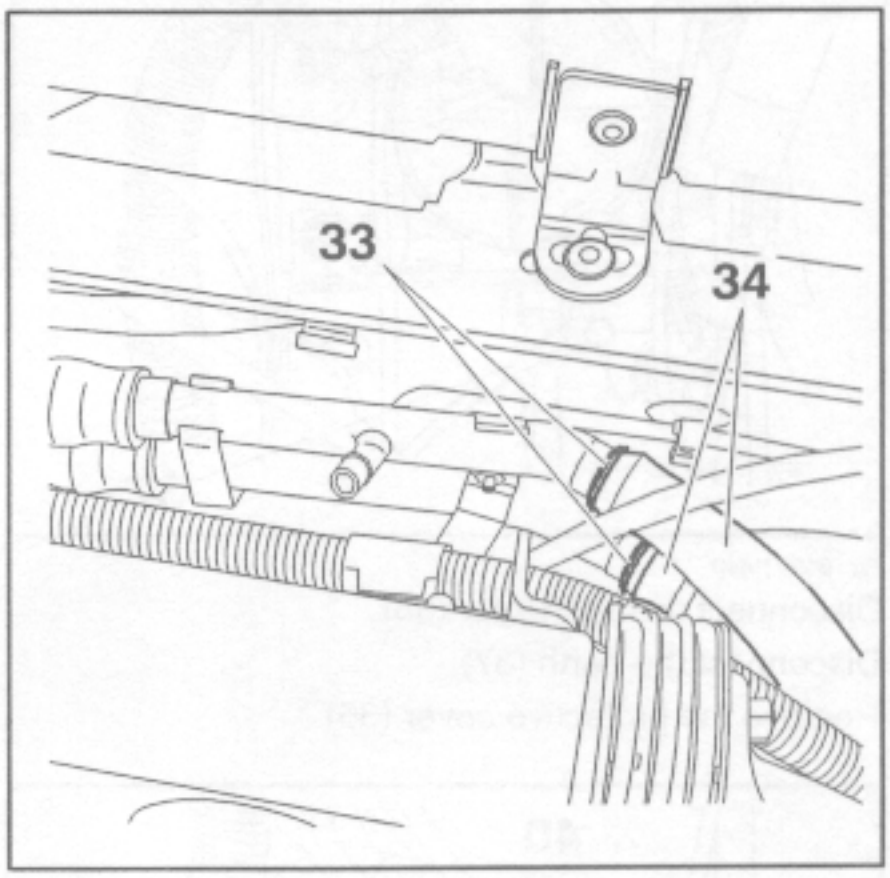


Fig : B1BP1MFC

Remove the clips (33).

Disconnect the hoses (34).

Remove the front panel (see the relevant operation).

Uncouple the 2 hoses from the radiator.

Remove the radiator.

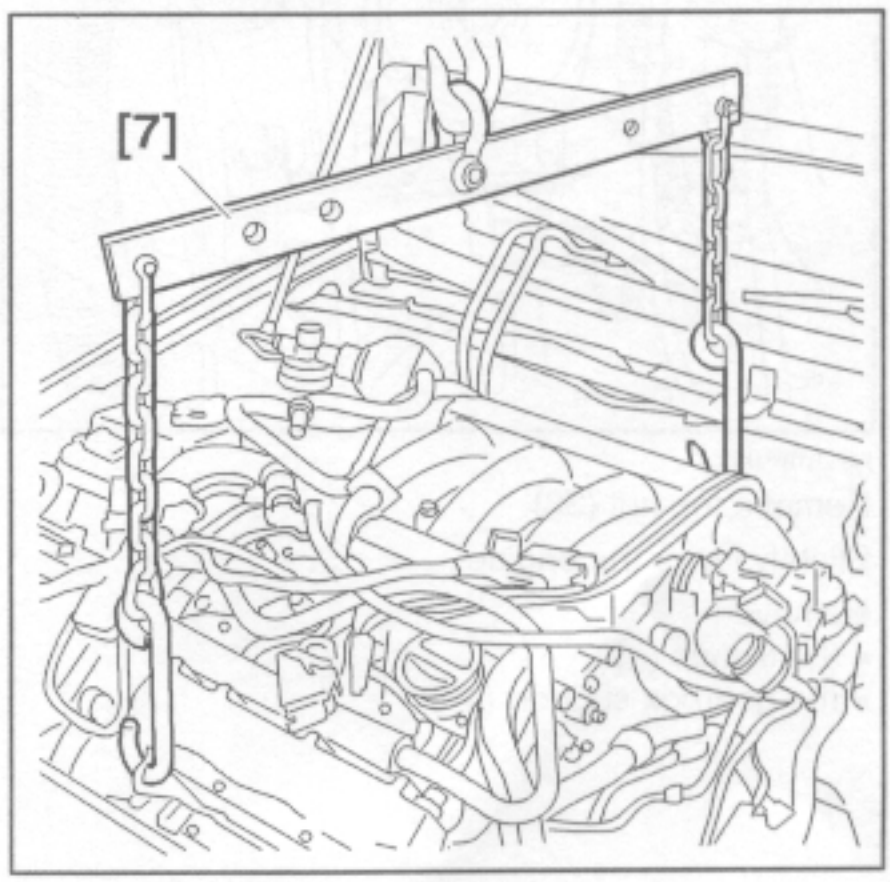


Fig : B1BP1MGC

Support the power unit ; by means of tool [7].

www.WorkshopManuals.co.uk

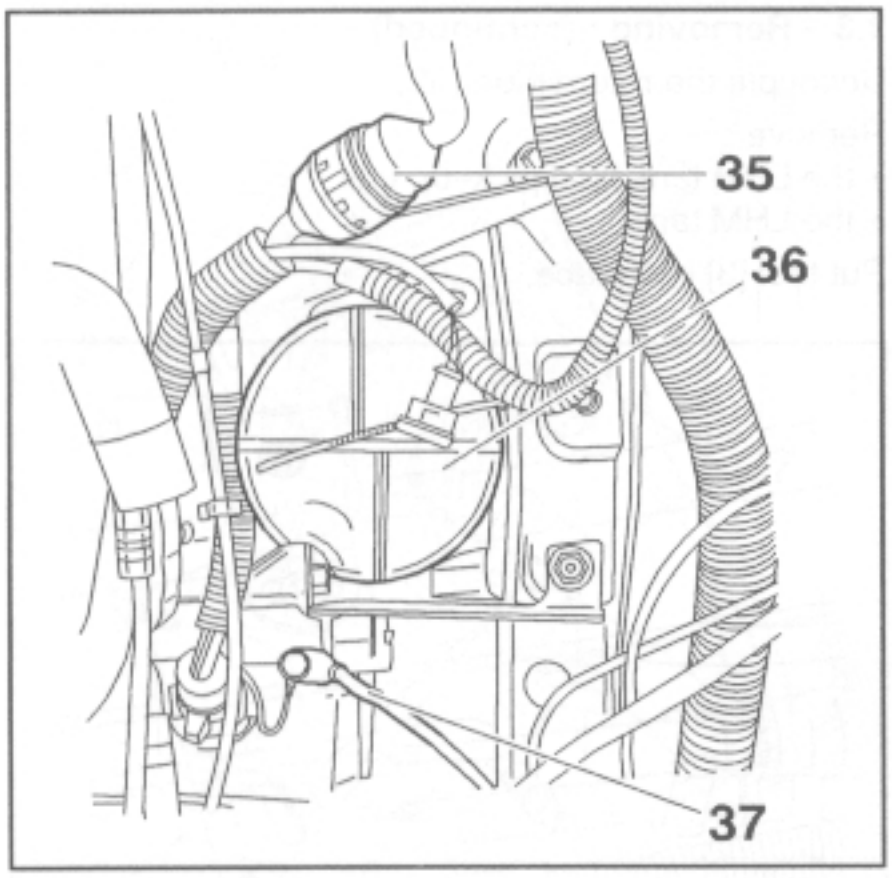


Fig : B1BP1MHC

Disconnect the connector (35).

Disconnect the earth (37).

Remove the protective cover (36).

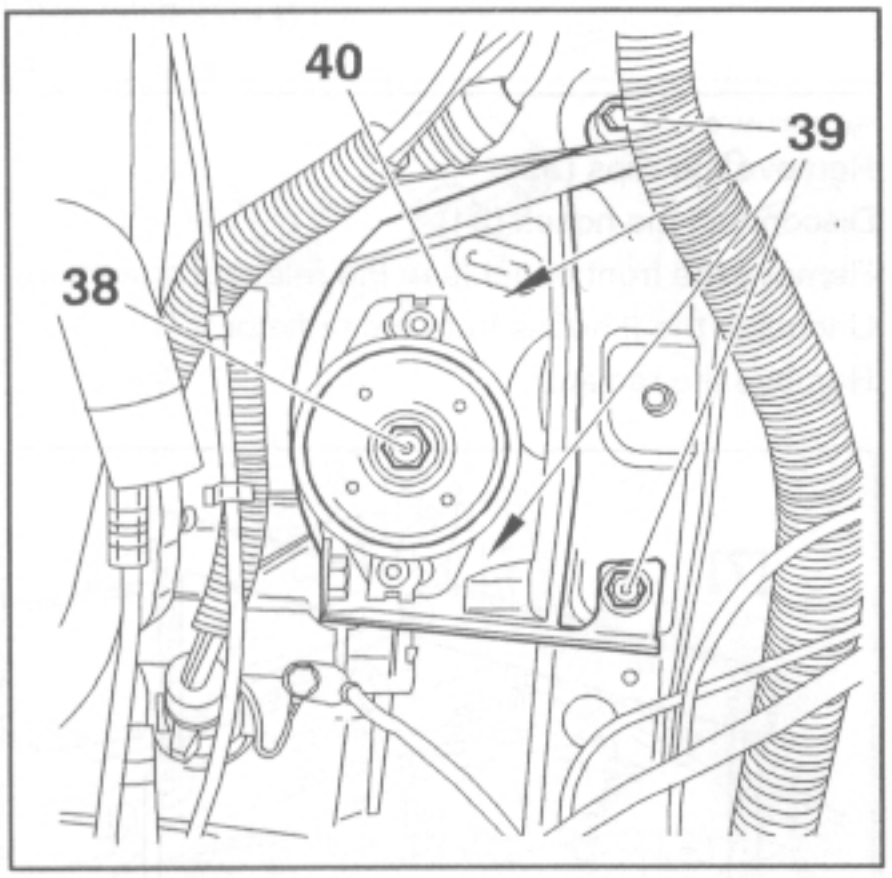


Fig : B1BP1MJC

Remove the nut (38).

Slightly lower the engine.

Remove :

- the fixings (39)
- the gearbox support (40)

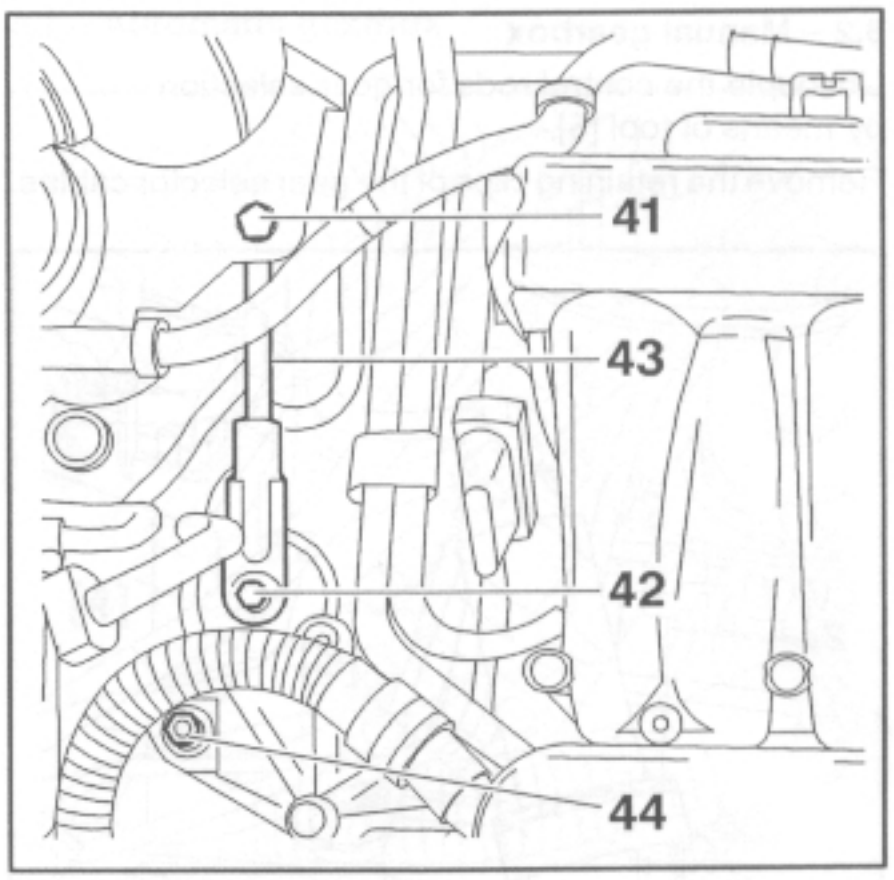


Fig : B1BP1MKC

Remove :

- the screws (41) and (42)
- the torque reaction rod (43)
- the nut (44)

WARNING : Take care not to damage the bulkhead.

NOTE : Carefully release the air conditioning condenser from the body.

Remove the power unit.

NOTE : This operation is carried out from above.

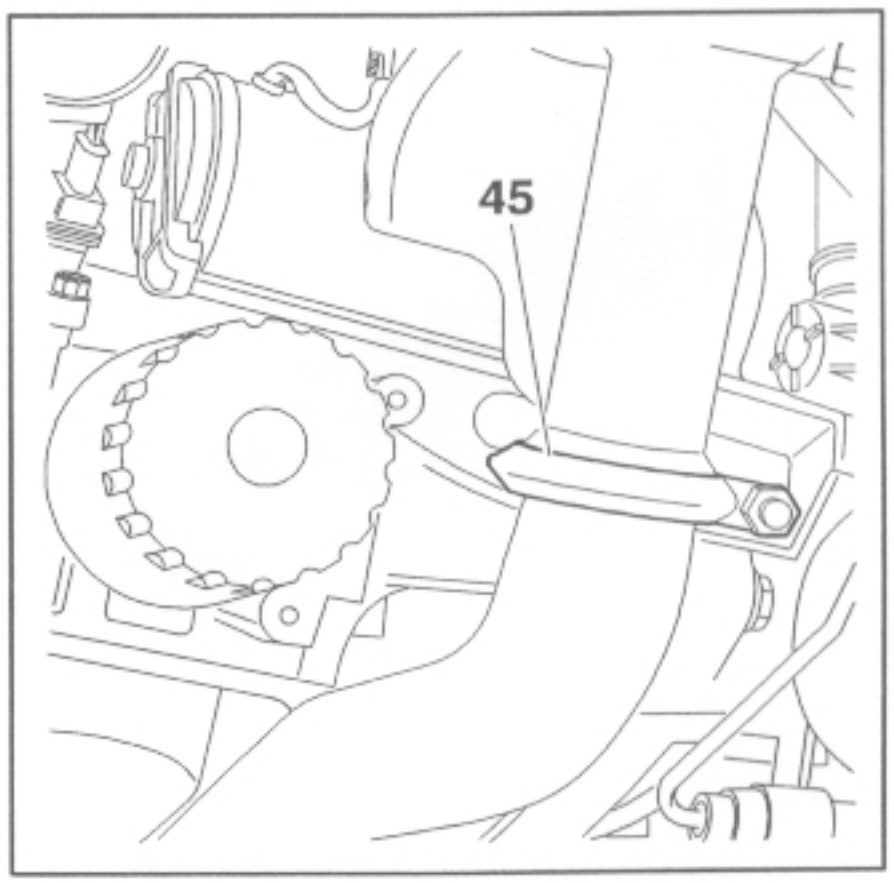


Fig : B1BP1MLC

Remove the exhaust clamp (45).

www.WorkshopManuals.co.uk

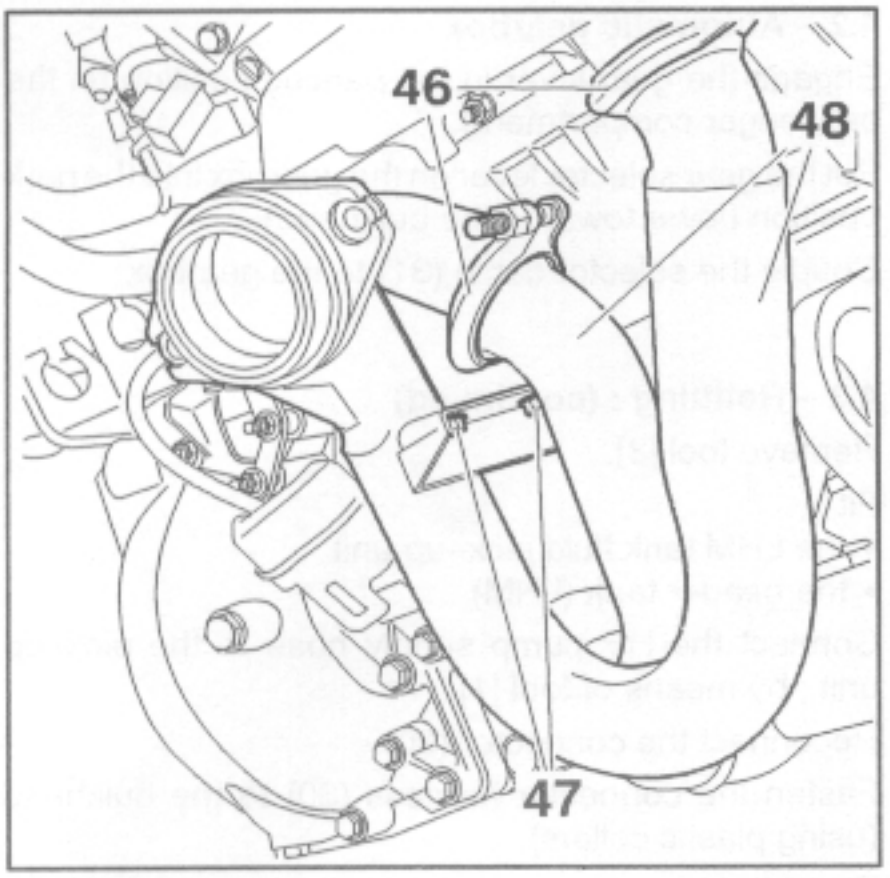


Fig : B1BP1MMC

Slacken the clamps (46).

Remove :
- the nuts (47)
- the exhaust pipes (48)

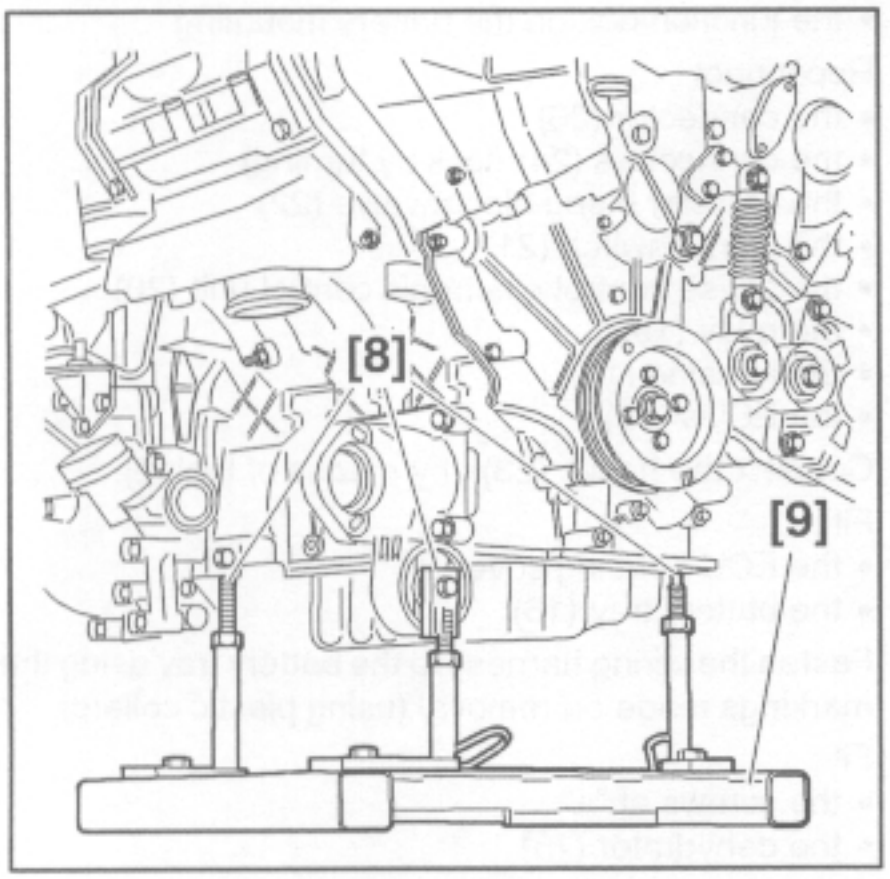


Fig : B1BP1MNC

Position the support shafts (8).

Place the engine/gearbox assembly on the lifting table [9].

4 – REFITTING

IMPERATIVE : Always fit new Nylstop nuts.

Fit (on the workshop crane) :
- the exhaust pipes (48)
- the nuts (47)
- the clamping collars (45), (46) ; tighten to 2,5 m.daN
- the gearbox mounting spacer ; coat with G7 grease : 3 grammes

Position the power unit near its fixing points by fitting the lower torque reaction rod.

Place a jack below the gearbox (insert a block of wood).

Using the jack, locate the stud of the gearbox in its support.

Fit :
- gearbox support (40)
- screws (39) ; tighten to 2,7 m.daN
- nut (38) ; tighten to 6,5 m.daN

Lower the power unit to the right level and refit the right engine support.

Fit :
- the nut (44) ; tighten to 4,5 m.daN
- the torque reaction rod (43)
- the screw (41) ; tighten to 5 m.daN
- the screw (42) ; tighten to 5 m.daN

Connect the return pipe (32).

Fit the air conditioning condenser.

www.WorkshopManuals.co.uk

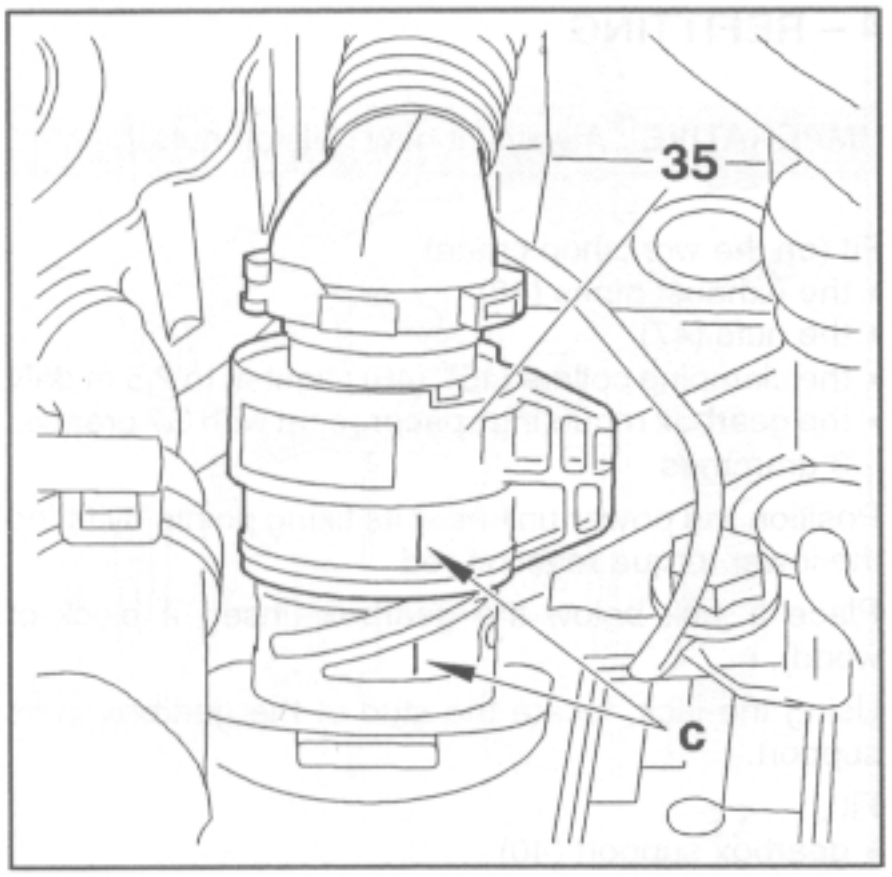


Fig : B1BP1MPC

NOTE : To facilitate locking the connector (35), align the two markings "c".

Reconnect the connector (35) (lock by turning).

Fit :
- the protector (36)
- the earth (37)

Couple the heater matrix hoses (34) (O ring seal).

Fit :
- the clips (33)
- the gear selector sheath retaining clip

4.1 – Manual gearbox

Remove tool [6].

Refit the clutch slave cylinder.

Couple up the control rods for gear selection.

Refit the gear selector cable retaining clips.

4.2 – Automatic gearbox

Engage the gear lever in the parking position (in the passenger compartment).

Put the gear selector lever on the gearbox into the park position (lever towards the bulkhead).

Couple the selector cable (31) to the gearbox.

4.3 – Refitting : (continued)

Remove tool [3].

Fit :
- the LHM tank fluid pick–up unit
- the header tank (LHM)

Connect the HP pump supply hose to the pick–up unit ; by means of tool [1].

Reconnect the connector (30).

Fasten the connector harness (30) to the bulkhead (using plastic collars).

Reconnect :
- connectors (28) and (29)
- the connector at "b"

Fit :
- the wires (25)
- the protective cover (27)
- the junction box on the battery mounting

Reconnect :
- the connector (26)
- the connectors (24) (lock by turning)
- the canister bleed electrovalve (22)
- the inertia switch (21)
- the cruise control electronic control unit (20)
- the relay (19)
- the housing (18)
- the ECUs (17)

Connect the hoses (23) ; by means of tool [2].

Fit :
- the ECU housing cover (4)
- the battery tray (16)

Fasten the wiring harness to the battery tray using the markings made on removal (using plastic collars).

Fit :
- the screws at "a"
- the dehydrator (15)

Refit the pipes fixing (1) on the cradle.

Couple the tubes (1).

Refit the front panel (see the relevant operation).

www.WorkshopManuals.co.uk

Recouple :
- the bonnet release cable (13)
- the pipe (11) ; by means of tool [1]
- the air sleeve (12)
- the fuel supply and return piping (9)
- flexible hose (6)
- the accelerator cable
- the housing (5)

Fit the cover (7).

Reconnect :
- the sensor (8) (pressure sensor integrated)
- inlet air temperature sensor (10)

Check that the cooling system is not leaking.

Fit :
- the air filter housing (3)
- the air conditioning compressor

Refit the exhaust ball joint ; tighten to 1 m.daN.

Fit :
- the auxiliary equipment drive belt (see the relevant operation)
- the driveshafts (see the relevant operation)
- the front splash shields

Reconnect the battery negative terminal.

Fill the cooling system (see the relevant operation).

Checking the levels.

IMPERATIVE : Start the engine, with the pressure regulator release screw loosened.

Bleed the cooling system (see the relevant operation).

www.WorkshopManuals.co.uk

REMOVING – REFITTING : AUXILIARY EQUIPMENT DRIVE BELT

NOTE : The auxiliary equipment drive belt is tensioned automatically by the dynamic tensioner.

1 – REMOVING

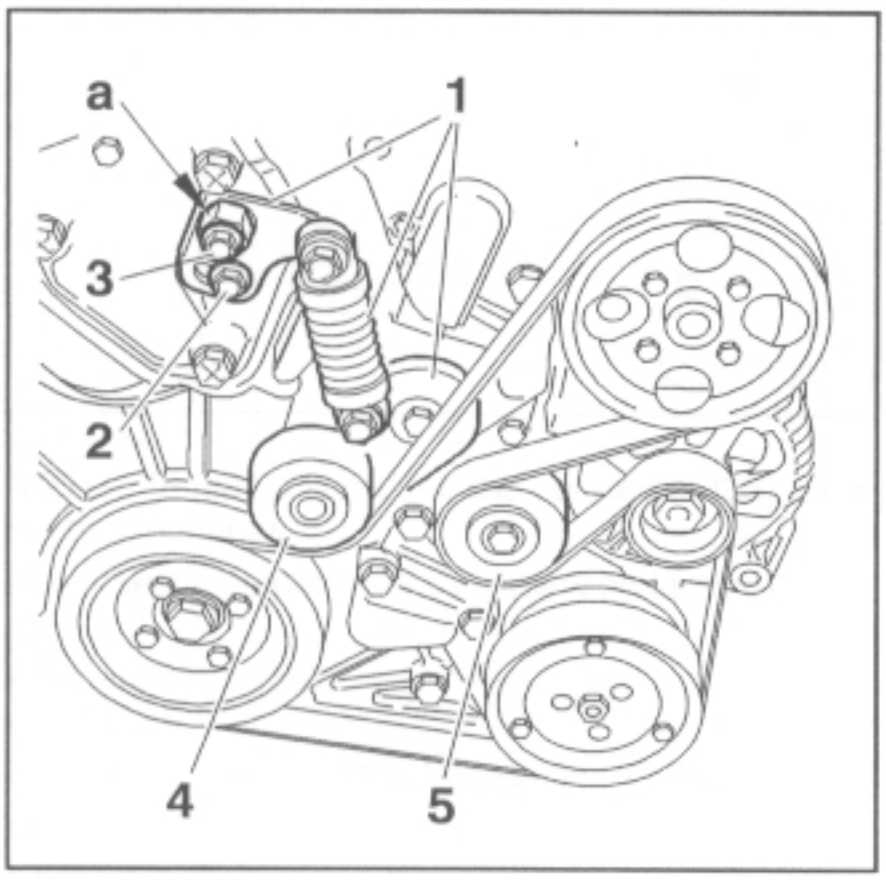


Fig : B1BP1EXC

Slacken bolt (3).

Keep the dynamic tensioner (1) under tension using the hexagon "a".

Disengage the shoulder of the bolt (2) from the oblong hole in the dynamic tensioner.

Release the dynamic tensioner (1) using the hexagon "a".

Remove the auxiliary equipment drive belt.

NOTE : Check that rollers (4) and (5) rotate freely (no tight spot).

2 – REFITTING

Reinstall the auxiliary equipment drive belt.

NOTE : Check that the belt is correctly located in the grooves of the various pulleys.

Bring the dynamic tensioner (1) into its operating position using the hexagon "a".

Tighten the bolt (2) to 2,5 m.daN.

Tighten the bolt (3) to 2,5 m.daN.

www.WorkshopManuals.co.uk

23rd DECEMBER 1994

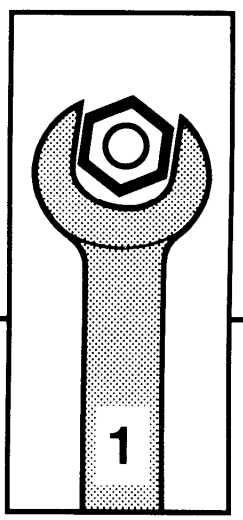
REF. 1 N° XM 112-00/1

ABONNEMENT GME

DK5 ENGINE

● CYLINDERHEAD

MAN 058931



GB

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

CYLINDERHEAD

CYLINDER HEAD TIGHTENING 3

REMOVING – REFITTING THE CYLINDER HEAD (IN THE VEHICLE) 5

REMOVING – REFITTING THE CAMSHAFT 11

www.WorkshopManuals.co.uk

CYLINDER HEAD TIGHTENING

1 – RECOMMENDED TOOLS

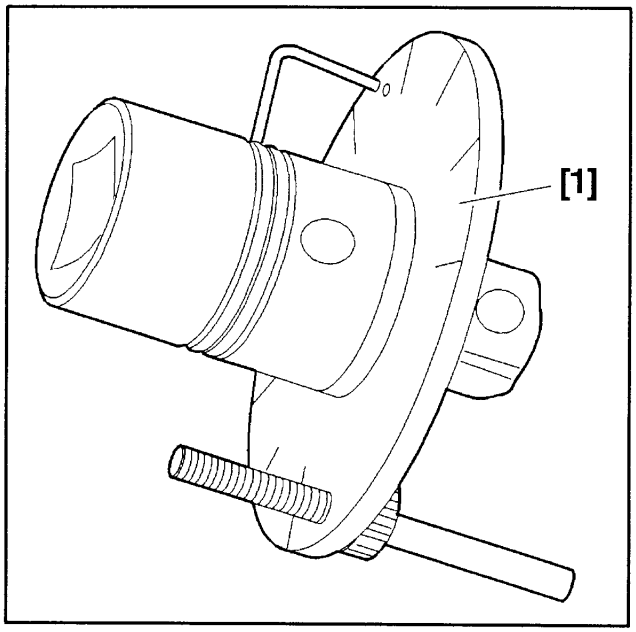


Fig : B1DP001C

[1] adaptor for angular tightening.

[1]	4069–T

2 – CHECKING CYLINDER HEAD BOLTS BEFORE RE–USE

IMPERATIVE : It is necessary to check the length of the cylinderhead bolts before re–using them.

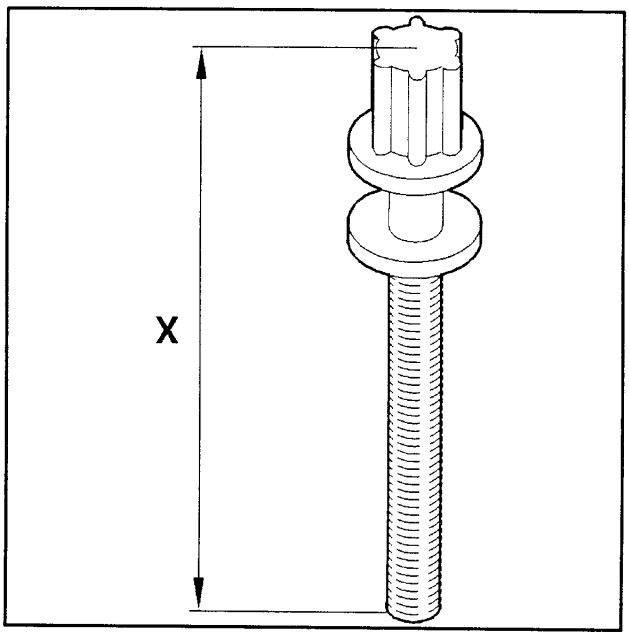


Fig : B1DP00QC

X overall length of the screw.

Engine code	screw Ø	X
DK5	10x150	162.5 mm
	12x150	153.5 mm

IMPERATIVE : Use new screws if their lengths exceed (X).

www.WorkshopManuals.co.uk

3 – PRIOR CONDITIONS

Clean the joint faces.

(do not use a sharp or abrasive tool).

Check the flatness of the cylinderhead (0,03 mm).

Clean out the threads of the cylinder block head screws with a tap (10x150 and 12x150 taps).

The cylinderhead gasket will be fitted dry.

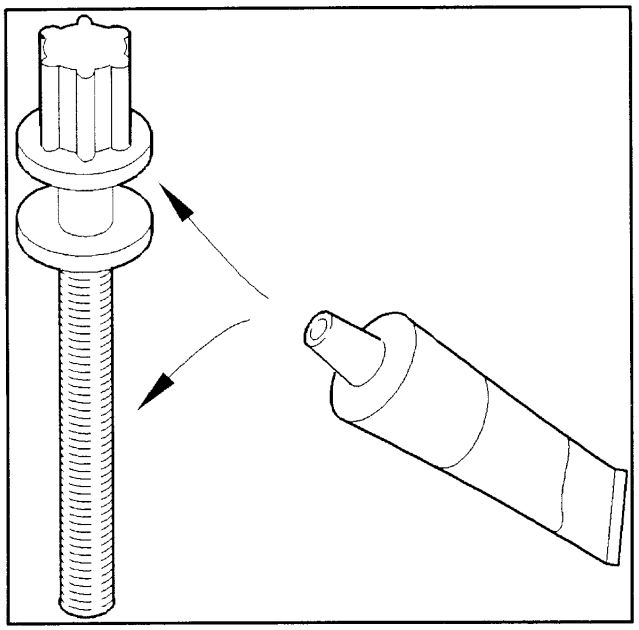


Fig : B1DP00RC

Smear the threads and contact faces under heads of the bolts with MOLYKOTE G. RAPID PLUS grease.

4 – CYLINDER HEAD TIGHTENING

IMPERATIVE : Tighten the cylinderhead bolts in the order indicated.

4.1 – Generality

This tightening method avoids the need to warm up the engine before the final tightening of the cylinderhead.

No retightening of the cylinderhead is required at the first service.

4.2 – Tightening sequence

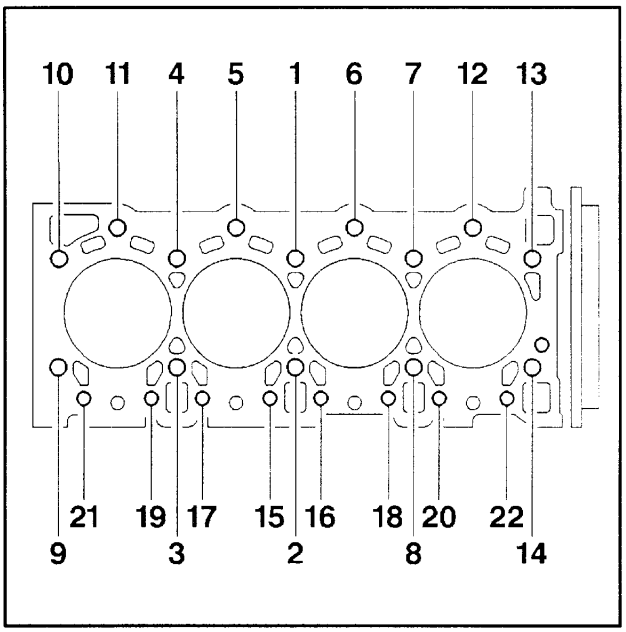


Fig : B1BP03XC

This operation is performed in 2 stages.

First stage :

- proceed bolt by bolt in the order shown (1 to 14)
- tightening of screws 12x150 to 5 mda.N
- proceed bolt by bolt in the order shown (15 to 22)
- tightening of screws 10x150 to 3.5 mda.N

Second stage :

- proceed bolt by bolt in the order shown (1 to 22)
- angular tightening of 120° ± 5° utilising tool [1]

www.WorkshopManuals.co.uk

REMOVING – REFITTING THE CYLINDER HEAD (IN THE VEHICLE)

1 – RECOMMENDED TOOLS

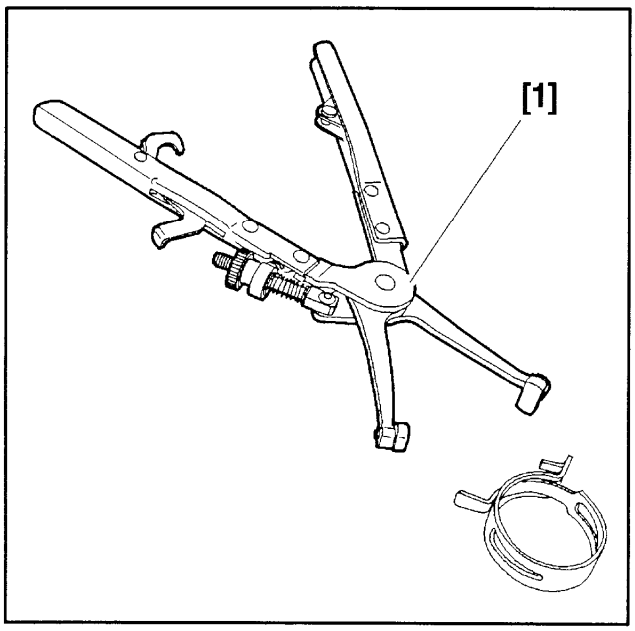


Fig : E5-P059C

[1] hose clamp (9029–T).

Additional tools :

- setting rod 5711–TQ (tool box 5711–T)
- spanner 5711–TR (tool box 5711–T)
- tensioning spanner 5711–TS (tool box 5711–T)
- flywheel setting rod 7014–TJ (tool box 7004–T)
- camshaft gear wheel setting rod 5711–TA (tool box 5711–T)
- injection pump setting rod 5711–TB (tool box 5711–T)
- belt tension measuring instrument 4099–T – 4122–T
- LHM reservoir/filter assembly cover 9004–T
- filling cylinder 4520–T
- set of levers to free cylinderhead 149–T (tool box 4067–T)

2 – REMOVAL

Raise and support the vehicle, with the wheels hanging free.

Unclip the battery trim cover :

- 2 attachment points, front side end
- 1 attachment point marked by an arrow towards the air filter (using a screwdriver)

Remove :

- the battery
- the protective plate under the engine
- the RH front road wheel
- the engine protection plate situated under the R.H. front wheelarch
- the R.H. front mud shield

Drain :

- the gearbox
- the cooling system (see the relevant operation)

Remove :

- the R.H. drive shaft (see the relevant operation)
- the turbocharger (see the relevant operation)

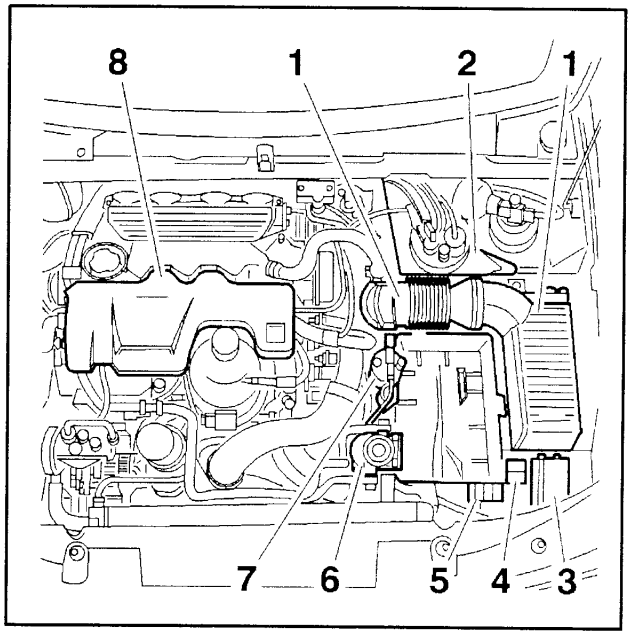


Fig : B1DP02GC

Remove :

- air filter (1) (together with its sleeve)
- the LHM fluid reservoir (2)

Fit the LHM reservoir/filter assembly cover.

Take out the fixing screws then push aside :

- fuse box (3)
- pre–heater control unit (5)
- diesel fuel priming pump (6)
- dehydrator reservoir (7)
- the battery tray

www.WorkshopManuals.co.uk

Unclip :
- the electrical harnesses from the battery tray
- fuse carrier boxes (4) from the cooling fans unit

Uncouple the bonnet opening cable.

Remove :
- the battery tray
- trim cover (6)
- the water pump drive belt (see the relevant operation)

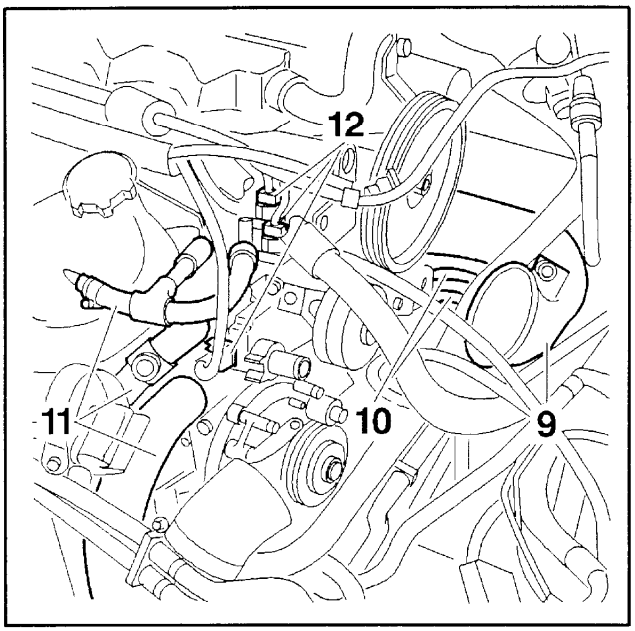


Fig : B1DP02HC

Remove sleeve (9).

Disconnect :
- the Diesel fuel inlet and return pipes (10) from the heater
- flexible hoses (11), utilising tool [1]
- connectors (12)

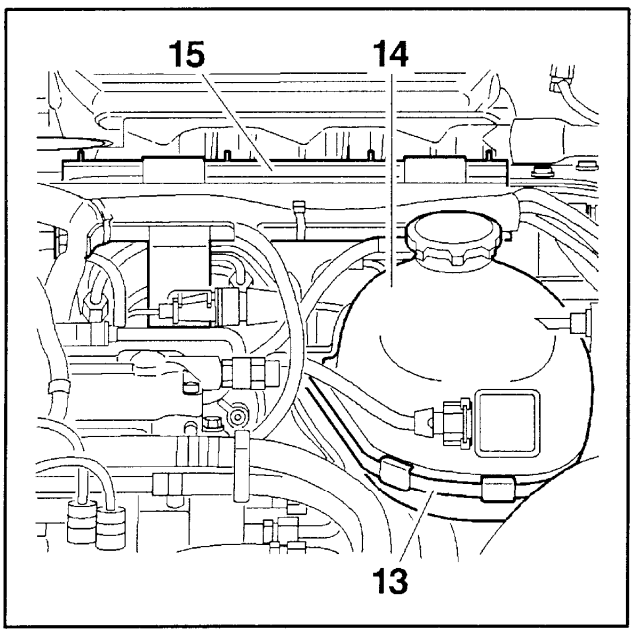


Fig : B1DP02IC

Take off clamping collar (13).

Disconnect the connection hose from the header tank, utilising tool [1].

Remove header tank (14).

Separate the wiring harnesses from the harness support (15).

Remove :
- wiring harness support (15)
- injector pipes

Disconnect :
- the injector return pipe
- the 2 heater plug feed pipes
- number 3 cylinder injector connector

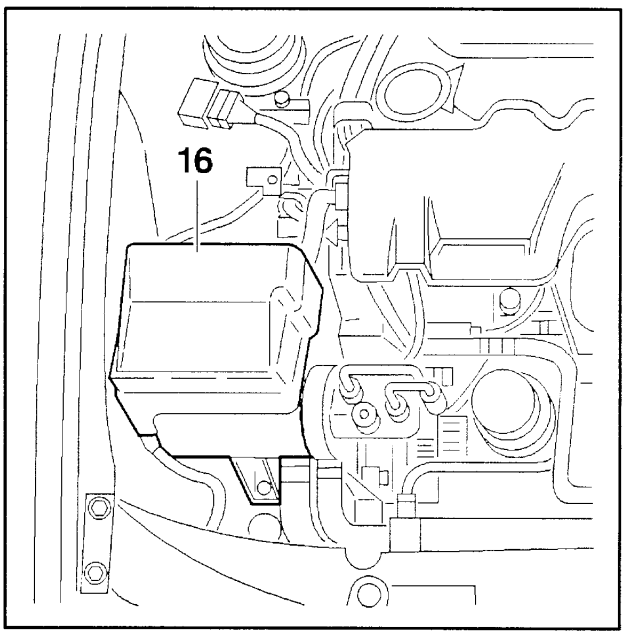


Fig : B1DP02JC

Withdraw the E.C.U.s from E.C.U. tray (16).

Remove E.C.U. tray (16).

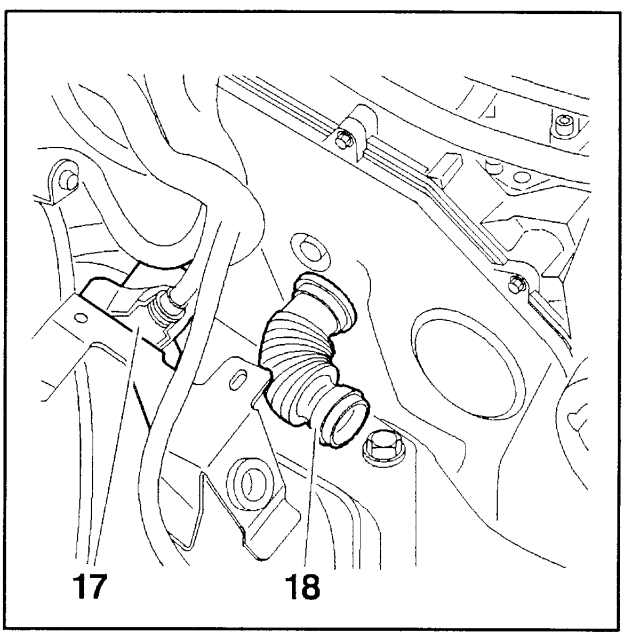


Fig : B1DP02KC

Remove :
- connector (17) trim cover
- connector (17) fixing screws

www.WorkshopManuals.co.uk

• sleeve (18) (rotate by 1/4 turn)

Unclip the electrical harnesses.

Remove the accessory drive belt (see the relevant operation).

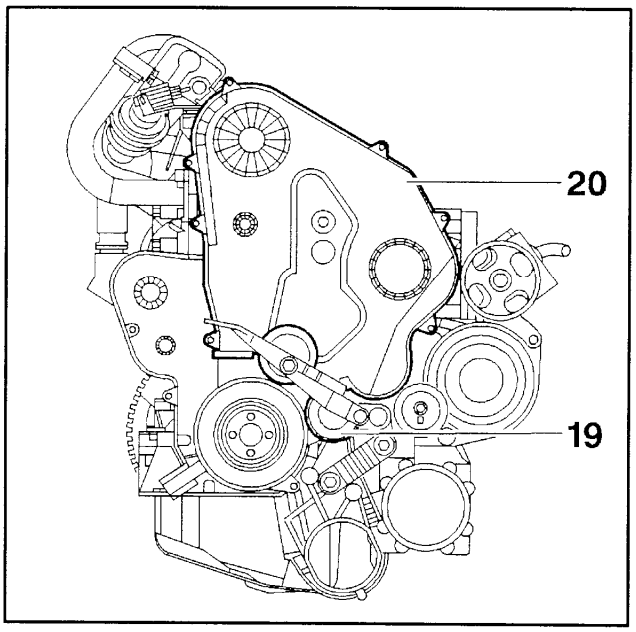


Fig : B1DP02LC

Remove :

• roller (19)
• upper timing cover (20)
• the timing belt (see the relevant operation)

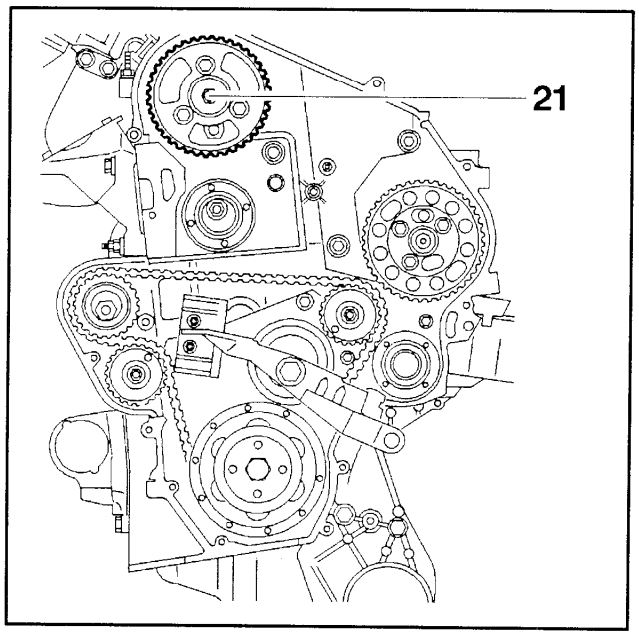


Fig : B1DP02MC

Remove camshaft gear wheel (21) (together with its fixing plate).

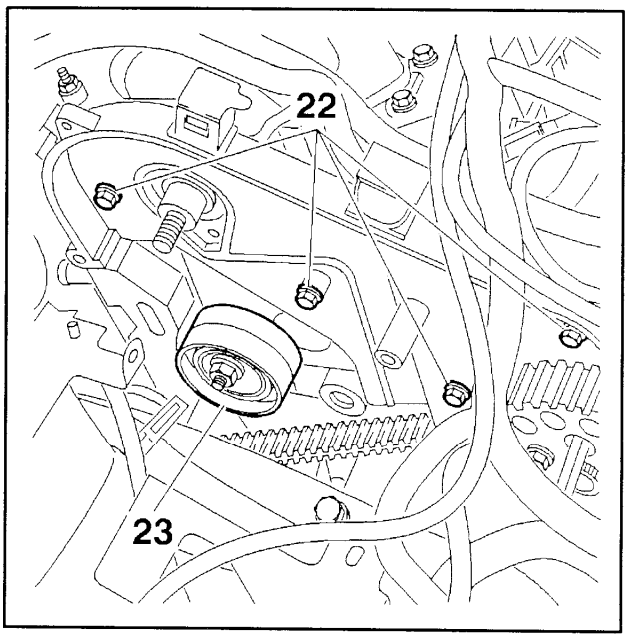


Fig : B1DP02NC

Remove :

• screws (22)
• roller tensioner (23)

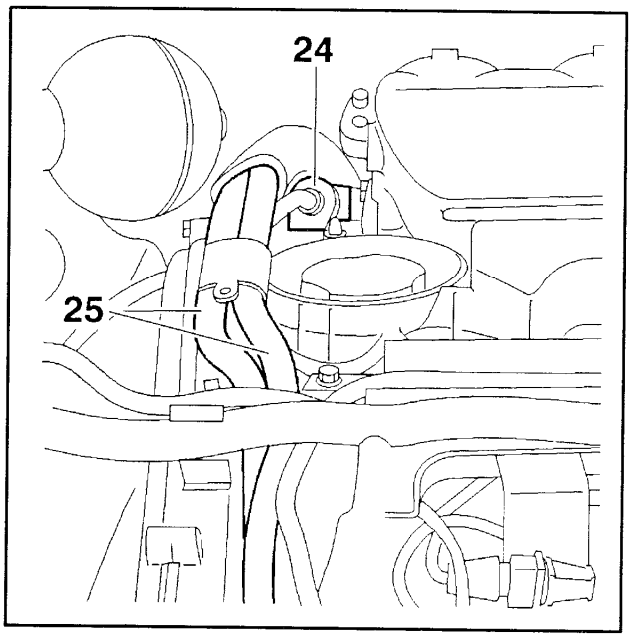


Fig : B1DP02PC

Remove electrovalve (24).

Unclip connecting hoses (25).

www.WorkshopManuals.co.uk

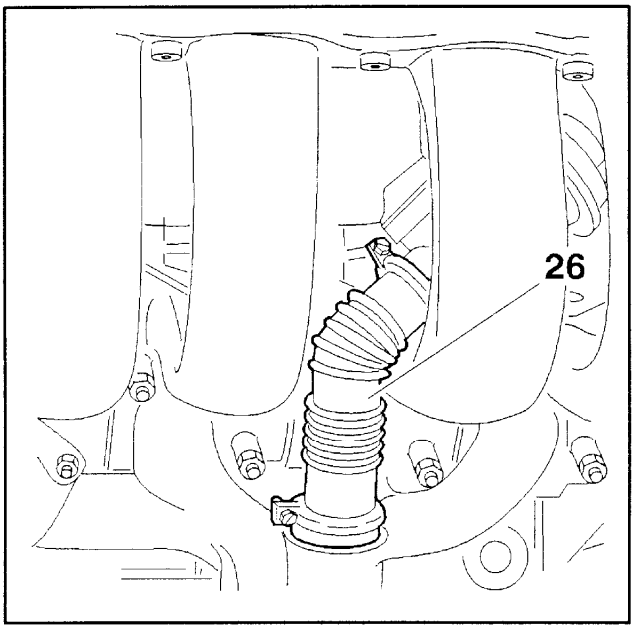


Fig : B1DP02QC

Disconnect metal sleeve (26).

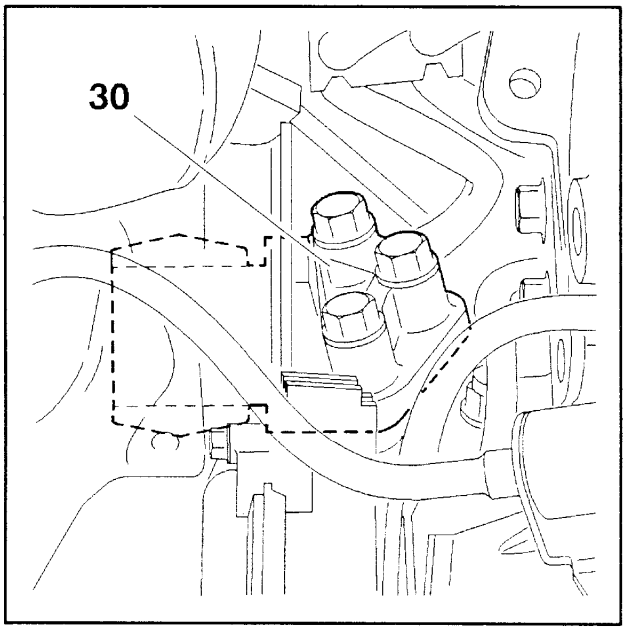


Fig : B1DP02SC

Remove :

- flexible retainer (30)
- the cylinder head bolts (22 screws)
- the cylinder head

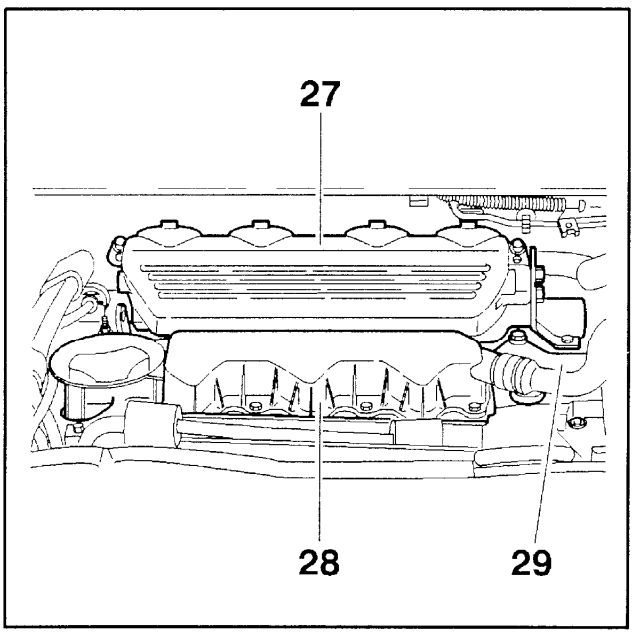


Fig : B1DP02RC

Remove :

- air reservoir (27) (together with its supports)
- the cylinder head cover (28)
- closing plate (29)

www.WorkshopManuals.co.uk

3 – REFITTING

3.1 – Generality

Clean the joint faces (do not use a sharp or abrasive tool).

Check the flatness of the cylinderhead : maximum permissible bow = 0.03 mm.

Clean out the threads of the cylinder block head screws with a tap (10x150 and 12x150 taps).

Blow compressed air in the various threads of the cylinder block.

IMPERATIVE : It is necessary to check the length of the cylinderhead bolts before re-using them.

Use new screws if their lengths exceed :
- 162.5 mm (screw Ø10)
- 153.5 mm (screw Ø12)

Brush the threads of the cylinder head bolts.

Reinstall the cylinderhead screws with the threads and under heads previously coated with grease MOLYKOTE G RAPID.

3.2 – Cylinder head

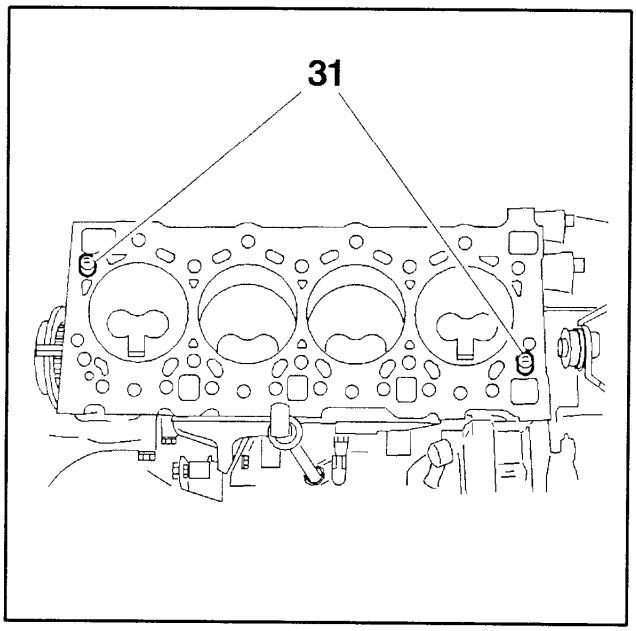


Fig : B1DP02TC

Check if dowels (31) are fitted.

Position :
- the cylinderhead gasket
- the cylinder head
- the cylinder head bolts

3.2.1 – Cylinder head tightening

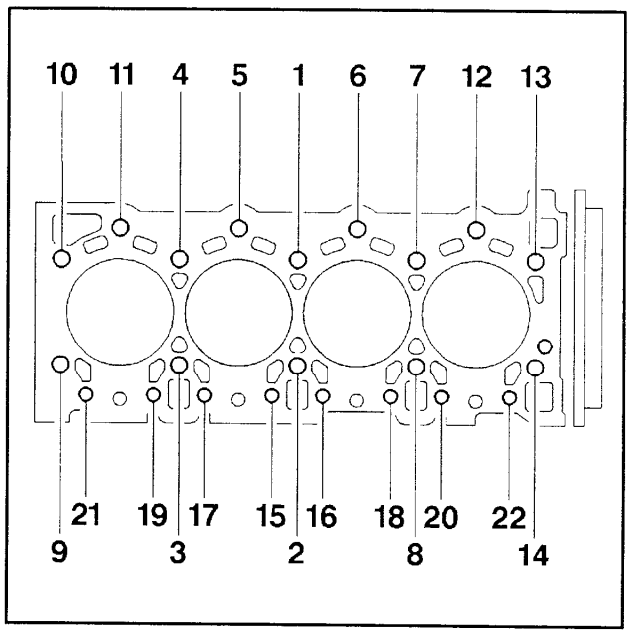


Fig : B1BP03XC

3.2.2 – First stage

Proceed bolt by bolt in the order shown (1 to 14).

Tightening torque of bolts (Ø12) : 5 m.daN.

Proceed bolt by bolt in the order shown (15 to 22).

Tightening torque of bolts (Ø10) : 3.5 m.daN.

3.2.3 – Second stage

Proceed bolt by bolt in the order shown (1 to 22).

Angular tightening of 120° ; tolerance : ± 5°.

NOTE : It is not necessary to retighten the cylinderhead after the engine warming up.

3.2.4 – Refitting (continued)

Fit :
- flexible retainer (30) ; tightening torque = 5 m.daN
- closing plate (29) ; tightening torque = 1.5 m.daN
- the cylinder head cover (28) ; tightening torque = 0.8 m.daN
- air reservoir (27) ; tightening torque = 0.8 m.daN

Reconnect metal sleeve (26).

Clip connecting hoses (25) in place.

Relocate :
- electrovalve (24)
- roller tensioner (23)
- screws (22)
- the camshaft gear wheel (together with its fixing plate) ; tightening torque = 4.3 m.daN
- the timing belt (see the relevant operation)

www.WorkshopManuals.co.uk

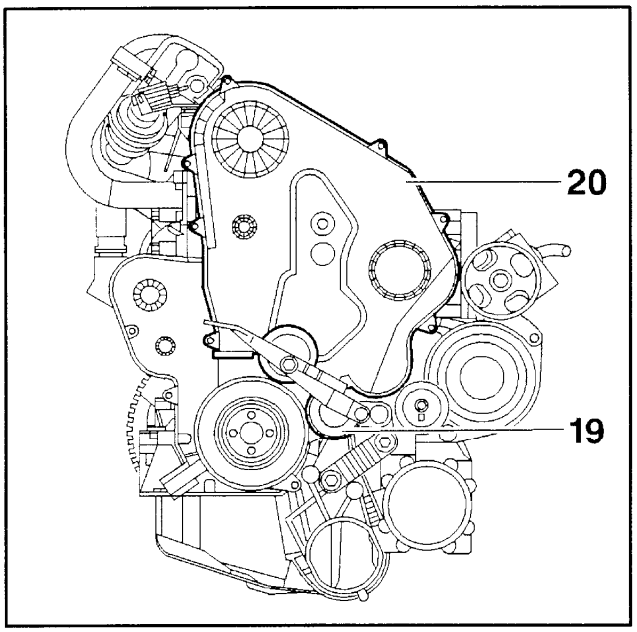


Fig : B1DP02LC

Refit :
- upper timing cover (20)
- roller (19)
- the auxiliary equipment drive belt (see the relevant operation)

Clip the electrical harnesses back.

Reinstall :
- sleeve (18) (rotate by 1/4 turn)
- connector (17)
- connector (17) trim cover
- E.C.U. tray (16)
- the E.C.U.s

Reconnect :
- the 2 heater plug feed pipes
- number 3 cylinder injector connector
- the injector return pipe

Relocate :
- injector pipes
- wiring harness support (15)
- clip the electrical harnesses to the harness support (15)

Reconnect the connecting hose to the header tank, utilising tool [1].

Fit :
- header tank (14)
- clamping collar (13)

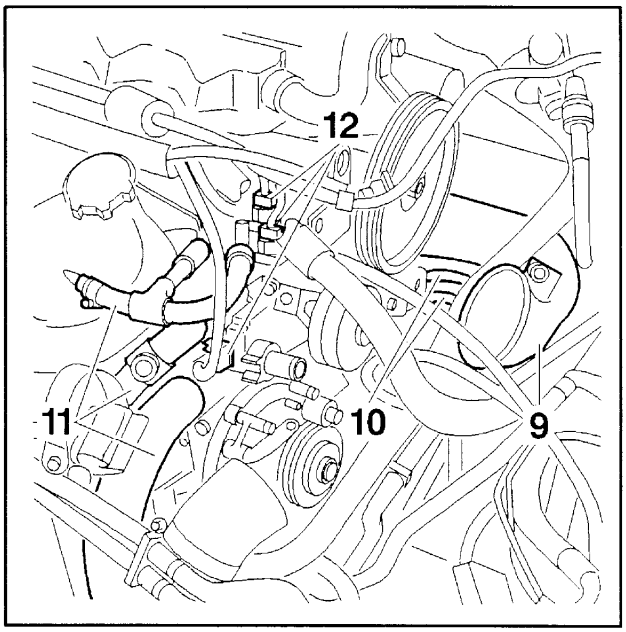


Fig : B1DP02HC

Reconnect :
- flexible hoses (11) ; use tools [1]
- connectors (12)
- the Diesel fuel inlet and return pipes (10) from the heater

Refit :
- sleeve (9)
- the water pump drive belt (see the relevant operation)
- trim cover (8)
- the battery tray

Couple up the bonnet release cable.

Clip in place :
- the wiring harnesses to the battery tray
- fuse box (4)

Relocate :
- the dehydrator reservoir
- diesel fuel priming pump (6)
- pre-heater control unit (5)
- fuse box (3)
- the LHM fluid reservoir (2)
- air filter (1) (together with its sleeve)
- the turbocharger (see the relevant operation)
- the R.H. drive shaft (see the relevant operation)

Refill the gearbox with oil and top up to level.

Reinstall :
- the R.H. front mud shield
- the engine protection plate situated under the R.H. front wheelarch
- the RH front road wheel
- the protective plate under the engine
- the battery

Clip in place the battery trim cover.

Return the vehicle to its wheels.

Fill and bleed the cooling system (see the relevant operation).

www.WorkshopManuals.co.uk

REMOVING – REFITTING THE CAMSHAFT

1 – RECOMMENDED TOOLS

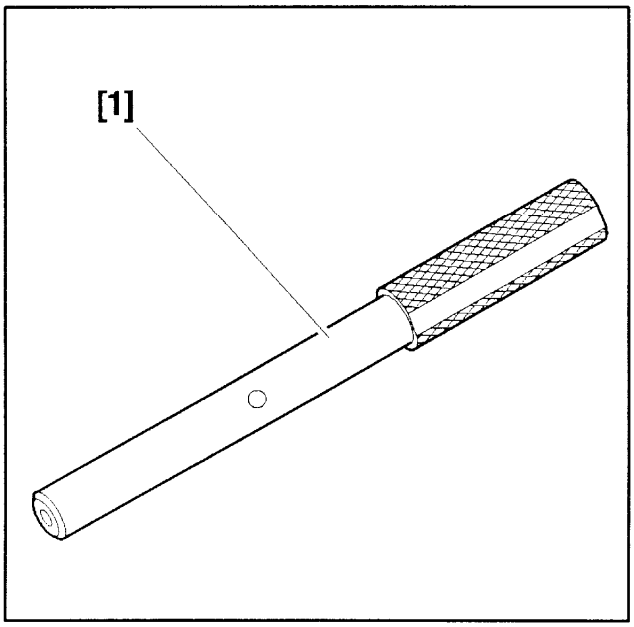


Fig : E5-P05XC

[1] camshaft gear wheel setting rod 5711-TA (tool box 5711-T).

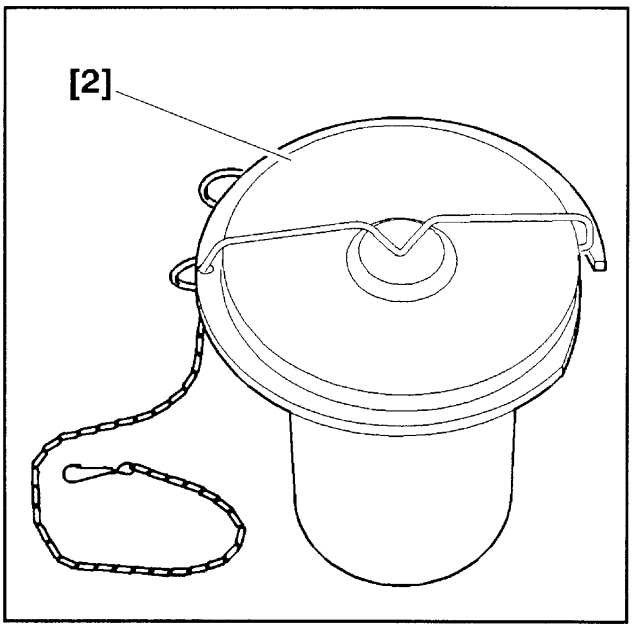


Fig : E5-P05YC

[2] LHM reservoir/filter assembly cover 9004-T.

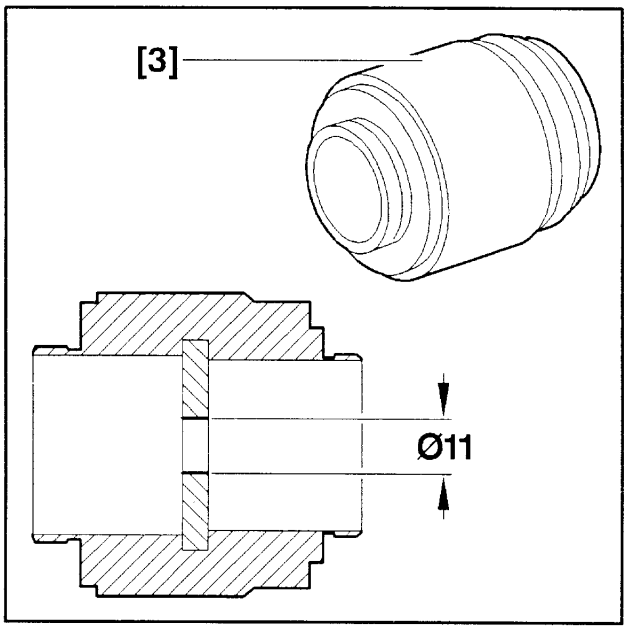


Fig : E5-P05ZC

[3] seal fitting drift – camshaft 5711-TF (tool box 5711-T).

Additional tools :

- setting rod 5711-TQ (tool box 5711-T)
- spanner 5711-TR (tool box 5711-T)
- tensioning spanner 5711-TS (tool box 5711-T)
- flywheel setting rod 7014-TJ (tool box 7004-T)
- injection pump setting rod 5711-TB (tool box 5711-T)
- belt tension measuring instrument : 4099-T or 4122-T

www.WorkshopManuals.co.uk

2 – REMOVAL

Lift and support the vehicle with the front wheels suspended.

Unclip the battery trim cover :
- 2 attachment points, front side end
- 1 attachment point marked by an arrow towards the air filter (using a screwdriver)

Remove :
- the battery
- the protective plate under the engine
- the RH front road wheel
- the engine protection plate situated under the R.H. front wheelarch
- the R.H. front mud shield

Drain the cooling system (see the relevant operation).

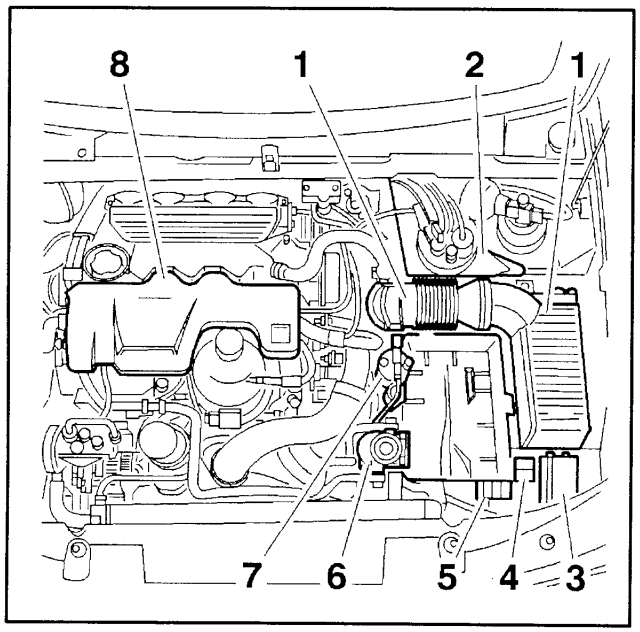


Fig : B1DP02GC

Remove :
- air filter (1) (together with its sleeve)
- the LHM fluid reservoir (2)

Locate the LHM reservoir/filter assembly cover [2].

Take out the fixing screws then push aside :
- fuse box (3)
- pre-heater control unit (5)
- diesel fuel priming pump (6)
- the dehydrator reservoir (7)
- the battery tray

Unclip :
- the electrical harnesses from the battery tray
- fuse carrier boxes (4) from the cooling fans unit

Uncouple the bonnet opening cable.

Remove :
- trim cover (8)
- the water pump drive belt (see the relevant operation)
- the camshaft pulley

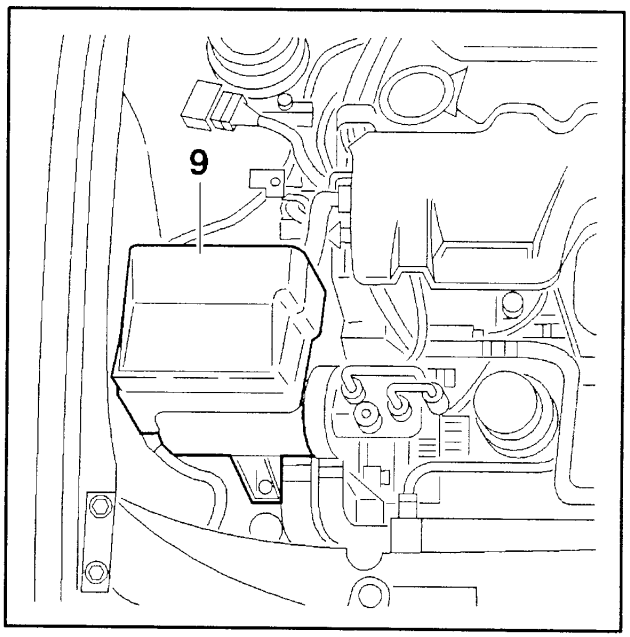


Fig : B1DP02VC

Withdraw the E.C.U.s from E.C.U. tray (9).

Remove E.C.U. tray (9).

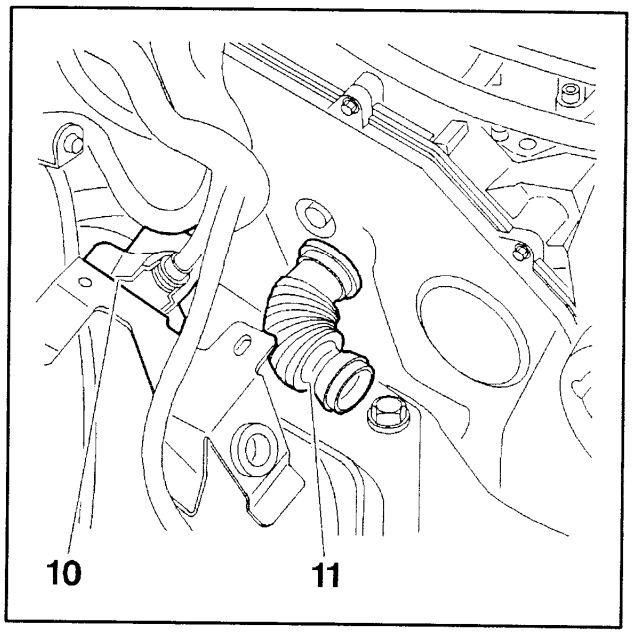


Fig : B1DP02WC

Remove :
- connector (10) trim cover
- connector (10) fixing screws
- sleeve (11) (rotate by 1/4 turn)

Unclip the electrical harnesses.

Remove the accessory drive belt (see the relevant operation).

www.WorkshopManuals.co.uk

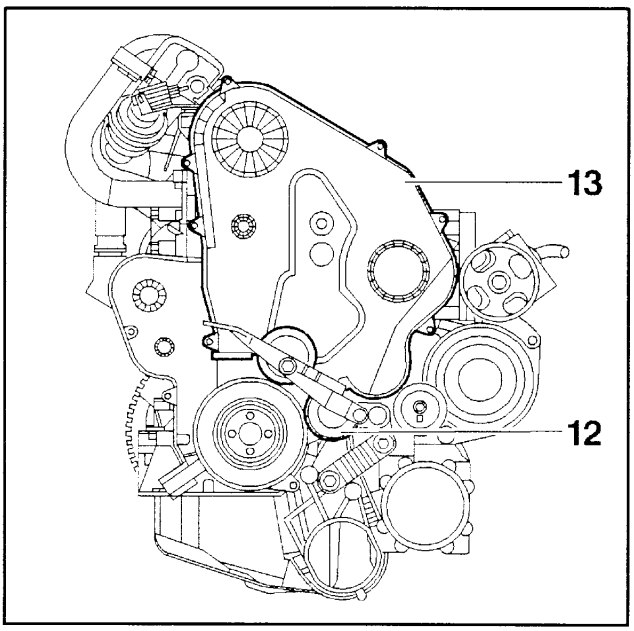


Fig : B1DP02XC

Remove :
- roller (12)
- upper timing cover (13)
- the timing belt : carry out a partial removal operation (see the relevant operation)

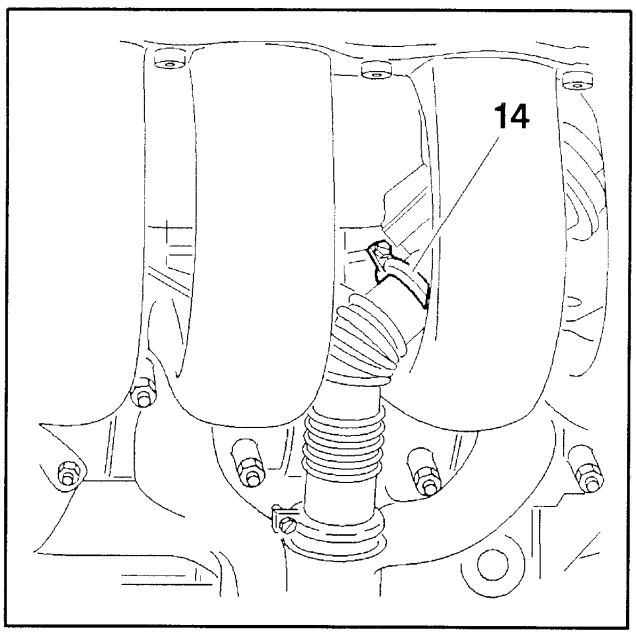


Fig : B1DP02YC

Take off clamping collar (14).

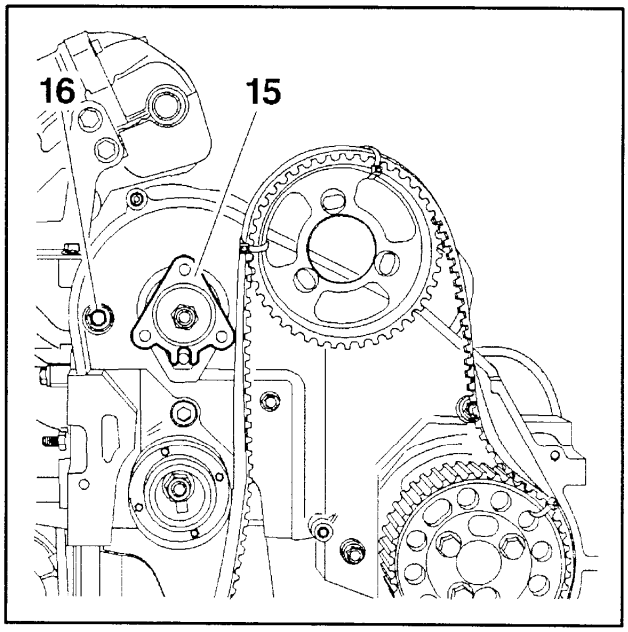


Fig : B1DP02ZC

Remove :
- camshaft plate (15)
- screw (16)

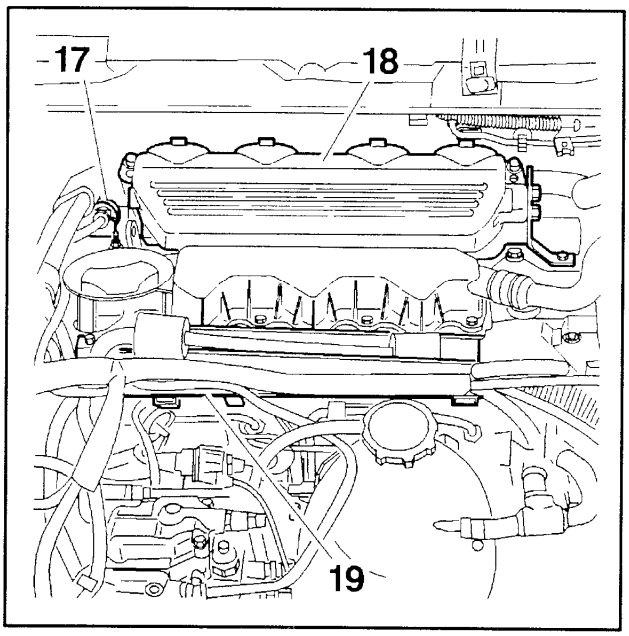


Fig : B1DP030C

Remove :
- electrovalve (17)
- air reservoir (18) (together with its supports)
- mounting bracket (19)

www.WorkshopManuals.co.uk

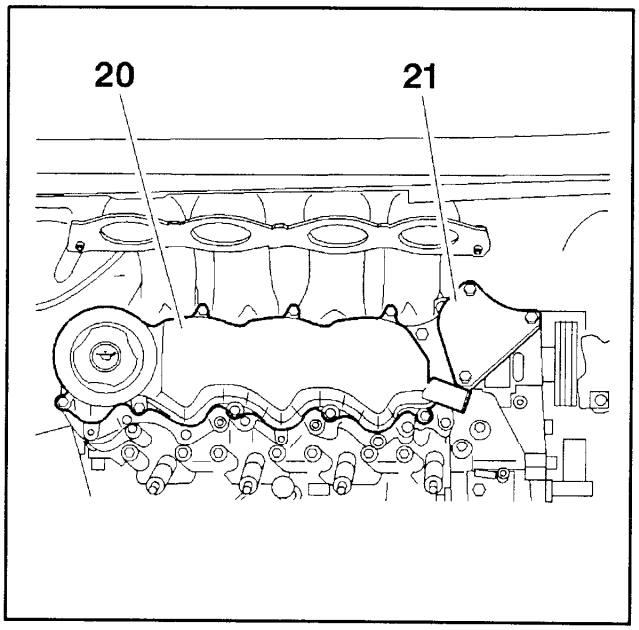


Fig : B1DP031C

Remove :
- the cylinder head cover (20)
- closing plate (21)

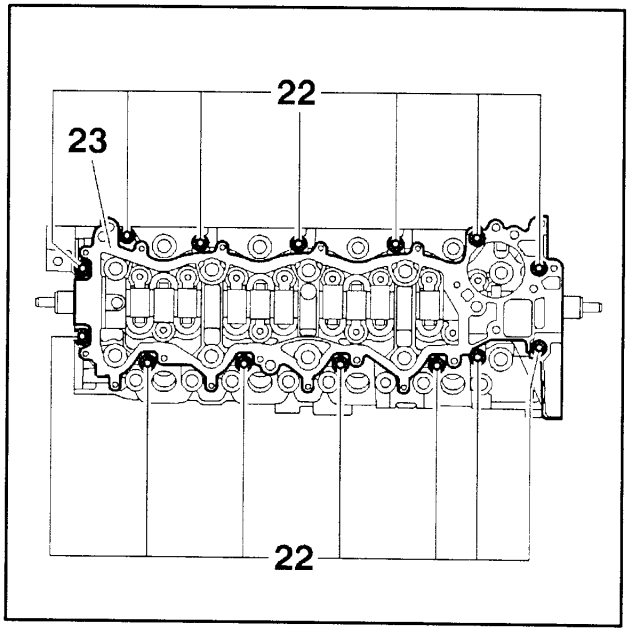


Fig : B1DP032C

Remove :
- screws (22)
- camshaft carrier bearing (23)

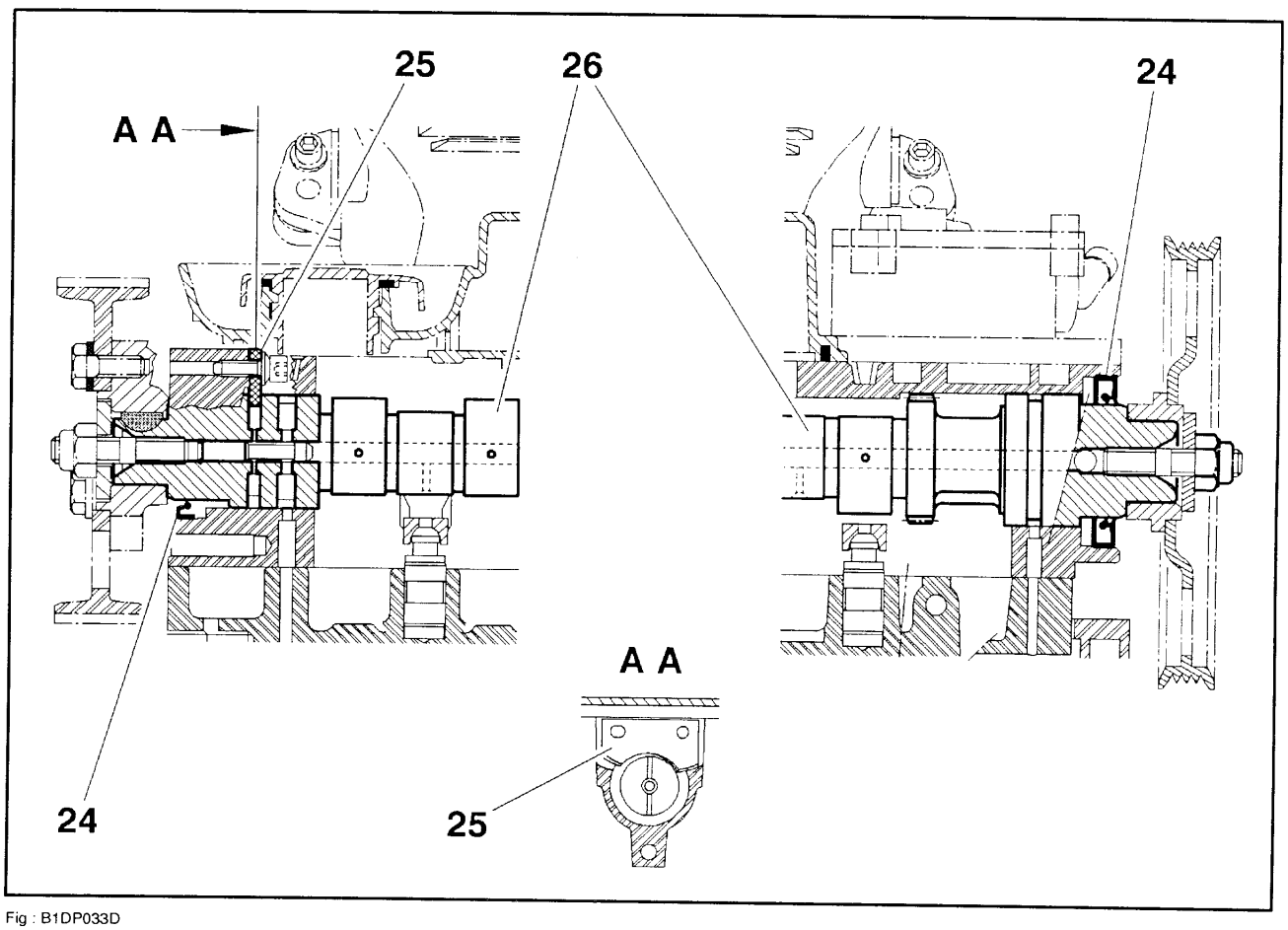


Fig : B1DP033D

Remove :
- lipped seals (24)
- flange (25)
- camshaft (26)

www.WorkshopManuals.co.uk

3 – REFITTING

Clean the joint faces.

Do not use abrasives or sharp tools on the joint faces.

Check the condition of the hydraulic push-rods.

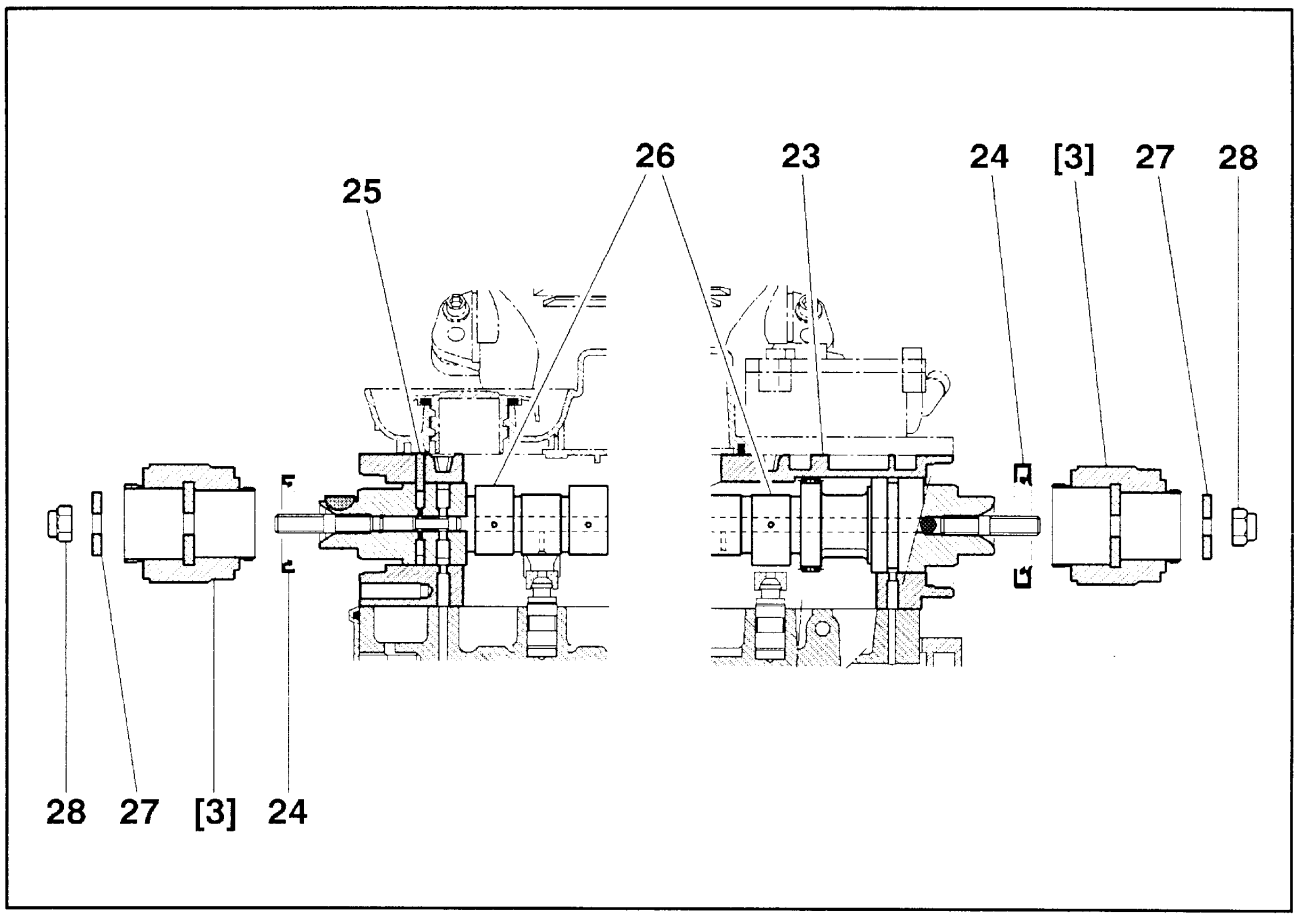


Fig : B1DP034D

Lubricate the camshaft with new engine oil.

Refit :

- camshaft (26) into camshaft carrier bearing (23)
- flange (25) ; tighten to 1,15 m.daN
  use new screws (pre-coated).

Oil the new lipped seals (24).

Put lipped seal [24] into place with tool (3).

Position :

- washer (27)
- nut (28)

Tighten nut (28) and stop when lipped seal (24) is located.

Remove :

- nut (28)
- washer (27)
- tool [3]

www.WorkshopManuals.co.uk

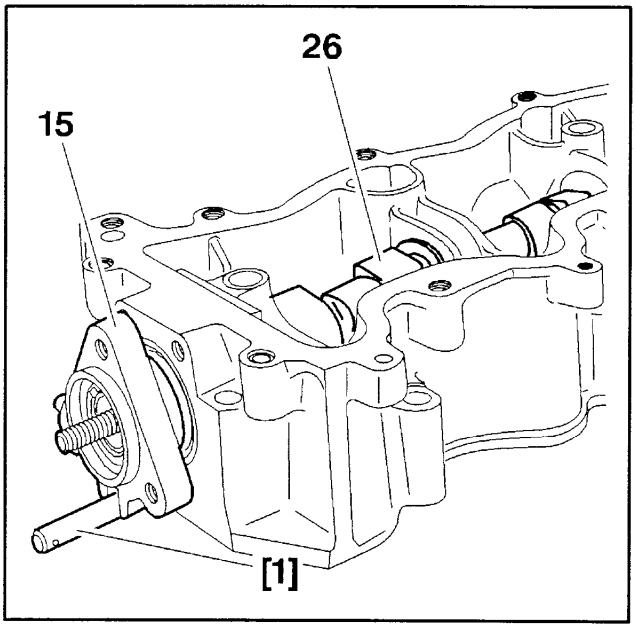


Fig : B1DP035C

Refit the camshaft plate (15).

Peg the camshaft with setting rod [1].

IMPERATIVE : Do not rotate camshaft (26) as the valves may be damaged when fitting the camshaft bearing to the cylinderhead.

Remove :
- tool [1]
- camshaft plate (15)

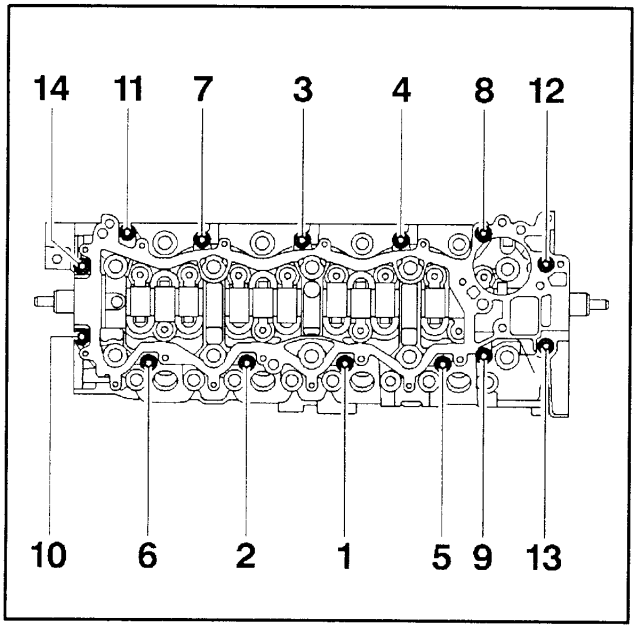


Fig : B1DP01JC

Smear the upper contact face of the cylinderhead with sealing product (E10).

Relocate :
- camshaft carrier bearing (23) (to the cylinderhead)
- screws (22) ; tighten to 2 m.daN, observing the correct tightening order : 1–14
- closing plate (21) ; tighten to 1.5 m.daN
- the cylinder head cover (20) ; tighten to 0.8 m.daN
- air reservoir (18) (together with its supports) (see operation : removing–refitting the EGR valve)
- electrovalve (17)
- mounting bracket (19)
- screw (16)
- camshaft plate (15) (new nut) ; tighten to 4.3 m.daN
- the timing belt : refit partly (see the relevant operation)
- upper timing cover (13)
- roller (12)
- sleeve (11) (rotate by 1/4 turn)
- connector (10)
- connector (10) trim cover

Clip the electrical harnesses back.

Install :
- the auxiliary equipment drive belt (see the relevant operation)
- E.C.U. tray (9)
- the E.C.U.s

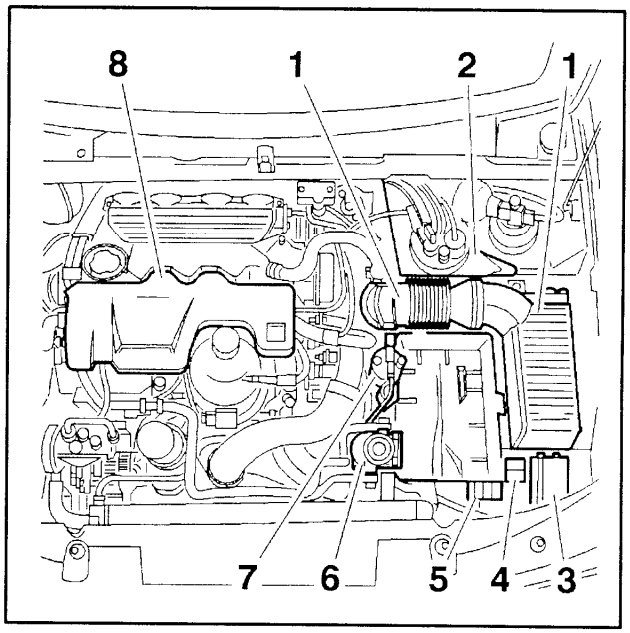


Fig : B1DP02GC

Fit :
- the camshaft pulley (new nut) ; tighten to 4.3 m.daN
- the water pump drive belt (see the relevant operation)
- trim cover (8)

Clip in place :
- the wiring harnesses to the battery tray
- fuse carrier boxes (4) from the cooling fans unit

www.WorkshopManuals.co.uk

Locate :
- the battery tray
- the bonnet release cable
- the dehydrator reservoir (7)
- diesel fuel priming pump (6)
- pre-heater control unit (5)
- fuse box (3)
- the LHM fluid reservoir (2)
- air filter (1)
- the R.H. front mud shield
- the engine protection plate situated under the R.H. front wheelarch
- the RH front road wheel
- the protective plate under the engine
- the battery

Clip in place the battery trim cover.

Return the vehicle to its wheels.

Fill and bleed the cooling system (see the relevant operation).

www.WorkshopManuals.co.uk

31st MAY 1995

ABONNEMENT GME

REF. 1 No XM 112-00/2

XU 10J4R ENGINE

● CYLINDERHEAD

MAN 058931

GB

1

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

CYLINDERHEAD

TIGHTENING : THE CYLINDER HEAD 3

REMOVING – REFITTING : THE CYLINDER HEAD (IN THE VEHICLE) 5

REMOVING – REFITTING : THE CAMSHAFTS 12

www.WorkshopManuals.co.uk

TIGHTENING : THE CYLINDER HEAD

1 – RECOMMENDED TOOL

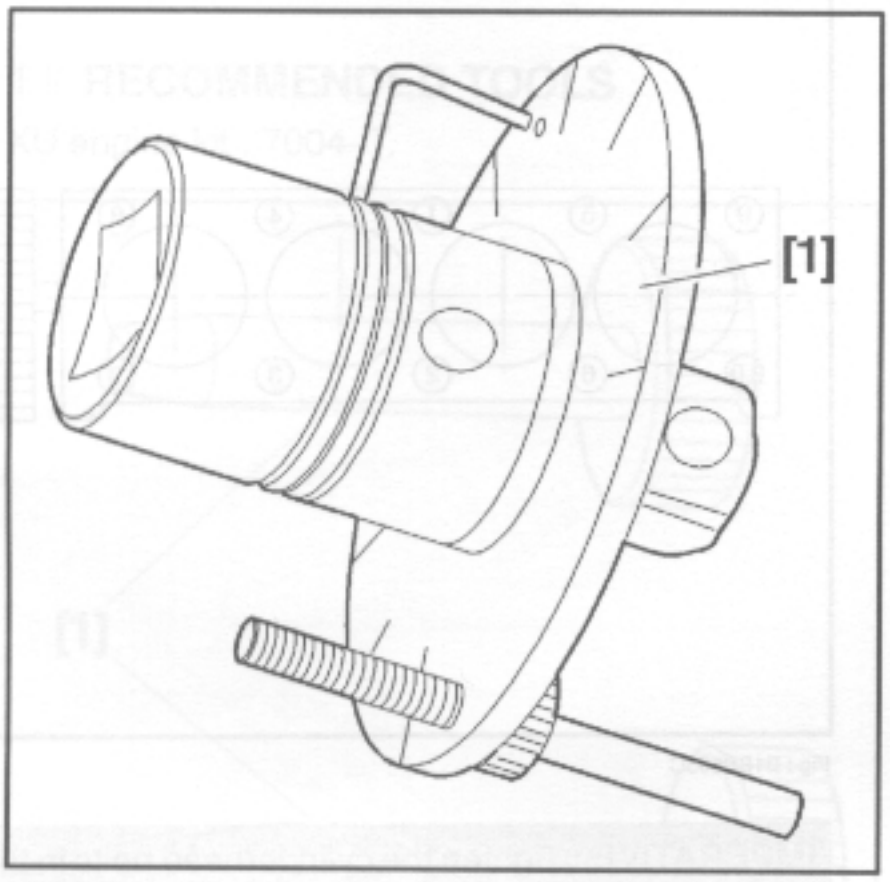


Fig : B1DP001C

[1] adaptor for angular tightening 4069–T.

2 – CHECKING CYLINDER HEAD BOLTS BEFORE RE–USE

IMPERATIVE : It is necessary to check the length of the cylinderhead bolts before re–using them.

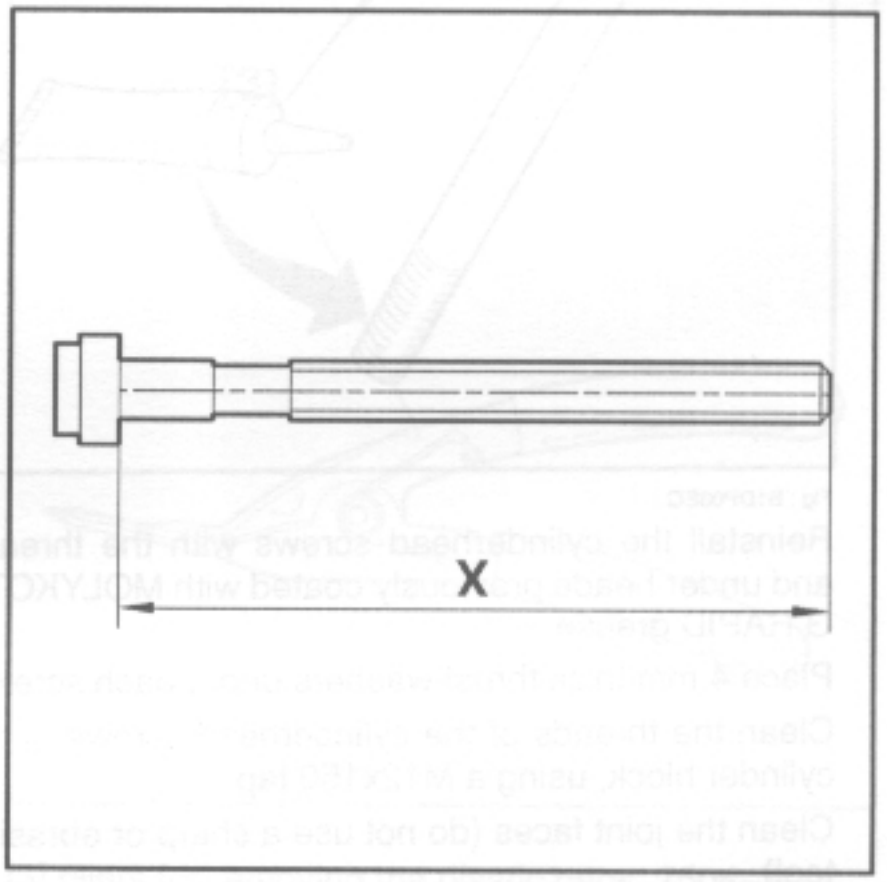


Fig : B1DP039C

X = length under head.

Length X between 110 and 112 mm : the cylinderhead screws can be re–used.

If their lengths exceed 112 mm, use new screws.

www.WorkshopManuals.co.uk

3 – PRIOR CONDITIONS

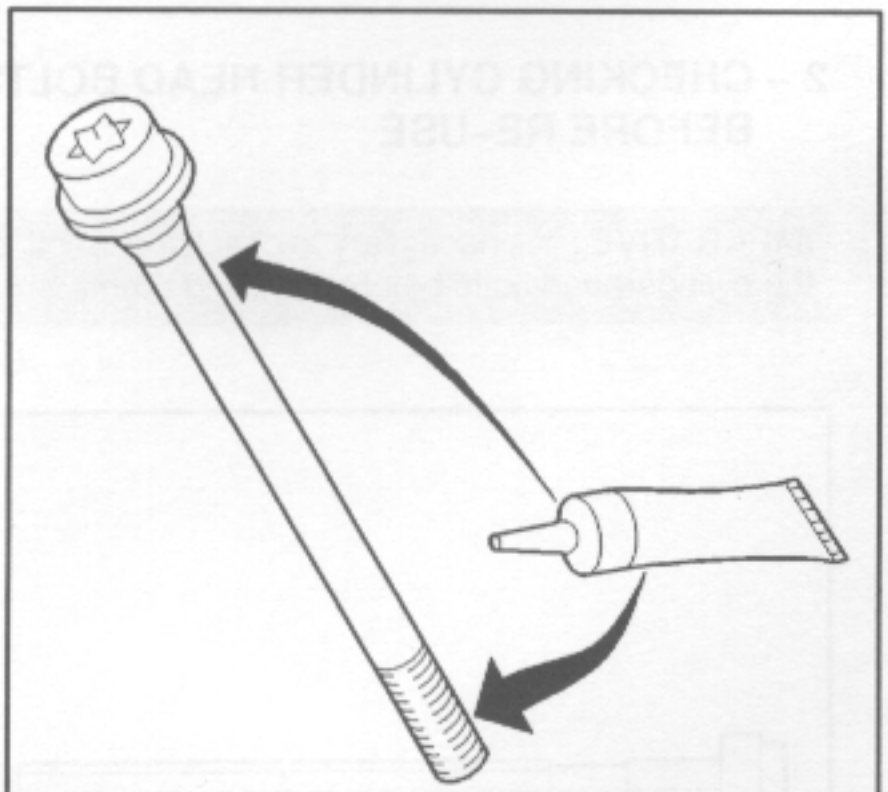


Fig : B1DP03EC

Reinstall the cylinderhead screws with the threads and under heads previously coated with MOLYKOTE G RAPID grease.

Place 4 mm thick thrust washers under each screw.

Clean the threads of the cylinderhead screws in the cylinder block, using a M12x150 tap.

Clean the joint faces (do not use a sharp or abrasive tool).

Degrease the channels of the cylinderhead screws.

Check the flatness of the cylinderhead : maximum permissible bow = 0.05 mm.

The cylinderhead gasket is dry fitted ; the identification tab should be placed on the flywheel side.

4 – CYLINDER HEAD TIGHTENING

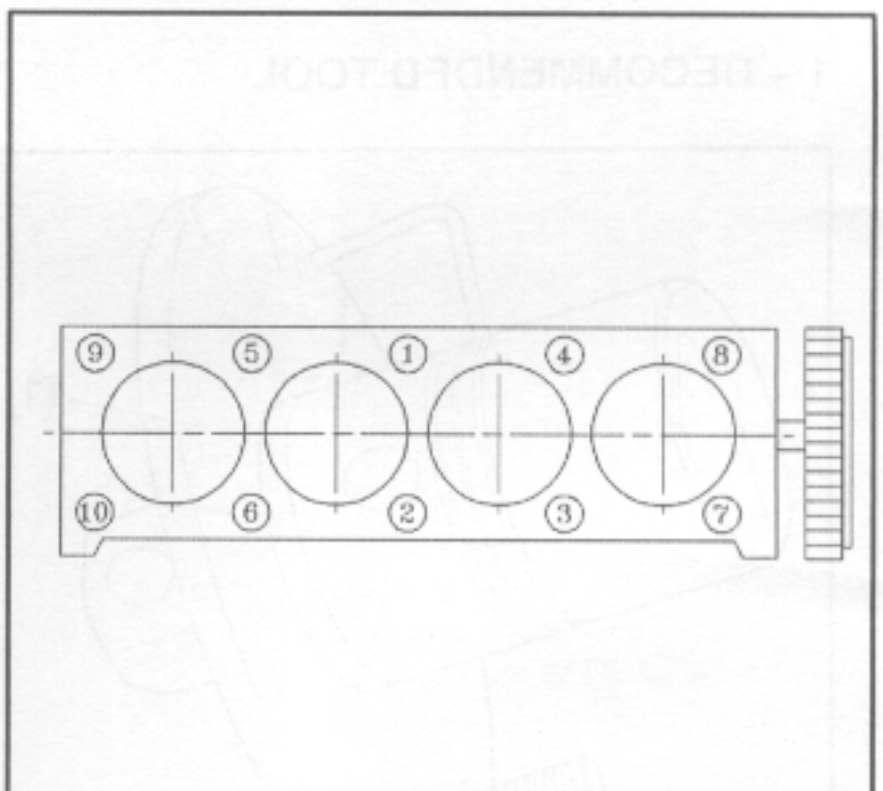


Fig : B1BP005C

IMPERATIVE : Tighten the cylinderhead bolts in the order indicated.

This method avoids the need to warm up the engine before the final tightening of the cylinderhead.

No retightening of the cylinderhead is required at the first service.

Observing the correct tightening order :

- pre–tighten the bolts to 3.5 m.daN
- tighten the bolts to 7 m.daN
- complete with a 160° angular tightening, utilising tool [1]

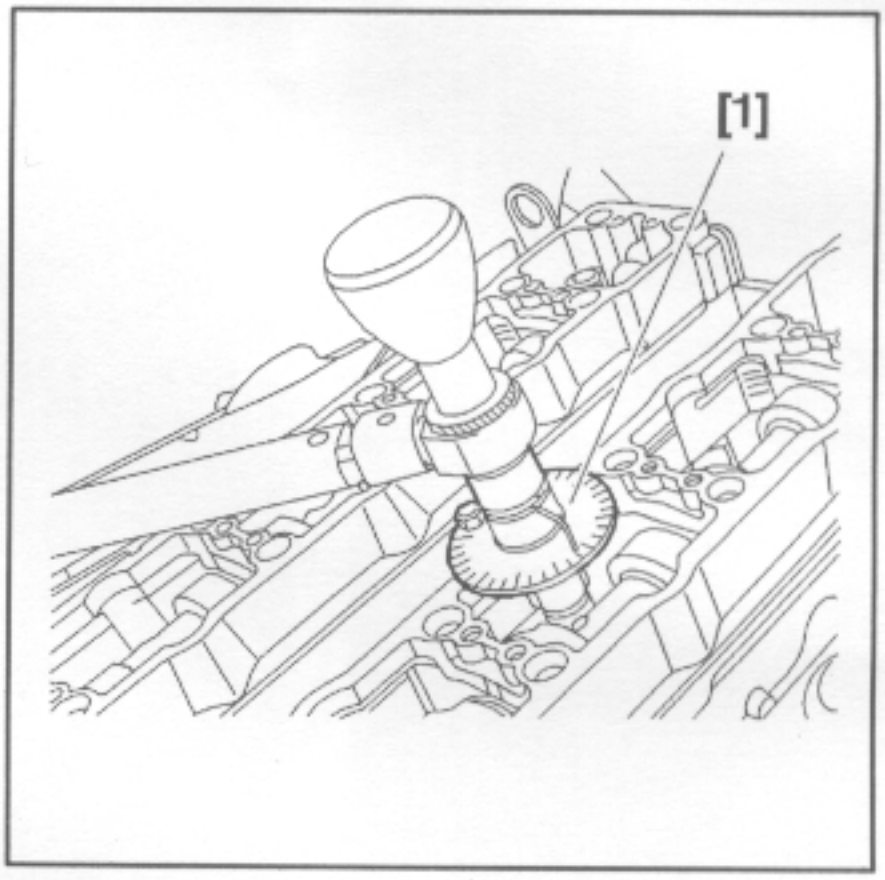


Fig : B1DP03DC

www.WorkshopManuals.co.uk

REMOVING – REFITTING : THE CYLINDER HEAD (IN THE VEHICLE)

1 – RECOMMENDED TOOLS

XU engine kit : 7004–T.

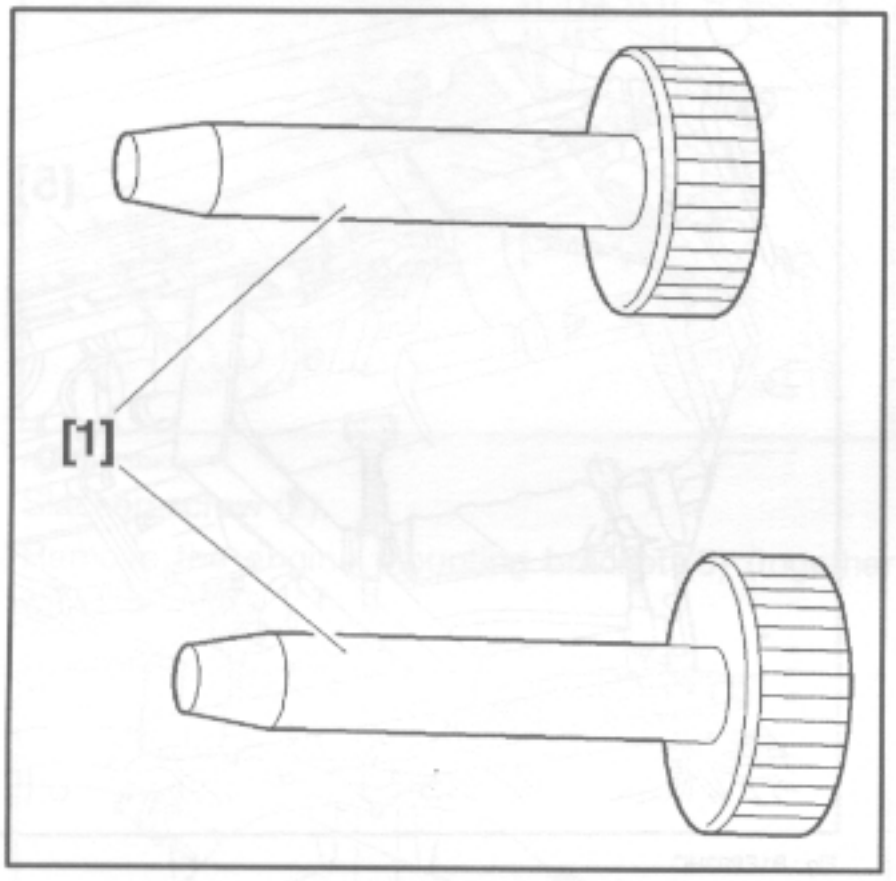


Fig : E5–P04HC

[1] camshaft timing peg, 9041–T.Z.

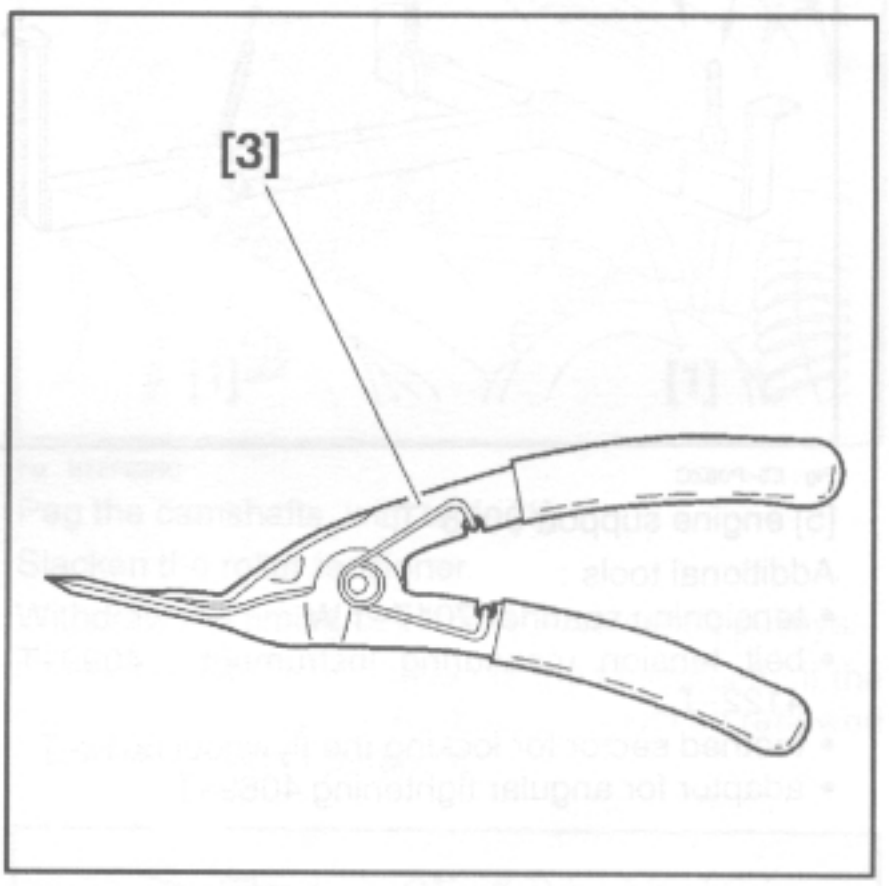


Fig : E5–P07JC

[3] pliers for removing the plastic pegs, 7504–T.

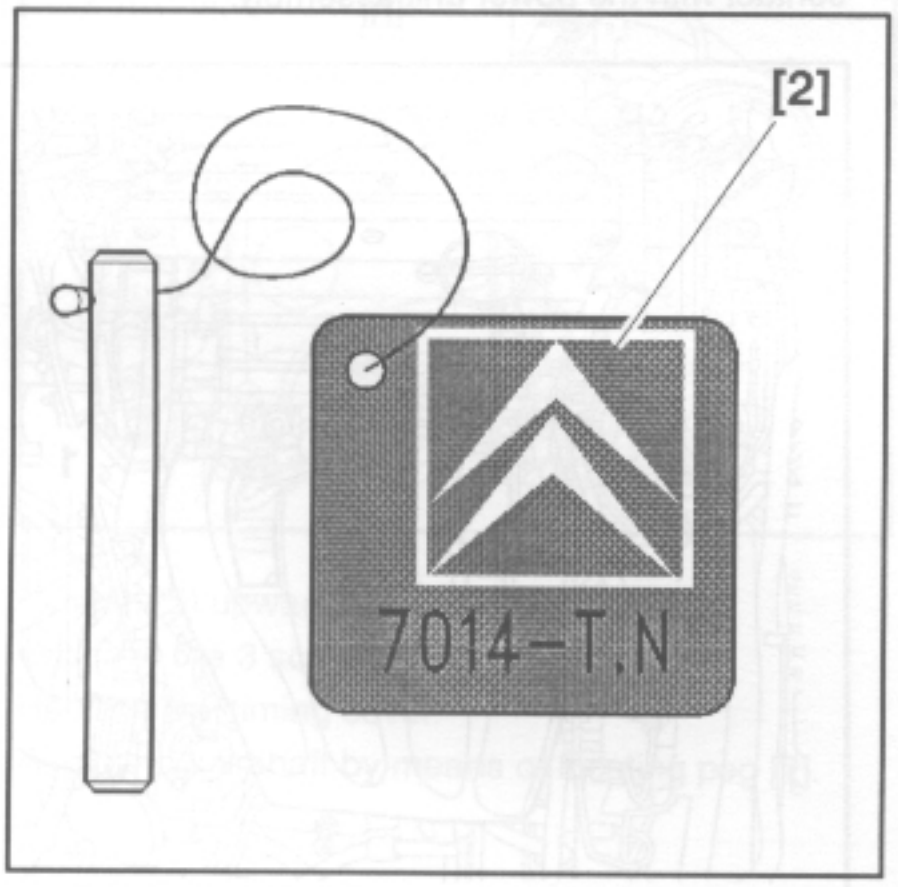


Fig : E5–P07GC

[2] crankshaft locating peg, 7014–T.N.

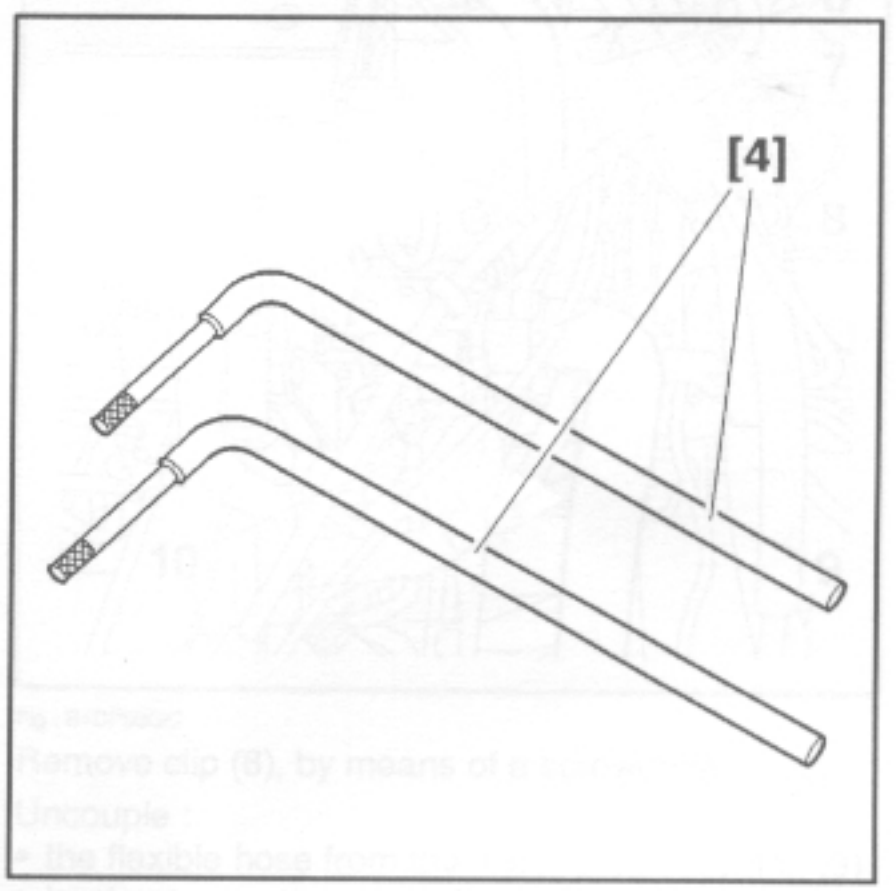


Fig : E5–P07HC

[4] set of levers to release the cyinderhead, 149–T.

www.WorkshopManuals.co.uk

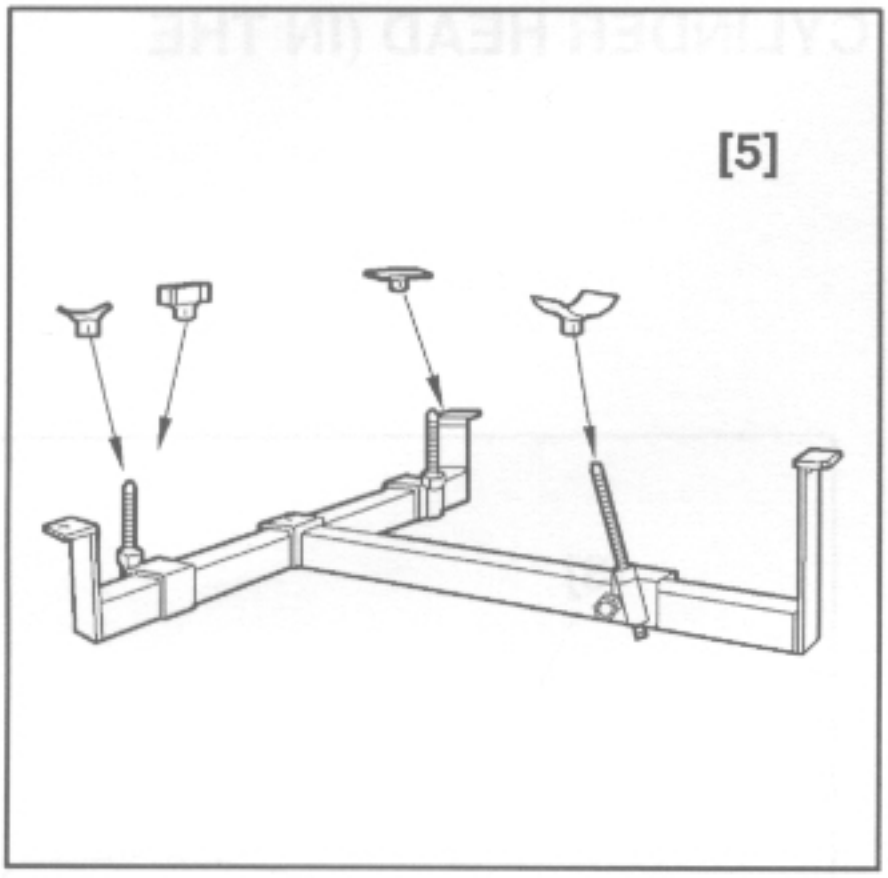


Fig : E5-P06ZC

[5] engine support 9026-T.

Additional tools :

- tensioning spanner 7017-T.W
- belt tension measuring instrument : 4099-T or 4122-T
- toothed sector for locking the flywheel 6012-T
- adaptor for angular tightening 4069-T

2 - REMOVAL

Lift and support the vehicle with the front wheels suspended.

Drain the cooling system.

Remove :

- the RH front road wheel
- the mud shield, utilising tool [3]

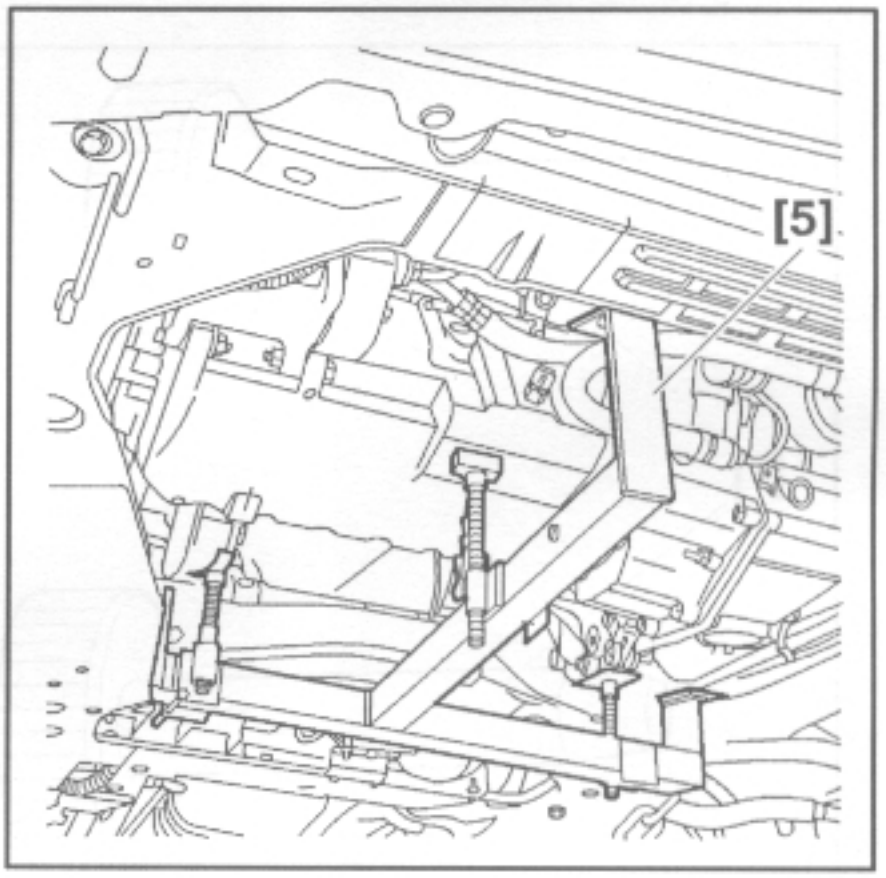


Fig : B1EP03HC

Fit support [5] to the cradle (under the engine/gearbox assembly) ; bring the adjustable fixing rods into contact with the power unit assembly.

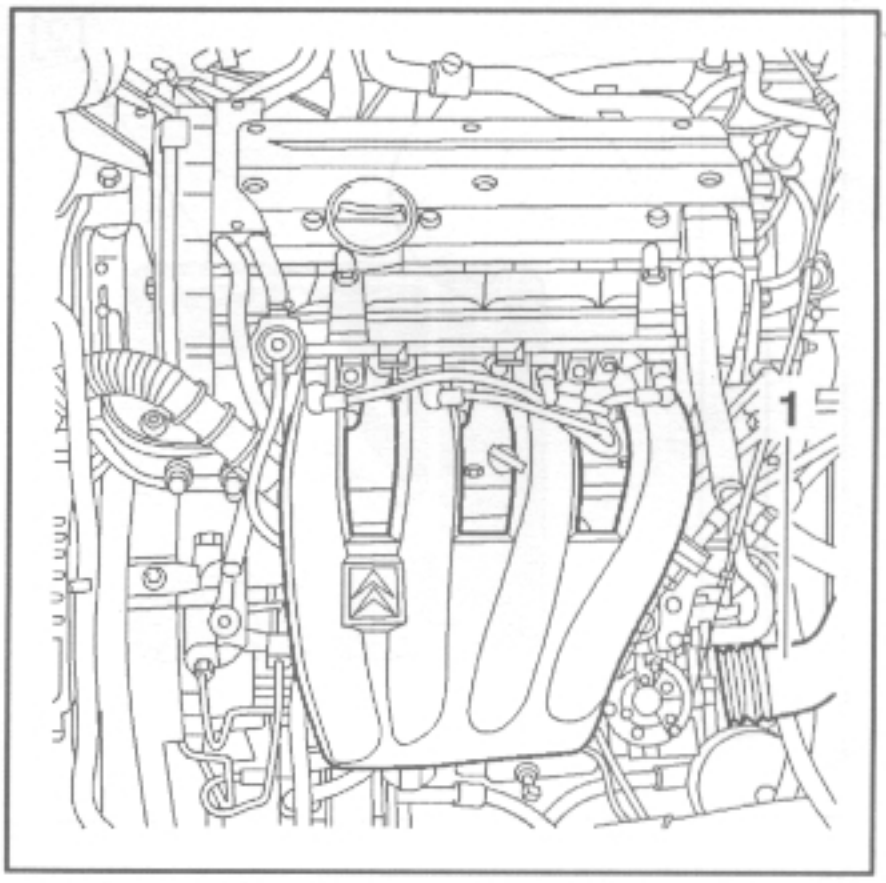


Fig : B1DP03FC

Remove :

- sleeve (1)
- the inlet manifold together with the injection rail (see the relevant operation)

www.WorkshopManuals.co.uk

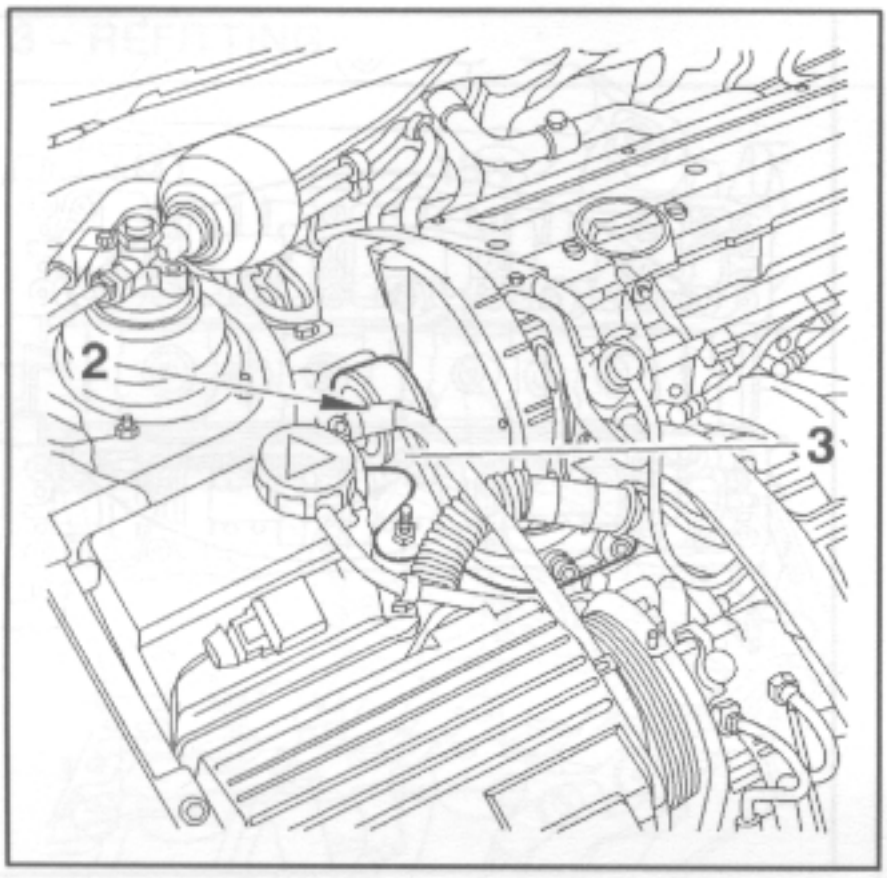


Fig : B1EP03KC

Slacken screw (2).

Remove the engine mounting bracket (3) (together with the pivot).

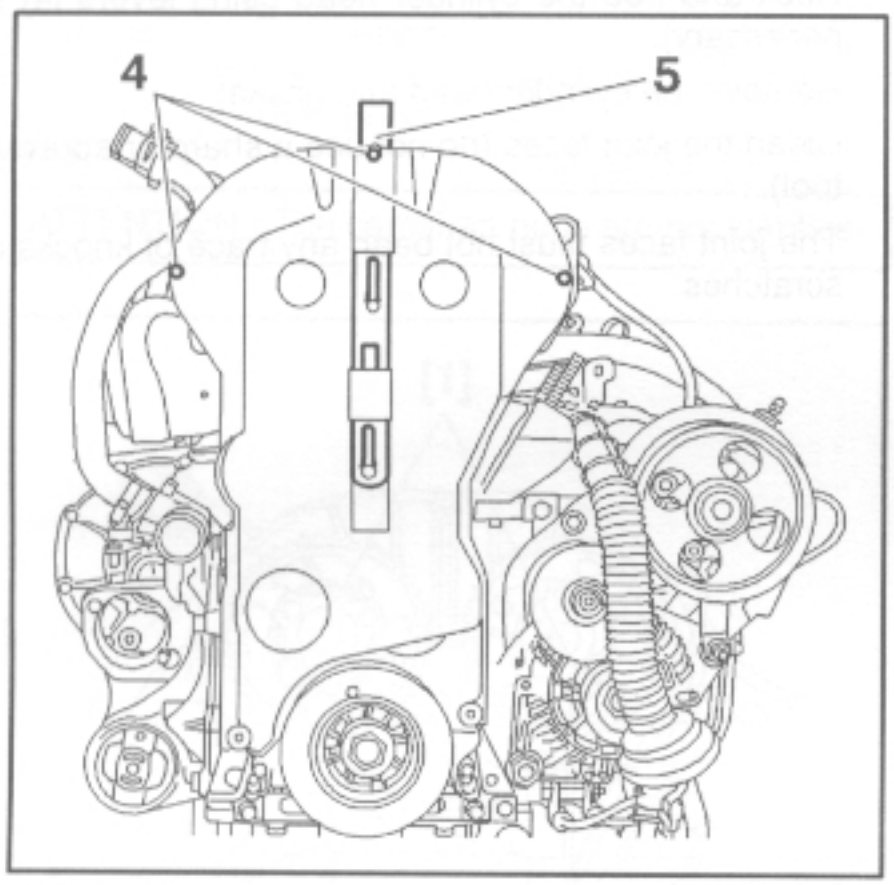


Fig : B1EP03LC

Pull tab (5) upwards to release the pins.

Unscrew the 3 screws (4).

Remove the timing cover.

Peg the crankshaft by means of locating peg [2].

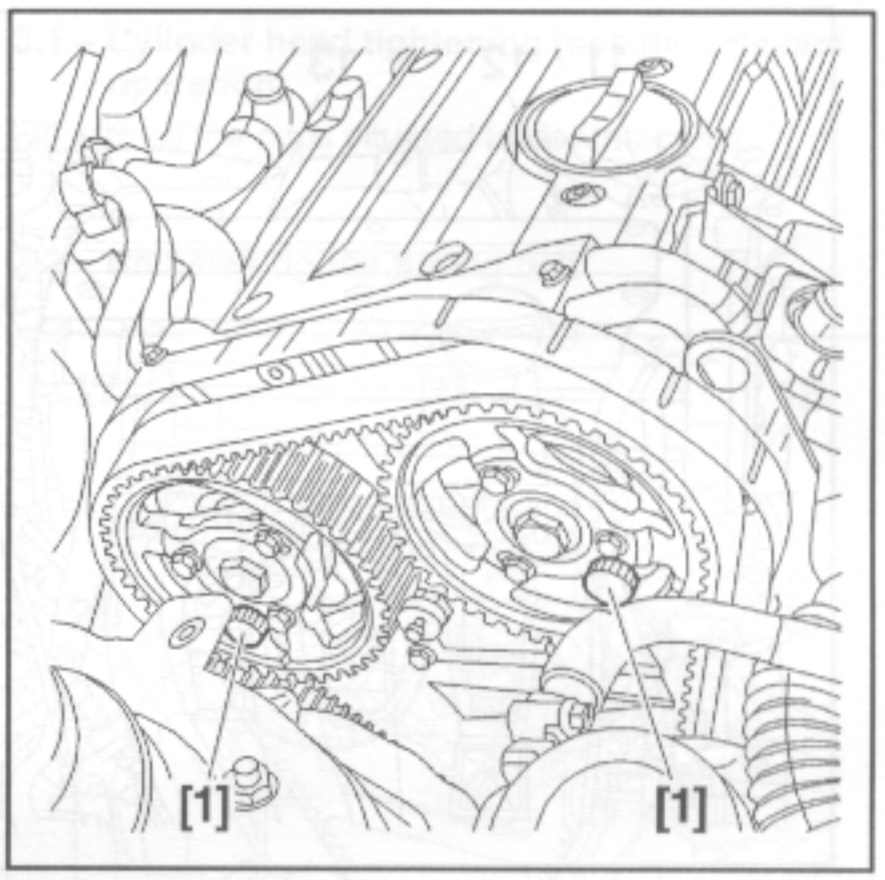


Fig : B1EP03NC

Peg the camshafts, with tools [1].

Slacken the roller tensioner.

Withdraw the timing belt from the camshaft pulleys.

Check visually the condition of the timing belt : if the belt shows cracks or traces of oil, it must be renewed (see the relevant operation).

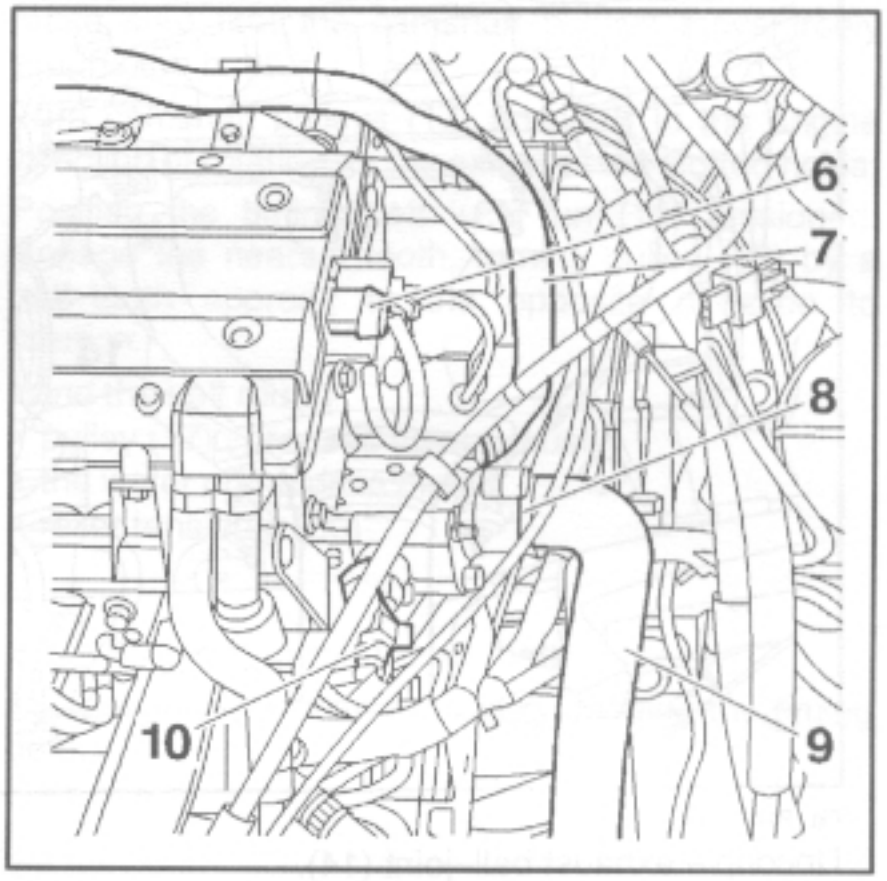


Fig : B1DP03GC

Remove clip (8), by means of a screwdriver.

Uncouple :

- the flexible hose from the water outlet housing (9)
- heater connection pipe (7)

Relocate clip (8) into its grooves.

Disconnect :

- ignition connector (6)
- connectors (10) from the sensors of water outlet housing

www.WorkshopManuals.co.uk

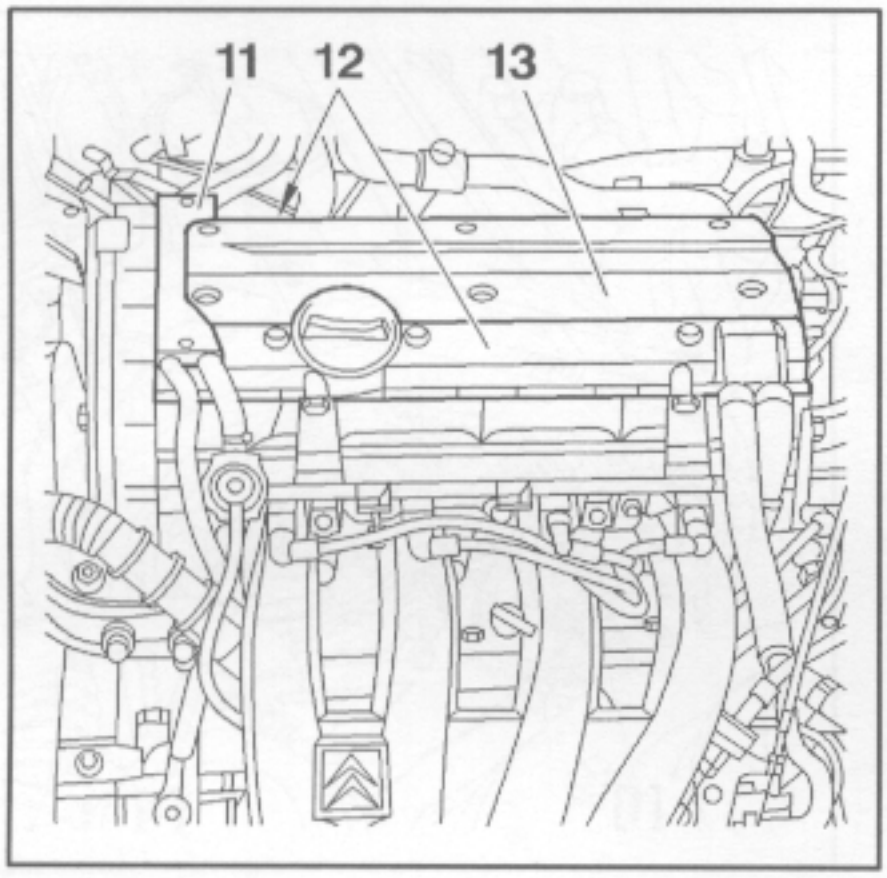


Fig : B1DP03HC

Remove :

- cover (11) from the fuel pipes
- the support of the fuel pipes
- casing (13) of the HT coils
- covers (12) from the camshaft carrier bearings

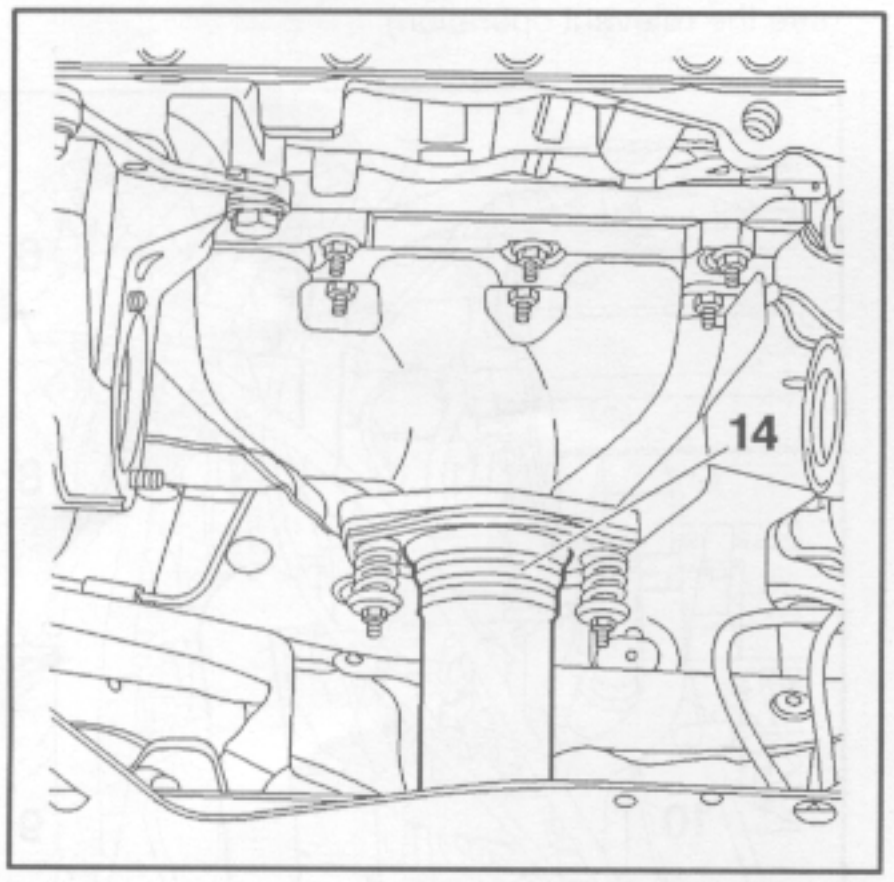


Fig : B1DP03JC

Uncouple exhaust ball–joint (14).

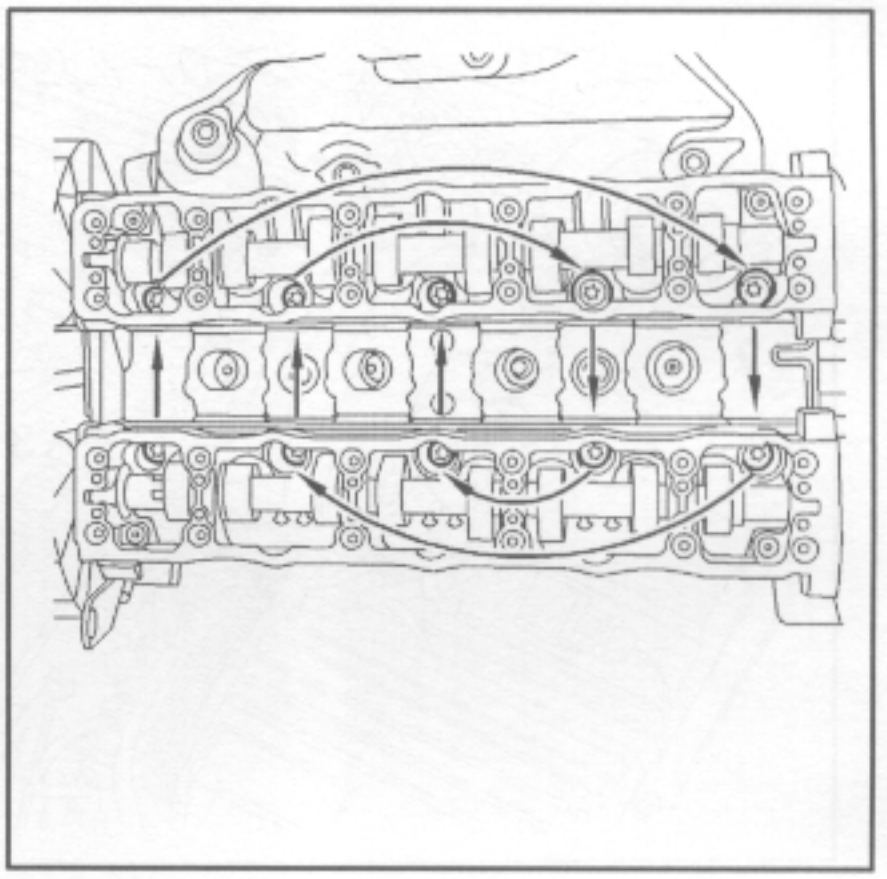


Fig : B1DP03KC

Remove the cylinder head bolts ; starting at the outside and working in a spiral sequence, slacken the cylinder head bolts progressively.

Rock and free the cylinder head using levers [4] (if necessary).

Remove the cylinder head and gasket.

Clean the joint faces (do not use a sharp or abrasive tool).

The joint faces must not bean any trace of knocks or scratches.

www.WorkshopManuals.co.uk

3 – REFITTING

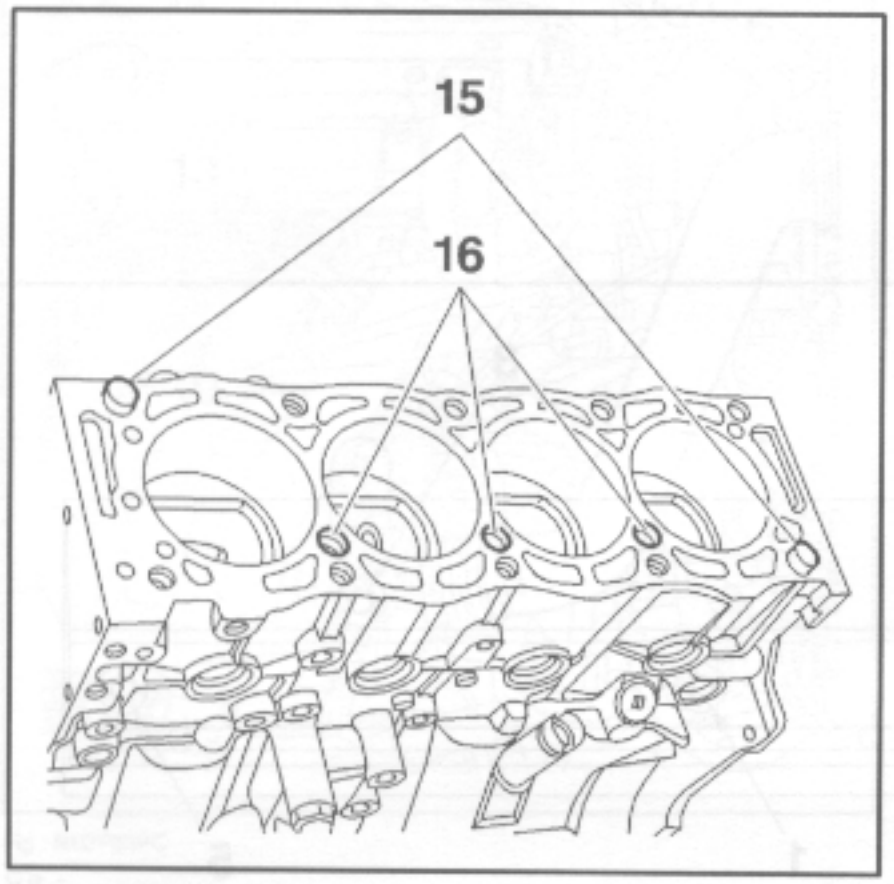


Fig : B1DP03LC

Check if dowels (15) are fitted.

Clean water pipework (16) between the cylinders.

Prepare the cylinderhead :
- check the flatness of the cylinderhead
- peg the camshaft hubs

ATTENTION : The camshaft hubs are not identical.

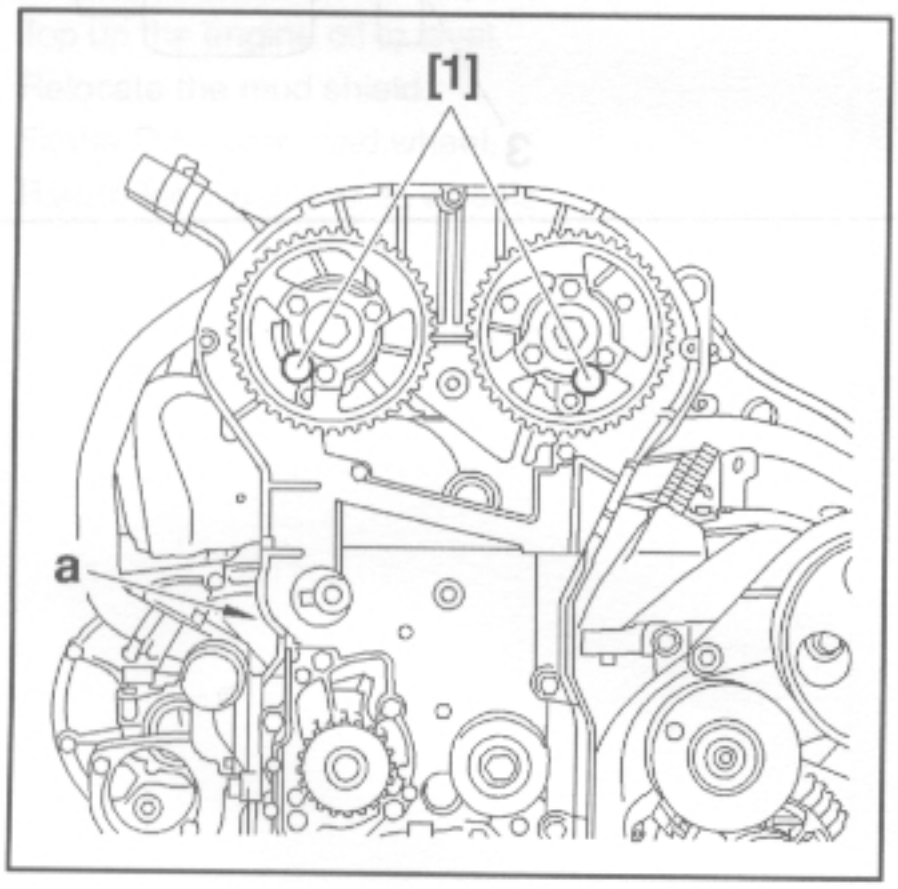


Fig : B1DP03MC

Position :
- the cylinderhead gasket ; the identification tab should be placed on the flywheel side
- the cylinder head
- the cylinder head bolts

Engage extremity "a" of the timing cover correctly over the water pump body.

3.1 – Cylinder head tightening (see the relevant operation)

Fill with oil the cups situated under the cams.

3.2 – Reinstalling the timing belt

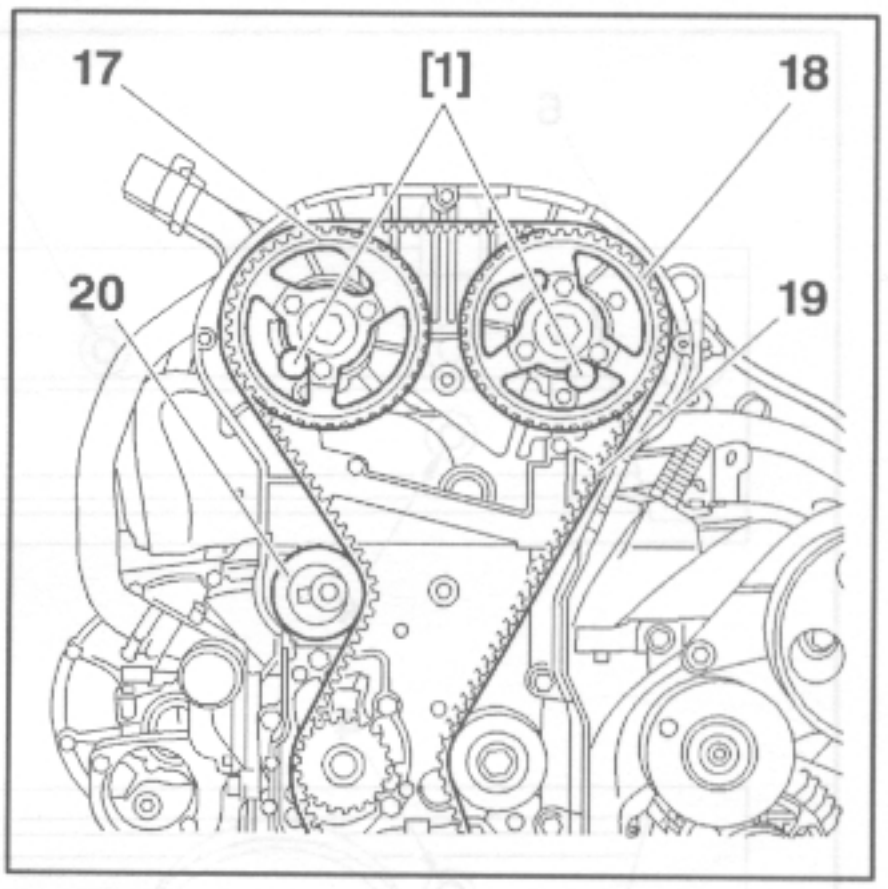


Fig : B1DP03NC

Make sure that the camshaft pulleys move freely around the hubs.

Turn camshaft pulleys (17) and (18) in the engine direction of rotation, to the extent of the slotted holes.

Position the timing belt with run (19) tensioned. Engage the nearest tooth, turning pulley (18) by a half–tooth approx., in the opposite direction to rotation.

Wind the belt round :
- pulley (17) ; proceed as previously
- the water pump drive pinion
- roller tensioner (20)

3.3 – Tensioning the timing belt

(refer to the operation : removing/refitting the timing belt).

www.WorkshopManuals.co.uk

3.4 – Refitting (continued)

Fit :
- the timing belt cover
- the engine mounting bracket

Remove support [5].

Couple up the exhaust system.

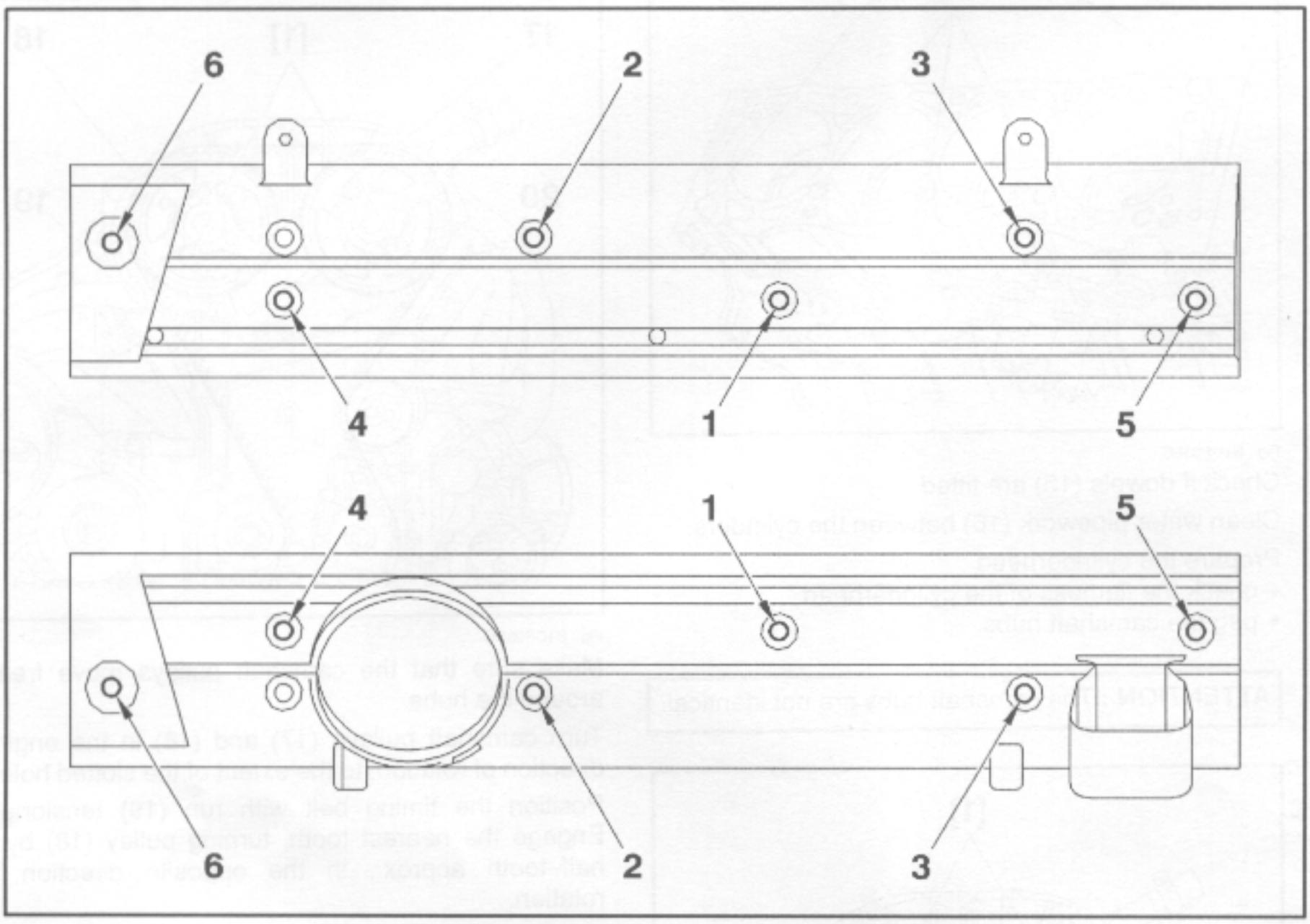


Fig : B1DP01YD

Refit the covers of the camshaft carrier bearings.

NOTE : These covers are equipped with a seal made of composite material which can stand several dismantling operations. If the seal is damaged, it can be partially repaired with sealing product E10 (AUTO–JOINT OR).

Tighten the bolts to 1 m.daN, observing the correct tightening order.

ATTENTION : The cylinderhead cover is now tightened in the centre, the fixing screws being no longer placed towards the outside.

www.WorkshopManuals.co.uk

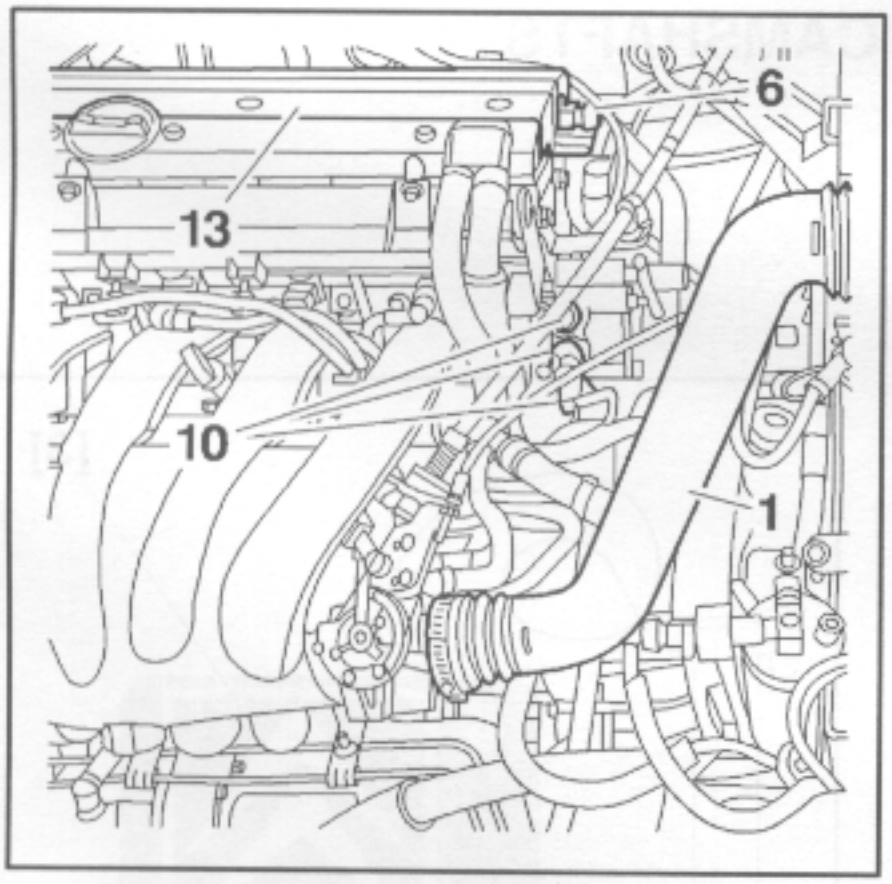


Fig : B1DP03PC

Fit :
- casing (13) of the HT coils
- the support of the fuel pipes
- the inlet manifold (see the relevant operation)
- sleeve (1)

Recouple the connecting hoses.

Reconnect :
- connectors (10) to the sensors
- ignition connector (6)

Fill and bleed the cooling system.

Top up the engine oil to level.

Relocate the mud shield.

Fit the R.H. front road wheel.

Return the vehicle to its wheels.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : THE CAMSHAFTS

1 – RECOMMENDED TOOLS

XU engine kit : 7004–T.

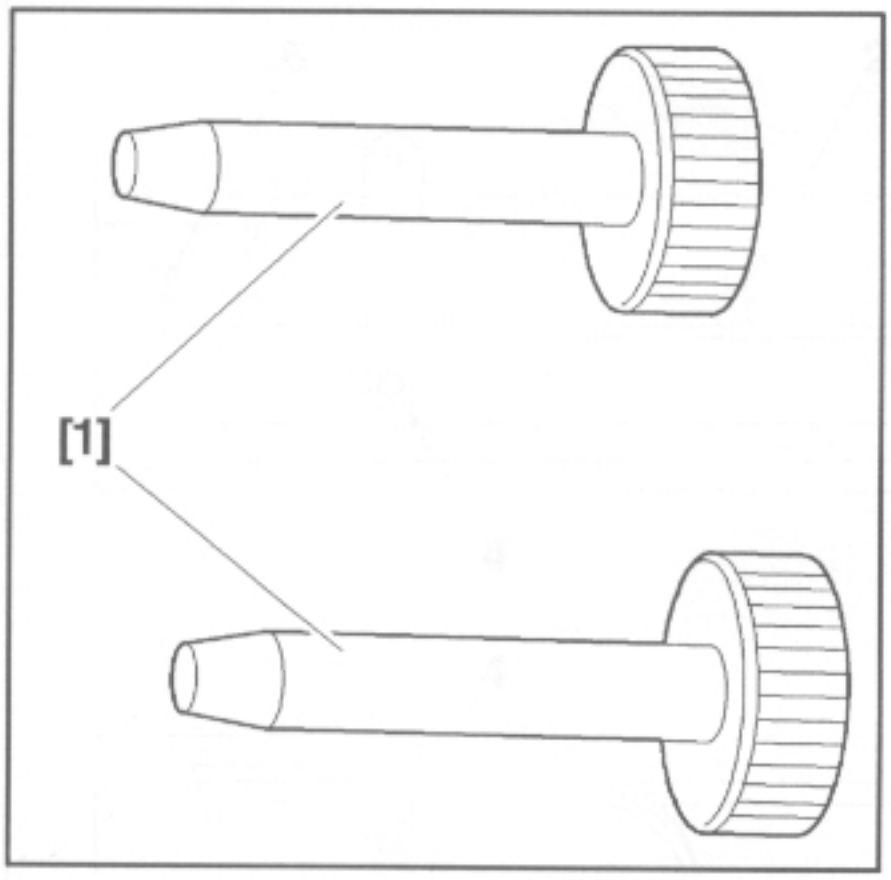


Fig : E5–P04HC

[1] camshaft timing peg, 9041–T.Z.

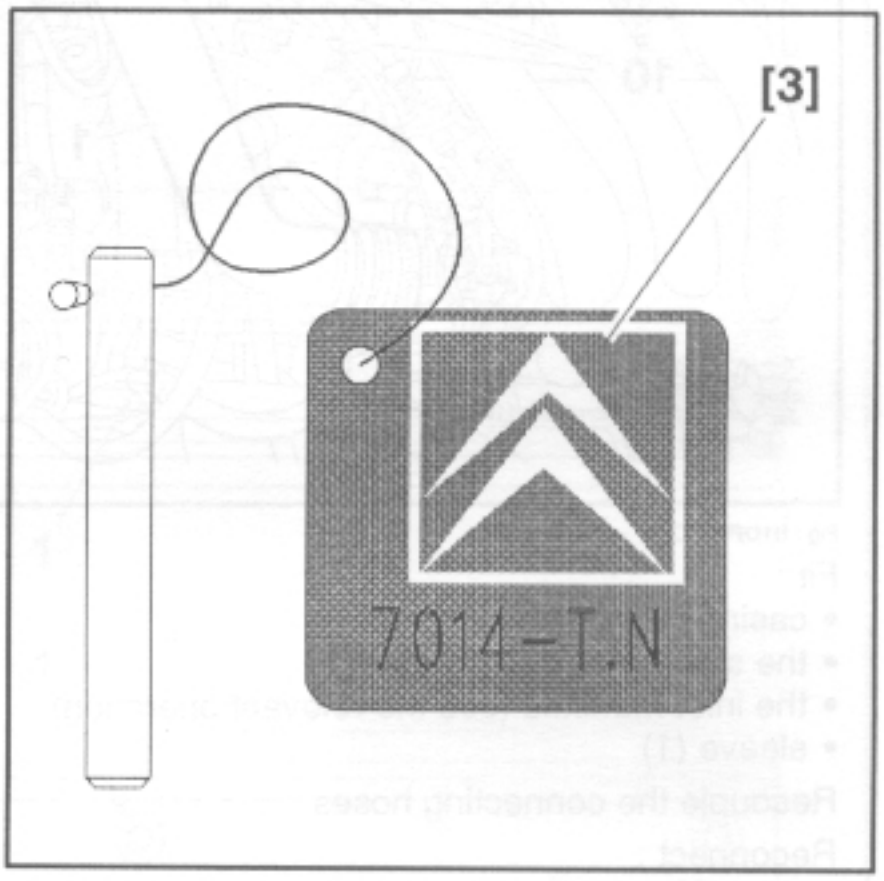


Fig : E5–P04JC

[3] crankshaft locating peg, 7014–T.N.

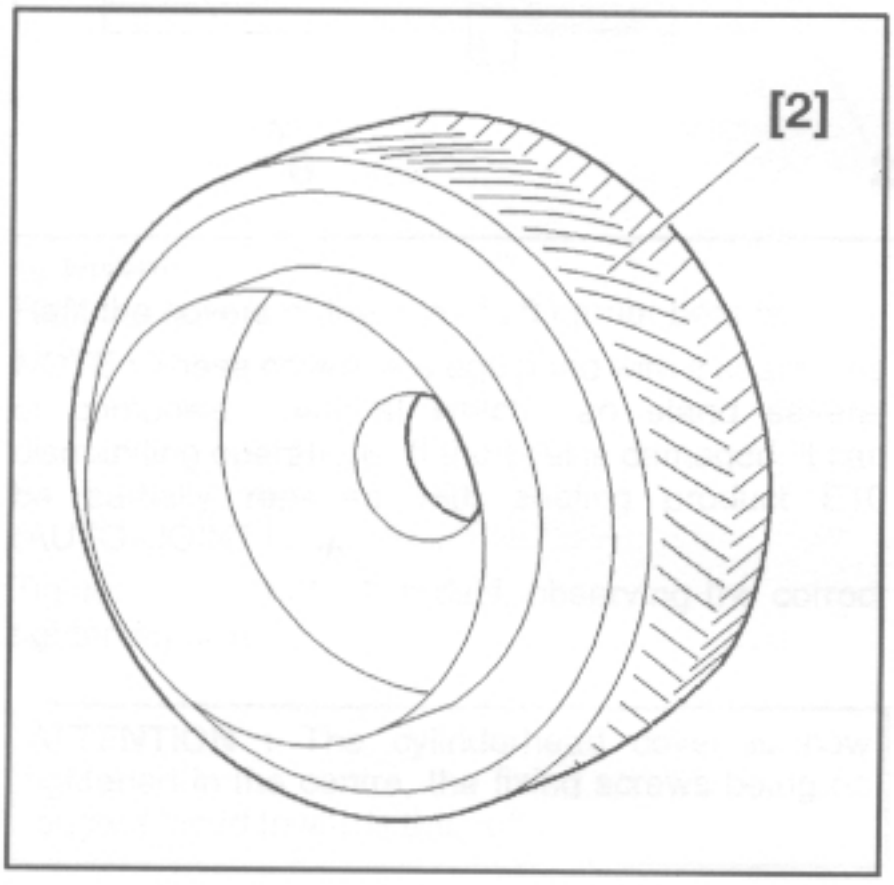


Fig : E5–P04IC

[2] camshaft seal fitting tool, 9041–T.AA.

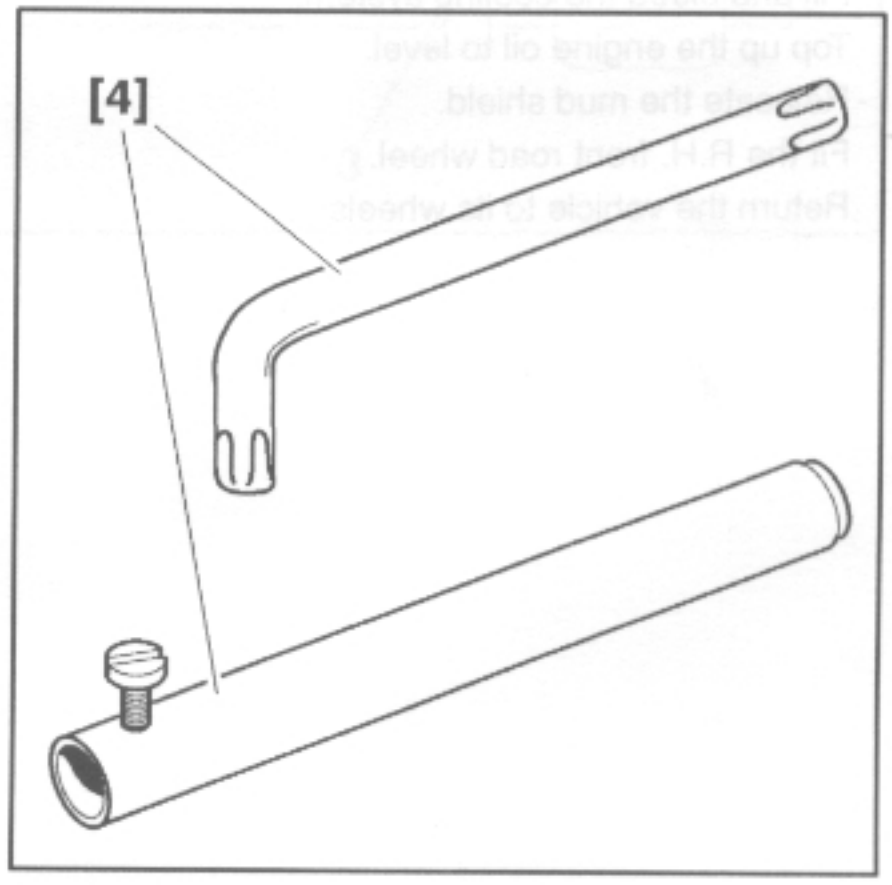


Fig : E5–P04KC

[4] tensioning spanner for the roller tensioner, 7017–T.W.

www.WorkshopManuals.co.uk

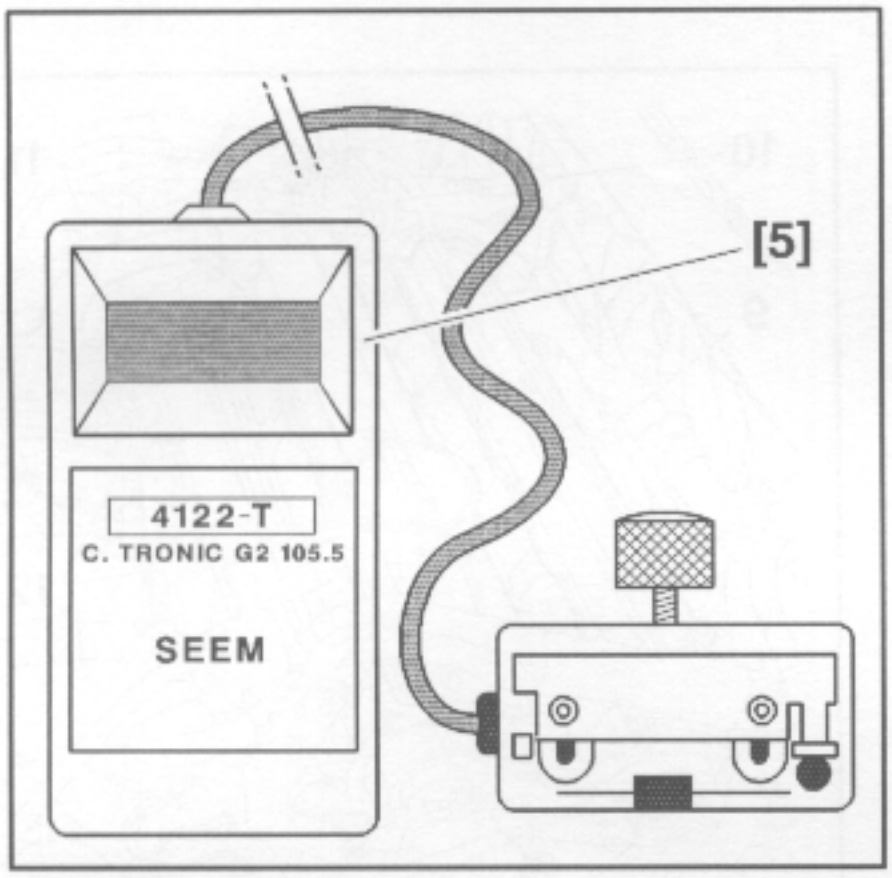


Fig : E5-P03DC

[5] belt tension measuring equipment, with digital read-out, 4122-T or 4099-T.

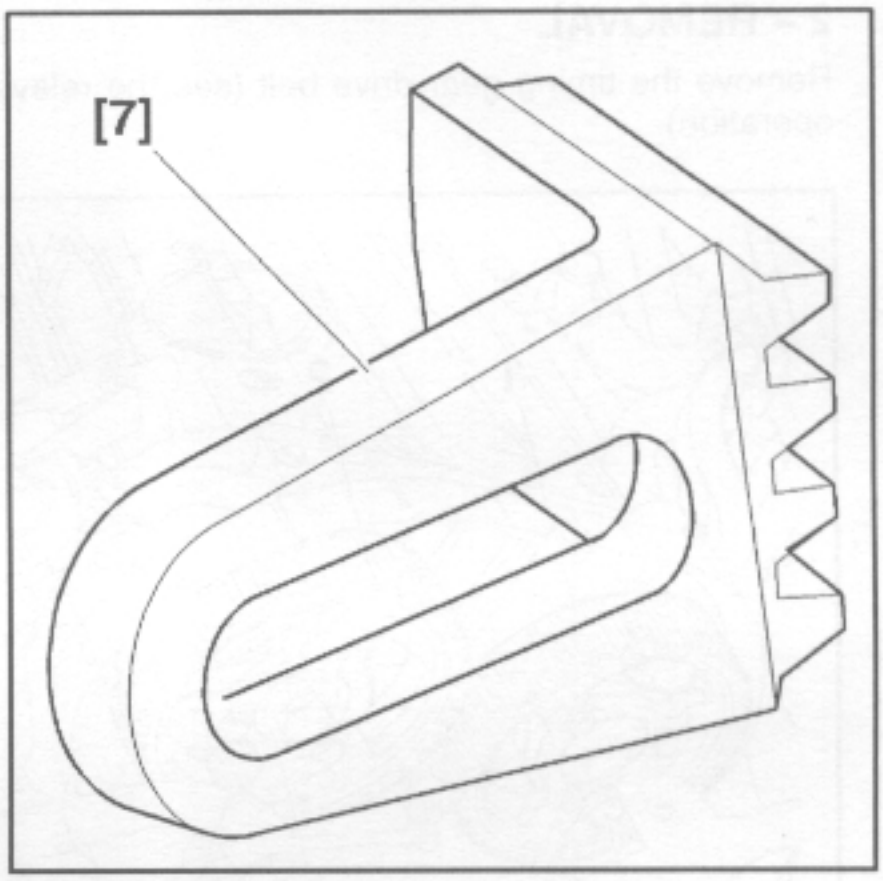


Fig : E5-P04MC

[7] flywheel locking toothed sector, 6012-T.

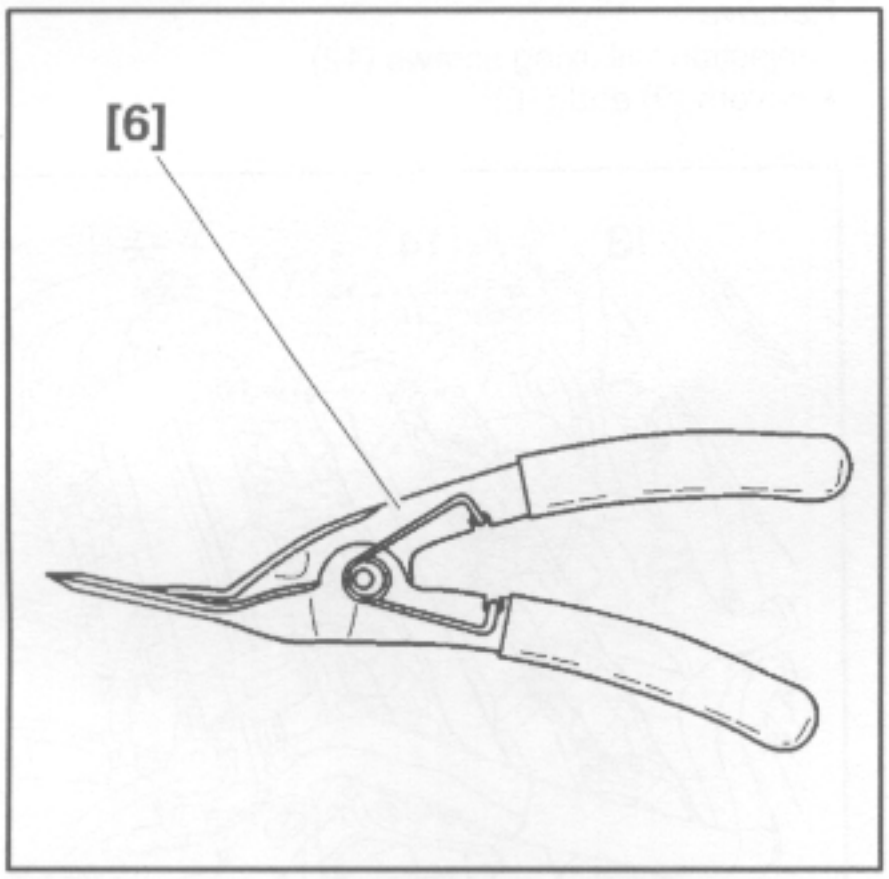


Fig : E5-P04LC

[6] pliers for removing the plastic pegs, 7504-T.

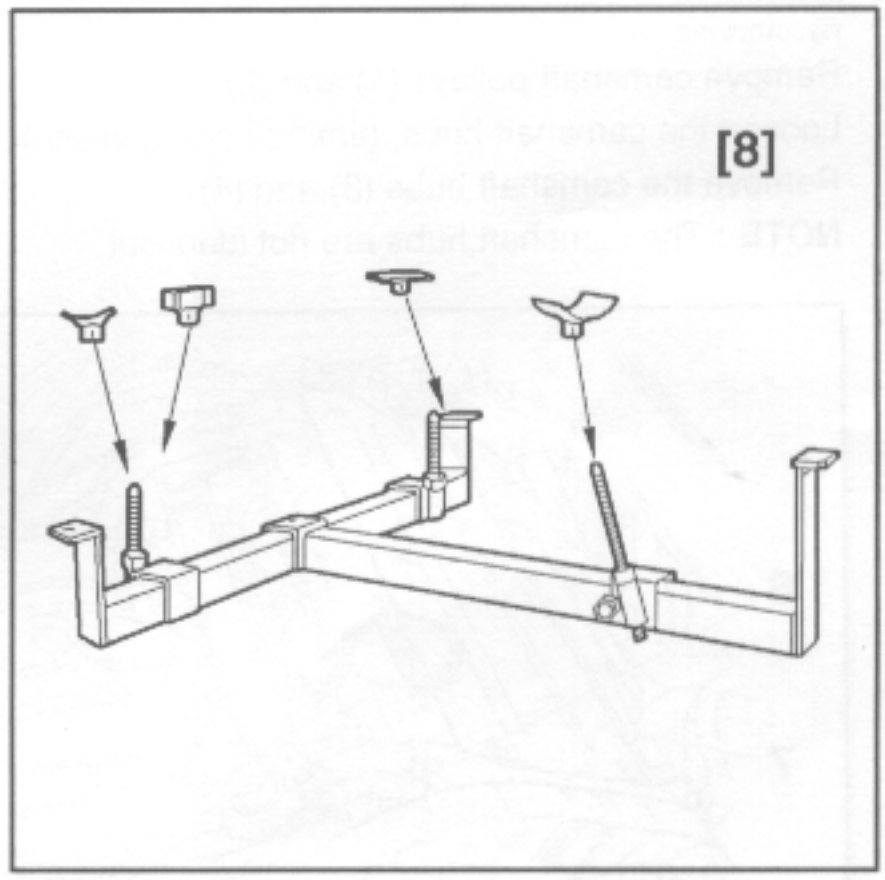


Fig : E5-P04NC

[8] engine support 9026-T.

www.WorkshopManuals.co.uk

2 – REMOVAL

Remove the timing gear drive belt (see the relevant operation).

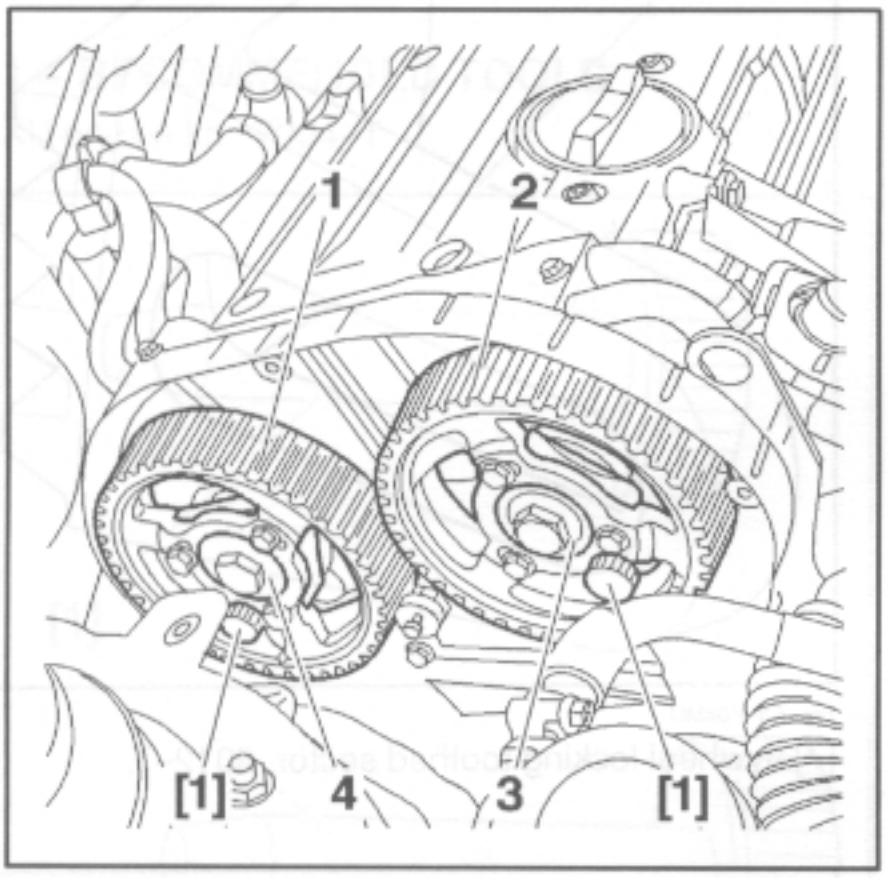


Fig : B1DP01PC

Remove camshaft pulleys (1) and (2).

Loosen the camshaft hubs, (timing peg [1] in situ).

Remove the camshaft hubs (3) and (4).

NOTE : The camshaft hubs are not identical.

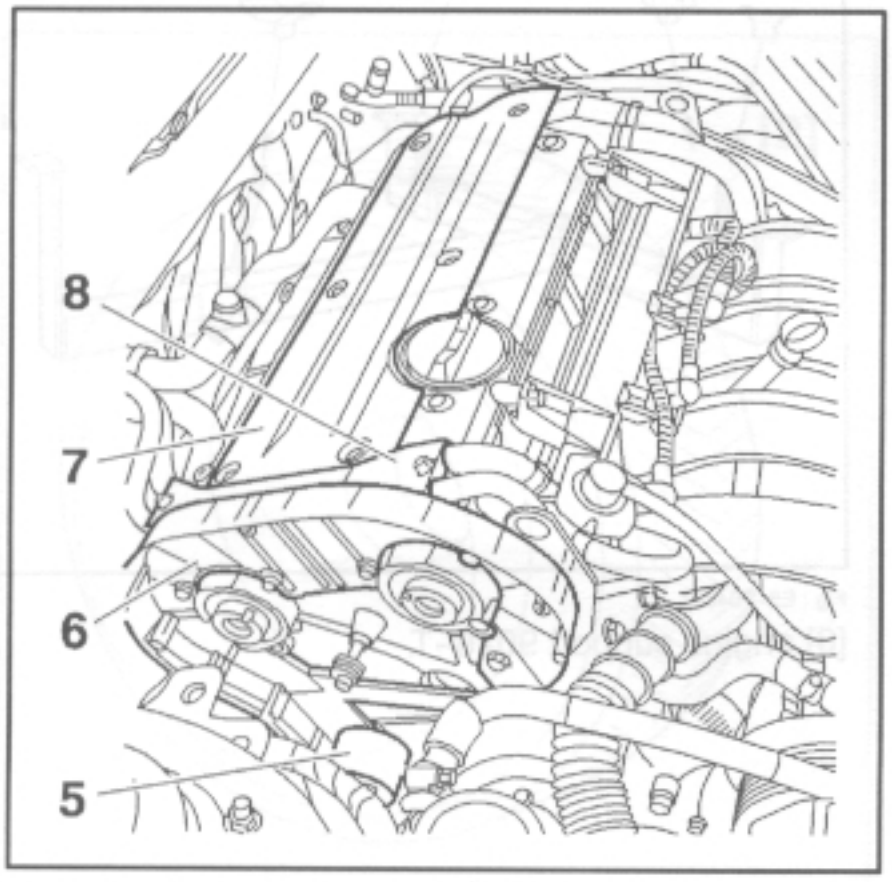


Fig : B1DP01QC

Remove :

- roller tensioner (5)
- interior timing cover (6)
- casing (7) of the HT coils
- cover (8) from the fuel pipes
- the support of the fuel pipes

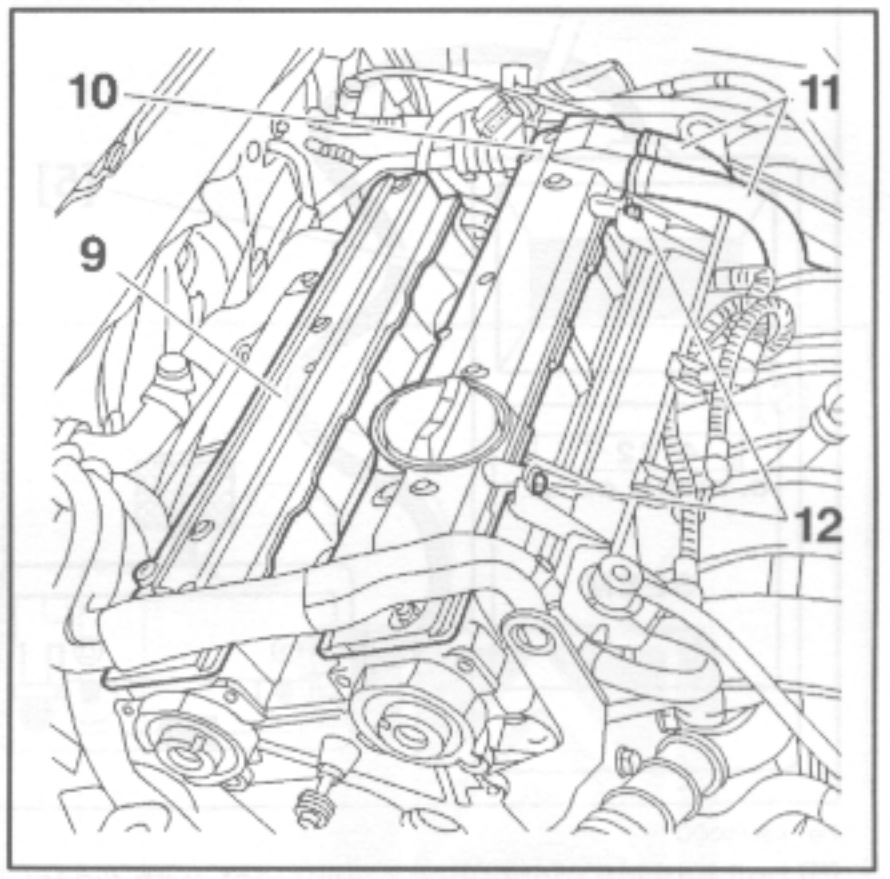


Fig : B1DP01RC

Uncouple connecting hoses (11).

Remove :

- injection rail fixing screws (12)
- covers (9) and (10)

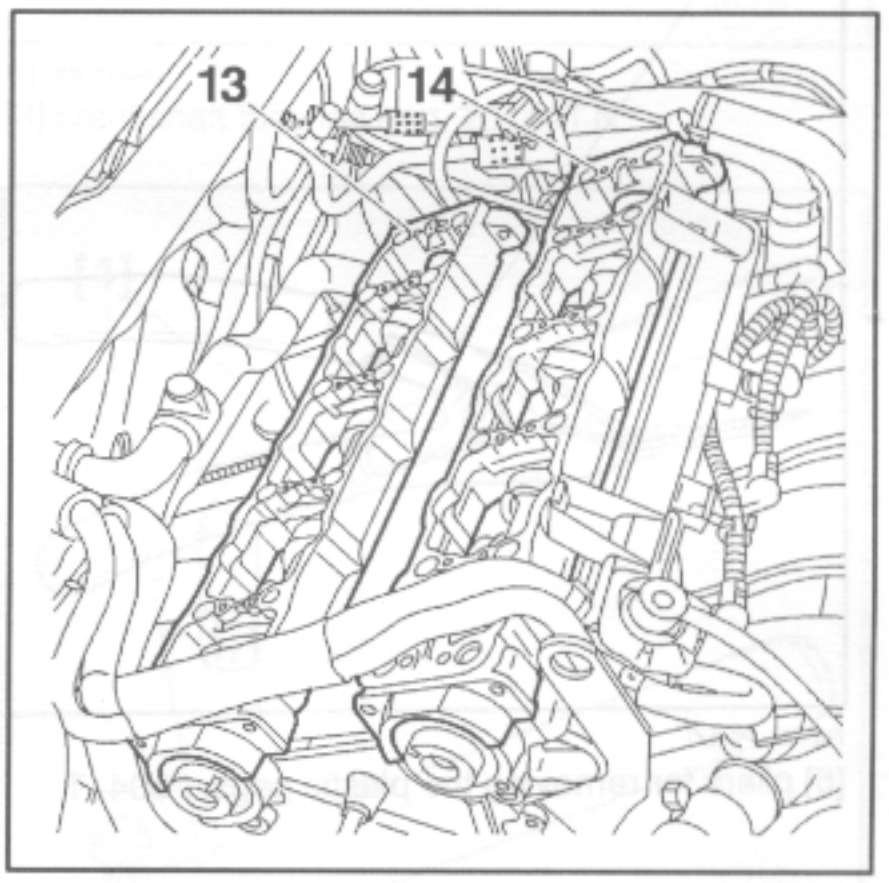


Fig : B1DP01SC

Unclip the sparking plug leads.

Gradually slacken by a few turns the screws of the camshaft carrier 2 bearings (13) and (14).

Detach the camshaft carrier bearings.

Slacken then remove (13) , (14).

www.WorkshopManuals.co.uk

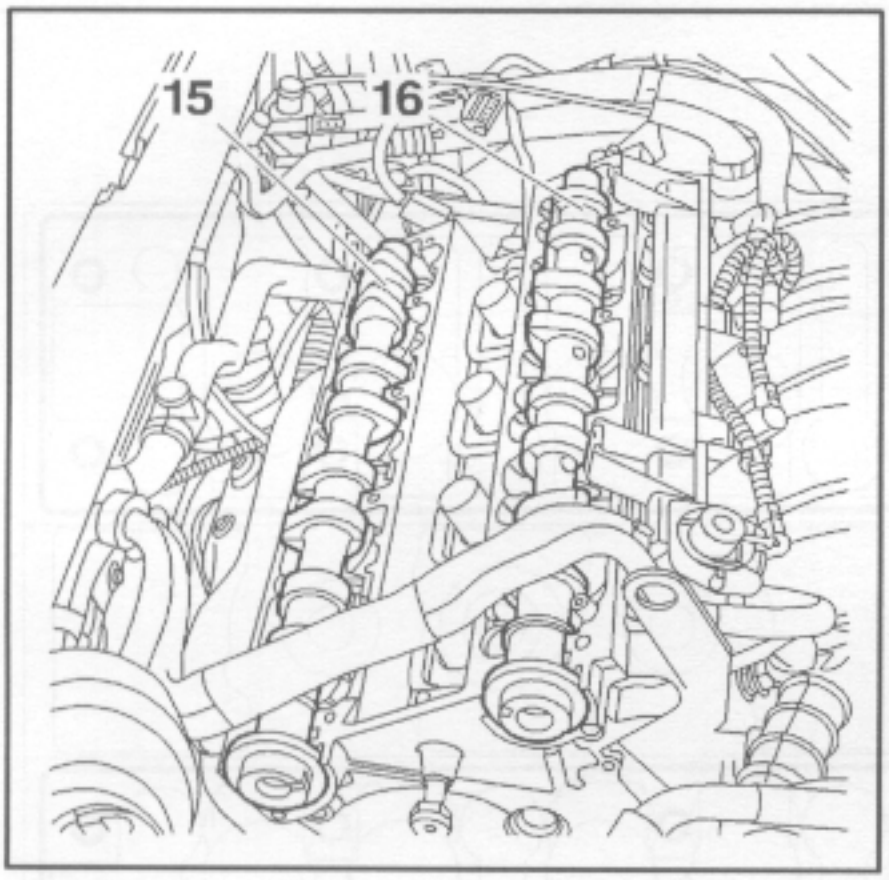


Fig : B1DP01TC

ATTENTION : The camshafts are identical ; mark their position.

Inlet camshaft (16).

Exhaust camshaft (15).

IMPERATIVE : Free the camshaft from its centring bearing, at timing gear end, by pressing the opposite extremity.

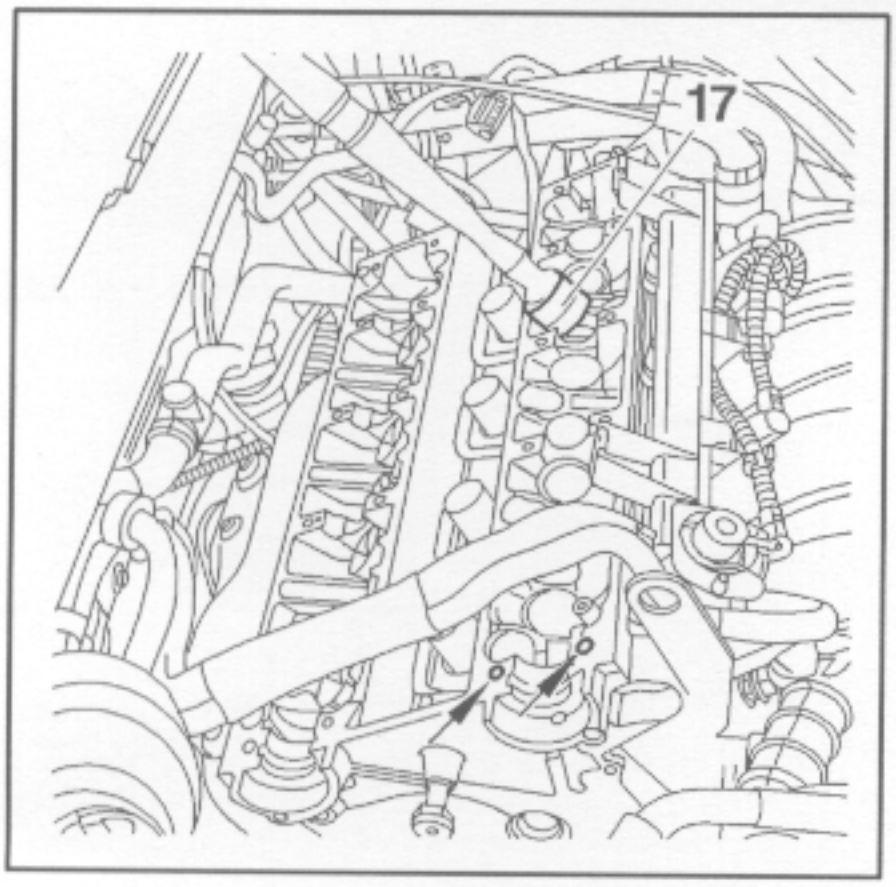


Fig : B1DP01UC

Remove :

- the camshafts
- tappets (17), observing their original location

Use a suction pad (a valve grinder, for example).

NOTE : Check the condition of the hydraulic tappets.

NOTE : Check the condition of the camshaft bearings.

Clean the joint faces.

IMPERATIVE : Let the oil flow out of the tappings of the camshaft carrier bearing fixing screws.

3 – REFITTING

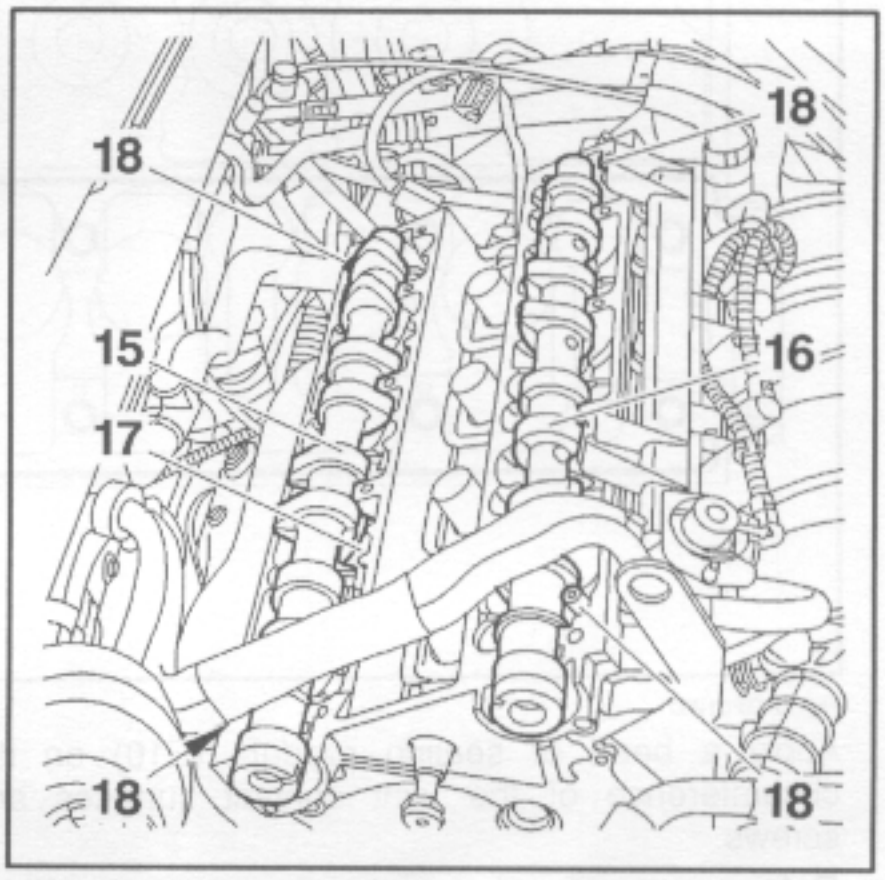


Fig : B1DP01VC

Ascertain that the 4 locating pins (18) are present.

Oil the bodies of the tappets.

Grease the bearings and cams with grease G1.

Refit tappets (17) observing their original location.

Make sure that the tappets rotate freely in the cylinderhead.

Fit the camshafts :

- inlet camshaft (16) : cam of cylinder 2 upwards
- exhaust camshaft (15) : cam of cylinder 1 upwards

www.WorkshopManuals.co.uk

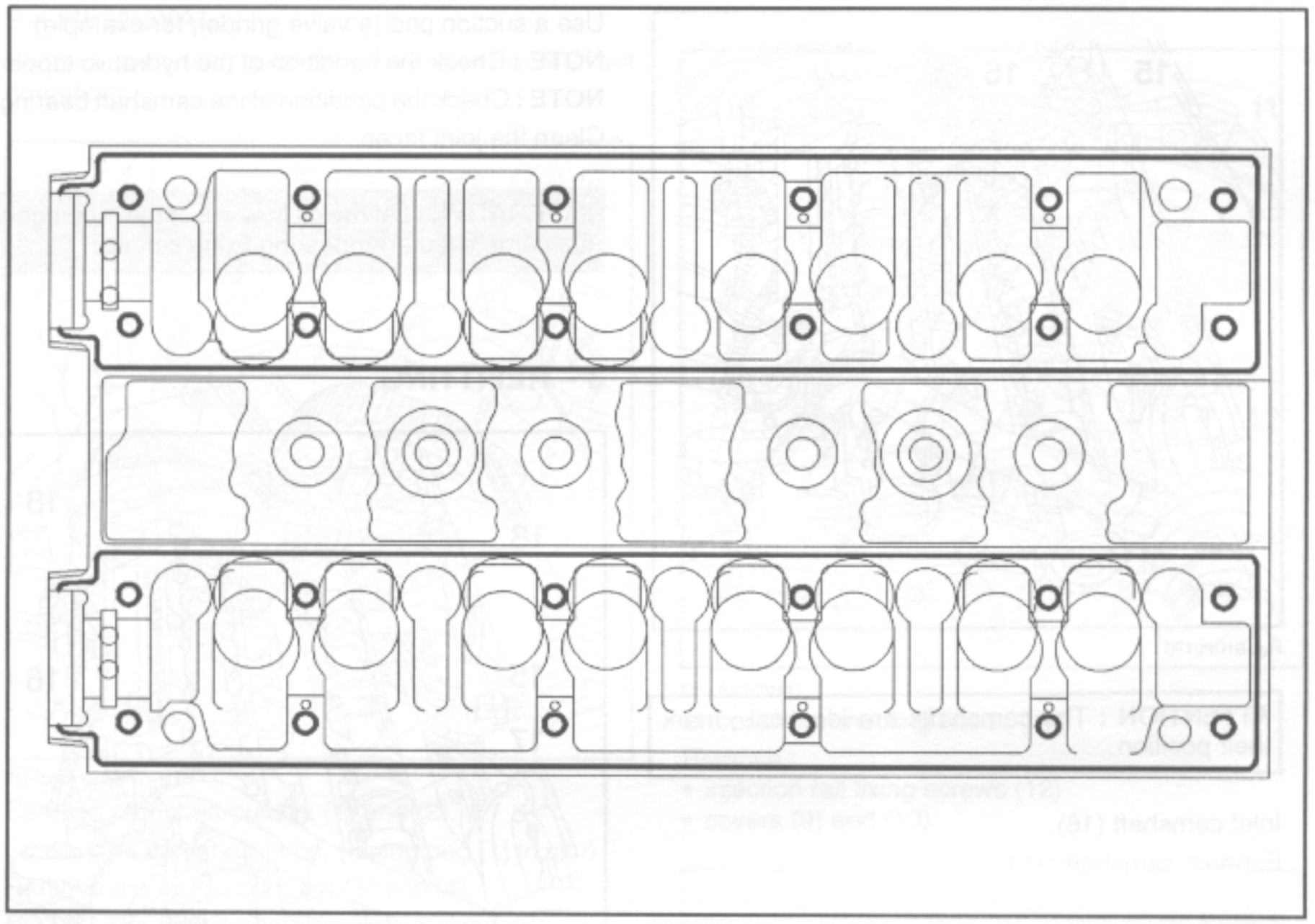


Fig : B1DP01WD

Apply a bead of sealing product (E10) on the circumference of the joint contact surfaces and screws.

Refit :

- the camshaft carrier bearings
- the screws with sealing rings under head

IMPERATIVE : Screw up the screws progressively without tightening.

www.WorkshopManuals.co.uk

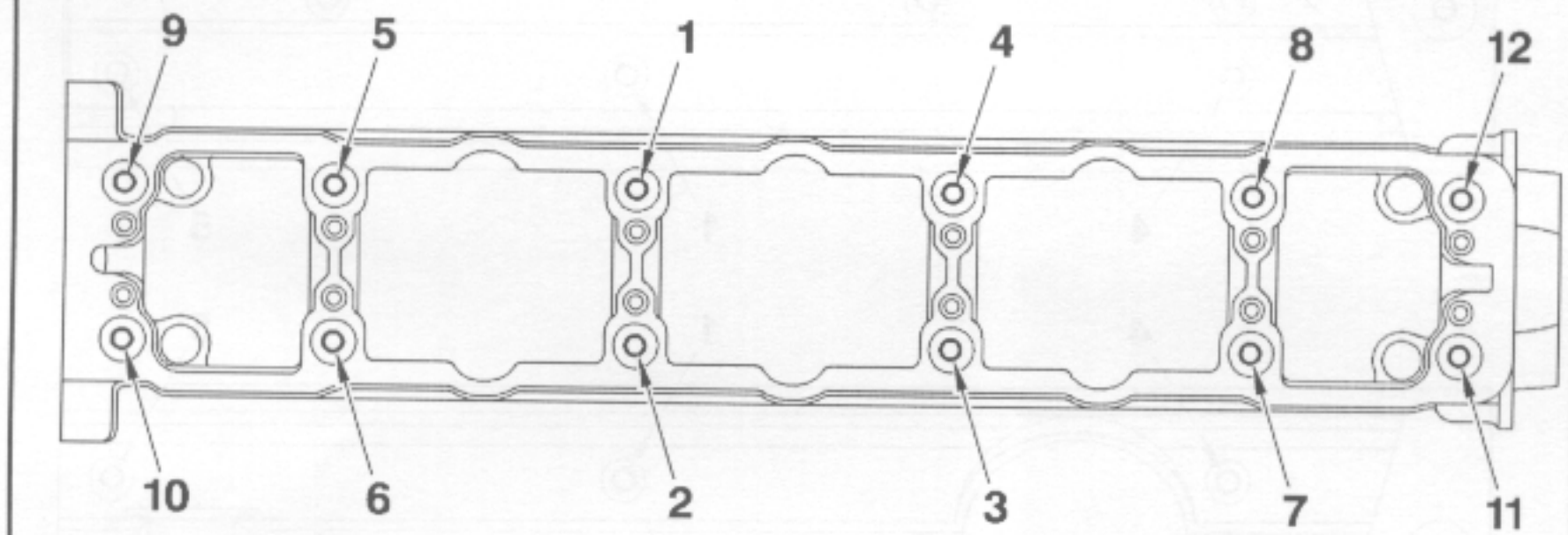


Fig : B1DP01XD

Tighten the bolts, observing the correct tightening order.

Pre–tighten to 0.5 mdaN.

Tighten to 1 m.daN.

Refit the covers of the camshaft carrier bearings.

NOTE : These covers are equipped with a seal made of composite material which can stand several dismantling operations. If the seal is damaged, it can be partially repaired with sealing product E10 (AUTO–JOINT OR).

ATTENTION : The cylinderhead cover is now tightened in the centre, the fixing screws being no longer placed towards the outside.

www.WorkshopManuals.co.uk

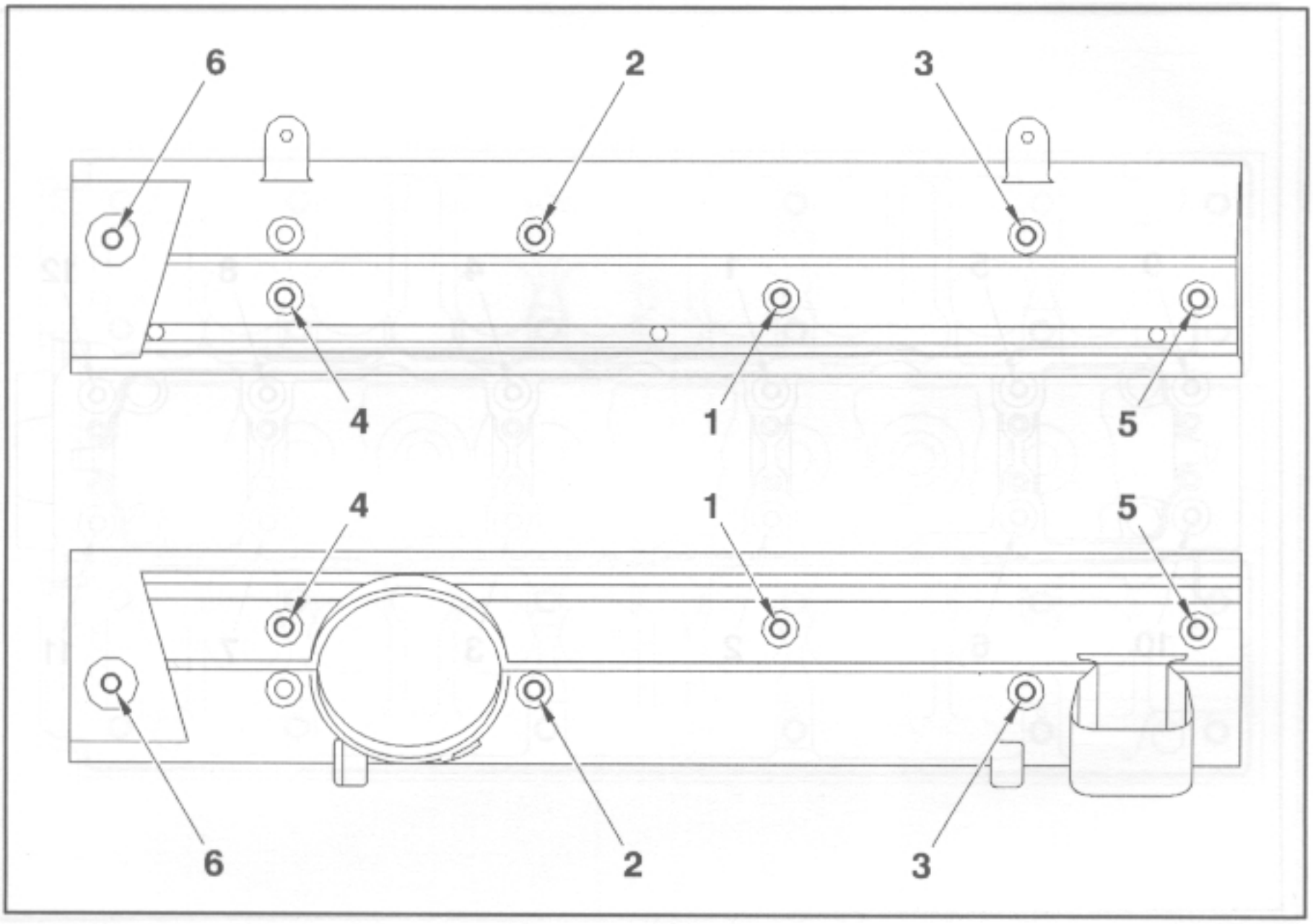


Fig : B1DP01YD

Tighten the bolts to 1 m.daN, observing the correct tightening order.

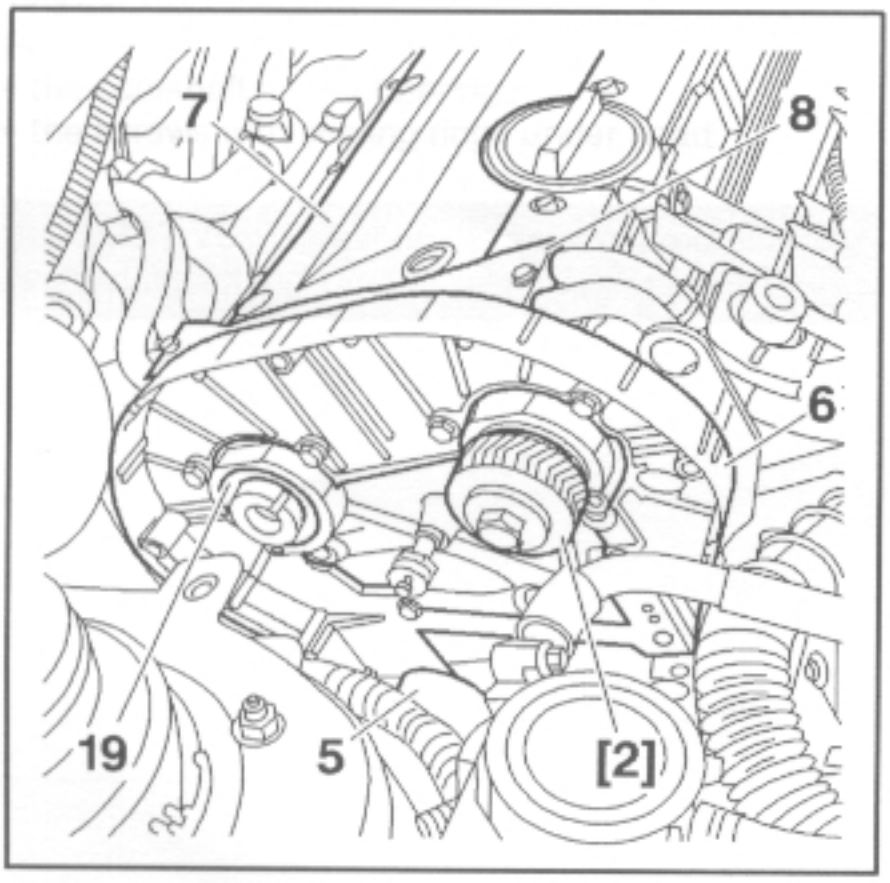


Fig : B1DP01ZC

Fit :

- interior timing cover (6)
- roller tensioner (5)
- the support of the fuel pipes ; cover (8)
- casing (7) of the HT coils

Recouple connecting hoses (11).

Oil the lips of seals (19).

Equip the camshafts with seals (19), using tool [2].

Use the camshaft screw to locate them.

www.WorkshopManuals.co.uk

3.1 – Identification marks of the camshaft hubs

3.1.1 – 1st possibility

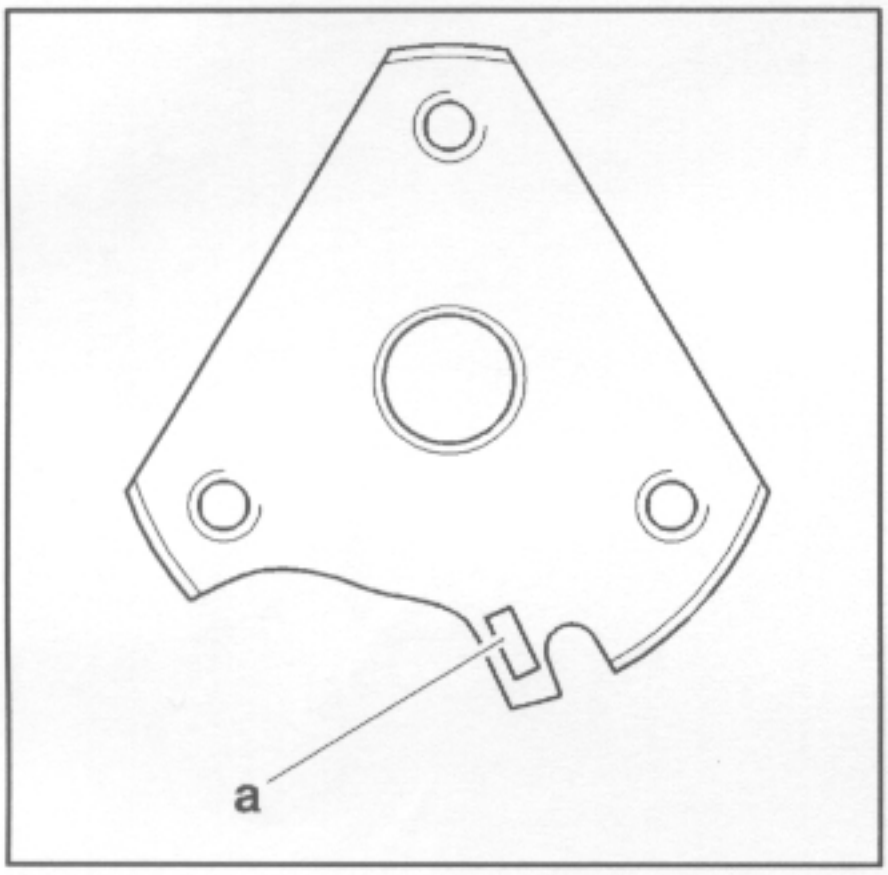


Fig : B1DP020C

Marking :
- inlet camshaft : none
- exhaust camshaft : marking "a"

NOTE : The markings can be seen near the pin slot.

3.1.2 – 2nd possibility

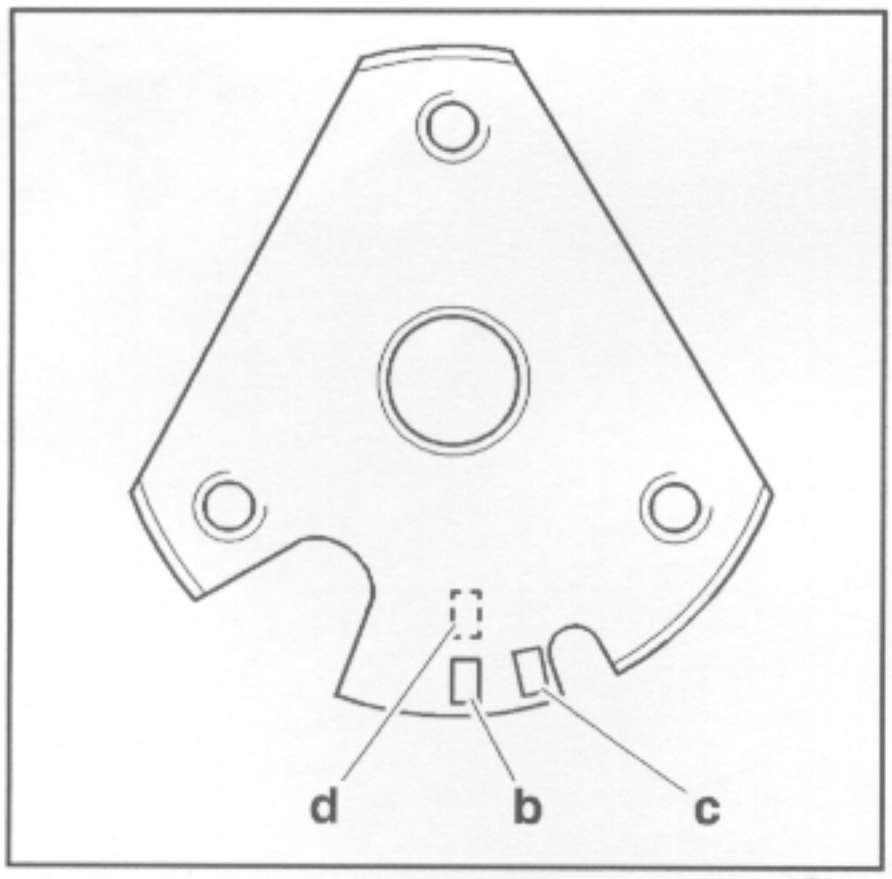


Fig : B1DP03CC

Marking :
- inlet camshaft : "b"
- exhaust camshaft : "c"

Number in marking "d" :
- inlet camshaft : 3
- exhaust camshaft : 4

NOTE : The markings can be seen near the pin slot. Marking "d", bearing the number, appears on the rear surface of the hub.

3.2 – Refitting (continued)



Fig : B1DP021C

Fit :
- the camshaft hubs : inlet camshaft : (3), exhaust camshaft : (4)
- the bolts ; the thrust washers

Introduce timing pegs [1].

Tighten the bolts to 7.5 m.daN.

www.WorkshopManuals.co.uk



Fig : B1DP022C

Clean the contact surfaces of the camshaft pulleys and hubs.

Fit the camshaft pulleys to the hubs, without tightening.

Make sure that the camshaft pulleys move freely around the hubs.

Refit the timing gear drive belt (see the relevant operation).

www.WorkshopManuals.co.uk

XM

OCTOBER 1997

SUBSCRIPTION

RPO No: 7511

REF. 1 No XM 112-00/3

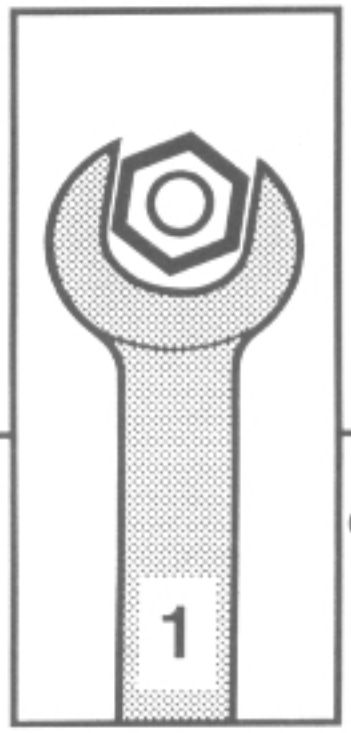
PETROL ENGINE

ES9J4 (2946 cm³. V6)

● CYLINDER HEAD

MAN 108931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".



GB

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

CYLINDER HEAD

REMOVING – REFITTING : CYLINDER HEAD 1

1 – Recommended tools 1
2 – Preliminary operations 2
3 – Removing –
4 – Refitting 4

REMOVING – REFITTING : THE CAMSHAFTS 8

1 – Recommended tools 8
2 – Removing 9
3 – Refitting 10

www.WorkshopManuals.co.uk

REMOVING – REFITTING : CYLINDER HEAD

1 – RECOMMENDED TOOLS

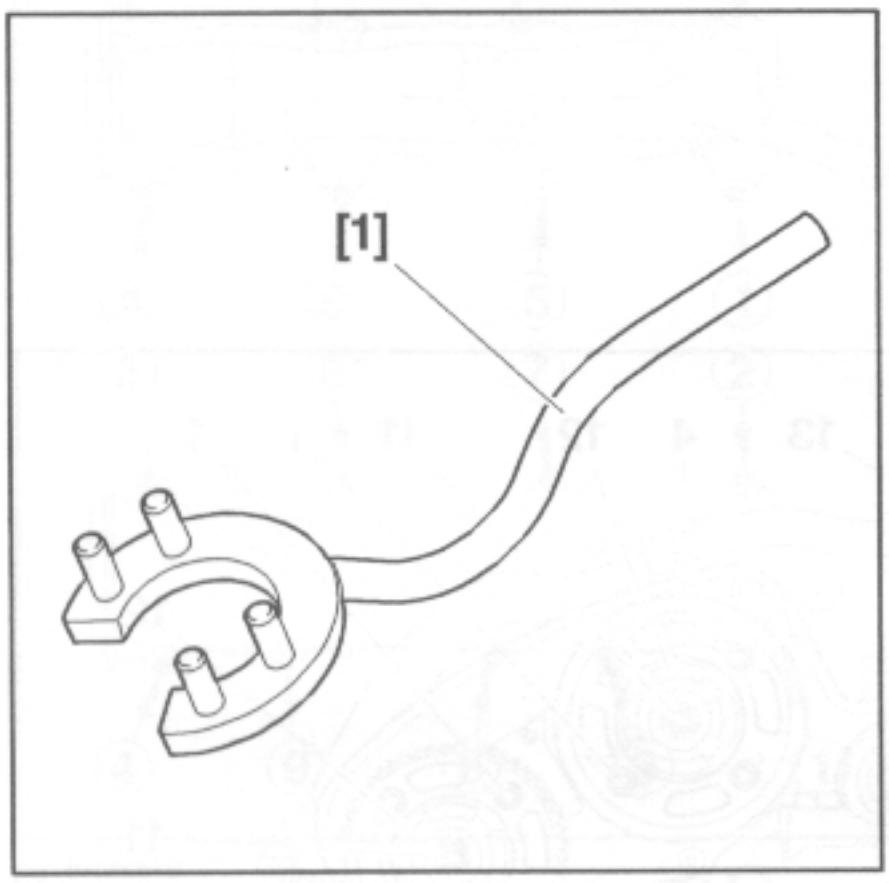


Fig : E5AP03NC

[1] camshaft immobilising key (–).0187 F.

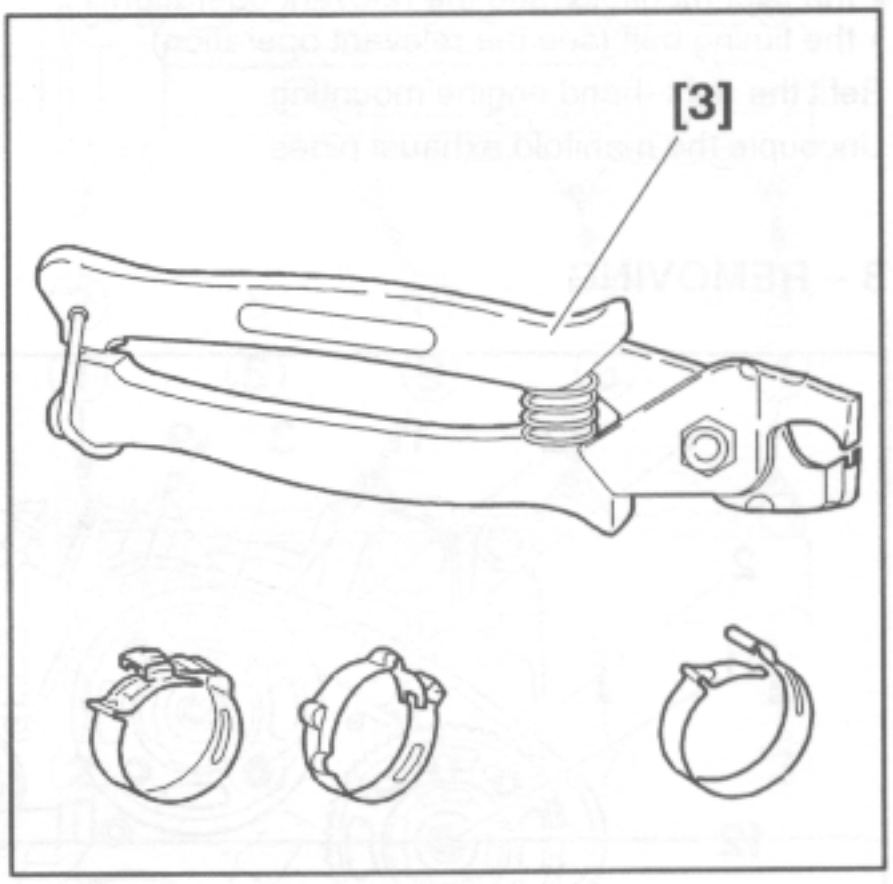


Fig : E5–P12HC

[3] pliers to remove "clic" clips 4145–T.

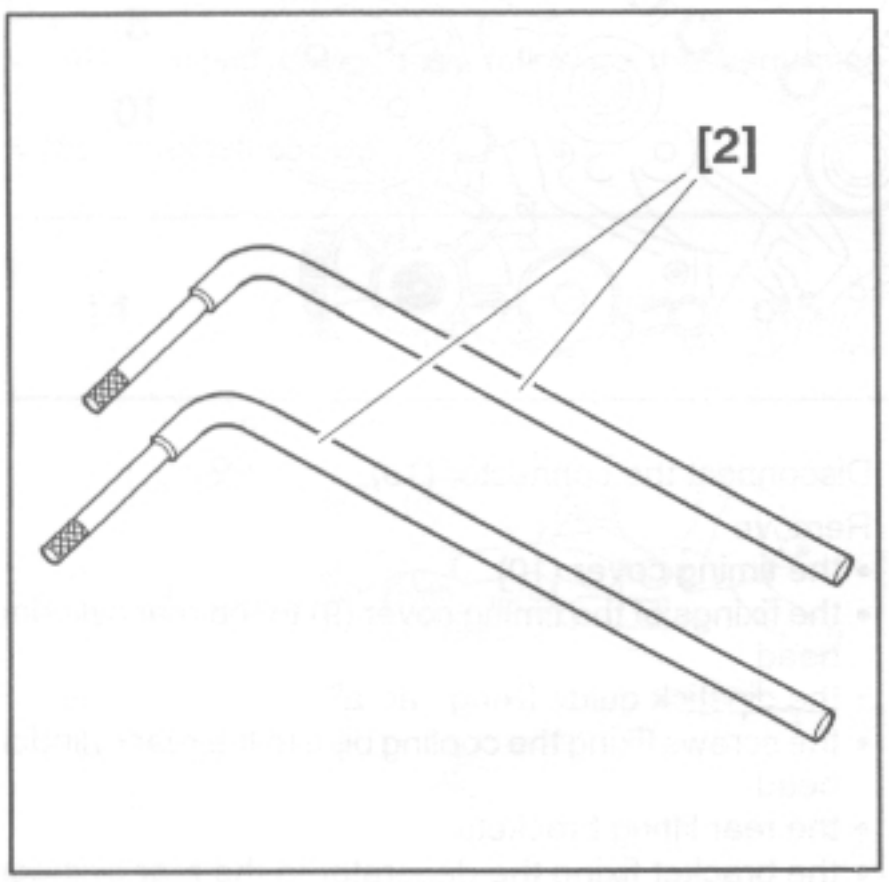


Fig : E5AP051C

[2] cylinder head releasing levers 149–T.

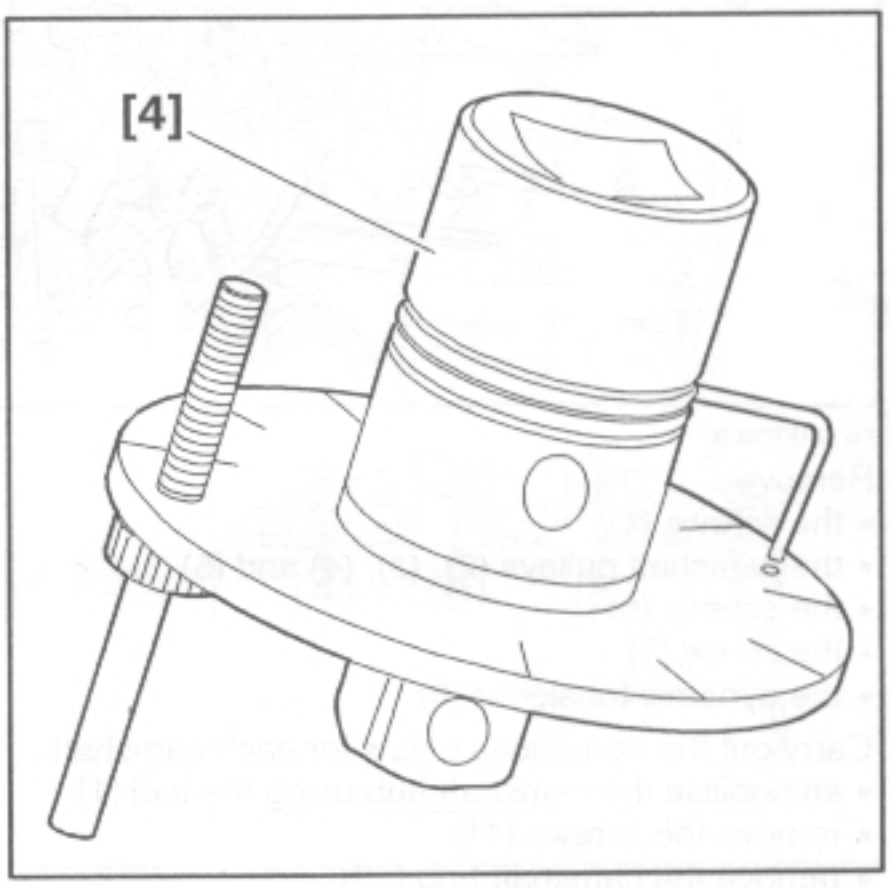


Fig : E5AP052C

[4] angle sector to tighten the cylinder head 4069–T.

www.WorkshopManuals.co.uk

2 – PRELIMINARY OPERATIONS

Drain the cooling system (see the relevant operation).

Remove :
- the engine cover
- the inlet manifold (see the relevant operation)
- the timing belt (see the relevant operation)

Refit the right–hand engine mounting.

Uncouple the manifold exhaust pipes.

3 – REMOVING

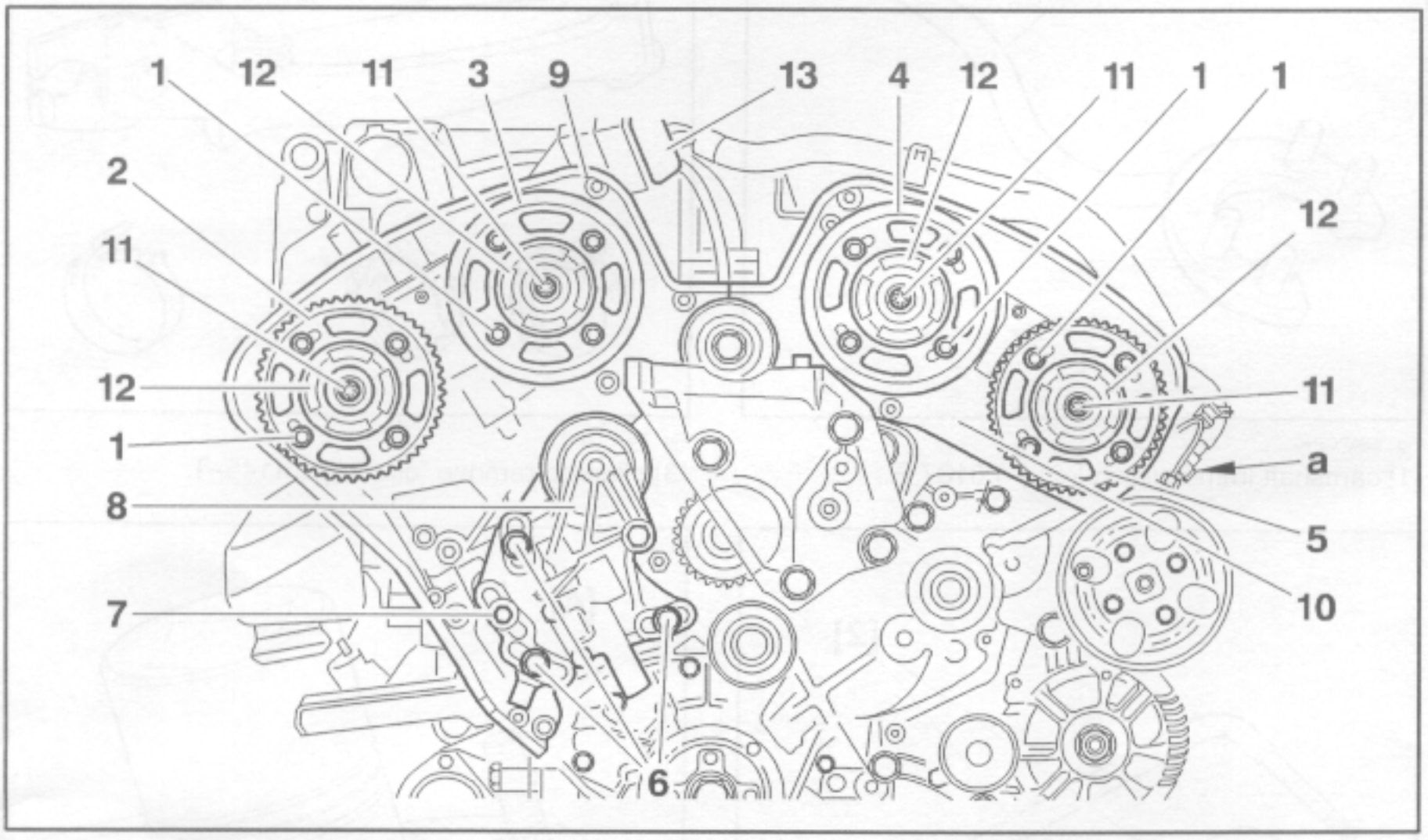


Fig : B1EP10LD

Remove :
- the screws (1)
- the camshaft pulleys (2), (3), (4) and (5)
- the screws (6)
- the screw (7)
- the dynamic tensioner (8)

Carry out the operations below for each camshaft :
- immobilise the camshaft hub using the tool [1]
- remove the screws (11)
- remove the camshaft hub (12)

WARNING : Due to the importance of the tightening torque of the camshaft hubs fixing screws, the spanner must be held straight during removal.

Disconnect the connector (13).

Remove :
- the timing cover (10)
- the fixings of the timing cover (9) to the rear cylinder head
- the dipstick guide fixing ; at "a"
- the screws fixing the cooling pipe to the rear cylinder head
- the rear lifting brackets
- the bracket fixing the deaerator to the rear cylinder head

Uncouple :
- the earths, harnesses and connectors connecting to the cylinder heads
- the high pressure pump pipes ; using a pipe spanner and the tool [3]
- the vent pipes from the camshaft covers

www.WorkshopManuals.co.uk

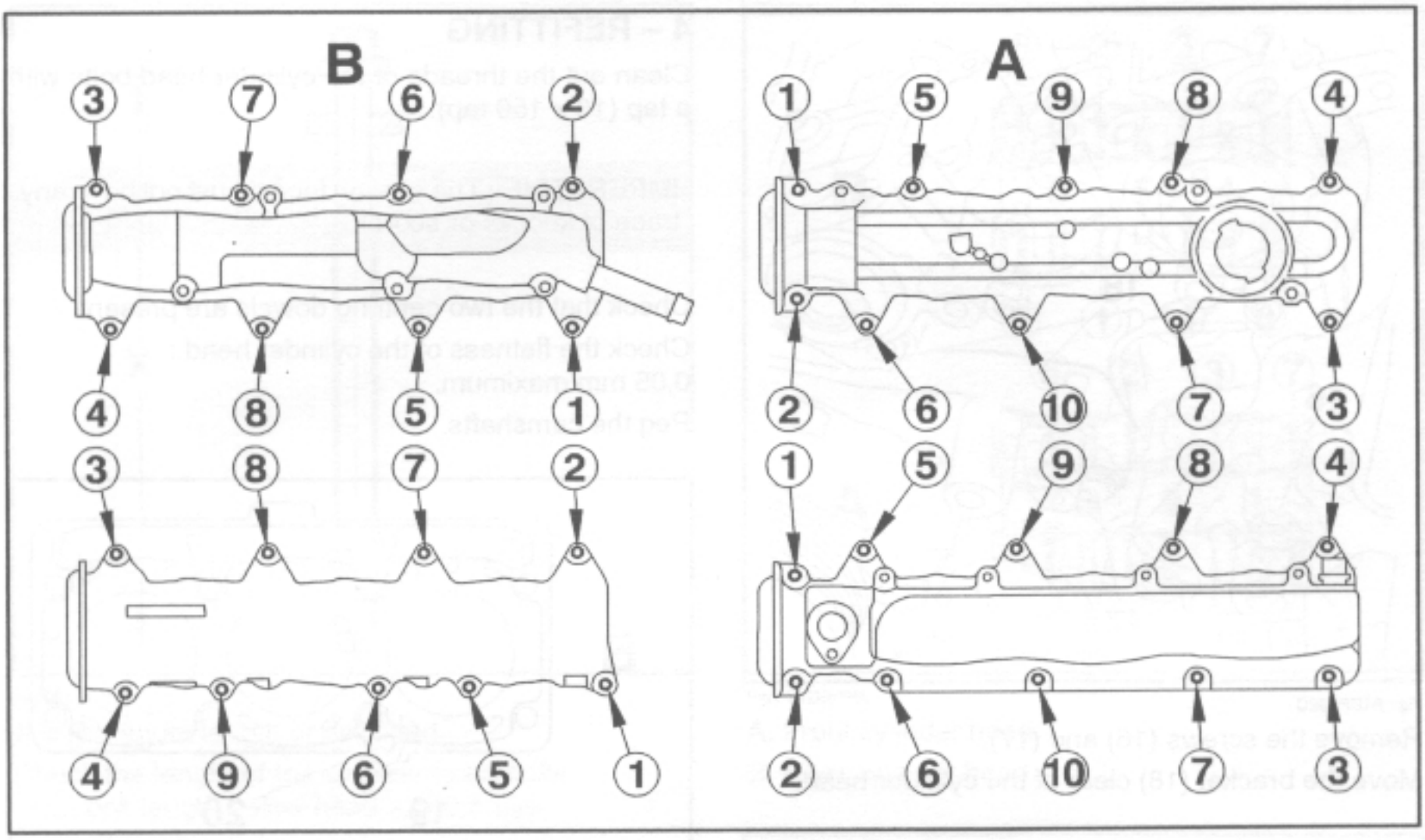


Fig : B1DP08YD

A. Front cylinder head.

B. Rear cylinder head.

Remove :

- the camshaft cover bolts following the sequence shown
- the camshaft covers

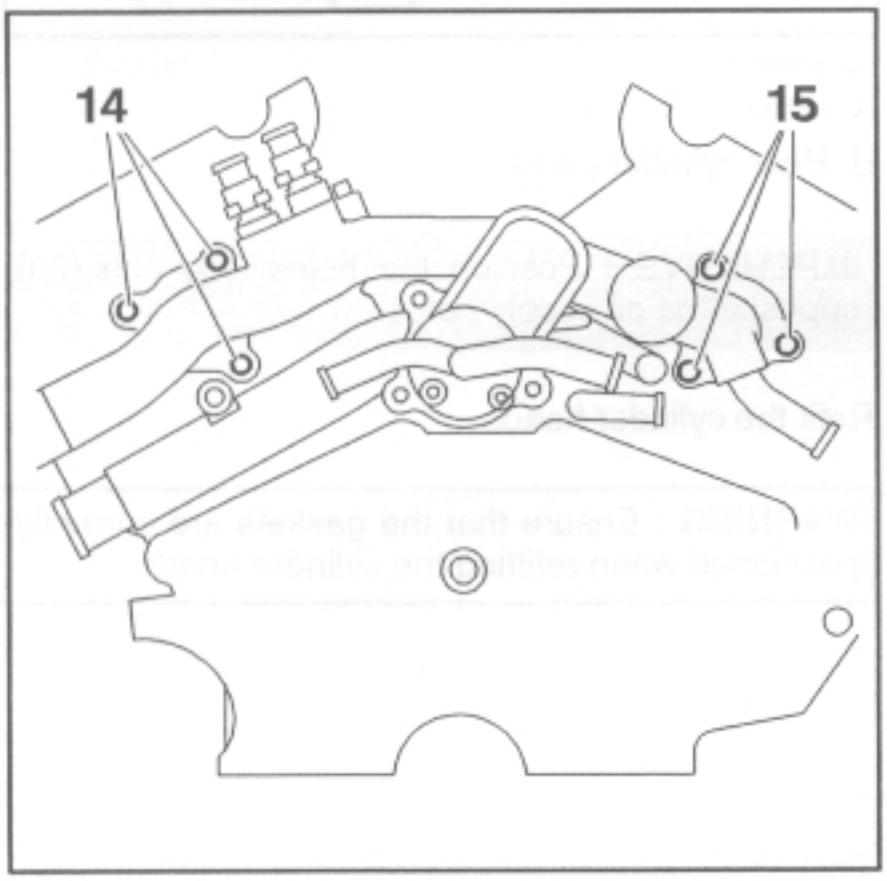


Fig : B1GP05YC

Remove the screws (14) and (15).

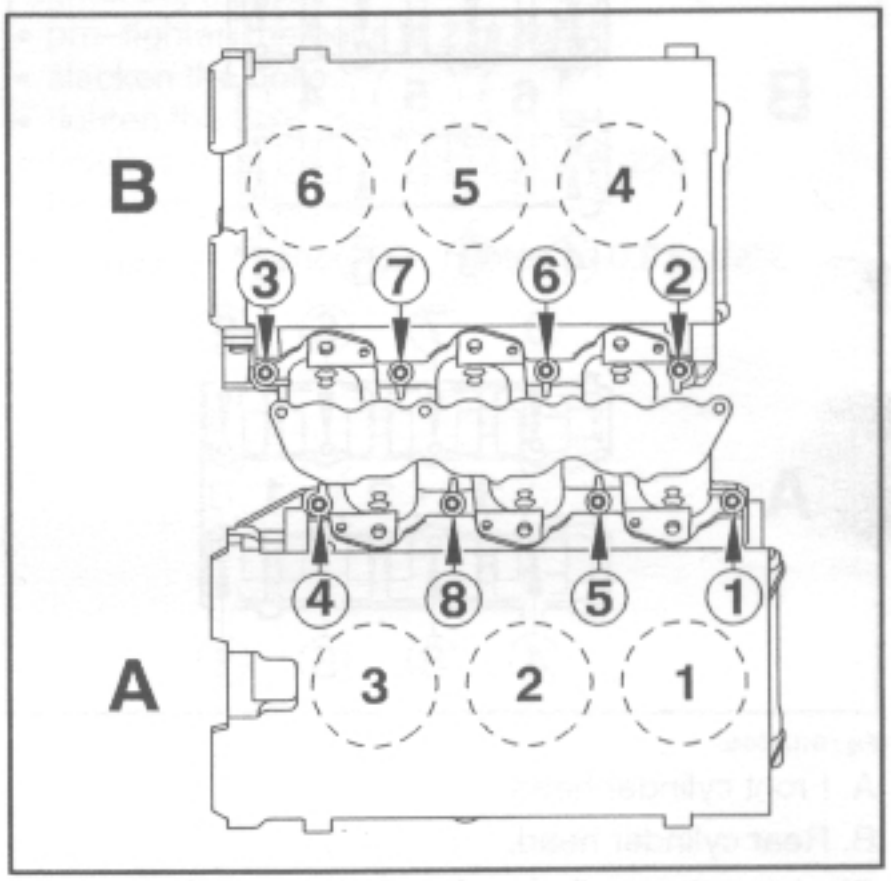


Fig : B1DP092C

A. Front cylinder head.

B. Rear cylinder head.

Following the sequence shown, slacken the nuts and bolts securing the air manifold and fuel rail assembly.

Remove the air manifold/fuel rail assembly.

NOTE : Mark the route of the vent pipe.

www.WorkshopManuals.co.uk

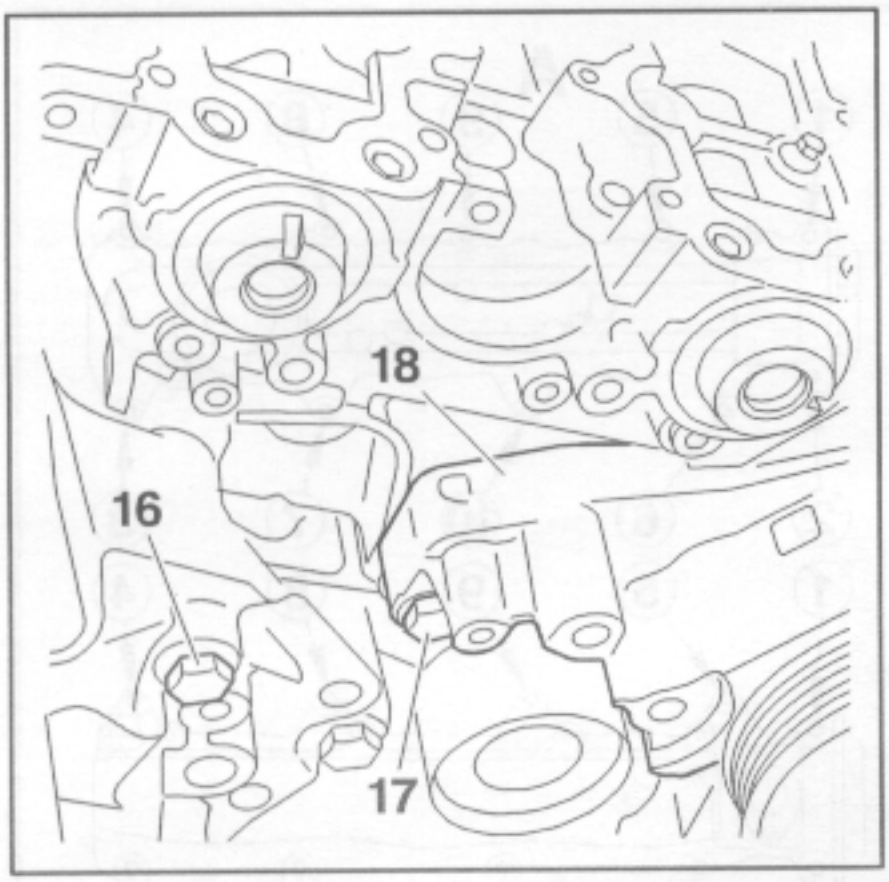


Fig : B1DP132C

Remove the screws (16) and (17).

Move the bracket (18) clear of the cylinder head.

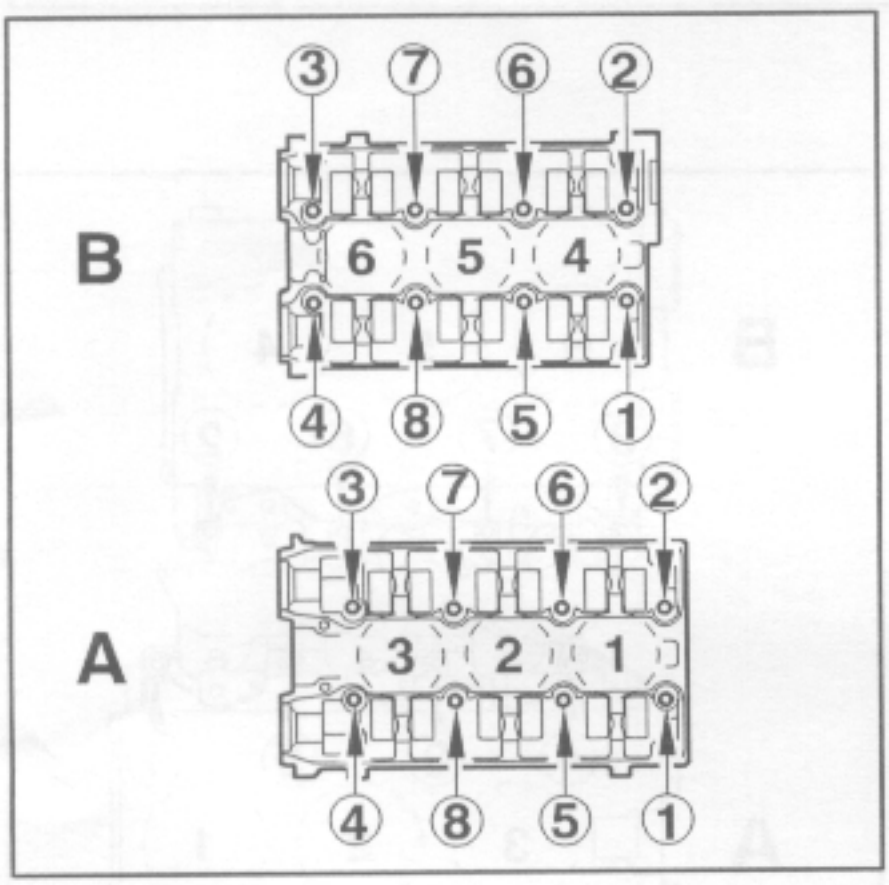


Fig : B1DP094C

A. Front cylinder head.

B. Rear cylinder head.

Slacken the cylinder head bolts following the sequence shown.

Release the cylinder heads from the cylinder block using the levers [2].

Remove the cylinder heads.

WARNING : Protect the various sealing faces.

4 – REFITTING

Clean out the threads of the cylinder head bolts with a tap (10 x 150 tap).

IMPERATIVE : The sealing faces must not have any trace of knocks or scores.

Check that the two centring dowels are present.

Check the flatness of the cylinder head :
0,05 mm maximum.

Peg the camshafts.

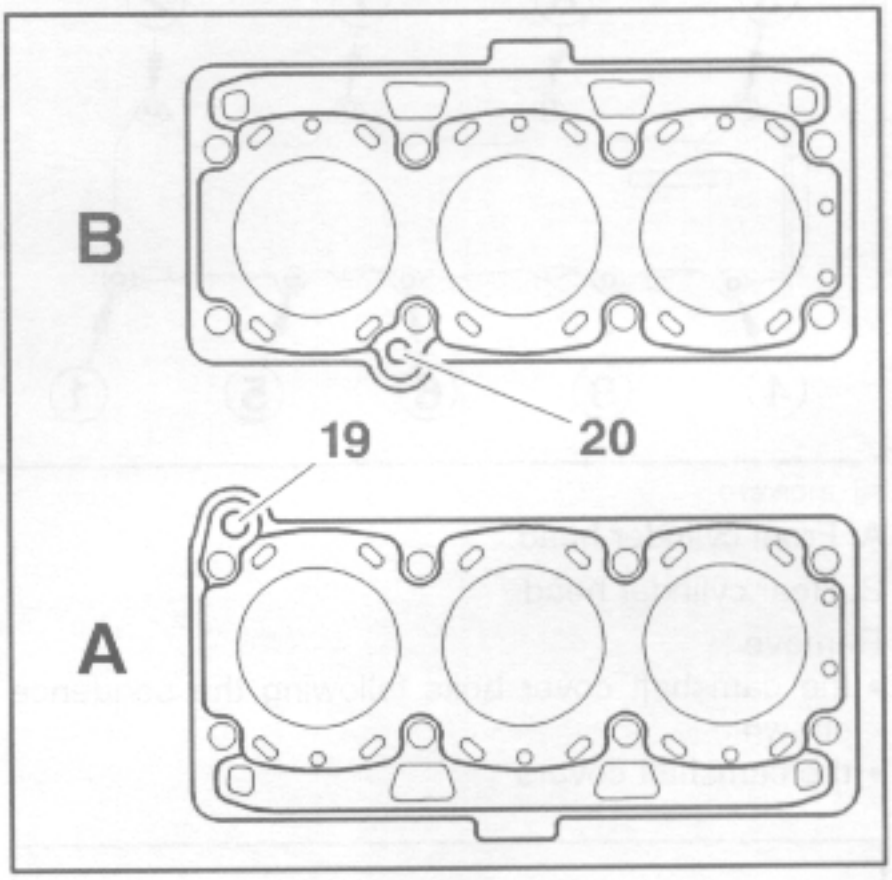


Fig : B1DP133C

A. Front cylinder head.

B. Rear cylinder head.

IMPERATIVE : Position the holes (19) and (20) opposite the oil supply holes.

Refit the cylinder heads.

WARNING : Ensure that the gaskets are correctly positioned when refitting the cylinder heads.

www.WorkshopManuals.co.uk

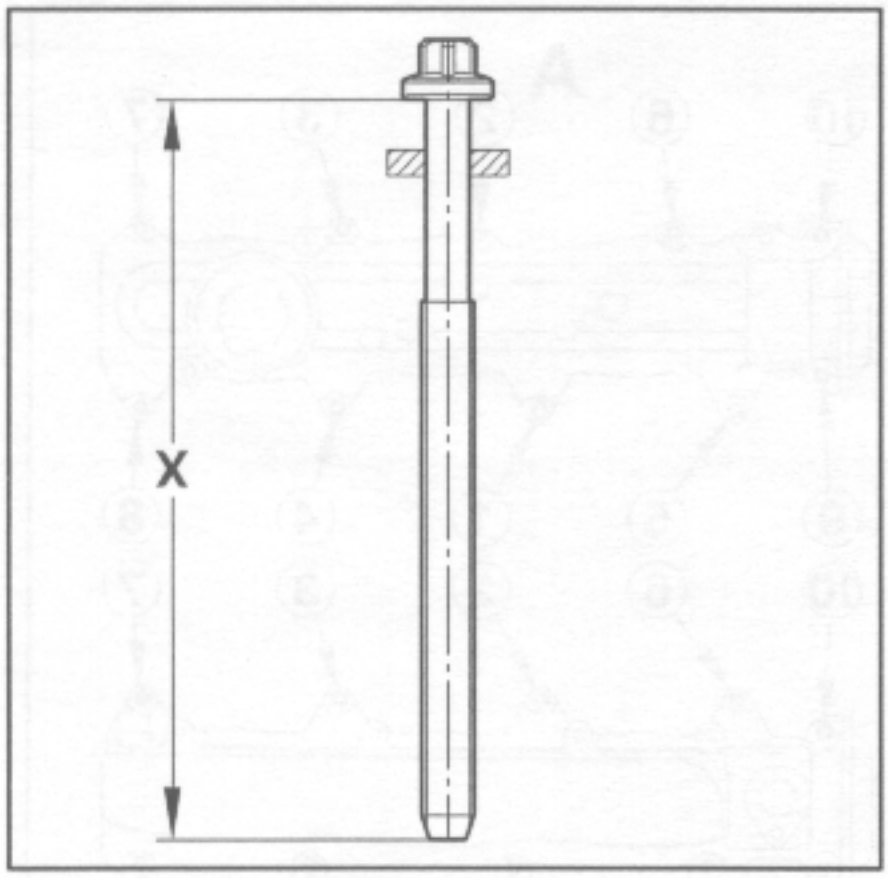


Fig : B1DP134C

X = maximum length under head.

Check the length of the cylinder head bolts :
max. bolt length below head = 149,5 mm.

Clean the cylinder head bolts.

Coat the bolt threads and contact surfaces under the bolt heads with MOLYKOTE G.RAPIDE PLUS G10.

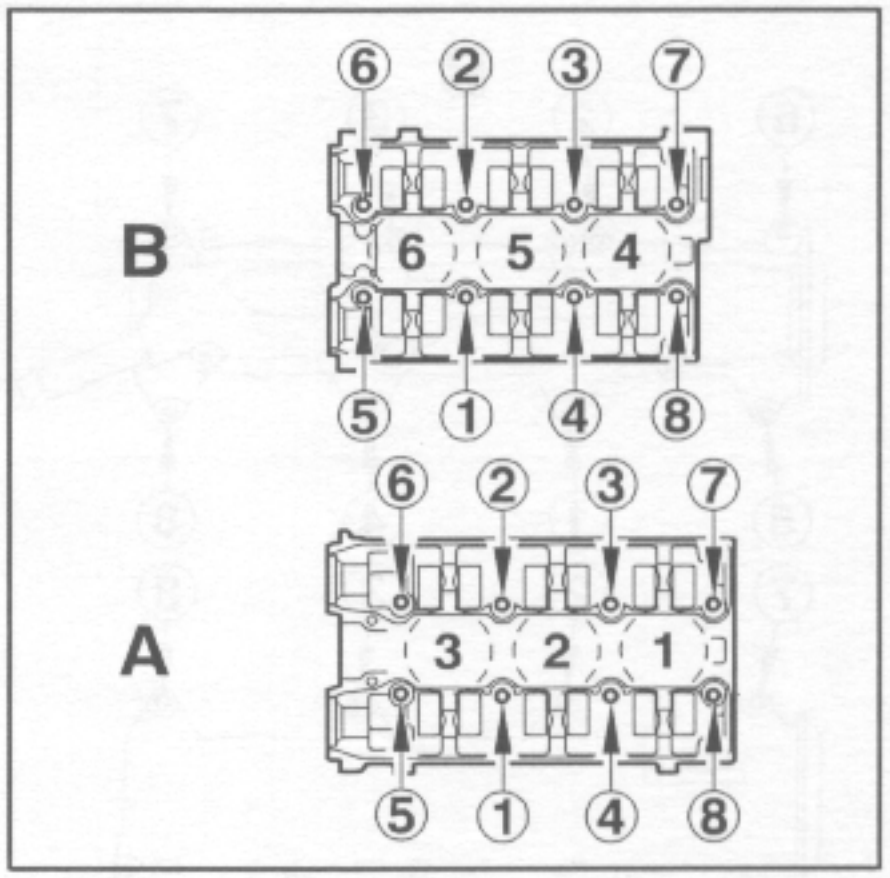


Fig : B1DP096C

A. Front cylinder head.

B. Rear cylinder head.

WARNING : Proceed bolt by bolt in the order shown.

Tightening method :
- pre–tighten the bolts to 2 m.daN
- slacken the bolts
- tighten the bolts to 1,5 m.daN
- finish with an angular tightening of 225 ° ; by means of tool [4]

Refit bolts (14) and (15) ; tighten to 0,8 m.daN.

www.WorkshopManuals.co.uk

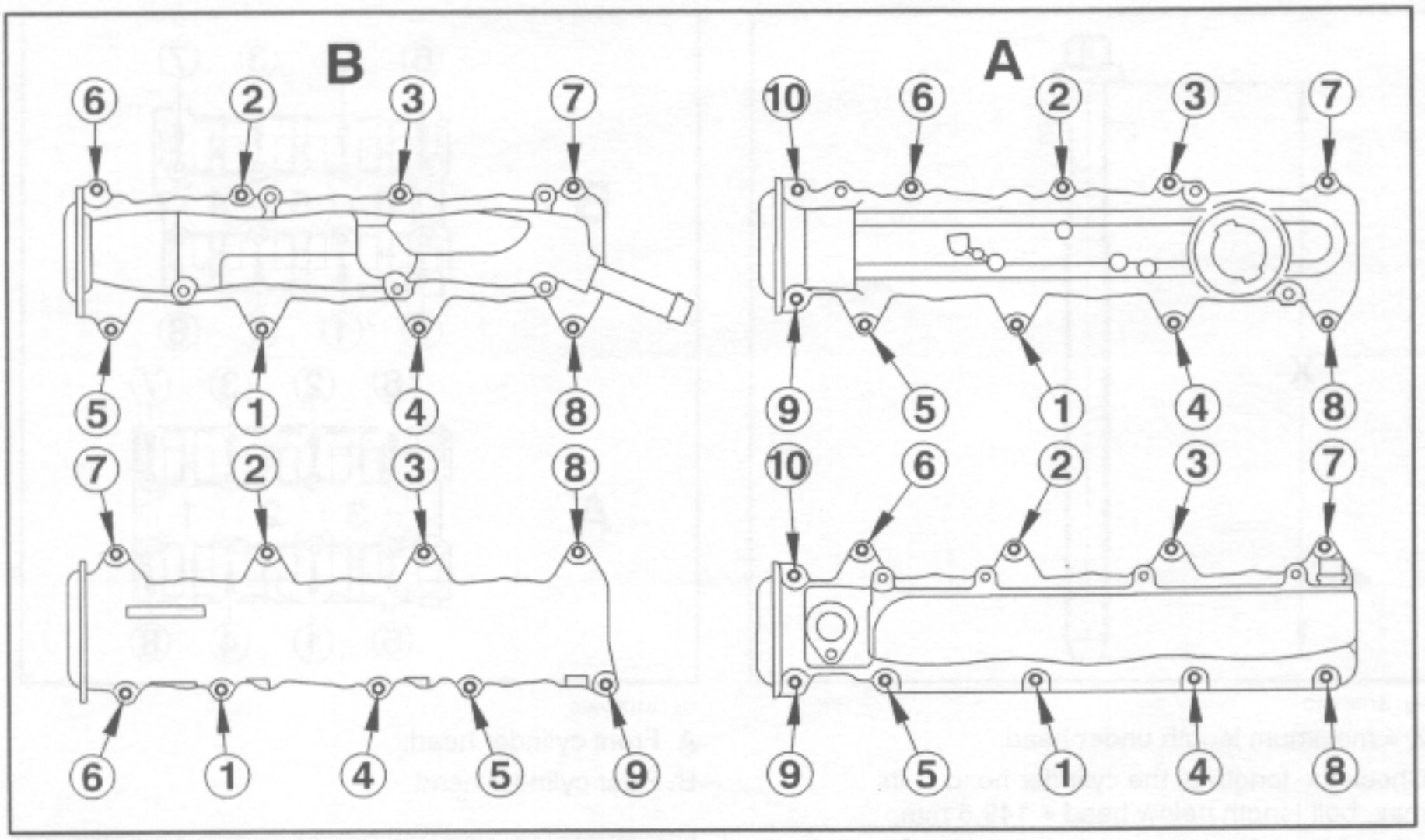


Fig : B1DP08UD

A. Front cylinder head.

B. Rear cylinder head.

Fit :

- the camshaft covers
- the camshaft cover bolts following the sequence shown

WARNING : Proceed bolt by bolt in the order shown.

Tightening method :

- pre–tighten the bolts to 0,5 m.daN
- tighten the bolts to 0,8 m.daN

Connect the vent pipes.

www.WorkshopManuels.co.uk

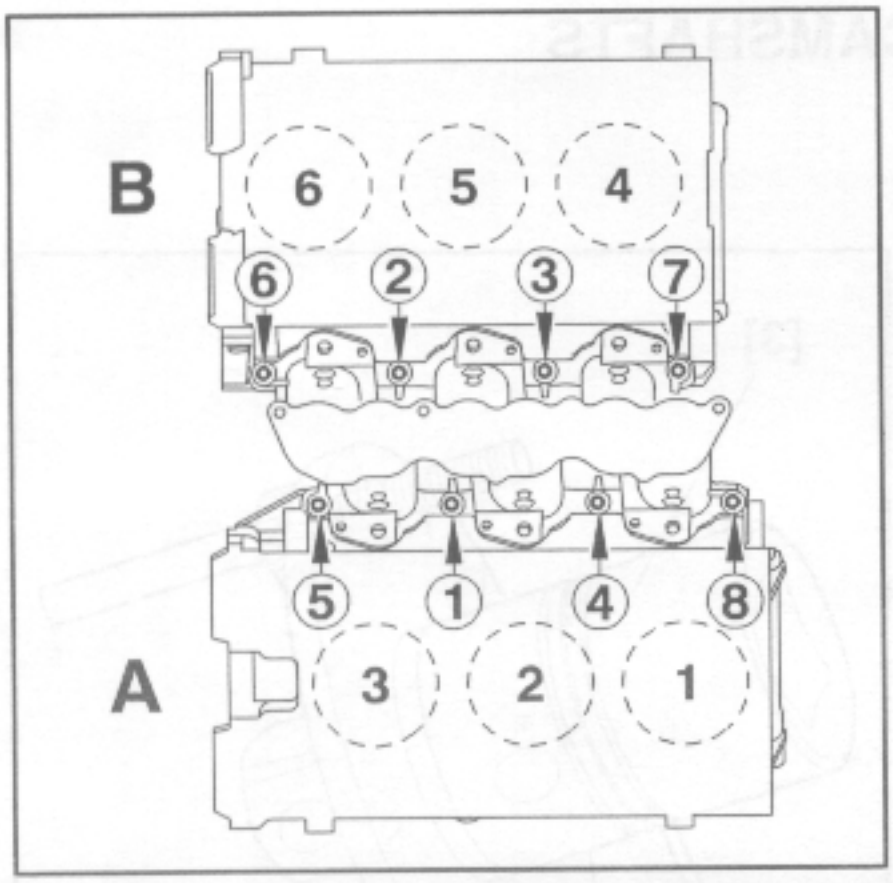


Fig : B1DP097C

A. Front cylinder head.

B. Rear cylinder head.

Replace the seals between the lower manifold and the cylinder head.

Replace the seal between the upper and lower manifolds.

Refit the lower air manifold.

WARNING : Proceed bolt by bolt in the order shown.

Tightening method. Fixing with diameter of 6 mm :
- 0,4 m.daN pre–tightening
- tightening torque = 1 m.daN

Check.

Tightening method. Fixing with diameter of 8 mm :
- 1 m.daN pre–tightening
- tightening torque = 2,5 m.daN

Reconnect the connector (13).

Fit :
- the timing cover (10)
- the fixings of the timing cover (9) to the rear cylinder head

4.1 – Carry out the operations below on each camshaft

Fit the camshaft hub (12).

Immobilise the camshaft hub using the tool [1].

Fit and tighten screws (11) :
- first procedure : tighten to 2 m.daN.
  Tighten by an angle of 57 ° with tool [4]
- second procedure :
  tighten to 8 m.daN

4.2 – Refitting (continued)



Fig : B1EP10MC

Fit :
- the dynamic tensioner (8)
- the screw (7) ; tighten to 1 m.daN
- the screws (6) (without tightening)
- the camshaft pulleys (2), (3), (4) and (5)
- the screws (1) (without tightening)
- the exhaust clamps ; tighten to 2,5 m.daN

Remove the right–hand engine mounting.

Fit :
- the timing belt (see the relevant operation)
- the bracket fixing the deaerator to the rear cylinder head
- the screw (17) ; tighten to 4 m.daN
- the screw (16) ; tighten to 6 m.daN

Couple :
- the high pressure pump pipes ; using a pipe spanner and the tool [3]
- the earths, harnesses and connectors connecting to the cylinder heads

Fit :
- the rear lifting brackets
- the screws fixing the cooling pipe to the rear cylinder head
- the dipstick guide fixing ; tighten to 2,5 m.daN
- the upper inlet manifold (see the relevant operation)

Fill and bleed the cooling system (see the relevant operation).

Reinitialise the injection ECU.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : THE CAMSHAFTS

1 – RECOMMENDED TOOLS

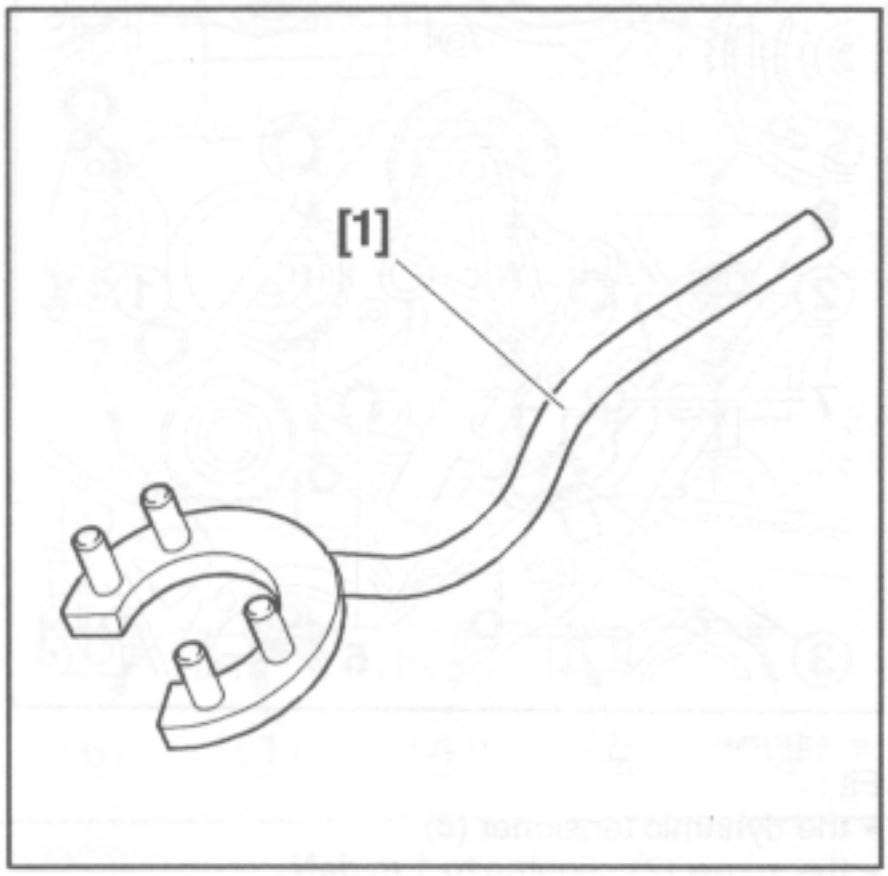


Fig : E5AP03NC

[1] camshaft hub locking tool (–).0187 F.

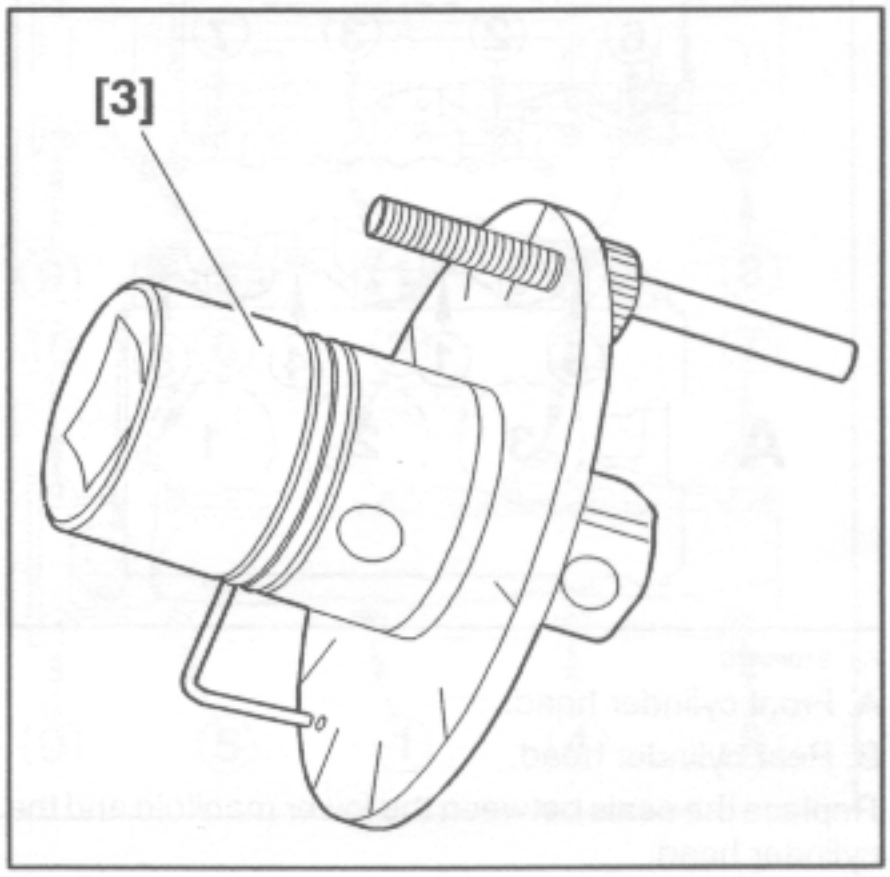


Fig : E5AP03QC

[3] adaptor for angular tightening 4069–T.

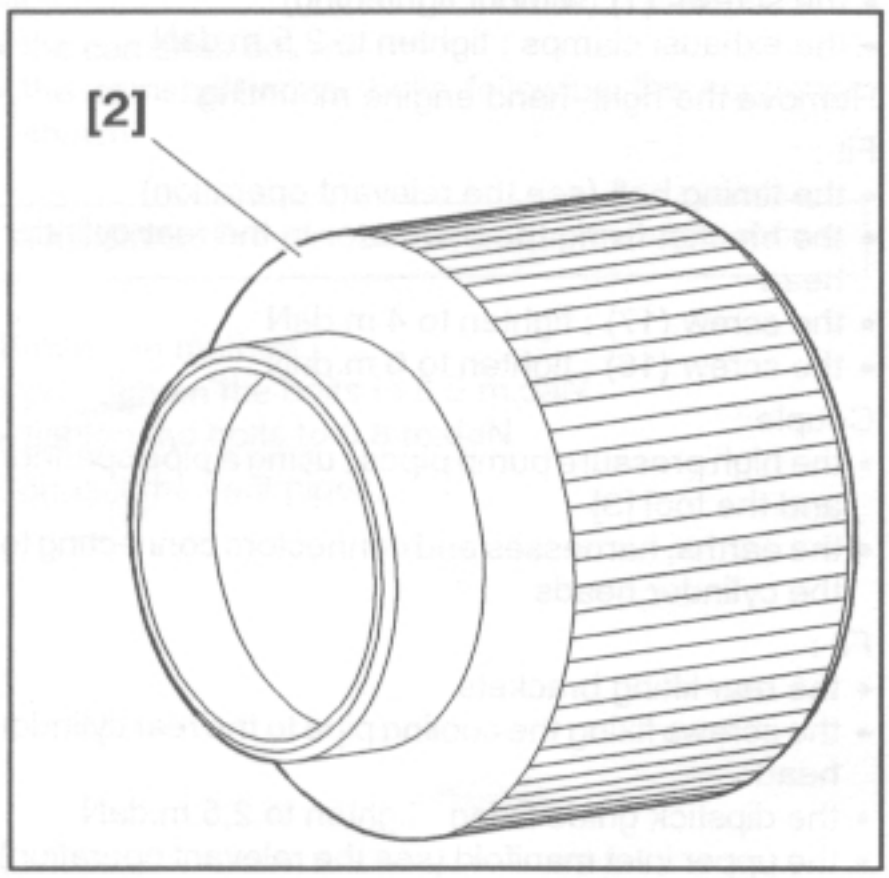


Fig : E5AP03PC

[2] fitting mandrel of the camshaft lipped seal C.0187 D.

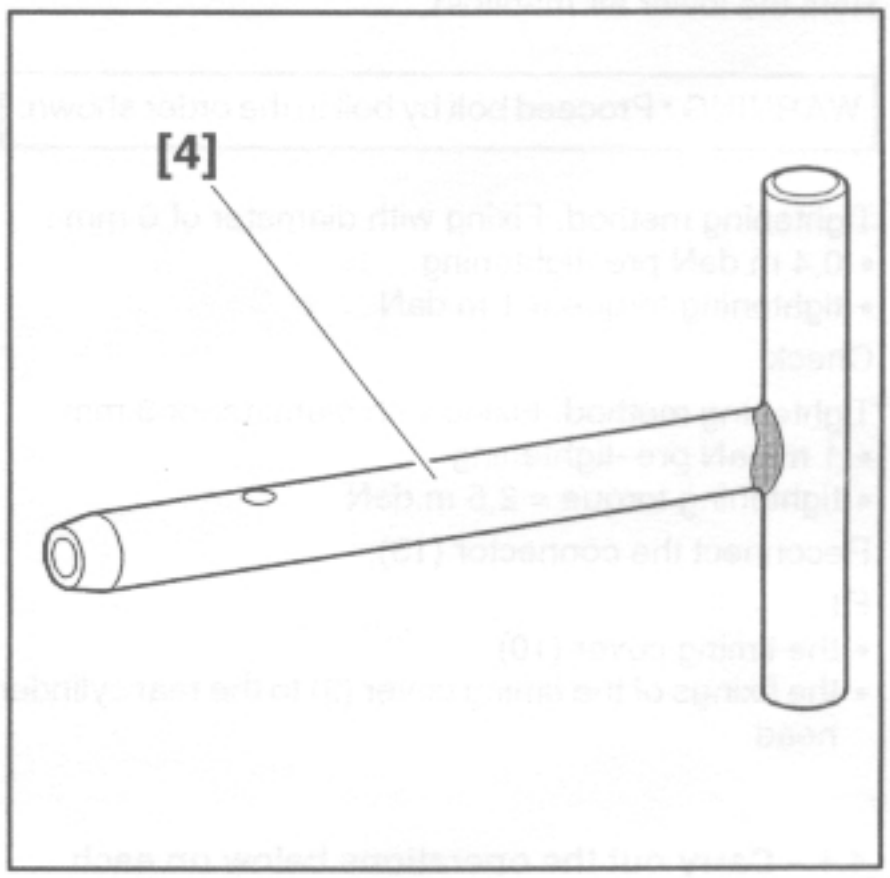


Fig : E5AP03TC

[4] camshaft setting pegs (–).0187 B.

www.WorkshopManuals.co.uk

2 – REMOVING

Remove the cover.

Uncouple the ignition harness.

Remove :
- the rear lifting brackets
- the ignition harness mounting
- the upper inlet manifold (see the relevant operation)
- the timing belt (see the relevant operation)
- the camshaft drive pulleys

Refit the right hand upper engine mounting.

Lock the camshaft hubs using the tool [1].

Remove the camshaft hubs fixing screws.

WARNING : The tightening torques of the camshaft hubs fixing screws are important. Ensure that the spanner is held straight during removal.

Remove :
- the timing cover bolts of the camshaft bearing cap casings
- the front timing cover

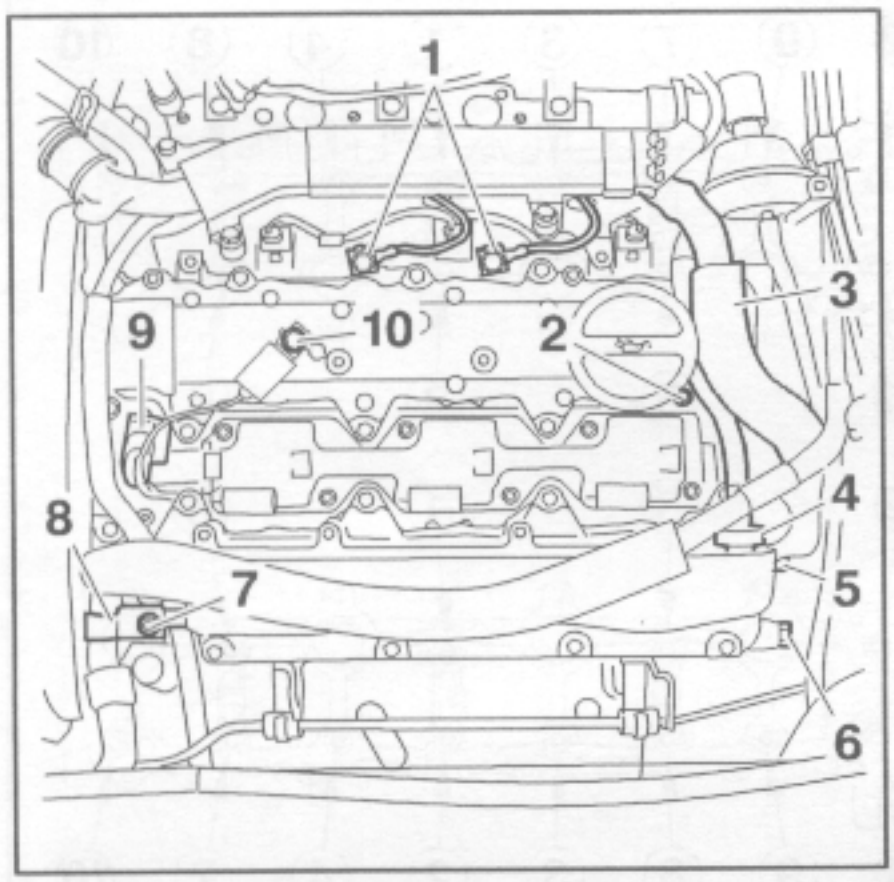


Fig : B1DP135C

Disconnect the earths (1).

Remove the screws (2), (5), (6) and (7).

Disconnect the connector (9).

Disconnect the pipe (4).

Remove flange (8).

Release :
- the LHM supply pipe
- the electrical harness (3)

Remove the screw (10).

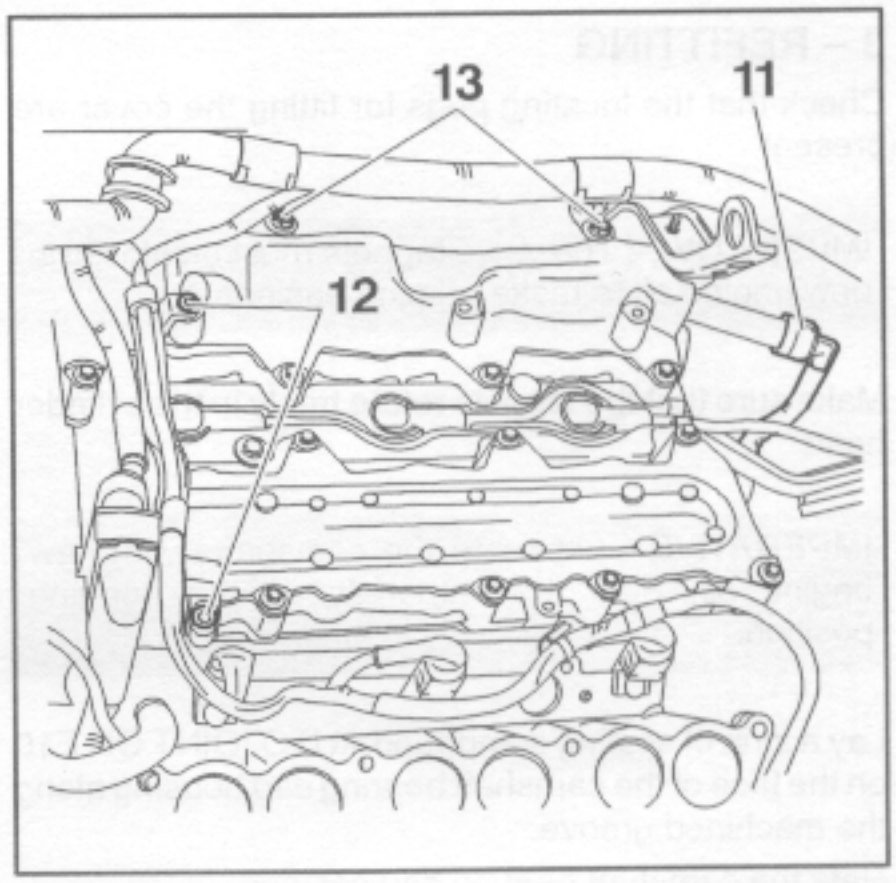


Fig : B1DP136C

Disconnect the pipe (11).

Remove the screws (12) and (13).

Progressively loosen the bolts of each cylinder head cover in a spiral sequence starting from the outside.

Remove the cylinder head covers.

WARNING : Progressively loosen the camshaft bearing cap housing fixing screws in a spiral sequence, starting from the outside, so that they move a few millimetres from the seal surface.

Remove :
- the camshaft bearing caps housings
- the camshafts

NOTE : If removing the valve tappets. Mark the location of the tappets before removing them.

www.WorkshopManuals.co.uk

3 – REFITTING

Check that the locating pegs for fitting the cover are present.

IMPERATIVE : The valve tappets must be stored in new engine oil to make priming easier.

Make sure that the tappets rotate freely in the cylinder head.

IMPERATIVE : Lubricate the camshafts with new engine oil. Refit the camshafts in the pegging position.

Lay a strip of sealing compound AUTOJOINT OR E10 on the face of the camshaft bearing cap housing along the machined groove.

Refit the camshaft bearing cap casings.

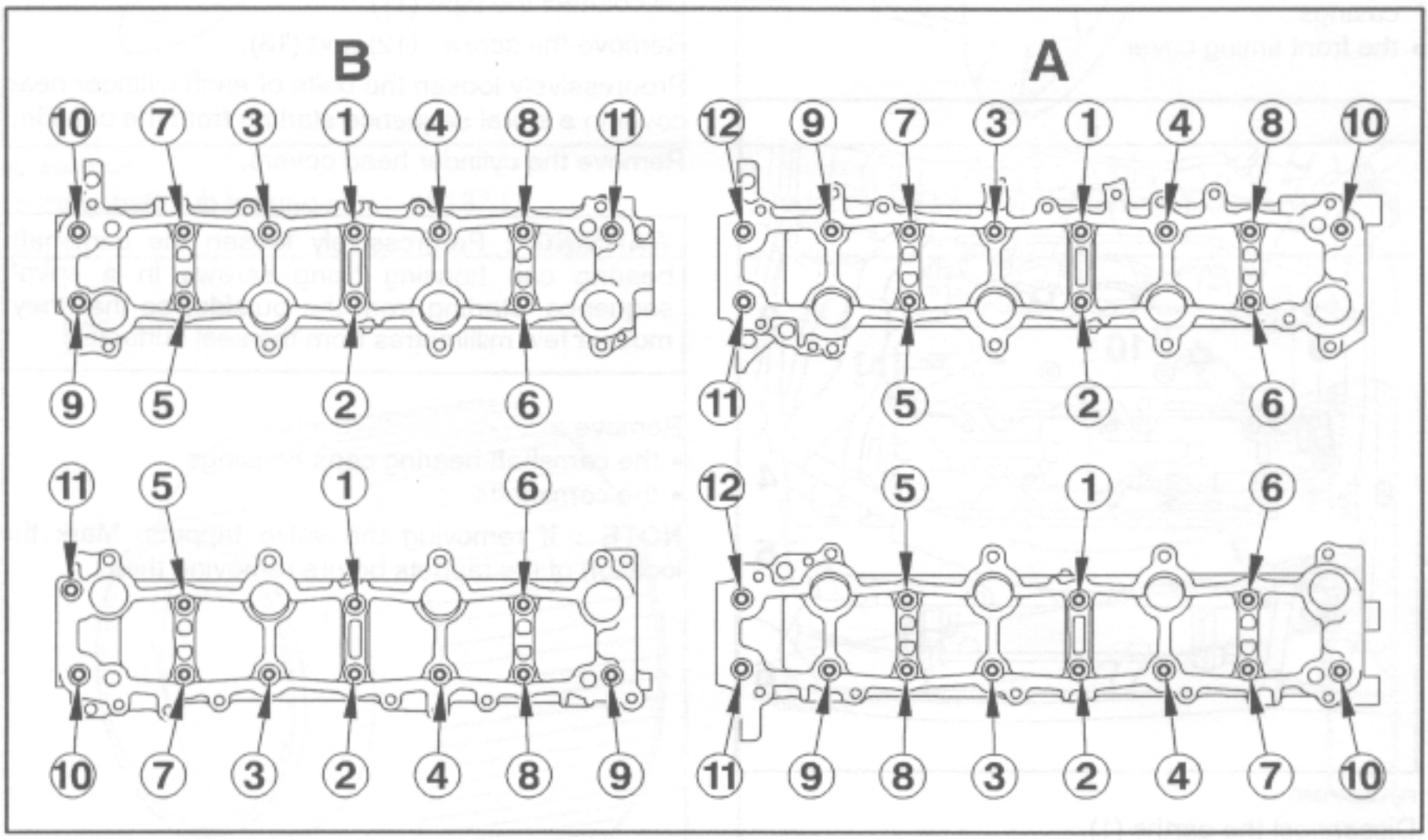


Fig : B1DP08TD

A : front cylinder head.

B : rear cylinder head.

Nip then progressively tighten the fixing bolts in the order shown.

Pre–tighten to 0,2 m.daN.

Tightening torque = 0,8 m.daN.

www.WorkshopManuals.co.uk

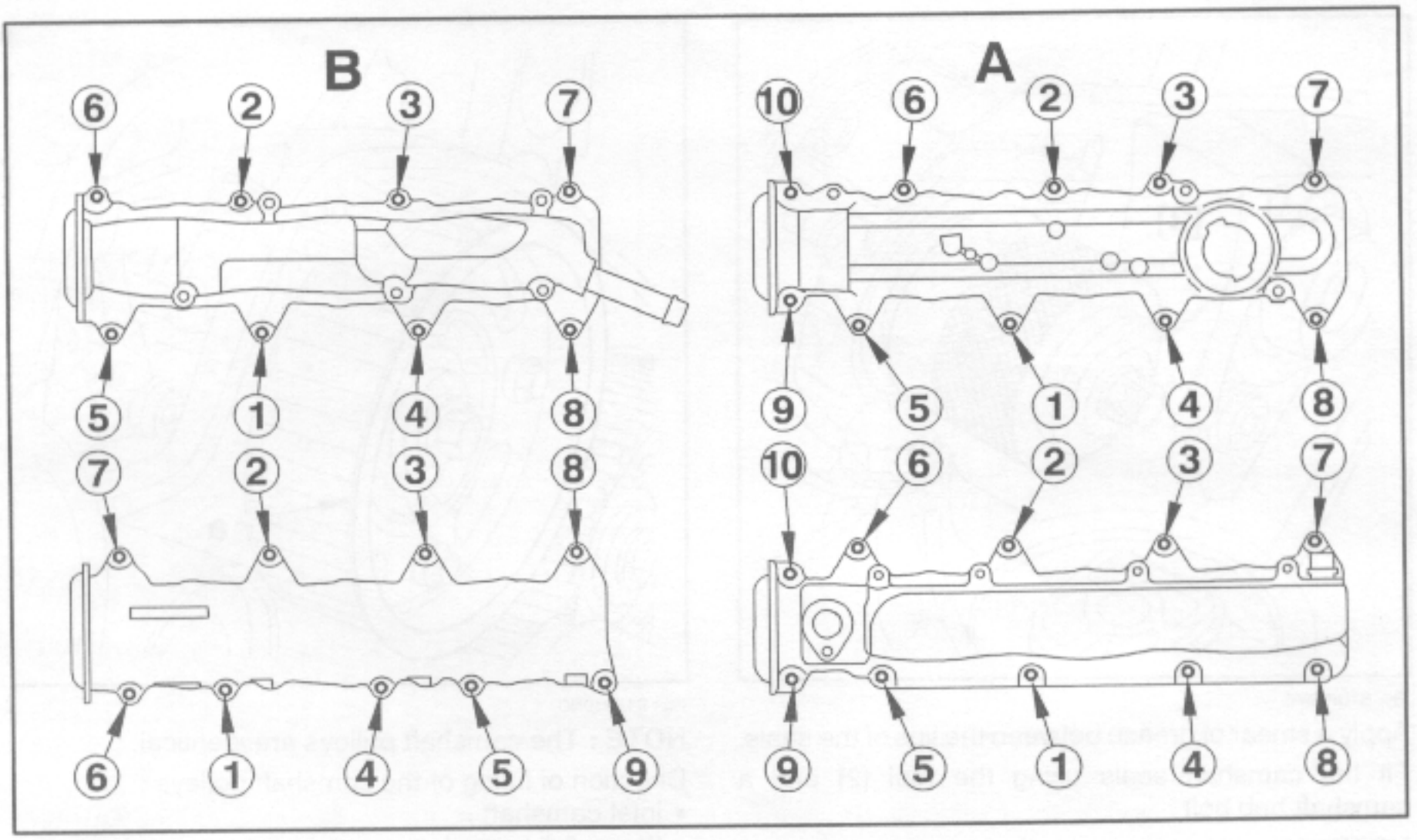


Fig : B1DP08UD

A : front cylinder head.

B : rear cylinder head.

NOTE : The cylinder head covers are fitted with a gasket made of composite material which can be removed several times. If the gasket is damaged, it can be partially repaired with sealing product AUTOJOINT OR E10.

Nip then progressively tighten the fixing bolts in the order shown.

Pre–tighten to 0,5 m.daN.

Tightening torque = 1 m.daN.

Fit :

- the timing cover bolts on the camshaft bearing cap casings
- the front timing cover

IMPERATIVE : The outer face of the gaskets must be free of all traces of oil.

www.WorkshopManuals.co.uk

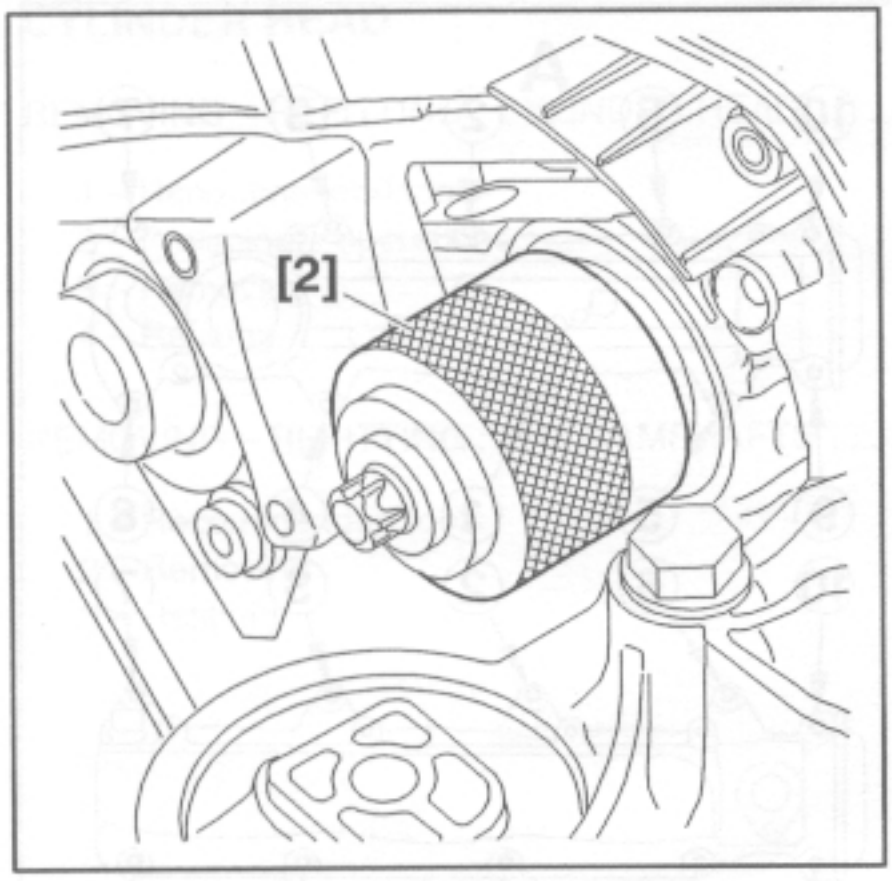


Fig : B1DP08VC

Apply a smear of grease between the lips of the seals.

Fit the camshaft seals using the tool [2] and a camshaft hub bolt.

NOTE : Use only new seals.

Fit the camshaft hubs.

NOTE : Smear the threads and contact faces under heads of the bolts with MOLYKOTE G. RAPID PLUS grease.

Carry out the operations below on both camshafts.

Immobilise the camshaft hub using the tool [1].

Refit the camshaft hub fixing bolt.

Peg the camshaft hubs ; by means of tools [4].

Tighten the camshaft hub fixing bolt using one of the following two methods :

- 1st method :
  tighten to 2 m.daN.
  Angular tightening of 57° ; by means of tool [3]
- 2nd method :
  tighten to 8 m.daN

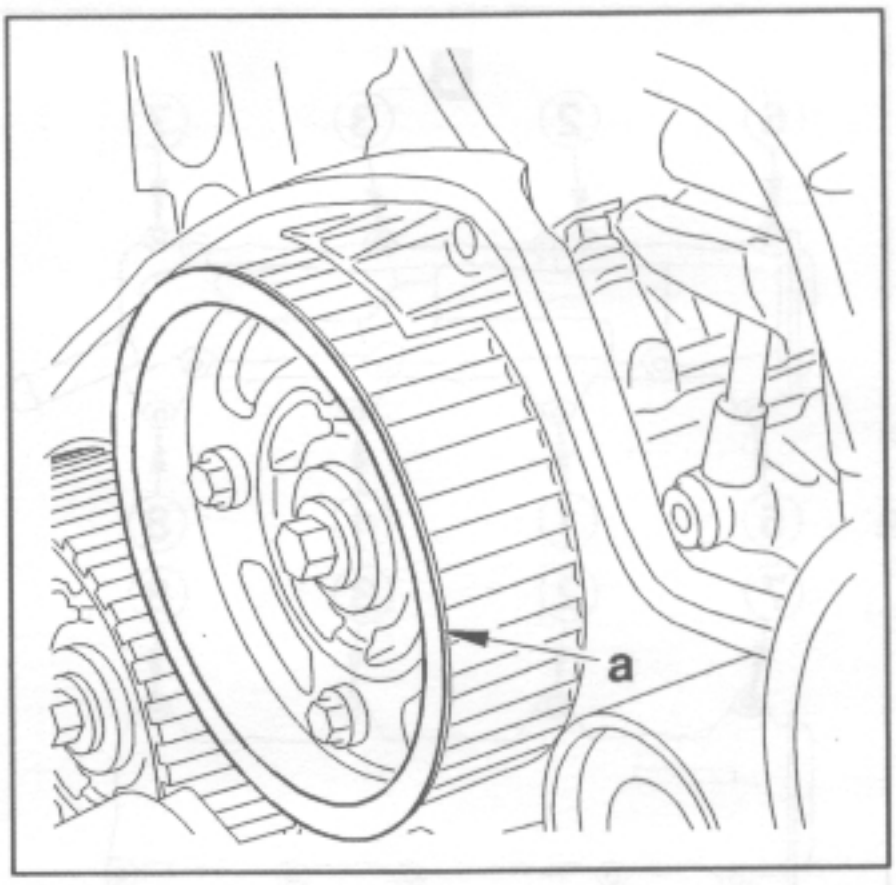


Fig : B1EP10NC

NOTE : The camshaft pulleys are identical.

Direction of fitting of the camshaft pulleys :

- inlet camshaft =
  flange "a" towards the outside
- exhaust camshaft =
  flange "a" towards the inside

Refit screw (10).

Reconnect the connector (9).

Position :

- the LHM supply pipe
- the electrical harness (3)

Fit :

- the flange (8)
- the screws (12), (13), (7), (6), (5) and (2)
- the earths (1)
- the rear lifting brackets
- the timing belt (see the relevant operation)
- the upper inlet manifold (see the relevant operation)

Couple up pipe (4).

Refit the ignition harness mounting.

Connect the ignition harness.

Fit the cover.

© "The intellectual property rights relating to the technical information contained in this document belong exclusively to the Manufacturer. Reproduction, translation or distribution in whole or in part without prior written authorisation from the Manufacturer is forbidden".

www.WorkshopManuals.co.uk

31st MAY 1995

ABONNEMENT GME

REF. 1 No XM 122-00/2

XU 10J4R ENGINE

● VALVE TIMING

MAN 058931

GB

1

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

VALVE TIMING

CHECKING : THE VALVE TIMING SETTING 3

REMOVING – REFITTING : THE TIMING BELT 7

www.WorkshopManuals.co.uk

CHECKING : THE VALVE TIMING SETTING

1 – RECOMMENDED TOOLS

Engine kit : 7004–T.

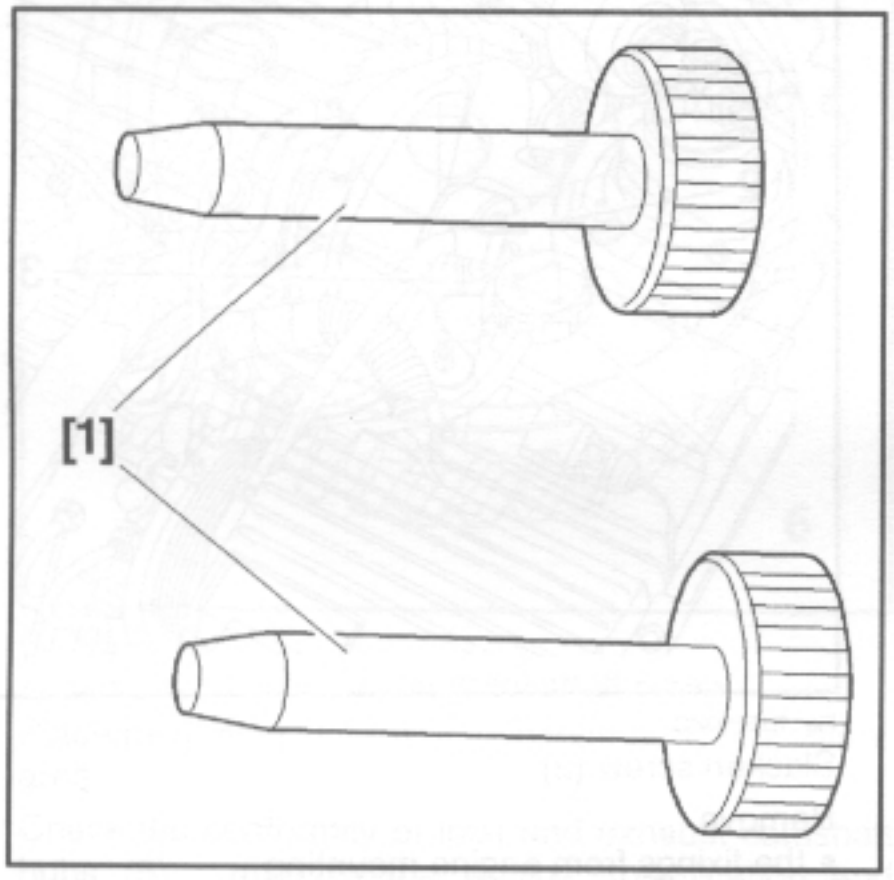


Fig : E5–P04HC

[1] camshaft timing peg 9041–T.Z.

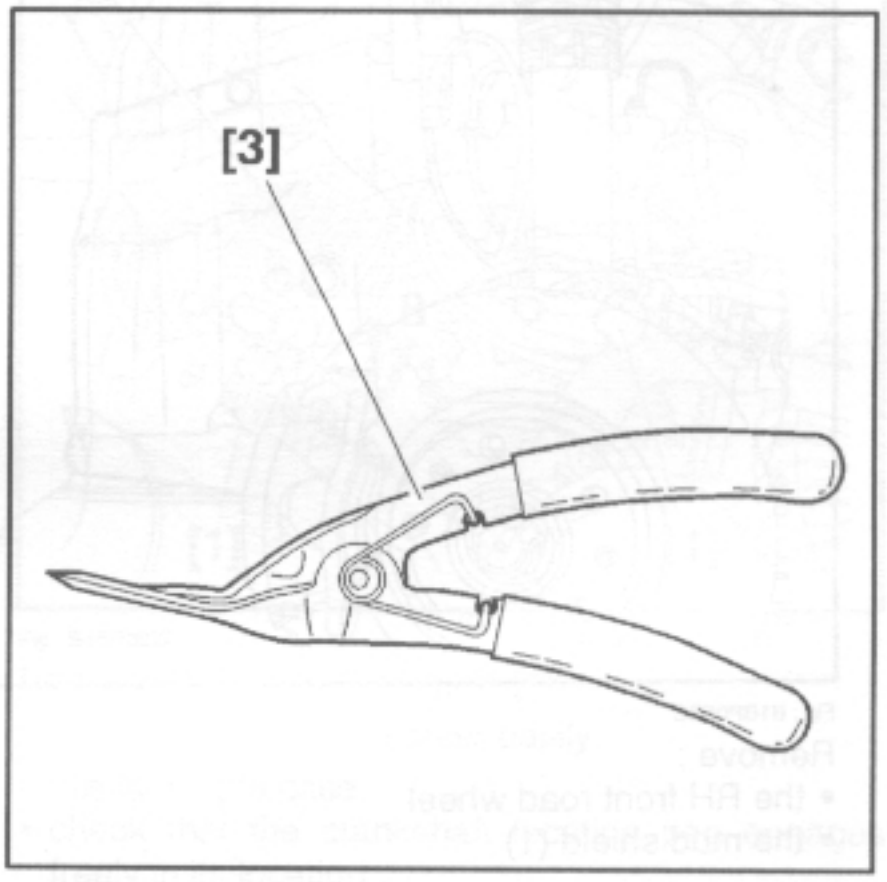


Fig : E5–P07JC

[3] pliers for removing the plastic pegs 7504–T.

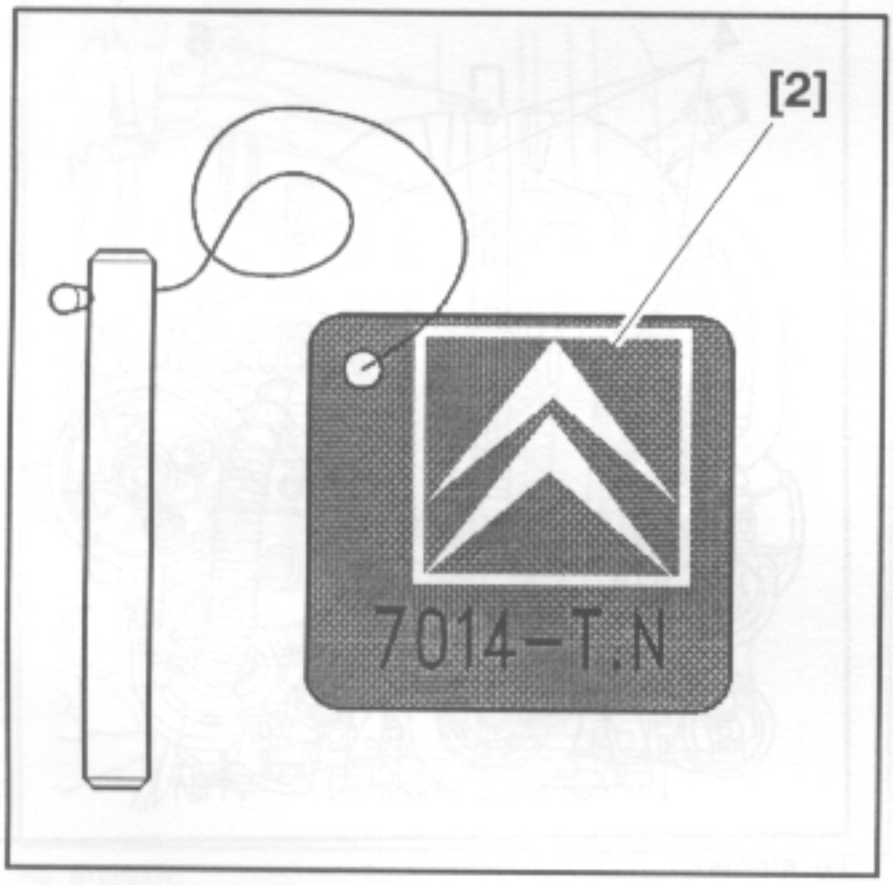


Fig : E5–P07GC

[2] crankshaft locating peg 7014–T.N.

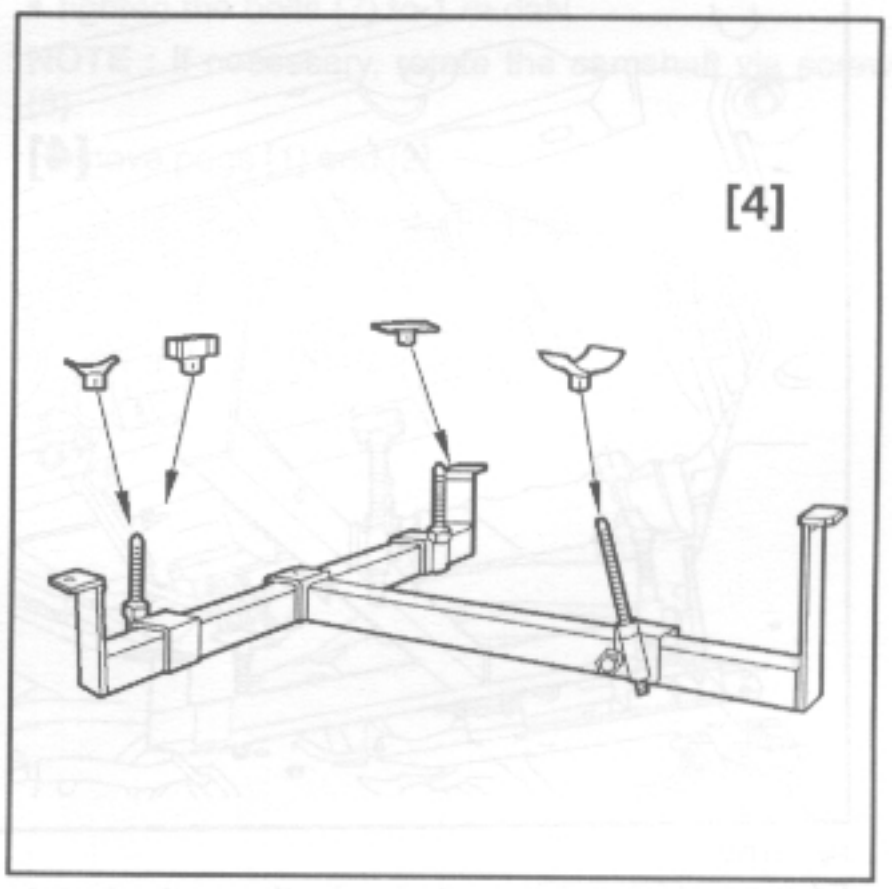


Fig : E5–P087C

[4] engine support 9026–T.

www.WorkshopManuals.co.uk

2 – REMOVAL

Lift and support the vehicle with the front wheels suspended.

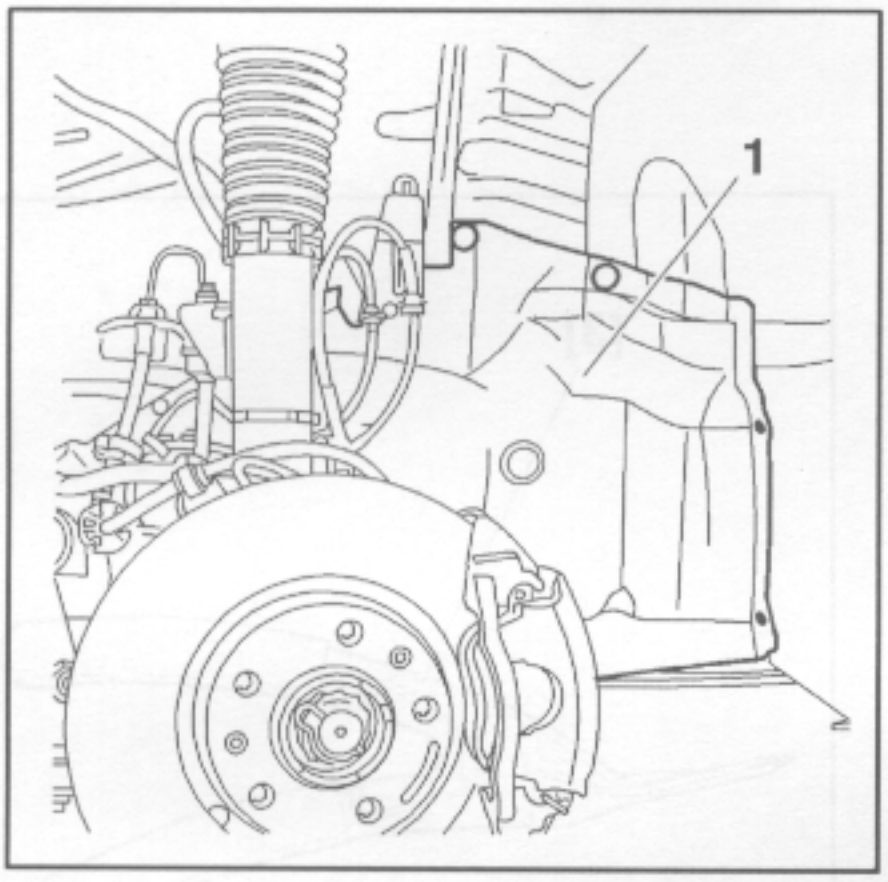


Fig : B1BP05SC

Remove :

- the RH front road wheel
- the mud shield (1)

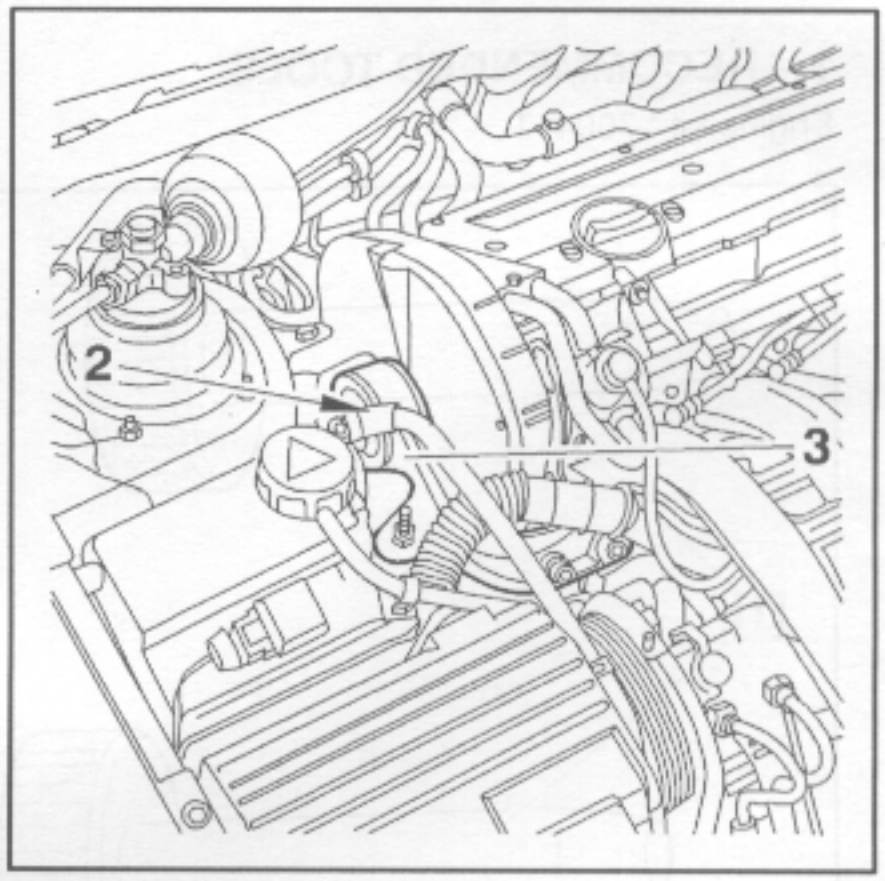


Fig : B1EP03KC

Slacken screw (2).

Remove :

- the fixings from engine mounting
- engine mounting bracket (3)

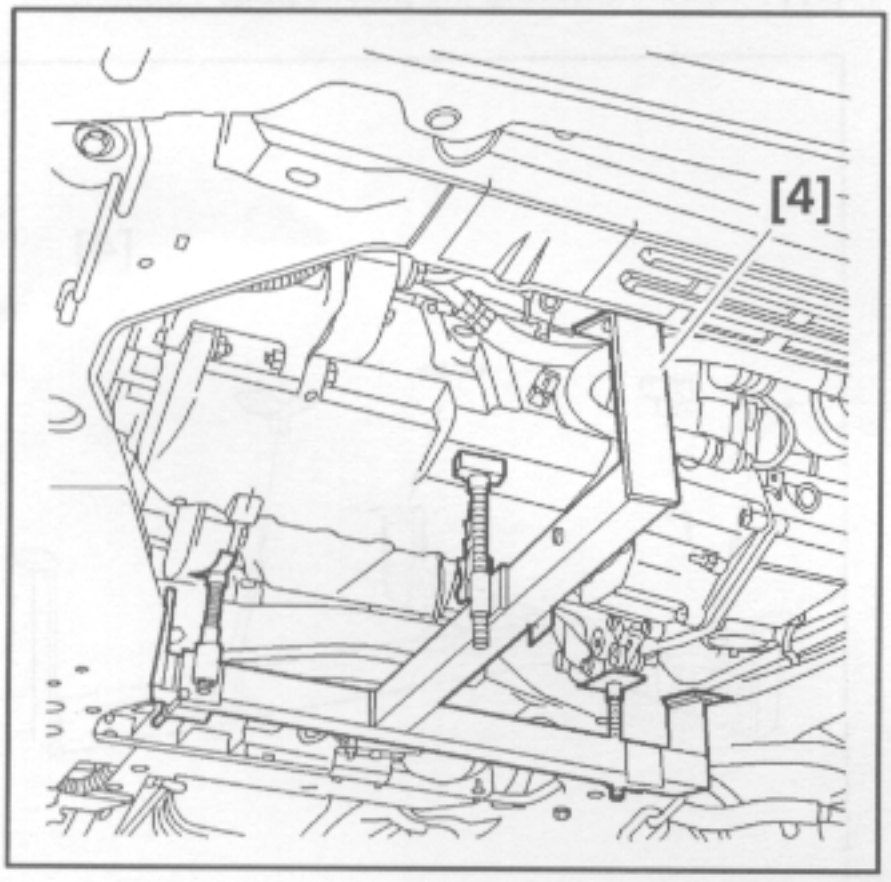


Fig : B1EP03WC

Fit support [4] to the cradle (under the engine/gearbox assembly).

Bring the adjustable fixing rods into contact with the power unit assembly.

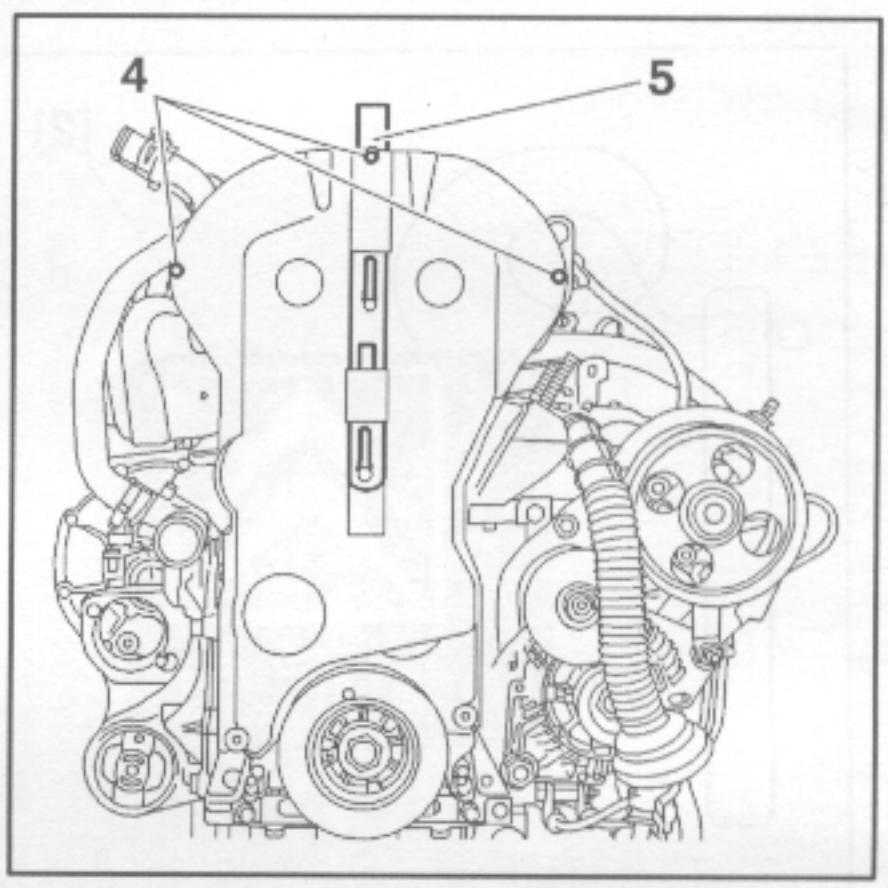


Fig : B1EP03LC

Pull tab (5) upwards to release the pins.

Unscrew the 3 screws (4).

Remove the timing cover.

www.WorkshopManuals.co.uk

3 – CHECKS

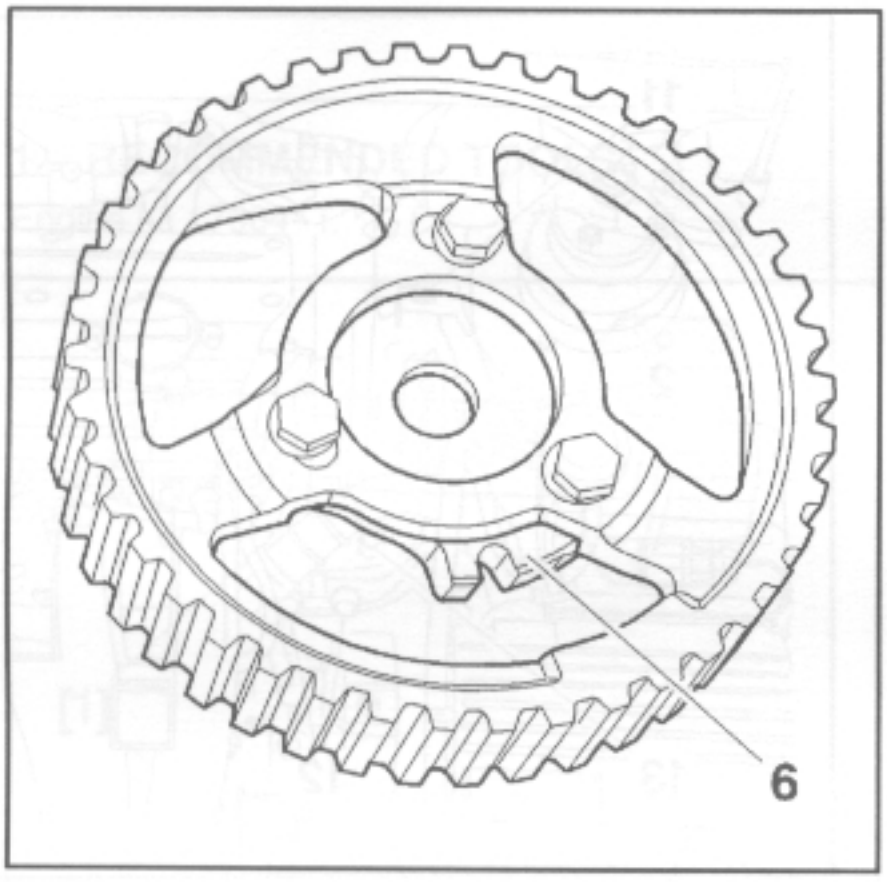


Fig : B1EP03XC

Rotate the engine via the crankshaft screw.

Place the timing slot (6) of camshaft hubs in a visible area.

Check the conformity of inlet and exhaust camshaft hubs (6) : refer to the engine specification and identification.

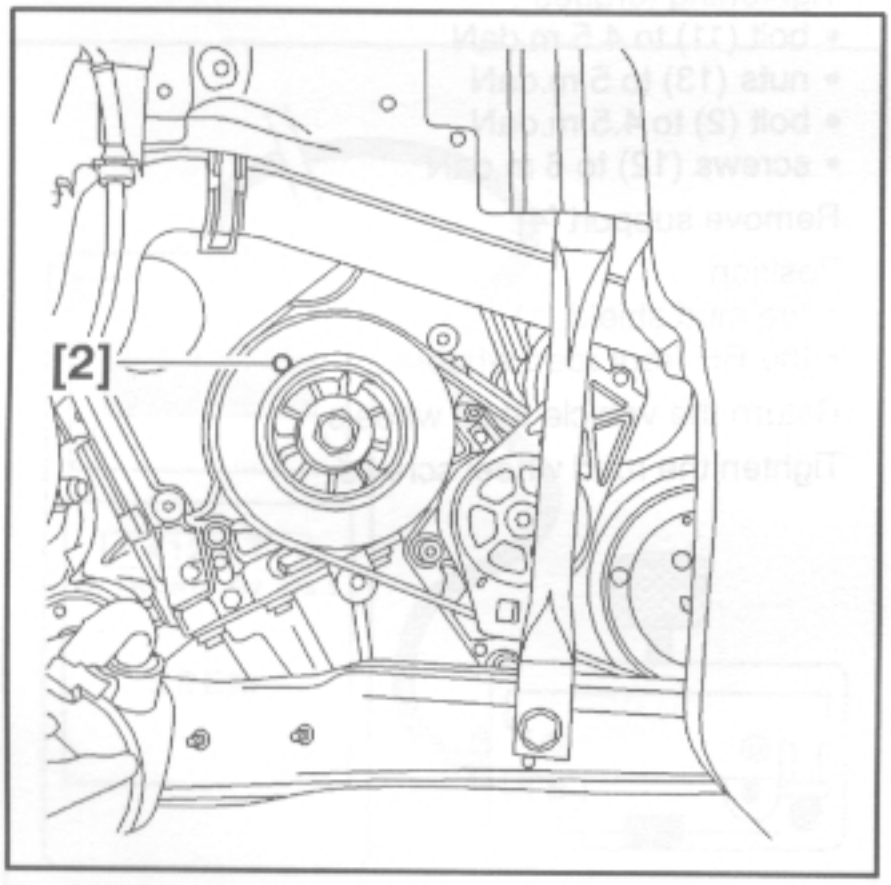


Fig : B1EP03YC

Turn the engine by the crankshaft pulley bolt until it is in the setting position.

Peg the crankshaft by means of locating peg [2].

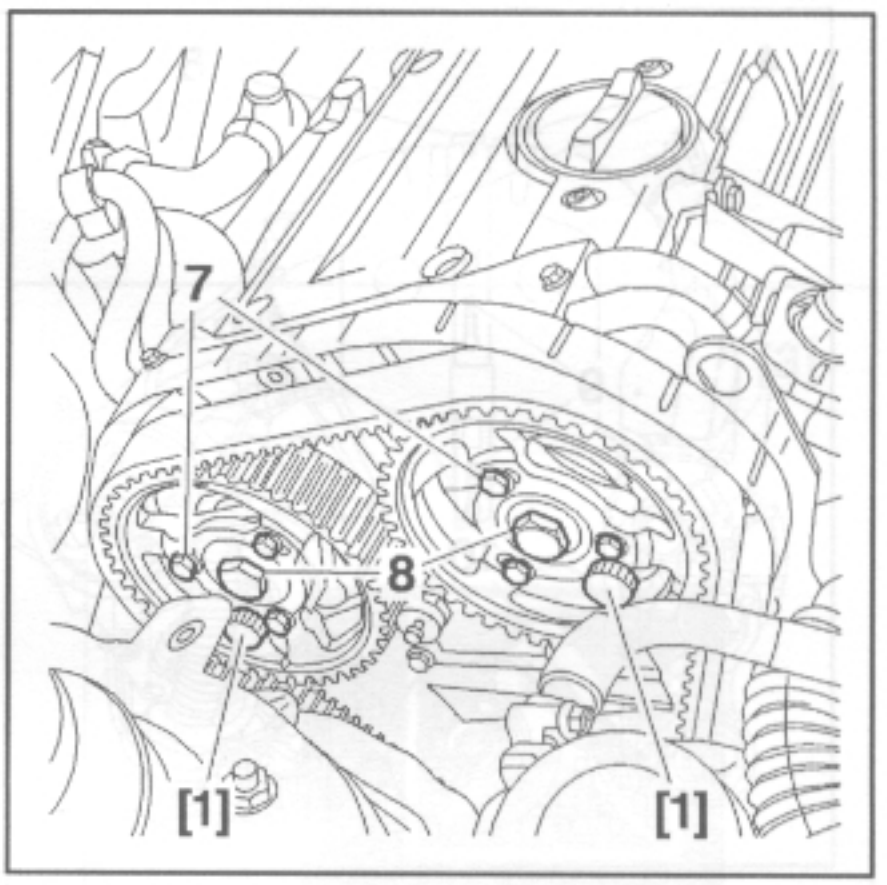


Fig : B1EP03ZC

Peg the camshafts, with tools [1].

Timing pegs [1] should enter easily.

If this is not the case :

- check that the crankshaft locating peg engages freely in its location
- slacken the 3 screws (7) of the camshaft pulleys
- peg the camshaft hubs (refer to the Note)
- tighten the bolts (7) to 1 m.daN

NOTE : If necessary, rotate the camshaft via screw (8).

Remove pegs [1] and [2].

www.WorkshopManuals.co.uk

4 – REFITTING

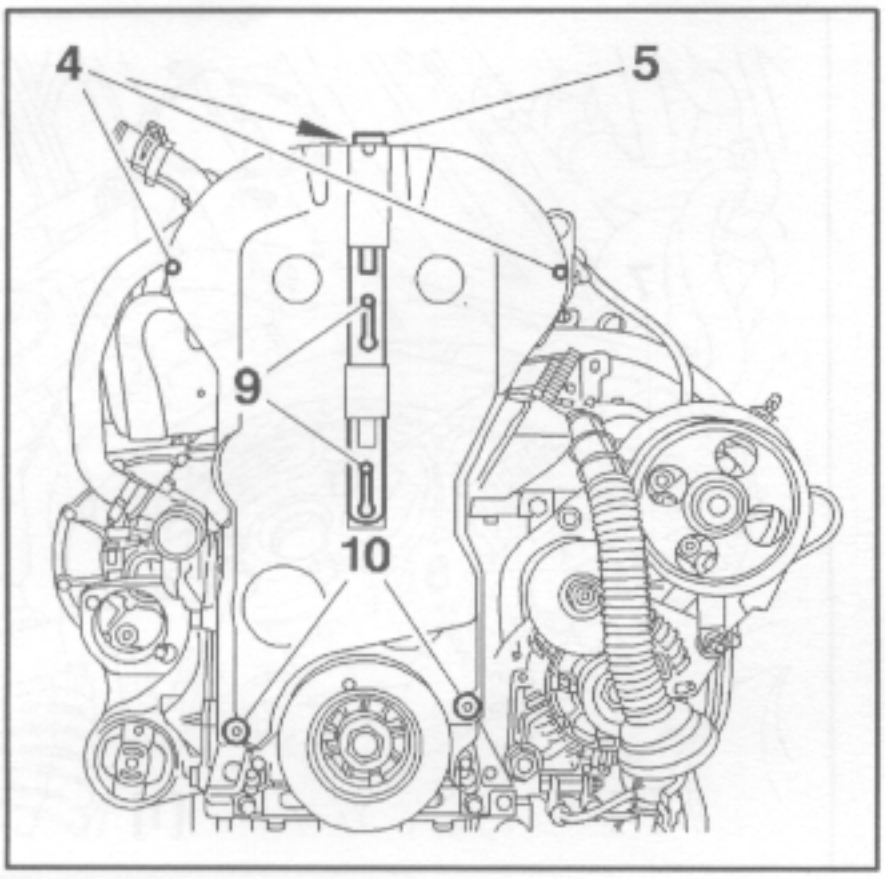


Fig : B1EP040C

Ensure that the rubber pads are in position on spindles (9).

Put the timing cover on its support screws (10).

Tighten the 3 screws (4).

Exert a pressure in the centre of the timing cover.

Lower tab (5) to lock pins (9).

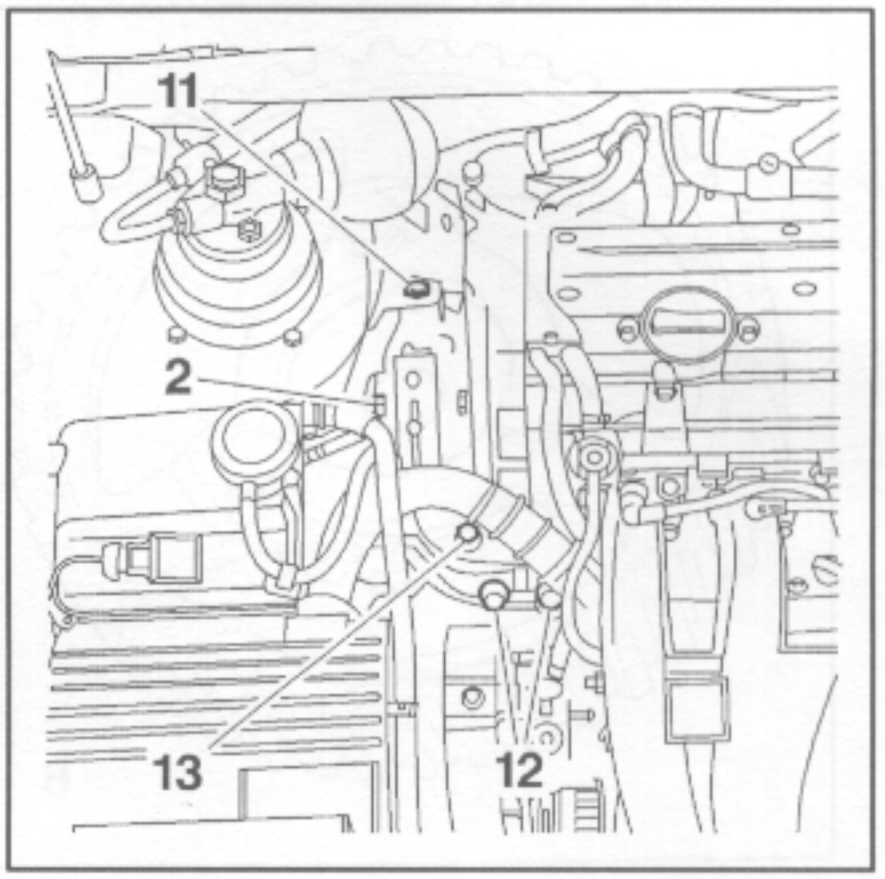


Fig : B1EP041C

Refit the engine mounting bracket.

Position :
- screw (11)
- the 3 nuts (13)
- screw (2)
- screws (12)

Tightening torques :
- bolt (11) to 4.5 m.daN
- nuts (13) to 5 m.daN
- bolt (2) to 4.5 m.daN
- screws (12) to 6 m.daN

Remove support [4].

Position :
- the mud shield (1)
- the RH front road wheel

Return the vehicle to its wheels.

Tighten the road wheel screws.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : THE TIMING BELT

1 – RECOMMENDED TOOLS

Engine kit : 7004–T.

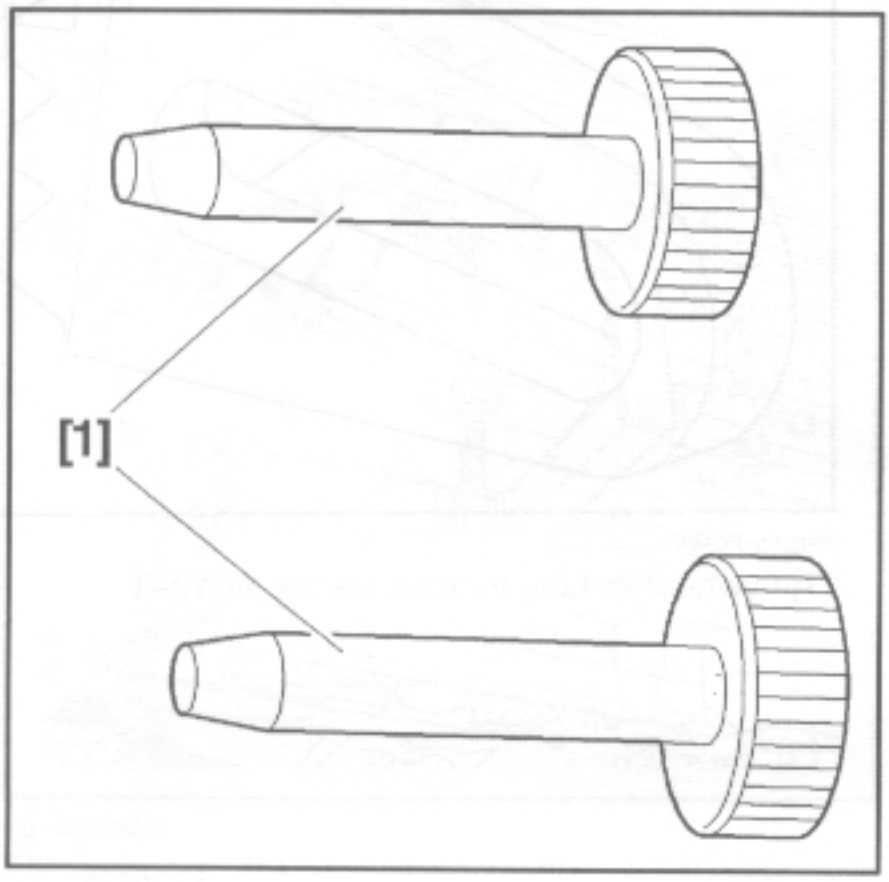


Fig : E5–P04HC

[1] camshaft timing peg, 9041–T.Z.

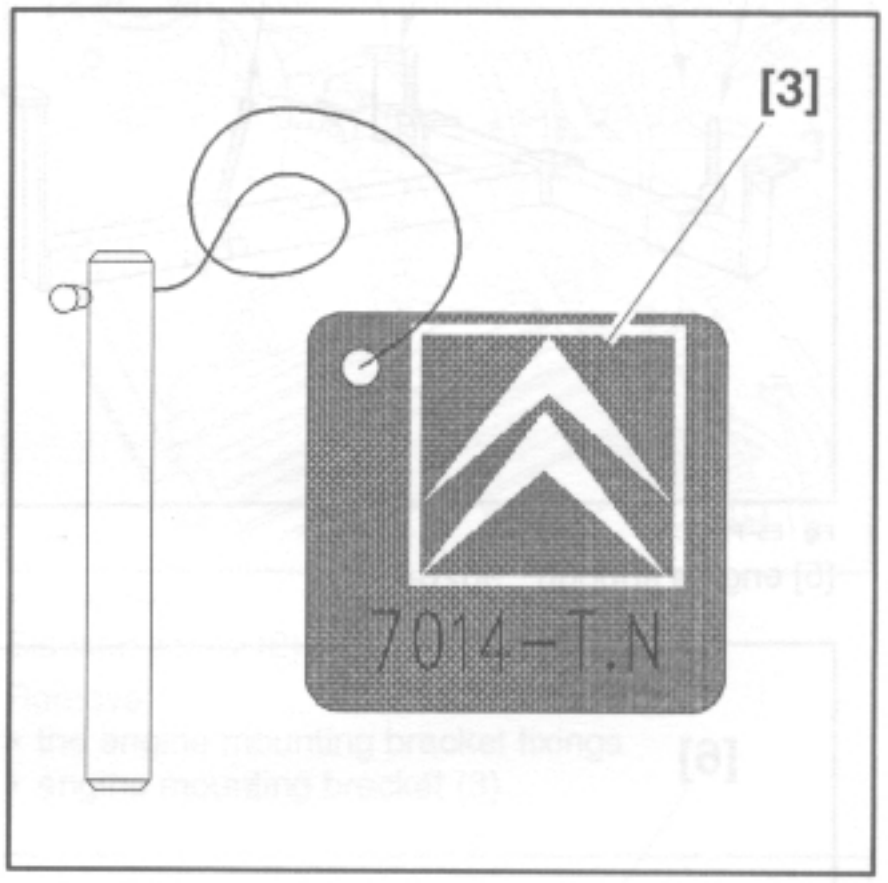


Fig : E5–P04JC

[3] crankshaft locating peg, 7014–T.N.

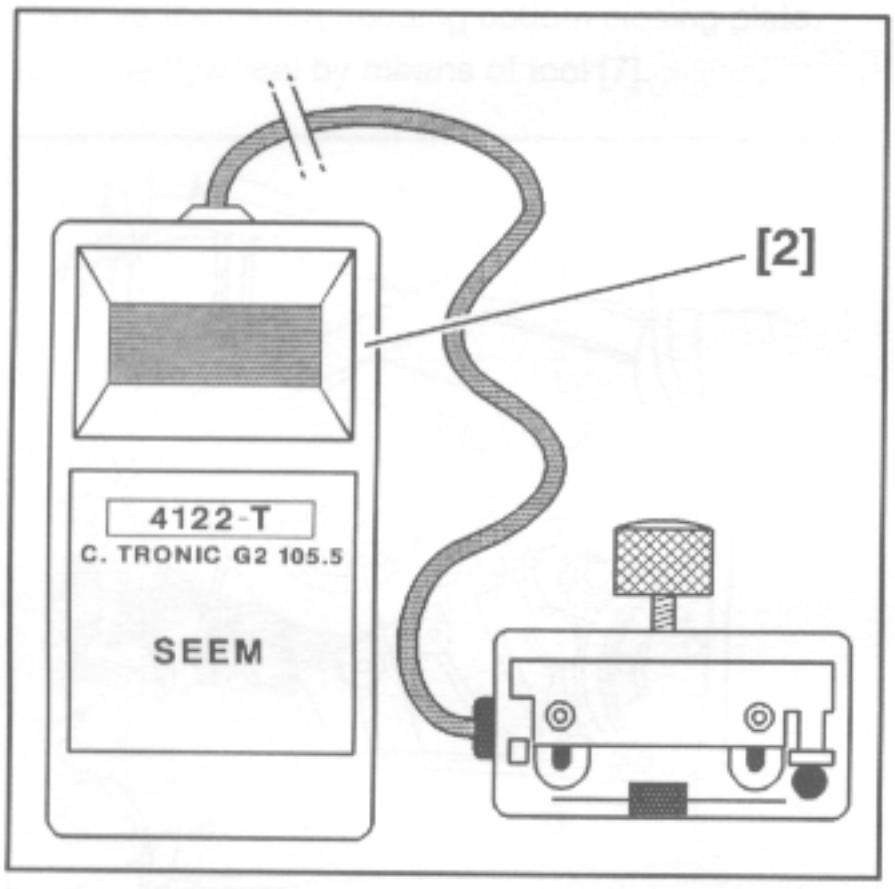


Fig : E5–P031C

[2] belt tension measuring equipment, with digital read–out, 4122–T or 4099–T.

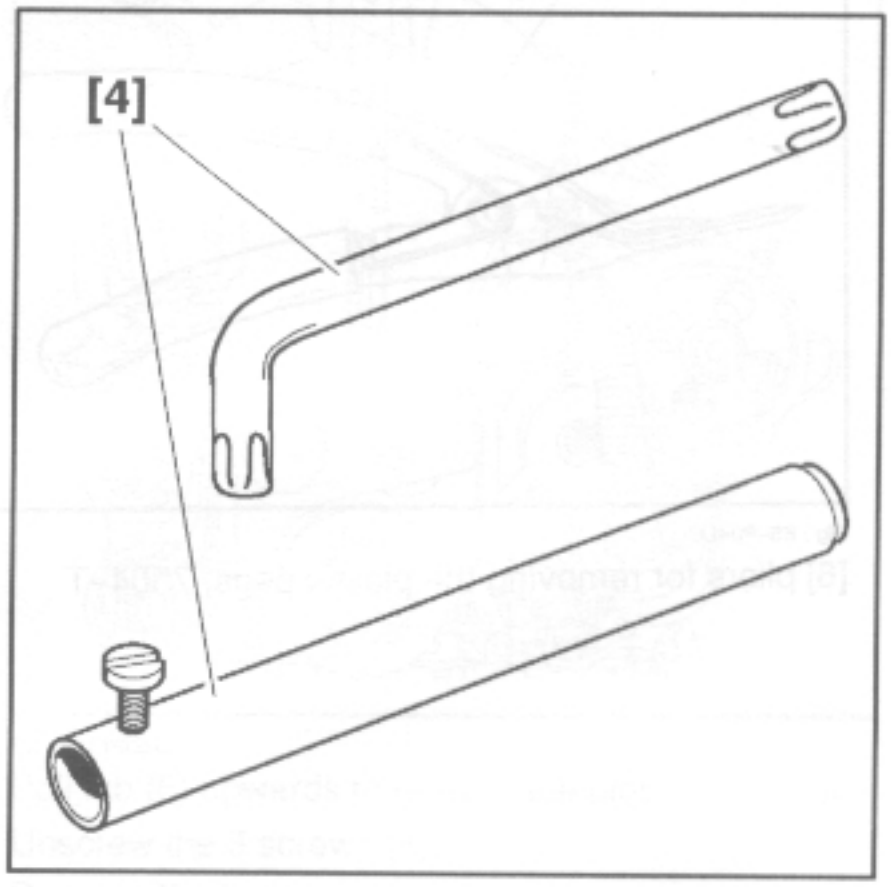


Fig : E5–P04KC

[4] tensioning spanner for the roller tensioner, 7017–T.W.

www.WorkshopManuals.co.uk

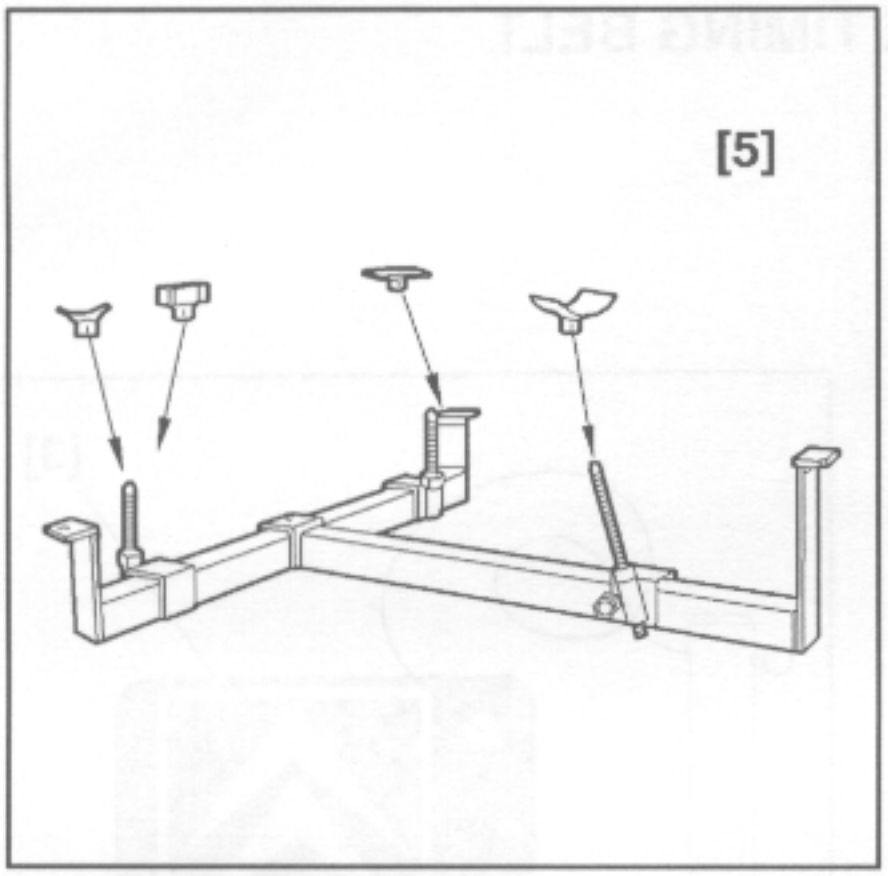


Fig : E5-P06ZC
[5] engine support , 9026-T.

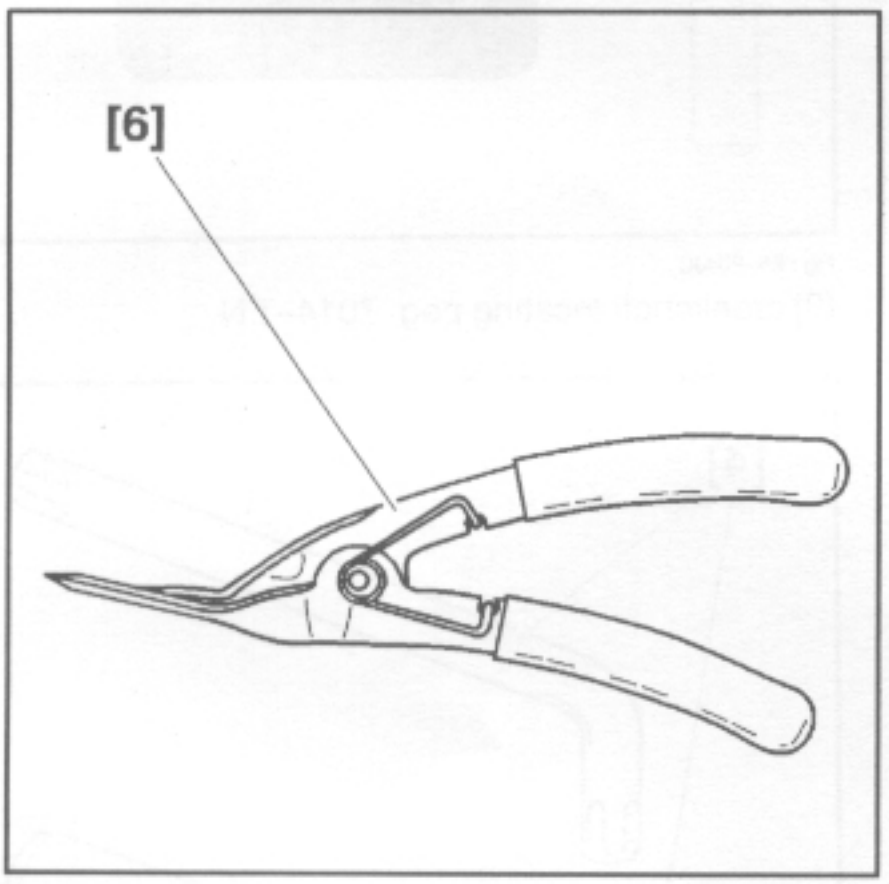


Fig : E5-P04LC
[6] pliers for removing the plastic pegs, 7504-T.

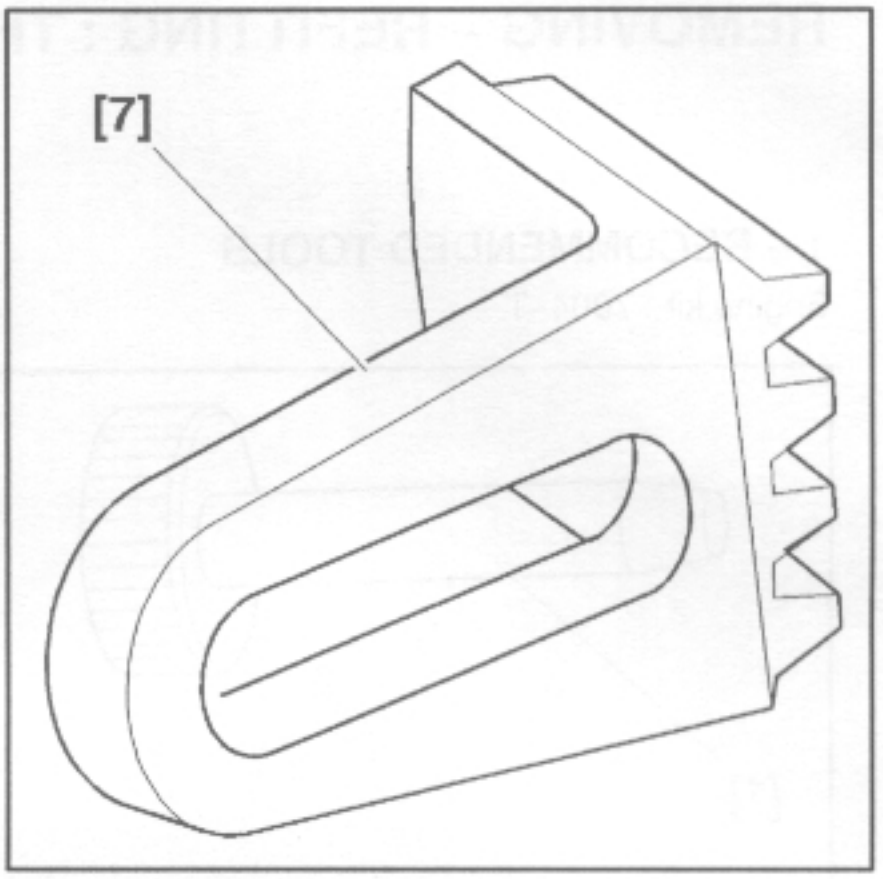


Fig : E5-P04MC
[7] flywheel locking toothed sector, 6012-T.

www.WorkshopManuals.co.uk

2 – REMOVAL

Lift and support the vehicle with the front wheels suspended.

Remove the accessory drive belt (see the relevant operation).

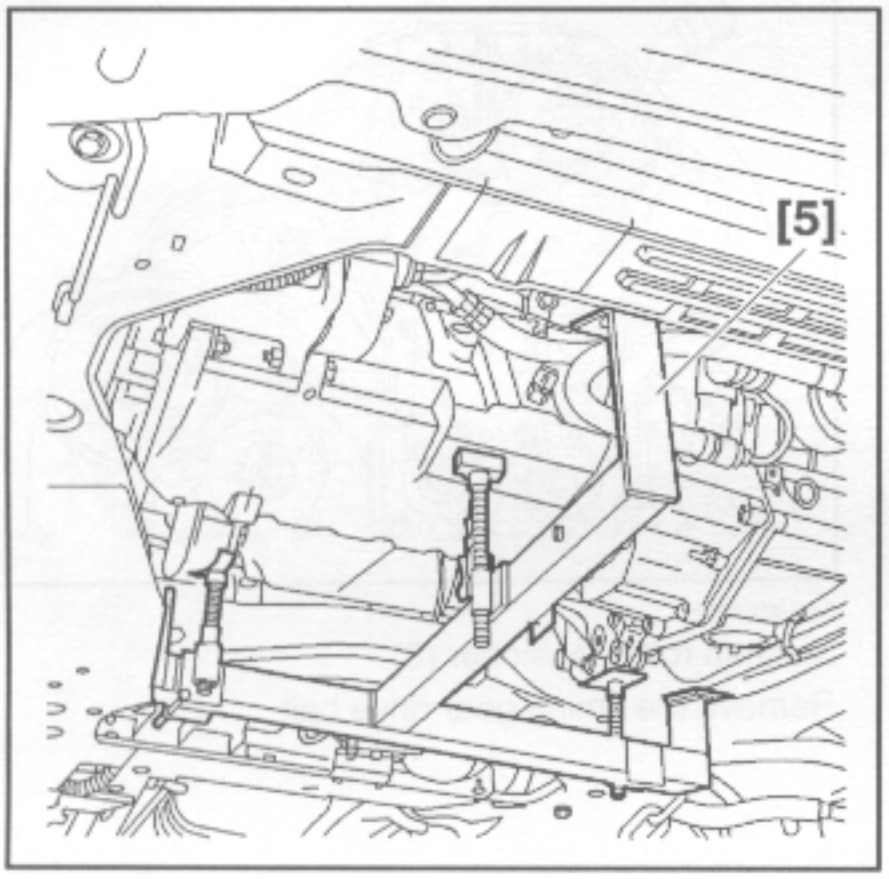


Fig : B1EP03HC

Fit support [5] to the cradle – (under the engine/gearbox assembly) ; bring the adjustable fixing rods into contact with the power unit assembly.

Remove the clutch housing bottom closing plate.

Lock the flywheel by means of tool [7].

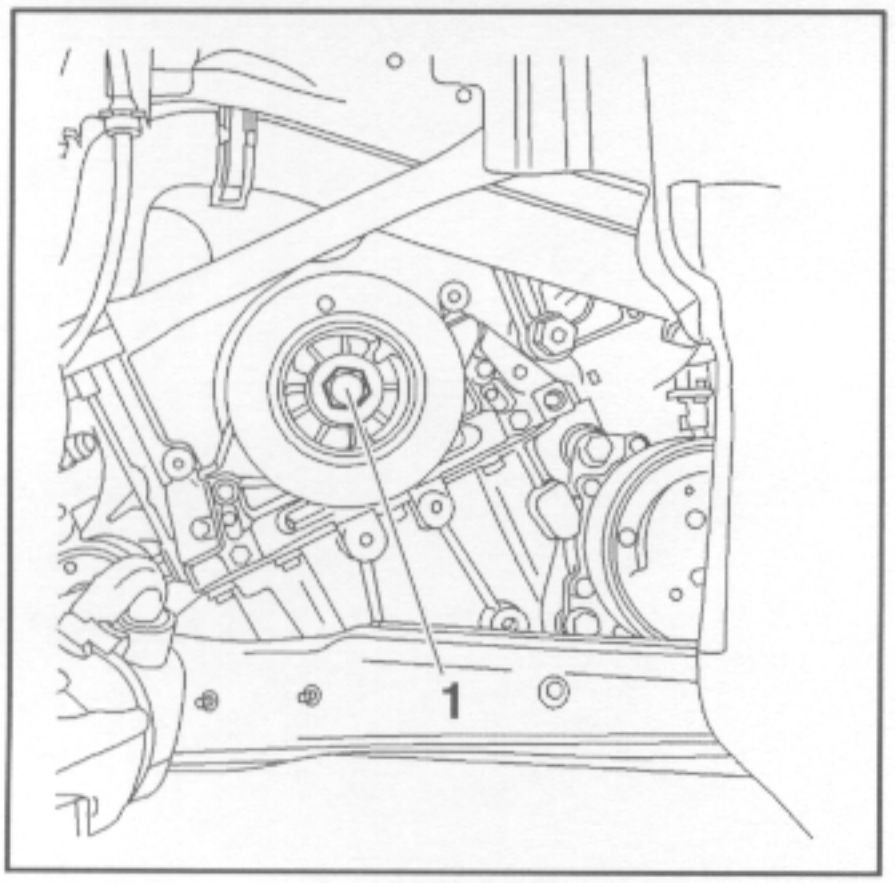


Fig : B1EP03JC

Extract crankshaft pulley screw (1).

Brush the thread of screw (1).

Refit the crankshaft screw to turn the engine (tighten moderately).

Remove tool [7].

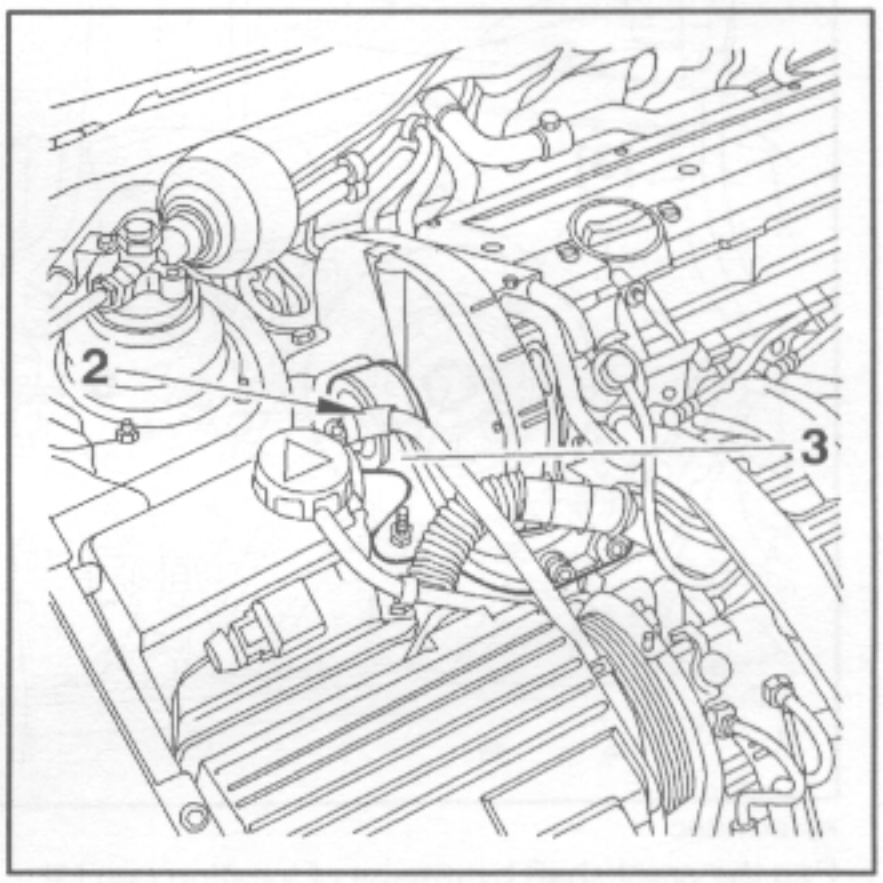


Fig : B1EP03KC

Slacken screw (2).

Remove :

- the engine mounting bracket fixings
- engine mounting bracket (3)

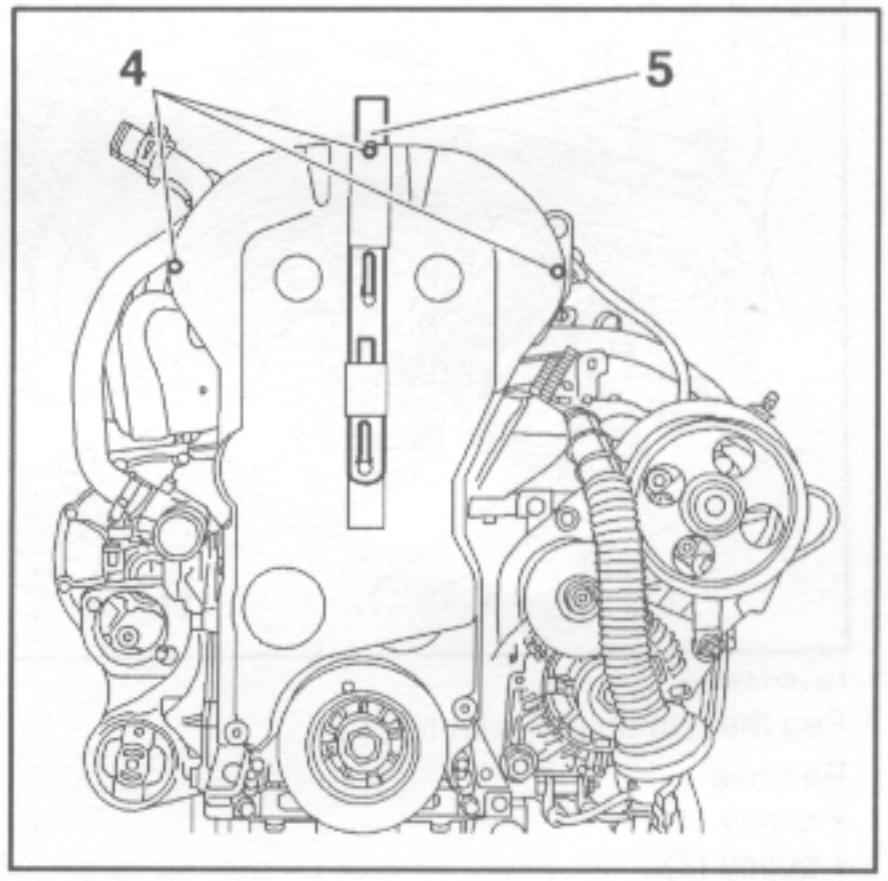


Fig : B1EP03LC

Pull tab (5) upwards to release the pins.

Unscrew the 3 screws (4).

Remove the timing cover.

www.WorkshopManuals.co.uk

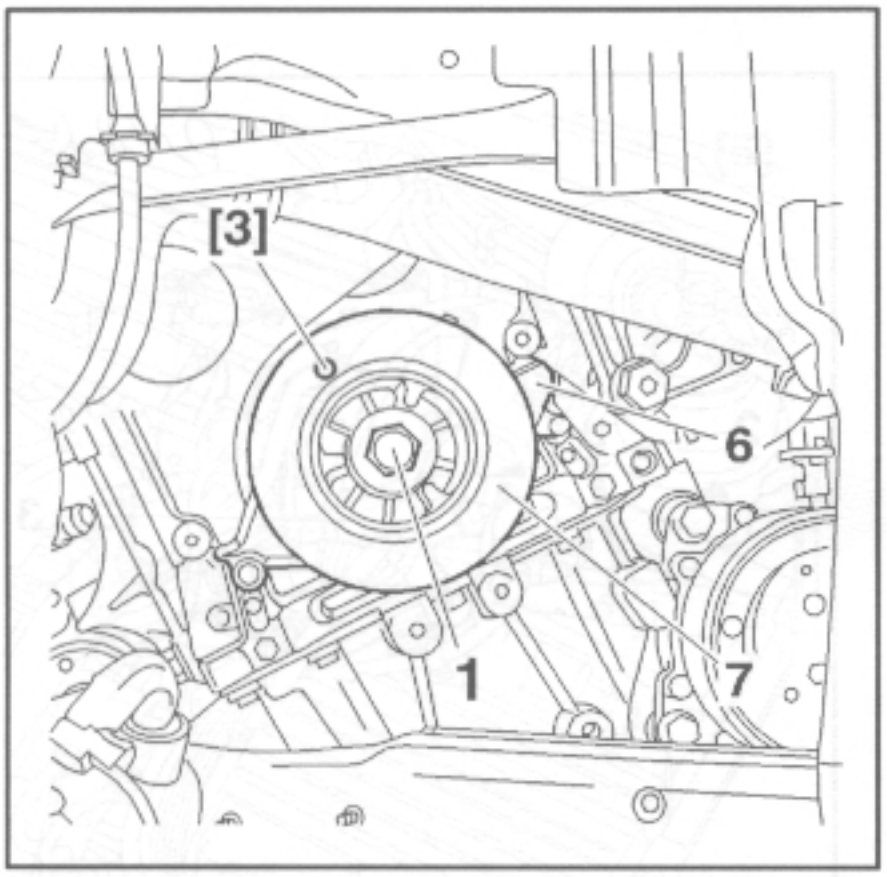


Fig : B1EP03MC

Peg the crankshaft by means of locating peg [3].

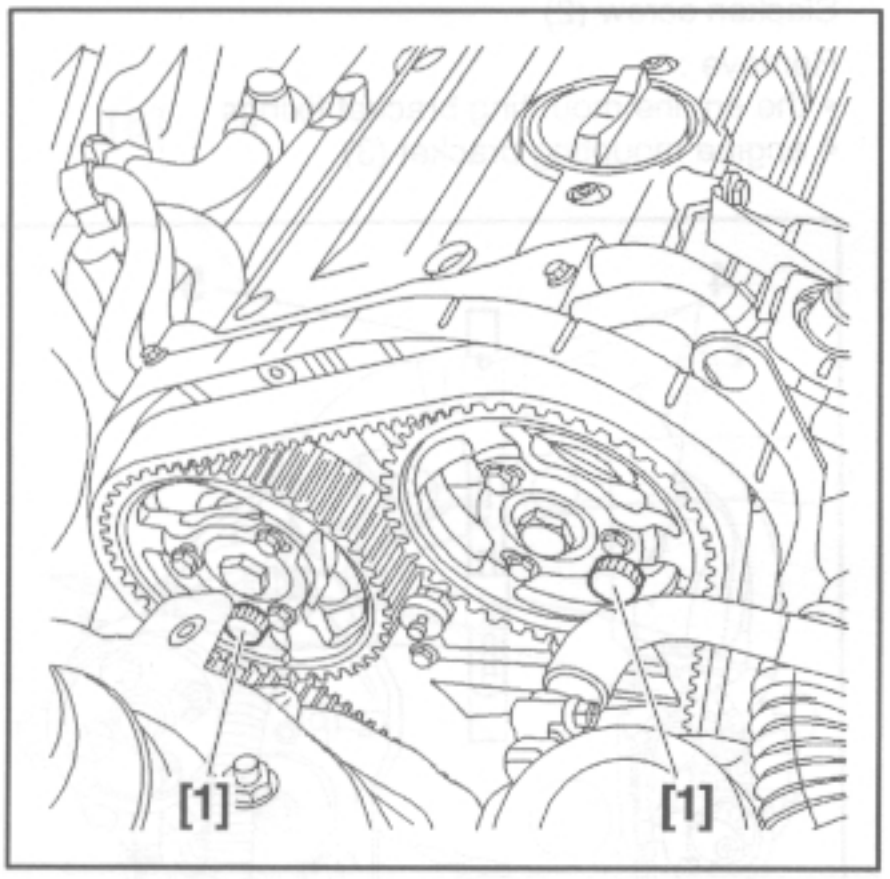


Fig : B1EP03NC

Peg the camshafts, with tools [1].

Remove :

- screw (1)
- pulley (7)
- lower timing cover (6)

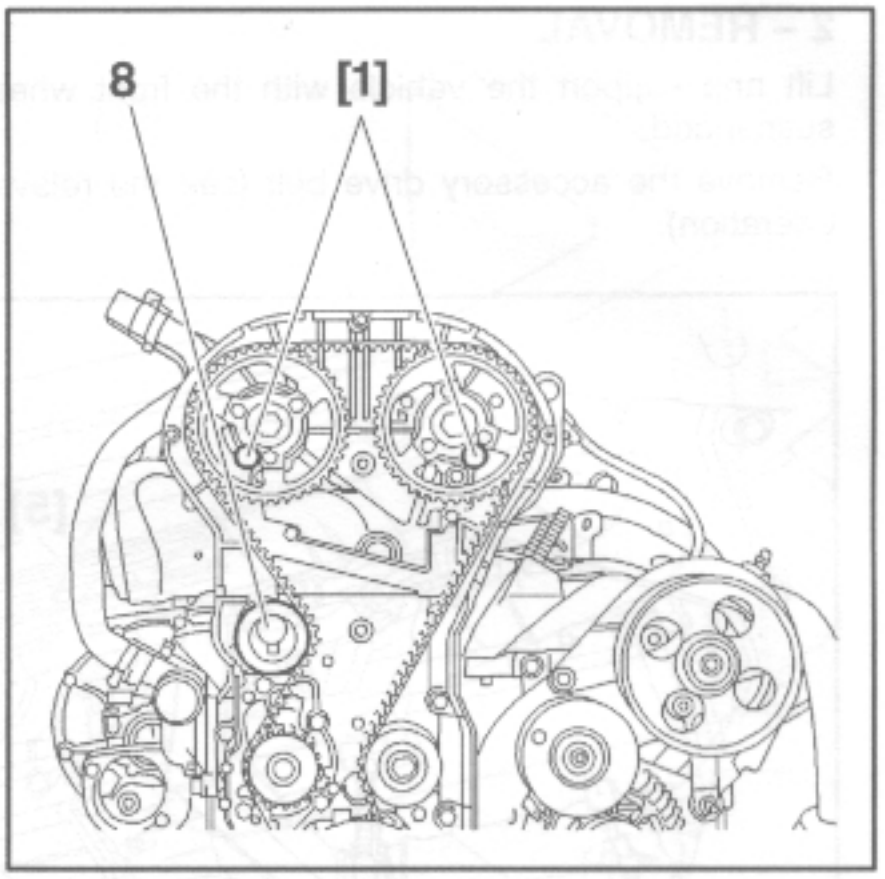


Fig : B1EP03PC

Slacken roller tensioner (8).

Remove the timing gear drive belt.

www.WorkshopManuals.co.uk

3 – REFITTING

3.1 – Preparation

Loosen the 3 fixing screws of each camshaft pulley.

Make sure that the camshaft pulleys move freely around the hubs.

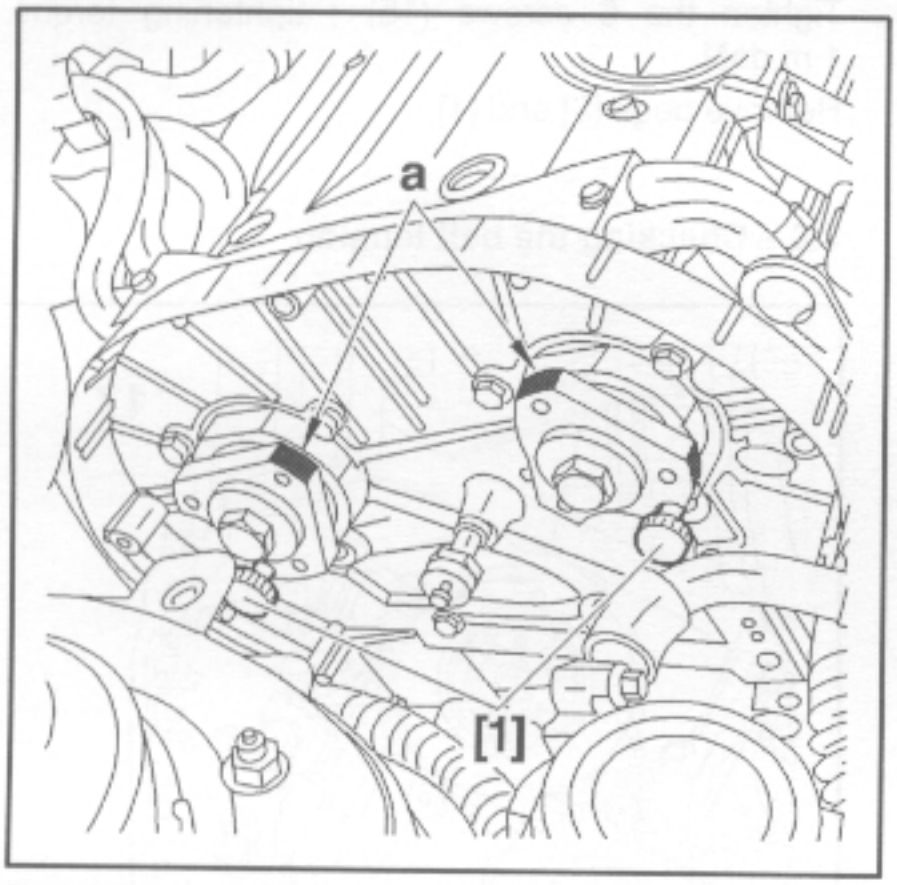


Fig : B1EP03VC

If this is not the case :

- remove camshaft pulleys
- clean the contact surfaces of the camshaft pulleys and hubs (a)

Fit the camshaft pulleys to the hubs, without tightening.

NOTE : The camshaft pulleys are identical. The camshaft hubs are not identical (setting angles).

3.2 – Reinstalling the timing belt

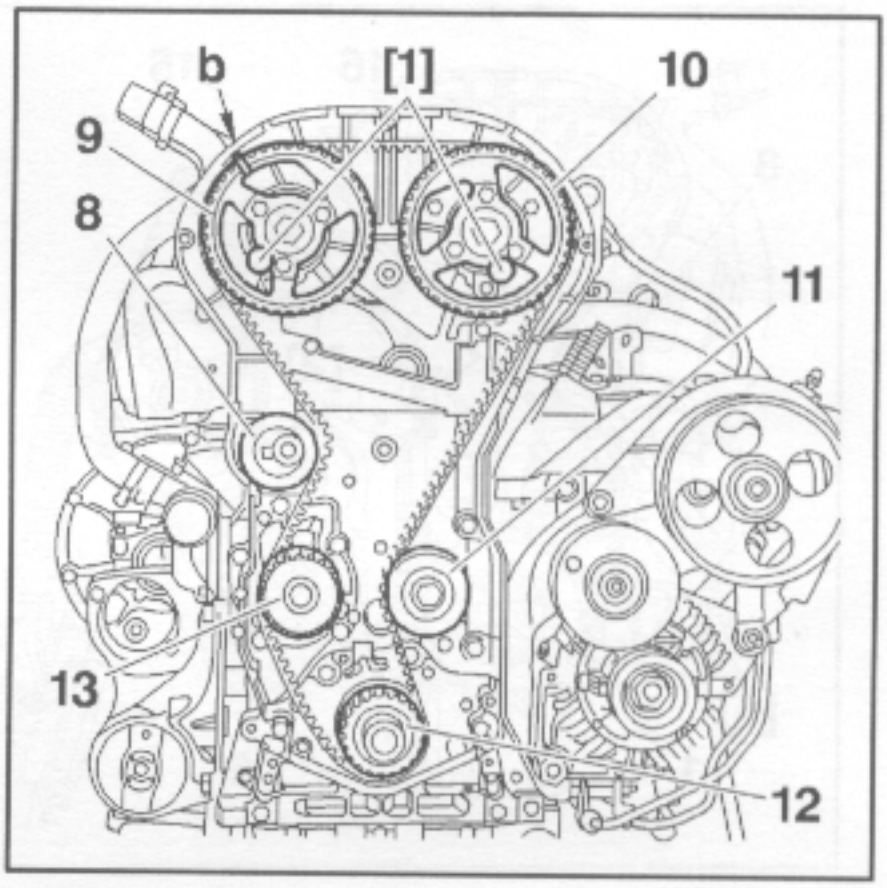


Fig : B1EP03QC

Place the belt over exhaust camshaft pulley (9).

Hold the belt in position by means of a plastic collar at "b".

Wind the belt round :

- inlet camshaft pulley (10)
- guide roller (11)
- crankshaft sprocket (12)
- water pump (13)
- roller tensioner (8)

www.WorkshopManuals.co.uk

3.3 – Pre–tensioning the timing belt

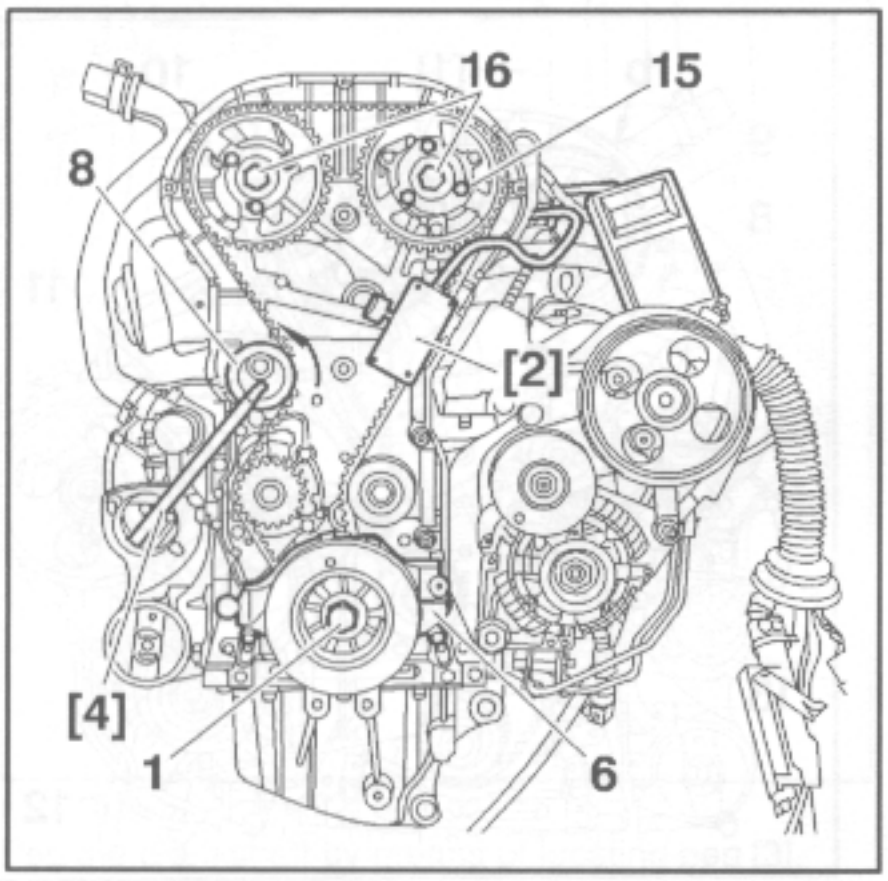


Fig : B1EP03RC

Place instrument [2] on the timing belt, avoiding any stress from the surrounding.

Rotate the roller tensioner with tool [4] to reach a tension of 45 SEEM units (25 daN).

Tighten :
- roller tensioner (8)
- the 6 bolts (15) to 1 mdaN

Remove :
- tool [2]
- timing pegs [1]
- the plastic collar

Position :
- the bottom cover (6)
- the crankshaft pulley
- screw (1) (loctite E6 on threads)

Tightening torque : 12 m.daN.

3.4 – Tensioning the timing belt

Turn the crankshaft 2 turns in the normal direction of rotation.

Peg the crankshaft.

Slacken the 6 screws (15) of the camshaft pulleys.

Peg the camshaft hubs ; if necessary, rotate the camshaft via screw (16).

Operate tensioner (8) to slacken the belt.

Place instrument [2] on the timing belt.

Tension to 26 SEEM units (9 to 10 daN).

Tighten :
- roller tensioner (8) ; tighten to 2 m.daN
- the 6 screws (15)

Remove :
- tool [2]
- pegs [3],[1]

3.5 – Setting the valve timing

Turn the crankshaft 2 turns in the normal direction of rotation.

Peg the crankshaft.

Slacken the 6 screws (15) of the camshaft pulleys.

Peg the camshaft hubs ; if necessary, rotate the camshaft via screw (16).

Tighten the 6 screws (15) ; tightening torque : 1 m.daN.

Remove pegs [3] and [1].

3.6 – Checking the belt tension

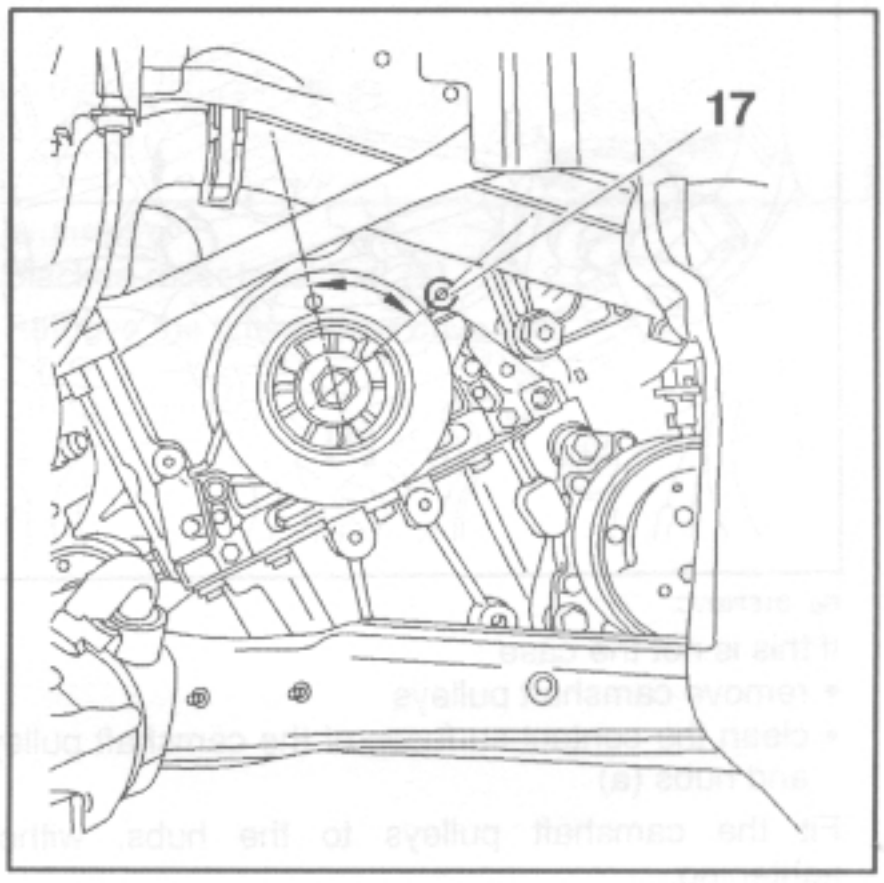


Fig : B1EP03SC

Rotate the crankshaft by a 1/4 turn : bring the timing hole of the pulley opposite support screw (17) of the timing covers ; do not turn backwards.

Place instrument [2] on the timing belt, avoiding any stress from the surrounding.

The tension value should be between 32 and 40 SEEM units (14 to 18 daN). Otherwise : resume the operation from the start.

www.WorkshopManuals.co.uk

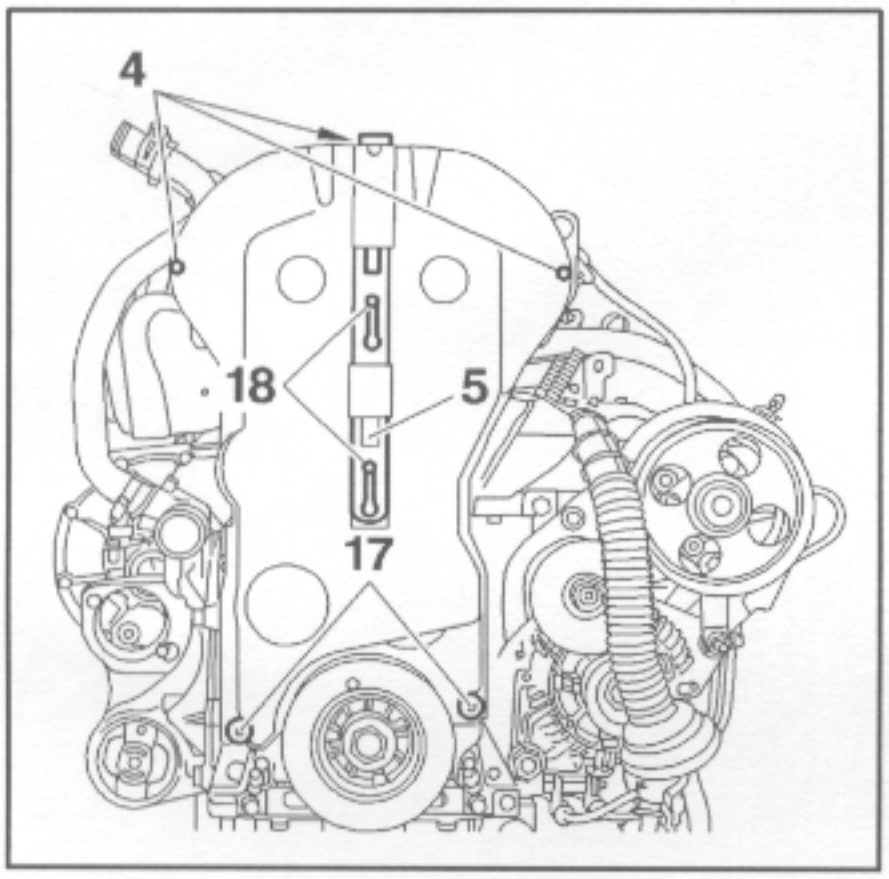


Fig : B1EP03TC

Ensure that the rubber pads are in position on spindles (18).

Put the timing cover on its support screws (17).

Tighten the 3 screws (4).

Exert a pressure in the centre of the timing cover ; lower tab (5) to lock pins (18).

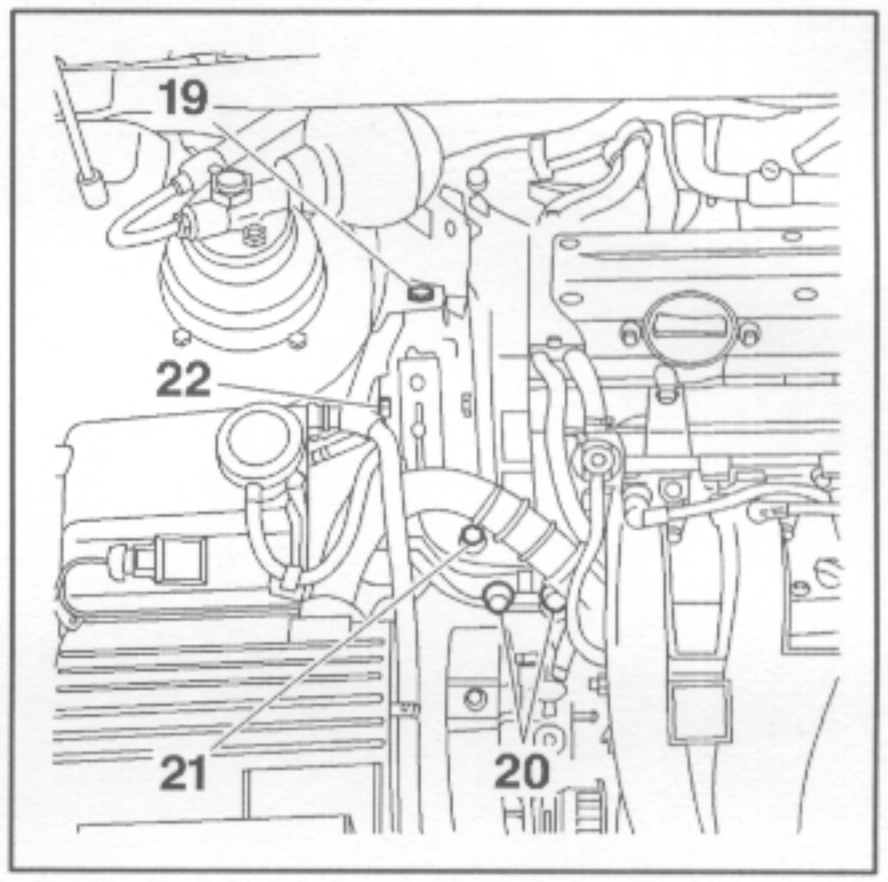


Fig : B1EP03UC

Refit the engine mounting.

Tighten :
- screw (19), the 3 nuts (21) to 4.5 m.daN
- screw (22) to 5 m.daN
- screws (20) to 6 m.daN

Remove support [5].

Position :
- the clutch housing closing plate
- the auxiliary equipment drive belt (see the relevant operation)

www.WorkshopManuals.co.uk

29th SEPTEMBER 1995

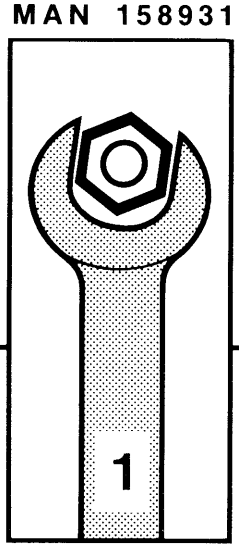
ABONNEMENT GME

REF. 1 No XM 122-00/3

ENGINE XUD 11 BTE

● VALVE TIMING

MAN 158931



GB

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

VALVE TIMING

CHECKS : VALVE TIMING 3

REMOVING – REFITTING : THE TIMING BELT 7

www.WorkshopManuals.co.uk

CHECKS : VALVE TIMING

1 – RECOMMENDED TOOLS

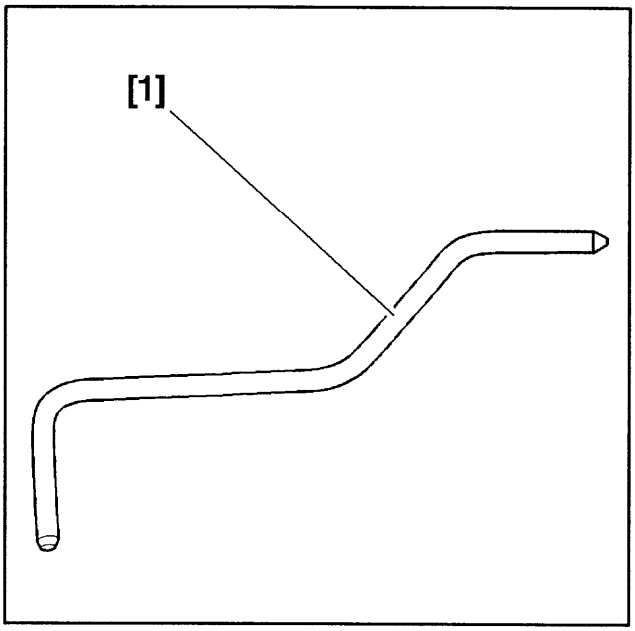


Fig : E5-P01HC

Engine kit : 7004–T.

[1] flywheel locating peg 7014–T.J.

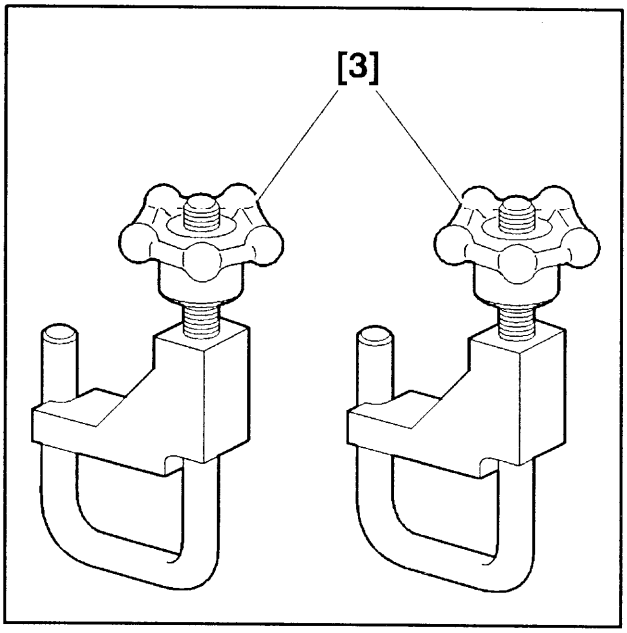


Fig : E5-P08JC

[3] hose clamp (4153–T).

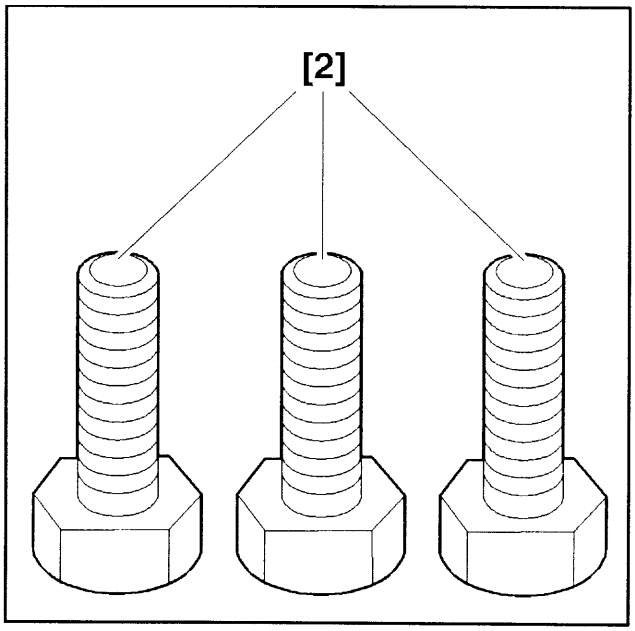


Fig : E5-P09MC

[2] bolt M8x40 : 7004–T.G.

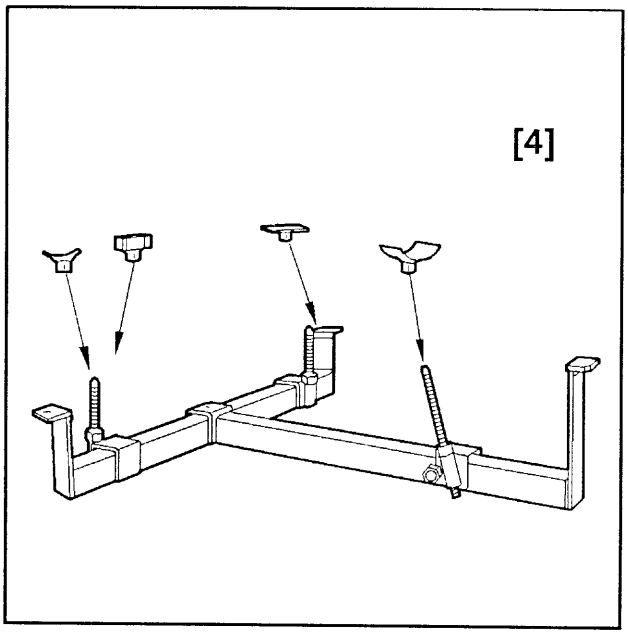


Fig : E5-P087C

Lower support [4] for the engine/gearbox unit, in the vehicle (9026–T).

www.WorkshopManuals.co.uk

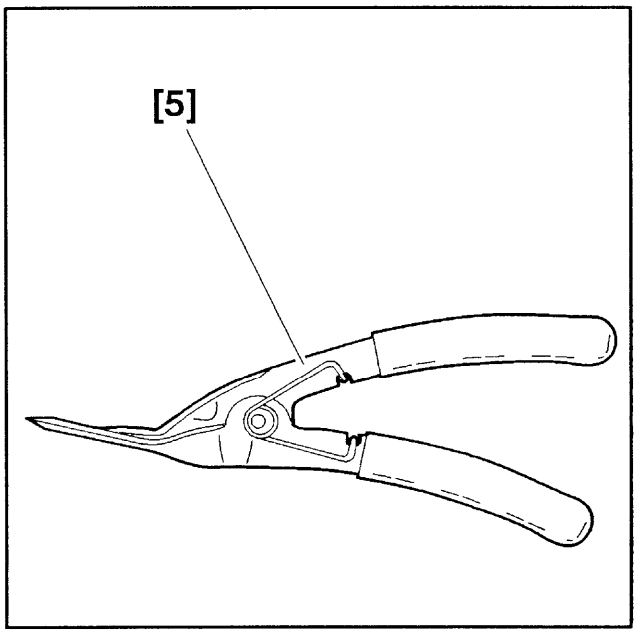


Fig : E5-P10GC

[5] pliers for removing the plastic pegs : 7504-T.

2 – REMOVAL

Disconnect the battery negative terminal.

Engage the 5th gear to enable the engine to be turned.

Raise the front R.H. side of the vehicle and support it on stands.

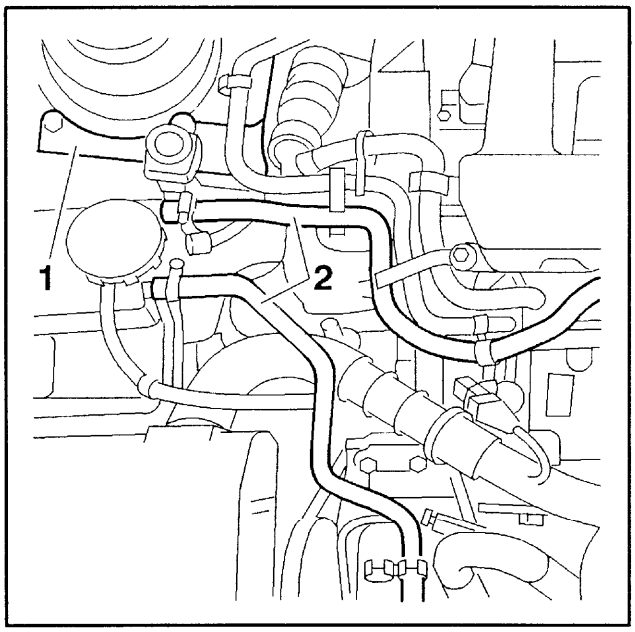


Fig : B1EP051C

Remove :

- the wheel
- the mud shield ; utilising tool [5]
- the sound insulator from under the engine
- the ECU housing (push the ECU and electrical harness aside)
- support (1) of switch with inertia

Uncouple flexible pipes (2) ; utilising tool [3].

Remove Diesel fuel flexible pipes.

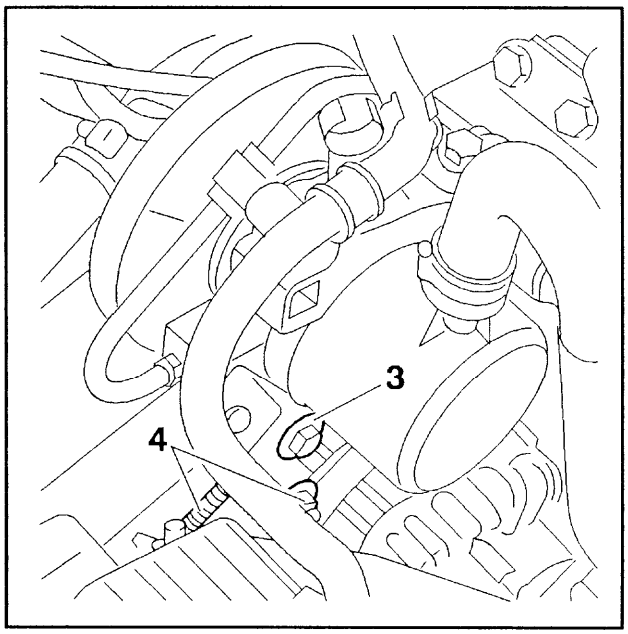


Fig : B1EP052C

Remove belt of high pressure pump (screw (3)).

Remove the alternator belt (nut (4) + screw).

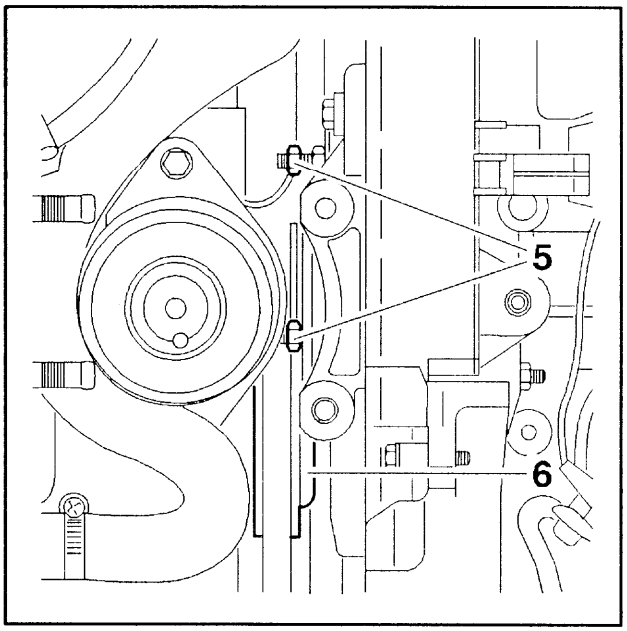


Fig : B1EP045C

Remove :

- the two nuts (5)
- the guide roller (6)

www.WorkshopManuals.co.uk

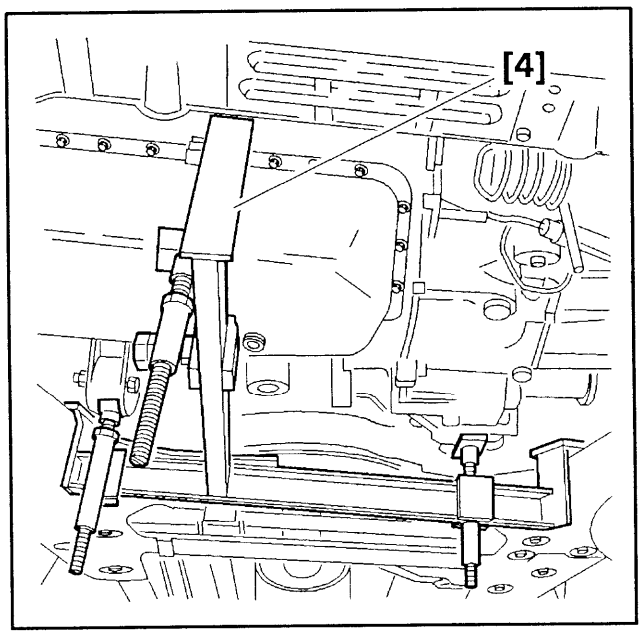


Fig : B1EP043C
Position tool [4] under cradle.

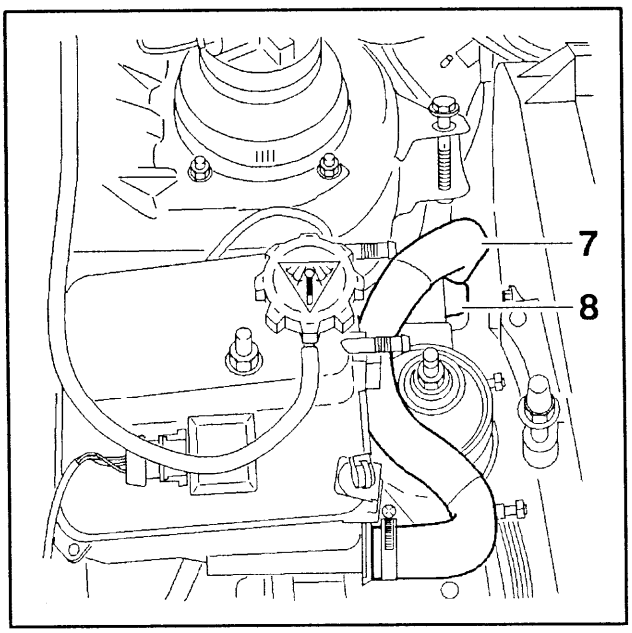


Fig : B1EP046C
Free flexible pipe (7) from clamp (8).

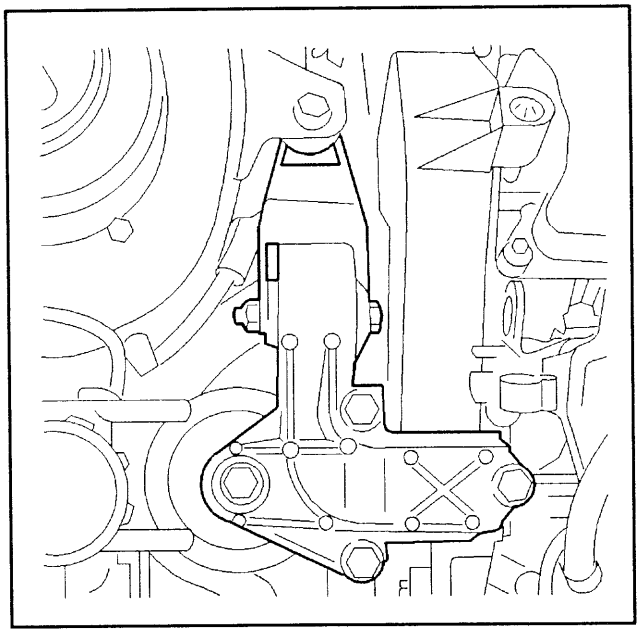


Fig : B1EP055C
Remove the whole engine support bracket.

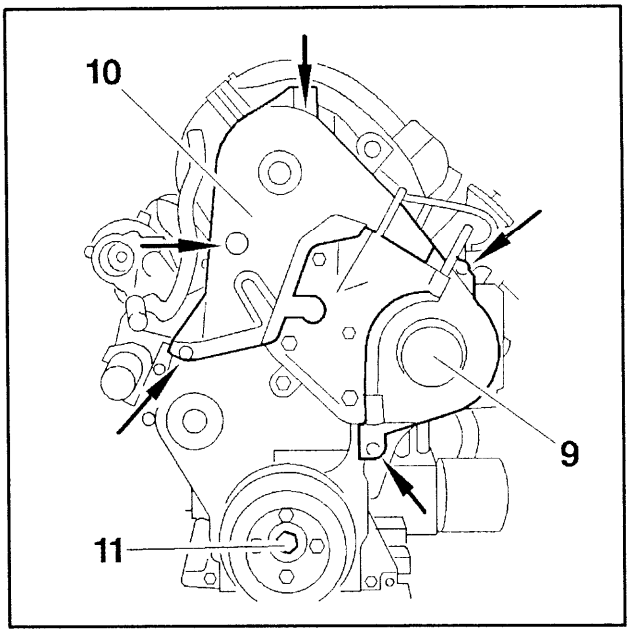


Fig : B1EP057C
Remove :
- the cover (9) (screw ->)
- the cover (10) (screw ->) (pull flexible pipe (7) towards the bulkhead)

www.WorkshopManuals.co.uk

3 – CHECKING THE SETTING

Rotate the engine via screw (11). Check if camshaft is in the setting position.

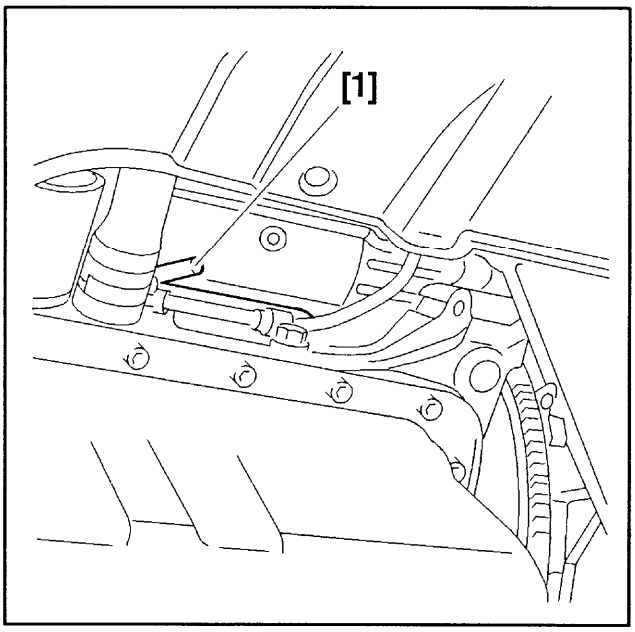


Fig : B1EP058C

Peg the flywheel with tool [1].

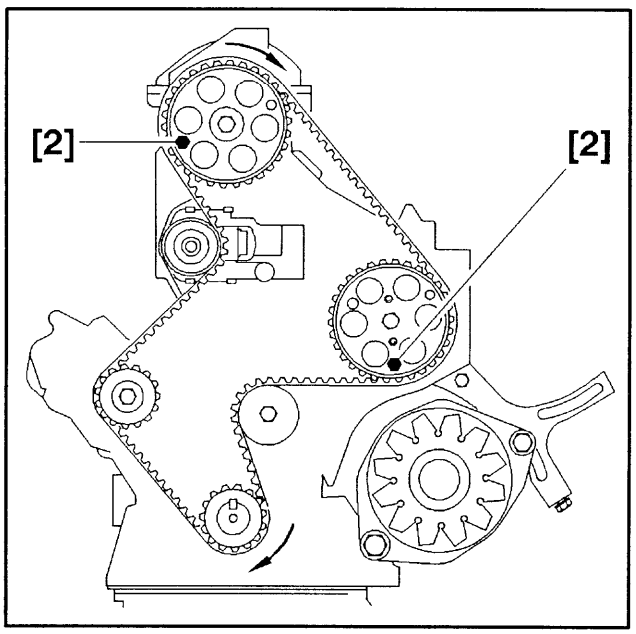


Fig : B1EP059C

Peg :

- the camshaft gear wheel ; utilising tool [2]
- the pinion of injection pump ; utilising tool [2]

If the timing is not correct, repeat the operation (see the relevant operation).

4 – REFITTING

Proceed in the reverse order to removal.

NOTE : Checking belt tension : see the relevant operation.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : THE TIMING BELT

1 – RECOMMENDED TOOLS

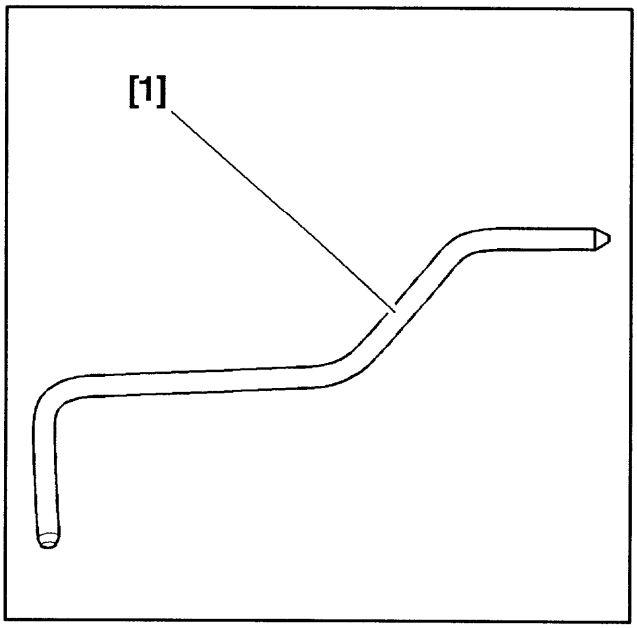


Fig : E5-P01HC

Engine kit 7004–T.

[1] flywheel locating peg 7014–T.J.

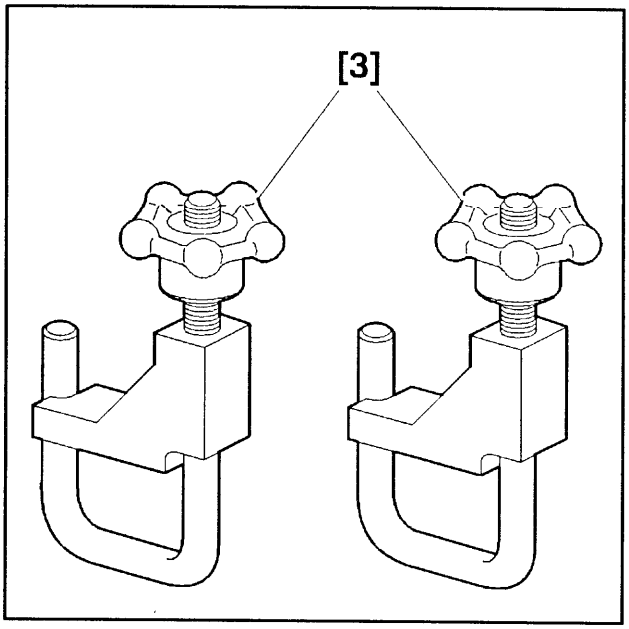


Fig : E5-P08JC

[3] hose clamp (4153–T).

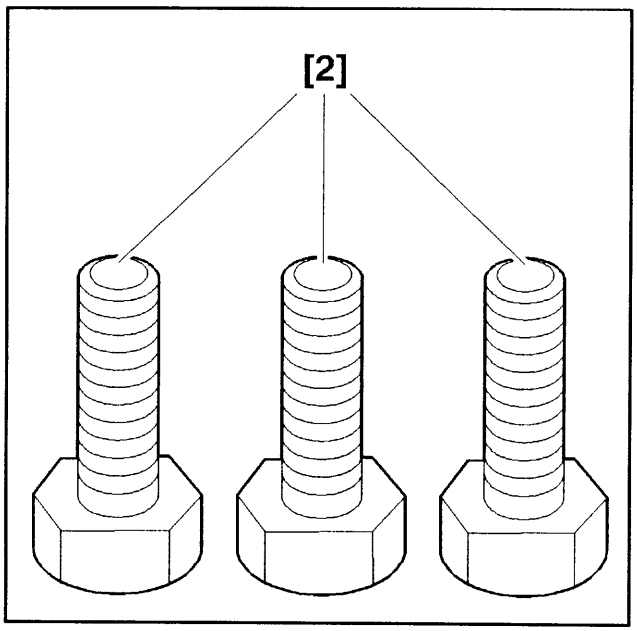


Fig : E5-P09MC

[2] bolt M8x40 : 7004–T.G.

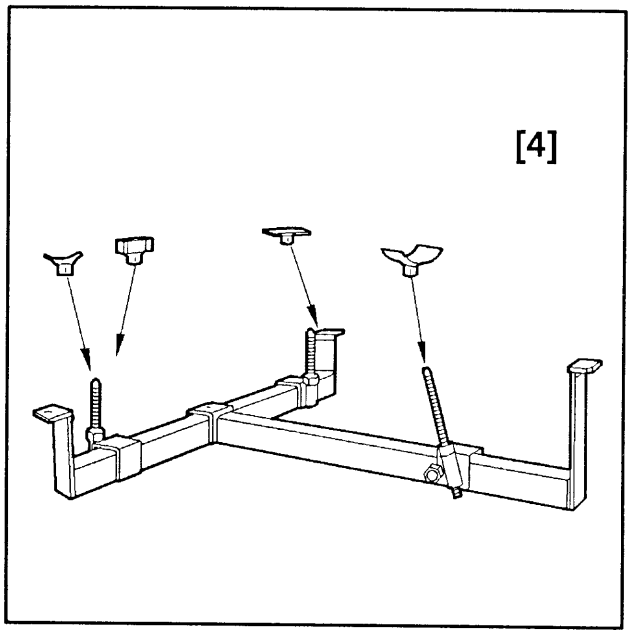


Fig : E5-P087C

Lower support (4) for the engine/gearbox unit, in the vehicle (9026–T).

www.WorkshopManuals.co.uk

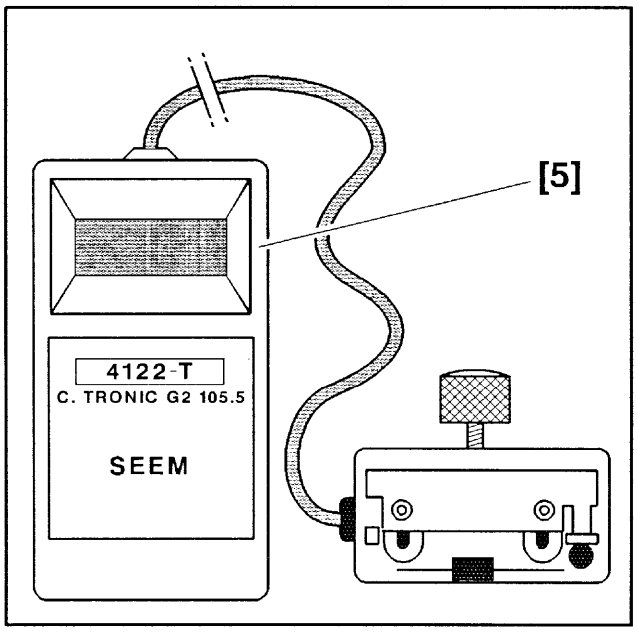


Fig : E5-P03DC

[5] SEEM belt tensioner (C.TRONIC.105.5) 4122–T.

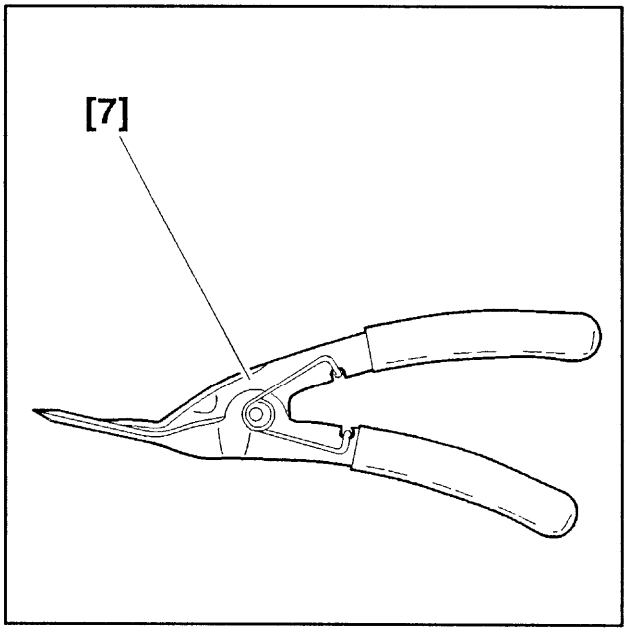


Fig : E5-P09NC

[7] pliers for removing the plastic pegs 7504–T.

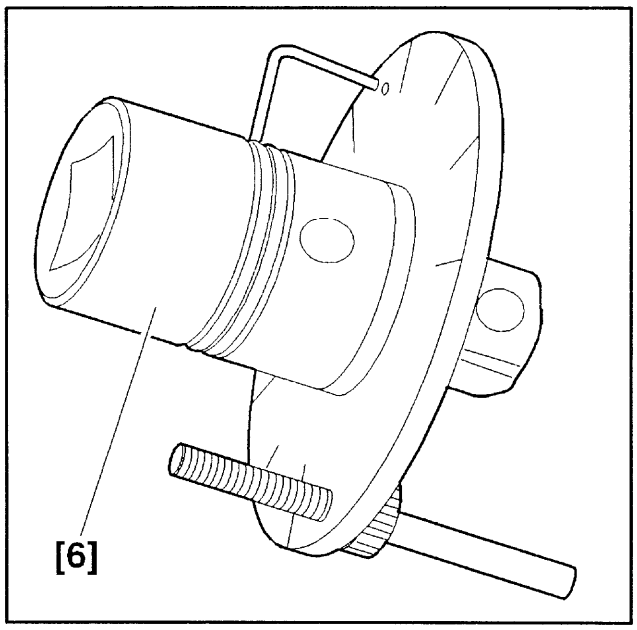


Fig : E5-P04QC

[6] angular torque setting protractor 4069–T.

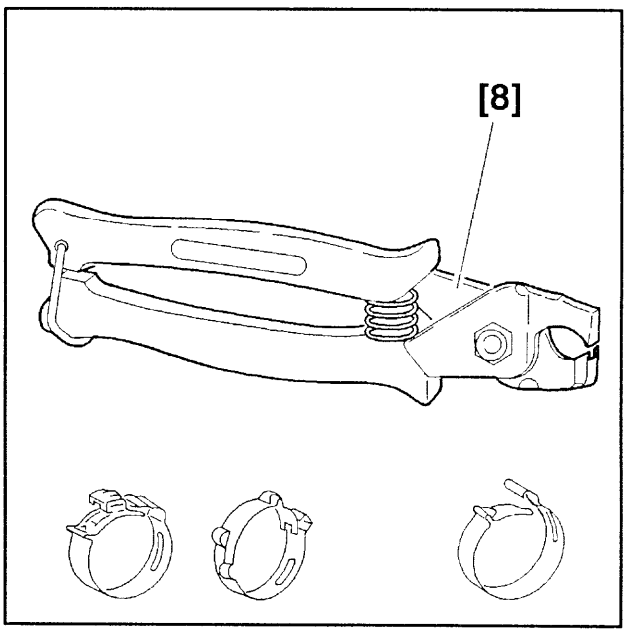


Fig : E5-P09PC

[8] clic clip pliers (4145–T).

www.WorkshopManuals.co.uk

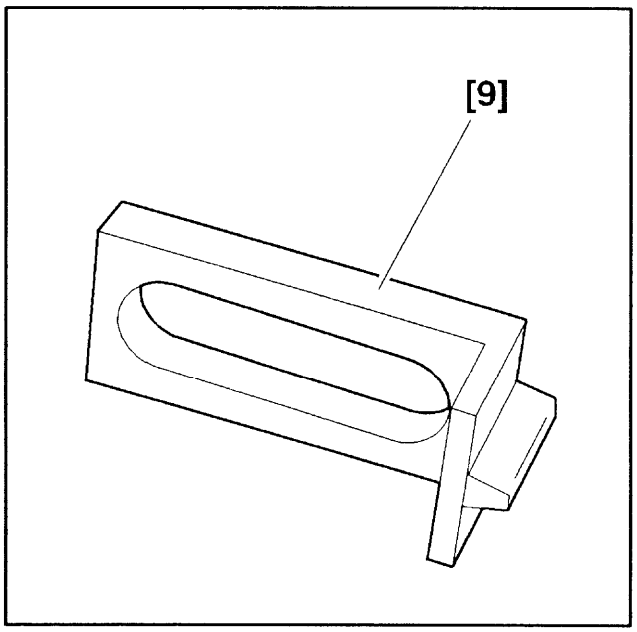


Fig : E5-P10VC

[9] toothed sector for locking the engine flywheel 9044-T.

2 - REMOVAL

Disconnect the battery negative terminal.

Engage the 5th gear to enable the engine to be turned.

Raise the front R.H. side of the vehicle and support it on stands.

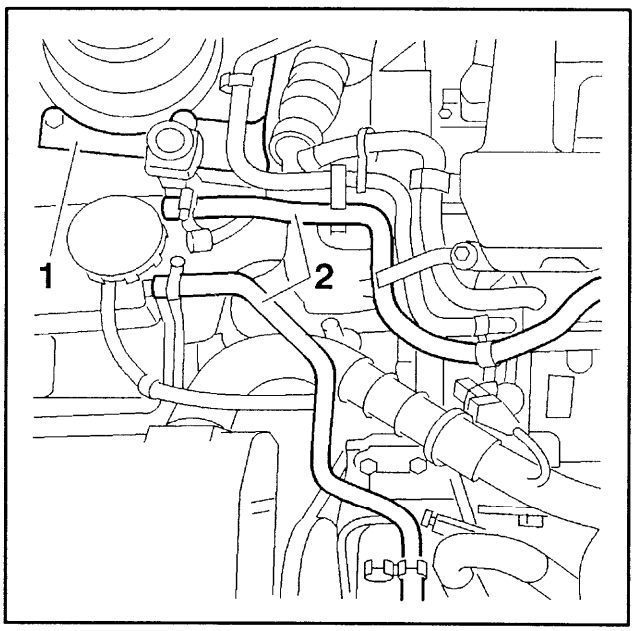


Fig : B1EP051C

Remove :

- the wheel
- the mud shield ; utilising tool [7]
- the sound insulator from under the engine
- the ECU housing (push the ECU and electrical harness aside)
- support (1) of switch with inertia

Uncoupling of flexible pipes (2) ; utilising tool [3].

Remove Diesel fuel flexible pipes.

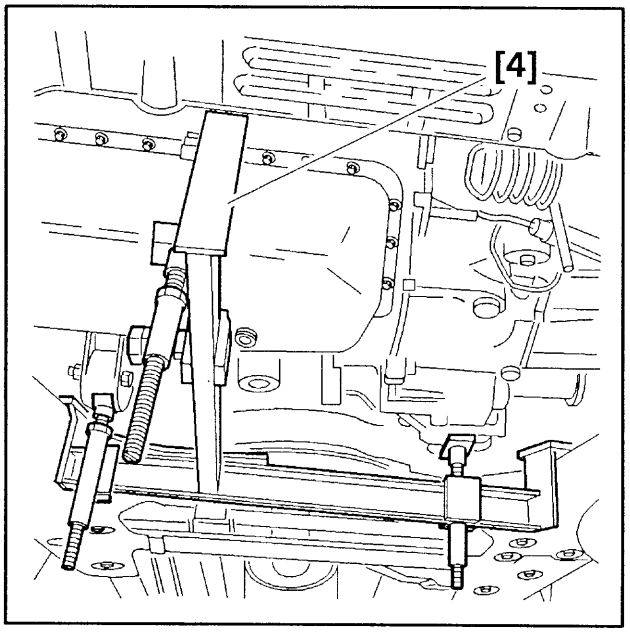


Fig : B1EP043C

Position tool (4) under cradle.

Remove the whole engine support bracket.

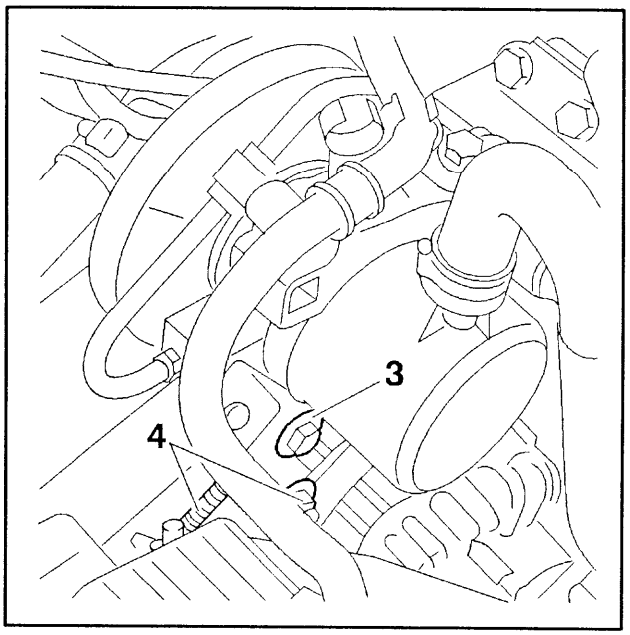


Fig : B1EP052C

Remove belt of high pressure pump (screw (3)).

Remove the alternator belt (nut (4) + screw).

www.WorkshopManuals.co.uk

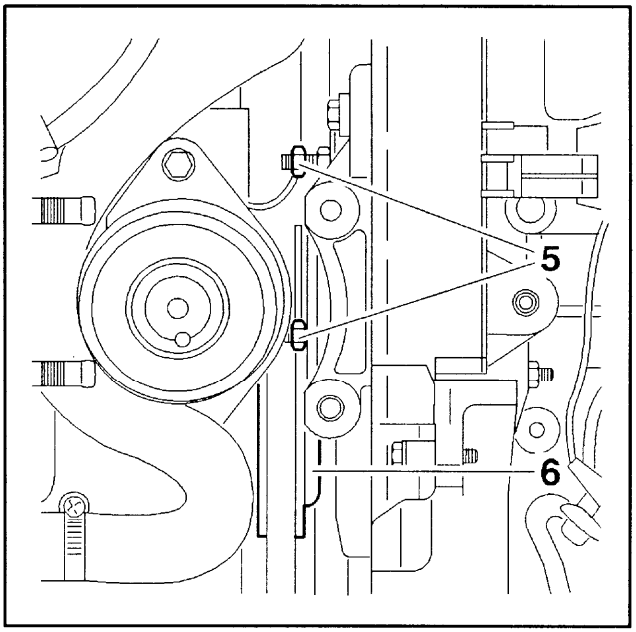


Fig : B1EP045C

Remove :
- the two nuts (5)
- the fluide roller (6)

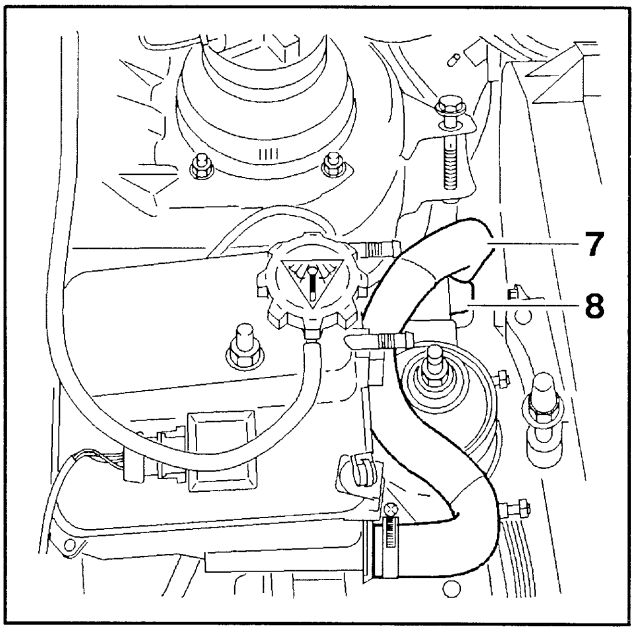


Fig : B1EP046C

Free flexible pipe (7) from clamp (8).

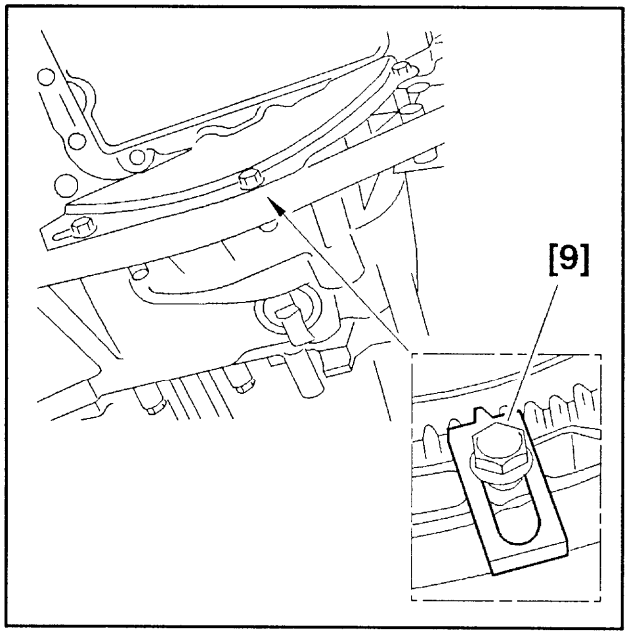


Fig : B1EP05KC

Remove the flywheel protection shield.

Fit the tool [9].

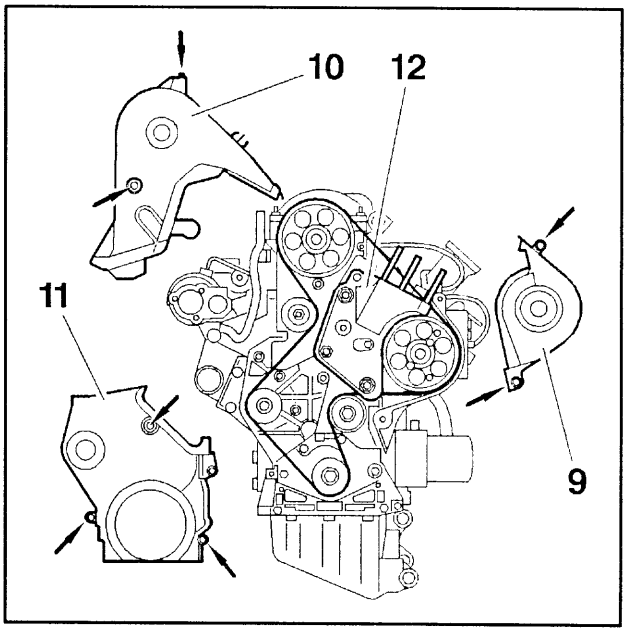


Fig : B1EP047C

Remove :
- the crankshaft pulley fixing screw
- the crankshaft pulley
- the cover (9) (screw –>)
- the cover (10) (screw –>) (pull flexible pipe (7) towards the bulkhead)
- the cover (11) (screw –>)
- the lower engine mounting (12)
- tool [9]

www.WorkshopManuals.co.uk

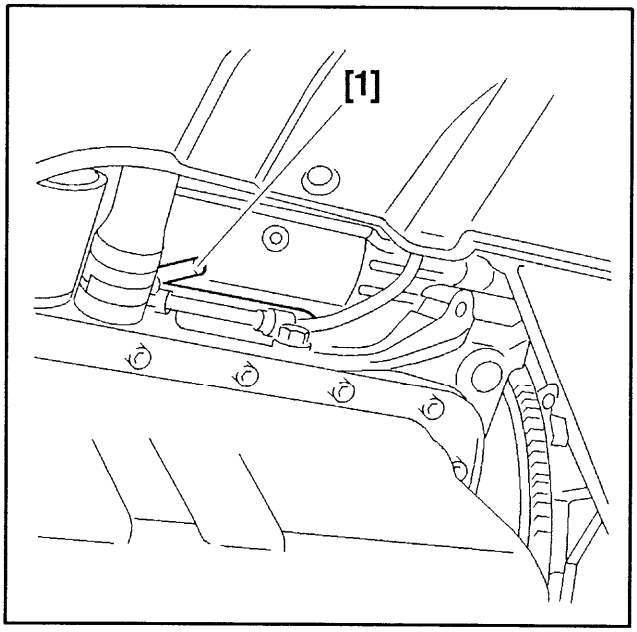


Fig : B1EP058C

Peg the flywheel with tool [1].

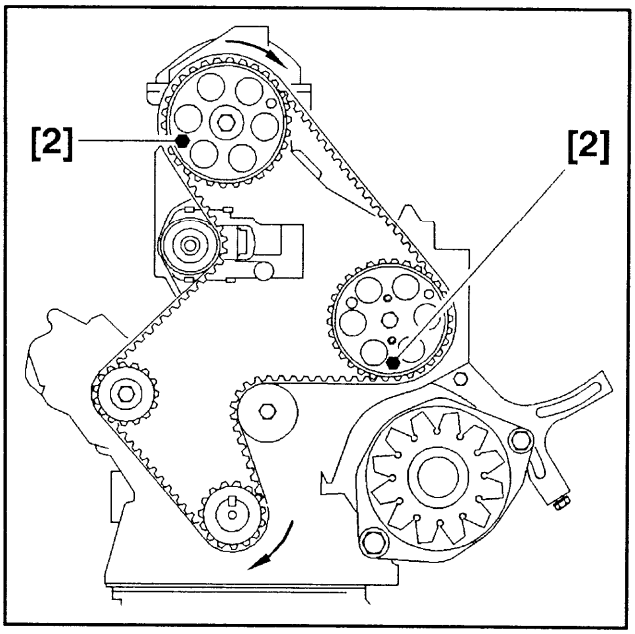


Fig : B1EP059C

Peg :
- the camshaft gear wheel ; utilising tool [2]
- the pinion of injection pump ; utilising tool [2]

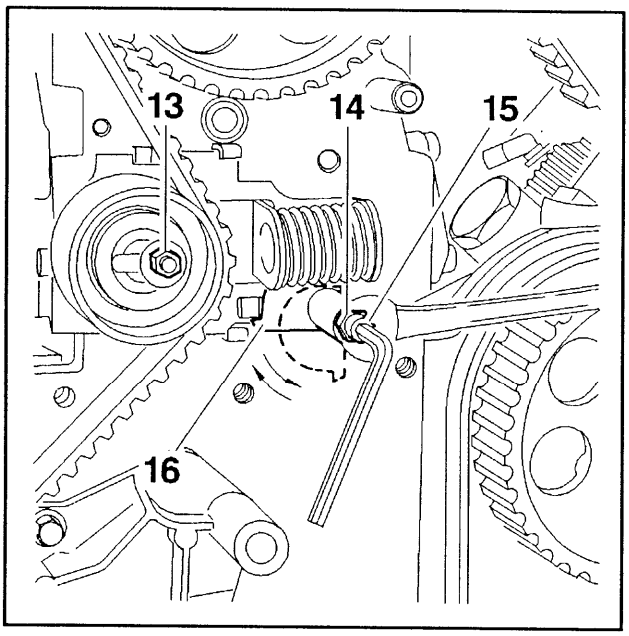


Fig : B1EP04AC

To release the timing belt :
- slacken nut (13)
- slacken the nut (14) and the bolt (15) (5 mm hexagon spanner ; 10 mm open-end spanner)
- act upon the eccentric of roller tensioner (16). Tighten the nut (13)

Remove the timing gear drive belt.

3 – REFITTING

Install the timing belt ; observing the correct tightening order, over :
- the pinion of injection pump ; belt run without slack
- the guide roller ; engage the belt by half a width
- the crankshaft sprocket
- the water pump
- the camshaft gear wheel ; engage the belt by half a width
- the roller tensioner ; engage the belt by half a width

Align the belt onto the various pinions.

Remove the three locating pegs.

Slacken nut (13).

Carry out 2 turns with crankshaft and stop at the point where it would be possible to engage the locating pegs (without inserting them).

IMPERATIVE : Never turn backwards.

Tighten the nut (13) : tightening torque = 1 m.daN.

Carry out 2 turns with crankshaft and stop at the point where it would be possible to engage the locating pegs.

IMPERATIVE : Never turn backwards.

www.WorkshopManuals.co.uk

Loosen the nut (13) by 1 turn. Let spring act.

Tighten nut (13) and bolt (15) : tightening torque = 1 m.daN.

Fit the three locating pegs.

NOTE : If one of the rods cannot be fitted, repeat the belt fitting operations.

Remove the three locating pegs.

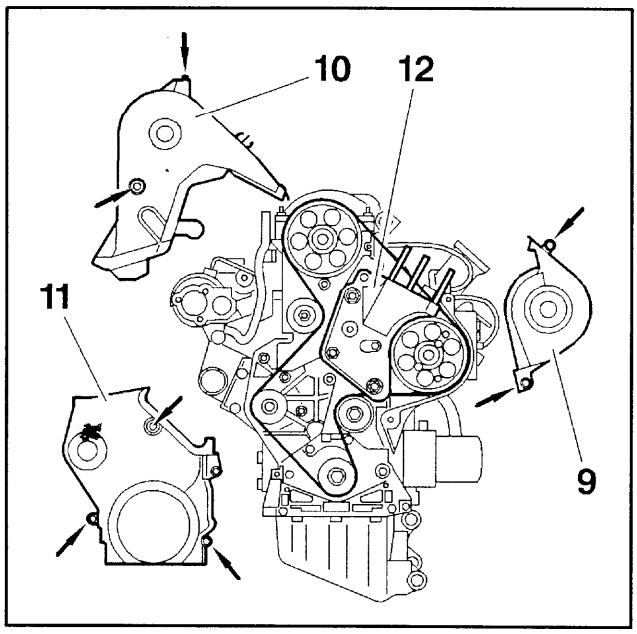


Fig : B1EP047C

Fit :
- the lower engine mounting (12)
- the cover (11) (screw –>)
- the cover (10) (screw –>) (push flexible pipe (7) towards the bulkhead)
- the cover (9) (screw –>)
- tool [9]
- remove the crankshaft pulley (clean the contact surface)

Apply a few drops of LOCTITE FRENBLOC (E6) to the threads.

Tightening sequence :
- crankshaft pulley fixing screw : pre–tighten to 7 m.daN
- angular tightening of 60°

Remove tool [9].

Fit : the flywheel protection plate.

Insert flexible pipe (7) in clamp (8).

Refit the engine mounting assembly.

Remove tool [4].

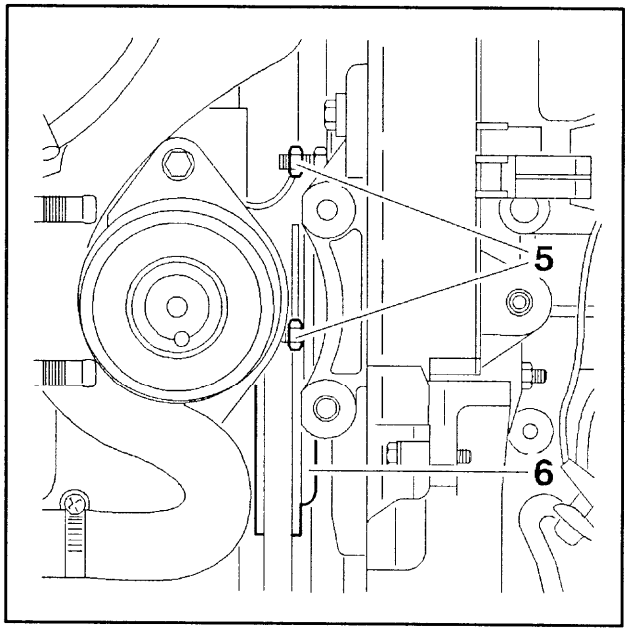


Fig : B1EP045C

Fit :
- the guide roller (6)
- the two nuts (5)

Refit the alternator belt (nut (4) + screw).

Install belt of high pressure pump (screw (3)).

NOTE : Checking belt tension : see the relevant operation.

Locate :
- the Diesel fuel flexible pipes
- the flexible hoses (2)

Fit :
- the ECU housing
- the sound insulator under the engine
- the mud shield
- the wheel

Connect the battery negative terminal.

Return the vehicle to its wheels.

www.WorkshopManuals.co.uk

Xm

NOVEMBER 1997

SUBSCRIPTION

RPO No: 7511

REF. 1 No XM 122-00/4

PETROL ENGINE

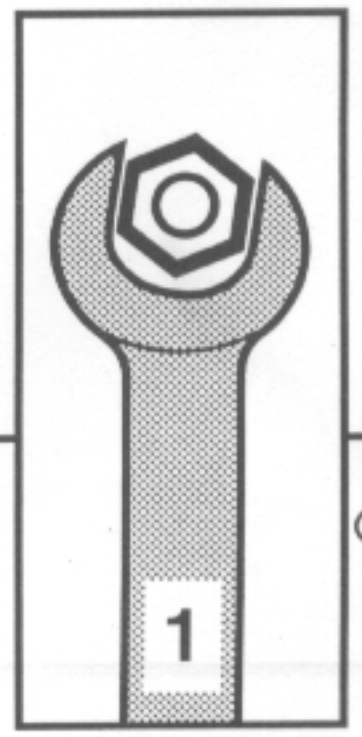
ES9J4 (2946 cm³. V6)

● VALVE TIMING

MAN 108931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE



GB

www.WorkshopManuals.co.uk

VALVE TIMING

CHECKS : SETTING THE VALVE TIMING 1

1 – Recommended tools 1
2 – Removing –

REMOVING – REFITTING : CAM BELT 4

1 – Recommended tools 4
2 – Removing 5
3 – Refitting 8
4 – Checking the valve timing 10

www.WorkshopManuals.co.uk

CHECKS : SETTING THE VALVE TIMING

1 – RECOMMENDED TOOLS

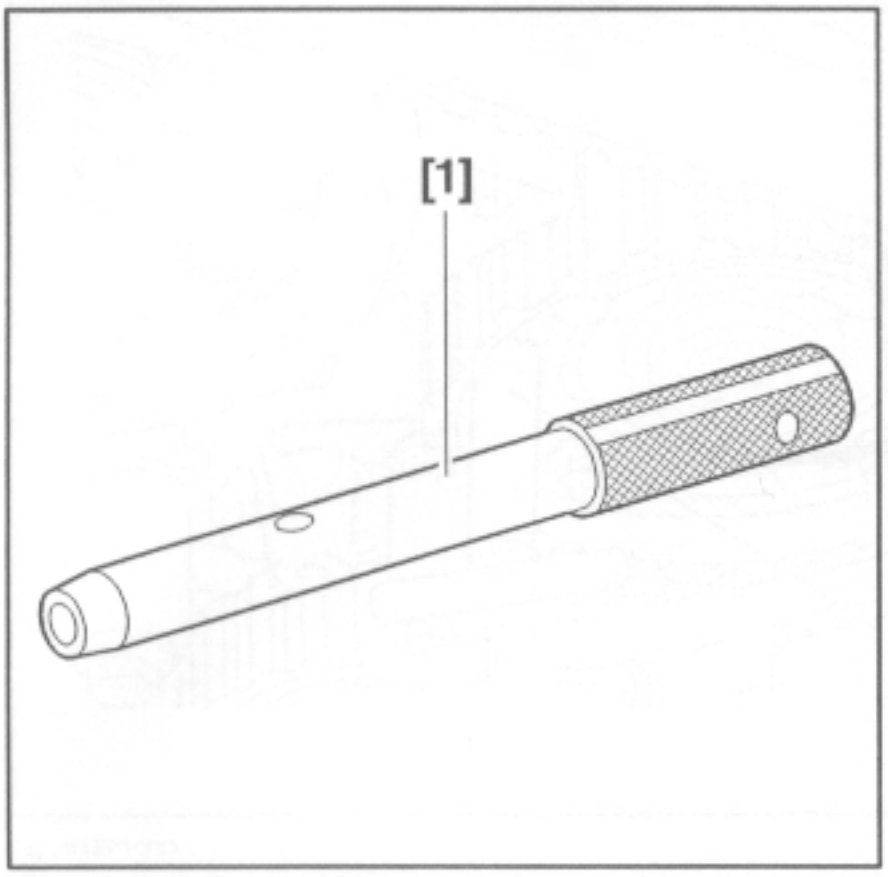


Fig : E5AP039C

[1] crankshaft setting rod (–).0187 A.

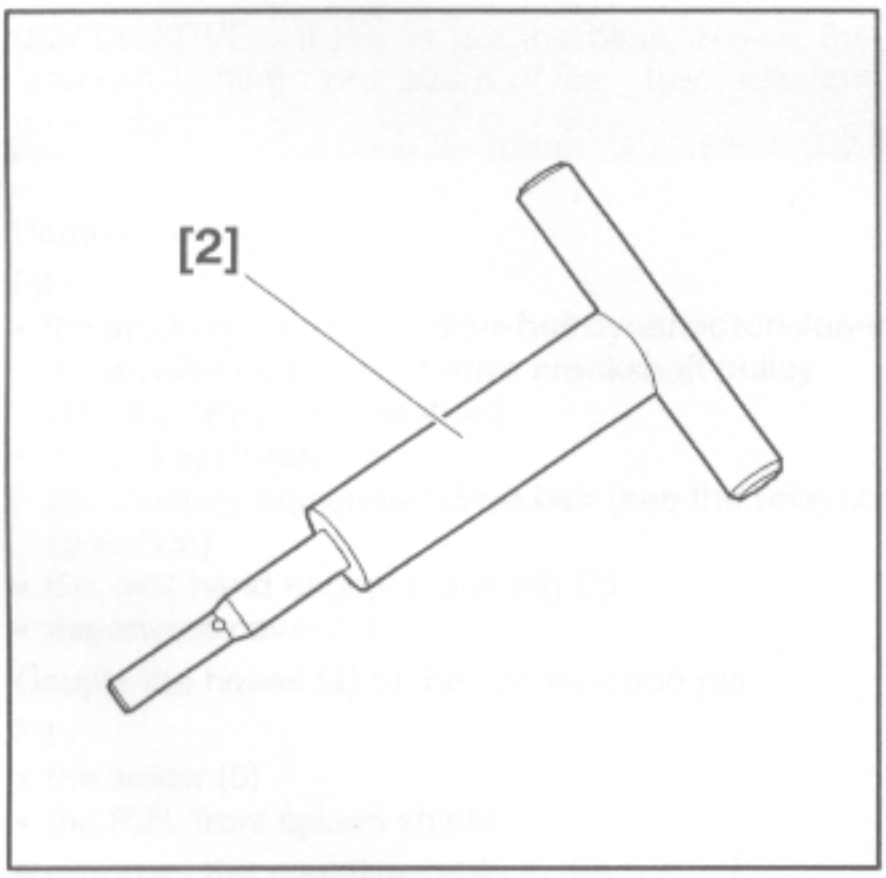


Fig : E5AP122C

[2] locating pin for checking the valve timing (–).0187 CZ.

2 – REMOVING

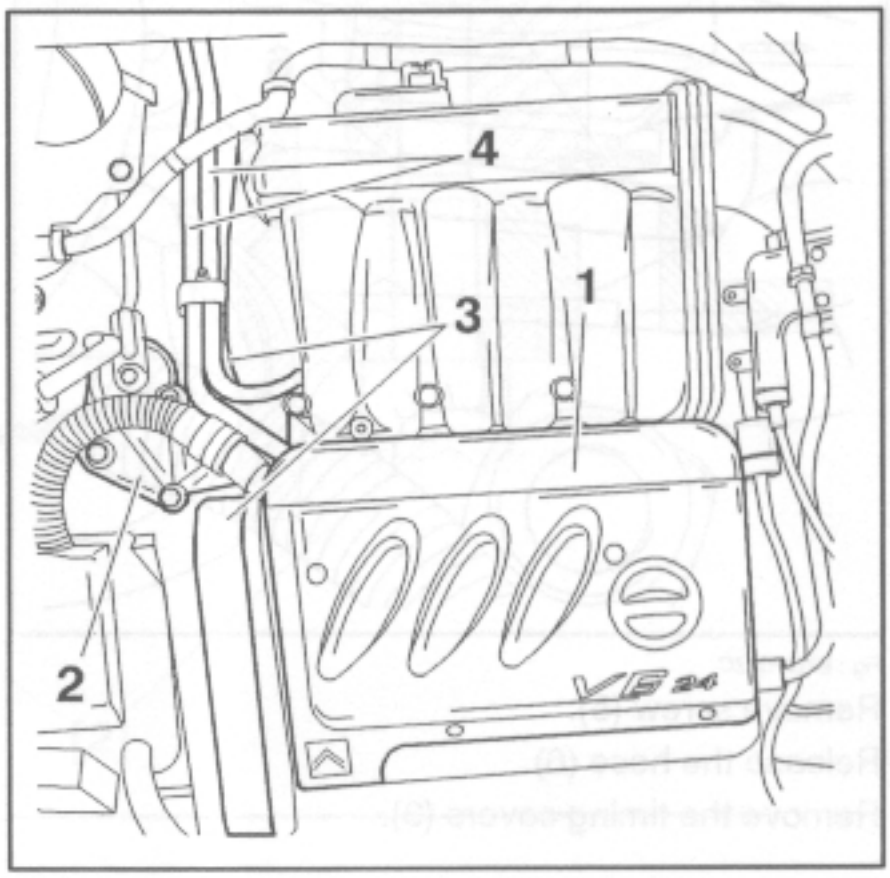


Fig : B1BP1MQC

Disconnect the battery negative cable.

Remove the engine cover (1).

Uncouple the hoses (4) from the fuel injection rail.

Remove the auxiliary equipment drive belt (see the relevant operation).

Hold the engine in place with the help of a workshop crane (R.H. side).

Remove :

- the R.H. front splash shield
- the auxiliary equipment drive belt dynamic tensioner
- the auxiliary equipment drive crankshaft pulley
- the right hand engine mounting (2)

Unclip the hoses (4) from the timing covers (3).

www.WorkshopManuals.co.uk

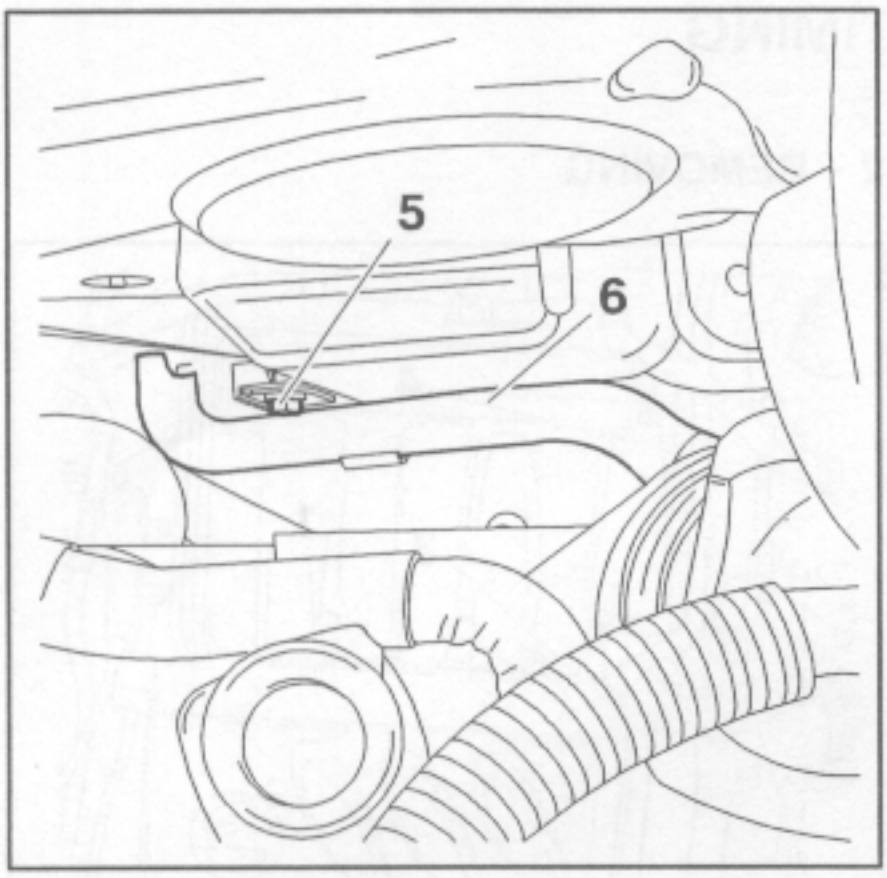


Fig : B1GP05ZC

Remove screw (5).

Release the hose (6).

Remove the timing covers (3).

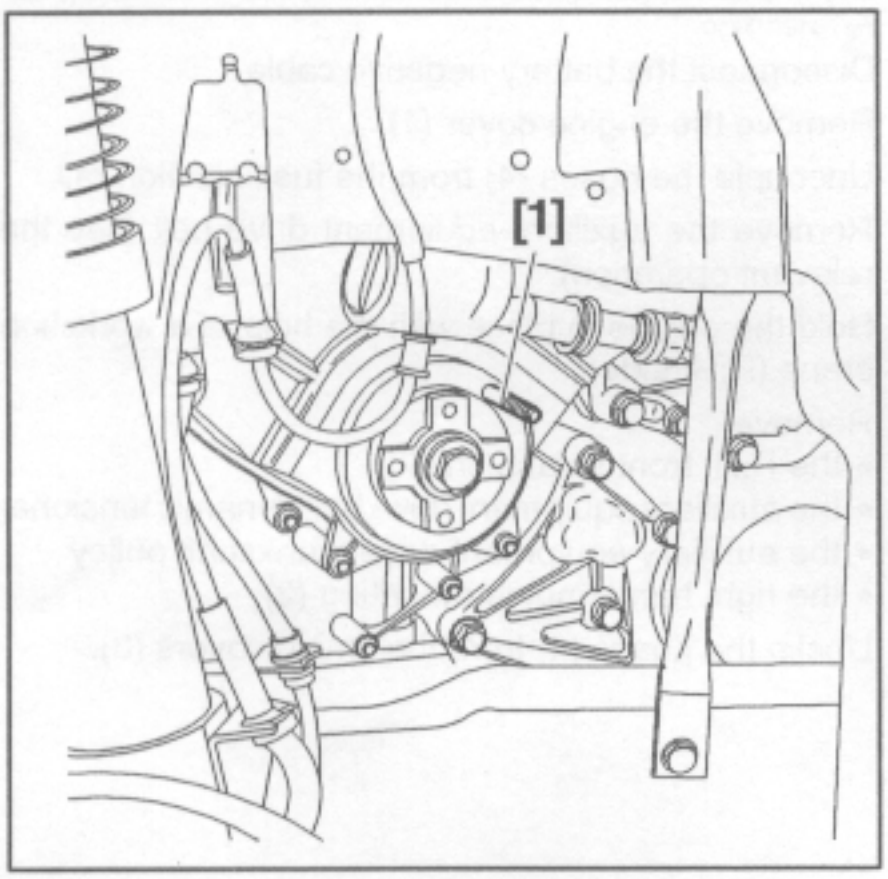


Fig : B1CP02UC

Peg the crankshaft by means of setting rod [1].

www.WorkshopManuals.co.uk

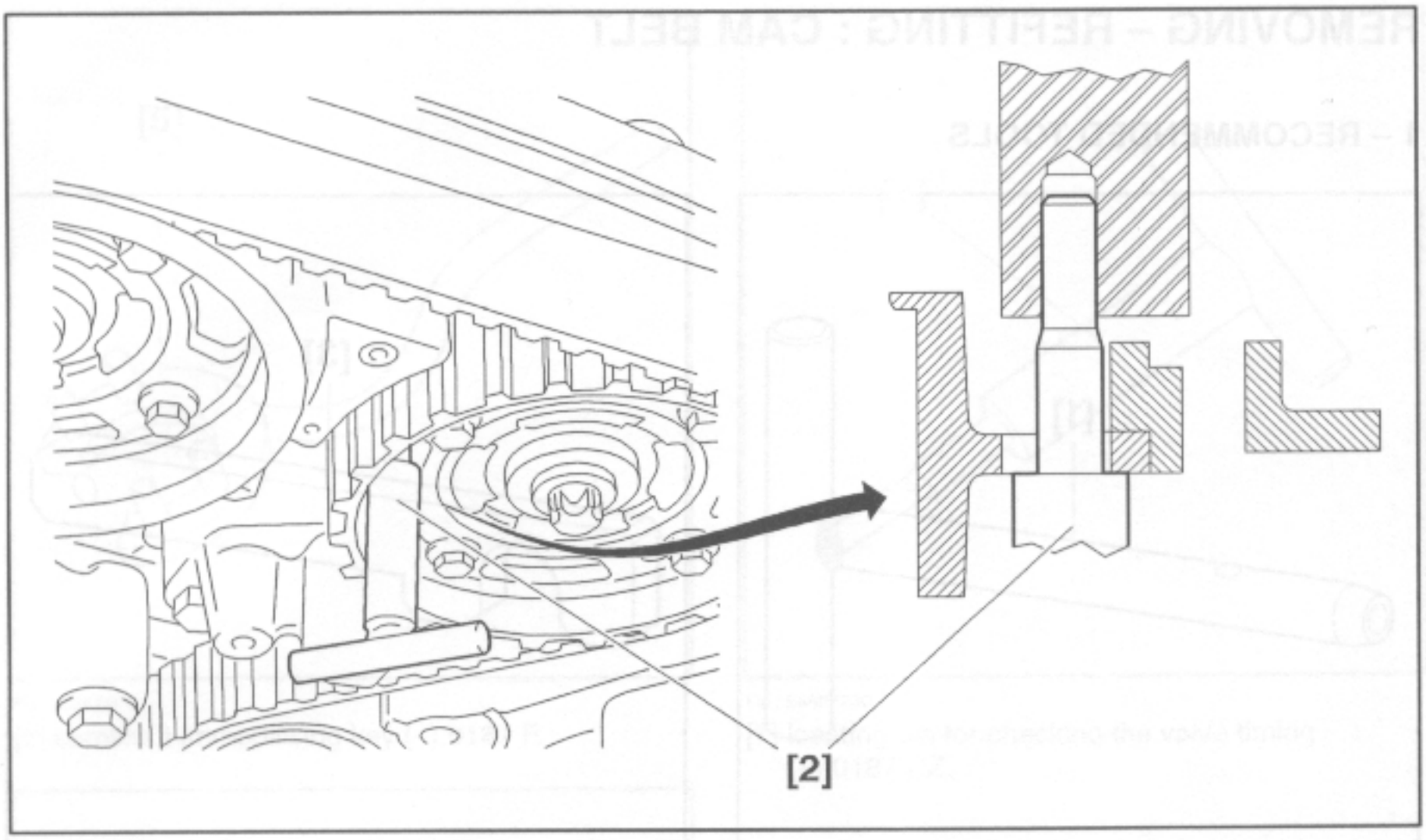


Fig : B1EP10PD

Check that the tool [2] can be inserted freely through the pulleys and into the cylinder heads.

IMPERATIVE : If this is not the case, repeat the cambelt fitting procedure (see the relevant operation).

Remove tool [1].

Fit :
- the auxiliary equipment drive belt dynamic tensioner
- the auxiliary equipment drive crankshaft pulley (see the relevant operation)
- the timing covers (3)
- the auxiliary equipment drive belt (see the relevant operation)
- the right hand engine mounting (2)
- the engine cover (1)

Couple the hoses (4) to the fuel injection rail.

Fit :
- the screw (5)
- the R.H. front splash shield

Reconnect the negative cable to the battery.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : CAM BELT

1 – RECOMMENDED TOOLS

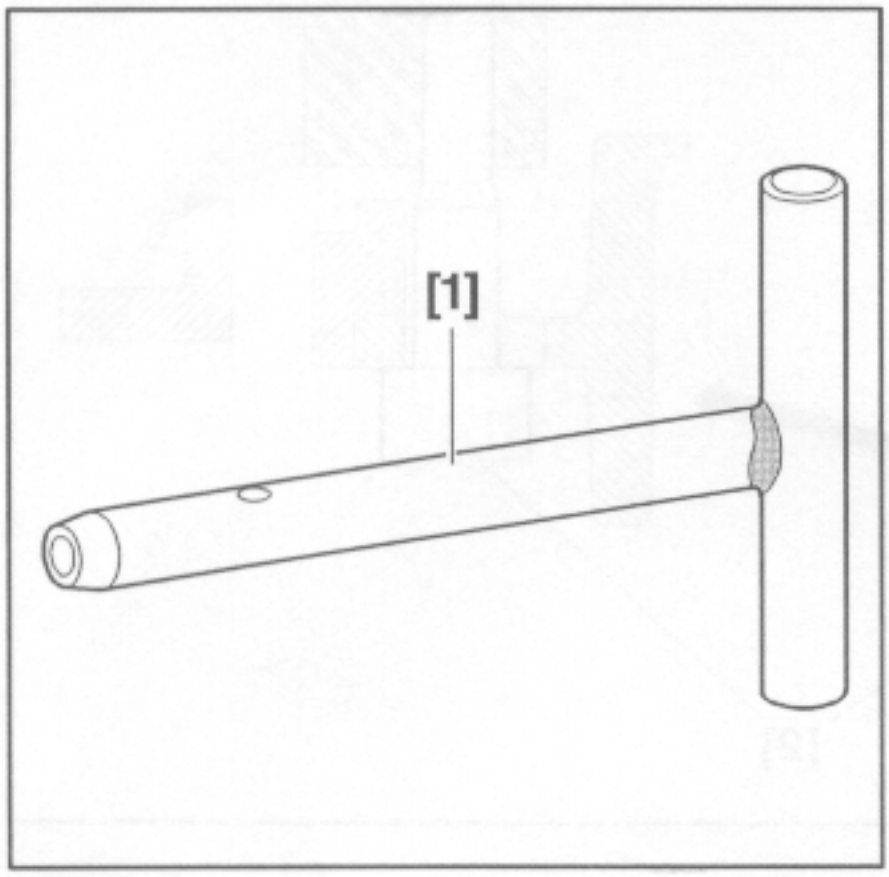


Fig : E5AP033C

[1] camshaft setting pegs ((–).0187 B).

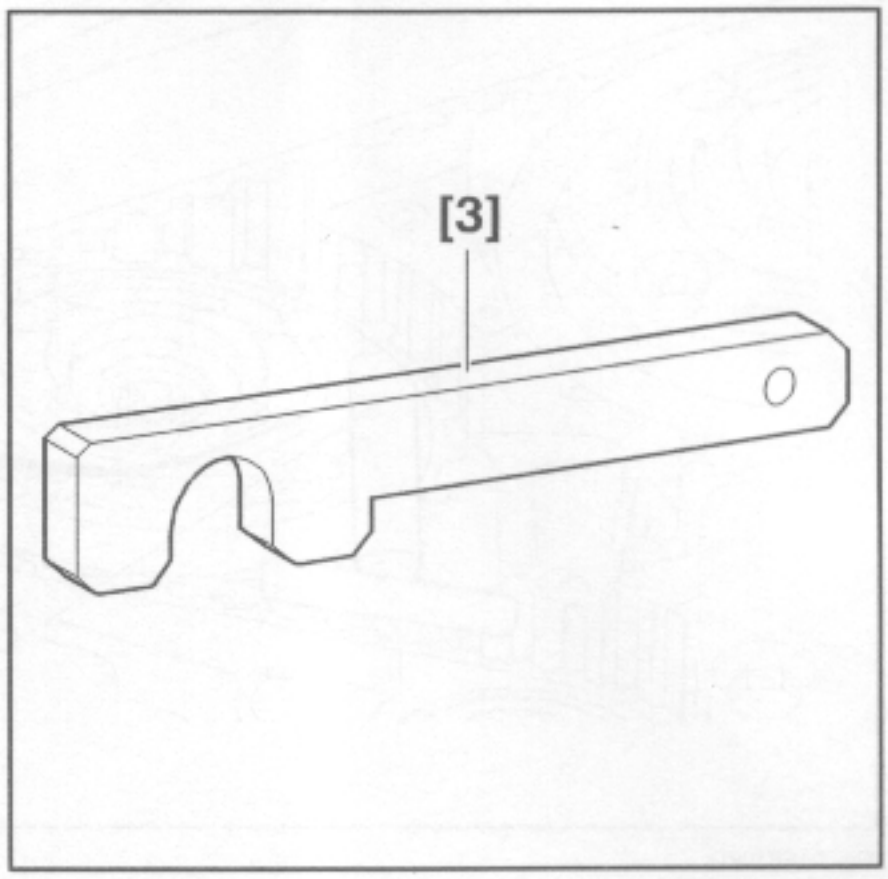


Fig : E5AP035C

[3] adjusting shim for the dynamic tensioner (–).0187 E.

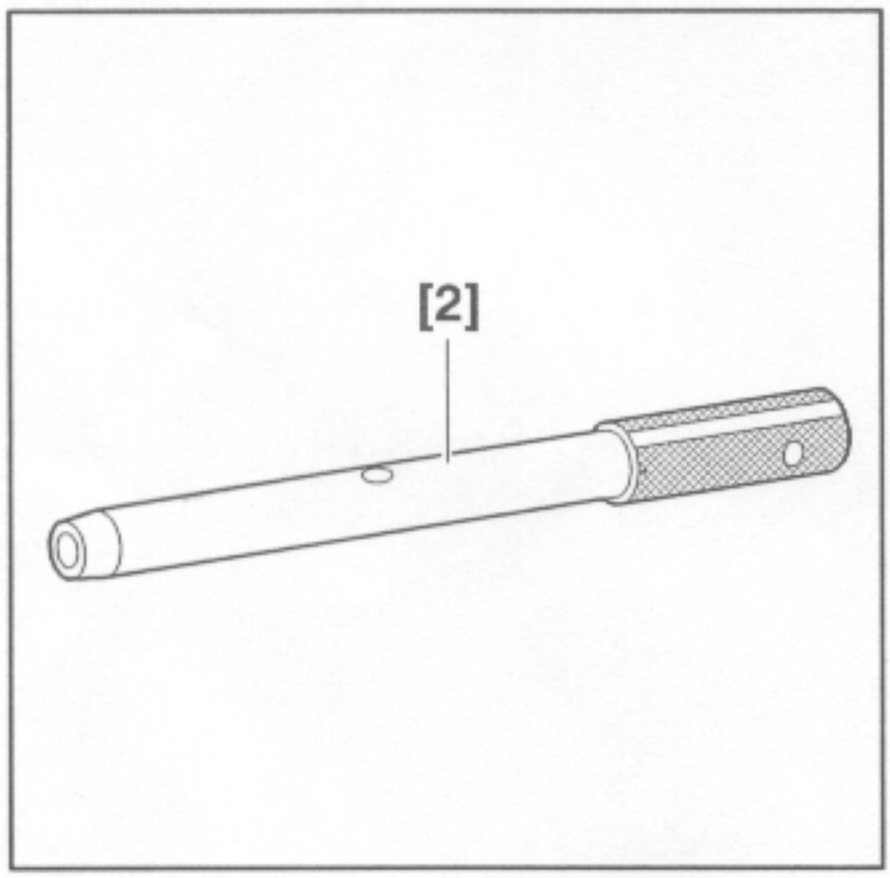


Fig : E5AP034C

[2] crankshaft setting rod (–).0187 A.

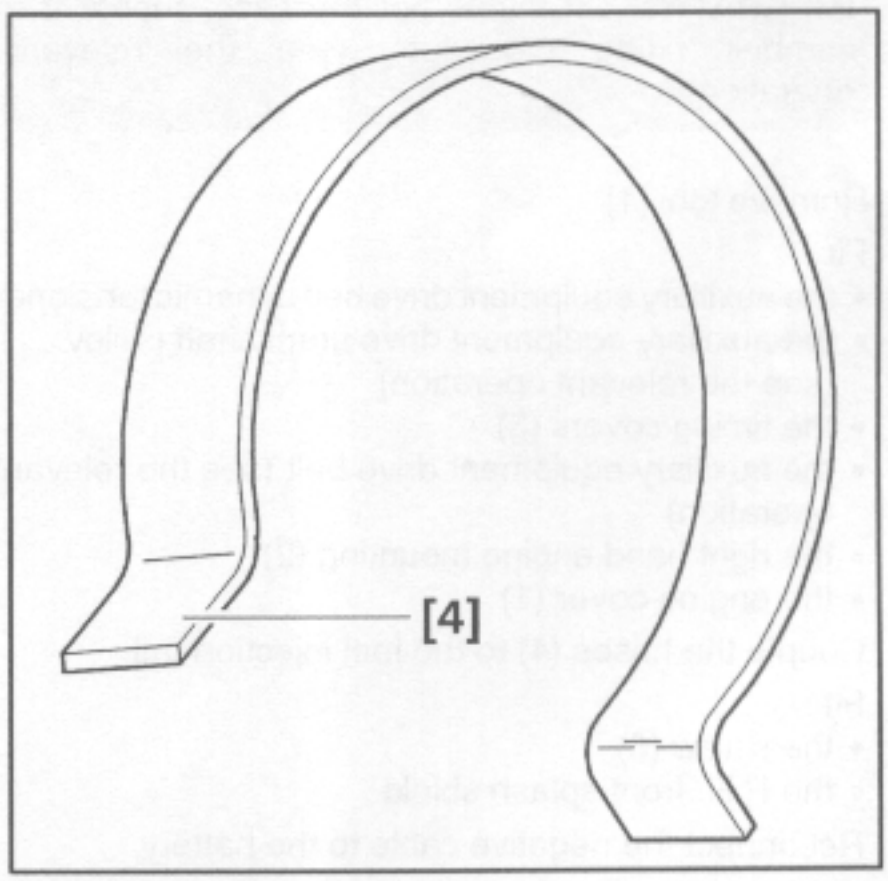


Fig : E5AP036C

[4] belt retaining pin (–).0187 J.

www.WorkshopManuals.co.uk

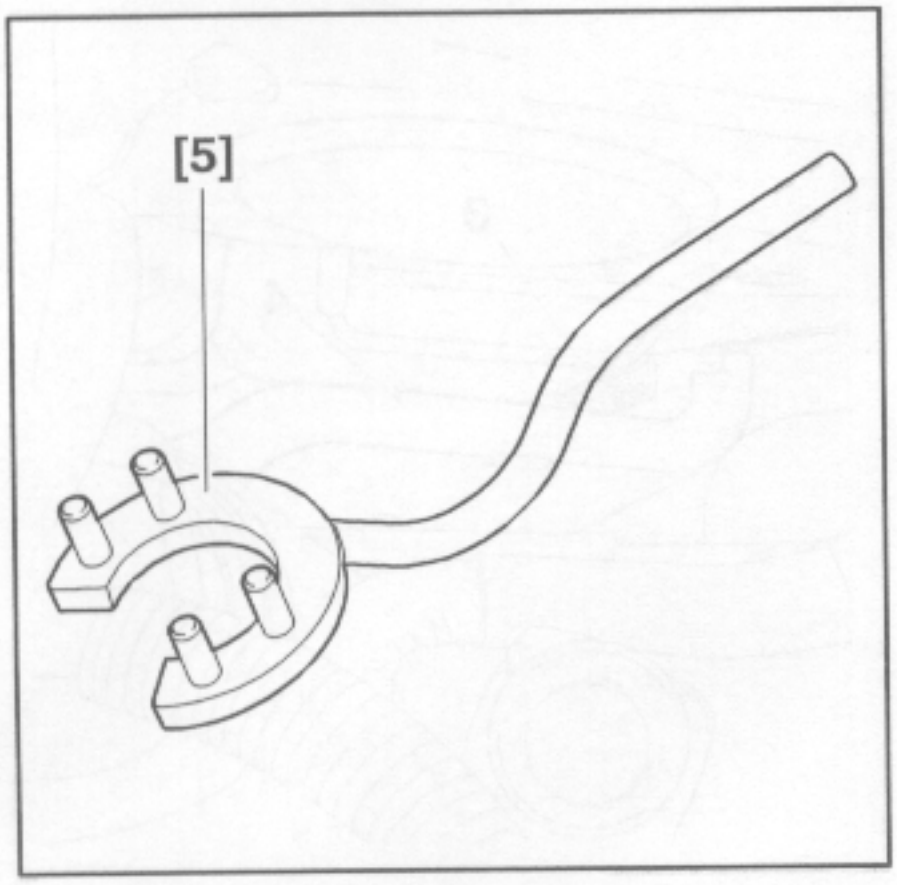


Fig : E5AP037C

[5] camshaft immobilising key (–).0187 F.

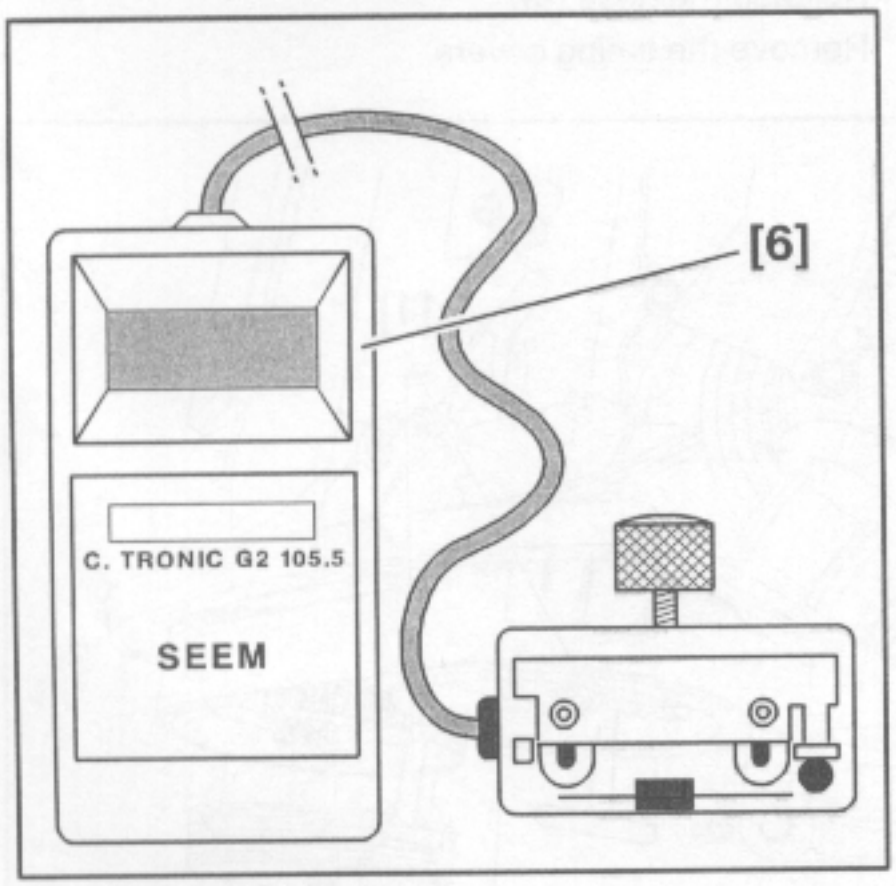


Fig : E5–P03SC

[6] SEEM belt tension measuring instrument, with digital display : 4122–T.

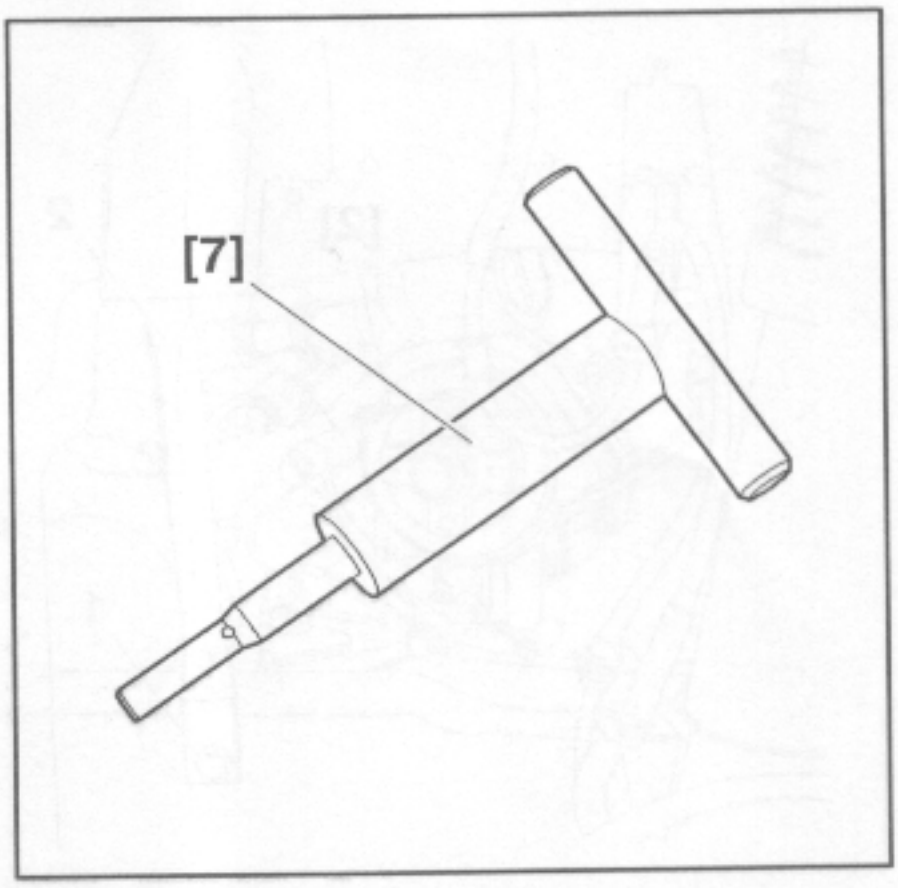


Fig : E5AP123C

[7] locating pin for checking the valve timing (–).0187 CZ.

2 – REMOVING

Disconnect the battery negative cable.

Remove the auxiliary equipment drive belt (see the relevant operation).

Hold the engine in place with the help of a workshop crane (R.H. side).

Remove :

- the right–hand engine mounting
- the engine cover
- the auxiliary equipment drive crankshaft pulley
- the auxiliary equipment drive belt dynamic tensioner

www.WorkshopManuals.co.uk

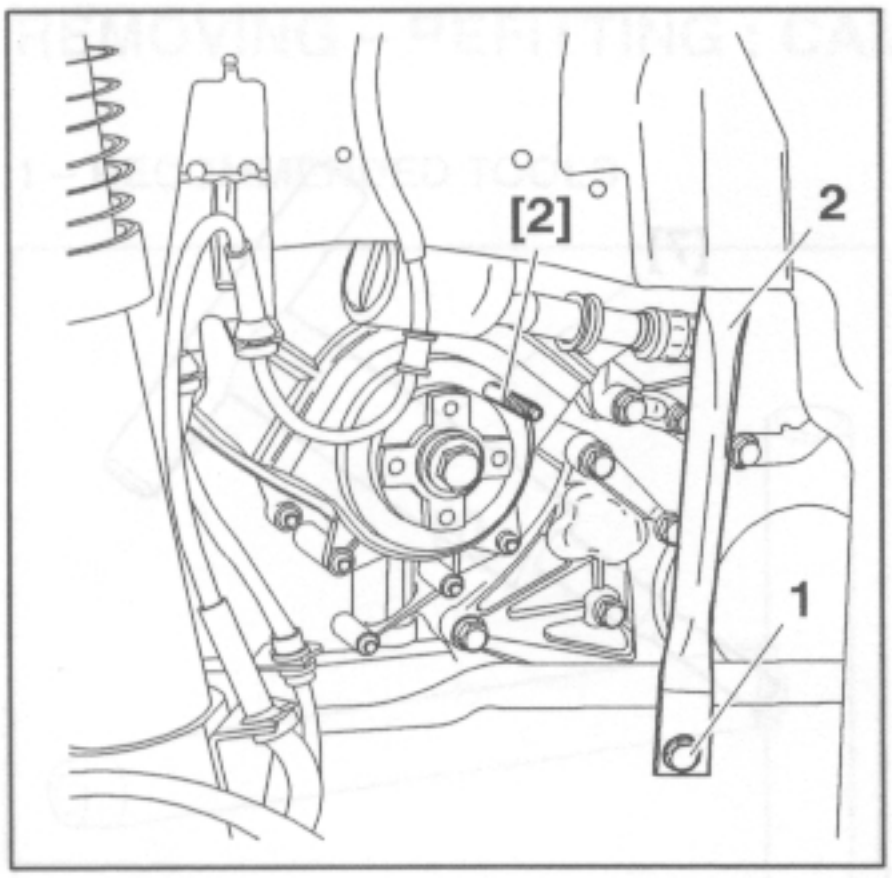


Fig : B1CP02VC

Peg the crankshaft by means of setting rod [2].
Remove the screw (1).
Tilt the bar (2).

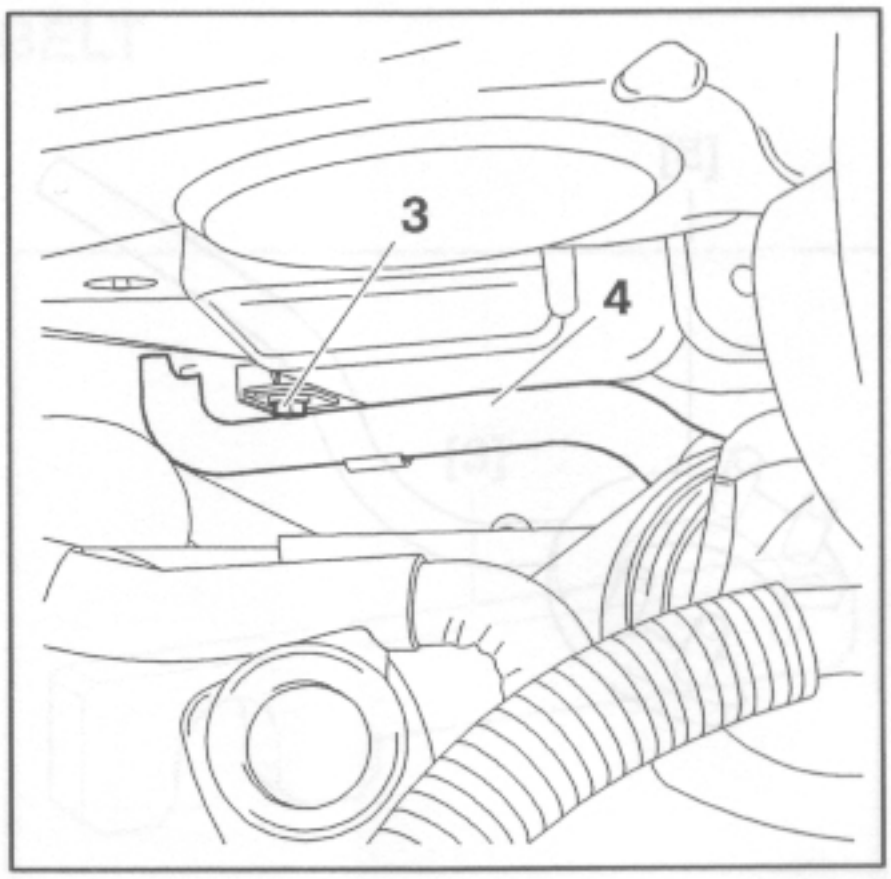


Fig : B1GP060C

Remove the screw (3).
Release the hose (4).
Remove the timing covers.

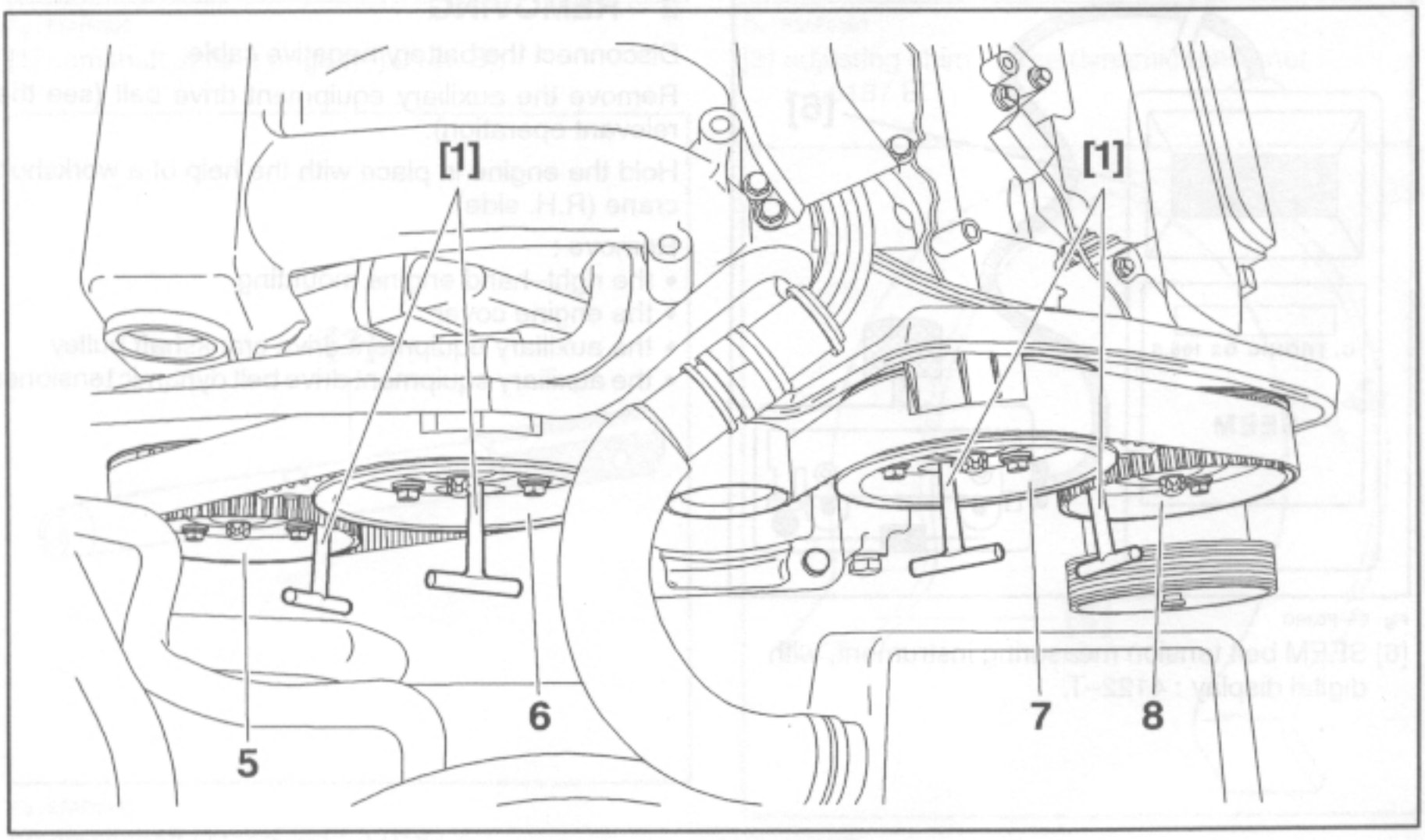


Fig : B1EP10QD

Loosen the screws of the camshaft pulleys (5), (6), (7) and (8).
Control the rotation of the camshafts ; by means of tool [5].
Lubricate the tools [1] using G6 (TOTAL MULTIS) grease.
Peg the camshafts ; using the tools [1] and [5].

www.WorkshopManuals.co.uk

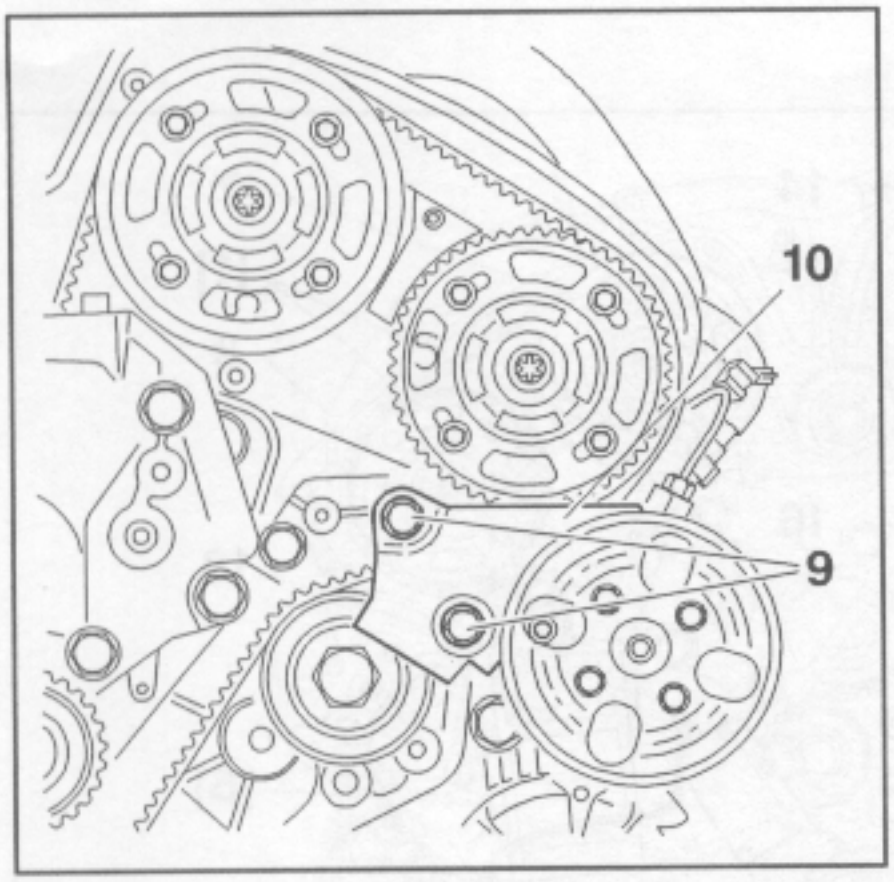


Fig : B1EP10RC

Remove :
- the screws (9)
- the plate (10)

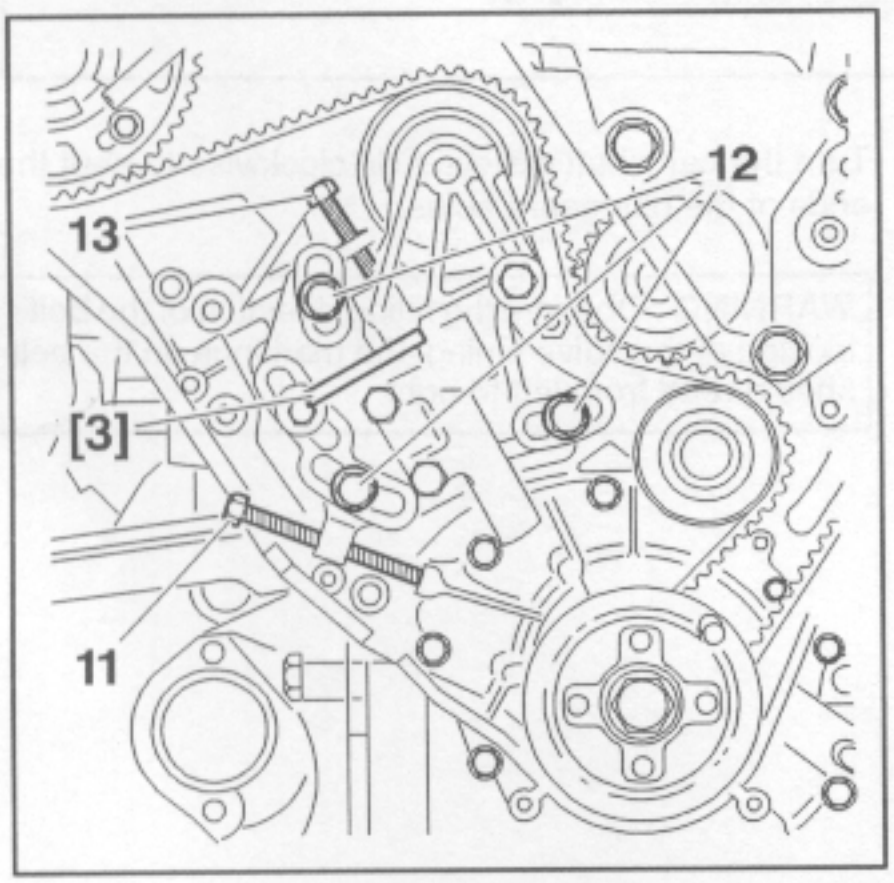


Fig : B1EP10SC

Screw in fully, a bolt M8 of length 75 mm (11).

Fit a bolt M8 of length 40 mm (13).

Put tool [3] into place.

Tighten the bolt (13) until the tool [3] is locked.

Loosen screws (12).

Slacken the bolt (11) to relax the tension of the cambelt.

Mark the direction of fitting of the timing belt in case of reuse.

Remove the timing gear drive belt.

www.WorkshopManuals.co.uk

3 – REFITTING

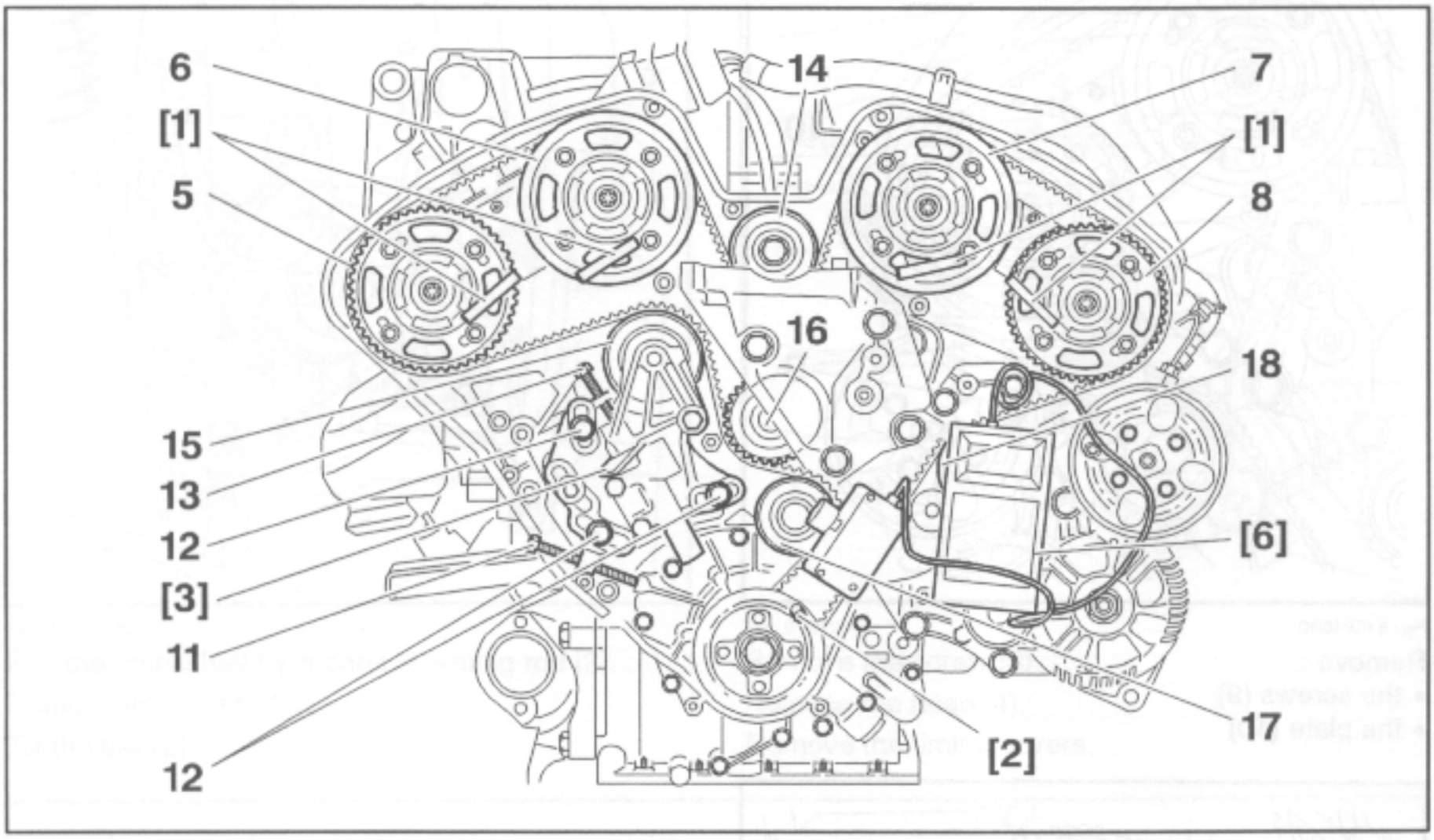


Fig : B1EP10TD

Check that the rollers (14), (15), (17) and (18) rotate freely (no play and no stiffness).

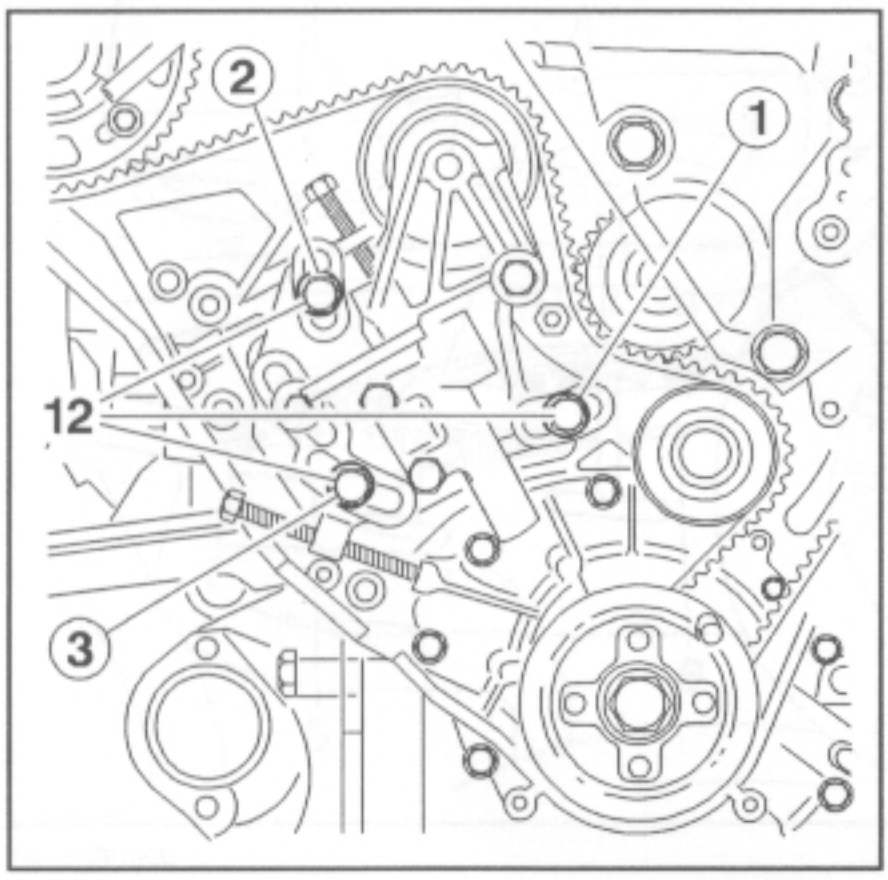


Fig : B1EP10UC

Tighten the screws (12) to 1 m.daN (in the order shown).

Loosen the screws (12) by 45°.

Tighten the camshaft pulley bolts to 0,5 m.daN.

Slacken the camshaft pulley bolts by 45°.

Turn the camshaft pulleys fully clockwise to abut the ends of the elongated holes.

WARNING : Observe the fitting direction of the belt : looking at the valve timing, the markings on the belt should read from left to right.

www.WorkshopManuals.co.uk

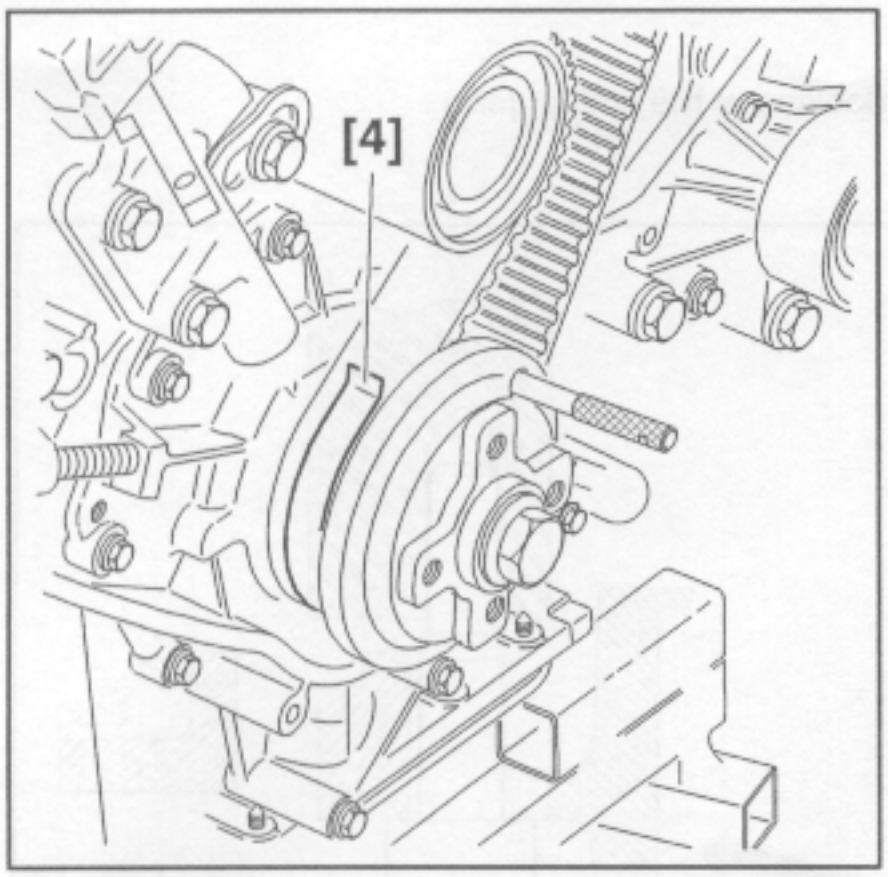


Fig : B1EP08GC

Fit the timing belt to the crankshaft pinion.

Put tool [4] into place.

Fit the timing belt following the sequence shown :
- the guide roller (18)
- the camshaft pulley (8)
- the camshaft pulley (7)
- the guide roller (14)
- the camshaft pulley (6)
- the camshaft pulley (5)
- the roller tensioner (15)
- the water pump pulley (16)
- the guide roller (17)

Slightly tighten the screw (11) in order to lightly tension the belt.

NOTE : When fitting the belt to the camshaft pulleys, turn them anti–clockwise to align with the nearest tooth. The angular movement of the pulleys must be less than the width of one tooth.

Remove tool [4].

Put tool [6] into place.

Tighten the screw (11) to tension the belt to 83 ± 2 SEEM units.

WARNING : Check that the camshaft pulleys are not at the end of the slots. If this is not the case, repeat the cambelt fitting procedure.

Tighten the screws (12) to 2,5 m.daN (in the order shown).

Tighten the camshaft pulley bolts to 1 m.daN (at least 2 screws per pulley).

Observe the following order :
- the camshaft pulley (8)
- the camshaft pulley (7)
- the camshaft pulley (6)
- the camshaft pulley (5)

Remove tools [1],[2] and [6].

Rotate the crankshaft by 2 turns in a clockwise direction (looking at the timing gear).

IMPERATIVE : Never turn backwards.

Peg the crankshaft by means of setting rod [2].

Loosen the screws (12) by 45°.

Remove the screw (13).

Undo screw (11) to allow the tool [3] to slide but without play.

Wait one minute (damper action) in the case of retightening the screw (11).

Ensure that the tool [3] slides without play.

Remove tool [3].

Tighten the screws (12) to 2,5 m.daN (in the order shown).

Remove :
- screw (11)
- tool [2]

Rotate the crankshaft by 2 turns in a clockwise direction (looking at the timing gear).

Peg the crankshaft by means of setting rod [2].

Peg the camshaft pulleys using the tools [1].

Observe the following order :
- the camshaft pulley (8)
- the camshaft pulley (7)
- the camshaft pulley (6)
- the camshaft pulley (5)

If the peg [1] can be inserted : slacken the camshaft pulley bolts by 45°.

If the peg can not be inserted [1] : slacken the camshaft pulley bolts by 45° ; turn the hub using the lever [5] so that it can be pegged.

WARNING : Check that the camshaft pulleys are not at the end of the slots. If this is not the case, repeat the cambelt fitting procedure.

Tighten the camshaft pulley bolts to 1 m.daN.

Observe the following order :
- the camshaft pulley (8)
- the camshaft pulley (7)
- the camshaft pulley (6)
- the camshaft pulley (5)

Remove tools [1] and [2].

www.WorkshopManuals.co.uk

4 – CHECKING THE VALVE TIMING

Rotate the crankshaft by 2 turns in a clockwise direction (looking at the timing gear).

Peg the crankshaft by means of setting rod [2].

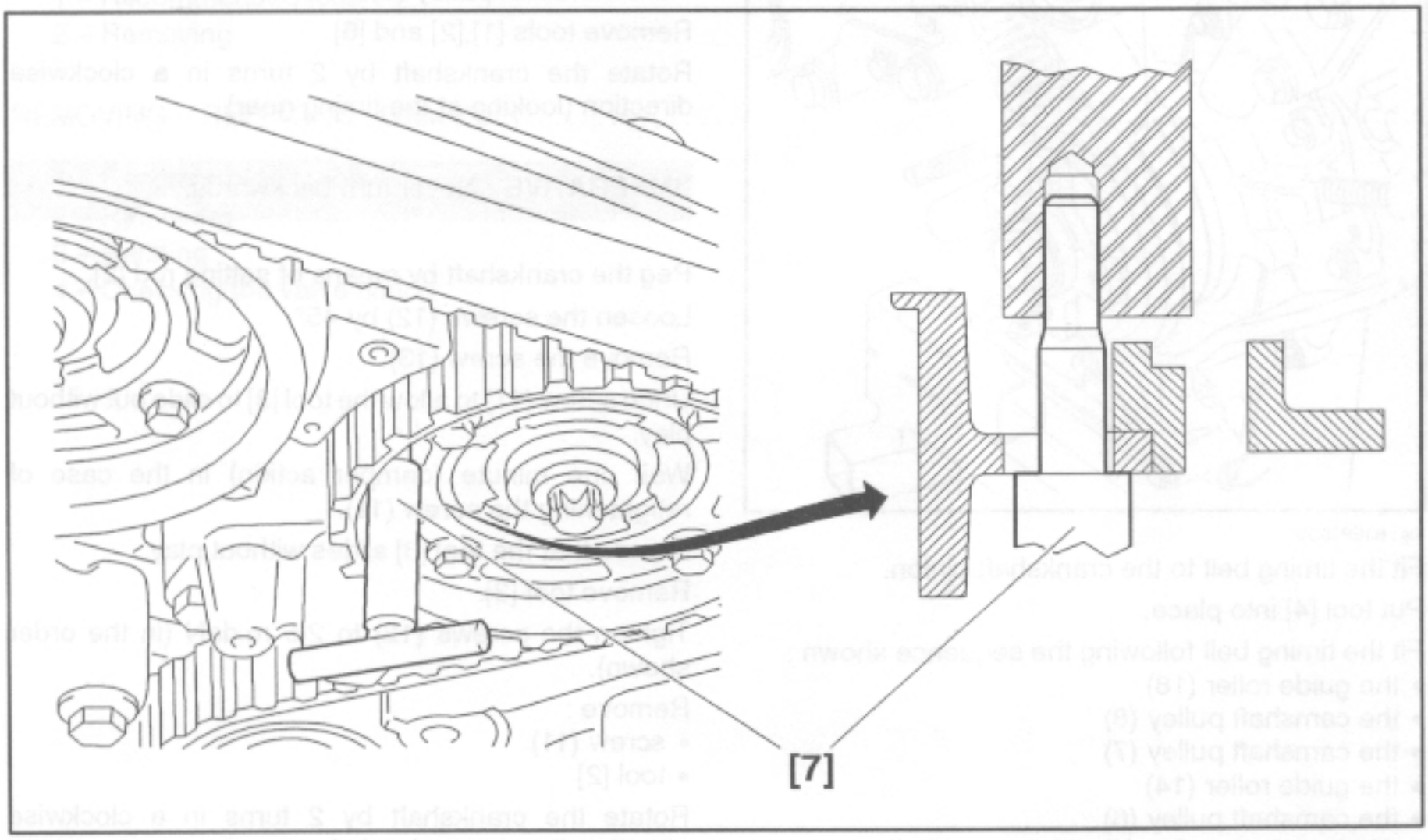


Fig : B1EP10VD

Check that the tool [7] can be inserted freely through the pulleys and into the cylinder heads.

Remove tool [2].

Fit :

- the plate (10)
- the screws (9) ; tighten to 4 m.daN
- the timing covers
- the auxiliary equipment drive belt dynamic tensioner
- the auxiliary equipment drive crankshaft pulley
- the auxiliary equipment drive belt
  (see the relevant operation)
- the right–hand engine mounting
  (see the relevant operation)
- the engine cover

Fit :

- flexible hose (4)
- screw (3)
- screw (1) : tighten to 4,5 m.daN

Reconnect the negative cable to the battery.

© "The intellectual property rights relating to the technical information contained in this document belong exclusively to the Manufacturer. Reproduction, translation or distribution in whole or in part without prior written authorisation from the Manufacturer is forbidden".

www.WorkshopManuals.co.uk

APRIL 1995

REF. 1 No XM 122-1/4

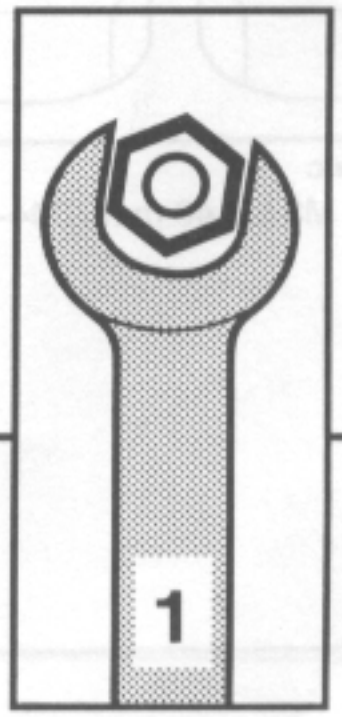
CANCELS AND REPLACES

ABONNEMENT GME

XUD 11 ENGINE

● VALVE TIMING

Removing - Refitting the timing belt (on the vehicle)



GB

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

REMOVING – REFITTING : TIMING BELT (ON THE VEHICLE)

1 – RECOMMENDED TOOLS

XU 7004–T engine overhaul tool box.

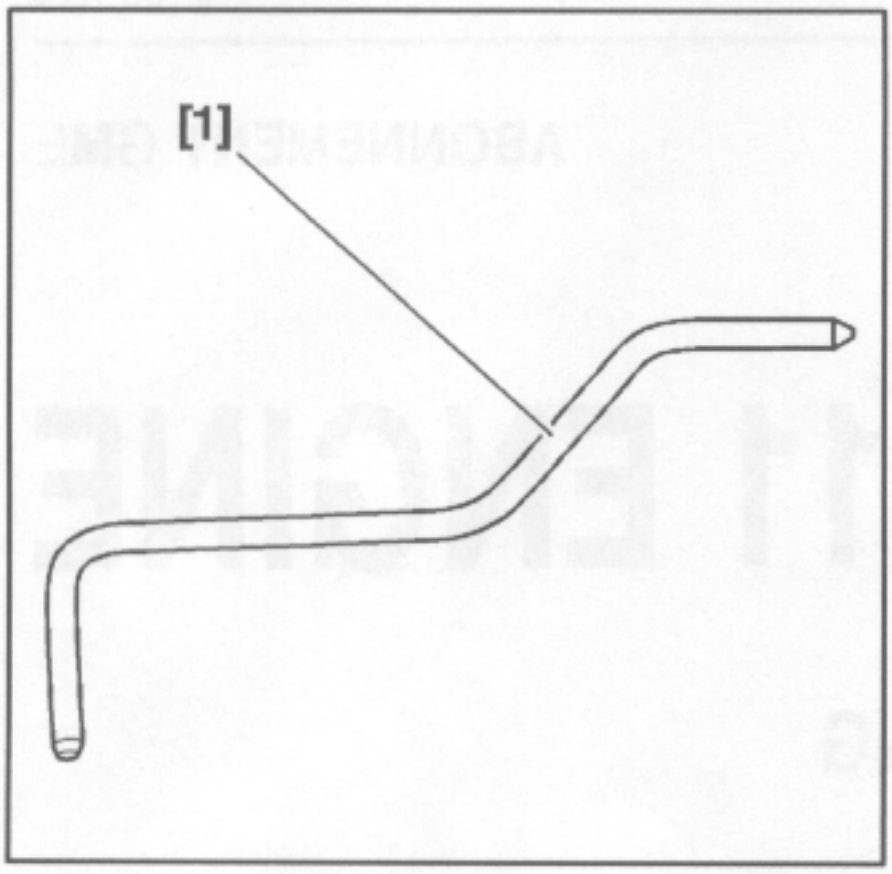


Fig : E5–P01HC

[1] flywheel setting rod 7014–T.J (tool box XU 7004–T).

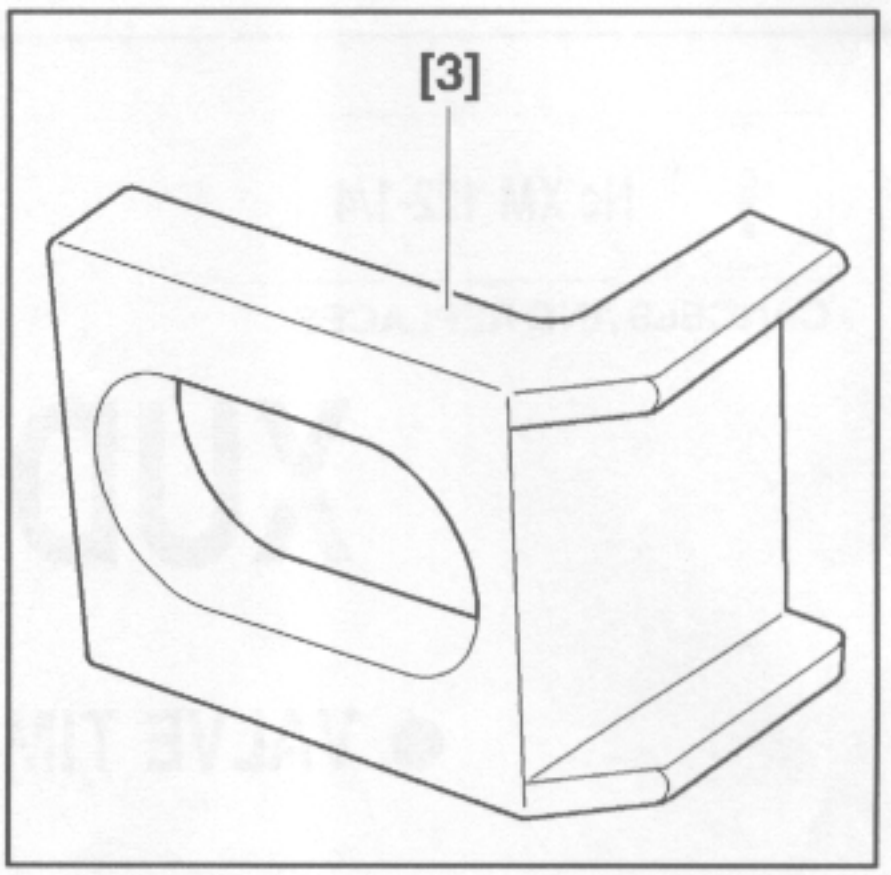


Fig : E5–P09LC

[3] toothed sector for locking the engine flywheel 9044–T (tool box XU 7004–T).

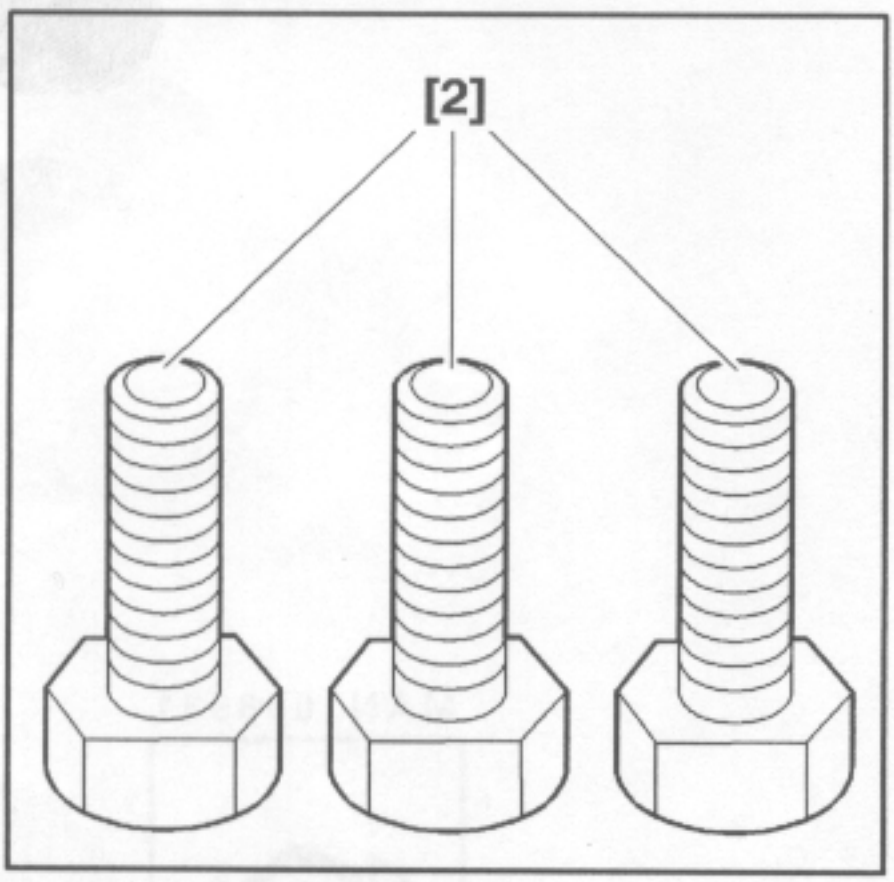


Fig : E5–P09MC

[2] bolts M8 L = 40 mm 7004–T (tool box XU 7004–T).

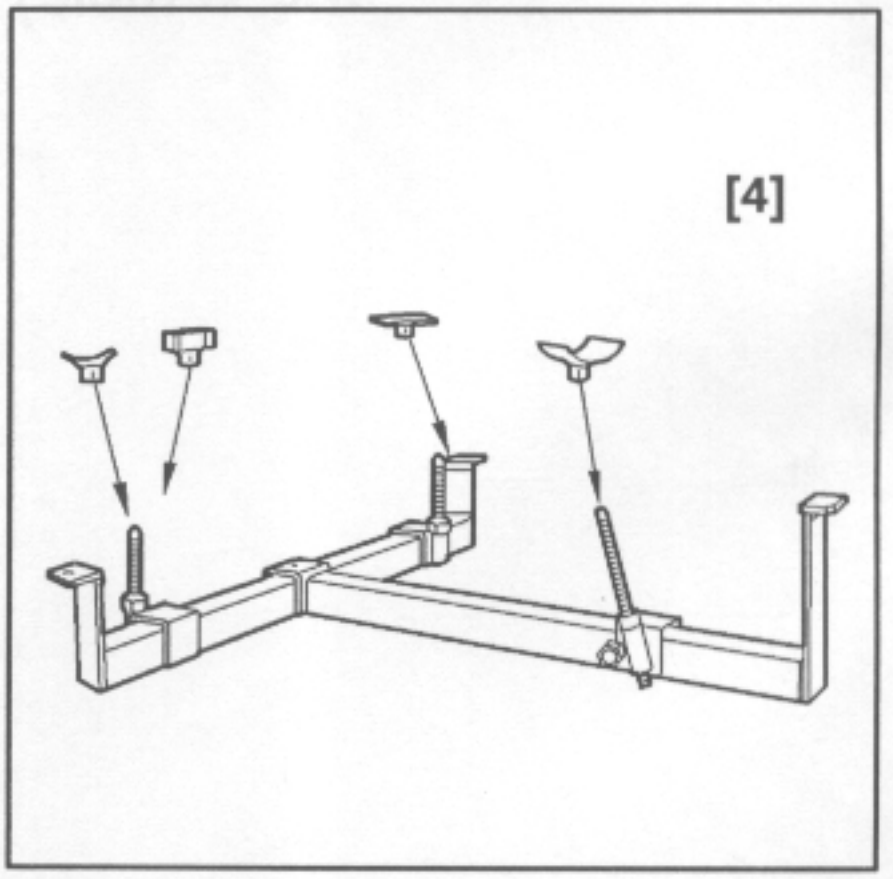


Fig : E5–P087C

[4] engine support 9026–T.

www.WorkshopManuals.co.uk

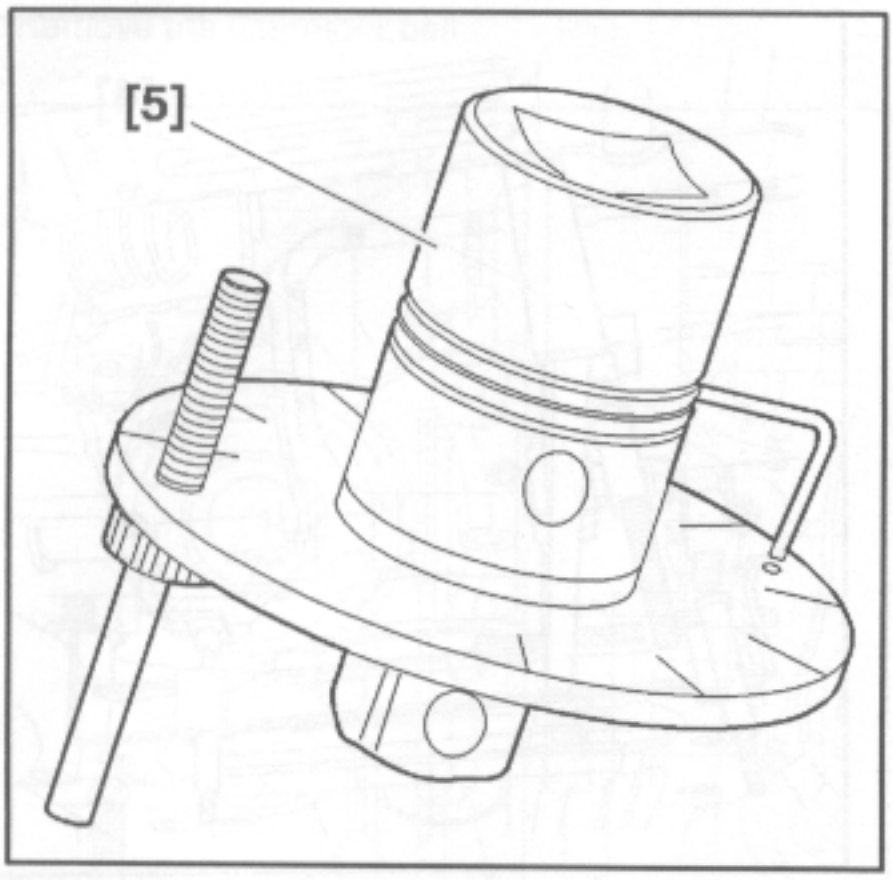


Fig : E5–P04UC
[5] adaptor for angular tightening 4069–T.

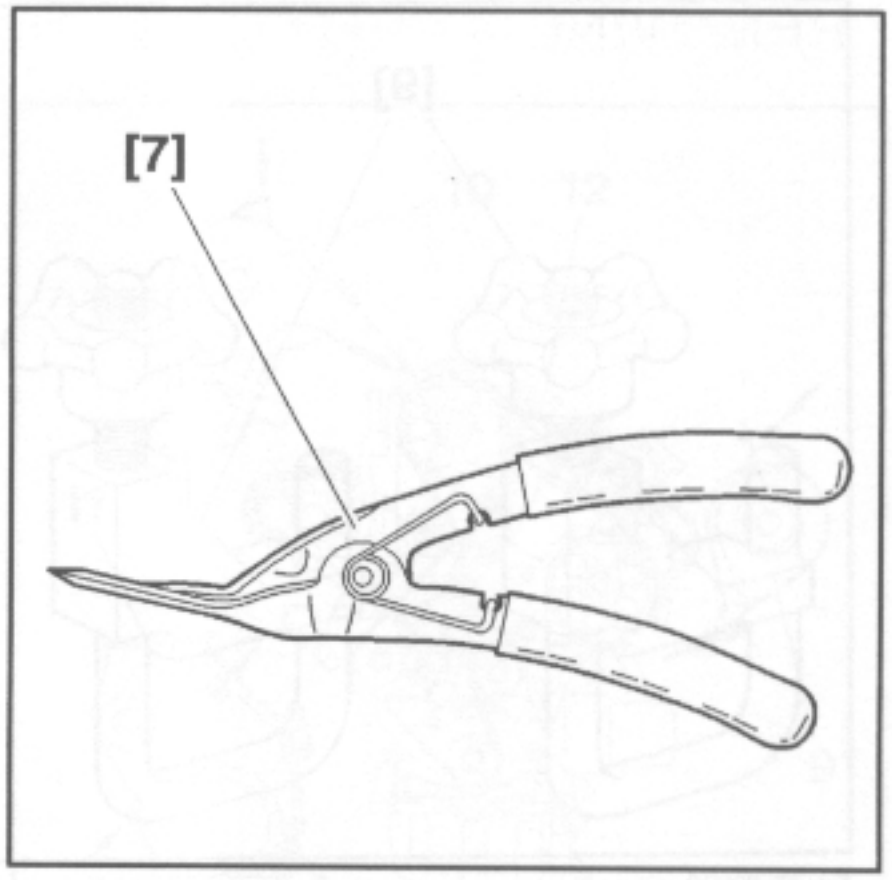


Fig : E5–P09NC
[7] pliers 7504–T for removing plastic clips.

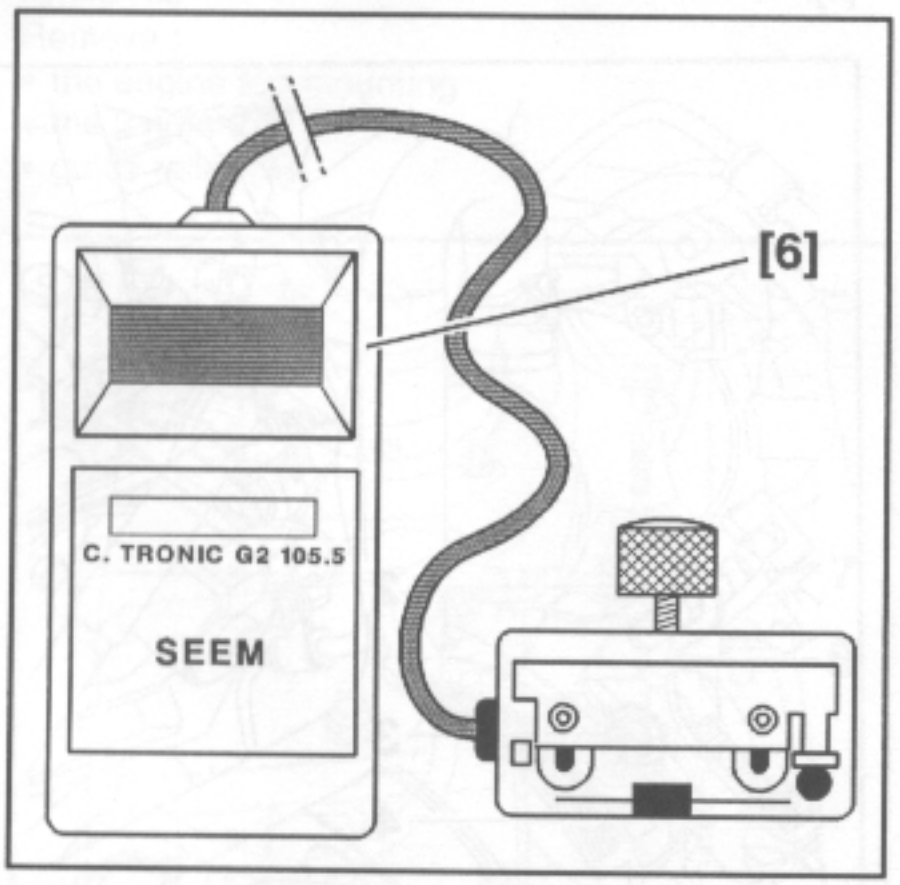


Fig : E5–P03SC
[6] belt tension measuring instrument with digital read out (SEEM) (4122–T) (C.TRONIC 105.5).

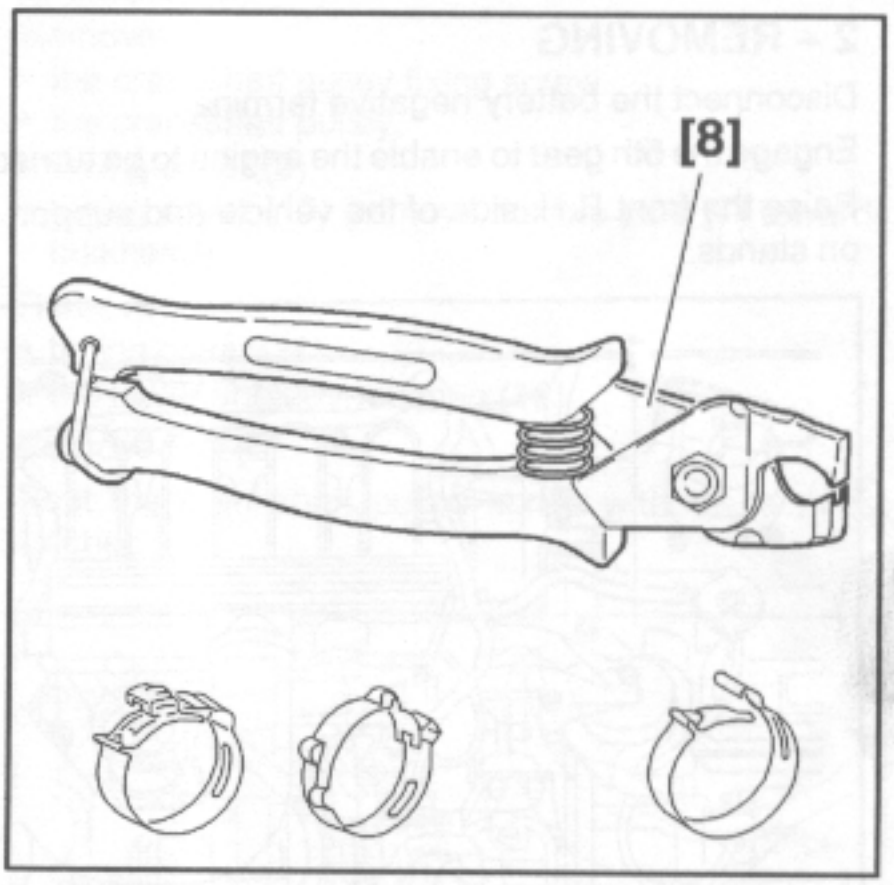


Fig : E5–P09PC
[8] clic clip pliers 4145–T.

www.WorkshopManuals.co.uk

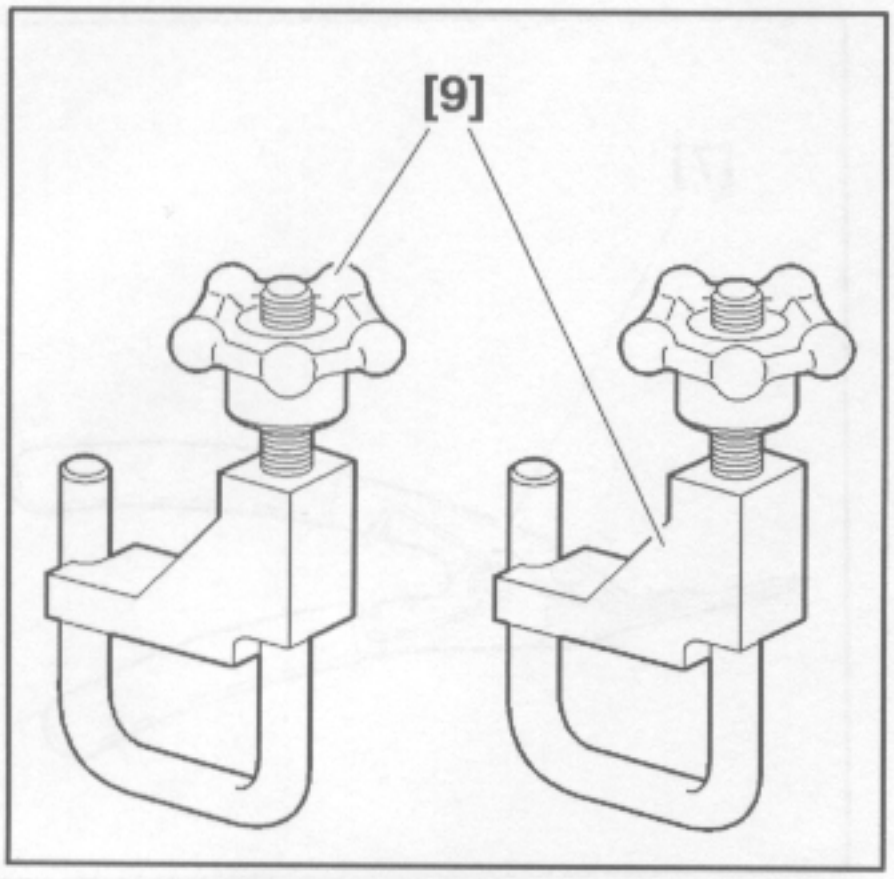


Fig : E5-P09QC
[9] pair of hose clamps (2) 4153-T.

2 - REMOVING

Disconnect the battery negative terminal.

Engage the 5th gear to enable the engine to be turned.

Raise the front R.H. side of the vehicle and support it on stands.

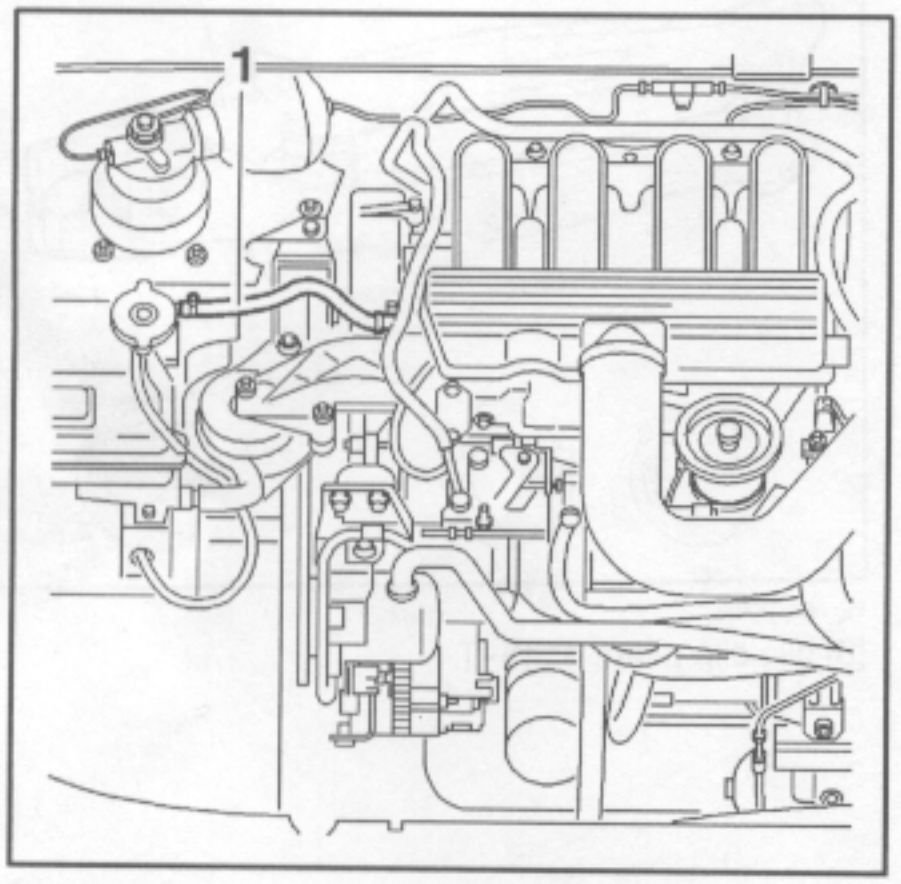


Fig : B1EP042C

Remove :

- the RH front road wheel
- the R.H. front mud shield ; by means of tool [7]
- the sound insulator from under the engine (depending on the version)
- calculator box (depending on the version)

(remove calculator and electrical harness).

Position the tool [9] onto the flexible hose (1).

Uncouple the connection hose.

Remove the diesel fuel pipes (if necessary).

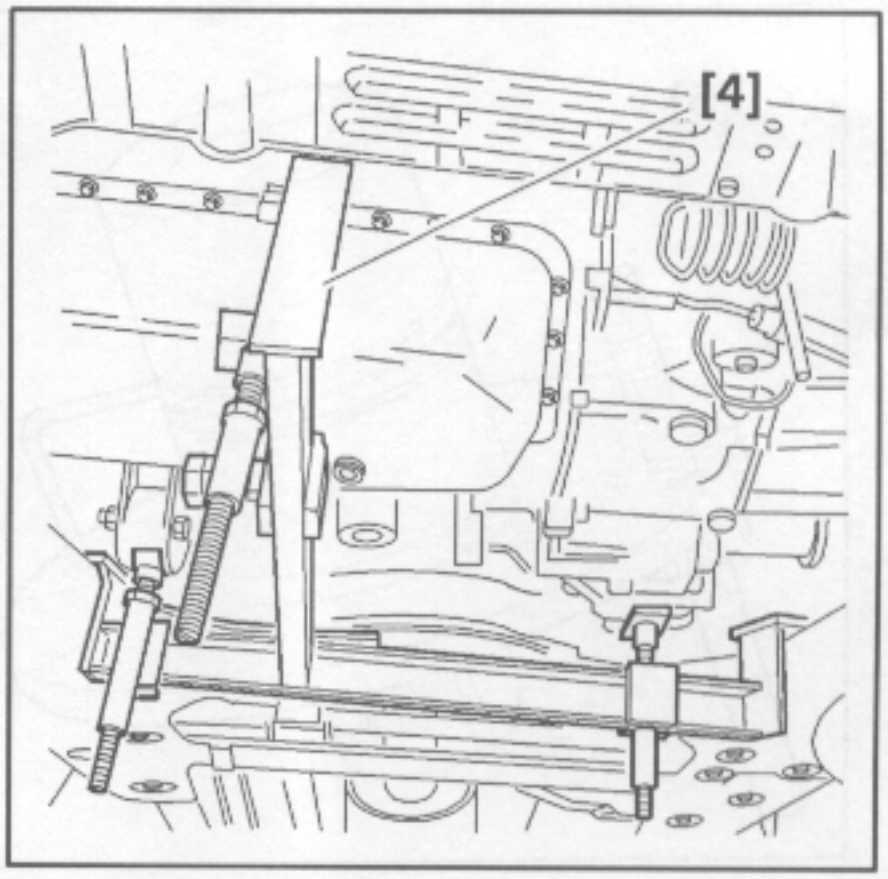


Fig : B1EP043C

Support the power unit assembly ; by means of tool [4].

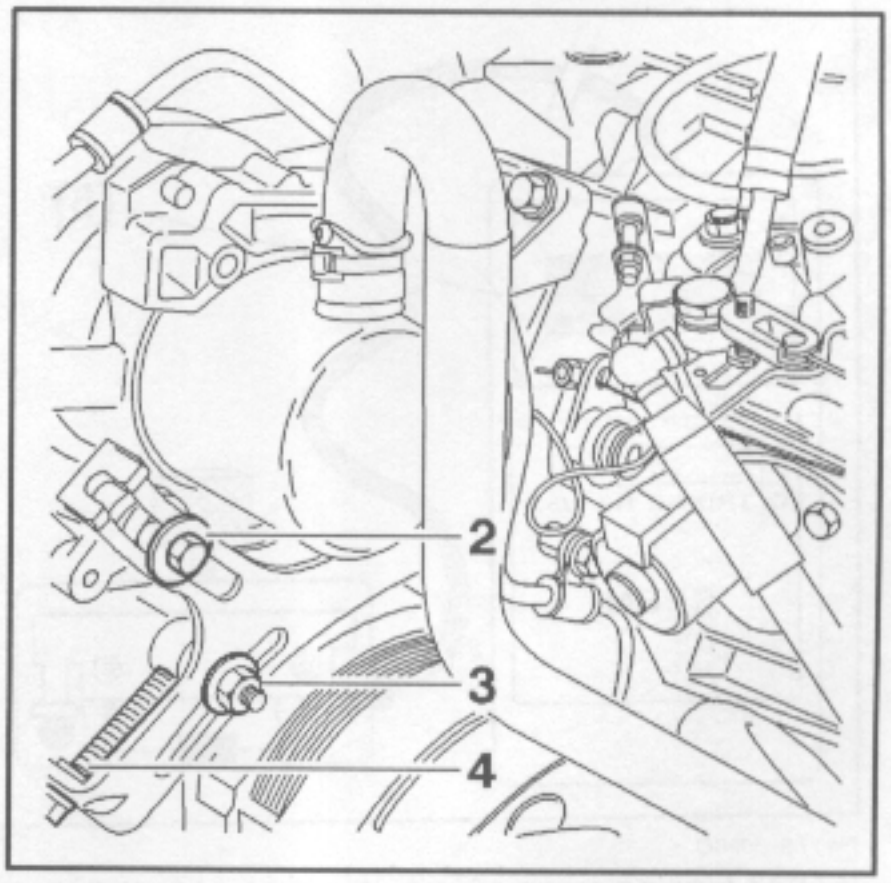


Fig : B1EP044C

Slacken screw (2).

Remove belt of high pressure pump.

Slacken the nut (3) and the bolt (4).

www.WorkshopManuals.co.uk

Remove the alternator belt.

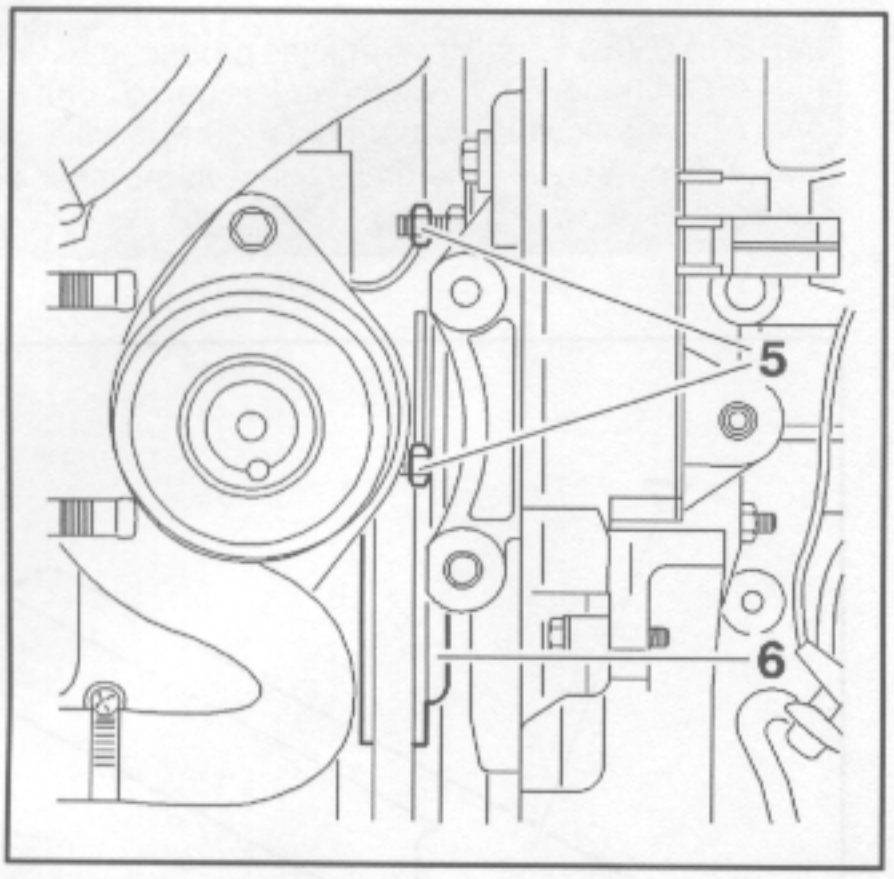


Fig : B1EP045C

Remove :
- the engine top mounting
- the 2 nuts (5)
- guide roller (6)

Fig : B1EP046C

Remove flexible pipe (7) from clamp (8).

Remove the clutch housing bottom closing plate.

Lock the flywheel by means of tool [3].

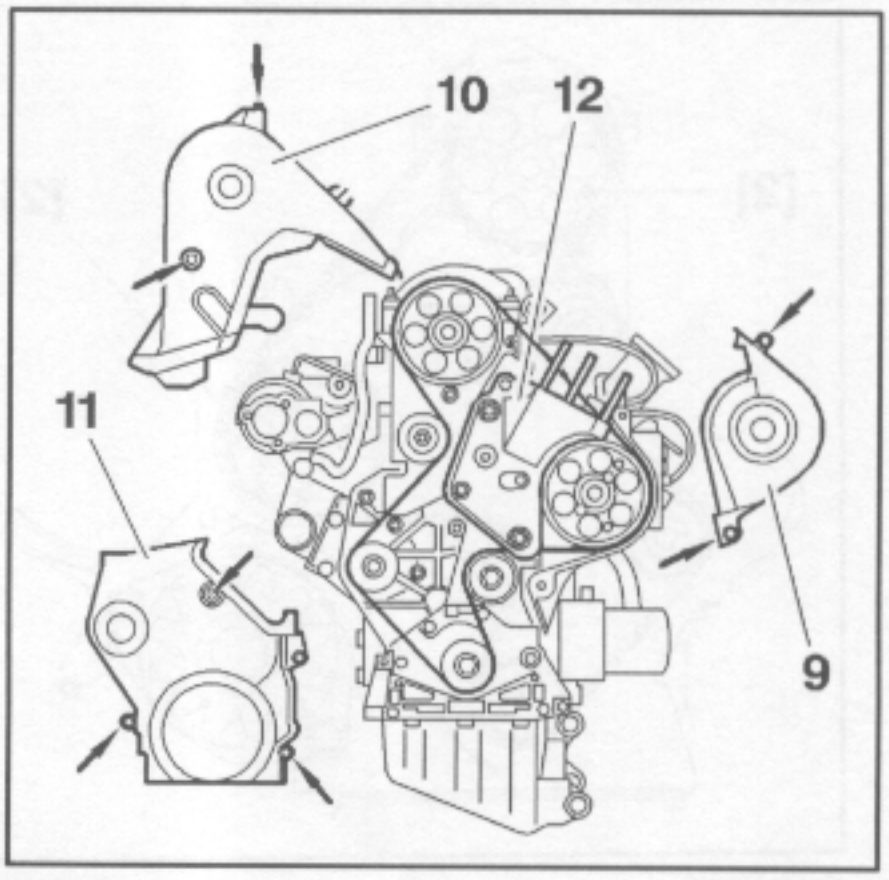


Fig : B1EP047C

Remove :
- the crankshaft pulley fixing screw
- the crankshaft pulley
- timing cover (9)
- timing cover (10) (remove flexible pipe (7) towards bulkhead)

Remove :
- timing cover (11)
- the lower engine mounting (12)

Remove tool [3].

Refit the crankshaft pulley screw without its thrust washer.

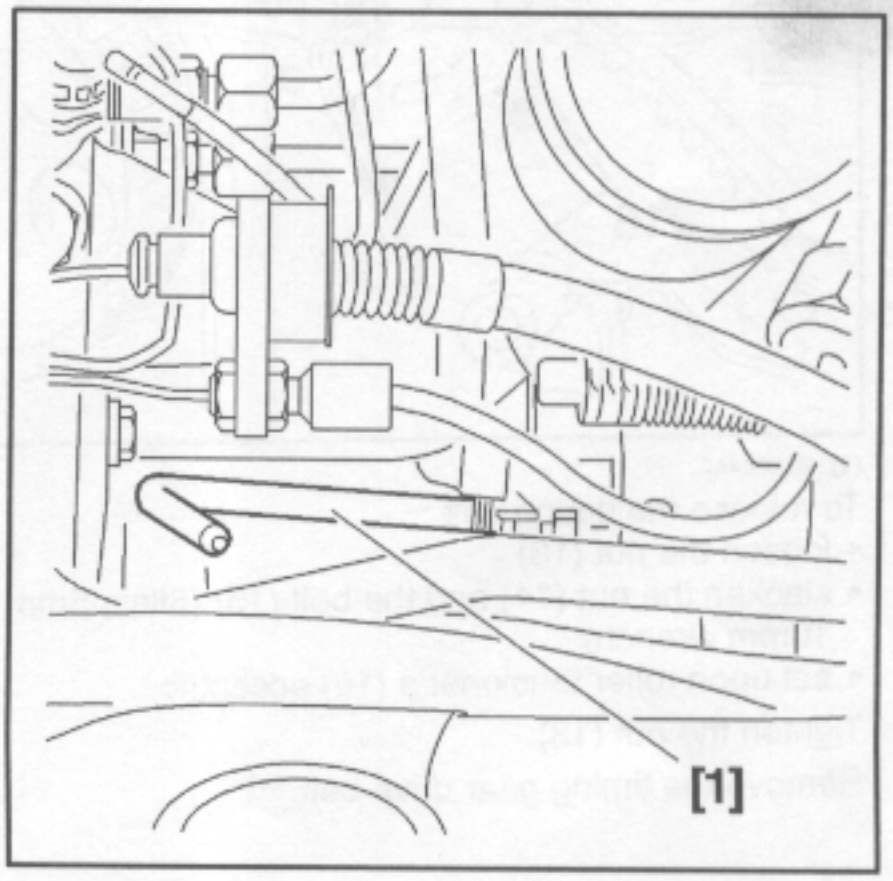


Fig : B1EP048C

Peg the flywheel with tool [1].

www.WorkshopManuals.co.uk

3 – REFITTING

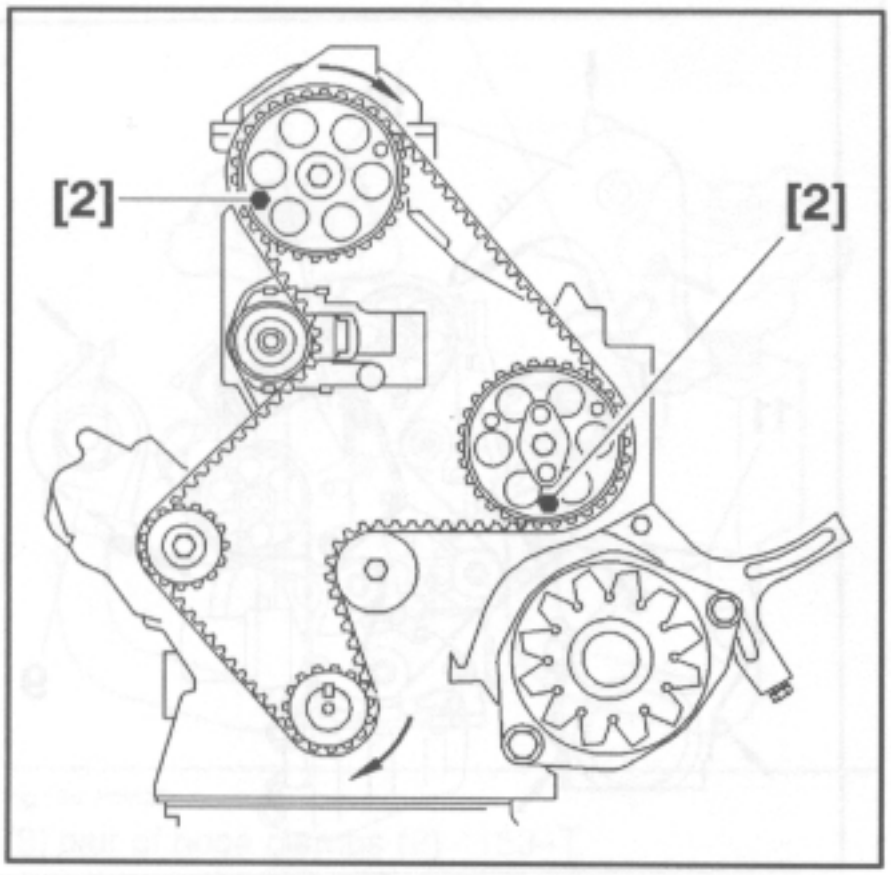


Fig : B1EP049C

Peg by means of tool [2] :
- the camshaft gear
- pinion of injection pump

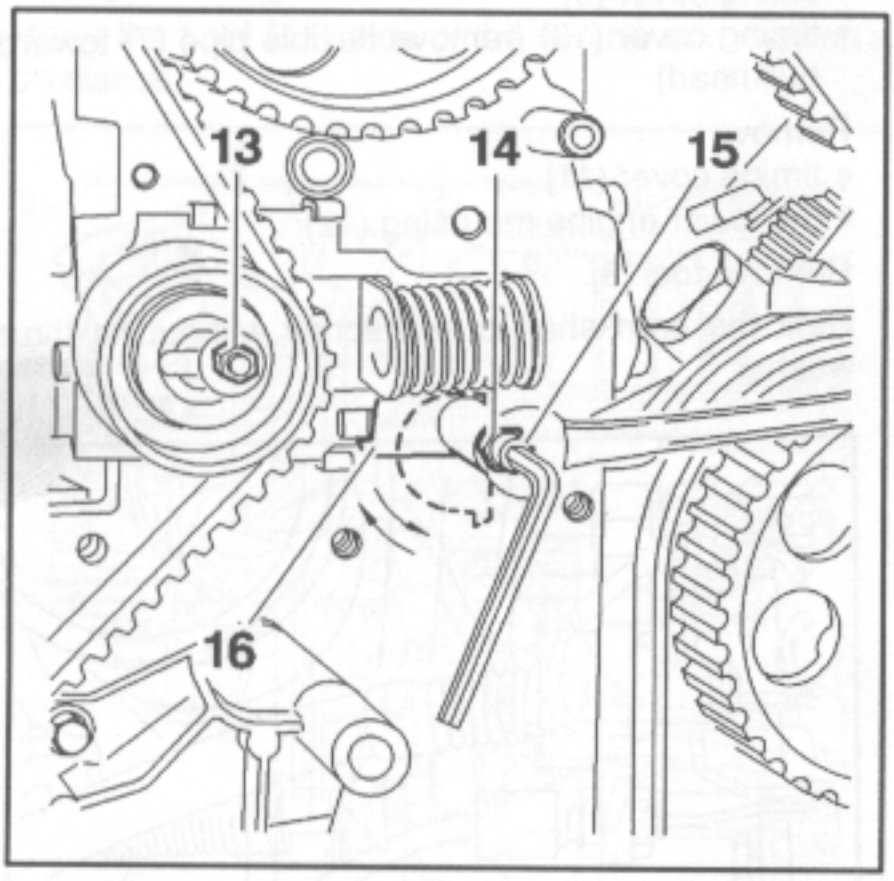


Fig : B1EP04AC

To release the timing belt :
- loosen the nut (13)
- slacken the nut (14) and the bolt (15) (6flats 5mm ; 10mm wrench)
- act upon roller tensioner's (16) eccentric

Tighten the nut (13).

Remove the timing gear drive belt.

IMPERATIVE : For all the vehicles produced before the RPO number 6176, when work is being done on one of the following components : the crankshaft pulley fixing screw ; the timing belt, fit the specific "after sales" key (17).

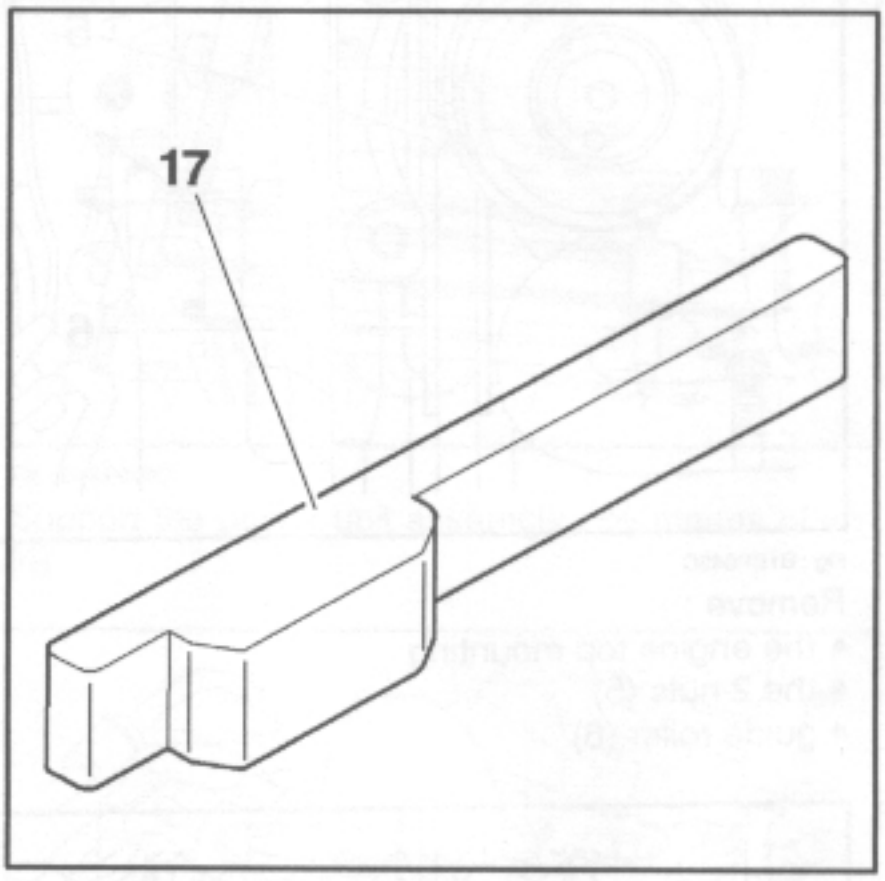


Fig : B1EP04BC

Specific "after sales" key (17).

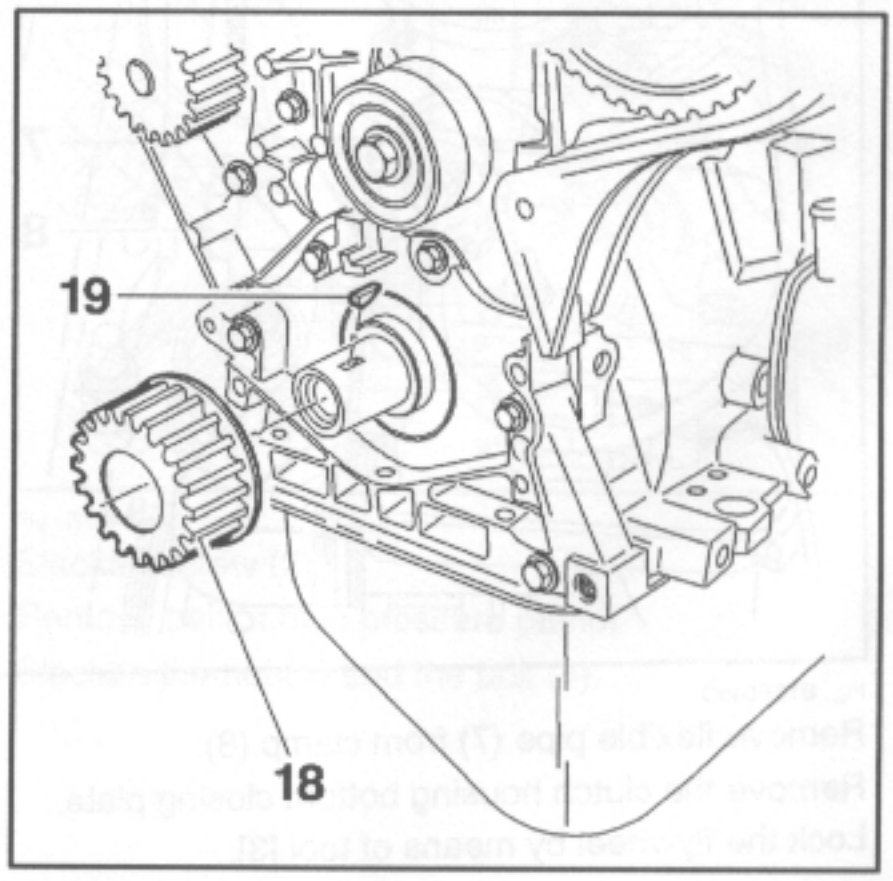


Fig : B1EP04CC

Remove :
- crankshaft sprocket (18)
- the key (19)

www.WorkshopManuals.co.uk

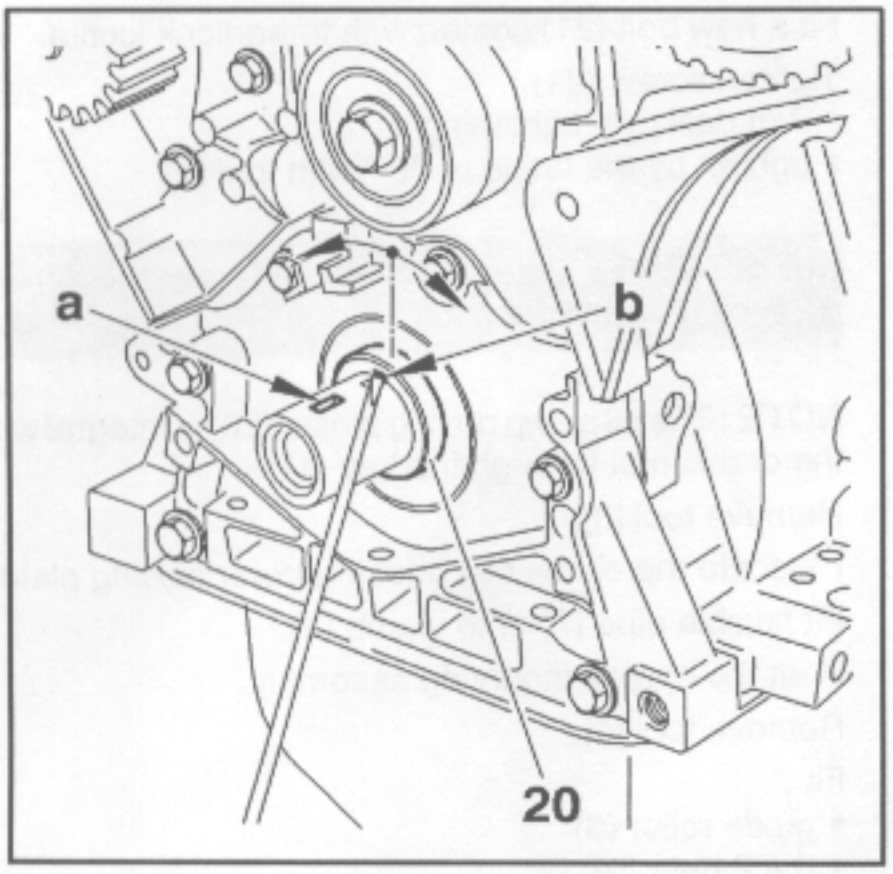


Fig : B1EP04DC

ATTENTION : Do not damage the seal lip.

Align the oil pump pinion keying groove "b" with the crankshaft keying groove "20" (a) (using a screwdriver).

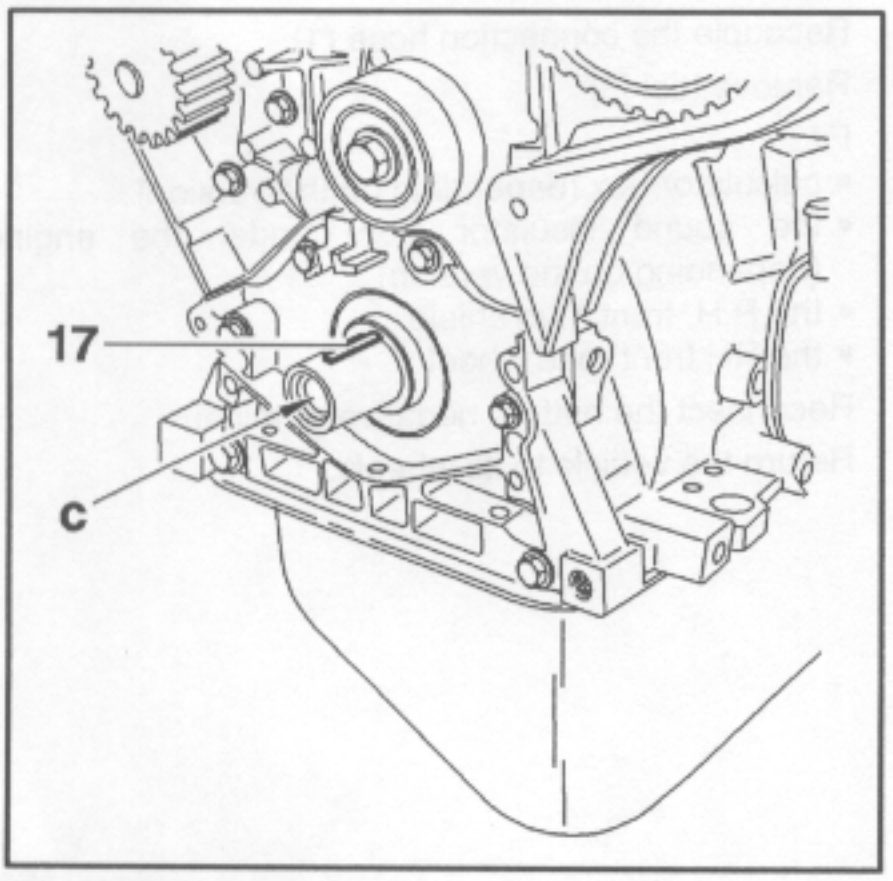


Fig : B1EP04EC

Fit key (17).

Clean the tapping "c" by means of a screw tap M 14x150.

Refit the gear (18).

Install the timing belt over :
- the injection pump pinion ; belt run without slack
- the roller tensioner (*)
- the crankshaft pinion
- the water pump drive pinion

Install the timing belt over :
- the camshaft pinion (*)
- the roller tensioner (*)

NOTE : (*) partially engage belt.

Put belt on–line onto the various pinions.

Remove tools [1] and [2].

Loosen the nut (13).

Turn the crankshaft two turns in the normal direction of rotation.

Check if the crankshaft is in pegging position.

NOTE : Do not refit pegs [1] and [2].

IMPERATIVE : Never rotate the crankshaft backward.

Tighten nut (13) to 1 m.daN.

Turn the crankshaft two turns in the normal direction of rotation.

Check if the crankshaft is in pegging position.

IMPERATIVE : Never rotate the crankshaft backward.

Loosen the nut (13) by 1 turn.

Tighten nut (13) to 1 m.daN.

Tighten nut (14) and bolt (15), to 1 m.daN.

Fit tools [1] and [2].

ATTENTION : If one of the rods cannot be fitted, repeat the belt fitting operations.

Remove tools [1] and [2].

www.WorkshopManuals.co.uk

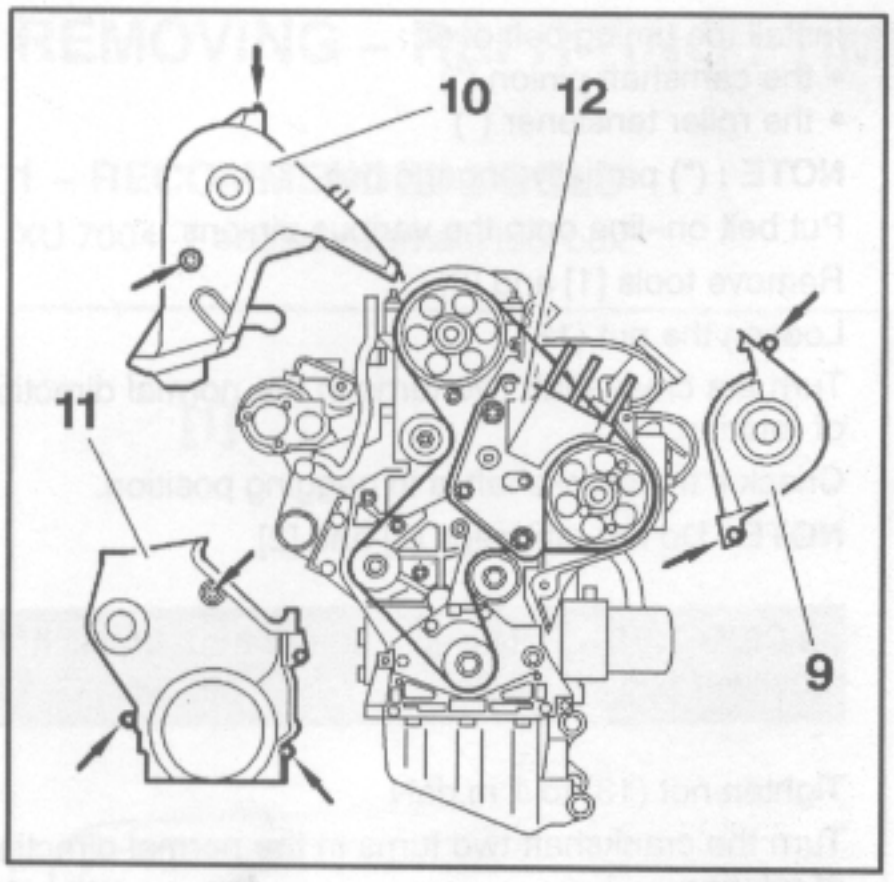


Fig : B1EP047C

Fit :
- the lower engine mounting (12)
- timing cover (11)
- timing cover (10) (remove flexible pipe (7) towards bulkhead)
- timing cover (9)

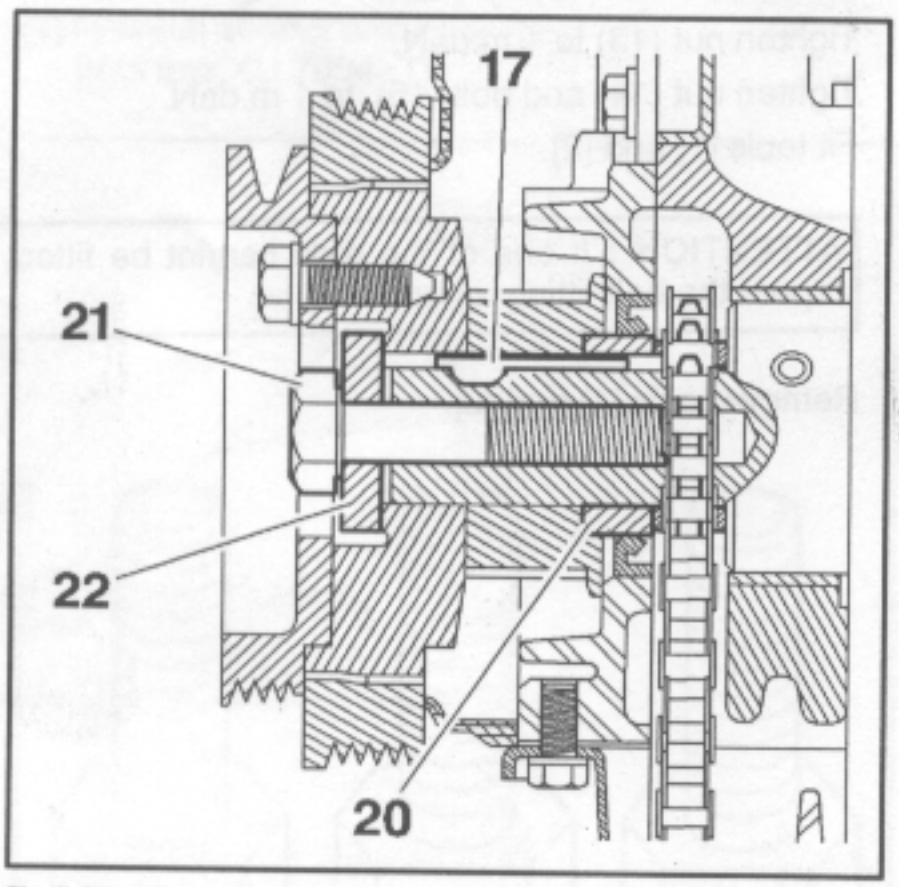


Fig : B1EP04FC

Fit :
- tool [3]
- the crankshaft pulley
- place the new washer (22)

Fit a new bolt (21) coated with threadlock loctite.

Tighten screw (21) :
- 7 m.daN pre–tightening
- tighten by the angle of 60 ° with tool [5]

IMPERATIVE : After tightening, identify the screw (21) by a yellow paint marking.

NOTE : The oil pump driving pinion (20) is integral with the crankshaft through the key (17).

Remove tool [3].

Relocate the clutch bell housing lower closing plate.

Fit flexible pipe (7) onto clamp (8).

Refit the engine mounting assembly.

Remove tool [4].

Fit :
- guide roller (6)
- the 2 nuts (5)
- the alternator belt

Tension the belt by acting on the screw (4) (see the relevant operation).

Tighten nut (3).

Install belt of high pressure pump.

Tighten the belt (see the relevant operation).

Tighten screw (2).

Recouple the connection hose (1).

Remove tool [9].

Fit :
- calculator box (depending on the version)
- the sound insulator from under the engine (depending on the version)
- the R.H. front mud shield
- the RH front road wheel

Reconnect the battery negative terminal.

Return the vehicle to its wheels.

© Reproduction ou traduction même partielle interdite sans l'autorisation écrite des Automobiles CITROËN

www.WorkshopManuals.co.uk

XM

23rd DECEMBER 1994

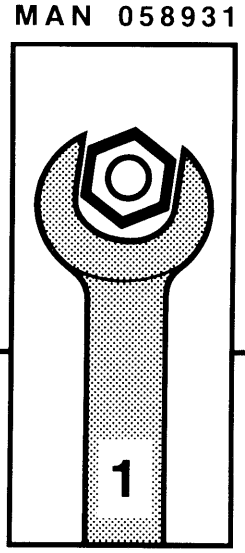
REF. 1 N° XM 133-00/4

ABONNEMENT GME

DK5 ENGINE

● ENGINE MOUNTING

MAN 058931



AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

REMOVING – REFITTING : ENGINE MOUNTING ASSEMBLY

1 – RECOMMENDED TOOLS

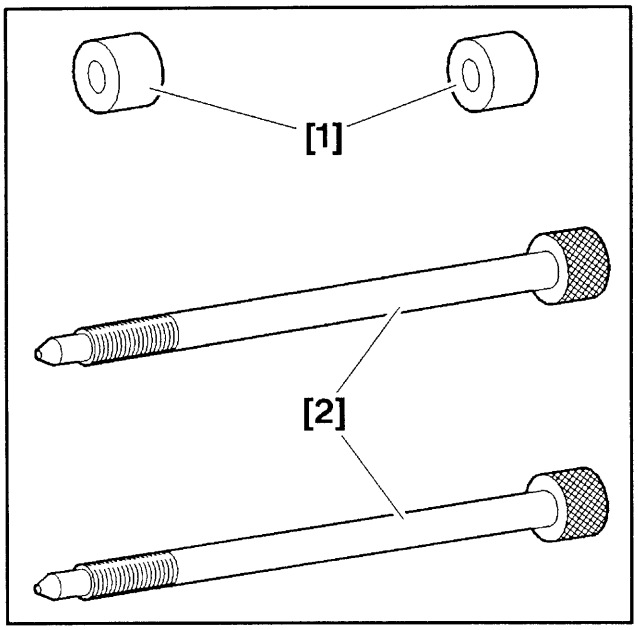


Fig : E5-P053C

[1] spacer 5714–TP1 (tool box 5711–T).
[2] setting rod 5714–TP2 (tool box 5711–T).

www.WorkshopManuals.co.uk

2 – IDENTIFICATION

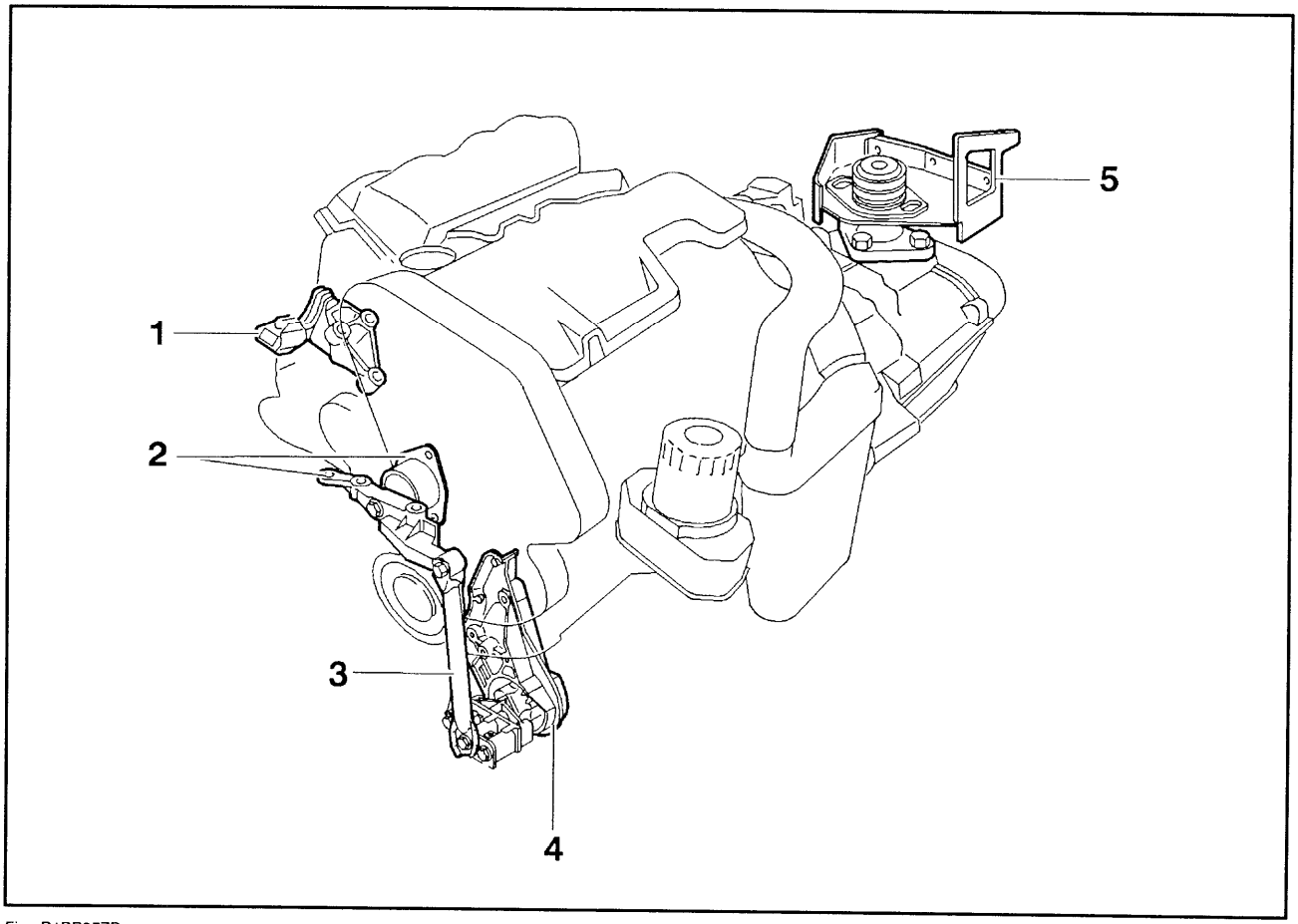


Fig : B1BP05ZD

(1) – upper torque mechanism.
(2) – engine mounting.
(3) – torque rod.
(4) – lower torque mechanism.
(5) – gearbox mounting.

www.WorkshopManuals.co.uk

3 – REMOVAL

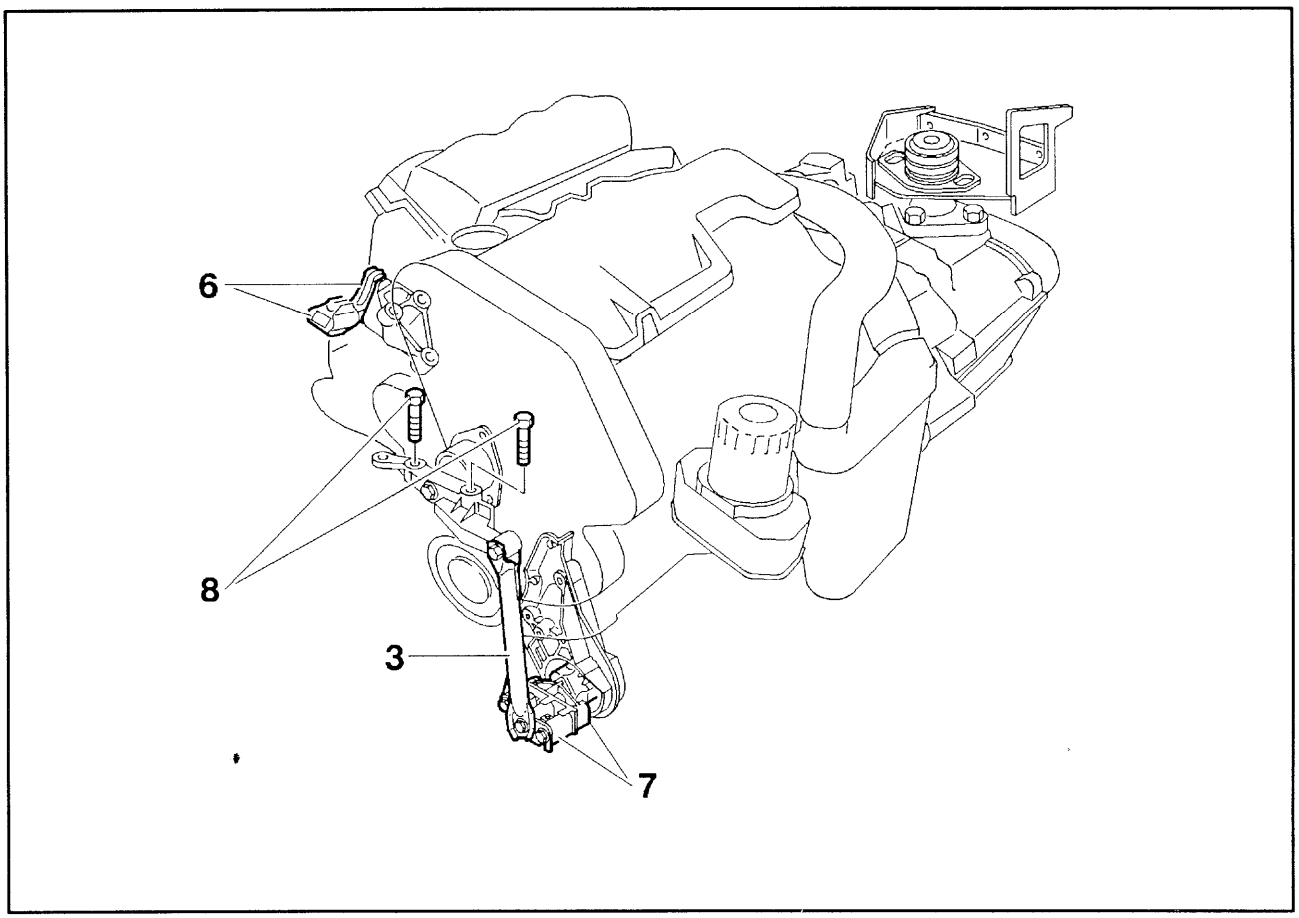


Fig : B1BP060D

Remove :
- upper torque mechanism flexible retainer shaft (6)
- torque rod (3)
- lower torque mechanism flexible retainer shaft (7)

Position a workshop crane.

Support the engine.

Take off screws (8).

www.WorkshopManuals.co.uk

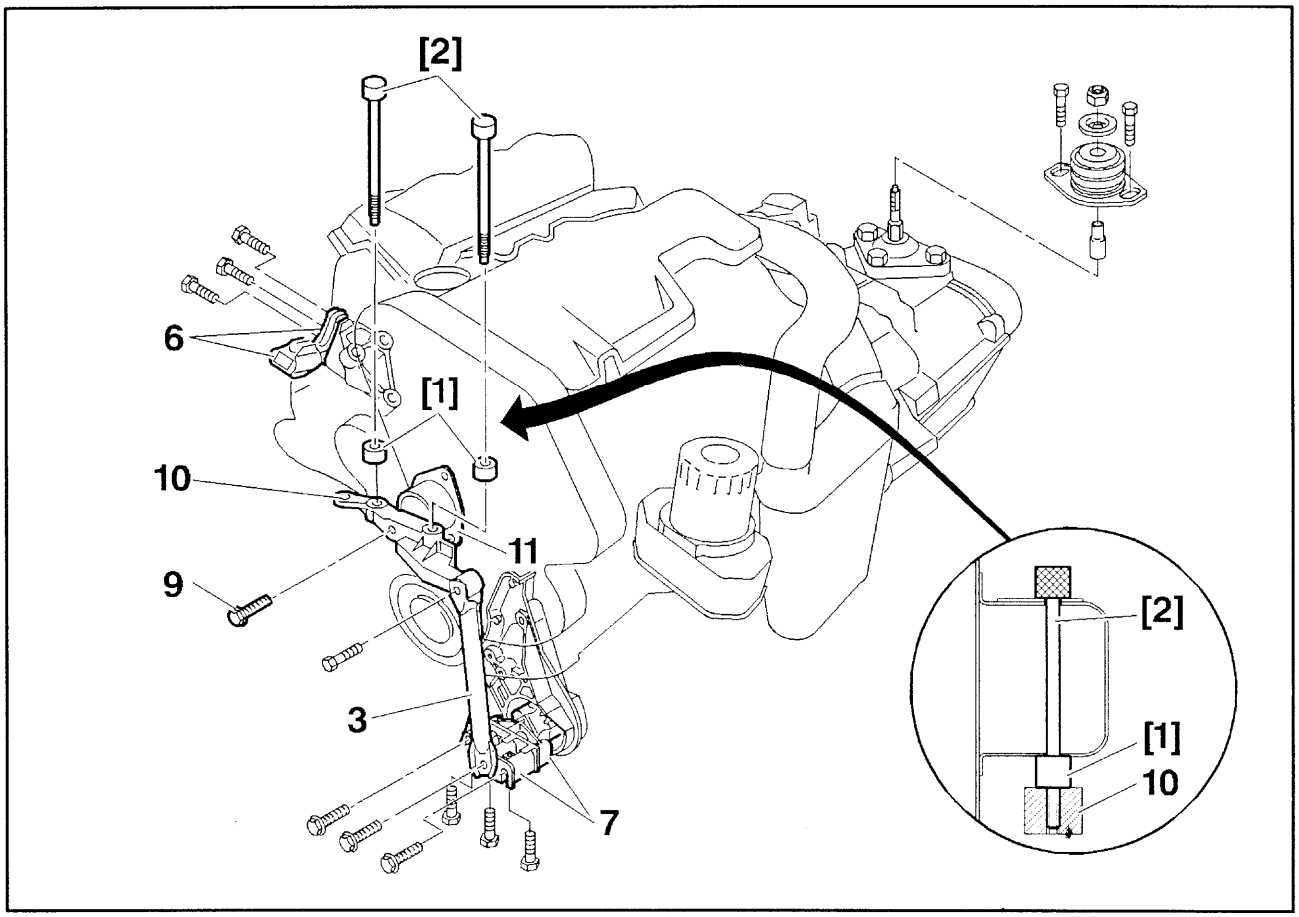


Fig : B1BP061D

Slightly lower the engine.

Fit tools [1] and [2].

Remove :

- screw (9)
- tools [1] and [2]
- engine support base (10)

Fit :

- torque rod (3)
- lower torque mechanism flexible retainer shaft (7)
- upper torque mechanism flexible retainer shaft (6)
- the front exhaust pipe

4 – REFITTING

Prior condition : uncouple the front exhaust pipe.

Refit engine support base (10) to support (11).

Fit screw (9) without tightening.

Fit tools [1] and [2].

Tighten screw (9).

Remove tools [1] and [2].

Slightly lift the engine.

Reinstall screws (8).

Withdraw the workshop crane.

ATTENTION : Before reassembling the torque mechanisms, the power unit must be suspended by means of brackets (2) and (5) and kept free from stress.

www.WorkshopManuals.co.uk

5 – TIGHTENING TORQUES

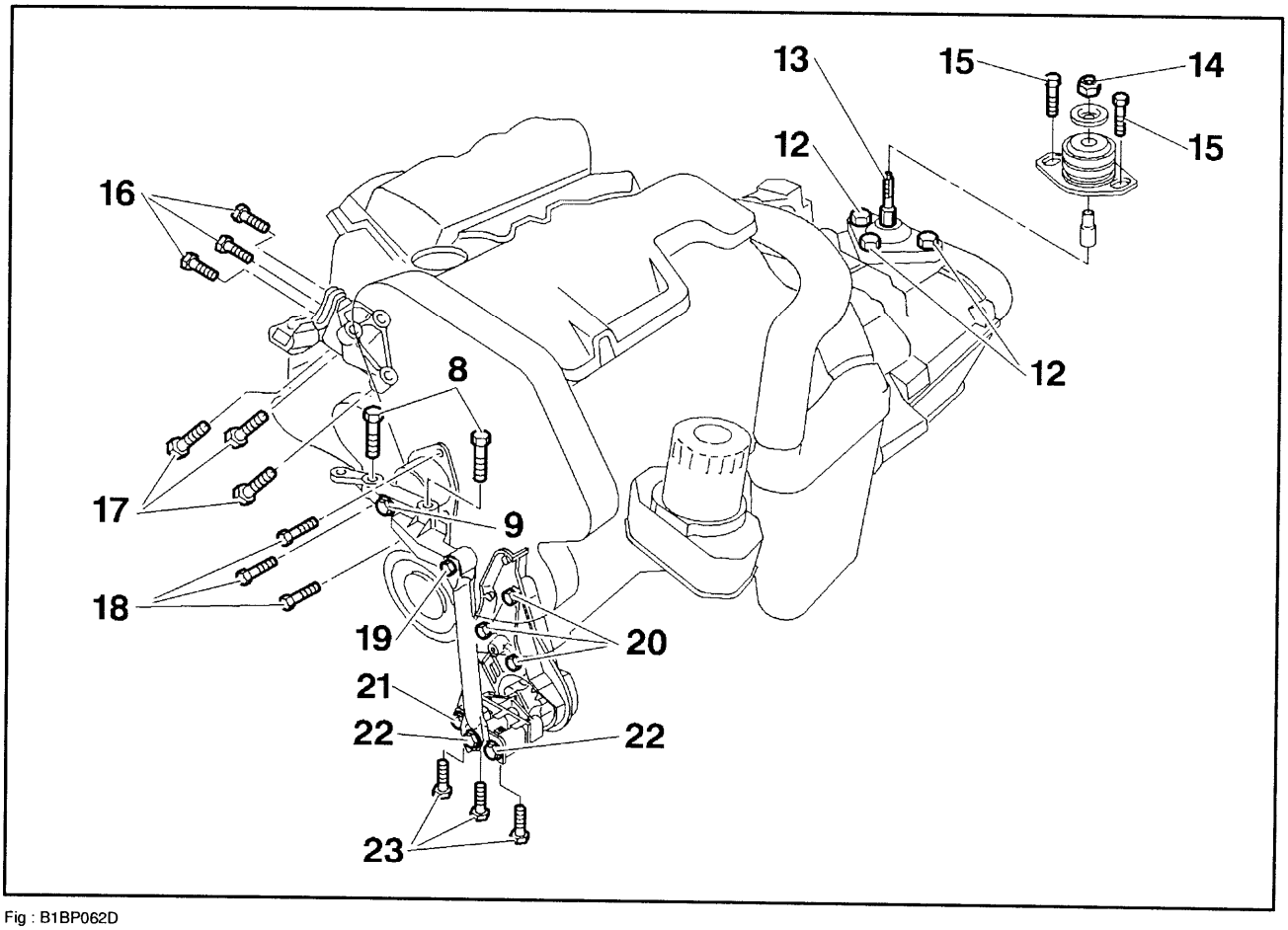


Fig : B1BP062D

Tightening torques :

- screws (8) : 5 m.daN
- screw (9) : 9 m.daN
- screws (12) : 5 m.daN
- the stud (13) : 5 m.daN
- nut (14) : 6.5 m.daN
- screws (15) : 2 m.daN
- screws (16) : 5 m.daN
- screws (17) : 5.5 m.daN
- screws (18) : 3 m.daN
- screw (19) : 11 m.daN
- screws (20) : 5.5 m.daN
- screw (21) : 6 m.daN
- screws (22) : 11 m.daN
- screws (23) : 5 m.daN

www.WorkshopManuals.co.uk



31st JANUARY 1995

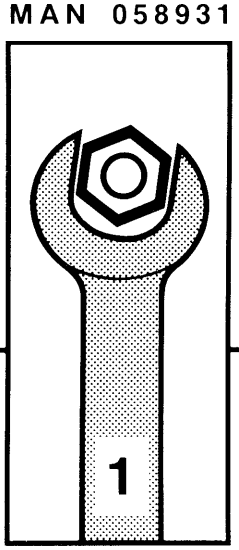
REF. 2 No XM 146-00/8

ABONNEMENT GME

DK5 ENGINE

● AIR AND FUEL SUPPLY

MAN 058931



GB



AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRES VENTE

www.WorkshopManuals.co.uk

AIR AND FUEL SUPPLY – SUPERCHARGING

DATA – IDENTIFICATION : INJECTORS, BOSCH EQUIPMENT 3
DATA – IDENTIFICATION : PRE AND POST–HEATING CIRCUITS 4
DATA – IDENTIFICATION : AIR SUPPLY CIRCUIT 5
DATA – IDENTIFICATION : FUEL SUPPLY SYSTEM 8
CHECKING–ADJUSTING : BOSCH INJECTORS 11
REMOVING – REFITTING : BOSCH INJECTION PUMP 13
REMOVING – REFITTING : INJECTORS 15
REMOVING – REFITTING : THE TURBOCHARGER 17
OVERHAULING : INJECTORS 19

www.WorkshopManuals.co.uk

DATA – IDENTIFICATION : INJECTORS, BOSCH EQUIPMENT

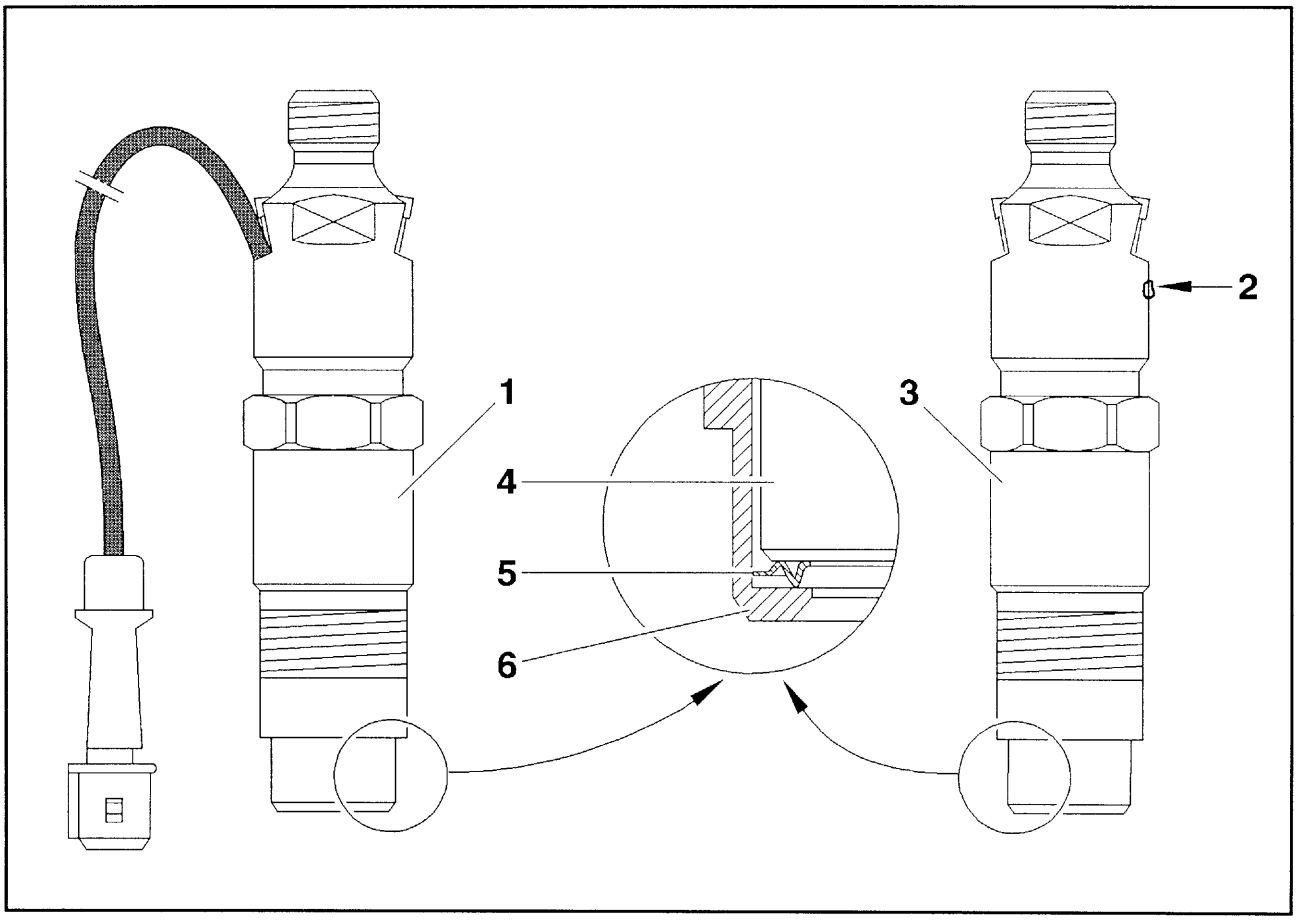


Fig : B1HP094D

(1) – no. 3 cylinder injector.
(2) – code.
(3) – no. 1 ; 2 ; 4 cylinder injector.
(4) – injector.
(5) – fire fing.
(6) – injector holder.

NOTE : Fire ring (5) is inside the injector carrier.

Engine THY(DK5ATE)	Injectors	
	Cylinder No.1 , 2 , 4	Cylinder No.3
Injector holder	KCE 30 S5	KCE 30 S7
Injector	DNOSD312	DNOSD316
Code	Yellow	Connector
Setting in bars	170–175	170–175

www.WorkshopManuals.co.uk

DATA – IDENTIFICATION : PRE AND POST–HEATING CIRCUITS

1 – DATA

In order to conciliate driving pleasure and a correct engine combustion when starting from cold, there is a tendency to reduce the engine pre–heating time, compensating it by a continuation of the supply to the heater plugs after starting.

This phase is called post–heating.

The pre and post–heating times are determined by the injection E.C.U..

The pre–heating circuit can be checked with a diagnostic instrument.

2 – IDENTIFICATION

Pre and post–heating plugs :
BERU 0 100 226 186.

Pre and post–heating control unit :
BOSCH 0 281 003 004.

www.WorkshopManuals.co.uk

DATA – IDENTIFICATION : AIR SUPPLY CIRCUIT

www.WorkshopManuals.co.uk

1 – AIR SUPPLY CIRCUIT

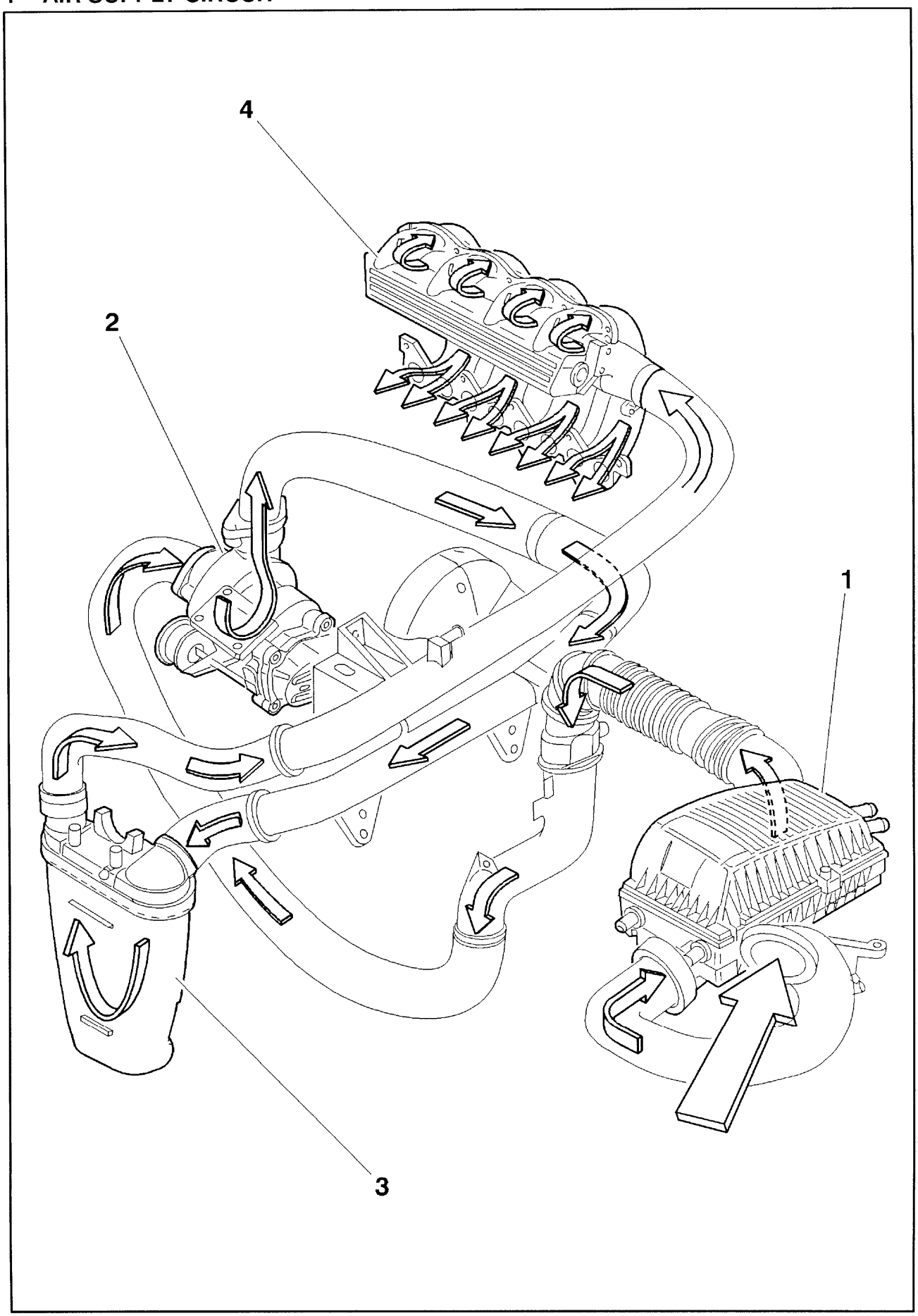


Fig : B1HP096P

www.WorkshopManuals.co.uk

(1) air filter.
(2) turbocharger.
(3) water–to–air heat exchanger.
(4) inlet manifold – exhaust gas recycling electrovalve.

2 – TURBOCHARGER

GARRET T2 Type	Boost pressure	Rotational speed
No load	300 mbar ± 100 650 mbar ± 100	3000 rpm 4500 rpm
Full load	900 mbar	3000 rpm

3 – WASTEGATE VALVE

Control pressure	1000 mbar
Rod travel	3 mm

4 – WATER–TO–AIR HEAT EXCHANGER

Reference : VALEO PA66–GF30.

The water–to–air heat exchanger cools the compressed air.

The inlet air temperature borders on 60 °C (in normal driving conditions).

Advantages (by comparison with an air–to–air exchanger) :

- inlet air cooling improved, for a broad engine speed range
- reduced size of the exchanger

5 – EXHAUST GAS RECYCLING ELECTROVALVE

PURFLUX Type	EGR 50	EGR 82
Emission standards	L	Y
Shaft/guide clearance	0.10 ± 5 mm	0.10 ± 5 mm
Overall valve travel	9 ± 0.5 mm	12 ± 0.5 mm
Valve completely open	Control vacuum : 700 mbar	

www.WorkshopManuals.co.uk

DATA – IDENTIFICATION : FUEL SUPPLY SYSTEM

1 – FUEL SUPPLY SYSTEM

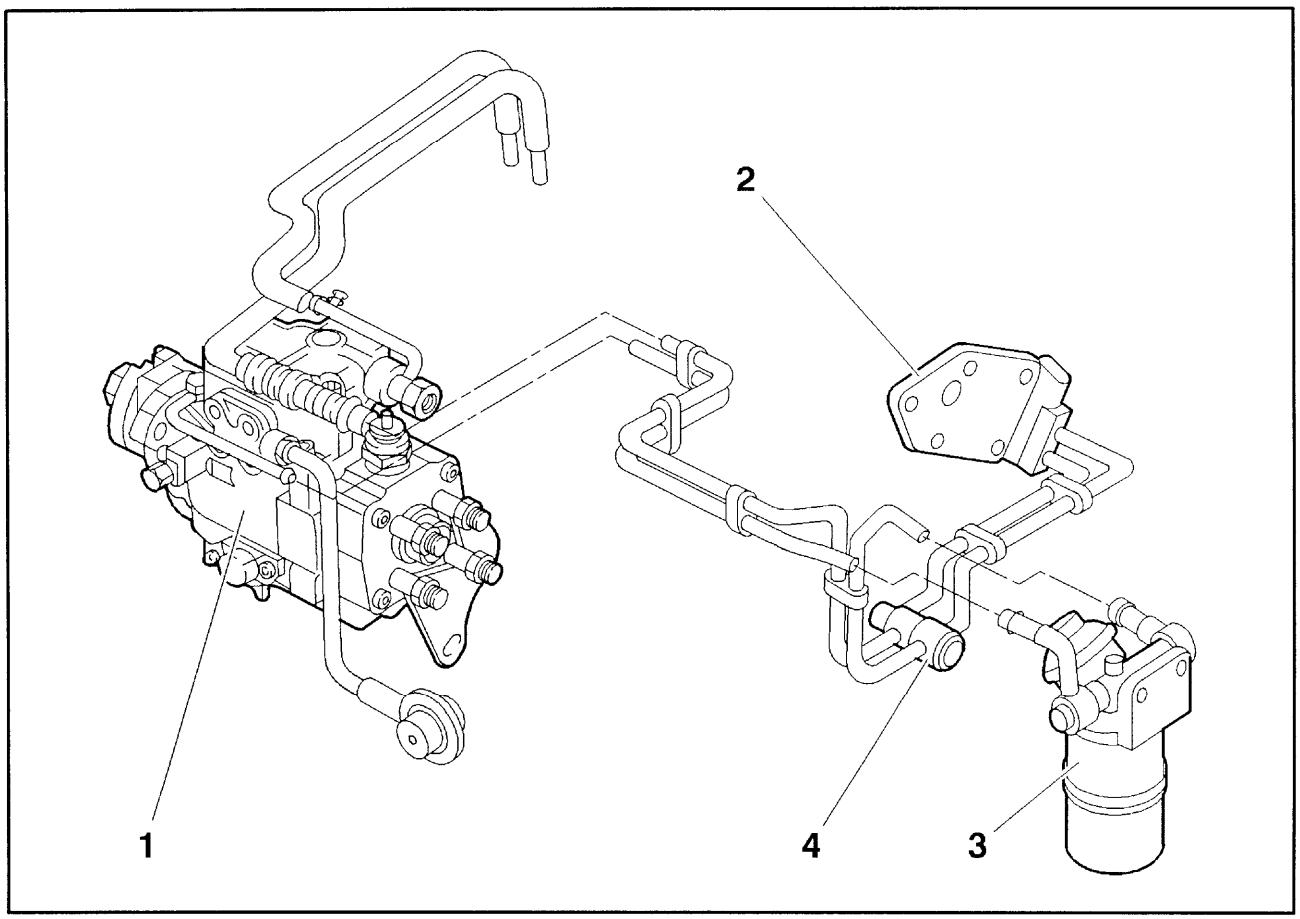


Fig : B1HP097D

(1) injection pump.
(2) diesel fuel heater.
(3) diesel fuel filter.
(4) thermostat.

2 – FUEL TANK

Plastic fuel tank capacity : 80 litres.

www.WorkshopManuals.co.uk

3 – DIESEL FUEL HEATER

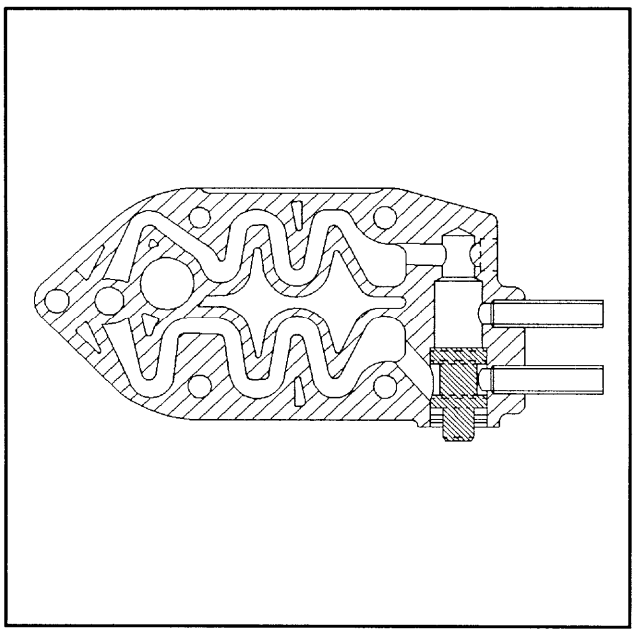


Fig : B1HP098C

Operating principle :

- temperature < 15°C : all the Diesel fuel circulates through the heater
- temperature between 15°C and 35°C : a proportion of the Diesel fuel, is heated
- temperature > 35°C : no Diesel fuel heating

4 – THERMOSTAT

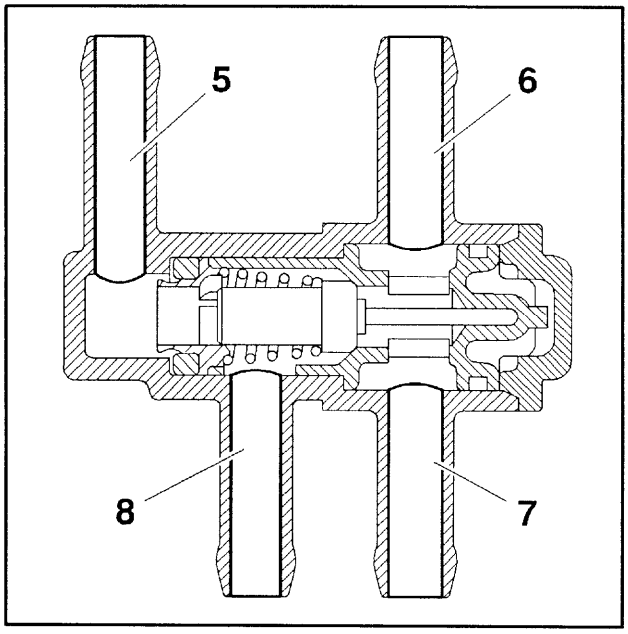


Fig : B1HP099C

(7) Diesel fuel inlet.

(6) Diesel fuel supply to heater.

(5) heated Diesel fuel return.

(8) heated Diesel fuel outlet.

Operating principle :

Temperature	Thermostatic unit	Diesel fuel
Temperature < 15°C	Closed position :	All the Diesel fuel circulates through the heater
Temperature between 15°C and 35°C	Intermediate position :	A proportion of the Diesel fuel, is heated
Temperature > 35°C	Open position :	No Diesel fuel heating

www.WorkshopManuals.co.uk

5 - DIESEL FUEL FILTER

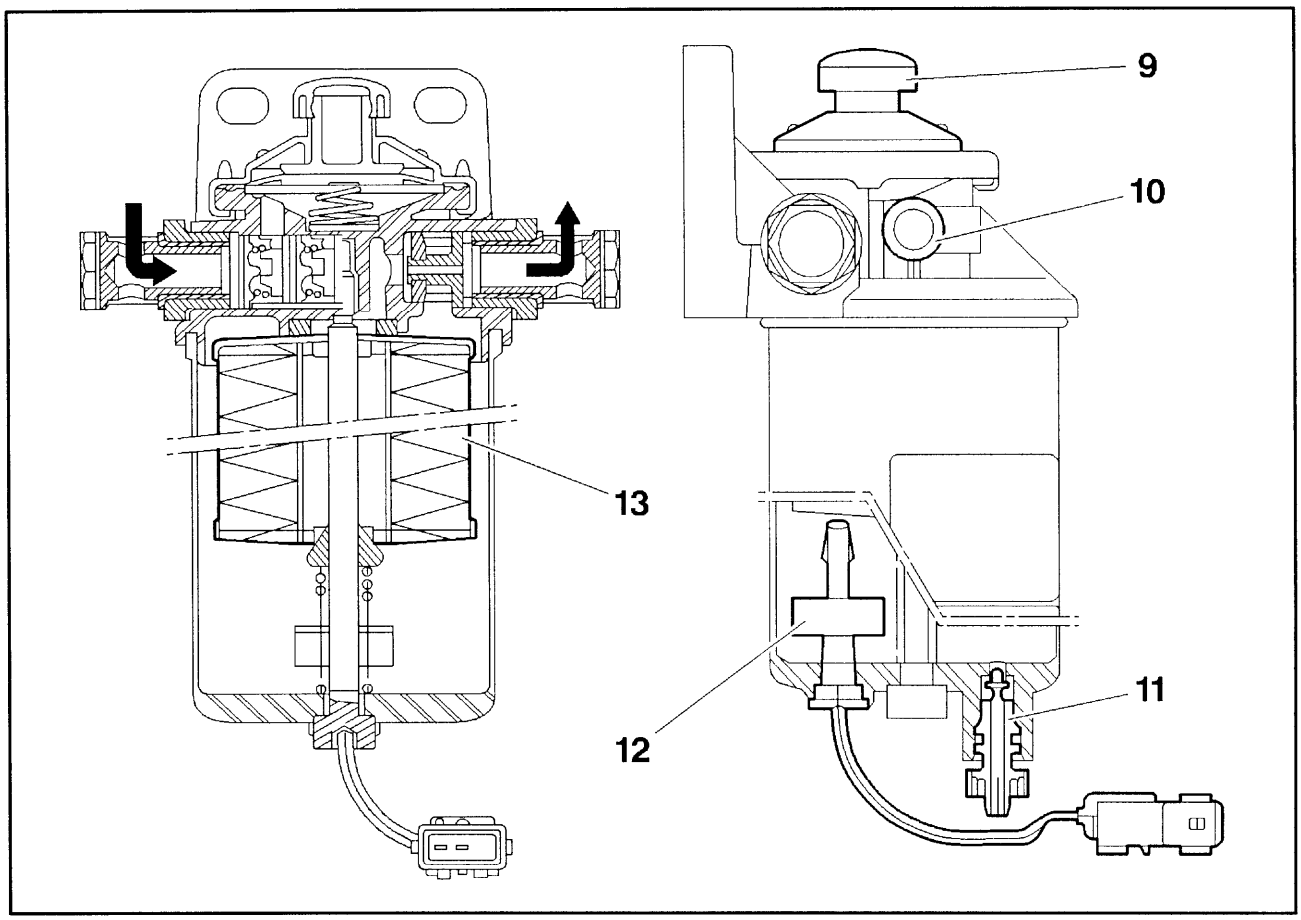


Fig : B1HP09AD

(9) priming pump.

(10) bleed screws (Diesel fuel).

(11) bleed screws (water).

(12) water detector.

(13) filter cartridge.

Diesel fuel filter equipped with a water-in-fuel detection device.

Diesel fuel filter reference (BOSCH 9 454 160 142).

6 - WATER DETECTOR

Operating principle :

- the base of the Diesel fuel filter houses the water detector
- if water is present in the fuel, due to its density, it will stay in the lower section of the Diesel fuel filter
- when the water level reaches the detection sensor electrodes, the instrument panel warning lamp is reconnected to earth and lights up, which indicates the need to bleed the Diesel fuel filter
- whenever ignition is switched on, if the condition of the electronic function and lamp is correct, the warning lamp will illuminate for about 1.5 second

www.WorkshopManuals.co.uk

CHECKING-ADJUSTING : BOSCH INJECTORS

1 - RECOMMENDED TOOLS

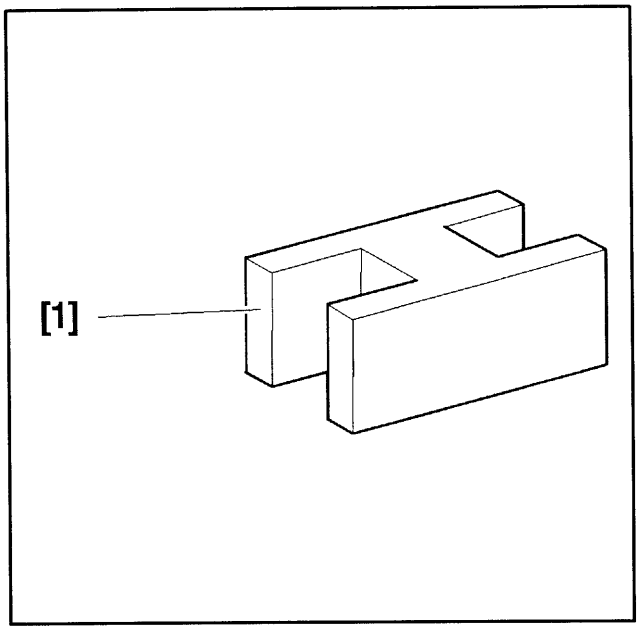


Fig : B1HP04VC

[1] clamp 7008-T.A for slackening and retightening the injector holder body (tool box 4123-T).

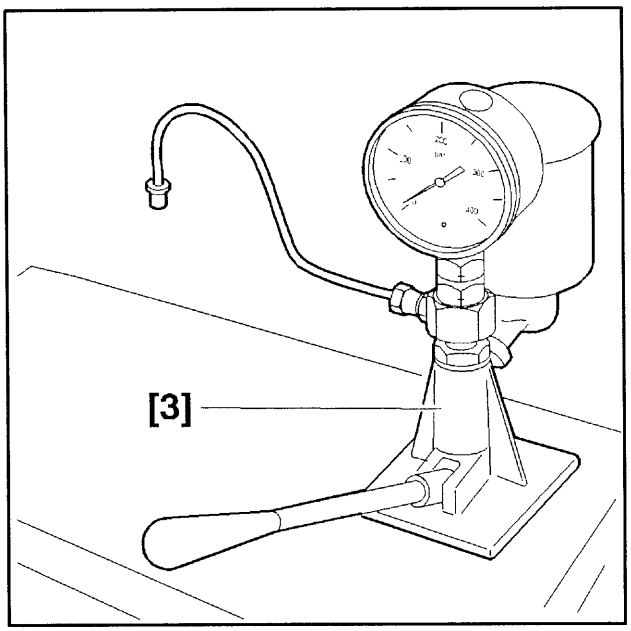


Fig : B1HP021C

[3] injector testing pump 4026-T.bis.

Test fluid : de-odourised paraffin.

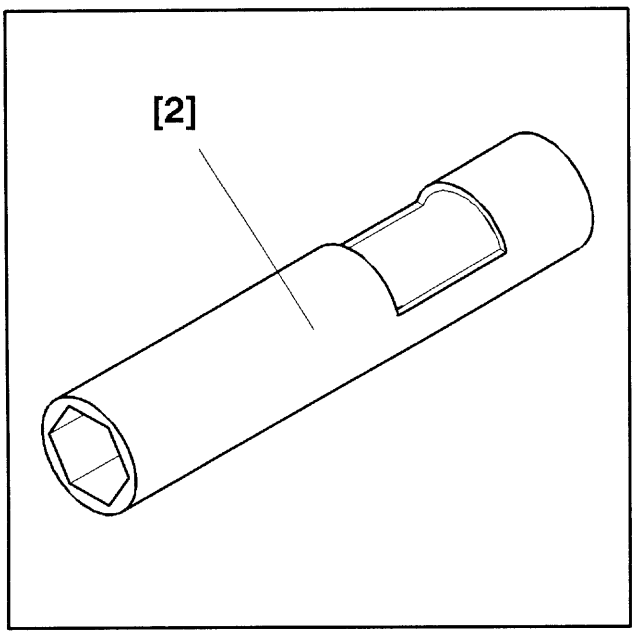


Fig : B1HP04WC

[2] spanner 5710-T for removing and refitting the injector holders.

ATTENTION : Use a suitable test fluid. Never expose the hands to the spray; risk of injury and serious blood poisoning. The sprayed fluid catches fire very easily.

2 - CHECKING FOR LEAKS

Pressure gauge in circuit.

Dry the end of the injector.

Operate the pump lever.

Maintain a pressure 20 bars below the calibration pressure.

The injector should not drip within 10 seconds.

www.WorkshopManuals.co.uk

3 - CHECKING THE SHAPE OF THE SPRAY AND THE GRUNT OF THE INJECTOR

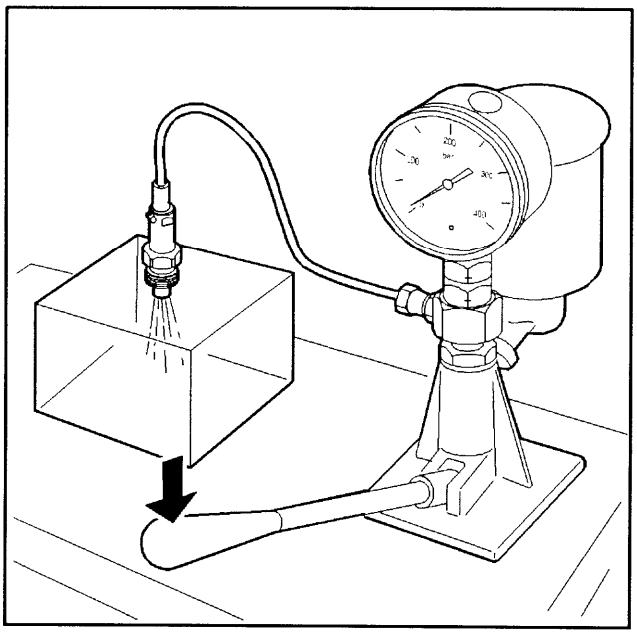


Fig : B1HP022C

Pressure gauge isolated.

Operate the pump lever with short sharp strokes.

The injector should produce a very fine and homogeneous spray.

At a frequency of one or two strokes a second, the injector should have a very soft grunt.

With more rapid strokes, the grunt should disappear.

4 - CHECKING THE CALIBRATION PRESSURE

Pressure gauge isolated.

Give several rapid pump strokes to bleed the circuit.

Pressure gauge in circuit.

Operate the pump lever very slowly.

Read the pressure at the moment the injector opens.

Compare with the theoretical setting pressure of the injector.

5 - ADJUSTING THE CALIBRATION PRESSURE

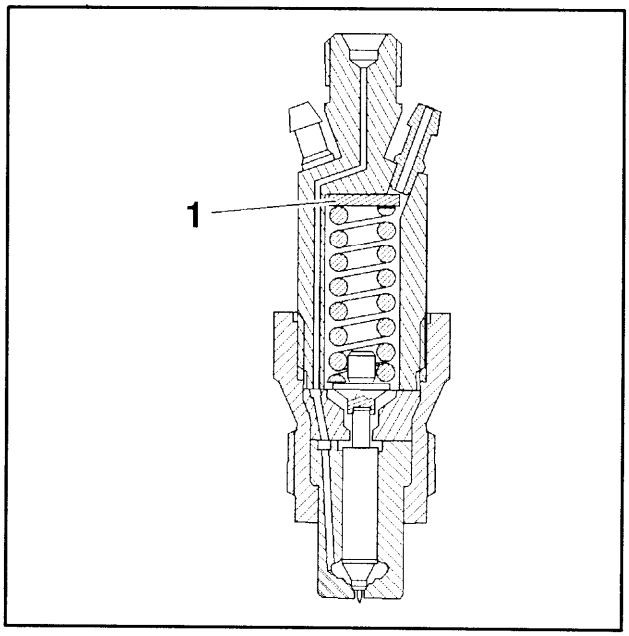


Fig : B1HP05CC

The calibration is adjusted by means of a thicker or thinner shim (1).

NOTE : A change in shim thickness of 0.10 mm gives, on average, a calibration pressure change of 10 bars.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : BOSCH INJECTION PUMP

1 – RECOMMENDED TOOLS

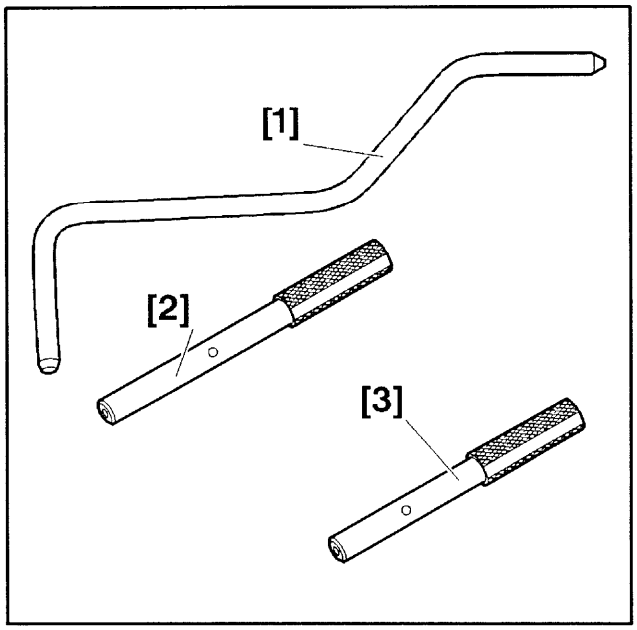


Fig : B1EP01FC

[1] flywheel setting rod 7014–T.J (tool box 7004–T).

[2] camshaft gear wheel setting rod 5711–T.A (tool box 5711–T).

[3] injection pump setting rod 5711–T.B (tool box 5711–T).

2 – REMOVAL

Unclip the battery trim cover :

- 2 attachment points, front side end
- 1 attachment point marked by an arrow towards the air filter (using a screwdriver)

Disconnect the battery negative terminal.

Raise and support the vehicle with the wheels clear of the ground.

Timing belt – carry out a partial removal operation (see the relevant operation).

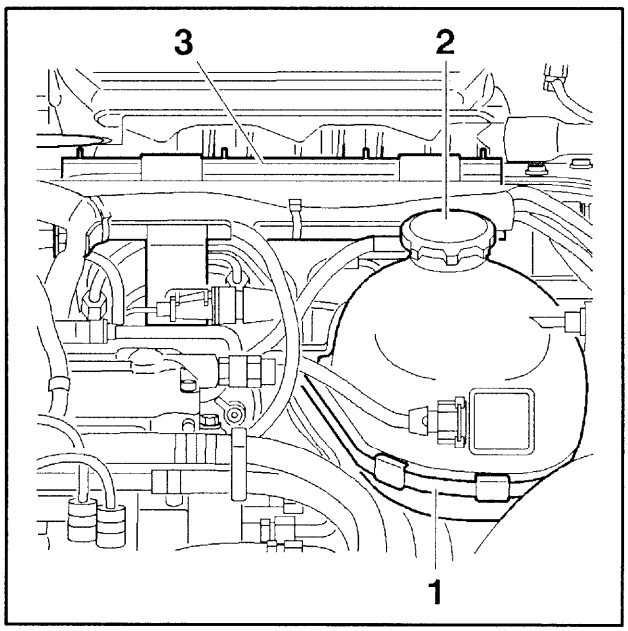


Fig : B1HP07XC

Remove header tank (1) fixing collar (2).

Push header tank (2) aside.

Separate the wiring harnesses and connection hoses from harness support (3).

Remove :

- wiring harness support (3)
- the electrical and mechanical junctions adjoining the injection pump
- the injector pipes

www.WorkshopManuals.co.uk

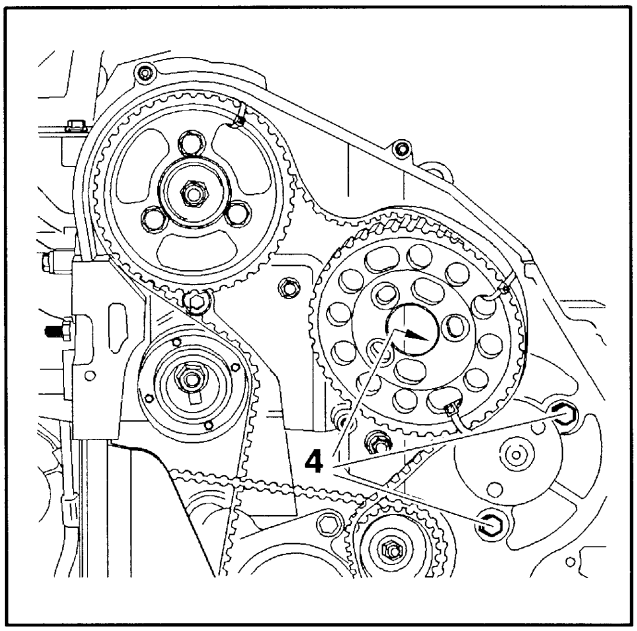


Fig : B1HP07YC

Remove :
- injection pump fixing screws (4)
- the pump rear fixing
- the injection pump

3 – REFITTING

Fit :
- the injection pump
- injection pump fixing screws (4) ; tighten to 2.25 m.daN
- the pump rear fixing ; tighten to 2.25 m.daN
- the injector pipes ; tighten to 2.5 m.daN
- the electrical and mechanical junctions adjoining the injection pump
- wiring harness support (3)

Clip the electrical harnesses and flexible hoses in place to the harness support.

Fit :
- header tank (2)
- the timing belt (see the relevant operation)

Return the vehicle to its wheels.

Bleed the fuel system.

Connect the battery.

Clip in place the battery trim cover.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : INJECTORS

1 – RECOMMENDED TOOLS

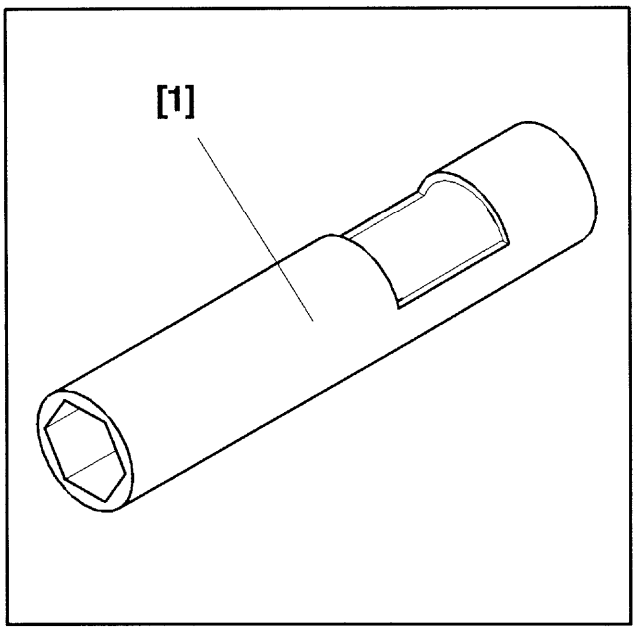


Fig : B1HP051C

[1] spanner 5710–T for removing and refitting the injector holders.

2 – REMOVAL

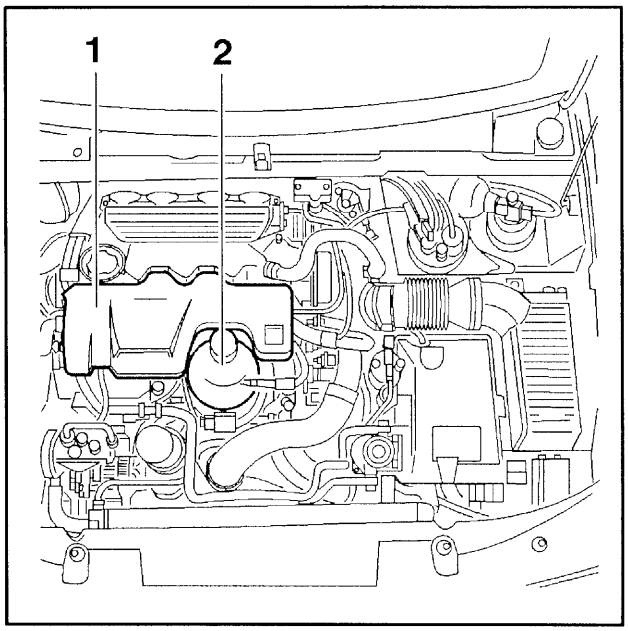


Fig : B1HP06BC

Remove spoke trim (1).

Separate the wiring harnesses from the harness support.

Remove :
- wiring harness support
- header tank fixing clamping collar (2)

Push header tank (2) aside.

Remove :
- the header tank fixing bracket
- the Diesel fuel inlet and return pipes

Disconnect the connector from number 3 cylinder injector.

www.WorkshopManuals.co.uk

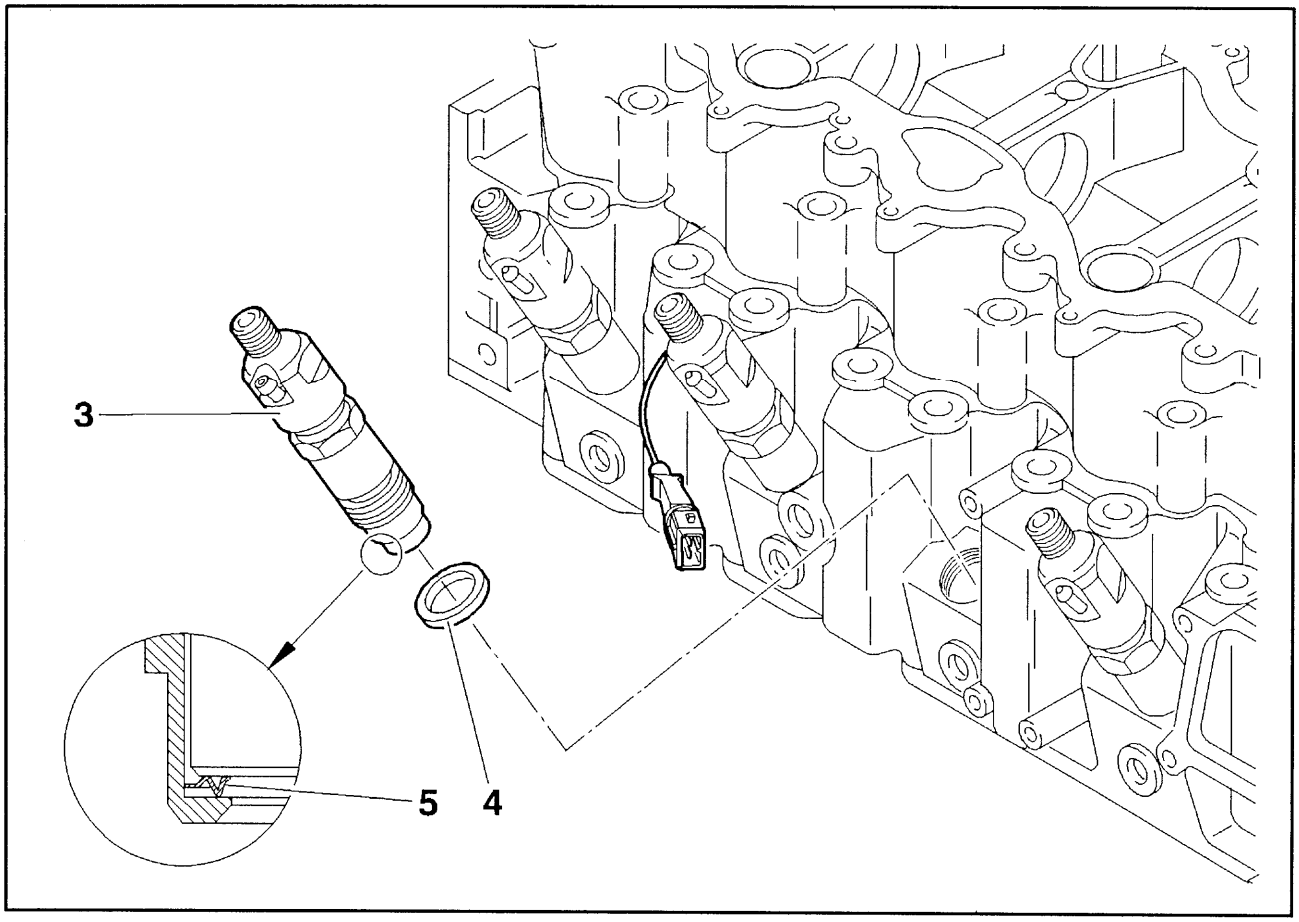


Fig : B1HP06CD

Remove :
- the injector holders (3) using socket [1]
- sealing washers (4)

NOTE : Fire ring (5) is inside the injector carrier.

3 – REFITTING

IMPERATIVE : Replace the sealing washer systematically.

Fit :
- sealing washers (4)
- injector holders (3) ; tighten to 5.5 m.daN
- the Diesel fuel inlet and return pipes ; tighten to 2 m.daN

Reconnect number 3 cylinder injector connector.

Fit :
- the header tank fixing bracket
- the header tank
- wiring harness support

Clip the electrical harnesses to the harness support

Refit the centre trim

www.WorkshopManuals.co.uk

REMOVING – REFITTING : THE TURBOCHARGER

1 – PRELIMINARY OPERATIONS

Lift and support the vehicle with front wheels suspended.

Unclip the battery trim cover : 2 attachment points, front side end, 1 attachment point marked by an arrow towards the air filter (using a screwdriver).

Disconnect the battery negative terminal.

Remove :
- the protective plate under the engine
- the RH front road wheel
- the engine protection plate situated under the R.H. front wheelarch

2 – REMOVAL

Drain the gearbox.

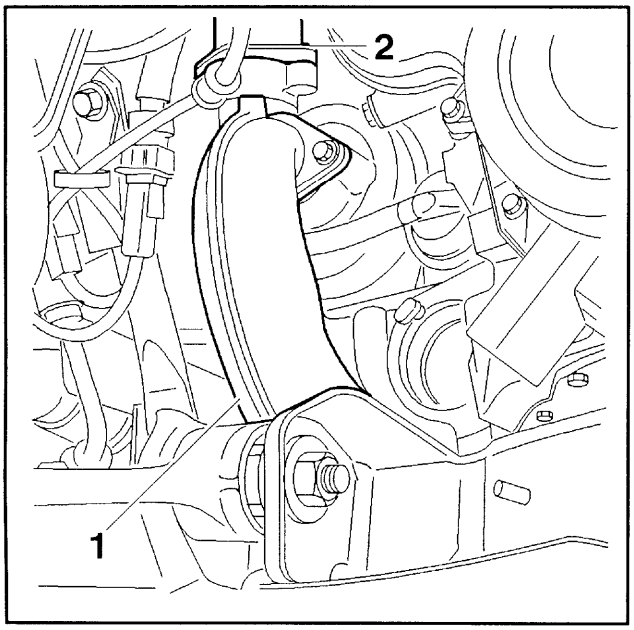


Fig : B1HP08LC

Remove :
- the R.H. drive shaft (see the relevant operation)
- sleeve (1)

Uncouple sleeve (2) from the turbocharger.

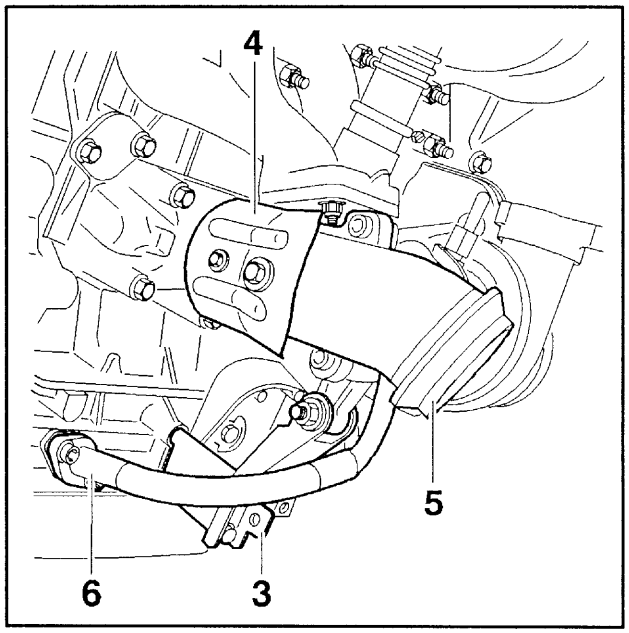


Fig : B1HP08MC

Remove :
- mounting bracket (3)
- metal plate (4)
- turbocharger outlet pipe bend (5)

Uncouple oil return pipe (6) from the cylinder block.

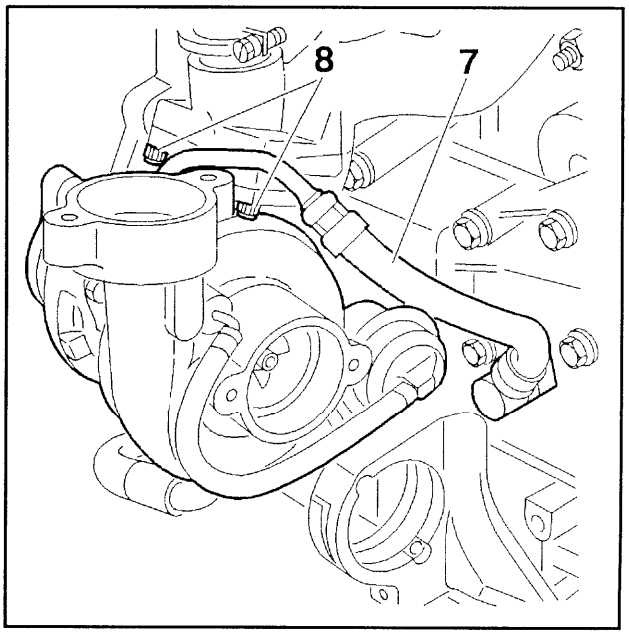


Fig : B1HP08NC

Remove :
- oil inlet union (7)
- the fixing bolts (8)
- the turbocharger

www.WorkshopManuals.co.uk

3 – REFITTING

3.1 – Generality

Precautions to be taken before carrying out any work :
- examine the engine air filtering system
- drain the engine oil
- replace the oil filter
- ensure that the oil circuit unions are clean
- fit new seals
- use the recommended securing screws (heat resistant)

Check that no foreign body is present :
- in the inlet circuit
- in the exhaust gas manifold (it may cause the destruction of the turbocharger when operating it)

3.2 – Refitting – turbocharger

Fit :
- the turbocharger
- the fixing bolts (8). Tightening : 2.25 m.daN
- mounting bracket (3)
- oil inlet union (7)

Couple up sleeve (2) with the turbocharger.

Fit :
- turbocharger outlet pipe bend (5)
- metal plate (4)
- cylinder block oil return pipe (6)
- sleeve (1)
- the R.H. drive shaft (see the relevant operation)

Refill the gearbox with oil and top up to level.

4 – COMPLEMENTARY OPERATIONS

Fit :
- the engine protection plate situated under the R.H. front wheelarch
- the RH front road wheel
- the protective plate under the engine

Reconnect the negative cable to the battery.

Clip in place the battery trim cover.

Return the vehicle to its wheels.

Precautions to be taken before starting the vehicle :
- disconnect the injection double relay
- rotate the engine with the starter and stop when the oil pressure warning lamp has gone out
- reconnect the injection double relay
- let the engine turn at idle for 30 seconds, before increasing the load
- after the starting up, check the tightness of the various hose connections

www.WorkshopManuals.co.uk

OVERHAULING : INJECTORS

1 – RECOMMENDED TOOLS

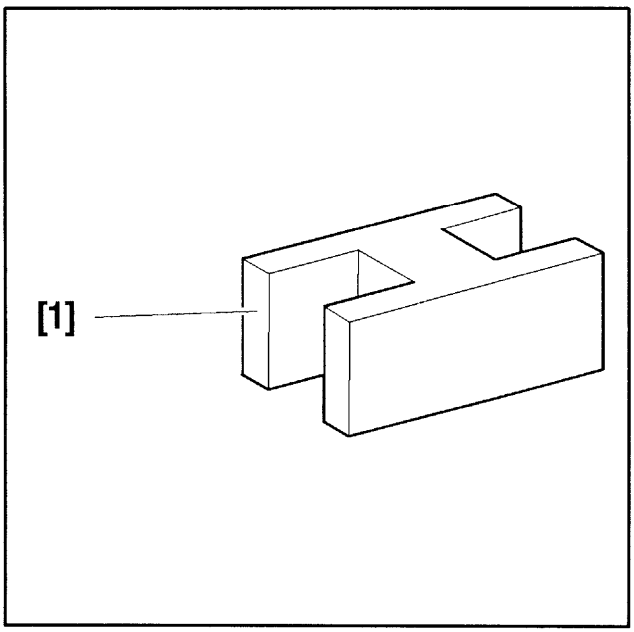


Fig : B1HP04VC

[1] clamp 7008–T.A for slackening and retightening the injector holder body (tool box 4123–T).

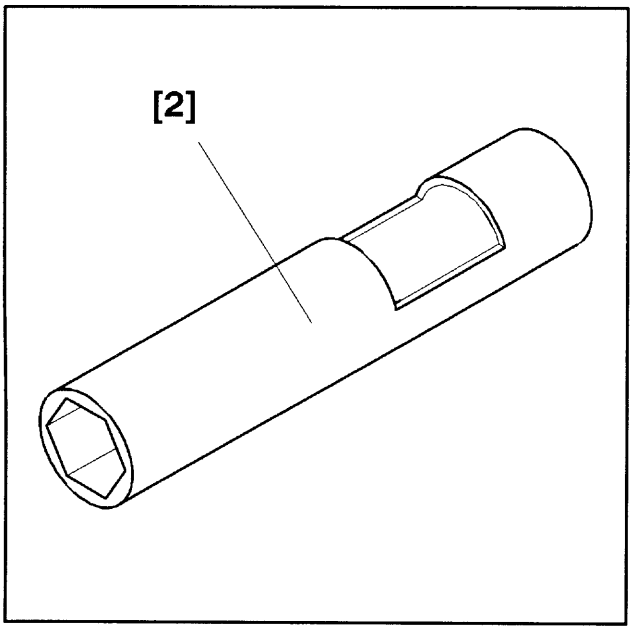


Fig : B1HP04WC

[2] spanner 5710–T for removing and refitting the injector holders.

2 – DISMANTLING

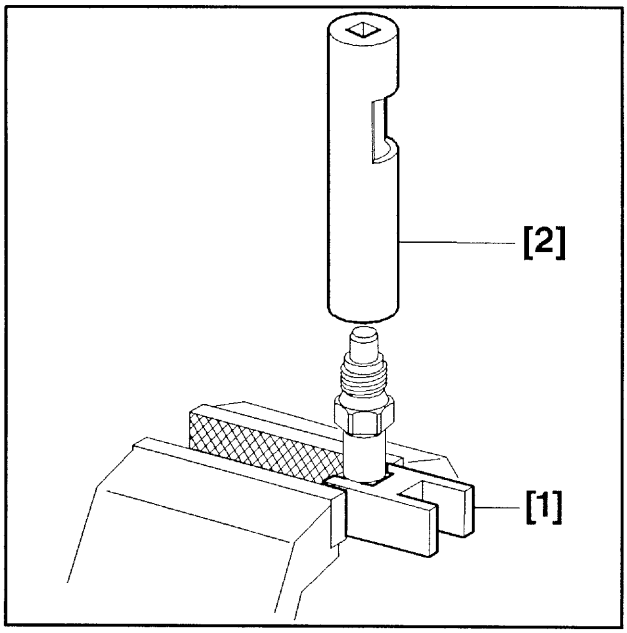


Fig : B1HP04ZC

Grip the injector holder and tool [1] in a vice.

Unscrew the injector holder using socket [2].

Immerse the parts in test fluid.

The nozzle/needle must be kept paired.

3 – REFITTING

ATTENTION : Extreme cleanliness should be observed during the rebuilding operations.

Lubricate the parts with test fluid before fitting.

www.WorkshopManuals.co.uk

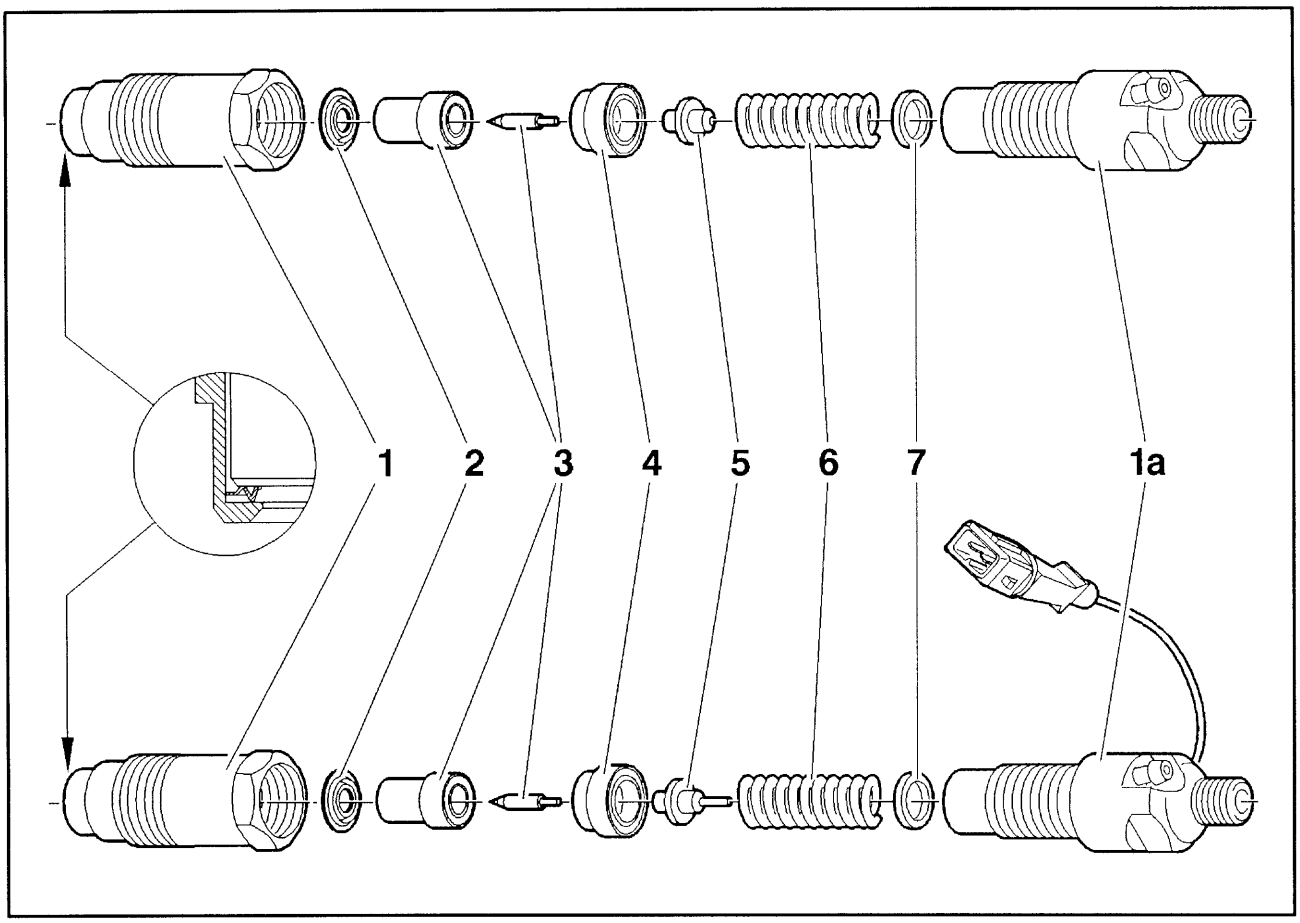


Fig : B1HP06DD

In injector holder (1), place :
- fire ring (2)
- injector (3)
- distance piece (4)
- push-rod (5)
- spring (6)
- adjusting shim (7)
- body (1a)

Systematically replace the fire ring. Respect the fitting direction.

Tighten the assembly to 7 m.daN.

www.WorkshopManuals.co.uk

29th SEPTEMBER 1995

ABONNEMENT GME

REF. 2 No XM 146-00/10

ENGINE XUD 11 BTE

● AIR AND FUEL SUPPLY - SUPER CHARGING

LUCAS DIESEL "EPIC" injection

MAN 158931

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

GB

1

www.WorkshopManuals.co.uk

AIR AND FUEL SUPPLY – SUPERCHARGING

TIMING : "EPIC" INJECTION PUMP 3

REMOVING – REFITTING : "E.P.I.C." INJECTION PUMP 5

REMOVING – REFITTING : THE TURBOCHARGER 11

REMOVING – REFITTING : EGR VALVE 15

www.WorkshopManuals.co.uk

TIMING : "EPIC" INJECTION PUMP

1 – RECOMMENDED TOOLS

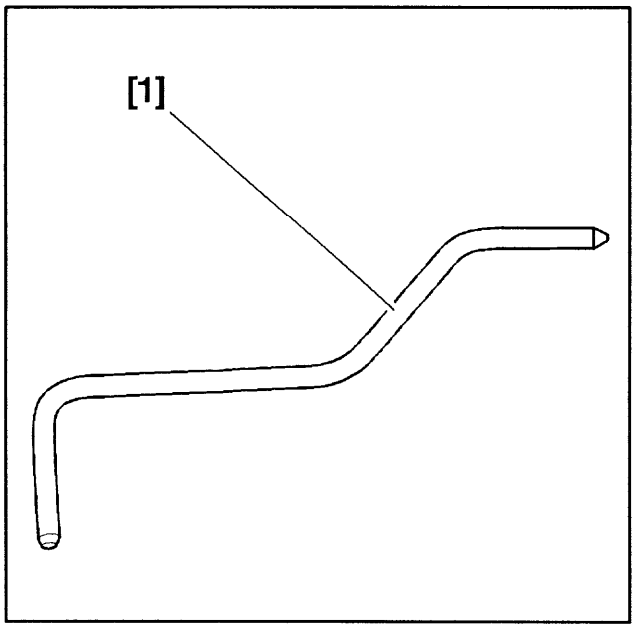


Fig : E5-P01HC

Engine kit : 7004–T.

[1] flywheel locating peg 7014–T.J.

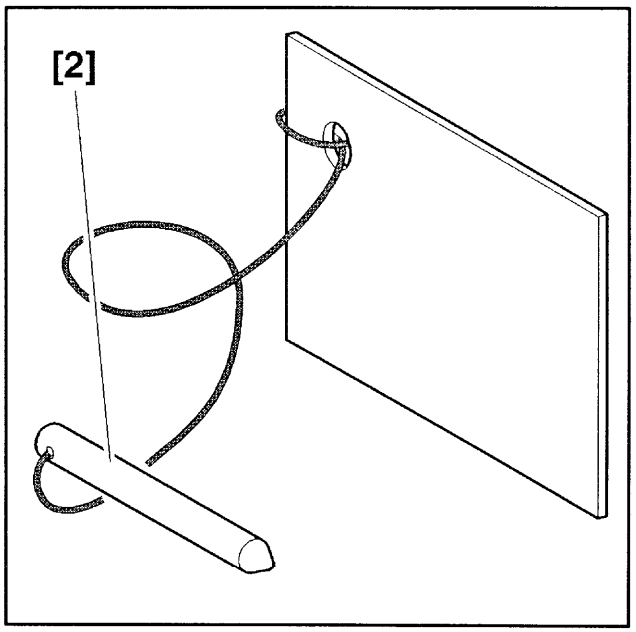


Fig : E5-P10HC

Box for Diesel injection pump timing tools, 4123–T.

[2] setting rod for "EPIC" pump timing, 9043–T.

2 – STATIC TIMING AT TDC – PEGGING THE FLYWHEEL

NOTE : This operation is a prepositioning of the injection pump.

Peg the flywheel using the rod (1).

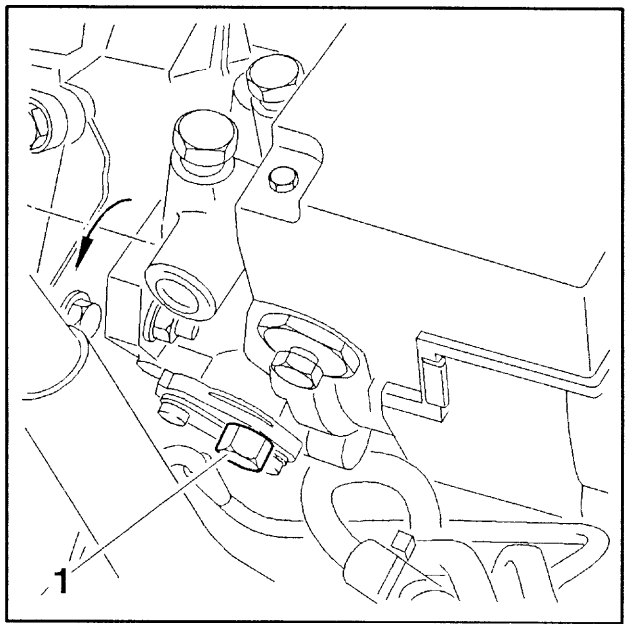


Fig : B1HP0BBC

Swing the pump to the full retard position away from the engine.

Remove the cap (1) from the timing orifice.

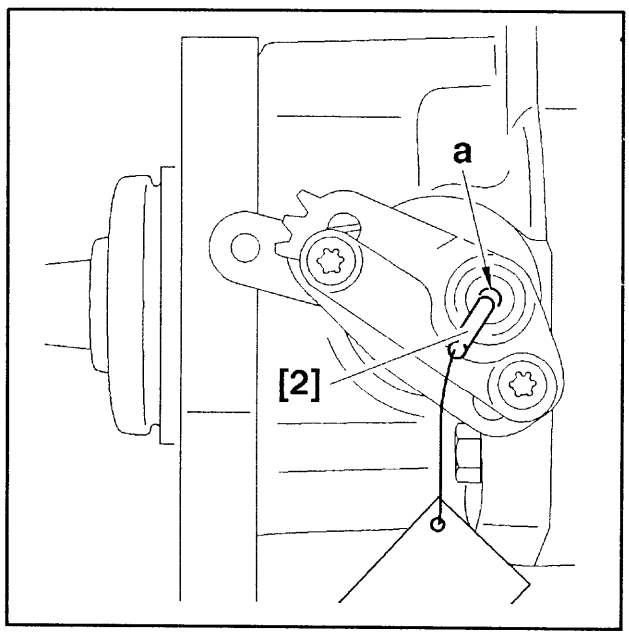


Fig : B1HP0BCC

www.WorkshopManuals.co.uk

Position tool [2] into timing orifice "a".

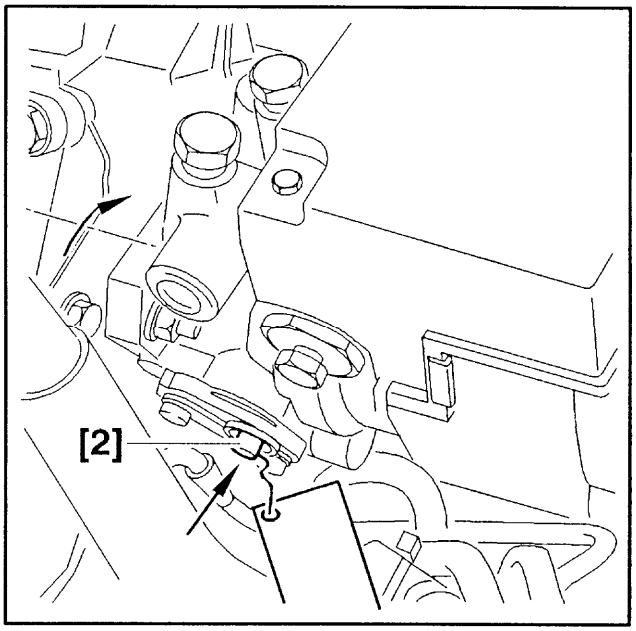


Fig : B1HP0BDC

Turn pump towards inside of engine ; press tool [2] untill it subsides.

Tighten :

- the 3 nuts : tightening torque = 2 m.daN
- the rear bolt : tightening torque = 2 m.daN

Remove tool [2] from timing hole "a".

Refit the plug (1).

Check the cleanliness of the o'ring seal contact face.

Tightening torque = 0.5 m.daN.

Remove tool [1].

www.WorkshopManuals.co.uk

REMOVING – REFITTING : "E.P.I.C." INJECTION PUMP

1 – RECOMMENDED TOOLS

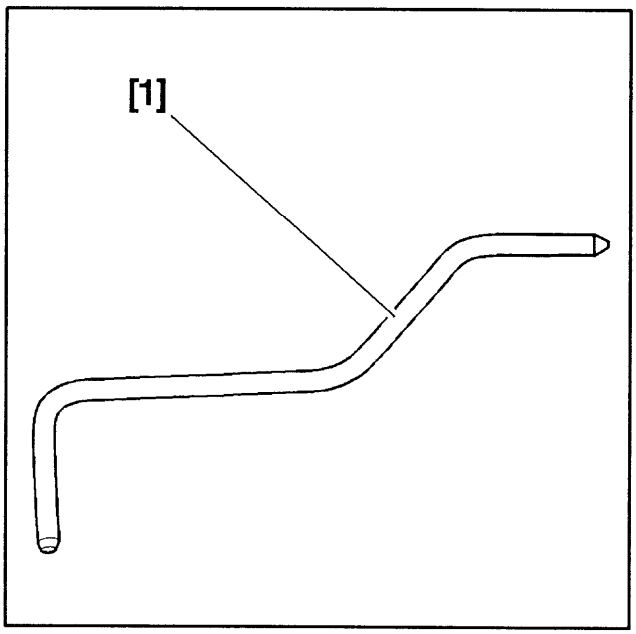


Fig : E5-P01HC

Engine kit : 7004–T.

[1] flywheel locating peg 7014–T.J.

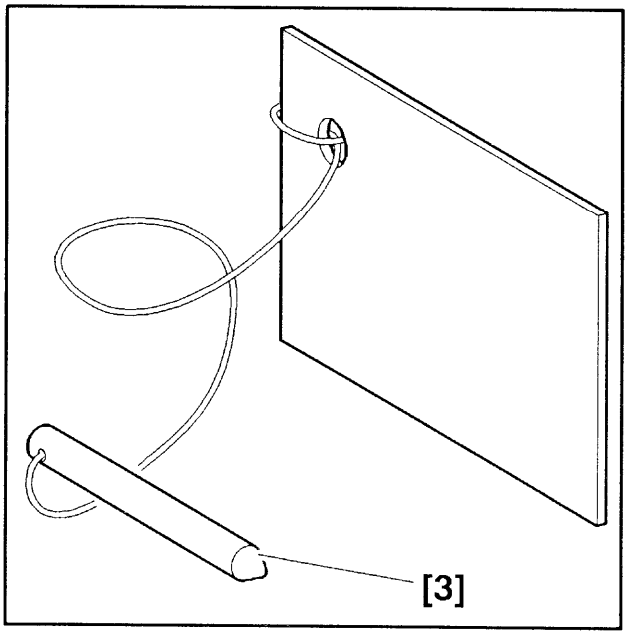


Fig : E5-P10LC

Box for Diesel injection pump timing tools, 4123–T.

[3] setting rod for "E.P.I.C." pump timing, 9043–T.

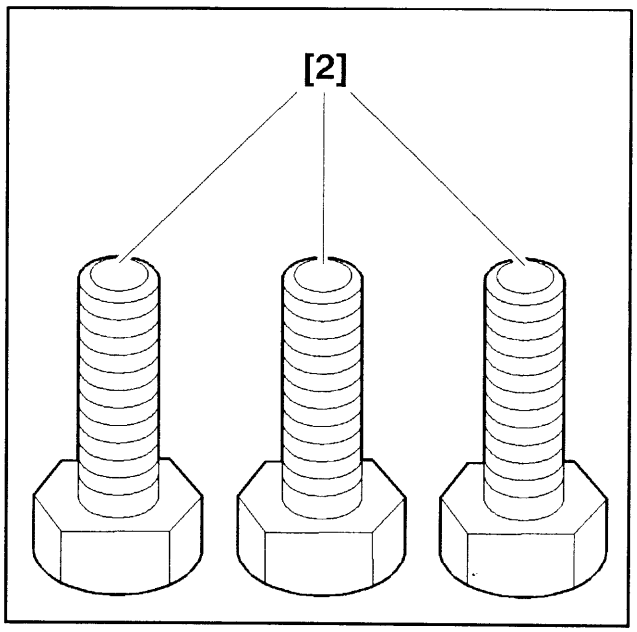


Fig : E5-P09MC

[2] bolt M8x40 : 7004–T.G.

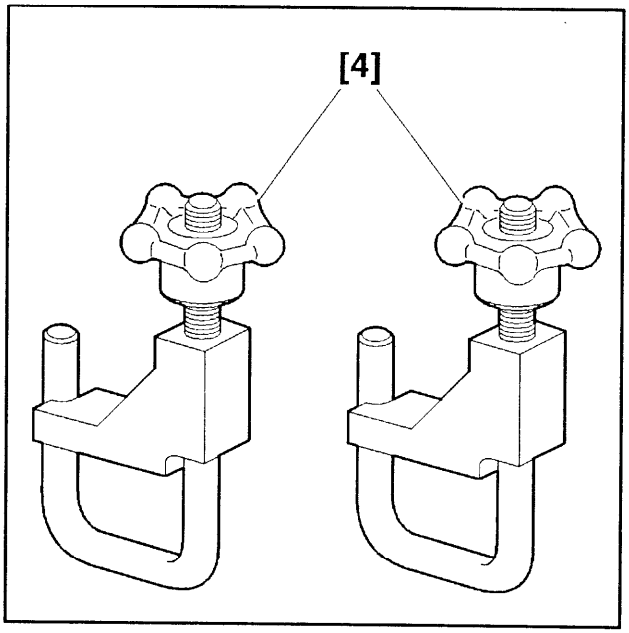


Fig : E5-P08NC

[4] hose clamp (4153–T).

www.WorkshopManuals.co.uk

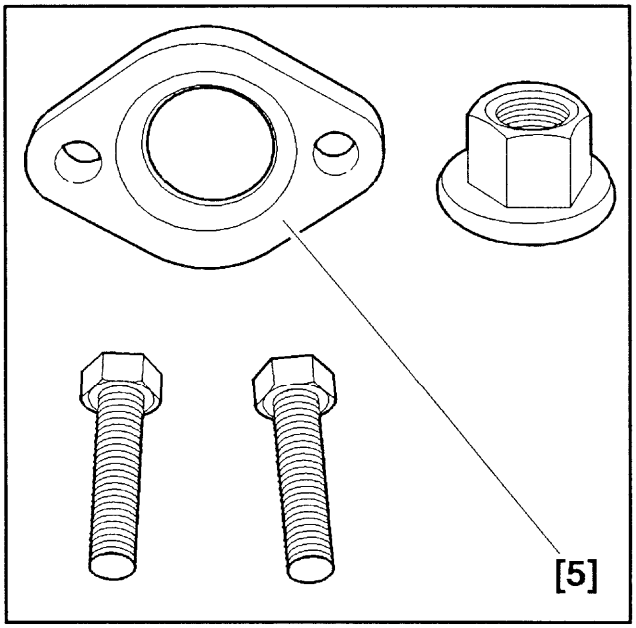


Fig : E5-P10MC

Box for Diesel injection pump timing tools, 4123-T.
Injection pump gear release flange [5] (6028-TA).

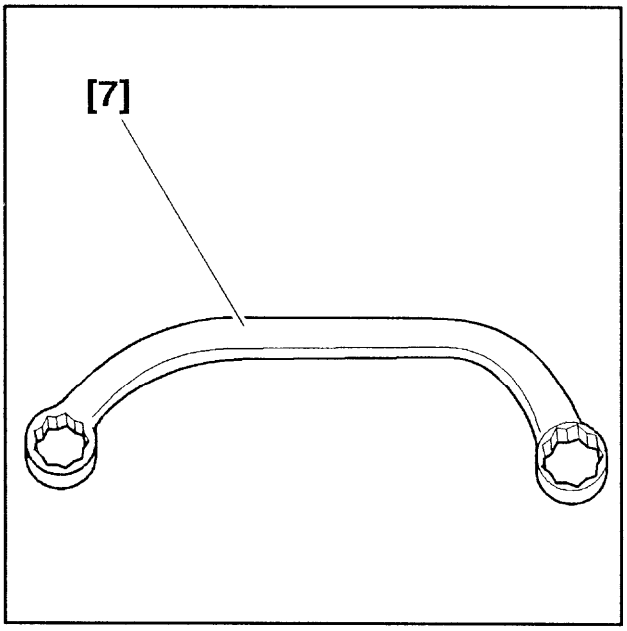


Fig : E5-P10NC

[7] 11x13 FACOM open ring spanner.

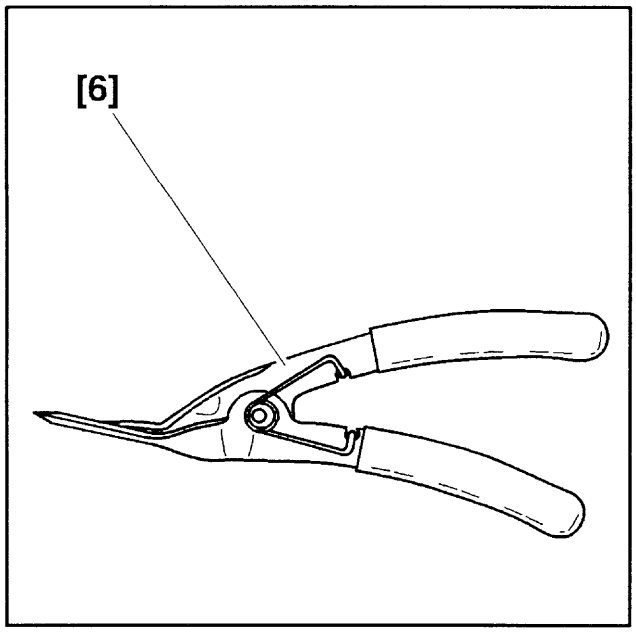


Fig : E5-P04LC

[6] pliers for removing the plastic pegs : 7504-T.

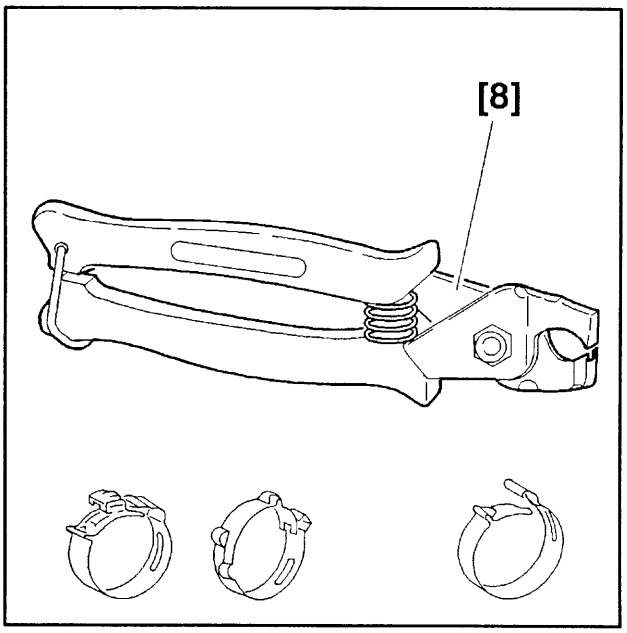


Fig : E5-P09PC

[8] clic clip pliers (4145-T).

www.WorkshopManuals.co.uk

2 - REMOVAL

Disconnect the battery negative terminal.

Raise the front R.H. side of the vehicle and support it on stands.

Remove :
- the wheel
- the sound insulator from under the engine
- the mud shield ; utilising tool [6]

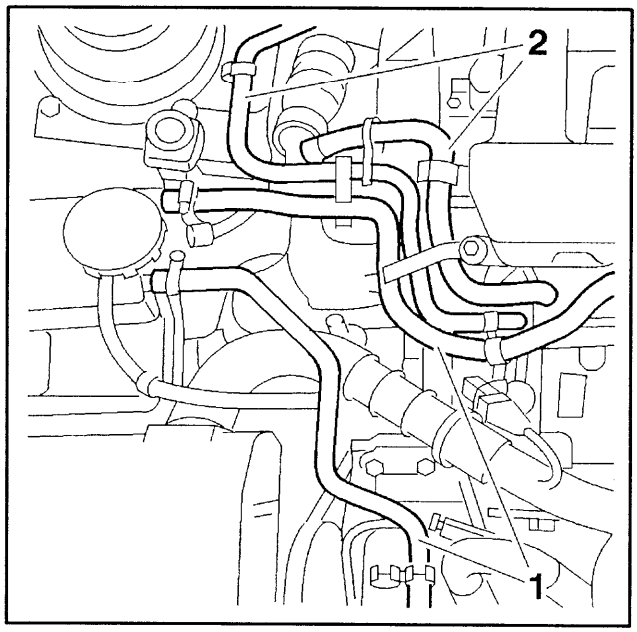


Fig : B1EP05HC

Uncouple flexible pipes (1) ; utilising tool [4].

Uncouple flexible pipes (2) ; utilising tool [8].

Remove : the ECU housing (push the ECU and electrical harness aside).

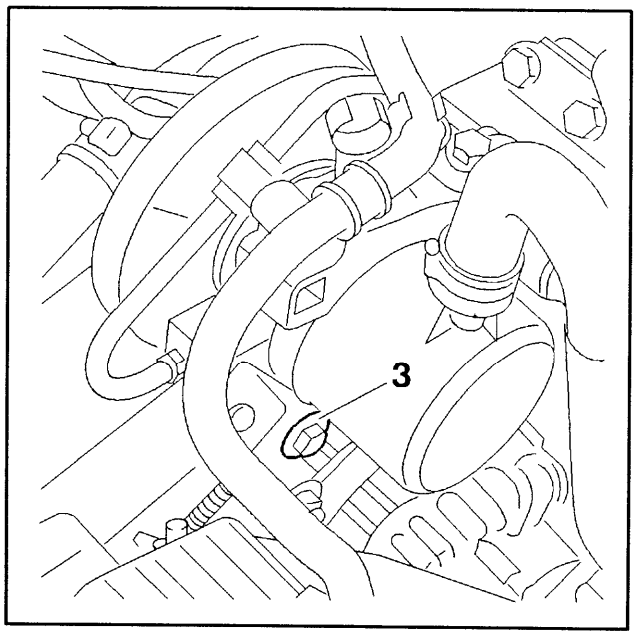


Fig : B1HP0BKC

Remove belt of high pressure pump (screw (3)).

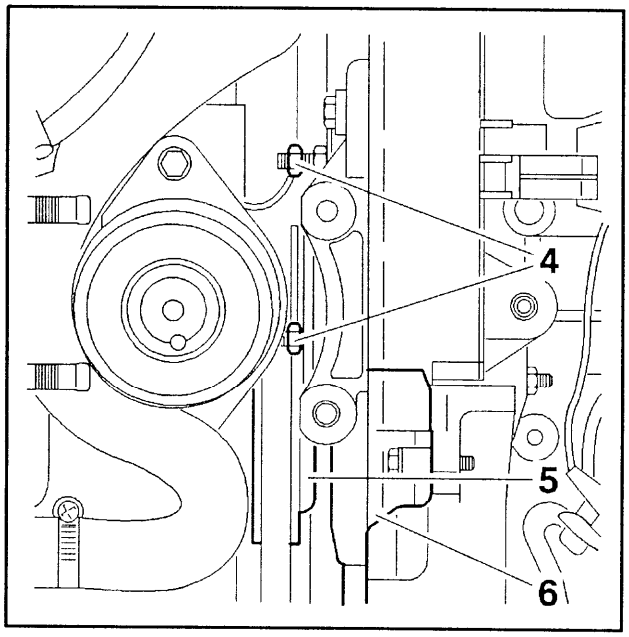


Fig : B1HP0BLC

Remove :
- the two nuts (4)
- the guide roller (5)
- the casing (6)

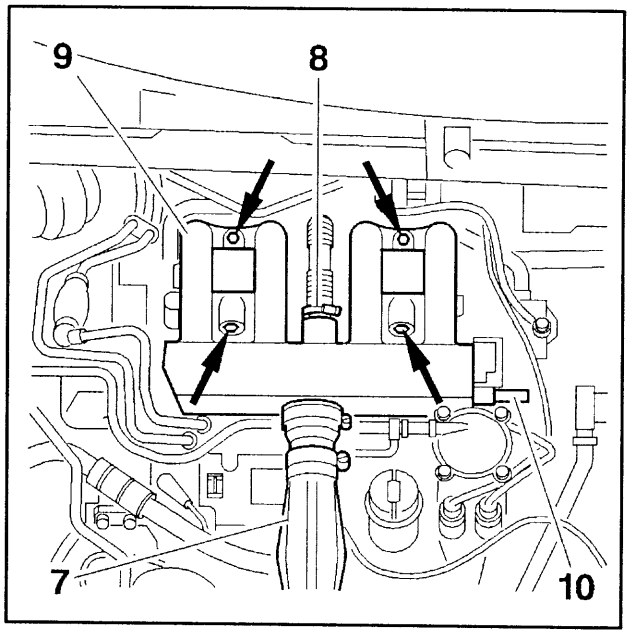


Fig : B1HP0BMC

Remove :
- air sleeve (7)
- EGR pipe clip (8)
- air inlet manifold (9) (screw ->)

Dislocate : flexible pipe of inlet pressure (10).

Disconnect : sensor of needle lift (11).

www.WorkshopManuals.co.uk

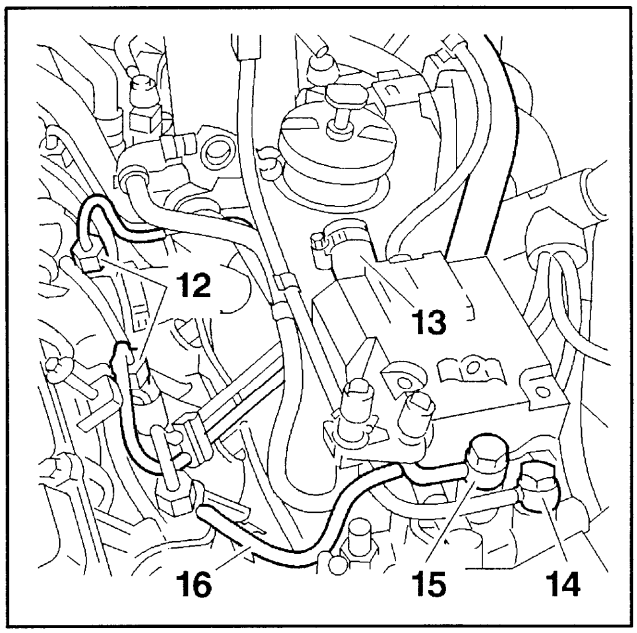


Fig : B1HP0BNC

Remove :
- the wiring harnesses (12)
- the flexible pipe (13)

Disconnect Diesel fuel inlet (14) and return (15) pipes.

Uncouple the return pipe (16).

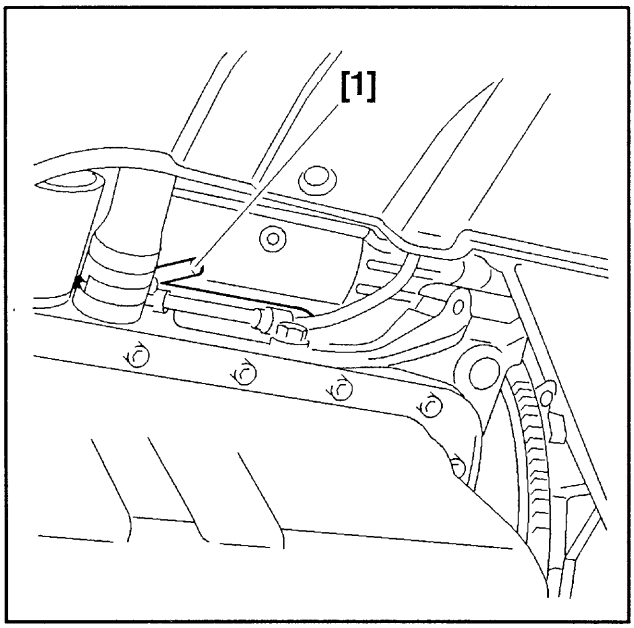


Fig : B1EP058C

Peg the flywheel with tool [1]. Turn the engine by the crankshaft pulley bolt until it is in the setting position.

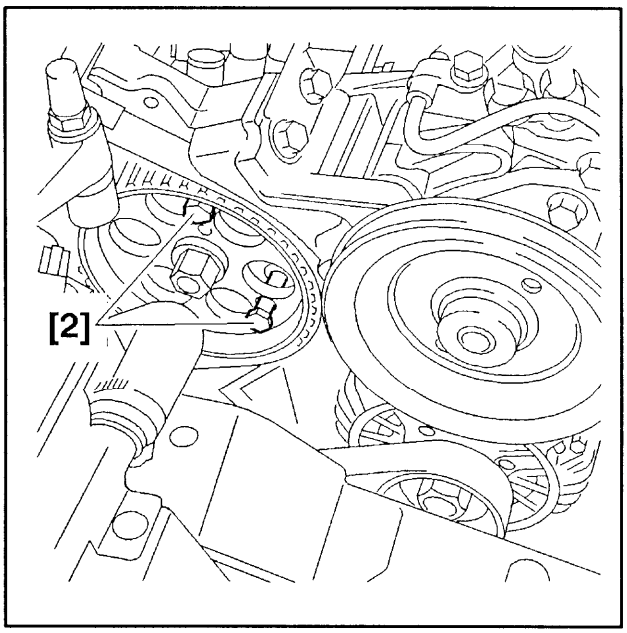


Fig : B1HP0BPC

Peg : the injection pump pinion by means of tool [2] (screw M8x125).

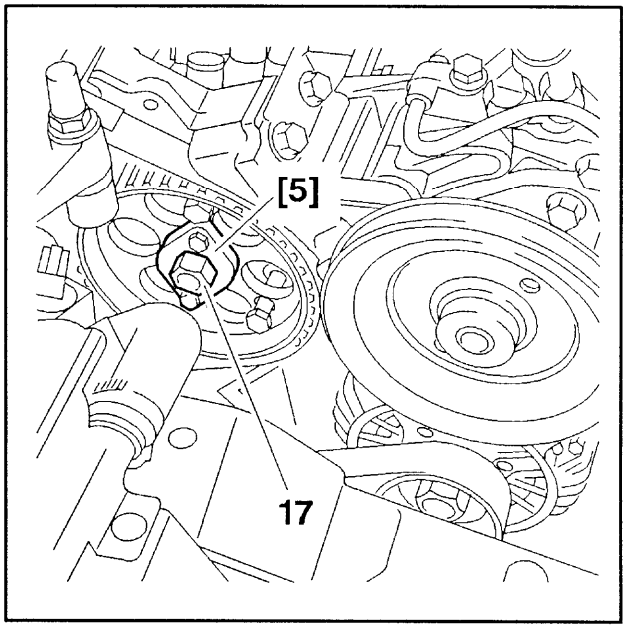


Fig : B1HP0BQC

Install tool [4] over the pump driving pinion.

Release pump's pinion from axle by loosening nut (17).

Remove the tool [5].

www.WorkshopManuals.co.uk

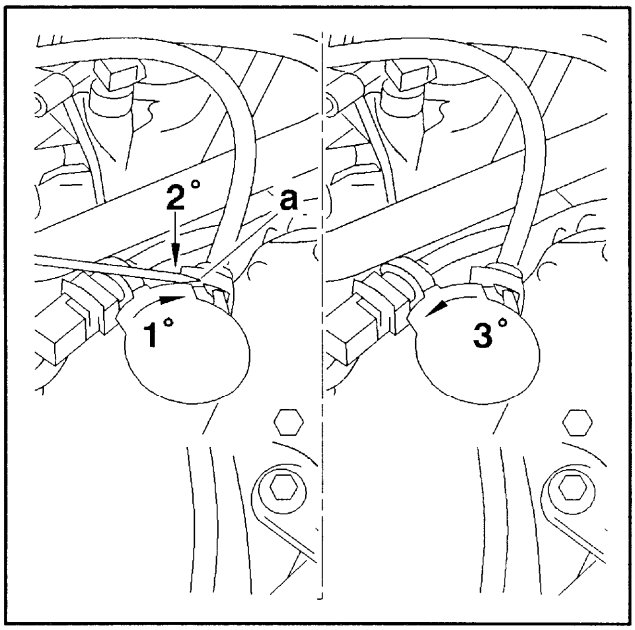


Fig : B1HP0BRC

Disconnect : adaptor KOSTAL :
- 1 : maintain adaptor clockwise
- 2 : disengage the lug (a), by means of a screwdriver
- 3 : release the adaptor by maintaining it

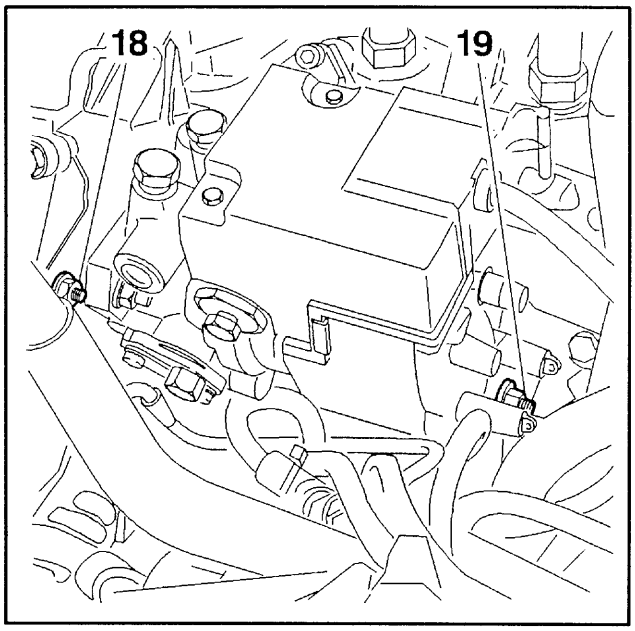


Fig : B1HP0BSC

Remove :
- the rear bolt (19)
- the 3 nuts (18) ; utilising tool [7]
- the pump ; unscrew the nut (17)

3 – REFITTING

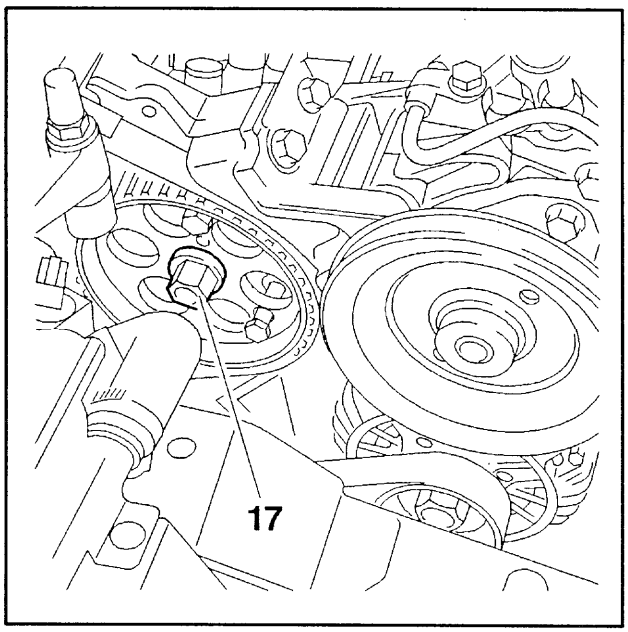


Fig : B1HP0BTC

Fit key into the groove of pinion by fastening nut (17) manually.

Fit :
- the 3 nuts (18) (without tightening)
- the rear bolt (19) (without tightening)

Tighten the nut (17) to 5 da.Nm.

Time the injection pump (see the relevant operation).

Tighten ; observing the correct tightening order :
- the 3 nuts (18) to 2 m.daN
- the rear bolt (19) to 2 m.daN

Remove setting rods [1] and [3].

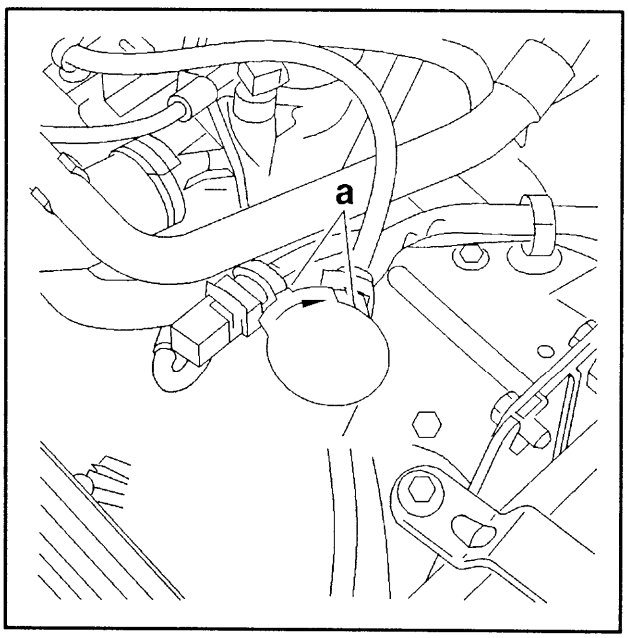


Fig : B1HP0BUC

Reconnect : adaptor KOSTAL ; until engagement of the lug (a).

www.WorkshopManuals.co.uk

Connect Diesel fuel inlet and return pipes (14) (15) : tightening torque = 2.5 m.daN.

Fit :
- the wiring harnesses (12) : tightening torque = 2.5 m.daN
- the flexible pipe (13)

Couple up overflow return pipe (16).

Fit :
- air inlet manifold (9) (screw –>)
- EGR pipe clip (8)
- air sleeve (7)

Locate : flexible pipe of inlet pressure (10).

Reconnect : sensor of needle lift (11).

Fit :
- the guide roller (5)
- the two nuts (4)
- the casing (6)

Install belt of high pressure pump (screw (3)).

Belt tension (see the relevant operation).

Fit : the ECU housing.

Relocate :
- diesel fuel inlet and return pipes (2)
- the flexible hoses (1)

Fit :
- the sound insulator under the engine
- the mud shield
- the wheel

Connect the battery negative terminal.

Return the vehicle to its wheels.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : THE TURBOCHARGER

1 – RECOMMENDED TOOLS

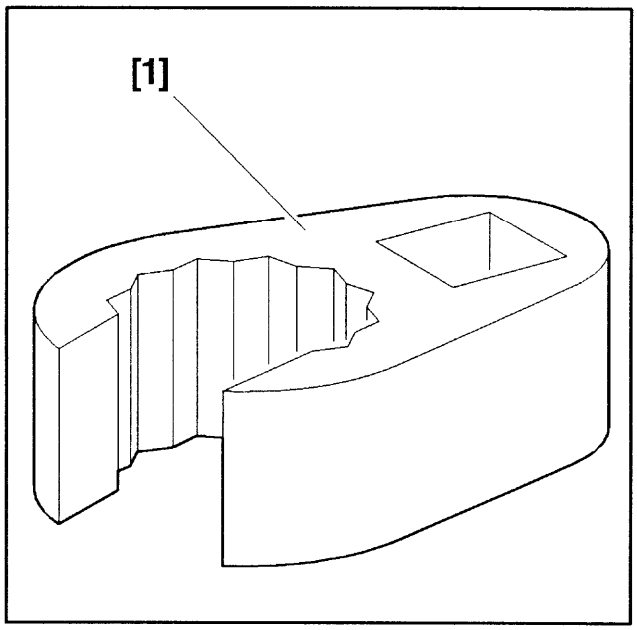


Fig : E5-P10KC

[1] open-end "CROWFOOT" tool FACOM : reference (18.17).

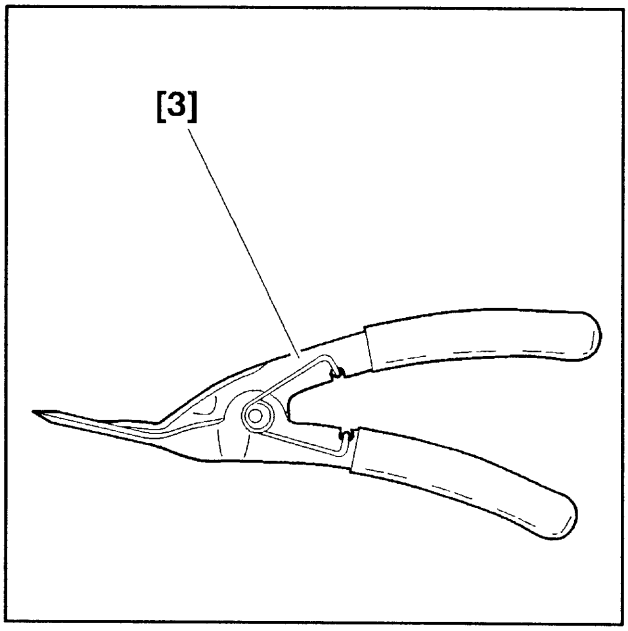


Fig : E5-P07JC

[3] pliers 7504-T for removing plastic clips.

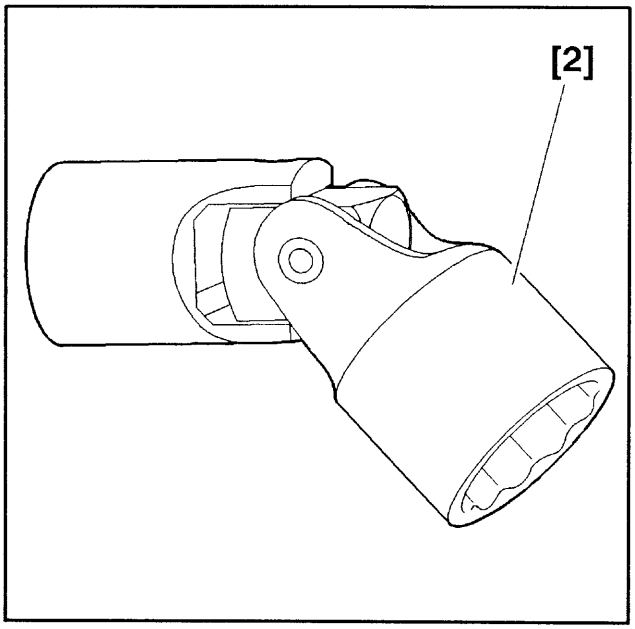


Fig : E5-P10JC

[2] articulating bush FACOM S 16 Ø 16 mm.

2 – PRECAUTIONS TO BE TAKEN

Examine the engine air filtering system.

Drain the engine oil. Replace the oil filter.

Check that no foreign body is present :
- in the inlet circuit
- in the exhaust gas manifold (it may cause the destruction of the turbocharger when operating it)

Ensure that the oil circuit unions are clean. Fit new seals.

Use the recommended securing screws (heat resistant).

Putting into service :
- disconnect the electric shut off solenoid
- turn the engine with the starter until the oil pressure warning lamp goes out
- start the engine
- let the engine turn at idle for 30 seconds, then increase the load

After the starting up, check the tightness of the various hose connections.

www.WorkshopManuals.co.uk

3 - REMOVAL

Place the vehicle on a lift.

Disconnect the battery negative terminal.

Remove :
- the RH front road wheel
- the mud shield ; by means of tool [3]
- the sound insulator from under the engine

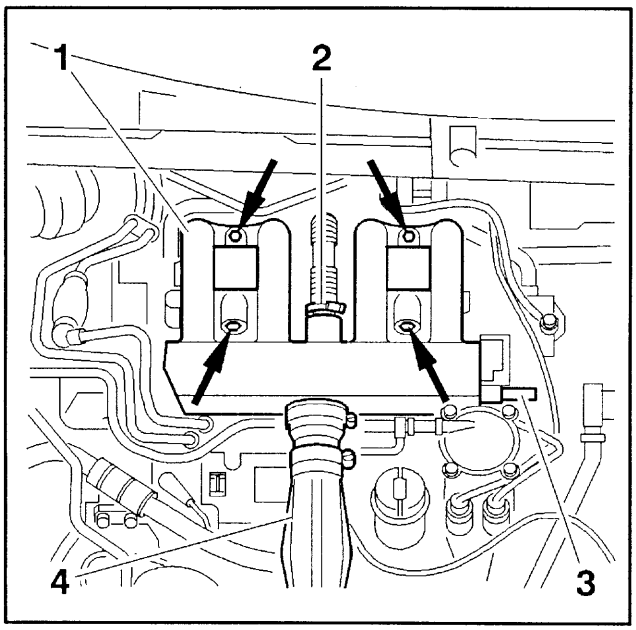


Fig : B1HP0BEC

Remove :
- air sleeve (4)
- EGR pipe clip (2)
- inlet manifold (1) (screw ->)

Dislocate : flexible pipe of inlet pressure (3).

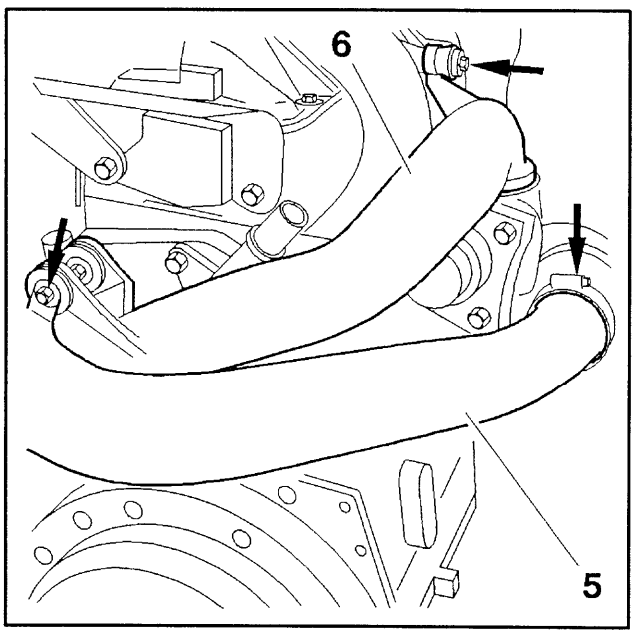


Fig : B1HP0BFC

Remove :
- the turbocharger suction sleeve (5) (screw ->)
- the turbocharger outlet sleeve (6) (screw ->)

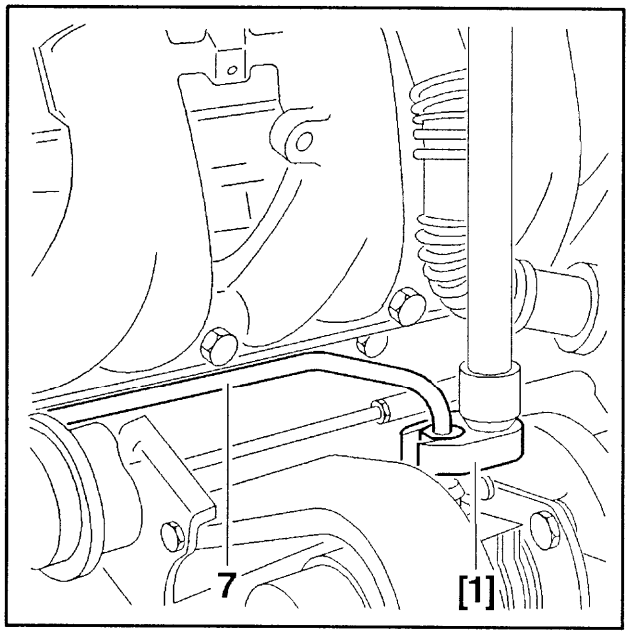


Fig : B1HP0BGC

Uncouple : oil inlet union (7) ; by means of tool [1].

Uncouple :
- the gearbox control rods. Remove the shaft from the central pivot
- the exhaust ball-joint

Remove :
- the catalytic converter
- the shaft (connecting the lever to the gear box)

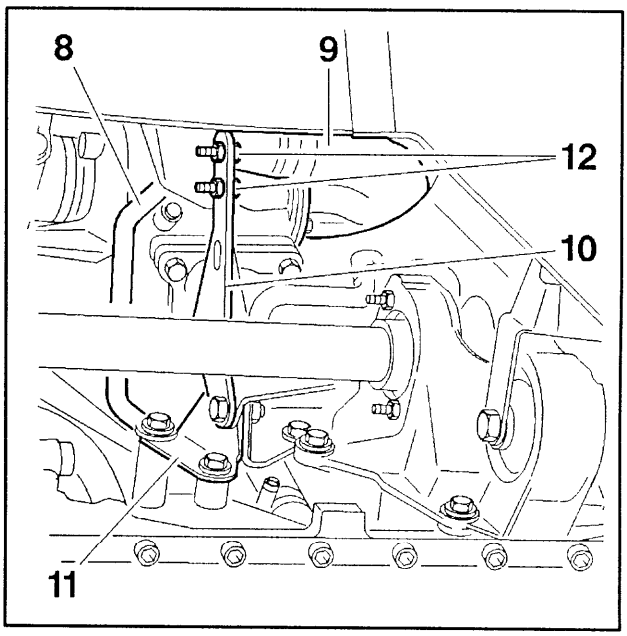


Fig : B1HP0BHC

Remove :
- the 5 support screws (10)
- the 3 support screws (11)
- the turbocharger outlet pipe bend (9)

Remove the clamp for oil return pipe (8).

Remove the heat shield (protection of steering).

www.WorkshopManuals.co.uk

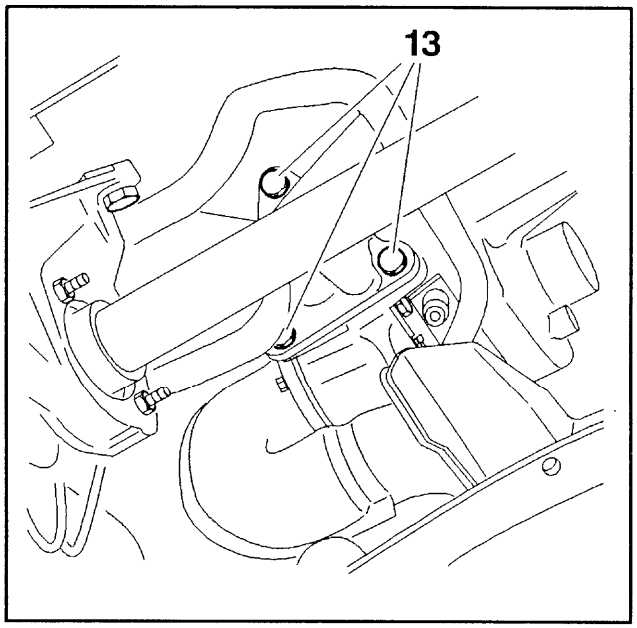


Fig : B1HP0BJC

Remove :
- the 3 screws (13) ; by means of tool [2]
- the turbocharger

4 – REFITTING

Put the turbocharger into place.

Reinstall the 3 fixing screws (13) ; by means of tool [2] : tightening torque = 5.5 m.daN.

Fit :
- turbocharger outlet pipe bend (9) (use a new seal) : tightening torque = 2.2 m.daN
- brackets (11) : tightening torque = 2.5 m.daN
- bracket (10) : tightening torque = 2.5 m.daN

NOTE : Tighten the 2 screws (12) of the support (10) last.

Fit :
- the heat shield (protection of steering)
- the shaft (connecting the lever to the gearbox) : tightening torque = 1 m.daN (under the gearbox)
- the catalytic converter. Tighten the clip to 2.5 m.daN (NEW clip). Tighten the ball joint to 1 m.daN

Fit pivot into the shaft : grease with TOTAL MULTIS G6.

Couple up the gear selection rods.

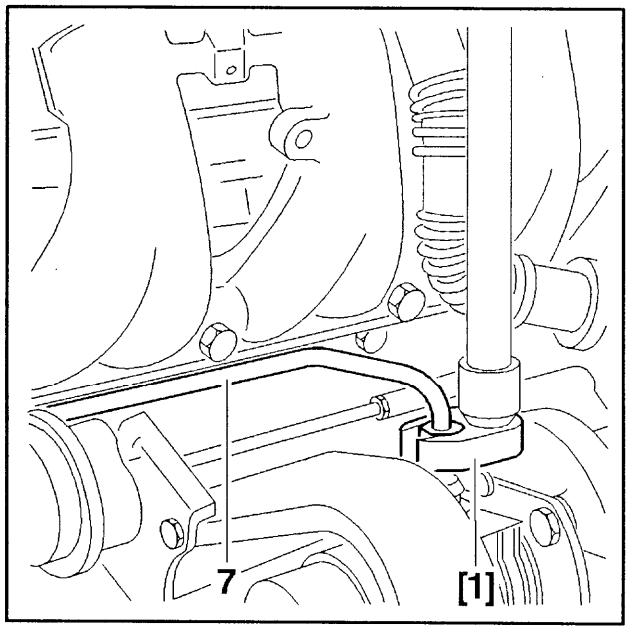


Fig : B1HP0BGC

Recouple : oil inlet union (7) ; by means of tool [1] : tightening torque = 2 m.daN.

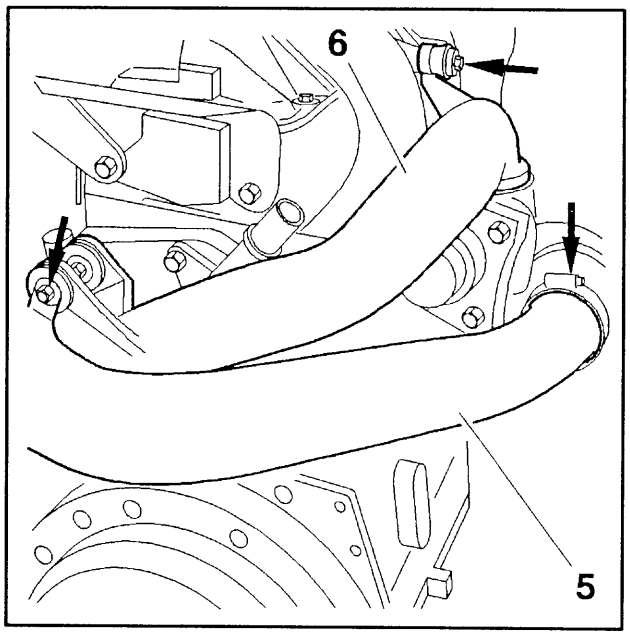


Fig : B1HP0BFC

Fit :
- the turbocharger outlet sleeve (6) (screw –>). Position the sleeve correctly in order to start screwing in the screw
- the turbocharger suction sleeve (5) (screw –>)

www.WorkshopManuals.co.uk

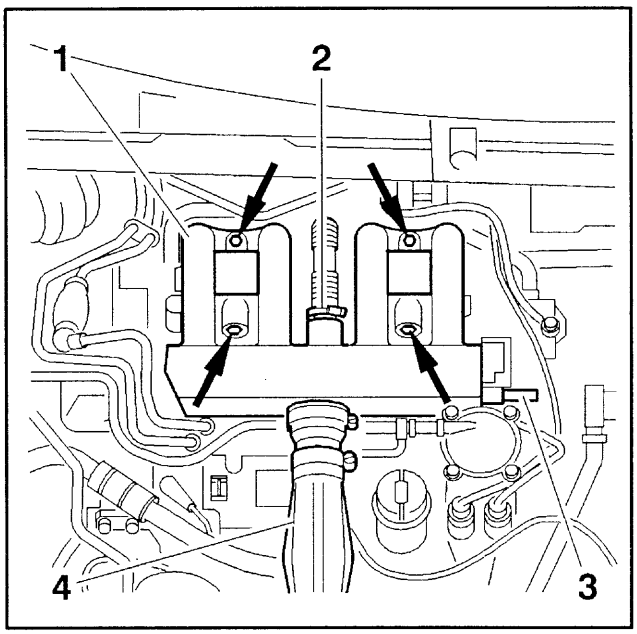


Fig : B1HP0BEC

Fit :
- inlet manifold (1) (screw –>)
- EGR pipe clip (2)
- air sleeve (4)

Locate : flexible pipe of inlet pressure (3).

Fit :
- the mud shield
- the RH front road wheel
- the sound insulator under the engine

Connect the battery negative terminal.

Return the vehicle to its wheels.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : EGR VALVE

EGR : exhaust gas recycling device.

1 – RECOMMENDED TOOLS

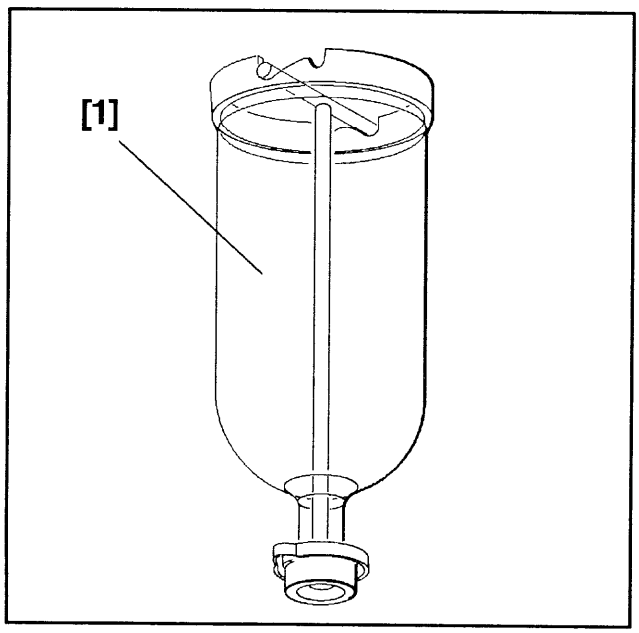


Fig : B1GP00AC

[1] filling cylinder 4520–T : to bleed the cooling system.

2 – REMOVAL

Drain the cooling system (see the relevant operation).

Remove : the turbocharger (see the relevant operation).

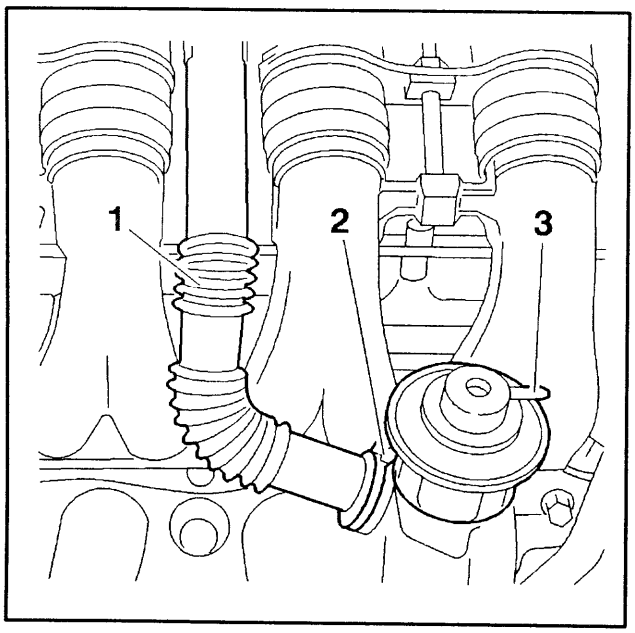


Fig : B1KP001C

Uncouple : the vacuum pipe (3).

Remove :
- EGR clip pipe (2)
- the pipe (1)

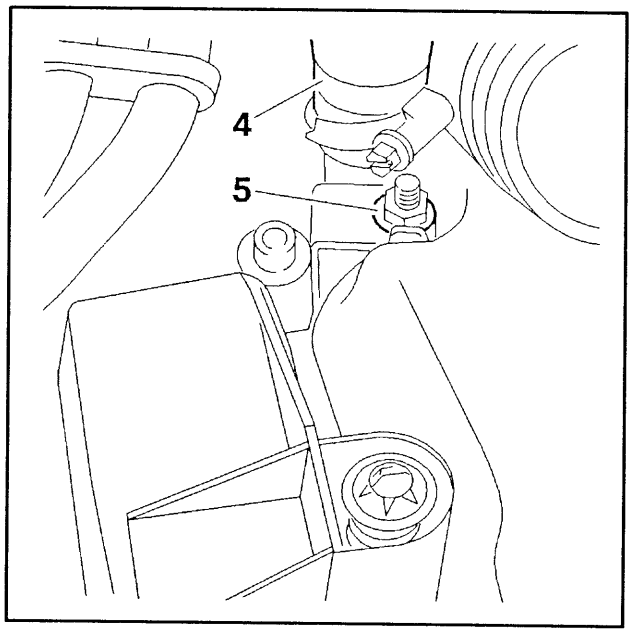


Fig : C5HP05FC

Uncouple : heater connection pipe (4).

Remove nut (5) – move lug away from the bleed screw.

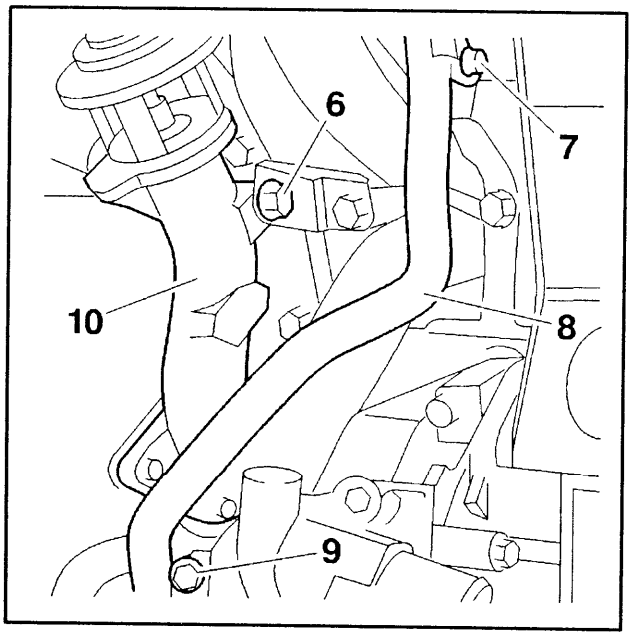


Fig : B1KP002C

Remove :
- screws (7) and (9)
- bolt (6)

www.WorkshopManuals.co.uk

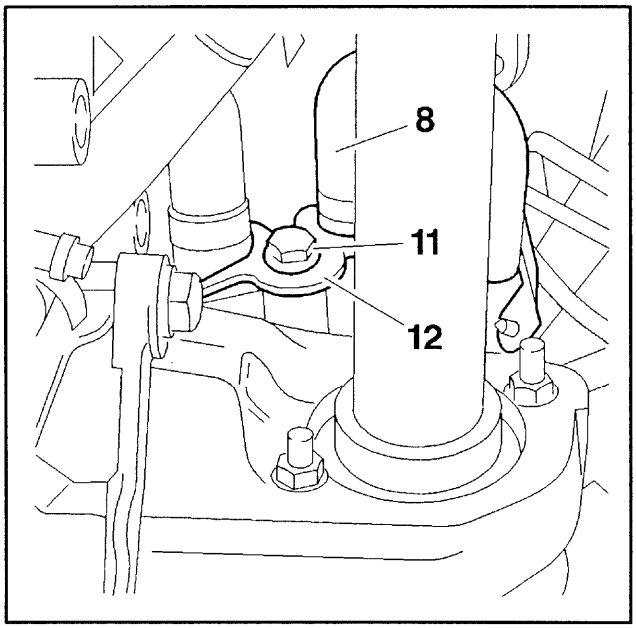


Fig : B1KP003C

Remove :
- bolt (11)
- flange (12)
- the pipe (8)

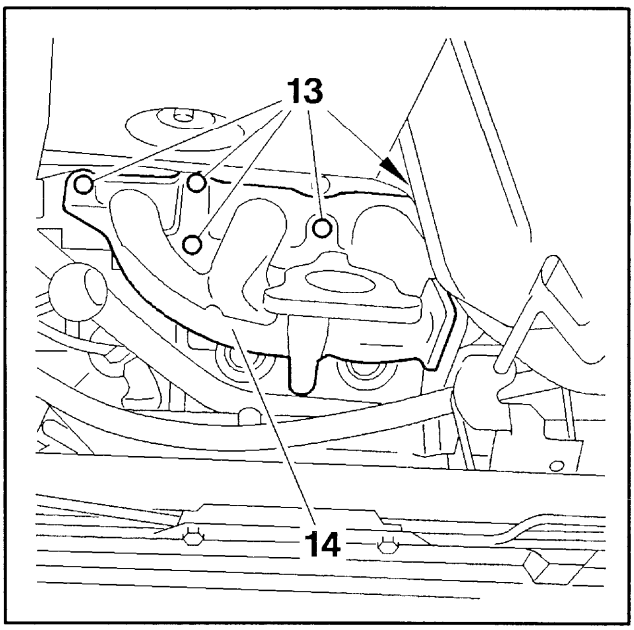


Fig : B1JP00UC

Remove :
- nuts (13)
- the exhaust manifold (14)

Remove EGR valve (10) from exhaust manifold (14).

3 – REFITTING

Clean contact surface of the seals of :
- EGR valve
- turbocharger
- exhaust manifold

Secure EGR valve (10) to exhaust manifold (14) : tightening torque = 1 m.daN.

Fit the exhaust manifold (14) with new gaskets.

Tighten the nuts (13) : tightening torque = 2 m.daN.

Couple up pipe (8) with the water housing. Fit a new O-ring seal.

Fit :
- flange (12)
- bolt (11) (without tightening)

Fit :
- EGR valve pipe (10) retaining screw (6) : tightening torque = 2 m.daN
- pipe (8) retaining screws (7) and (9)

Tighten screw (11) : tightening torque = 1 m.daN.

Recouple : heater connection pipe (4).

Position lug ; refit nut (5).

Reconnect vacuum pipe (3).

Position onto valve (10) :
- the pipe
- EGR pipe clip (without tightening)

NOTE : Before tightening the clip (2) on the valve side, refit the intake manifold, positioning the EGR pipe with its clip tightened, to the manifold. Tighten the clip (2) onto the valve (10) ; remove again the inlet manifold.

Fit : the turbocharger (see the relevant operation).

Fill the cooling system (see the relevant operation).

www.WorkshopManuals.co.uk

23rd DECEMBER 1994

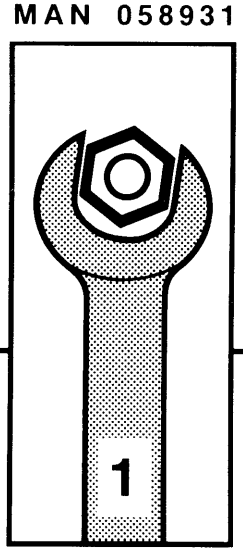
REF. 1 N° XM 180-00/4

ABONNEMENT GME

DK5 ENGINE

● EXHAUST

MAN 058931



AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

EXHAUST SYSTEM

DATA – IDENTIFICATION : EXHAUST 3

REMOVING – REFITTING : EXHAUST GAS RECYCLING VALVE 4

www.WorkshopManuals.co.uk

DATA – IDENTIFICATION : EXHAUST

1 – TIGHTENING TORQUES

Clamping collars (6) : tightening torque = 2.5 m.daN.

2 – IDENTIFICATION

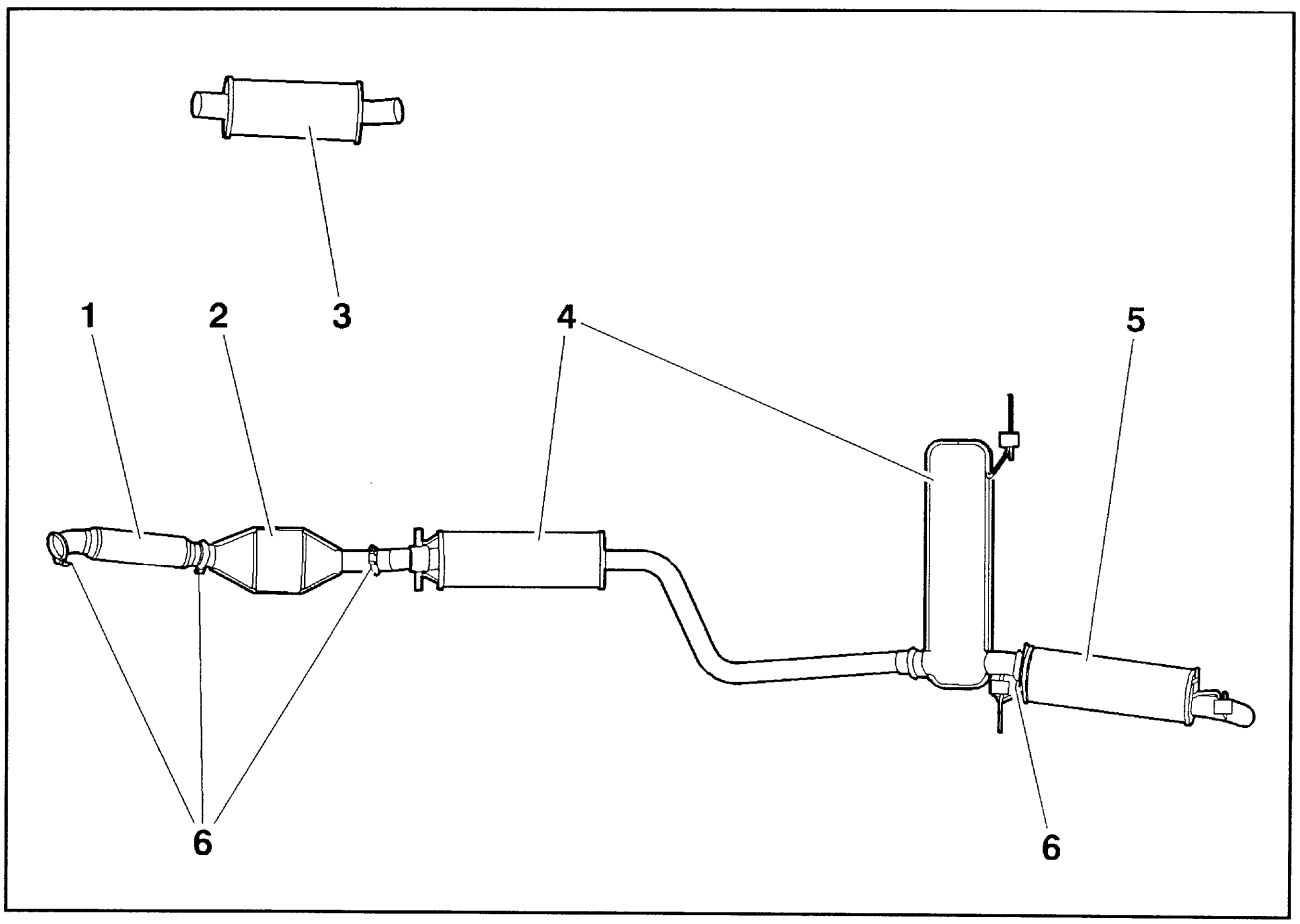


Fig : B1JP00RD

2.1 – Engine : THY (DK5ATE) without catalytic converter

(1) front pipe.
(3) front silencer PSA 3344.
(4) intermediate exhaust muffler PSA 4096 – PSA 3345.
(5) rear silencer PSA 4097.
(6) clamping collars.

2.2 – Engine : THY (DK5ATE) with catalytic converter

(1) front pipe.
(2) catalytic converter PSA K055.
(4) intermediate exhaust muffler PSA 4096 – PSA 3345.
(5) rear silencer PSA 4097.
(6) clamping collars.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : EXHAUST GAS RECYCLING VALVE

1 – RECOMMENDED TOOLS

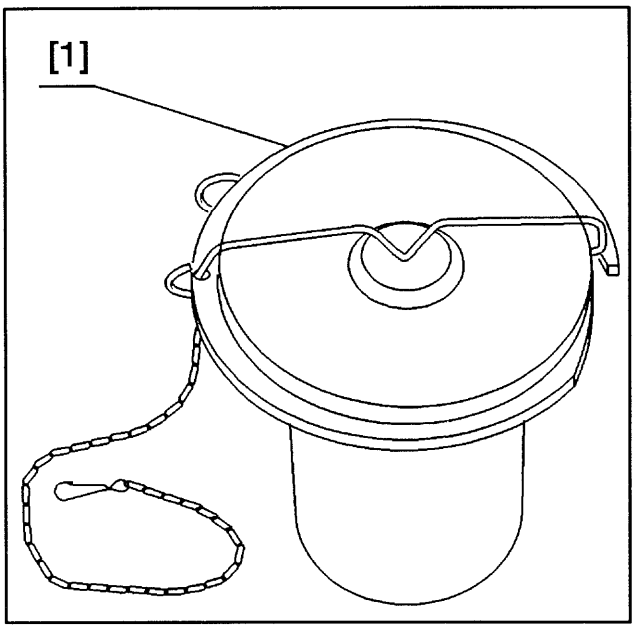


Fig : B4BP00CC

[1] LHM reservoir/filter assembly cover 9004–T.

2 – REMOVAL

Unclip the battery trim cover : 2 attachment points, front side end, 1 attachment point marked by an arrow towards the air filter (using a screwdriver).

Disconnect the battery negative terminal.

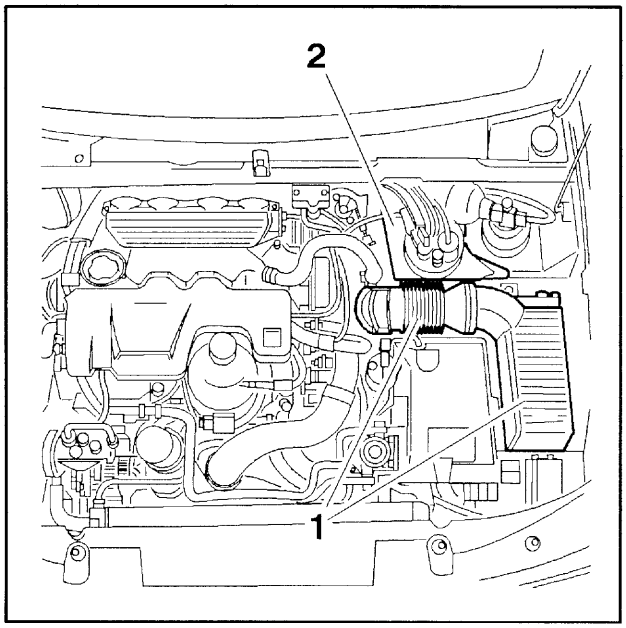


Fig : B1JP00KC

Remove :

- air filter (1) (provided with the sleeve and breather connection hose)
- the LHM fluid reservoir (2)

Locate the LHM reservoir/filter assembly cover [1].

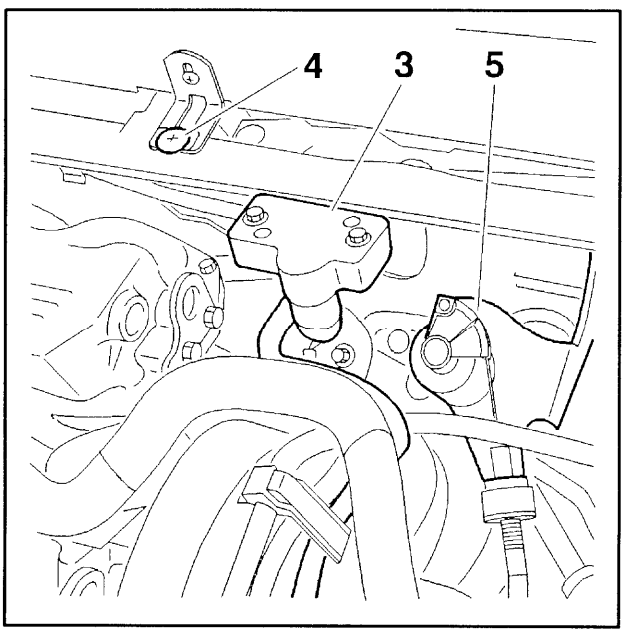


Fig : B1JP00LC

www.WorkshopManuals.co.uk

Remove :
- air pressure sensor (3)
- screw (4)
- accelerator pedal potentiometer (5)

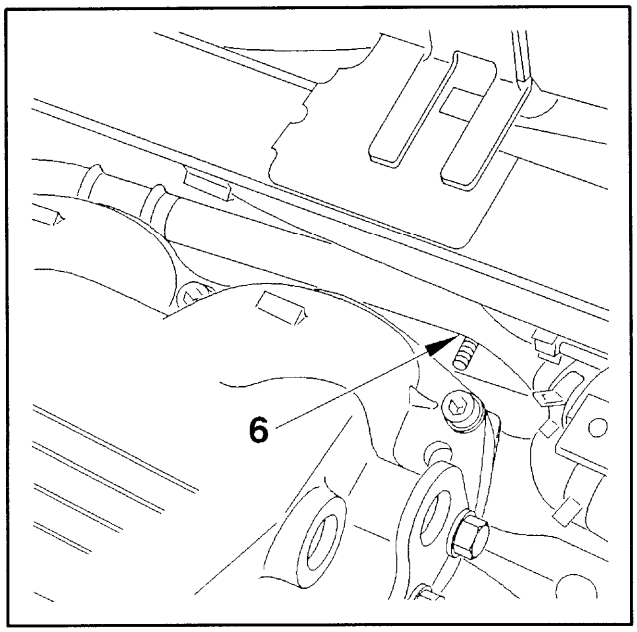


Fig : B1JP00MC

Take out nut (6).

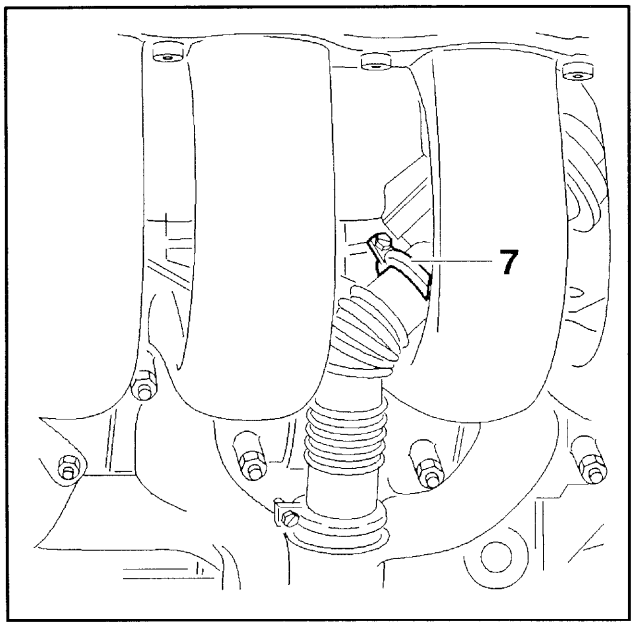


Fig : B1JP00NC

Fully slacken clamping collar (7).

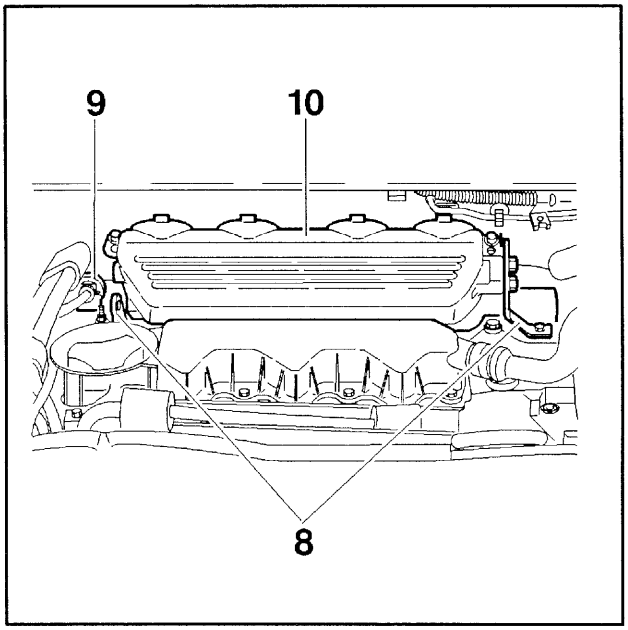


Fig : B1JP00PC

Remove :
- supports (8)
- electrovalve (9)
- air reservoir (10), together with exhaust gas recycling valve (12)

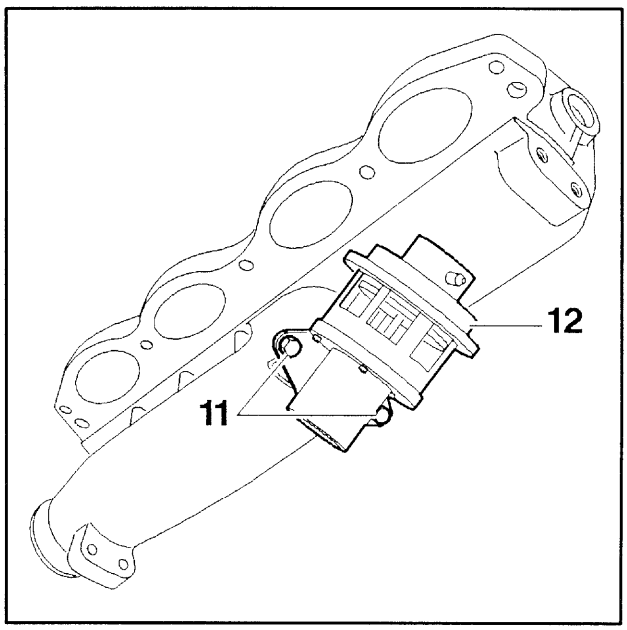


Fig : B1JP00QC

Remove :
- screws (11)
- valve (12)

www.WorkshopManuals.co.uk

3 – REFITTING

Refit valve (12) ; tighten the bolts (11) to 0.9 m.daN.

Put clamping collar (7) in position around the metal sleeve (start screwing in the clamping collar screw by 1 to 2 turns).

Refit air reservoir (10) with valve (12) to the inlet manifold.

ATTENTION : Make sure that valve (12) is correctly engaged in the metal sleeve.

Tighten :
- the collar (7)
- air reservoir screws (10) ; tighten to 0.8 m.daN

Position :
- supports (8)
- electrovalve (9)
- nut (6)
- accelerator pedal potentiometer (5)
- screw (4)
- air pressure sensor (3)
- the LHM fluid reservoir
- the air cleaner

Reconnect the battery.

Clip in place the battery trim cover.

www.WorkshopManuals.co.uk

Xm

OCTOBER 1997

SUBSCRIPTION

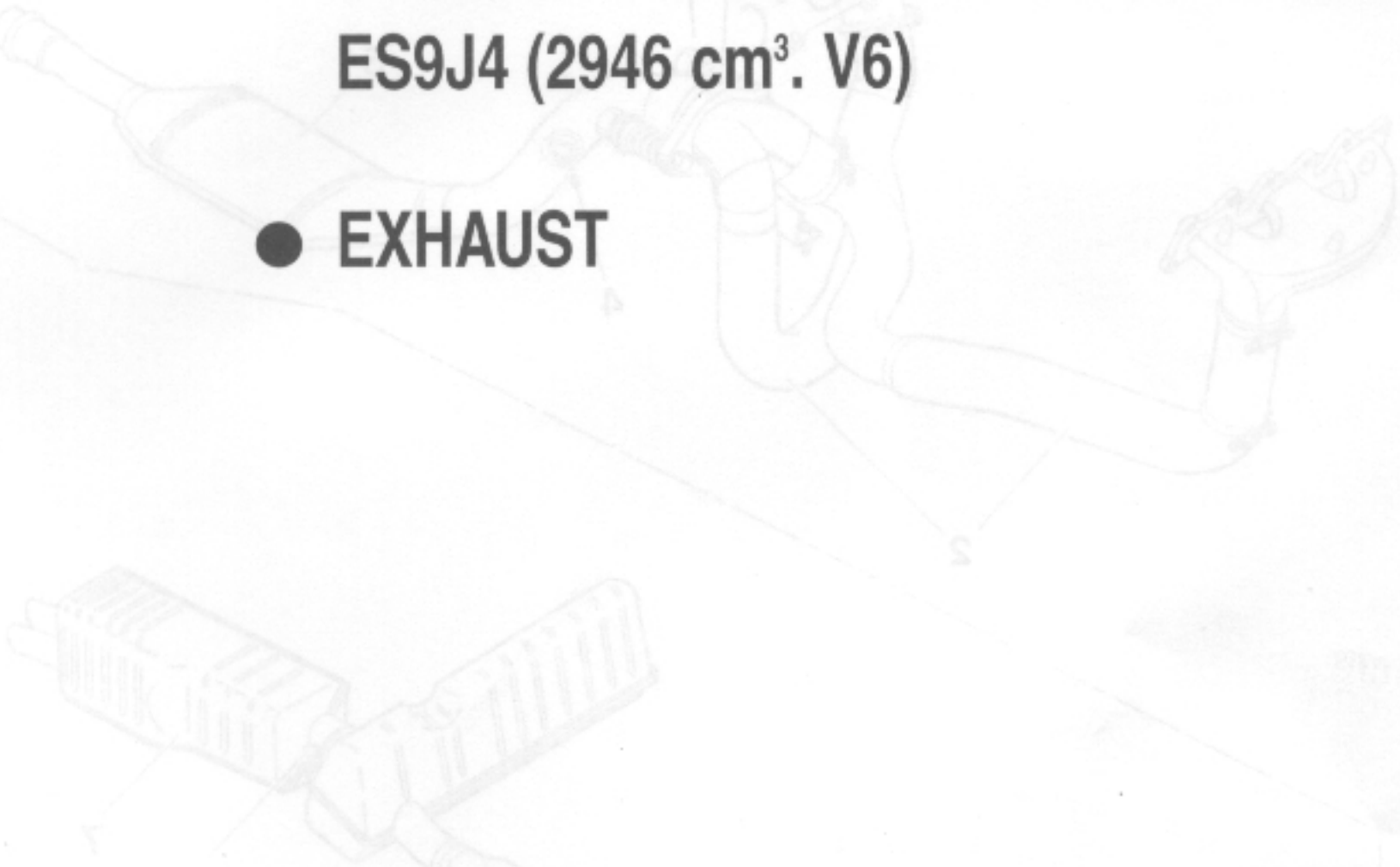
RPO No: 7511

REF. 1 No XM 180-00/5

PETROL ENGINE

ES9J4 (2946 cm³. V6)

- EXHAUST



MAN 108931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

1

GB

www.WorkshopManuals.co.uk

DATA : EXHAUST

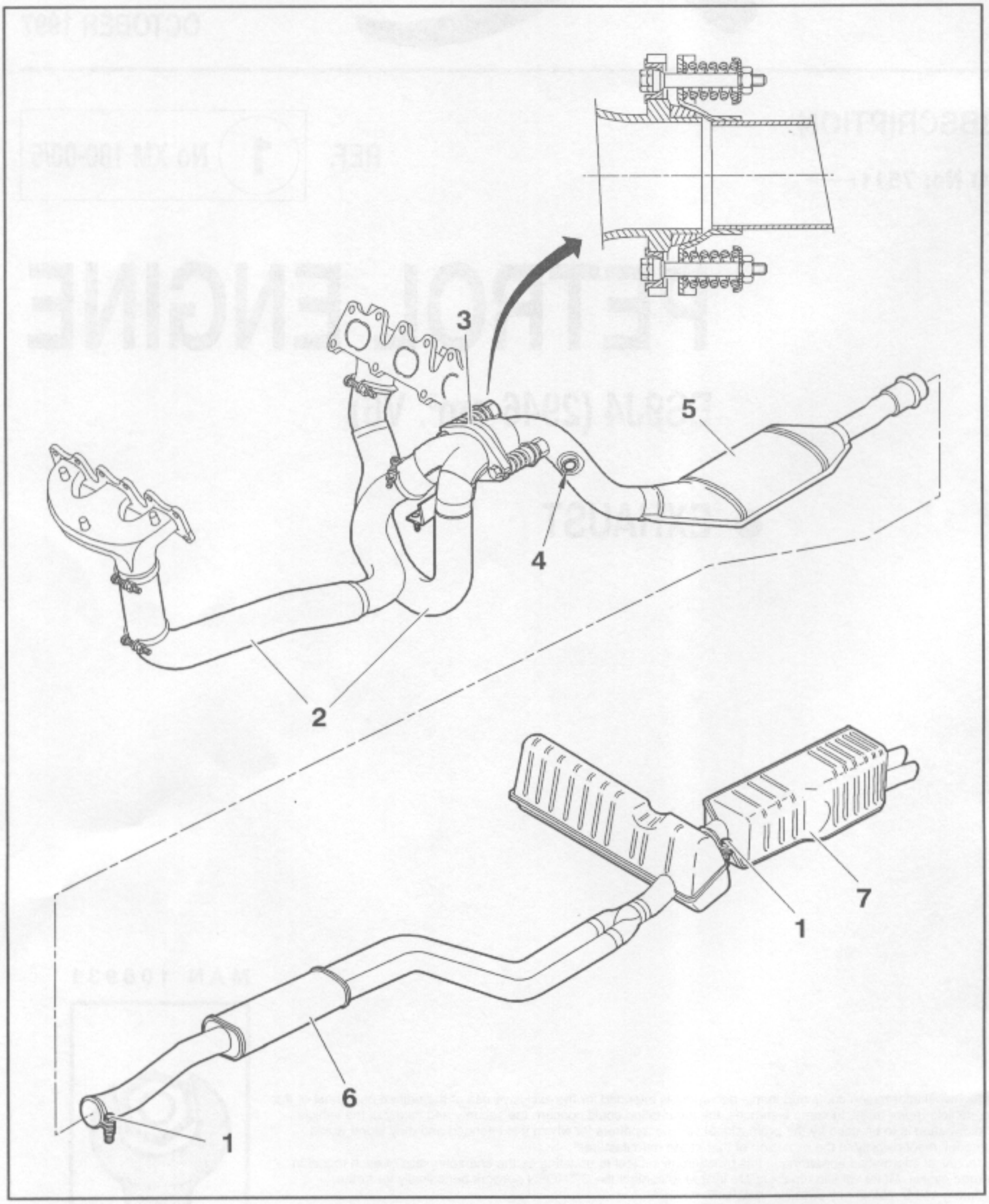


Fig : B1JP01RP

www.WorkshopManuals.co.uk

(1)	Clamping collars	Tightening : 2,5 m.daN
(2)	Front pipe	Dual pipe
(3)	Ball–joint	Diameter = 73,6 mm ; tightening : 1 m.daN ; spherical section (G2 grease)
(4)	Oxygen sensor	Tightening : 5,5 m.daN
(5)	Catalytic converter	PSA reference : K114
(6)	Intermediate pipe	PSA reference : 4122
(7)	Rear silencers	Twin tail pipes. PSA reference : 4123

www.WorkshopManuals.co.uk

28th FEBRUARY 1995

ABONNEMENT GME

REF. 1 No XM 220-00/4

CANCELS AND REPLACES

DK5 ENGINE

● LUBRICATION SYSTEM

MAN 058931

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

GB

1

www.WorkshopManuals.co.uk

LUBRICATION

DATA – IDENTIFICATION : LUBRICATION SYSTEM 3
CHECKS : OIL PRESSURE 7
REMOVING – REFITTING THE OIL PUMP 8

www.WorkshopManuals.co.uk

DATA – IDENTIFICATION : LUBRICATION SYSTEM

1 – OIL CAPACITY

No oil filter change : 7.5 litres.

Oil filter change : 8 litres.

Capacity of the gauge between the min. and max. marks : 3 litres.

2 – OIL FILTER CARTRIDGE

Filter cartridge :

- first fitting : PURFLUX LS 483
- second fitting : PURFLUX LS 520 C

3 – OIL TEMPERATURE AND LEVEL SENSOR

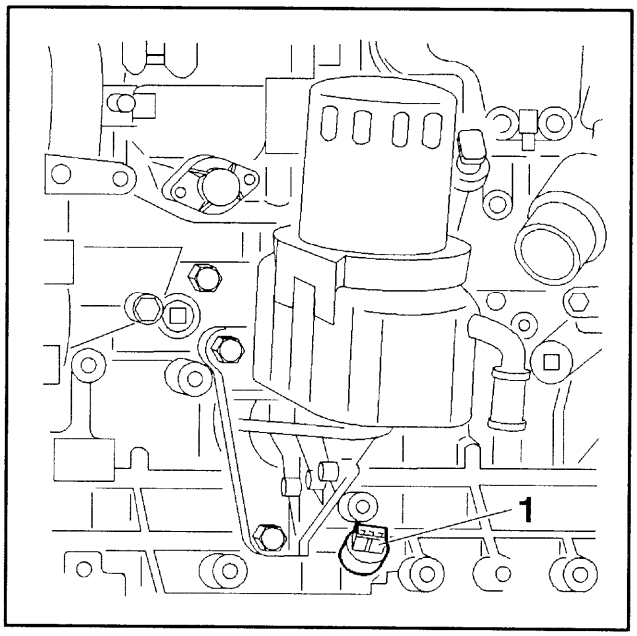


Fig : B1FP018C

(1) : oil temperature and level sensor.

Code : green connector.

4 – OIL PRESSURE SWITCH

Setting in bars : 0.5 bar.

Code : grey connector.

5 – OIL PRESSURE

The values given are in bars for an engine which is run–in, at an oil temperature of 90° C.

Engine speed	2000 rpm	4000 rpm
Oil pressure	3 bars	3.5 bars

www.WorkshopManuals.co.uk

6 – LUBRICATION SYSTEM

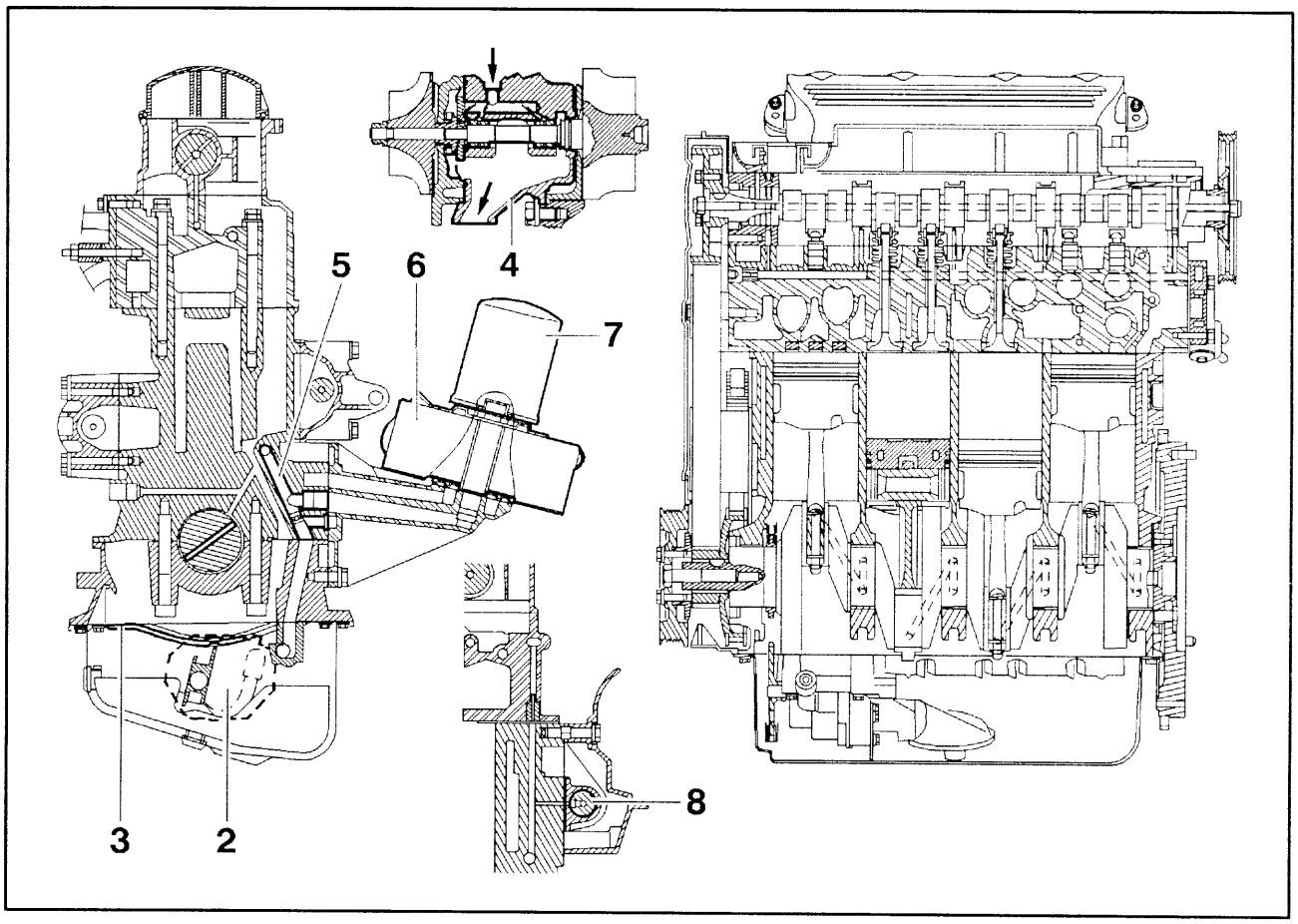


Fig : B1FP019D

(2) oil pump.
(3) anti–oil splashing steel plate.
(4) turbocharger.
(5) main oil feed line.
(6) water–to–oil heat exchanger.
(7) oil filter.
(8) balance shaft.

Lubrication under pressure supplied by a gear type oil pump.
The oil pump is driven by a chain.
The oil sump is made of steel.

www.WorkshopManuals.co.uk

6.1 – Underside of piston cooling

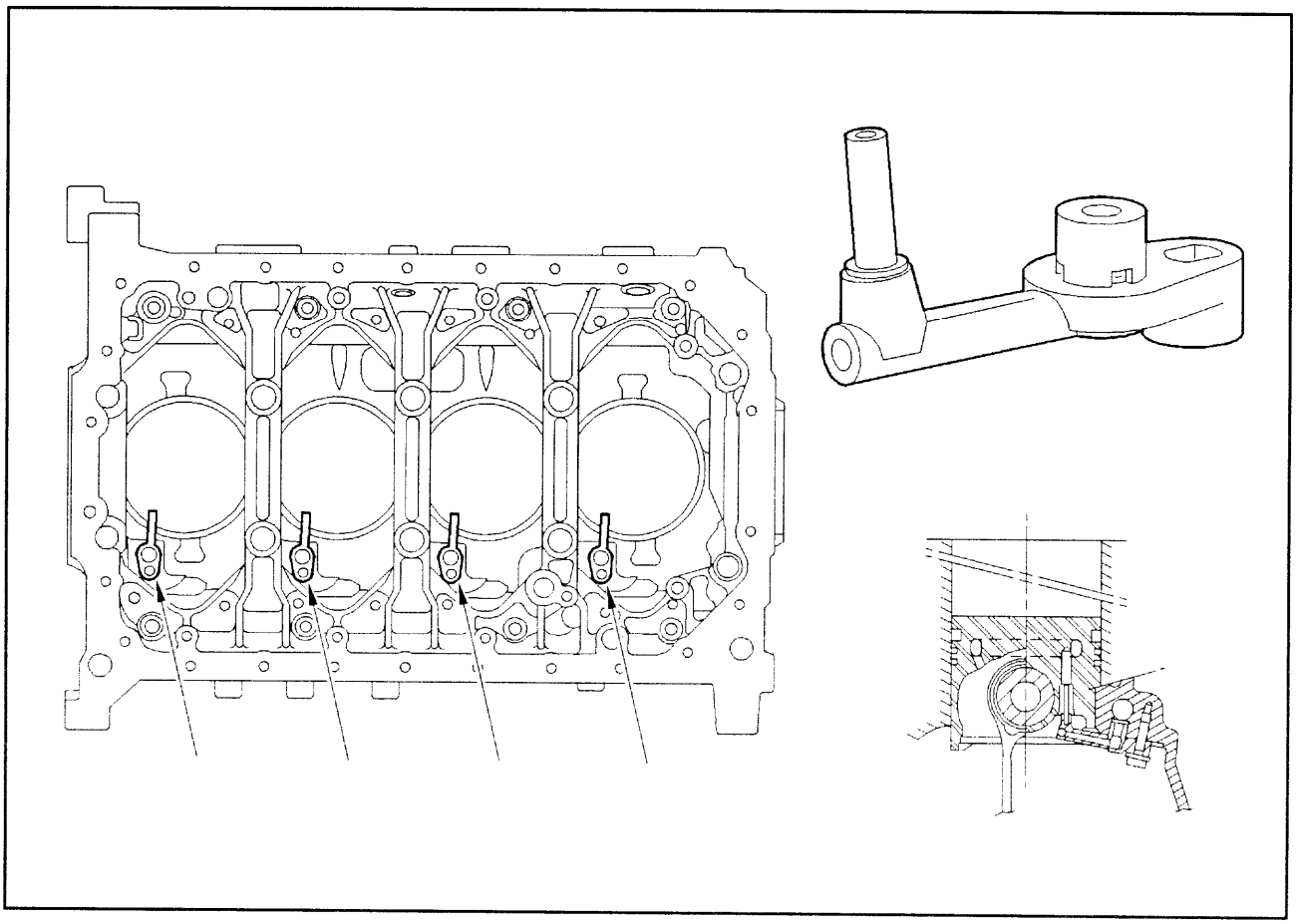


Fig : B1FP01AD

The undersides of pistons are cooled by 4 oil jets attached to the main oil gallery.

The DK5 engine pistons are equipped underhead with a circular passage which facilitates their cooling.

www.WorkshopManuals.co.uk

6.2 – Hydraulic tappets with automatic adjustment

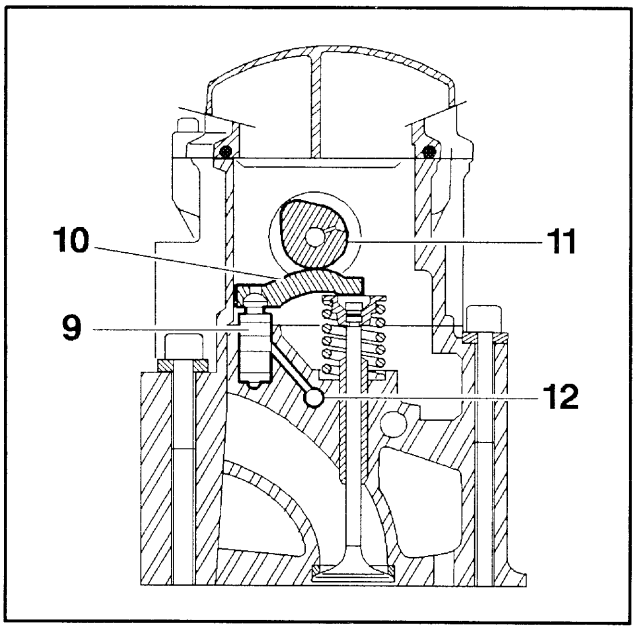


Fig : B1FP01BC

(9) hydraulic tappet.

(10) cam follower.

(11) camshaft.

(12) valve tappets oil feed gallery.

7 – ENGINE DRAINING

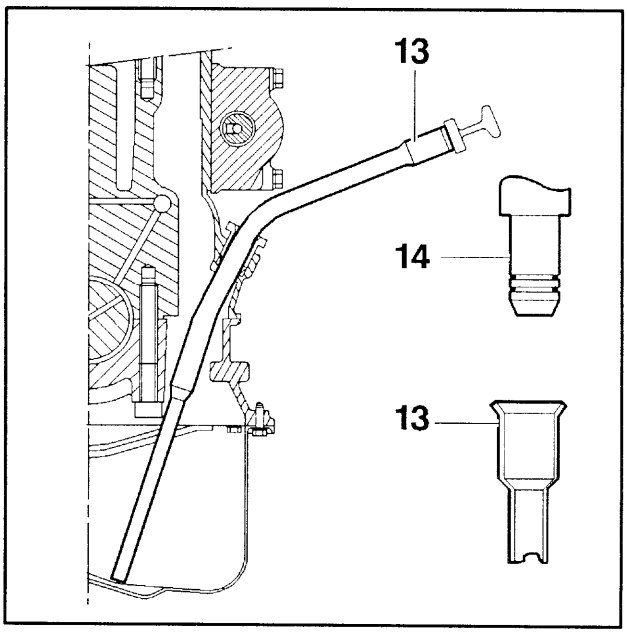


Fig : B1FP01CC

(13) dipstick guide tube extremity.

(14) 16 mm dia. funnel.

IMPERATIVE : The draining operation should be carried out when the gearbox is hot, immediately after the engine has been switched off.

It is possible to drain the engines via a suction device.

The end of the dipstick guide tube has been widened out, which enables a funnel to be connected to a suction draining equipment.

NOTE : Engines can still be drained by taking out the oil sump drain plug.

www.WorkshopManuals.co.uk

CHECKS : OIL PRESSURE

1 – RECOMMENDED TOOLS

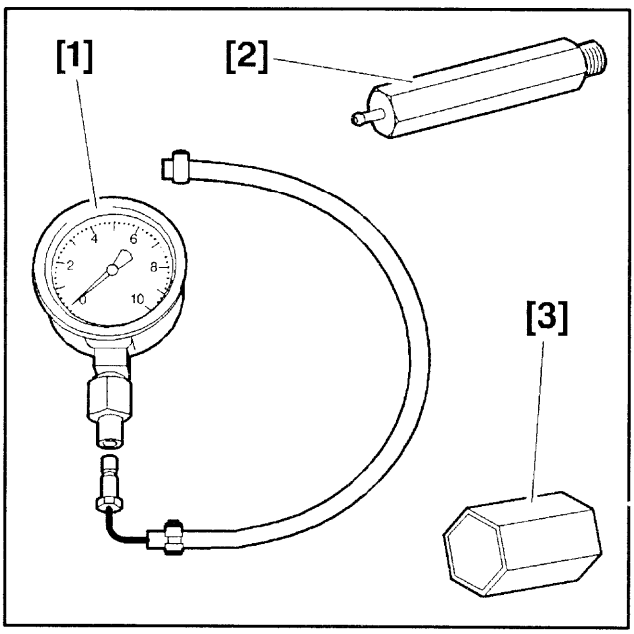


Fig : E5-P047C

[1] pressure gauge for checking the oil pressure (2279–T bis) (tool box 4103–T).

[2] engine oil pressure inlet union 4156–T.

[3] 22 mm socket 5709T.B2 (tool box 5709–T).

2 – PRESSURE CHECKING

Oil pressure is checked with the engine hot after checking the oil level.

Disconnect the oil pressure switch.

Remove the oil pressure switch, using tool [3].

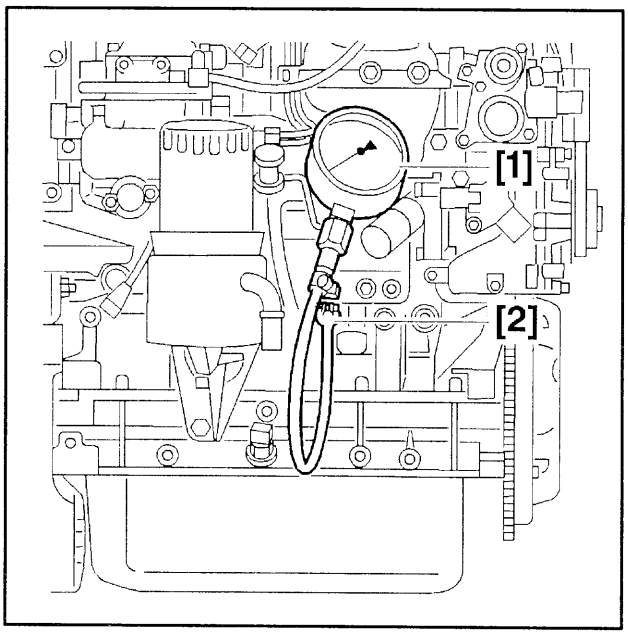


Fig : B1FP00YC

Position :

- union [2]
- the flexible hose

Connect pressure gauge [1].

Connect a tachometer.

Read the pressures.

Remove :

- pressure gauge [1]
- the flexible hose
- union [2]
- the tachometer

Refit the oil pressure switch using a new joint. Utilise tool [3]. Tighten to 2.25 m.daN.

Remove tool [3].

Reconnect the pressure switch.

www.WorkshopManuals.co.uk

REMOVING – REFITTING THE OIL PUMP

Tooling – engine mounting assembly (*) :
- setting rod 5714–TP2
- spacer 5714–TP1

Tooling – auxiliary equipment drive belt (*) :
- setting rod 5714–TQ
- spanner 5714–TR
- tensioning spanner 5714–TS

NOTE : (*) tool box 5711–T.

1 – REMOVAL

Lift and support the vehicle with the front wheels suspended.

Unclip the battery trim cover :
- 2 attachment points, front side end
- 1 attachment point marked by an arrow towards the air filter (using a screwdriver)

Disconnect the battery negative terminal.

Remove :
- the protective plate from under the engine
- the RH front road wheel
- the engine protection plate situated under the R.H. front wheelarch
- the R.H. front mud shield

Drain the engine oil off.

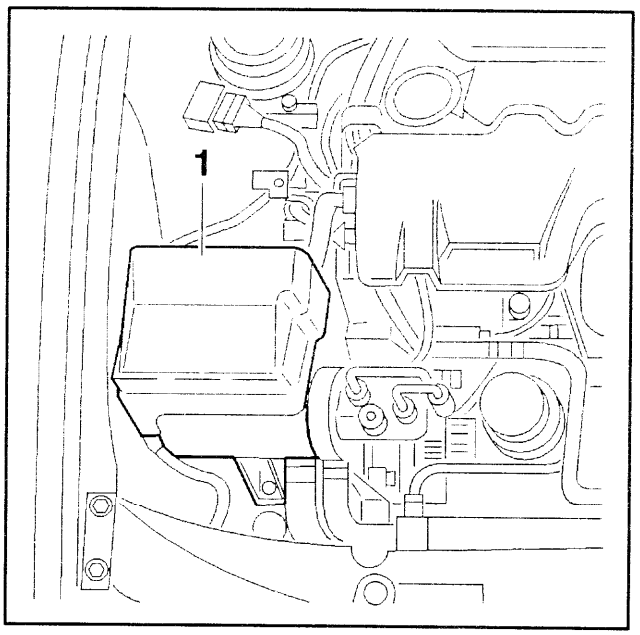


Fig : B1BP04GC

Withdraw the E.C.U.s from E.C.U. tray (1).

Remove :
- E.C.U. tray (1)
- the auxiliary equipment drive belt (see the relevant operation)

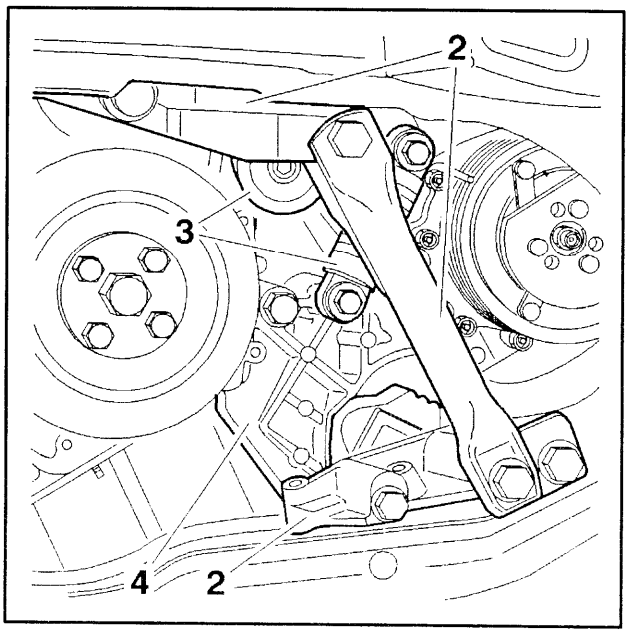


Fig : B1FP014C

Hold the engine in place with the help of a workshop crane.

Remove :
- engine mounting (2) (see the relevant operation)
- automatic roller tensioner (3)
- mounting bracket (4)

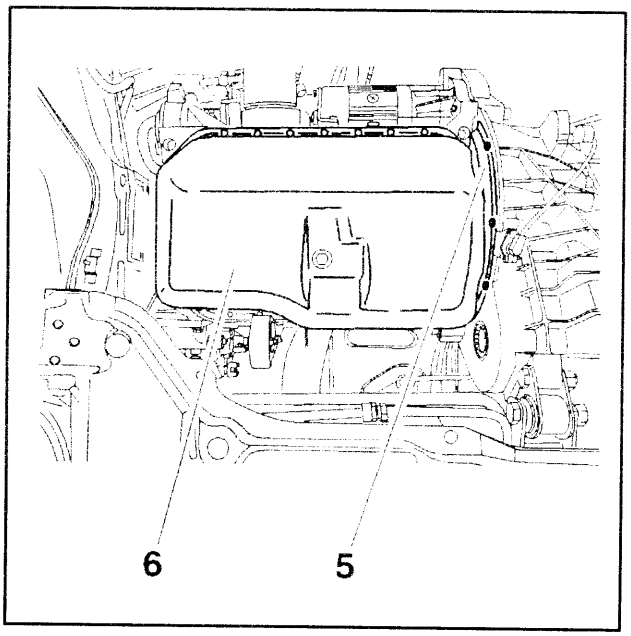


Fig : B1FP015C

Remove the flywheel protection shield (5).

Slightly lift the engine.

Withdraw oil sump (6).

www.WorkshopManuals.co.uk

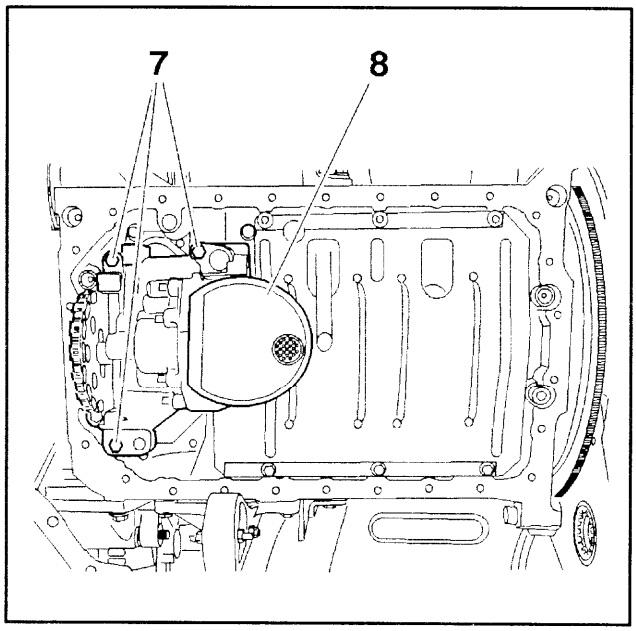


Fig : B1FP016C

Remove :
- screws (7)
- the oil pump (8)

2 – REFITTING

ATTENTION : Check that the dowel is in position.

Relocate the oil pump, engaging the drive pinion in the chain.

Tighten the bolts (7) to 0.9 m.daN.

Clean the joint faces of the sump and the cylinder block.

Do not use abrasives or sharp tools on the joint faces.

Coat the oil sump sealing surface with OR : E10 auto-joint.

Fit :
- oil sump (6) ; tighten to 0.8 m.daN
- flywheel protective plate (5)

Slightly lower the engine.

Refit bracket (4) together with the flexible stop spindle ; tighten to 5.5 m.daN.

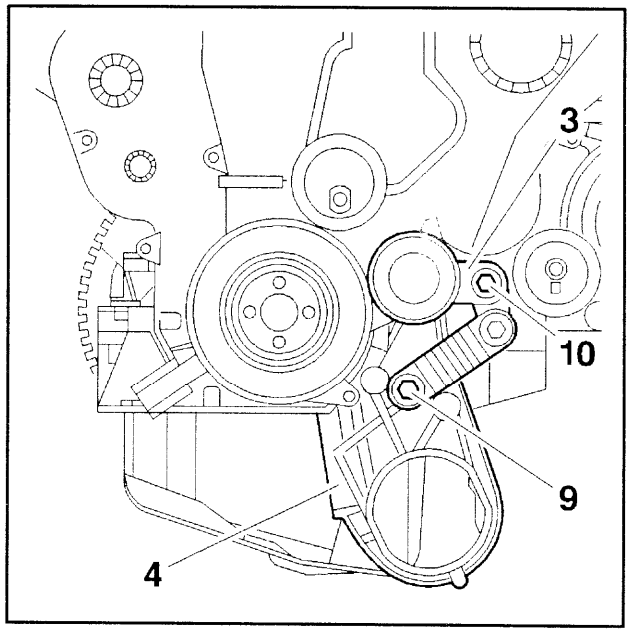


Fig : B1FP017C

Reinstall :
- automatic roller tensioner (3)
- screw (9) ; tighten to 2.3 m.daN
- screw (10) ; tighten to 7 m.daN
- engine mounting (2) (see the relevant operation)

Withdraw the workshop crane.

Fit :
- the auxiliary equipment drive belt (see the relevant operation)
- E.C.U. tray (1)
- the E.C.U.s
- the R.H. front mud shield
- the engine protection plate situated under the R.H. front wheelarch
- the RH front road wheel
- the protective plate under the engine

Return the vehicle to its wheels.

Connect the battery.

Clip in place the battery trim cover.

Refill the engine with oil and top up to level.

NOTE : Disconnect the injection double relay.

Rotate the engine with the starter and stop when the oil pressure warning lamp has gone out.

Reconnect the injection double relay.

www.WorkshopManuals.co.uk

OCTOBER 1997

SUBSCRIPTION

RPO No: 7511

REF. 1 No XM 220-00/5

PETROL ENGINE

ES9J4 (2946 cm³. V6)

● LUBRICATION

MAN 108931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

1

GB

www.WorkshopManuals.co.uk

LUBRICATION

CHECKS : OIL PRESSURE 1

1 – Recommended tools 1
2 – Pressure checking –

REMOVING – REFITTING : OIL PUMP 2

1 – Recommended tools 2
2 – Removing –
3 – Refitting 4

www.WorkshopManuals.co.uk

CHECKS : OIL PRESSURE

1 – RECOMMENDED TOOLS

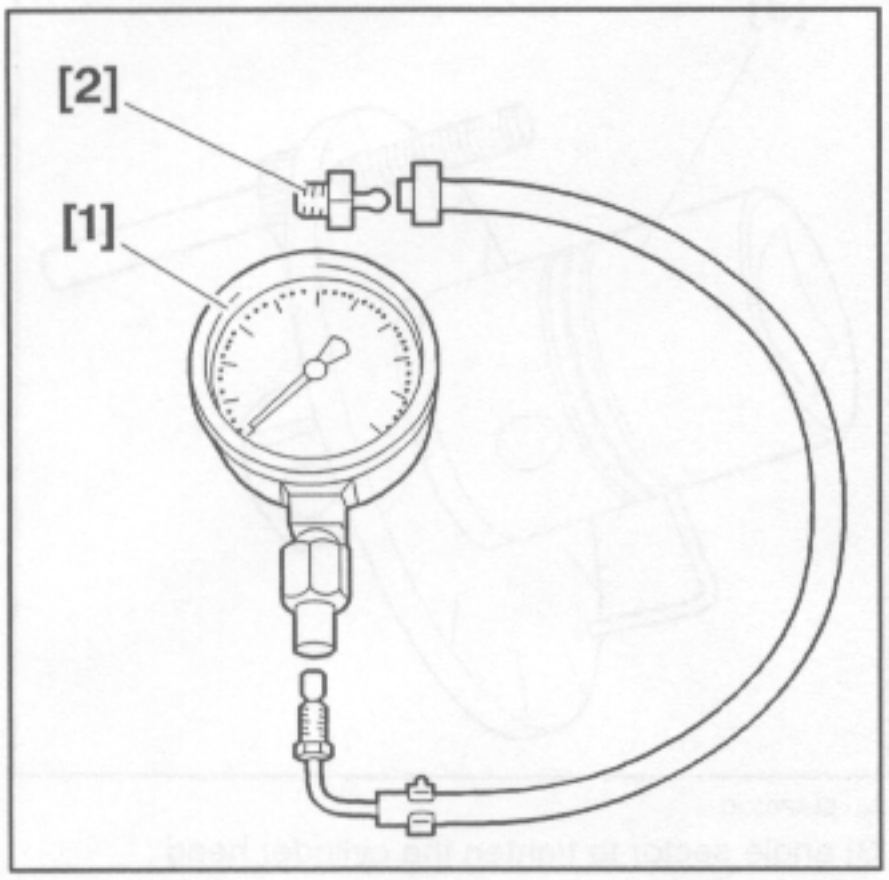


Fig : E5–P09VC

[1] 2279–T bis pressure gauge (4103–T tool kit).

[2] union 7001–T engine oil pressure take–off of the 4103–T box.

2 – PRESSURE CHECKING

Oil pressure is checked with the engine hot after checking the oil level.

Engine oil temperature 90 °C.

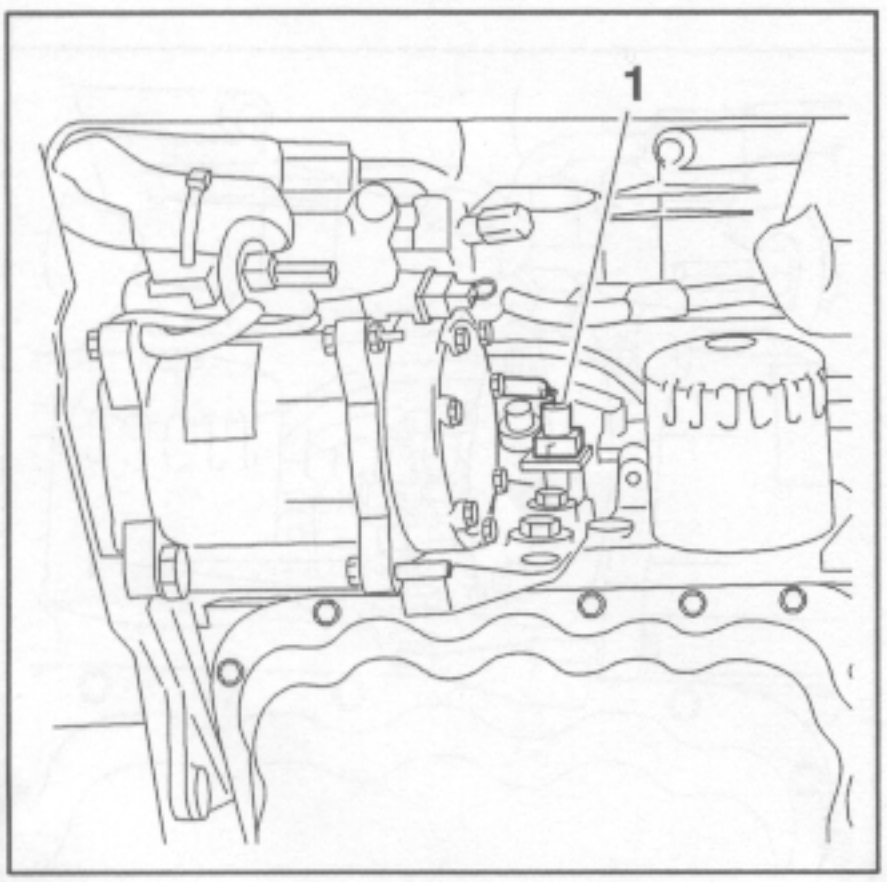


Fig : B1FP01VC

Disconnect the pressure switch (1).

Remove the oil pressure switch.

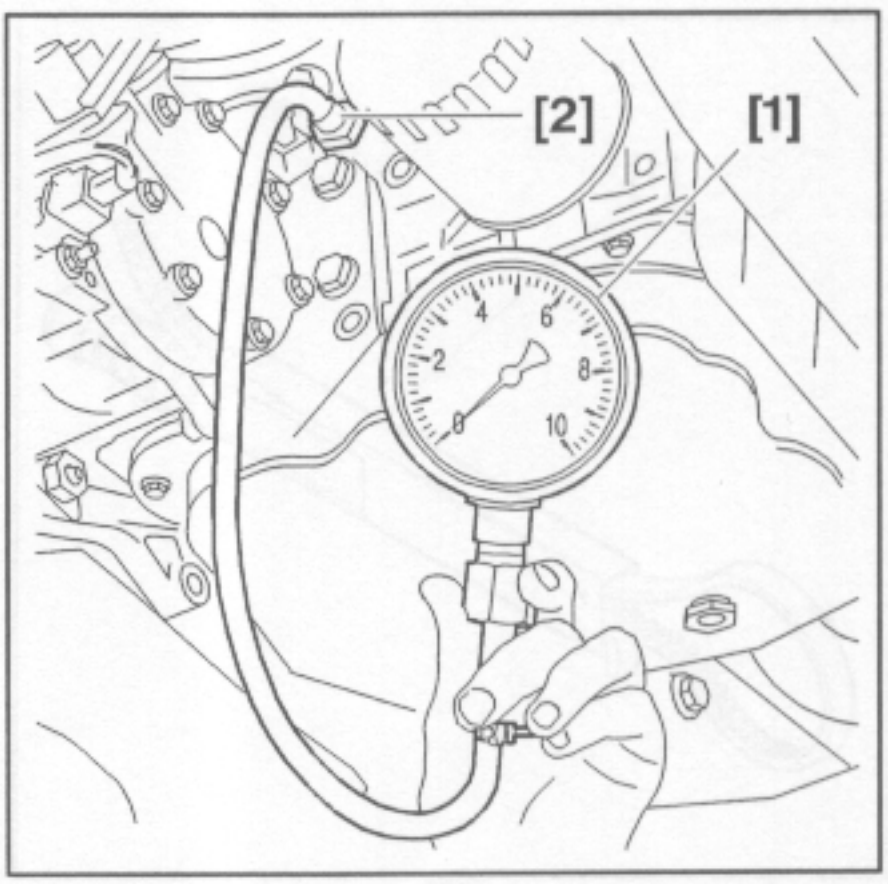


Fig : B1FP01WC

Fit the union [2].

Connect the pressure gauge [1] and its hose to the union [2].

Read the oil pressures.

Engine speed (rpm)	Pressure (bars)
900	2
3000	5

Remove the pressure gauge [1] and union [2].

Refit the oil pressure switch together with a new joint.

Tighten to 3,5 m.daN.

Reconnect the pressure switch.

Top up the engine oil level.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : OIL PUMP

1 – RECOMMENDED TOOLS

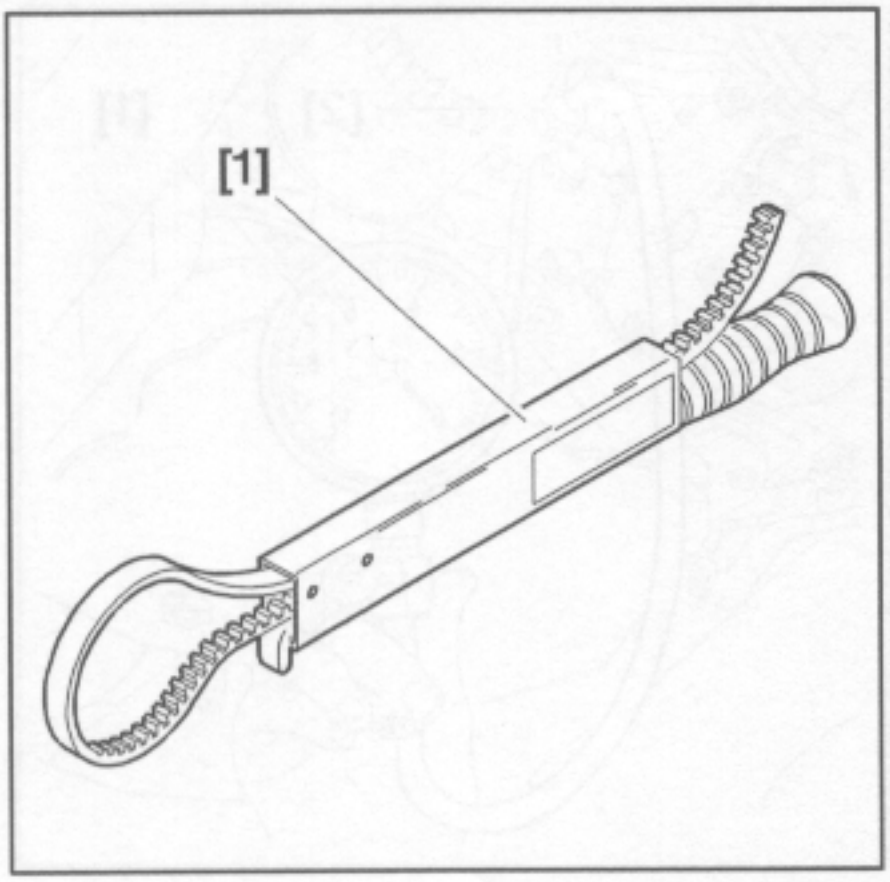


Fig : E5AP124C

[1] strap wrench : 8209–T.

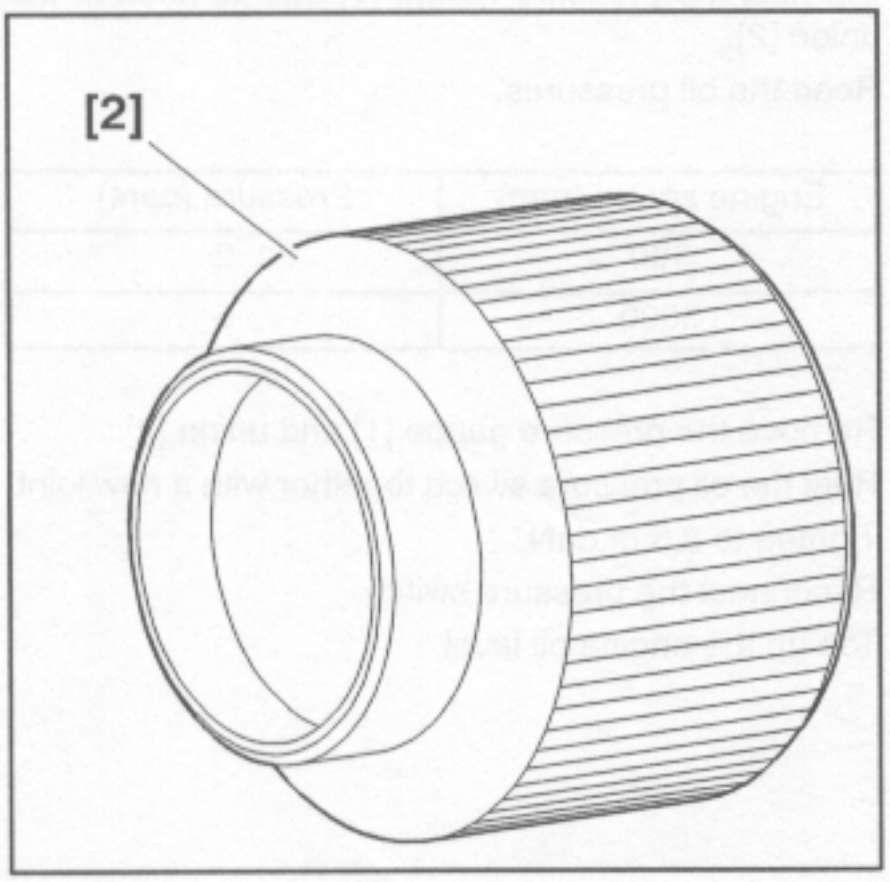


Fig : E5AP03PC

[2] crankshaft oil seal fitting mandrel : (–).0187 G (oil pump side).

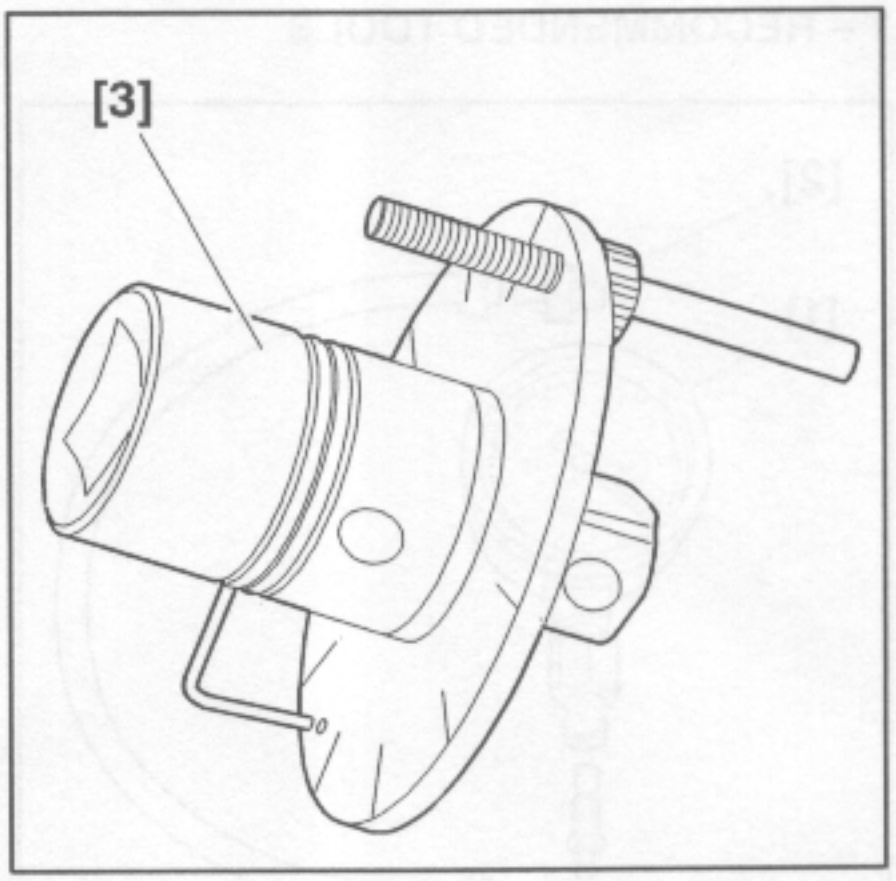


Fig : E5AP03QC

[3] angle sector to tighten the cylinder head : 4069–T.

2 – REMOVING

Remove :

- the auxiliary equipment drive belt (see the relevant operation)
- the timing belt (see the relevant operation)
- the crankshaft setting peg

Refit the right–hand engine mounting.

Lift the vehicle.

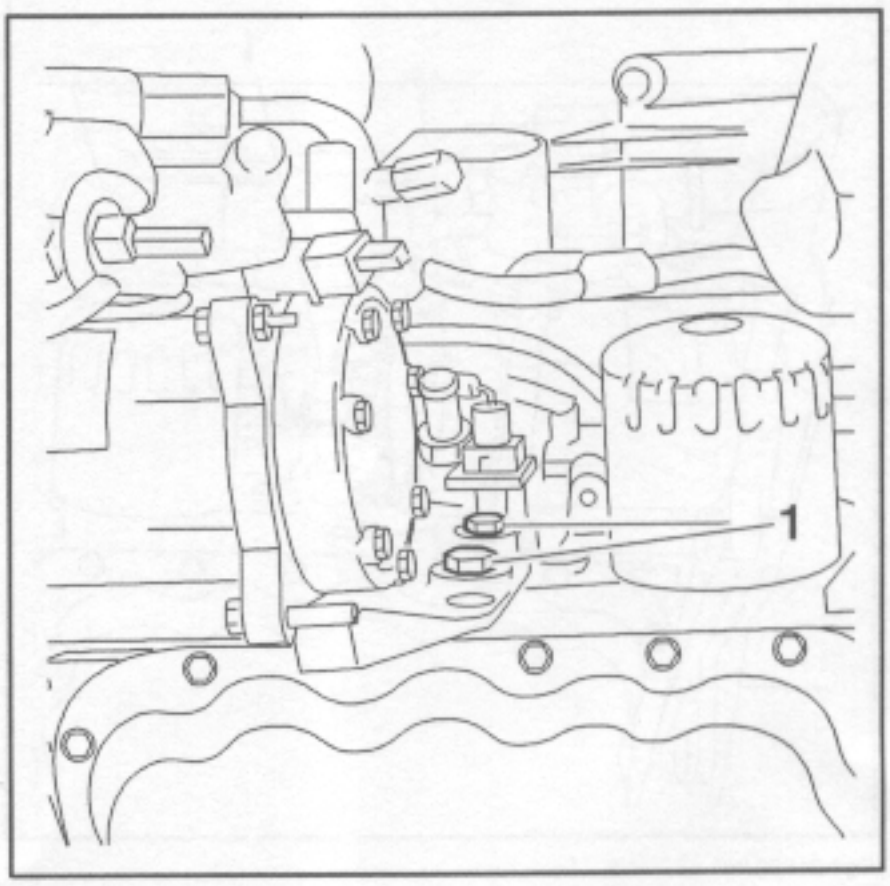


Fig : C5HP08NC

Remove the screws (1).

www.WorkshopManuals.co.uk

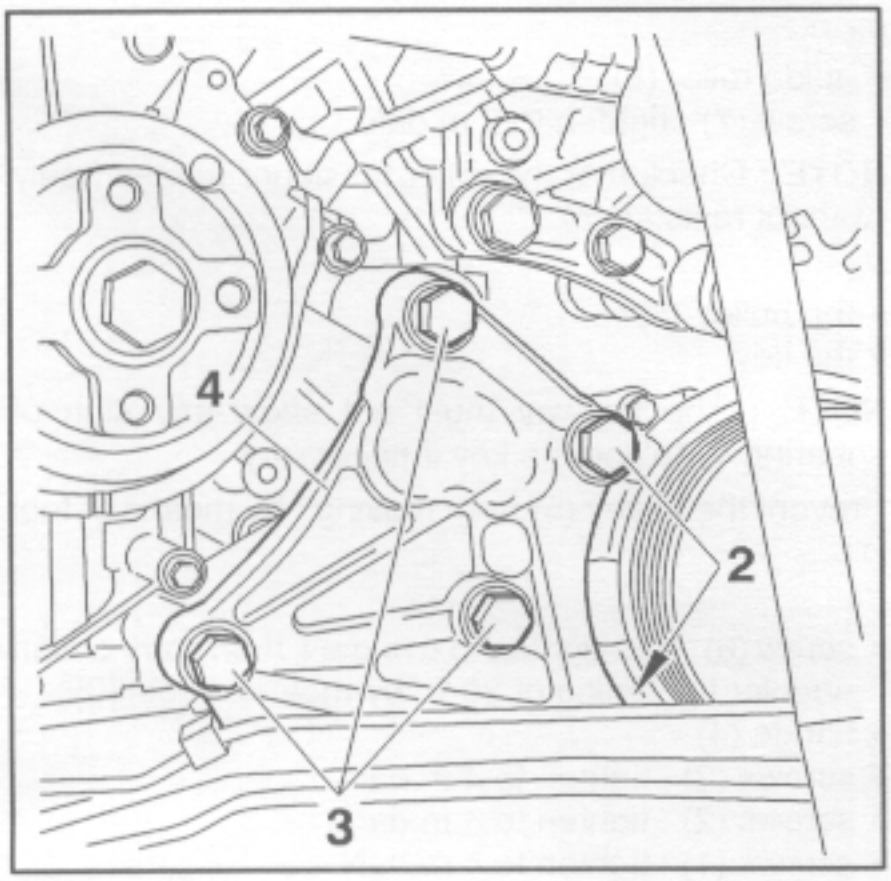


Fig : C5HP08PC

Loosen screws (2).

Remove :
- screws (3)
- flange (4)

NOTE : Suspend the air conditioning compressor from the L.H. side of the vehicle.

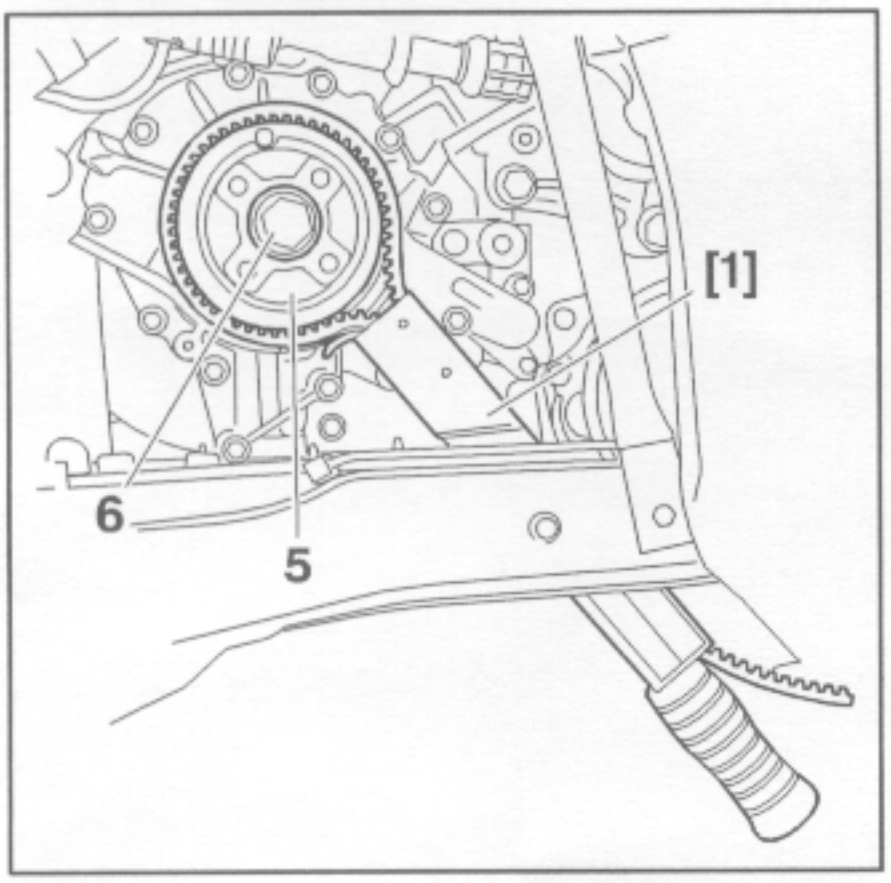


Fig : B1CP02WC

Prevent the pulley (5) from moving ; by means of tool [1].

Remove the bolt (6).

IMPERATIVE : During this operation, the crankshaft should not rotate.

Remove the pulley (5).



Fig : B1FP02AC

Remove :
- screw (7)
- guide roller (8)

Progressively loosen the oil pump screws (9) in the order shown.

Remove :
- the oil pump fixing screws
- the oil pump (9)

Plug the orifices.

NOTE : Recover the excess oil using a tray.

www.WorkshopManuals.co.uk

3 – REFITTING

NOTE : The oil pump is equipped with a composite seal which can be reused several times. If the seal is damaged, it can be partially repaired with sealing product AUTOJOINT OR (E10).

Remove the lipped seal.

NOTE : Fill the oil pump mechanism with clean engine oil.

WARNING : Check that the alignment dowels are present on the cylinder block.



Fig : B1FP02BC

Fit :
- the oil pump (9)
- the oil pump fixing screws

Tightening method :
- pretightening :
  0,5 m.daN (follow the recommended sequence)
- tightening :
  0,8 m.daN (follow the recommended sequence)

Refit a new oil seal : by means of tool [2].

IMPERATIVE : Apply grease to the gap between the seal lips (G6 grease).

Fit :
- guide roller (8)
- screw (7) : tighten to 8 m.daN

NOTE : Check that the roller tensioner rotates freely (without resistance).

Fit :
- the pulley (5)
- the key

NOTE : The keyway must not show any sign of shearing. Replace the key if necessary.

Prevent the pulley (5) from moving : by means of tool [1].

Fit :
- screw (6) : pre–tighten to 8 m.daN, then carry out an angular tightening of 80 ° ; by means of tool [3]
- flange (4)
- screws (3) : tighten to 4 m.daN
- screws (2) : tighten to 4 m.daN
- screws (1) : tighten to 4 m.daN
- the crankshaft setting peg

Fit :
- the timing belt (see the relevant operation)
- the auxiliary equipment drive belt (see the relevant operation)

IMPERATIVE : Top up the engine oil level.

© "The intellectual property rights relating to the technical information contained in this document belong exclusively to the Manufacturer. Reproduction, translation or distribution in whole or in part without prior written authorisation from the Manufacturer is forbidden".

www.WorkshopManuals.co.uk

31st JANUARY 1995

REF. 1 No XM 230-00/4

ABONNEMENT GME

DK5 ENGINE

● COOLING CIRCUIT

MAN 058931

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRES VENTE

GB

1

www.WorkshopManuals.co.uk

COOLING

DATA – IDENTIFICATION : COOLING SYSTEM 3

DRAINING – FILLING – BLEEDING : COOLING SYSTEM 8

REMOVING – REFITTING : THE WATER PUMP DRIVE BELT AND THE WATER PUMP 11

www.WorkshopManuals.co.uk

DATA – IDENTIFICATION : COOLING SYSTEM

www.WorkshopManuals.co.uk

1 – SETTING OF UNITS

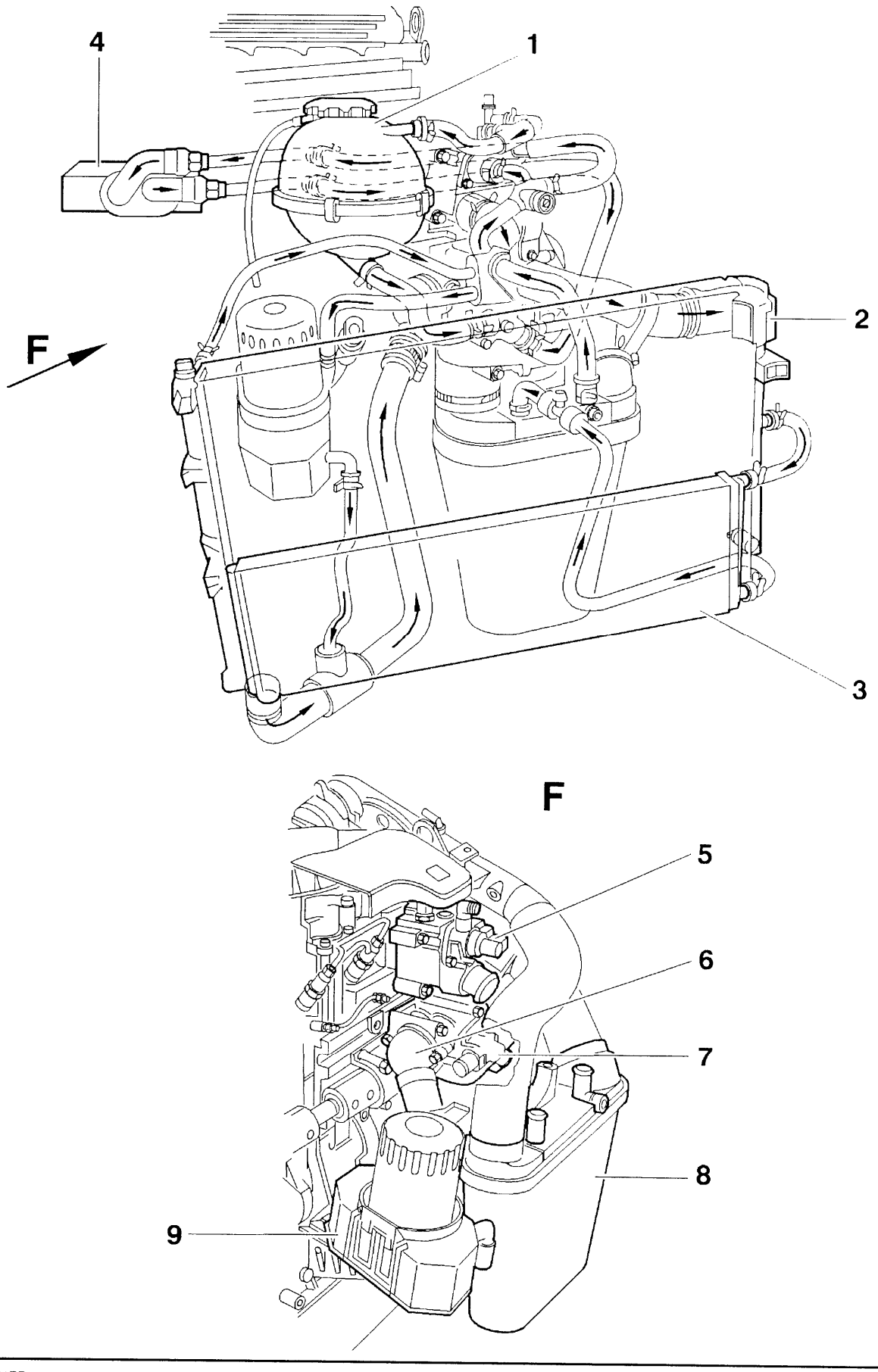


Fig : B1GP01RP

www.WorkshopManuals.co.uk

(1) – de–aeration chamber.
(2) – main radiator.
(3) – low temperature radiator.
(4) – heater matrix.
(5) – coolant outlet housing (on the cylinderhead).
(6) – thermostat.
(7) – coolant pump (on the cylinder block).
(8) – water–to–air heat exchanger.
(9) – water–to–oil heat exchanger.

2 – DATA – COOLING SYSTEM

Capacity of the cooling circuit : 13 litres (approximately).

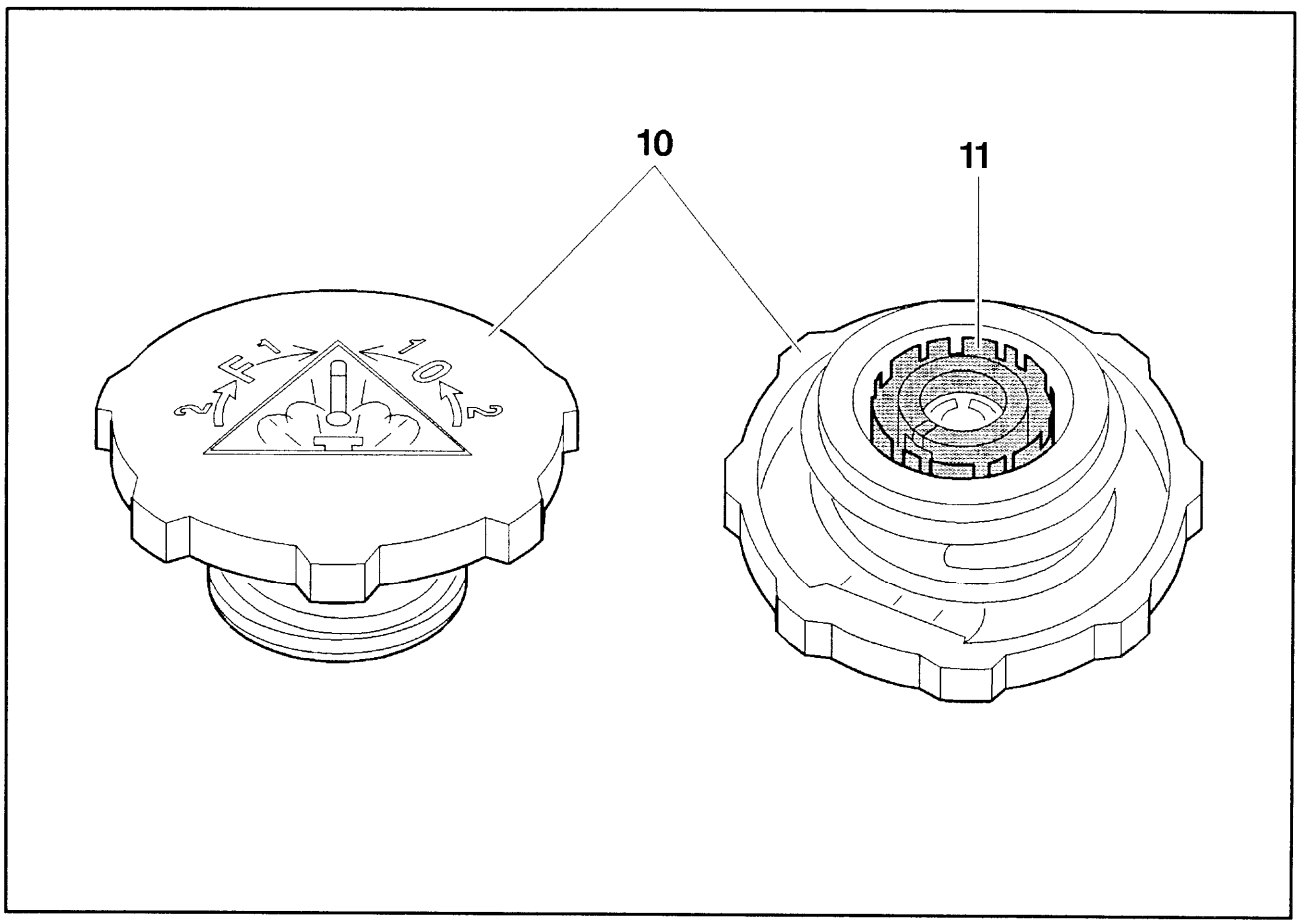


Fig : B1GP01SD

(10) filler plug / de–aeration chamber.
(11) ring.
Colour of the ring : mauve, calibration pressure : 1.4 bar.

www.WorkshopManuals.co.uk

2.1 – Coolant outlet housing

The tightening torque for the coolant outlet housing sensors and plugs is 1.8 m.daN + loctite FRENETANCH.

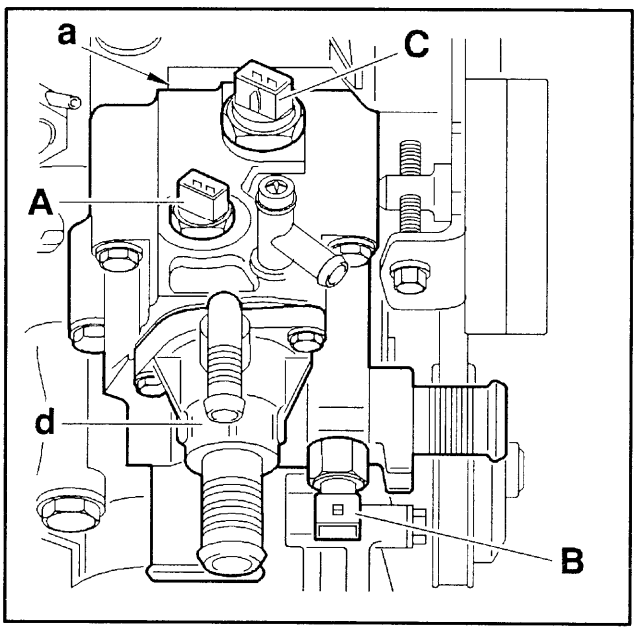


Fig : B1GP01TC

"a" – towards the cylinderhead.

"d" – thermostat.

Water temperature sensor :

	A	B	C
Sensor	Temperature sensor	Temperature sensor – thermal switch	Temperature sensor
Data	Pre-post heating, injection	Gauge and warning (118°C)	Water temperatures centralization control unit
Connector colour	Green	Blue	Brown
Colour of the ring	Yellow		

www.WorkshopManuals.co.uk

2.2 – Coolant pump

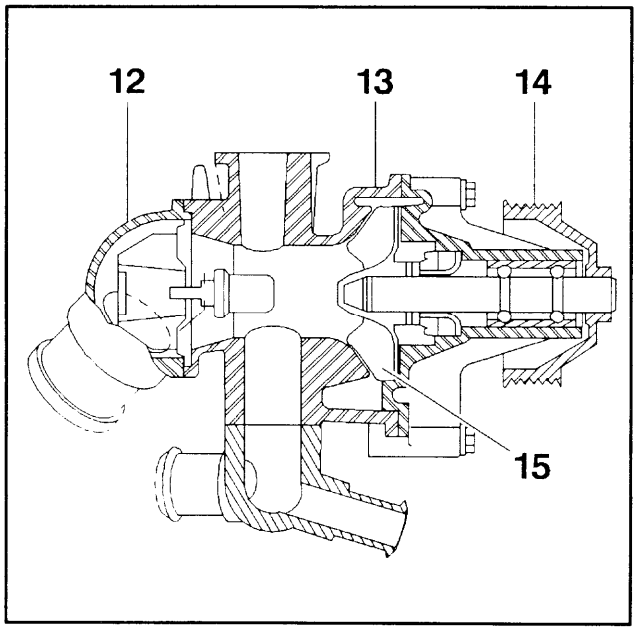


Fig . B1GP00XC

(12) water pump cover.

(13) pump body.

(14) pump pulley.

(15) turbine.

The water pump is driven by the camshaft pulley via a drive belt.

2.3 – Thermostat

Operation readings.

Main thermostat :

- starts to open at: 85°C
- fully open at: 100°C

Secondary thermostat :

- starts to open at: 84°C
- fully open at: 88°C

2.4 – Radiator

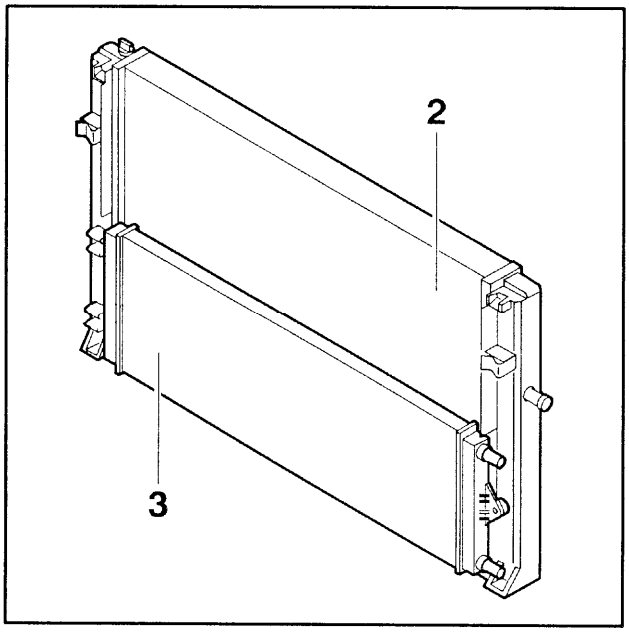


Fig : B1GP01UC

(2) main radiator – area : 26 dm2.

(3) low temperature radiator – area : 11 dm2.

2.5 – Fans

The vehicle is equipped with 2 electric cooling fans.

Fan			Post-cooling
1st cooling fan		2nd cooling fan	
1st speed	2nd speed	2nd speed	105°C
98°C – 93°C	101°C – 98°C	101°C – 98°C	For 6 minutes
310 W		310 W	(max.)

2.6 – Water–to–oil heat exchanger

13 elements.

www.WorkshopManuals.co.uk

DRAINING – FILLING – BLEEDING : COOLING SYSTEM

1 – RECOMMENDED TOOLS

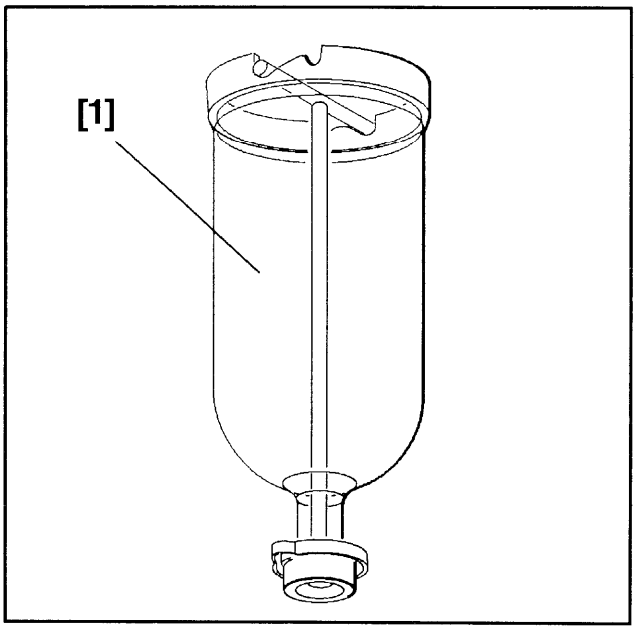


Fig : B1GP00AC

[1] filling cylinder 4520–T.

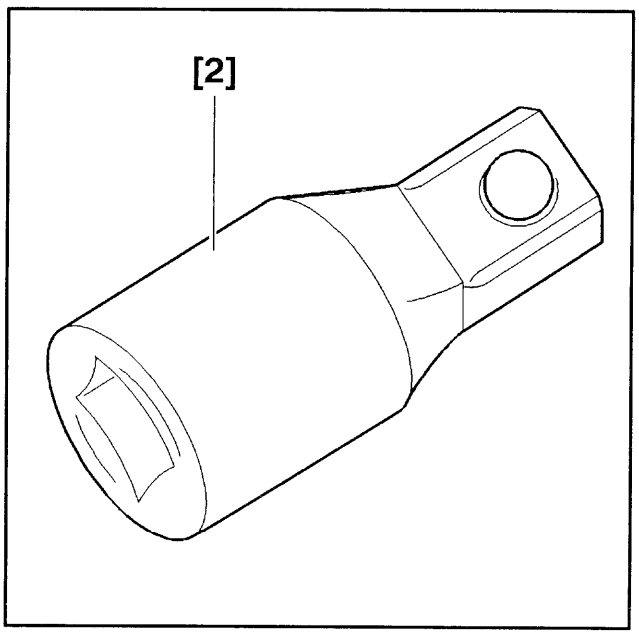


Fig : E5-P04FC

[2] 6 mm 5711TN square ended tool (tool box 5711–T).

2 – DRAINING

Remove the header tank plug cautiously (with engine cold).

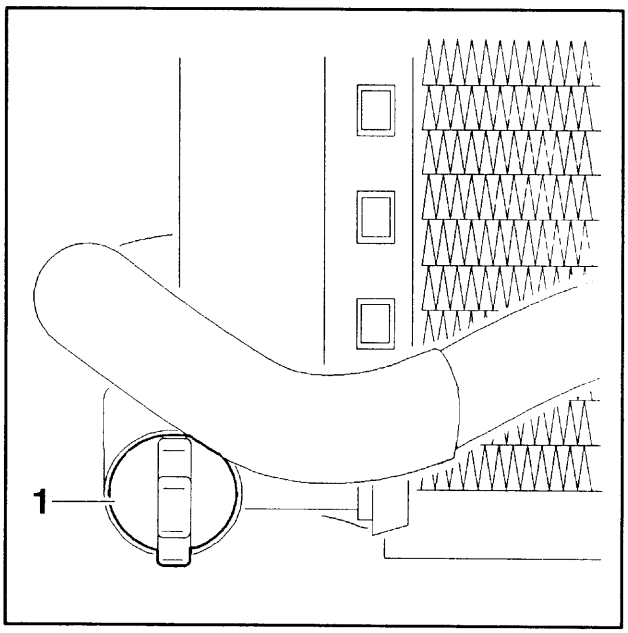


Fig : B1GP01GC

Open drain screw (1) to drain the radiator.

www.WorkshopManuals.co.uk

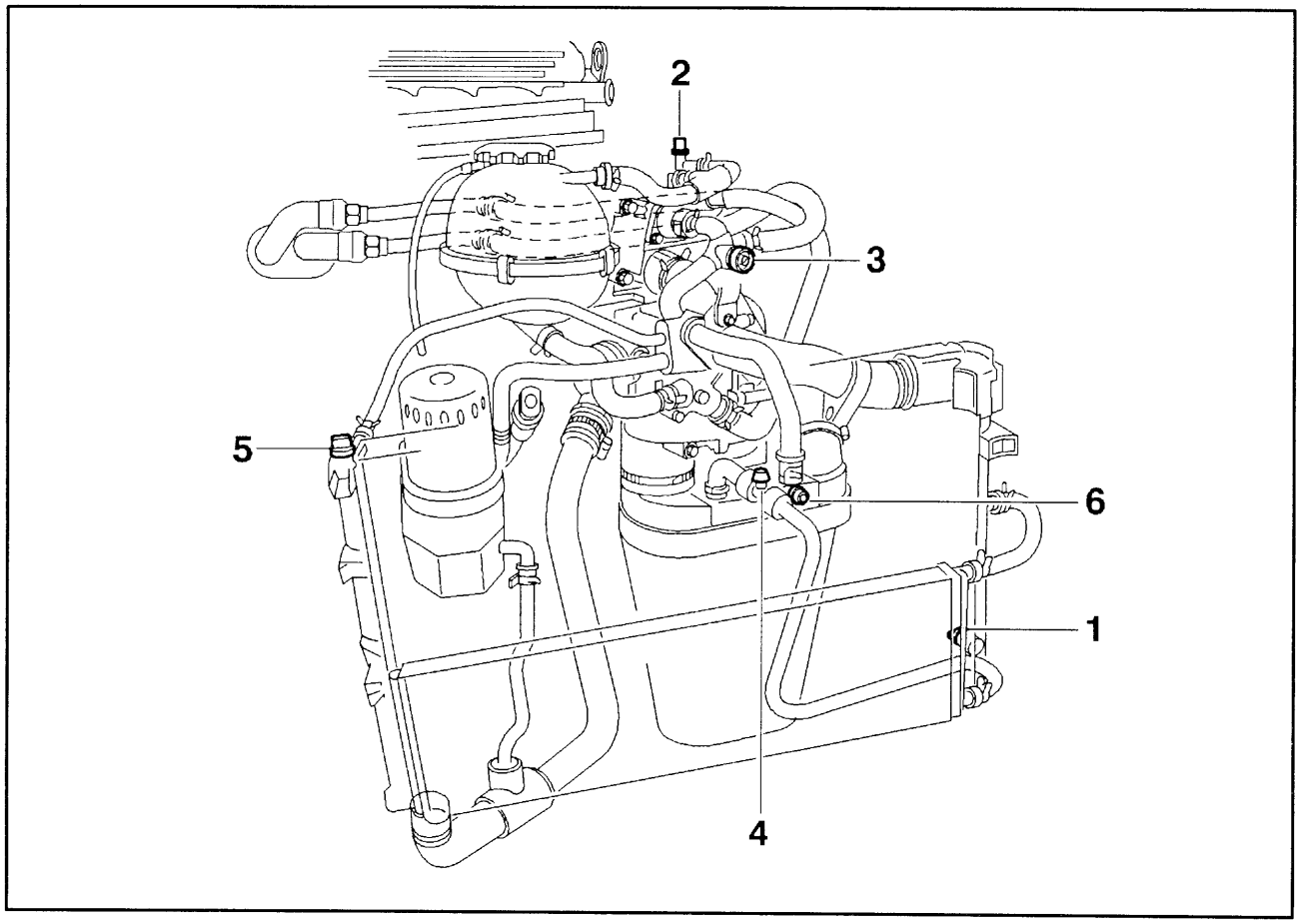


Fig B1GP01HD

Open the bleed screws (2),(3),(4),(5),(6).

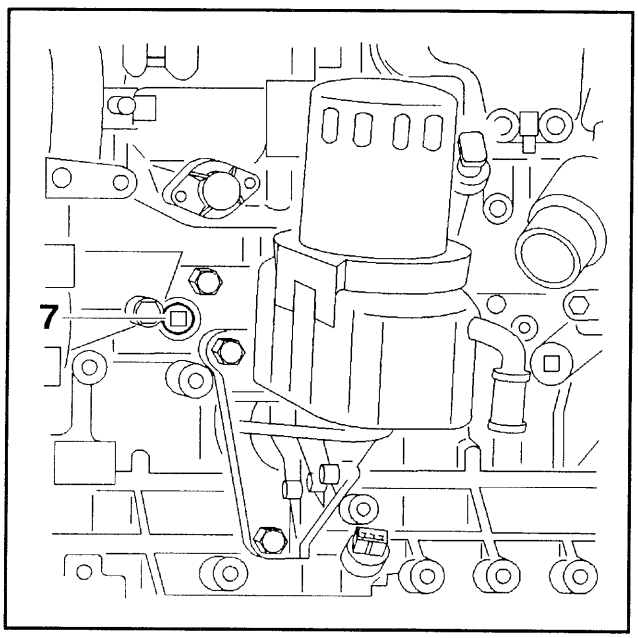


Fig : B1GP01JC

Take out drain plug (*) in order to drain the cylinder block (7) utilising tool [2].

www.WorkshopManuals.co.uk

3 – FILLING AND BLEEDING

Close the radiator drain screw (1).

Relocate and tighten drain screw (7) to 2.5 m.daN (equipped with a new seal).

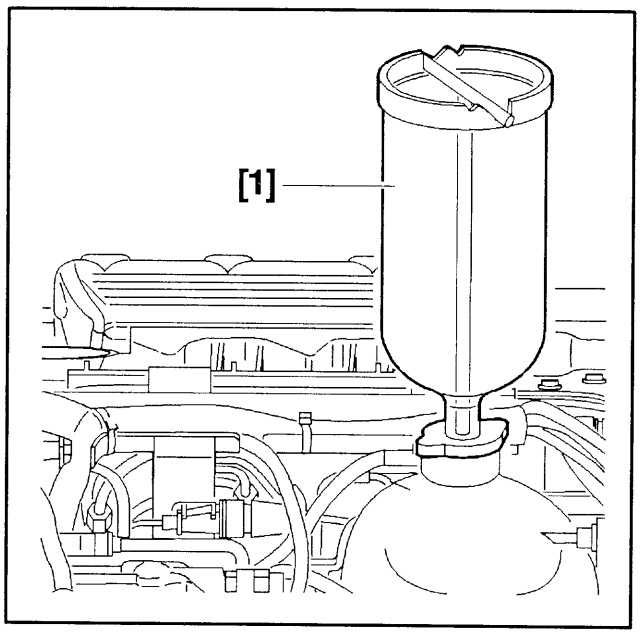


Fig : B1GP01KC

Fit the filling cylinder [1] to the filler orifice.

Fill the cooling system.

NOTE : Keep the filling cylinder full.

Close each bleed screw as soon as the fluid flows without air bubble.

Start the engine ; accelerate the engine speed to 1500 rpm.

Maintain this speed for three cooling cycles (fans starting and stopping).

Switch off the engine and wait for it to cool down.

Remove the filling cylinder [1].

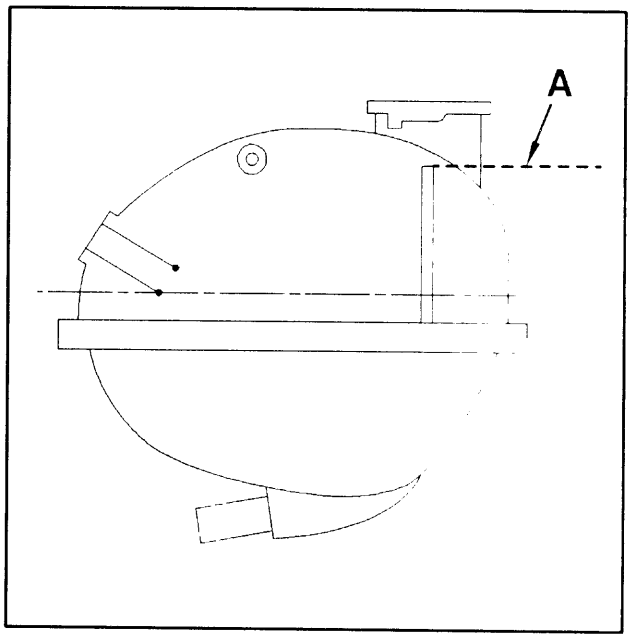


Fig : B1GP01LC

Top up the system to the max. mark A when cold.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : THE WATER PUMP DRIVE BELT AND THE WATER PUMP

1 – RECOMMENDED TOOLS

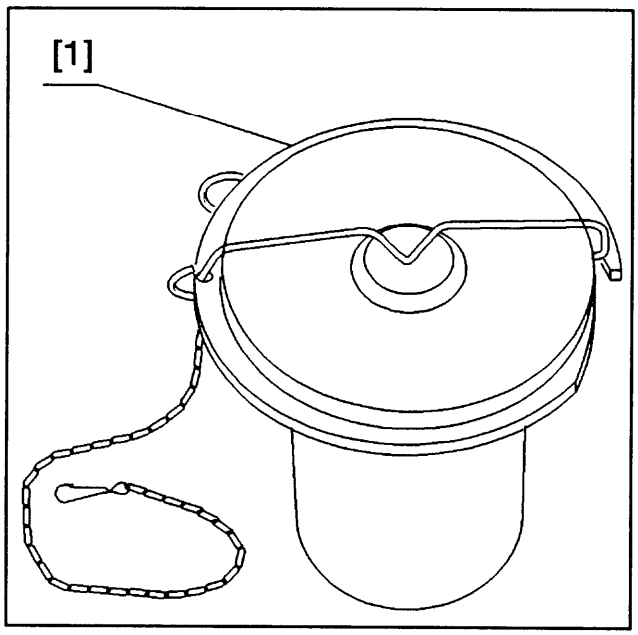


Fig B4BP00CC

[1] LHM reservoir/filter assembly cover 9004–T.

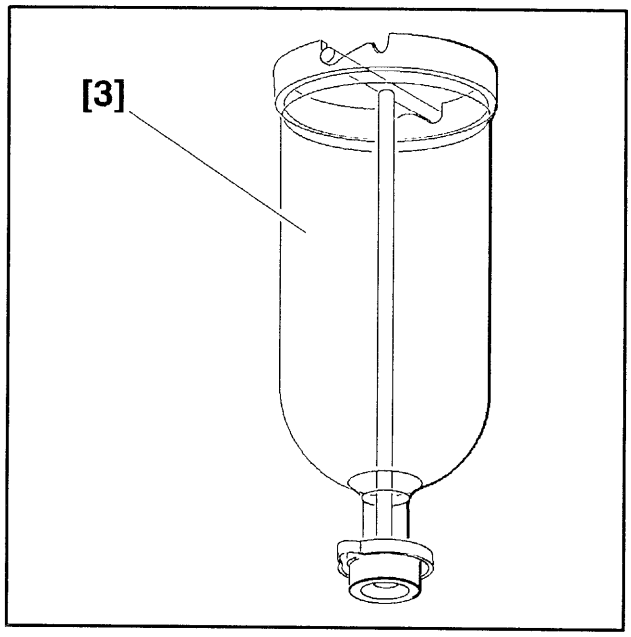


Fig : E5–P032C

[3] filling cylinder 4520–T.

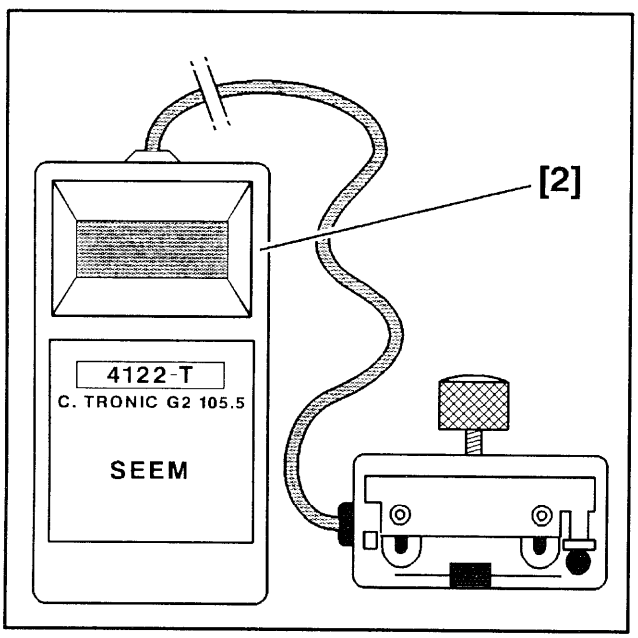


Fig : E5–P031C

[2] belt tension measuring equipment, with digital read–out.

4099–T : SEEM C.TRONIC 105.

4122–T : SEEM C.TRONIC 105.5.

www.WorkshopManuals.co.uk

2 – REMOVAL

Drain the cooling system (see the relevant operation).

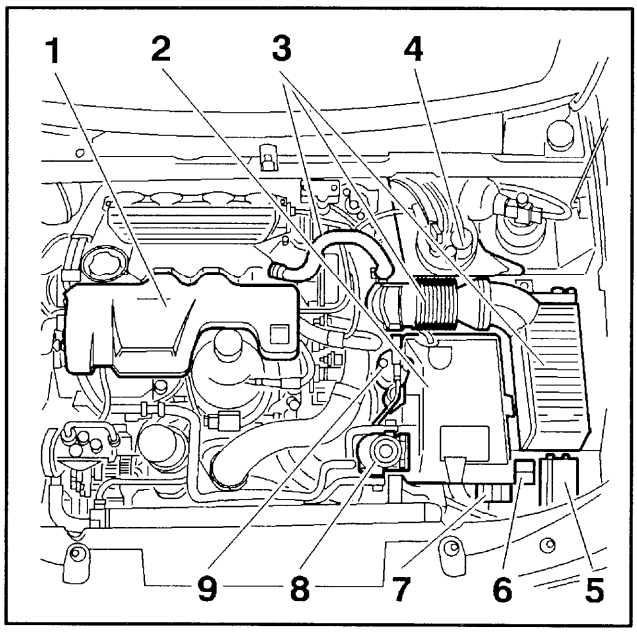


Fig : B1GP012C

Unclip the battery trim cover (2) :
- 2 attachment points, front side end
- 1 attachment point marked by an arrow towards the air filter (using a screwdriver)

Remove :
- trim cover (1)
- the battery
- air filter (3) (provided with the sleeve and breather connection hose)

Remove the LHM fluid reservoir (4). Locate the LHM reservoir/filter assembly cover [1].

Take out the fixing screws then push aside :
- fuse holder housing (5)
- pre-heater control unit (7)
- diesel fuel priming pump (8)
- dehydrator reservoir (9)
- the battery tray

Unclip :
- the electrical harnesses from the battery tray
- fuse carrier boxes (6) from the cooling fans unit

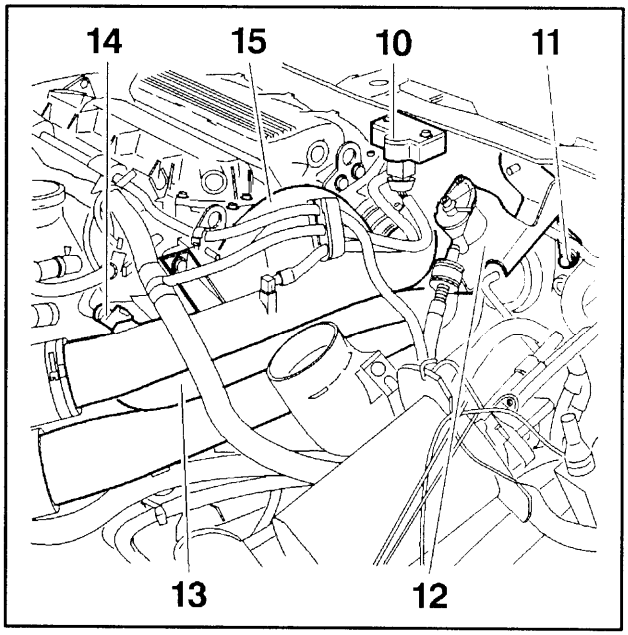


Fig : B1GP013C

Remove :
- air pressure sensor (10)
- screw (11)

Tilt the accelerator support (12).

Disconnect :
- coolant outlet housing flexible hose (13)
- air temperature sensor (14)

Unclip all the flexible hoses and electrical harnesses from turbocharger rigid suction pipe (15).

www.WorkshopManuals.co.uk

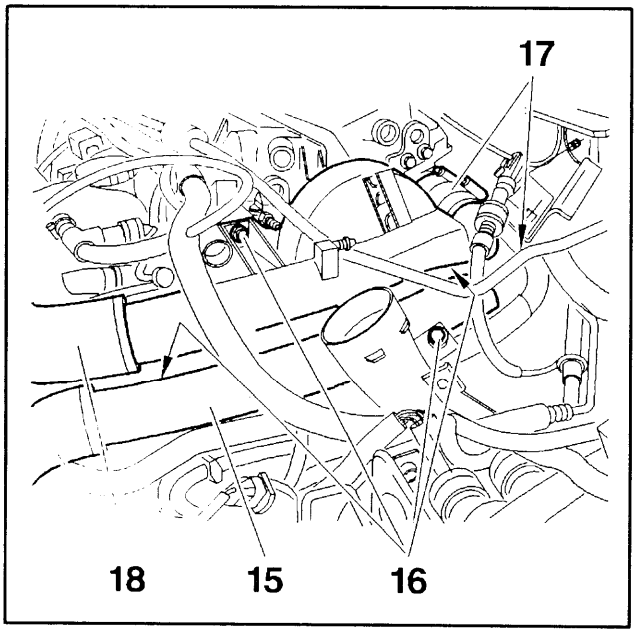


Fig : B1GP014C

Take off the 4 screws (16).

Disconnect sleeves (17) and (18).

Take out rigid suction pipe (15) from the turbocharger.

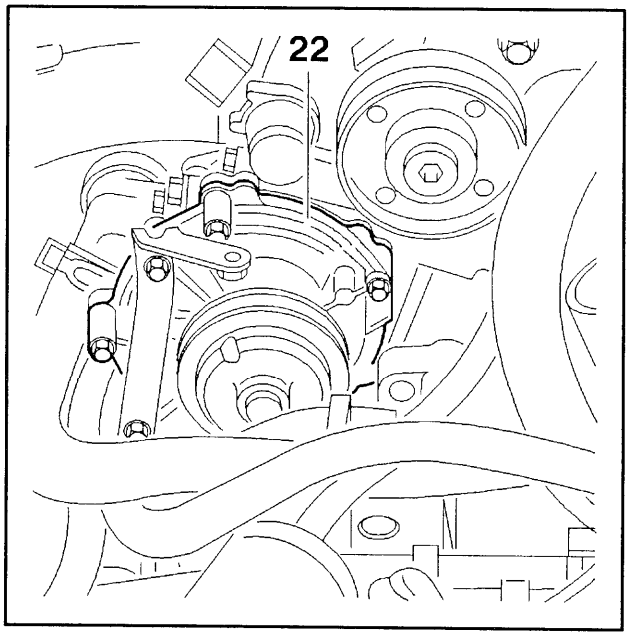


Fig : B1GP015C

Remove water pump (22).

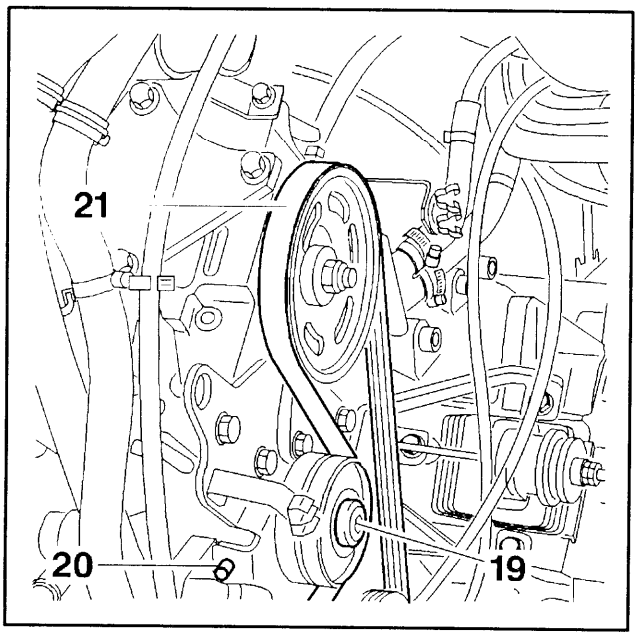


Fig : B1GP017C

Slacken screw (19).

Turn screw (20) in the tightening direction to release the belt.

Remove water pump belt (21).

www.WorkshopManuals.co.uk

3 – REFITTING

Clean the joint faces (do not use a sharp or abrasive tool).

Coat the gasket contact surface with a thin layer of sealing compound.

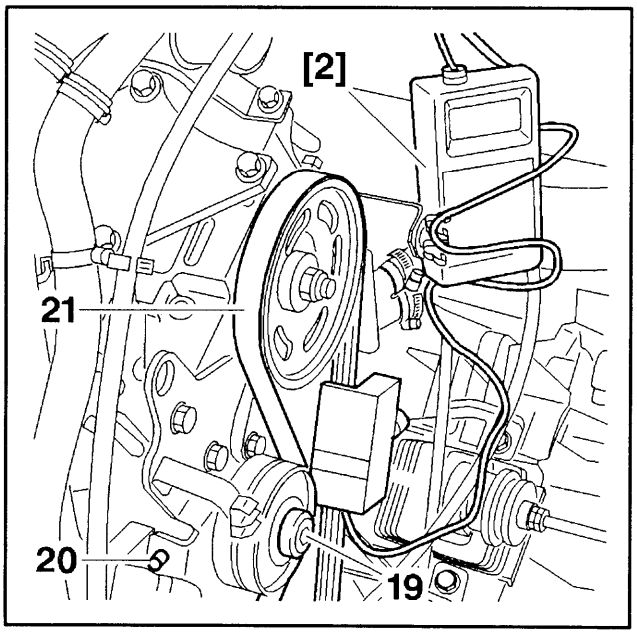


Fig : B1GP016C

Fit :
- the water pump (22) ; tighten to 1 m.daN
- water pump drive belt (21)

Install measuring equipment [2] on the belt.

Slacken screw (20) to tension the belt.

– new belt = 46 SEEM units.

– used belt = 38 SEEM units.

Remove measuring instrument [2].

Turn the crankshaft 3 turns in the normal direction of rotation.

Install measuring instrument [2].

Check belt (21) tension value.

– new belt = 46 SEEM units.

– used belt = 38 SEEM units.

Retighten screw (19).

Remove measuring instrument [2].

Refit turbocharger rigid suction pipe (15).

Reconnect sleeves (17) and (18).

Screw the 4 screws (16) in place.

Clip all the flexible hoses and electrical harnesses back to the turbocharger rigid suction pipe.

Reconnect :
- coolant outlet housing flexible hose (13)
- air temperature sensor (14)

Clip in place :
- fuse carrier boxes (6) from the cooling fans unit
- the wiring harnesses to the battery tray

Fit :
- the battery tray
- the dehydrator reservoir
- diesel fuel priming pump (8)
- pre-heater control unit (7)
- the fuse holder housing (5)
- the LHM fluid reservoir
- air filter (3) (provided with the sleeve and breather connection hose)
- the battery

Clip in place the battery trim cover (2)

Fill and bleed the cooling system (see the relevant operation).

Relocate trim cover (1).

www.WorkshopManuals.co.uk

Xm

NOVEMBER 1997

SUBSCRIPTION

RPO No: 7511

REF. 1 No XM 230-00/5

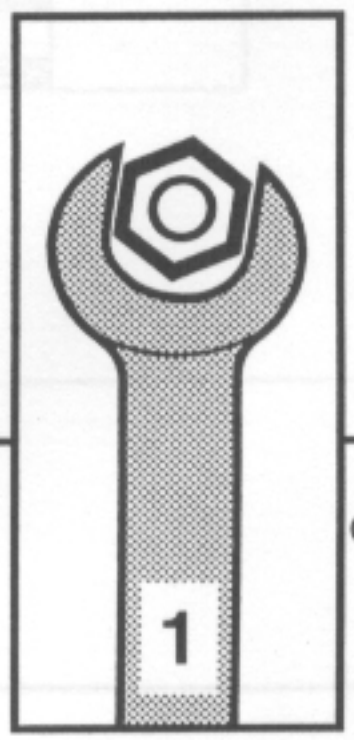
PETROL ENGINE

ES9J4 (2946 cm³. V6)

- COOLING

MAN 108931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".



GB

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

COOLING

DATA : COOLING SYSTEM 1

DRAINING – FILLING – BLEEDING : COOLING SYSTEM 3

1 – Recommended tools 3
2 – Draining –
3 – Filling and bleeding the system 5

REMOVING – REFITTING : COOLANT PUMP 6

1 – Removing 6
2 – Refitting 7

REMOVING – REFITTING : THERMOSTAT 8

1 – Recommended tools 8
2 – Removing 9
3 – Refitting 10

www.WorkshopManuals.co.uk

DATA : COOLING SYSTEM

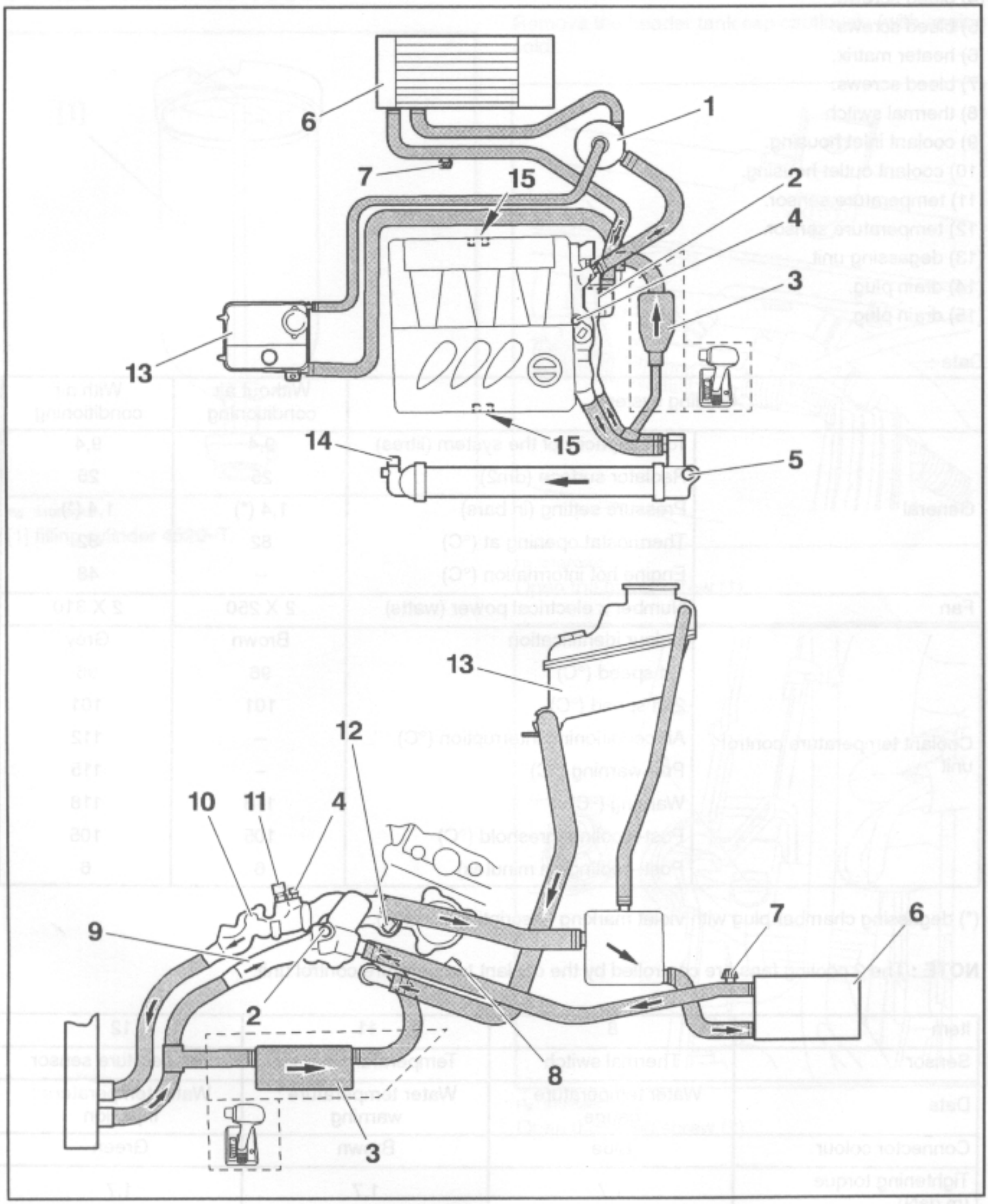


Fig : B1GP061P

www.WorkshopManuals.co.uk

(1) degasser.
(2) bleed screws.
(3) oil / water heat exchanger.
(4) bleed screws.
(5) bleed screws.
(6) heater matrix.
(7) bleed screws.
(8) thermal switch.
(9) coolant inlet housing.
(10) coolant outlet housing.
(11) temperature sensor.
(12) temperature sensor.
(13) degassing unit.
(14) drain plug.
(15) drain plug.

Data :

Cooling system		Without air conditioning	With air conditioning
General	Total capacity of the system (litres)	9,4	9,4
	Radiator surface (dm2)	25	25
	Pressure setting (in bars)	1,4 (*)	1,4 (*)
	Thermostat opening at (°C)	82	82
	Engine hot information (°C)	–	48
Fan	Number x electrical power (watts)	2 X 250	2 X 310
Coolant temperature control unit	Colour identification	Brown	Grey
	1st speed (°C)	96	96
	2nd speed (°C)	101	101
	Air conditioning interruption (°C)	–	112
	Pre–warning (°C)	–	115
	Warning (°C)	118	118
	Post–cooling threshold (°C)	105	105
	Post–cooling (in minutes)	6	6

(*) degassing chamber plug with violet marking (inscriptions on top).

NOTE : The 2 cooling fans are controlled by the coolant temperature control unit.

Item	8	11	12
Sensor	Thermal switch	Temperature sensor	Temperature sensor
Data	Water temperature : gauge	Water temperature : warning	Water temperature : injection
Connector colour	Blue	Brown	Green
Tightening torque (m.daN)	1,7	1,7	1,7

www.WorkshopManuals.co.uk

DRAINING – FILLING – BLEEDING : COOLING SYSTEM

1 – RECOMMENDED TOOLS

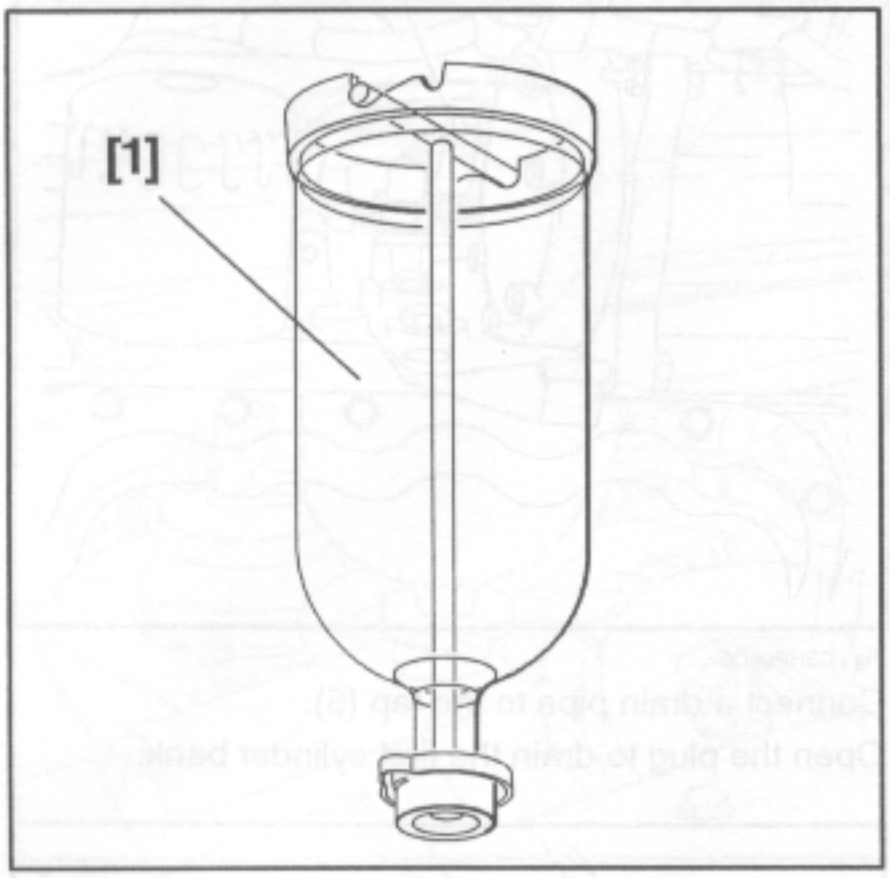


Fig : B1GP00AC

[1] filling cylinder 4520–T.

2 – DRAINING

Remove the header tank cap cautiously (with engine cold).

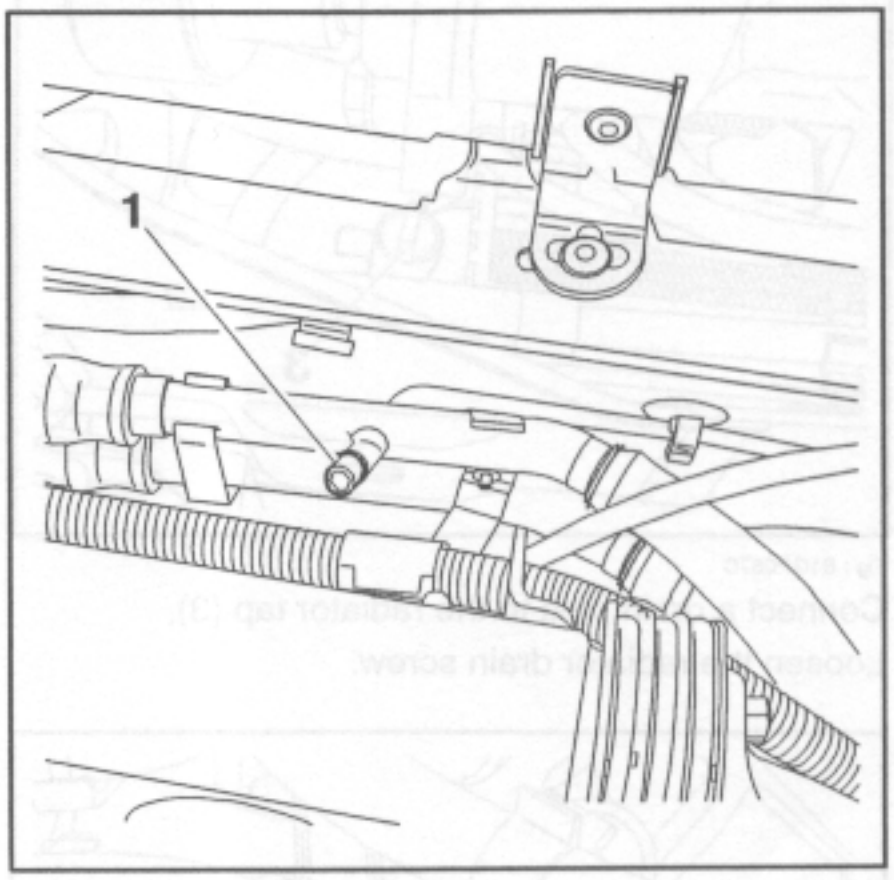


Fig : B1GP065C

Open the bleed screw (1).

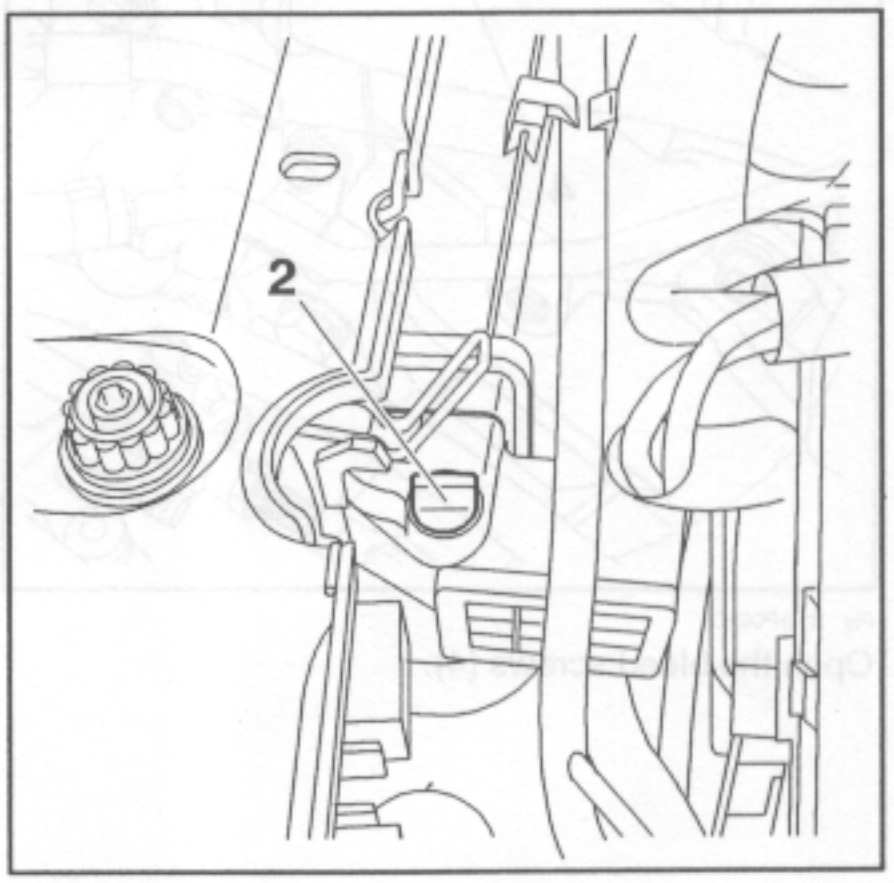


Fig : B1GP066C

Open the bleed screw (2).

www.WorkshopManuals.co.uk

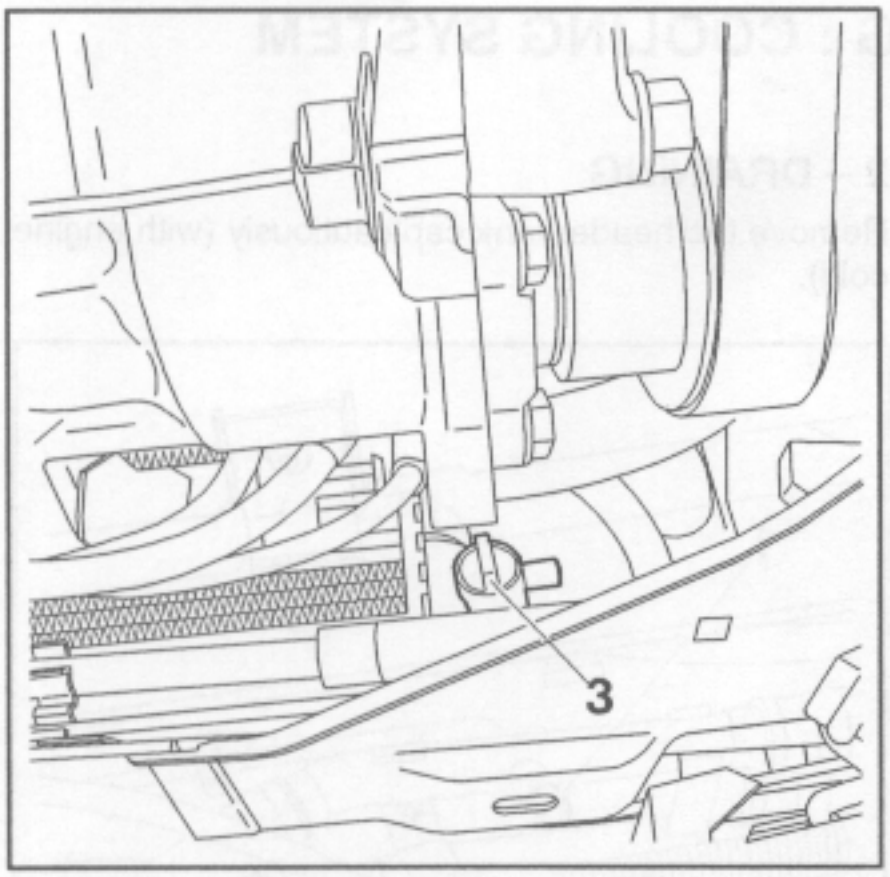


Fig : B1GP067C

Connect a drain pipe to the radiator tap (3).
Loosen the radiator drain screw.

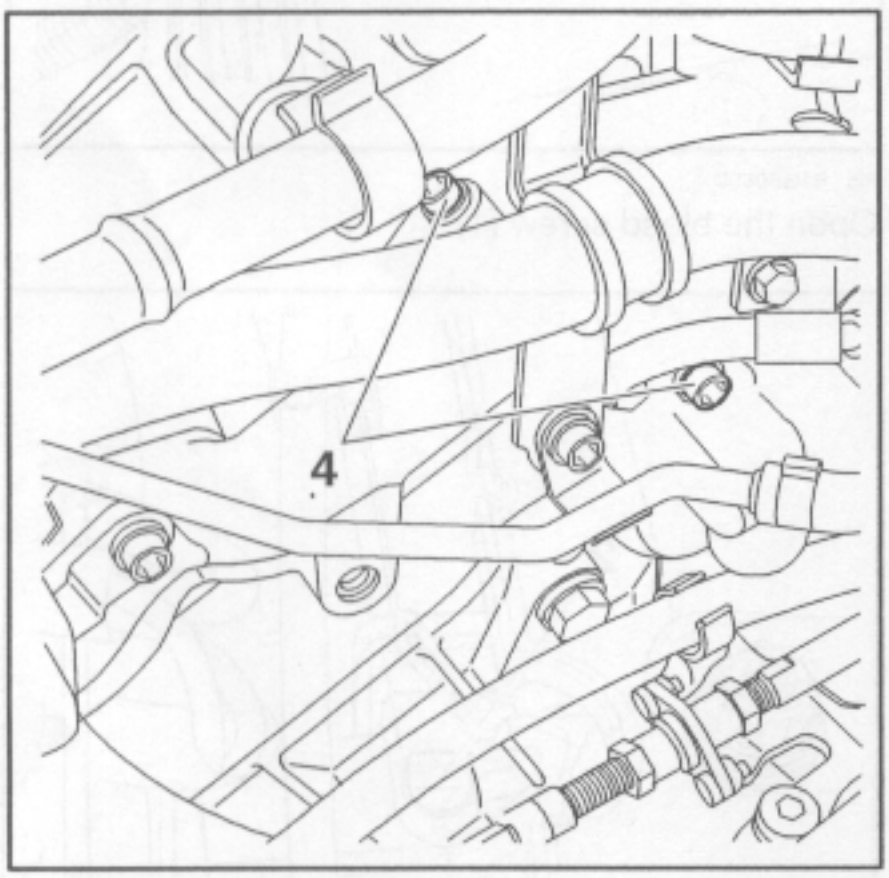


Fig : B1GP068C

Open the bleed screws (4).

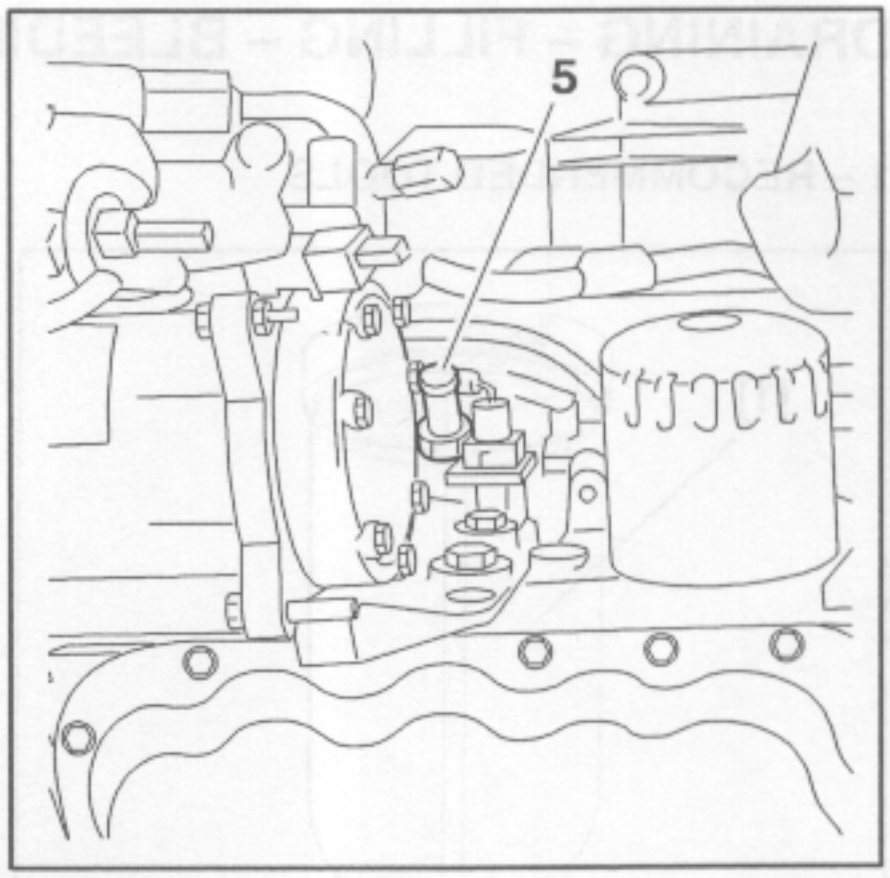


Fig : C5HP08QC

Connect a drain pipe to the tap (5).
Open the plug to drain the first cylinder bank.

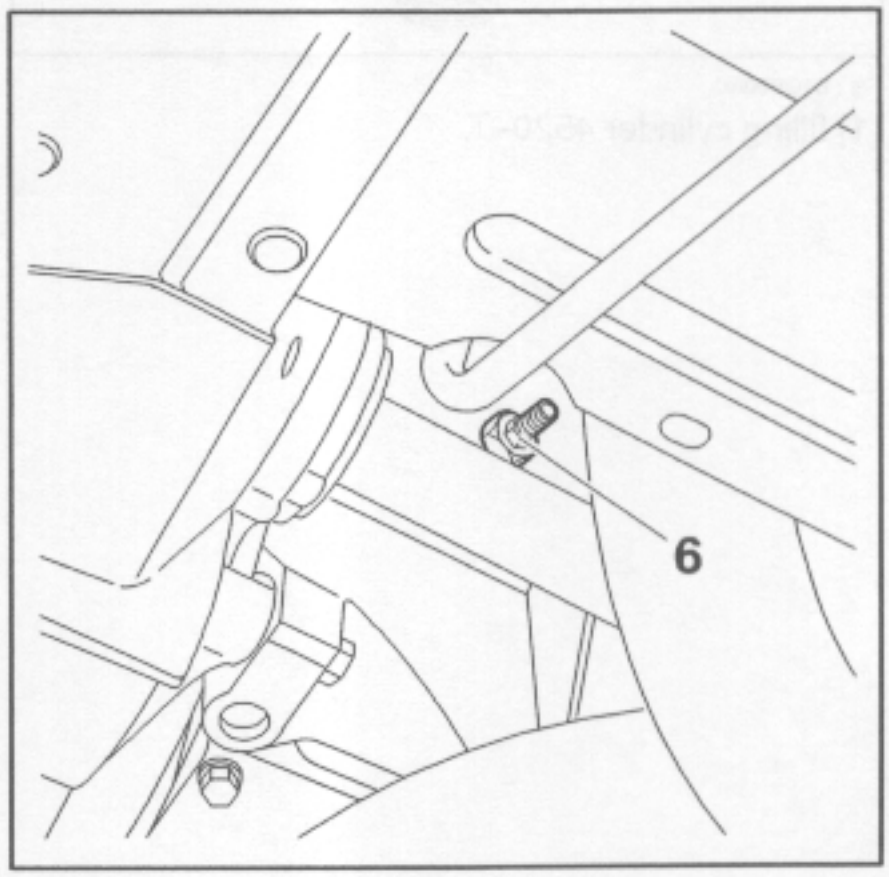


Fig : B2FP035C

Connect a drain pipe to the tap (6).
Open the plug to drain the second cylinder bank.
Disconnect the drain pipes from the taps (5) and (6).
Tighten the taps (5) and (6) ; to 3 m.daN.

www.WorkshopManuals.co.uk

3 – FILLING AND BLEEDING THE SYSTEM

NOTE : Before any filling operation, rinse the cooling system with clear water.

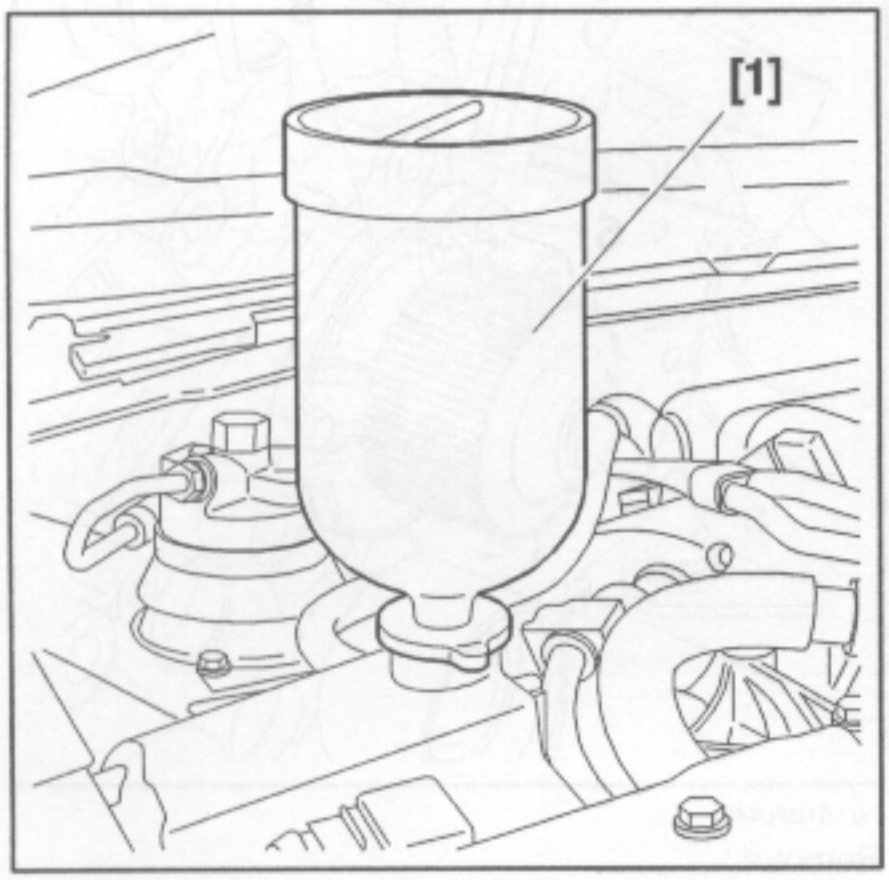


Fig : B1GP069C

Fit the filling cylinder [1] to the filler orifice.

Slowly fill the filling cylinder [1] with coolant, up to the "1 litre" mark, in order to pressurise the system.

Shut the bleed screws when the fluid flows cleanly and without any air bubbles.

Run the engine at a speed of 1500/2500 rpm.

Maintain this speed for three cooling cycles (fans starting and stopping).

NOTE : To bleed the heater matrix correctly, the filler cylinder should be filled up to the "1 litre" mark.

Switch off the engine and wait for it to cool down.

Remove the filling cylinder [1].

Refit the header tank cap.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : COOLANT PUMP

1 – REMOVING

Drain the cooling system (see the relevant operation).

Remove the timing gear drive belt (see the relevant operation).



Fig : B1GP043C

Remove :

- screw (1)
- the guide roller
- screws (2)
- the engine mounting bracket (3)
- screws (4)
- the dynamic tensioner (5)

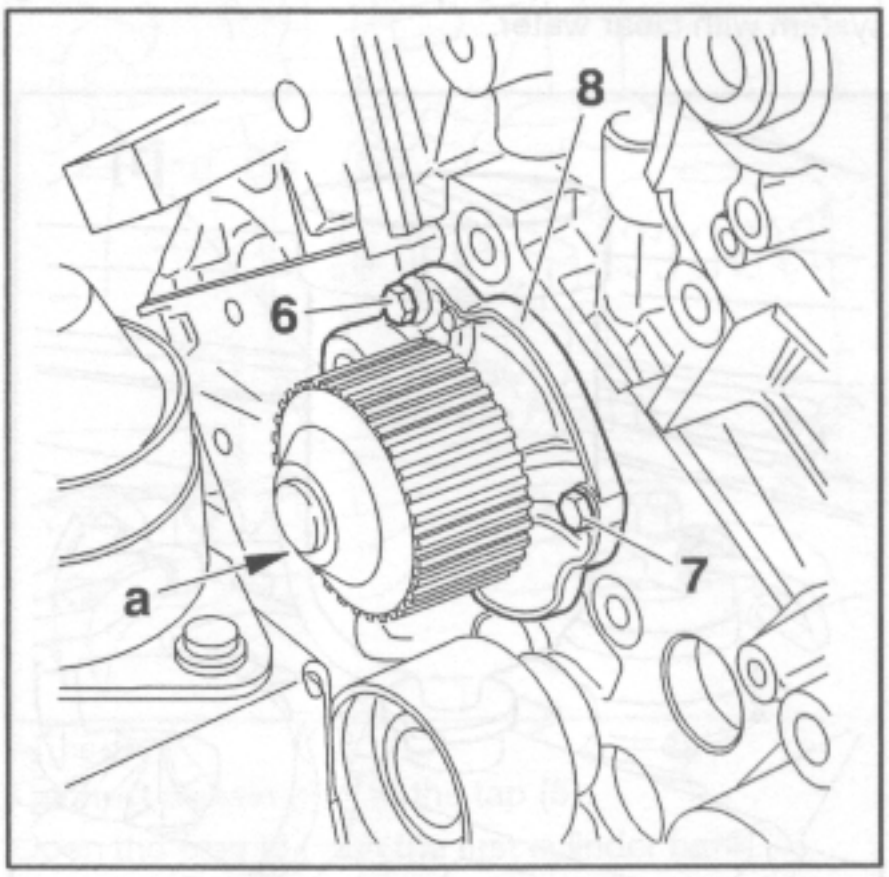


Fig : B1GP044C

Remove :

- the screws (6) and (7)
- the bolt at "a"
- the water pump (8)
- the water pump seal

www.WorkshopManuals.co.uk

2 – REFITTING

IMPERATIVE : Replace systematically the water pump seal.

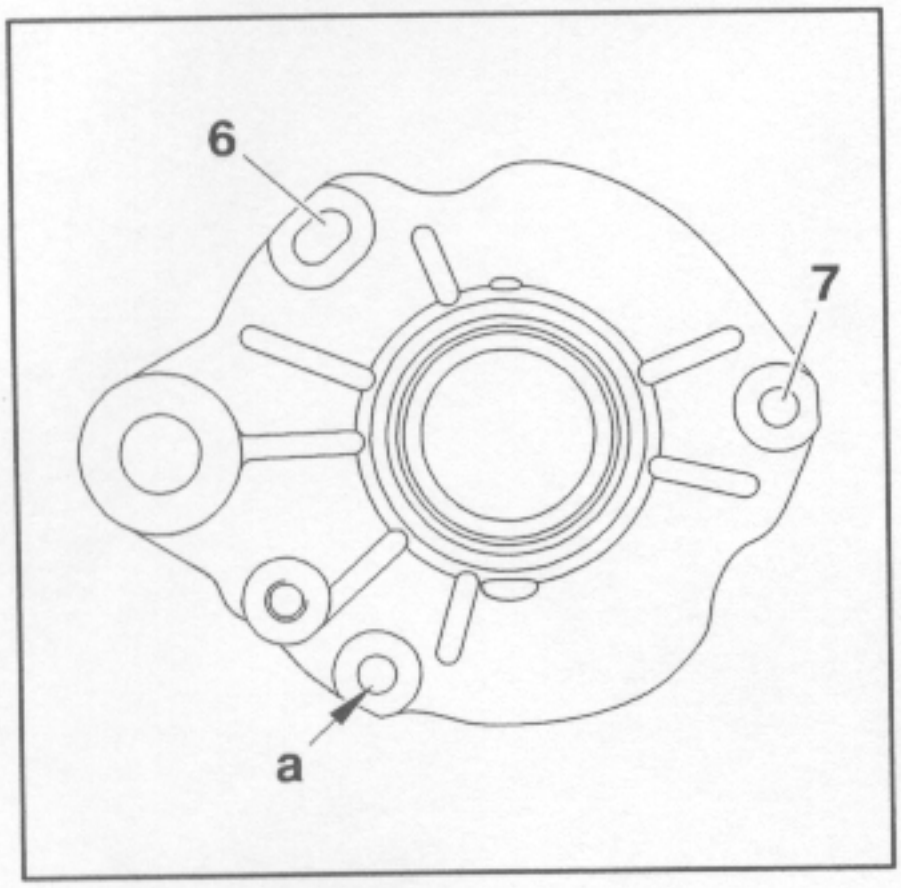


Fig : B1GP045C

Refit the water pump (8) together with a new seal.

WARNING : Respect the tightening order : 7, 6, a.

Tightening method :
- pre–tighten to 0,5 m.daN
- tightening torque = 0,8 m.daN

Fit :
- the dynamic tensioner (5)
- screws (4)
- the engine mounting bracket (3)
- screws (2) ; tighten to 6 m.daN
- the guide roller
- screw (1) ; tighten to 8 m.daN

Fit the timing belt (see the relevant operation).

Fill and bleed the cooling system (see the relevant operation).

www.WorkshopManuals.co.uk

REMOVING – REFITTING : THERMOSTAT

1 – RECOMMENDED TOOLS

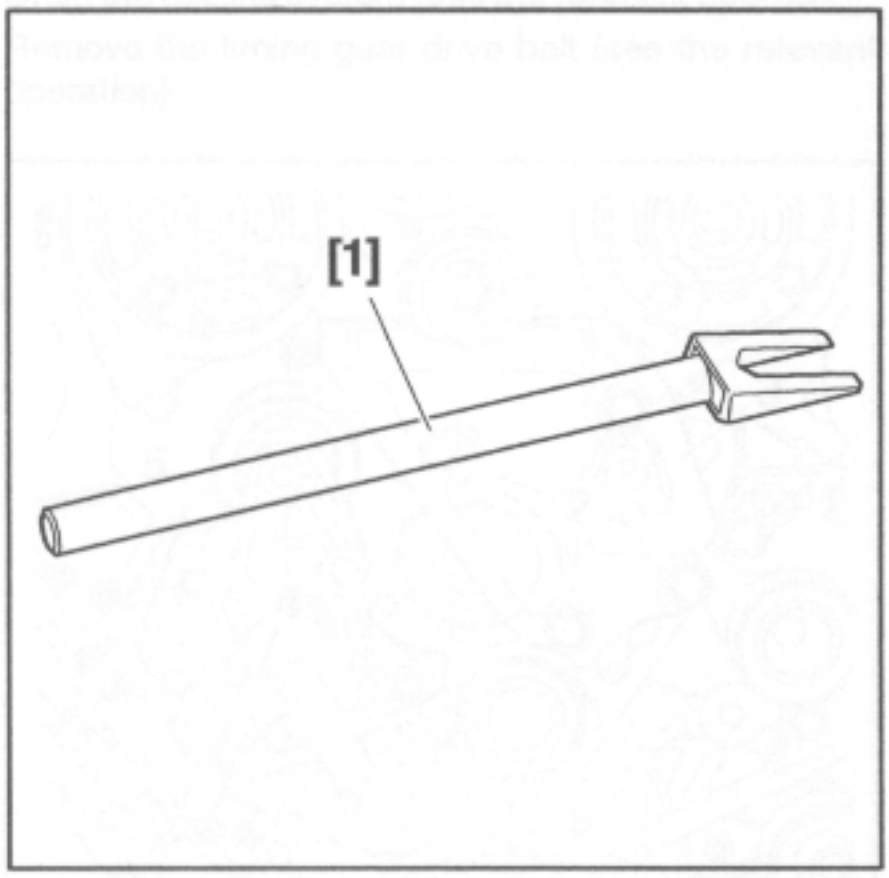


Fig : E5AP05JC

[1] fork 8010–TG.

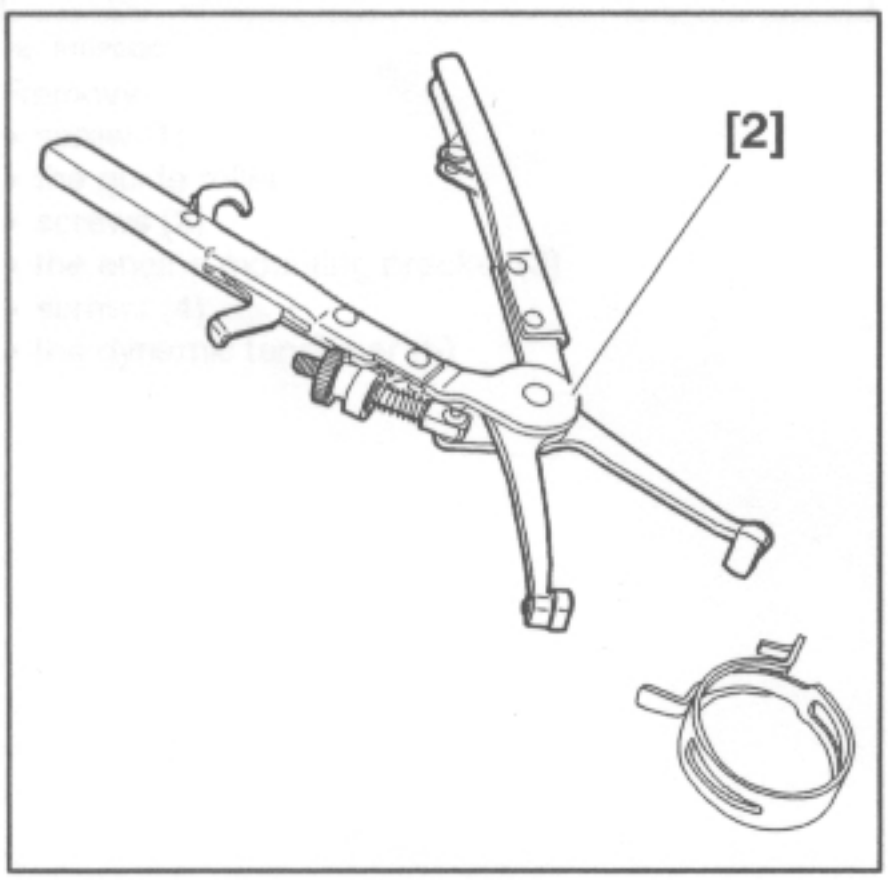


Fig : E5AP02WC

[2] pliers for removing and refitting hose clips 9029–T.

www.WorkshopManuals.co.uk

2 – REMOVING

Disconnect the battery negative terminal.

Drain the cooling system (see the relevant operation).

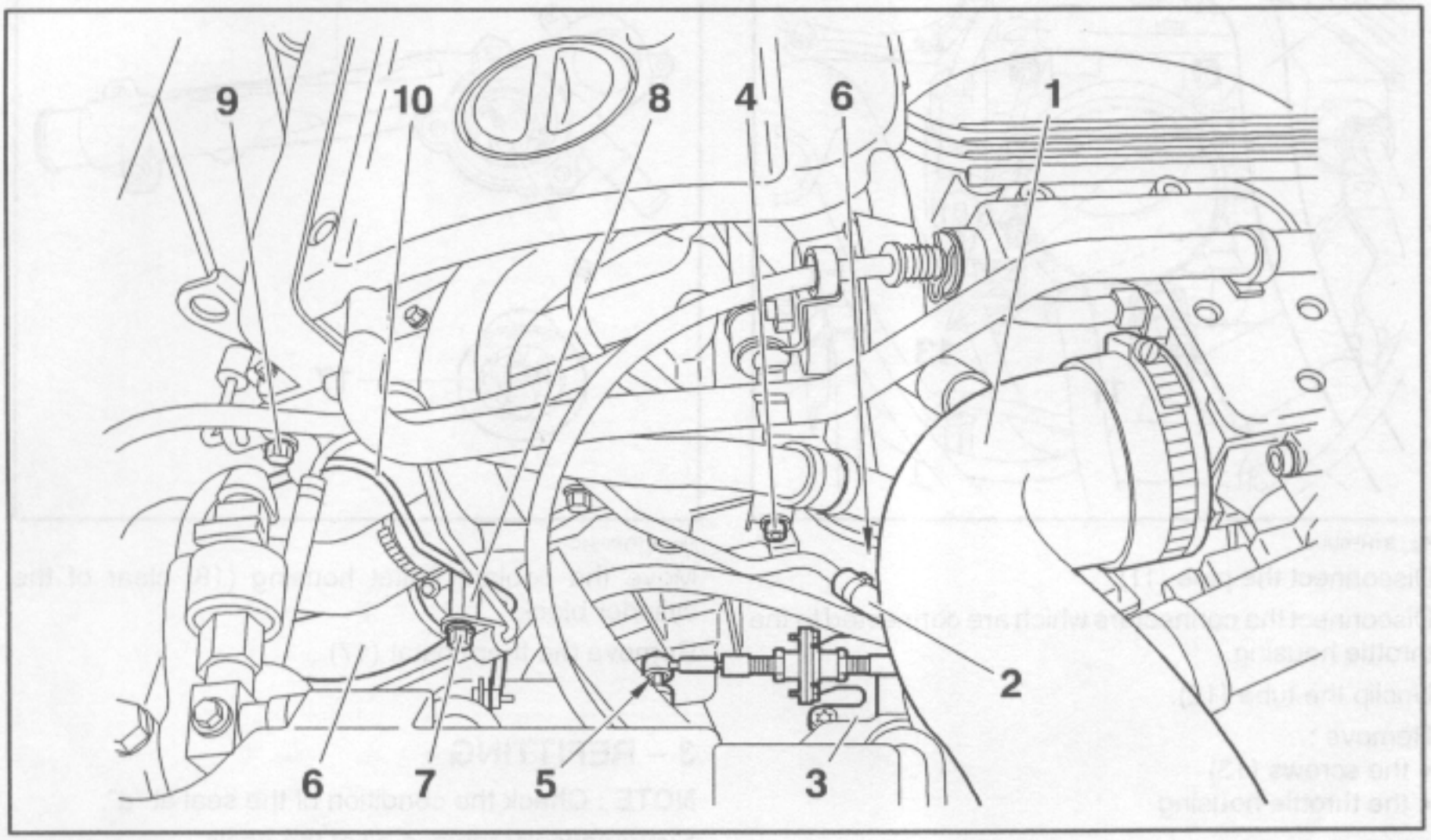


Fig : B1GP062D

Remove the air inlet duct (1).

Disconnect the pipe (2).

Disengage the ball–joint (5) ; by means of tool [1].

Remove :

- the gear control bracket (3)
- the screw (4)
- the screw (7)
- the stud (8)
- the screw (9)

Loosen the pipe (10) clamps.

Uncouple the 2 hoses (6) from the coolant outlet housing ; by means of tool [2].

www.WorkshopManuals.co.uk

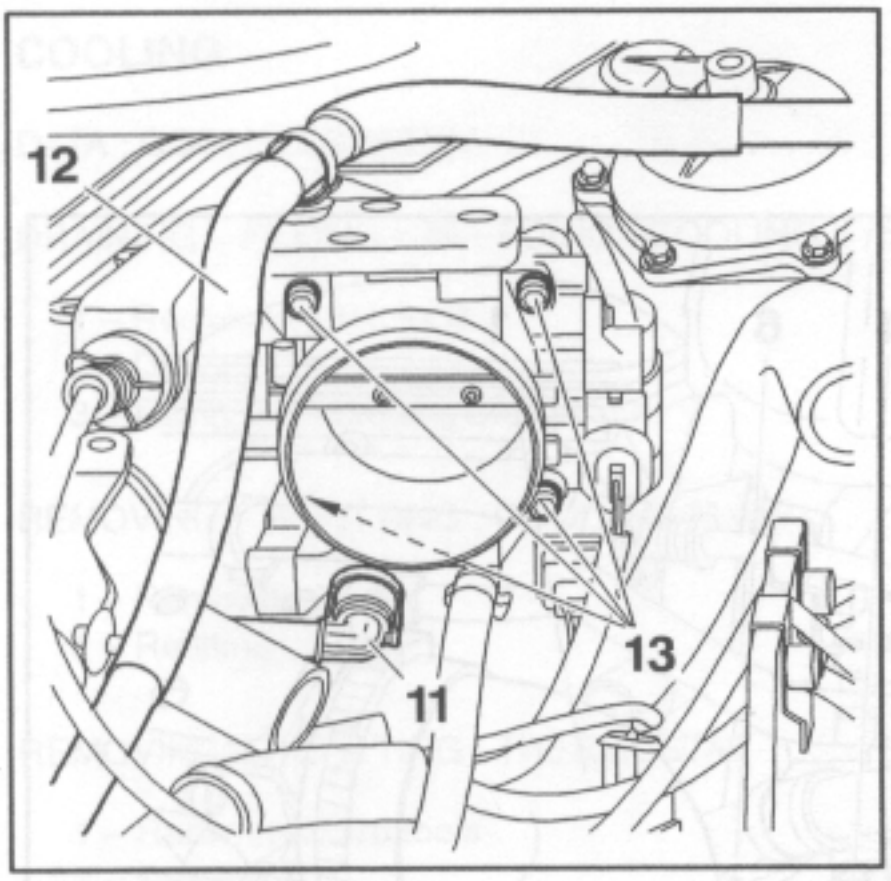


Fig : B1HP0UUC

Disconnect the pipe (11).

Disconnect the connectors which are connected to the throttle housing.

Unclip the tube (12).

Remove :
- the screws (13)
- the throttle housing

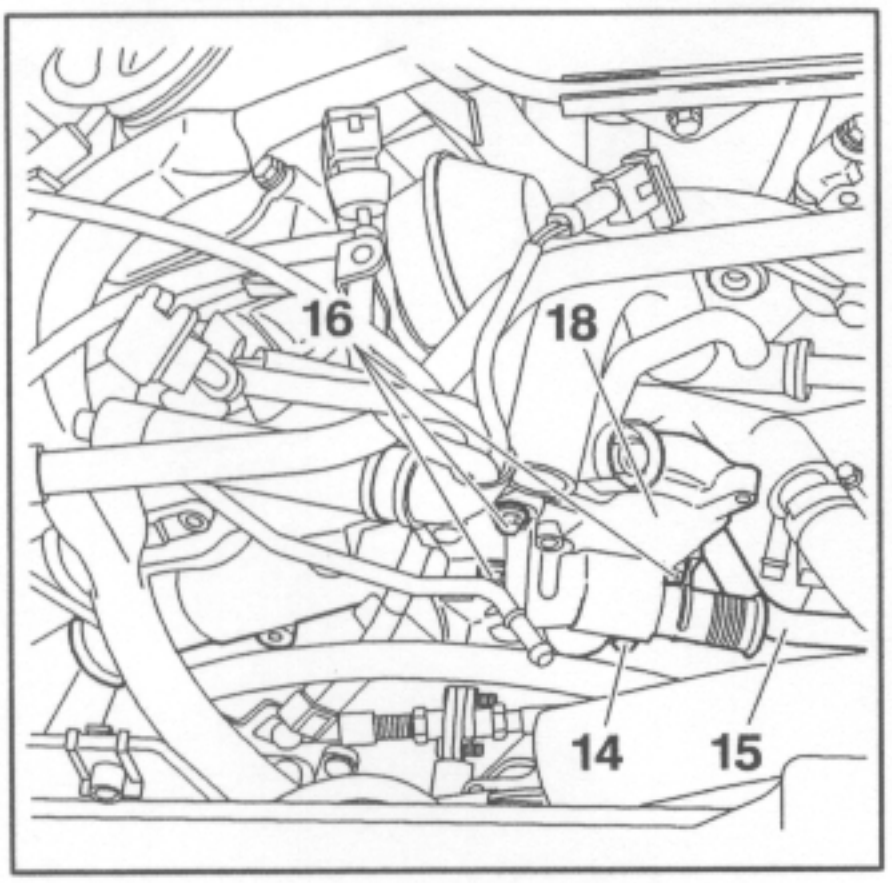


Fig : B1GP063C

Remove :
- the screw (14)
- the 2 screws fixing the pipe (15) to the rear cylinders bank (from underneath the vehicle)

Disconnect the pipe (15).

Remove the screws (16).

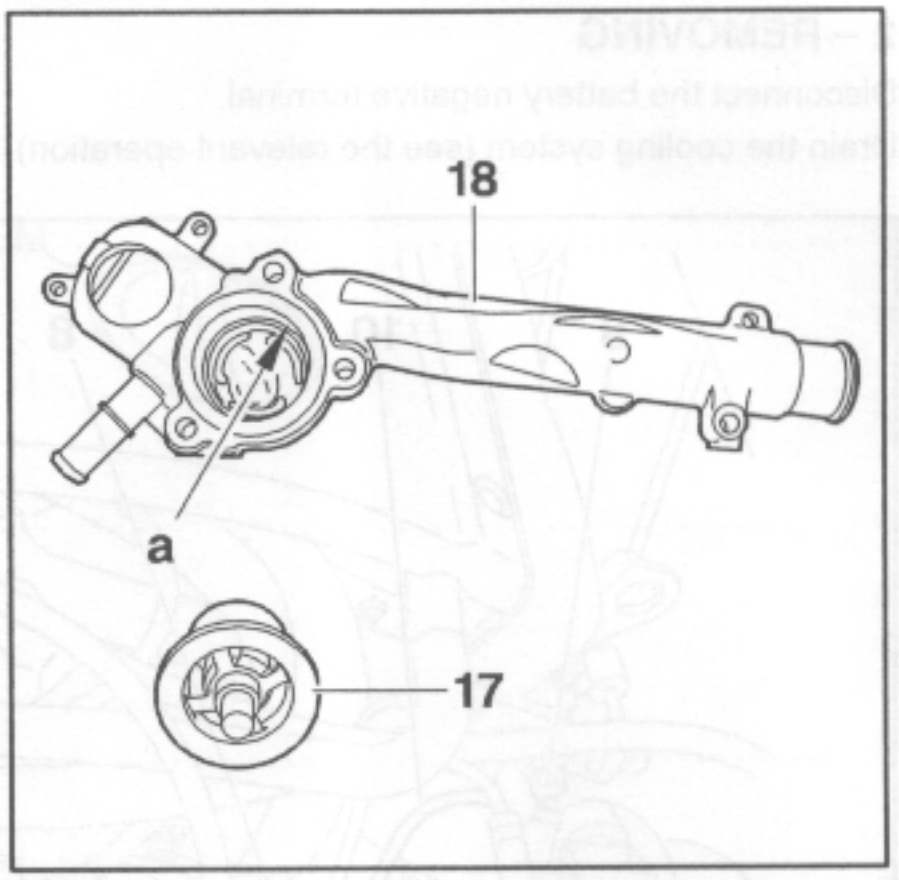


Fig : B1GP064C

Move the coolant outlet housing (18) clear of the cylinder block.

Remove the thermostat (17).

3 – REFITTING

NOTE : Check the condition of the seal at "a".

Systematically replace all of the seals.

Fit :
- the thermostat (17) (new)
- the coolant outlet housing (18)
- the screws (16) ; tighten to 2,5 m.daN

Couple :
- the pipe (15) (O ring seal)
- the hoses (6) ; by means of tool [2]

Fit :
- the screw (14)
- the 2 screws fixing the pipe (15) to the rear cylinders bank
- the throttle housing
- the screws (13) ; tighten to 0,8 m.daN

Connect the connectors which are connected to the throttle housing.

Couple up pipe (11).

Tighten the pipe (10) clamps.

Fit :
- the stud (8)
- screw (7)
- screw (9)
- screw (4)
- the gear control bracket (3)

Locate the ball–joint (5).

Couple up pipe (2).

Refit the air inlet duct (1).

Reconnect the battery negative terminal.

© "The intellectual property rights relating to the technical information contained in this document belong exclusively to the Manufacturer. Reproduction, translation or distribution in whole or in part without prior written authorisation from the Manufacturer is forbidden".

www.WorkshopManuals.co.uk

Xm

31st MAY 1995

REF. 2 No XM 144-00/7

ABONNEMENT GME

XU 10J4R ENGINE

● AIR AND FUEL SUPPLY-SUPERCHARGING

MAN 058931

1

GB

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

AIR AND FUEL SUPPLY – SUPERCHARGING

REMOVING – REFITTING : INLET MANIFOLD CONNECTION 3

REMOVING – REFITTING : THE KNOCK SENSOR 6

REMOVING – REFITTING : INJECTION RAIL AND INJECTORS 7

REMOVING – REFITTING : THE CASING OF HT COILS 8

www.WorkshopManuals.co.uk

REMOVING – REFITTING : INLET MANIFOLD CONNECTION

1 – RECOMMENDED TOOL

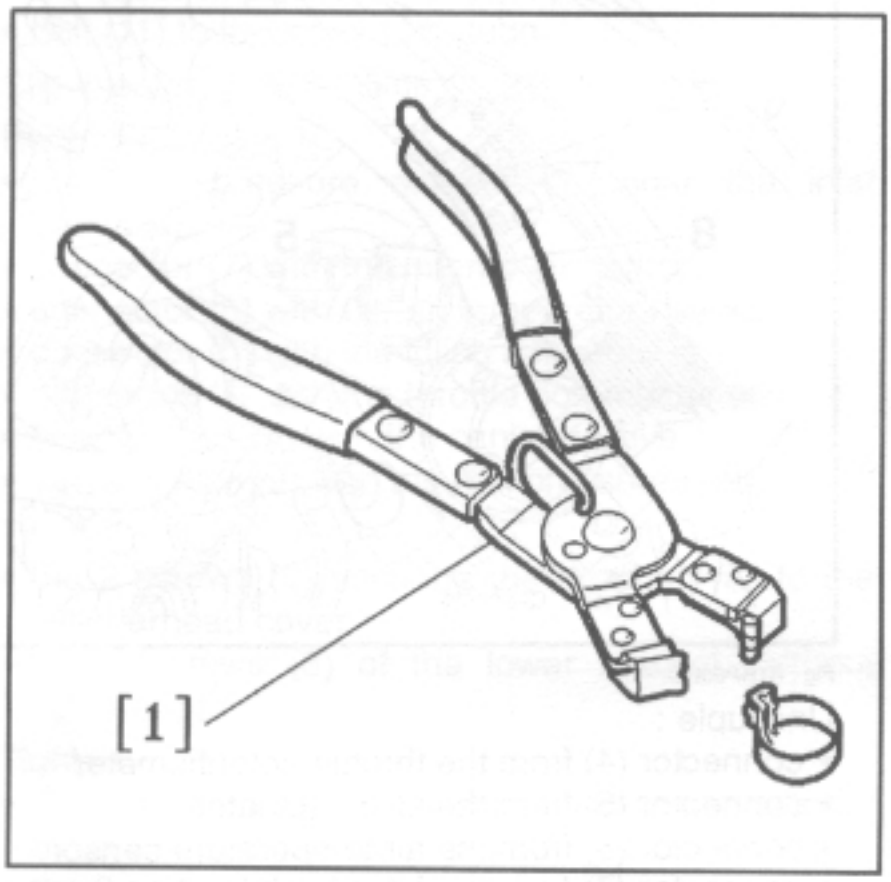


Fig : B3BP00GC

[1] CLIC clip pliers 4121–T.

2 – REMOVAL

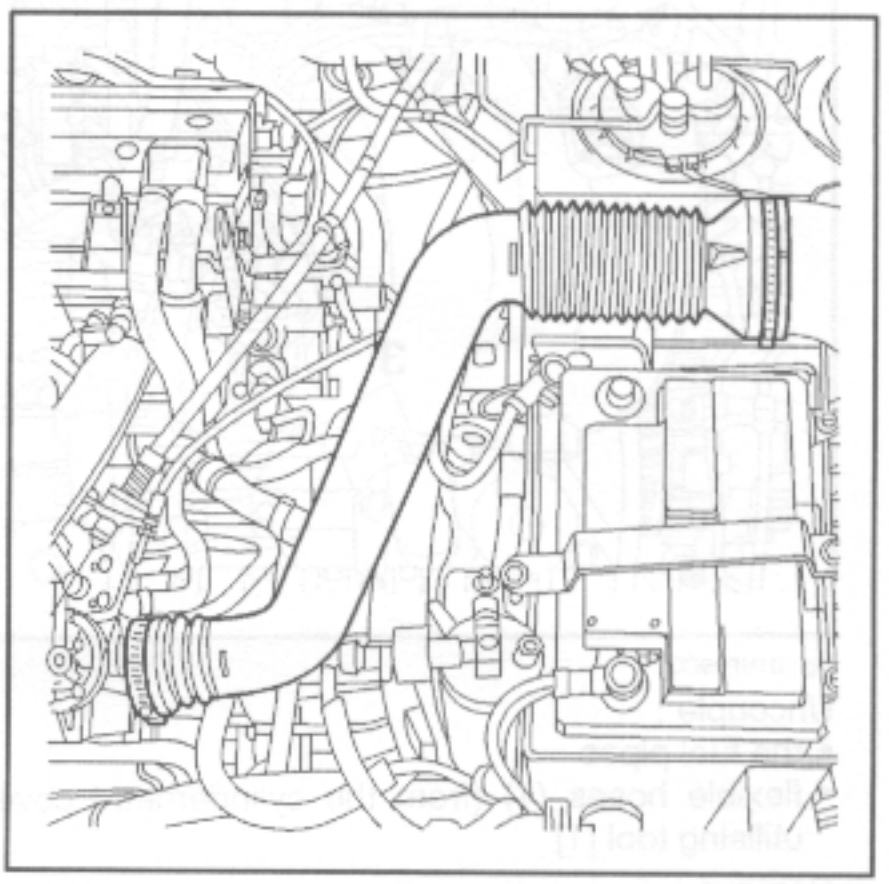


Fig : B1HP09BC

Disconnect the cable from the battery negative terminal.

Slacken the screw–type clamping collars of the air duct (air filter and throttle butterfly housing side).

Remove the air duct.

Uncouple :

- the accelerator cable
- the load correction cable (KD) – vehicle with automatic transmission

www.WorkshopManuals.co.uk

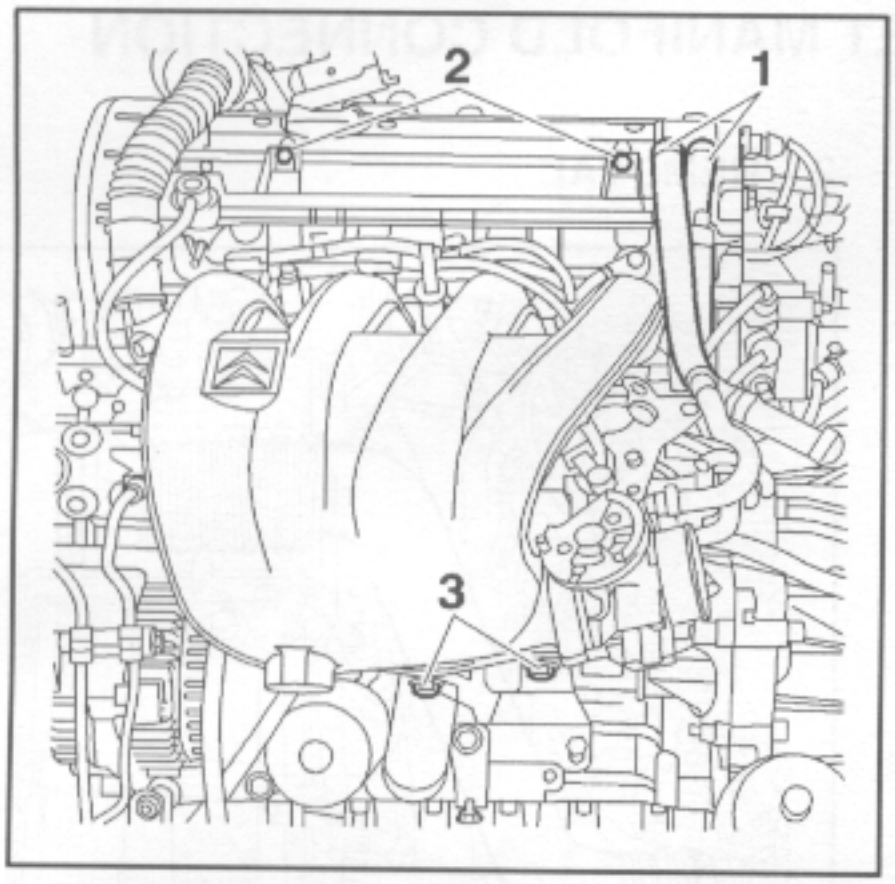


Fig : B1HP09CC

Uncouple :
- the fuel pipes
- flexible hoses (1) (from the cylinderhead cover), utilising tool [1]

Remove :
- the 2 screws (2) securing the injection rail to the cylinderhead cover
- the 2 screws (3) of the lower bracket

Slacken the screws fixing the lower bracket to the cylinder block.

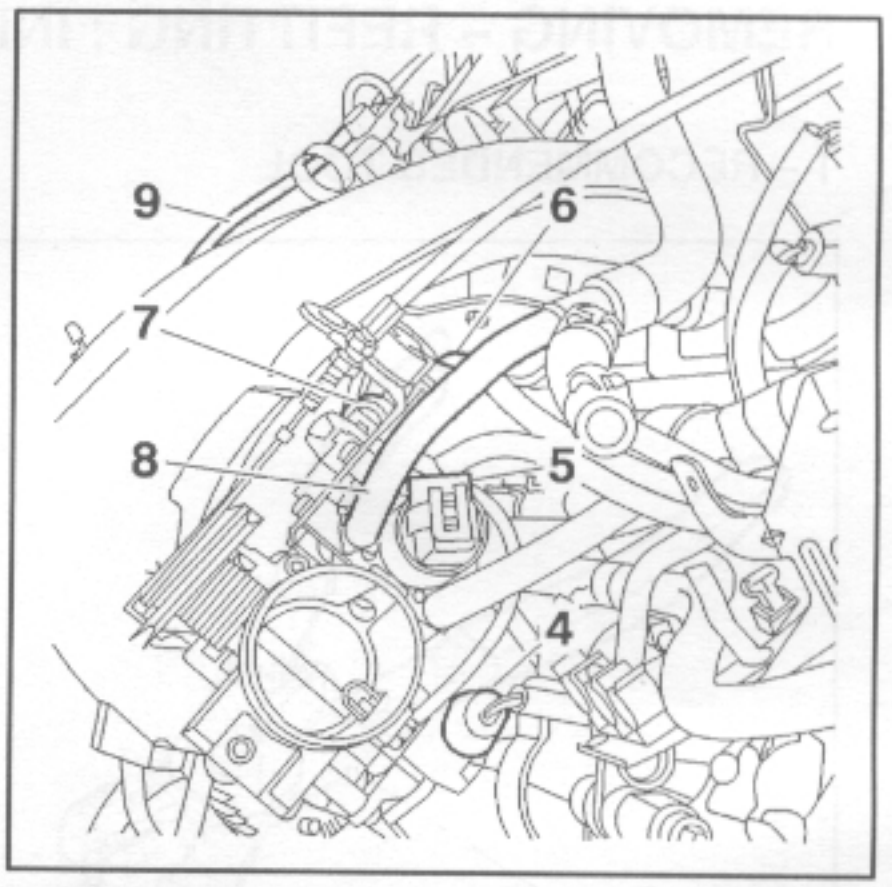


Fig : B1HP09DC

Uncouple :
- connector (4) from the throttle potentiometer
- connector (5) from the idling actuator
- connector (6) from the air temperature sensor
- connector (7) from the interior air heater
- flexible hose (8) from the canister valve
- vacuum pipe (9) from the fuel pressure regulator
- the inlet pressure connector (under the inlet manifold)

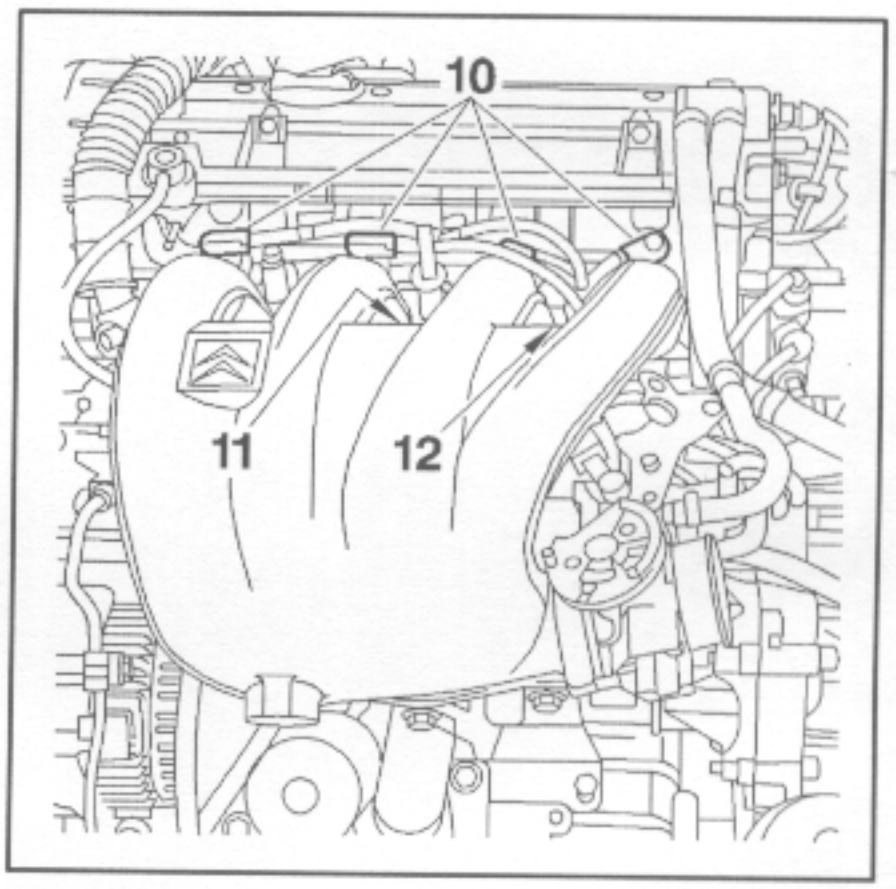


Fig : B1HP09EC

Disconnect injectors (10), with the help of a scriber.

Unclip the injection pipe assembly of injectors from its support (12).

Remove :
- bolt (11) from the oil dipstick tube
- the fixings from the inlet manifold connection
- the inlet manifold

www.WorkshopManuals.co.uk

3 – REFITTING

Fit :
- the inlet manifold (together with its seal) ; tighten the bolts to 2 m.daN
- the injection pipe assembly (12)
- bolt (11) to the oil dipstick tube

Clip injectors (10) in place.

Reconnect :
- the inlet pressure connector (under the inlet manifold)
- connector (7) with the interior air heater
- connector (6) with the air temperature sensor
- connector (5) with the idling actuator
- connector (4) with the throttle potentiometer
- flexible hose (8) with the canister valve
- vacuum pipe (9) with the fuel pressure regulator

Fit :
- the 2 screws (2) securing the injection rail to the cylinderhead cover
- the 2 screws (3) of the lower bracket (without tightening)

Tighten :
- the screws fixing the lower bracket to the cylinder block
- the 2 screws (3) of the lower bracket

Reconnect :
- the fuel pipes
- flexible hoses (1) with the cylinderhead cover, utilising tool [1]

Refit the air duct.

Reconnect :
- the accelerator cable
- the load correction cable – vehicle with automatic transmission

Adjustment of load correction cable – vehicle with automatic transmission (see the relevant operation).

Connect the battery.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : THE KNOCK SENSOR

1 – REMOVAL

Disconnect the cable from the battery negative terminal.

Remove the inlet manifold (see the relevant operation).

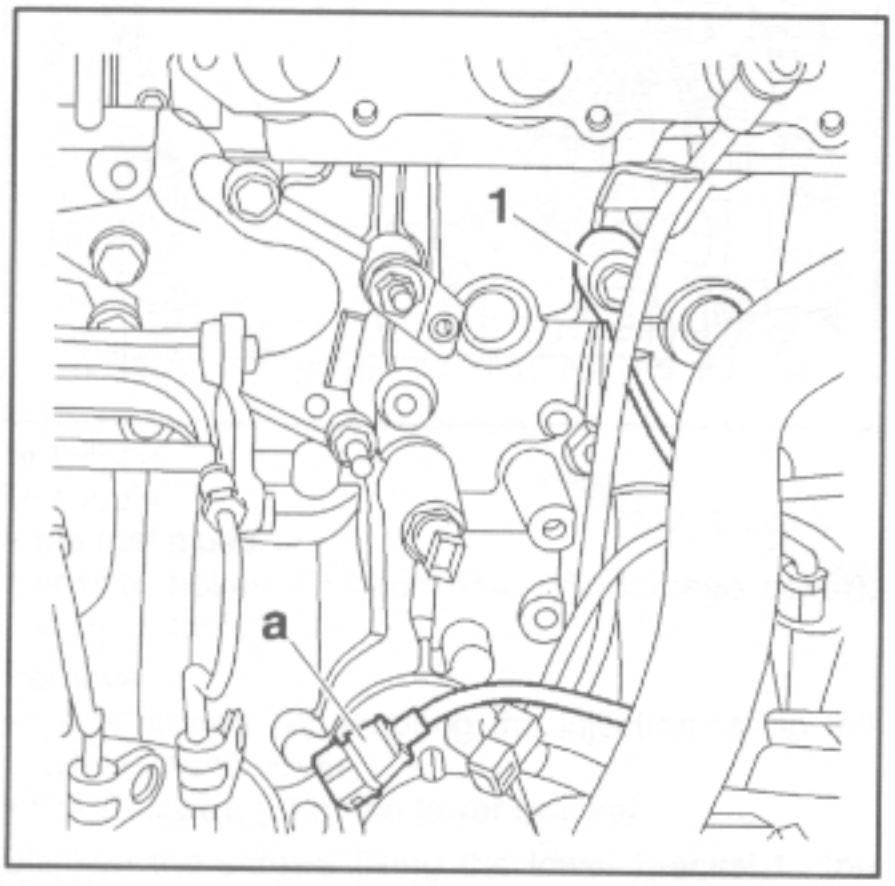


Fig : B1HP09GC

Disconnect connector (a) (3–way green connector).

Remove knock sensor (1).

2 – REFITTING

Fit :

- knock sensor (1) ; tighten to 2 m.daN
- the inlet manifold (see the relevant operation)

Reconnect connector (a).

Connect the battery.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : INJECTION RAIL AND INJECTORS

1 – RECOMMENDED TOOL

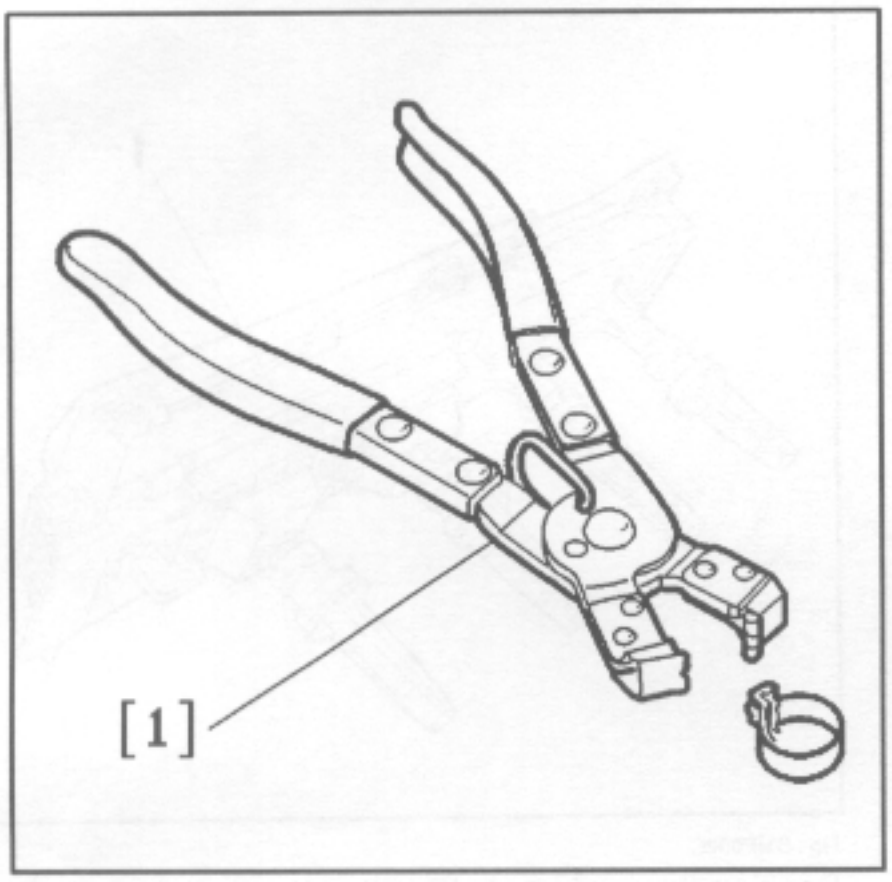


Fig : B3BP00GC

[1] CLIC clip pliers 4121–T.

2 – REMOVAL

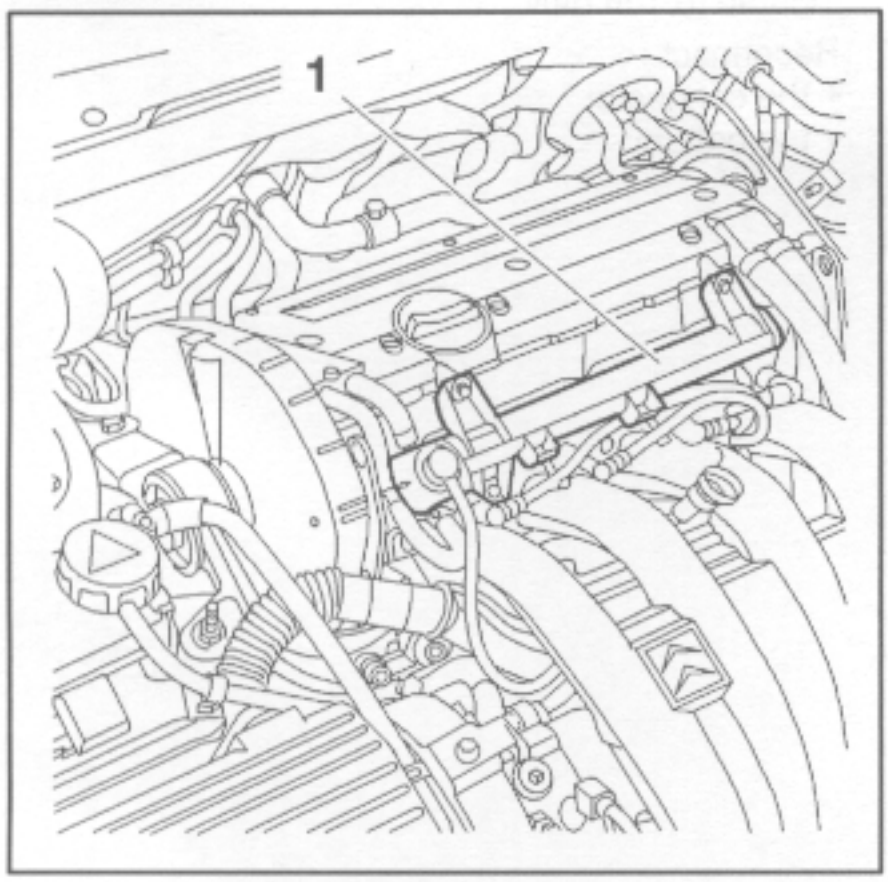


Fig : B1HP09HC

Disconnect the cable from the battery negative terminal.

IMPERATIVE : Carry out the operation, with engine cold (petrol may be thrown out).

Uncouple :
- the fuel pipes from injection pipe (1), using tool [1]
- the vacuum pipe from the fuel pressure regulator

Remove :
- the injection rail 4 fixing screws
- injection rail (1)

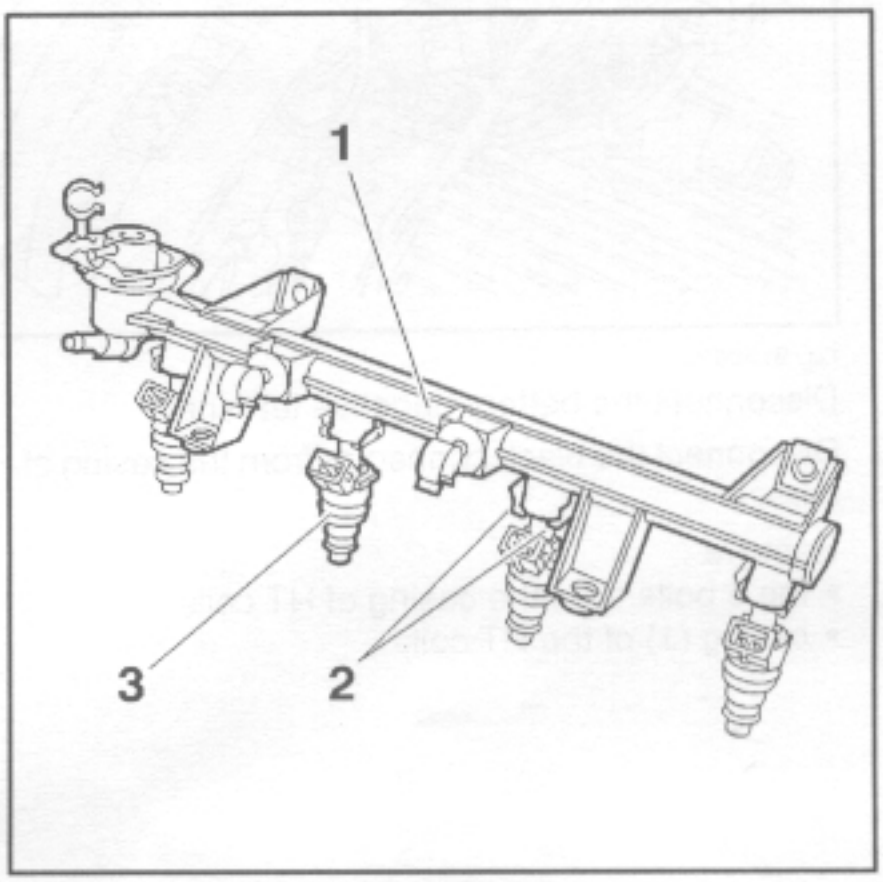


Fig : B1HP09IC

Remove :
- clips (2)
- injectors (3)

3 – REFITTING

Fit :
- injectors (3)
- clips (2)
- injection rail (1)

Reconnect :
- the vacuum pipe
- the fuel pipes, utilising tool [1]
- the battery

www.WorkshopManuals.co.uk

REMOVING – REFITTING : THE CASING OF HT COILS

1 – REMOVAL

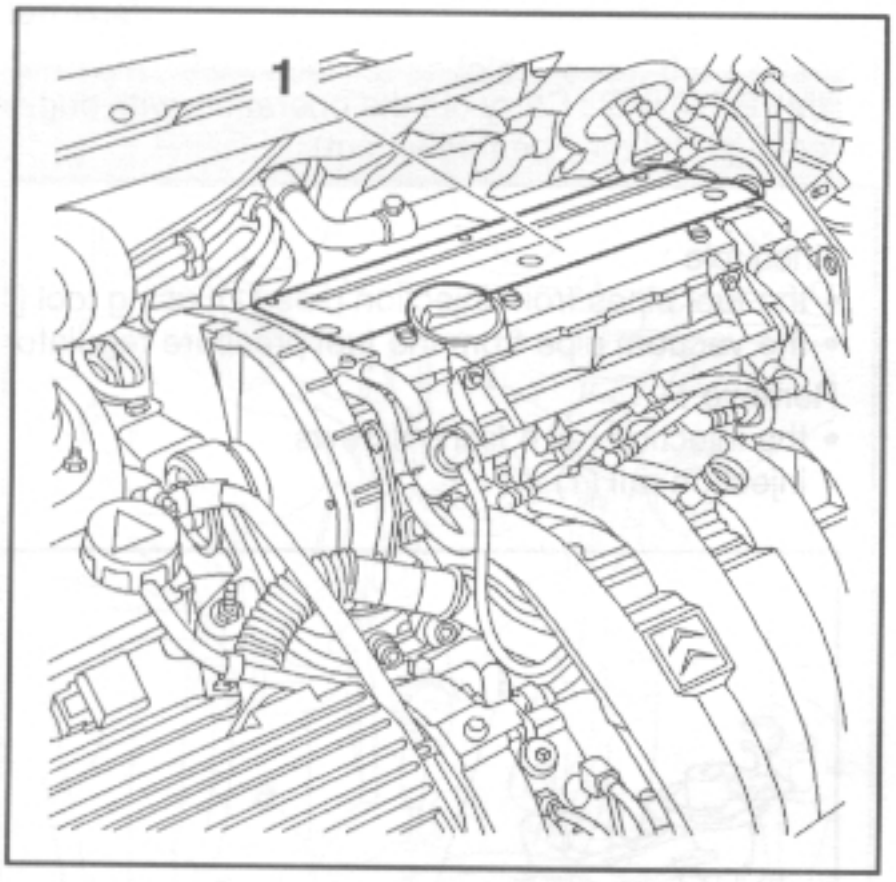


Fig : B1IP001C

Disconnect the battery negative terminal.

Disconnect the black connector from the casing of HT coils.

Remove :
- the 6 bolts from the casing of HT coils
- casing (1) of the HT coils

2 – REFITTING

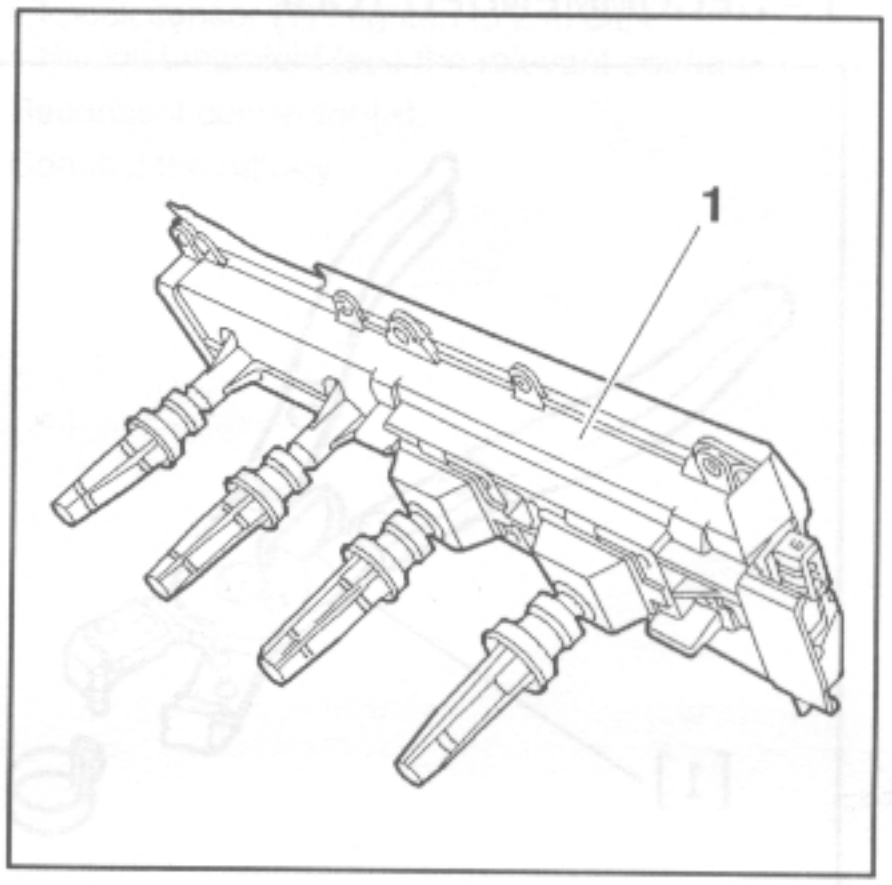


Fig : B1IP002C

Position the casing of HT coils (1).

NOTE : See to it that the extensions locate correctly into the wells of the sparking plugs and over the sparking plugs.

Reinstall the 6 screws of the casing of HT coils.

Tighten to 1 m.daN.

Reconnect :
- the connector
- the battery

www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk

DECEMBER 1997

SUBSCRIPTION

RPO No: 7511

REF. 2 No XM 144-00/8

PETROL ENGINE

ES9J4 (2946 cm³. V6)

- AIR AND FUEL SUPPLY - TURBOCHARGING
- IGNITION

MAN 108931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

GB

1

www.WorkshopManuals.co.uk

REMOVING – REFITTING : SPARKING PLUGS

1 – RECOMMENDED TOOLS

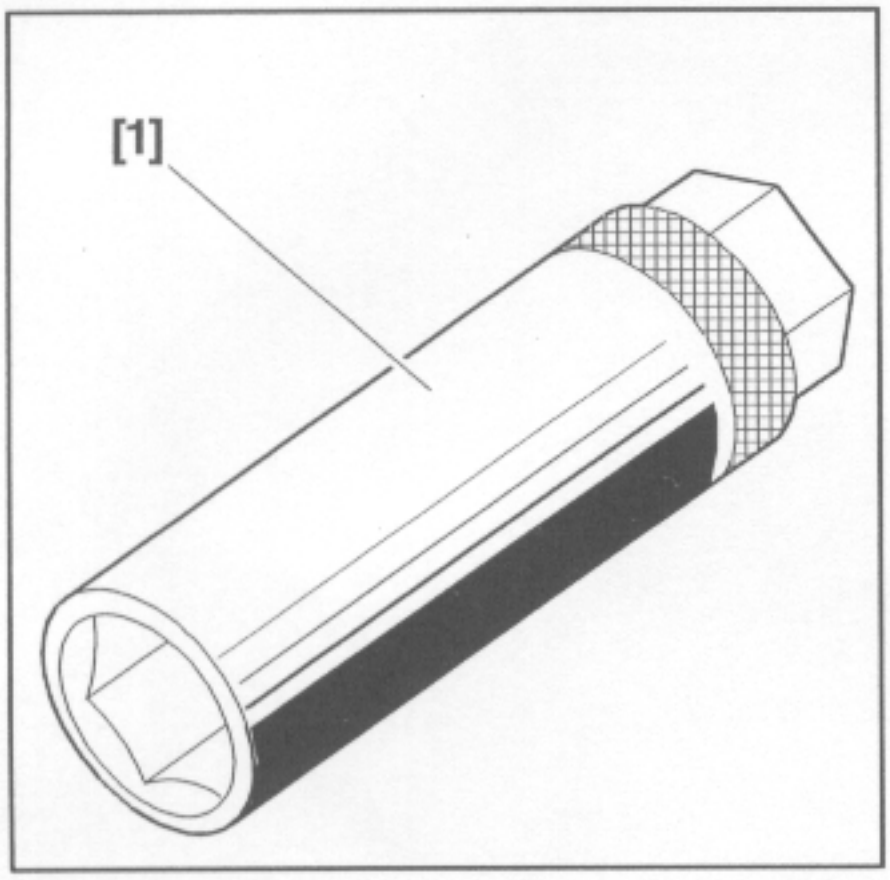


Fig : E5AP03MC

[1] spark plug spanner 9007–T.

2 – REMOVING

Remove the inlet manifold (see the relevant operation).

Plug the air inlet passages.

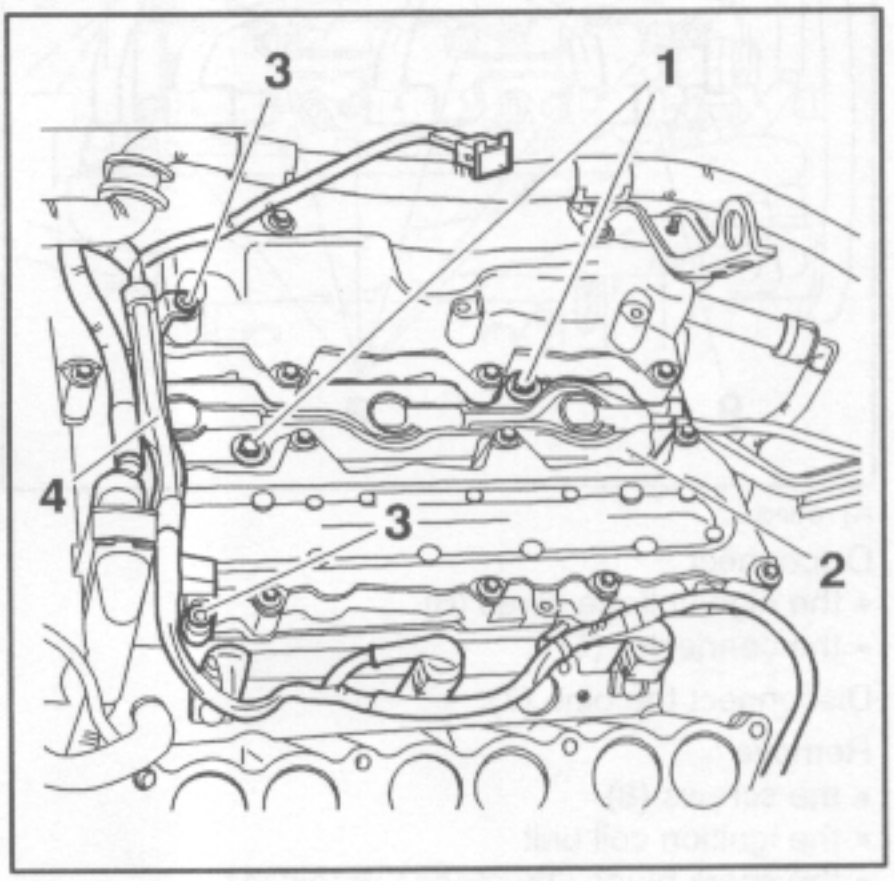


Fig : B1DP137C

Remove the screws (3).

Release the harness (4).

Remove :

- the screws (1)
- the ignition harness cassette (2)
- the engine cover

www.WorkshopManuals.co.uk

2 – REFITTING

IMPERATIVE : Replace the gasket between the inlet manifold and the cylinder head.

Refit the throttle housing–air inlet manifold assembly.

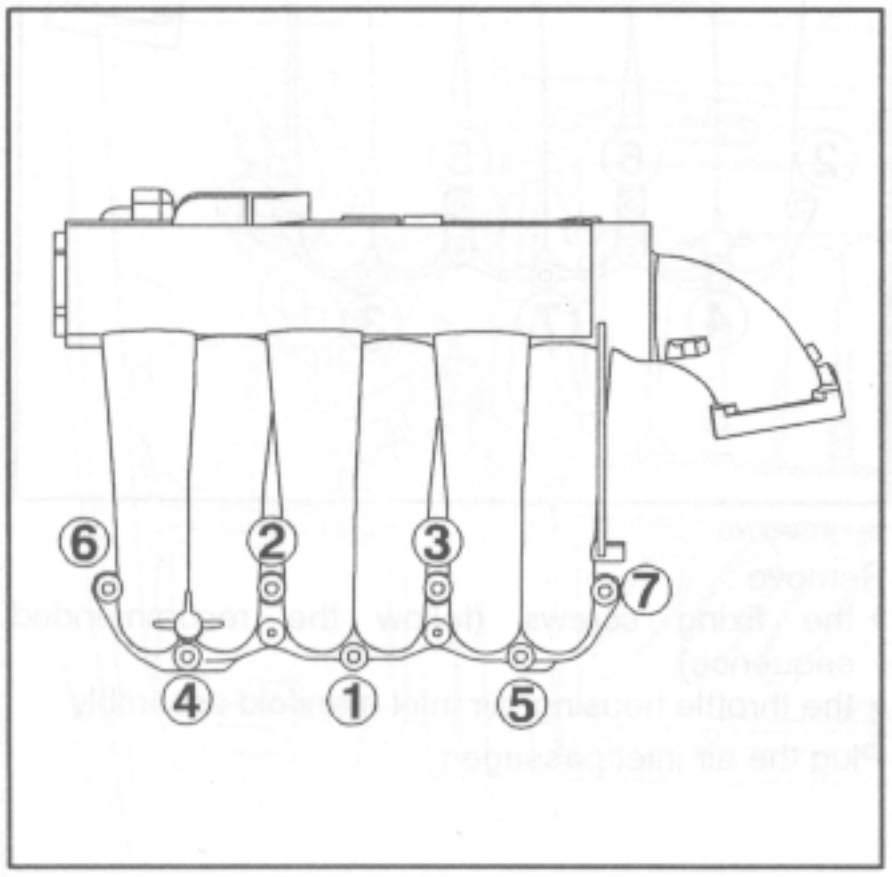


Fig : B1HP0LJC

Tightening method :
- pre–tighten each screw from 1 to 7 to a torque of 1 m.daN (follow the recommended sequence)
- tighten the screws from 1 to 7 to a torque of 2 m.daN (follow the recommended sequence)
- check the tightness of the bolts (follow the recommended sequence)

Fit :
- refit the screws (13) and (14) ; tighten to 1,5 m.daN
- the screws (11)
- refit the screws (12) and (8)

Connect the high tension leads (7).

Fit fixings (a) and (b) of the high voltage harness.

Couple the throttle housing gas recycling pipe.

Reconnect :
- the throttle housing harness connectors
- the connector (5)

Recouple :
- flexible hose (4)
- the accelerator cable
- the cruise control control rod (6)

Reclip the pipe (3).

Fit :
- the screws (1)
- the air sleeve (2)
- the engine cover

www.WorkshopManuals.co.uk

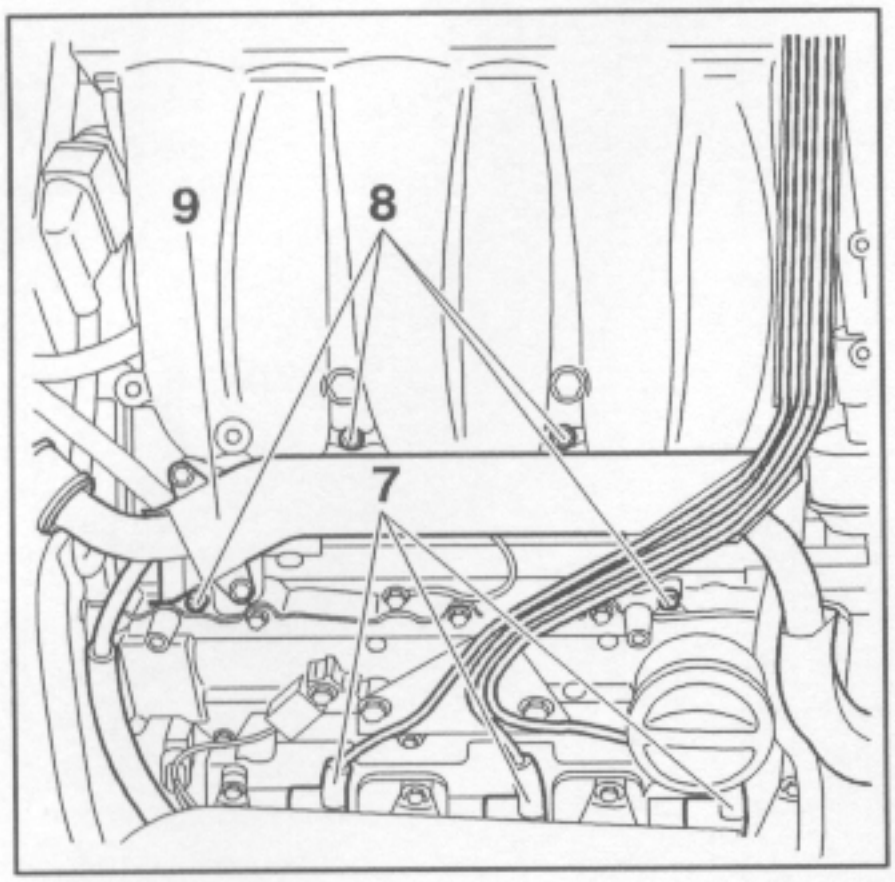


Fig : B1HP0UVC

Disconnect the high tension leads (7).

Remove the screws (8).

Release the harness (9).

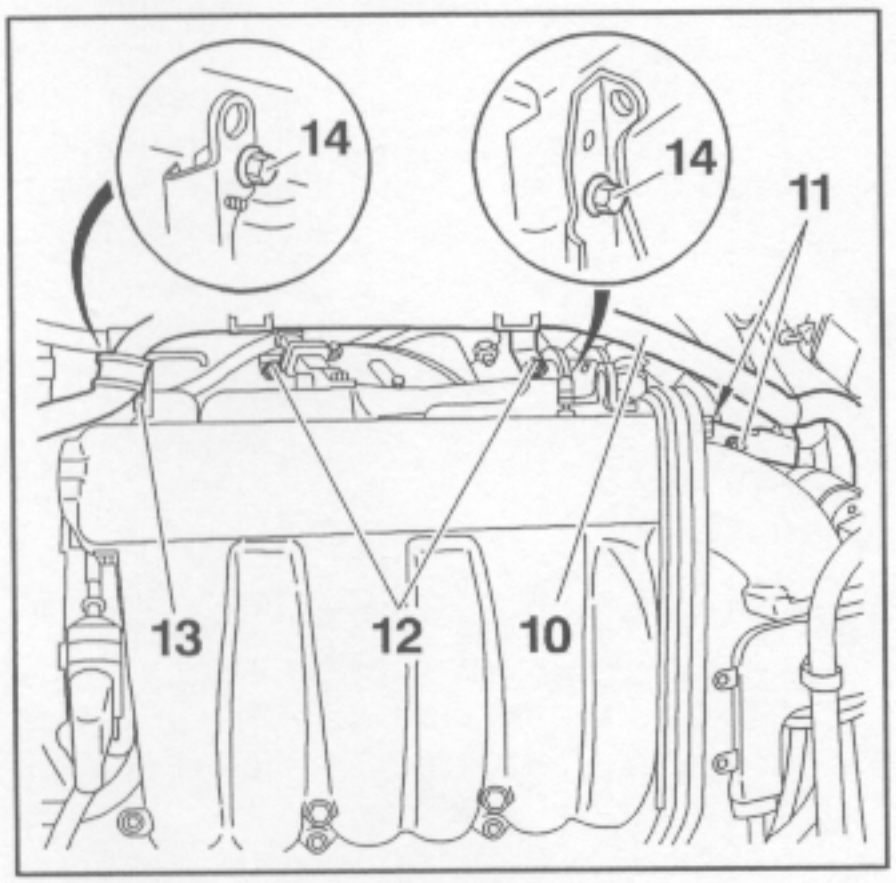


Fig : B1HP0UWC

Remove :

- the screws (12)
- the screws (11)

Release the harness (10).

Remove the screws (13) and (14).

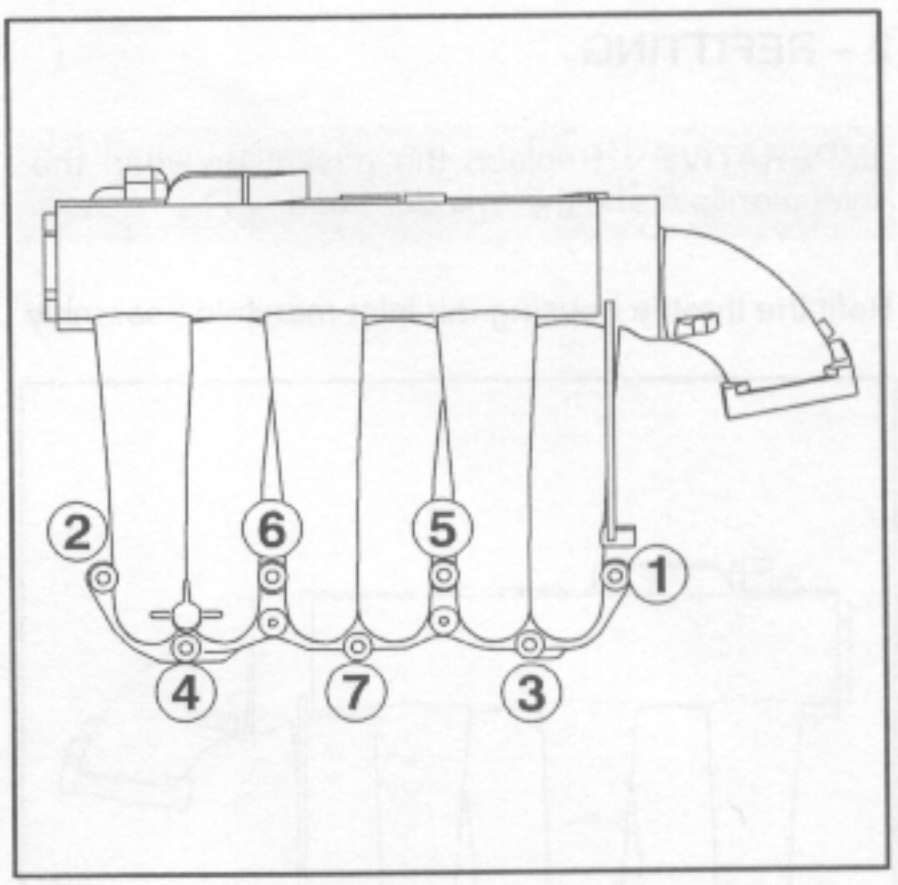


Fig : B1HP0UXC

Remove :

- the fixing screws (follow the recommended sequence)
- the throttle housing–air inlet manifold assembly

Plug the air inlet passages.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : INLET MANIFOLD

1 – REMOVING

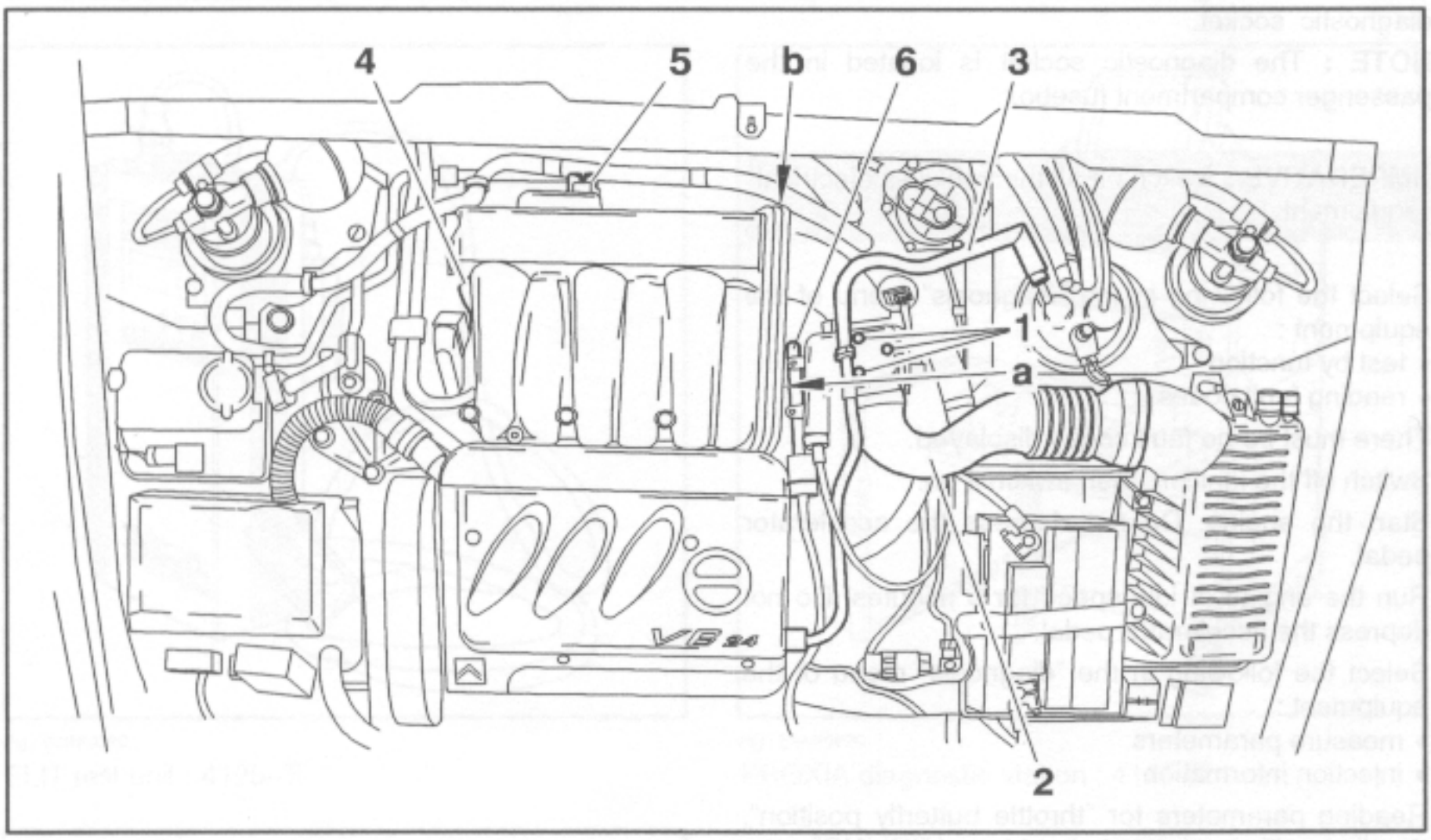


Fig : B1BP1MRD

Remove :
- the engine cover
- the air sleeve (2)
- the screws (1)

Unclip the pipe (3).

Uncouple :
- the cruise control control rod (6)
- the accelerator cable
- the flexible hose (4)

Remove the high voltage harness fixings (a) and (b).

Disconnect :
- the connector (5)
- the throttle housing harness connectors

Uncouple the throttle housing gas recycling pipe.

www.WorkshopManuals.co.uk

3 – AUTO–ADAPTATION OF THE RICHNESS

Warm up the engine until the cooling fan or fans cut in and out : water temperature = 80 °C.

Connect the diagnostic tool to the vehicle central diagnostic socket.

NOTE : The diagnostic socket is located in the passenger compartment fusebox.

IMPERATIVE : Switch off all the vehicle's electrical equipment.

Select the following in the "diagnosis" menu of the equipment :
- test by function
- reading fault codes

There must be no fault codes displayed.

Switch off the ignition, then switch it on.

Start the engine. Do not depress the accelerator pedal.

Run the engine at idle speed for 5 minutes. Do not depress the accelerator pedal.

Select the following in the "diagnosis" menu of the equipment :
- measure parameters
- injection information

Reading parameters for "throttle butterfly position", the diagnostic equipment should read "IDLING".

If a different condition should be displayed, carry out the following operations :
- check the routing and tension of the accelerator cable
- ensure that the throttle butterfly returns to the idle stop
- slowly depress the accelerator pedal and check that the diagnostic equipment reads the throttle positions of "IDLE – MID–THROTTLE – FULL THROTTLE" when displaying "throttle butterfly position"

If the throttle status does not alter, there is an electrical fault : refer to the specific brochure. Fault finding.

NOTE : Erasing the fault codes using diagnostic equipment does not erase the auto–adaptation of the mixture richness.

www.WorkshopManuals.co.uk

INITIALISATION PROCEDURE : BOSCH MP7.0 MULTIPOINT FUEL INJECTION ECU

1 – RECOMMENDED TOOLS

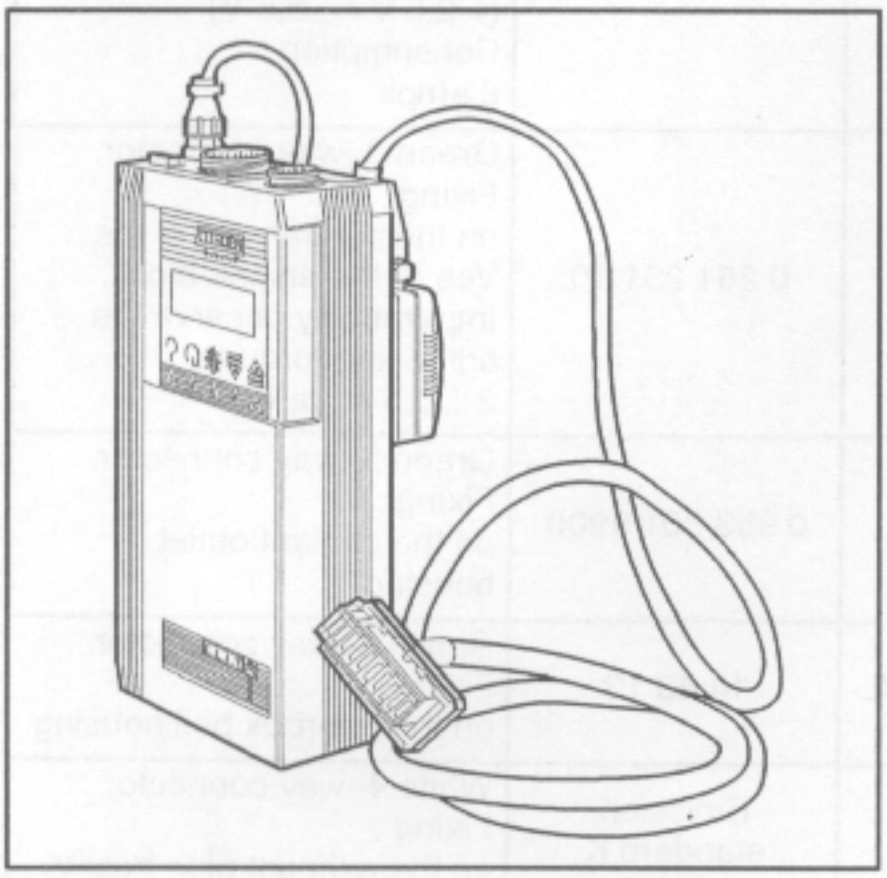


Fig : B3BP039C

ELIT test unit : 4125–T.

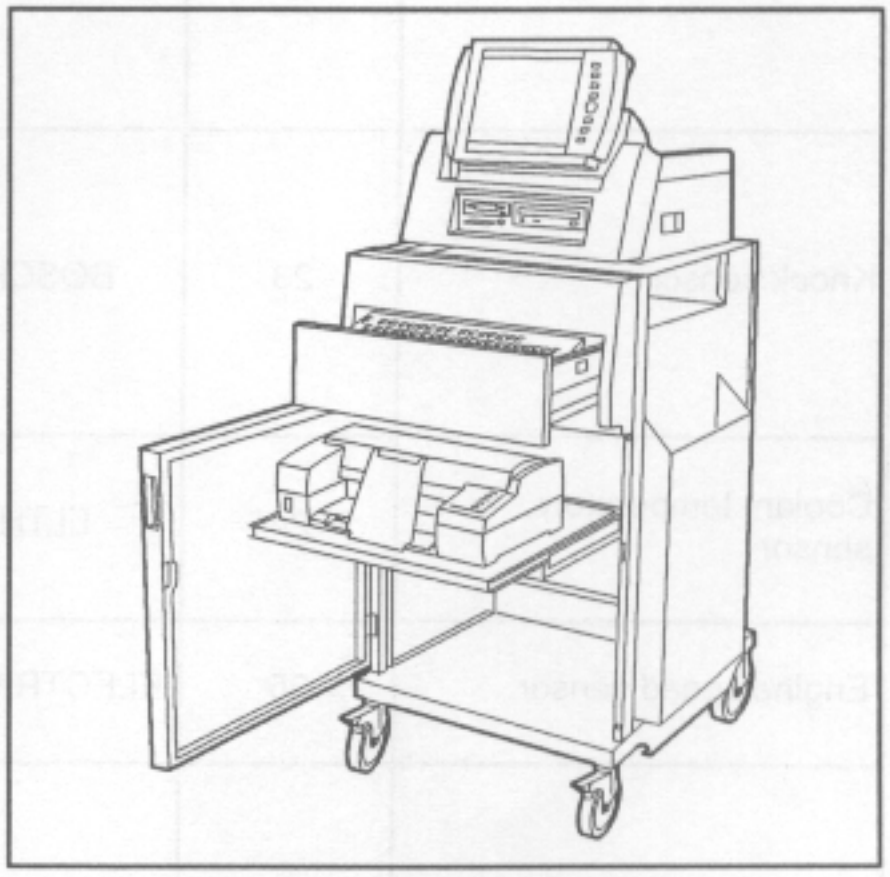


Fig : E5AP087C

PROXIA diagnostic station : 4165–T.



Fig : E5AP088C

LEXIA diagnostic station : 4171–T.

2 – INITIALISATION OF THE ENGINE IDLE SPEED

Switch on the ignition.

Unlock the coded anti–theft device (according to equipment).

Wait 5 seconds before starting the engine.
Do not depress the accelerator pedal.

www.WorkshopManuals.co.uk

Component	Item	Supplier	Reference	Remarks
Throttle housing heating element	20	SOLEX	22 496 134	Yellow 2–way connector. Fixing : on the throttle housing. Supply : 13,5 Volts (+ 2,5 V / – 5,5 V). Consumption : 8 amps
Knock sensor	23	BOSCH	0 261 231 10	Green 3–way connector. Fixing : on the central part of the Vee of the engine block. Imperatively observe the tightening torque : 2 ± 0,5 m.daN
Coolant temperature sensor	24	ELTH	0 953 001 9900	Green 2–way connector. Fixing : on the coolant outlet housing
Engine speed sensor	25	ELECTRICFIL	14 43 13	Brown 3–way connector. Fixing : on the gearbox bell housing
Oxygen sensor	28	BOSCH	Emission standard K LSH23	White 4–way connector. Fixing : on the exhaust pipe below the body
			Emission standard Z/L3 LSH24. 0 258 003 754	Brown 4–way connector. Fixing : on the exhaust pipe below the body
Throttle potentiometer	29	BOSCH	DKG1 0 280 122 009	Single track. White 3–way connector. Fixing : on the throttle housing. Not adjustable

6 – IGNITION SYSTEM

Component	Item	Supplier	Reference	Remarks
Spark plugs	26	BOSCH	FR7 KDC	Electrode gap : 1 mm Tightening torque : 2,5 m.daN
		EYQUEM	RFC 58LSPD	
Ignition coil unit	27	SAGEM	BBC 3.2	4–way black connector. Dual static type ignition

www.WorkshopManuals.co.uk

5 – ELECTRICAL CIRCUIT

Component	Item	Supplier	Reference	Remarks
Engine management ECU	1	BOSCH	MP 7.0. Emission standard Z/L3. Vehicle with manual gearbox : 0 261 204 410. With automatic gearbox : 0 261 204 415	55–way connector. "semi–sequential" injection. "flash" type eprom (reprogrammable eprom). Located in the ECU housing
Inertia switch	4	FIRST INERTIA SWITCH	Type 505	3–way black connector. Location on front right wheel arch, fixing on the suspension support. Can be manually reset if the cut–off system is activated
Double relay : 1 – power : ignition system, coded anti–theft device, oxygen sensor heating	5	OMP / BITRON	240 104	15–way black connector. Located in the ECU housing
2 – main supply : injection ECU, electric fuel pump	6	CARTIER	03 723	
Power–assisted steering pressure sensor	8	BITRON		Blue 2–way connector. Switch opens at 20 bars, for ECU information (steering on full lock). Mauve identification collar. Fixed to the power steering hydraulic 4–way union beneath the vehicle
Vehicle speed sensor	9	EATON		White 3–way connector. Fixing : on the differential housing of the gearbox
Inlet air temperature sensor	18	JAEGER	IAT S04	Grey 2–way connector. Fixing : on the air filter inlet duct

www.WorkshopManuals.co.uk

3 – FUEL SYSTEM

Component	Item	Supplier	Reference	Remarks
Fuel to be used				95 RON or 98 RON premium unleaded petrol
Fuel tank	11			Capacity = 80 litres. Composition = polyethylene
Fuel pump	12	BOSCH	EKP 10 0 580 453 024	Electric pump immersed in the tank. Voltage : 12 V. Pressure : 3,5 bars. Delivery : 115 to 120 l/h
		ROCHESTER		
Fuel filter	13	PURFLUX		Fixing : on the fuel tank. The arrow, on the filter, indicates the direction of the fuel flow
Canister	14	PURFLUX	AVE 20	Location : under the front right wing
Canister discharge electrovalve	15	BOSCH	0 280 142 317	Electrovalve normally closed. Brown 2–way connector. Location : under the front right wing. Resistance = 24 ohms
Injectors	21	BOSCH	EV 8 E 0 280 155 613	Injector group 1–2–3, brown 2–way connector. Injector group 4–5–6, 2–way black connector. Yellow marking. Bi–jet injector. Resistance = 16 ohms
Pressure regulator	22	BOSCH	0 280 160 560	Fixing on the return end of the fuel rail. Regulating pressure = 3 bars
Pulsation damper			0 280 161 500	Fixing on the supply end of the fuel rail

4 – AIR CIRCUIT

Component	Item	Supplier	Reference	Remarks
Integral pressure sensor	16	BOSCH	DSS 0 261 230 012	Grey 3–way connector. Incorporated into the inlet manifold
Throttle housing	17	MAGNETI–MARELLI	PSA 603	The unit comprises : heating element. Throttle potentiometer
Idling regulation electrovalve	19	BOSCH	ZWD 5 0 280 140 563	Grey 3–way connector. Fixed to the throttle housing by a retaining clamp

www.WorkshopManuals.co.uk

2 – DATA

Engine plate	XFZ (ES9J4)
Capacity (cc)	2946
Idling speed (rpm) (not adjustable)	600 ± 50 Variable engine speed according to the battery voltage 700 ± 50 (air conditioning) 800 ± 50 (parking manoeuvres)
Cut–off at maximum speed (rpm)	6520
Injection cut–out on deceleration (rpm)	1400
Cut–in speed (rpm)	1100
% CO	< 0,5
% CO2	> 11

www.WorkshopManuals.co.uk

DATA : BOSCH MP 7.0 MULTIPOINT INJECTION SYSTEM

Application : this procedure applies to engine XFZ (ES9J4).

1 – SYNOPSIS

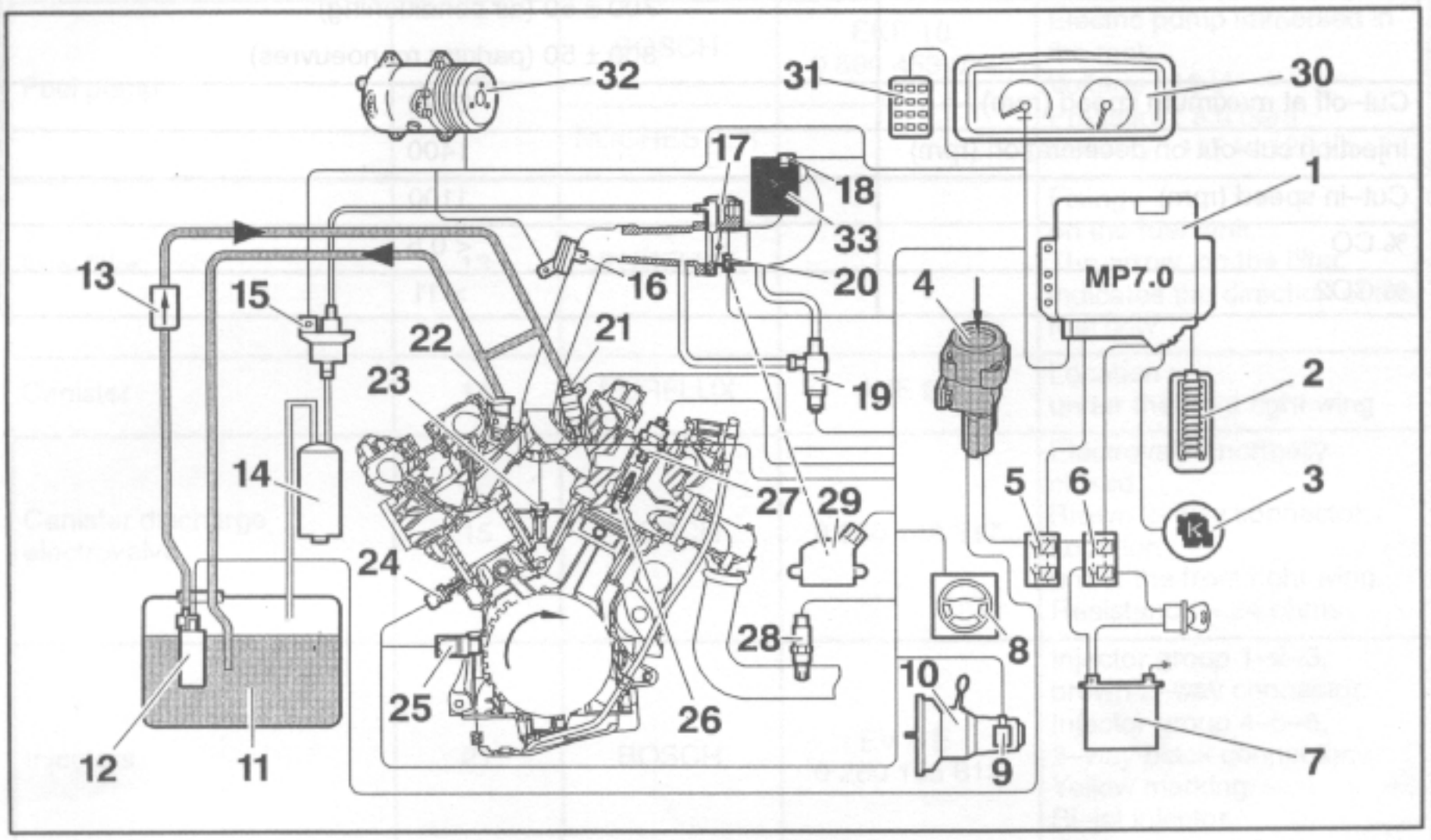


Fig : B1HP0KZD

(1) engine management ECU.
(2) diagnostic connector.
(3) injection ignition test warning lamp.
(4) inertia switch.
(5) double relay : power.
(6) double relay : principal.
(7) battery.
(8) pressure sensor : power assisted steering.
(9) vehicle speed sensor.
(10) gearbox.
(11) fuel tank.
(12) fuel pump.
(13) fuel filter.
(14) canister.
(15) canister discharge electrovalve.
(16) integral pressure sensor.
(17) canister discharge unit – throttle housing.
(18) inlet air temperature sensor.
(19) idling regulation electrovalve.
(20) throttle housing heating element.
(21) injectors.
(22) pressure regulator – pulsation damper.
(23) knock sensor.
(24) coolant temperature sensor.
(25) engine speed sensor.
(26) sparking plugs (x6).
(27) HT coil unit.
(28) oxygen sensor.
(29) throttle potentiometer.
(30) consumption information – engine speed.
(31) coded anti–theft keypad.
(32) air conditioning compressor cut out information.
(33) air filter unit.
(34) automatic gearbox ECU, if the vehicle is equipped with an automatic gearbox.

www.WorkshopManuals.co.uk

AIR AND FUEL SUPPLY – TURBOCHARGING

DATA : BOSCH MP 7.0 MULTIPOINT INJECTION SYSTEM 1

1 – Synopsis 1
2 – Data 2
3 – Fuel system 3
4 – Air circuit –
5 – Electrical circuit 4
6 – Ignition system 5

INITIALISATION PROCEDURE : BOSCH MP7.0 MULTIPOINT FUEL INJECTION ECU 6

1 – Recommended tools 6
2 – Initialisation of the engine idle speed –
3 – Auto–adaptation of the richness 7

REMOVING – REFITTING : INLET MANIFOLD 8

1 – Removing 8
2 – Refitting 10

IGNITION

REMOVING – REFITTING : SPARKING PLUGS 11

1 – Recommended tools 11
2 – Removing –
3 – Refitting 12

www.WorkshopManuals.co.uk

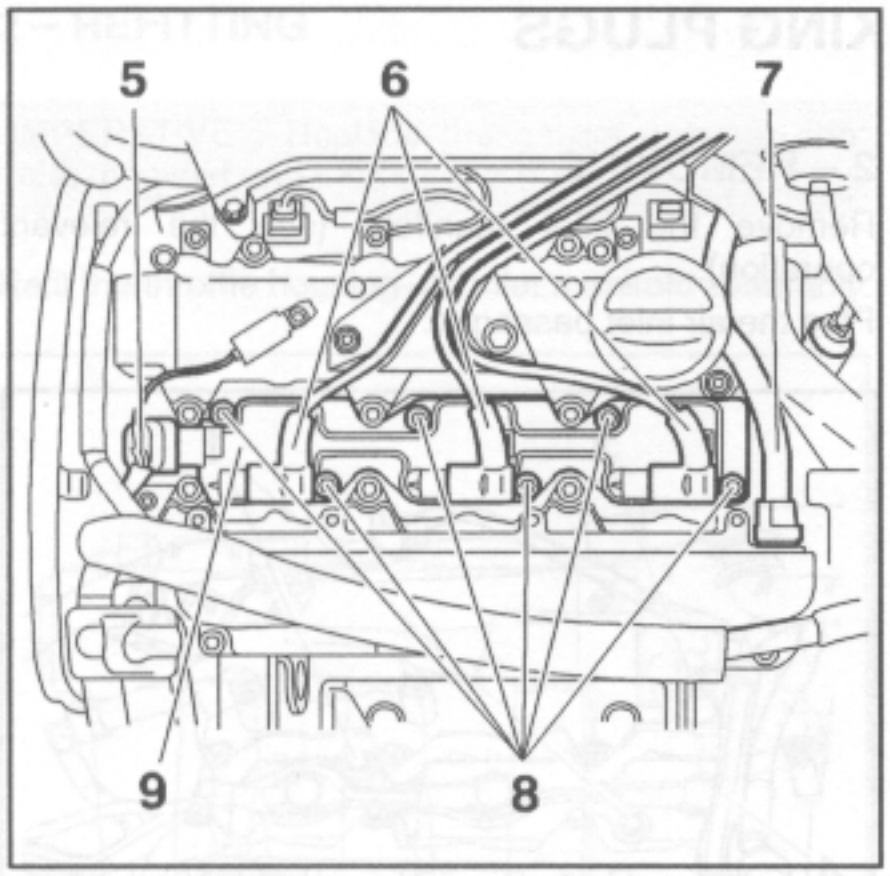


Fig : B1IP008C

Disconnect :
- the high voltage wires (6)
- the connector (5)

Disconnect the pipe (7).

Remove :
- the screws (8)
- the ignition coil unit
- the spark plugs ; by means of tool [1]

3 – REFITTING

NOTE : Lubricate the threads of the sparking plugs (NO–BIND G4 grease).

Fit the sparking plugs.

Using tool [1], tighten the sparking plugs to 2.75 m.daN.

Fit :
- the ignition coil unit
- the screws (8) ; tighten to 0,8 m.daN

Couple up pipe (7).

Reconnect :
- connector (5)
- the high voltage wires (6)

Fit :
- the ignition harness cassette (2)
- the screws (1)
- the screws (3)
- the engine cover

Refit the inlet manifold (see the relevant operation).

www.WorkshopManuals.co.uk

28th APRIL 1995

REF. 2 No XM 146-00/9

ABONNEMENT GME

AIR AND FUEL SUPPLY

- BOSCH VP36 MSA11 (DK5) FUEL INJECTION

Operating principle
Diagnosis

MAN 158931

1

GB

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

AIR AND FUEL SUPPLY – SUPERCHARGING

PRESENTATION : BOSCH VP36 MSA11 FUEL INJECTION 3
FUNCTION – LOCATION : COMPONENTS OF THE SYSTEM 6
OPERATING PRINCIPLE : BOSCH VP36 MSA11 FUEL INJECTION 16
DATA : BOSCH VP36 MSA11 FUEL INJECTION 22
REPAIRS : BOSCH VP36 MSA11 FUEL INJECTION 24
FAULT FINDING : BOSCH VP36 MSA 11 FUEL INJECTION 26

www.WorkshopManuals.co.uk

PRESENTATION : BOSCH VP36 MSA11 FUEL INJECTION

1 – PREAMBLE

Engine DK5 ATE incorporates an electronic management of the injection.

Advantages of the electronic management :
- to comply with the emission standards
- to improve the driveability
- to reduce consumption
- and optimise engine performance

2 – PRESENTATION

Main parts constituting the system :
- the injection pump
- the injection E.C.U.

2.1 – Injection pump

The BOSCH injection pump of the VP36 type is derived from the VE type BOSCH pump.

The pump mainly contains :
- the diesel fuel flow electrical actuator (it replaces: load lever, rods, springs)
- an electrovalve for the control of injection advance

2.2 – Injection electronic control unit

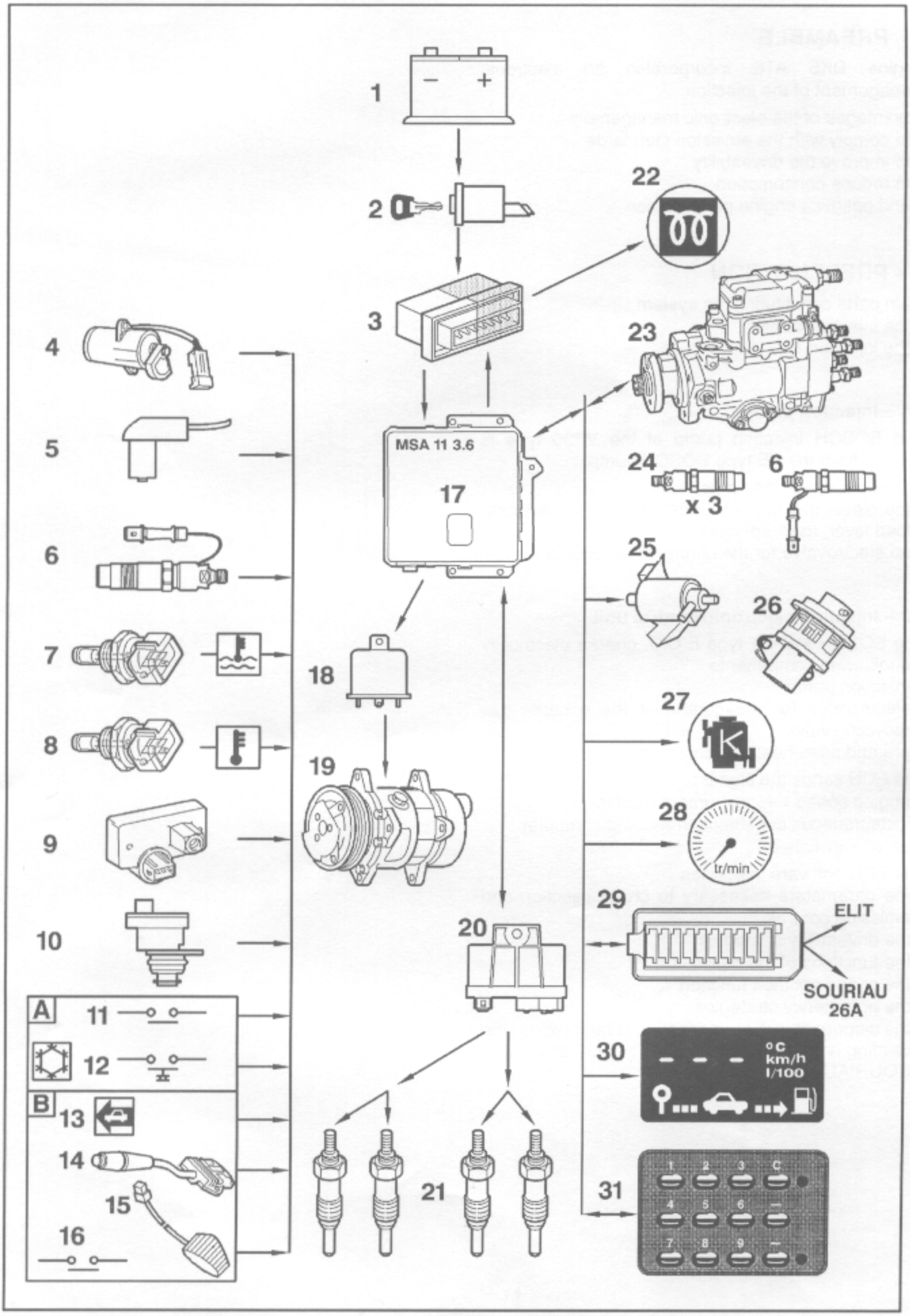
The BOSCH MSA11 type E.C.U. checks electrically the following components :
- injection pump
- electrovalve for the control of the exhaust gas recycling valve
- pre and post–heating control unit

The ECU sends the signal :
- engine speed ==> instrument cluster
- instantaneous consumption ==> trip computer
- air con. switch–off

The ECU software integrates :
- the parameters necessary to check injection and emission controls
- the driveability strategies
- the functions of the cruise control
- the coded antitheft function
- the emergency strategies
- the diagnostic with memorisation of fault codes ; the reading is carried out by means of ELIT test unit or SOURIAU station

www.WorkshopManuals.co.uk

3 – SYNOPTIC VIEW OF INJECTION



www.WorkshopManuals.co.uk

Fig : B1HP0ACP

Parts list :

Code	Component	Code	Component
1	Battery	16	Clutch contact switch
2	Ignition switch	17	Injection electronic control unit + atmospheric pressure sensor
3	Double injection relay	18	Refrigeration compressor cut–off relay
4	Accelerator pedal sensor	19	Refrigeration compressor clutch
5	TDC sensor	20	Pre and post–heating control unit
6	Injector carrier number3 (injector with needle lift sensor)	21	Pre–heater plugs
7	Water temperature sensor	22	Preheating warning lamp
8	Air temperature sensor	23	Injection pump
9	Pressure sensor	24	Injectors
10	Distance sensor	25	Recycling electrovalve
A	Air conditioning function	26	Exhaust gas recycling valve
11	Airconditioning switch (AC ON)	27	Diagnostic warning lamp
12	Pressostat (AC TH)	28	Tachometer
B	Cruise control function	29	Diagnostic socket
13	Cruise control switch	30	Trip computer
14	Cruise control selector switch	31	Coded anti–theft keyboard
15	Stop lamp switch		

www.WorkshopManuals.co.uk

FUNCTION – LOCATION : COMPONENTS OF THE SYSTEM

1 – DOUBLE RELAY

1.1 – Location

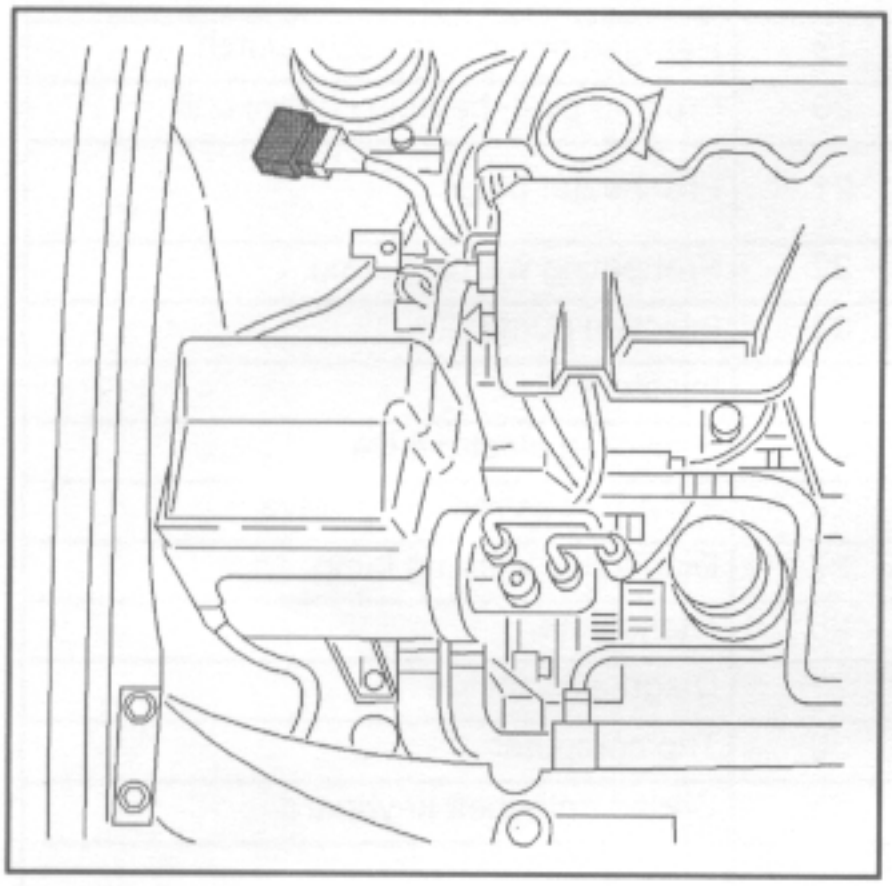


Fig : B1HP09XC

Located : on the R.H. front wheel arch.

1.2 – Function

The double relay enables :
- the supply of the injection ECU
- the illumination of the pre–heating warning lamp, controlled by the injection E.C.U.

2 – ACCELERATOR PEDAL SENSOR

2.1 – Location

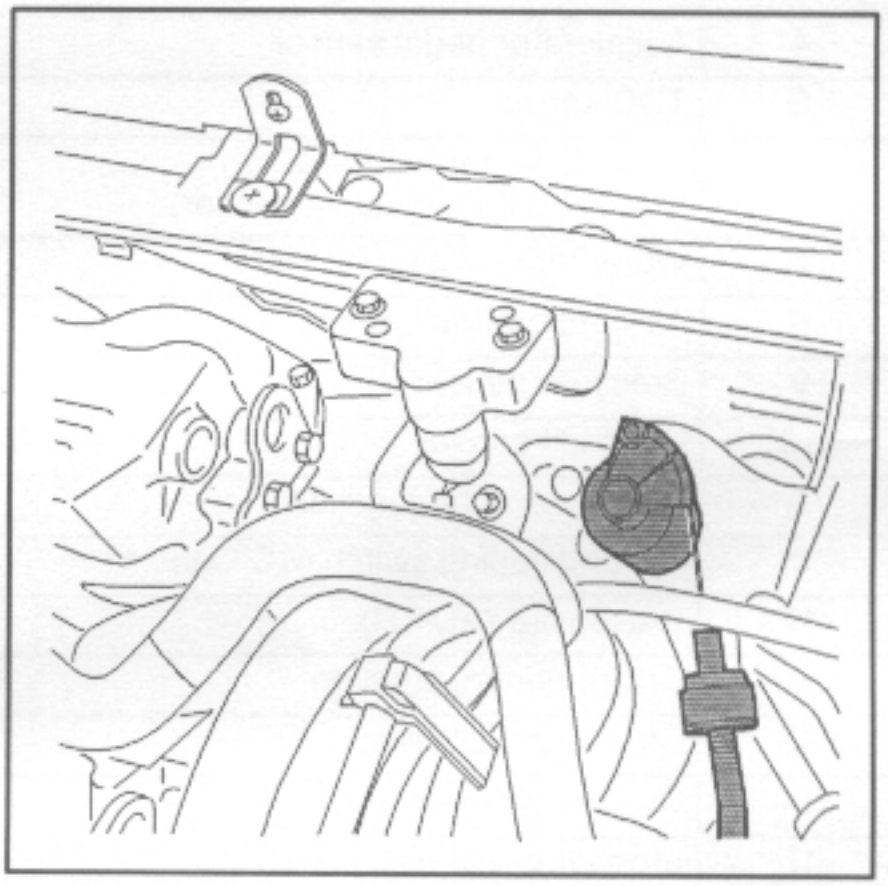


Fig : B1HP09YC

Located : on the scuttle panel aperture, next to the LHM reservoir.

2.2 – Function

The sensor :
- records the driver's request (acceleration, deceleration)
- sends information to injection ECU

The injection ECU activates the injection pump, following the driver's request.

2.3 – Constitution

The sensor is linked to the foot throttle pedal by means of a cable, it comprises the following components :
- a potentiometer of which the resistance varies proportionnaly with the position of the foot throttle pedal
- a contact with 2 positions (foot off/foot on)

The contact enables the ECU to check the validity of the information supplied by the potentiometer (the contact is open when the pedal is released).

www.WorkshopManuals.co.uk

3 – TDC SENSOR

3.1 – Location

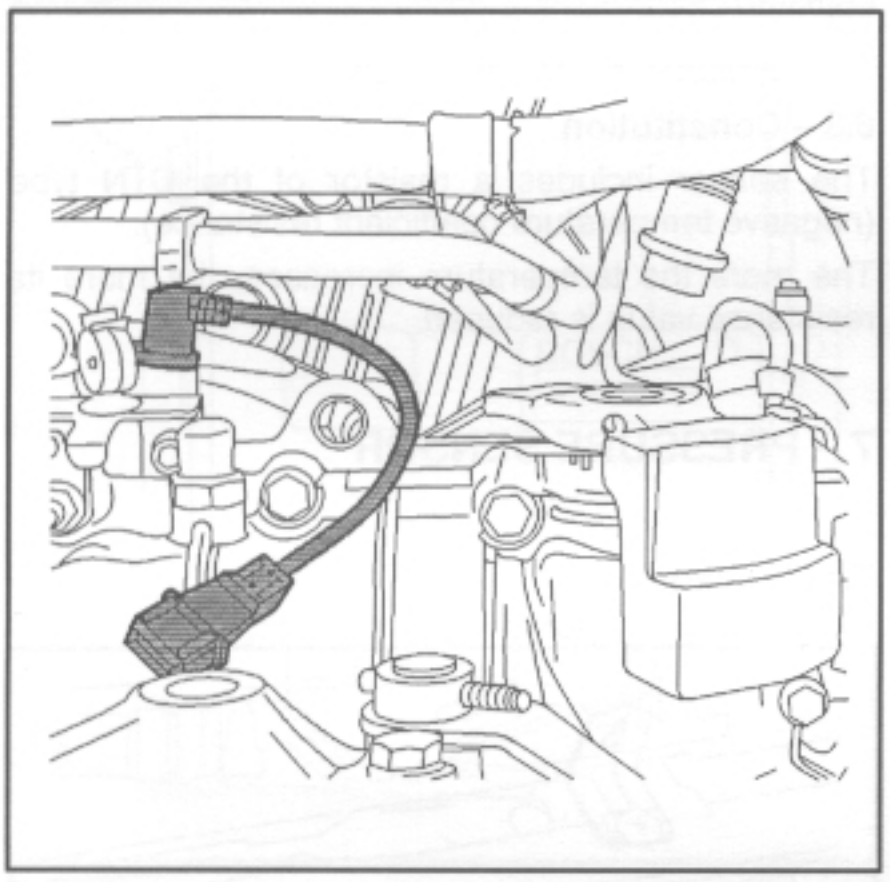


Fig : B1HP09ZC

Located : on the clutch housing.

3.2 – Function

The sensor is of the inductive type.

The sensor supplies the ECU with a signal each time each of the 4 pegs, which are disposed at 90° on the flywheel, pass.

Each impulse is produced 5° after the top dead center (TDC).

The signal enables to determine :
- engine rpm
- position of the reciprocating gear

NOTE : The airgap between the sensor and the flywheel's pegs can't be adjusted.

4 – NEEDLE LIFT SENSOR

4.1 – Location

The sensor is integrated into injector carrier number 3.

4.2 – Function

From the sensor's action, the E.C.U. :
- determines precisely the beginning of the injection
- carries out a dynamical correction of the injection advance

4.3 – Constitution

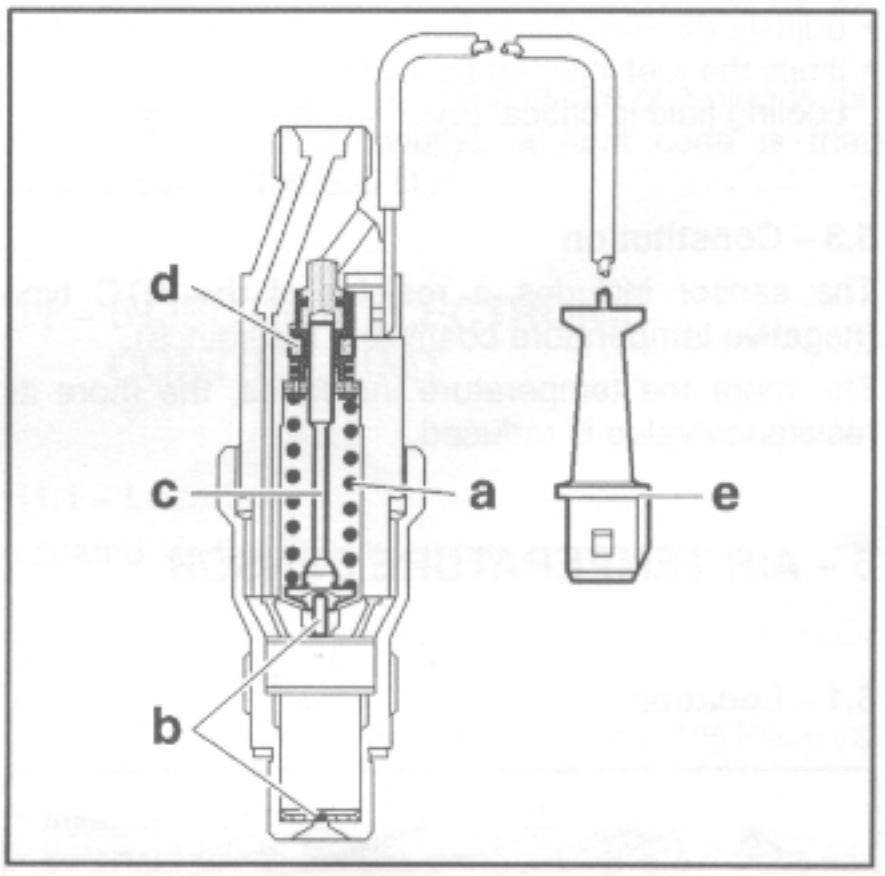


Fig : B1HP0A0C

Injector carrier number3 :
- a : spring
- b : injector needle
- c : magnetic core
- d : ignition coil
- e : 2–way connector

The sensor is of the inductive type.

The injector's needle is extended by a core.

When the injector opens : the core changes its position in the coil ; it creates a modification of the magnetic field.

The variation of the magnetic field generates a current detected by the ECU.

www.WorkshopManuals.co.uk

5 – WATER TEMPERATURE SENSOR

5.1 – Location

Located : on the water outlet housing.

5.2 – Function

The water temperature sensor informs the E.C.U. about the engine coolant temperature.

Following the temperature, the E.C.U. :

- adjusts the pre–heating time
- adjusts the post–heating time
- adjusts the starting flow
- adjusts the idling speed
- permits the recycling of exhaust gases
- adjusts the diesel fuel flow
- limits the fuel injected flow if the temperature of the cooling fluid is critical (overheating function)

5.3 – Constitution

The sensor includes a resistor of the NTC type (negative temperature coefficient resistance).

The more the temperature increases, the more its resistance value is reduced.

6 – AIR TEMPERATURE SENSOR

6.1 – Location

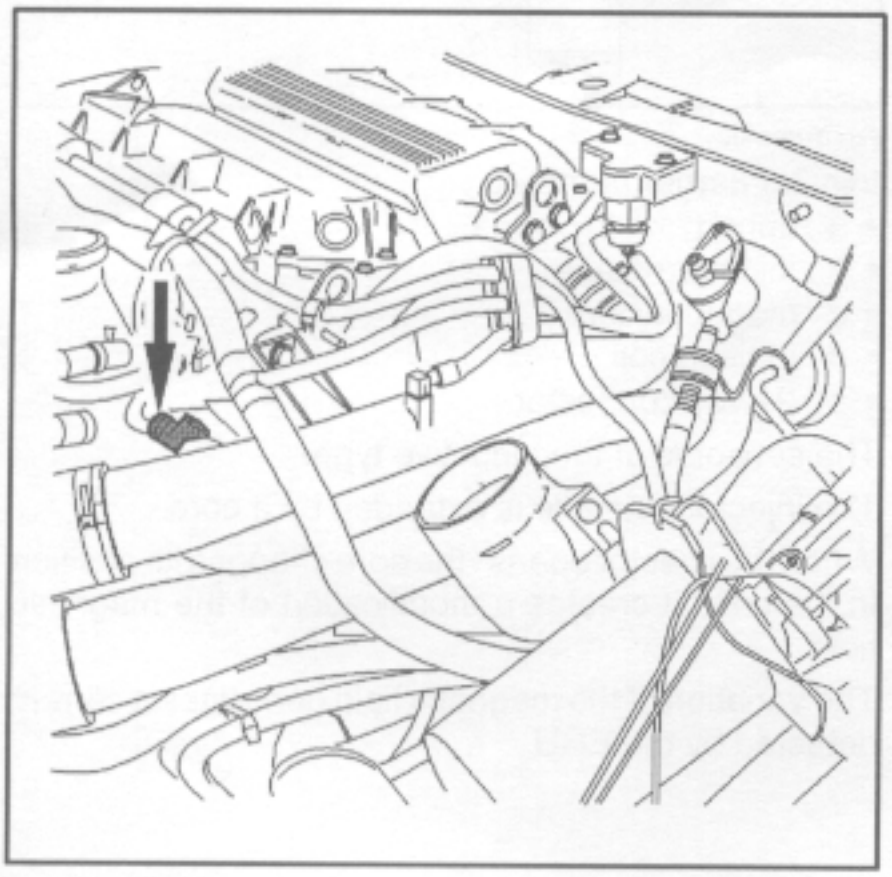


Fig : B1HP0A1C

Located : on the air inlet duct.

6.2 – Function

The air temperature sensor informs the ECU about the temperature of the air taken in.

This information enables the diesel fuel flow to be adjusted.

6.3 – Constitution

The sensor includes a resistor of the CTN type (negative temperature coefficient resistance).

The more the temperature increases, the more its resistance value is reduced.

7 – PRESSURE SENSOR

7.1 – Location

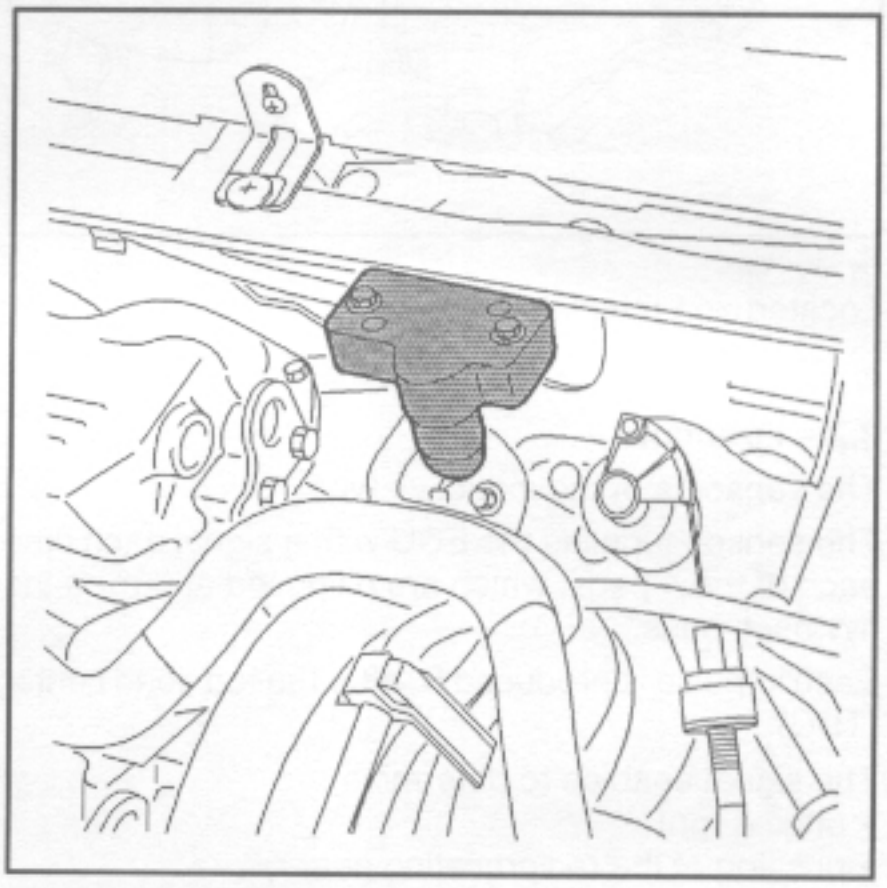


Fig : B1HP0A2C

Located : on the scuttle panel aperture, next to the LHM reservoir.

7.2 – Function

The sensor enables the air pressure in the inlet manifold to be determined.

This information enables the adjustment of the diesel fuel flow.

7.3 – Constitution

The sensor is of the piezoelectrical type. It is composed of stress gauges.

It supplies a voltage proportional to the air pressure in the inlet manifold.

www.WorkshopManuals.co.uk

8 – ATMOSPHERIC PRESSURE SENSOR

8.1 – Location

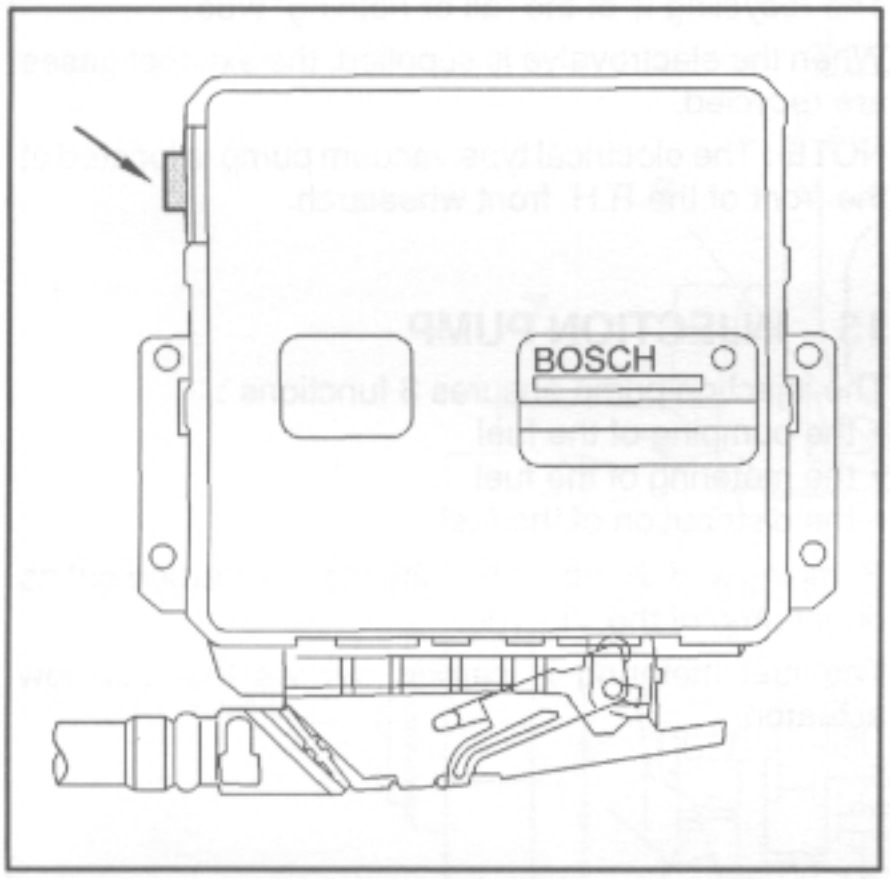


Fig : B1HP0A3C

The sensor is coupled to the injection E.C.U..

8.2 – Function

The sensor informs the ECU about the atmospheric pressure ; this parameter is used to determine injection advance.

9 – VEHICLE SPEED SENSOR

9.1 – Location

The sensor in located on the gearbox.

9.2 – Function

The sensor informs the E.C.U. of the speed of the vehicle, this component is a "Hall effect" type sensor, 5 impulses per meter, 8 impulses per revolution.

With the information from the sensor, the ECU :

- improves the idle speed of the vehicle in motion
- optimises the accelerations
- reduces jerks
- ensures the vehicle cruise control

10 – PRE AND POST–HEATING CONTROL UNIT

10.1 – Location

Located : at the front of the battery tray.

10.2 – Function

The control unit electrically supplies the pre–heater plugs in pairs according to the orders from the injection E.C.U.

The pre–heating and post–heating times are determined by the ECU in accordance with the engine coolant temperature.

The preheating warning lamp is controlled by the injection ECU via the double relay.

The control unit can detect the failure of a plug (short circuit, break in continuity), a fault code is then memorised by the E.C.U..

11 – INJECTION ELECTRONIC CONTROL UNIT

11.1 – Location

Located : in the ECU housing.

11.2 – Function

The ECU ensures the electrical checks of the following elements :

- injection pump
- solenoid valve for the control of the exhaust gas recycling valve
- pre and post–heating control unit

The ECU sends the signal :

- engine speed ==> instrument cluster
- instantaneous consumption ==> trip computer
- air con. switch–off

The ECU software integrates :

- the parameters necessary to check injection and emission controls
- the driveability strategies
- the functions of the cruise control
- the coded antitheft function
- the emergency strategies
- the diagnostic with memorisation of fault codes ; the reading is carried out by means of ELIT test unit or SOURIAU 26 A station

www.WorkshopManuals.co.uk

11.3 – Description

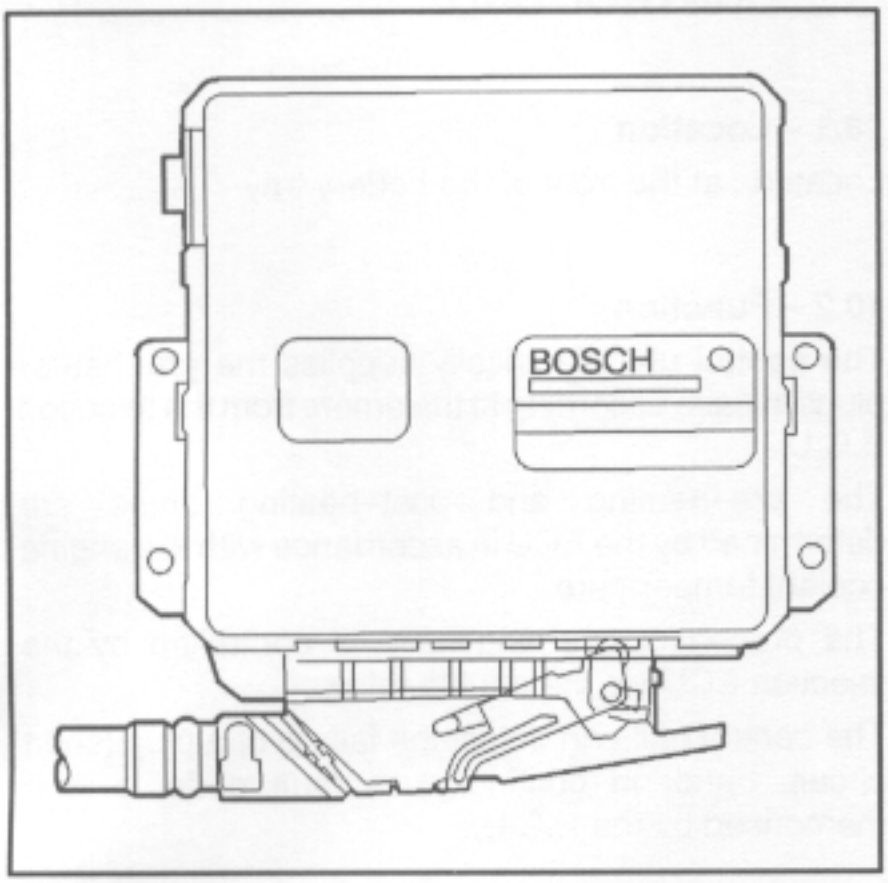


Fig : B1HP0A4C

The ECU includes :
- 1 55–way connector
- 1 atmospheric pressure sensor
- 3 microprocessors

12 – RECYCLING ELECTROVALVE

12.1 – Location



Fig : B1HP0A5C

Located : on the engine (near the engine oil filler neck).

12.2 – Function

The E.C.U. controls the operation of the electrovalve.

The electrovalve links the vacuum pump and the exhaust gas recycling valve capsule (EGR valve).

The recycling is of the "all or nothing" type.

When the electrovalve is supplied, the exhaust gases are recycled.

NOTE : The electrical type vacuum pump is located at the front of the R.H. front wheelarch.

13 – INJECTION PUMP

The injection pump ensures 3 functions :
- the pumping of the fuel
- the metering of the fuel
- the distribution of the fuel

Pumping and distribution of the fuel are carried out as on a pump of the VE type.

The fuel metering is carried out via the fuel flow actuator.

www.WorkshopManuals.co.uk

13.1 – Description

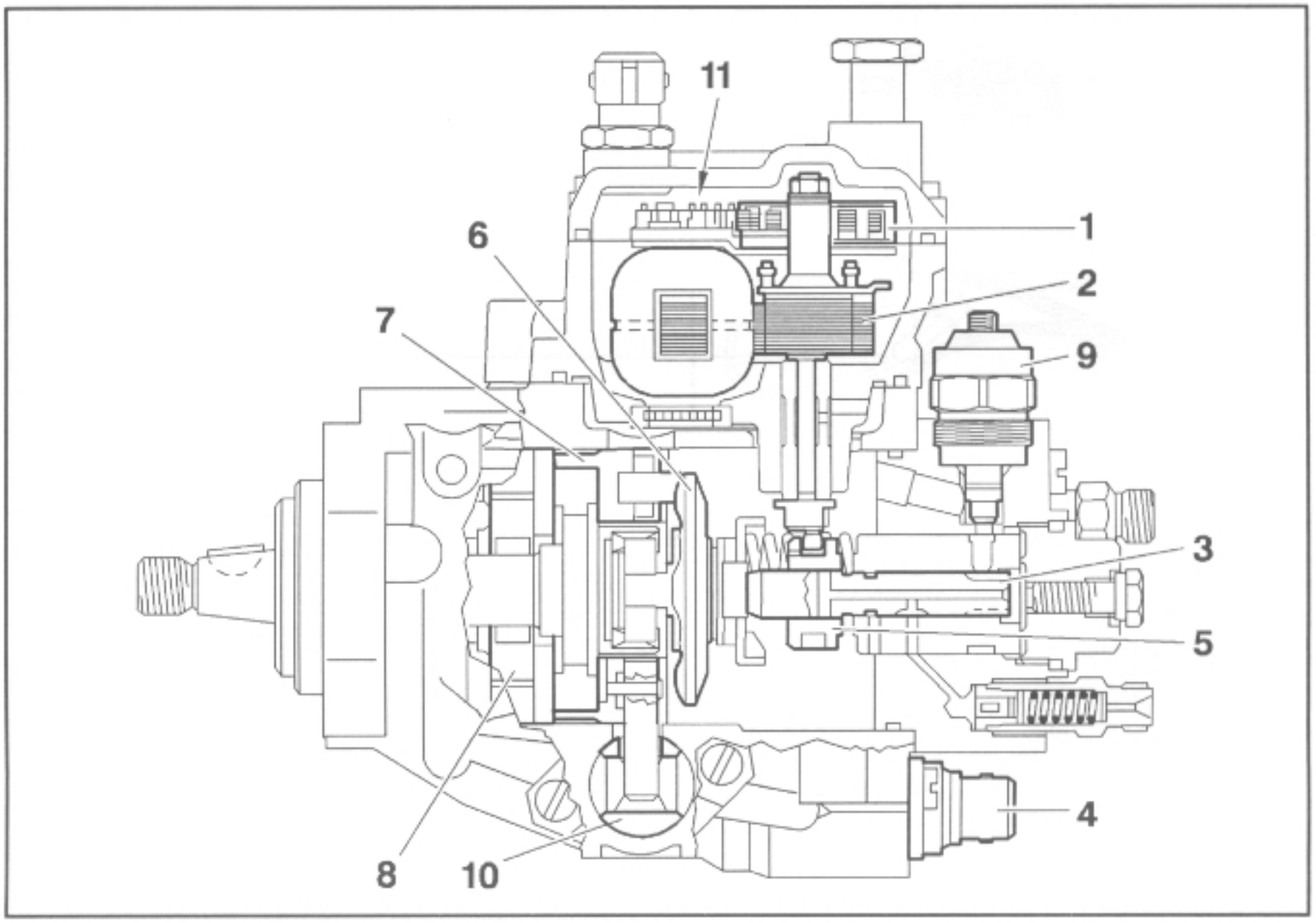


Fig : B1HP0A6D

1 : regulating slide valve position sensing sensor.
2 : fuel flow actuator.
3 : high pressure piston.
4 : advance electrovalve.
5 : regulating slide valve (sliding block).
6 : cam plate.
7 : roller bearing ring.
8 : transfer pump.
9 : electric fuel cut–off solenoid.
10 : advance piston.
11 : diesel fuel temperature sensor.

The electrical information of the injection pump go through a 7–way black KOSTAL type round connector.
The connector is attached to the wiring harness of the injection pump ; location : next to the E.C.U. housing.

www.WorkshopManuals.co.uk

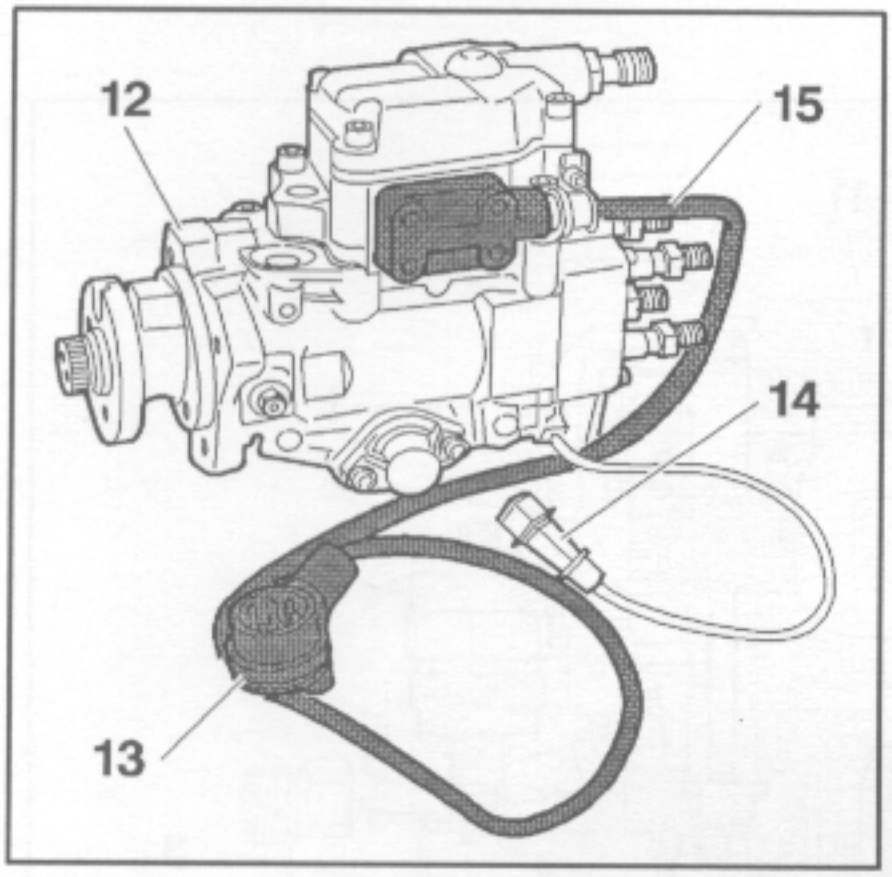


Fig : B1HP0A7C

12 : injection pump.
13 : pump connector.
14 : connector of the advance electrovalve.
15 : pump wiring harness.

www.WorkshopManuals.co.uk

13.2 – Fuel flow actuator

13.2.1 – Function

The flow actuator replaces the regulator unit for mechanical injection pumps, it regulates the fuel flow injected.

It is controlled by the injection E.C.U. (variable cyclic ratio current).

13.2.2 – Description

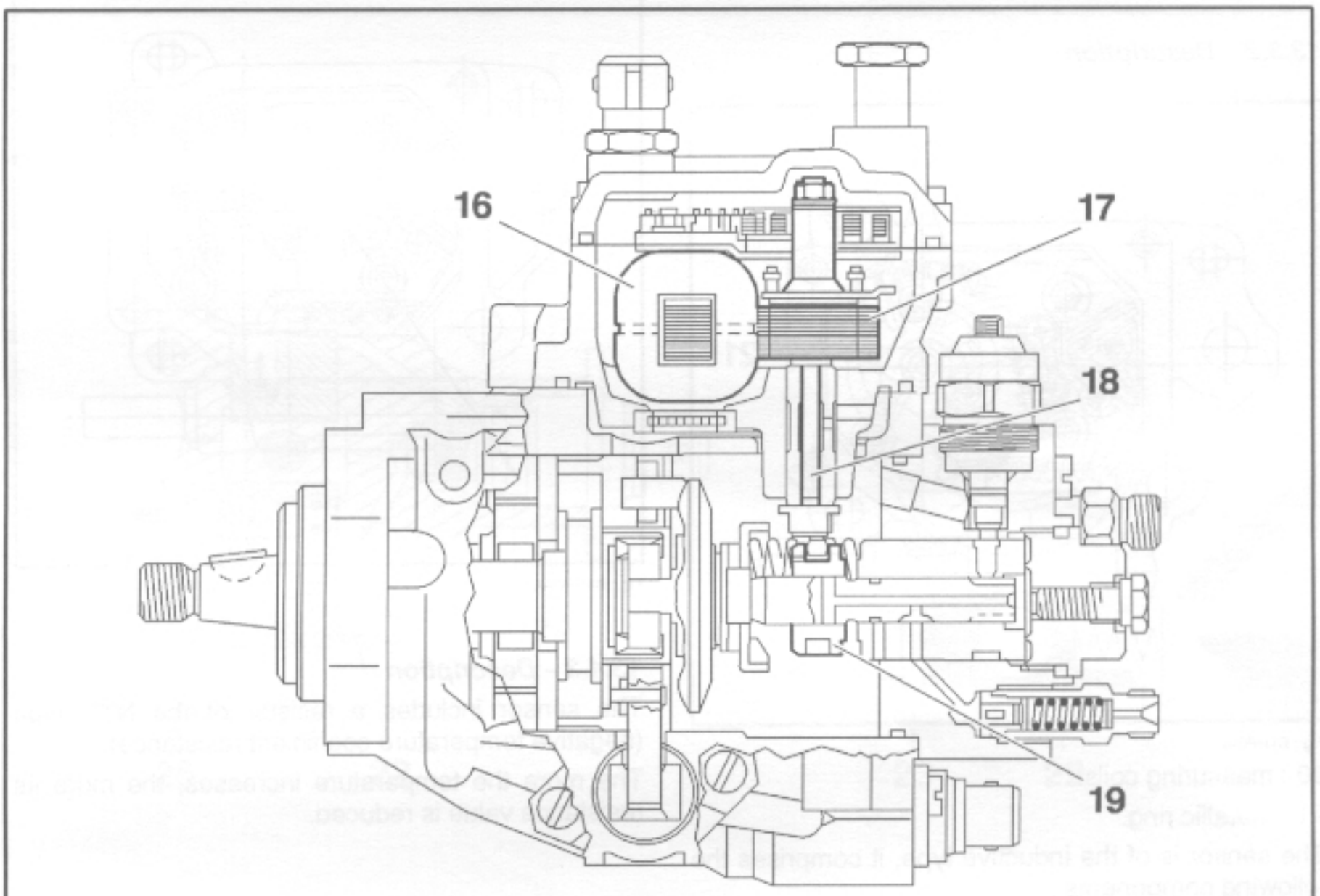


Fig : B1HP0A8D

16 : solenoid.

17 : permanent rotary magnet (on the axle).

18 : connection axle.

19 : regulation slide valve.

The flow actuator is composed of the following components :
- a rotary magnet attached to the regulation slide valve
- a fixed solenoid supplied by a variable cyclic ratio current

When the flow actuator is not supplied the diesel fuel flow is nil (the regulation slide valve is positioned to zero delivery by return springs).

www.WorkshopManuals.co.uk

13.3 – Regulating slide valve position sensing sensor

13.3.1 – Function

The sensor supplies the ECU with the information : position of the regulating slide valve = amount of diesel fuel injected.

If the position of the regulating slide valve differs from the pre–determined position : the fuel flow actuator is activated to move it back to the pre–determined position.

13.3.2 – Description

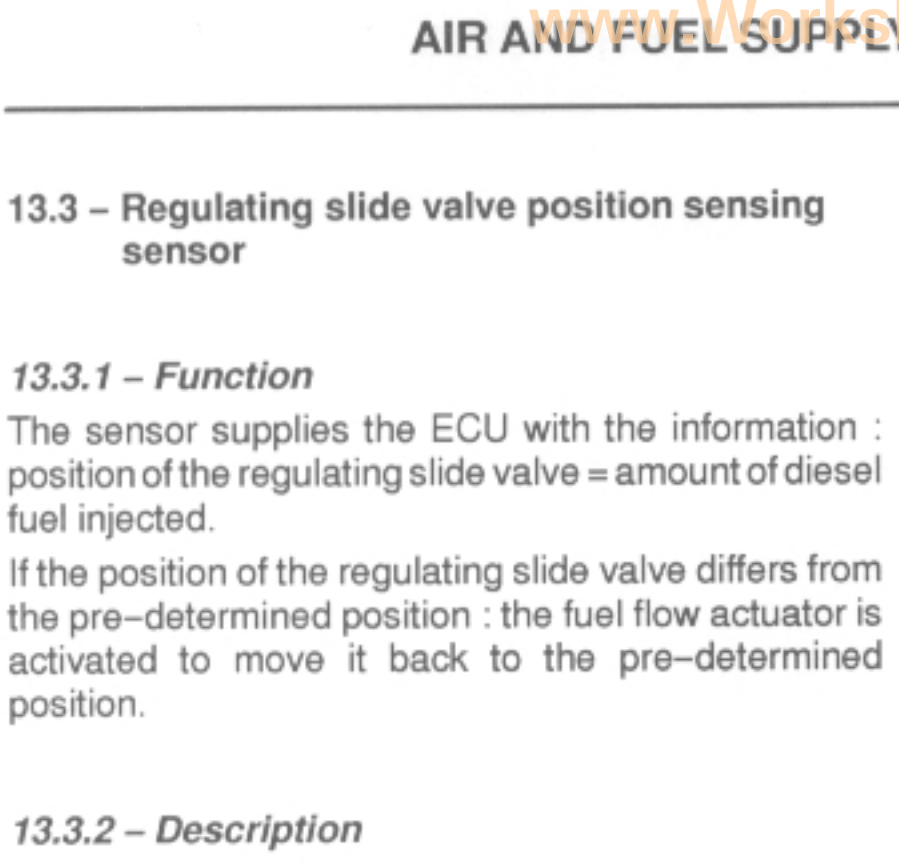


Fig : B1HP0A9C

20 : measuring coils.

21 : metallic ring.

The sensor is of the inductive type, it comprises the following components :

- 2 measuring coils
- a metallic ring moving before the measuring coils

The metallic ring is attached to the axle of the fuel flow actuator ; it causes the inductance of the measuring coils to vary.

13.4 – Diesel fuel temperature sensor

13.4.1 – Function

The sensor informs the ECU about the temperature of the diesel fuel ; this information enables the diesel fuel flow to be adjusted according to the fluidity of the fuel.

13.4.2 – Location

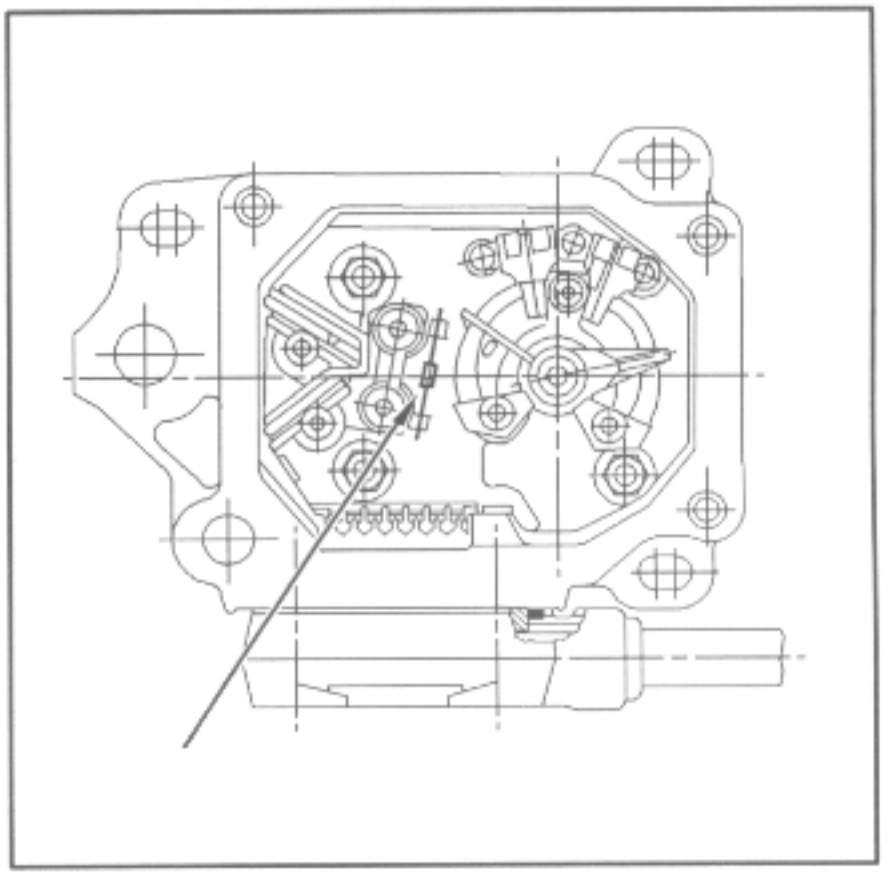


Fig : B1HP0AAC

13.4.3 – Description

The sensor includes a resistor of the NTC type (negative temperature coefficient resistance).

The more the temperature increases, the more its resistance value is reduced.

www.WorkshopManuals.co.uk

13.5 – Solenoid valve of motion

13.5.1 – Function

The solenoid valve makes it possible to modulate the pressure applied onto the advance piston (connected to the cam plate), which enables the injection advance to vary.

It is supplied by a varying cyclic ratio current.

13.5.2 – Presentation of the system

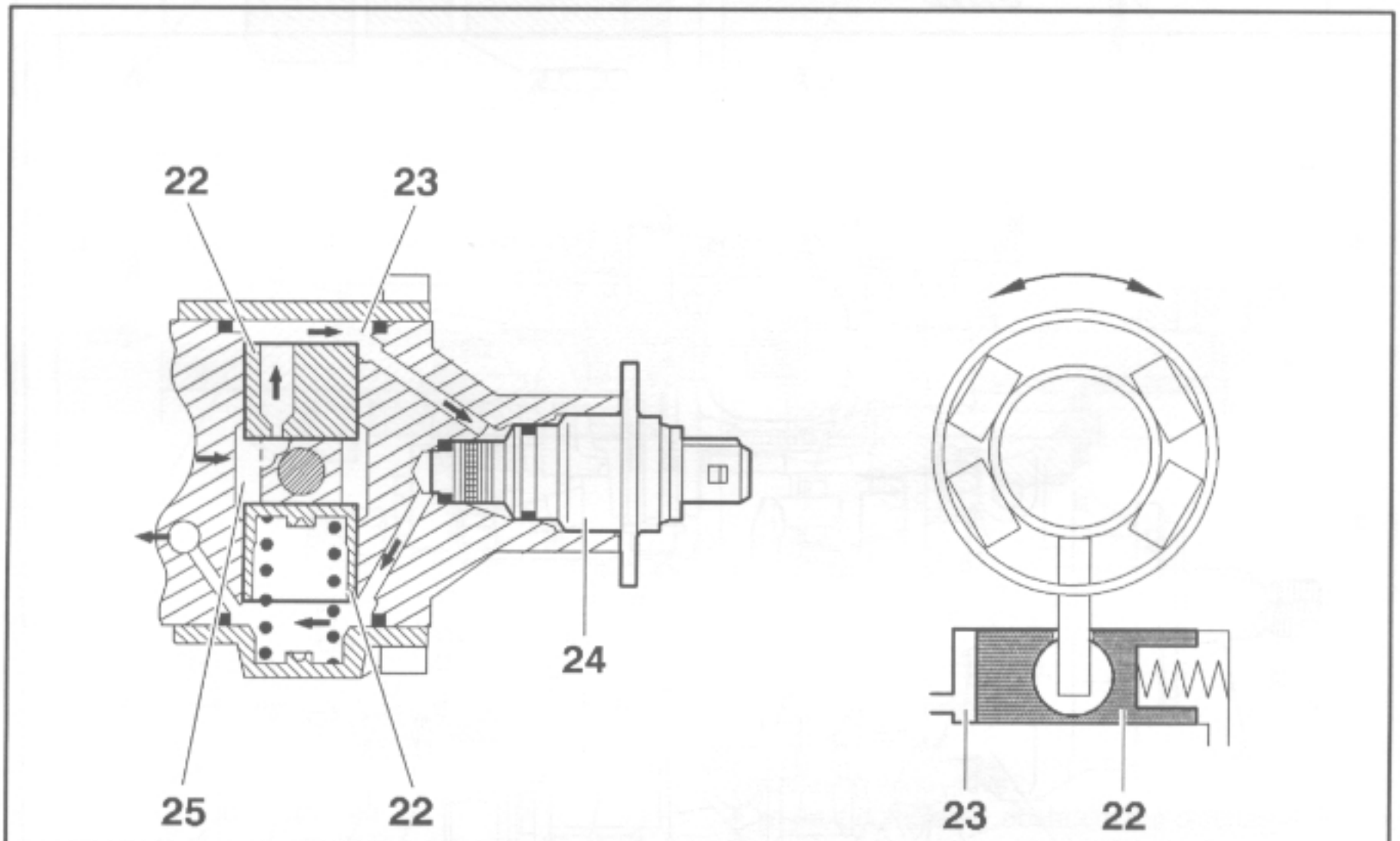


Fig : B1HP0ABD

22 : advance piston.

23 : modulated pressure.

24 : electrovalve.

25 : internal pressure of the pump.

www.WorkshopManuals.co.uk

OPERATING PRINCIPLE : BOSCH VP36 MSA11 FUEL INJECTION

1 – FLOW ADJUSTMENT

Parameters which determine the flow of fuel injection controlled by the ECU :
- request of driver
- maximum injection flow taken in
- amount of air entering the engine
- full load output

1.1 – Injection pump

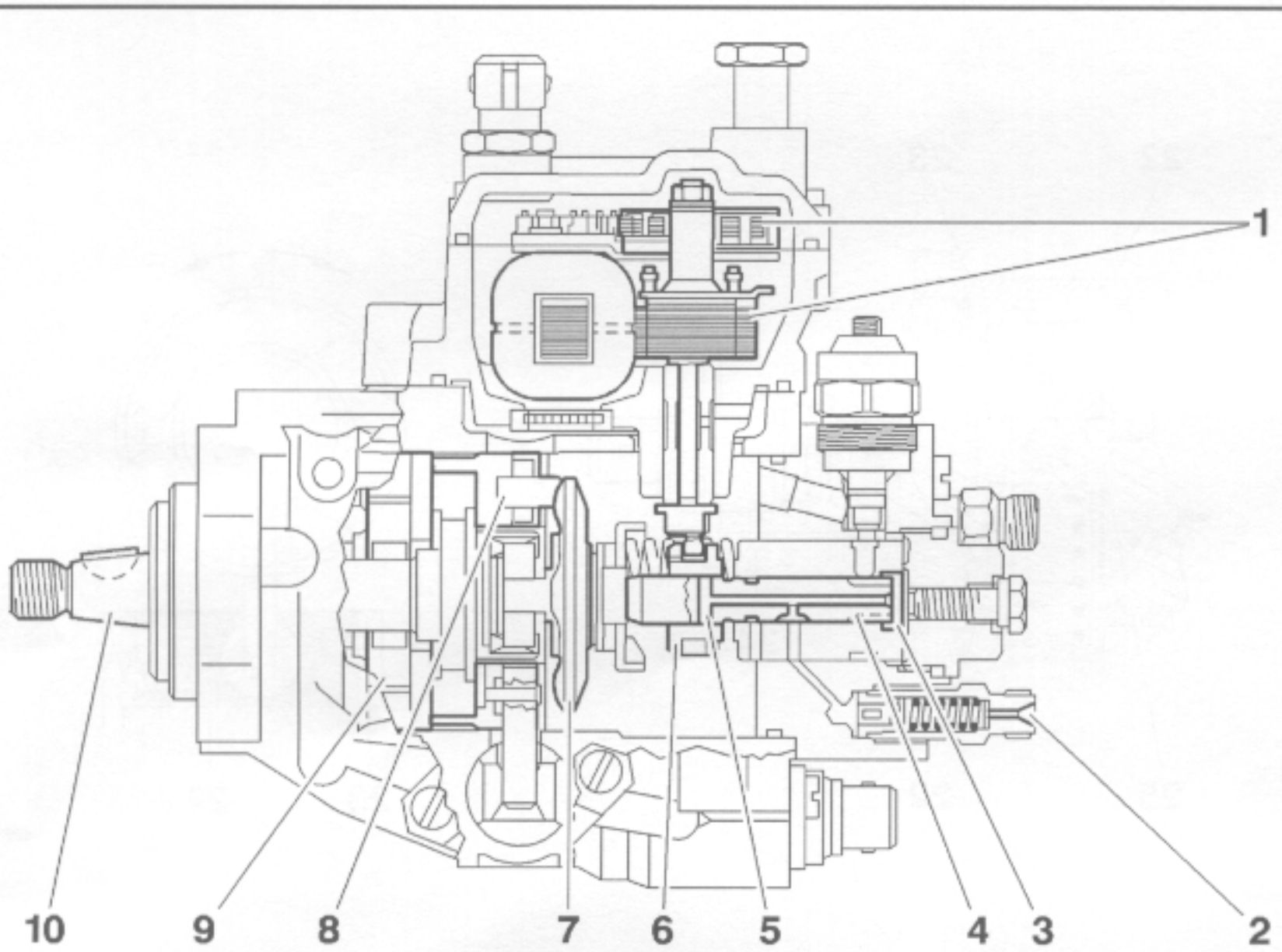


Fig : B1HP0ADD

(1) fuel flow actuator.
(2) outlet towards injector.
(3) delivery chamber.
(4) injection piston.
(5) fuel discharge port.
(6) regulating slide valve.
(7) cam plate.
(8) roller bearing ring.
(9) fuel pump.
(10) drive shaft of injection pump.

The injection pump shaft drives the following components :
- fuel pump
- cam plate

Cam plate :
- it rests on the roller bearing ring
- it transmits a rotating and alternating movement to the piston

www.WorkshopManuals.co.uk

1.2 – Phases of operation

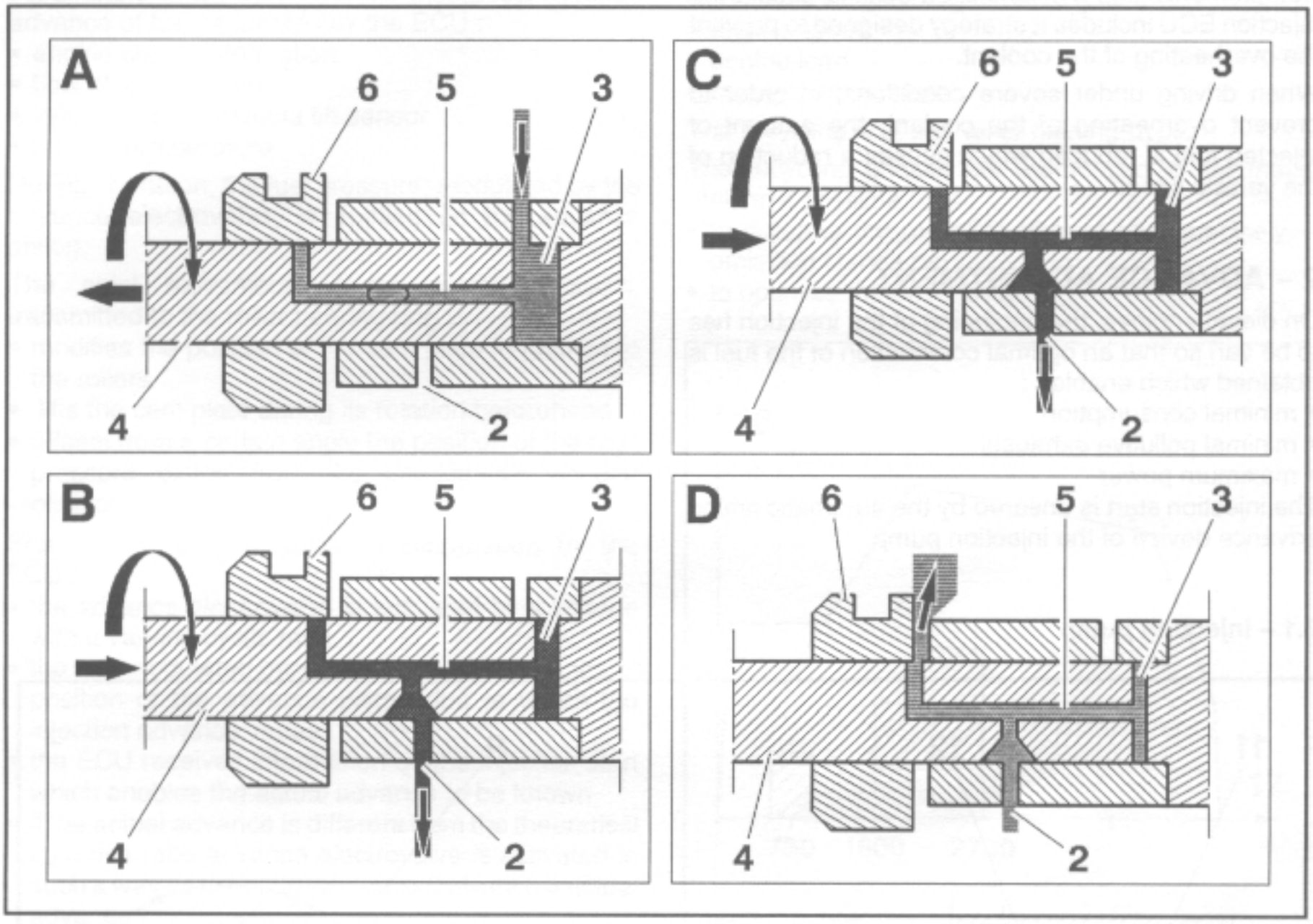


Fig : B1HP0AED

(A) phase 1 : suction.

(B) phase 2 : delivery.

(C) phase 3 : distribution.

(D) phase 4 : metering.

Phase 1 : suction.
- the piston moves to the left
- it increases the volume of the delivery chamber
- it permits the opening of the supply passage and the suction of the fuel

Phase 2 : delivery.
- the piston moves to the right
- it closes the feed gallery
- it enables injection by an increase in pressure

Phase 3 : distribution.
- the piston pivots on its axle
- the piston connects the delivery chamber with an injector outlet

Phase 4 : metering.

The regulating slide valve, positioned by the slide valve actuator, varies the fuel delivery by modifying the end of injection (partial obstruction of the discharge port).

Regulating slide valve :
- when it completely obstructs the discharge port : a maximum quantity of fuel is injected
- when it leaves the discharge channel completely open : no fuel is injected

According to the injection flow determined by the E.C.U. :
- the flow actuator is activated by a voltage (the fuel delivery increases or decreases through the movement of the regulating slide valve)
- the E.C.U. reads the position of the regulating slide valve – position sensor
- if the position of the slide valve is different from the pre–determined one, the E.C.U. makes a correction (if necessary) by a new activation of the actuator

www.WorkshopManuals.co.uk

1.3 – Anti–ebullition protection

Complementary to the optimised cooling circuit, the injection ECU includes a strategy designed to prevent the overheating of the coolant.

When driving under severe conditions, in order to prevent overheating of the coolant, the amount of injected fuel is reduced which causes a reduction of the vehicle speed.

2 – ADVANCE ADJUSTMENT

On diesel engines, the beginning of the injection has to be vari so that an optimal combustion of the fuel is obtained which enables :

- minimal consumption
- minimal pollutive exhausts
- maximum power

The injection start is ensured by the automatic timing advance device of the injection pump.

2.1 – Injection pump

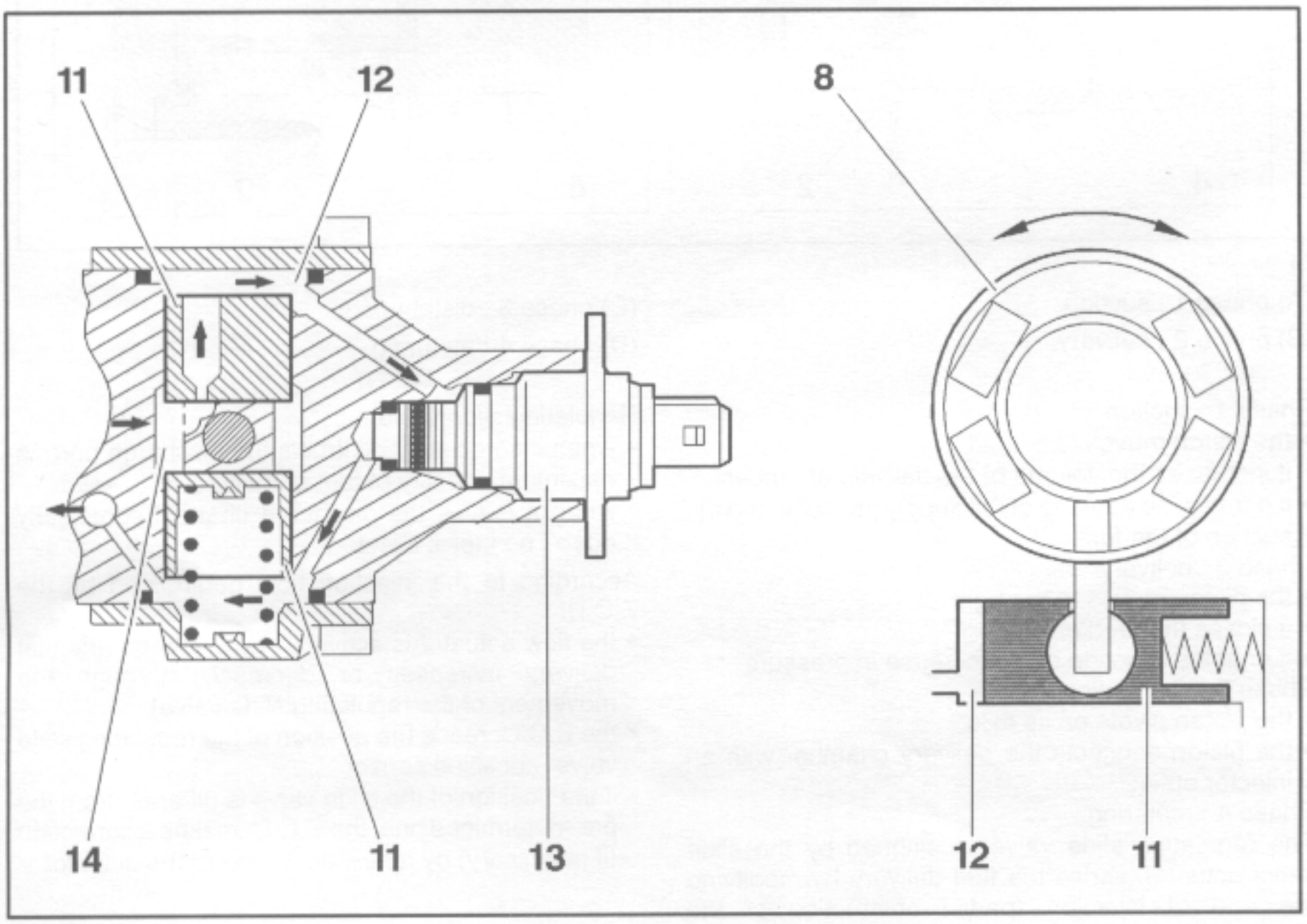


Fig : B1HP0AFD

(8) roller bearing ring.
(11) advance piston.
(12) modulated pressure.
(13) advance electrovalve.
(14) internal pressure of the pump.

www.WorkshopManuals.co.uk

2.2 – Operation

Parameters which determine the theoretical injection advance of fuel requested by the ECU :
- engine speed information
- flow of injected fuel
- injection start – needle lift sensor
- coolant temperature

During operation, the fuel pressure, modulated by the advance electrovalve, is applied on the advance piston.

The axial movement of the advance piston, transmitted to the roller bearing ring :
- modifies the position of the cam plate in relation to the rollers
- lifts the cam plate during its rotation beforehand
- offsets from a certain angle the position of the high pressure piston from the crankshaft's angular position

From the theoretical advance determined by the ECU :
- the advance electrovalve is activated by a voltage with a varying cyclic ratio
- the fuel modulated pressure enables the change of position of the advance piston due to which the injection advance varies
- the ECU receives information on the injection start which enables the actual advance to be known
- if the actual advance is different from the theoretical advance : the advance electrovalve is activated in such a way as to obtain theoretical advance = actual advance

During the deceleration phase, there can be an injection cut off :
- the injection start information no longer exists
- the ECU then manages the injection advance in an open loop

3 – RECYCLING OF EXHAUST GASES

Conditions for recycling exhaust gases :
- engine speed
- engine load
- coolant temperature

The recycling is of the "all or nothing" type.

The recycling phases are memorised in the maps making it possible :
- to determe the recycling phases very precisely – emission standards
- to optimise the driveability

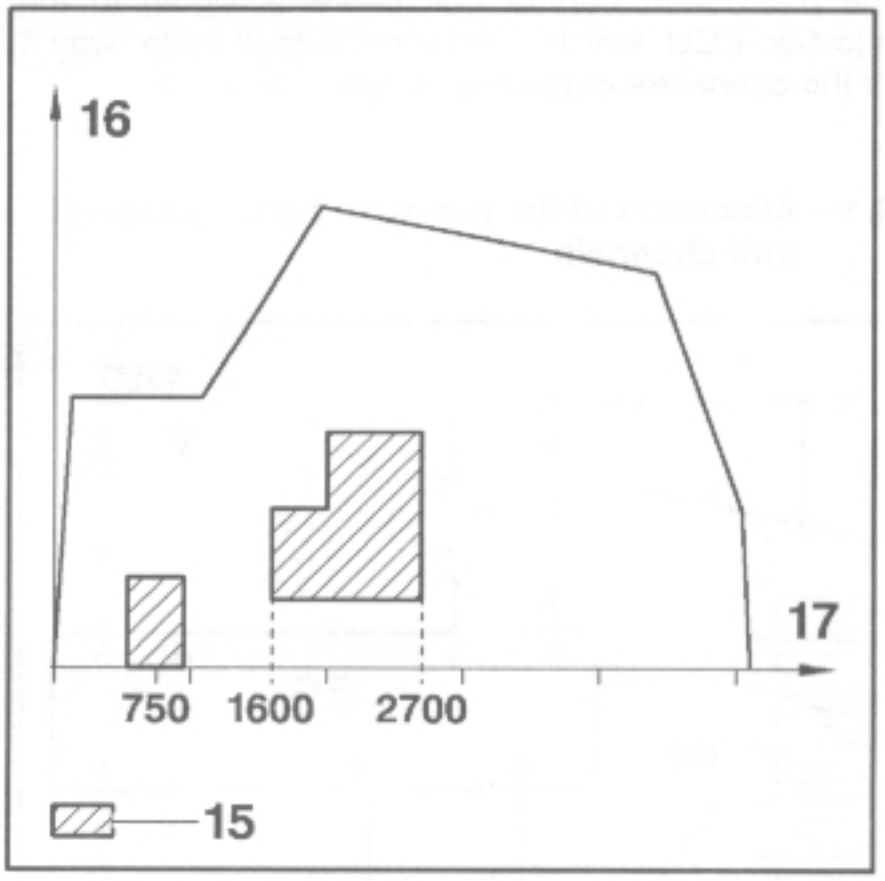


Fig : B1HP0AGC

(15) phases of exhaust emission EEC 93 recycling.

(16) fuel delivery.

(17) speed (rpm).

NOTE : There's no more recycling at altitudes above 1700 meters.

www.WorkshopManuals.co.uk

4 – PRE–POST HEATING

The control unit electrically supplies the pre–heater plugs in pairs according to the orders from the injection E.C.U..

The pre and post–heating times are determined by the injection E.C.U..

The pre–heating warning lamp is controlled by the injection ECU via the double relay.

The diagnosis of the pre–heater plugs is managed by the injection ECU.

In the case of a failure of one of the pre–heater plugs, the pre–heater control unit sends a signal to the injection ECU, which memorizes a fault code (way 5 of the connector of the pre–heater control unit).

4.1 – Allocation of the pre–post heating control unit channels

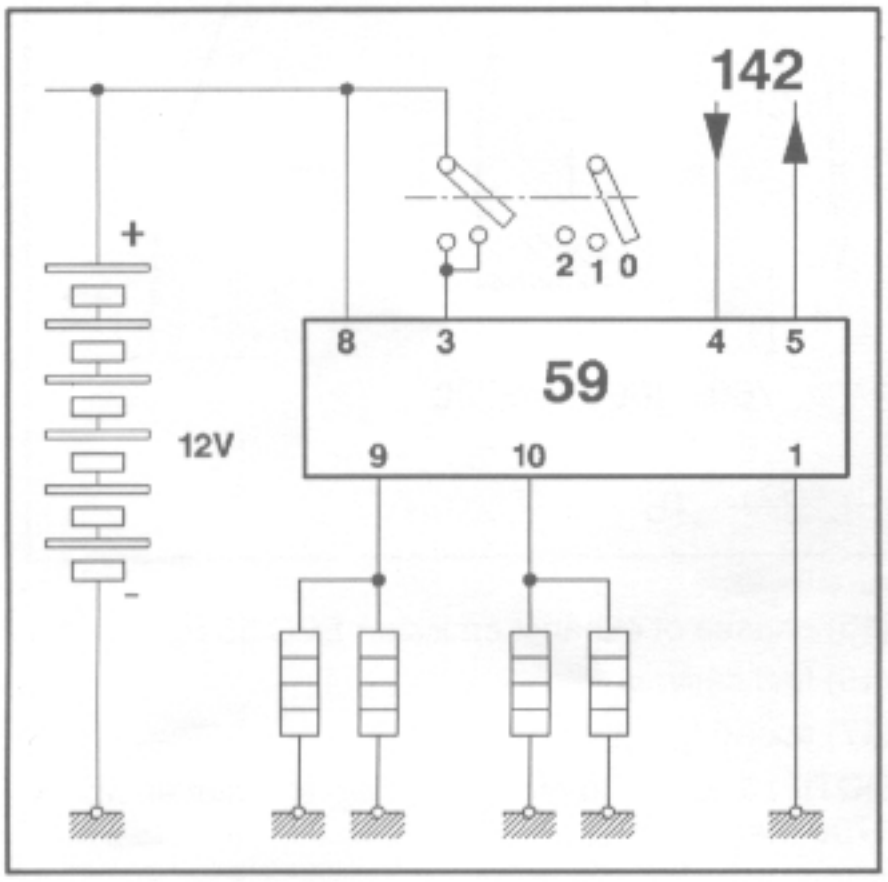


Fig : B1HP0AHC

59 : pre and post–heater control unit.

142 : injection E.C.U.s.

Ways 9/10 : pre and post–heater plugs.

4.2 – Pre–heating and post–heating

The pre–heating and post–heating times are determined by the ECU in accordance with the engine coolant temperature.

Pre–heating duration : 16 seconds (max.).

Post–heating duration : 3 minutes (max.).

Parameters which can interrupt the post–heating :
- engine load
- coolant temperature > 70 °C

5 – IMPROVEMENT OF DRIVING

5.1 – Adjustment of idling speed

The idling speed is regulated from the following information :
- engine speed
- coolant temperature
- engagement of the air conditioning compressor
- vehicle speed (vehicle driven at idling speed)

The following are possible through a modulation of the injection flow :
- to adjust the idling speed
- to obtain a degressive fast idle speed following the heating of the engine
- to inject a personal amount of fuel for each cylinder in order to correct possible failures of acyclisme
- to correct the engine speed during engagement of the air conditioning compressor
- to improve the idling speed of the vehicle in motion

5.2 – Reduction of jerks

The driver's request is filtered by the injection ECU in order to avoid jerkiness.

During acceleration :
- the injection flow is increased by a small value
- the power unit swings on its blocks
- the ECU detects a slight variation of the engine rpm (engine speed sensor)
- the power unit rests on its blocks
- the injection flow is applied without risking jerks

NOTE : During deceleration the injection flow is reduced gradually to avoid jerkiness.

5.3 – Over–speed regulation

When the engine exceeds the maximum speed value, the injection system reduces the injection flow gradually in order to reduce the "wall" effect.

5.4 – Temporary overflow

Under some conditions, an "increased" temporary flow is supplied to improve accelerations.

www.workshopmanuals.co.uk

6 – OTHER FUNCTIONS

6.1 – Refrigeration

The ECU can cut off the supply to the electromagnetic clutch of the air conditioning compressor in the following cases :

- starting the vehicle
- acceleration
- coolant temperature > 119 °C

When the air conditioning compressor is released, it can be engaged only after a time delay of 4 seconds.

6.2 – Trip computer

The injection ECU sends the instantaneous consumption information in the form of voltage fluctuations to the on–board computer.

6.3 – Coded anti–theft device

ATTENTION : If the code of the coded antitheft device is lost, the injection ECU has to be replaced.

www.WorkshopManuals.co.uk

DATA : BOSCH VP36 MSA11 FUEL INJECTION

1 – INJECTION ELECTRONIC CONTROL UNIT

Make : BOSCH.

Type : MSA 11 3.6.

Reference of the Manufacturer :
- engine DK5ATE/L, emission control EEC93 : 0 281 001 212
- engine DK5ATE/Y, emission control US87 : 0 281 001 213

2 – INJECTION PUMP

		Remarks
Make	BOSCH	
Pump type	VP36	
Reference	VE R520 535 0 460 404 993	
Static timing at TDC	Check piston lift only : 0.52 mm	Not adjustable
Idling speed – without air conditioning With engine hot	Pre–determined rated value 750 rpm (+0 / –20 rpm)	 Adjustable (*)
Idling speed – with air conditioning With engine hot	 820 rpm	 Not adjustable
Maximum no load speed (rpm)	5150 rpm	Not adjustable
Max. speed under load (rpm)	4430 rpm	Not adjustable
Dynamic timing, at idle With engine hot	4°	Cartographic advance Not adjustable

(*) : the adjustment requires the use of the SOURIAU 26 A station or the ELIT test unit.

ATTENTION : By its design, the pump only requires timing by means of a checking rod (see the relevant operation).

www.WorkshopManuals.co.uk

3 – PRE AND POST HEATING CIRCUITS

3.1 – Pre and post–heating control unit

Make : BOSCH.

Reference of the Manufacturer : 0 281 003 004.

3.2 – Pre–heater plugs

Make	Reference of the Manufacturer	Voltage	Time required to reach 850 °C	Intensity after 20 seconds	Extremity dia.	Tightening torque
BOSCH	0250201033	11V	4 ± 1.5 s	9A	6 mm	2.5 m.daN
BERU	0100226186	11V	4 ± 1.5 s	9A	6 mm	2 m.daN

www.WorkshopManuals.co.uk

REPAIRS : BOSCH VP36 MSA11 FUEL INJECTION

1 – INJECTION PUMP

On the following parts, carrying any operation is prohibited :

- diesel fuel temperature sensor
- fuel flow actuator
- regulating slide valve position sensor (sliding block)
- advance electrovalve
- injection pump electrical harness

ATTENTION : By its design, the pump only requires timing by means of a checking rod (see the relevant operation).

2 – CHECKING–ADJUSTING

2.1 – Accelerator pedal sensor

The checks are carried out by means of ELIT test unit or SOURIAU 26 A station.

Check the voltage supplied by the sensor, in the "full throttle" position.

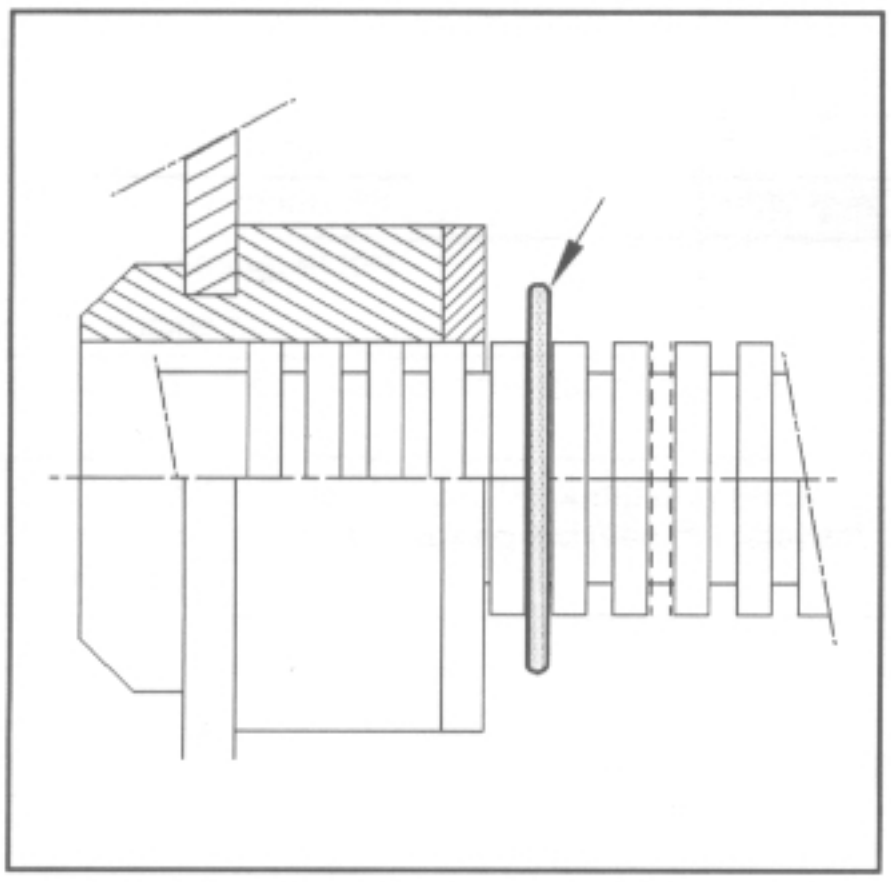


Fig : B1HP09WC

Move the pin in the notches of the accelerator cable to obtain "at full throttle," a voltage between 3.6 and 3.9 volts.

ATTENTION : In the case of an incorrect adjustment, full load would not be obtained.

2.2 – Idling speed

ATTENTION : The checks and adjustments must be carried out with engine hot, no fault memorised by the E.C.U., vehicle at rest, refrigeration de–activated.

2.2.1 – Checks

The idling speed is adjustable. It is determined by the injection E.C.U. according to the maps in memory and the information received.

Idling speed, engine hot : 750 rpm (+0 / –20 rpm).

2.2.2 – Adjustments

ATTENTION : This procedure must be used only upon recommendation of the manufacturer or in the case of serious disturbances in the operation of the engine : the engine stalls, noises and vibrations at idling (engine mounting assembly not responsible).

The adjustment requires the use of the SOURIAU 26 A station or the ELIT test unit.

Possible rotational speed increase by 63 rpm in 3 steps of 21 rpm.

Possible rotational speed decrease by 63 rpm in 3 steps of 21 rpm.

2.3 – Flow injected on starting

ATTENTION : The checks and adjustments must be carried out with engine hot ; if the water temperature is above 70 °C.

2.3.1 – Checks

Flow injected on starting : it is determined by the injection E.C.U. according to the maps in memory and the information received.

Flow injected on starting = 35 mg per stroke.

www.WorkshopManuals.co.uk

2.3.2 – Adjustment

ATTENTION : This procedure must be used only upon recommendation of the manufacturer or in the case of serious disturbances in the operation of the engine.

Possible increase of 4.8 mg per stroke in 16 steps of 0.3 mg per stroke.

Possible decrease of 4.8 mg per stroke in 16 steps of 0.3 mg per stroke.

The adjustment requires the use of the SOURIAU 26 A station or the ELIT test unit.

ATTENTION : Untimely corrections will have an effect on the noise and fumes on starting.

2.4 – Full load output

2.4.1 – Checks

Full load output : it is determined by the injection E.C.U. according to the maps in memory and the information received.

Pre–determined nominal value : 100.2 %.

2.4.2 – Adjustment

ATTENTION : This procedure must be used only upon recommendation of the manufacturer or in the case of serious disturbances in the operation of the engine : the engine lacks power, consumption too high, fumes from the exhaust.

Possible increase of 2.3 %, i.e., 3 increments of 0.781 %.

Possible decrease of 4.7 %, i.e., 6 increments of 0.781 %.

The adjustment requires the use of the SOURIAU 26 A station or the ELIT test unit.

The adjustment is for the operating phases :

- full load
- max. speed
- acceleration

ATTENTION : The performance and the maximum output of the engine are obtained with the nominal value ; untimely corrections will have an effect on fuel consumed and fumes emitted.

3 – INJECTOR CARRIER NUMBER3

In the case of a failure of the needle lift sensor, the complete injector carrier has to be changed.

The sensor–injector assembly is adjusted in the factory. Every modification of adjustment (for example pressure setting) will cause engine malfunction (wrong information on the beginning of injection).

ATTENTION : Every pressure setting of injector number 3 is prohibited.

IMPERATIVE : Make sure that injector number 3 is fitted correctly on to cylinder number 3 (injector with needle lift sensor).

www.WorkshopManuals.co.uk

FAULT FINDING : BOSCH VP36 MSA 11 FUEL INJECTION

1 – DIAGNOSTIC TOOLS

1.1 – ELIT test unit : 4125–T

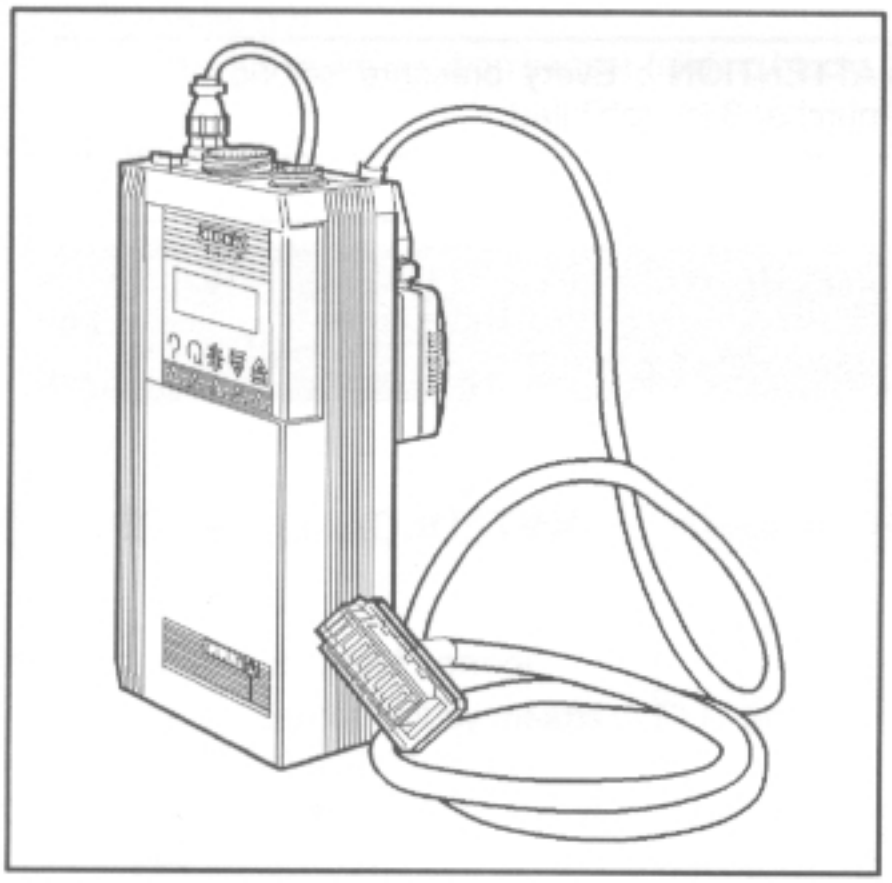


Fig : B3BP039C

The tool can be used for :
- reading the fault codes
- road testing
- operating the actuating components
- measuring the parameters

1.2 – Test connector box : 4109–T

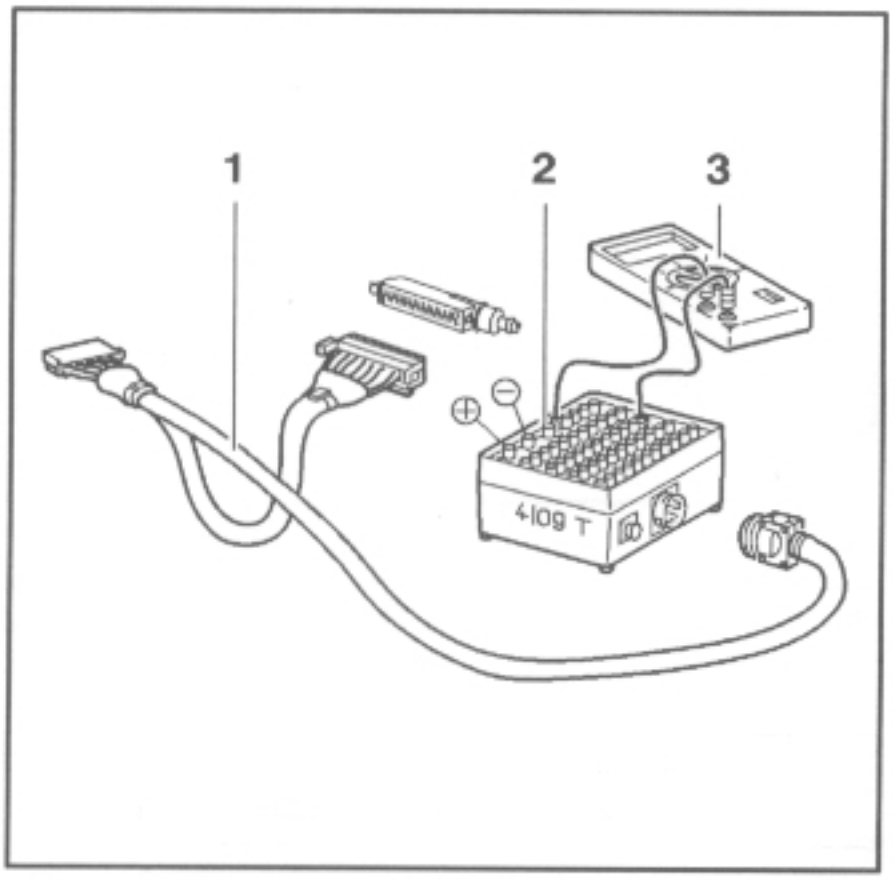


Fig : B1HP074C

(1) – 55–way wiring harness.

(2) – test connector box.

(3) – multimeter.

The box allows reading the voltages and resistances.

1.3 – 26 A diagnostic station

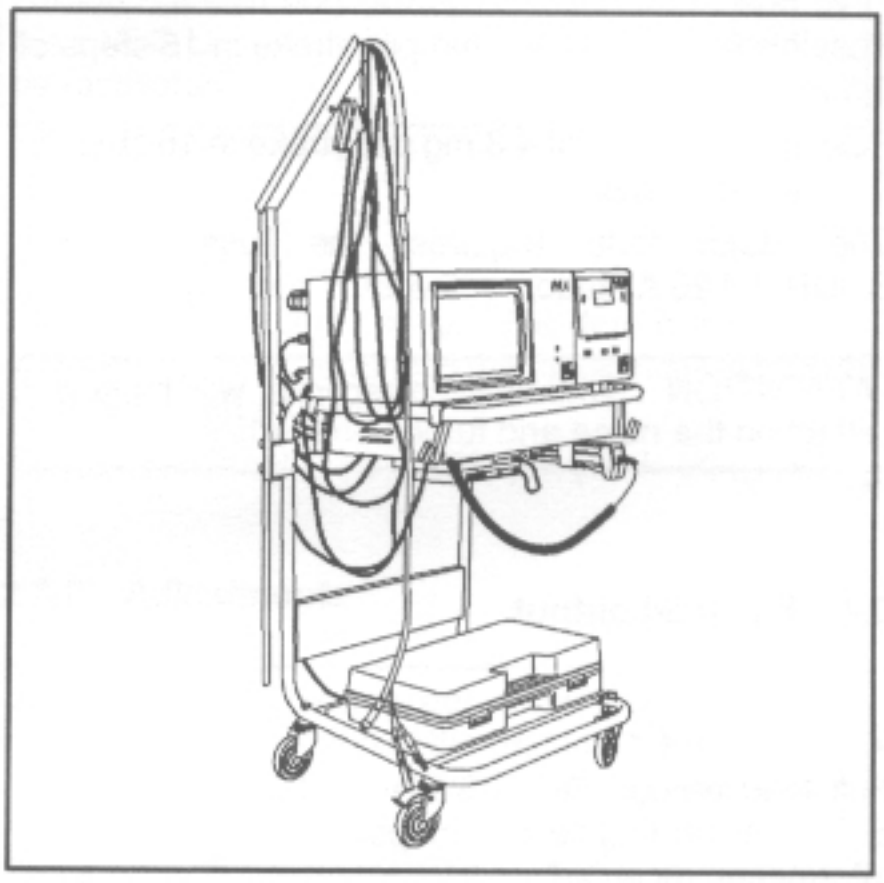


Fig : B3BP031C

The tool can be used for :
- reading the fault codes
- operating the actuating components
- checking the Diesel injection system
- checking the parameters

www.WorkshopManuals.co.uk

2 – FAULT FINDING CHART

2.1 – List of fault codes

NOTE : The autodiagnostic system warning lamp will light up if the following incident codes are displayed : 37,41,54,55,56,65.

13 – inlet air temperature sensor (907).

14 – engine coolant temperature sensor (909).

18 – power outlet short circuit.

21 – accelerator pedal sensor (773).

25 – brake switch (319).

26 – clutch switch (328).

27 – vehicle speed information (154).

33 – over pressure sensor (903).

36 – diesel fuel thermal sensor (922).

37 – stop electrovalve (429).

38 – cruise control.

41 – engine speed sensor (160).

43 – adjustment of advance (443).

51 – sliding block position (166).

52 – flow adjustment (445).

53 – electronic control unit (142) (battery voltage).

54 – electronic control unit (142).

57 – atmospheric pressure sensor (142).

58 – pre–heating (59).

65 – needle lift sensor (165).

www.workshopmanuals.co.uk

2.2 – Fault code 13 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Air temperature sensor (907) (air inlet pipe)	Disconnected	13–52	Grey	Diagnostic equipment : ohmmeter E.C.U. disconnected : measure the resistance of the sensor according to the temperature	Yes Fixed replacement value. Air temperature = 100 °C
	Connected			Diagnostic equipment : voltmeter Electronic control unit connected : ignition switched on, sensor disconnected Check the sensor supply voltage : U ≈ 5 V	

Graph for checking the sensor resistance according to the temperature.

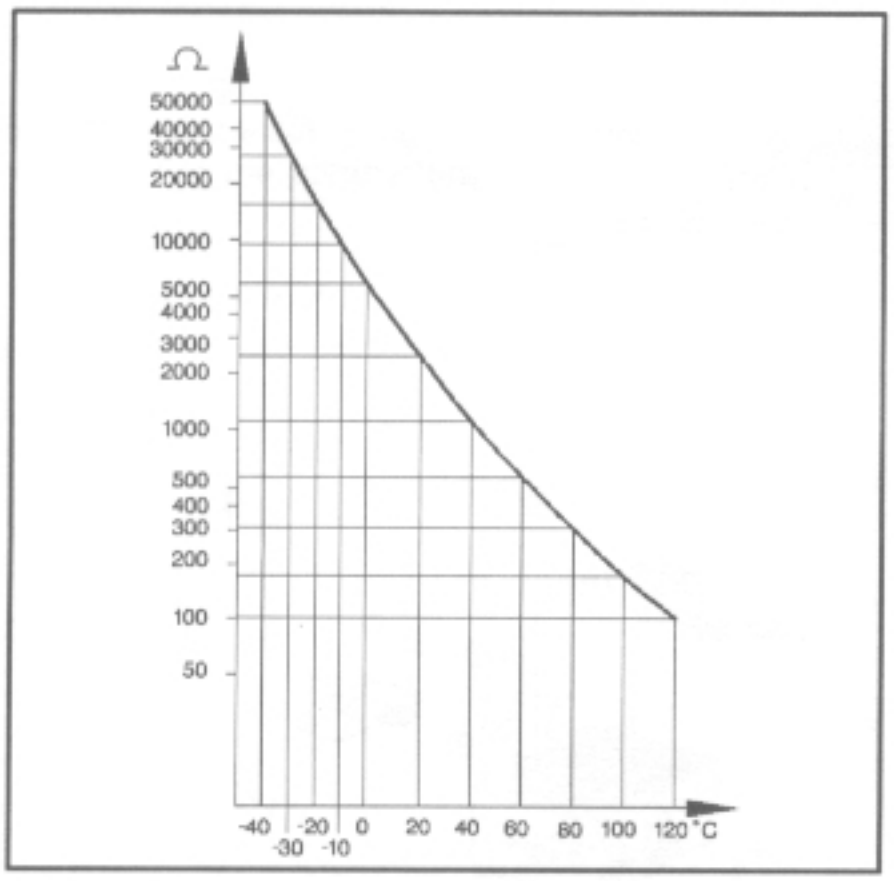


Fig : B1HP043C

www.WorkshopManuals.co.uk

2.3 – Fault code 14 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Engine coolant temperature sensor (909) (cylinderhead water outlet housing)	Disconnected	53–13	Green	Diagnostic equipment : ohmmeter E.C.U. disconnected : measure the resistance of the sensor according to the temperature	Yes
	Connected			Diagnostic equipment : voltmeter Electronic control unit connected : ignition switched on, sensor disconnected Check the sensor supply voltage : U ≈ 5 V	

Graph for checking the sensor resistance according to the temperature.

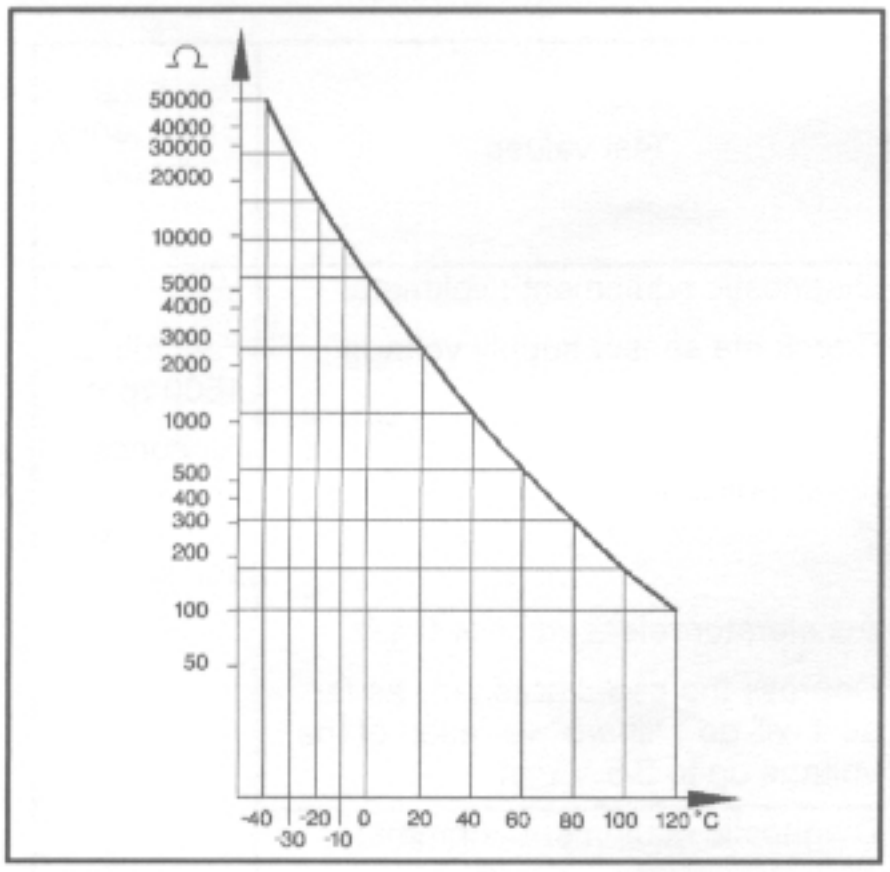


Fig : B1HP043C

www.WorkshopManuals.co.uk

2.4 – Fault code 18 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Power outlet short circuit (at +)	Disconnected			Diagnostic equipment : voltmeter	No
Advance electrovalve (443)		10–19		Check the voltage – ignition switched on : U ≈ 12 V ; ignition off : U ≈ 0 V	
EGR electrovalve (442)		6–19			
Pre–heating warning lamp		11–19			
Pre–heating control		8–19			
Air conditioning relay (822)		9–19			

2.5 – Fault code 21 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Accelerator pedal sensor (773) (under the bonnet)	Connected	33–13	1–4	Diagnostic equipment : voltmeter Check the sensor supply voltage : U ≈ 5 V	Yes Fast idling : 1500 rpm Air conditioning compressor cut–off
		13–37	4–2	Check the voltages as a function of the conditions laid down Accelerator released : U ≈ 0.4 V Depress the pedal gradually as far as it will go : "linear" variation of the voltage up to 3.5 V min.	
	Disconnected	33–13	1–4	Diagnostic equipment : ohmmeter R ≈ 1000 ohms	
		25–13	3–4	In the accelerated position : R ≈ 1000 ohms R ≈ ∞ : accelerator released	
		13–37	4–2	1000 ohms < R < 2000 ohms : accelerator released	

www.WorkshopManuals.co.uk

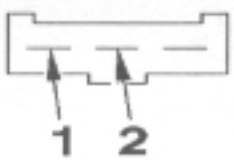
2.6 – Fault code 25 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Brake switch (319)	Disconnected	31 – terminal "_"		Diagnostic equipment : voltmeter Ignition switched on, check the voltage Brake pedal released : U ≈ 12 V Brake pedal depressed : U ≈ 0 V	No
		26 – terminal "_"		Brake pedal released : U ≈ 0 V Brake pedal depressed : U ≈ 12 V	

2.7 – Fault code 26 (minor fault)

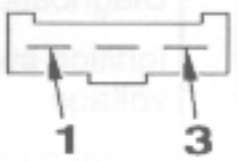
Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Clutch switch (328)	Connected	28–18		Diagnostic equipment : voltmeter Ignition switched on U ≈ 0 V – "clutch engaged" position U ≈ battery U – "clutch released" position	Yes

2.8 – Fault code 27 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Vehicle speed sensor (154) (on the gearbox)	Connected		 White	Diagnostic equipment : voltmeter Make sure that the speedometer is correctly operating Ignition switched on – check the sensor supply voltage : U ≈ battery U	Yes
		29–18	 White	Diagnostic equipment : voltmeter Road wheels rotating – check the output voltage of the sensor : U ≈ 6 V	

www.WorkshopManuals.co.uk

2.9 – Fault code 33 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Over pressure sensor (903)	Connected	51–13	 Brown	Diagnostic equipment : voltmeter Ignition switched on – check the sensor supply voltage : U ≈ 5 V	Yes Replacement value : 1000 mbars
		54–13		The output voltage must be between 0.1V and 4V Engine stopped : U ≈ 1.5 V	
			 Brown	Diagnostic equipment : ohmmeter Sensor disconnected – check on the sensor : R ≈ 1360 ohms	

www.WorkshopManuals.co.uk

2.10 – Fault code 36 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Diesel fuel thermal sensor (922) (in the pump)	Connected	35–13		Diagnostic equipment : voltmeter 7–way KOSTAL connector disconnected Check the sensor supply voltage : U ≈ 5 V	Yes Replacement value : 45 °C
				Diagnostic equipment : ohmmeter 7–way KOSTAL connector (towards the injection pump) Check : the resistance R between the ways 4 and 7 of the 7–way connector (see table below)	

T °C	R ohms
10	3780
20	2500
30	1690
40	1170
50	820
60	590
70	430
80	320
90	240
100	185

www.WorkshopManuals.co.uk

2.11 – Fault code 37 (serious fault)

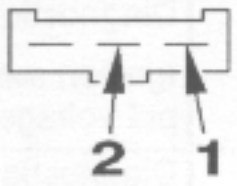
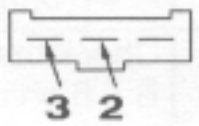
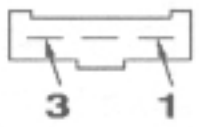
Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Stop electrovalve (429)	Connected	18–3		Diagnostic equipment : voltmeter Check the item supply voltage : U ≈ battery U	Yes Engine stopped by the fuel delivery cut off
	Disconnected			Diagnostic equipment : ohmmeter Check the resistance of the electrovalve : R ≈ 7.5 ohms	

2.12 – Fault code 38 (minor fault)

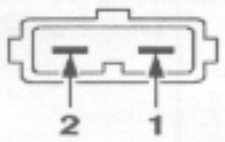
Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Cruise control	Disconnected	30–45–48		Diagnostic equipment : ohmmeter Check the continuity and insulation of the wires between cruise control (214) and E.C.U. (142)	Yes Cruise control stopped

www.WorkshopManuals.co.uk

2.13 – Fault code 41 (serious fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Engine speed sensor (160)	Disconnected	13–47	 Brown	Diagnostic equipment : ohmmeter Check the resistance value : R = 360 + 45 ohms	Yes Use of the signal from the needle lift sensor
		19–13		Coil insulated from the earth R ≈ ∞	
		19–47		Air gap value 0.8 to 1.6 mm The air gap is not adjustable	

2.14 – Fault code 43 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Adjustment of advance (443) (on the pump)	Connected	10 – terminal "–"		Diagnostic equipment : voltmeter Ignition switched on, check the voltage : U ≈ 12 V	Yes Reduction of the fuel delivery and performance
	Disconnected	10–16 ; 10–17	 Black	Diagnostic equipment : ohmmeter Check the resistance value : R ≈ 15 ohms	Exhaust gas recycling stopped

www.workshopmanuals.co.uk

2.15 – Fault code 51 (serious fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Sliding block position (166) (in the pump)	Connected	14 – terminal "–"		Diagnostic equipment : voltmeter Ignition switched on, check the output voltage of the item : U ≈ 2.5 V	No Engine stopped
	Disconnected	39–14		Diagnostic equipment : ohmmeter Check the resistance R value : R ≈ 6 ohms	
		21–14		Check the resistance R value : R ≈ 6 ohms	
		21–39		Check the resistance R value : R ≈ 12 ohms	

2.16 – Fault code 52 (serious fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Flow adjustment (445) (in the pump)	Disconnected	1 – terminal "–" 2 – terminal "–" ; 16 – terminal "–"		Diagnostic equipment : voltmeter Ignition switched on, check the item supply voltage : U ≈ 12 V	No Engine cut–off above 1200 rpm
	Disconnected	1–16 ; 2–16		Diagnostic equipment : ohmmeter Check the resistance of the actuator : R ≈ 1 ohms	

www.WorkshopManuals.co.uk

2.17 – Fault code 53 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
E.C.U. (battery voltage) (142)	Connected	16–18 ; 17–18 16–19 ; 17–19		Diagnostic equipment : voltmeter Ignition switched on, check the supply voltage of the E.C.U. : U ≈ 12 V	Yes Replacement value : U ≈ 8.3 V

2.18 – Fault code 54 (serious fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
E.C.U. (142)				Other fault codes present ? repair the faulty functions The engine runs : check the E.C.U. supply and earth. Otherwise : E.C.U. not operating	Yes Air con. switch–off. Cruise control stopped

2.19 – Fault code 57 (minor fault)

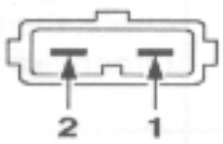
Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Atmospheric pressure sensor (142) (incorporated in the E.C.U.)				Using SOURIAU 26A station or ELIT test unit, check the value of the atmospheric pressure – measure parameters Engine stopped, ignition on, pressure reading < 650 mbars or > 1075 mbars = sensor not operating = replacement of the ECU	Yes Replacement value : 1000 mbars

www.WorkshopManuals.co.uk

2.20 – Fault code 58 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Pre–heating (59)	Connected	8–18		Diagnostic equipment : voltmeter Check the control voltage of the pre–heater control unit : U ≈ battery U The plugs are supplied by twos ; the E.C.U. monitors the difference in current between the 2 units. The test is carried out if U > 9 volts	No

2.21 – Fault code 65 (serious fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Needle lift sensor (165) on cylinder 3	Connected	5–12	 White	Diagnostic equipment : voltmeter Ignition switched on, check the sensor supply voltage : U ≈ 3.5 V	Yes
	Disconnected			Diagnostic equipment : ohmmeter Check the resistance value : R = 100 + 10 ohms at 20 °C	

www.WorkshopManuals.co.uk

28th AUGUST 1996

ABONNEMENT GME

REF. 2 No XM 146-00/9a

AIR AND FUEL SUPPLY

- BOSCH VP36 MSA11 7.6 L3
  Diagnosis

MAN 158931

Addition to Bulletin ② (No XM 146-00/9)

GB

1

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

FAULT FINDING : BOSCH VP36 MSA 11 7.6 L3 FUEL INJECTION

1 – DIAGNOSTIC TOOLS

1.1 – ELIT test unit : 4125–T

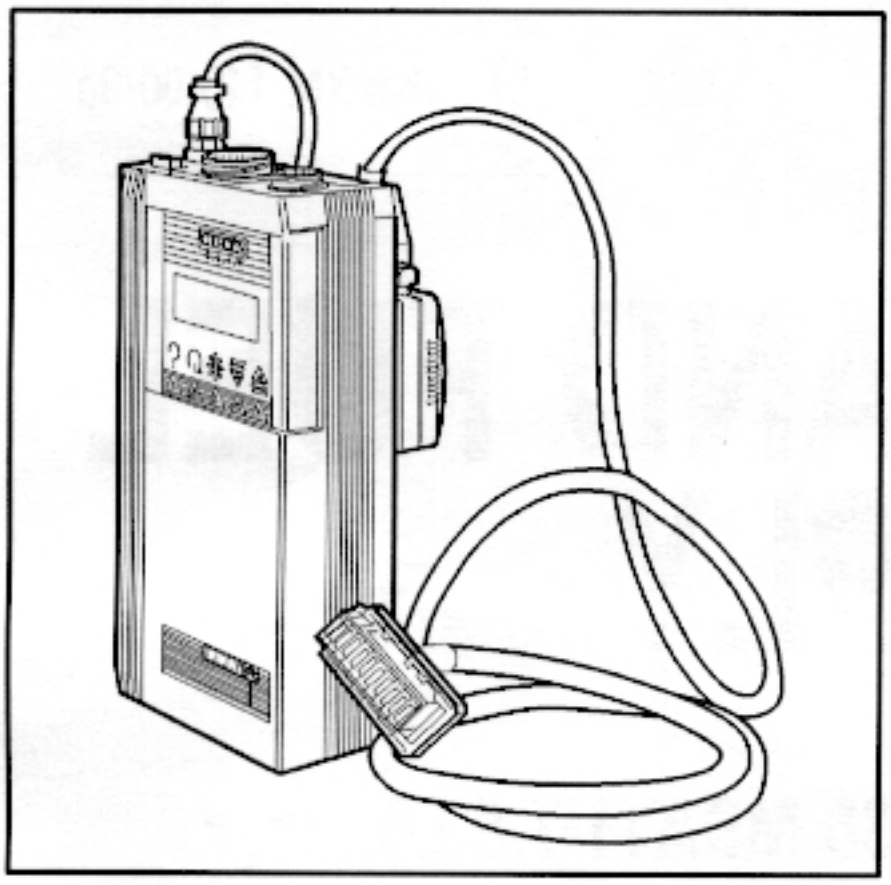


Fig : B3BP039C

The tool can be used for :
- reading the fault codes
- road testing
- operating the actuating components
- measuring the parameters

1.2 – Test connector box : 4109–T

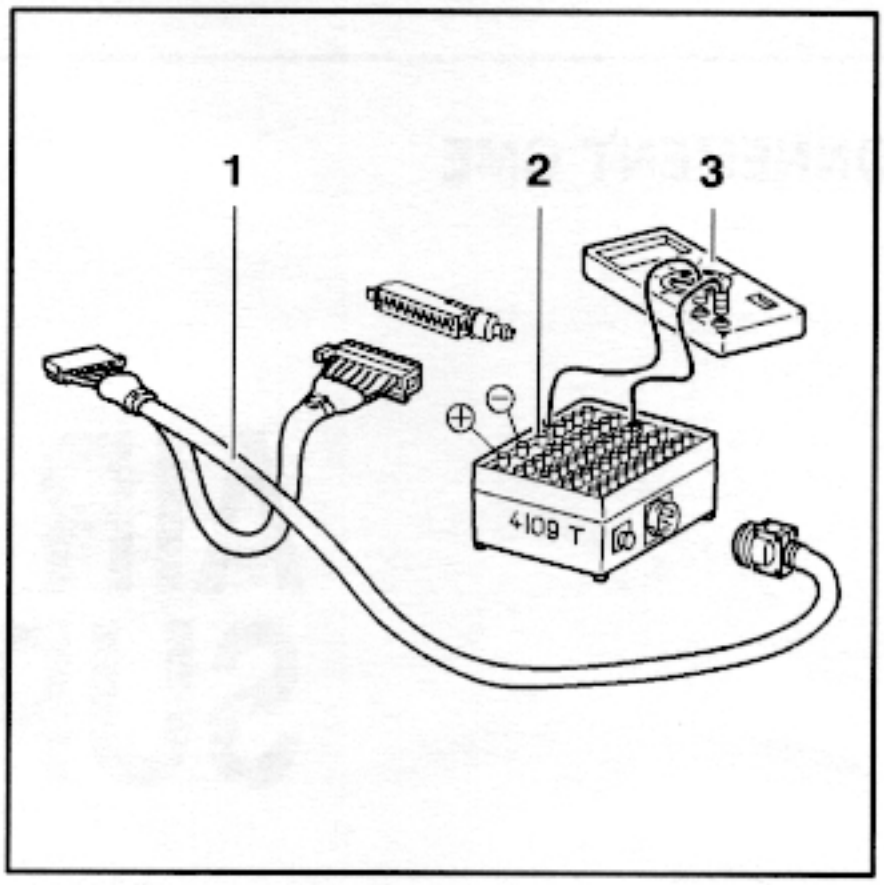


Fig : B1HP074C

(1) – 55–way wiring harness.

(2) – test connector box.

(3) – multimeter.

The box allows reading the voltages and resistances.

1.3 – 26 A diagnostic station

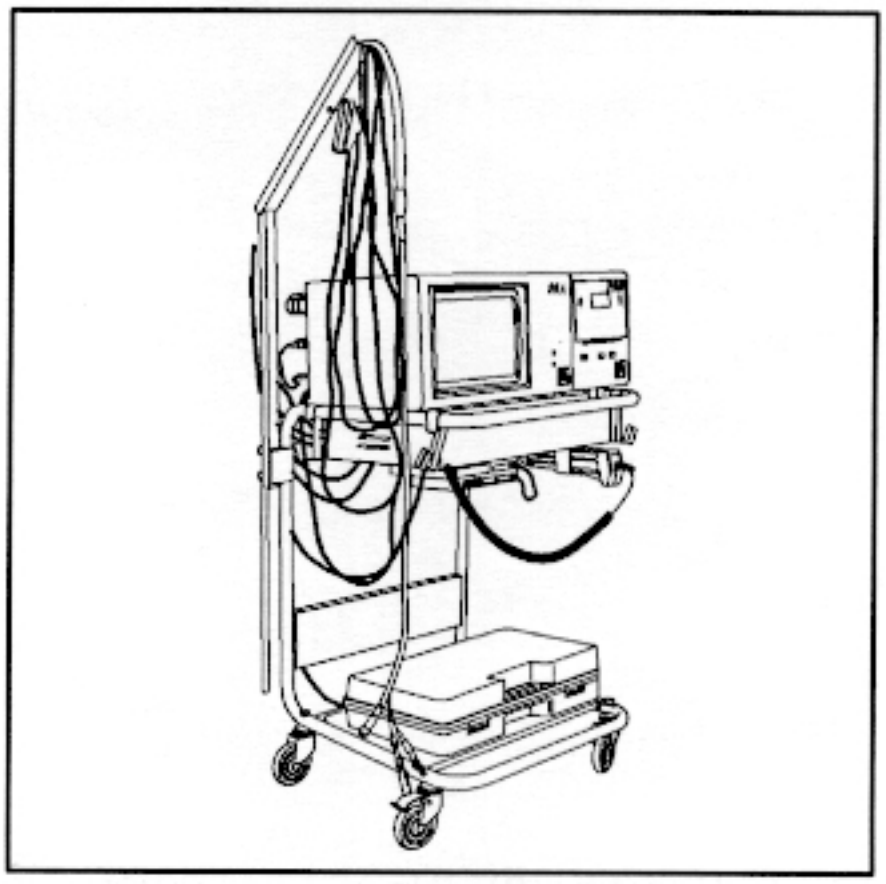


Fig : B3BP031C

The tool can be used for :
- reading the fault codes
- operating the actuating components
- checking the Diesel injection system
- checking the parameters

www.WorkshopManuals.co.uk

2 – FAULT FINDING CHART

This document deals only with the faults specific to the MSA 11 7.6 injection.

For the other faults, refer to the document specific to the MSA 11 3.6 injection.

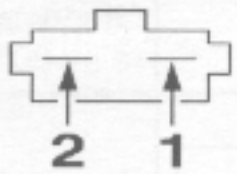
2.1 – List of fault codes

NOTE : The autodiagnostic system warning lamp will light up if the following incident codes are displayed : 37, 41, 51, 52, 54, 65.

13 – air temperature sensor (907).
14 – engine coolant temperature sensor (909).
17 – regulation of the exhaust gas recycling (442).
18 – power outlet short circuit.
21 – accelerator pedal sensor (773).
25 – brake switch (319).
26 – clutch switch (328).
27 – vehicle speed information (154).
33 – over pressure sensor (903).
36 – diesel fuel thermal sensor (922).
37 – stop electrovalve (429).
38 – cruise control.
41 – engine speed sensor (160).
43 – advance adjustment (443).
51 – sliding block position (166).
52 – flow adjustment (445).
53 – electronic control unit (142) (battery voltage).
54 – electronic control unit (142).
57 – atmospheric pressure sensor (142).
58 – pre–heating (59).
65 – needle lift sensor (165).
79 – air flow sensor (340).

NOTE : The MSA 11 7.6 E.C.U. has not got an integrated atmospheric pressure sensor. The measure of the atmospheric pressure is readjusted each time the engine idles for 2 seconds. The exhaust gas recycling butterfly control electrovalve is tested only by the fault code 18 : power outlet short circuit. The diagnostic of the pre–heater plugs is no longer done since the 4 plugs are in parallel (2 x 2 plugs for MSA 11 3.6).

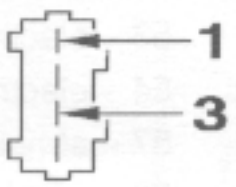
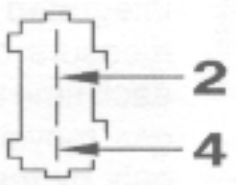
2.2 – Fault code 17 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Regulation of the exhaust gas recycling (442) on the bodyshell, near the R.H. front sphere	Connected	8 – 18		Diagnostic equipment : voltmeter Ignition switched on Check the item supply voltage : U ≈ battery U	Yes Limitation of the pump delivery reduction of performance
	Disconnected	8 – 16	 Brown	Diagnostic equipment : ohmmeter Check the resistance of the electrovalve : R ≈ 52 ohms	

NOTE : Fault code 17 is detected only in the 2800 rpm EGR idle operation zone. At each return to idling, the E.C.U. cancels the fault code 17 and performs a new check. If the fault is still present, it is recorded. Otherwise, return to normal operation.

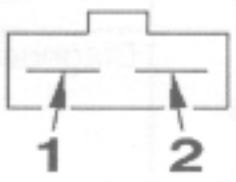
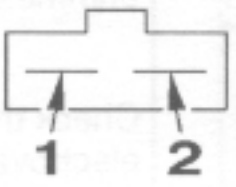
www.WorkshopManuals.co.uk

2.3 – Fault code 79 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Air flow sensor (340)	Connected	16 – 18		Diagnostic equipment : voltmeter	Yes
		17 – 19		Ignition switched on Check the sensor supply voltage : U ≈ battery U	EGR cut–off
		38 – 13		With engine running ; check that the output voltage varies between 0.5 and 5 volts, according to the engine load	

NOTE : An inversion in the direction of fitting of the flowmeter will cause instability and engine misfiring.

2.4 – Fault code (without)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
EGR throttle butterfly electrovalve (437)	Connected	6 – 18	 Black	Diagnostic equipment : voltmeter Ignition switched on Check the item supply voltage : U ≈ battery U	
		16 – 18		Otherwise verify : U ≈ battery U Otherwise check the supply to relay 807	
	Disconnected	6 – 16	 Black	Diagnostic equipment : ohmmeter Verify : R ≈ 40 ohms	

© Reproduction ou traduction même partielle interdite sans l'autorisation écrite des Automobiles CITROËN

www.WorkshopManuals.co.uk

OCTOBER 1995

ABONNEMENT GME

REF. 12 No XM 500-0/1

FAULT FINDING

- BOSCH MP5.1.1. FUEL INJECTION

- XU 10 J4R PETROL ENGINE (1998cc - 16 Valve)

MAN 158932

2

GB

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

FAULT FINDING : BOSCH MP5.1.1 FUEL INJECTION

1 – DIAGNOSTIC TOOLS

1.1 – ELIT test unit : 4125–T

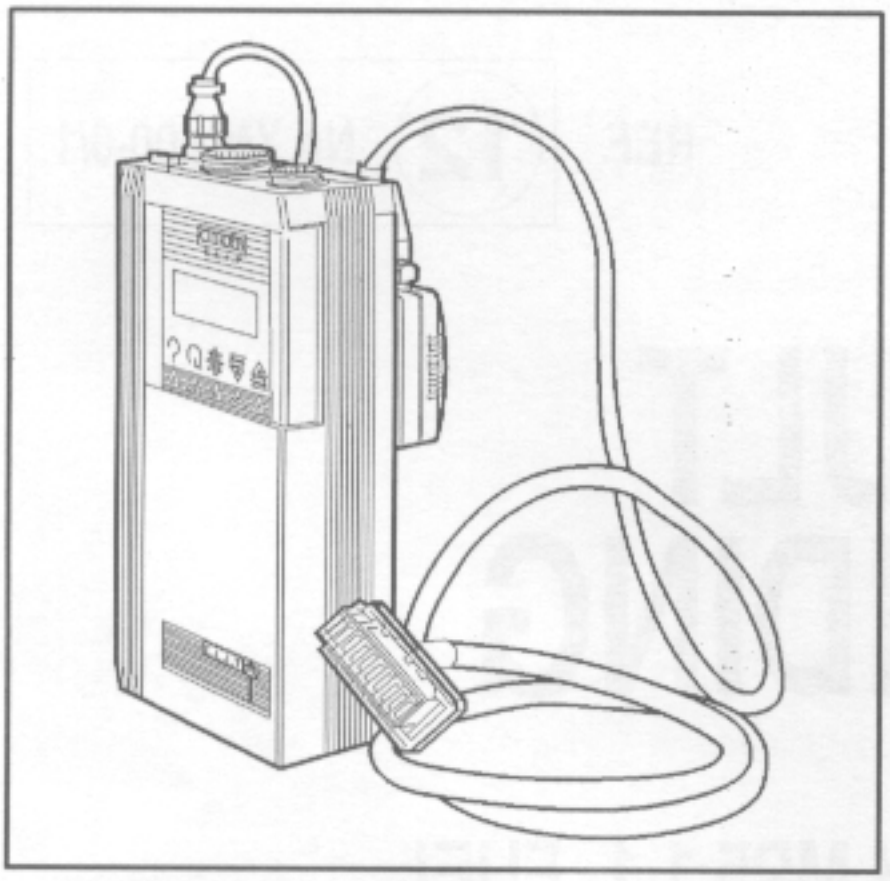


Fig : B3BP039C

The tool can be used for :
- reading the fault codes
- road testing
- operating the actuating components
- measuring the parameters

1.2 – Test connector box : 4109–T

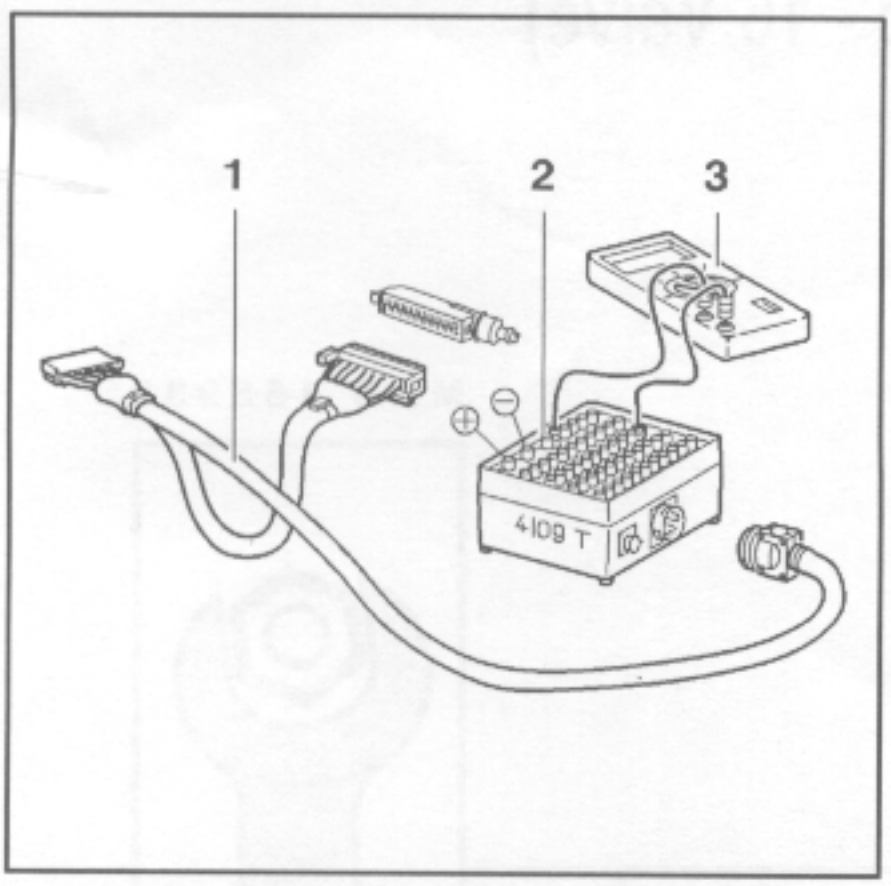


Fig : B1HP074C

(1) – 55–way wiring harness.

(2) – test connector box.

(3) – multimeter.

The box allows reading the voltages and resistances.

1.3 – 26 A diagnostic station

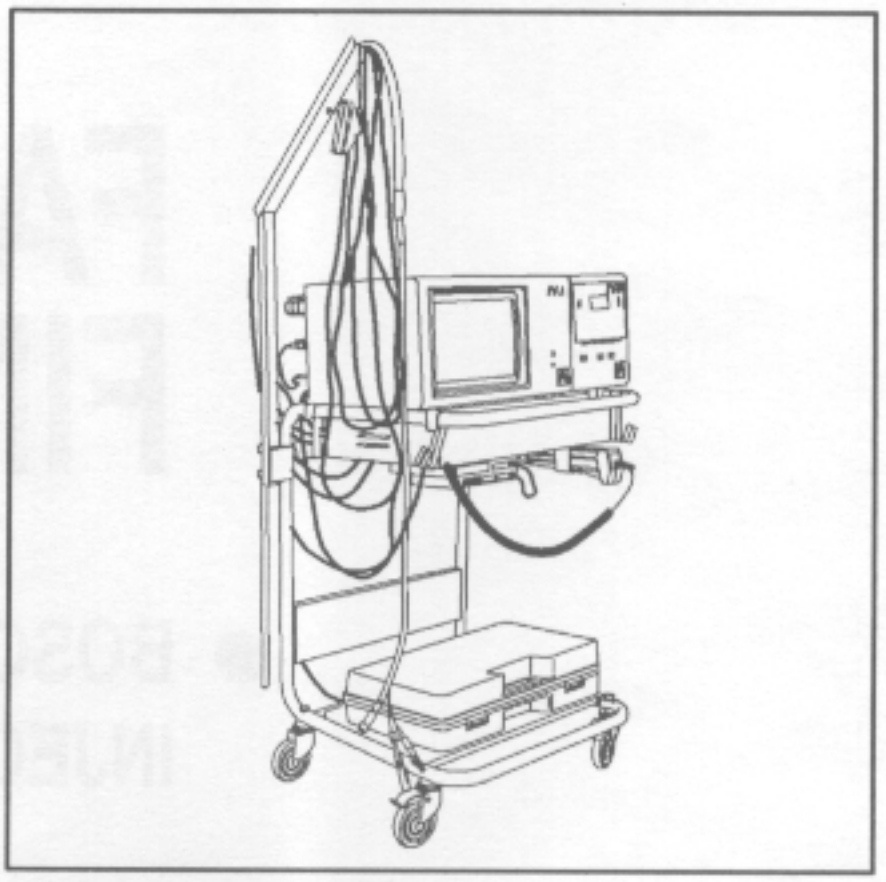


Fig : B3BP031C

The tool can be used for :
- reading the fault codes
- operating the actuating components
- the simulation/starting test
- checking the ignition system
- checking the injection system
- checking the parameters
- OCR checks

www.WorkshopManuals.co.uk

2 – FAULT FINDING CHART

2.1 – List of fault codes

NOTE : The autodiagnostic system warning lamp will light if the following incident codes are displayed : 42,52,54.

IMPERATIVE : After erasing a defect code, it is necessary to reset the E.C.U.. Switch off the ignition, then switch it on. Wait 3 seconds before starting the engine.

13 – air temperature sensor (907).
14 – engine coolant temperature sensor (909).
21 – throttle spindle potentiometer (770) on the butterfly housing.
22 – idling regulation stepper motor (712).
27 – vehicle speed information (154).
31 – mixture regulation auto adaptation.
33 – pressure sensor (903).
34 – canister discharge electrovalve (434).
41 – engine speed sensor (160).
42 – injectors (570).
43 – anti–knock adjustment.
44 – knock sensor (150).
51 – (900) oxygen sensor.
52 – oxygen sensor mixture regulation stop.
53 – ignition injection control unit.
54 – E.C.U. (142) in the box behind the battery.

www.WorkshopManuals.co.uk

2.2 – Fault code 13 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Air temperature sensor (907) (throttle butterfly housing)	Disconnected	27–26	Grey	Diagnostic equipment : ohmmeter E.C.U. disconnected : measure the resistance of the sensor according to the temperature	Yes
	Connected			Diagnostic equipment : voltmeter E.C.U. connected : ignition switched on, sensor disconnected Check the component supply voltage : U ≈ 5 V	

Graph for checking the sensor resistance according to the temperature.

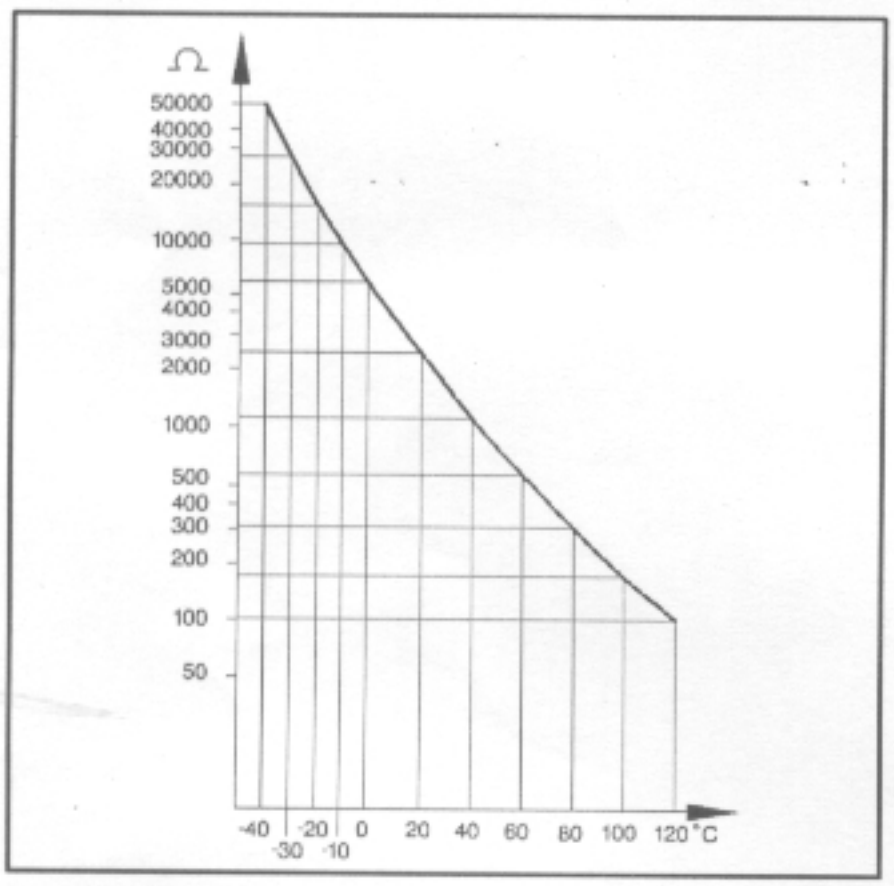


Fig : B1HP043C

www.WorkshopManuals.co.uk

2.3 – Fault code 14 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Engine coolant temperature sensor (909) (cylinder head water outlet housing)	Disconnected	25–26	— — Green	Diagnostic equipment : ohmmeter E.C.U. disconnected : measure the resistance of the sensor according to the temperature	Yes
	Connected			Diagnostic equipment : voltmeter E.C.U. connected : ignition switched on, sensor disconnected Check the component supply voltage : U ≈ 5 V	

Graph for checking the sensor resistance according to the temperature.

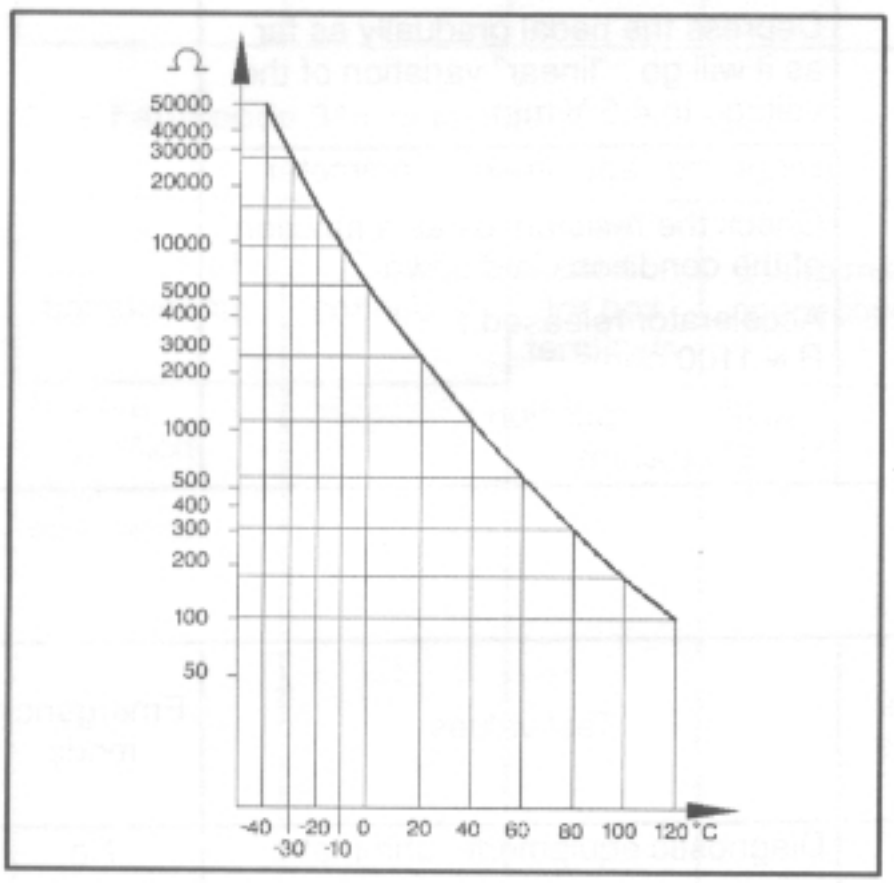


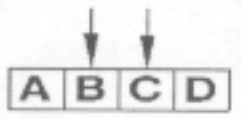
Fig : B1HP043C

www.WorkshopManuals.co.uk

2.4 – Fault code 21 (minor fault)

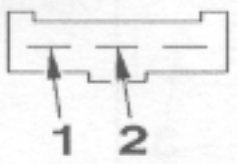
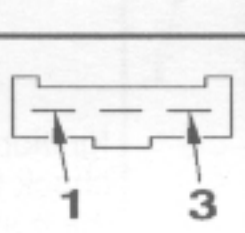
Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Throttle spindle potentiometer (770) on the butterfly housing	Connected	12–26	 White	Diagnostic equipment : voltmeter Ignition switched on Check the component supply voltage : U ≈ 5 ± 0,5 V	Yes
		29–26	 White	Diagnostic equipment : voltmeter Check the voltages as a function of the conditions laid down Accelerator released : U ≈ 0,5 ± 0,1 V Depress the pedal gradually as far as it will go : "linear" variation of the voltage to 4,5 V min.	
	Disconnected			Diagnostic equipment : ohmmeter Check the resistances as a function of the conditions laid down Accelerator released : R ≈ 1100 ohms "full throttle" position : R ≈ 2700 ohms	

2.5 – Fault code 22 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Idling regulation stepper motor (712)	Disconnected	33–15		Diagnostic equipment : ohmmeter Select "activation" : code 83 is displayed Otherwise, verify : Between terminals 33 and 15 : the resistance of the winding ; R ≈ 53 ohms	No
		24–21		Between terminals 24 and 21 : the resistance of the winding ; R ≈ 53 ohms	

www.WorkshopManuals.co.uk

2.6 – Fault code 27 (minor fault)

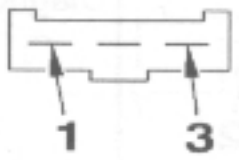
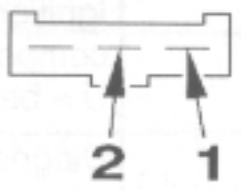
Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Vehicle speed sensor (154) – manual gearbox	Connected		 White	Diagnostic equipment : voltmeter Make sure that the speedometer is operating correctly Ignition switched on – check the component supply voltage : U ≈ battery U	Yes
		9–26	 White	Diagnostic equipment : voltmeter Road wheels rotating – check the output voltage of the component : U ≈ 6 V	

2.7 – Fault code 31 (minor fault)

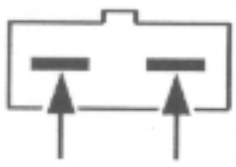
Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Mixture regulation auto adaptation				Any other fault code present ? repair the faulty functions Otherwise, verify : the quality of the fuel. The lambda probe heating. The canister discharge electrovalve (jammed open). The fuel pressure. Any exhaust leak before the lambda probe Test the actuating components to check that an injector is not jammed open	Yes

www.WorkshopManuals.co.uk

2.8 – Fault code 33 (minor fault)

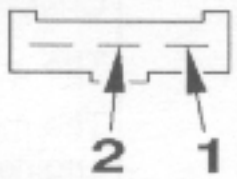
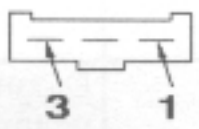
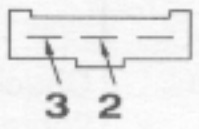
Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Inlet manifold pressure sensor (903)	Connected	12–26	 Black	Diagnostic equipment : voltmeter Check the component supply voltage : U ≈ 5 V	Yes
		7–26		Diagnostic equipment : voltmeter Ignition switched on – check the voltages as a function of the conditions laid down Vary the pressure using a hand–operated vacuum pump Pressure 400 mb : U ≈ 1,4 V (idling speed) Pressure 1000 mb : U ≈ 4,5 V (full load)	

2.9 – Fault code 34 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Canister discharge electrovalve (434)	Connected	5–14	Black	Diagnostic equipment : ohmmeter Select "activation" : code 84 is displayed Make sure that the item reacts to each voltage application	No
	Disconnected		 Black	Diagnostic equipment : ohmmeter Check the resistance R value : R ≈ 50 ohms	

www.WorkshopManuals.co.uk

2.10 – Fault code 41 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Engine speed sensor (160) (flywheel sensor)	Disconnected	11–30	 Brown	Diagnostic equipment : ohmmeter Check the resistance R value : R ≈ 330 ohms	No
				Check the following values Air gap value 0,5 to 0,15 mm The air gap is not adjustable	
		19–30		Flywheel ; out–of–true not adjustable : 0,4 (max.)	
		19–11		Windings insulated from earth R ≈ ∞	

2.11 – Fault code 42 (serious fault)

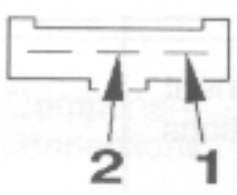
Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Injectors (570) (control)	Connected		(on each injector)	Start the activation – code 82 is displayed Otherwise : disconnect the fuel pump Create impulses to activate the injector Make sure that a clicking noise can be heard Carry out the test successively with only one injector connected Reconnect the fuel pump	No
	Disconnected		 Black	Diagnostic equipment : ohmmeter Check the resistance R value : R ≈ 16 ohms	

www.WorkshopManuals.co.uk

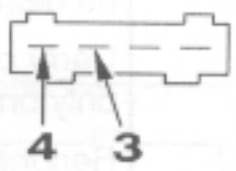
2.12 – Fault code 43 (minor fault)

Location of components	E.C.U. connector	Test connec-tor box terminals	Component connections	Test values	Emergency mode
Anti–knock adjustment				Check The quality of the fuel The mechanical condition of the engine Otherwise : see code 44	Yes

2.13 – Fault code 44 (minor fault)

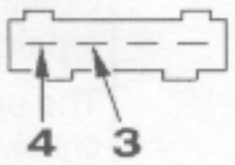
Location of components	E.C.U. connector	Test connec-tor box terminals	Component connections	Test values	Emergency mode
Knock sensor (150)	Connected, with engine running	8–26	 Green 	Diagnostic equipment : ohmmeter, voltmeter Check the sensor connections ; tightening torque : 2 ± 0,5 m.daN Check : the continuity of the circuit between the connector and the E.C.U. Accelerate sharply : the output voltage must be between 0,1V and 0,7V	Yes

2.14 – Fault code 51 (minor fault)

Location of components	E.C.U. connector	Test connec-tor box terminals	Component connections	Test values	Emergency mode
Oxygen sensor (900)		10–28		See relative tests for code 31	Yes

www.WorkshopManuals.co.uk

2.15 – Fault code 52 (serious fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Oxygen sensor mixture regulation stop	Connected, with engine running	28–10		Diagnostic equipment : voltmeter 1st case : mixture too weak, U ≈ 0 V Make sure that none of the following faults are present Air leak at inlet and exhaust Fuel pressure too low Injector with carbon deposits 2nd case : mixture too rich, U ≈ 1 V Make sure that none of the following faults are present Injector leaking Fuel pressure too high In both cases, if the malfunction persists Ensure that the fuel is of the type recommended : 98 UNLEADED or EUROSUPER Otherwise : see relative tests for code 31	Yes

2.16 – Fault code 53 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Ignition injection control unit (142) (supply voltage)	Connected	18–19 37–14 37–2 37–19		Diagnostic equipment : voltmeter Check the component supply voltage : 10<U<15,5 Otherwise : check the charging circuit	Yes

www.WorkshopManuals.co.uk

2.17 – Fault code 54 (serious fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
E.C.U. (142) in the box behind the battery				Other fault codes present ? repair the faulty functions The engine runs : check the E.C.U. supply and earth. Otherwise : E.C.U. not operating	No

© Reproduction ou traduction même partielle interdite sans l'autorisation écrite des Automobiles CITROËN

www.WorkshopManuals.co.uk

Xm

OCTOBER 1997

SUBSCRIPTION

REF. 12 No XM 500-0/4

DIAGNOSIS

- BOSCH MP 7.0 INJECTION
- ES9 J4 PETROL ENGINE
  (2946 cm³ - 24 valves)

MAN 158932

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE



GB

www.WorkshopManuals.co.uk

TOOLS

PRESENTATION : DIAGNOSTIC TOOLS 1

1 – ELIT test unit : 4125–T 1
2 – Test connector box : 4109–T –
3 – PROXIA diagnostic station : 4165–T –
4 – LEXIA diagnostic station : 4171–T –

AIR AND FUEL SUPPLY – TURBOCHARGING

FAULT FINDING : BOSCH MP7.0 FUEL INJECTION (XFZ ES9J4 V6 2946 CC ENGINE) 2

1 – Diagnostic tools 2
2 – Fault finding chart –

www.WorkshopManuals.co.uk

PRESENTATION : DIAGNOSTIC TOOLS

1 – ELIT TEST UNIT : 4125–T

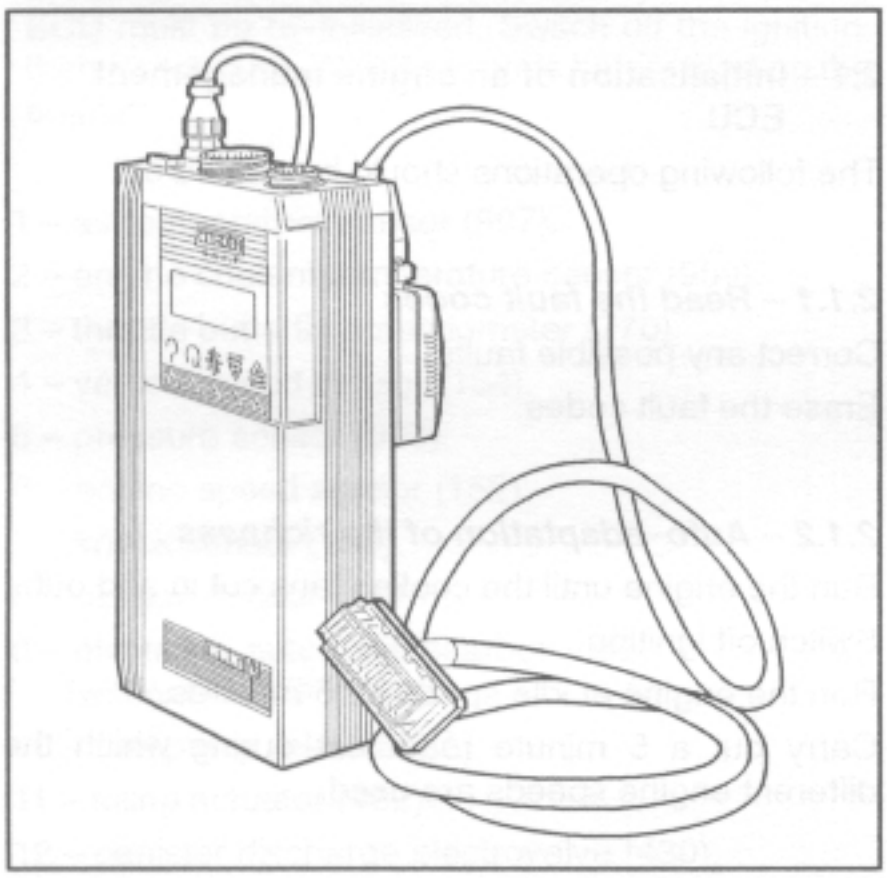


Fig : B3BP039C

2 – TEST CONNECTOR BOX : 4109–T

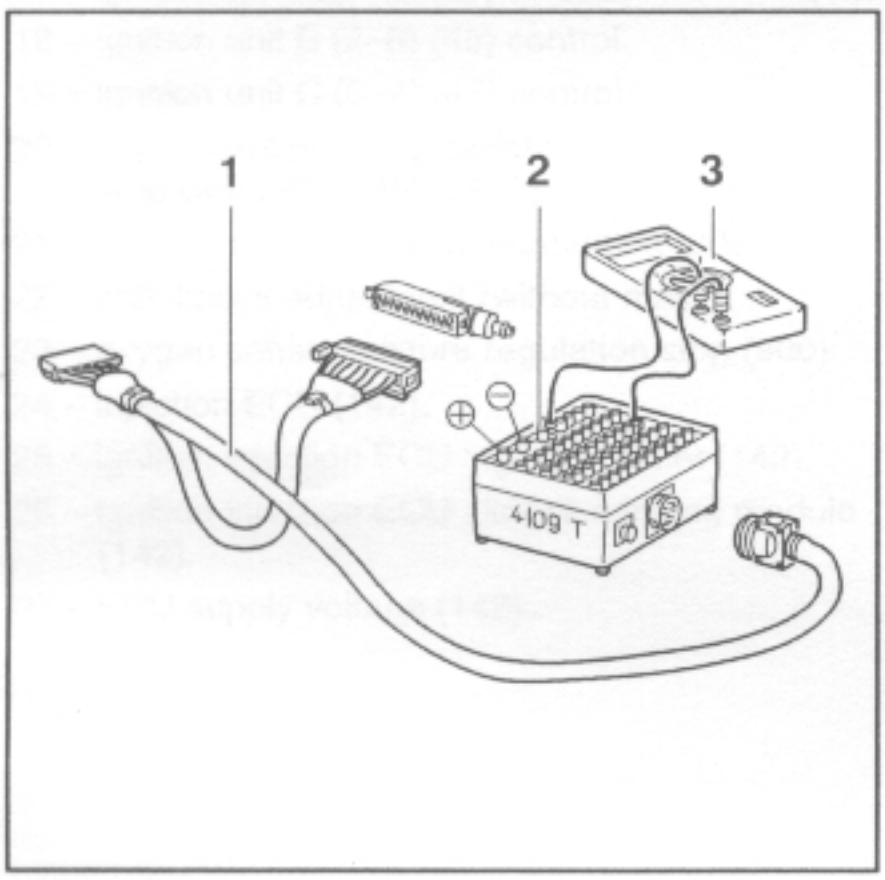


Fig : B1HP074C

(1) electrical harness (according to function).

(2) test connector box.

(3) multimeter.

3 – PROXIA DIAGNOSTIC STATION : 4165–T



Fig : E5AP087C

4 – LEXIA DIAGNOSTIC STATION : 4171–T



Fig : E5AP088C

www.WorkshopManuals.co.uk

FAULT FINDING : BOSCH MP7.0 FUEL INJECTION (XFZ ES9J4 V6 2946 CC ENGINE)

1 – DIAGNOSTIC TOOLS

1.1 – ELIT test unit : 4125–T

The tool can be used for :
- fault reading
- measuring the parameters
- testing the actuators
- identification of the injection ECU
- "downloading" of the ECU programs

1.2 – Test connector box : 4109–T

The box allows reading of the voltages and resistances : 55–way wiring harness.

1.3 – LEXIA diagnostic station : 4171–T

The tool can be used for :
- fault reading
- measuring the parameters
- testing the actuators
- identification of the injection ECU
- "downloading" of the ECU programs
- consultation of the electrical wiring diagrams

1.4 – PROXIA diagnostic station : 4165–T

The tool can be used for :
- fault reading
- measuring the parameters
- testing the actuators
- identification of the injection ECU
- "downloading" of the ECU programs
- consultation of the electrical wiring diagrams

2 – FAULT FINDING CHART

2.1 – Initialisation of an engine management ECU

The following operations should be carried out.

2.1.1 – Read the fault codes

Correct any possible faults.

Erase the fault codes.

2.1.2 – Auto–adaptation of the richness

Run the engine until the cooling fans cut in and out.

Switch off ignition.

Run the engine at idle speed for 5 minutes.

Carry out a 5 minute road test during which the different engine speeds are used.

2.1.3 – Reading of faults

Correct any possible faults.

Erase the fault codes.

Restart the ECU initialisation procedure (operation 2.1).

www.WorkshopManuals.co.uk

2.2 – Fault list

NOTE : The self–diagnostic warning lamp lights up if the following faults are detected: 14 – 15 – 16 – 17 – 18 – 19 – 24.

IMPERATIVE : After a fault has been erased, the ECU must be re–initialised. Switch off the ignition, then switch it on. Wait 3 seconds before starting the engine.

1 – air temperature sensor (907).
2 – engine coolant temperature sensor (909).
3 – throttle butterfly potentiometer (770).
4 – vehicle speed sensor (154).
5 – pressure sensor (903).
6 – engine speed sensor (152).
7 – knock sensor (150).
8 – oxygen sensor (900).
9 – electronic automatic gearbox input (without identification).
10 – fuel pump relay (807A).
11 – idling actuator (432).
12 – canister discharge electrovalve (430).
13 – oxygen sensor (807B) heating relay control.
14 – injector unit A (1–5) (570) control.
15 – injector unit B (2–6) (570) control.
16 – injector unit C (3–4) (570) control.
17 – ignition unit A (1–5) (45) control.
18 – ignition unit B (2–6) (45) control.
19 – ignition unit C (3–4) (45) control.
20 – adjustment of idling speed : stop (without identification).
21 – mixture regulation auto adaptation (900).
22 – anti–knock adjustment (without make).
23 – oxygen sensor mixture regulation stop (900).
24 – injection ECU (142).
25 – ignition injection ECU : ignition shunt (142).
26 – ignition injection ECU : knock sensing module (142).
27 – ECU supply voltage (142).

www.WorkshopManuals.co.uk

2.3 – Fault code 1 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Air temperature sensor (907) (below air filter – inlet manifold connection)	Dis-connected	44–26 (55–way black)	 1–2 (2–way grey)	Diagnostic equipment : ohmmeter Measure the resistance of the sensor according to the temperature	Yes Air temperature = water temperature ; until 40 °C, then fixed value at 40 °C
	Connected			Diagnostic equipment : voltmeter Sensor disconnected ; ignition switched on Check the component supply voltage : U = 5 V	

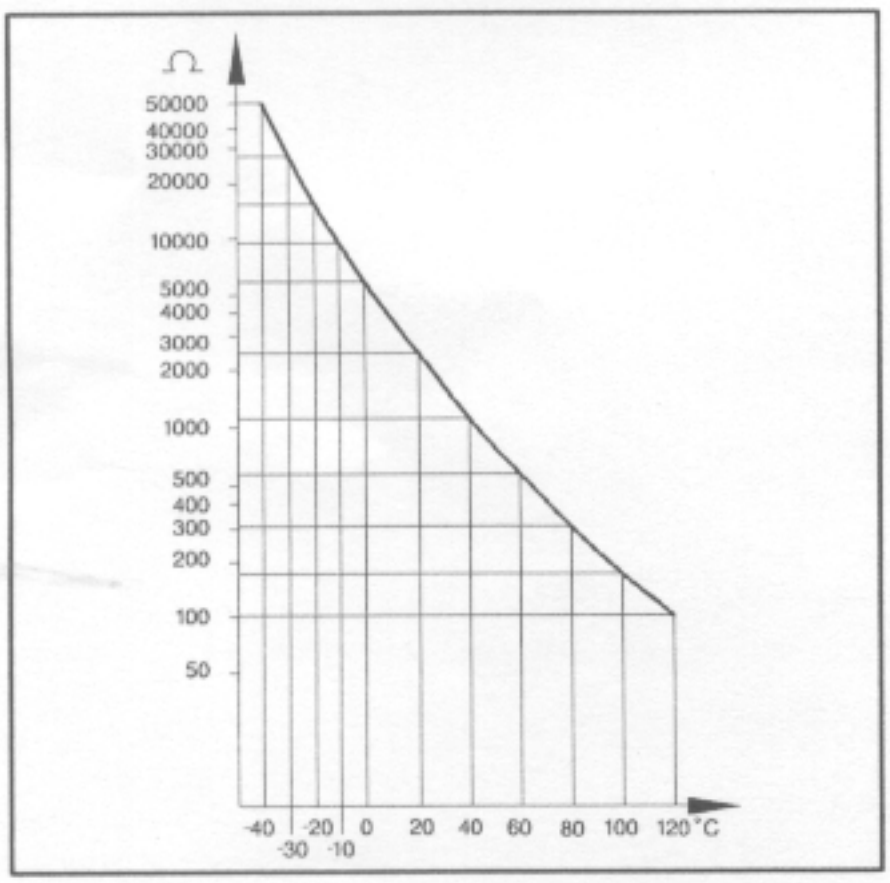


Fig : B1HP043C

Graph for checking the sensor resistance according to the temperature.

www.WorkshopManuals.co.uk

2.4 – Fault code 2 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Engine coolant temperature sensor (909) (cylinder head coolant outlet housing)	Dis-connected	45–26 (55–way black)	1–2 (2–way green)	Diagnostic equipment : ohmmeter Measure the resistance of the sensor according to the temperature	Yes The engine must be warm : water temperature = 70 °C
	Connected			Diagnostic equipment : voltmeter Sensor disconnected ; ignition switched on Check the component supply voltage : U = 5 V	

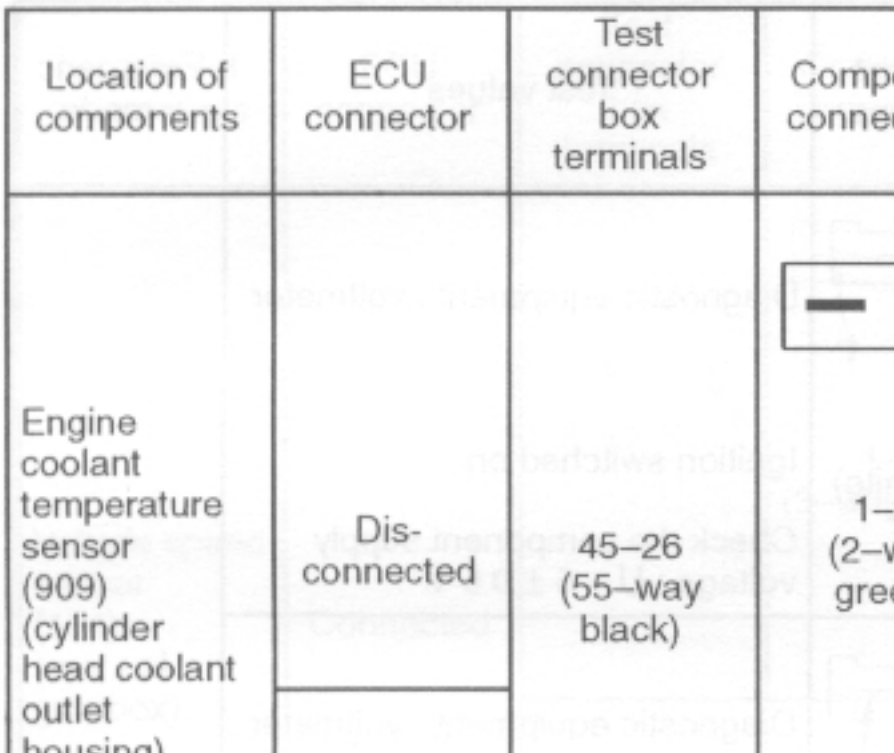
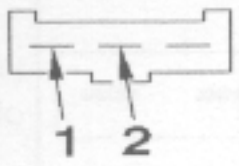


Fig : B1HP043C

Graph for checking the sensor resistance according to the temperature.

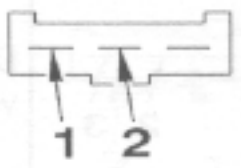
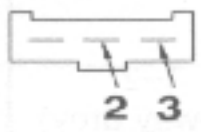
www.WorkshopManuals.co.uk

2.5 – Fault code 3 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Throttle spindle potentiometer (770) on the butterfly housing	Connected	26–12 (55–way black)	 1–2 (3–way white)	Diagnostic equipment : voltmeter Ignition switched on Check the component supply voltage ; U = 5 ± 0.5 V	Yes
		26–53 (55–way black)	 1–3 (3–way white)	Diagnostic equipment : voltmeter Check the voltages as a function of the conditions laid down Accelerator released : U = 0.5 ± 0.1 V Depress the pedal gradually as far as it will go : "linear" variation of the voltage to 4.5 V min.	
	Dis-connected			Diagnostic equipment : ohmmeter Check the resistances as a function of the conditions laid down Accelerator released : R = 1000 ohms "Full throttle" position : R = 2800 ohms	
		26–12 (55–way black)	 1–2 (3–way white)	Diagnostic equipment : ohmmeter Check the resistance value R : 1600 ohms < R < 2400 ohms	

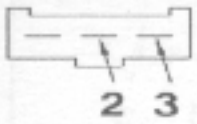
www.WorkshopManuals.co.uk

2.6 – Fault code 4 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Vehicle speed sensor (154) (manual gearbox)	Connected		 1–2 (3–way white)	Diagnostic equipment : voltmeter Make sure that the speedometer is operating correctly Ignition switched on ; check the component supply voltage : U = U battery	No
		19–9 (55–way black)	 2–3 (3–way white)	Diagnostic equipment : voltmeter Wheels rotating ; check the output voltage of the item : U ≈ 6 V	

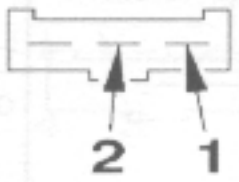
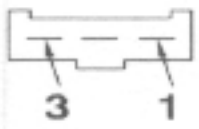
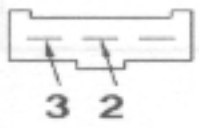
www.WorkshopManuals.co.uk

2.7 – Fault code 5 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Pressure sensor (903), on the inlet manifold	Connected	26–12 (55–way black)	 2–3 (3–way grey)	Diagnostic equipment : voltmeter Check the component supply voltage : U ≈ 5 V	Yes
		7–26 (55–way black)	 1–2 (3–way grey)	Diagnostic equipment : voltmeter Ignition switched on ; check the voltages as a function of the conditions laid down Remove the sensor Reconnect the vacuum pipe. Vary the pressure using a hand–operated vacuum pump Vacuum pressure 400 mb : U = 2.1 V Vacuum pressure 600 mb : U = 3.45 V Vacuum pressure 780 mb : U = 4.75 V Fit the sensor	

www.WorkshopManuals.co.uk

2.8 – Fault code 6 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Engine speed sensor (152) (on clutch housing)	Dis-connected	49–48 (55–way black)	 1–2 (3–way brown)	Diagnostic equipment : ohmmeter Check the resistance value R : 300 ohms < R < 400 ohms Check the following values : air gap value 0.5 to 1.5 mm (not adjustable) Flywheel (non–adjustable run–out) : 0.4 mm (max.)	No
		49–24 (55–way black)	 1–3 (3–way brown)	Coil insulated from the earth : R = ∞	
		48–24 (55–way black)	 2–3 (3–way brown)		

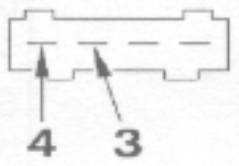
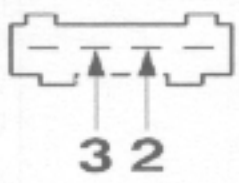
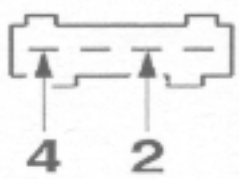
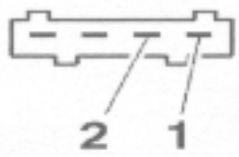
www.WorkshopManuals.co.uk

2.9 – Fault code 7 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Knock sensor (150)	Dis-connected	11–30 (55–way black)	 1–2 (3–way green)	Diagnostic equipment : ohmmeter Check the fitting of the sensor (tightening torque 2 ± 0.5 m.daN) Check the continuity and insulation of the wires between terminals 1 and (11) : 1 knock sensor. (11) injection ECU Check the continuity and insulation of the wires between terminals 2 and (30) : 2 knock sensor. (30) injection ECU Check the insulating of the wires between terminals 11 and 30 : R ≈ ∞	Yes

www.WorkshopManuals.co.uk

2.10 – Fault code 8 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Oxygen sensor (900) (on the exhaust manifold)	Connected	10–28 (55–way black)	 3–4 (4–way brown)	Diagnostic equipment : voltmeter Engine hot + with engine running Check the component's voltage : 0 < U < 1 volts Check the fuse F11 (BB10 fuse box under bonnet)	Yes
	Dis–connected	10–28 (55–way black)		Diagnostic equipment : ohmmeter Check the continuity and insulation of the wires between terminals 10 and (3) : 10 injection ECU. (3) oxygen sensor Check the continuity and insulation of the wires between terminals 28 and (4) : 28 injection ECU. (4) oxygen sensor Check the continuity and insulation of wires between terminal (2) and the earth M4D : (2) oxygen sensor	
				Check the continuity and insulation of wires R = ∞	
				Check the continuity and insulation of wires R = ∞	
				Check the oxygen sensor heating element : R ≈ 2 ohms	

www.WorkshopManuals.co.uk

2.11 – Fault code 9 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Electronic automatic gearbox input	Dis-connected		1–2–3–4 (7–way black)	Diagnostic equipment : ohmmeter Check the continuity of the wires between the following terminals : 6 engine ECU and 39 Auto. gearbox ECU. 31 engine ECU and 38 Auto. gearbox ECU. 42 engine ECU and 51 Auto. gearbox ECU. 43 engine ECU and 40 Auto. gearbox ECU	No

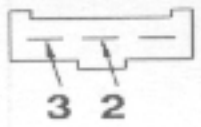
NOTE : BVA: Automatic Gearbox.

2.12 – Fault code 10 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Fuel pump relay (807A) (control)	Connected	3–19 (55–way black)	Connected double relay (input 10) (15–way black)	Diagnostic equipment : voltmeter Remove fuse F9 (fuel pump) (BB10 fuse box under bonnet) Select "activation" : the relay should click If not : ignition switched on ; check the component supply voltage : U = U battery Refit the fuse F9	No

www.WorkshopManuals.co.uk

2.13 – Fault code 11 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Idling actuator (432)	Connected			Sealing of the air circuit Crimp the pipe : engine speed < 500 rpm Otherwise : presence of an air leak Select "activation" : make sure that a clicking noise can be heard	Yes
	Dis-connected	37–4 (55–way black)	 2–3 (3–way grey)	Diagnostic equipment : ohmmeter Ignition off Check the resistance value of the winding : R = 12 ohms (directly at the electrovalve)	
		22–37 (55–way black)	 1–2 (3–way grey)	Check the resistance value of the winding : R = 10 ohms (directly at the electrovalve)	

www.WorkshopManuals.co.uk

2.14 – Fault code 12 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Canister discharge electrovalve (430) (control)	Connected	37–5 (55–way black)	 1–2 (2–way brown)	Diagnostic equipment : voltmeter Start the activation : the control of the canister electrovalve will be energised twice second for 15 seconds (check that a flapping noise is heard in the R.H. front wing) Make sure that the item reacts to each voltage application	No
	Dis-connected			Diagnostic equipment : ohmmeter Check the resistance value R : 25 ohms < R < 50 ohms	

2.15 – Fault code 13 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Oxygen sensor (807B) heating relay control	Connected	51–14 (55–way black)	Connected double relay (input 10) (15–way black)	Diagnostic equipment : voltmeter Select "activation" : the relay should click If not : switch on ignition Check the component supply voltage : U ≈ U battery	No

www.WorkshopManuals.co.uk

2.16 – Fault code 14 (serious fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
	Connected			Start the activation : make sure that a clicking noise can be heard	
Injector unit A (1–5) (570) control	Dis-connected	37–17 (55–way black)	 1–2 (2–way brown)	Diagnostic equipment : ohmmeter Ignition off : disconnect the injector N°1 Check the resistance value R : injector N°5 = R ≈ 12 ohms Carry out the test successively with only one injector connected Check the continuity and insulation of the wires between terminals 17 and (2) (on each injector) : 17 injection ECU. (2) injector Check the continuity and insulation of the wires between terminals 37 and (1) (on each injector) : 37 injection ECU. (1) injector	No

www.WorkshopManuals.co.uk

2.17 – Fault code 15 (serious fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Injector unit B (2–6) (570) control	Connected			Start the activation : make sure that a clicking noise can be heard	No
	Dis-connected	37–35 (55–way black)	1–2 (2–way brown)	Diagnostic equipment : ohmmeter Ignition off : disconnect the injector N°2 Check the resistance value R : injector N°6 = R ≈ 12 ohms Carry out the test successively with only one injector connected Check the continuity and insulation of the wires between terminals 35 and (2) (on each injector) : 35 injection ECU. (2) injector Check the continuity and insulation of the wires between terminals 37 and (1) (on each injector) : 37 injection ECU. (1) injector	

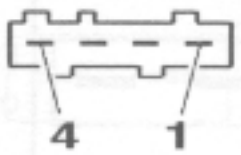
www.WorkshopManuals.co.uk

2.18 – Fault code 16 (serious fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Injector unit C (3–4) (570) control	Connected			Start the activation : make sure that a clicking noise can be heard	No
	Dis-connected	37–16 (55–way black)	▬ ▬ 1–2 (2–way brown)	Diagnostic equipment : ohmmeter Ignition off : disconnect the injector N°3 Check the resistance value R : injector N°4 = R ≈ 12 ohms Carry out the test successively with only one injector connected Check the continuity and insulation of the wires between terminals 16 and (2) (on each injector) : 16 injection ECU. (2) injector Check the continuity and insulation of the wires between terminals 37 and (1) (on each injector) : 37 injection ECU. (1) injector	

www.WorkshopManuals.co.uk

2.19 – Fault code 17 (serious fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Ignition unit A control. Coils of cylinders 1 and 5 (45)	Connected			Start the activation : make sure that a clicking noise can be heard	No
	Dis-connected	1–27 (55–way black)	 1–4 (4–way black)	Diagnostic equipment : ohmmeter Check : primary circuit resistance ; R ≈ 0,6 ohms Check : coil SAGEM secondary circuit : R ≈ 12600 ohms Check the continuity of the sparking plug leads between terminal 1 (ECU) and terminal 1 (coil)	
	Connected			Diagnostic equipment : voltmeter Ignition switched on : check the voltage between terminal 4 (coil) and earth : U ≈ U battery	

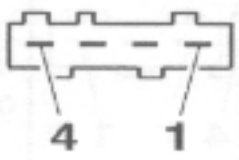
www.WorkshopManuals.co.uk

2.20 – Fault code 18 (serious fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Ignition unit B control. Coils of cylinders 2 and 6 (45)	Connected			Start the activation : make sure that a clicking noise can be heard	No
	Dis-connected	20–27 (55–way black)	 2–4 (4–way black)	Diagnostic equipment : ohmmeter Check : primary circuit resistance ; R = 0.6 ohms Check : SAGEM coil secondary circuit : R = 12600 ohms Check the continuity of the sparking plug leads between terminal 20 (ECU) and terminal 2 (coil)	
	Connected			Diagnostic equipment : voltmeter Ignition switched on : check the voltage between terminal 4 (coil) and earth : U ≈ U battery	

www.WorkshopManuals.co.uk

2.21 – Fault code 19 (serious fault)

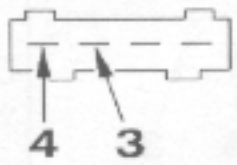
Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Ignition unit C control. Coils of cylinders 3 and 4 (45)	Connected			Start the activation : make sure that a clicking noise can be heard	No
	Dis-connected	21–27 (55–way black)	 3–4 (4–way black)	Diagnostic equipment : ohmmeter Check : primary circuit resistance ; R = 0.6 ohms Check : SAGEM coil secondary circuit : R = 12600 ohms Check the continuity of the sparking plug leads between terminal 21 (ECU) and terminal 3 (coil)	
	Connected			Diagnostic equipment : voltmeter Ignition switched on : check the voltage between terminal 4 (coil) and earth : U ≈ U battery	

2.22 – Fault code 20 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Adjustment of idling speed : stop				Idling speed too high : check for air leaks between the idle valve and the inlet manifold. Check for air leaks on the inlet manifold Idle speed too low : check the idle valve for fouling. Check the condition of the pipes connected to the idle valve (pipes fouled, squashed, split)	No

www.WorkshopManuals.co.uk

2.23 – Fault code 21 (minor fault)

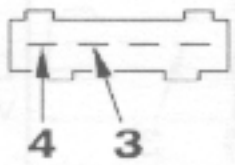
Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Mixture regulation auto adaptation (900)	Connected. With engine running	10–28 (55–way black)	 3–4 (4–way brown)	Diagnostic equipment : voltmeter Check the inlet and exhaust circuits for leaks Function to be checked on the ECU; wait for 2 minutes (sensor pre–heating) Read the voltage at terminals 10 and 28 which should vary between 0 and 1 V Otherwise : check the HT leads, the sealing of the exhaust system and the fuel pressure Check that one of the following defects does not exist : injector leaking. The fuel pressure. Blocked fuel return pipe. Clogged air filter. If the canister discharge electrovalve is jammed open Check the condition of the ignition and the plugs. Check the compression in the cylinders. Ensure that the fuel is of the type recommended. Check if the exhaust system is not blocked. Check the fuel filter	No

2.24 – Fault code 22 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Anti–knock adjustment				Check : the quality of the fuel. The mechanical condition of the engine Otherwise : see fault "7"	Yes

www.WorkshopManuals.co.uk

2.25 – Fault code 23 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Oxygen sensor mixture regulation stop (900)	Connected. With engine running	10–28 (55–way black)	 3–4 (4–way brown)	Diagnostic equipment : voltmeter Check the inlet and exhaust circuits for leaks Function to be checked on ECU; wait for 2 minutes (sensor pre–heating) Read the voltage at terminals 10 and 28 which should vary between 0 and 1 V Check the HT leads, the sealing of the exhaust system and the fuel pressure Otherwise, check : the oxygen sensor for fouling. Ageing of the oxygen sensor	Yes

2.26 – Fault code 24 (serious fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Injection ECU (142)				Other fault codes present : repair the faulty functions With engine running : check the ECU supply and earth Otherwise : ECU not operating Check the starting capacity of the battery and the state of charge	No

www.WorkshopManuals.co.uk

2.27 – Fault code 25 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Ignition injection ECU : ignition shunt (142)	Connected			Diagnostic equipment : PROXIA station ; LEXIA diagnostic stations or ELIT test unit Select " measure parameters" : the charge time regulation settings are at their limit (1 ms) ECU internal control stage fault	No

2.28 – Fault code 26 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Ignition injection ECU : knock sensing module (142)	Connected			ECU internal control stage fault	No

2.29 – Fault code 27 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
ECU supply voltage (142)	Connected	37–2 37–14 18–19 27–14	Battery	Diagnostic equipment : voltmeter Check the component supply voltage : 10 < U < 15,5 Volts Otherwise : a) check the ECU supply and earths. b) check the charging circuit	Yes

www.WorkshopManuals.co.uk

Xm

FEBRUARY 1998

SUBSCRIPTION

RPO No: 7756 ⟼

REF. 12 No XM 500-0/5

DIAGNOSIS

XUD 11 BTE DIESEL ENGINE (2088 cm³ - Turbo D12)

- LUCAS DIESEL INJECTION "EPIC" L4

MAN 158932

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

GB

2

www.WorkshopManuals.co.uk

TOOLS

PRESENTATION : DIAGNOSTIC TOOLS 1

1 – ELIT test unit : 4125–T 1
2 – Test connector box : 4109–T –
3 – PROXIA diagnostic station : 4165–T –
4 – LEXIA diagnostic station : 4171–T –

AIR AND FUEL SUPPLY – TURBOCHARGING

FAULT FINDING : LUCAS DIESEL EPIC L4 FUEL INJECTION (XUD11BTE (P8C) 2088CC TURBO ENGINE) 2

1 – Data 2
2 – Checking the function : recycling of exhaust gases (parameter measurements) –
3 – Fault finding chart 3

www.WorkshopManuals.co.uk

PRESENTATION : DIAGNOSTIC TOOLS

1 – ELIT TEST UNIT : 4125–T

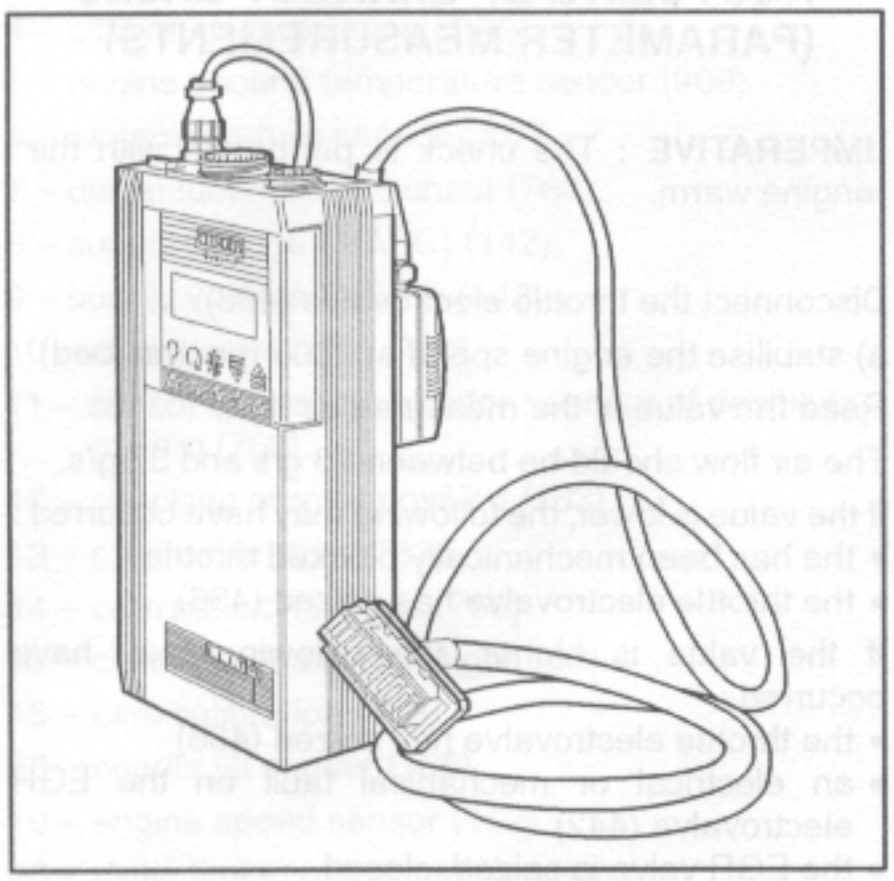


Fig : B3BP039C

2 – TEST CONNECTOR BOX : 4109–T

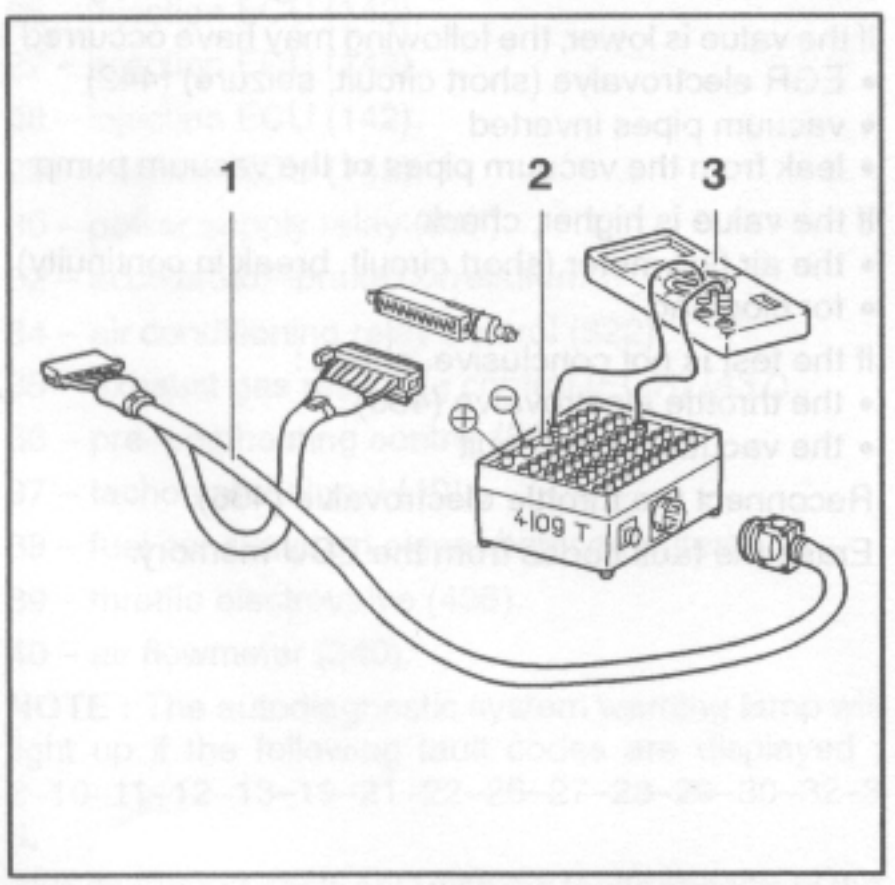


Fig : B1HP074C

(1) electrical harness (according to function).

(2) test connector box.

(3) multimeter.

3 – PROXIA DIAGNOSTIC STATION : 4165–T

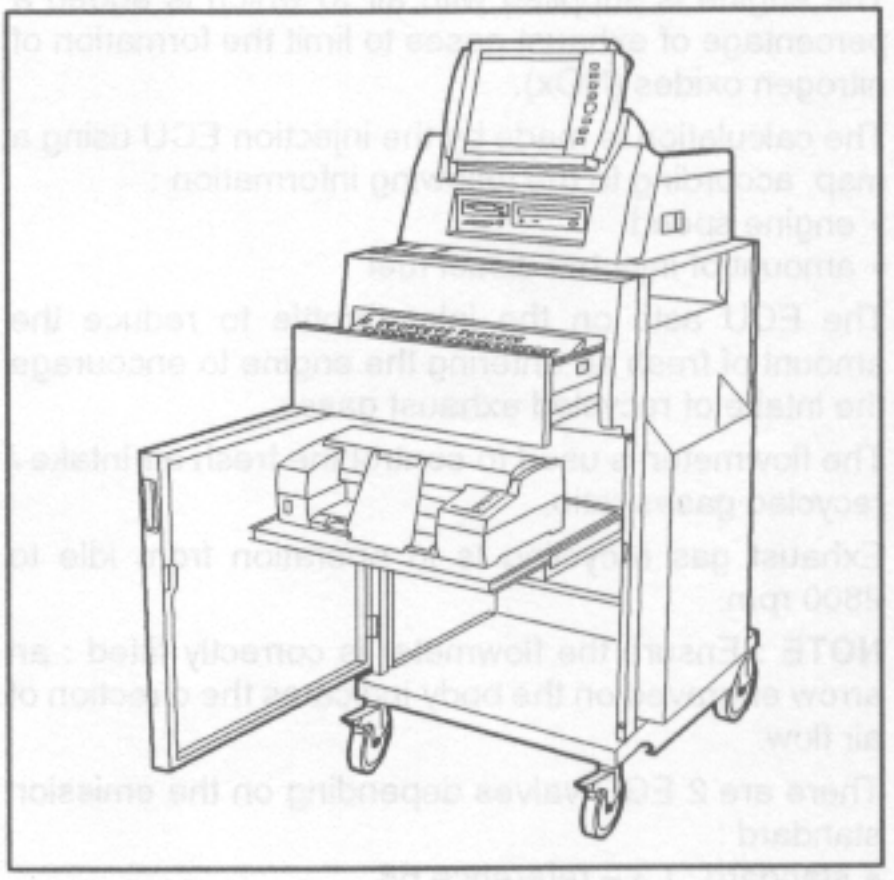


Fig : E5AP087C

4 – LEXIA DIAGNOSTIC STATION : 4171–T

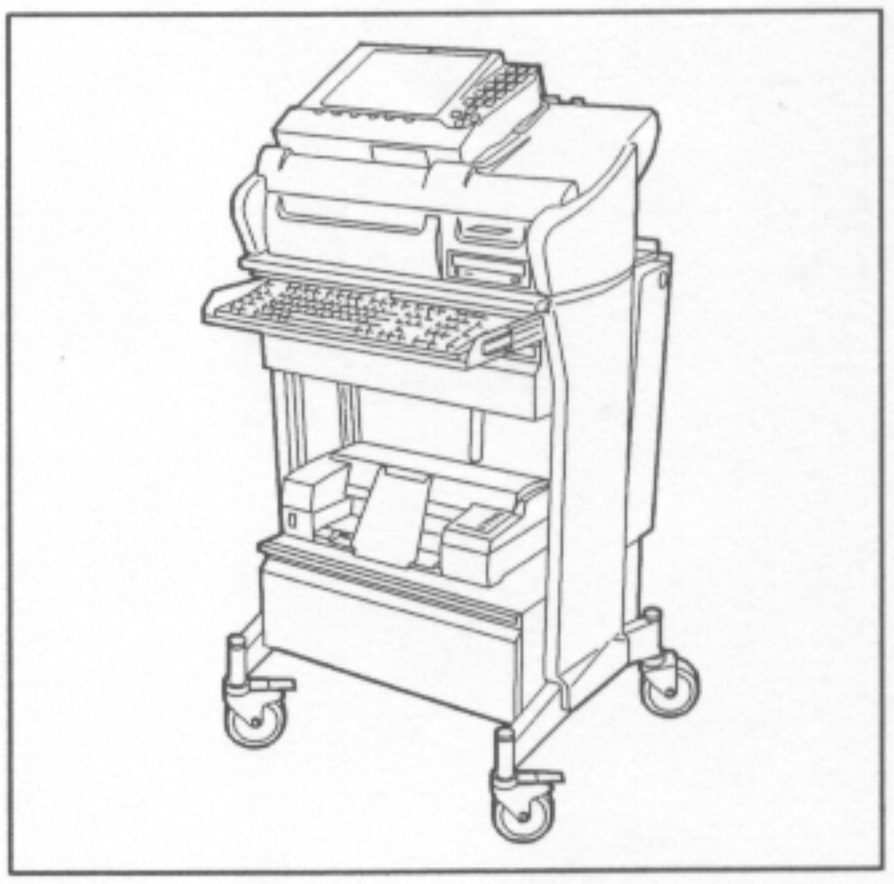


Fig : E5AP088C

www.WorkshopManuals.co.uk

FAULT FINDING : LUCAS DIESEL EPIC L4 FUEL INJECTION (XUD11BTE (P8C) 2088CC TURBO ENGINE)

1 – DATA

The engine is supplied with air to which is added a percentage of exhaust gases to limit the formation of nitrogen oxides (NOx).

The calculation is made by the injection ECU using a map, according to the following information :

- engine speed
- amount of injected diesel fuel

The ECU acts on the inlet throttle to reduce the amount of fresh air entering the engine to encourage the intake of recycled exhaust gases.

The flowmeter is used to control the fresh air intake / recycled gases ratio.

Exhaust gas recycling is in operation from idle to 2800 rpm.

NOTE : Ensure the flowmeter is correctly fitted : an arrow engraved on the body indicates the direction of air flow.

There are 2 EGR valves depending on the emission standard :

- standard : L3 – reference 68
- standard : L4 – reference 86

2 – CHECKING THE FUNCTION : RECYCLING OF EXHAUST GASES (PARAMETER MEASUREMENTS)

IMPERATIVE : The check is performed with the engine warm.

Disconnect the throttle electrovalve (436).

a) stabilise the engine speed at 2000 rpm (no load).

Read the value of the measured air flow.

The air flow should be between 23 g/s and 37 g/s.

If the value is lower, the following may have occurred :

- the has been mechanically blocked throttle
- the throttle electrovalve has seized (436)

If the value is higher, the following may have occurred :

- the throttle electrovalve has seized (436)
- an electrical or mechanical fault on the EGR electrovalve (442)
- the EGR valve is seized, closed
- there is a leak from the vacuum pipes of the vacuum pump

b) stabilise the engine speed at 3000 rpm (no load).

Read the value of the measured air flow.

The air flow should be between 53 g/s and 67 g/s.

If the value is lower, the following may have occurred :

- EGR electrovalve (short circuit, seizure) (442)
- vacuum pipes inverted
- leak from the vacuum pipes of the vacuum pump

If the value is higher, check :

- the air flowmeter (short circuit, break in continuity)
- for clogging

If the test is not conclusive, check :

- the throttle electrovalve (436)
- the vacuum pipe circuit

Reconnect the throttle electrovalve (436).

Erase the fault codes from the ECU memory.

www.WorkshopManuals.co.uk

3 – FAULT FINDING CHART

3.1 – List of fault codes

2 – accelerator pedal sensor (773).
3 – pressure sensor (903).
4 – calibration resistance (763).
5 – engine coolant temperature sensor (909).
6 – air temperature sensor (907).
7 – diesel fuel thermal sensor (763).
8 – supply voltage (+ APC) (142).
9 – supply voltage (+ BAT) (142).
10 – stop electrovalve (763).
11 – sensor of position of rotor ; sensor of position of cam (763).
12 – checking of rotor position (763).
13 – rotor calibration (763).
14 – cam position sensor (763).
15 – checking of cam position (763).
16 – cam calibration (763).
18 – needle lift sensor (165).
19 – engine speed sensor (152).
20 – static timing of the injection pump.
21 – rotor position sensor (763).
22 – power supply to sensors.
23 – vehicle speed sensor (154).
25 – needle sensor signal coherence.
26 – injection ECU (142).
27 – injection ECU (142).
28 – injection ECU (142).
29 – injection ECU (142).
30 – power supply relay (807).
32 – accelerator–brake correlation.
34 – air conditioning relay control (822).
35 – exhaust gas recycling control (EGR) (437).
36 – pre–postheating control (59).
37 – tachometer signal (40).
38 – fuel consumption signal (trip computer).
39 – throttle electrovalve (436).
40 – air flowmeter (340).

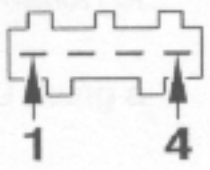
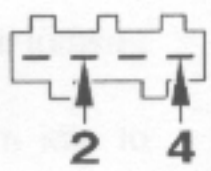
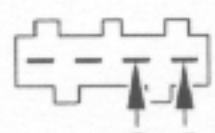
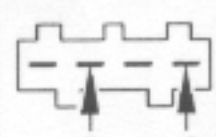
NOTE : The autodiagnostic system warning lamp will light up if the following fault codes are displayed : 2–10–11–12–13–19–21–22–26–27–28–29–30–32–36.

This document deals only with the faults specific to the EPIC L4 injection.

For the other faults, refer to the document specific to the EPIC injection.

www.WorkshopManuals.co.uk

3.2 – Fault code 2 (serious fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Accelerator pedal sensor (773) (under the bonnet)	Connected	33–51	 Grey	Diagnostic equipment : voltmeter Engine stopped, ignition on Check the component supply voltage : U ≈ 5 V	Engine speed 1300 rpm – fixed
		10–51		Check the output voltage of the item Accelerator released : U ≈ 0.4 V ; "linear" variation of the voltage until U > 4 V = "Full throttle" position	
	Dis-connected	33–51		Diagnostic equipment : ohmmeter R ≈ 5000 ohms	
		8–51		"Full throttle" position : R = 2000 ohms Accelerator released : R ≈ ∞	
		10–51		"Full throttle" position : R = 6200 ohms Accelerator released : R ≈ 2200 ohms	

www.WorkshopManuals.co.uk

3.3 – Fault codes 11–13 (major) fault codes 14–16 (minor fault)

NOTE : The fault may appear as a result of : the entrance of air into the injection pump when the diesel fuel filter is replaced.

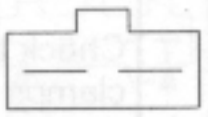
Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Rotor position sensor. Cam position sensor (763)	Dis-connected	 6–19	 KOSTAL 4–6	Diagnostic equipment : ohmmeter 100 ohms < R < 75 000 ohms	Yes ==> incorrect accelerator response ; idle instabilities ; jerks ; smoke from the exhaust
		6–18	KOSTAL 4–5	45 ohms < R < 60 ohms	
		9–6	KOSTAL 3–4	45 ohms < R < 60 ohms	
		9–12	KOSTAL 3–2	200 ohms < R < 250 ohms	
				Check the condition of the clamps of the various connectors (oxidation)	

3.4 – Fault codes 38 (minor fault)

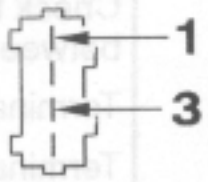
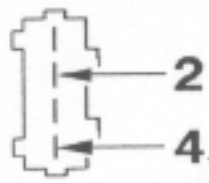
Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Fuel consumption signal (trip computer)	Dis-connected			Diagnostic equipment : ohmmeter Check the continuity of the wires between terminals 23 and 10 Terminal "23" : ECU Terminal "10" : trip computer	No

www.WorkshopManuals.co.uk

3.5 – Fault codes 39 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
The throttle electrovalve (436) On the bodyshell, near the front R.H. sphere	Connected			Start the activation It should be possible to hear the electrovalve operating	Yes Function deactivated
		39–54		Diagnostic equipment : voltmeter Ignition switched on Verify : U ≈ U battery Ignition off Verify : U = 0 V	
	Dis-connected	39–47	 Green	Diagnostic equipment : ohmmeter Check the resistance of the electrovalve R ≈ 5 ohms	

3.6 – Fault codes 40 (minor fault)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values	Emergency mode
Air flowmeter (340)	Connected			Diagnostic equipment : voltmeter Ignition switched on Check the component supply voltage U ≈ U battery	No EGR cut–off
		5–52 5–54		With engine running Check that the output voltage varies between 0.5 and 5 volts, according to the engine load	

NOTE : An inversion in the direction of fitting of the flowmeter will cause instability and engine misfiring.

© "The intellectual property rights relating to the technical information contained in this document belong exclusively to the Manufacturer. Reproduction, translation or distribution in whole or in part without prior written authorisation from the Manufacturer is forbidden".

www.WorkshopManuals.co.uk

31st JULY 1995

ABONNEMENT GME

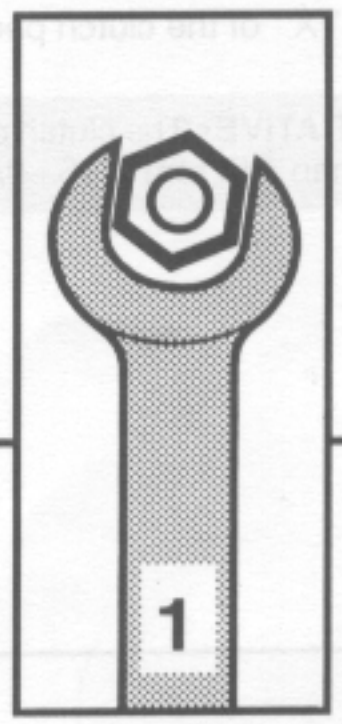
REF. 4 No XM 312-0/1

CANCELS AND REPLACES

CLUTCH

● CHECKING AND ADJUSTING THE CLUTCH CONTROL (On all models except 2.5 L Turbo)

MAN 058931



GB

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

CHECKS AND ADJUSTMENTS : CLUTCH PEDAL STROKE

IMPERATIVE : If the clutch control is new, compress the cable sheath, before adjustment, by carrying out successive declutching operations (30 at least).

NOTE : This clutch has neither assisting device, nor automatic wear adjustment.

1 – CHECKS

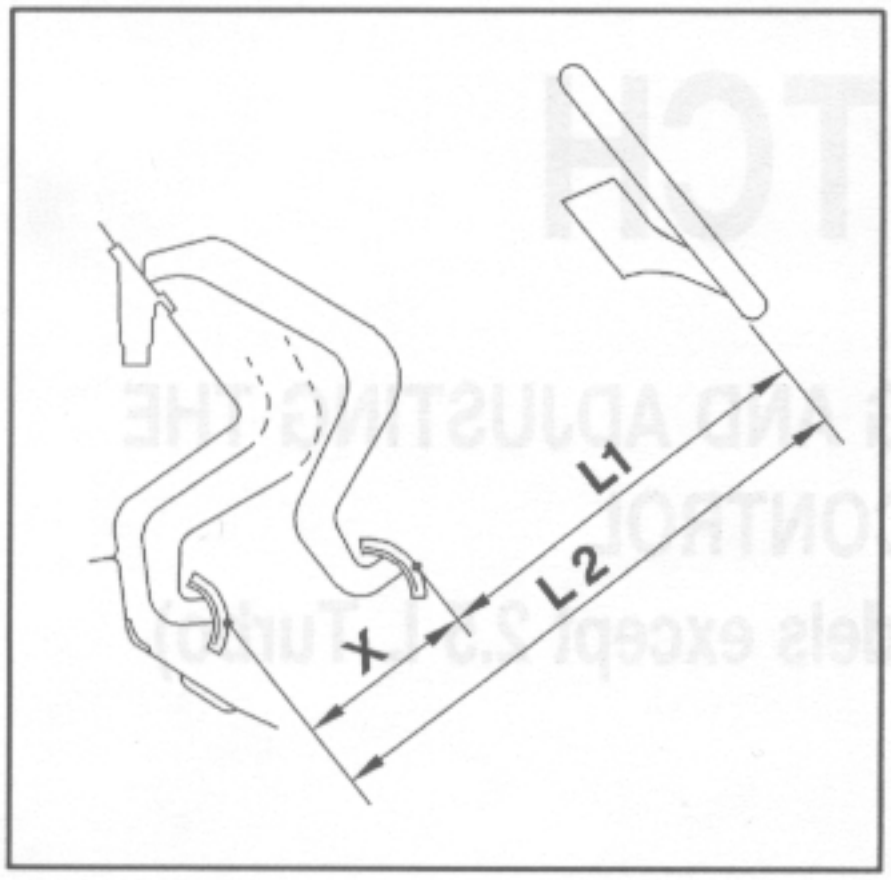


Fig : B2BP023C

ATTENTION : The point to be taken on the pedal for measurement should correspond to the driver's foot resting point.

Measure distance "L1" between :
- pedal at rest
- steering wheel

Measure distance "L2" between :
- pedal held right down
- steering wheel

Travel " X " of the clutch pedal (X = L2–L1).

IMPERATIVE : The clutch pedal travel should not be less than 145 mm (145 –0/+10).

2 – ADJUSTMENT

Check clutch pedal stroke X :
- if the value is incorrect
- if the clutch pedal is too high

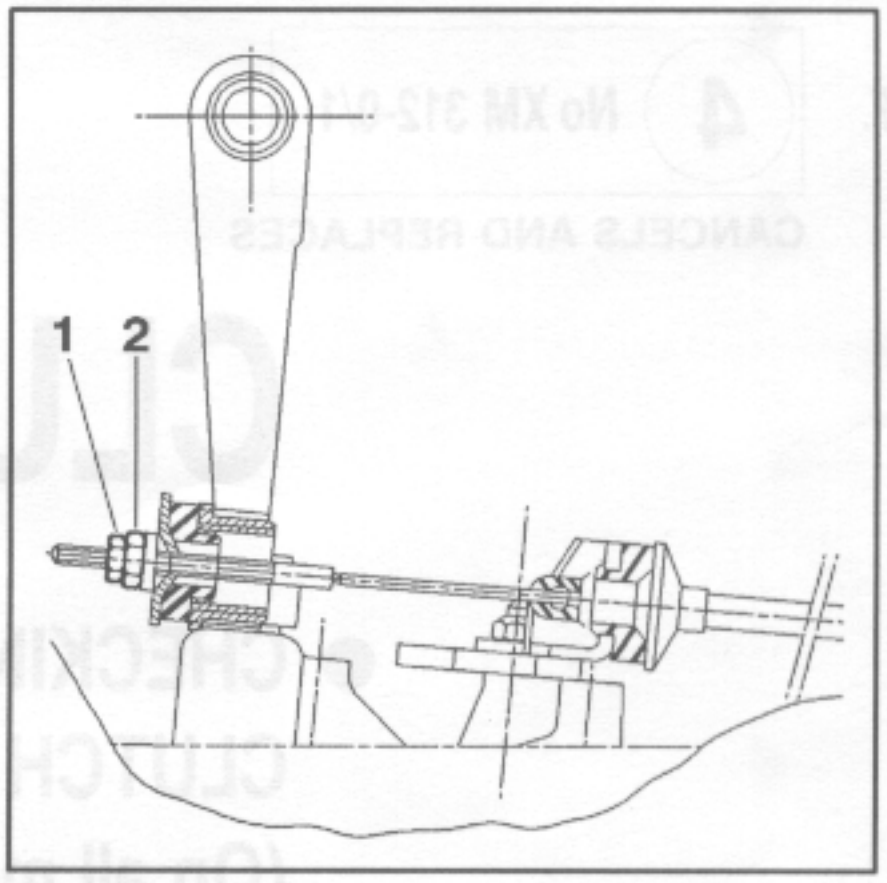


Fig : B2BP025C

Slacken lock–nut (1).

To obtain a travel corresponding to the value indicated, slacken or tighten nut (2).

(tighten the nut to increase the travel and reciprocally).

Tighten lock–nut (1).

www.WorkshopManuals.co.uk

Xm

31st JULY 1995

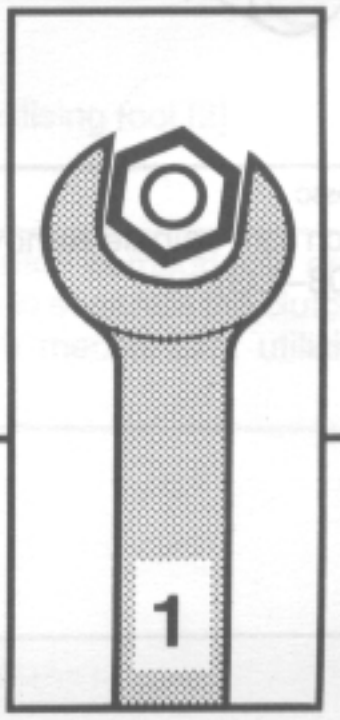
ABONNEMENT GME

REF. 4 No XM 312-1/5

CLUTCH

- **REMOVING - REFITTING :**
  "Pull-type" clutch, DK5 engine - MG5TB gearbox

MAN 058931



GB

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkShopManuals.co.uk

REMOVING – REFITTING : "PULL–TYPE" CLUTCH, ENGINE DK5 – MG5TB GEARBOX

1 – RECOMMENDED TOOLS

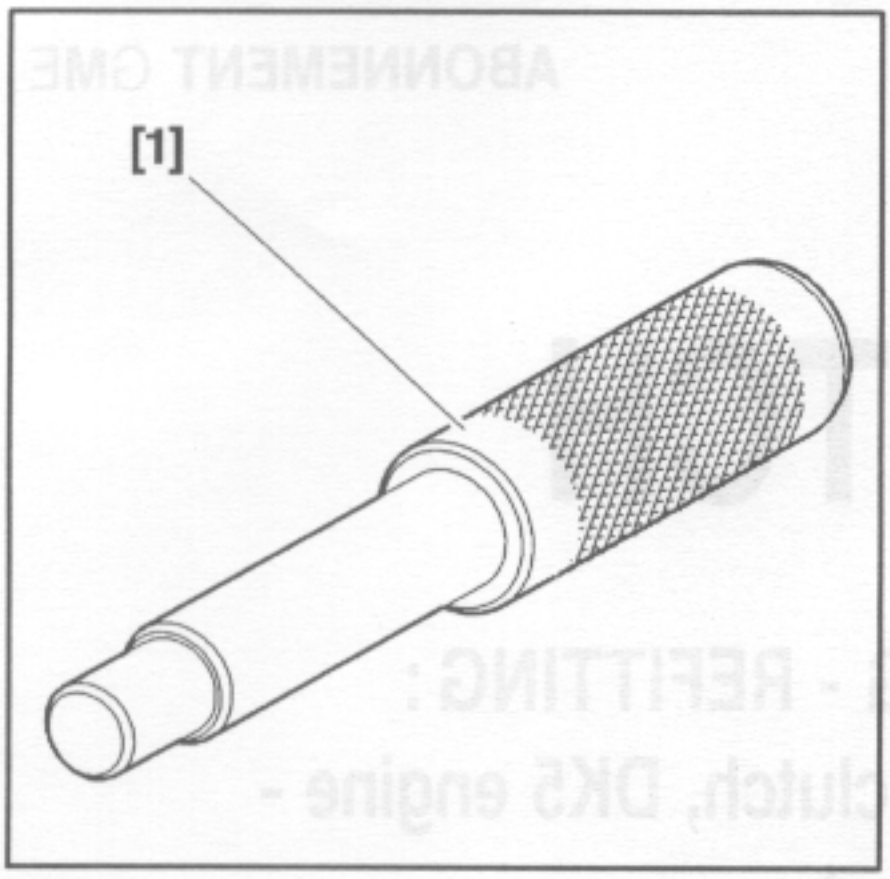


Fig : E5–P054C

[1] clutch centring mandrel 5712–T.

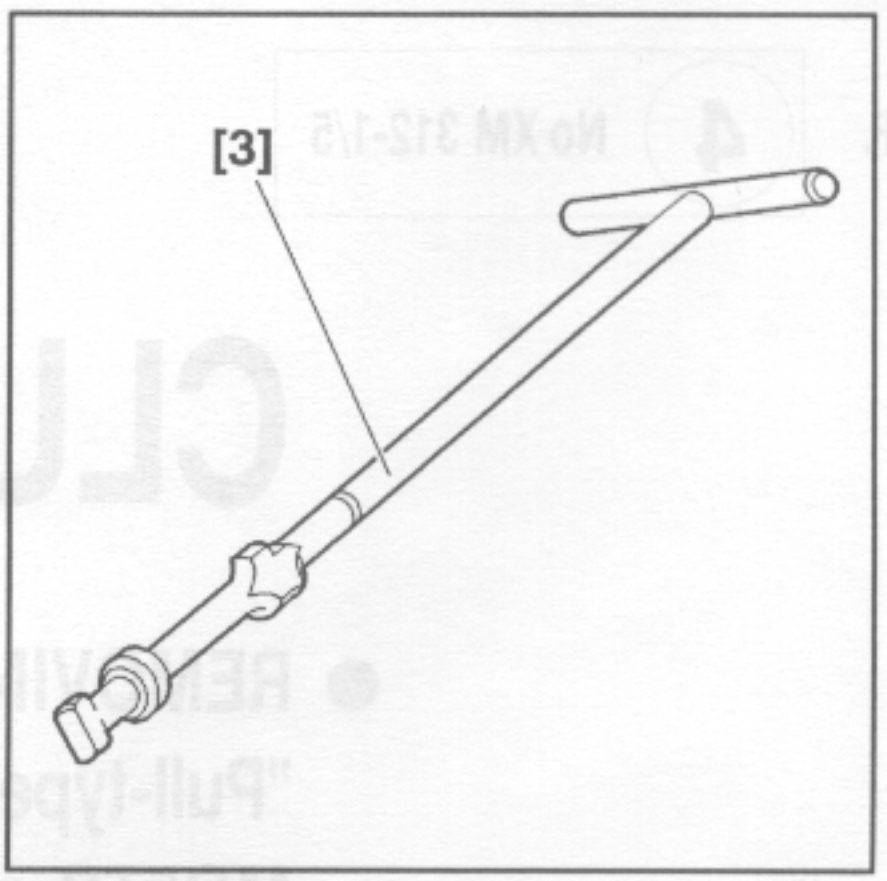


Fig : E5–P056C

[3] tool for clipping the clutch thrust bearing 9040–T.E.

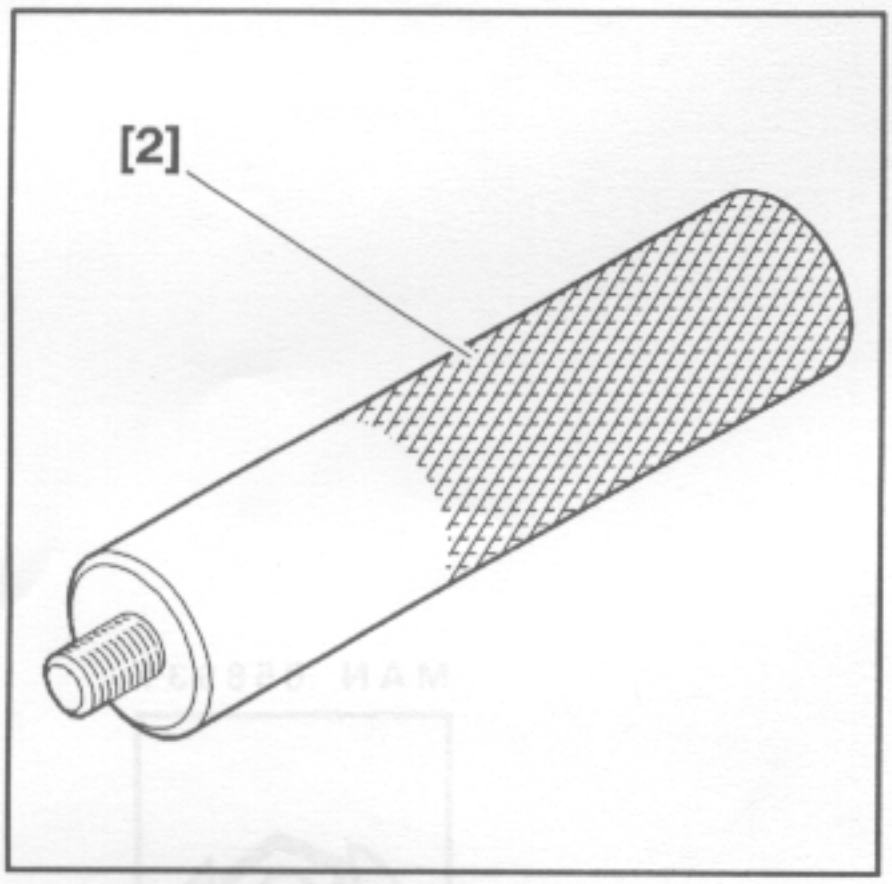


Fig : E5–P055C

[2] clutch fork spindle removing–refitting tool (5708–T.G).

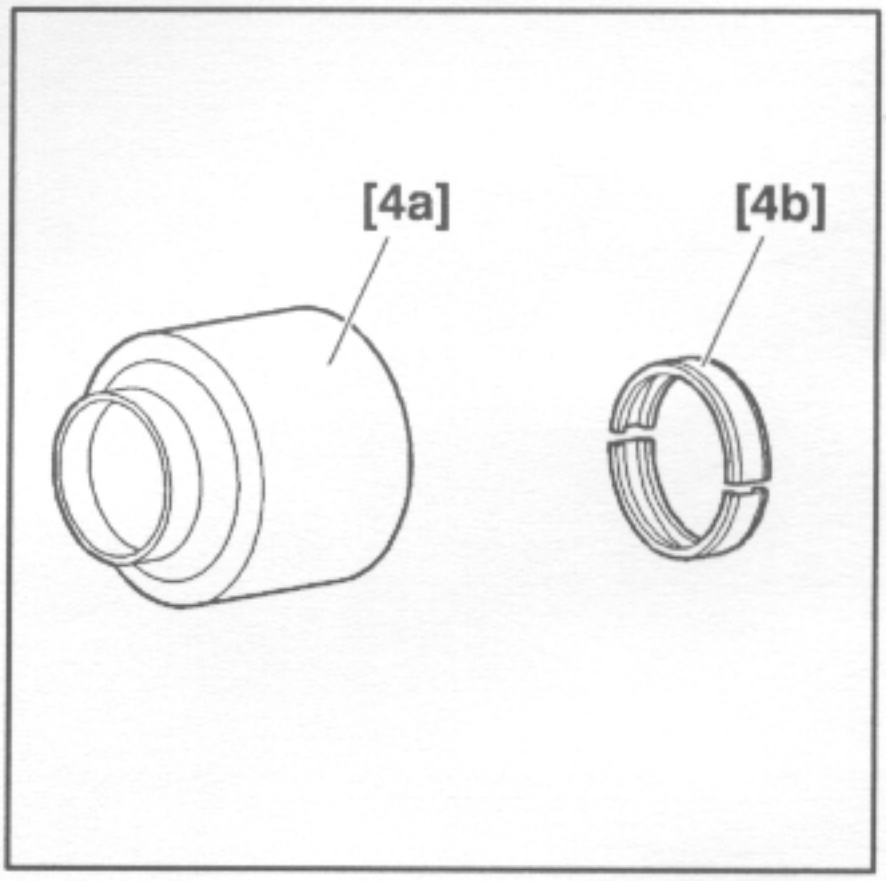


Fig : E5–P057C

[4a–4b] tool for unclipping the clutch thrust bearing 9040–T.D1 + 9040–T.D2.

www.WorkshopManuals.co.uk

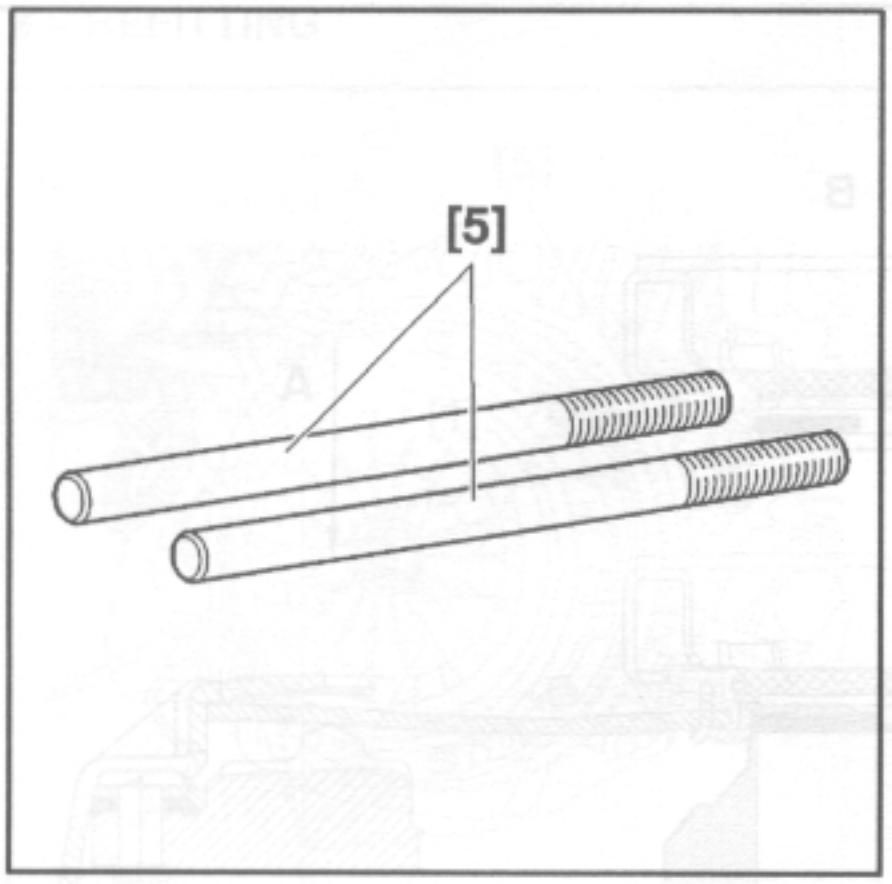


Fig : E5–P058C

[5] engine/gearbox centring guide pins (9040–T.A).

2 – REMOVAL

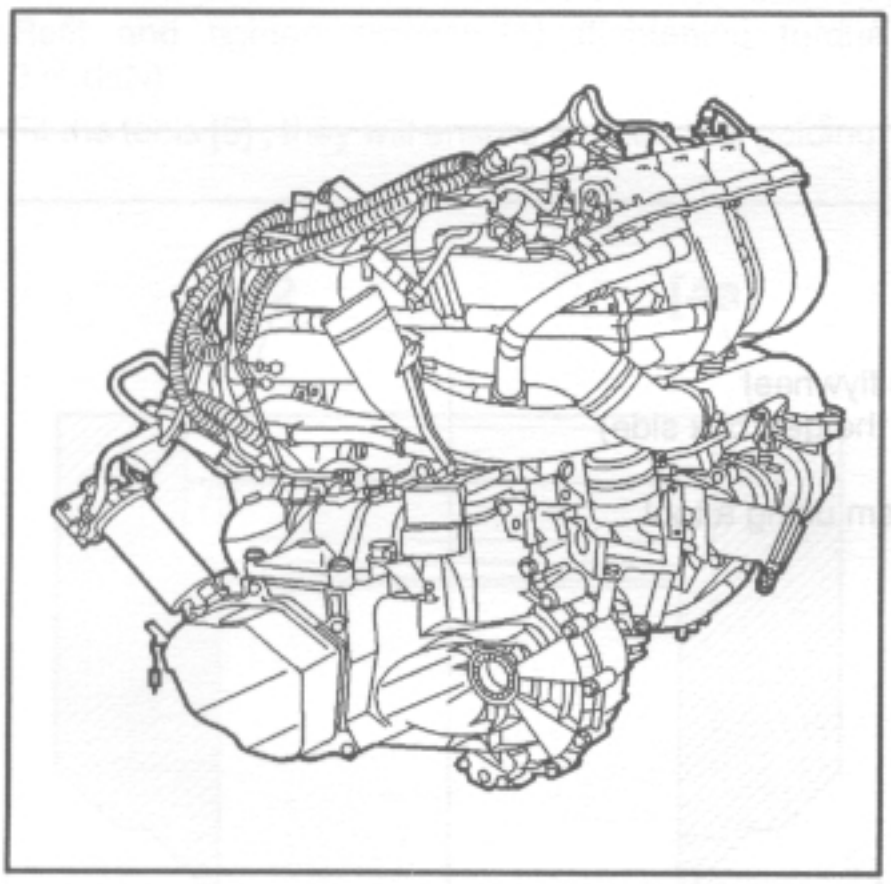


Fig : B2CP072C

Remove the power unit assembly (see the relevant operation).

Remove the gearbox (see the relevant operation).

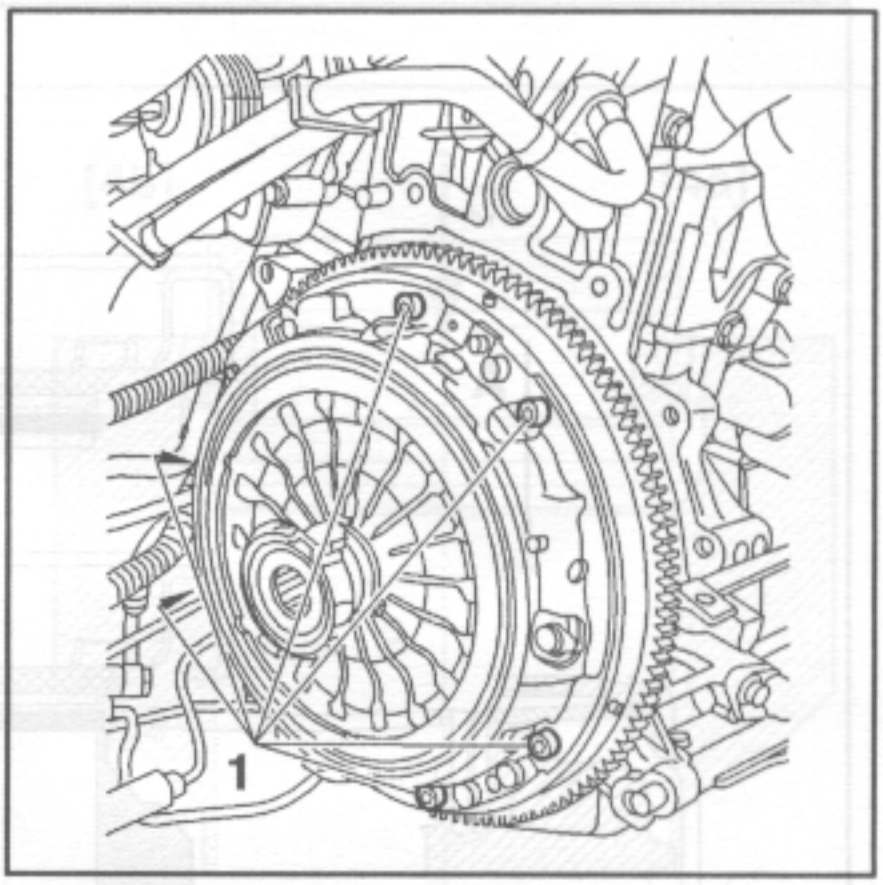


Fig : B2BP01AC

Remove :

- screws (1)
- the clutch mechanism together with the clutch thrust bearing
- the clutch disc

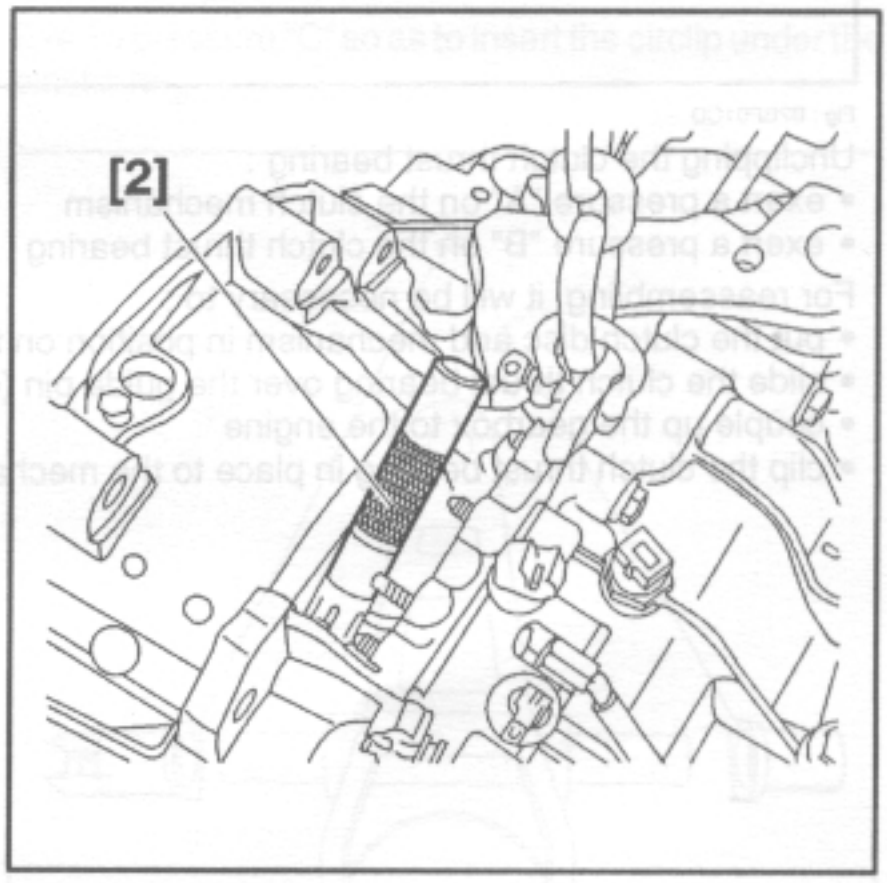


Fig : B2BP01BC

Remove :

- the clutch fork shaft, utilising tool [2]
- the clutch fork

ATTENTION : If the clutch components are to be re–used, it is necessary to separate the clutch thrust bearing from the clutch mechanism, utilising tool [4a].

www.WorkshopManuals.co.uk

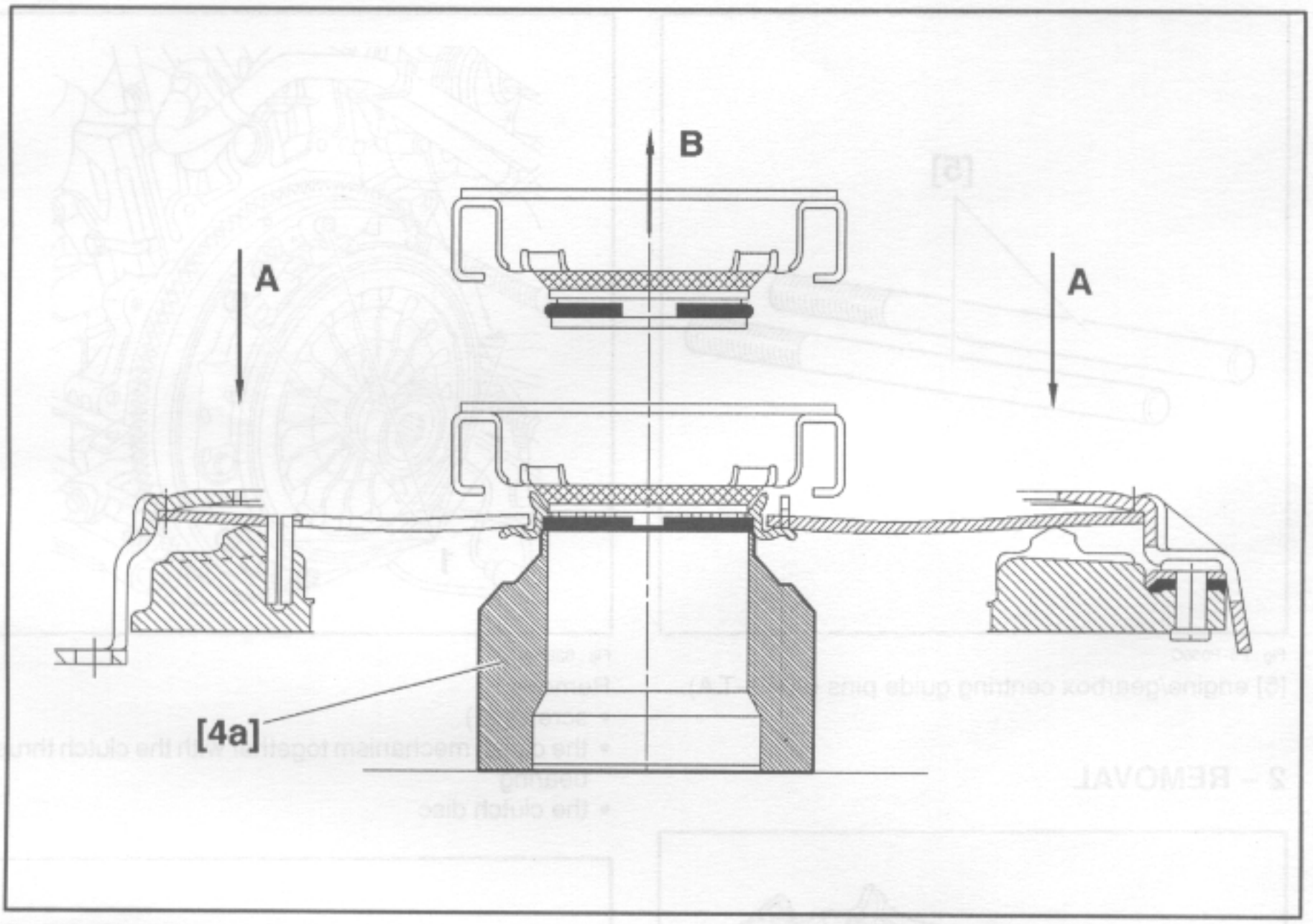


Fig : B2BP01CD

Unclipping the clutch thrust bearing :
- exert a pressure "A" on the clutch mechanism
- exert a pressure "B" on the clutch thrust bearing

For reassembling, it will be necessary to :
- put the clutch disc and mechanism in position on the flywheel
- slide the clutch thrust bearing over the guide pin (on the gearbox side)
- couple up the gearbox to the engine
- clip the clutch thrust bearing in place to the mechanism using a tool

www.WorkshopManuals.co.uk

3 – REFITTING

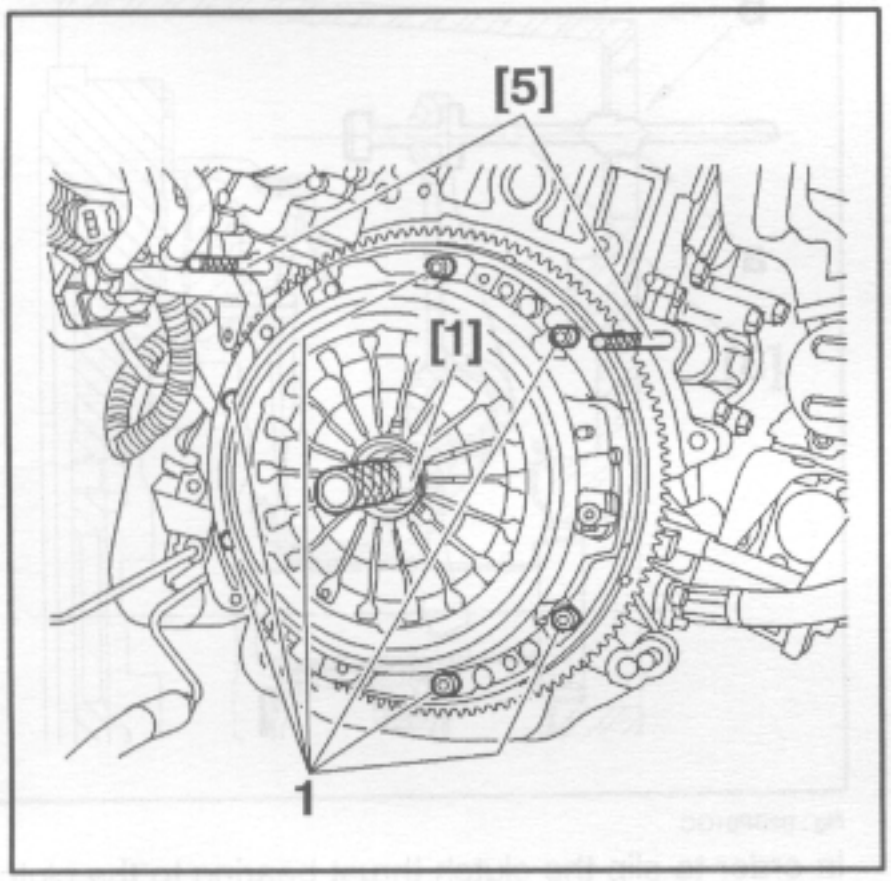


Fig : B2BP01DC

Put the clutch disc and mechanism in position on the flywheel.

Centre the disc by means of tool [1].

Refit and tighten screws (1) (tightening torque 2 m.daN).

Fit the tools [5] ; they will ensure the gearbox guiding.

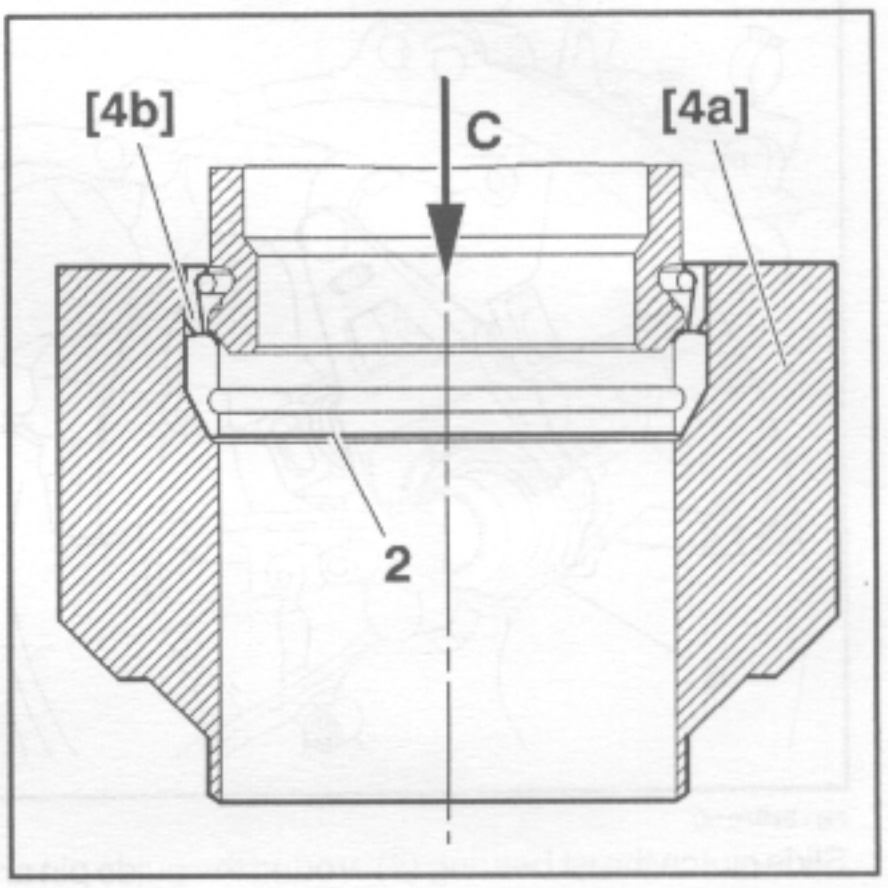


Fig : B2BP01FC

Fit the circlip to the clutch thrust bearing.

Place half–shells [4b] over the circlip and introduce the assembly into tool [4a] (fitting direction : chamfer downwards).

Exert a pressure "C" so as to insert the circlip under the plastic ring.

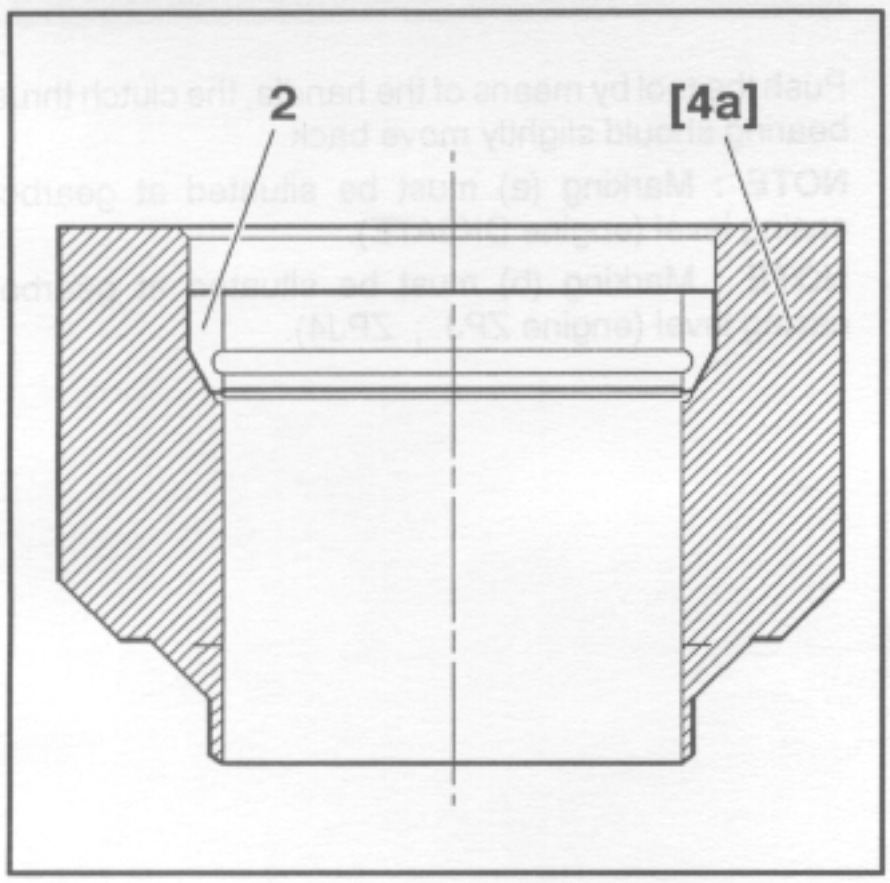


Fig : B2BP01EC

ATTENTION : To re–use the clutch thrust bearing, plastic bush (2) must be relocated on the circlip.

Remove the circlip.

Remove plastic bush.

Introduce plastic bush (2) into tool [4a].

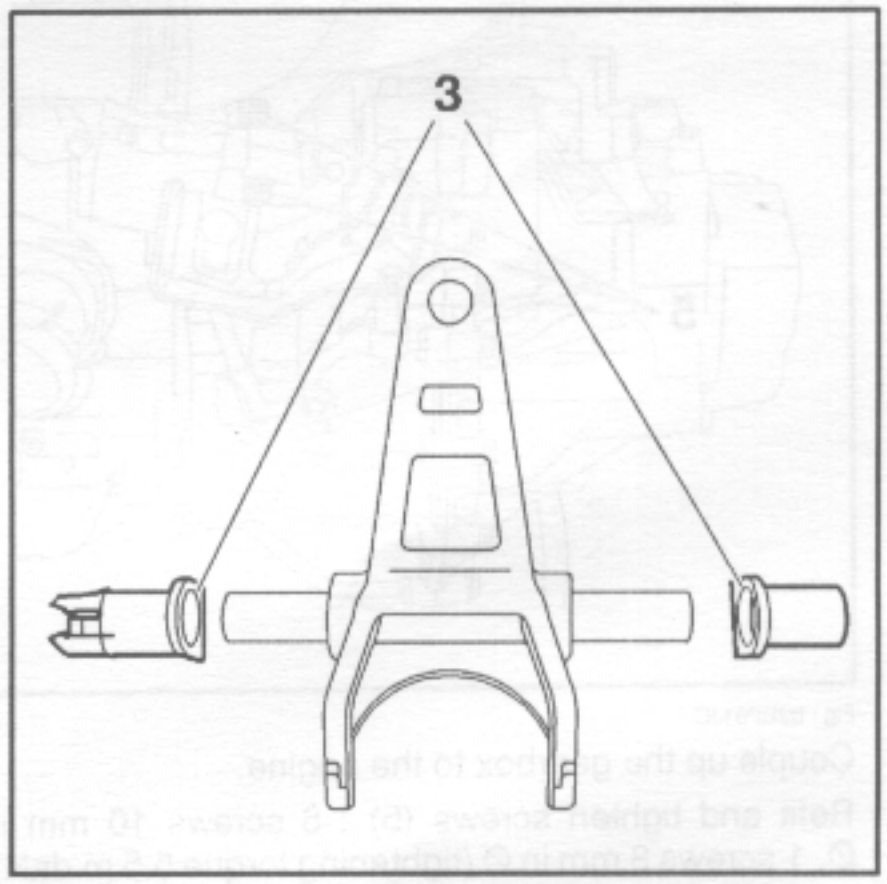


Fig : B2BP01HC

Replace fork shaft bearings (3) ; use new bearings.

Fit the clutch fork.

Lock the clutch fork, introducing its spindle.

www.WorkshopManuals.co.uk

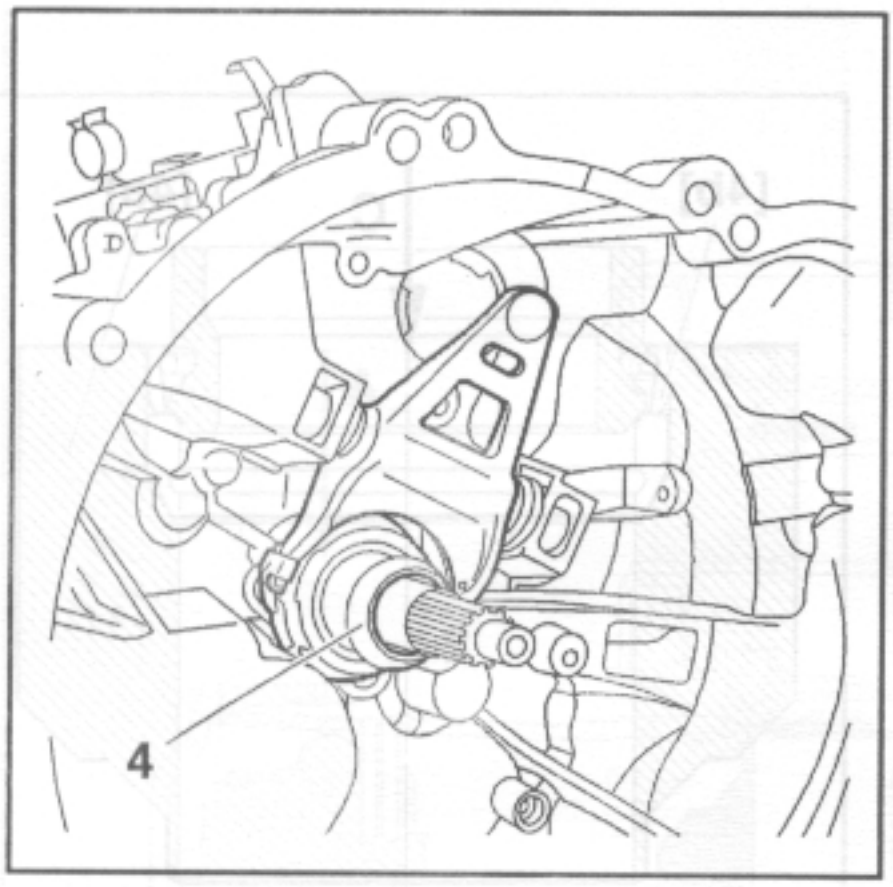


Fig : B2BP01IC

Slide clutch thrust bearing (4) around the guide pin and engage the clutch fork simultaneously.

Grease the thrust bearing guide and both ends of the clutch fork moderately with MOLYKOTE grease.

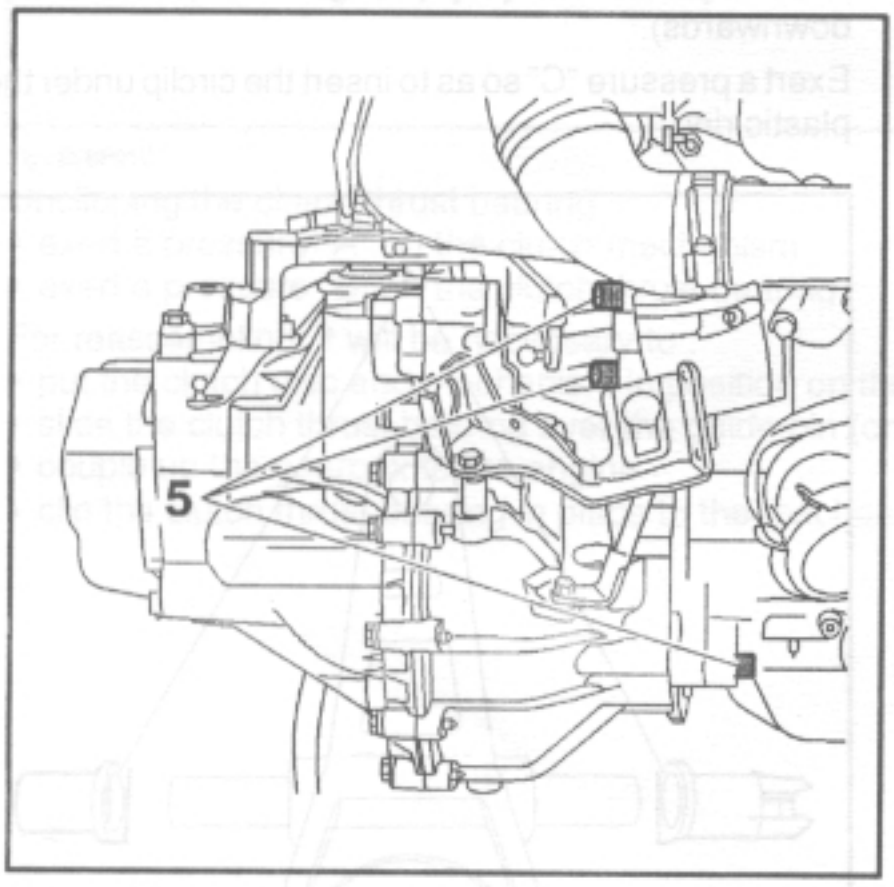


Fig : B2BP01JC

Couple up the gearbox to the engine.

Refit and tighten screws (5) : 6 screws 10 mm in Ø, 1 screws 8 mm in Ø (tightening torque 5.5 m.daN).

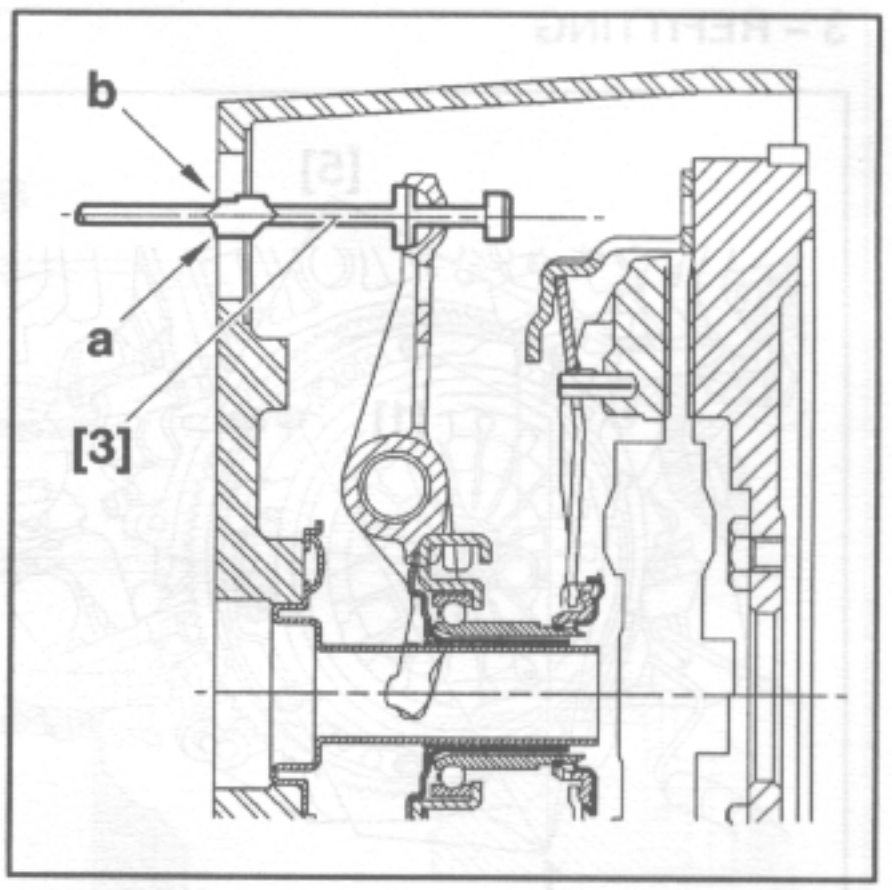


Fig : B2BP01GC

In order to clip the clutch thrust bearing to the clutch mechanism, it is necessary to :

- introduce tool [3] into the oblong hole of the clutch fork
- rotate the tool through 90 °
- pull the handle

IMPERATIVE : Ensure that the clutch thrust bearing is correctly attached to the clutch mechanism.

Push the tool by means of the handle, the clutch thrust bearing should slightly move back.

NOTE : Marking (a) must be situated at gearbox casing level (engine DK5ATE).

NOTE : Marking (b) must be situated at gearbox casing level (engine ZPJ ; ZPJ4).

www.WorkshopManuals.co.uk

3.1 – Details of the clipping of the clutch thrust bearing to the clutch mechanism

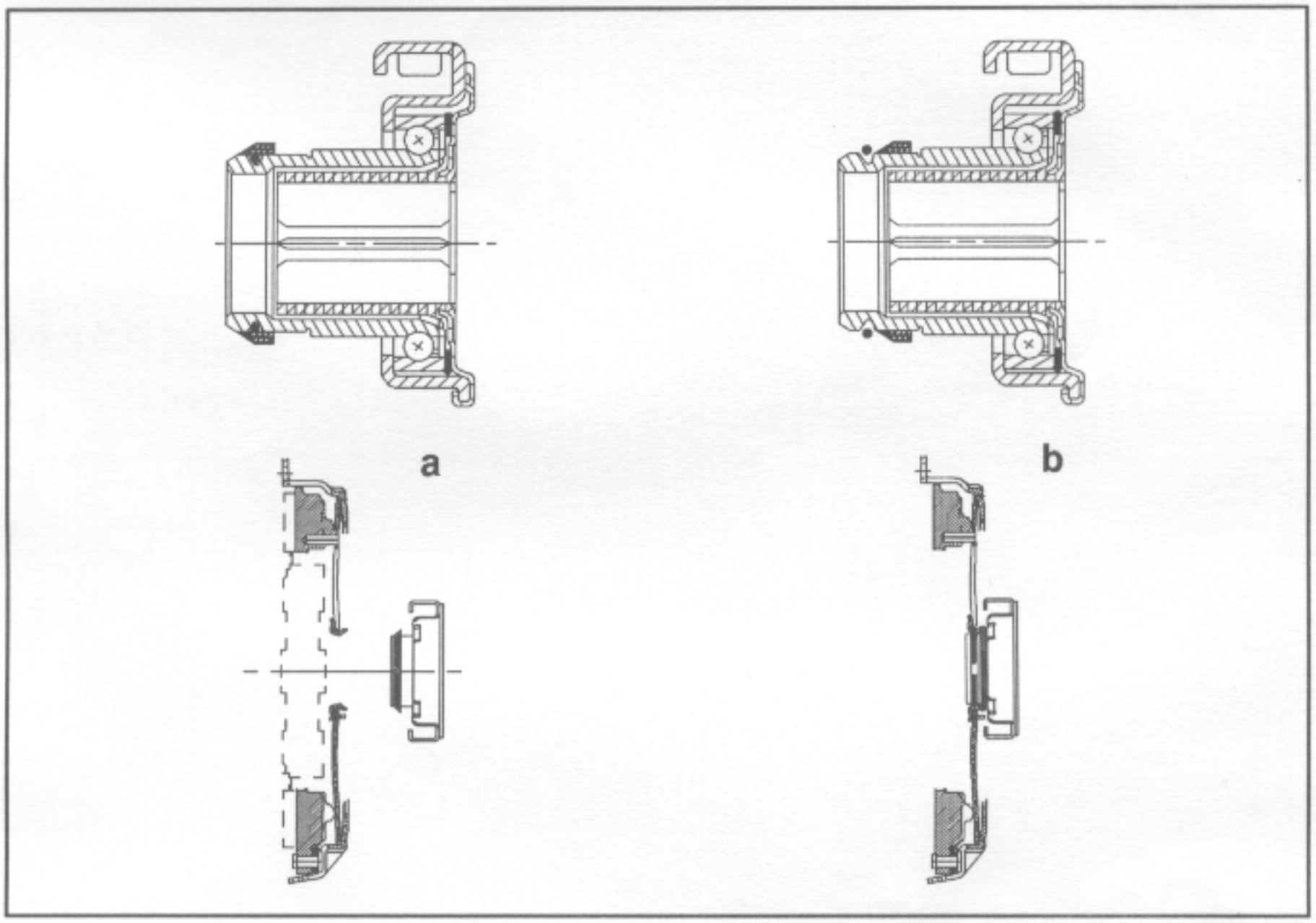


Fig : B2BP01KD

(a) : before clipping.

(b) : after clipping.

3.2 – Refitting

Refit the gearbox (see the relevant operation).

Relocate the engine–gearbox assembly (see the relevant operation).

www.WorkshopManuals.co.uk

30th NOVEMBER 1994

RÉF. 4 No XM 312-1/7

ABONNEMENT GME

CLUTCH

● REMOVING - REFITTING
Hydraulic clutch control

MAN 058931

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

1

www.WorkshopManuals.co.uk

REMOVING – REFITTING : HYDRAULIC CLUTCH CONTROL

1 – RECOMMENDED TOOLS

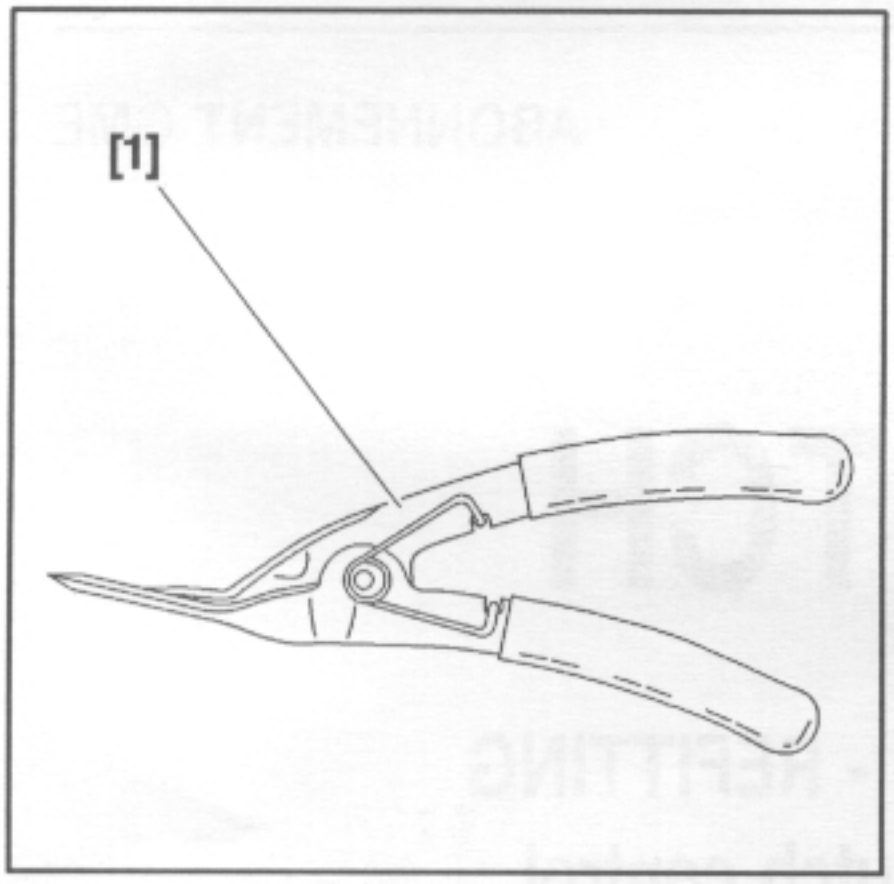


Fig : B1BP00DC

[1] pliers 7504–T for removing plastic clips.

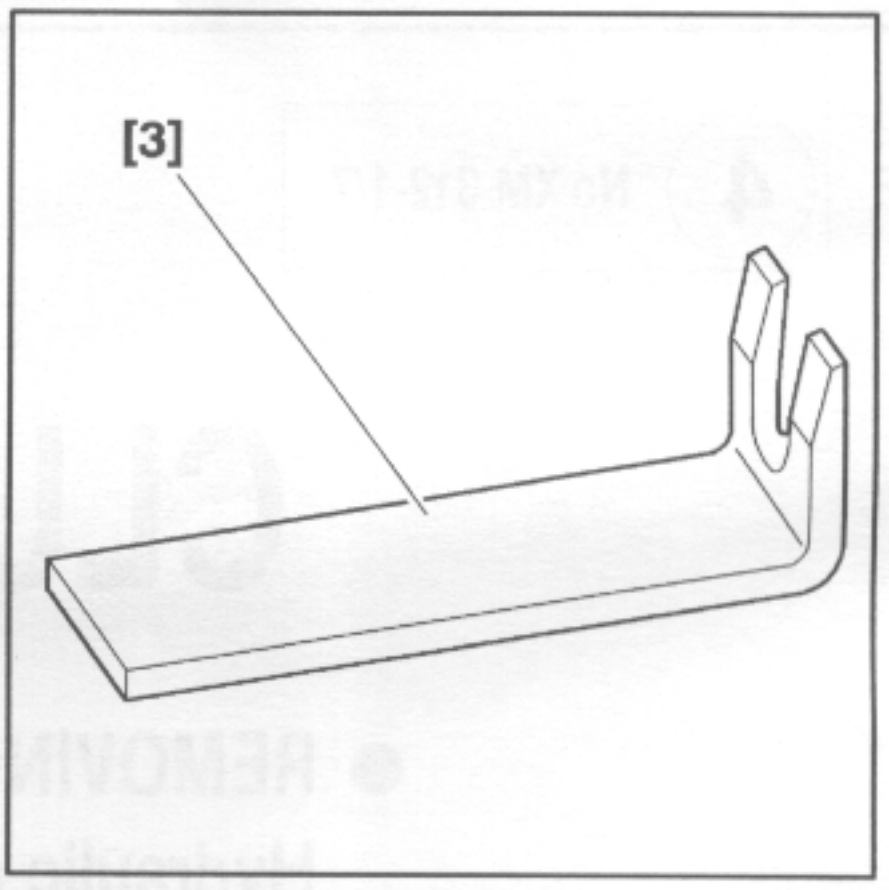


Fig : E5–P070C

[3] tool 9040–T.H for unclipping quick–fit union.

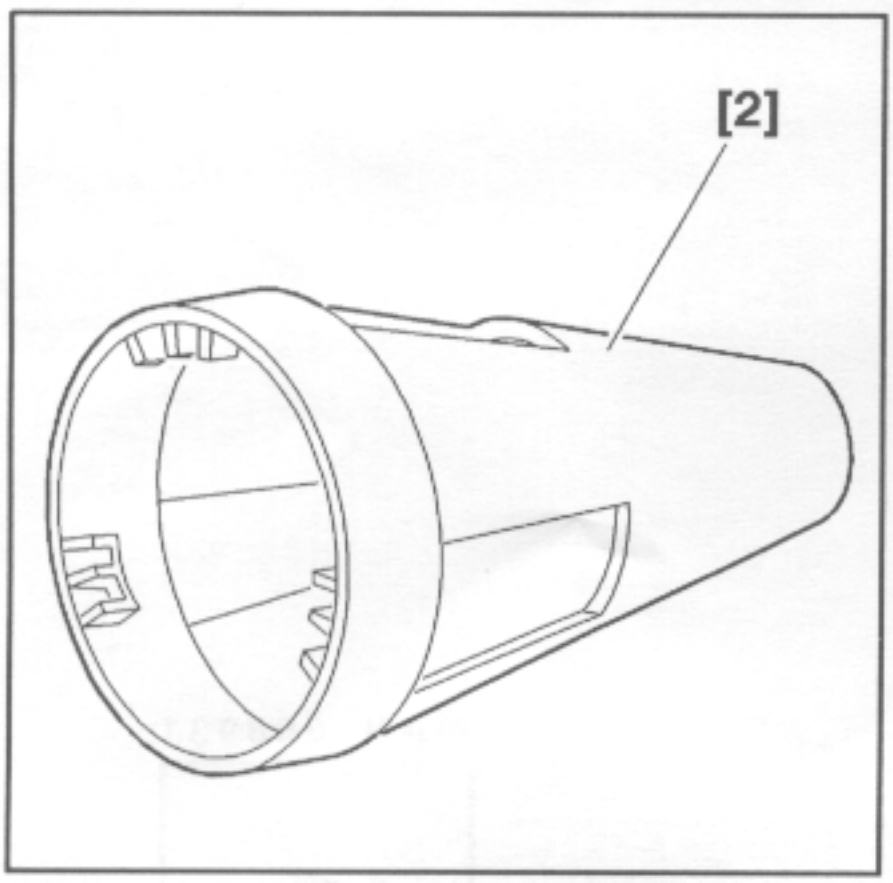


Fig : E5–P048C

[2] slave cylinder locking end–piece 9040–T.F.

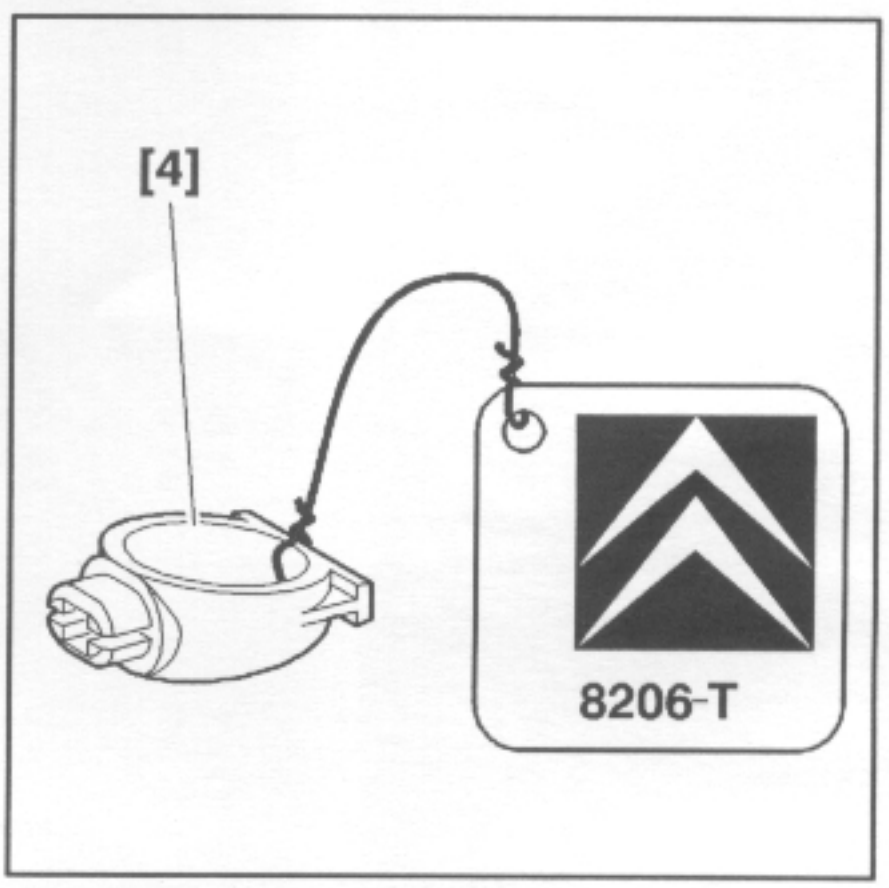


Fig : E5–P05CC

[4] steering bearing locating stop 8206–T.

www.WorkshopManuals.co.uk

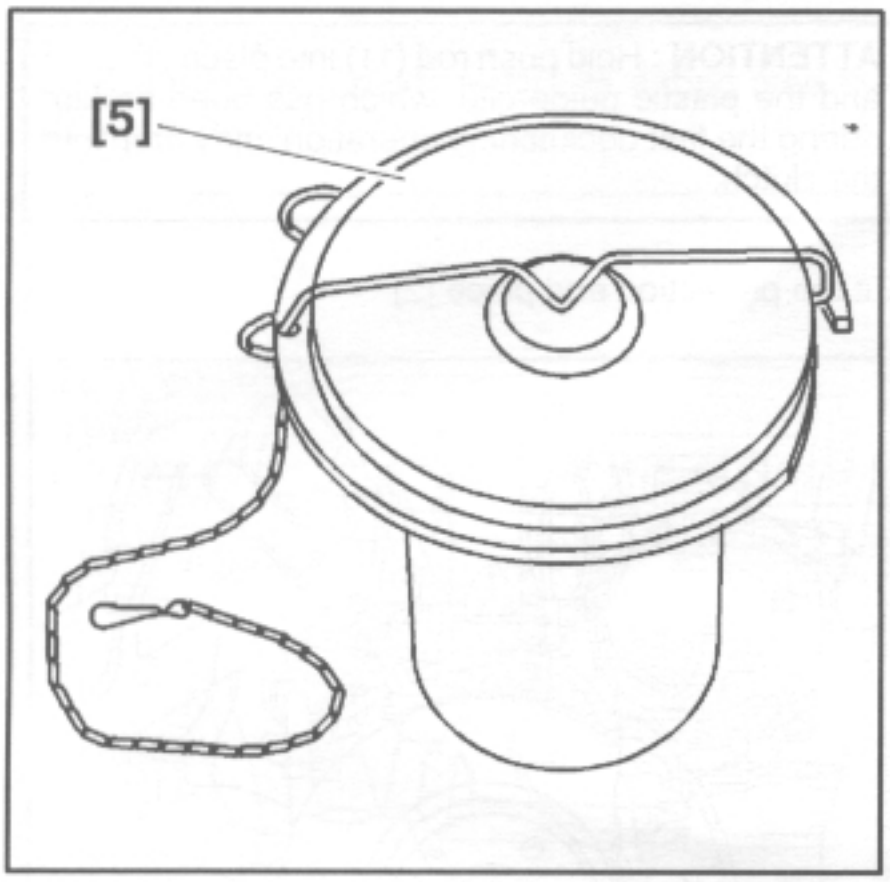


Fig : E5-P05DC

[5] LHM reservoir/filter assembly cover (9004-T).

2 - REMOVAL

The hydraulic clutch control consists of 2 parts.

1 - engine compartment side :
- the slave cylinder
- the push rod
- the semi-rigid hydraulic piping

2 - passenger compartment side :
- the master cylinder
- the reservoir
- the quick-fit union

NOTE : Move the seat fully backwards (driver's side).

2.1 - Engine compartment side

Lift and support the front of the vehicle.

Remove the left-hand front wheel.

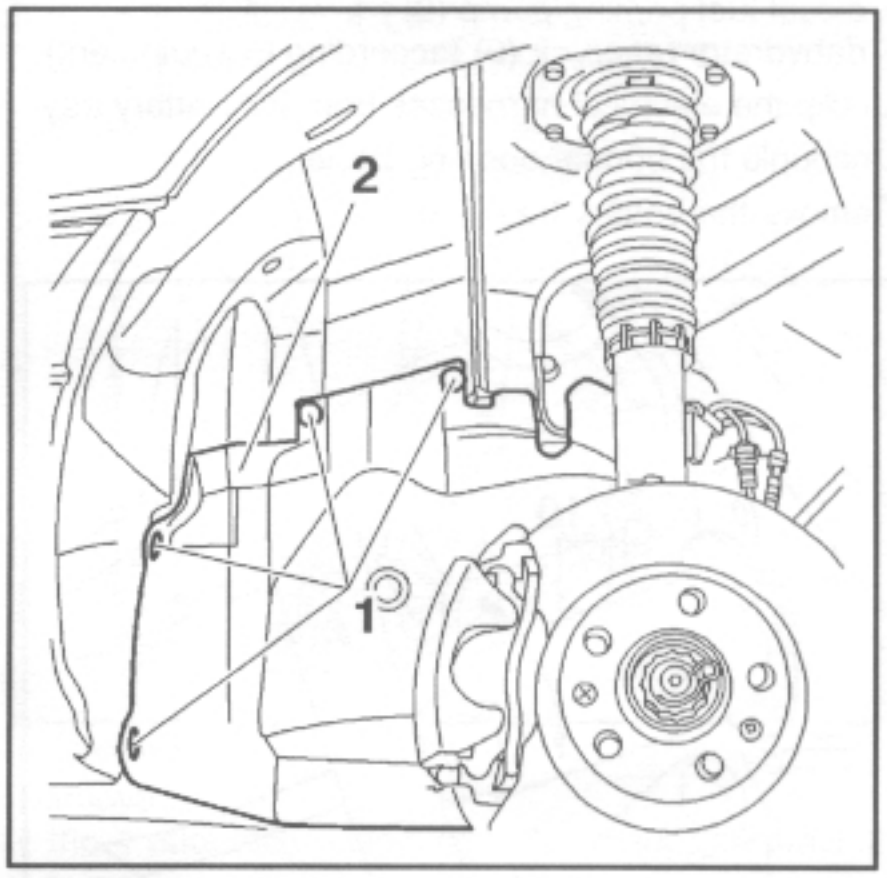


Fig : B2BP01MC

Remove :
- pegs (1) ; utilising tool [1]
- the mud shield (2)

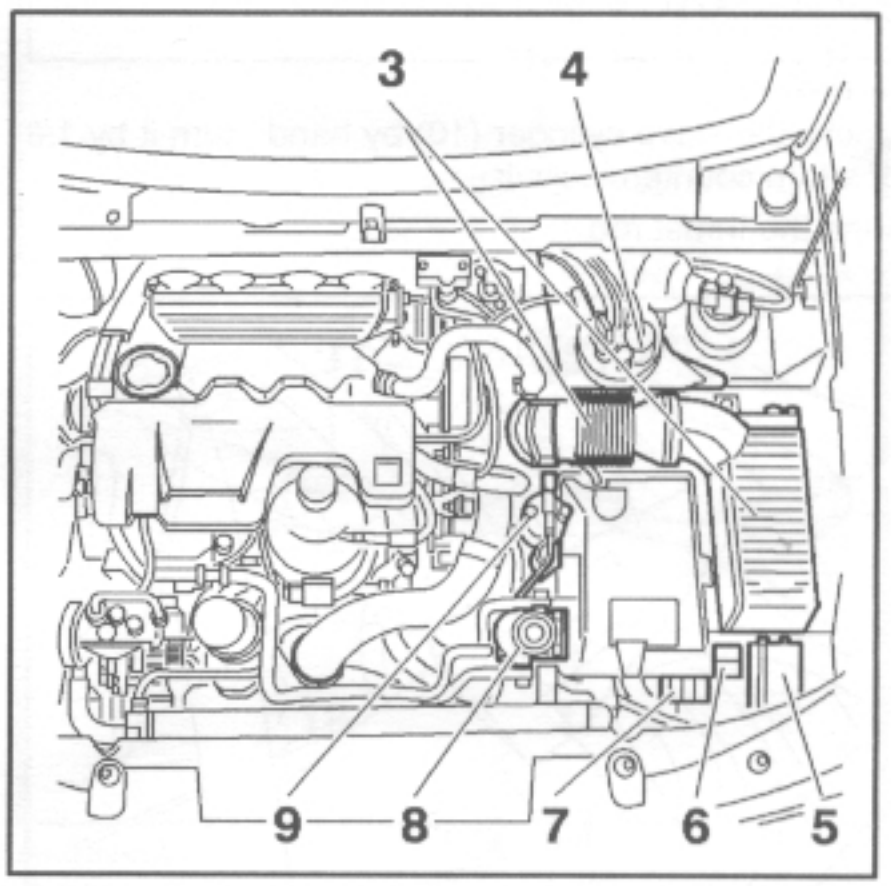


Fig : B2BP01NC

Unclip the battery trim cover : 2 attachment points, front side end, 1 attachment point marked by an arrow towards the air filter (using a screwdriver).

Disconnect the battery.

Remove :
- the battery
- air filter (3) (provided with the sleeve and breather connection hose)
- the LHM fluid reservoir (4)

Locate the LHM reservoir/filter assembly cover [5].

www.WorkshopManuals.co.uk

Take out the fixing screws then push aside :
- fuse holder housing (5)
- fuse holder housing (6)
- pre–heater control unit (7)
- diesel fuel priming pump (8)
- dehydrator reservoir (9) (according to equipment)

Unclip the electrical harnesses from the battery tray.

Uncouple the bonnet opening cable.

Remove the battery tray.

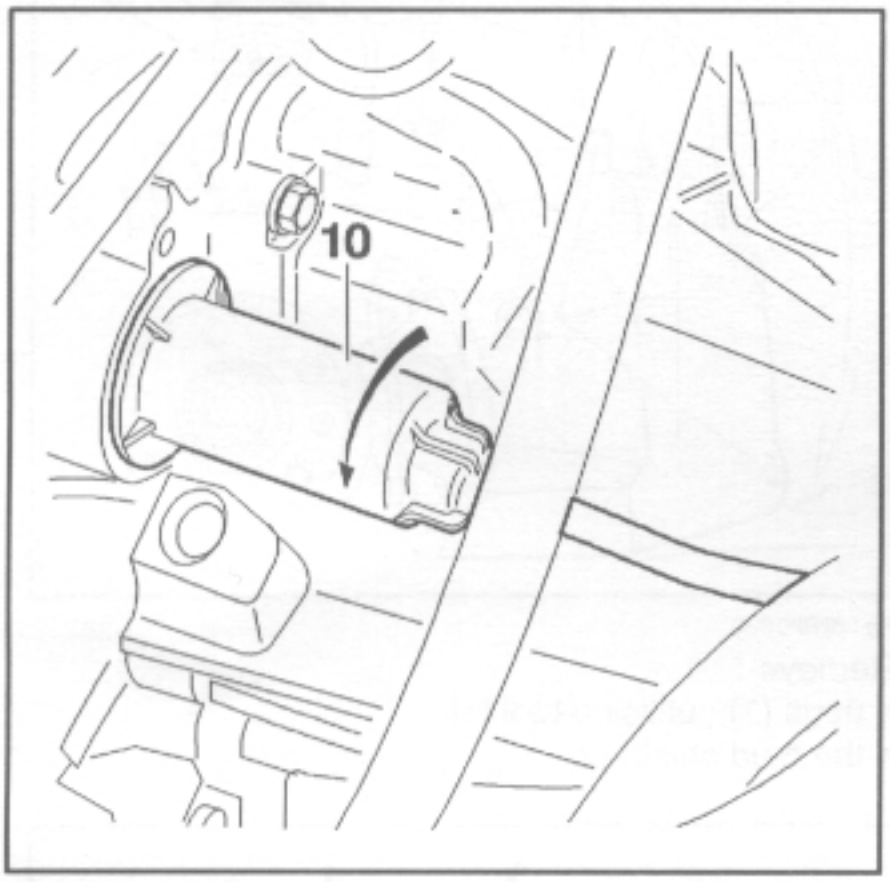


Fig : B2BP01PC

Unclip the slave cylinder (10) by hand ; turn it by 1/8 of a turn counterclockwise.

Mind the thrust rod.

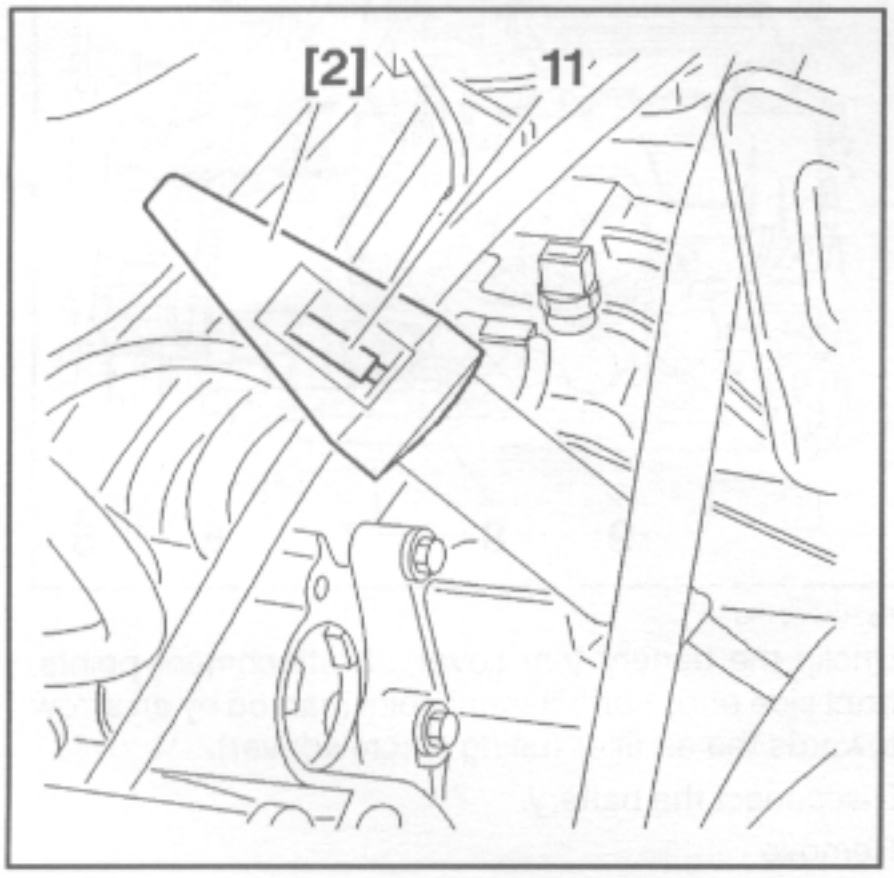


Fig : B2BP01QC

ATTENTION : Hold push rod (11) into place : the rod and the plastic guide clip, which has been broken during the first declutching operation, may drop into the clutch.

Fit the protection end piece [2].

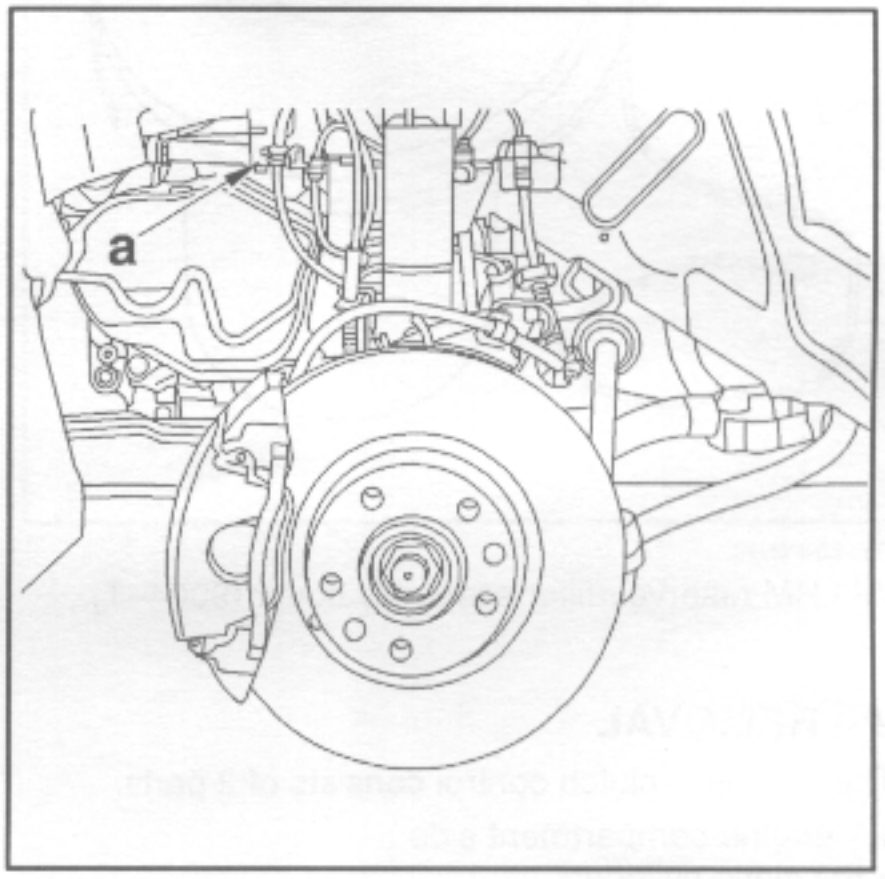


Fig : B2BP01RC

Unclip the hydraulic pipe for clutch control from the side sill at "a" and from the gearbox.

Remove the fixing bracket from the hydractive suspension hydraulic pipe (under the sphere).

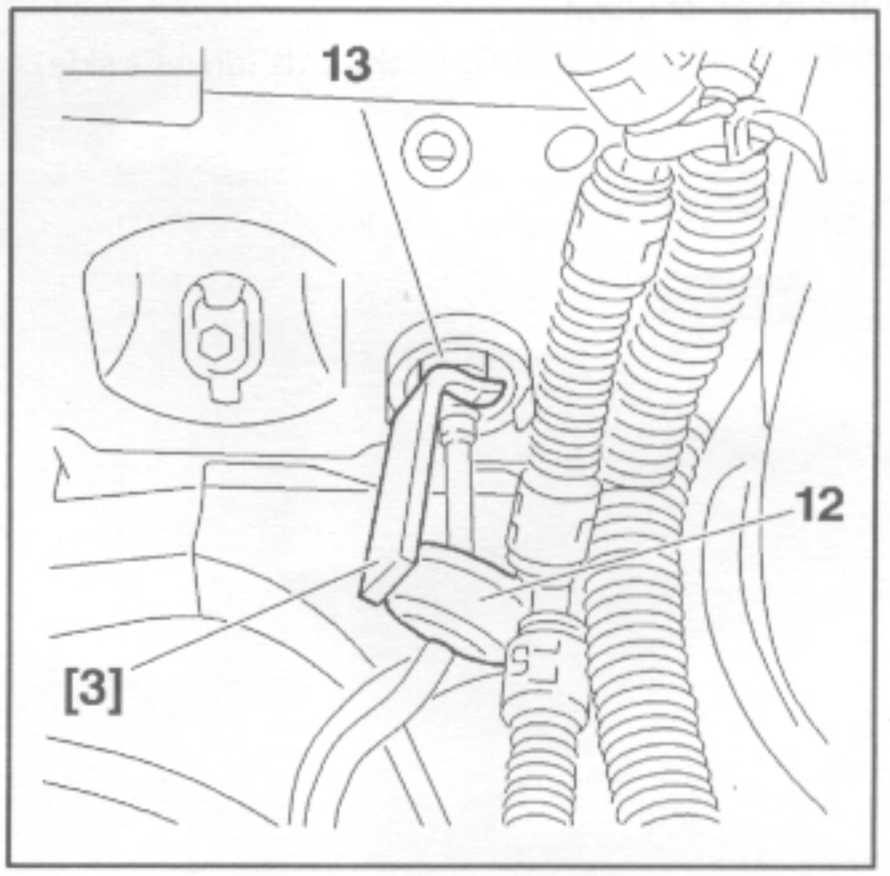


Fig : B2BP01SC

Disengage rubber protector (12) from the bulkhead.

Unclip the quick–fit union (13) ; utilising tool [13].

Remove the clutch control through the wheelarch.

www.WorkshopManuals.co.uk

2.2 – Passenger compartment side

Remove the steering wheel and its airbag (see the relevant operation).

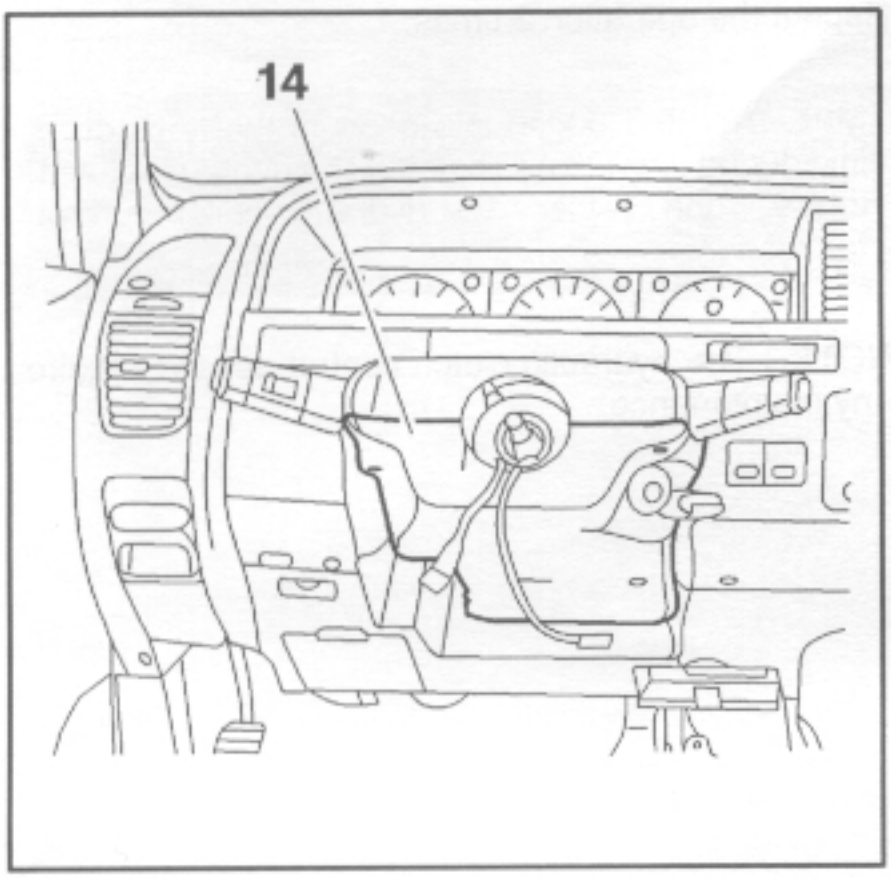


Fig : B2BP01TC

Remove :
- lower panel (14)
- the L.H. lower trim

Disengage the junction box partially.

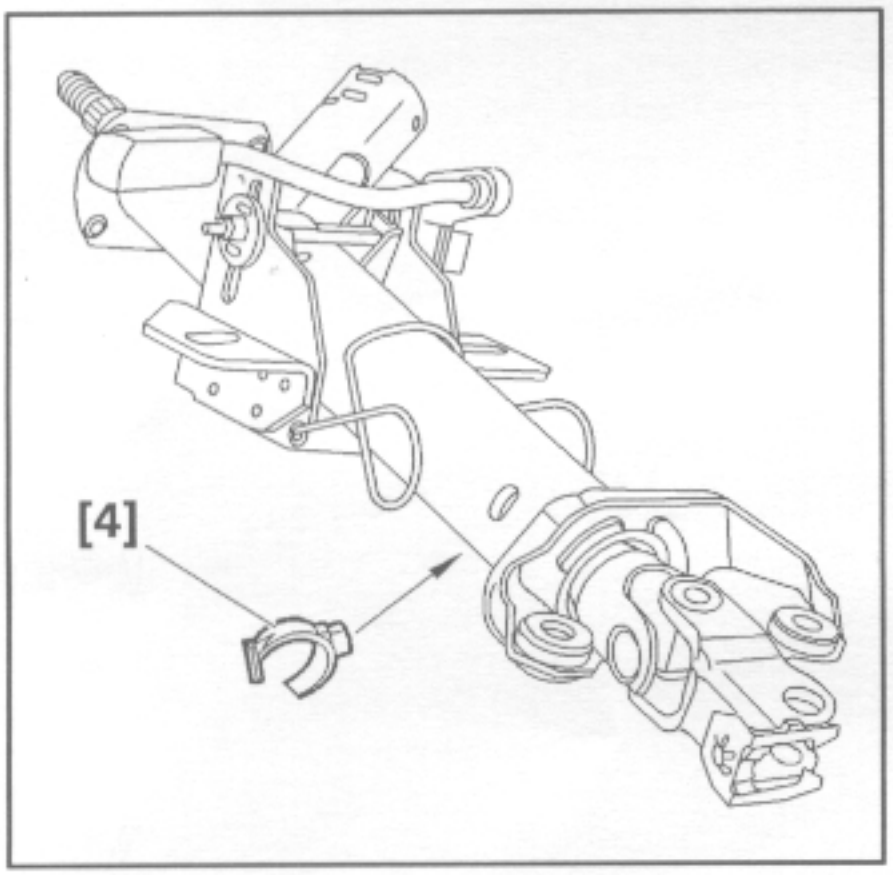


Fig : B2BP01UC

Fit the plastic clamp [4].

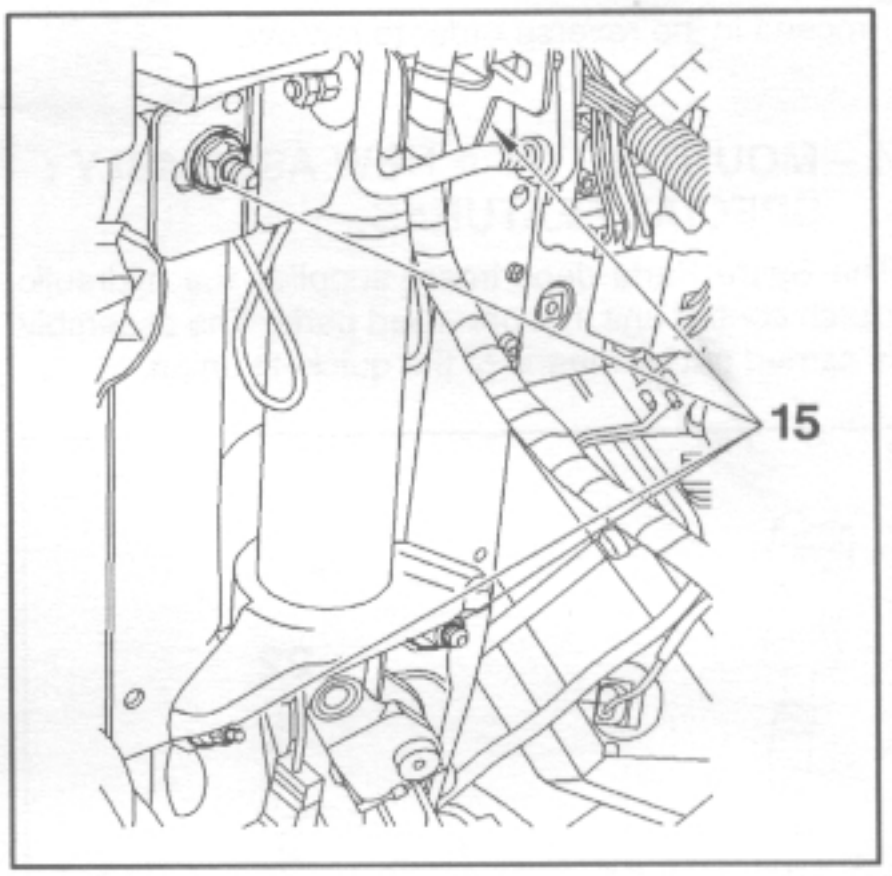


Fig : B2BP01VC

Remove :
- the 4 nuts (15) – steering column support bracket fixing
- the 3 bolts – clutch pedal bracket fastenings

Remove the pedal shaft (NYLSTOP nut).

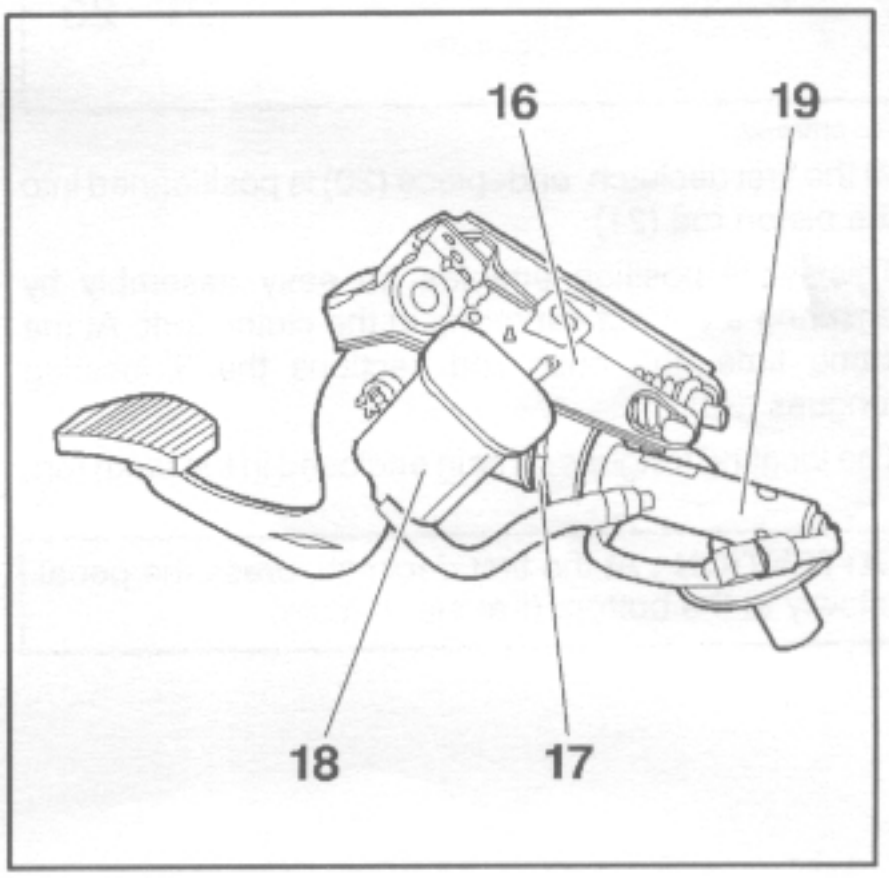


Fig : B2BP01WC

Remove the pedal bracket (complete) (16).

Unclip :
- the push rod (17)
- the reservoir (18)

Remove the master cylinder (19) ; turn it by 1/8 of a turn counterclockwise.

www.WorkshopManuals.co.uk

3 – REFITTING

Proceed in the reverse order to removal.

4 – MOUNTING OF A NEW ASSEMBLY : SPECIAL FEATURES

The Spare Parts department supplies the hydraulic clutch control unit in 2 pre–filled parts. The assembly is carried out by means of the quick–fit union.

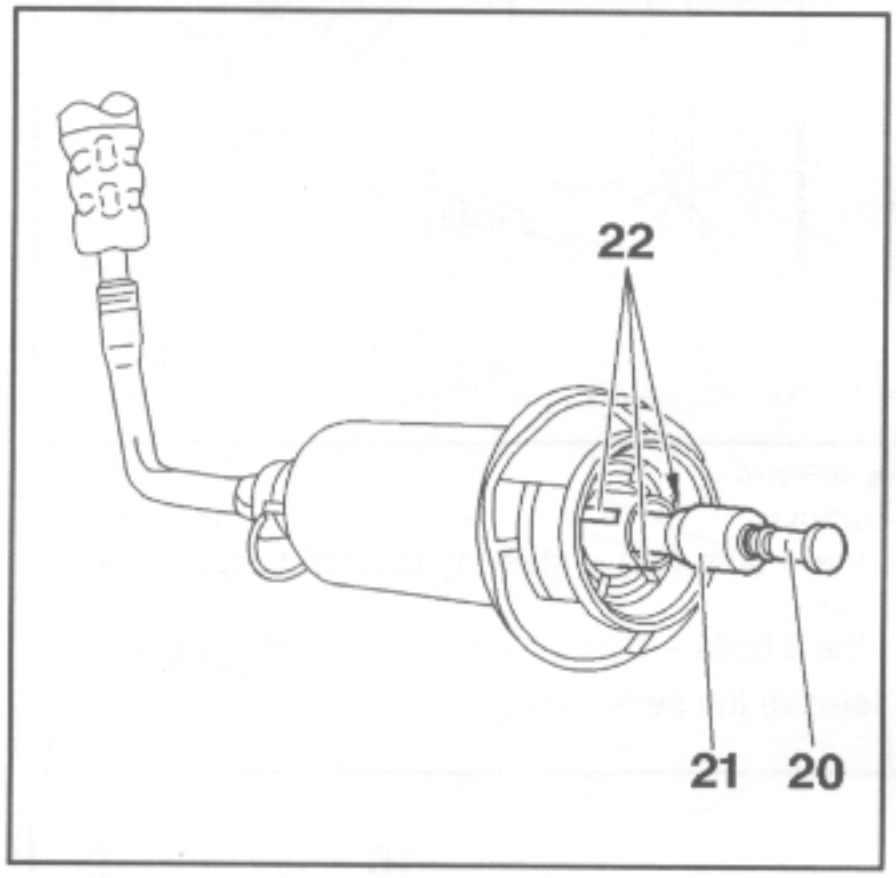


Fig : B2BP01XC

At the first declutch, end–piece (20) is positionned into the piston rod (21).

This initial position enables an easy assembly by ensuring a correct centering in the clutch fork. At the same time, the push rod sections the 3 locating tongues (22).

The locating tongues remain enclosed in the push rod.

ATTENTION : At the first declutch, press the pedal slowly to the bottom (transfer of fluid).

Return the pedal slowly by hand.

Wait a few seconds.

Repeat the operation 3 times.

IMPERATIVE : Taking into account the transfer of fluid during operation and use of the hydraulic clutch control : don't replace the hydraulic clutch control partially.

NOTE : The hydraulic clutch control doesn't require any maintenance.

www.WorkshopManuals.co.uk

XM

APRIL 1996

ABONNEMENT GME

REF. 5 No XM - 1

EVOLUTION

● EVOLUTION : ME 5 TB GEARBOX

MAN 158931

GB

1

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

EVOLUTION : ME5T GEARBOX

1 – EVOLUTION

Lubricating notches of the 3/4/5 th speed driven pinions.

From number 178164 (identification ref. "GM") : the lubrication of the driven pinions has been modified.

The lubricating notches of the driven pinions are transferred onto the synchronizer hubs.

Modified parts :
- 3 rd speed driven pinion
- 4 th speed driven pinion
- the 3rd/4th synchro hub
- 5 th speed driven pinion
- 5 th gear synchro hub

1.1 – Earlier assembly

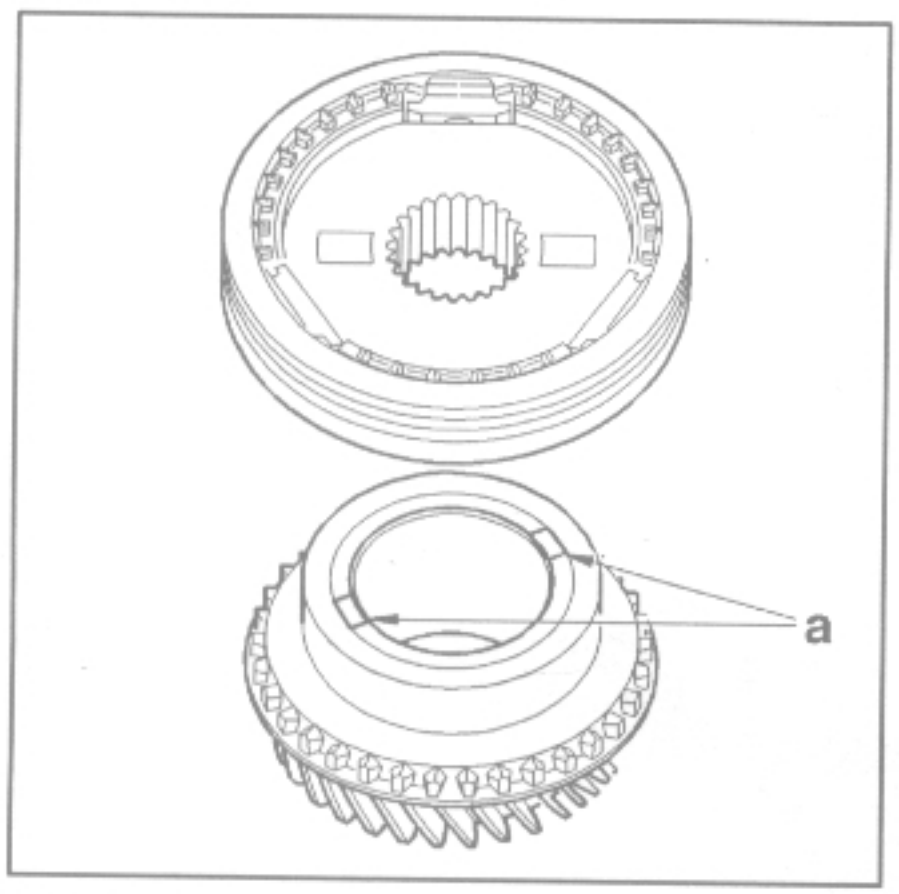


Fig : B2CP12DC

Lubricating notches "a".

1.2 – Later assembly

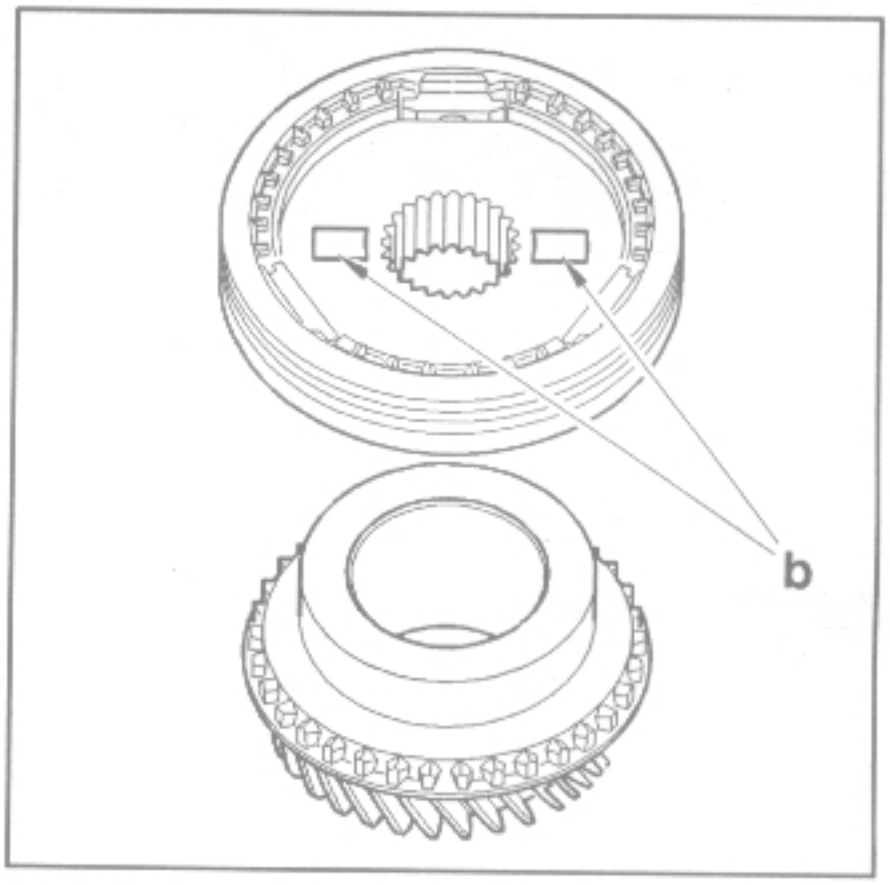


Fig : B2CP12EC

Lubricating notches "b".

1.3 – 3/4 th gear synchro sleeve ; 3/4 th gear selector shaft

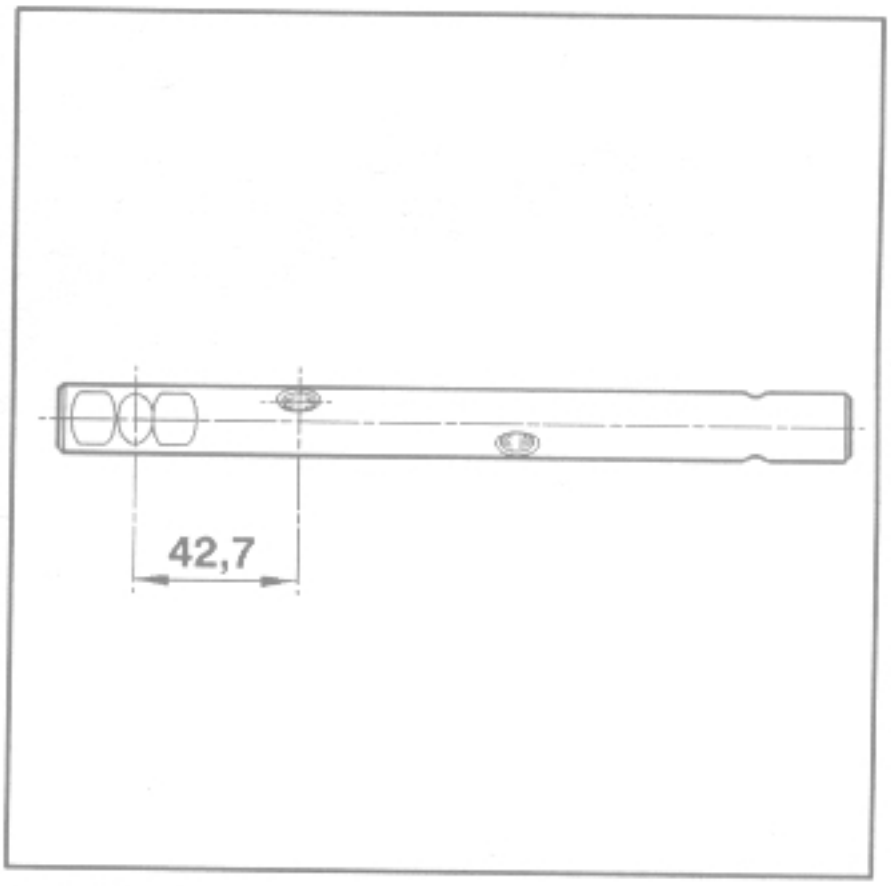


Fig : B2CP12FC

From number 180633 (identification ref. "GM") :
- the groove width of the synchro sleeve is reduced (from 8.8 mm to 8.3 mm)
- the fork fixing position on the selector shaft is offset (from 42.5 mm to 42.7 mm)

www.WorkshopManuals.co.uk

2 – REPAIR RECOMMENDATIONS

IMPERATIVE : Mixing old and new parts is prohibited.

Replacing the 5 th speed driven pinion requires changing the following parts :
- 5 th gear synchro hub
- the 5 th speed driving pinion

Replacing the 5 th gear synchro hub requires the following parts to be changed :
- the 5 th speed driving pinion (*)
- 5 th speed driven pinion (*)

NOTE : (*) sold together.

Replacing the 4 th speed driven pinion requires changing the following parts :
- 3/4 th gear synchro hub
- 3 rd speed driven pinion
- the 3/4 th speed selector shaft

Replacing the 3 th speed driven pinion requires changing the following parts :
- 3/4 th gear synchro hub
- 4 th speed driven pinion
- the 3/4 th speed selector shaft

Replacing the 3/4 th gear synchro hub requires the following parts to be changed :
- 3 rd speed driven pinion
- 4 th speed driven pinion
- the 3/4 th speed selector shaft

3 – REPLACEMENT PARTS

The old parts are no longer available from the Replacement Parts Department who will only supply complete assemblies.

ATTENTION : During repairs, all the components of an assembly must be fitted.

www.WorkshopManuals.co.uk

JUNE 1999

SUBSCRIPTION

5 No XM - 2

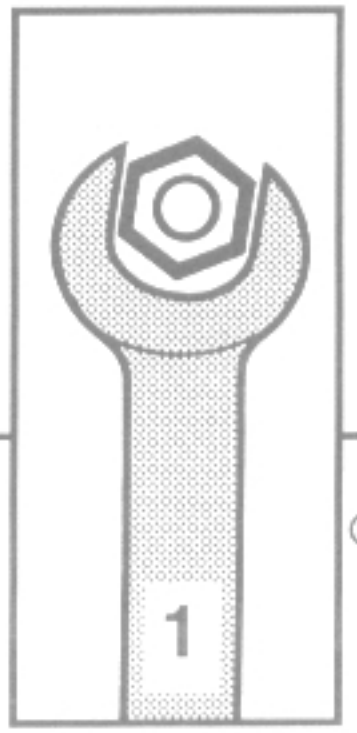
EVOLUTION

• EVOLUTION: FILLING AND TOPPING -UP OF OIL FOR 4HP20 AUTOMATIC GEARBOX

MAN 108931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE



GB

www.WorkshopManuals.co.uk

EVOLUTION : FILLING AND TOPPING UP THE AUTOMATIC GEARBOX OIL (TYPE 4HP20)

1 – VEHICLE CONCERNED

Vehicle with automatic gearbox (type 4HP20).

Applicable from gearbox number 20H2YY (from RPO No. 8201).

1.1 – Evolution

Discontinuation of the manual dipstick on the automatic gearbox.

The check is performed when the oil has reached a temperature of 60°C (instead of 80°C).

Gearbox filled with oil through the air vent.

1.2 – Identification

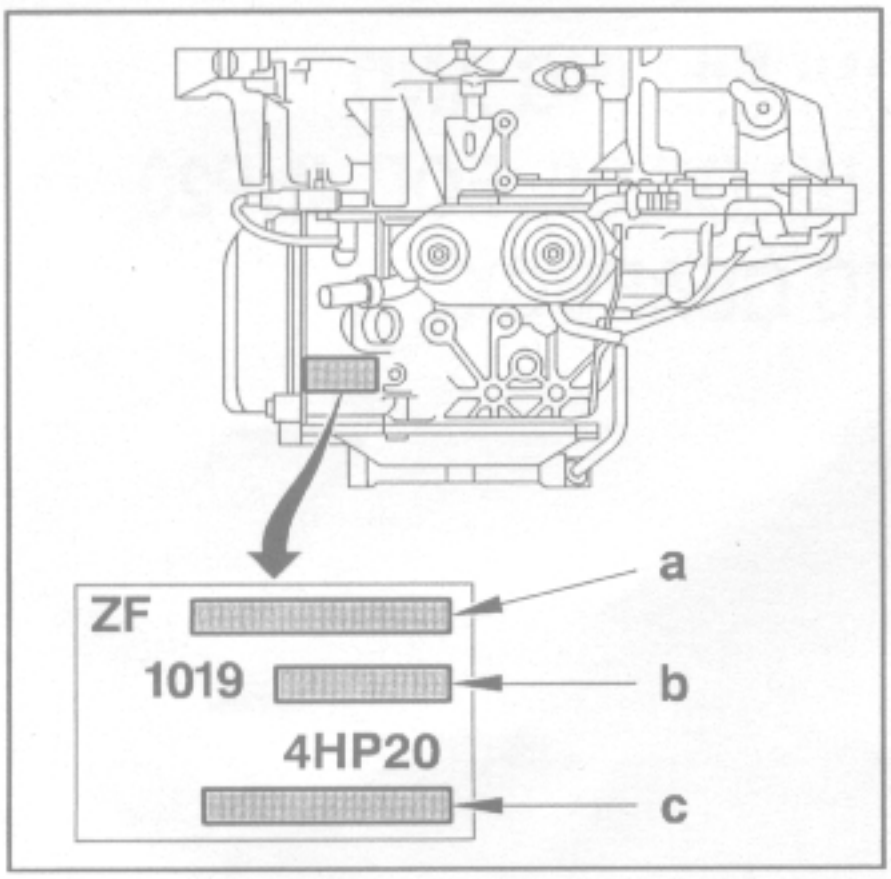


Fig : B2CP3A9C

"a" serial number.

"b" ZF identification number.

"c" component number.

2 – REFILLING – TOP-UP

2.1 – Recommended tools

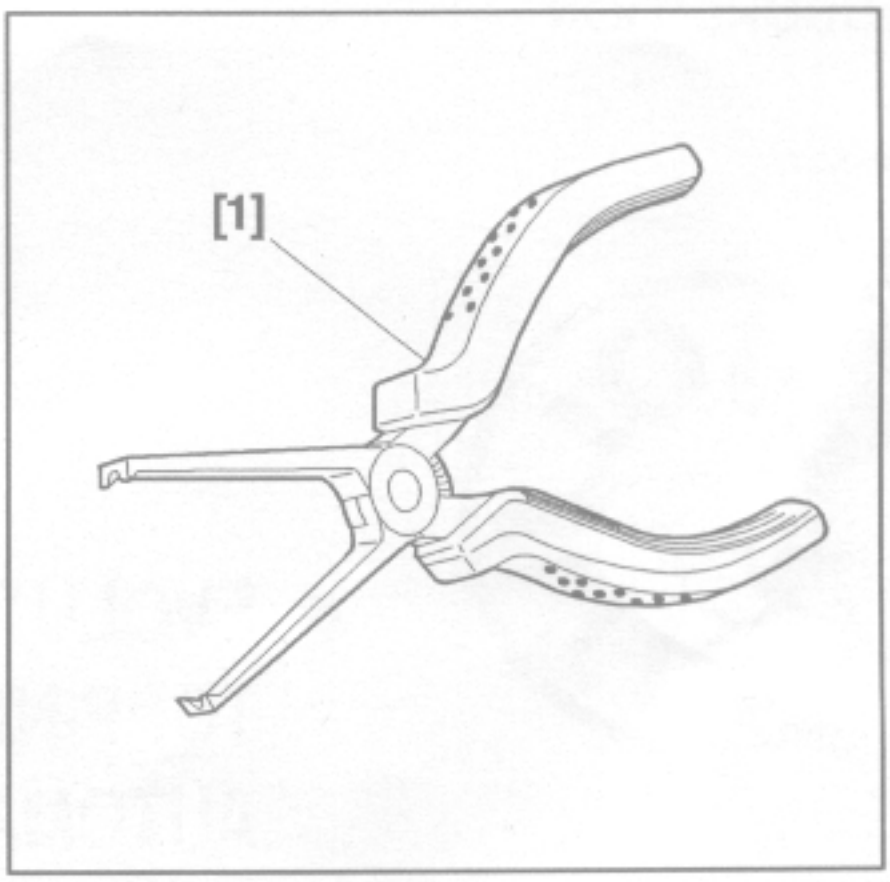


Fig : E5AP02RC

[1] hose clip pliers 4517–T (tool box 4507–T).

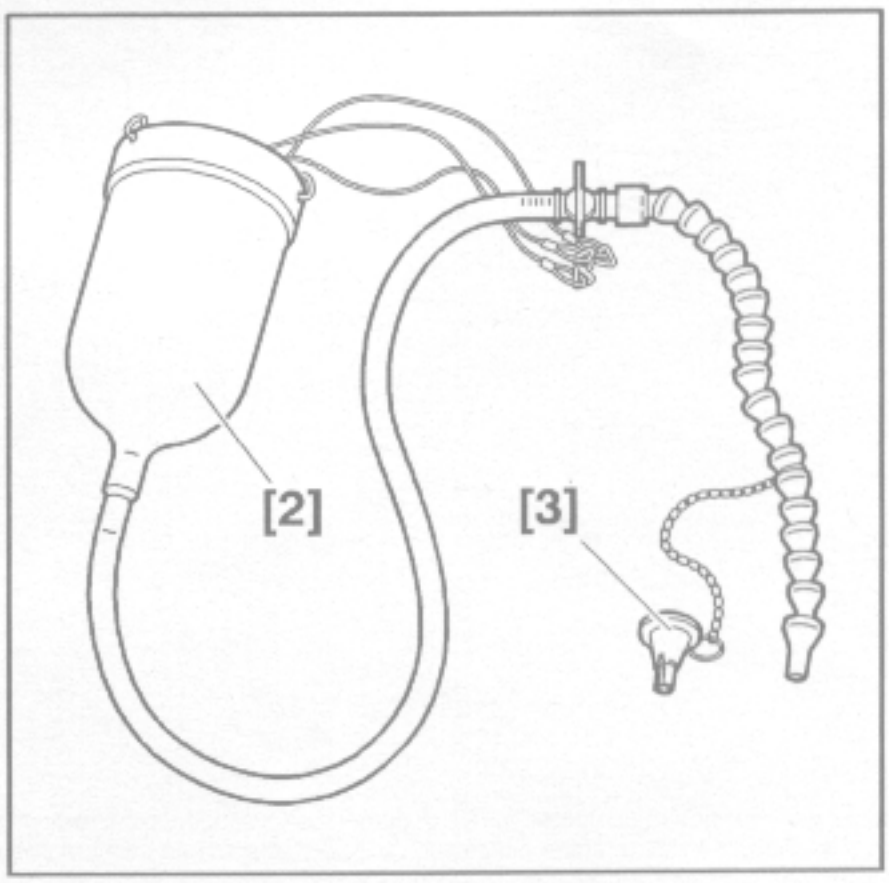


Fig : E5AP1FHC

[2] topping up cylinder (–).0341.

[3] specific connector (–).0341.B.

www.WorkshopManuals.co.uk

2.2 – Refilling

The oil capacities are still the same :

- oil capacity of a new gearbox : 7,7 litres (minimum), 8,3 litres (max.)
- oil remaining after draining : 4,7 litres (minimum), 5,3 litres (max.)
- quantity of oil to be added after draining : about 3 litres

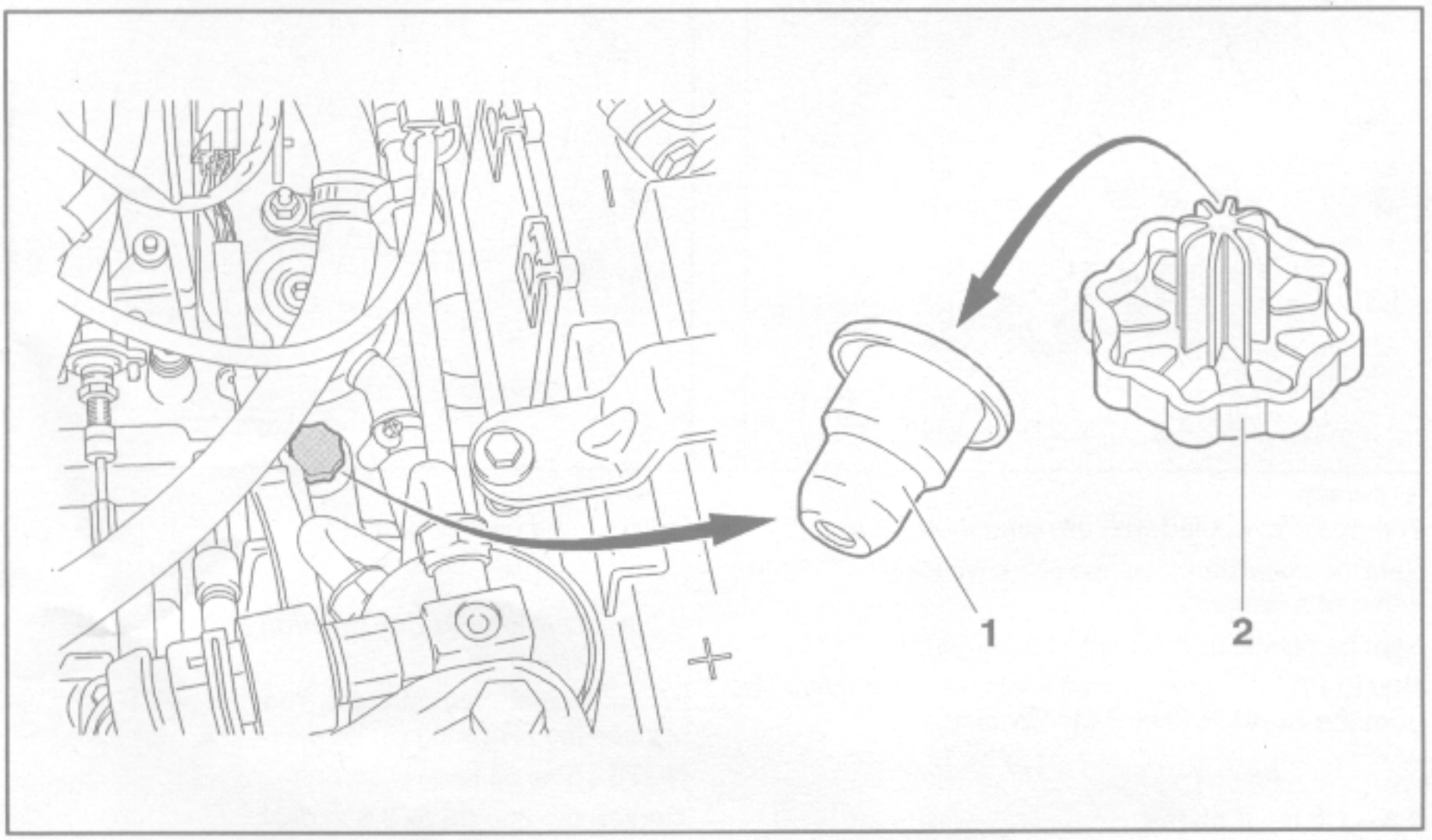


Fig : B2CP3ACD

Remove :

- the air filter housing
- the air vent assembly (1) and (2) of the gearbox ; by means of tool [1]

www.WorkshopManuals.co.uk

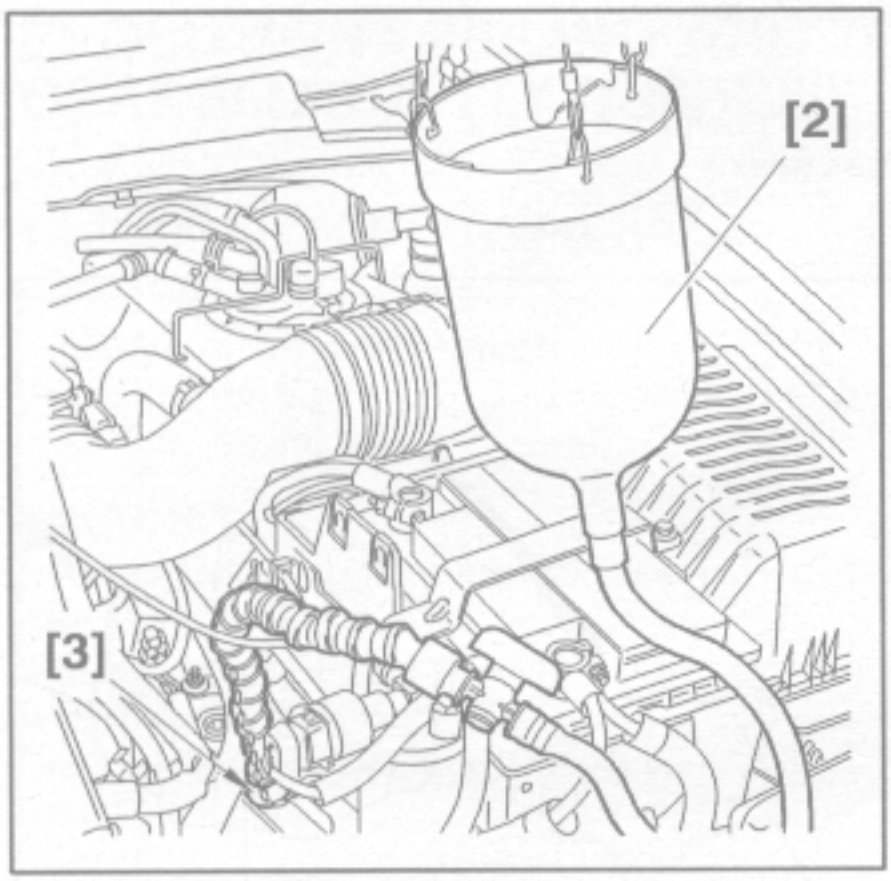


Fig : B1BP202C

The gearbox is filled with oil using tools [2] and [3].

Refit the metal part (1) of the air vent ; using a Ø 18 mm drift and a hammer.

Clip the plastic part (2) onto the air vent.

NOTE : All the gearbox air vent parts are available from the Replacement Parts Division.

2.3 – Oil level check

2.3.1 – Prior conditions

The vehicle is on a flat surface, handbrake off.

Engine idling, without consumers (air conditioning, heating, etc).

Check that the gearbox is not in a back–up mode ; using a diagnostic tool.

Apply the brakes firmly and move the lever through the various selector positions.

Lever in position P.

The check is performed when the oil has reached a temperature of 55°C ± 1°C ; using a diagnostic tool.

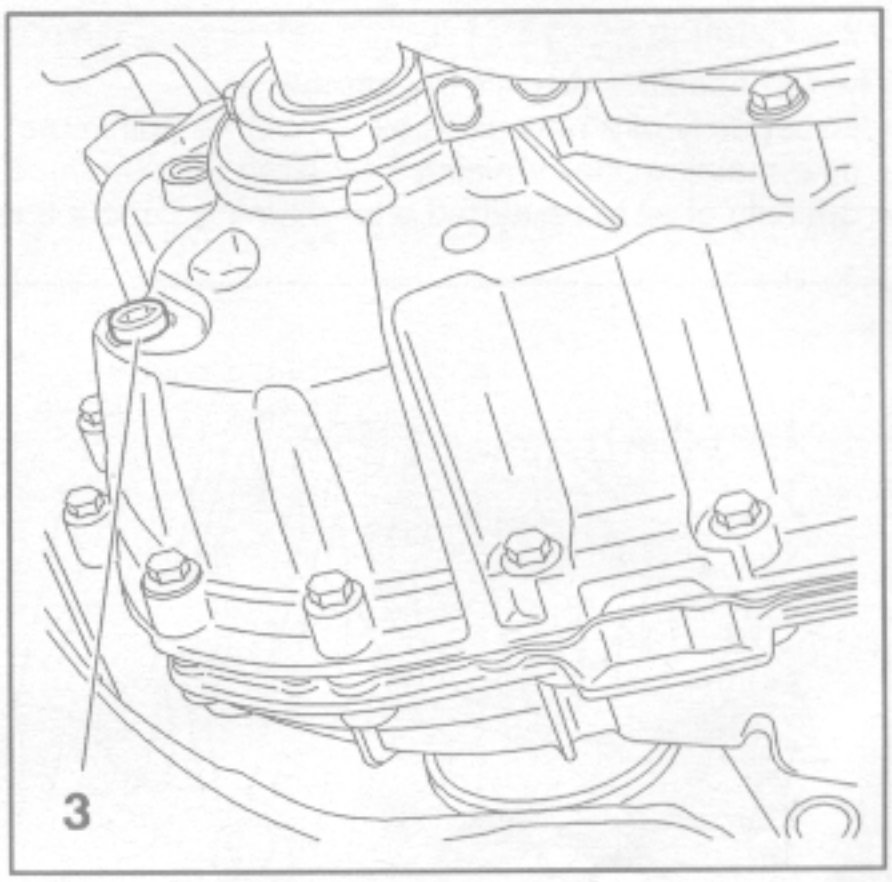


Fig : B2CP3ABC

Remove the oil level plug (3).

2.3.2 – Oil flowing out through the oil level aperture

When the oil temperature reaches 60°C ± 1°C, replace the filler plug (3).

NOTE : The oil level is correct.

Tighten the cap (3) to 2,5 m.daN.

2.3.3 – Oil not flowing out through the oil level aperture

Refit the oil level plug (3).

Stop the engine.

Remove the air vent assembly (1) and (2) from the gearbox ; by means of tool [1].

Add 0.5 litre of oil to the gearbox ; by means of tool [2].

Repeat the topping up procedure.

Remove tools [2] and [3].

Refit the metal part (1) of the air vent ; using a Ø 18 mm drift and a hammer.

Clip the plastic part (2) onto the air vent.

Refit the air filter housing.

NOTE : The method for topping up the oil of a gearbox with a manual dipstick remains the same.

© "The intellectual property rights relating to the technical information contained in this document belong exclusively to the Manufacturer. Reproduction, translation or distribution in whole or in part without prior written authorisation from the Manufacturer is forbidden".

www.WorkshopManuals.co.uk

31st MAY 1995

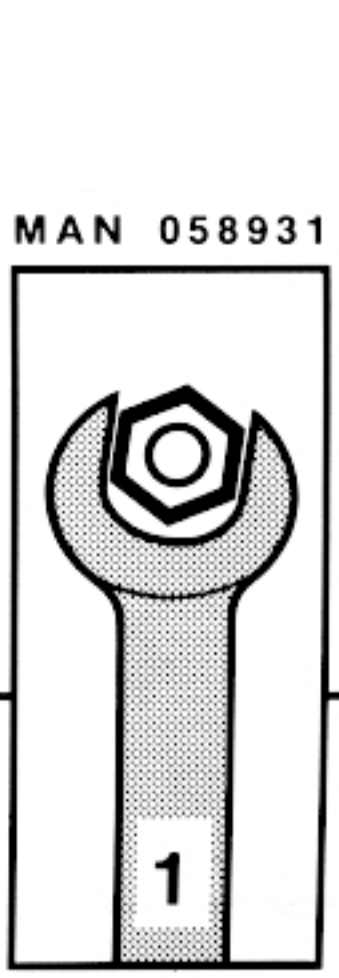
REF. 5 No XM 330-00/3

ABONNEMENT GME

GEARBOX

- **MANUAL GEARBOX**
  type MG 5 T

MAN 058931



GB

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

GEARBOX

MG5TB GEARBOX DATA – IDENTIFICATION : 3

GEARBOX DRAINING – FILLING – LEVEL : 11

MG5TB GEARBOX, ENGINE DK5 REMOVING – REFITTING : 12

www.WorkshopManuals.co.uk

MG5TB GEARBOX DATA – IDENTIFICATION :

1 – IDENTIFICATION

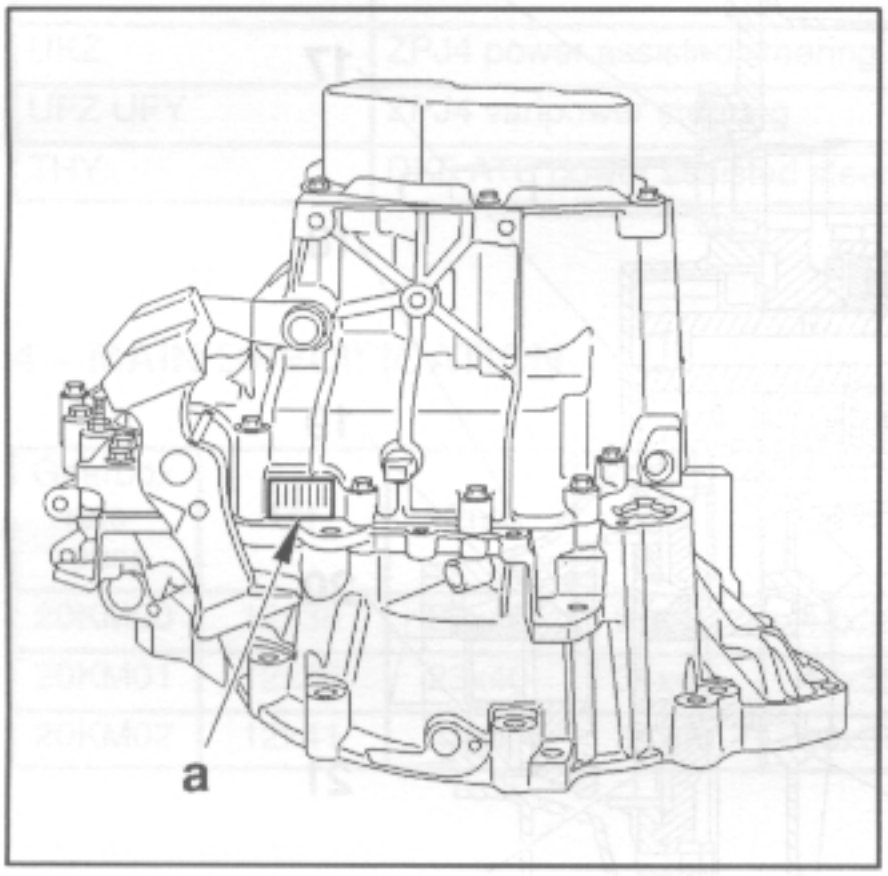


Fig : B2CP06XC

Identification plate "a" of gearbox.

www.WorkshopManuals.co.uk

2 – DESCRIPTION

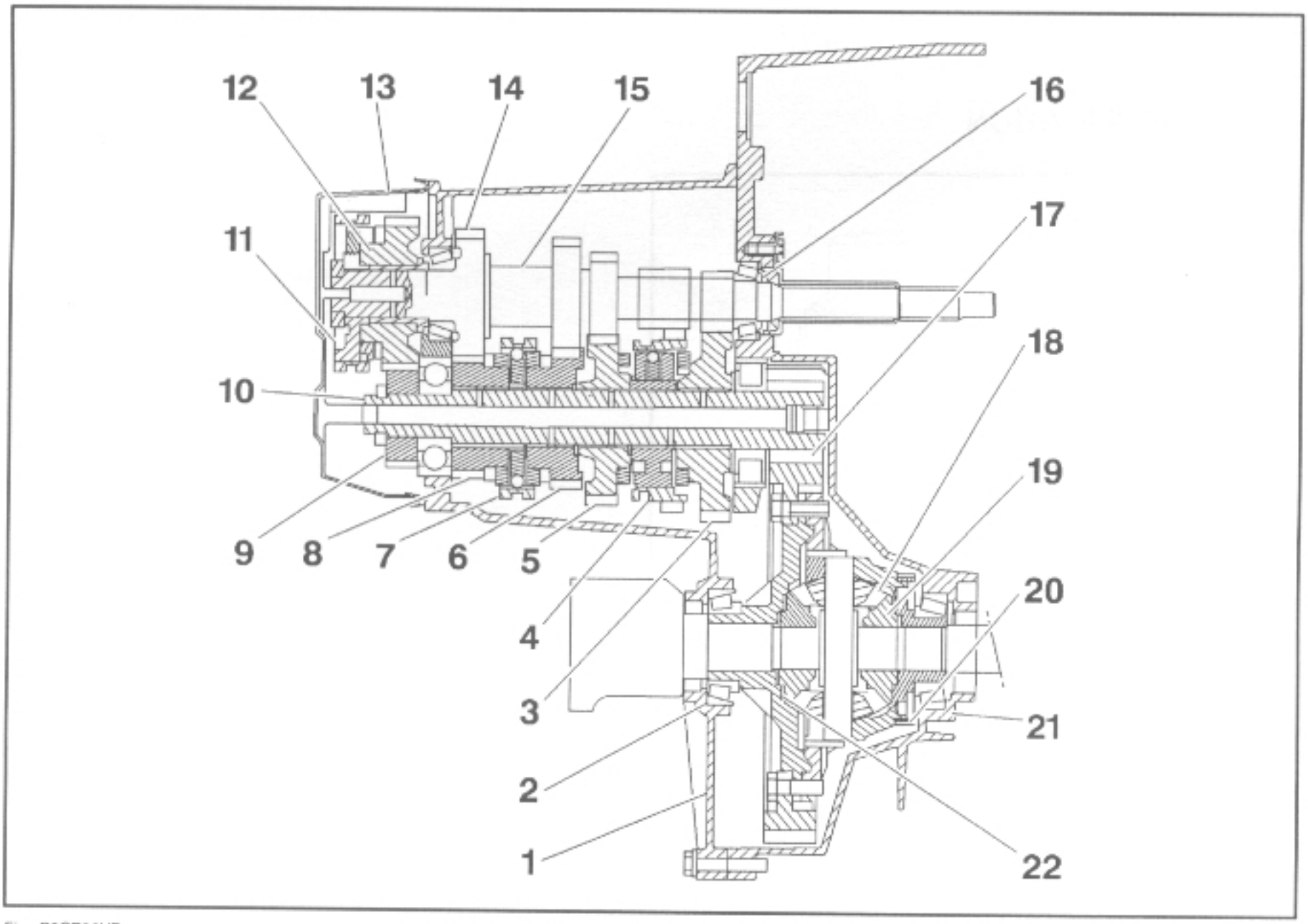


Fig : B2CP06YD

Description :

- (1) gearbox casing
- (2) differential bearing adjusting shim
- (3) 1st speed driven gear
- (4) 1st/2nd speeds synchronizer
- (5) 2nd speed driven gear
- (6) 3rd speed driven gear
- (7) 3rd/4th speeds synchronizer
- (8) 4th speed driven gear
- (9) 5th speed driven gear
- (10) output shaft
- (11) 5th speed synchronizer
- (12) 5th speed driving gear
- (13) steel cover
- (14) 4th speed driving gear
- (15) input shaft
- (16) input shaft bearing clearance adjusting shim
- (17) differential crown wheel
- (18) satellite pinion
- (19) planet pinion
- (20) speedometer drive gear
- (21) clutch and axle housing
- (22) sun wheel adjusting shim

www.WorkshopManuals.co.uk

3 – ALLOCATIONS

Engine type		Gearbox reference	Applicable
Legislation type	Code		
UFZ	ZPJ power assisted steering	20KM00 20KM01	07/94
UKZ	ZPJ4 power assisted steering	20KM00	07/94
UFZ UFY	ZPJ4 varipower steering	20KM01	07/94
THY	DK5 ATE power assisted steering	20KM02	07/94

4 – MAIN SPECIFICATION

Gearbox refe-rence	1st	2nd	3rd	4th	5th	Reverse	Final drive	Speedometer drive ratio
20KM00	12x38	23x40	34x40	43x38	53x38	12x29	16x69	16x20 (plastic)
20KM01	12x38	23x40	34x40	43x38	53x38	12x29	16x69	16x20 (steel)
20KM02	12x41	22x41	34x40	43x37	53x34	12x29	16x65	16x20 (plastic)

5 – LUBRICATION

5.1 – Oil specification

Refer to the Manufacturer's recommendations.

5.2 – Oil capacity

After draining = 2.2 litres.

The oil level is to be checked via the level/filler plug.

www.WorkshopManuals.co.uk

6 – TIGHTENING TORQUES

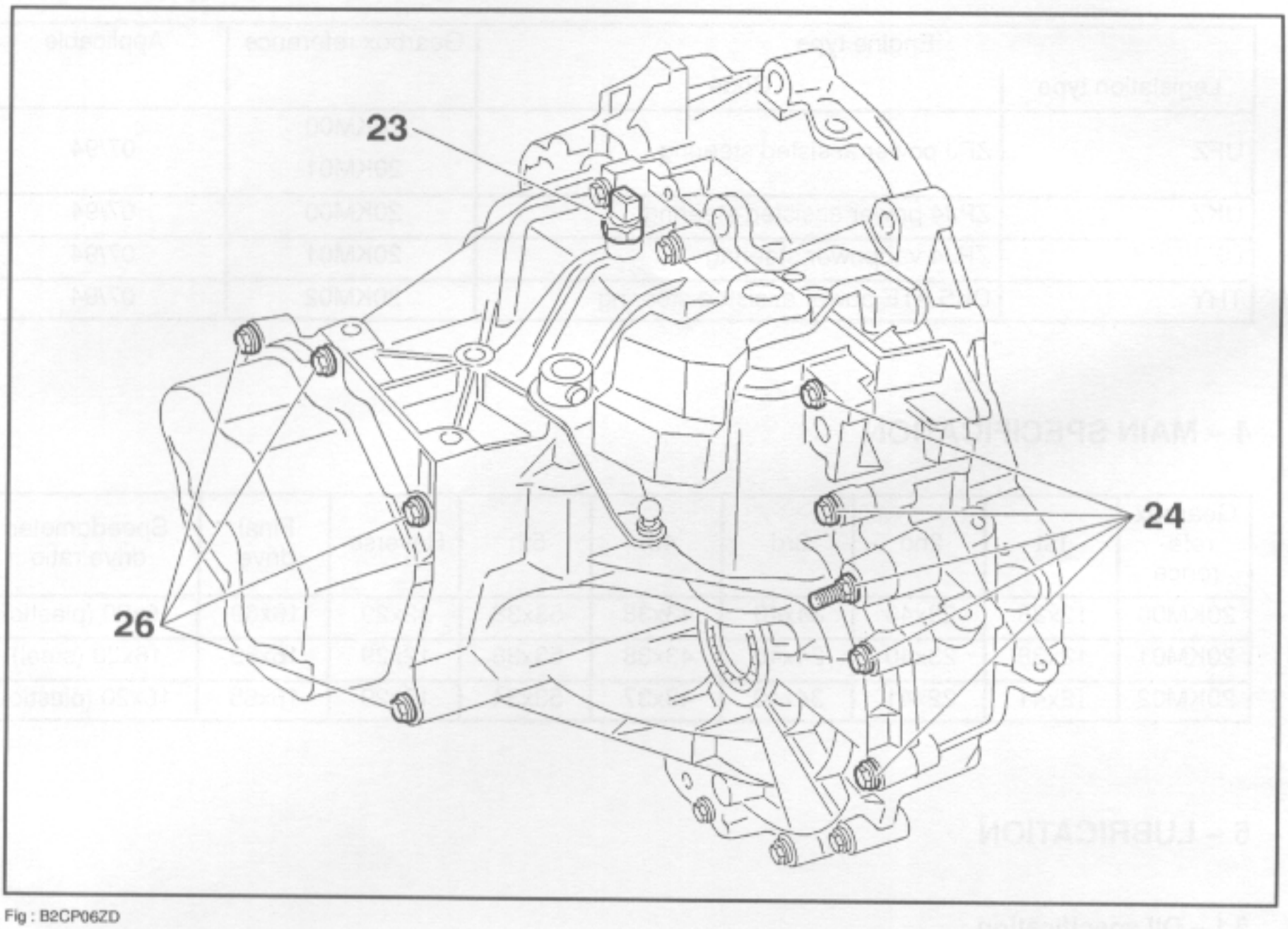


Fig : B2CP06ZD

Code	Description	Number	m.daN torque
23	Reverse lamp switch	1	2.5
24	Cover screw	21	3
26	5th speed cover screw	5	2

www.WorkshopManuals.co.uk

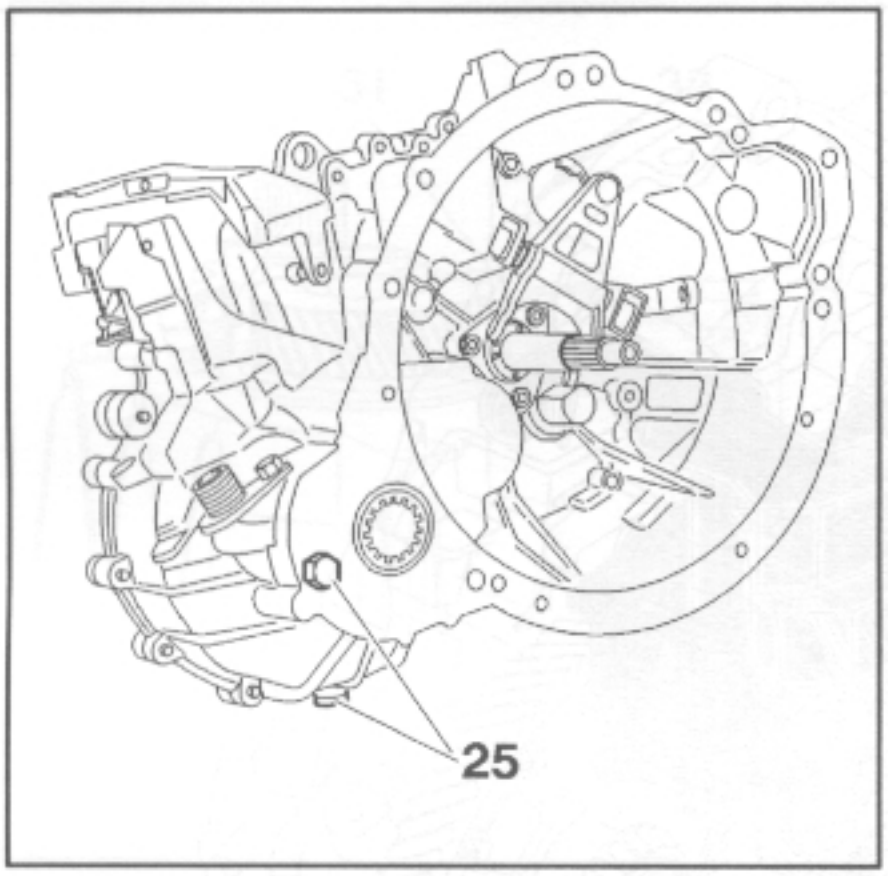


Fig : B2CP07PC

Code	Description	Number	m.daN torque
25	Plug	2	2.7

www.WorkshopManuals.co.uk

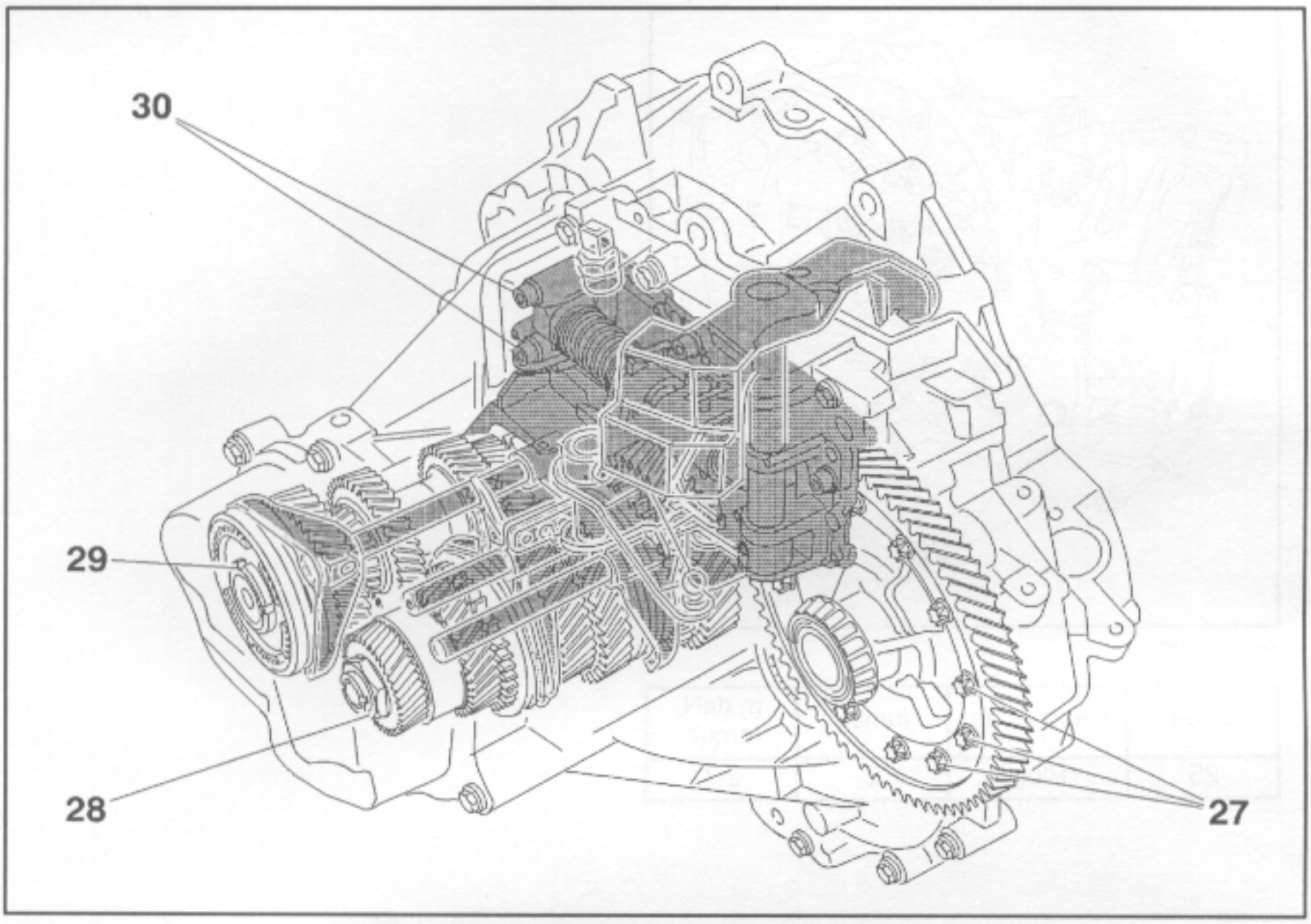


Fig : B2CP070D

Code	Description	Number	m.daN torque
27	Differential crown wheel screw	12	8.5
28	Secondary shaft nut	1	17
29	Primary shaft nut	1	17
30	Gear control bracket screw	7	2.3

www.WorkshopManuals.co.uk

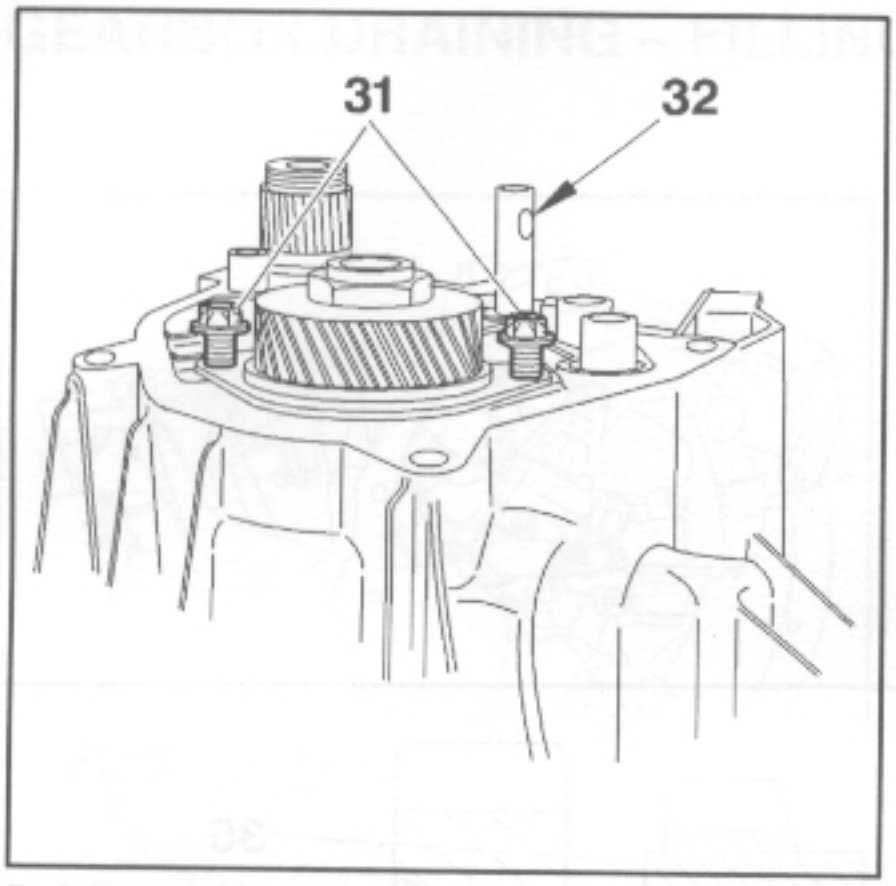


Fig : B2CP06BC

Code	Description	Number	m.daN torque
31	Bearing retaining plate screw	2	3.7
32	5th speed fork fixing screw	1	2.3

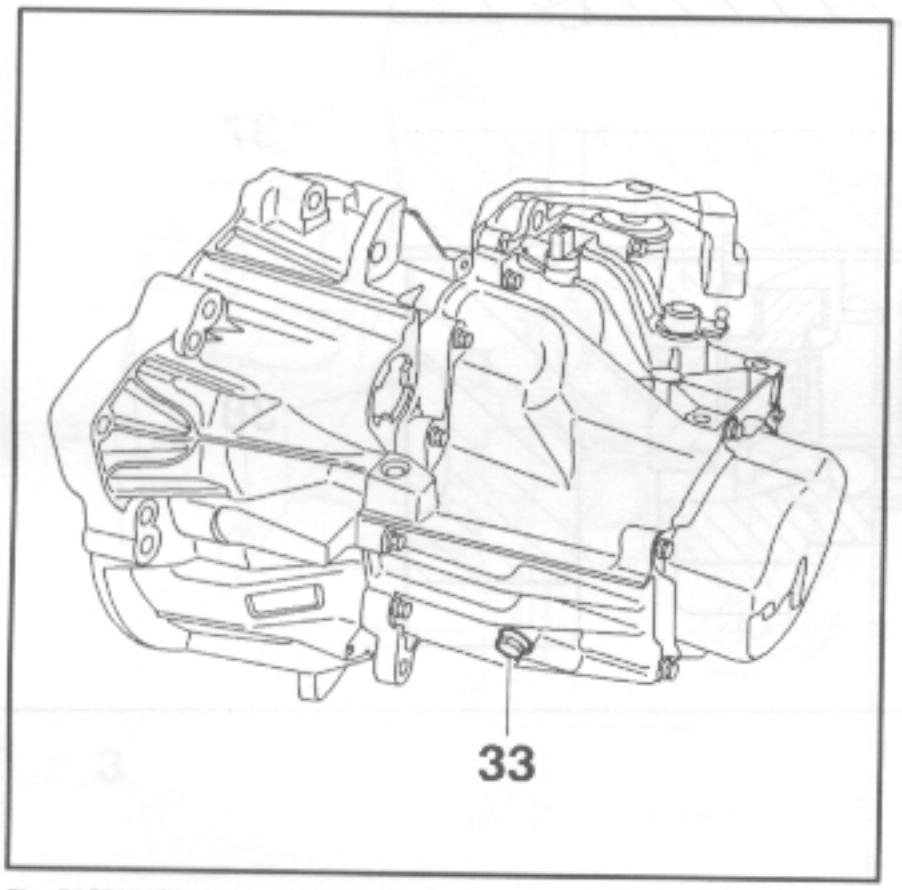


Fig : B2CP071C

Code	Description	Number	m.daN torque
33	Reverse gear shaft stop bolt	1	2

www.WorkshopManuals.co.uk

7 – SPECIAL FEATURES

7.1 – Gearbox

This gearbox incorporates a reverse gear brake.

The differential comprises 2 satellites :

- input shaft (bearing adjustment : 0.10 m + 0.10 – 0)
- output shaft (no adjustment)
- differential (bearing clearance : 0.20 to 0.30 pre–load)
- differential (planet clearance : 0.10 mm max.)

7.2 – Synchronizers (new design)

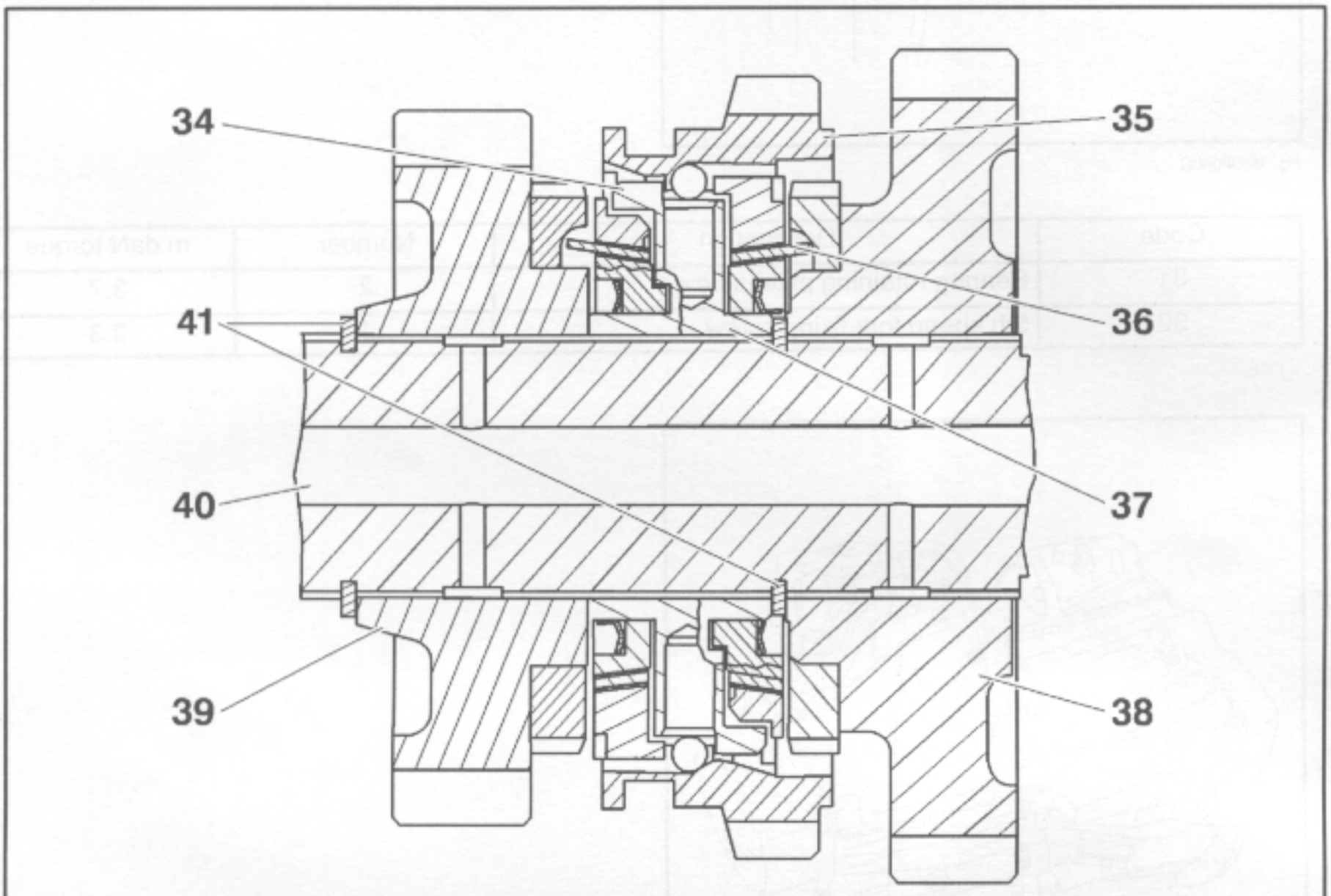


Fig : B2CP06DD

Description :

- (34) double synchronizer
- (35) synchronizer crown wheel
- (36) synchronizer cones
- (37) synchronizer hub
- (38) 1st speed gear
- (39) 2nd speed gear
- (40) output shaft
- (41) stop ring

www.WorkshopManuals.co.uk

GEARBOX DRAINING – FILLING – LEVEL :

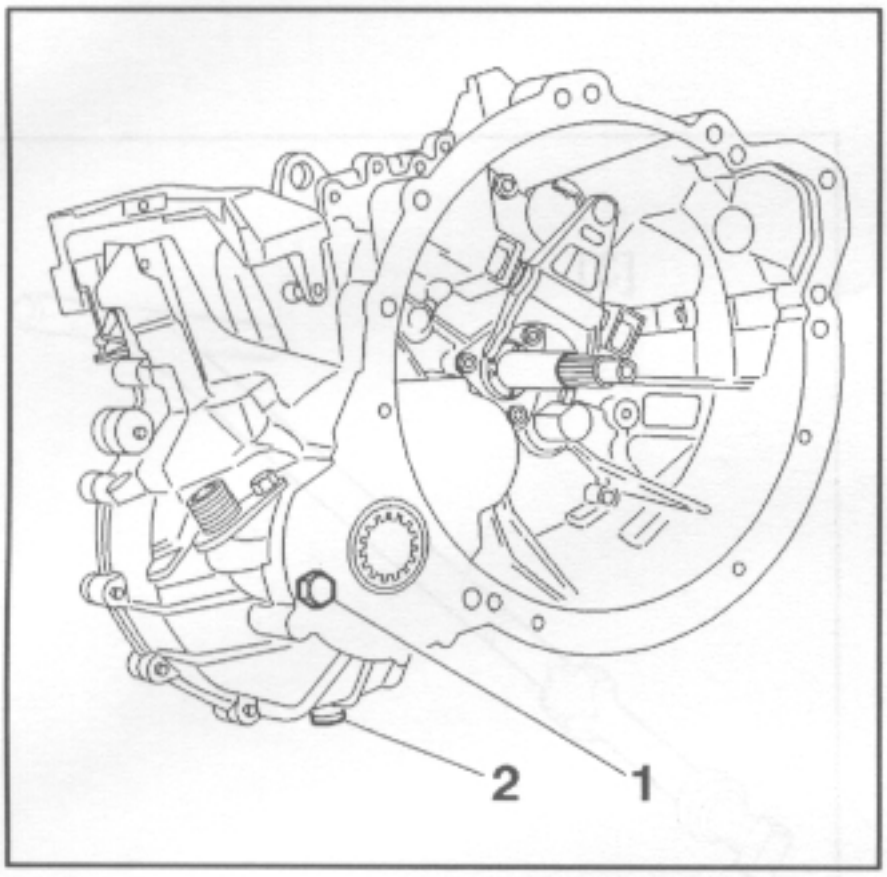


Fig : B2CP07LC
(1) filling and level plug.
(2) gearbox drain plug.

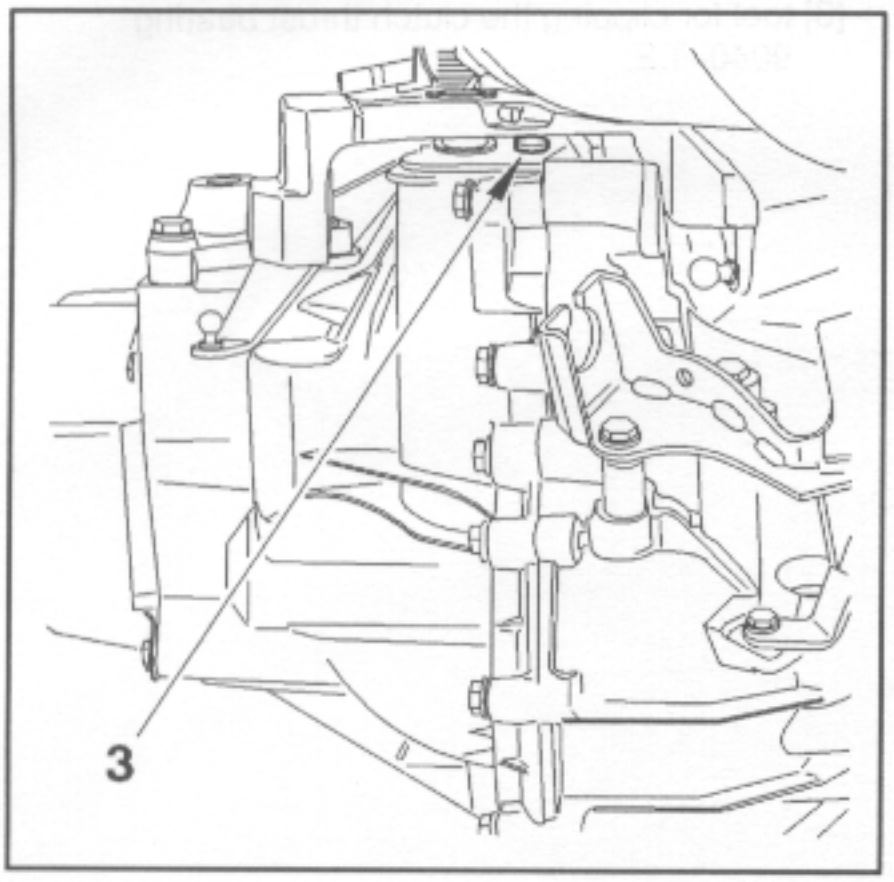


Fig : B2CP07MC
(3) air vent plug.

1 – OIL SPECIFICATION

Refer to the Manufacturer's recommendations.

2 – OIL CAPACITY

Refer to the indications provided in gearbox : data – identification.

www.WorkshopManuals.co.uk

MG5TB GEARBOX, ENGINE DK5 REMOVING – REFITTING :

1 – RECOMMENDED TOOLS

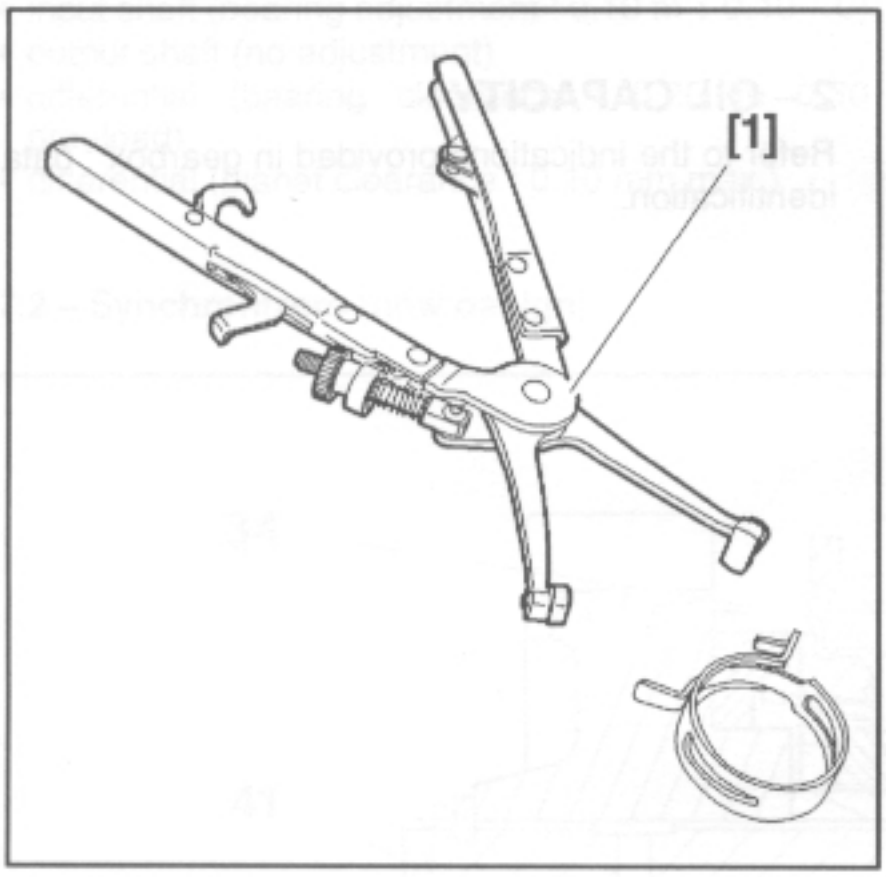


Fig : E5–P059C

[1] pliers 9029–T for removing and refitting flexible clamping collars.

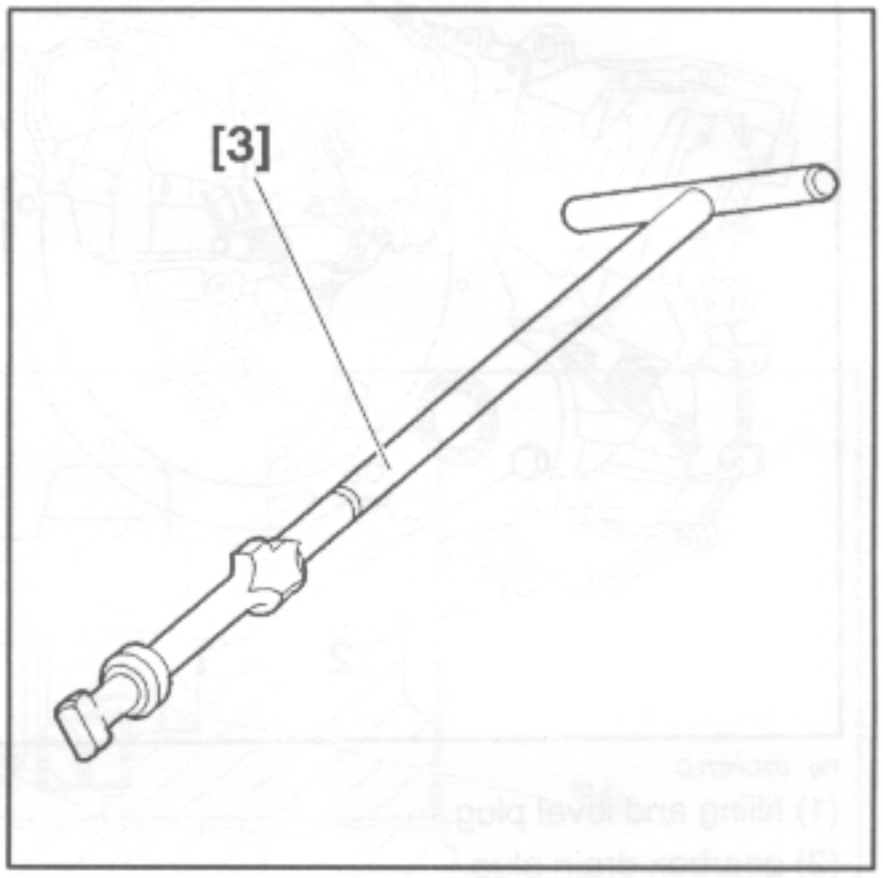


Fig : E5–P056C

[3] tool for clipping the clutch thrust bearing 9040–T.E.

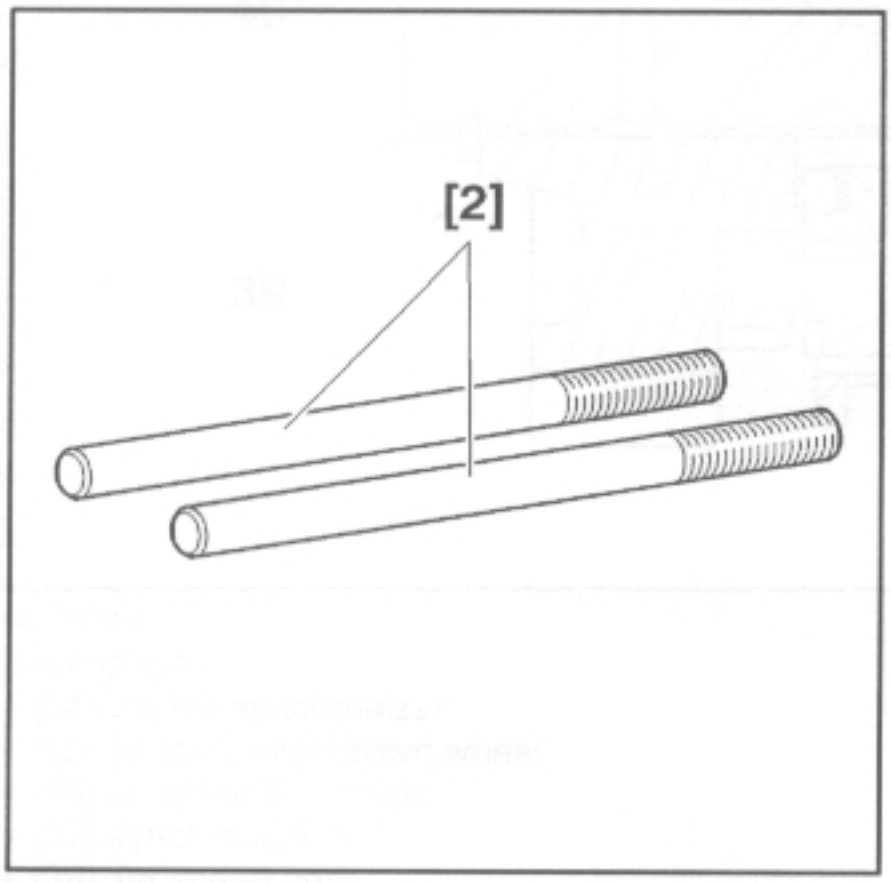


Fig : E5–P05AC

[2] engine/gearbox centring guide pins 9040–T.A.

www.WorkshopManuals.co.uk

2 – REMOVAL

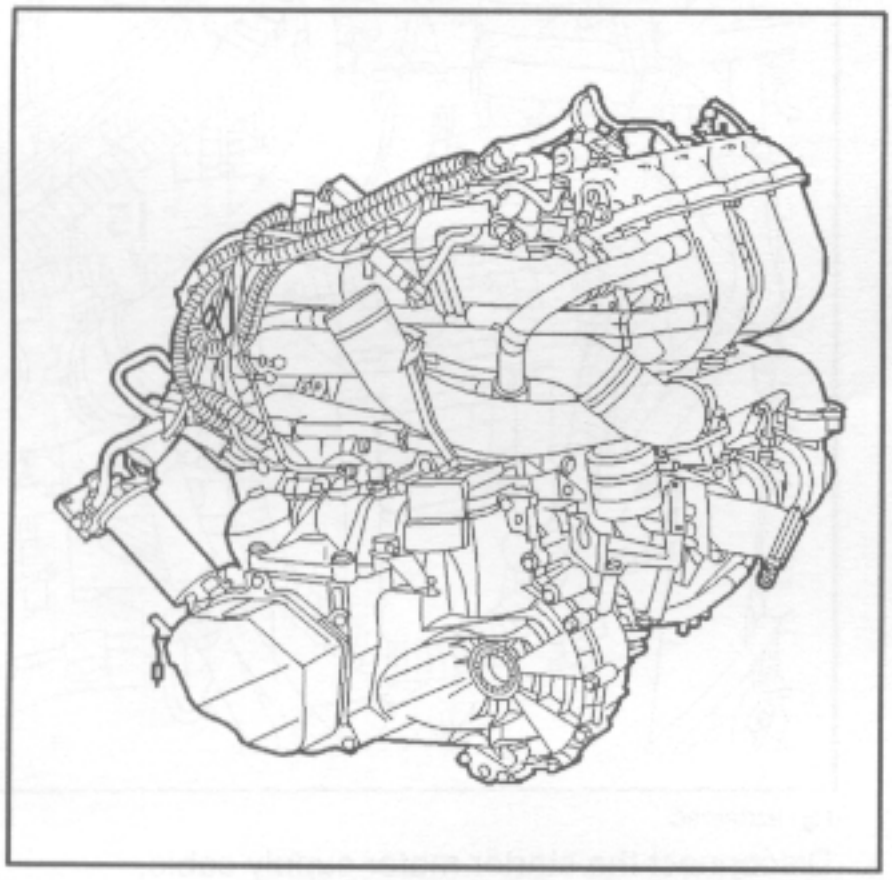


Fig : B2CP072C

Remove the power unit assembly (see the relevant operation).

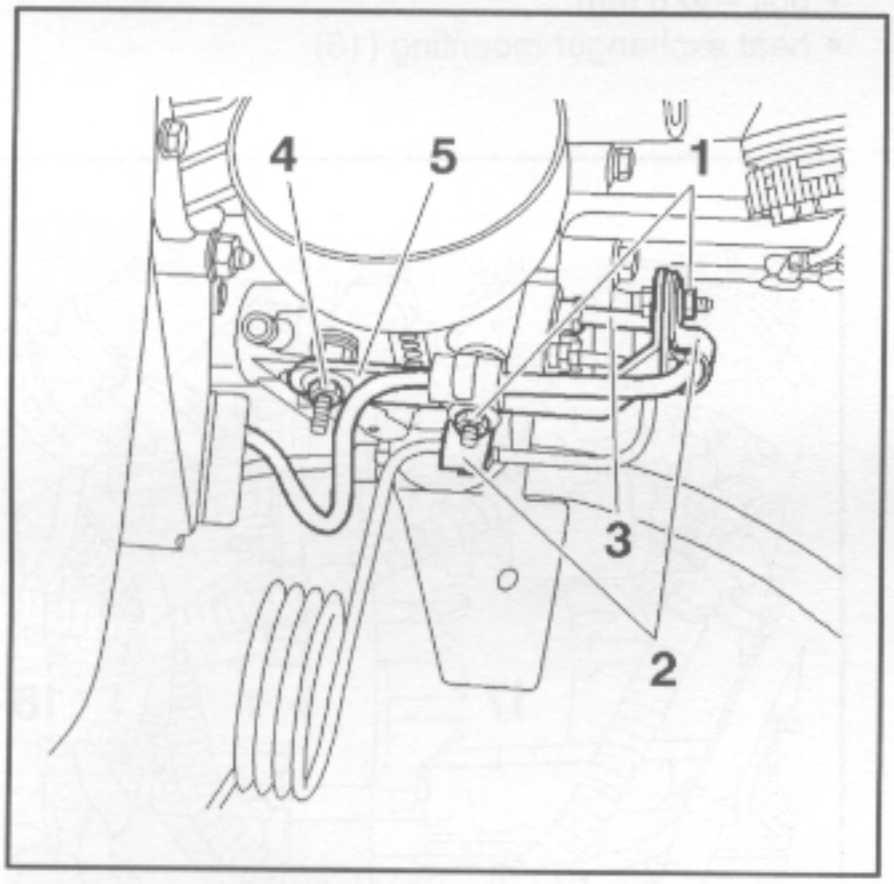


Fig : B2CP073C

Remove fixing nuts (1) from lugs (2).

Disengage the 2 lugs.

Uncouple pipe (3) from the pressure regulator.

Remove :

- nut (4)
- bracket (5)

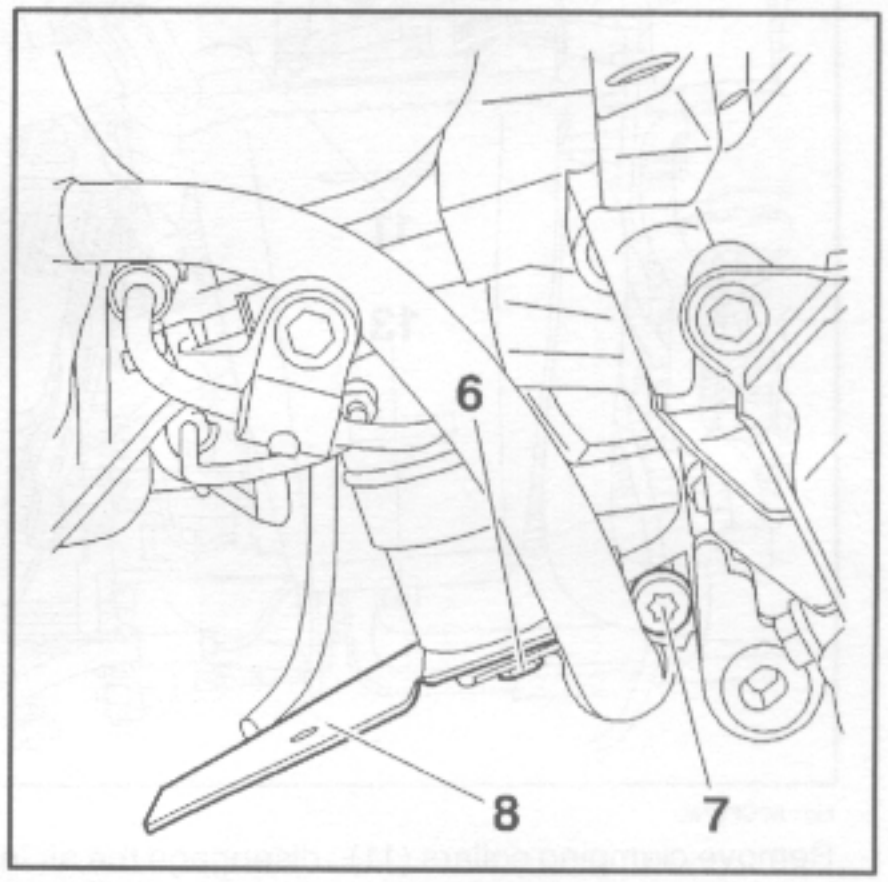


Fig : B2CP074C

Remove :

- screw (6)
- TORX screw (7)
- bracket (8)
- the pressure regulator

Disconnect the leads from the reversing lamp and the speed sensor.

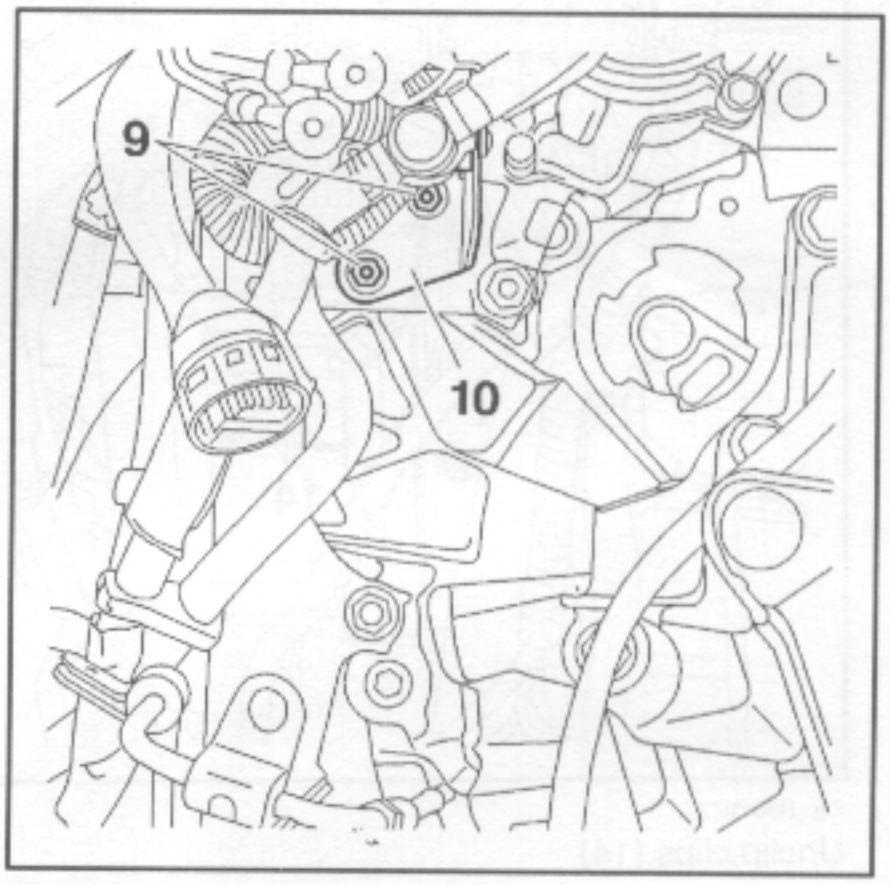


Fig : B2CP075C

Take out nuts (9).

Push bracket (10) aside.

www.WorkshopManuals.co.uk

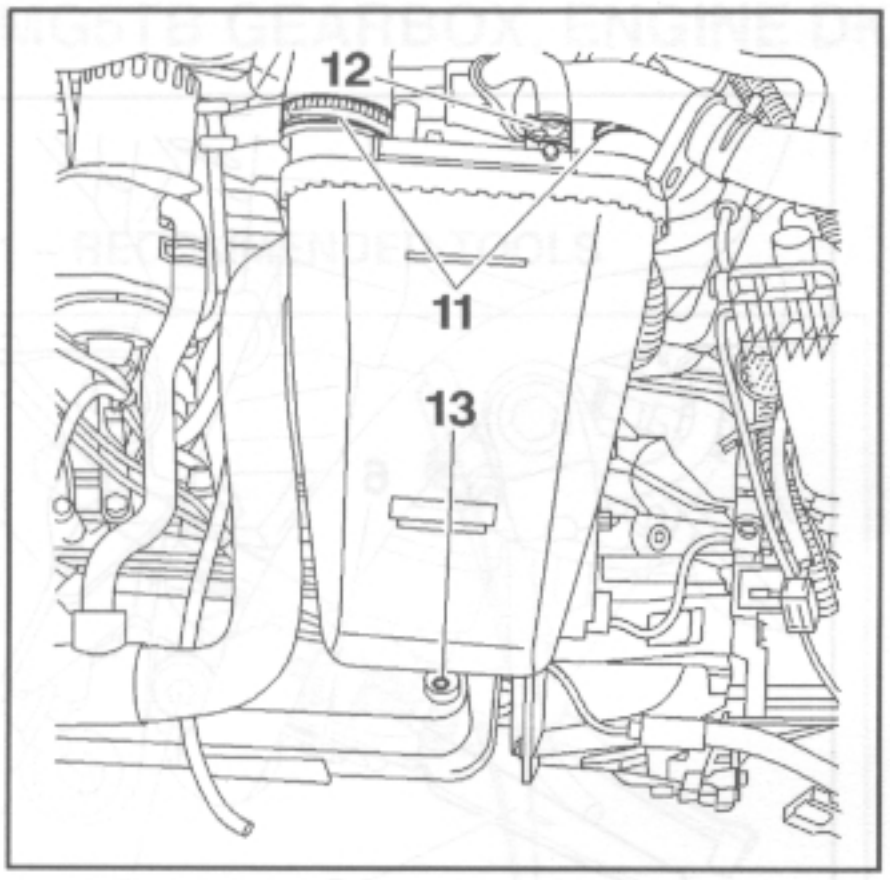


Fig : B2CP076C

Remove clamping collars (11) ; disengage the air inlet and outlet flexible hoses.

Take off clamping collar (12), using tool [1].

Disengage the water outlet connection hose.

Take out screw (13) ; dislocate the heat exchanger downwards.

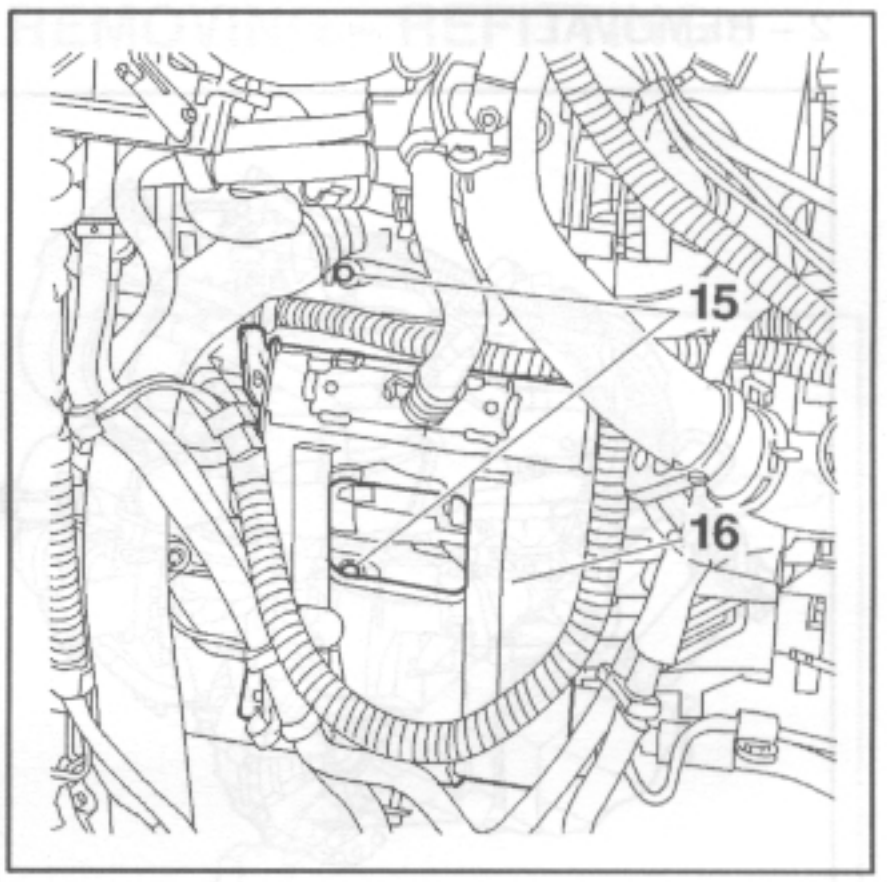


Fig : B2CP078C

Disconnect the starter motor supply cable.

Remove :

- screws (15)
- the 2 nuts (on the starter motor fixing screws)
- bolt – Ø 6 mm
- heat exchanger mounting (16)

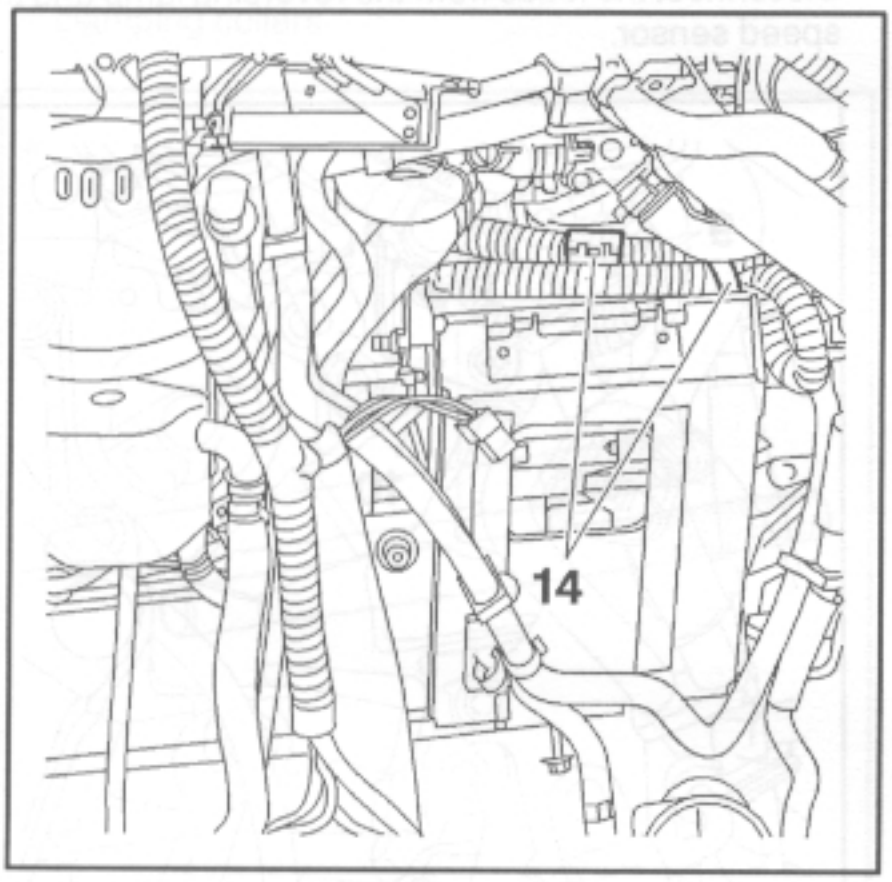


Fig : B2CP077C

Unclip clips (14).

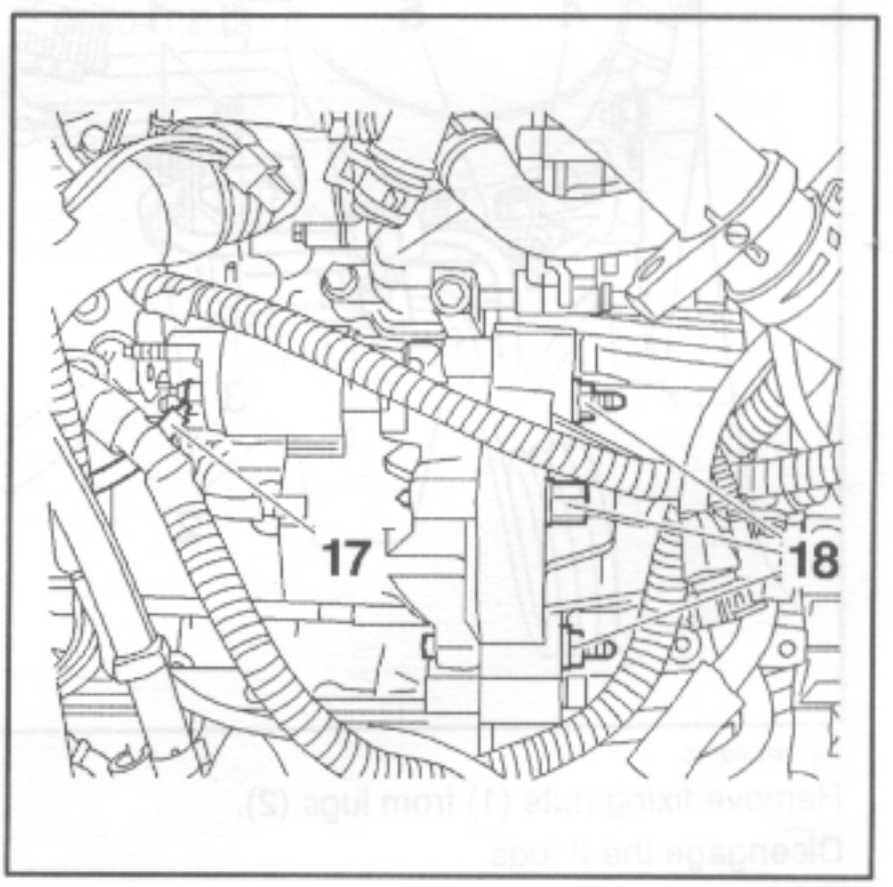


Fig : B2CP079C

Disconnect solenoid feed wire (17).

Remove the starter motor fixing bolts (18).

Disengage and remove the starter motor.

www.WorkshopManuals.co.uk

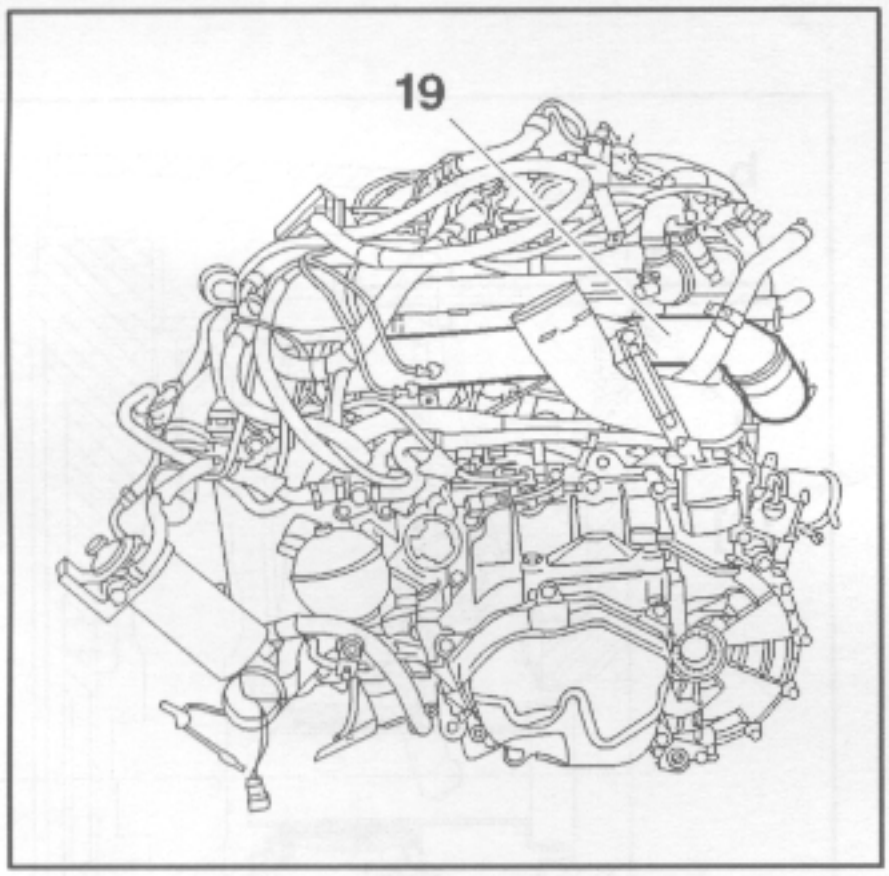


Fig : B2CP07AC

Remove :
- duct (19)
- the flywheel protection plate

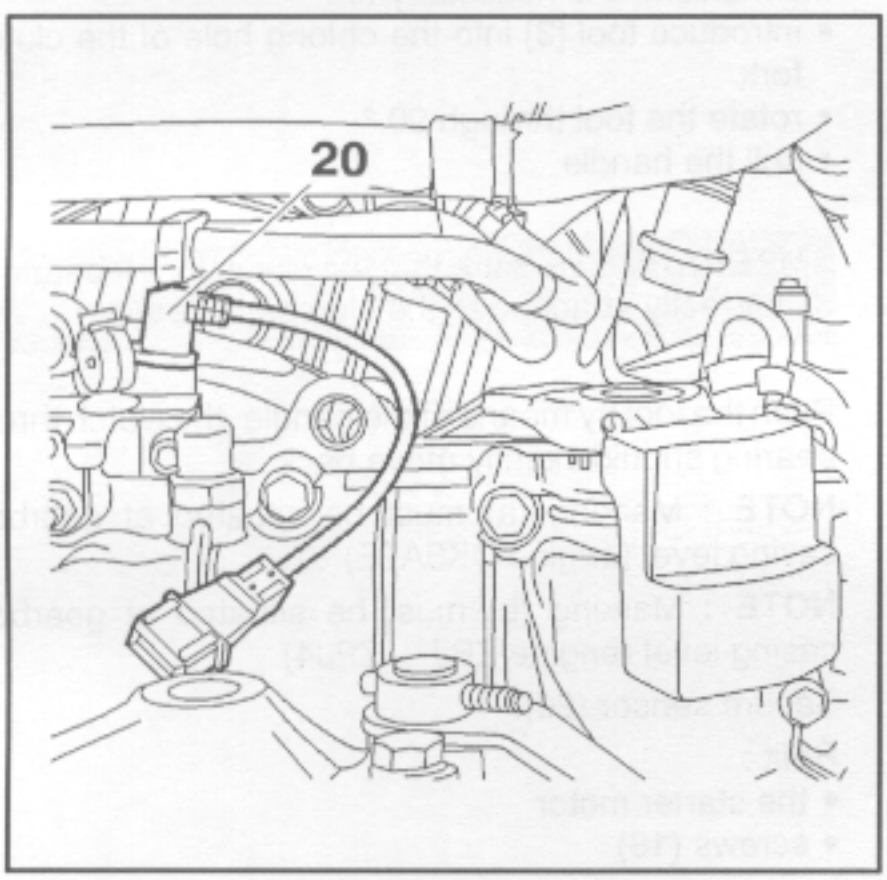


Fig : B2CP07BC

Remove the sensor (20).

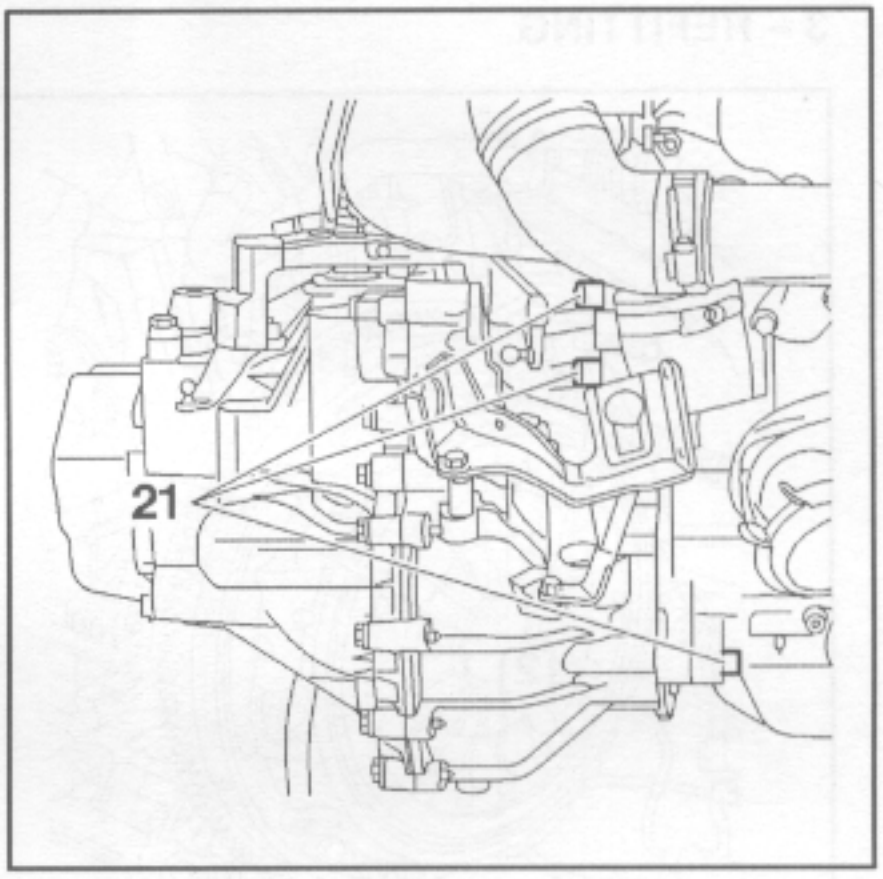


Fig : B2CP07CC

Remove :
- power unit assembly screws (21) : 6 screws 10 mm in Ø, 1 screw 8 mm in Ø
- the gearbox

www.WorkshopManuals.co.uk

3 – REFITTING

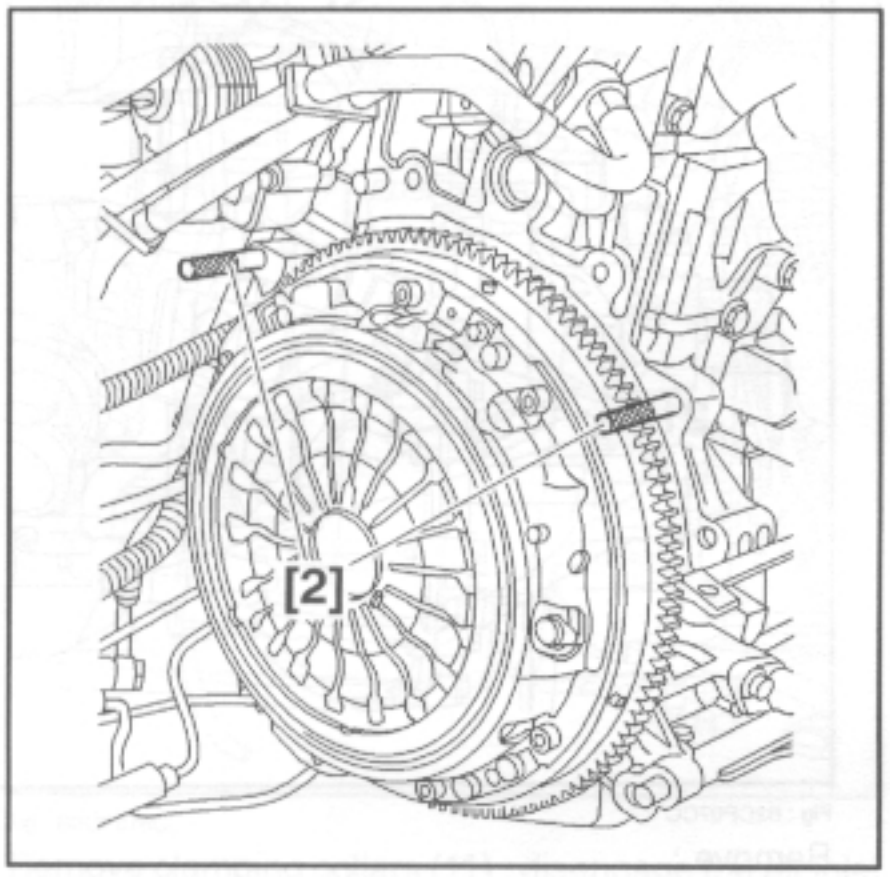


Fig : B2CP07DC

Introduce timing pegs [2].

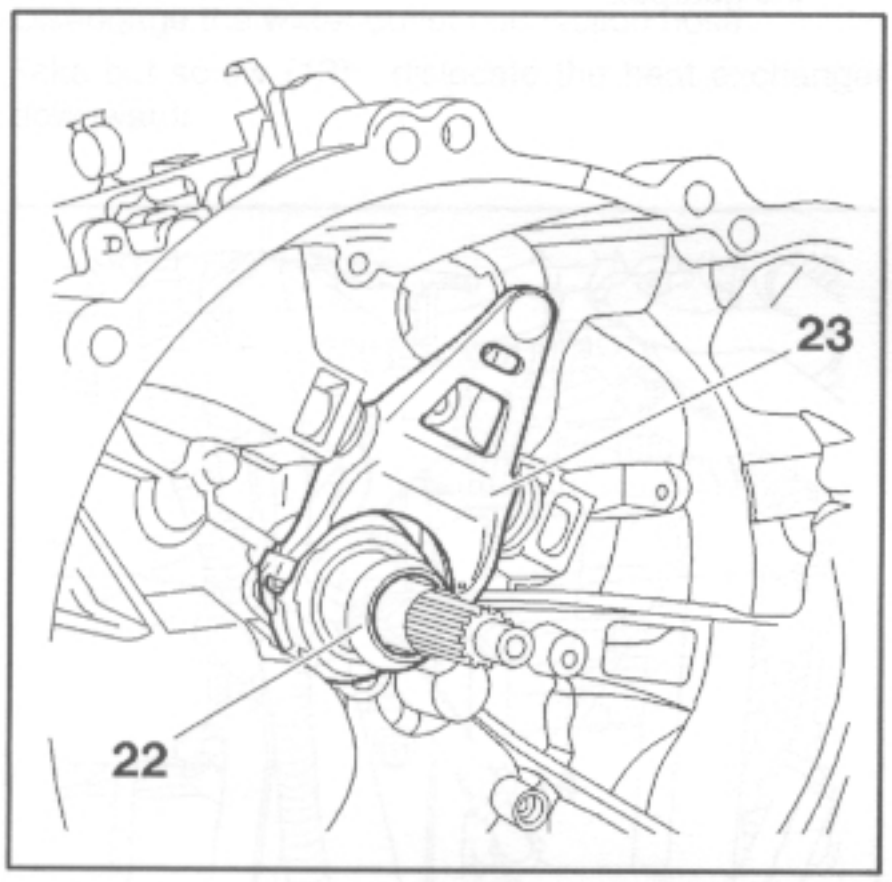


Fig : B2CP07EC

Place clutch thrust bearing (22) in position on the thrust bearing guide and engage clutch fork (23) simultaneously.

Grease the thrust bearing guide and the two ends of the clutch fork moderately.

Couple up the gearbox with the engine.

Refit and tighten screws (21) ; tightening torque : 5.5 m.daN.

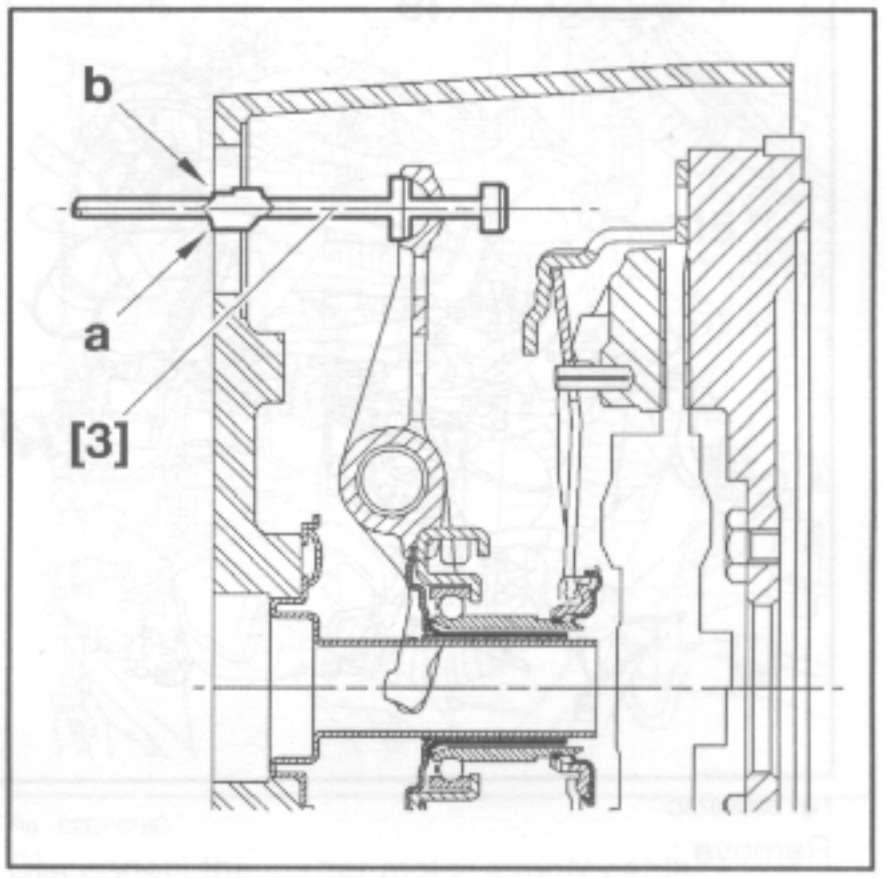


Fig : B2BP01GC

In order to clip the clutch thrust bearing to the clutch mechanism, it is necessary to :

- introduce tool [3] into the oblong hole of the clutch fork
- rotate the tool through 90 °
- pull the handle

IMPERATIVE : Ensure that the clutch thrust bearing is correctly attached to the clutch mechanism.

Push the tool by means of the handle, the clutch thrust bearing should slightly move back.

NOTE : Marking (a) must be situated at gearbox casing level (engine DK5ATE).

NOTE : Marking (b) must be situated at gearbox casing level (engine ZPJ ; ZPJ4).

Secure sensor (20).

Refit :

- the starter motor
- screws (18)

Reconnect solenoid feed wire (17).

Reinstall :

- heat exchanger mounting (16)
- the 2 nuts (on the starter motor fixing screws)
- bolt – Ø 6 mm
- screws (15)

Reconnect the starter motor supply cable.

Clip in place clips (14).

Fit :

- the heat exchanger ; locate it upwards
- screw (13)

www.WorkshopManuals.co.uk

Relocate :
- the water outlet hose
- clamping collar (12), using tool [1]
- the air ducts
- clamping collars (11)

Refit :
- mounting bracket (10)
- nuts (9)

Place the rubber pipes over a rigid duct.

Reconnect the reversing lamp and speed sensor leads.

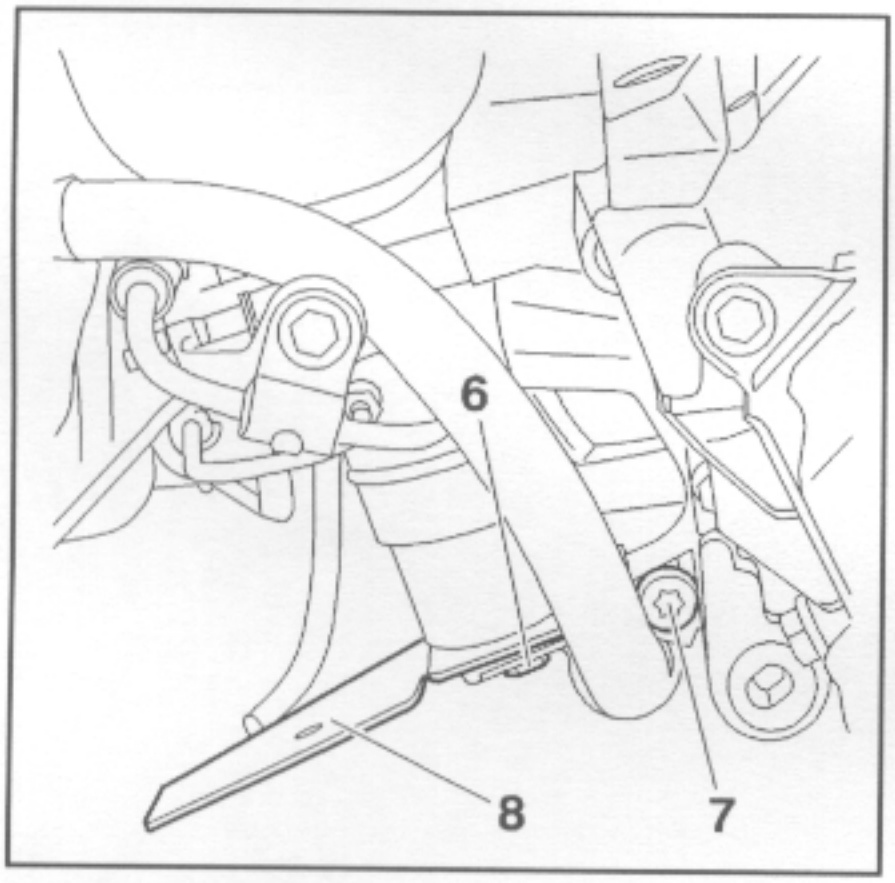


Fig : B2CP074C

Refit :
- the pressure regulator
- bracket (8)
- TORX screw (7)
- screw (6)
- bracket (5)
- nut (4)

Recouple pipe (3) with the pressure regulator.

Place back in position lugs (2).

Fit :
- nuts (1)
- duct (19)
- the flywheel protection plate

Relocate the engine-gearbox assembly (see the relevant operation).

www.WorkshopManuals.co.uk

XM

OCTOBER 1997

SUBSCRIPTION

RPO No: 7511

REF. 5 No XM 350-00/2

GEARBOX

- AUTOMATIC GEARBOX
  4HP20 type
  - Recommendations - Precautions
  - Data

MAN 108931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

1

GB

www.WorkshopManuals.co.uk

RECOMMENDATIONS – PRECAUTIONS

PROCEDURE BEFORE REPAIRS : AUTOMATIC GEARBOX 1

1 – Oil specification – oil level 1
2 – Checking using diagnostic equipment 2

PRECAUTIONS TO BE TAKEN : AUTOMATIC GEARBOX 3

1 – Towing 3
2 – Driving –
3 – Repairs to the electrical components –
4 – Repairs to the mechanical components –

GEARBOX

DATA : AUTOMATIC GEARBOX 4

1 – Identification 4
2 – Data 5
3 – Tightening torques –

FAULT FINDING : OIL LEAKS 9

www.WorkshopManuals.co.uk

PROCEDURE BEFORE REPAIRS : AUTOMATIC GEARBOX

In the event of a gearbox malfunction, there are 2 possible configurations available depending on the severity of the fault :

- gearbox in back–up mode with a substitute programme (the default values are used)
- gearbox in back–up mode with an emergency programme

WARNING : In the emergency programme, significant snatching can be felt when shifting P/R or N/R.

Meet of the customer.

Speak to the customer in order to find out the symptoms of the malfunction.

1 – OIL SPECIFICATION – OIL LEVEL

1.1 – Oil specification

If the gearbox displays a serious fault resulting in a malfunction or the destruction of a clutch, the oil will overheat and become contaminated with impurities (the oil is "burnt").

"Burnt" oil can be identified by its dark colour and its unpleasant smell.

IMPERATIVE : Replace the gearbox.

1.2 – Oil level

Prior conditions :

- hot oil (minimum 80 °C)
- foot on the brake, engage all the gears
- vehicle on a level surface
- the selector lever is in position P
- engine running

Check the oil level.

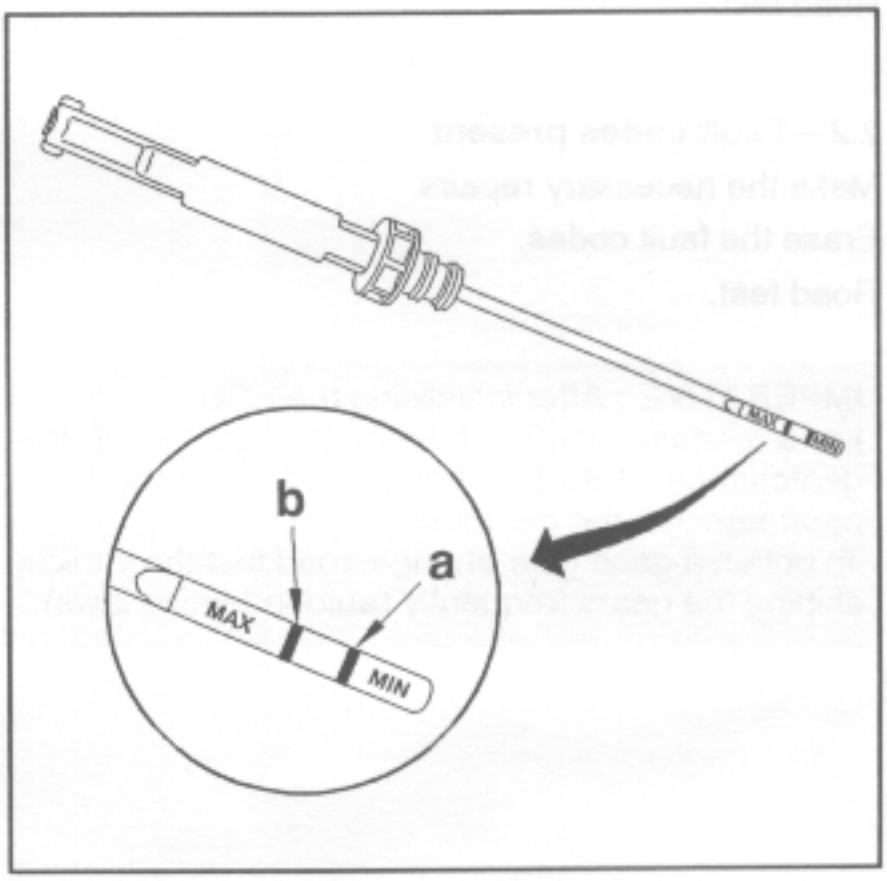


Fig : B2CP295C

The oil level on the dipstick should between the min "a" and max "b" marks.

IMPERATIVE : The oil level must never be above the max. mark "b".

If the oil level is too high, the following may occur :

- overheating of oil
- oil leaks

If the level is too low, the gearbox will be destroyed.

Top up the engine oil in the automatic gearbox to level (if necessary).

www.WorkshopManuals.co.uk

2 – CHECKING USING DIAGNOSTIC EQUIPMENT

Read the fault codes.

2.1 – No fault codes

Select " measure parameters".

Anomalies present :

- yes : make the necessary repairs
- no : carry out a reading of the engine ECU fault codes

Road test.

2.2 – Fault codes present

Make the necessary repairs.

Erase the fault codes.

Road test.

IMPERATIVE : After initialising the ECU :
for a certain length of time, the quality of the gearchange could be affected (adapting the ECU parameters to the gearbox).
To obtain a good gear change, road test the vehicle shifting the gears frequently (auto–adaptive laws).

www.WorkshopManuals.co.uk

PRECAUTIONS TO BE TAKEN : AUTOMATIC GEARBOX

1 – TOWING

It is necessary to lift up the front of the vehicle in order to tow it.

If it is not possible to lift up the front of the vehicle :
- the selection lever must be in position "N"
- do not add any oil
- do not exceed a speed of 70 km/h over a distance of 200 km

2 – DRIVING

Never drive with the ignition switched off.

Never push the vehicle in an attempt to start it (impossible with an automatic gearbox).

NOTE : Lubrication of the automatic gearbox is ensured only when the engine is running.

3 – REPAIRS TO THE ELECTRICAL COMPONENTS

Do not disconnect :
- the battery with the engine running
- the ECU with ignition on

Before re–connecting a connector, check :
- the condition of the various contacts (distortion, corrosion ...)
- the presence and condition of the connector locking mechanism

During electrical checks :
- the battery must be fully charged
- never use a voltage source higher than 16V
- never use a test lamp

4 – REPAIRS TO THE MECHANICAL COMPONENTS

Never place the gearbox on the ground without suitable protection.

Do not use the unions as handles to move the gearbox.

The torque convertor retaining pin must be fitted whenever the gearbox is removed.

The centring peg must be used to couple the gearbox to the engine.

Remove the centring peg just before coupling the gearbox to the engine.

www.WorkshopManuals.co.uk

DATA : AUTOMATIC GEARBOX

1 – IDENTIFICATION

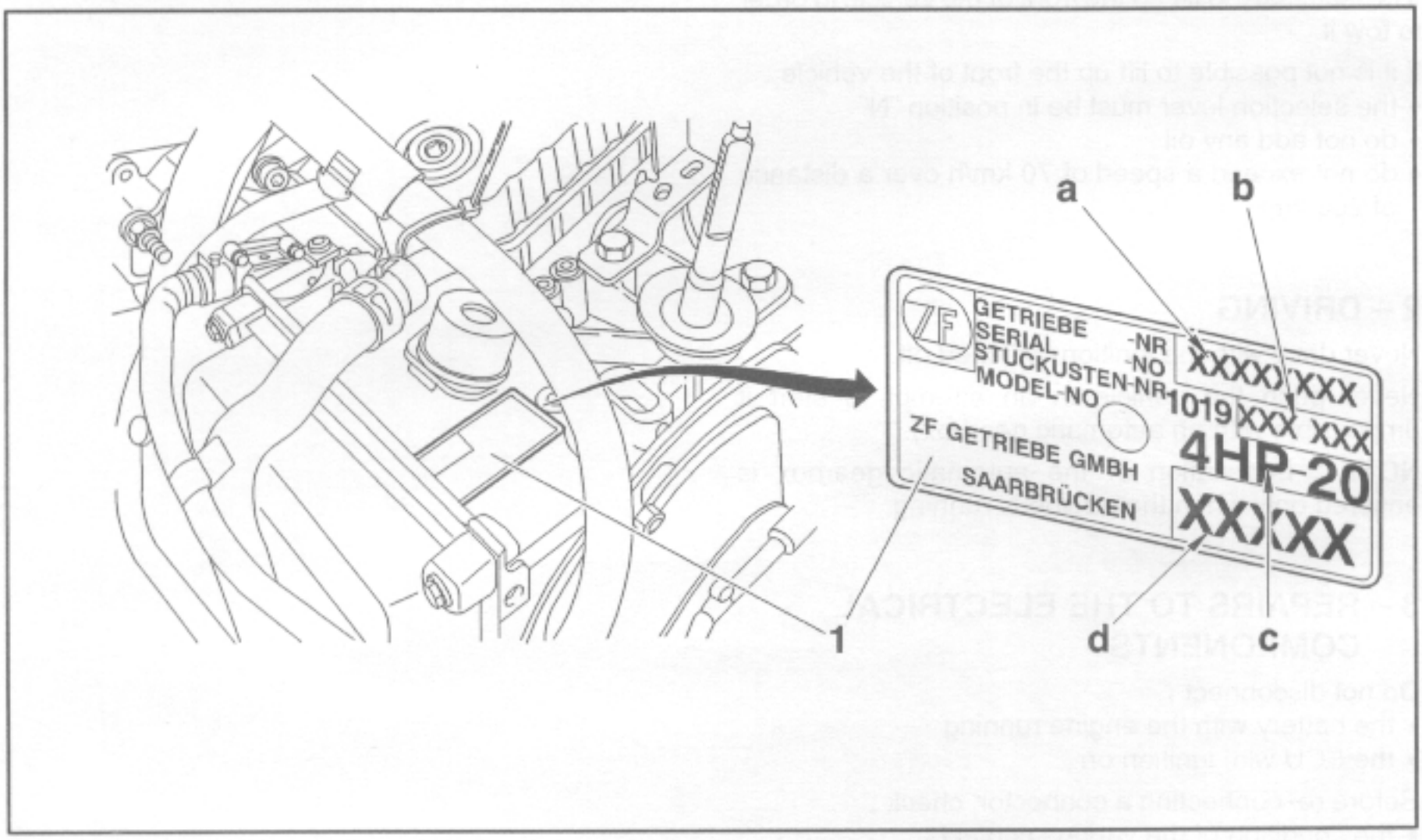


Fig : B2CP294D

(1) identification plate (riveted to the casing).

Description	Identification marking	Reference
Serial number	a	0002922
ZF identification number (last digits taken into account)	b	000017
Automatic gearbox type	c	4HP20
Component number	d	20HZ01

www.WorkshopManuals.co.uk

2 – DATA

1st	2nd	3rd	4th	Reverse	Final drive	Reduction gear	Speedometer drive ratio	
							Gear	Pinion
0.3192	0.5856	0.8676	1.2055	0.3379	20/69	59/68	25	20

Gears	Gearbox ratio	Overall ratio	Speed at 1000 rpm	
			Speed in km/h	Speed in mph
1st	0,3192	0,0925	10.95	6.79
2nd	0,5856	0,1697	20.09	12.47
3rd	0,8676	0,2514	29.77	18.48
4th	1,2055	0,3495	41.36	25.68
Reverse	0,3379	0,0979	11.59	7.19

Tyres (205/65 R 15V).
Rolling circumference : 1,973 m.

3 – TIGHTENING TORQUES

3.1 – Gearbox exterior

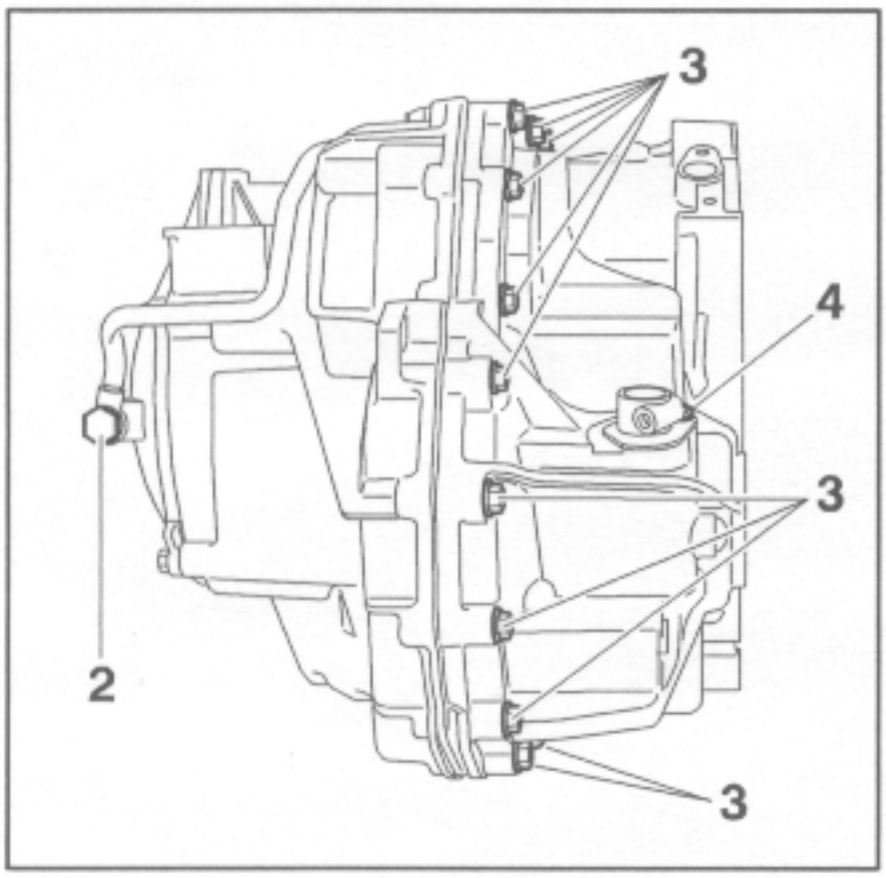


Fig : B2CP24AC

Item	Description	Number	Tightening torque (m.daN)
2	Oil pipe union fixing	2	2,5
3	Converter housing to mechanism housing exterior fixing	18	2,3
4	Speedometer drive fixing	1	0,8

www.WorkshopManuals.co.uk

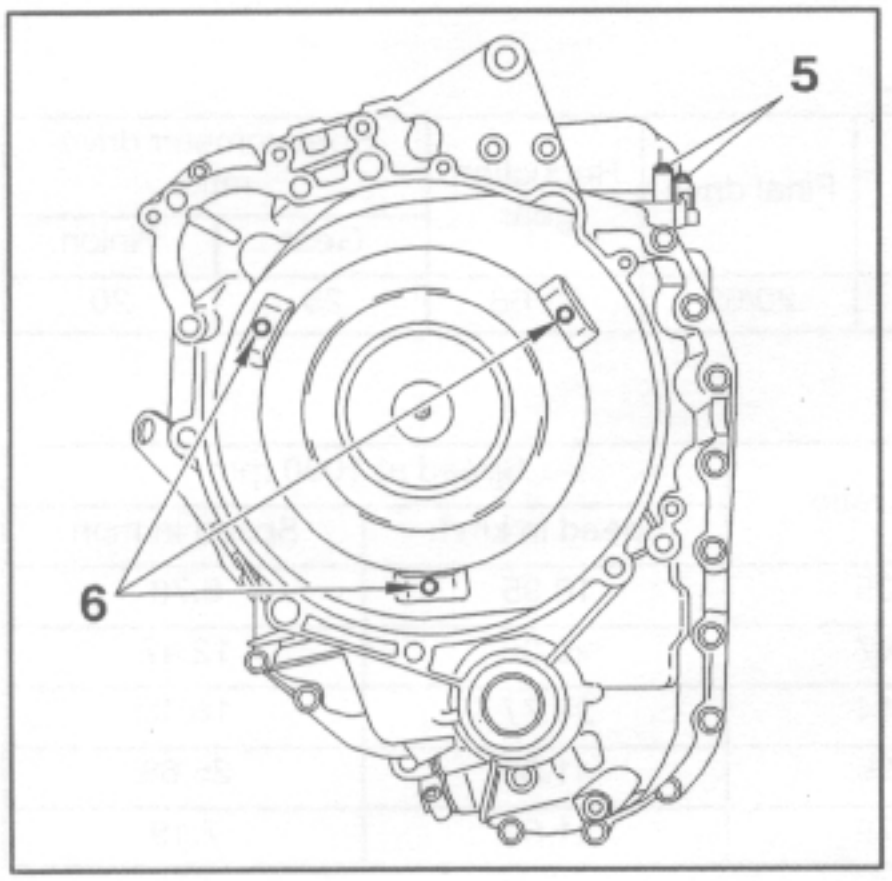


Fig : B2CP24BC

Item	Description	Number	Tightening torque (m.daN)
5	Steel cover fixing	4	0,6
6	Converter fixing to engine	3	6,5

www.WorkshopManuals.co.uk

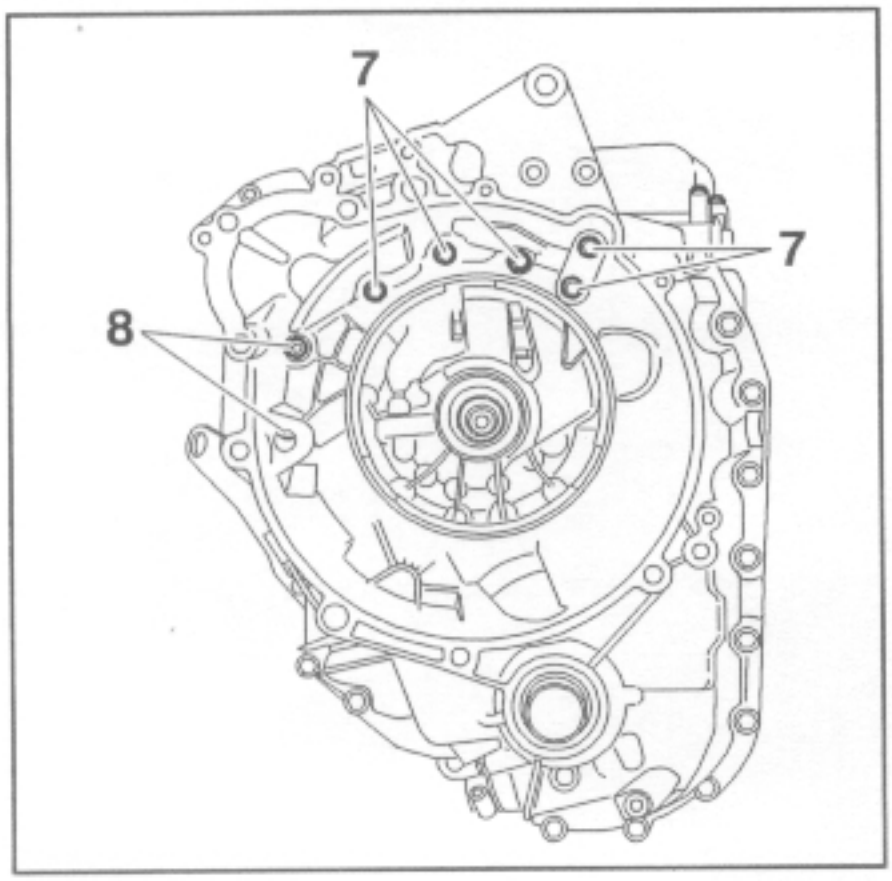


Fig : B2CP24CC

Item	Description	Number	Tightening torque (m.daN)
7	Converter housing to mechanism housing interior fixing	5	2,3
8	Converter housing to mechanism housing fixing (torx screw)	2	2,3
	Drain plug	1	4,5
	Heat exchanger fixing	2	3,5
	Selector lever position switch fixing	2	1
	Converter housing to engine block fixing	6	6,5

www.WorkshopManuals.co.uk

3.2 – Gearbox interior

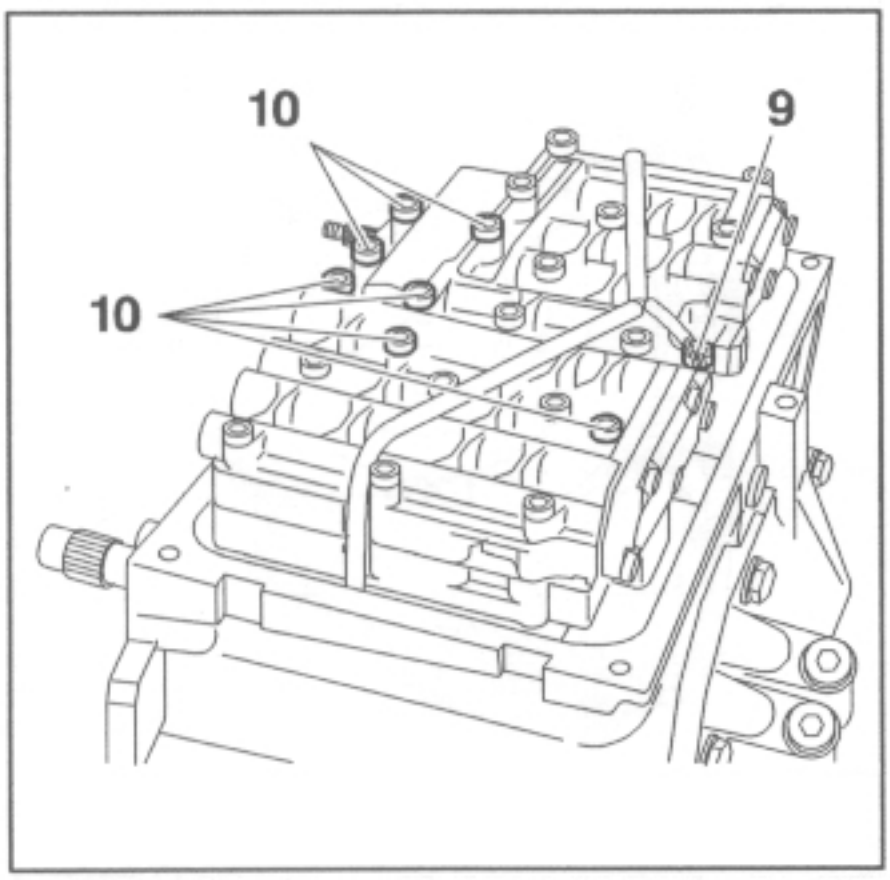


Fig : B2CP24DC

Item	Description	Number	Tightening torque (m.daN)
9	Input speed sensor fixing	1	0,8
10	Hydraulic valve block fixing (large head)	7	0,8

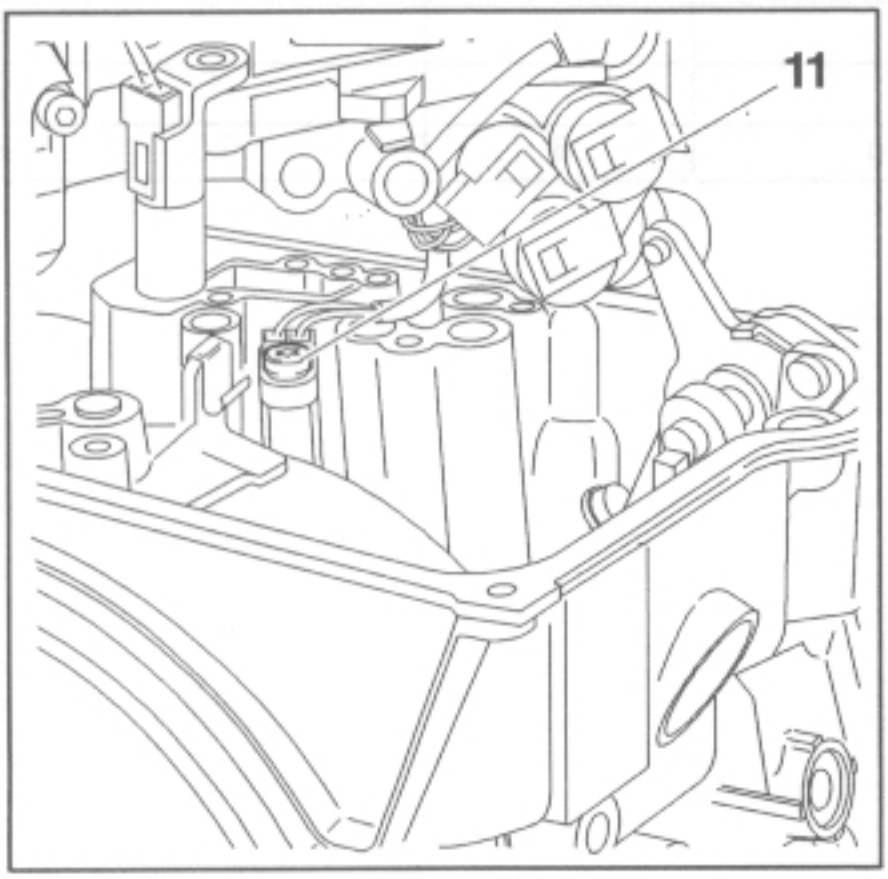


Fig : B2CP24EC

Item	Description	Number	Tightening torque (m.daN)
11	Output speed sensor fixing	1	1

www.WorkshopManuals.co.uk

FAULT FINDING : OIL LEAKS

A low fluid level can cause a drop in pressure or premature wear of the clutches.

IMPERATIVE : After any repair, check the oil level.

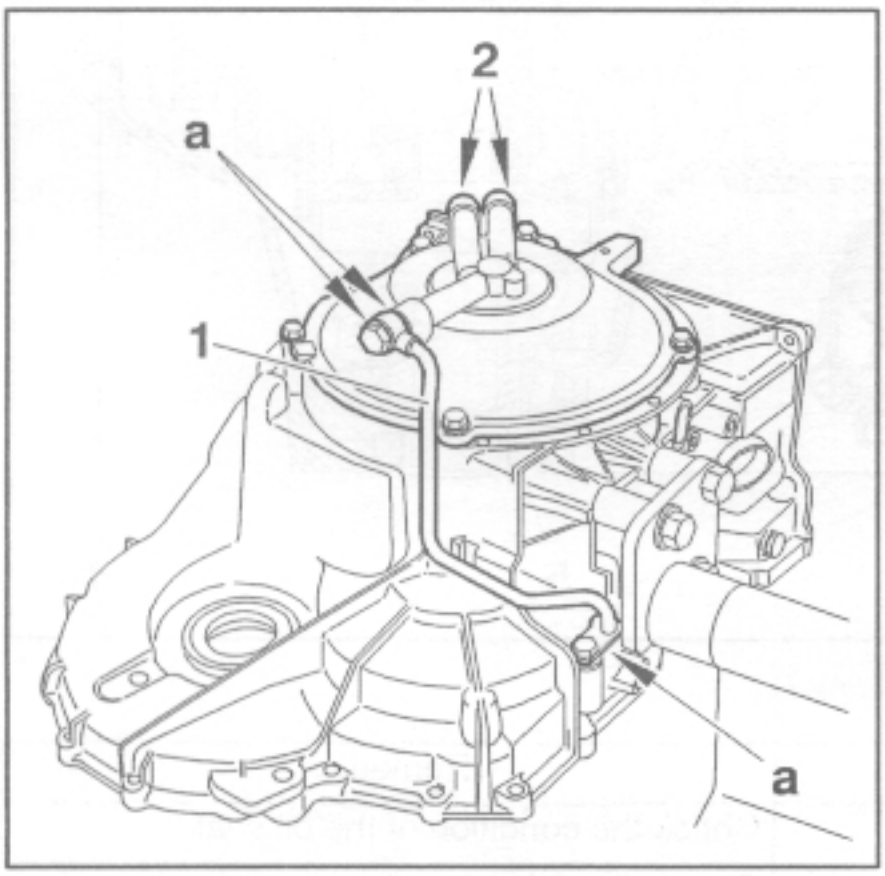


Fig : B2CP275C

Item	Source of the leaks	Remedies
1	Oil pipe between the front cover and the gearbox housing	Check the seals "a", check the tightening, visually check the pipe
2	Cover	Check the seals, check the tightening and condition of the O–ring seal

www.WorkshopManuals.co.uk

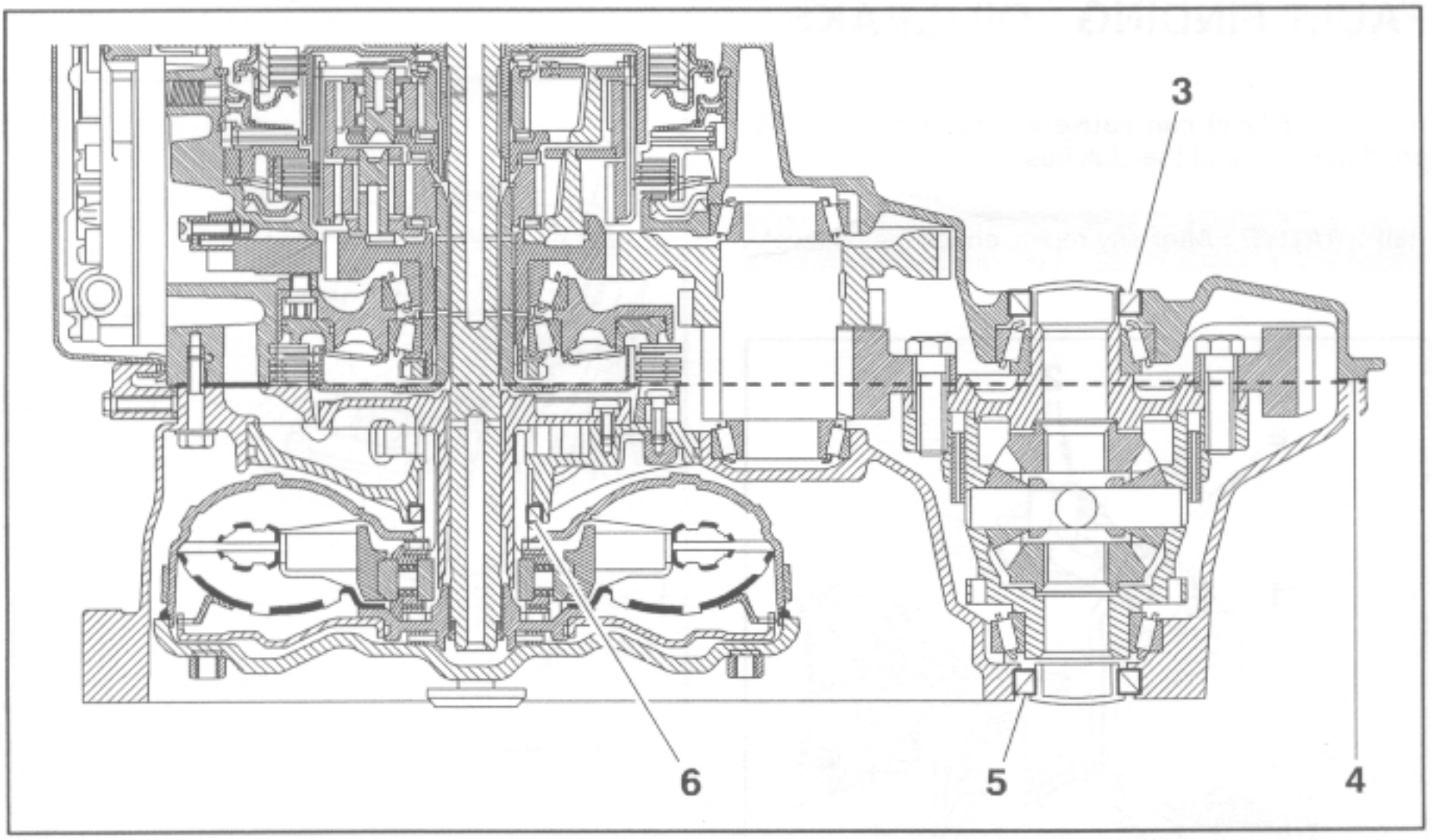


Fig : B2CP25ED

Item	Source of the leaks	Remedies
3	L.H. driveshaft	Check the condition of the oil seal
4	Between the gearbox and converter housings	Check the bolt tightening, replace the gearbox (if necessary)
5	R.H. driveshaft	Check the condition of the oil seal
6	Behind the converter	Check the condition of the seal

www.WorkshopManuals.co.uk

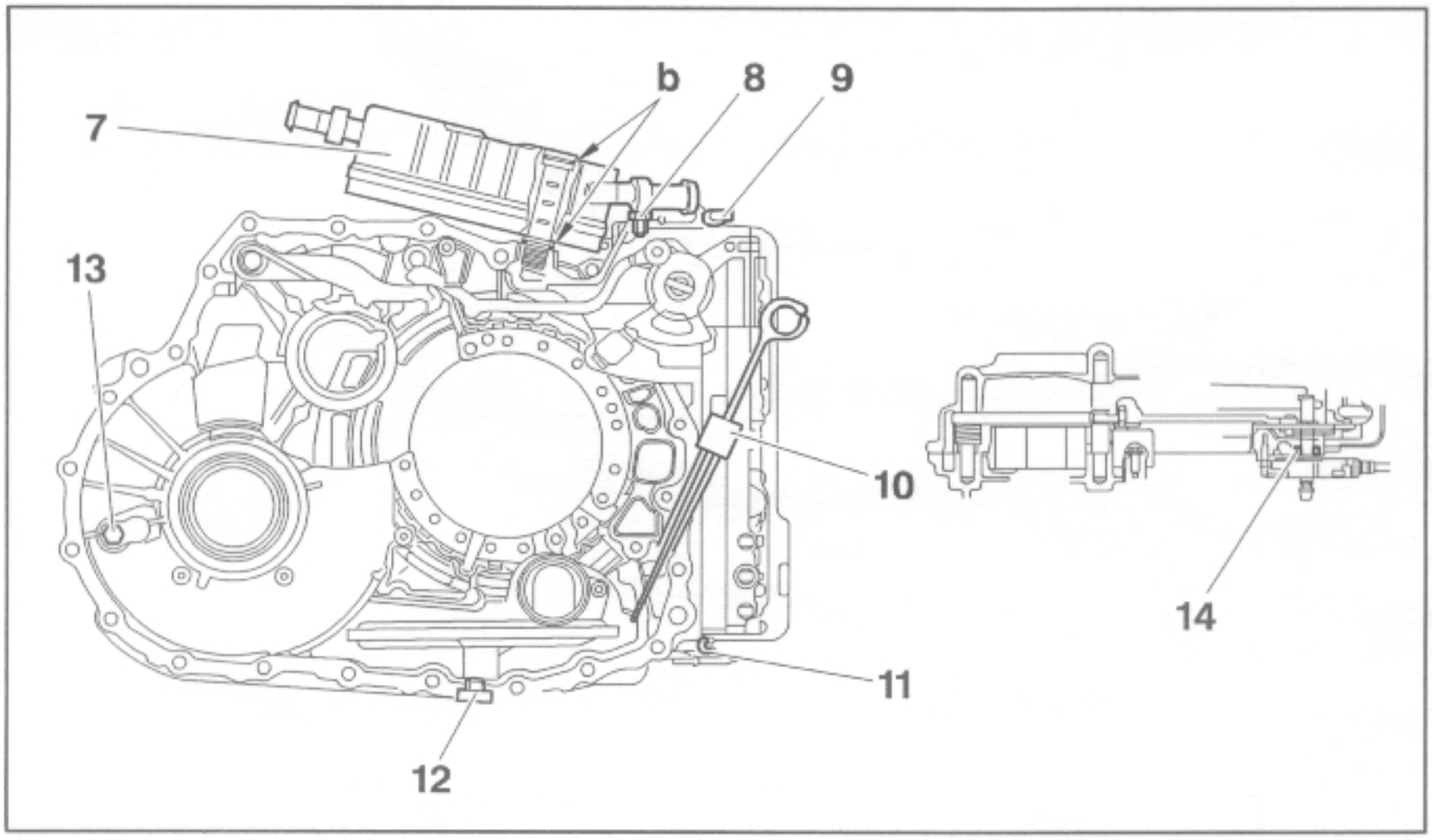


Fig : B2CP25FD

Item	Source of the leaks	Remedies
7	Heat exchanger	Check the presence and condition of the seals "b" on the inhex screws. Replace the seals or exchanger
8	Gearbox air vent	Check the oil level
9	Electrical connector	Check the seal. Check the screw tightening
10	Dipstick	Check if the dipstick is fitted correctly. Check the seal. Replace the O–ring seals
11	Gearbox oil sump seal	Check the screw tightening. Replace the oil sump seal. Ensure the tightening torque is correct
12	Drain screw	Check the seal. Check the fixing for tightness
13	Overflow screw on the converter housing	Check its condition. Check the fixing for tightness
14	Selector shaft between the selector lever position switch and the gearbox housing	Check the condition of the oil seal

www.WorkshopManuals.co.uk

Xm

31st JULY 1995

ABONNEMENT GME

REF. 5 No XM 350-0/2

GEARBOX

● AUTOMATIC GEARBOX
Checking and adjusting : the load correction cable

MAN 058931

GB

1

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

CHECKING–ADJUSTING : THE LOAD CORRECTION CABLE

1 – CRIMPING THE LUG

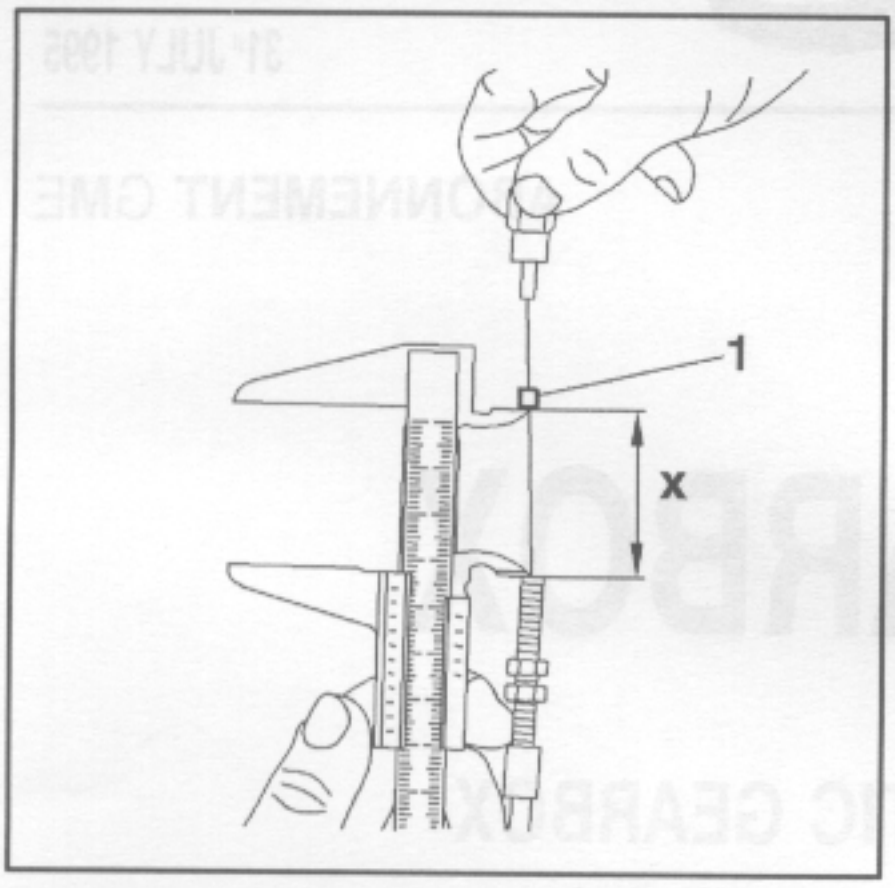


Fig : B2CP10GC

Lug (1) should be crimped to a new cable, only.

NOTE : In the case of a gearbox being replaced, the cable is provided with a lug crimped by the supplier, at distances which differ with the engines.

Engine types	Dimension "X"
XU10J2	43 mm
XU10J2TE	43 mm
XU10J4R	42 mm
XUD11ATE	44 mm
ZPJ	46 mm

Above values correspond to a cable which has been tensioned until the cam hard point is reached (cable in the vertical position and attached to the gearbox, only).

2 – CHECKING THE KICK DOWN CABLE (IN THE VEHICLE)

2.1 – Checking the lug crimping

Pull on the cable until resistance is felt.

For all engine types, dimension "B" should be equal to 39 mm.

Dimension "B" not correct : replace the cable.

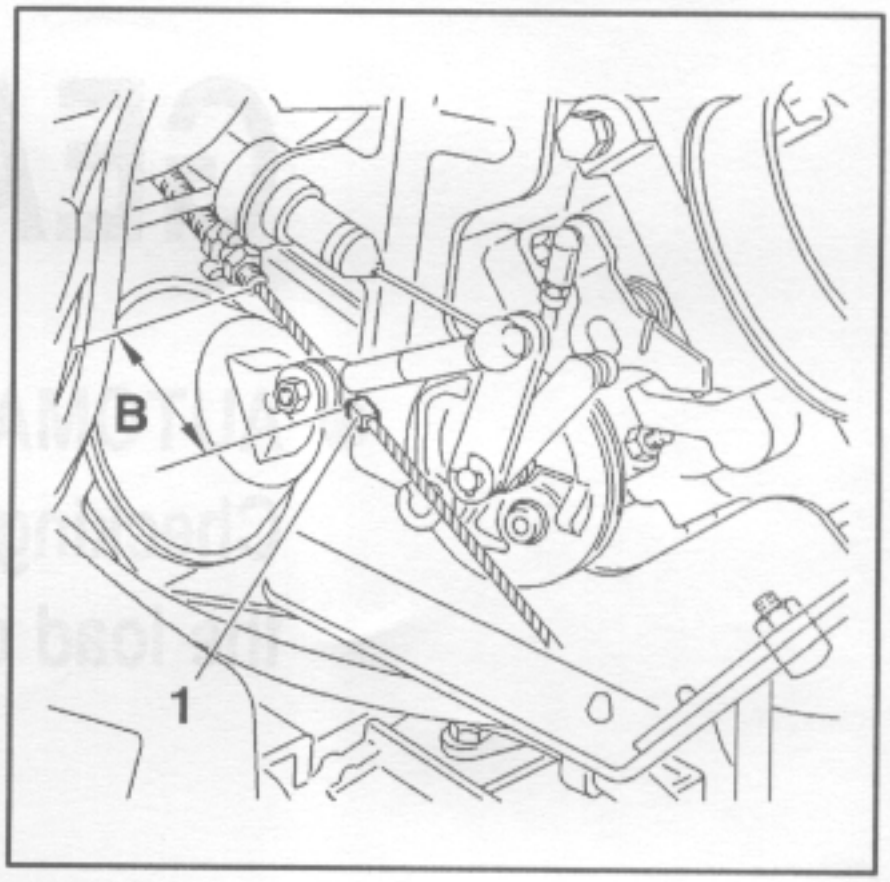


Fig : B2CP10HC

Engine ZPJ.

www.WorkshopManuals.co.uk

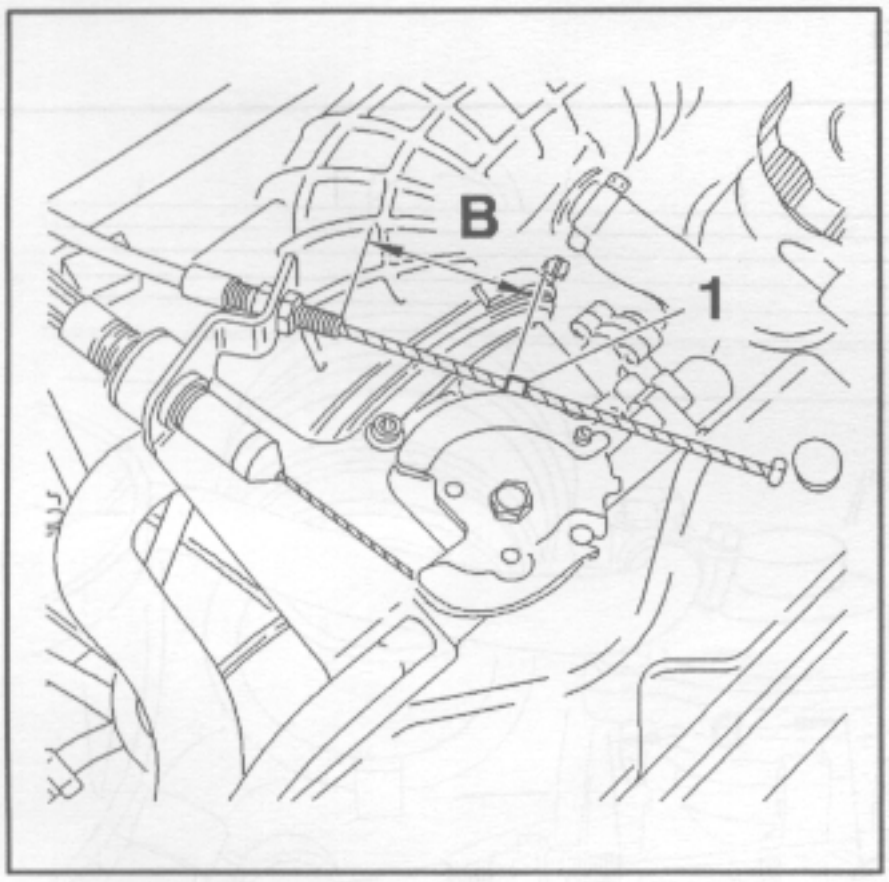


Fig : B2CP10JC
Engine XU10J2/J2TE.

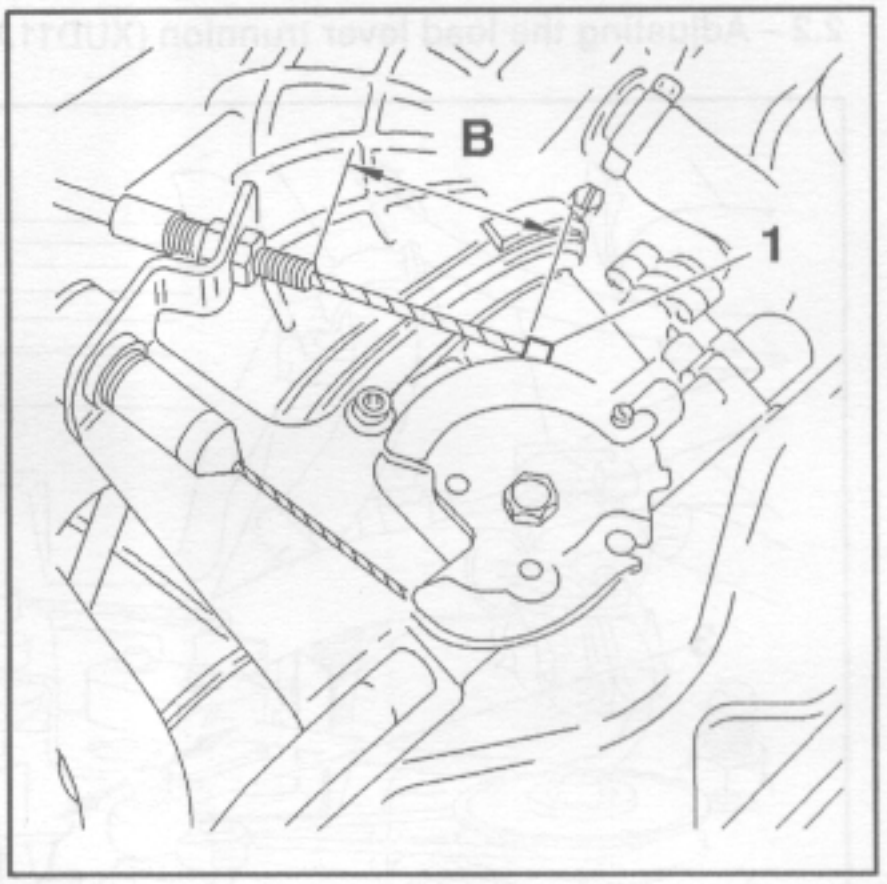


Fig : B2CP10KC
Engine XU10J4R.

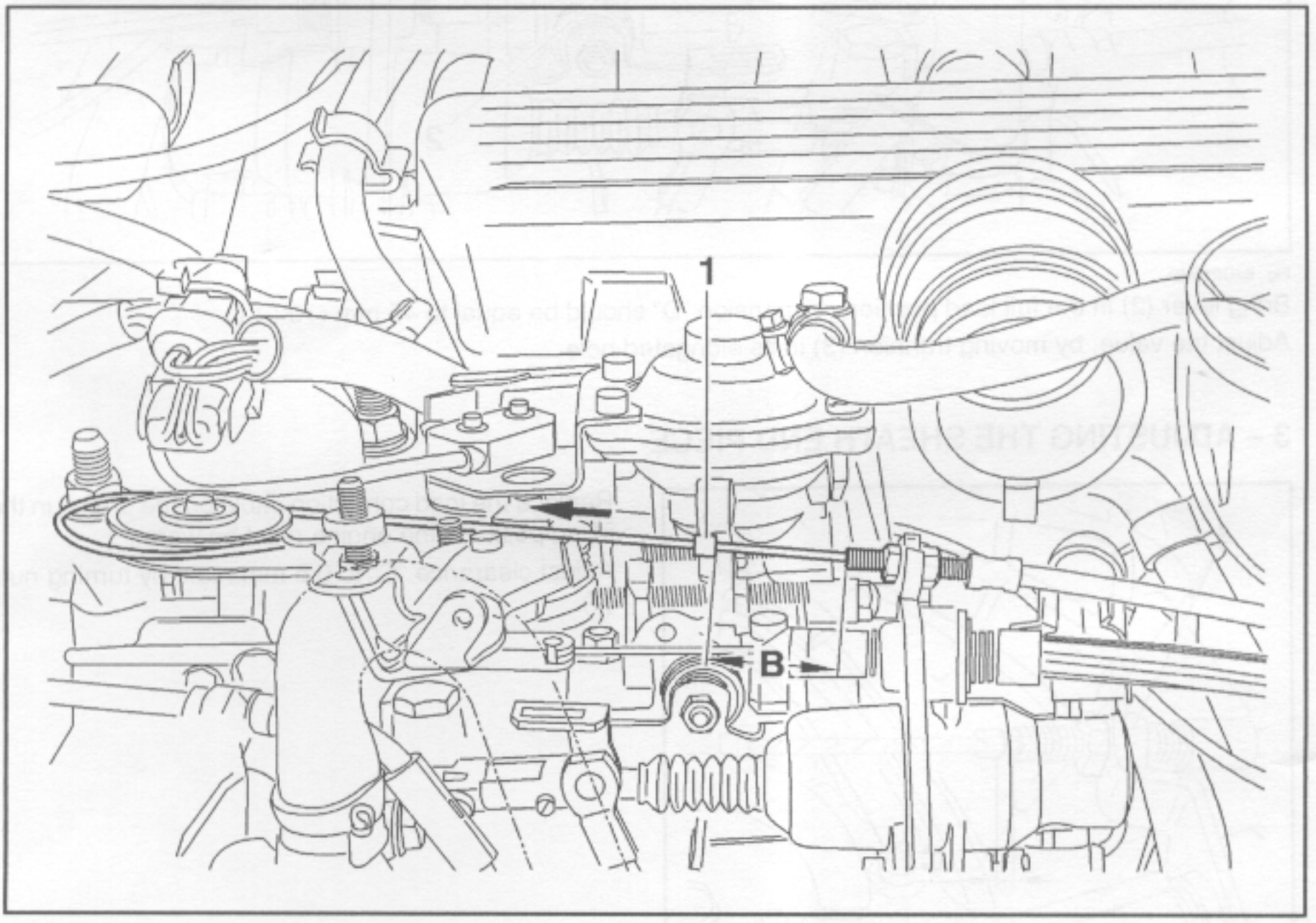


Fig : B2CP10LD
Engine XUD11ATE.

www.WorkshopManuals.co.uk

2.2 – Adjusting the load lever trunnion (XUD11ATE)

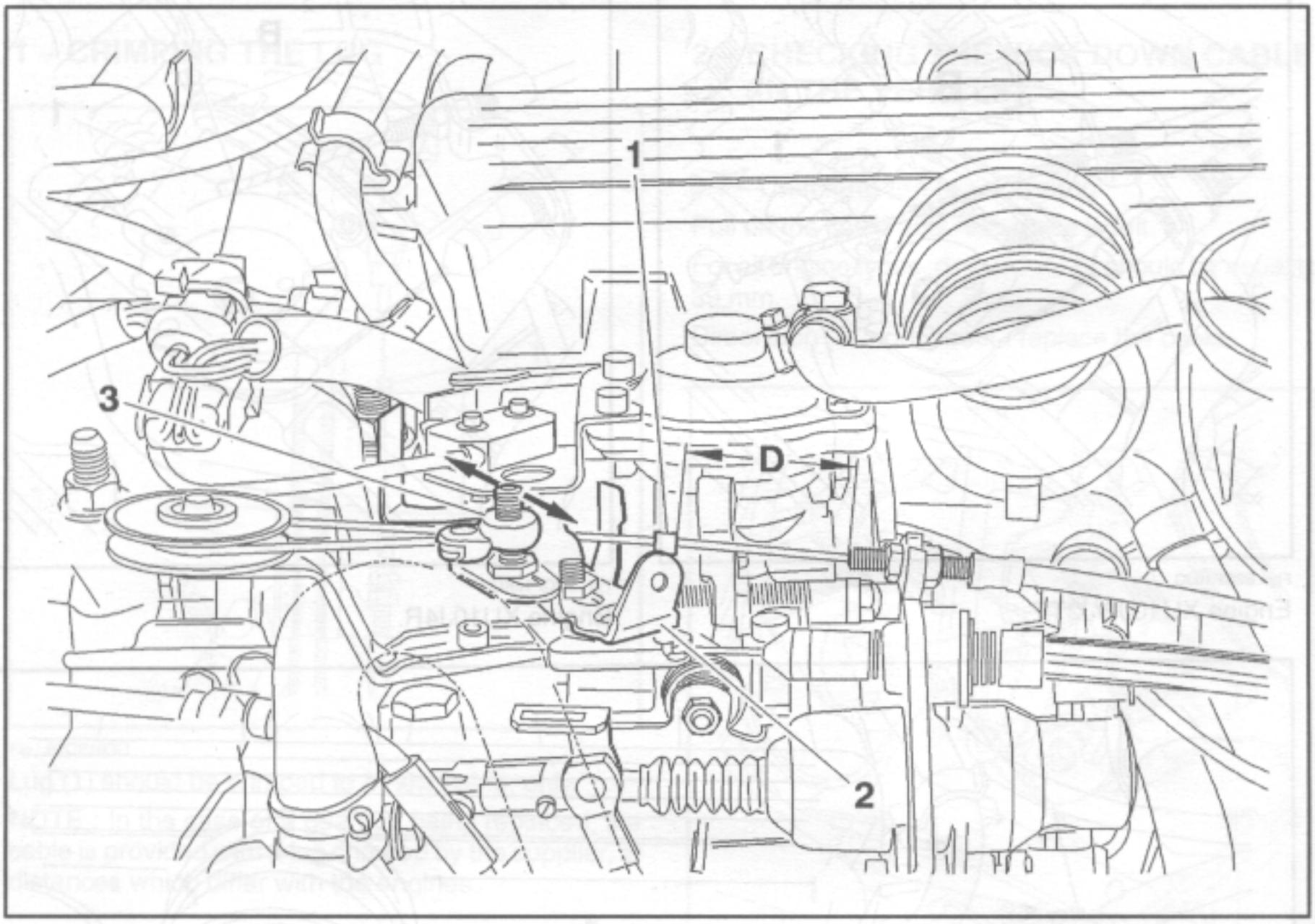


Fig : B2CP10MD

Bring lever (2) in the full load position ; dimension "D" should be equal to 45 mm (+0 ; +1).
Adjust the value, by moving trunnion (3) in its elongated hole.

3 – ADJUSTING THE SHEATH END PIECE

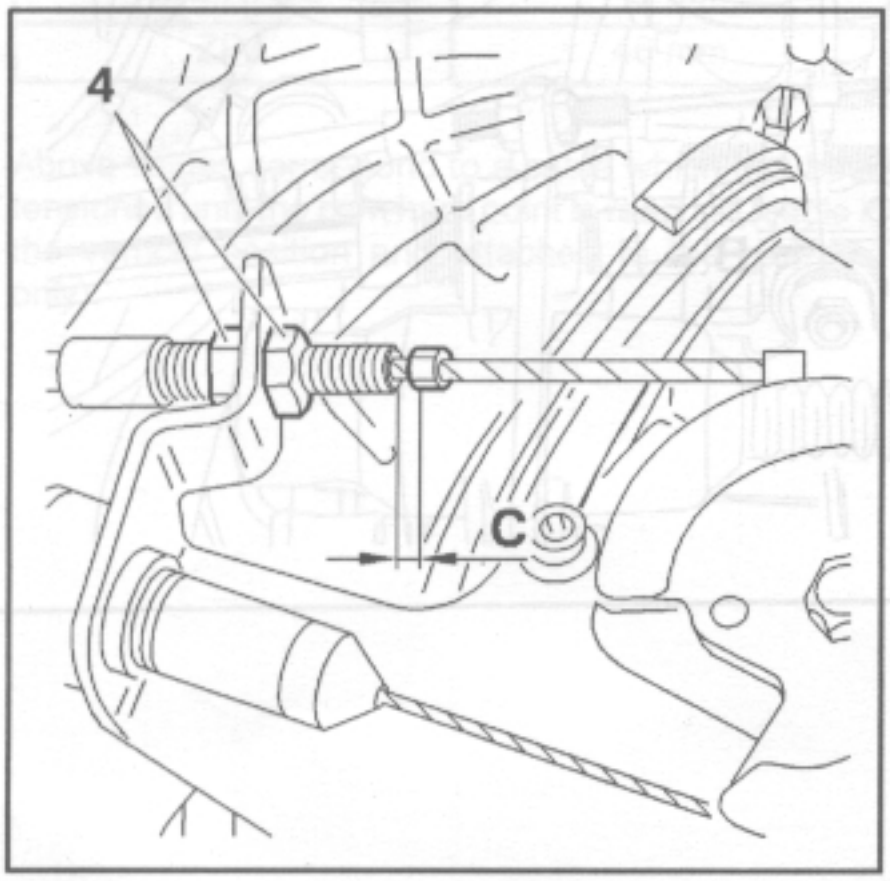


Fig : B2CP10NC

Replace the load correction cable on the drum ; in the idling position, the engine must be warm.
Adjust clearance "C" to 0.5 mm max. by turning nuts (4).

www.WorkshopManuals.co.uk

Xm

OCTOBER 1997

SUBSCRIPTION

RPO No: 7511

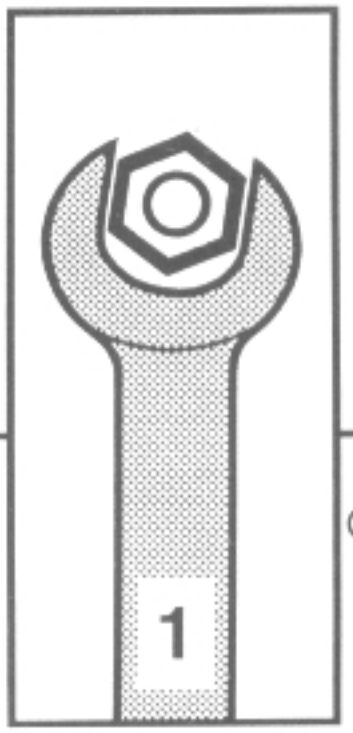
REF. 5 No XM 350-1/2

GEARBOX

- **AUTOMATIC GEARBOX**
  4HP20 type
  - Repairs

MAN 108931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".



GB

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

GEARBOX

DRAINING – REFILLING : AUTOMATIC GEARBOX **1**

1 – Draining 1
2 – Refilling –
3 – Checking the oil level 2
4 – Precautions to be taken –

INITIALISATION PROCEDURE : ELECTRONIC CONTROL UNIT **3**

REMOVING – REFITTING : AUTOMATIC GEARBOX **4**

1 – Recommended tools 4
2 – Preliminary operations 5
3 – Uncoupling –
4 – Coupling 6

REMOVING – REFITTING : HYDRAULIC VALVE BLOCK **7**

1 – Removing 7
2 – Refitting 9

REMOVING – REFITTING : INPUT SPEED SENSOR **10**

1 – Removing 10
2 – Refitting 11

REMOVING – REFITTING : OUTPUT SPEED SENSOR **12**

1 – Removing 12
2 – Refitting –

REMOVING – REFITTING : OIL TEMPERATURE SENSOR **13**

1 – Removing 13
2 – Refitting –

REMOVING – REFITTING : SELECTION LEVER POSITION SWITCH AND SEAL **14**

1 – Recommended tools 14
2 – Removing –
3 – Refitting 15

REMOVING – REFITTING : LOAD POTENTIOMETER **16**

1 – Removing 16
2 – Refitting –

REMOVING – REFITTING : SPEEDOMETER DRIVE **17**

1 – Removing 17
2 – Refitting –

www.WorkshopManuals.co.uk

REMOVING – REFITTING : ENGINE SPEED SENSOR 18

1 – Recommended tools 18
2 – Removing –
3 – Refitting 19

REMOVING – REFITTING : HEAT EXCHANGER 20

1 – Recommended tools 20
2 – Removing –
3 – Refitting 21

REMOVING – REFITTING : THE CONVERTER AND ITS SEAL 22

1 – Recommended tools 22
2 – Removing 23
3 – Refitting –

REMOVING – REFITTING : DRIVESHAFT SEAL 24

1 – Recommended tools 24
2 – Removing 25
3 – Refitting 26

www.WorkshopManuals.co.uk

DRAINING – REFILLING : AUTOMATIC GEARBOX

1 – DRAINING

WARNING : The gearbox should be drained if repairs are carried out.

IMPERATIVE : The gearbox must be drained when the oil is hot (80 °C minimum), to eliminate the impurities suspended in the oil.

NOTE : The oil change is partial, since the converter cannot be totally drained.

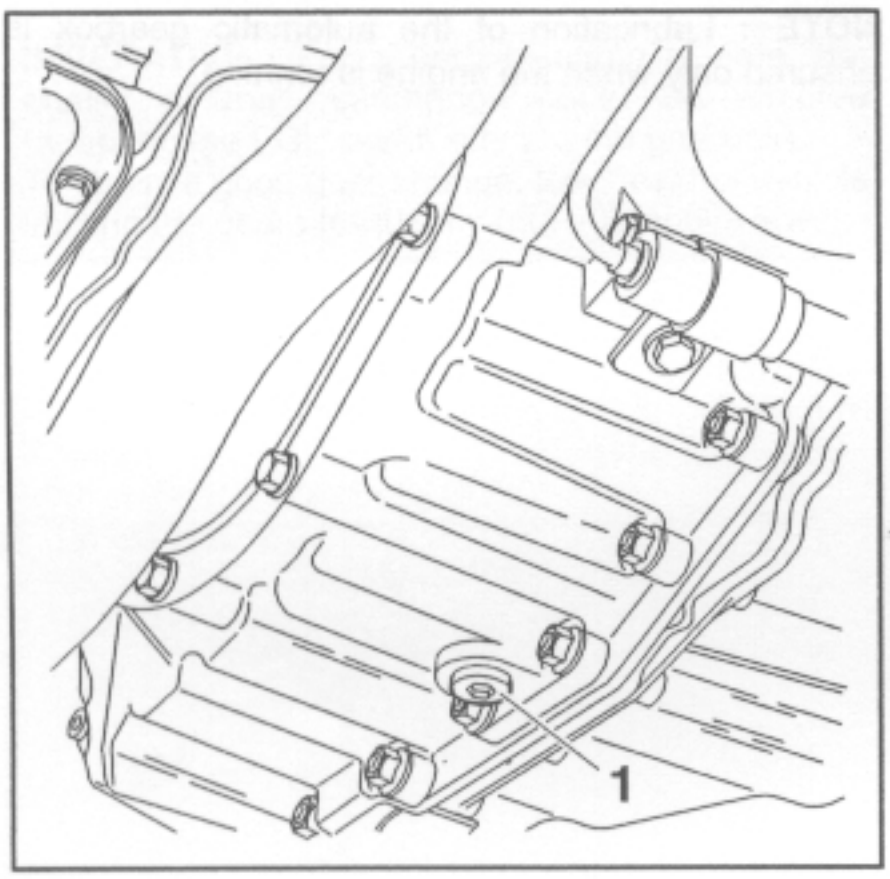


Fig : B2CP266C

Remove :
- the oil dipstick
- the drain plug (1)

2 – REFILLING

Refit the drain plug (1).

Filling is through the dipstick tube.

Use a funnel with a very fine filter (mesh of 0,15 mm maximum).

IMPERATIVE : Do not add any other fluid than the oil recommended.

Total oil capacity	7,7 litres (minimum). 8,3 litres (maximum).
Oil remaining after draining	4,7 litres (minimum). 5,3 litres (maximum)
Quantity of oil to be replaced	3 litres (approximately)

Refit the oil dipstick.

www.WorkshopManuals.co.uk

3 – CHECKING THE OIL LEVEL

Prior conditions :
- vehicle on a level surface
- hot oil (minimum 80 °C)
- foot on the brake, move the lever through the various selector positions
- the selector lever is in position P
- engine running

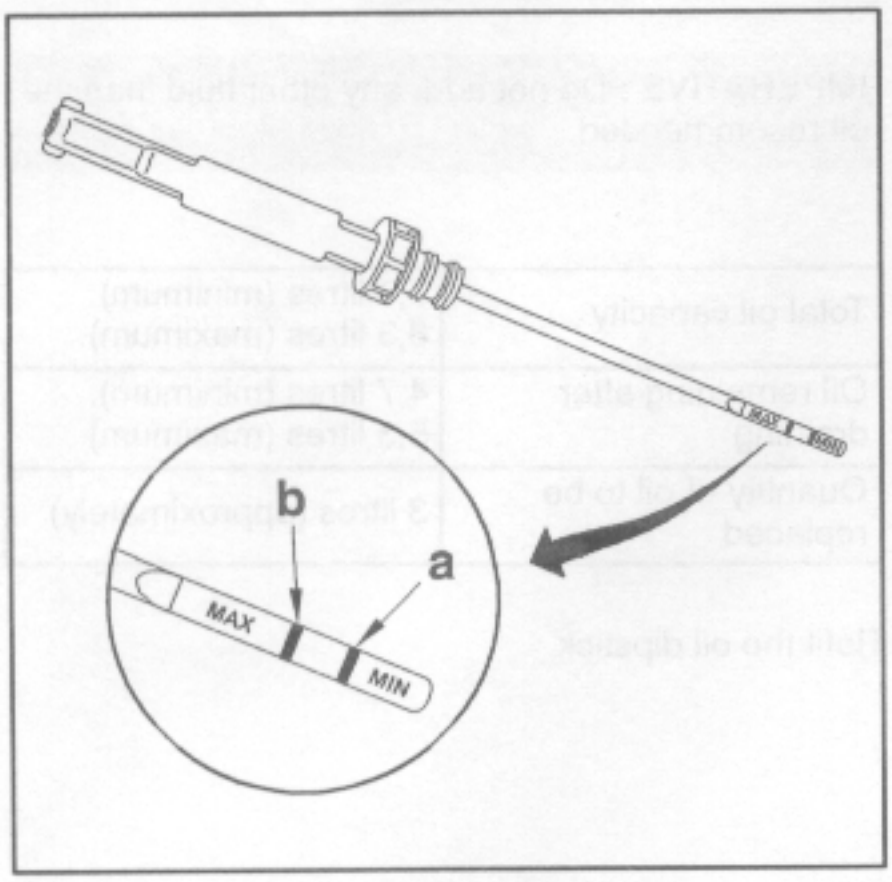


Fig : B2CP295C

The oil level must be between the min. "a" and max. "b" marks.

IMPERATIVE : The fluid level must never be above the max. mark.

If the oil level is too high, the following may occur :
- overheating of oil
- oil leaks

If the level is too low, the gearbox will be destroyed.

4 – PRECAUTIONS TO BE TAKEN

4.1 – Towing

It is necessary to lift up the front of the vehicle in order to tow it.

If it is not possible to lift up the front of the vehicle :
- the selection lever must be in position "N"
- do not add any oil
- do not exceed a speed of 70 km/h over a distance of 200 km

4.2 – Driving

Never drive with the ignition switched off.

Never push the vehicle in an attempt to start it (impossible with an automatic gearbox).

NOTE : Lubrication of the automatic gearbox is ensured only when the engine is running.

www.WorkshopManuals.co.uk

INITIALISATION PROCEDURE : ELECTRONIC CONTROL UNIT

Follow this procedure in the following cases :
- replacement of the ECU
- replacement of the gearbox
- downloading

NOTE : The automatic gearbox ECU is located in the ECU carrier.

Prior conditions :
- ignition switched on
- vehicle at rest
- position of the automatic gearbox selection lever : P or N

Connect the diagnostic instrument and follow the initialisation procedure.

IMPERATIVE : For a certain length of time, the quality of the gearchange could be affected (adapting the ECU parameters to the gearbox).
To obtain a good gear change, road test the vehicle shifting the gears frequently (auto–adaptive laws).

www.WorkshopManuals.co.uk

REMOVING – REFITTING : AUTOMATIC GEARBOX

1 – RECOMMENDED TOOLS

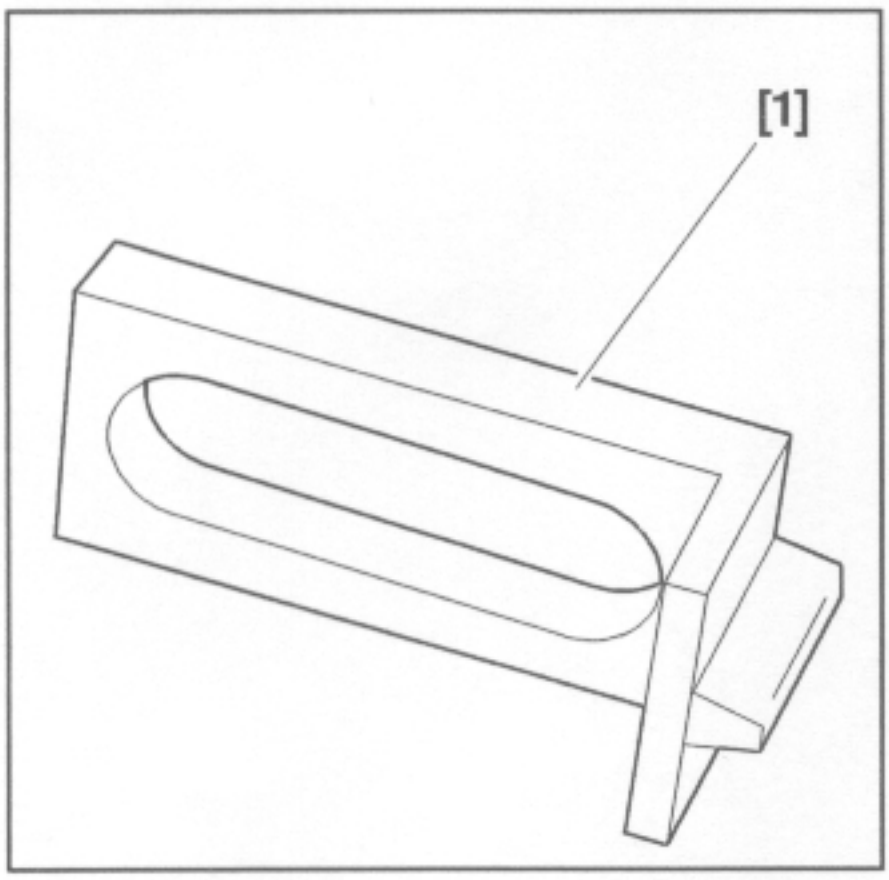


Fig : E5–P120C

[1] toothed sector for locking the engine flywheel 9044–T (tool box 7004–T).

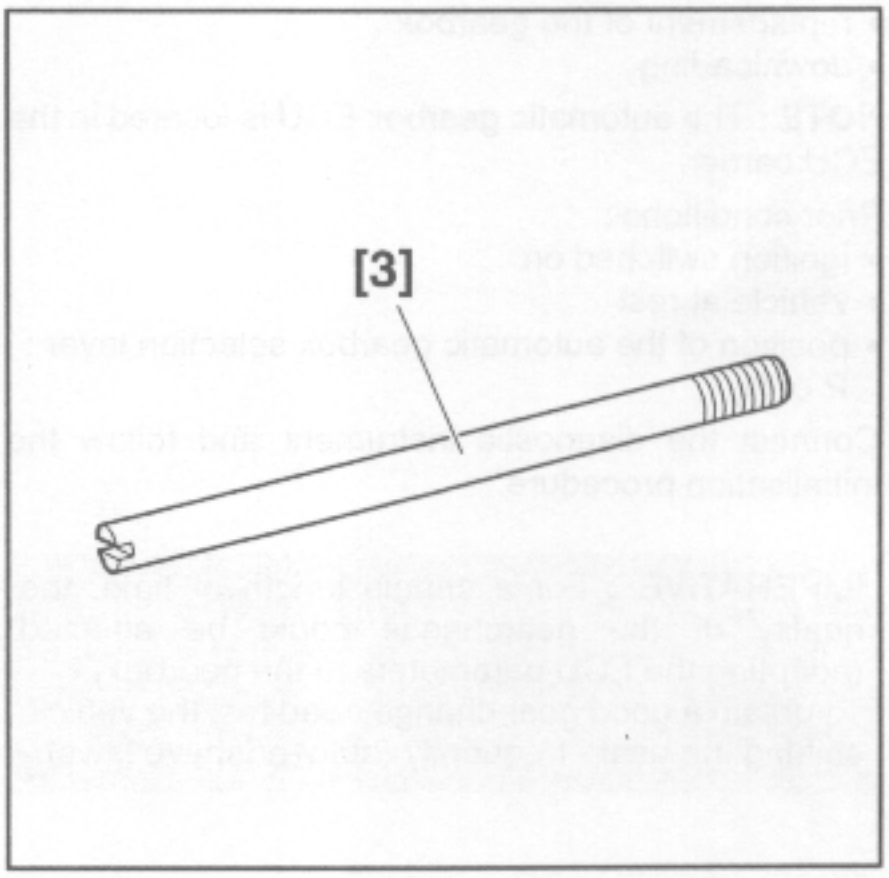


Fig : E5AP060C

[3] gearbox refitting peg 8010–T.A2 (tool box 8010–T).

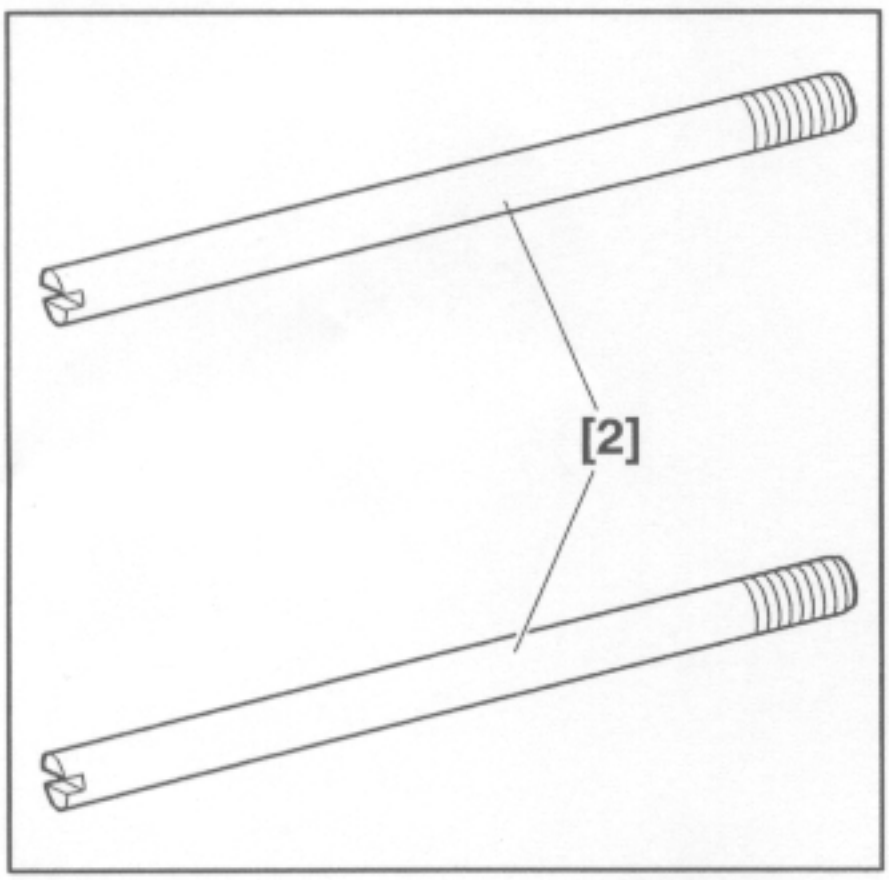


Fig : E5AP125C

[2] gearbox refitting rods 8010–T.Q (tool box 8010–T).

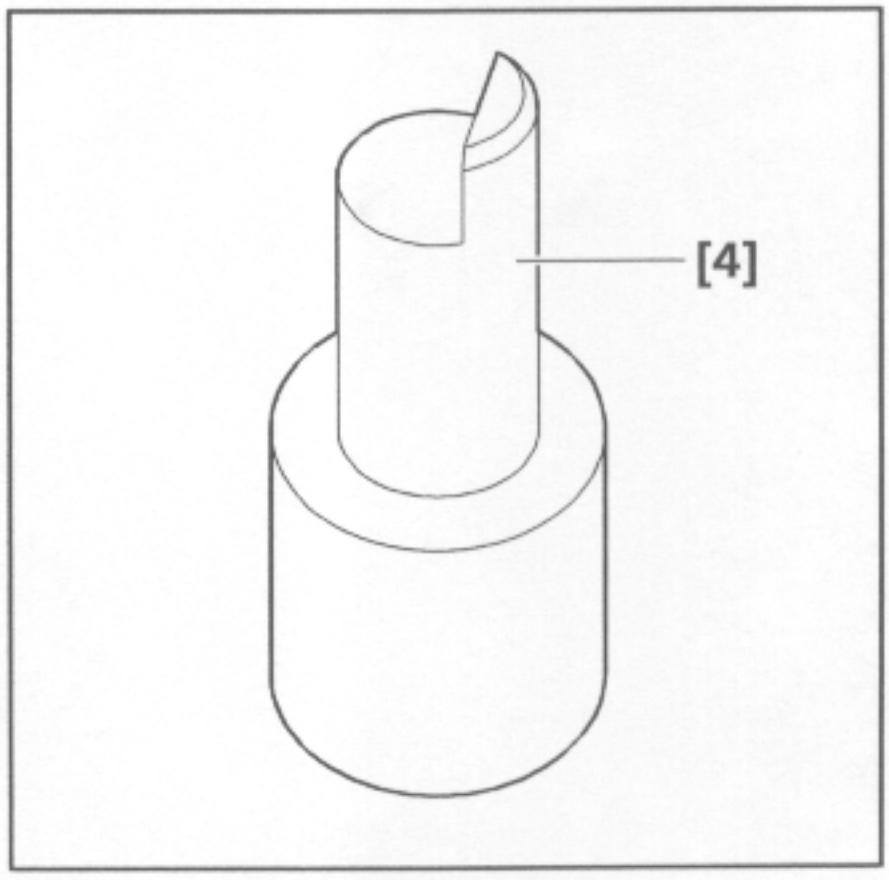


Fig : E5AP05NC

[4] converter locking peg 8010–T.E2 (tool box 8010–T).

www.WorkshopManuals.co.uk

2 – PRELIMINARY OPERATIONS

Remove the engine/gearbox assembly.

3 – UNCOUPLING

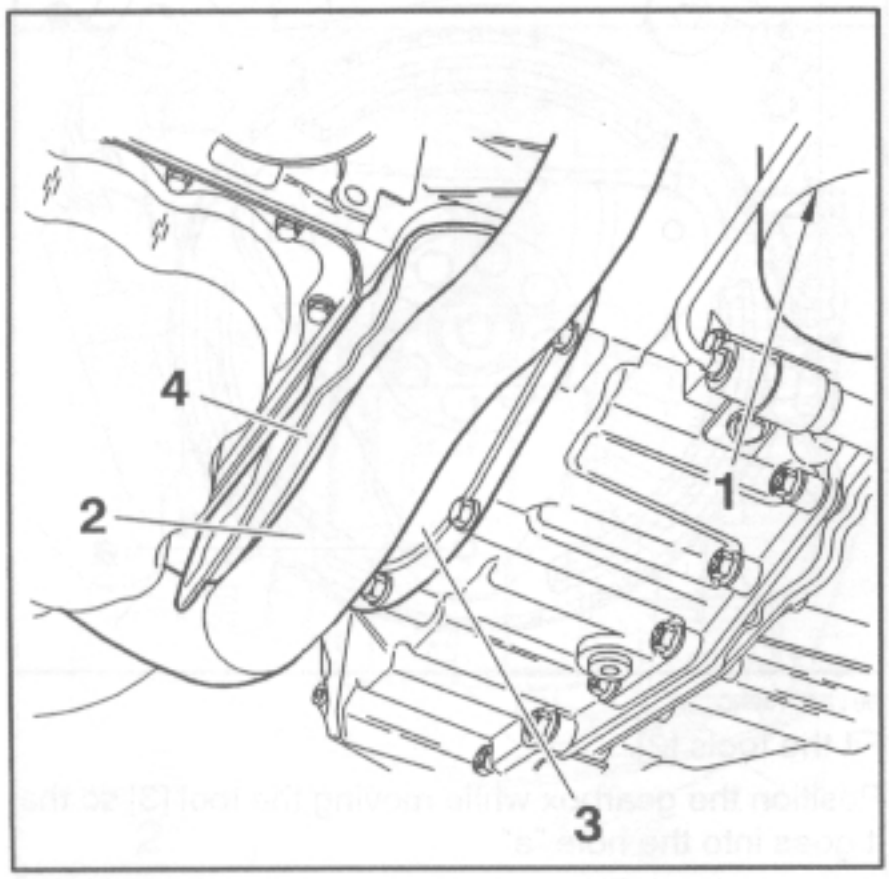


Fig : B2CP25JC

Remove :
- the pressure regulator (1)
- the exhaust (2)
- the converter cover panel (3)
- the heat shield (4)

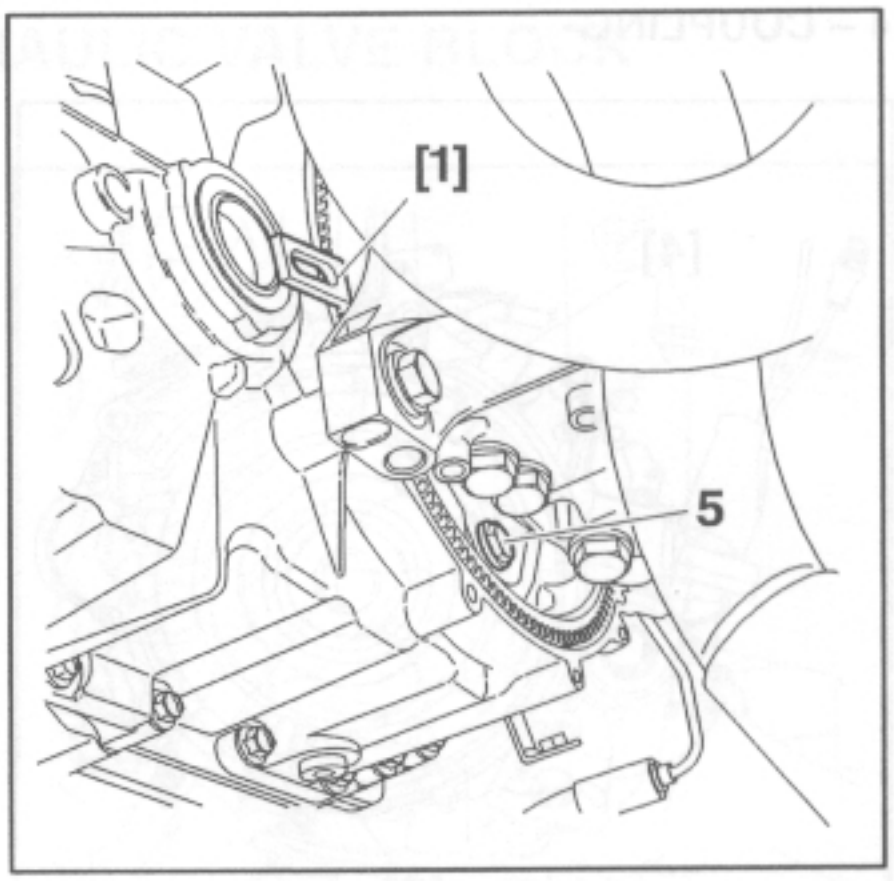


Fig : B2CP30MC

Turn the crankshaft (timing side) to gain access to the converter fixing screws (5).

Immobilise the converter ; by means of tool [1].

Remove :
- the 3 bolts (5)
- the bolts fixing the gearbox to the engine

Release the gearbox slightly from the engine (4 to 5 cm).

Remove :
- the engine speed sensor
- the gearbox

www.WorkshopManuals.co.uk

4 – COUPLING

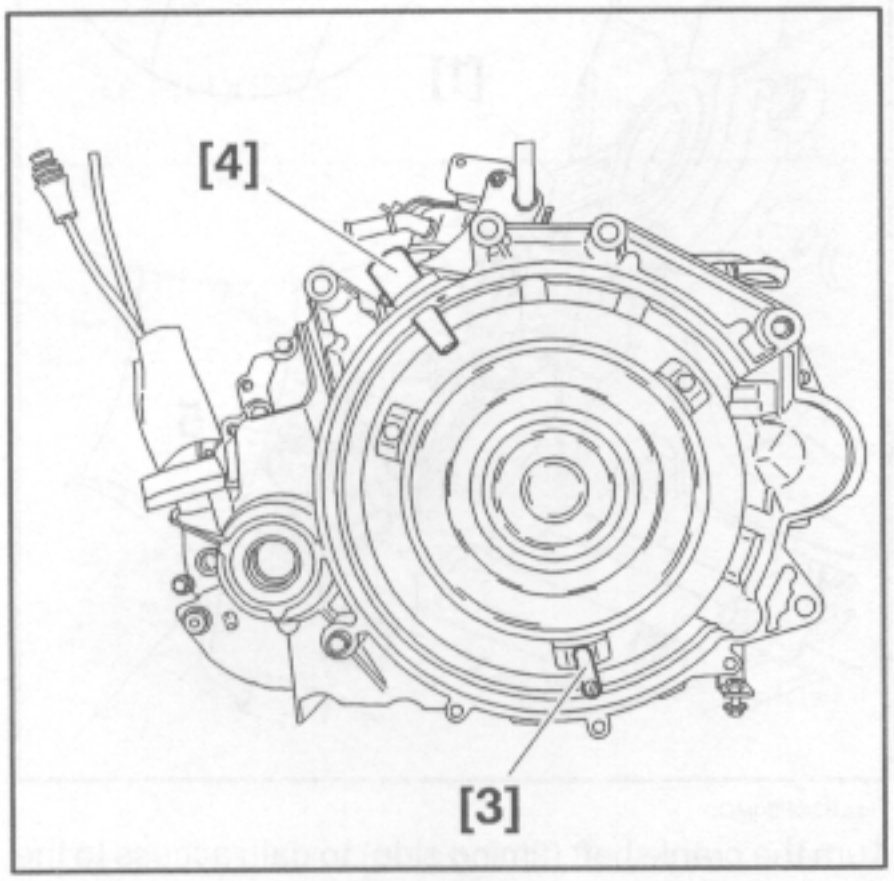


Fig : B2CP25MC

Position :
- tool [3]
- tool [4]

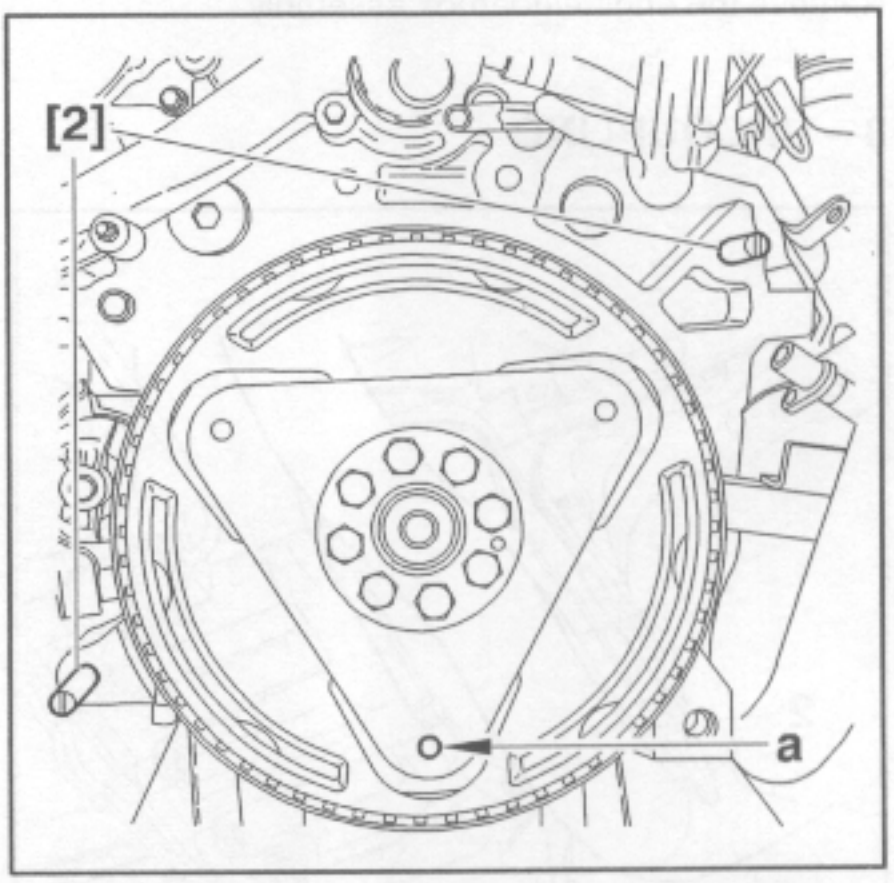


Fig : B2CP30NC

Fit the tools [2].

Position the gearbox while moving the tool [3] so that it goes into the hole "a".

Remove tool [4].

Fit the engine speed sensor.

Couple the gearbox to the engine, by means of tools [2].

Fit the bolts fixing the gearbox to the engine (tightening torque 5 m.daN).

Remove tools [2] and [3].

Fit tool [1].

Screw the 3 bolts (5) in place
(tightening torque 6.5 m.daN).

Remove tool [1].

Fit :
- the converter cover panel (3)
- the heat shield (4)
- the exhaust (2)
- the pressure regulator (1)
- the engine/gearbox assembly

www.WorkshopManuals.co.uk

REMOVING – REFITTING : HYDRAULIC VALVE BLOCK

1 – REMOVING

Drain the gearbox (see the relevant operation).

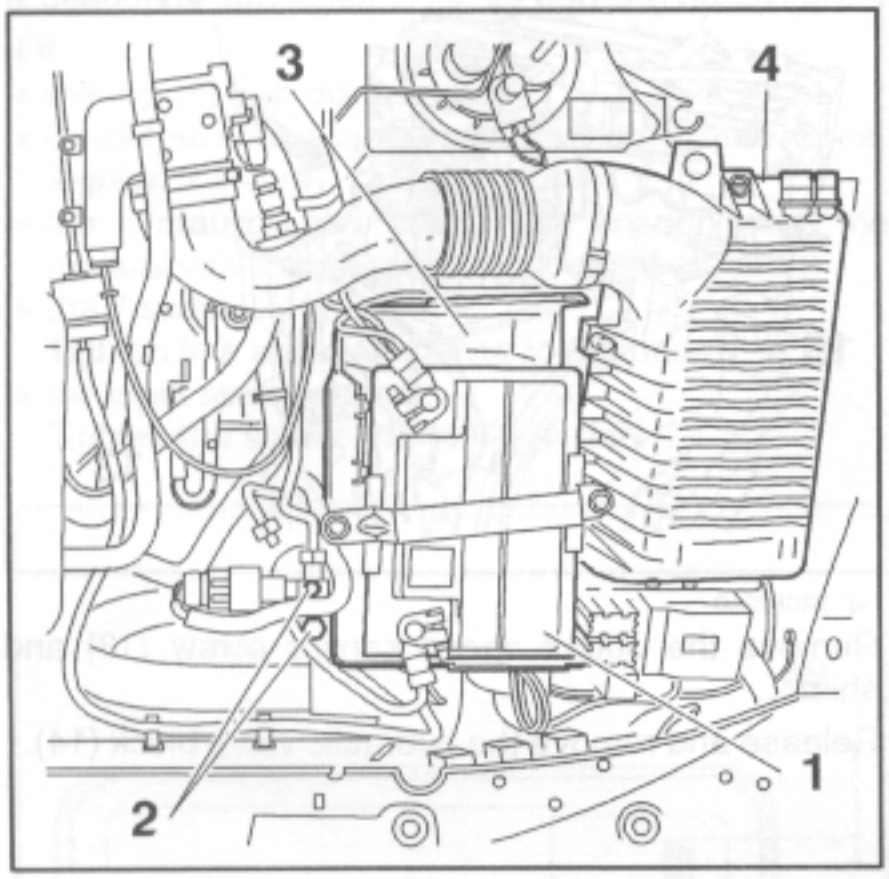


Fig : B1BP1LWC

Remove :

- the battery (1)
- the fixing screws of the dehydrator filter (2)
- the battery mounting (3)
- the air filter housing (4)

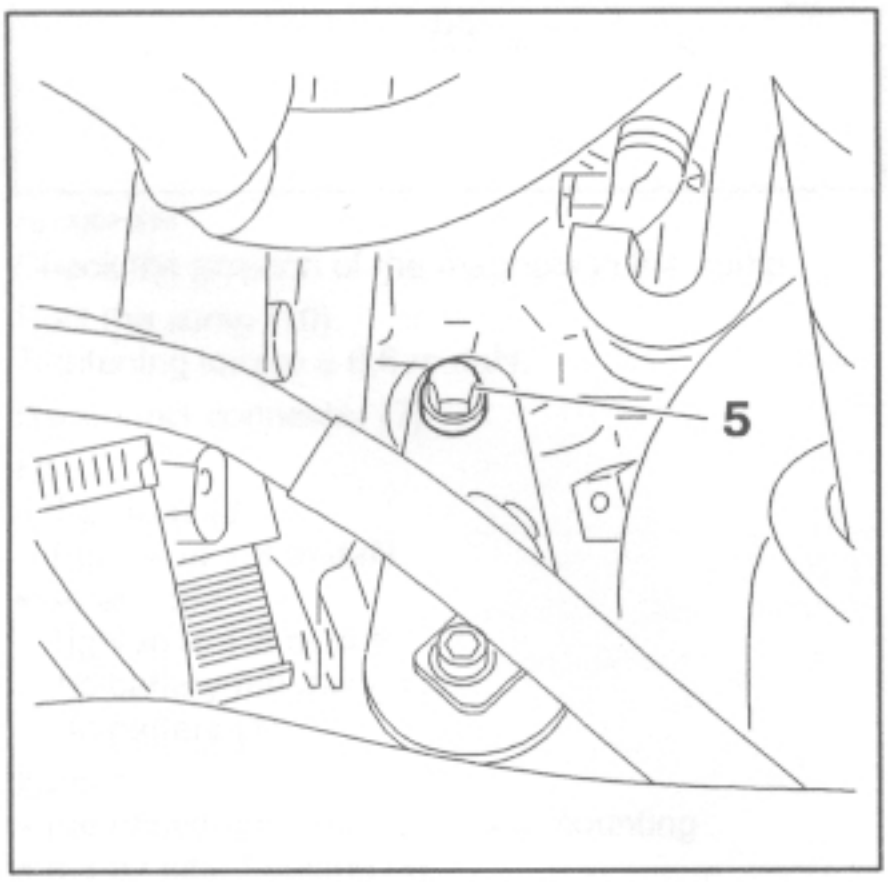


Fig : B1BP1LXC

Remove the screw (5).

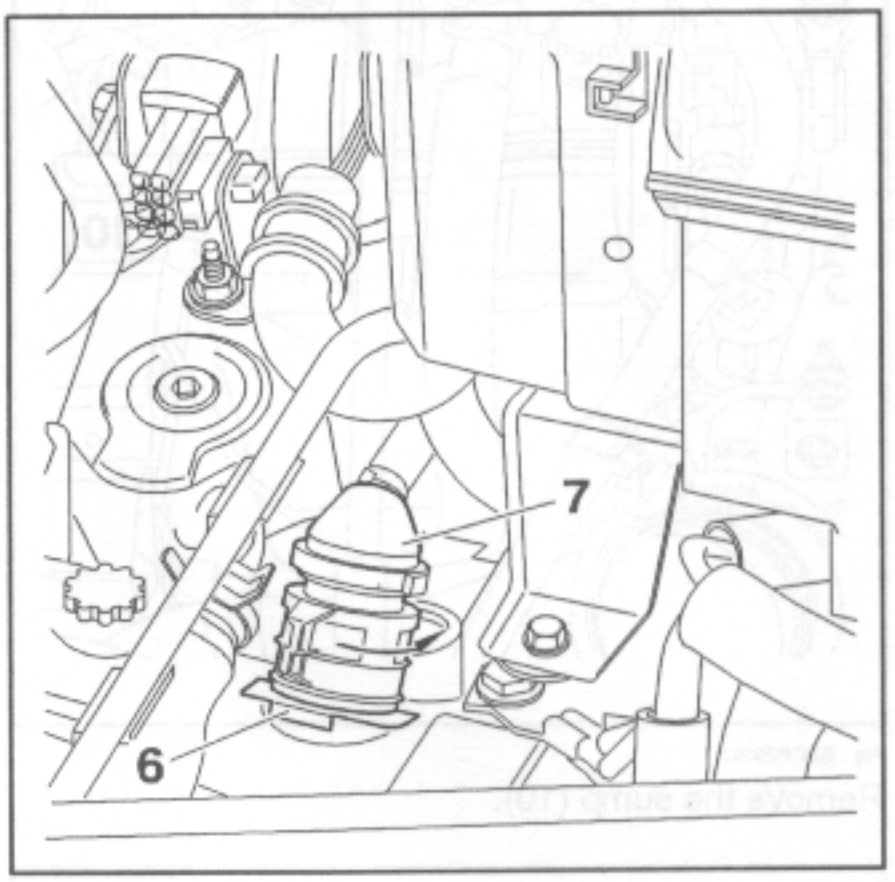


Fig : B1BP1LYC

Disconnect the connector (7) and turn the lock.

Remove the clip (6) and push the connector downwards.

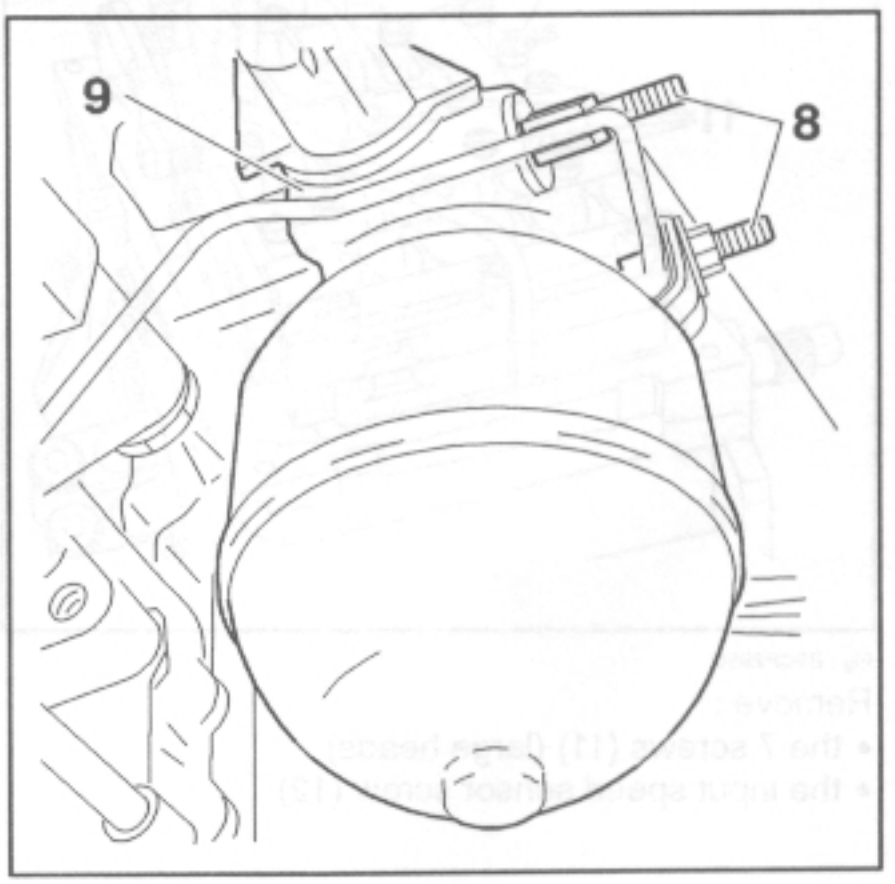


Fig : B1BP1LZC

Remove the 2 studs (8).

www.WorkshopManuals.co.uk

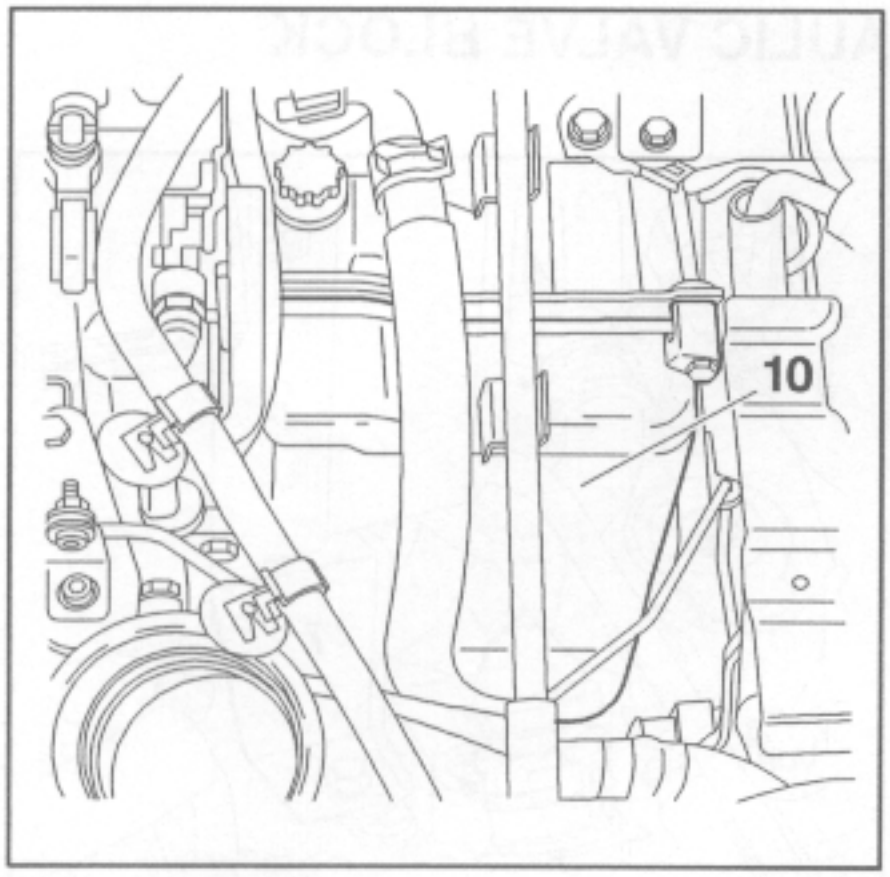


Fig : B2CP298C

Remove the sump (10).

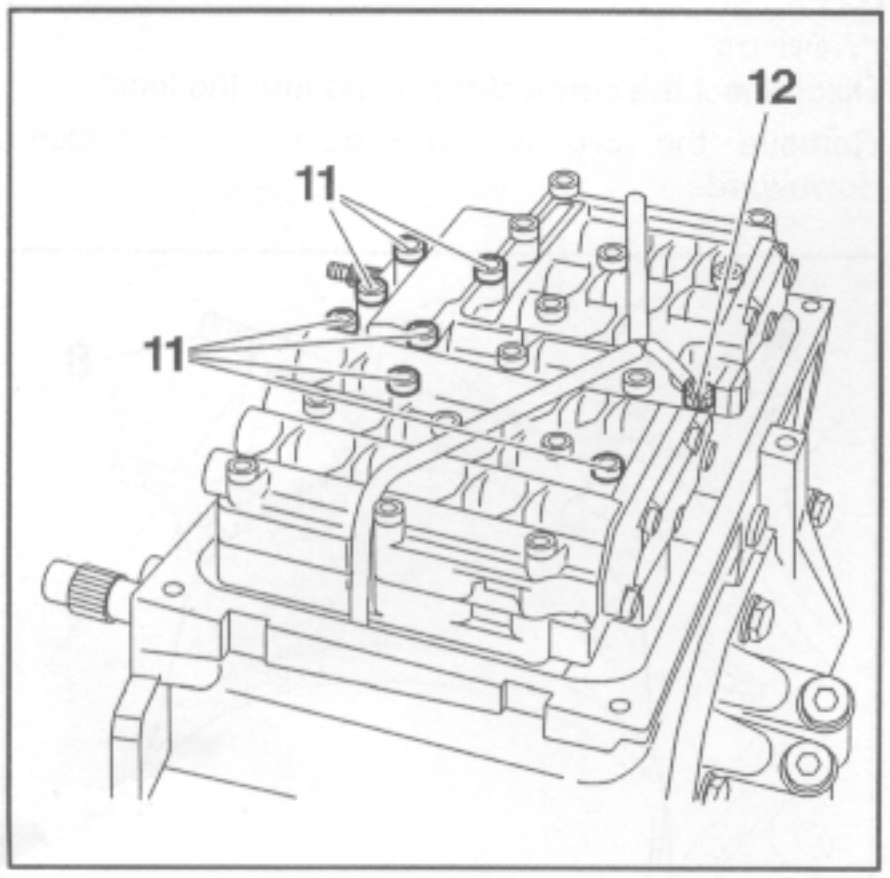


Fig : B2CP299C

Remove :
- the 7 screws (11) (large heads)
- the input speed sensor screw (12)

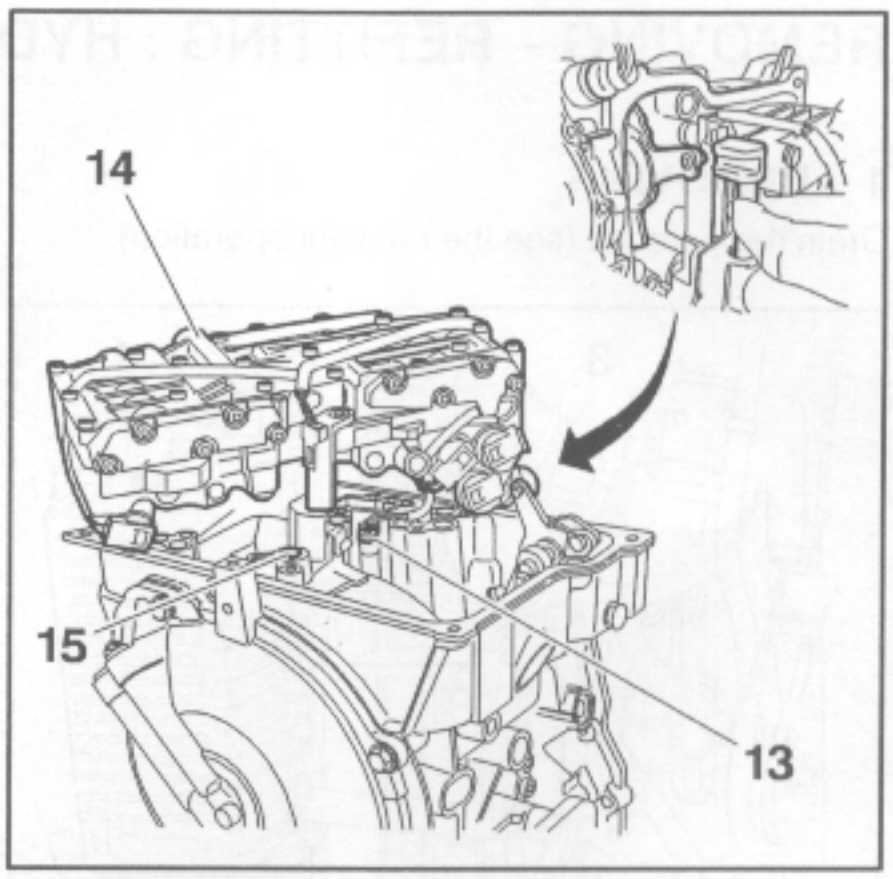


Fig : B2CP29AC

Remove the output speed sensor screw (13) and shim.

Release and remove the hydraulic valve block (14).

www.WorkshopManuals.co.uk

2 – REFITTING

IMPERATIVE : Check that the seal (15) is present.

Position the hydraulic valve block (14).

Engage the connector (7) in its housing (indexing).

Fit :

- the clip (6) (tab downwards)
- the output speed sensor with the shim if there is one.
  Tighten the screw (13) to 1 m.daN
- the hydraulic valve block (14), ensuring that the manual valve engages in the toothed quadrant
- the 7 screws (11).
  Tighten in a spiral sequence to 0,8 m.daN
- the input speed sensor.
  Tighten the screw (12) to 0,8 m.daN

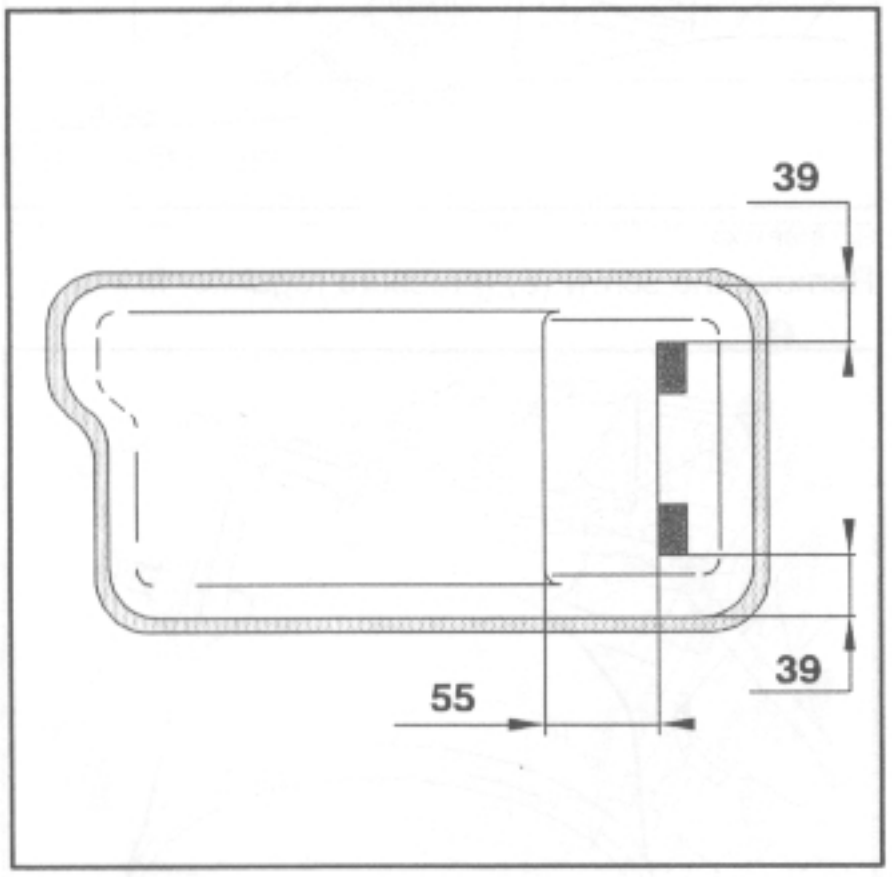


Fig : B2CP25TC

Check the position of the magnets in the sump.

Refit the sump (10).

Tightening torque = 0,6 m.daN.

Reconnect connector (7).

Fit :

- the studs (8).
  Tighten to 1,8 m.daN
- screw (5).
  Tighten to 1,8 m.daN
- the battery mounting (3)
- the battery (1)

Fasten :

- the dehydrator filter (2) to the mounting
- the air filter housing (4)

Reconnect the battery.

Refill the gearbox with oil and top up to level (see the relevant operation).

www.WorkshopManuals.co.uk

REMOVING – REFITTING : INPUT SPEED SENSOR

1 – REMOVING

Drain the gearbox (see the relevant operation).

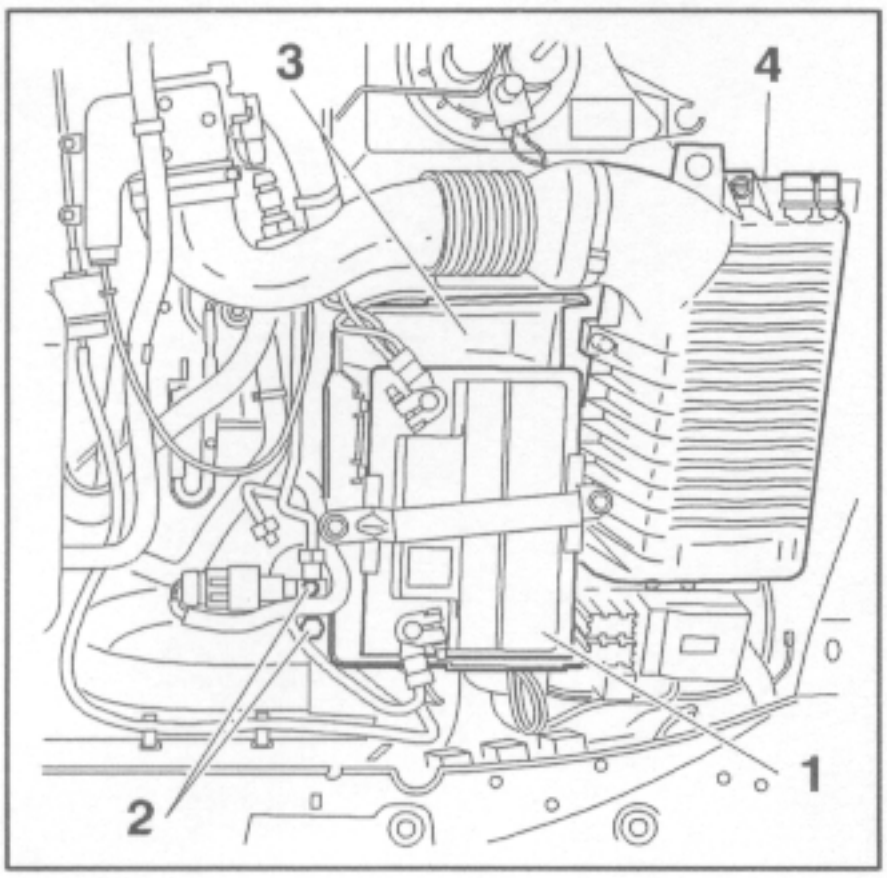


Fig : B1BP1LWC

Remove :

- the battery (1)
- the fixing screws of the dehydrator filter (2)
- the battery mounting (3)
- the air filter housing (4)

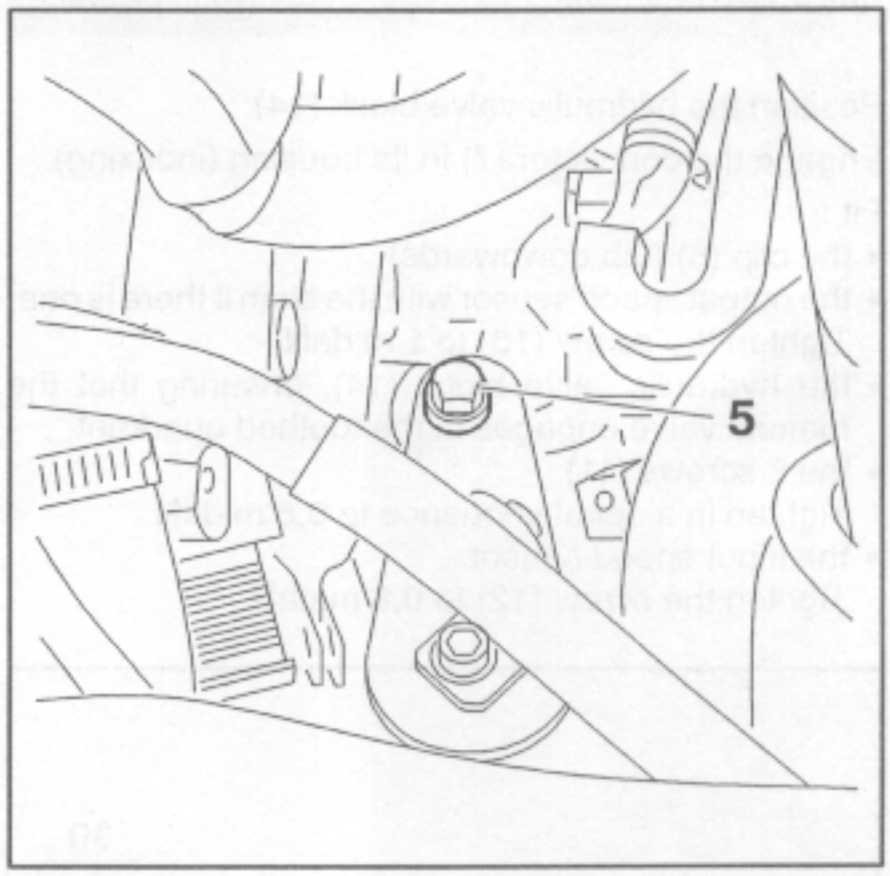


Fig : B1BP1LXC

Remove the screw (5) (pressure regulator fixing).

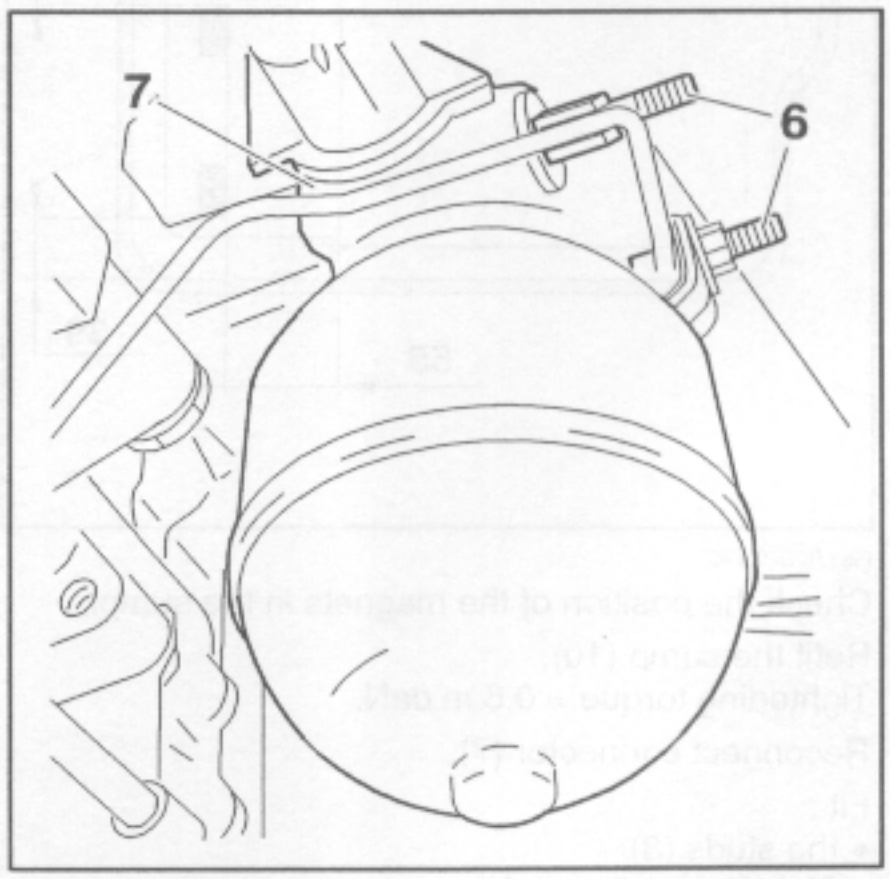


Fig : B1BP1M0C

Remove the 2 studs (6).

Carefully release the pressure regulator (7).

www.WorkshopManuals.co.uk

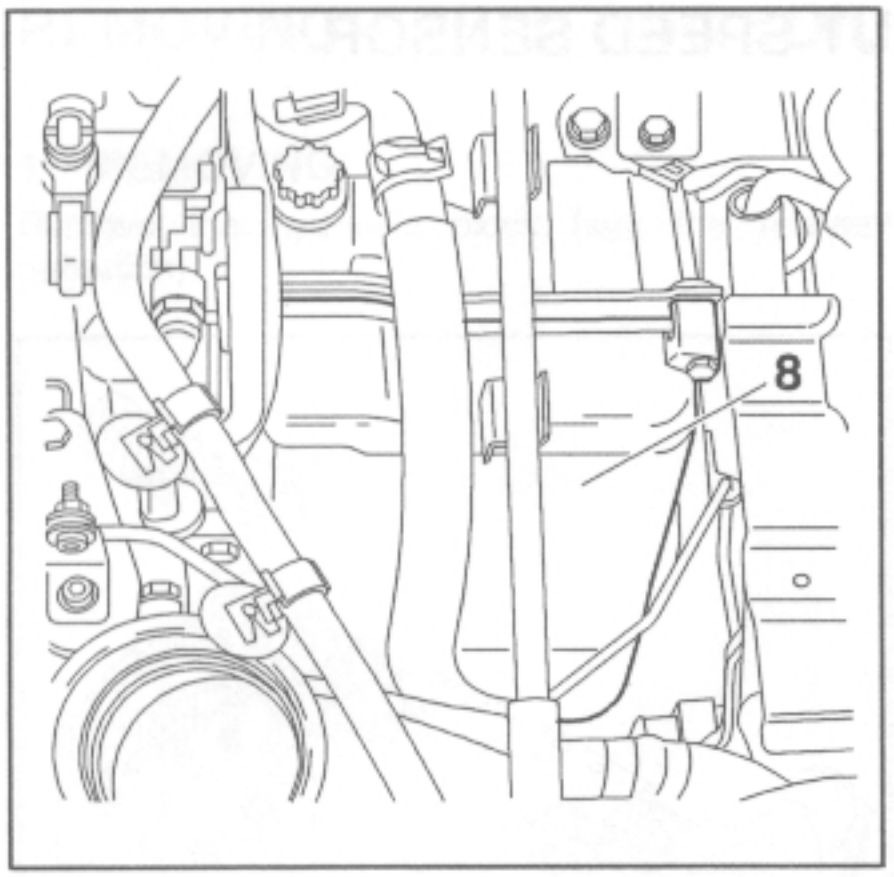


Fig : B2CP29BC

Remove the sump (8).

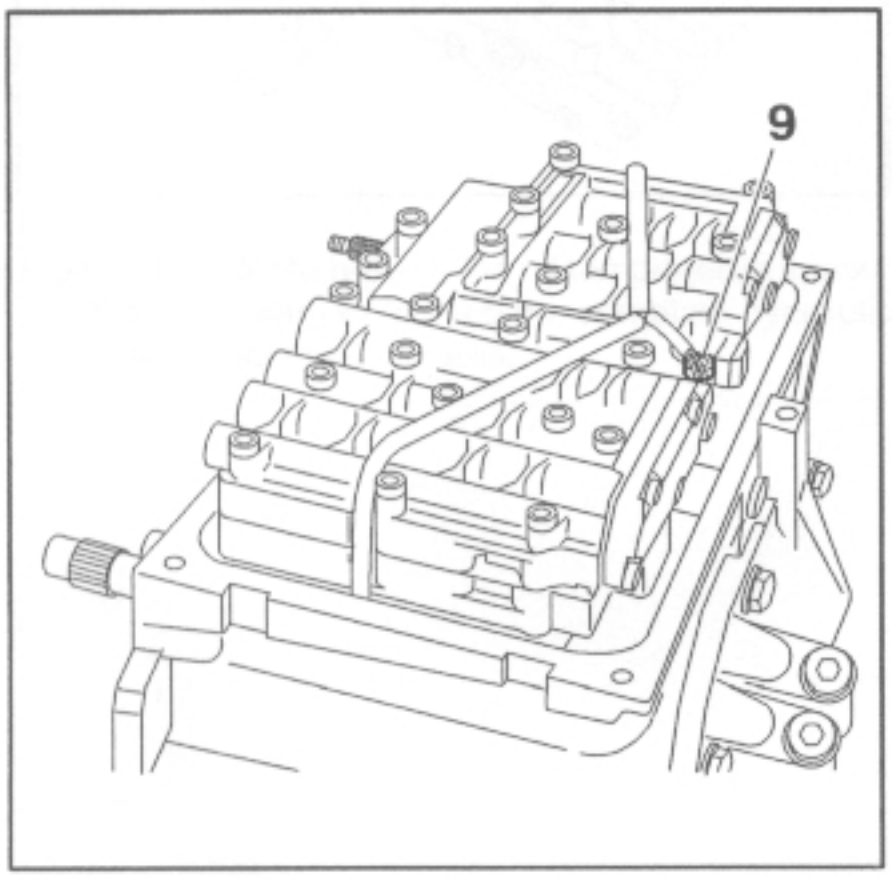


Fig : B2CP29CC

Remove :
- the screw (9)
- the input speed sensor

2 – REFITTING

Fit :
- the input speed sensor
- the screw (9) : tighten to 0,8 m.daN

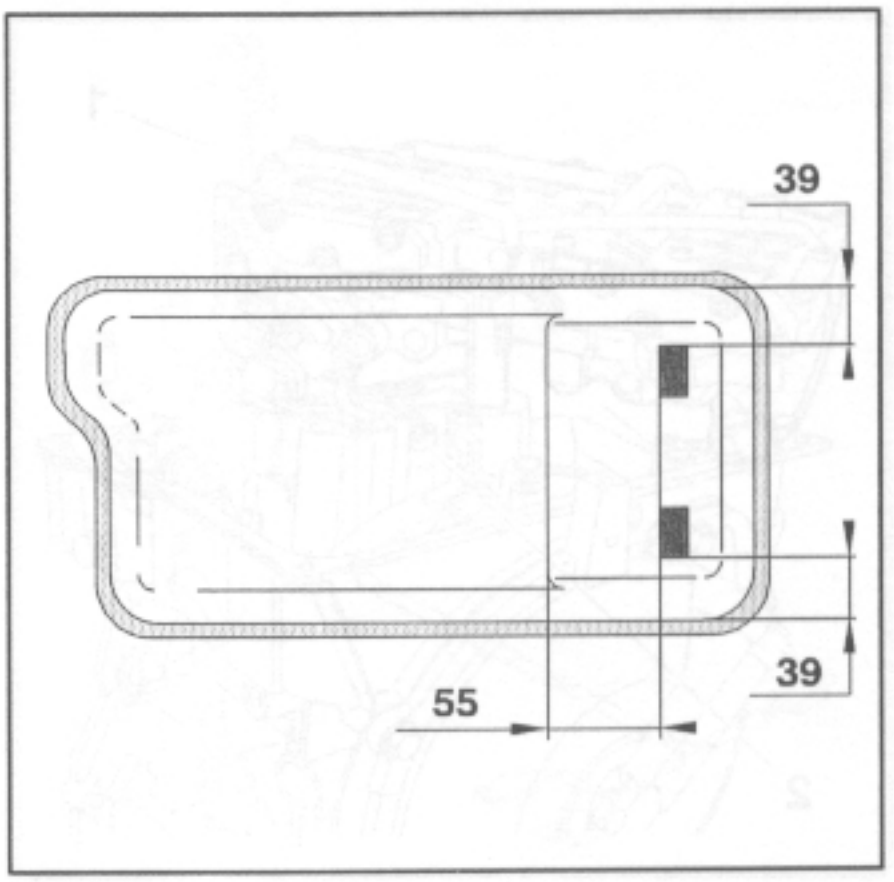


Fig : B2CP25TC

Check the position of the magnets in the sump.

Fit :
- the sump (8) : tighten to 0,6 m.daN
- the studs (6) : tighten to 1,8 m.daN
- the screw (5) : tighten to 1,8 m.daN
- the battery mounting (3)
- the battery (1)

Fasten :
- the dehydrator filter (2) to the mounting
- the air filter housing (4)

Reconnect the battery.

Refill the gearbox with oil and top up to level (see the relevant operation).

www.WorkshopManuals.co.uk

REMOVING – REFITTING : OUTPUT SPEED SENSOR

1 – REMOVING

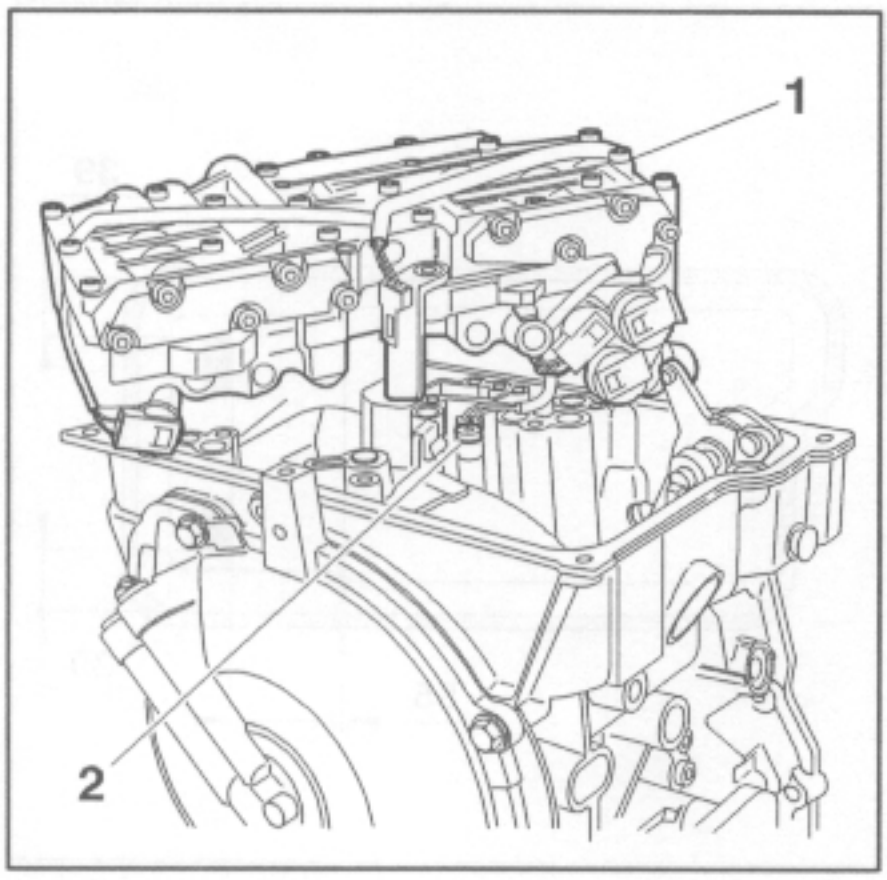


Fig : B2CP25WC

WARNING : If there is a shim under the output speed sensor (2), ensure that it is not lost.

Remove :
- the hydraulic valve block (1) (see the relevant operation)
- the output speed sensor (2)

2 – REFITTING

Fit :
- the output speed sensor (2) ; tightening torque = 1 m.daN
- the hydraulic valve block (1) (see the relevant operation)

www.WorkshopManuals.co.uk

REMOVING – REFITTING : OIL TEMPERATURE SENSOR

1 – REMOVING

Remove the hydraulic block (see the relevant operation).

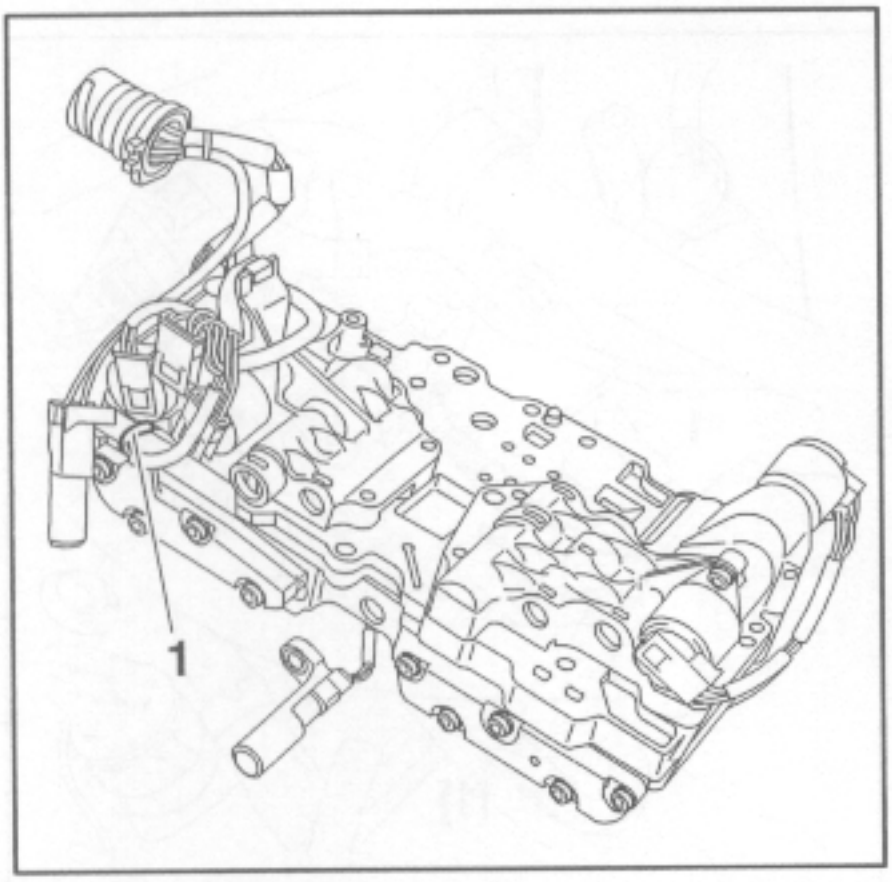


Fig : B2CP24KC

NOTE : In order to replace the oil temperature sensor (1), it is necessary to replace the complete hydraulic valve block electrical harness.

2 – REFITTING

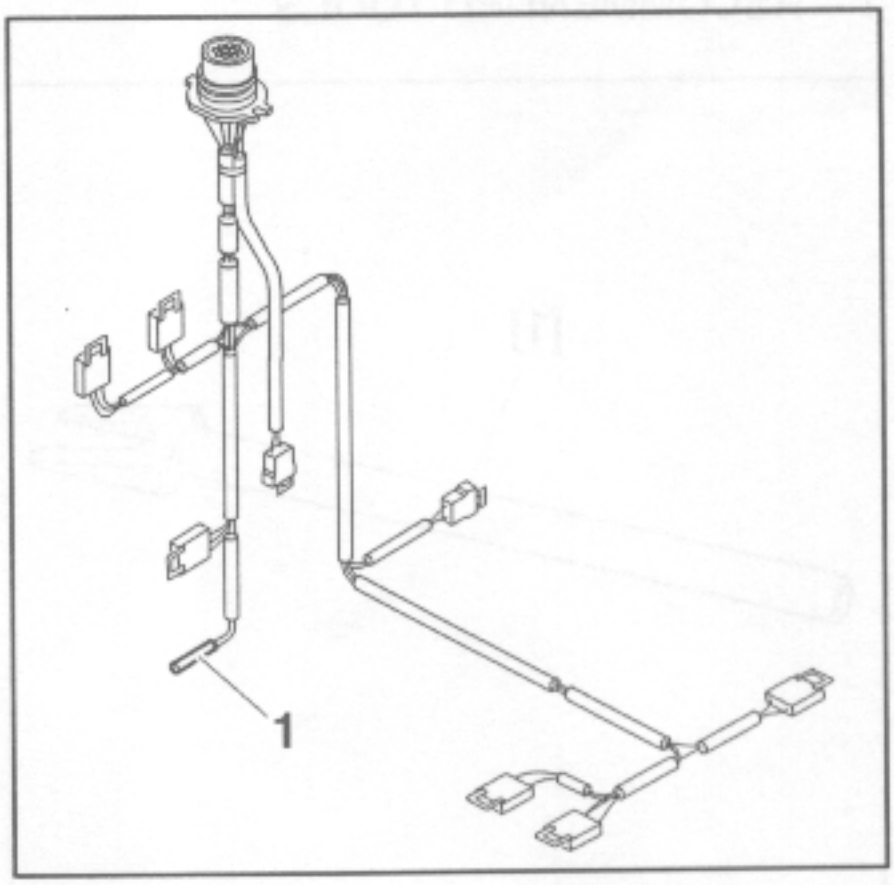


Fig : B2CP24LC

When refitting the wiring harness, make sure that it is routed correctly and that it is correctly located in the channels to prevent it from being trapped when the hydraulic valve block is refitted.

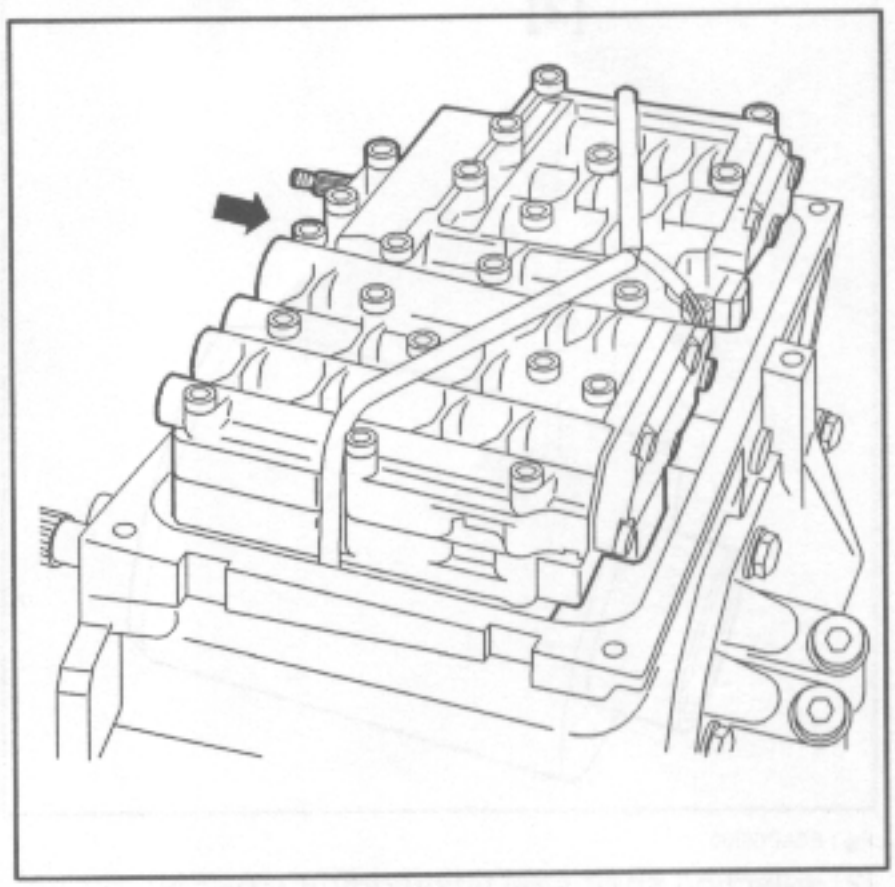


Fig : B2CP24MC

Refit the hydraulic valve block (see the relevant operation).

www.WorkshopManuals.co.uk

REMOVING – REFITTING : SELECTION LEVER POSITION SWITCH AND SEAL

1 – RECOMMENDED TOOLS

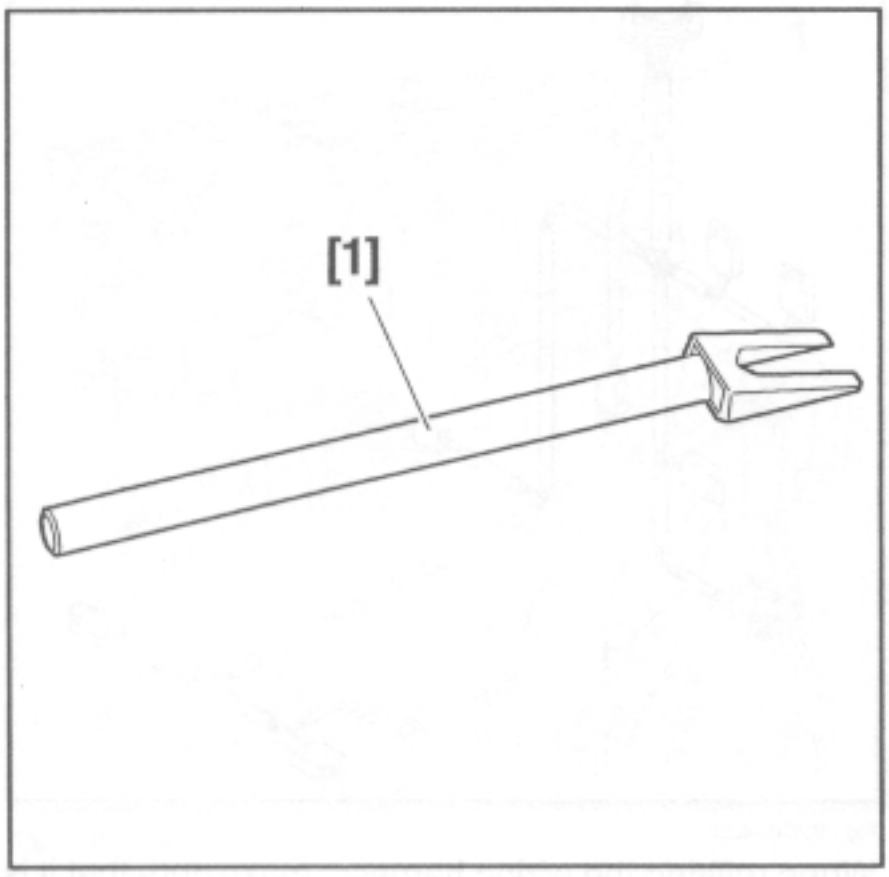


Fig : E5AP05JC

[1] fork 8010–T.G (tool box 8010–T).

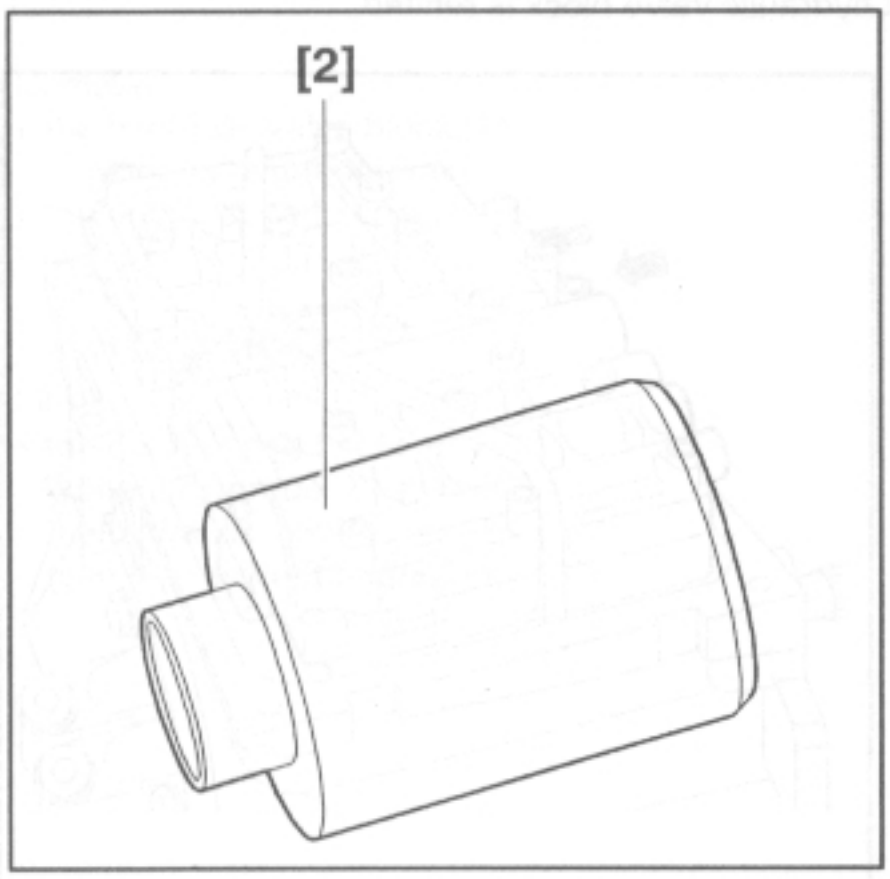


Fig : E5AP05KC

[2] selection shaft seal fitting drift 8010–T.N (tool box 8010–T).

2 – REMOVING

Disconnect the battery negative terminal.

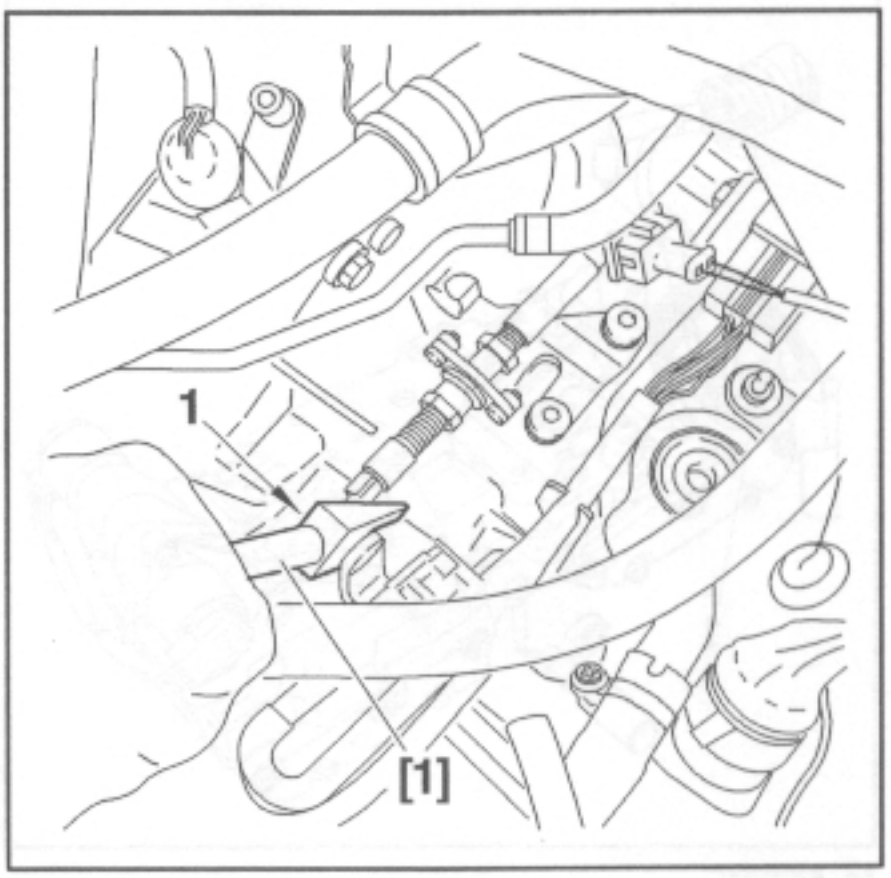


Fig : B2CP29DC

Uncouple the gear selection ball joint (1) ; by means of tool [1].

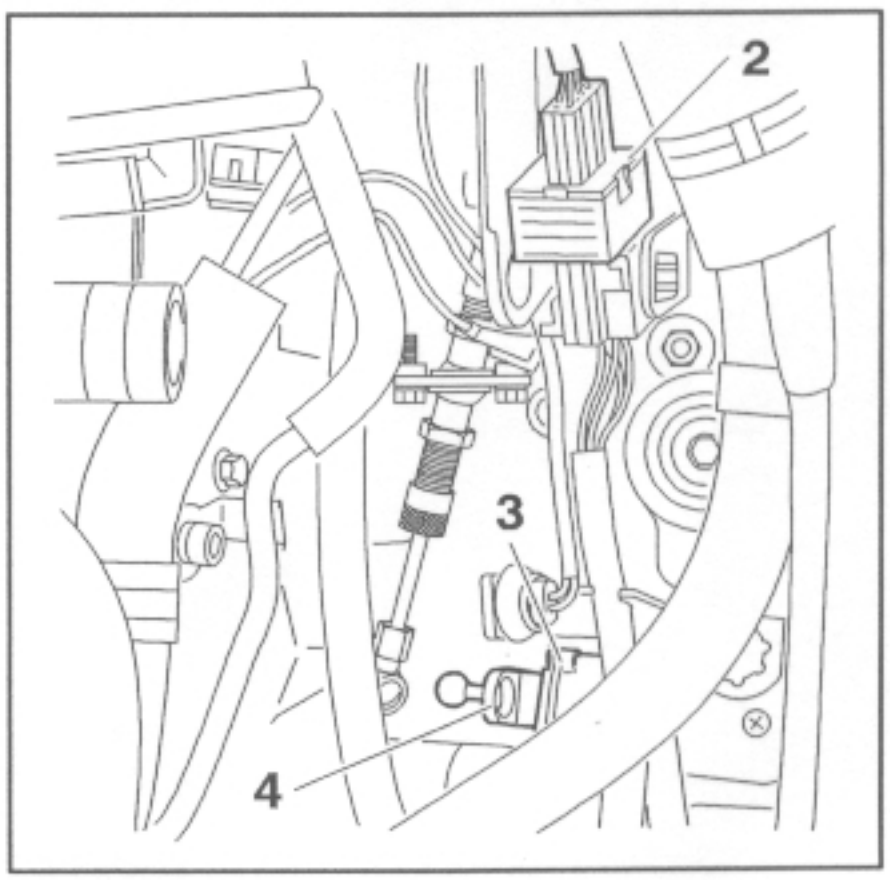


Fig : B2CP29EC

Disconnect the connector (2).

Remove :

- the rod (4)
- the 2 fixing screws of the gearbox selection lever (3) position switch
- the selection lever position switch

www.WorkshopManuals.co.uk

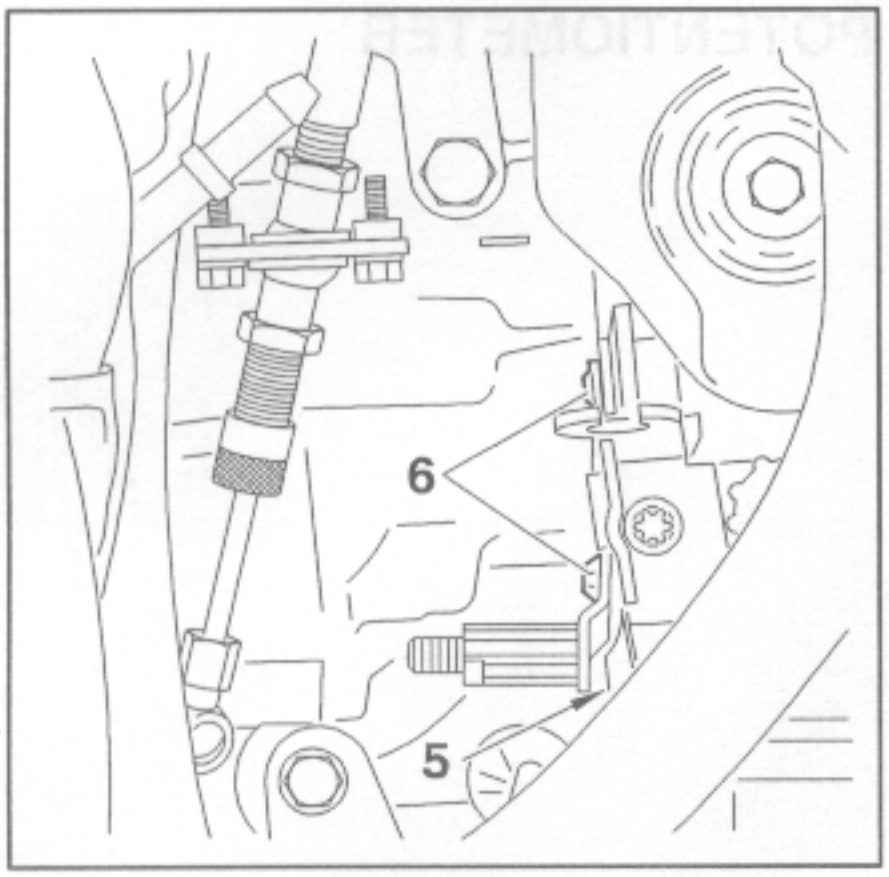


Fig : B2CP29FC

IMPERATIVE : Do not loosen or remove the fixing screws of the mounting (6).

Remove the selector shaft seal (5).

3 – REFITTING

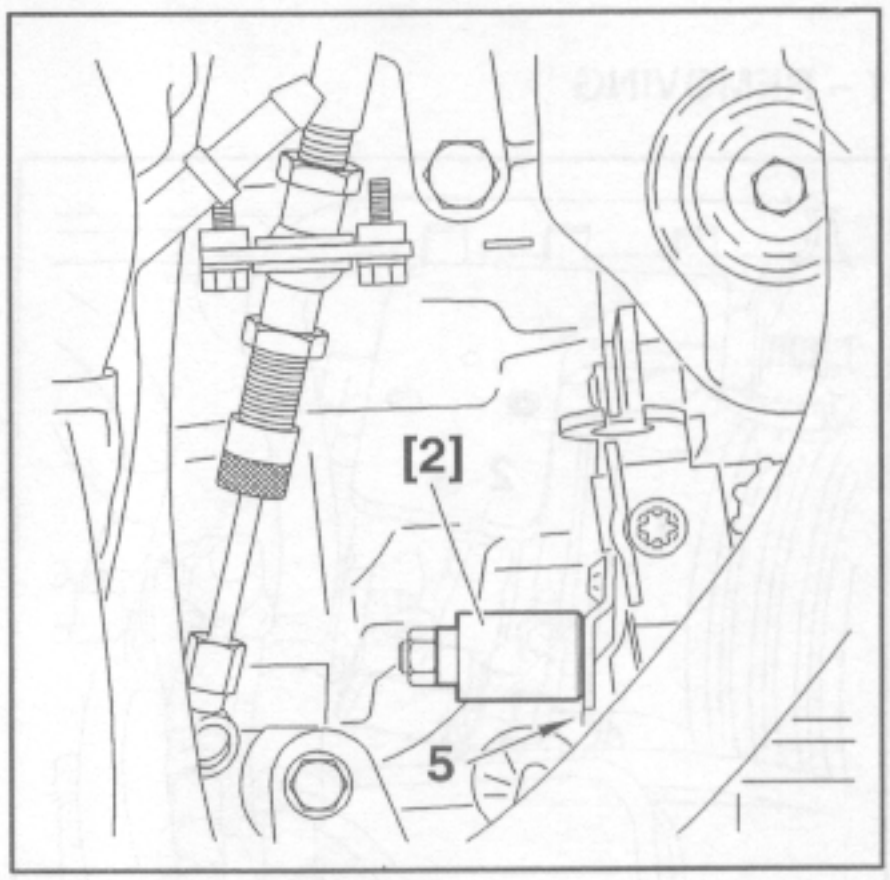


Fig : B2CP29GC

Fit :

- the selector shaft seal (5) ;
  by means of tool [2]
- the selection lever position switch :
  tightening torque = 1 m.daN
- the rod (4) : tightening torque = 2,1 m.daN

IMPERATIVE : Hold the rod (4) while tightening (risk of breaking the valve in the hydraulic valve block).

Reconnect connector (2).

Couple the selector control ball joint (1).

Reconnect the battery negative terminal.

IMPERATIVE : Check all gear changes. If there is a problem, adjust the selector control (see the relevant operation).

www.WorkshopManuals.co.uk

REMOVING – REFITTING : LOAD POTENTIOMETER

1 – REMOVING

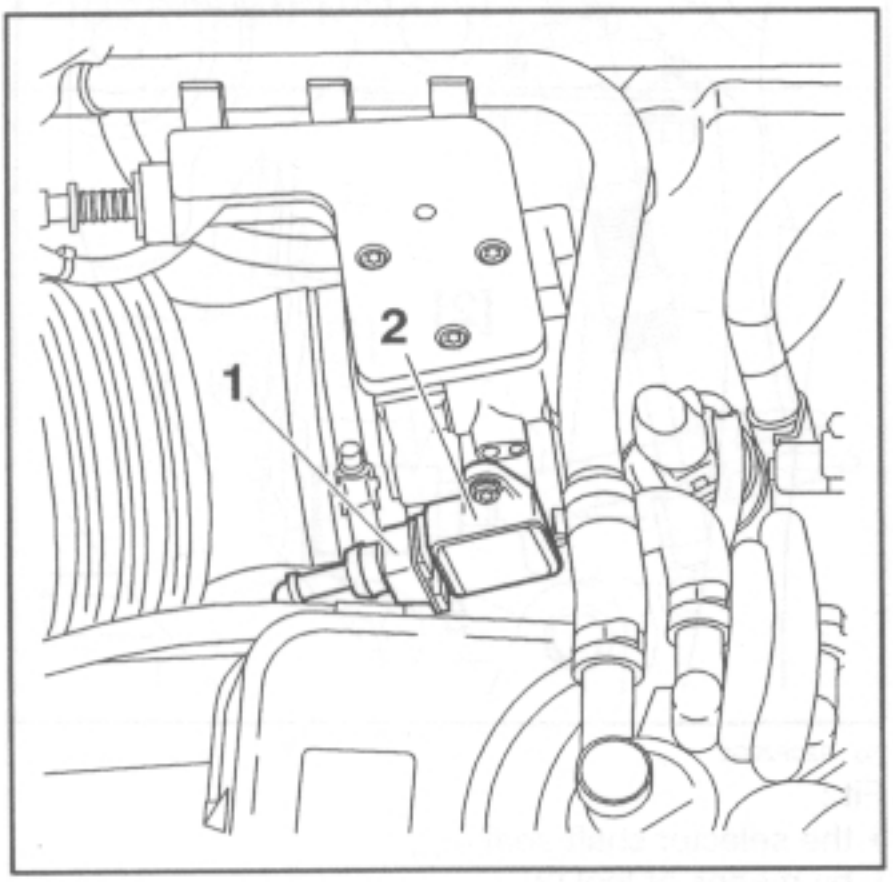


Fig : B2CP24UC

Disconnect the connector (1).

Remove the throttle potentiometer (2).

2 – REFITTING

Refit the throttle potentiometer (2).

Reconnect connector (1).

www.WorkshopManuals.co.uk

REMOVING – REFITTING : SPEEDOMETER DRIVE

1 – REMOVING

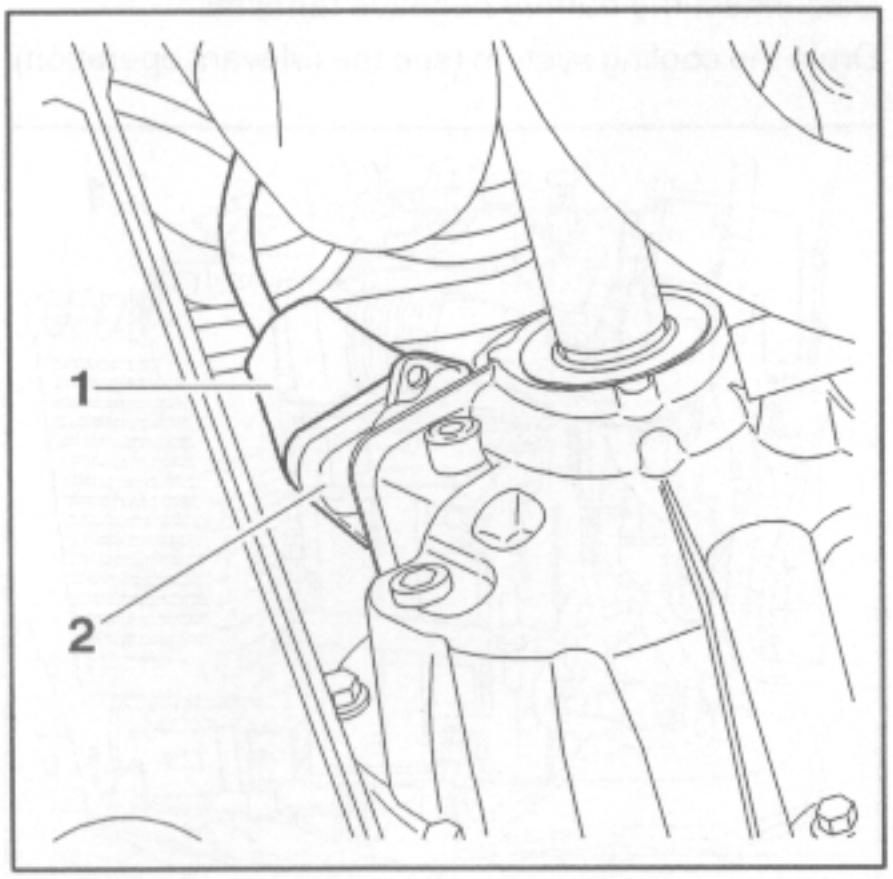


Fig : B2CP296C

Slide off the thermal protection sleeve (1) to gain access to the connector.

Disconnect the connector.

Remove the speedometer drive (2).

2 – REFITTING

Refit the speedometer drive (2).

Reconnect the connector.

Put the thermal protection sleeve (1) back into place.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : ENGINE SPEED SENSOR

1 – RECOMMENDED TOOLS

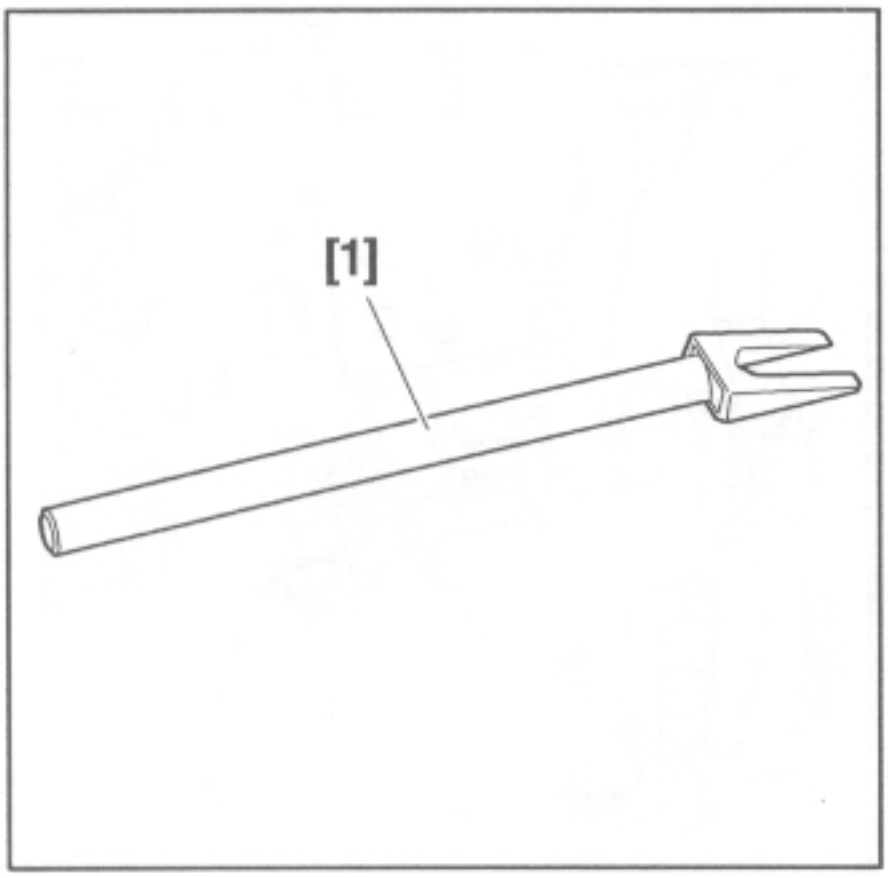


Fig : E5AP05JC

[1] fork 8010–T.G (tool box 8010–T).

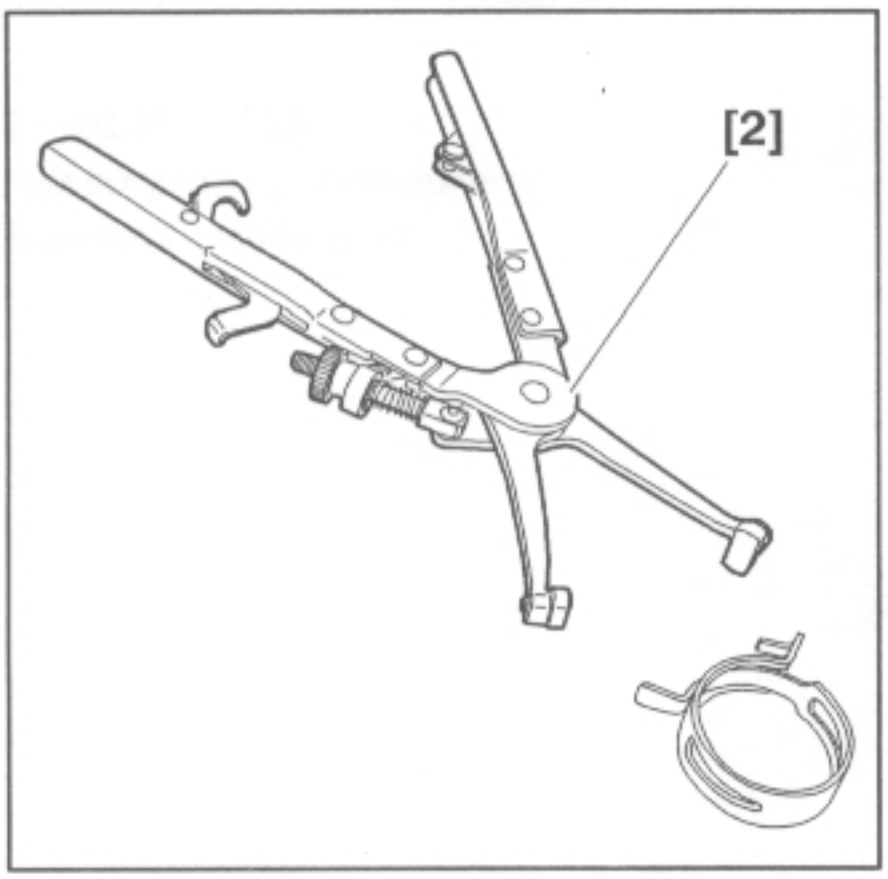


Fig : E5AP02WC

[2] pliers for removing and refitting hose clips 9029–T.

2 – REMOVING

Disconnect the battery negative terminal.

Drain the cooling system (see the relevant operation).

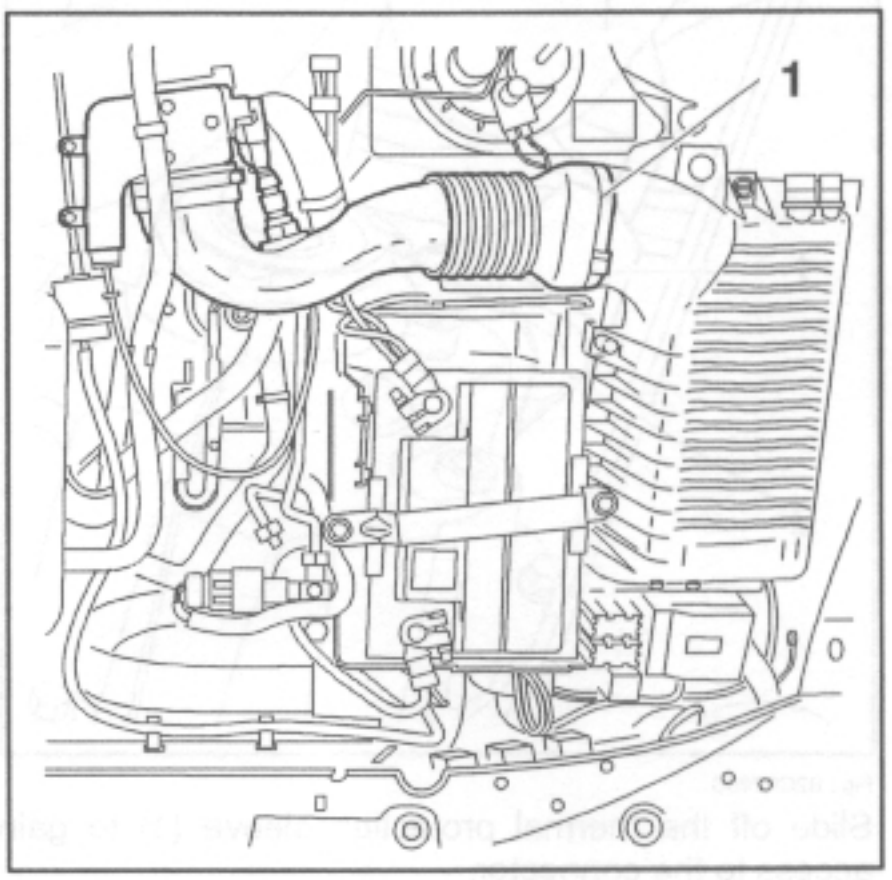


Fig : B1BP1LUC

Remove the throttle housing/air filter duct (1).

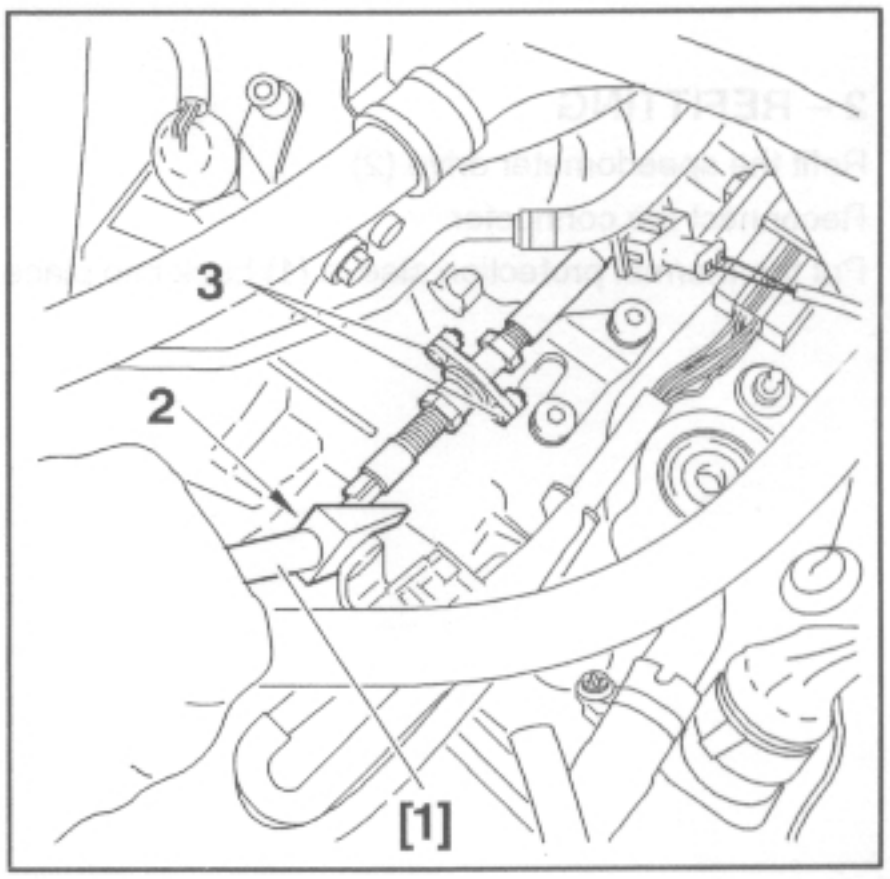


Fig : B2CP297C

Disconnect the gear selection ball joint (2) ; by means of tool [1].

Remove the screws (3).

Release the selector control (2).

www.WorkshopManuals.co.uk

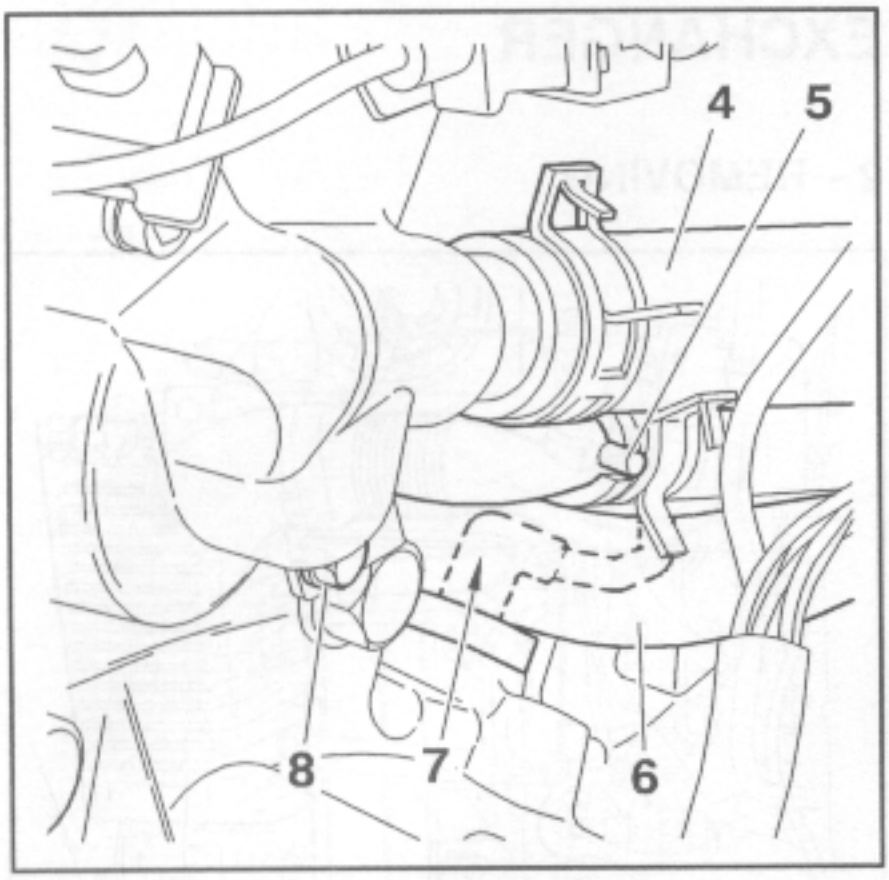


Fig : B1BP1LVC

Disconnect the hose (4) ; by means of tool [2].

Remove :
- the screw clamping the hose (6) to the gearbox
- the screw (8)

Disconnect the pipe (5) from the cylinder block.

Remove the fixing screw and the engine speed sensor (7).

3 – REFITTING

Refit the engine speed sensor (7) ;
tighten to 0,7 m.daN.

Connect the pipe (5) to the cylinder block.

Fit :
- the screw (8)
- the screw clamping the hose (6) to the gearbox

Connect the hose (4) ; by means of tool [2].

Refit the screws (3).

Reconnect the gear selector ball joint (2).

IMPERATIVE : If necessary, adjust the selector control (2) (see the relevant operation).

Fill and bleed the cooling system (see the relevant operation).

Refit the throttle housing/air filter duct (1).

Reconnect the battery negative terminal.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : HEAT EXCHANGER

1 – RECOMMENDED TOOLS

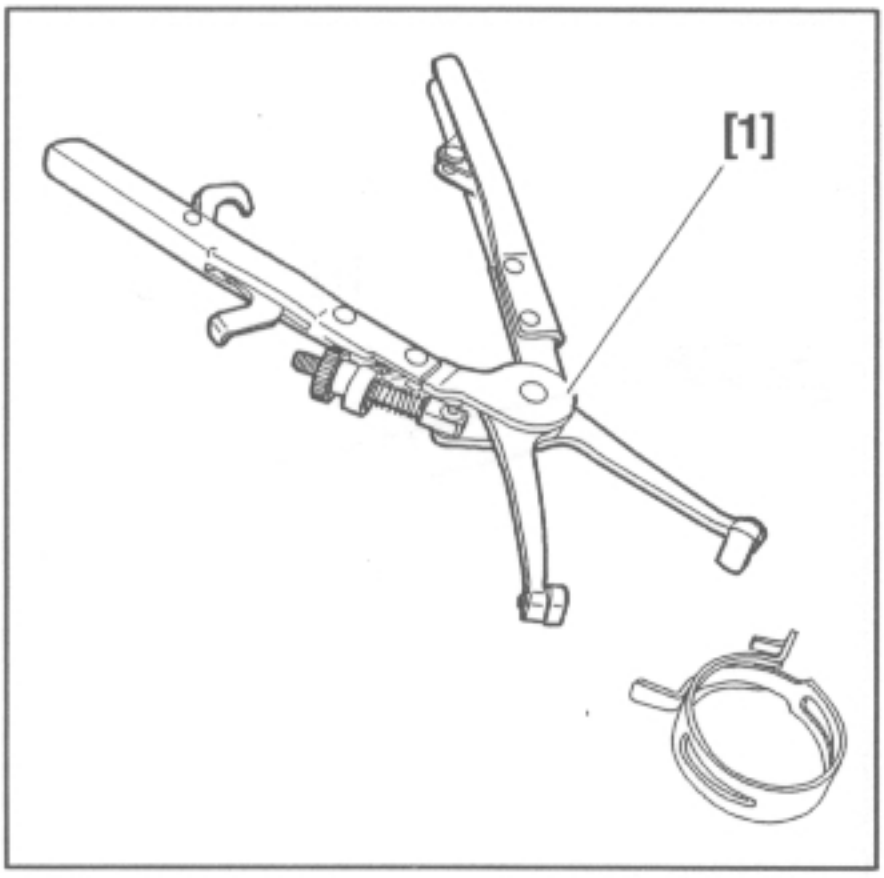


Fig : E5–P059C

[1] pliers for cooling hose flexible clamps 9029–T.

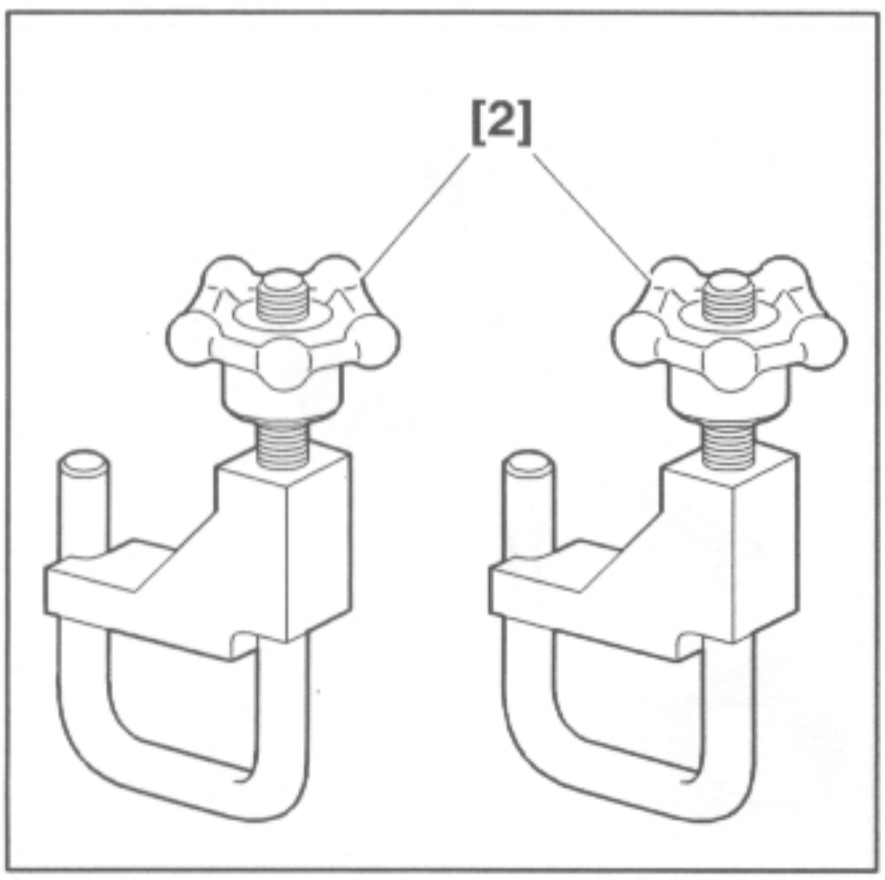


Fig : E5–P08HC

[2] pair of hose clamps 4153–T.

2 – REMOVING

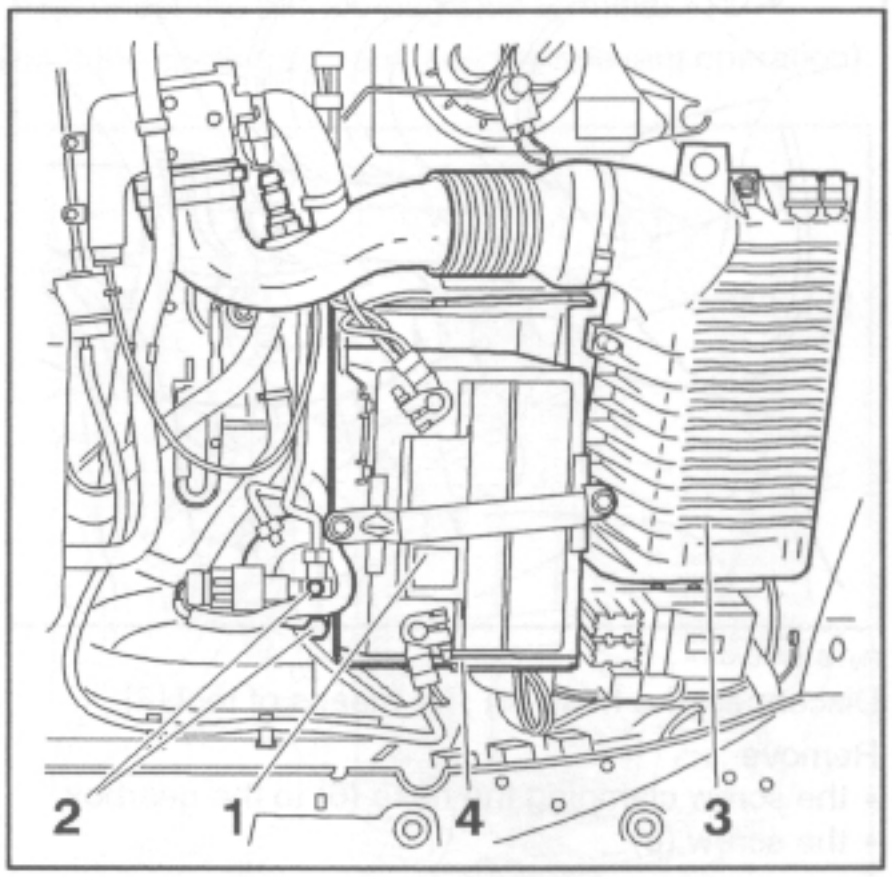


Fig : B1BP1M1C

Remove :
- the battery (1)
- the fixing screws of the dehydrator filter (2)
- the air filter box and sleeve (3)
- the battery support (4)

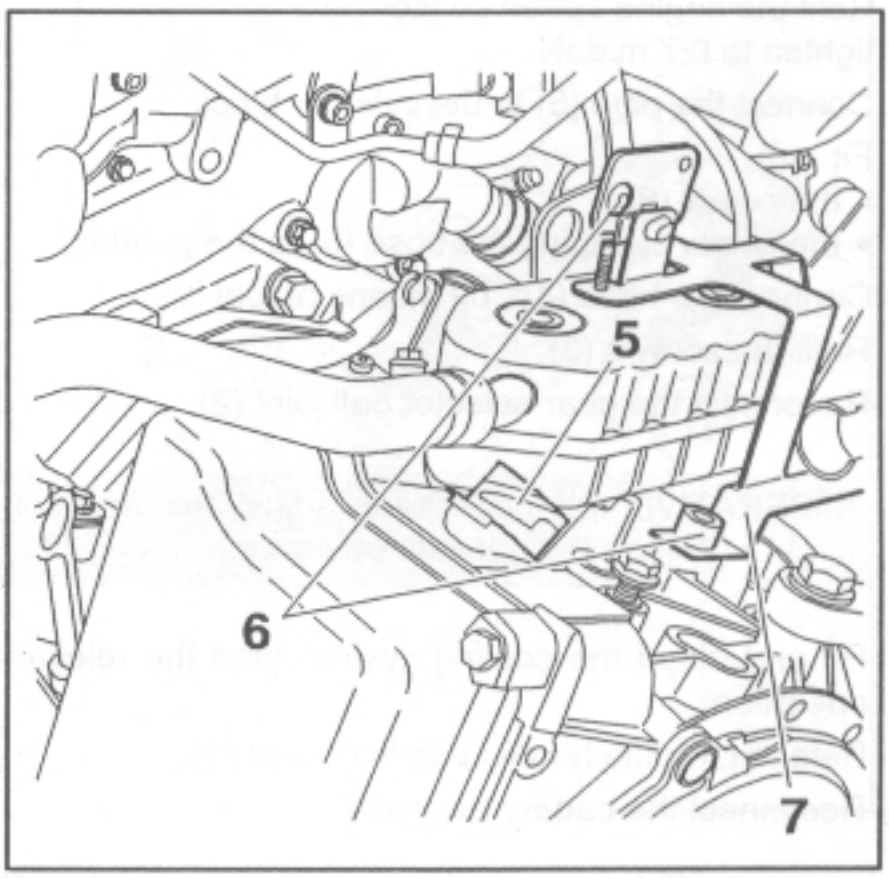


Fig : B1BP1M2C

Disconnect the connector (5) and turn the lock.

Remove the fixing screws (6) and the harness mounting (7).

www.WorkshopManuals.co.uk

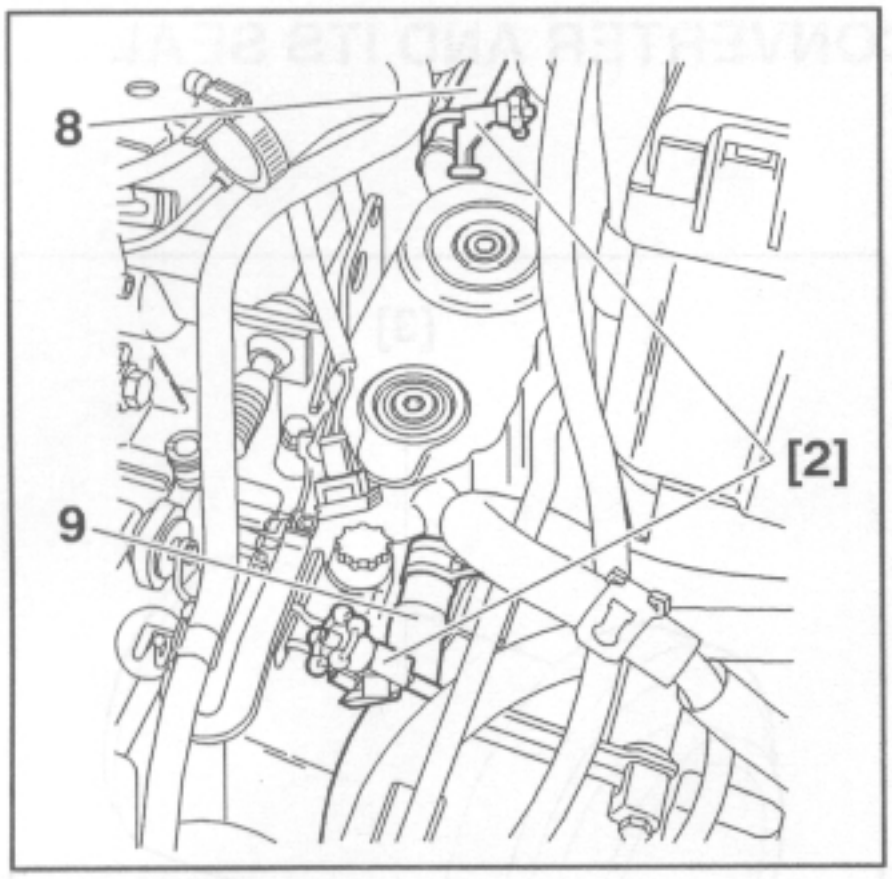


Fig : B2CP262C

Clamp hoses (8) and (9). Use tools [2].

Disconnect flexible hoses (8) and (9). Use tool [1].

Remove :
- the exchanger fixing screws and their seals
- the heat exchanger

Recover the seals beneath the heat exchanger.

3 – REFITTING

IMPERATIVE : The heat exchanger must be replaced if the gearbox oil is contaminated.

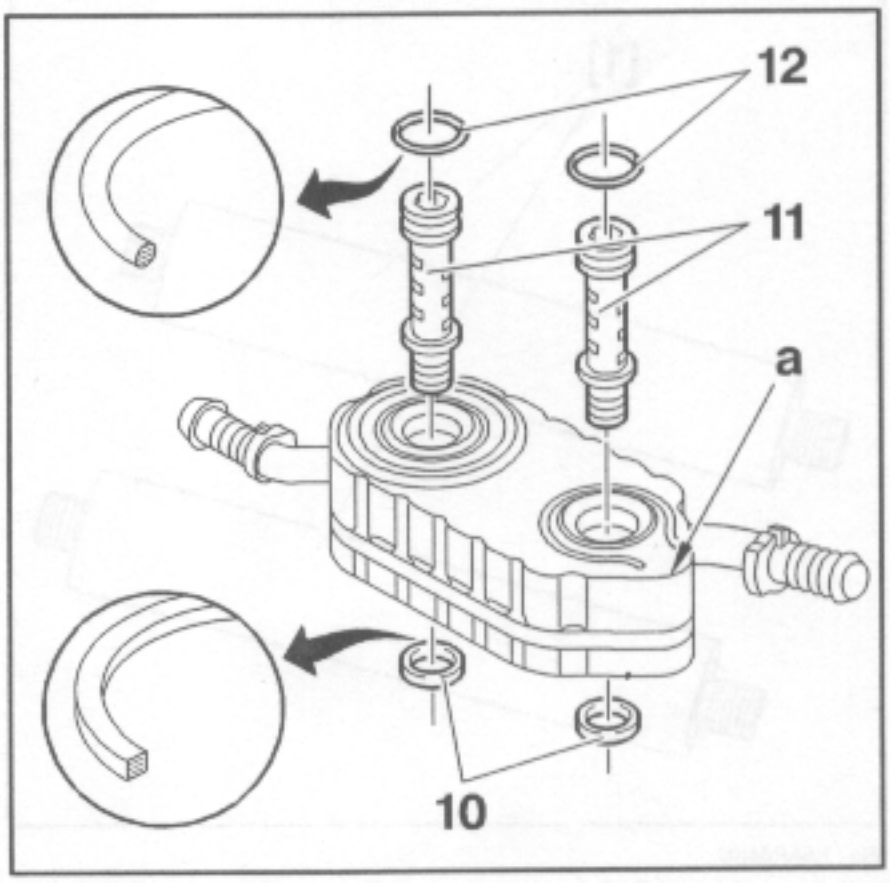


Fig : B2CP263C

Replace :
- the square section seals (10)
- the O–ring seals (12)

Fit the seals (10) in their locations on the housing.

WARNING : The heat exchanger must be fitted with point "a" facing towards the front of the vehicle.

Fit :
- the heat exchanger
- the screws (11). Tighten alternately to 3,5 m.daN

Couple the hoses (8) and (9).

Refit the mounting (7).

Reconnect connector (6).

Fit :
- the battery carrier (4)
- the air filter box and sleeve (3)
- the dehydrator filter (2) to the mounting
- the battery (1)

Fill, bleed and top up the level of the cooling circuit (see the relevant operation).

WARNING : An increase in the temperature will lead to the gearbox being destroyed. For this, carry out a road test and check the gearbox oil temperature.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : THE CONVERTER AND ITS SEAL

1 – RECOMMENDED TOOLS

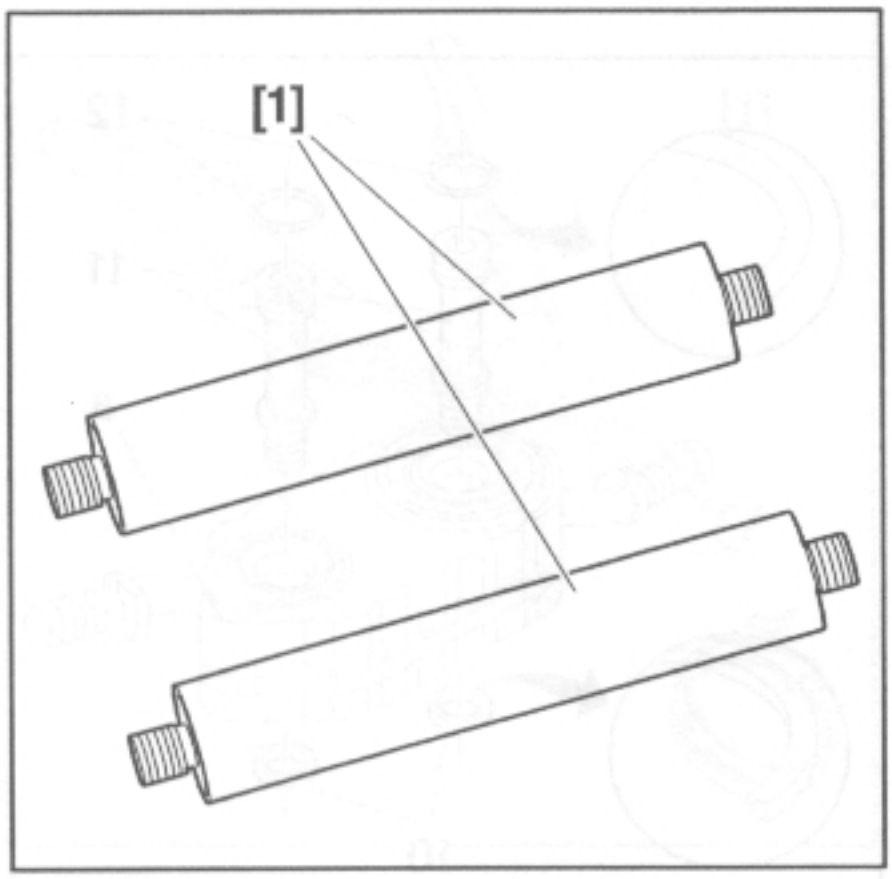


Fig : E5AP04KC

[1] handle for fitting the converter 8010–T.B (tool box 8010–T).

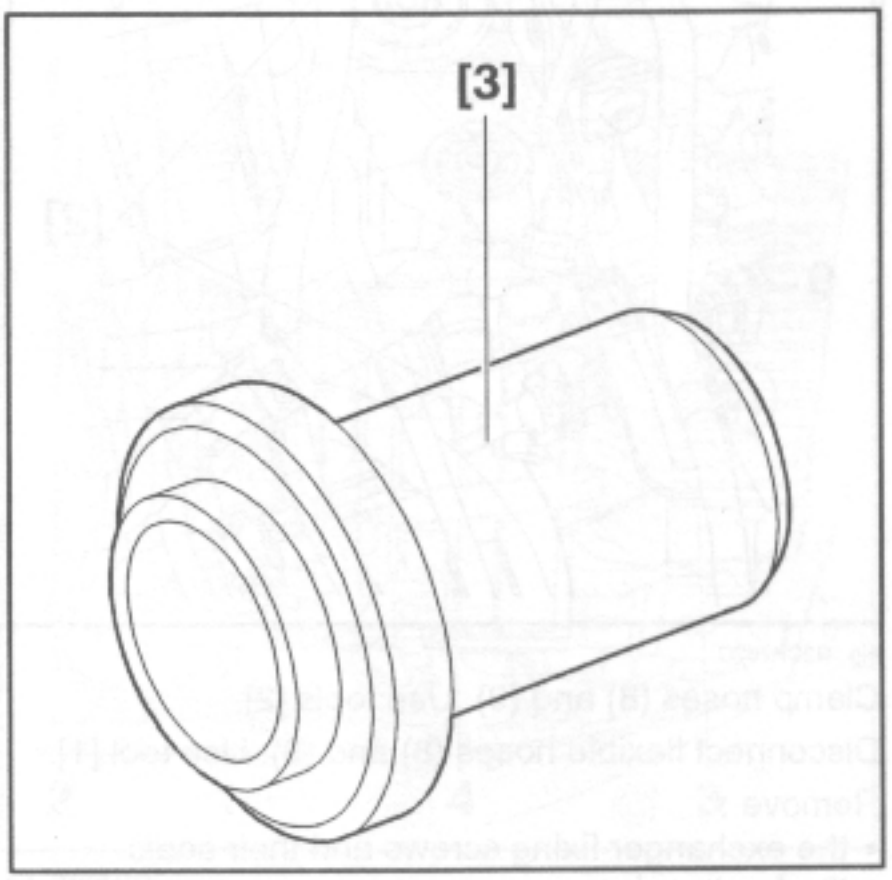


Fig : E5AP05MC

[3] converter seal fitting drift 8010–T.H (tool box 8010–T).

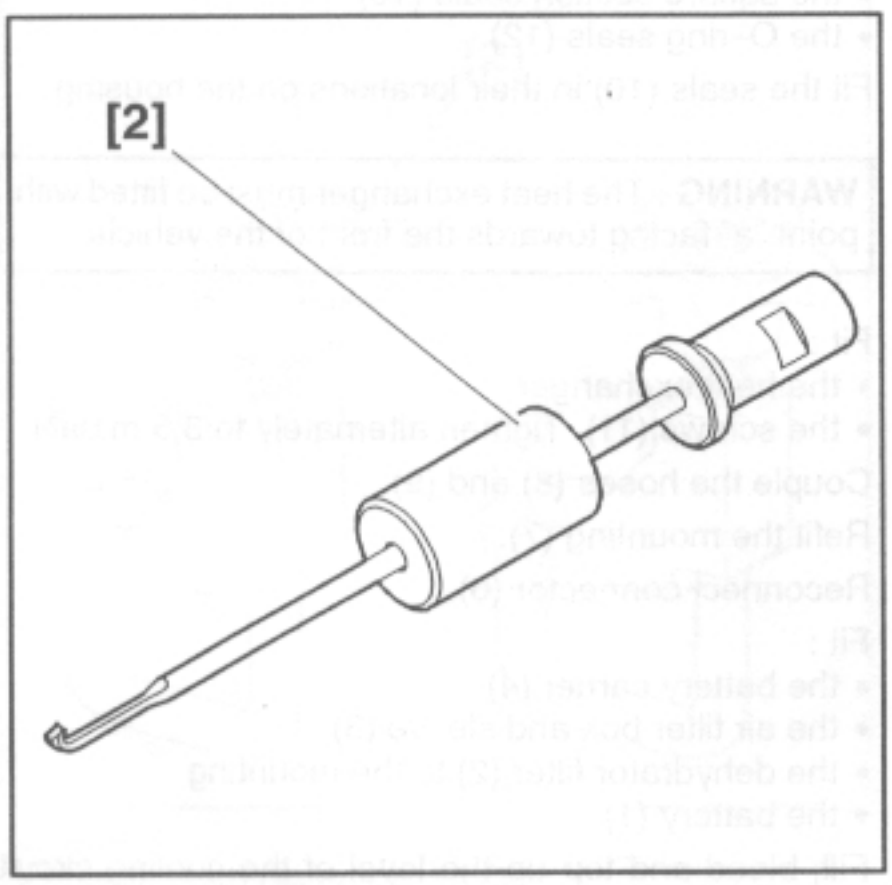


Fig : E5AP05LC

[2] inertia puller 8010–T.P (tool box 8010–T).

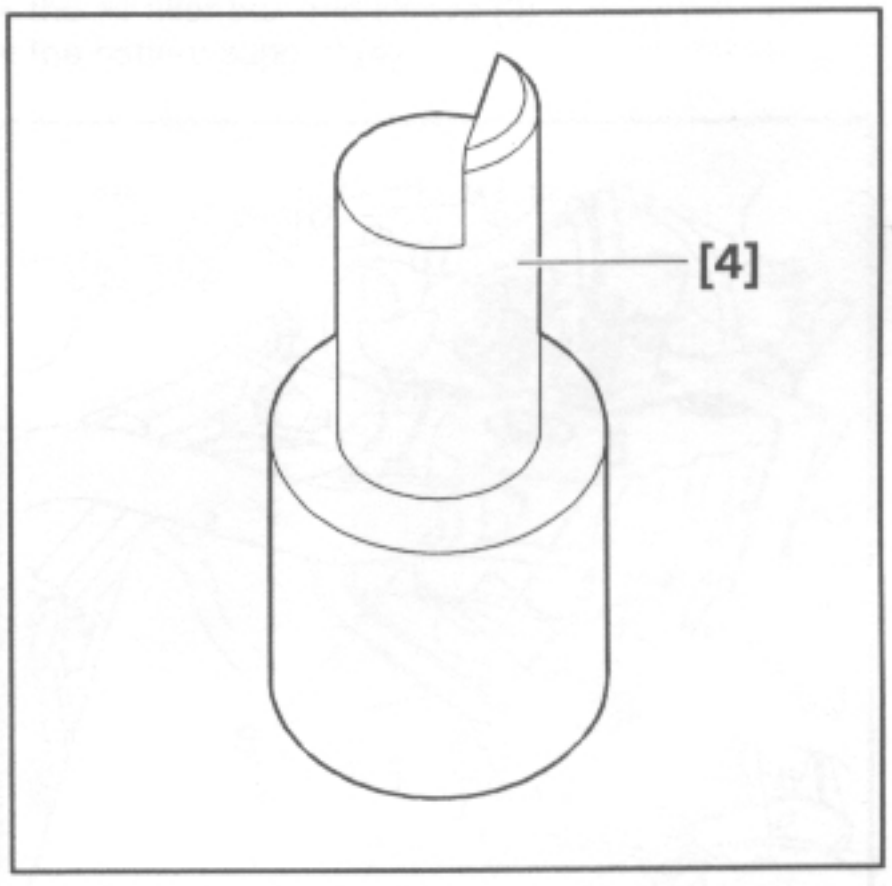


Fig : E5AP05NC

[4] converter retaining stop 8010–T.E2.

www.WorkshopManuals.co.uk

2 – REMOVING

2.1 – Converter

Remove the engine–gearbox assembly.

Uncouple the engine–gearbox assembly (see the relevant operation).

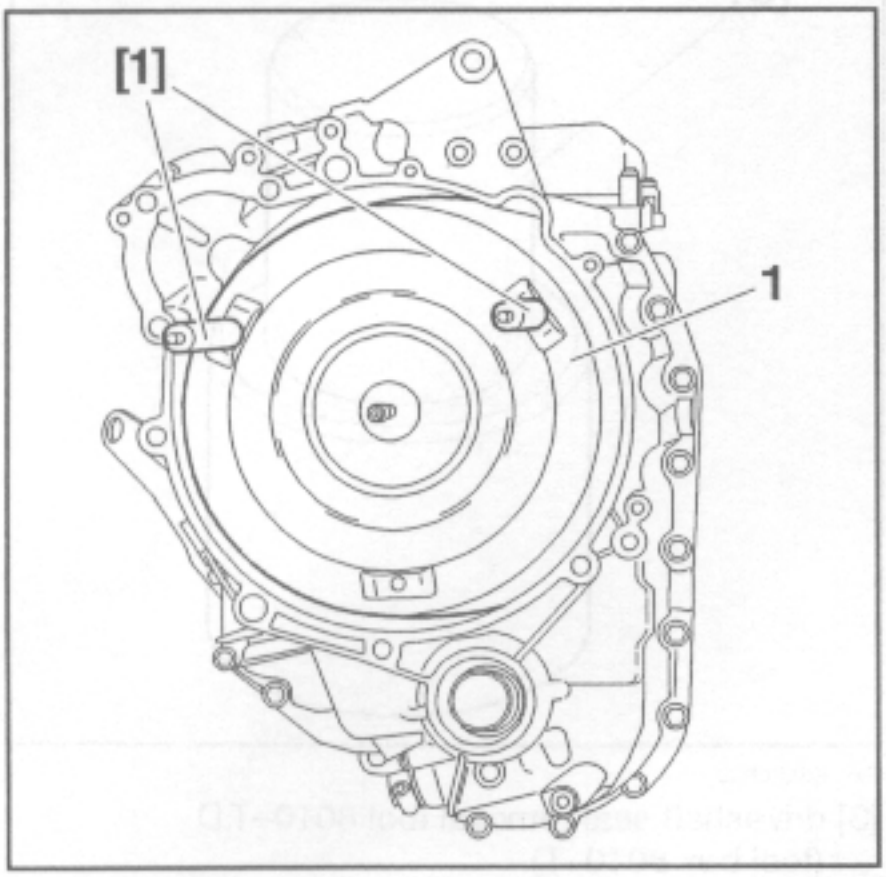


Fig : B2CP24WC

Fit the tools [1].

Pull and disengage the converter (1).

WARNING : The converter contains a significant quantity of oil.

2.2 – Converter lipped seal

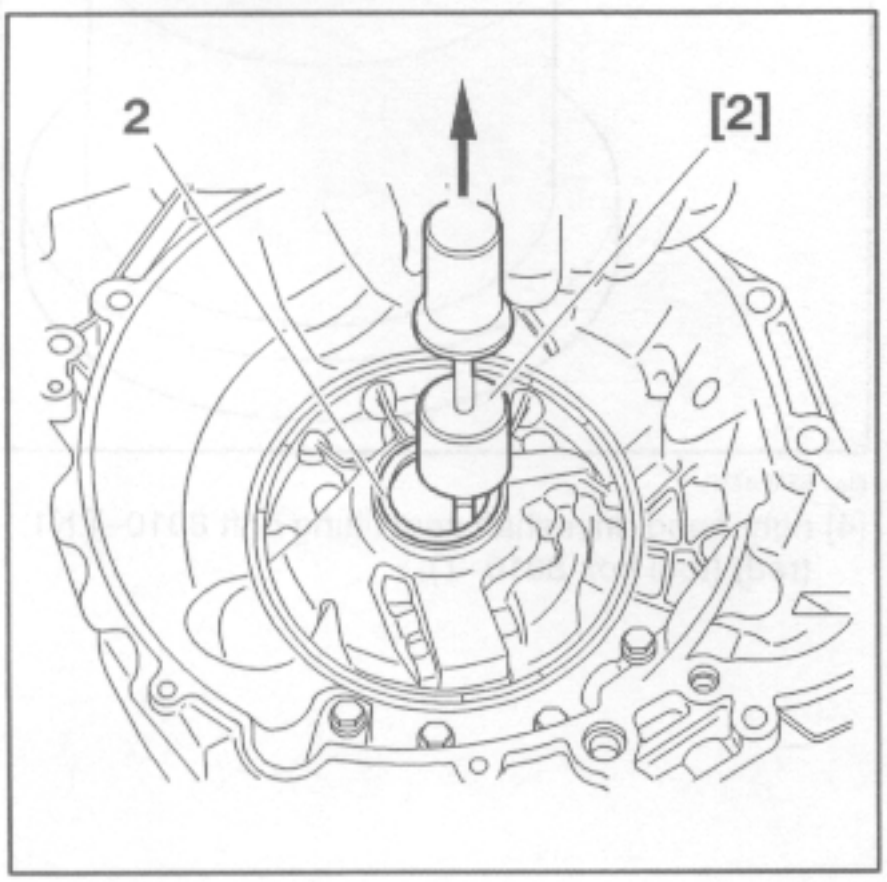


Fig : B2CP24XC

Extract the seal (2), by means of tool [2].

3 – REFITTING

3.1 – Converter lipped seal

Clean the seal location.

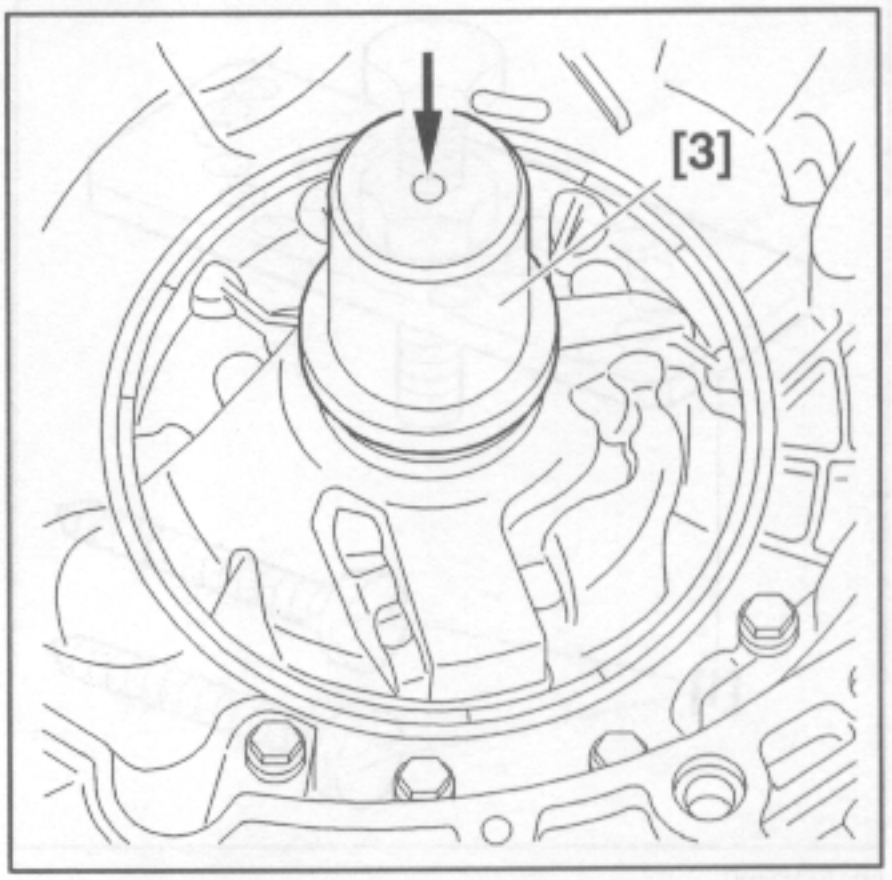


Fig : B2CP24YC

Fit the new seal using tool [3].

3.2 – Converter

Visually check :

- converter centring tool (crankshaft and converter side)
- the seal bearing surface on the converter
- the 3 fixing points
- the oil pump shaft, turbine and converter splines

NOTE : Do not add any fluid other than the oil recommended. Before installing a new torque converter, fill it partially with oil.

Lubricate the converter seal bearing surface.

Progressively engage the converter (1) using the tools [1] by turning it lightly in alternate directions to allow the splines to engage more easily.

Check that the converter (1) has been correctly fitted, by means of tool [4].

(the tool [4] is fitted into the hole for the engine speed sensor).

Couple the engine–gearbox assembly (see the relevant operation).

Refit the engine–gearbox assembly.

www.WorkshopManuals.co.uk

REMOVING – REFITTING : DRIVESHAFT SEAL

1 – RECOMMENDED TOOLS

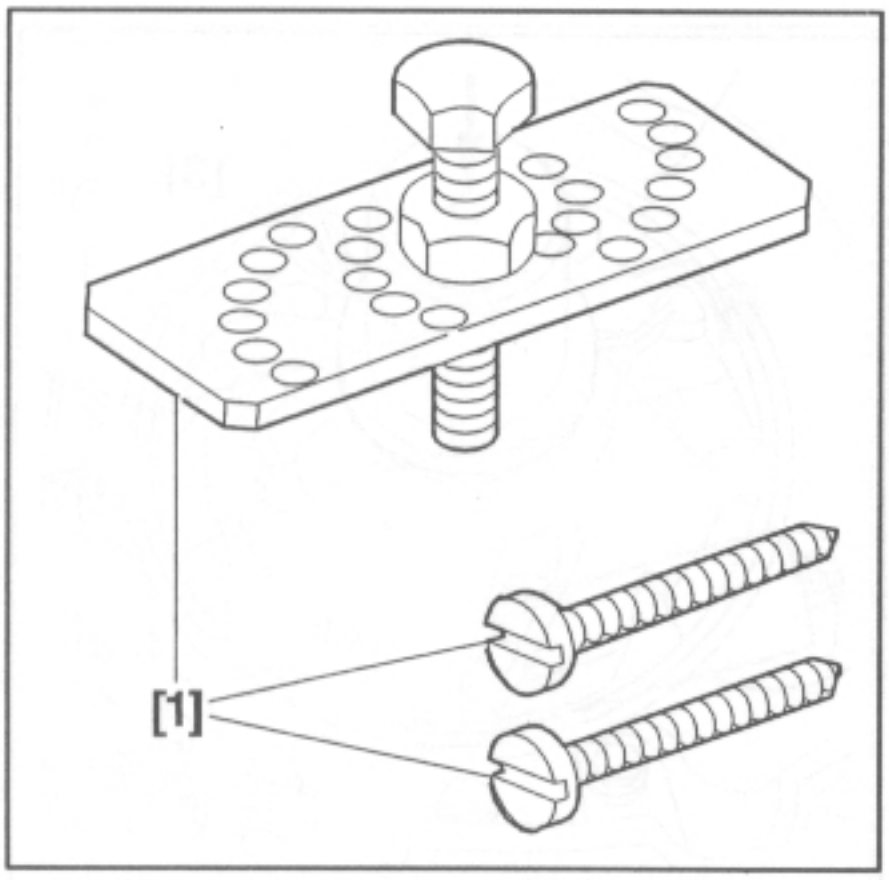


Fig : E5AP066C

[1] extractor 4601–T.G (tool box 4601–T).

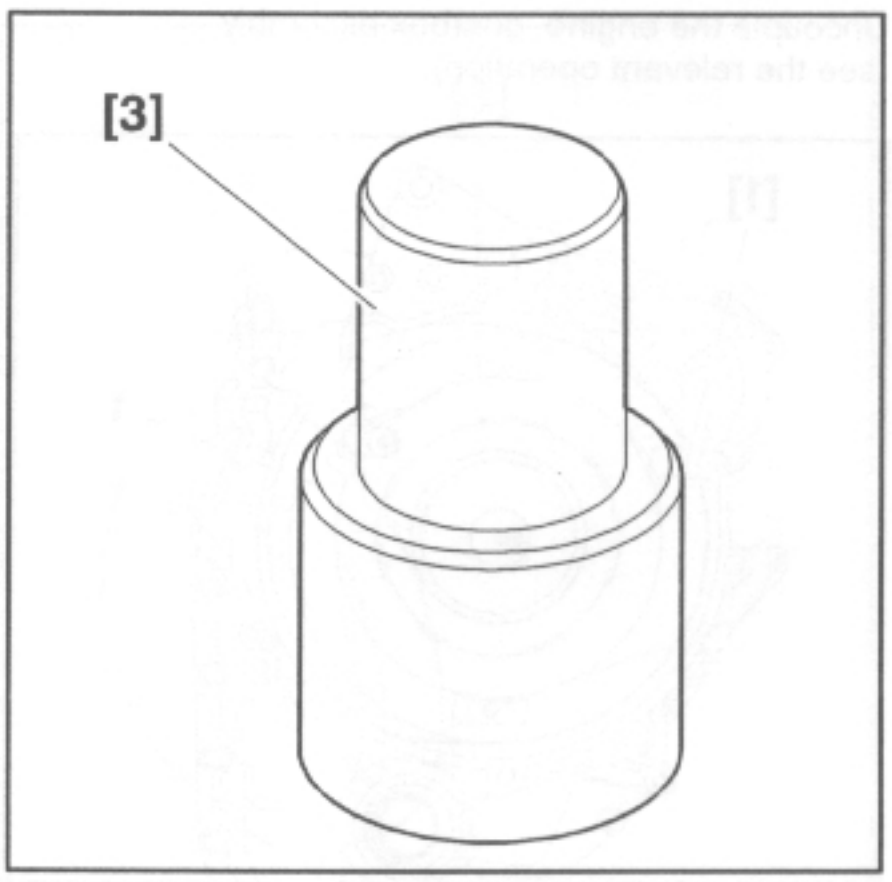


Fig : E5AP068C

[3] driveshaft seal removal tool 8010–T.D (tool box 8010–T).

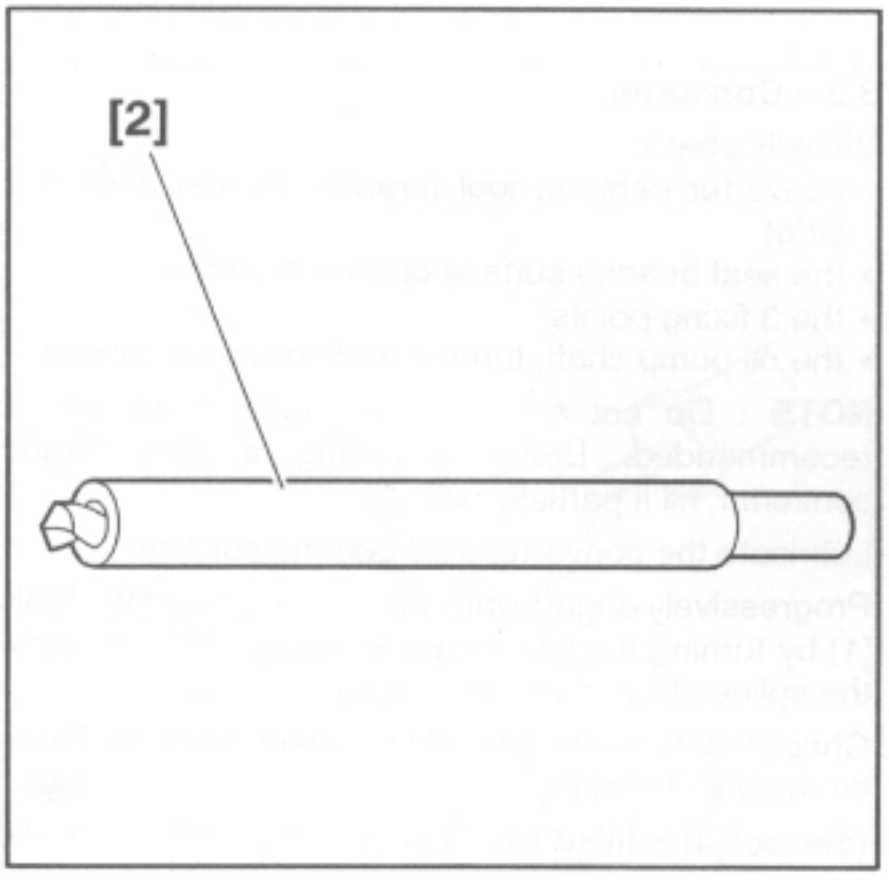


Fig : E5AP067C

[2] drill Ø 3,2 mm 4601–T.J (tool box 4601–T).

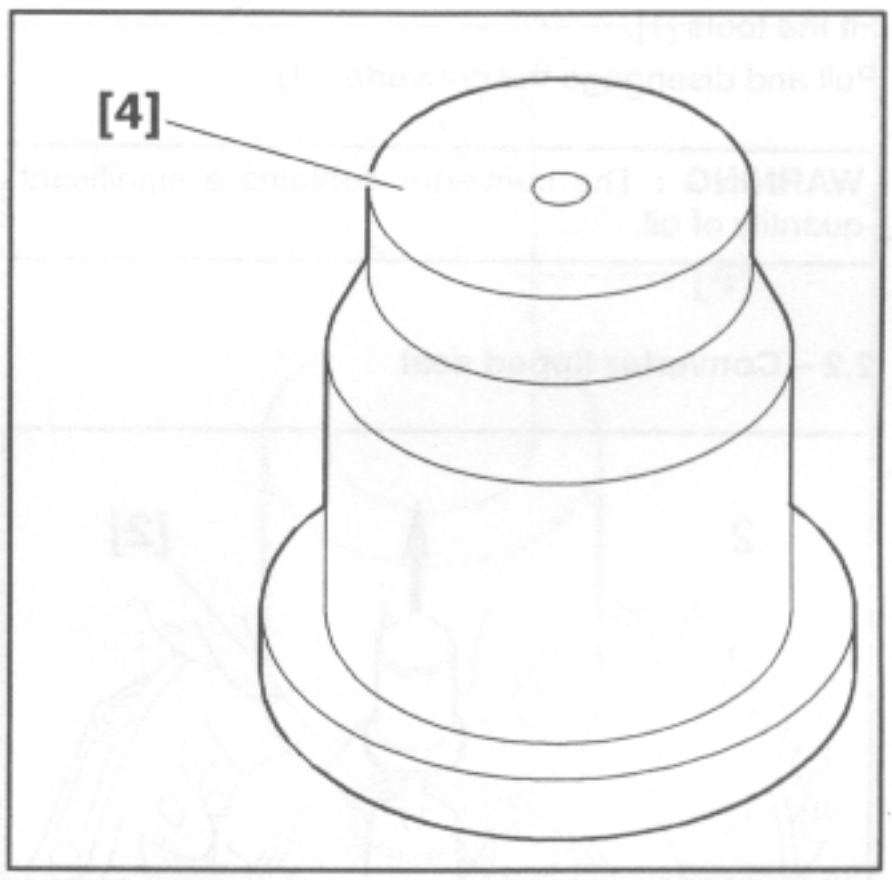


Fig : E5AP071C

[4] right hand driveshaft seal fitting drift 8010–T.K1 (red) (tool box 8010–T).

www.WorkshopManuals.co.uk

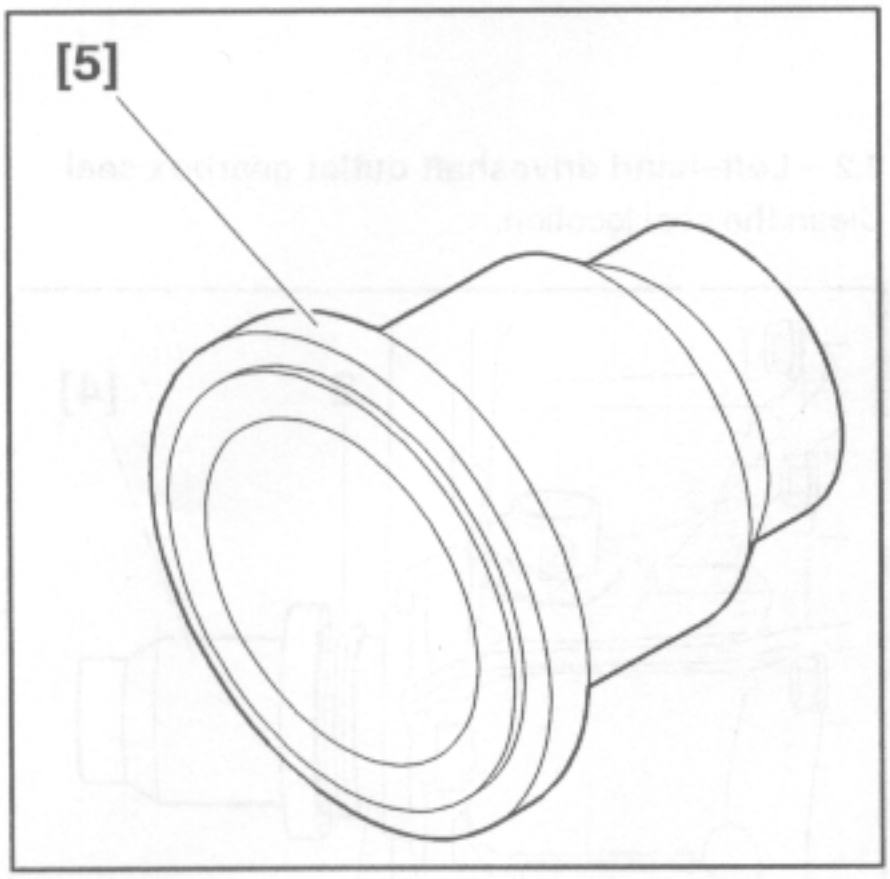


Fig : E5AP072C

[5] left hand driveshaft seal fitting drift 8010–T.K2 (black) (tool box 8010–T).

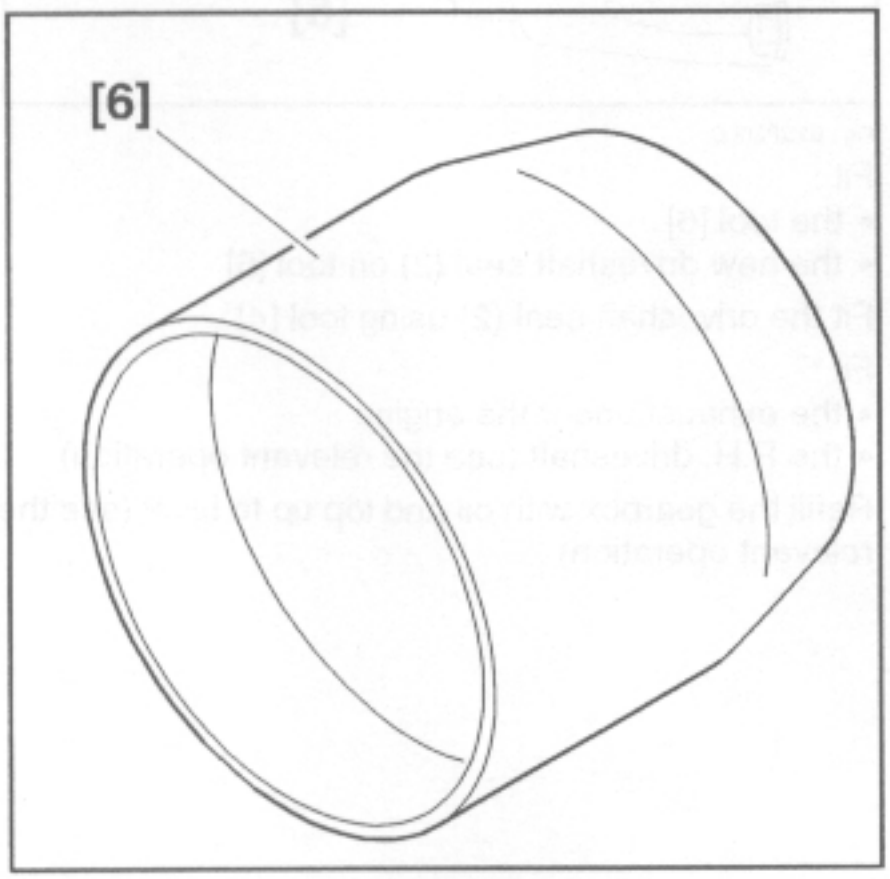


Fig : E5AP073C

[6] seal fitting guide 8010–T.J (tool box 8010–T).

2 – REMOVING

Remove the drive shafts (see the relevant operation).

Drain the gearbox (see the relevant operation).

2.1 – Left–hand driveshaft outlet gearbox seal

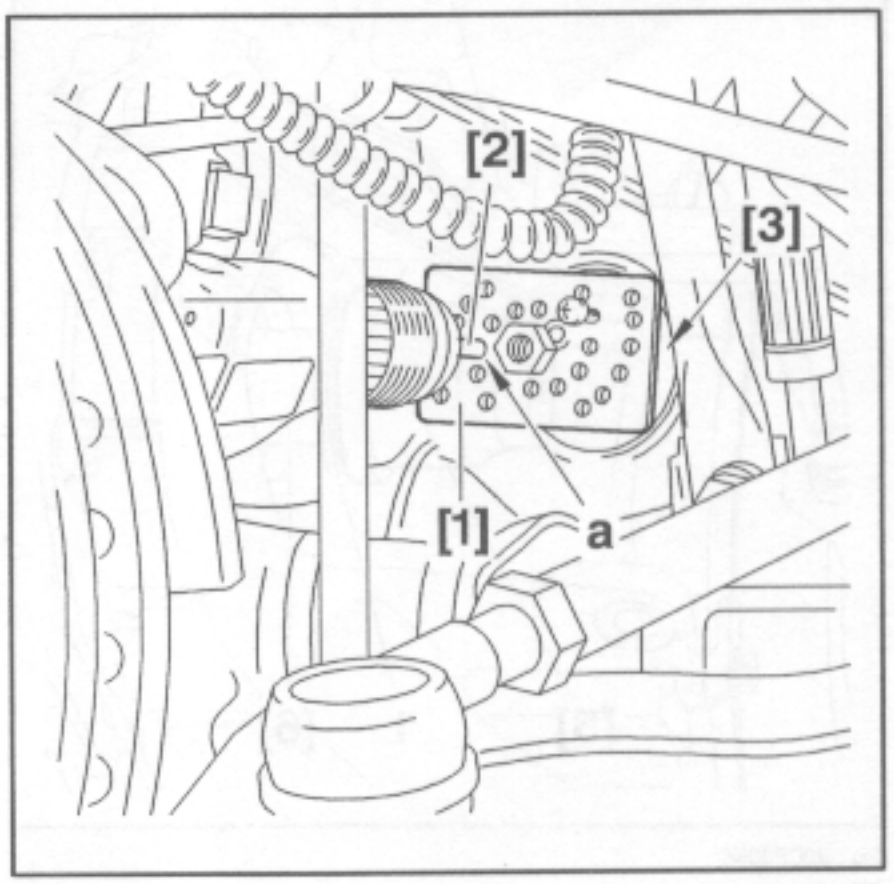


Fig : B2FP034C

Drill the seal using a drill and the tool [2].

Fit tool [3].

Fit tool [1] ; using one of the Ø 5x60 screws.

Drill the seal at "a", using a drill and the tools [1] and [2].

Fit the second 5x60 Ø screw.

Take out the seal using the tool [1].

2.2 – Right–hand driveshaft outlet gearbox seal

Remove :

- the exhaust under the engine
- the right–hand driveshaft outlet gearbox seal (removal procedure the same as for the left–hand driveshaft outlet gearbox seal)

www.WorkshopManuals.co.uk

3 – REFITTING

3.1 – Right–hand driveshaft outlet gearbox seal

Clean the seal location.

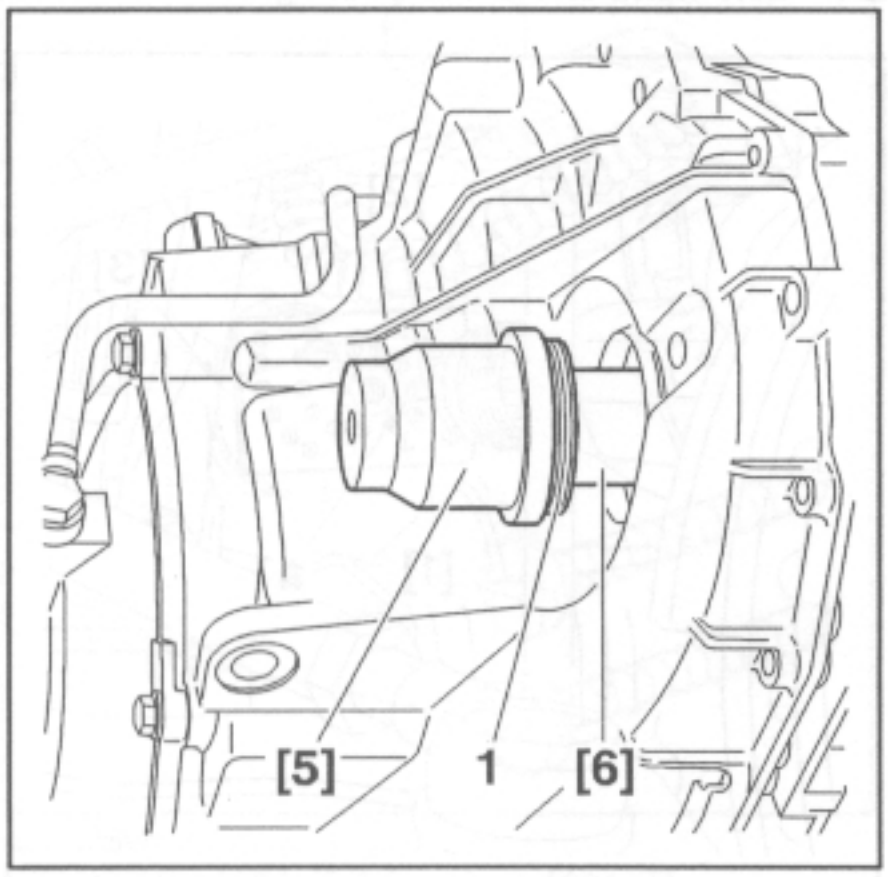


Fig : B2CP30KC

Fit :

- the tool [6]
- the new driveshaft seal (1) on tool [6]

Position the driveshaft seal (1) using tool [5].

Refit the left–hand driveshaft (see the relevant operation).

3.2 – Left–hand driveshaft outlet gearbox seal

Clean the seal location.

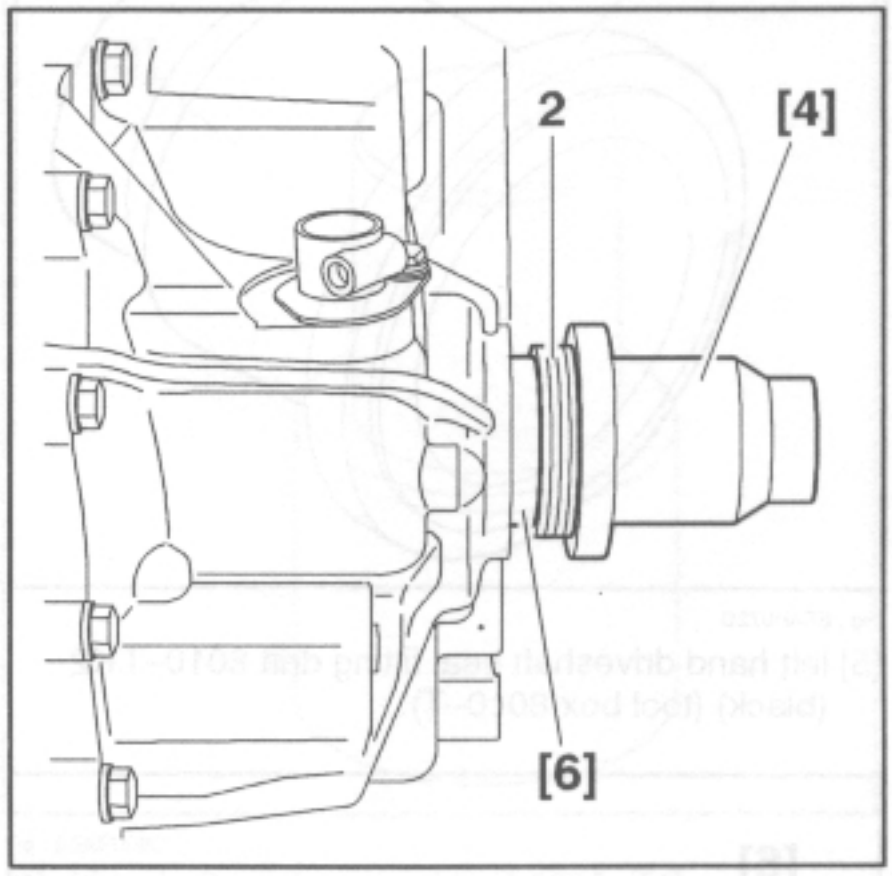


Fig : B2CP30LC

Fit :

- the tool [6]
- the new driveshaft seal (2) on tool [6]

Fit the driveshaft seal (2) using tool [4].

Fit :

- the exhaust under the engine
- the R.H. driveshaft (see the relevant operation)

Refill the gearbox with oil and top up to level (see the relevant operation).

www.WorkshopManuals.co.uk

Xm

OCTOBER 1997

SUBSCRIPTION

RPO No: 7511

REF. 5 No XM 354-00/2

GEARBOX

- **AUTOMATIC GEARBOX**
  4HP20 type
  - Gear selection control

MAN 108931

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

GB

1

www.WorkshopManuals.co.uk

GEARBOX

DATA : GEAR SELECTION CONTROL 1

REMOVING – REFITTING : GEAR SELECTION CONTROL 2

1 – Recommended tools 2
2 – Gear selection control –
3 – Gear lever knob 3
4 – Locking rod and lever 4
5 – Operating cable 5

www.WorkshopManuals.co.uk

DATA : GEAR SELECTION CONTROL

The gear selection control has 7 positions :
- P : parking (locking)
- R : reverse
- N : neutral
- D : automatic control (1st to 4th gear)
- 3 : automatic control (1st to 3rd gear)
- 2 : automatic control (1st, 2nd gear)
- 1 : automatic control (1st gear)

The ECU manages 3 driving programmes :
- economical :
  gears are changed at a relatively low speed, giving an economical driving performance
- sport :
  use with the emphasis on performance
- snow :
  manual driving programme or snow programme. The gear is only changed by the selector lever when it is in position 3, 2 or 1.
  In position "D", starting occurs in 2nd gear

A switch to the left of the gear lever allows the driver to select one of the 3 driving programmes.

NOTE : The engine can only be started in positions "P" or "N".

The automatic gearbox is controlled by a cable.

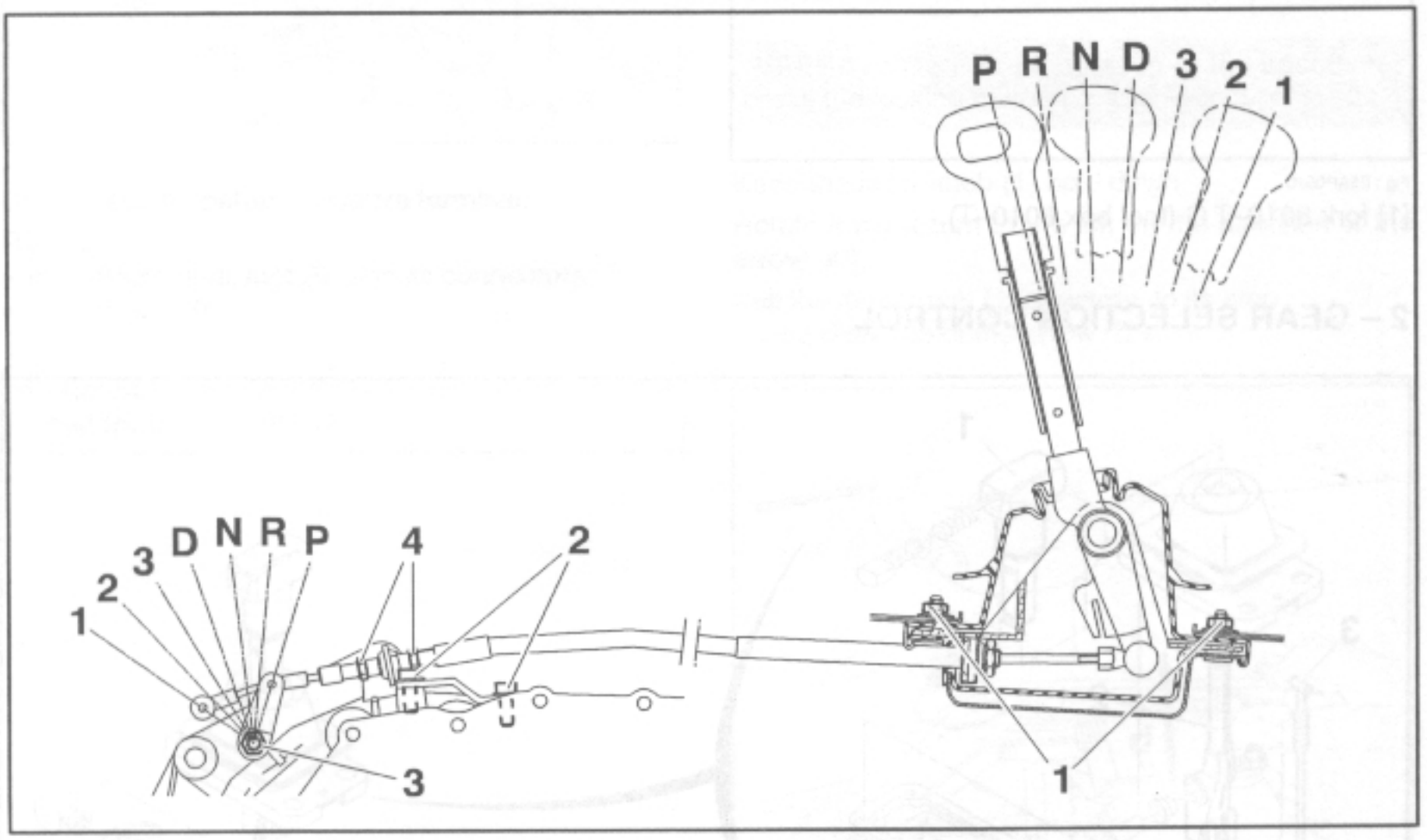


Fig : B2CP29HD

Tightening torques :
- (1) fixing to bodyshell : 0,7 m.daN
- (2) gearbox/mounting fixing : 1,5 m.daN
- (3) gearbox/selector fixing : 2,1 m.daN
- (4) adjustment nuts : 1 m.daN

Ball–joint lubrication (G9 grease).

www.WorkshopManuals.co.uk

REMOVING – REFITTING : GEAR SELECTION CONTROL

1 – RECOMMENDED TOOLS

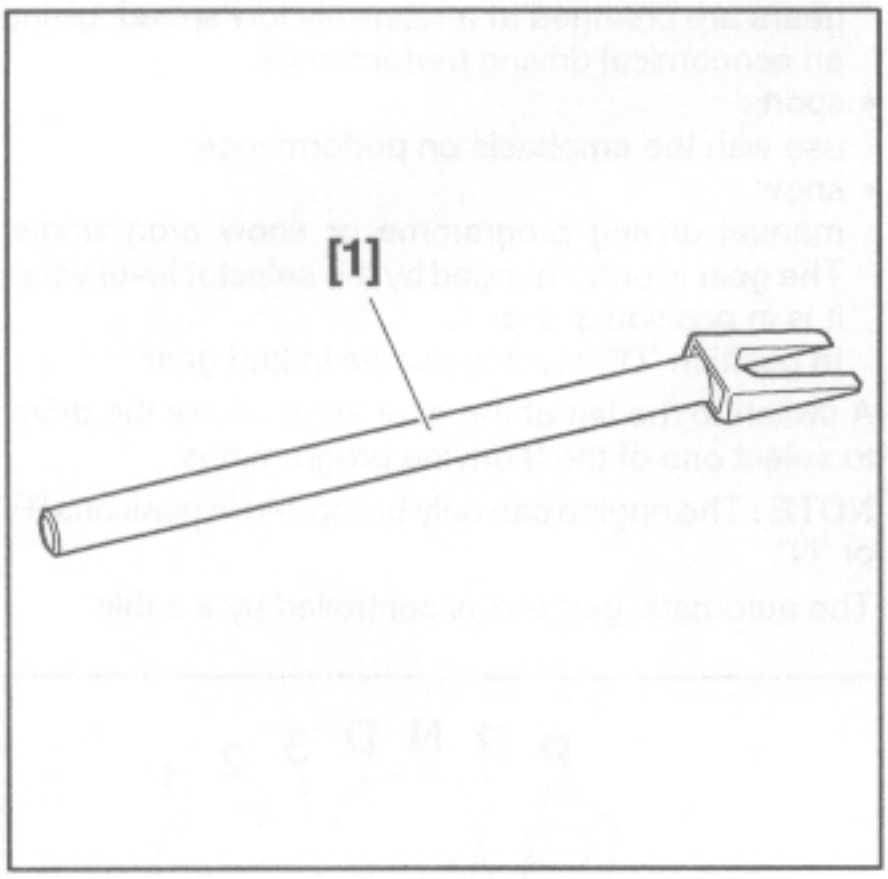


Fig : E5AP05JC

[1] fork 8010–T.G (tool box 8010–T).

2 – GEAR SELECTION CONTROL

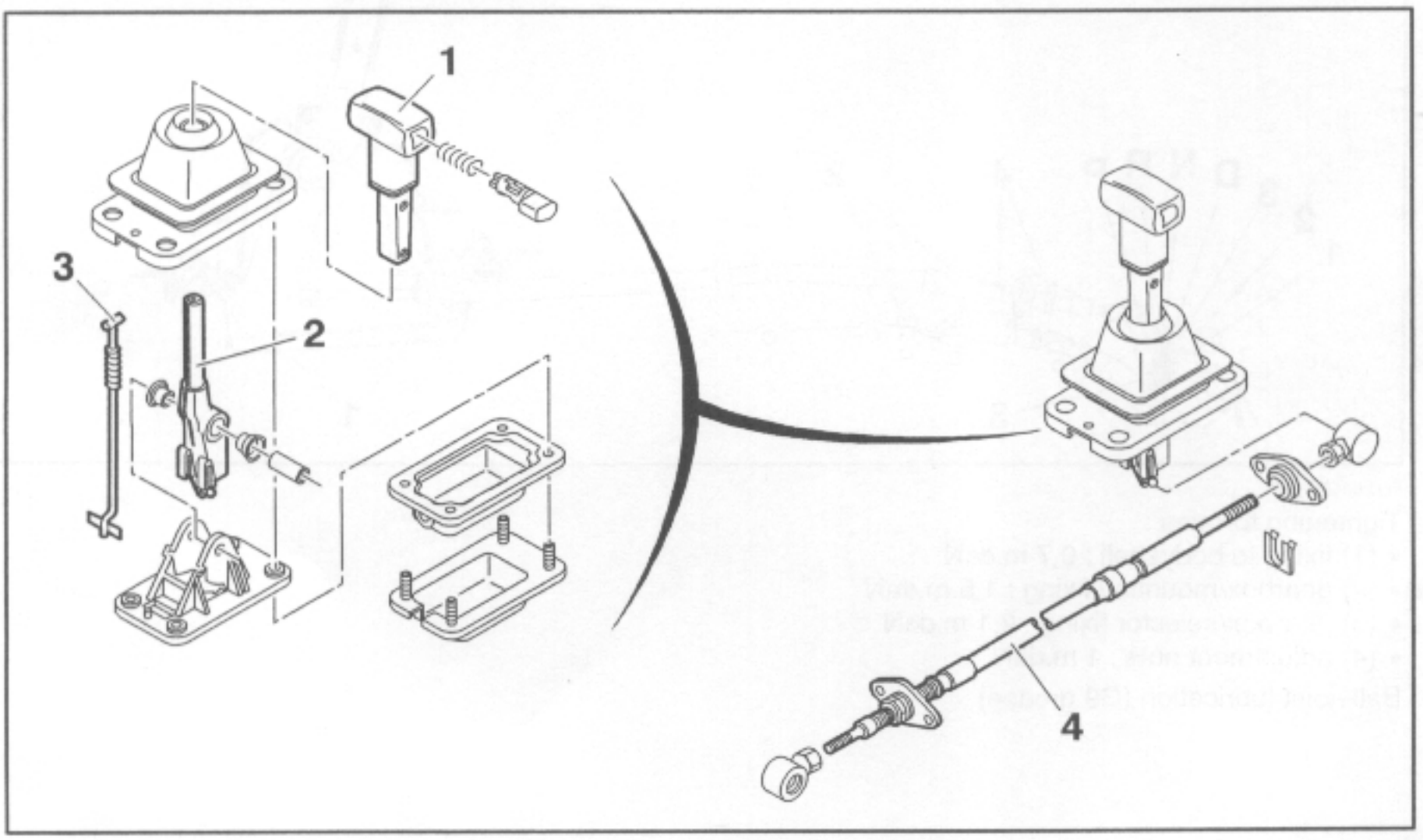


Fig : B2CP29JD

(1) gear lever knob.
(2) gear selection lever.
(3) selection control locking rod.
(4) operating cable.

www.WorkshopManuals.co.uk

3 – GEAR LEVER KNOB

3.1 – Removing

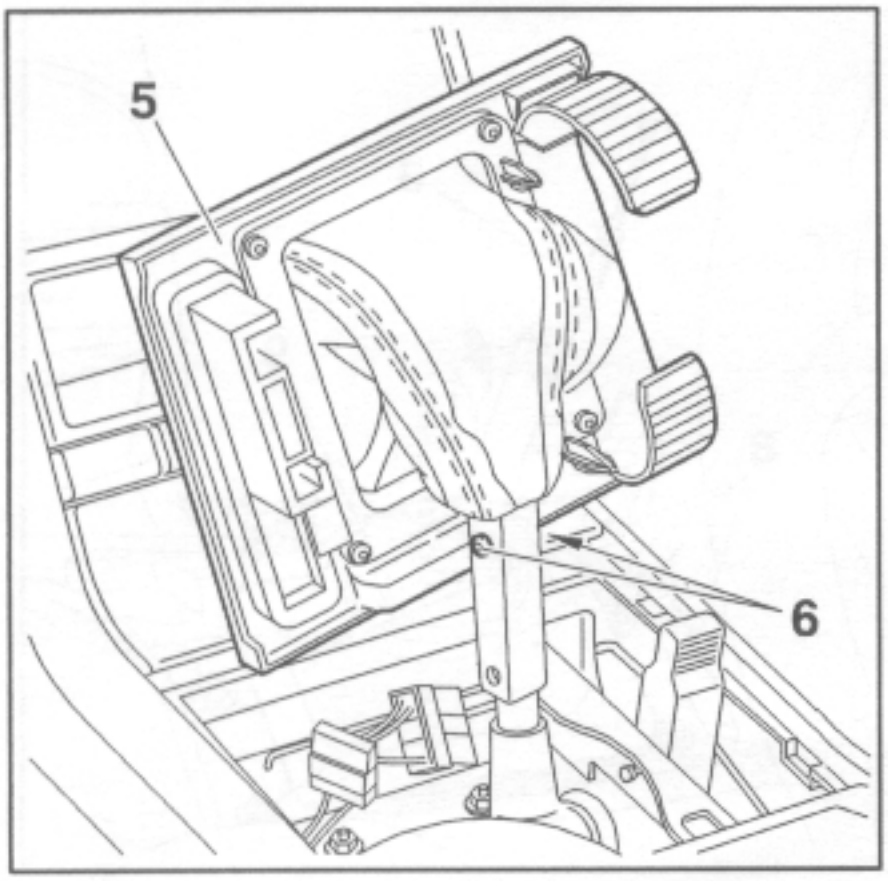


Fig : B2CP29KC

Disconnect the battery negative terminal.

Remove :
- the selector indicator (5) and its connectors
- the screws (6)

WARNING : None of these operations should be forced (remove carefully).

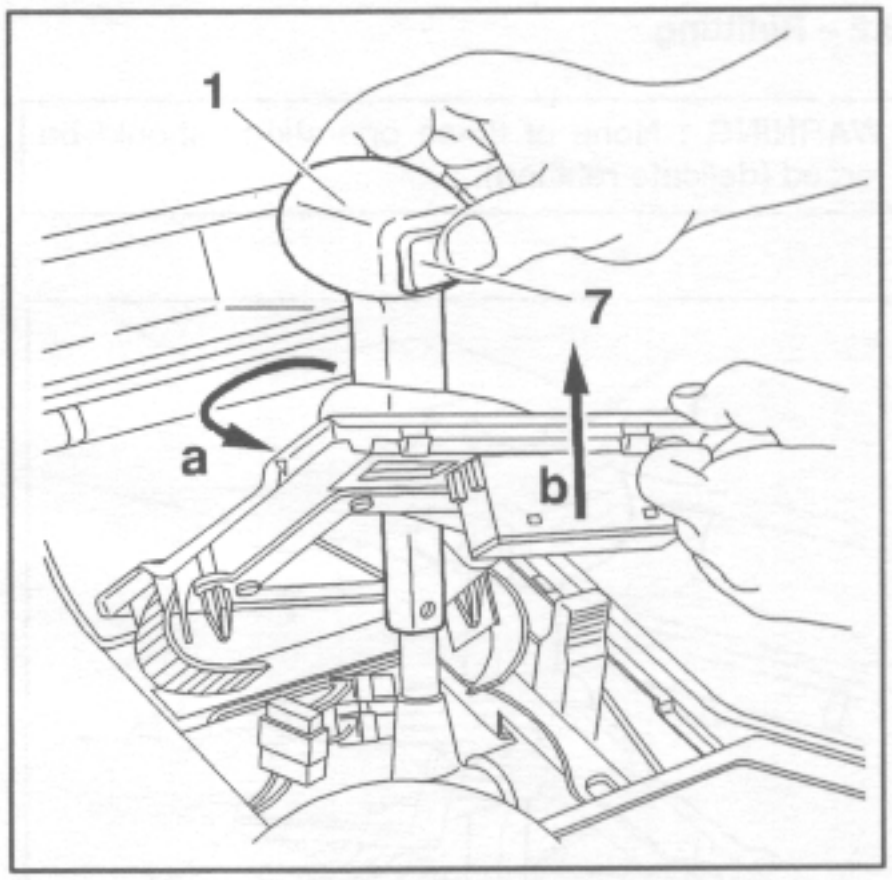


Fig : B2CP29LC

IMPERATIVE : For the duration of the operation : press the locking button (7) and keep it pressed.

Keep the lever knob (1) held down.

Rotate it a 1/4 turn to the left (in the direction of the arrow "a").

Pull the lever knob (1) upwards, to its stop (in the direction of the arrow "b").

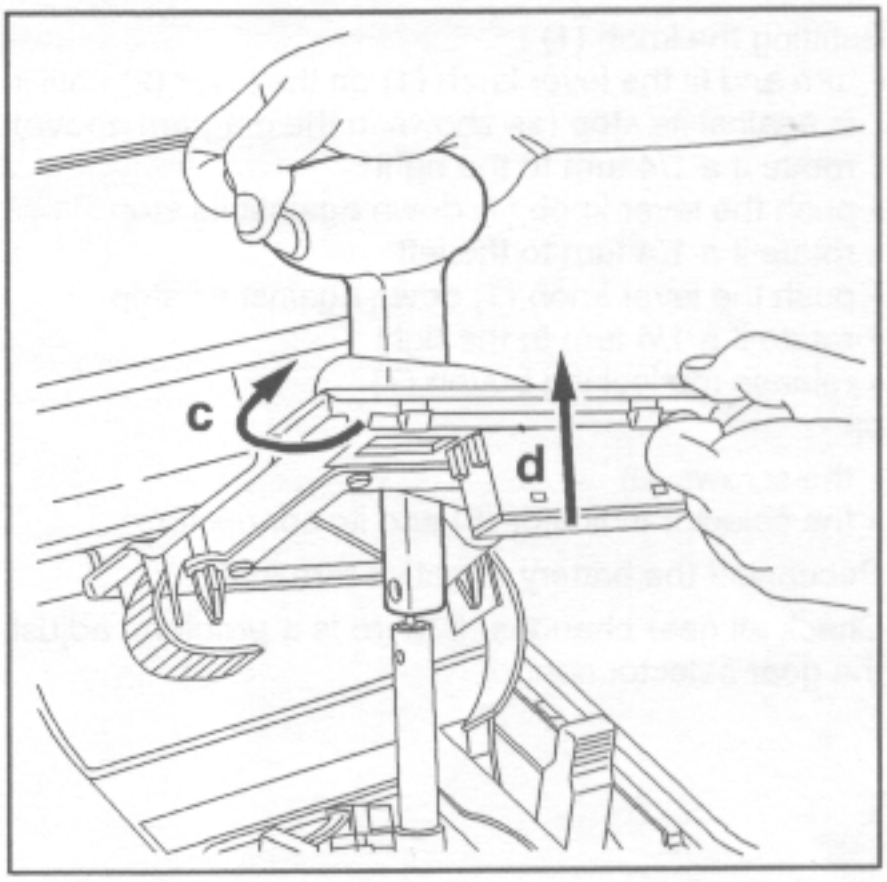


Fig : B2CP29MC

Rotate it a 1/4 turn to the right (in the direction of the arrow "c").

Pull the lever knob (1) to remove it (in the direction of the arrow "d").

www.WorkshopManuals.co.uk

3.2 – Refitting

WARNING : None of these operations should be forced (delicate refitting).

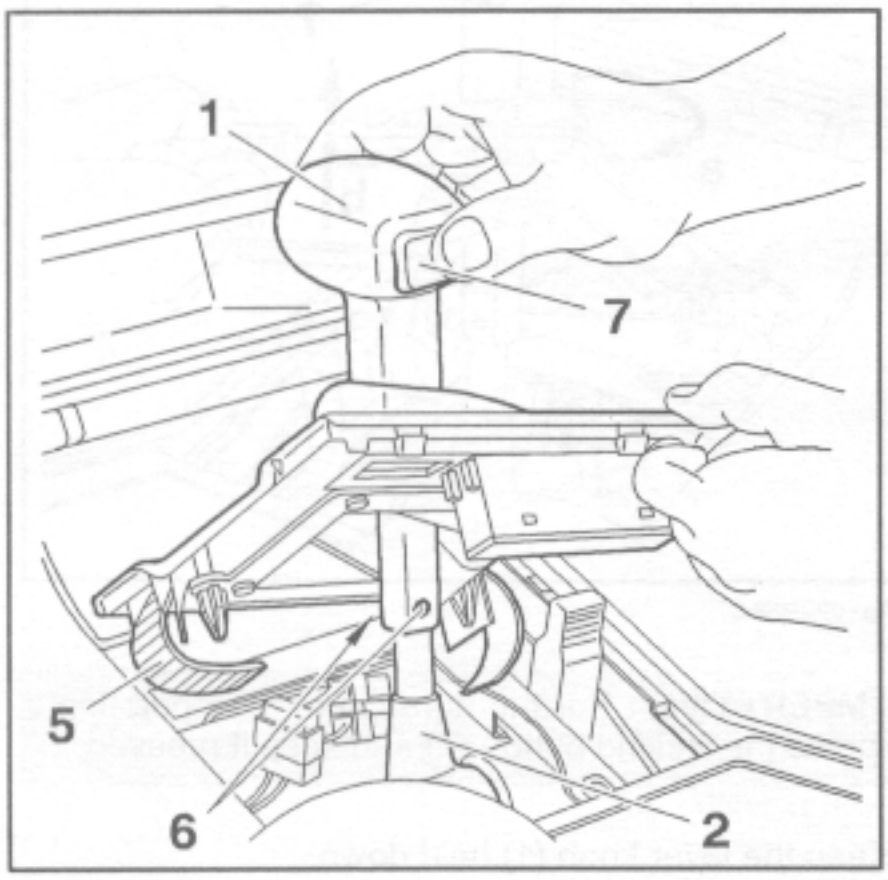


Fig : B2CP29NC

IMPERATIVE : For the duration of the operation Press the locking button (7) and keep it pressed.

Refitting the knob (1) :
- turn and fit the lever knob (1) on the lever (2) until it is against its stop (as shown in the diagram above)
- rotate it a 1/4 turn to the right
- push the lever knob (1) down against its stop
- rotate it a 1/4 turn to the left
- push the lever knob (1) down against its stop
- rotate it a 1/4 turn to the right
- release the locking button (7)

Fit :
- the screws (6)
- the selector indicator (5) and its connectors

Reconnect the battery negative terminal.

Check all gear changes. If there is a problem, adjust the gear selector control.

4 – LOCKING ROD AND LEVER

4.1 – Removing

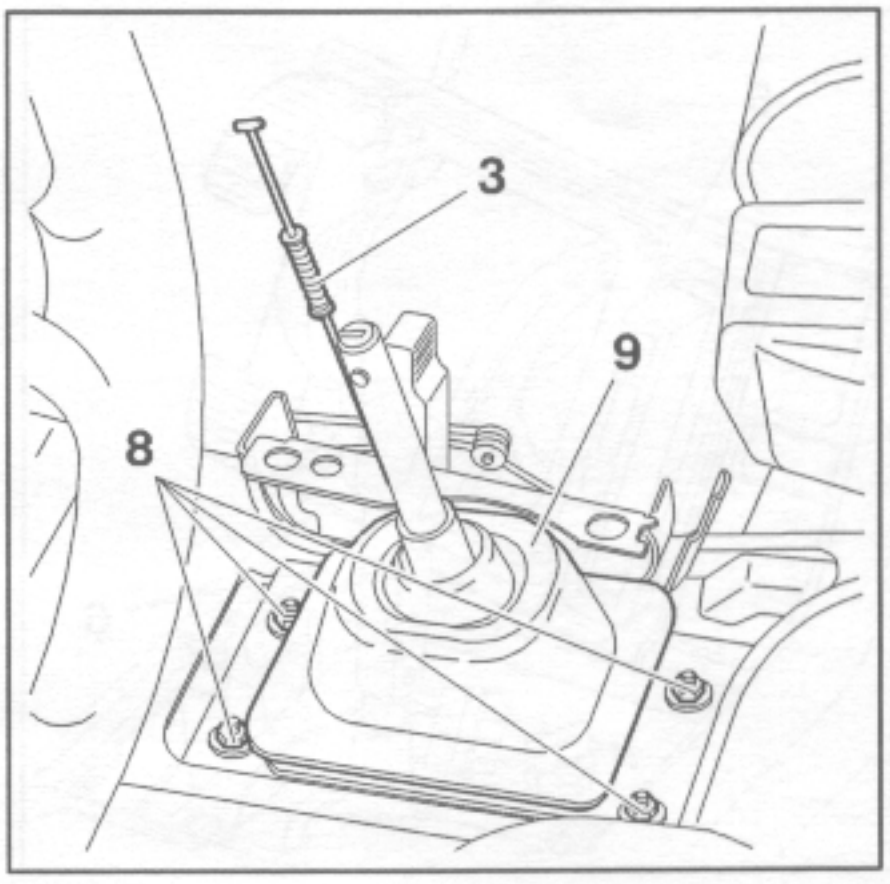


Fig : B2CP29PC

Remove :
- the selector knob (1)
- the insulation and the nuts (8)
- the exhaust heat shield

Push the gear lever assembly downwards.

Remove the gaiter (9).

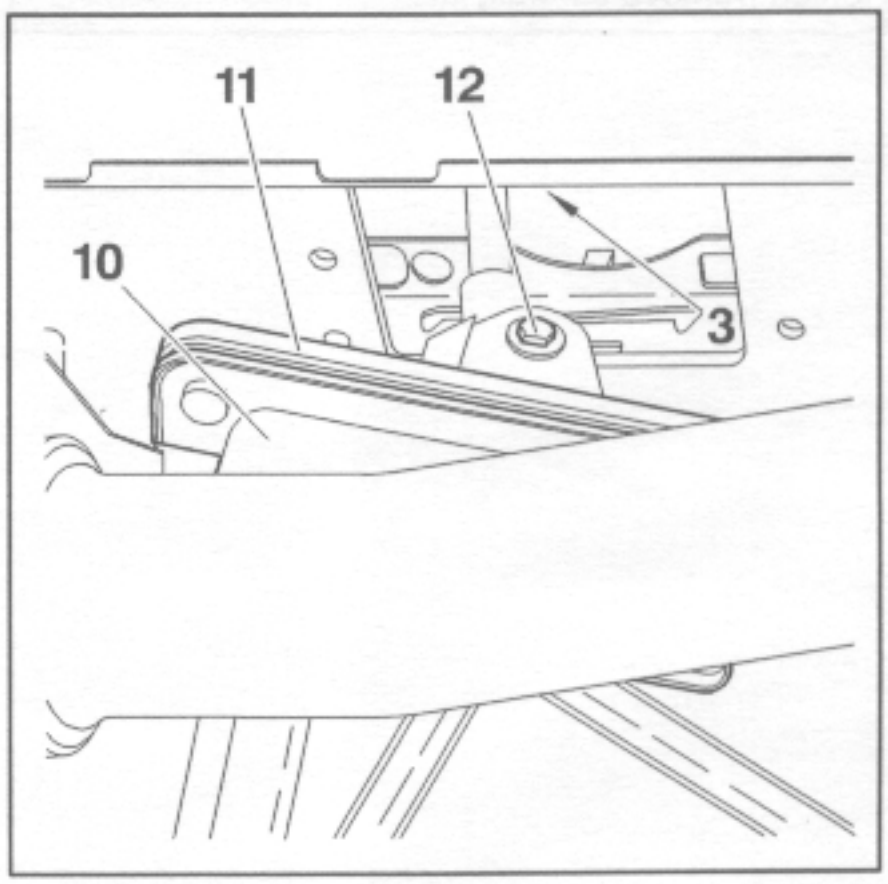


Fig : B2CP29QC

Remove :
- the cover (10)
- the seal (11)
- the screw and the nut (12)
- the screw spacer and sleeves (12)
- the locking rod (3)

www.WorkshopManuals.co.uk

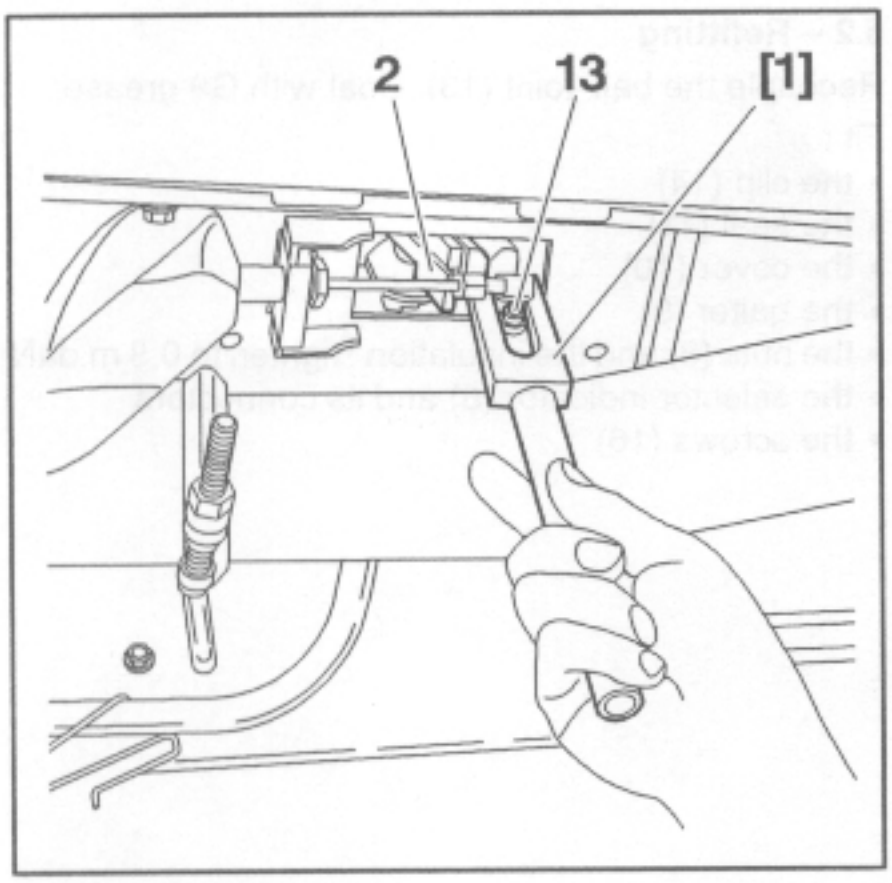


Fig : B2CP30SC

Uncouple the ball–joint (13) ; by means of tool [1].

Remove the lever (2).

4.2 – Refitting

Fit :
- the lever (2)
- the locking rod (3)
- the screw spacer and sleeves (12).
  Coat with G9 grease
- the screw and the nut (12) : tighten to 0,8 m.daN

Recouple the ball–joint (13). Coat with G9 grease.

Fit :
- the seal (11)
- the cover (10)
- the gaiter (9)
- the nuts (8) and the insulation : tighten to 0,8 m.daN
- the selector knob (1)

Check all gear changes. If there is a problem, adjust the gear selector control.

Refit the exhaust heat shield.

5 – OPERATING CABLE

5.1 – Removing

Disconnect the battery negative terminal.

Remove :
- the selector indicator (5) and its connectors
- the insulation and the nuts (8)
- the exhaust heat shield

Push the gear lever assembly downwards.

Remove the gaiter (9).

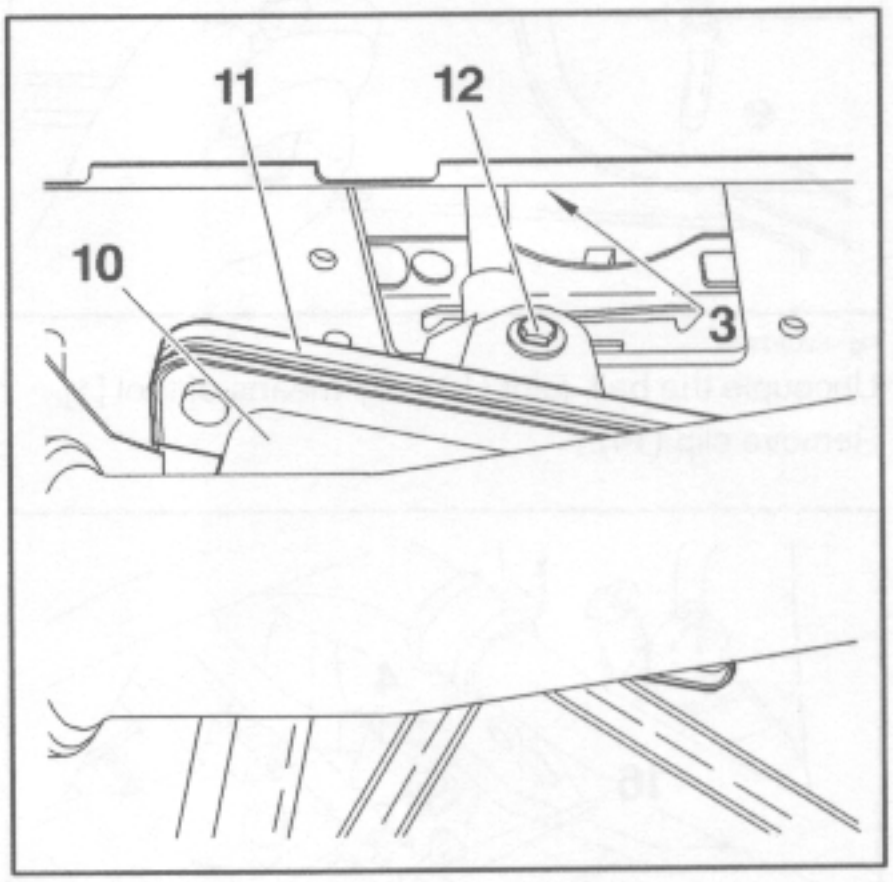


Fig : B2CP29QC

Remove :
- the cover (10)
- the seal (11)

www.WorkshopManuals.co.uk

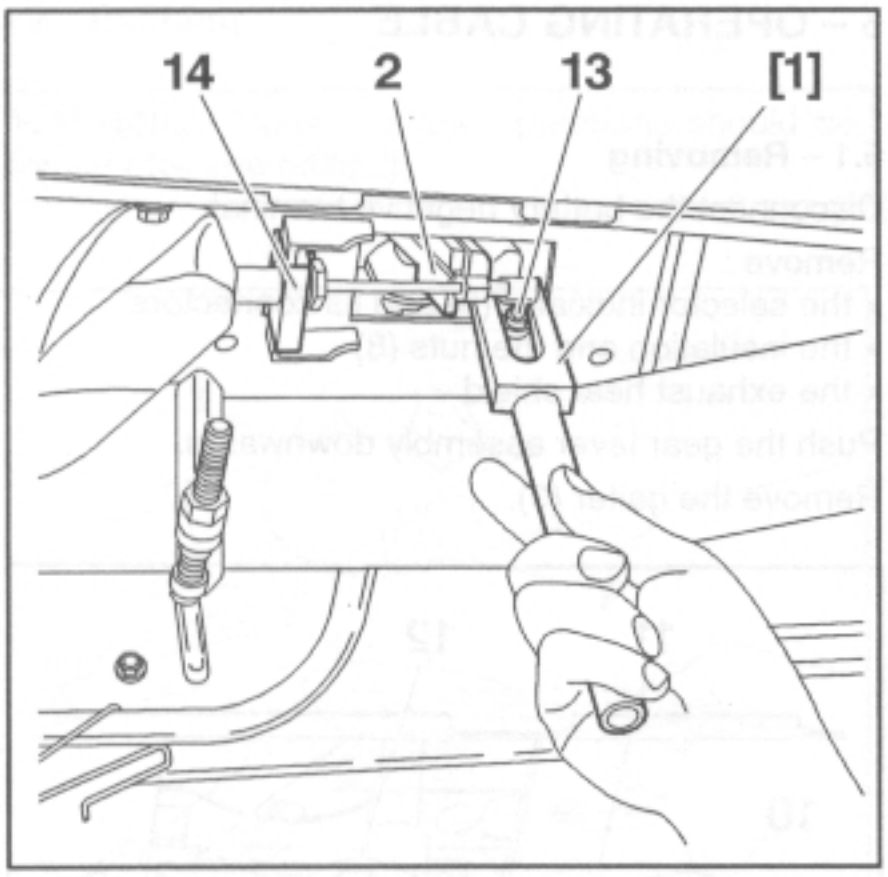


Fig : B2CP29RC

Uncouple the ball–joint (13) ; by means of tool [1].
Remove clip (14).

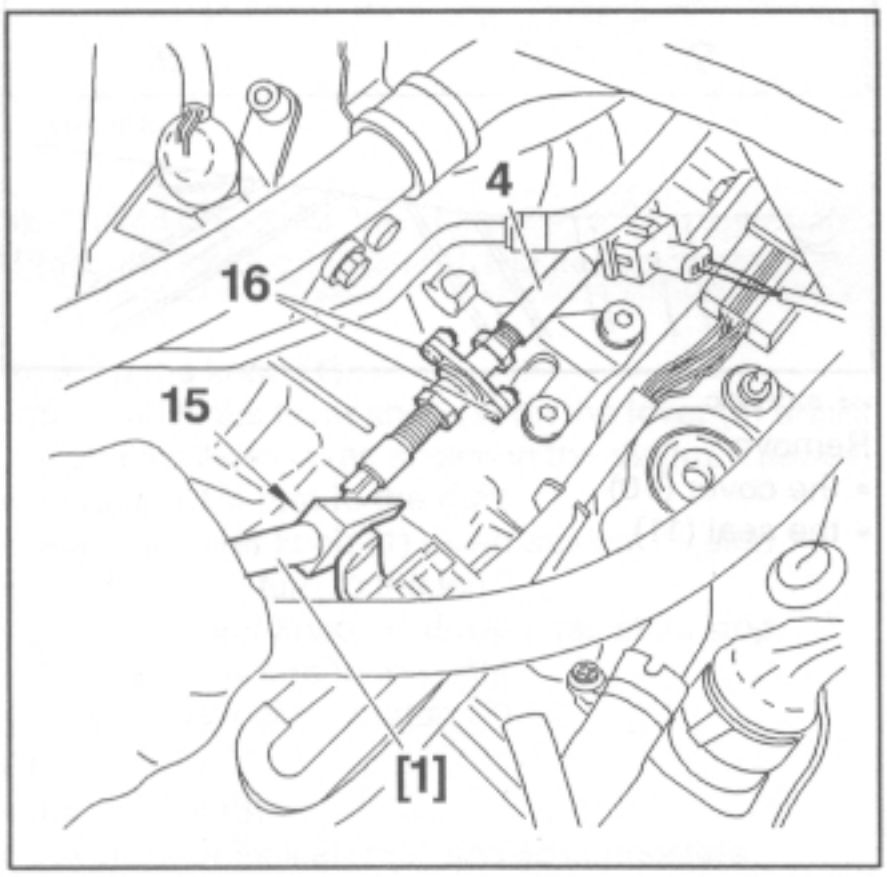


Fig : B2CP29SC

Uncouple the selector ball–joint (15) ; by means of tool [1].
Remove :
- the screws (16)
- the operating cable (4)

5.2 – Refitting

Recouple the ball–joint (13). Coat with G9 grease.
Fit :
- the clip (14)
- the seal (11)
- the cover (10)
- the gaiter (9)
- the nuts (8) and the insulation : tighten to 0,8 m.daN
- the selector indicator (5) and its connectors
- the screws (16)

www.WorkshopManuals.co.uk

5.3 – Adjustment

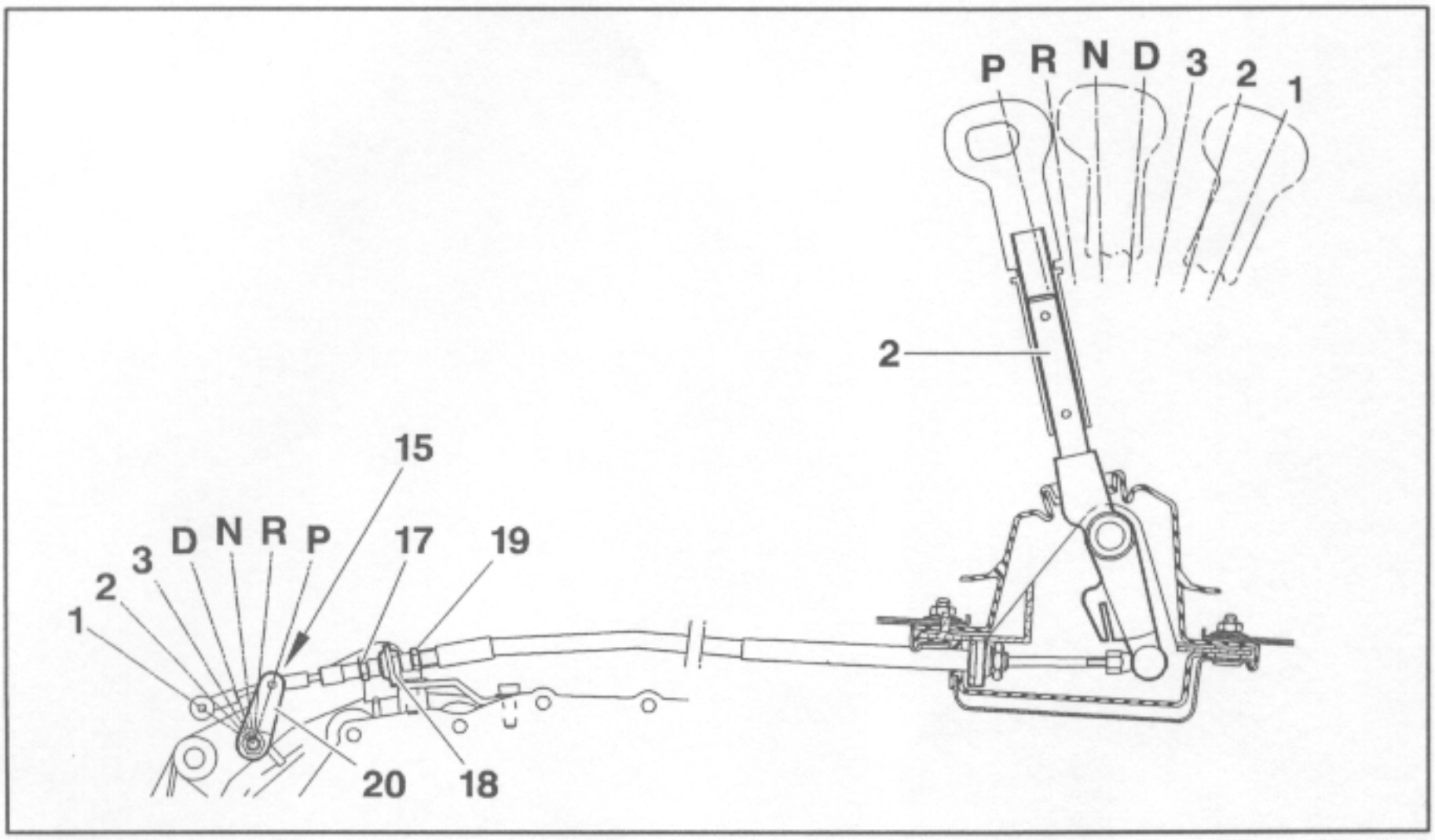


Fig : B2CP29TD

Adjusting the gear selection control :

- engage the gear selection lever (2) in the parking position
- put the selector control (20) in the parking position
- loosen the nut (17) and the lock–nut (19) on either side of the joint (18) in order to couple the ball joint (15) to the selector.
  Coat with G9 grease
- tighten the nut (17) and the lock–nut (19) :
  tighten to 1 m.daN

Reconnect the battery negative terminal.

Check all gear changes.
If there is a problem, adjust the gear selector control.

Refit the exhaust heat shield.

www.WorkshopManuals.co.uk

MARCH 1998

RPO No: 7511 ⟼

REF. 12 No XM 500-0/6

DIAGNOSIS

4 HP 20 AUTOMATIC GEARBOX

- RECOMMENDATIONS - PRECAUTIONS
- DIAGNOSTIC TOOLS

MAN 158932

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

GB

www.WorkshopManuals.co.uk

CONTENTS

RECOMMENDATIONS – PRECAUTIONS

PROCEDURE BEFORE REPAIRS : 4HP20 AUTOMATIC GEARBOX **1**

1 – Oil specification – oil level 1
2 – Checking using diagnostic equipment 2

PRECAUTIONS TO BE TAKEN : AUTOMATIC GEARBOX **3**

1 – Towing 3
2 – Driving –
3 – Repairs to the electrical components –
4 – Repairs to the mechanical components –

TOOLS

PRESENTATION : DIAGNOSTIC TOOLS **4**

1 – ELIT test unit : 4125–T 4
2 – Test connector box : 4109–T –
3 – PROXIA diagnostic station : 4165–T –
4 – LEXIA diagnostic station : 4171–T –

GEARBOX

FAULT FINDING : 4HP20 AUTOMATIC GEARBOX **5**

1 – Diagnostic tools 5
2 – Fault finding chart 6
3 – Electrical checks 25
4 – Function 31
5 – Downloading of the ECU 32
6 – Symptoms with no fault codes displayed by the diagnostic equipment –

www.WorkshopManuals.co.uk

PROCEDURE BEFORE REPAIRS : 4HP20 AUTOMATIC GEARBOX

In the event of a gearbox malfunction, there exist 2 possible configurations depending on the severity of the fault :

- gearbox in back–up mode with a substitute programme (the default values are used)
- gearbox in back–up mode with an emergency programme

WARNING : In the emergency programme, significant snatching can be felt when shifting P/R, R/N or N/D.

Receive of the customer.

Speak to the customer, to find out the symptoms of the malfunction.

1 – OIL SPECIFICATION – OIL LEVEL

1.1 – Oil specification

If the gearbox displays a serious fault resulting in a malfunction or the destruction of a clutch, the oil will overheat and be contaminated with impurities : the oil, then, is said to be "burnt".

In this case, it becomes discoloured and gives off an unpleasant smell.

IMPERATIVE : Replace the gearbox.

www.WorkshopManuals.co.uk

1.2 – Oil level

Check the oil level.

Prior conditions :

- hot oil (minimum 80 °C)
- foot on the brake, engage all the gears
- vehicle on a level surface
- the selector lever is in position P
- engine running

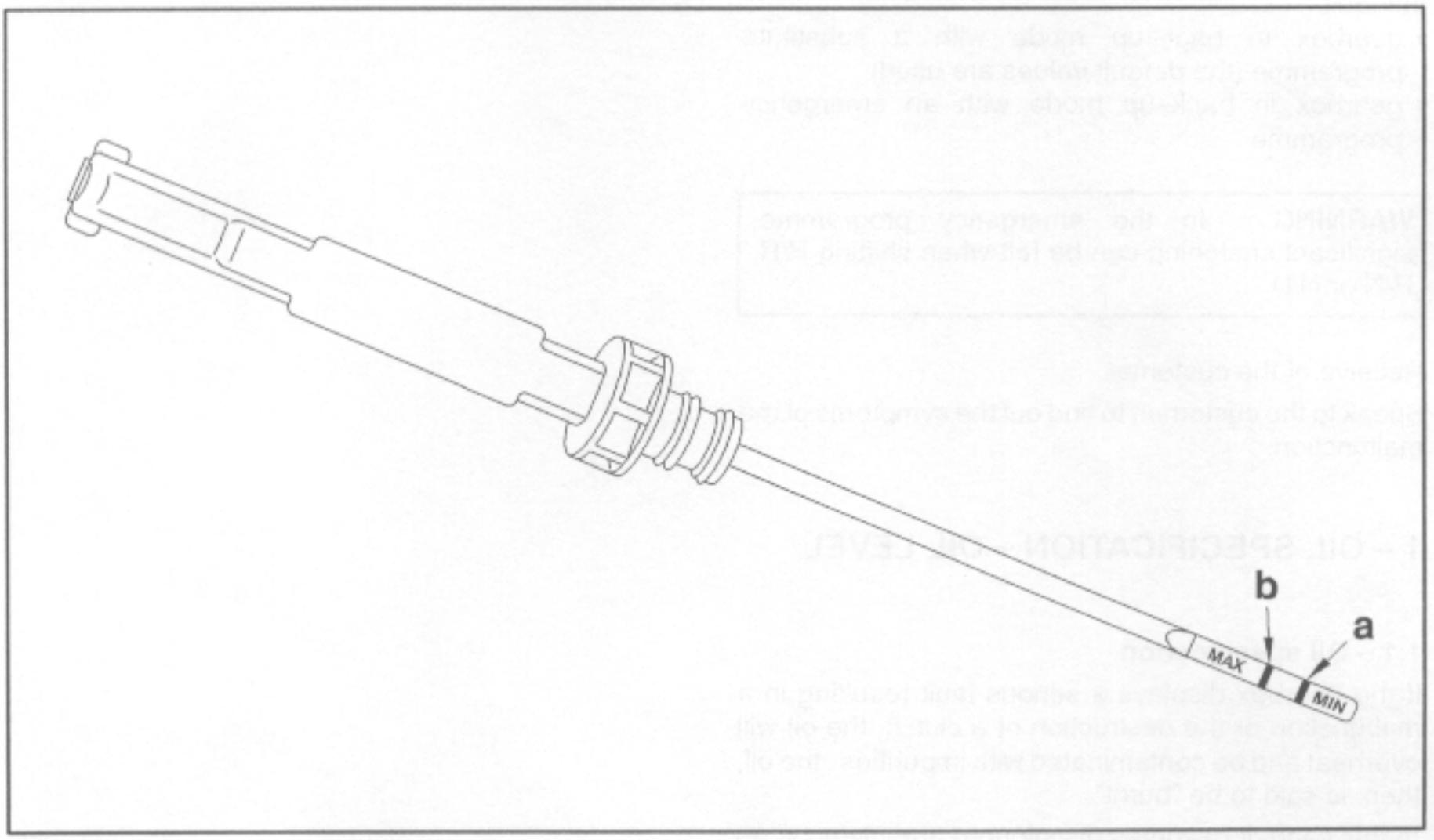


Fig : E2AP009D

The oil level on the dipstick should between the min "a" and max "b" marks.

IMPERATIVE : The oil level must never be above the max. mark "b".

If the oil level is too high, the following may occur :

- overheating of oil
- oil leaks

If the level is too low, the gearbox will be destroyed.

Top up the engine oil in the automatic gearbox to level (if necessary).

2 – CHECKING USING DIAGNOSTIC EQUIPMENT

Read the fault codes.

2.1 – No fault codes

Select " measure parameters".

Anomalies present :

- yes : make the necessary repairs
- no : carry out a reading of the engine ECU fault codes

Road test.

2.2 – Fault codes present

Make the necessary repairs.

Erase the fault codes.

Road test.

IMPERATIVE : After initialising the ECU, for a certain length of time, the quality of the gear change could be affected (adapting the ECU parameters to the gearbox). To obtain a good gear shift, road test the vehicle shifting the gears frequently (auto–adaptive laws).

www.WorkshopManuals.co.uk

PRECAUTIONS TO BE TAKEN : AUTOMATIC GEARBOX

1 – TOWING

It is necessary to lift up the front of the vehicle in order to tow it.

If it is not possible to lift up the front of the vehicle :
- the selection lever must be in position "N"
- do not add any oil
- do not exceed a speed of 70 km/h over a distance of 100 kilometres

2 – DRIVING

Never drive with the ignition switched off.

Never push the vehicle in an attempt to start it (impossible with an automatic gearbox).

NOTE : Lubrication of the automatic gearbox is ensured only when the engine is running.

3 – REPAIRS TO THE ELECTRICAL COMPONENTS

Do not disconnect :
- the battery with the engine running
- the ECU with ignition on

Before re–connecting a connector, check :
- the condition of the various contacts (distortion, corrosion ...)
- the presence and condition of the connector locking mechanism

During electrical checks :
- the battery must be fully charged
- never use a voltage source higher than 16V
- never use a test lamp

4 – REPAIRS TO THE MECHANICAL COMPONENTS

Never place the gearbox on the ground without suitable protection.

Do not use the unions as handles to move the gearbox.

The torque convertor retaining pin must be fitted whenever the gearbox is removed.

The centring peg must be used to couple the gearbox to the engine.

Remove the centring peg just before finally coupling the gearbox to the engine.

www.WorkshopManuals.co.uk

PRESENTATION : DIAGNOSTIC TOOLS

1 – ELIT TEST UNIT : 4125–T

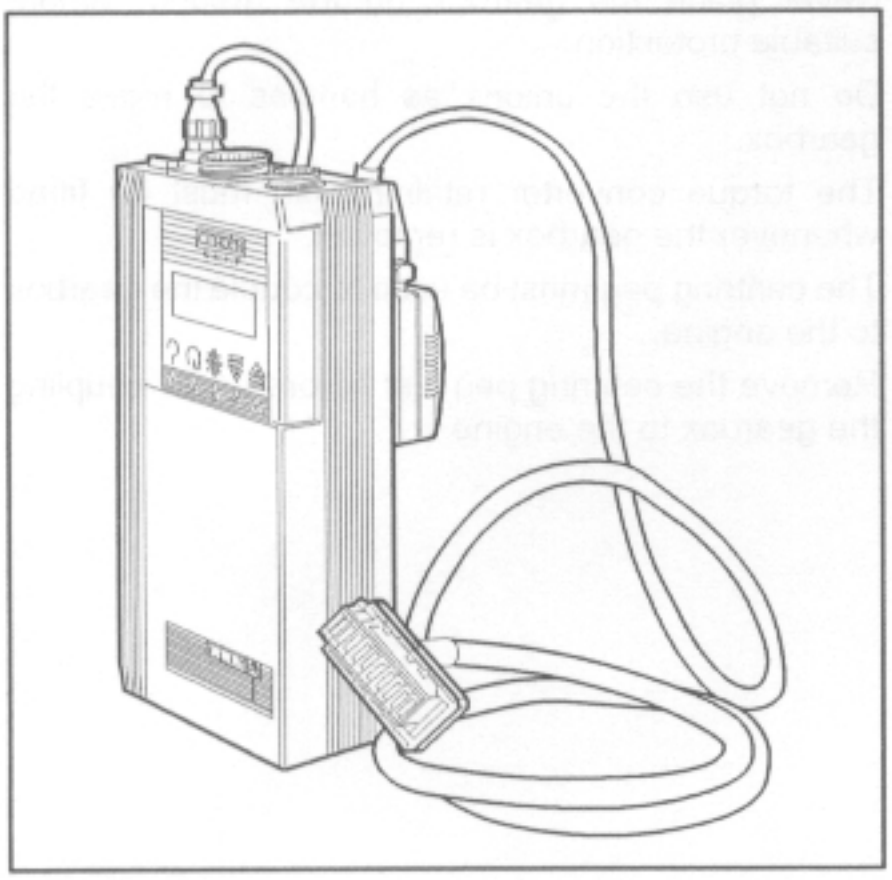


Fig : B3BP039C

2 – TEST CONNECTOR BOX : 4109–T

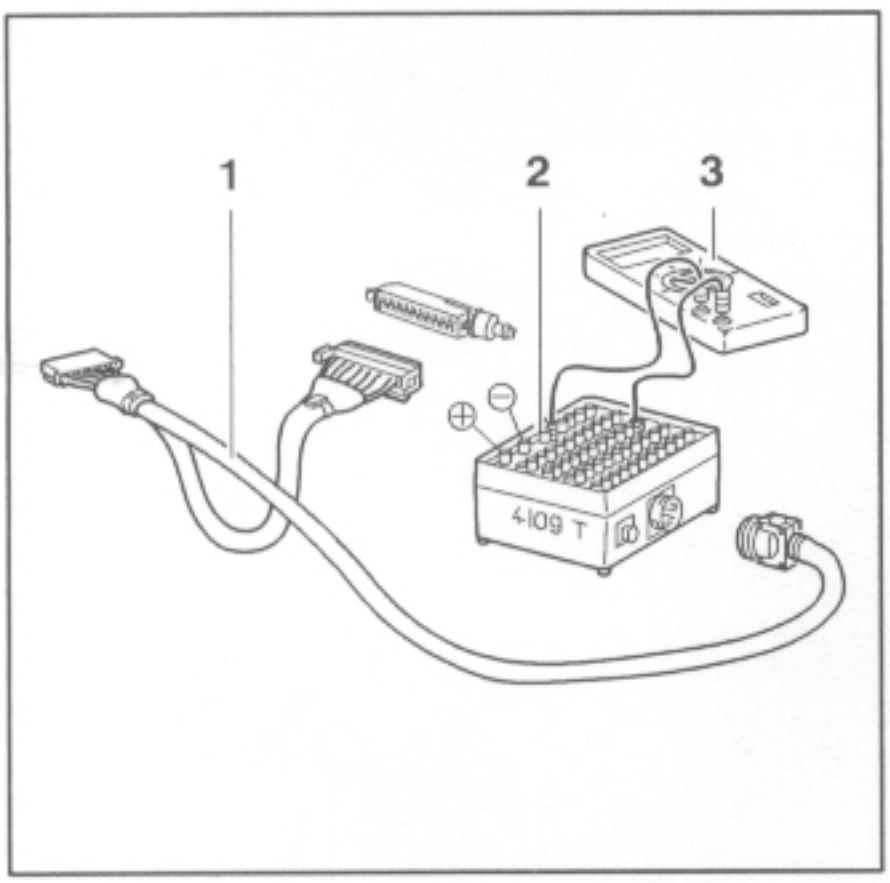


Fig : B1HP074C

(1) electrical harness (according to function).

(2) test connector box.

(3) multimeter.

3 – PROXIA DIAGNOSTIC : 4165–T STATION

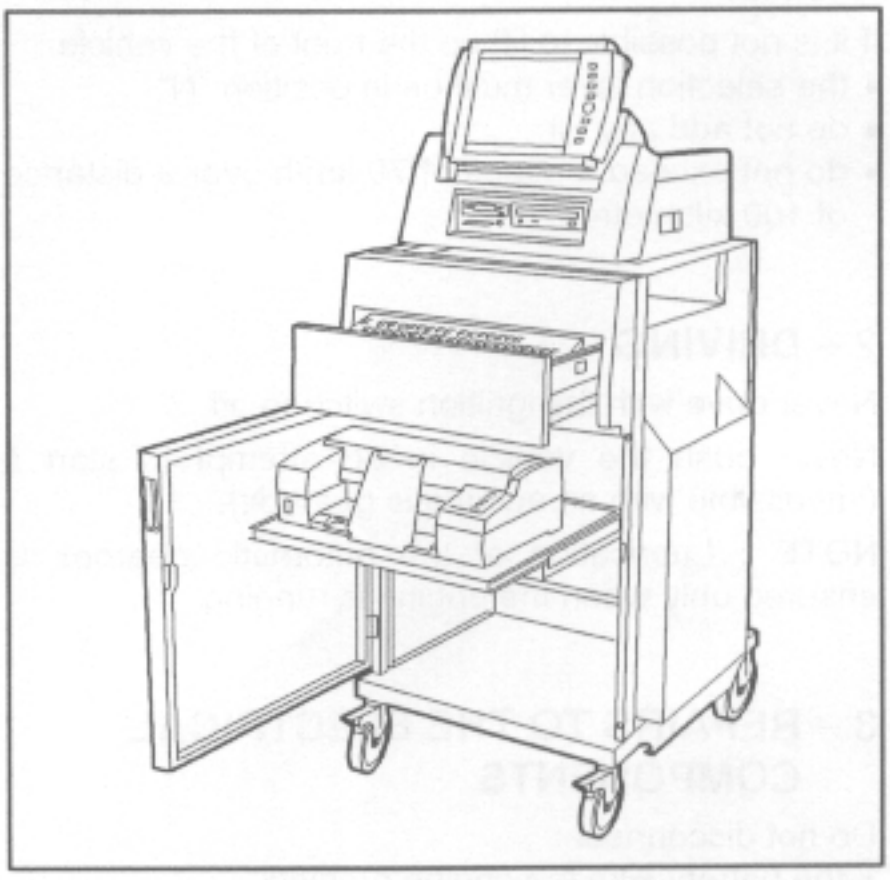


Fig : E5AP087C

4 – LEXIA DIAGNOSTIC STATION : 4171–T

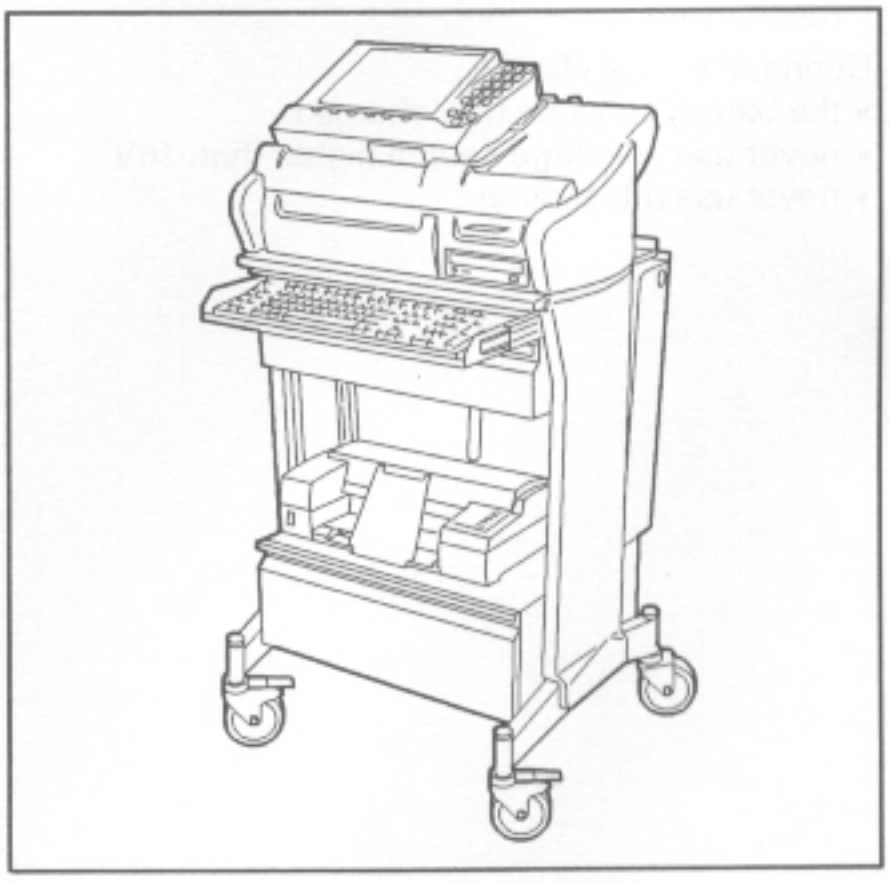


Fig : E5AP088C

www.WorkshopManuals.co.uk

FAULT FINDING : 4HP20 AUTOMATIC GEARBOX

1 – DIAGNOSTIC TOOLS

1.1 – ELIT test unit : 4125–T

The tool can be used for :
- fault reading
- erasing the faults
- measuring the parameters
- simulation
- initialisation of the autoadaptive parameters
- downloading updates into the ECU

1.2 – PROXIA diagnostic station : 4165–T

The tool can be used for :
- fault reading
- erasing the faults
- measuring the parameters
- testing the actuators
- initialisation of the autoadaptive parameters
- downloading updates into the ECU
- consultation of the electrical wiring diagrams

1.3 – LEXIA diagnostic station : 4171–T

The tool can be used for :
- fault reading
- erasing the faults
- measuring the parameters
- testing the actuators
- initialisation of the autoadaptive parameters
- downloading updates into the ECU
- consultation of the electrical wiring diagrams

1.4 – Test connector box : 4109–T. Electrical harness : 4187–T

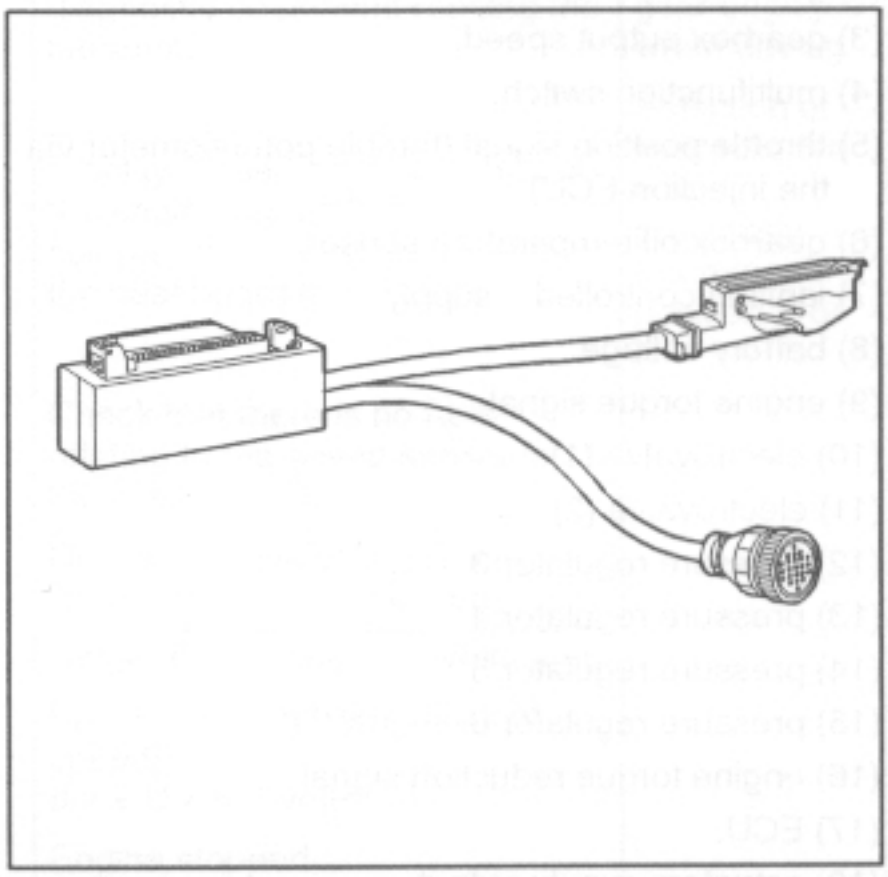


Fig : E5AP06VC

The tool allows the following to be checked using a voltmeter or ohmmeter :
- the sensors
- the actuators
- the automatic gearbox harness

1.5 – KOSTAL plug test harness and function selector connection : 8010–T (L)

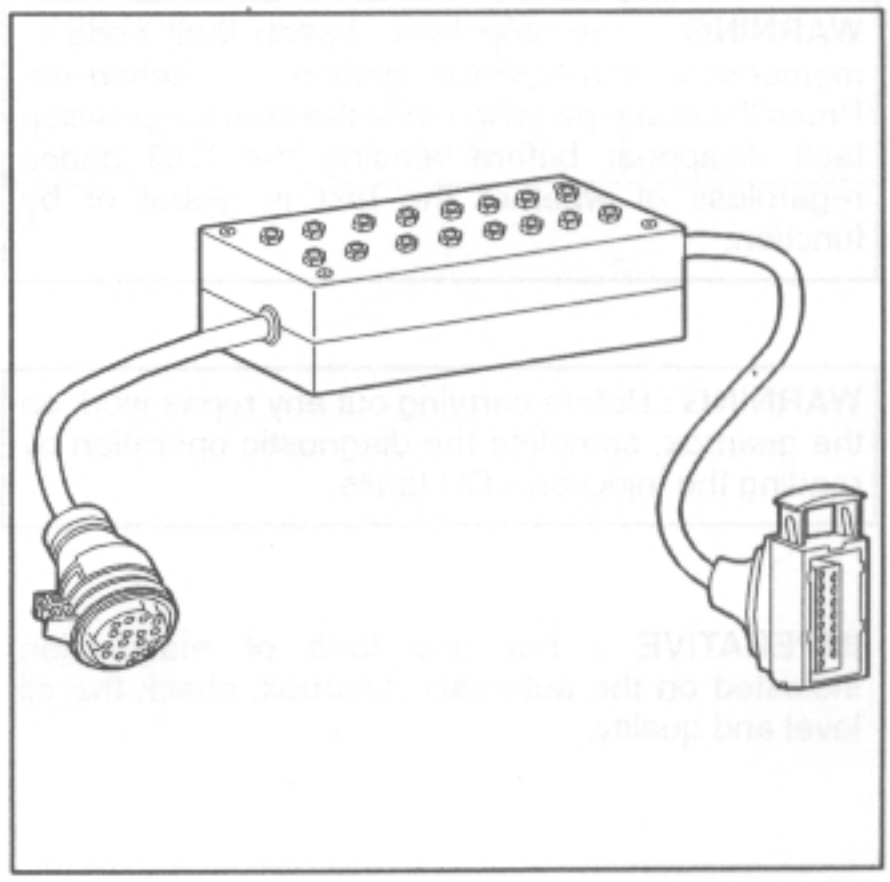


Fig : E5AP06WC

The tool enables ohmmeter checks to be carried out on :
- the sensors, electrovalves and regulators located on the hydraulic block via the KOSTAL socket
- the multifunction switch

www.WorkshopManuals.co.uk

2 – FAULT FINDING CHART

2.1 – Fault list

(1) engine speed signal.
(2) gearbox input speed.
(3) gearbox output speed.
(4) multifunction switch.
(5) throttle position signal (throttle potentiometer via the injection ECU).
(6) gearbox oil temperature sensor.
(7) ignition controlled + supply.
(8) battery voltage.
(9) engine torque signal.
(10) electrovalve (1).
(11) electrovalve (2).
(12) pressure regulator 3.
(13) pressure regulator 4.
(14) pressure regulator 5.
(15) pressure regulator 6.
(16) engine torque reduction signal.
(17) ECU.
(18) actuators supply output.
(19) gear engaged coherence.
(20) overspeed protection.
(21) gear selection control.
(22) display on instrument panel.
(23) cooling fan unit.
(24) stop lamp switch.

WARNING : The stop lamp switch fault code is memorised each time the ignition is switched on. Press the brake pedal to make the stop lamp switch fault disappear before reading the fault codes regardless of whether the test is global or by function.

WARNING : Before carrying out any repair work on the gearbox, complete the diagnostic operation by reading the injection ECU faults.

IMPERATIVE : For any fault or malfunction indicated on the automatic gearbox, check the oil level and quality.

www.WorkshopManuals.co.uk

2.2 – Fault code 1. Engine speed signal

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Engine speed information via the injection ECU (142)	Connected	40 – 28	43 – 19	Diagnostic equipment : diagnostic equipment reading the parameters Display in reading parameters of the engine speed to be compared to the value given by the dashboard tachometer Check that there is no fault relating to the speed sensor in the injection ECU Deal with the injection ECU faults first, then erase them	Retention of gear engaged when driving Selection of hydraulic 3rd after previously returning to position P or N
				Diagnostic equipment : voltmeter Engine running (regardless of speed) : 6.2 < U < 6.7 Volts Engine stopped : Ignition switched on : U ≈ 10 V Ignition off : U ≈ 5.9 V (in the case of an open circuit on the speed information, U ≈ 9.4 Volts)	
	Dis-connected	40	43	Diagnostic equipment : ohmmeter Check, in relation to the earth and battery +, the continuity and insulation of the link : gearbox ECU – injection ECU	

www.WorkshopManuals.co.uk

2.3 – Fault code 2. Gearbox input speed

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Turbine speed sensor (167) (in the hydraulic valve block housing (42))	Connected			Diagnostic equipment : diagnostic equipment reading the parameters The value must follow the engine speed allowing for the slipping of the converter "lock up" shut (locked–up converter) : the input speed must be the same as the engine speed	Retention of gear engaged when driving Selection of hydraulic 3rd after previously returning to position P or N
		16 – 28 44 – 28		Diagnostic equipment : Voltmeter in position AC : the voltage increases with the engine speed Voltmeter in position DC : engine stopped, ignition on, U = 2.5 V	
	Dis-connected	16 – 44	15 – 16 KOSTAL	Diagnostic equipment : ohmmeter R ≈ 920 ohms Check, in relation to the earth and battery +, the continuity and insulation of the link : gearbox ECU – hydraulic block	

www.WorkshopManuals.co.uk

2.4 – Fault code 3. Gearbox output speed

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Gearbox output speed sensor (168) (in the hydraulic valve block housing (42))	Connected	14 – 28		Diagnostic equipment :	Retention of gear engaged when driving Selection of hydraulic 3rd after previously returning to position P or N
		42 – 28		Voltmeter in position AC : the voltage increases with the engine speed Voltmeter in position DC : engine stopped, ignition on, U = 2.7 V	
	Dis-connected	42 – 14	1 – 2 KOSTAL	Diagnostic equipment : ohmmeter R = 920 ohms Check, in relation to the earth and battery +, the continuity and insulation of the link : gearbox ECU – hydraulic block	

www.WorkshopManuals.co.uk

2.5 – Fault code 4. Multifunction switch

The lever position is given by the combination of the state of the 4 switches.

If the ECU sees a combination that does not correspond to any recognised position, it detects a fault.

If the fault detected is no longer there, it will be declared intermittent the next time that the ignition is switched on.

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Multifunction switch (216) on the gearbox housing				Diagnostic equipment : diagnostic equipment reading the parameters Check that the actual position of the lever corresponds to that read by the ECU Check the adjustment of the cable connected to the lever	Retention of gear engaged when driving Selection of hydraulic 3rd when the ignition is switched on
	Connected	54 – 28	Fuse F10	Diagnostic equipment : voltmeter Check the + permanent supply to the switch and ECU Otherwise, check the F10 fuse If the fuse has blown, check that there is no short circuit to earth If the supply is correct, check that the switch operates correctly (see paragraph 3.5)	
	Dis-connected	9	4	Diagnostic equipment : ohmmeter Check, in relation to the earth and battery +, the continuity and insulation of the link : gearbox ECU – multifunction switch If the connections are good : Check the operation of the switch (see paragraph 3.5)	
		37	3		
		8	5		
		36	2		

WARNING : In the event that the ECU no longer recognises position P, the ECU will not allow the "shift lock" lever to be unlocked by pressing the brake pedal.

www.WorkshopManuals.co.uk

2.6 – Fault code 5. Throttle position signal (throttle potentiometer via the injection ECU)

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Throttle position information via the injection ECU (142)	Connected	38 – 28	31 – 19 injection ECU	Diagnostic equipment : diagnostic tool Check that there is no throttle potentiometer fault in the petrol injection ECU Deal with the injection ECU faults first, then erase them Depress the accelerator pedal to alter the throttle position Check that the fault is seen by the gearbox ECU as intermittent, then erase it Using the diagnostic equipment to read the parameters, check that the throttle position is more than or equal to 95 % with the accelerator pedal fully depressed which allows the kick down function to be activated, otherwise adjust the accelerator cable	Substitute value based on the engine speed and throttle information
				Diagnostic equipment : voltmeter Engine stopped, ignition on ADC function unlocked Throttle position 0 %, pedal released : U ≈ 8.5 V Throttle position 100 %, "accelerator completely depressed" : U ≈ 1.9 V The downshift function is active at throttle openings of 95 / 100 % In the case of an open circuit on the information about the driver's actions : U ≈ 9.3 V	
	Dis-connected	38	31 injection ECU	Diagnostic equipment : ohmmeter Check, in relation to the earth and battery +, the continuity and insulation of the link : gearbox ECU – injection ECU	

www.WorkshopManuals.co.uk

2.7 – Fault code 6. Gearbox oil temperature sensor

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Oil thermistor (924) (in the hydraulic valve block housing (42))	Connected	22 – 21		Diagnostic equipment : voltmeter The voltage varies according on the temperature : At 21 °C : U ≈ 0.93 V At 60 °C : U ≈ 0.97 V For an open circuit : U ≈ 5 V	Depending on the driving conditions : Substitute values : 60°C or 120°C Activation of the cooling fan units when the substitute value is 120°C
	Dis-connected		4 – 9 KOSTAL	Diagnostic equipment : ohmmeter Check the resistance of the sensor in relation to temperature (see graph below)	

NOTE : As the sensor is soldered to the hydraulic block internal harness, both items must be renewed when the sensor is replaced.

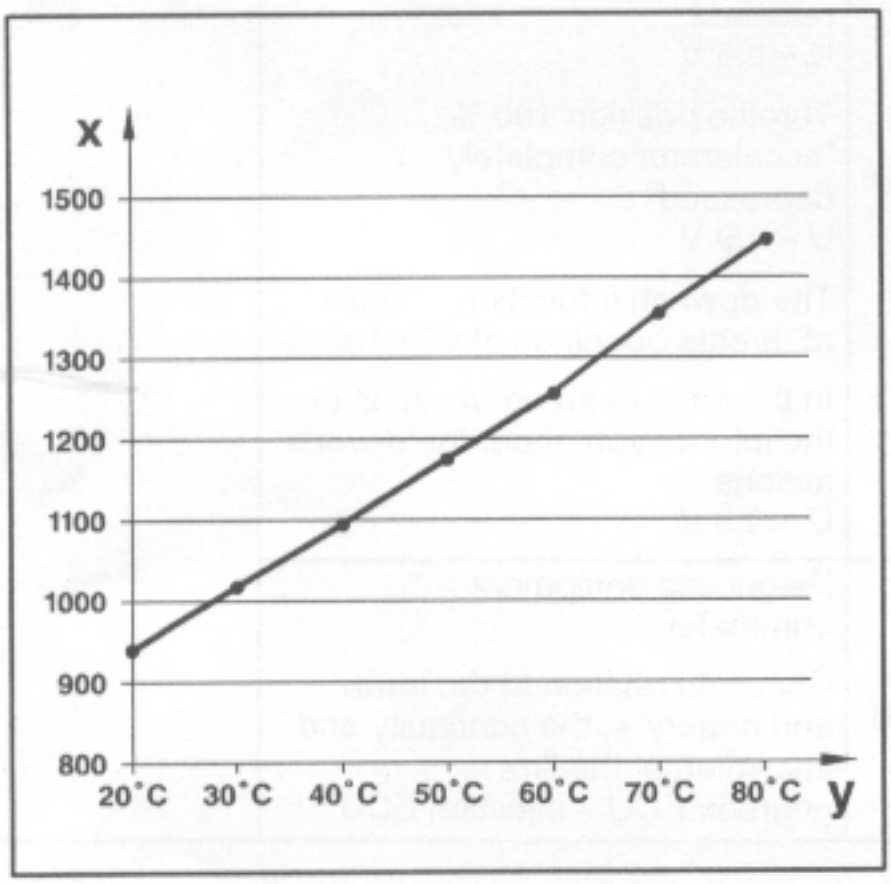


Fig : B2CP273C

X = ohms.

Y = °C.

www.WorkshopManuals.co.uk

2.8 – Fault code 7. Ignition controlled + supply

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Ignition controlled + supply	Connected	54 31 – 6 34	Fuse F10	Diagnostic equipment : voltmeter Ignition off : U = 0 V Ignition on : U = U battery (8V < U < 16V)	

2.9 – Fault code 8. Battery voltage

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
+ permanent supply	Connected	55 – 28	Fuse F31	Diagnostic equipment : voltmeter Ignition off : 8V < U < 16V	

2.10 – Fault code 9. Engine torque signal

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Engine torque information via the injection ECU (142)	Connected	39 – 28	6 – 19 injection ECU	Diagnostic equipment : voltmeter Position P, engine running : U = 9.2 V at a constant speed, increases on acceleration and decreases on deceleration Engine stopped : Ignition switched on : U ≈ 11 V Ignition off : U = 4.8 V (for an open circuit on the torque signal U = 8 V)	Substitute value based on the engine speed and throttle information
	Dis-connected	39	6 injection ECU	Diagnostic equipment : ohmmeter Check, in relation to the earth and battery +, the continuity and insulation of the link : gearbox ECU – injection ECU	

www.WorkshopManuals.co.uk

2.11 – Fault code 10. Electrovalve (1)

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Electrovalve 1 in the hydraulic block housing (42) (electrovalve block (447))	Connected	52 – 30		Diagnostic equipment : voltmeter Engine running, position P : U ≈ U battery EV1 being constantly activated : Engine stopped, position P : activate the electrovalve using the diagnostic equipment The voltage changes from U battery to 0 V	Selection of hydraulic 4th when driving Selection of hydraulic 3rd when the ignition is switched on
	Dis-connected		3 – 12 KOSTAL	Diagnostic equipment : ohmmeter R = 35 ohms Check, in relation to the earth and battery +, the continuity and insulation of the link : gearbox ECU – hydraulic block	

NOTE : If the oil temperature fault is also present first check that the KOSTAL plug of the hydraulic block is properly locked.

www.WorkshopManuals.co.uk

2.13 – Fault code 12. Pressure regulator 3 (converter control)

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Pressure regulator 3 in the hydraulic block housing (42) (regulator block (867))	Connected	3 – 5		Diagnostic equipment : voltmeter Engine stopped, ignition on ; torque converter without lock–up ("lock up" open) : U ≈ 1 V, (I = 159 mA), regardless of lever position Converter control only occurs from 2nd gear, according to the driving conditions Locked up converter, ("lock up "closed) : U ≈ 5 V, (I = 768 mA), regardless of lever position	Selection of hydraulic 4th when driving Selection of hydraulic 3rd when the ignition is switched on
	Dis-connected		5 – 6 KOSTAL	Diagnostic equipment : ohmmeter R ≈ 6 ohms Check, in relation to the earth and battery +, the continuity and insulation of the link : gearbox ECU – hydraulic block	

NOTE : If the oil temperature fault is also present first check that the KOSTAL plug of the hydraulic block is properly locked.

www.WorkshopManuals.co.uk

2.14 – Fault code 13. Pressure regulator 4

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Pressure regulator 4 in the hydraulic block housing (42) (regulator block (867))	Connected	3 – 1		Diagnostic equipment : voltmeter Engine running : Position P : U = 5 V (I = 768 mA) Engine stopped : Position R : U ≈ 1 V Other positions : U = 5 V	Selection of hydraulic 4th when driving Selection of hydraulic 3rd when the ignition is switched on
	Dis-connected		5 – 7 KOSTAL	Diagnostic equipment : ohmmeter R ≈ 6 ohms Check, in relation to the earth and battery +, the continuity and insulation of the link : gearbox ECU – hydraulic block	

NOTE : If the oil temperature fault is also present first check that the KOSTAL plug of the hydraulic block is properly locked.

www.WorkshopManuals.co.uk

2.15 – Fault code 14. Pressure regulator 5

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Pressure regulator 5 in the hydraulic block housing (42) (regulator block (867))	Connected	3 – 29		Diagnostic equipment : voltmeter Engine running : Positions P : U ≈ 1 V (I = 159 mA) (rest position) Engine stopped : Positions P, N, R : U ≈ 1,1 V Other positions : U ≈ 5,2 V	Selection of hydraulic 4th when driving Selection of hydraulic 3rd when the ignition is switched on
	Dis-connected		5 – 10 KOSTAL	Diagnostic equipment : ohmmeter R ≈ 6 ohms Check, in relation to the earth and battery +, the continuity and insulation of the link : gearbox ECU – hydraulic block	

NOTE : If the oil temperature fault is also present first check that the KOSTAL plug of the hydraulic block is properly locked.

www.WorkshopManuals.co.uk

2.16 – Fault code 15. Pressure regulator 6

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Pressure regulator 6 in the hydraulic block housing (42) (regulator block (867))	Connected	3 – 4		Diagnostic equipment : voltmeter Engine running : Position P : U ≈ 4.6 V (I = 768 mA) (max. opening) Engine stopped : Position R : U ≈ 1,1 V Other positions : U ≈ 5.2 V	Selection of hydraulic 4th when driving Selection of hydraulic 3rd when the ignition is switched on
	Dis-connected		5 – 11 KOSTAL	Diagnostic equipment : ohmmeter R ≈ 6 ohms Check, in relation to the earth and battery +, the continuity and insulation of the link : gearbox ECU – hydraulic block	

NOTE : If the oil temperature fault is also present first check that the KOSTAL plug of the hydraulic block is properly locked.

www.WorkshopManuals.co.uk

2.17 – Fault code 16. Engine torque reduction signal

Reduction of the advance when shifting gears :

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Torque reduction information to the injection ECU (142)	Connected	51 – 28	42 – 19 injection ECU	Diagnostic equipment : voltmeter Engine stopped, ignition on : Positions P, N : U = 9.5 V Other positions : U ≈ 0 V For an open circuit on the torque reduction line, regardless of lever position : U = 0 V	No downshift function (kickdown)
	Dis-connected	51	42 injection ECU	Diagnostic equipment : ohmmeter Check, in relation to the earth and battery +, the continuity and insulation of the link : gearbox ECU – injection ECU	

2.18 – Fault code 17. ECU

Clear the fault and check that the fault does not reappear, otherwise, perform the test with a new ECU.

2.19 – Fault code 18. Actuators supply output

This fault is only detected when the ignition is switched on. Switch off the ignition to exit back–up mode :

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Function of circuit breaker in the supply line inside the ECU	Connected	Regulator supply 3 – 6, 34 The electrovalves are supplied 52 – 6, 34		Diagnostic equipment : voltmeter Supplied actuators : > 7.5 Volts Non–supplied actuators : < 7.5 Volts	Selection of hydraulic 4th when driving Selection of hydraulic 3rd when the ignition is switched on
	Dis-connected		5 – 3 KOSTAL	Diagnostic equipment : ohmmeter Check the continuity and absence of a short circuit to the battery + or to earth at the regulator and electrovalve supply outputs If these two checks are correct, test with a new ECU	

www.WorkshopManuals.co.uk

2.20 – Fault code 19. Engaged gear coherence

The difference between the gearbox input and output speeds is too large for the gear engaged.

IMPERATIVE : For any fault or malfunction indicated on the automatic gearbox, check the oil level and quality.

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Gearbox input and output speed sensors in the hydraulic block housing (42)	Connected			Diagnostic equipment : diagnostic equipment reading the parameters Compare the vehicle and turbine speeds for the gear engaged Check that the state of the electrovalves and regulators corresponds to the expected gear (see paragraph 4.1) If the fault reappears after being erased, it is a mechanical fault; brake wear, internal oil leak, electrovalve or regulator jamming	Selection of hydraulic 4th when driving Selection of hydraulic 3rd when the ignition is switched on
				Diagnostic equipment : ohmmeter, voltmeter Check the engine speed signal and gearbox input and output sensors as shown in paragraphs 2.2, 2.3, 2.4	

www.WorkshopManuals.co.uk

2.21 – Fault code 20. Overspeed protection

Engine or turbine speeds higher than the maximum limits.

IMPERATIVE : For any fault or malfunction indicated on the automatic gearbox, check the oil level and quality.

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Engine and turbine speed information	Connected			Diagnostic equipment : diagnostic equipment reading the parameters Check that the engine and turbine speeds are not subject to interference Compare these values to the engine speed as seen by the injection ECU and to that displayed in the instrument panel	Selection of hydraulic 4th when driving Selection of hydraulic 3rd when the ignition is switched on
				Diagnostic equipment : ohmmeter, voltmeter Check the engine speed signal and gearbox input and output sensors as shown in paragraphs 2.2, 2.3, 2.4	

www.WorkshopManuals.co.uk

2.22 – Fault code 21. Gear selection check

There has been no change in the gear information after changing gear.

IMPERATIVE : For any fault or malfunction indicated on the automatic gearbox, check the oil level and quality.

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Gearbox input and output speed sensors in the hydraulic block housing (42)	Connected			Diagnostic equipment : diagnostic equipment reading the parameters Compare the vehicle and turbine speeds for the gear engaged Check that the state of the electrovalves and regulators corresponds to the expected gear (see paragraph 4.1) If the fault reappears after being erased, it is a mechanical fault; brake wear, internal oil leak, electrovalve or regulator jamming	Retention of gear engaged when driving Selection of hydraulic 3rd after previously returning to position P or N
				Diagnostic equipment : ohmmeter, voltmeter Check the supply to the electrovalves and regulators (see paragraph 2.8)	

www.WorkshopManuals.co.uk

2.23 – Fault code 22. Supply line : display on instrument panel

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Instrument panel (40)	Connected	25 – 28		Diagnostic equipment : voltmeter U = 6 V The position of the gear lever should be indicated in the control panel "normal" program : "ECO" display "snow" program : "*" display "sport" program : "SPT" display	"sport" and "snow" warning lamps are flashing (in the instrument panel)
	Dis-connected	25	12	Diagnostic equipment : ohmmeter Check the continuity and isolation of the gearbox ECU link – instrument panel	

2.24 – Fault code 23. Cooling fan unit

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
	Connected	20 – 34		Diagnostic equipment : voltmeter The cooling fan unit relay is activated when the oil temperature exceeds 120 °C	
	Dis-connected			Diagnostic equipment : ohmmeter R ≈ 400 ohms	

www.WorkshopManuals.co.uk

2.25 – Fault code 24. Stop lamp switch

No detection of the brake pedal being pressed after switching on the ignition :

Location of components	ECU connector	ECU terminals	Component connections	Test values	Emergency mode
Brake pedal contact 2100	Connected	10 – 34		Diagnostic equipment : voltmeter Ignition on : Brake pedal released : U = 0 V Brake pedal applied : U ≈ U battery	
	Dis-connected	10 – 54		Diagnostic equipment : ohmmeter Stop lamps disconnected (third stop lamp included) : Brake pedal released : R = infinity Brake pedal applied : R ≈ 0 ohm	

WARNING : The stop lamp switch fault is memorised each time the ignition is switched on. Press the brake pedal to make the fault disappear before reading the faults with the diagnostic equipment, regardless of whether the test is global or by function.

3 – ELECTRICAL CHECKS

3.1 – Diagnostic link

Location of components	ECU connector	ECU terminals	Component connections	Test values
Central diagnostic socket (280) in the passenger's compartment	Disconnected	50 – 28		Diagnostic equipment : voltmeter Disconnect the ECU connector Connect the diagnostic tool to the 30–way socket Check that U = U battery at terminal 50
		50	Terminal G1 (30–way brown)	Diagnostic equipment : ohmmeter Check the continuity and insulation in relation to the earthing of the diagnostic link

www.WorkshopManuals.co.uk

3.2 – Reversing lamp control

Test equipment : multimeter, multifunction switch test harness :

Location of components	ECU connector	ECU terminals	Component connections	Test values
Ignition function of the reversing lamps, reverse gear information for indexable rear view mirror. Lever in position R	Disconnected		Supply to the reversing lamps if Fuse F19 (52)	Diagnostic equipment : voltmeter Ignition on : Check the +12 Volts supply between terminal 8 on the harness side and the earth : U = U battery Otherwise, check the F12 fuse
			8 – 9 (10–way black)	Diagnostic equipment : ohmmeter Lever in position R : R = 0 ohm Other positions : R = infinity Check the isolation in relation to earth
			9 – earth (10–way black). Harness side	Check the reversing lamp circuit, between terminal 9 and the earth : R ≈ 2.3 ohms

NOTE : This information, supplied by the multifunction switch, is independent of the gearbox ECU.

3.3 – Engine starting approval

Test equipment : multimeter, multifunction switch test harness :

Location of components	ECU connector	ECU terminals	Component connections	Test values
Activation of the starter relay 801. Multifunction switch 216 on the gearbox housing. Lever in position P, N	Disconnected		Harness side : 7/earth (10–way black)	Diagnostic equipment : voltmeter Ignition switched on : Check the + 12 Volt supply of the relay, between terminal 7 and the earth : U = U battery
			Harness side : 6/earth (10–way black)	Diagnostic equipment : ohmmeter Check the starter relay coil between terminal 6 and the earth : R = 63 ohms
			6 / 7 (10–way black)	Diagnostic equipment : ohmmeter Lever in position P, N : R = 0 ohm Other positions : R = infinity

NOTE : This information, supplied by the multifunction switch, is independent of the gearbox ECU.

www.WorkshopManuals.co.uk

3.4 – Programme selector

Depending on driving style, the ECU selects the most appropriate gear selection law programme (programmes 1 to 5 covering the most economic to the most sporty driving styles). The driver can select a specific programme using the sport/snow selector :

Location of components	ECU connector	ECU terminals	Component connections	Test values
Snow programme selection	Connected			Diagnostic equipment : diagnostic equipment reading the parameters Snow warning lamp lit Snow selection : Programme : 8 (lever in position P, R, D) Programme : manual (lever in position 3, 2, 1)
		12 – 28	B5 – B4	Diagnostic equipment : voltmeter Ignition on Snow button pressed down : U = 0 V Snow button released : U = 12 V
	Disconnected	12	B5	Diagnostic equipment : ohmmeter Check the continuity and insulation from earth
Sport programme selection	Connected			Diagnostic equipment : diagnostic equipment reading the parameters Sport warning lamp lit Sport selection : Programme : 4 (or programme 5 depending on driving style)
		45 – 28	A1 – B4	Diagnostic equipment : voltmeter Ignition on : Sport button pressed down : U = 0 V Sport button released : U = 12 V
	Disconnected	45	A1	Diagnostic equipment : ohmmeter Check the continuity and insulation from earth

www.WorkshopManuals.co.uk

Location of components	ECU connector	ECU terminals	Component connections	Test values
Normal programme selection	Connected			Diagnostic equipment : diagnostic equipment reading the parameters Sport and snow warning lamps off Normal selection : Programme : 1 (or programme 1 to 5 depending on driving style)
		45 – 28	A1 – B4	Diagnostic equipment : voltmeter
		12 – 28	B5 – B4	Ignition on : U = 12 V
	Disconnected	45	A1	Diagnostic equipment : ohmmeter
		12	B5	Check the continuity and insulation from earth

3.5 – Multifunction switch

Diagnostic equipment : ohmmeter, switch test harness or harness 4187–T and electrical test unit :

Lever position	36	37	9	8	ECU connector	
	2	3	4	5	16–way black switch connector	
P	∞	R = 0 ohm	∞	∞		
*	∞	R = 0 ohm	R = 0 ohm	∞		
R	∞	∞	R = 0 ohm	∞		
*	∞	∞	R = 0 ohm	R = 0 ohm		
N	∞	∞	∞	R = 0 ohm		
*	R = 0 ohm	∞	∞	R = 0 ohm		
D	R = 0 ohm	R = 0 ohm	∞	R = 0 ohm	1	55
*	R = 0 ohm	R = 0 ohm	R = 0 ohm	R = 0 ohm		
3	R = 0 ohm	∞	R = 0 ohm	R = 0 ohm		
*	R = 0 ohm	R = 0 ohm	R = 0 ohm	R = 0 ohm		
2	R = 0 ohm	R = 0 ohm	R = 0 ohm	∞		
*	R = 0 ohm	R = 0 ohm	R = 0 ohm	R = 0 ohm		
1	∞	R = 0 ohm	R = 0 ohm	R = 0 ohm		

NOTE : The combinations marked with "*" relate to intermediary positions. The role of the combinations marked "*" is to only have one line changing state when passing from one recognised position to another.

NOTE : As the ECU connector has been disconnected for this test, the lever must be unlocked manually to move it from position P.

www.WorkshopManuals.co.uk

Diagnostic equipment : voltmeter, electrical harness 4187–T, harness test unit :

Lever position	36	37	9	8	ECU connector
P	0V	U battery	0V	0V	6
*	0V	U battery	U battery	0V	
R	0V	0V	U battery	0V	
*	0V	0V	U battery	U battery	
N	0V	0V	0V	U battery	
*	U battery	0V	0V	U battery	
D	U battery	U battery	0V	U battery	
*	U battery	U battery	U battery	U battery	
3	U battery	0V	U battery	U battery	
*	U battery	U battery	U battery	U battery	
2	U battery	U battery	U battery	0V	
*	U battery	U battery	U battery	U battery	
1	0V	U battery	U battery	U battery	

NOTE : The combinations marked with "*" relate to intermediary positions. The role of the combinations marked "*" is to only have one line changing state when passing from one recognised position to another.

3.6 – Hydraulic block

Diagnostic equipment : ohmmeter, test harness KOSTAL or harness 4187–T and electrical test unit :

Components	52	3	44	14	22	ECU connector	
	3	5	16	2	9	Connector KOSTAL	
EL1	R = 35 ohms	∞	∞	∞	∞	12	30
EL2	R ≈ 35 ohms	∞	∞	∞	∞	13	33
REG3	∞	R = 6 ohms	∞	∞	∞	6	5
REG4	∞	R ≈ 6 ohms	∞	∞	∞	7	1
REG5	∞	R = 6 ohms	∞	∞	∞	10	29
REG6	∞	R = 6 ohms	∞	∞	∞	11	4
Input speed	∞	∞	R ≈ 920 ohms	∞	∞	15	16
Output speed	∞	∞	∞	R = 920 ohms	∞	1	42
Oil temperature	∞	∞	∞	∞	X	4	21

X : resistance varying according to temperature.

www.WorkshopManuals.co.uk

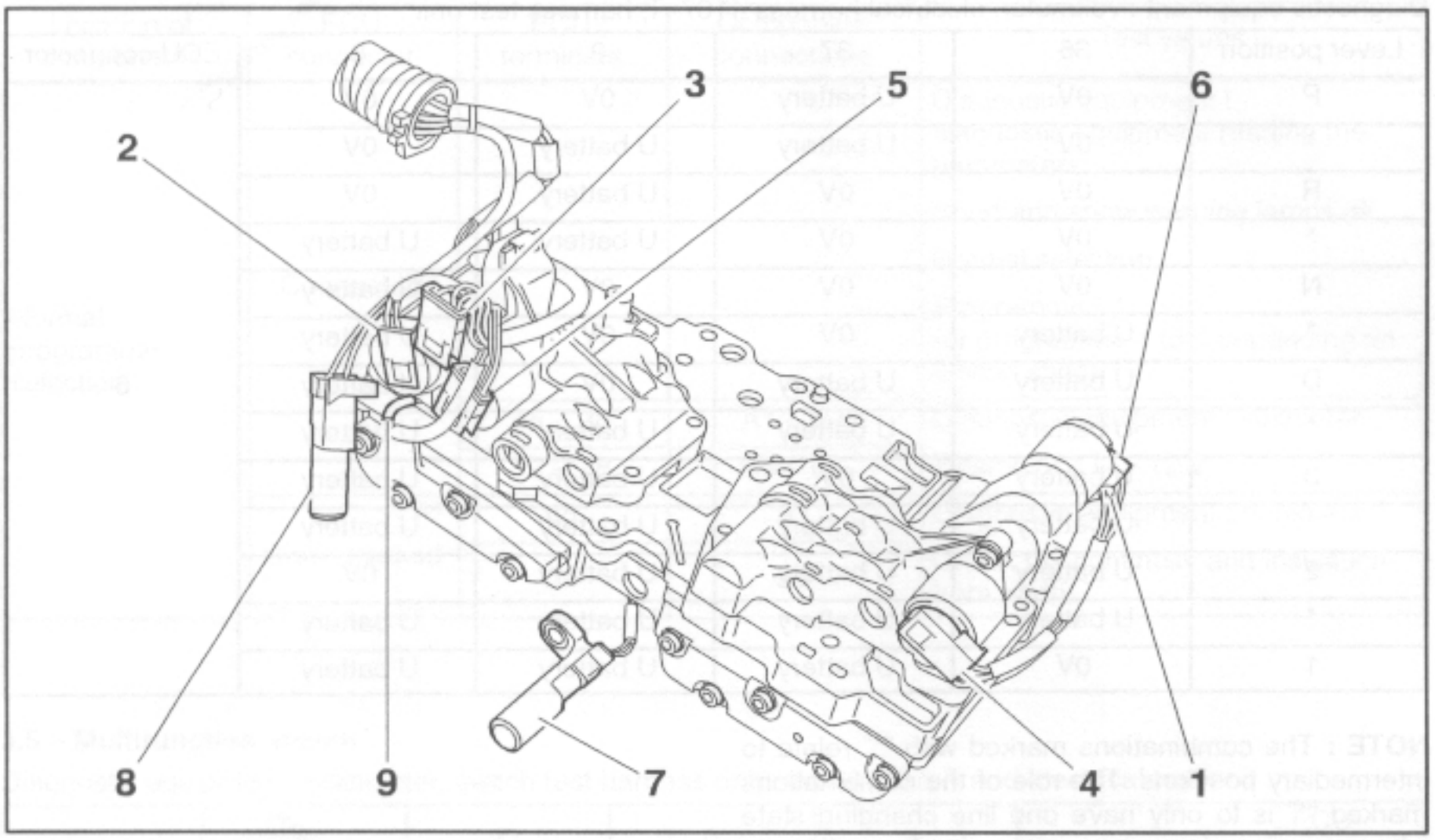


Fig : B2CP274D

(1) electrovalve (1) (green body, mauve and grey wires).
(2) electrovalve (2) (green body, mauve and green wires).
(3) pressure regulator 3 (black body, mauve and yellow wires).
(4) pressure regulator 4 (black body, mauve and red wires).
(5) pressure regulator 5 (black body, mauve and blue wires).
(6) pressure regulator 6 (black body, mauve and white wires).
(7) gearbox input speed sensor (turbine) (brown wires).
(8) gearbox output speed sensor (yellow wires).
(9) oil temperature sensor.

www.WorkshopManuals.co.uk

4 – FUNCTION

4.1 – Controlling the electrovalve and pressure regulators

Position of the gear selector lever	Gear engaged	Controlling the electrovalves **		Controlling the pressure regulator			
		EL1	EL2	EDS3	EDS4	EDS5	EDS6
P		1	1	159 mA	768 mA	159 mA	768 mA
R	R	1	1	159 mA	159 mA	159 mA	159 mA
N		1	1	159 mA	768 mA	159 mA	768 mA *
D	1	1	1	159 mA	768 mA	768 mA	768 mA
	2	1	0	X	768 mA	768 mA	159 mA
	3	1	0	X	768 mA	159 mA	768 mA
	4	1	0	X	159 mA	159 mA	159 mA
3	1	1	1	159 mA	768 mA	768 mA	768 mA
	2	1	0	X	768 mA	768 mA	159 mA
	3	1	0	X	768 mA	159 mA	768 mA
2	1	1	1	159 mA	768 mA	768 mA	768 mA
	2	1	0	X	768 mA	768 mA	159 mA
1	1	1	1	159 mA	768 mA	768 mA	768 mA

** : state "1" : electrovalve controlled ;
state "0" : electrovalve at rest.

* : except with the snow programme selected.

X : varies according to converter control.
159 mA "lock up" open.
768 mA "lock up" shut (locked–up converter).

NOTE : Without control of the 2 electrovalves, the gearbox is placed in hydraulic 3rd when the ignition is switched on.

WARNING : In hydraulic 3rd, reverse gear can be selected but is accompanied by a significant snatching.

NOTE : The pressure regulator currents displayed when reading parameters are the selected values and not the control current values.

4.2 – Kickdown function (kickdown)

The kickdown function is active at throttle openings of 95 / 100 %.

Using the diagnostic equipment to read the parameters, check that the throttle position is more than or equal to 95 % with the accelerator pedal fully depressed which allows the kick down function to be activated, otherwise adjust the accelerator cable.

www.WorkshopManuals.co.uk

5 – DOWNLOADING OF THE ECU

5.1 – Downloading an update to the ECU

The downloading operation allows the automatic gearbox ECU to be updated or to be adapted for an evolution of the injection ECU.

IMPERATIVE : Each time an update is downloaded to the automatic gearbox ECU, the injection ECU must also be updated (and vice versa).

IMPERATIVE : After any downloading operation, initialise the automatic gearbox autoadaptive parameters.

5.2 – Initialising the autoadaptive parameters

The autoadaptive initialisation function can be accessed via the "REPLACEMENT PARTS" menu and allows the autoadaptive parameters recorded by the gearbox ECU to be initialised.

WARNING : After initialising the autoadaptive parameters, the quality of the gearshift may not be at its optimum while the ECU is adapting itself to the vehicle.

6 – SYMPTOMS WITH NO FAULT CODES DISPLAYED BY THE DIAGNOSTIC EQUIPMENT

6.1 – No dialogue between the ECU and the diagnostic instrument

Check the supply and the earthing of the ECU.

Check the diagnostic line, (see paragraph 3.1).

Test with a new ECU. If the ECU is not operational, the gearbox will be in hydraulic 3rd when the ignition is switched on.

WARNING : In hydraulic 3rd, reverse gear can be selected but is accompanied by a significant snatching.

6.2 – Engine doesn't start, lever in position P, N

Engine start authorisation function via the multifunction switch :

- check that the injection ECU has been unlocked by the coded anti–theft system
- check the engine start authorisation, (see paragraph 3.3)

6.3 – The reversing lamps do not come on, lever in position R

Check the reversing lamps control, (see paragraph 3.2).

6.4 – No noticeable change when selecting the sport/snow programme

Check that the ECU can see the selections made, (see paragraph 3.4).

6.5 – No driving, lever in position D, as long as an imposed gear has not been previously selected, then absence of gear change when returning to position D

Short circuit to positive (+) on line 4 of the multifunction switch :

- check that the ECU recognises the gear lever position
- check the multifunction switch, (see paragraph 3.5)

NOTE : The gear lever will not unlock when this fault occurs, (position P not recognised).

www.WorkshopManuals.co.uk

CITROËN XM

31st JULY 1995

ABONNEMENT GME

REF. 6 No XM 390-00/5

HYDRAULICS

● SPECIFICATION : 6 + 2 PISTON HIGH PRESSURE PUMP

MAN 058932

GB

2

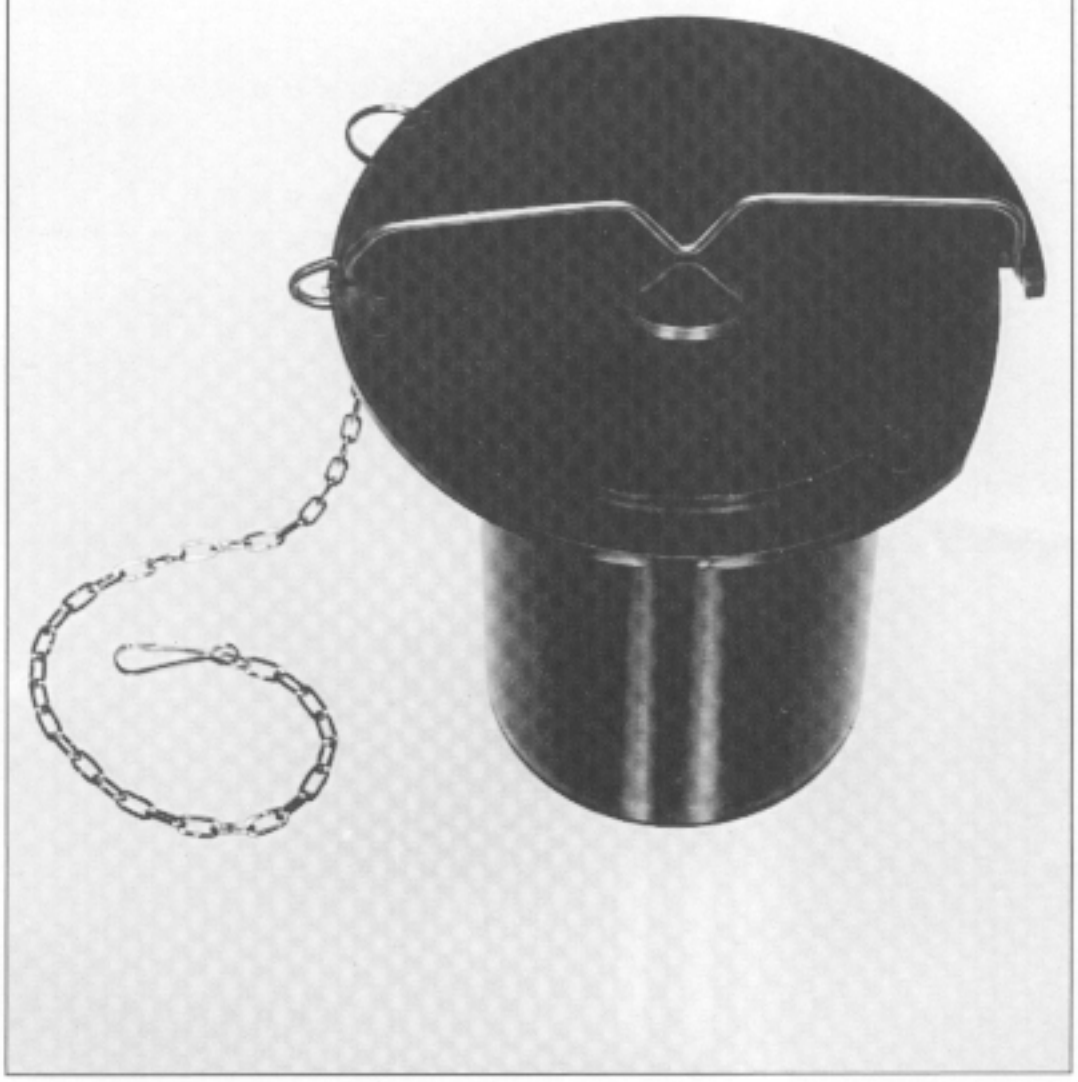
AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

OPERATION NUMBER	DESCRIPTION	VEHICLE	
		4 cyl. PETROL	6 cyl. PETROL
XM.390-000/1	List of operations : Source and reserve of pressure		
XM.390-000/2	Tools	X	X
XM.390-000/3	General - Fitting precautions	X	X
XM.390-00/1	Source and reserve of pressure specification	X	X
XM.390-00/2	Main basic system (POWER ASSISTED steering)	X	
XM.390-00/3	Main basic system (VARI POWER steering)		X
XM.390-0/1	Depressurizing the circuit. Removing and refitting the hydraulic fluid reservoir	X	X
XM.391-00/1	Steering function circuit (POWER ASSISTED steering)	X	
XM.391-00/2	Steering function circuit (VARI POWER steering)		X
XM.392-00/1	Hydraulic suspension function circuit (POWER steering)	X	
XM.392-00/2	Hydractive suspension function circuit (POWER steering)	X	
XM.392-00/2a	Hydractive suspension function (VARI POWER steering)		X
XM.393-00/1	Brake function circuit (POWER ASSISTED steering)	X	
XM.393-00/1a	Brake function circuit (VARI POWER steering)		X
XM.393-00/2	ABS brake function circuit (POWER ASSISTED steering)	X	
XM. 393-00/2a	ABS brake function circuit (VARI POWER steering)		X

www.WorkshopManuals.co.uk

9004-T



89-708

www.WorkshopManuals.co.uk

PRECAUTIONS TO BE TAKEN WHEN WORKING ON THE HYDRAULIC UNITS OR THE SYSTEM

The correct functioning of the entire system presupposes perfect cleanliness of the fluid and the hydraulic units. Stringent precautions must therefore be taken when working on the hydraulic system and during the storage of the fluid and components.

1. HYDRAULIC FLUID :

Mineral hydraulic fluid (LHM) is the only suitable type and must be used to the exclusion of all others in the hydraulic system of the car.
This LHM fluid is *green in colour* and similar to engine oil.
The use of *any other* would ruin the rubber rings and seals in the system.

2. RUBBER UNITS AND PARTS :

The hydraulic components of the vehicle must be replaced by *suitable* Citroën *genuine replacement components* only.
All rubber components (seals, hoses, diaphragms, etc...) are of a *special quality for use with LHM fluid* and are marked green or white.

3. STORAGE :

Components must be stored, *full of fluid and plugged*. Like the piping, they must be protected against knocks and the ingress of dust.
Rubber tubing and joints must be stored away from dust, air, light and heat.
LHM hydraulic fluid must be stored in its original containers carefully sealed. We advise the use of one litre (for topping up) or five litre cans (for refilling) to avoid having to keep opened containers.

4. CHECKS BEFORE CARRYING OUT WORK :

Before working on the hydraulic system in case of faulty operation, ensure the following :

a) That the controls or the mechanical linkages of the units or the group of hydraulic units involved are not stiff in operation

b) and that the HP circuit is under pressure, as follows :
With the engine at idling speed :
- Unscrew the pressure-release screw on the pressure regulator by one turn to one turn and a half : a sound of leakage should be heard from the regulator.
- Retighten the release screw : cut-out must occur which results in a reduction in the running noise emitted by the H.P. pump.

If not, check in the following sequence :
- that there is sufficient fluid in the reservoir,
- that the H.P. pump is primed and there is no air leak on the suction side of the pump,
- that the reservoir filter is clean and in good condition,
- that the release screw of the pressure regulator is correctly tightened,
- that sealing ball **(2)** is in position, **(see Fig. I and II, page 5).**

www.WorkshopManuals.co.uk

5. PRECAUTIONS TO BE TAKEN BEFORE WORKING ON THE HYDRAULIC SYSTEM :

a) *Carefuly clean* the aera of work, the unions and the unit to be removed.
- Disconnect the lead from the negative terminal of the battery.
- Only use petrol or lead-free petrol cleaning.

b) *Release the pressure* in the circuits :
- Place the vehicle in the *«low» position.*
- Slacken the pressure regulator screw *(by one turn to one turn and a half),* **do not remove the screw : the sealing ball (2), see Fig. I and II page 5, could get lost,**
- Wait until the front of the car has reached the low position.

Note : For special cases, *see* (6) *XM 390-0/1*
- brake accumulator of steering with DIRAVI power operation
- hydractive suspension

6. PRECAUTIONS TO BE TAKEN DURING REMOVAL.

a) *Blank off the metal pipes* with plugs, and rubber tubes with round pins of the correct diameter.

b) *Blank off the openings* of components with plugs of the correct diameter.

NOTE : Plugs and pins must be carefully cleaned before insertion.

7. CHECK OR TEST OF HYDRAULIC UNITS :

- Use **4034-T** *test bench* equipped and designed for use with LHM fluid.
- This bench is *painted green* and its accessories are marked in green.
- Never use the bench with another fluid or for testing components operating with another fluid.

NOTE : The «Le Bozec» pump used on test benches for checking DIESEL injectors can be resorted to for testing components operating with LHM mineral fluid provided that the bench is cleaned first.

8. PRECAUTIONS TO BE TAKEN DURING REFITTING.

a) *Cleaning :*
- steel pipes must be blown through with compressed air,
- rubber tubes and seals must be washed in petrol or lead-free petrol and then dried with compressed air,
- hydraulic units must also be cleaned with petrol or lead-free petrol and blown through with compressed air.

NOTE : Renew all joints and seals during refitting.

b) *Lubrication :*
- Follow the indications as stated in the operations in the Manual.
- Joints and internal parts must be lightly oiled before fitting (use mineral fluid LHM only).
- If parts in contact with hydraulic units have to be greased, use a mineral grease only (as employed for cardan shafts or bearings).

www.WorkshopManuals.co.uk

c) Fitting :

- Only use joints of a quality compatible with LHM mineral fluid.
  Refit a NEW seal each time the pipework is uncoupled.
- Metal pipes are protected by an epoxy paint.
  Before carrying out the recoupling operation, make certain that neither the pipe or the pipe location bear epoxy particles.

To connect a union, proceed as follows : **Fig. III**

- Fit a NEW sleeve-seal whenever the pipe is disconnected.
- Position sleeve-seal **« a »** moistened with LHM fluid, on the tube ; this sleeve must not reach the extremity of the pipe, **Fig. III.**
- Centre the pipe in the housing by lining it up with the hole centre line, avoiding all stress. (Ensure that the small end **« b »** of the pipe enters into the bore **« c »**, **Fig. IV.**
- ***Start screwing in the union-nut by hand ;*** slacken the unit fixings, *if necessary,* to make this operation easier.
- Tighten nut moderately : excessive force could cause a leak because of the distortion of the pipe.

Tightening torques :

Pipe with seal	3.5 mm Ø	**0.8 to 0.9 mdaN**
	4.5 mm Ø	
	6.0 mm Ø	**0.9 to 1.1 mdaN**
Pipe without seal	6.0 mm Ø	**1.3 mdaN**
	10.0 mm Ø	**3 mdaN**

The design of the various seals ensures that their sealing action increases with fluid pressure. **In the case of a leak, check the tightening torque of the union-nut. If the leak does not stop, replace the sleeve-seal.**

To connect a rubber tube, a rubber ring of suitable diameter has to be positioned between the tube and the hose clip.

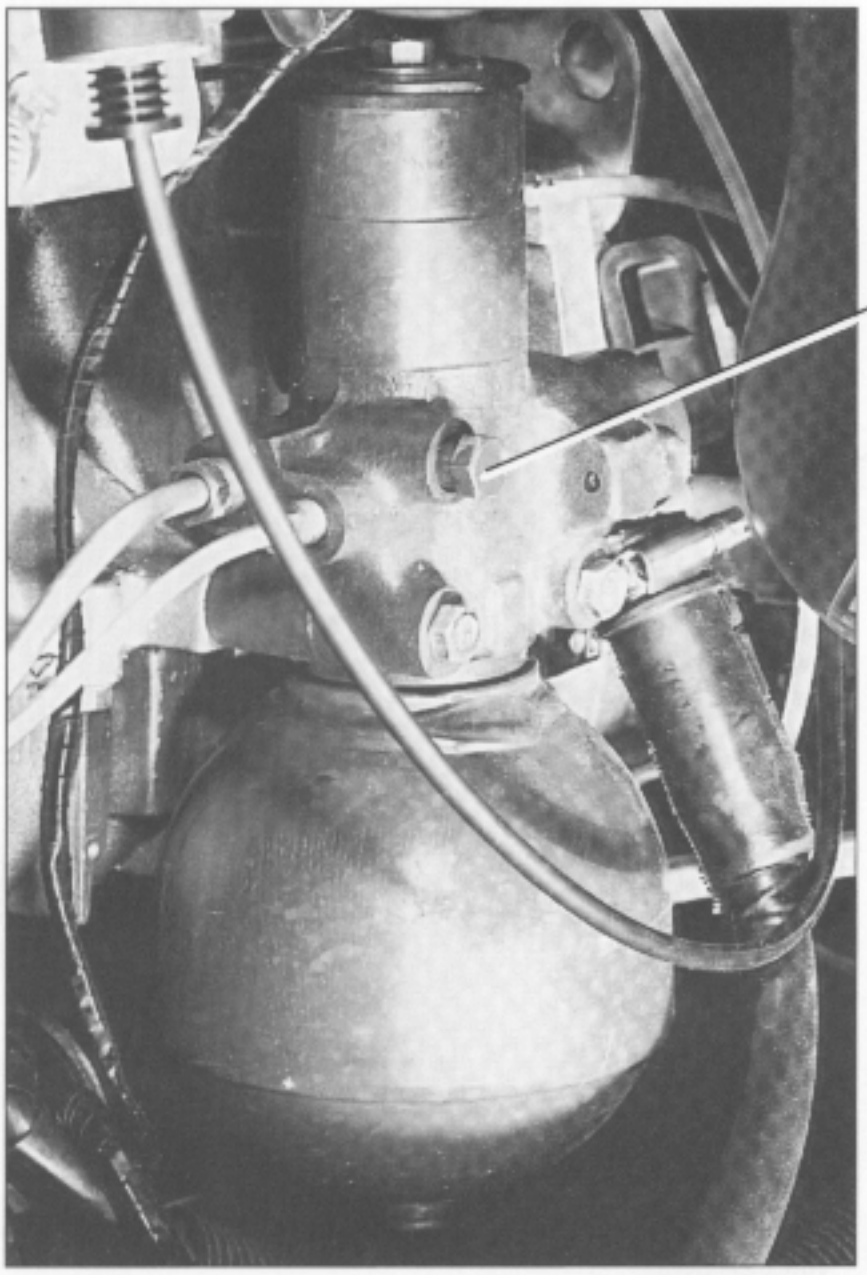
9. CHECKS ON COMPLETITION OF WORK.

On completion of work on hydraulic units or the system itself, check the following :

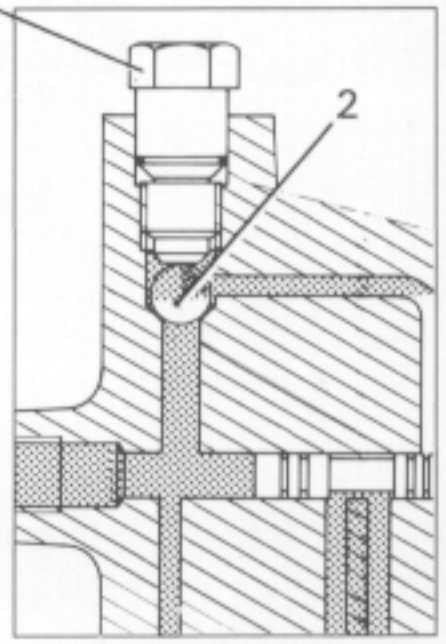
a) *The union for leaks.*

b) ***The clearance between the pipes :*** **pipes must not touch one another or any component, nor may any other unit., whether fixed or movable, exert any stress on them.**

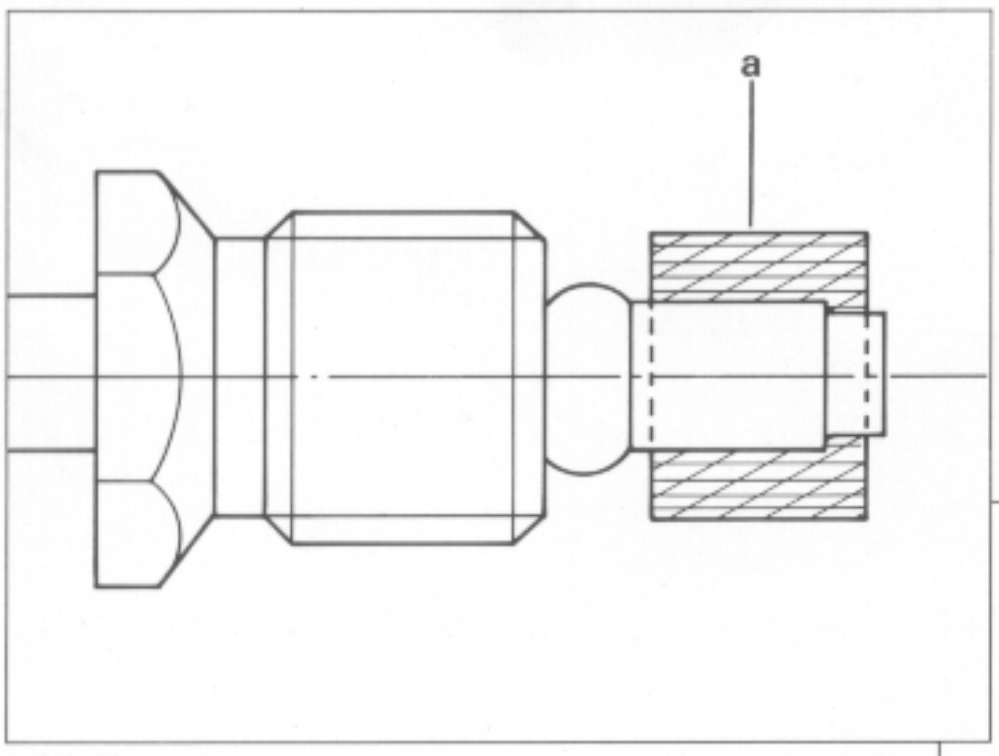
www.WorkshopManuals.co.uk



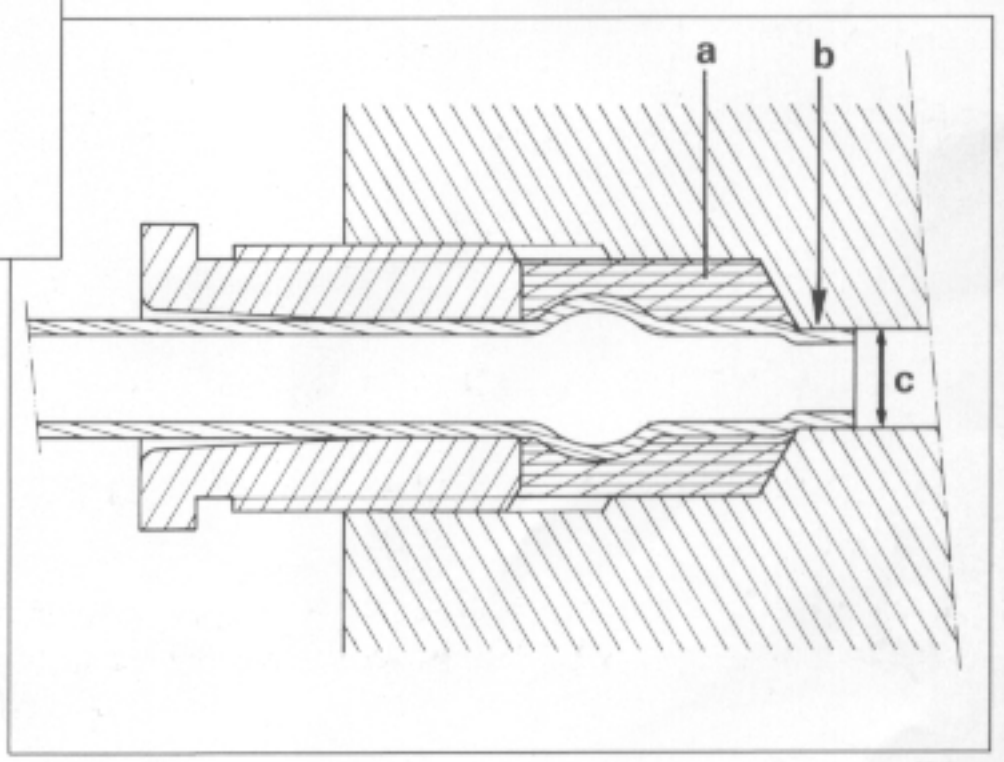
82-1050 I



D. 39-50 a II



T.T.-39-1 III



T.T.-00-.5 IV

8932

www.WorkshopManuals.co.uk

PRESSURE SOURCE AND RESERVE

Reservoir, Fig. I

TOTAL LHM PLUS
Green coloured mineral hydraulic fluid

Contents of the system : 5.3 litres
The level **(7)** must be checked :

- with the engine rotating and the circuit under pressure
- with the vehicle in the "TOP" position.

Key to reservoir systems :

1 : HP pump suction line

Return **2** : POWER ASSISTED steering : Flow regulator ; steering power valve
VARI POWER steering : Pressure regulator
VARI POWER steering - HYDRACTIVE suspension : Pressure regulator, electrovalve

Return **3** : Brake control valve
ABS : Hydraulic block

Overflow : XM All Types : Height correctors
Return **4** Suspension cylinders
Security valve
Steering

: POWER ASSISTED steering : Pressure regulator

Return **5** : Height correctors

Return **6** : POWER ASSISTED steering without active suspension : a plug
POWER ASSISTED steering with active suspension : electrovalve
VARI POWER steering : Centrifugal governor and steering system

7 : Level indicator

HP pump, Fig. II

5 piston volumetric pump

Pump delivery : 4 cc per turn (*as an indication*)

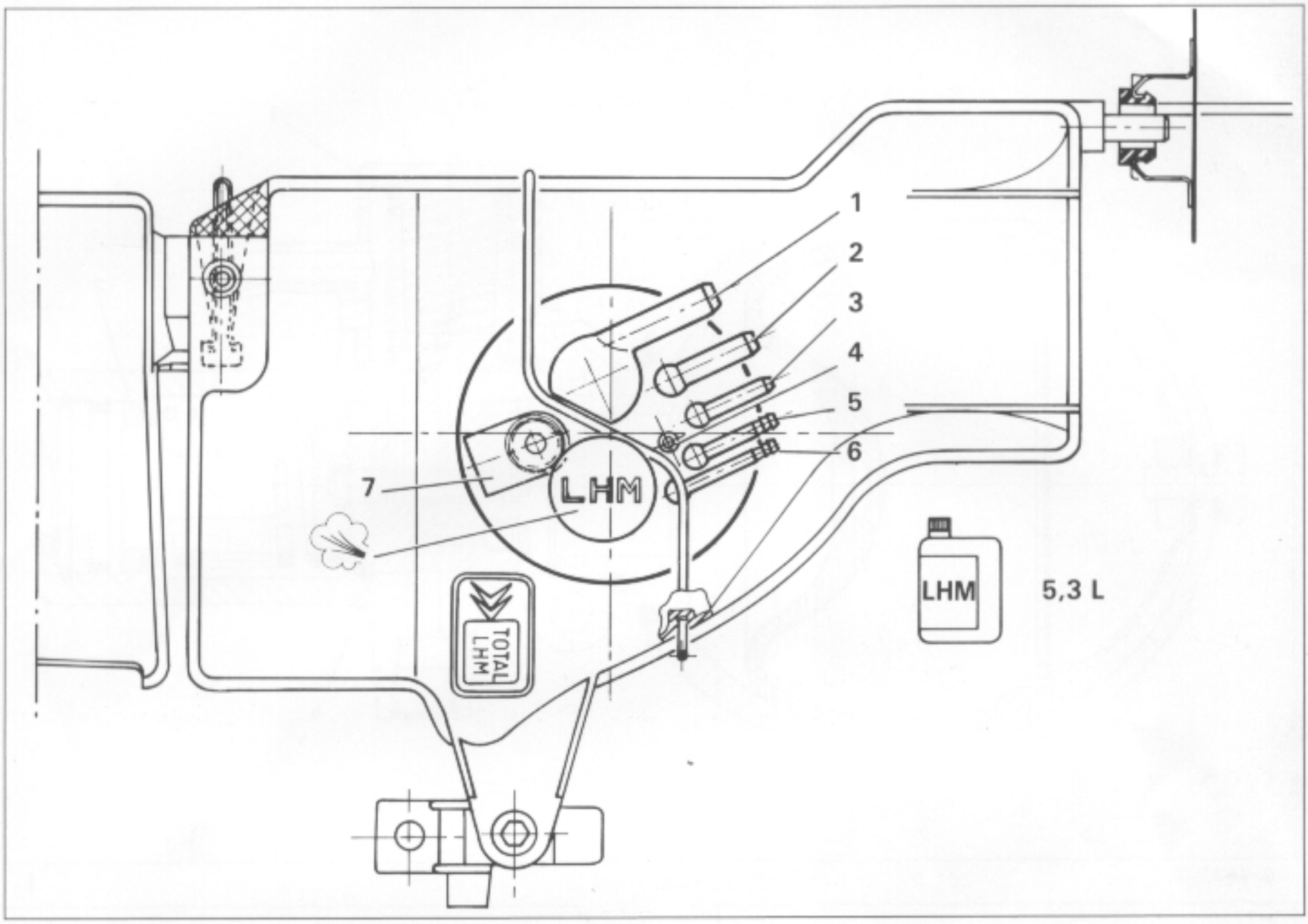
The pressure is limited by the pressure regulator.

The pump priming cannot be carried out if the pressure regulator release screw is not **slackened.**

HP pump driving :

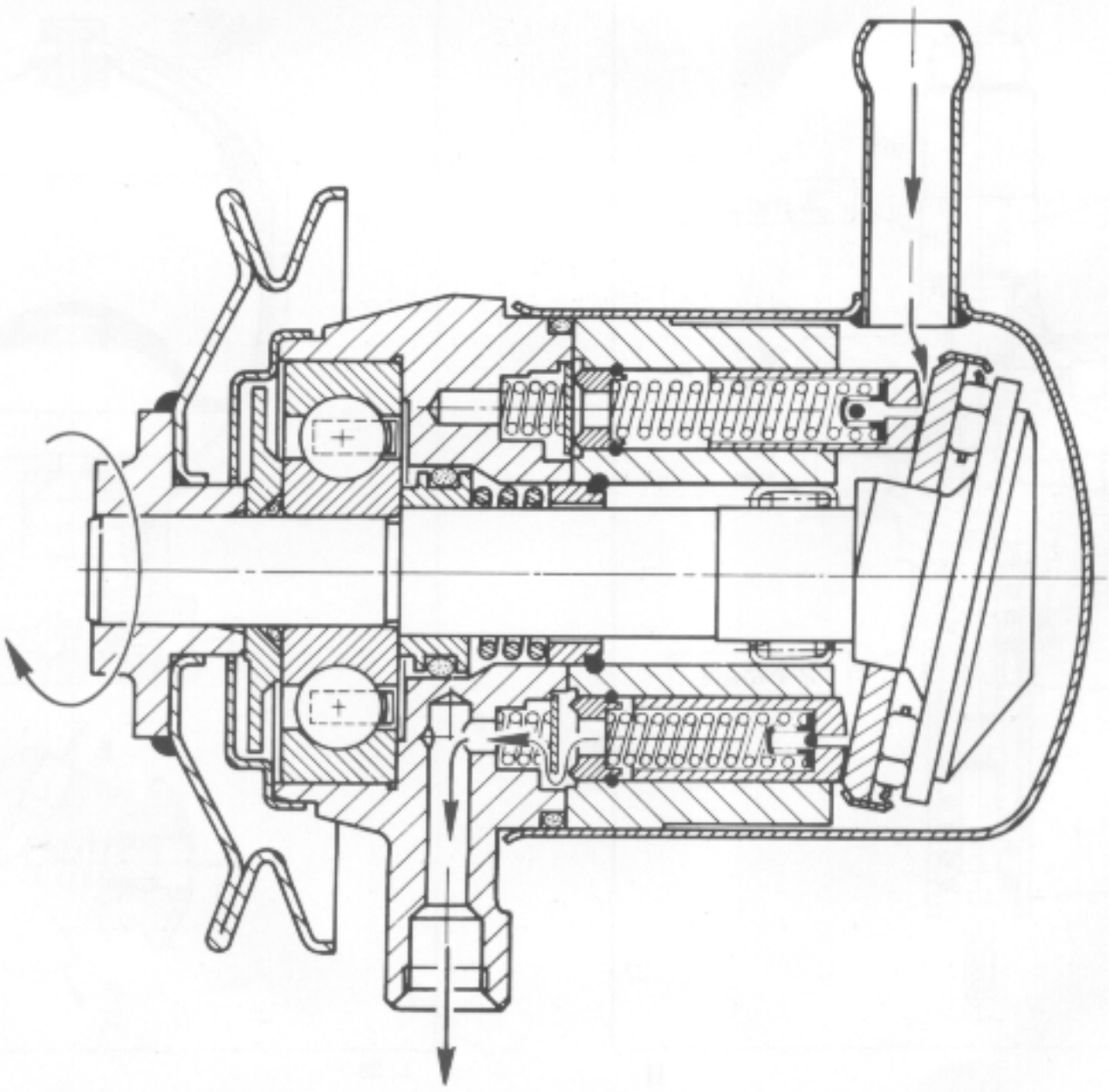
	Driving pulley	Pump pulley
4 cyl. engine	84 mm in Ø	132.5 mm in Ø
6 cyl. engine	124 mm in Ø	88 mm in Ø

www.WorkshopManuals.co.uk



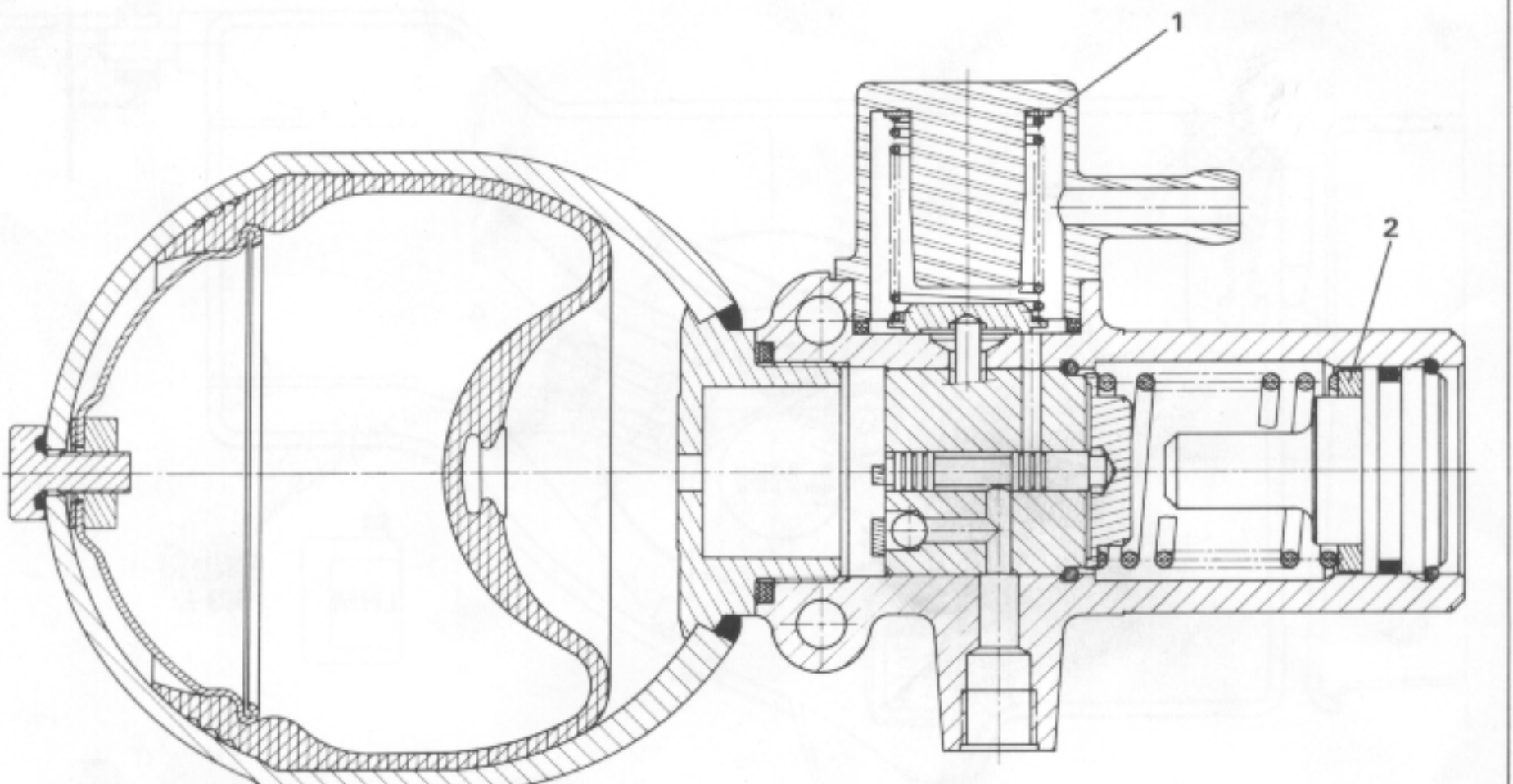
Y.39-1

I



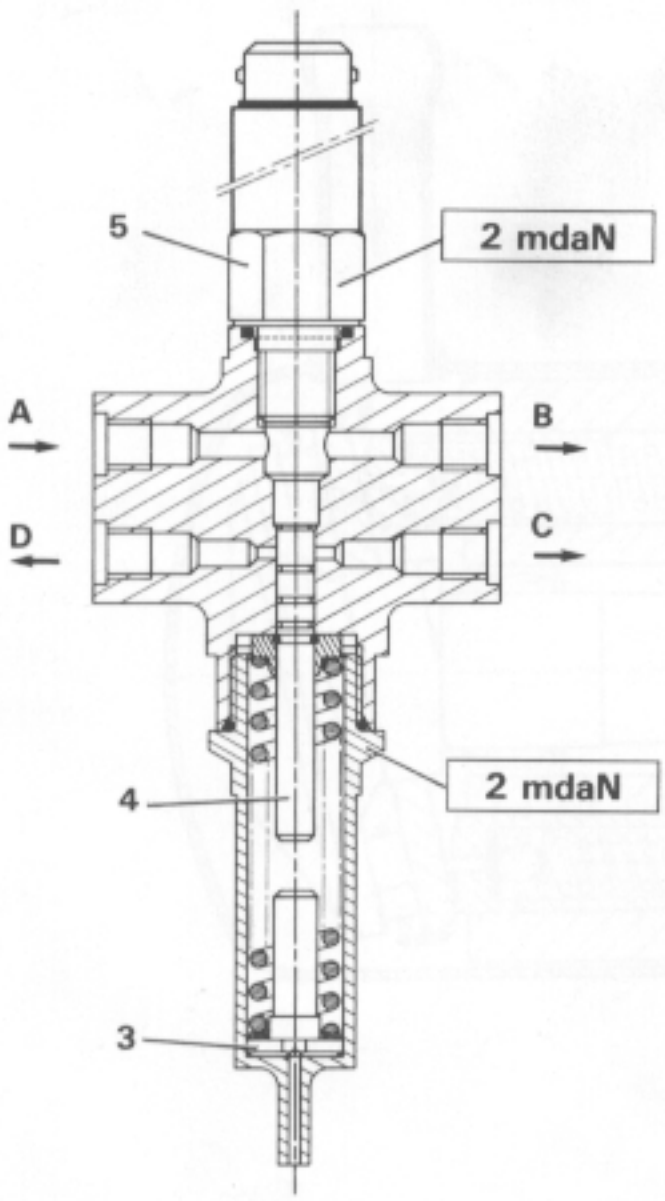
Y.39-24

www.WorkshopManuals.co.uk



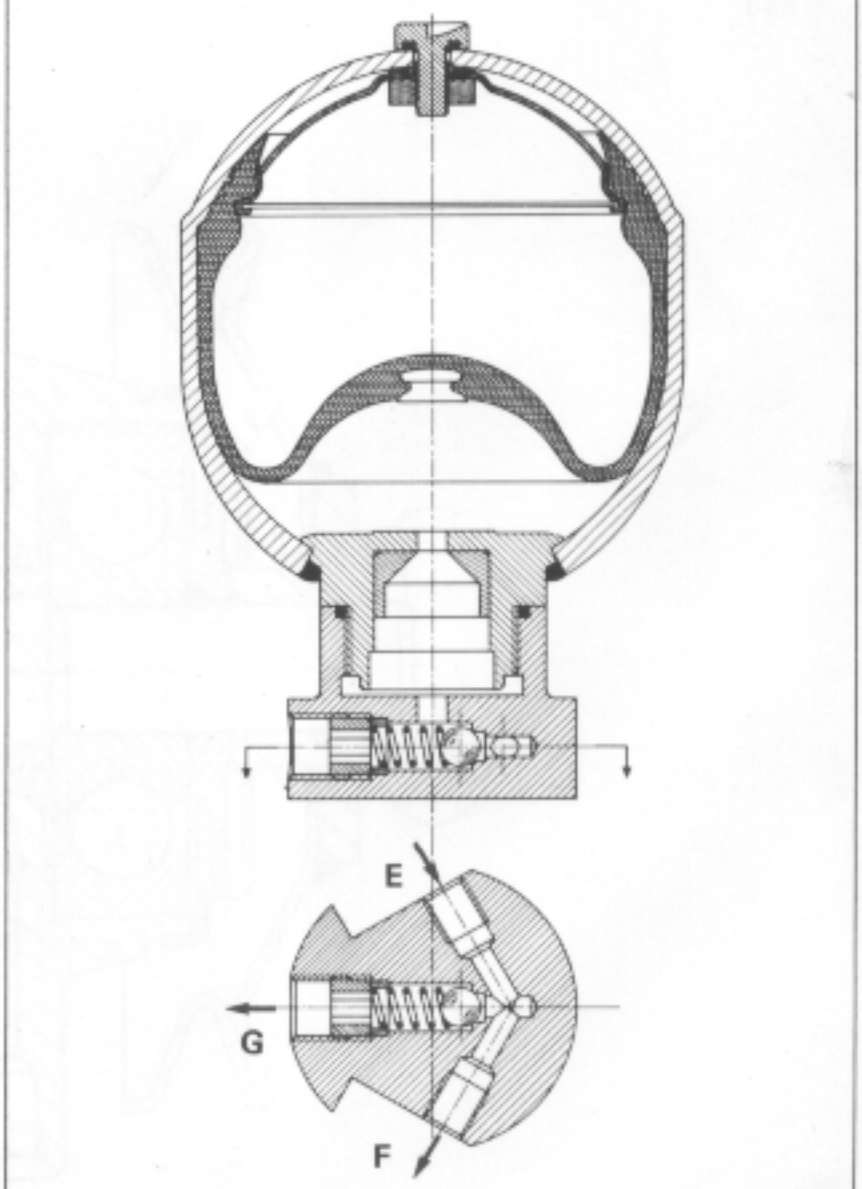
G. 39-9

I



Y.44-14

II



L. 39-7

III

www.WorkshopManuals.co.uk

Pressure regulator with pilot slide-valve : Fig. I

- Cut-out pressure : ..... **170 ± 5 bars**
- Cut-in pressure : ..... **145 ± 5 bars**
- Thickness of shims **(1)** for cut-out adjustment : ..... **0.3 mm**
- Thickness of shims **(2)** for cut-in adjustment : ..... **0.3 and 0.7 mm**
- One 0.3 mm shim brings about a change in pressure by : ..... **approx. 3 bars**
- One 0.7 mm shim brings about a change in pressure by : ..... **approx. 7 bars**

Main accumulator : Fig. I

- Capacity : ..... **400 cc**
- Calibration pressure : ..... **$62 \pm \frac{2}{32}$ bars**

Brake accumulator : Fig III
(VARI POWER steering)

E : HP
F : Centrifugal regulator, security valve.
G : Brake control valve.

Security valve : Fig. II

Slide valve **(4)** setting pressure .....

Pressure for supply to suspension .....
(delivery at C and D)

Pressure for isolation .....
(no supply to suspension at A and D) :

Low oil pressure switch setting .....
(warning lamp goes out)

POWER ASSISTED steering	VARI POWER steering
80 to 100 bars	110 to 130 bars
80 bars min.	110 bars min.
80 to 100 bars	

POWER ASSISTED steering	VARI POWER steering
pipe Ø 4.5 mm	Ø 4.5 mm
pipe Ø 3.5 mm	Ø 4.5 mm
pipe Ø 3.5 mm	
pipe Ø 3.5 mm	

Legend :

A : ASSISTED STEERING, H.P. inlet
VARI POWER, feed to steering

B : ASSISTED STEERING, supply to brake control valve
VARI POWER, H.P. inlet

C : Feed to rear height corrector.

D : Feed to front height corrector.

3 : Adjustment shims : 0.9 mm thick
4 : Slide valve.
5 : Fault detector pressure switch

www.WorkshopManuals.co.uk

HYDRAULIC CIRCUITS

The hydraulic circuit diagrams are represented according to the type of steering system fitted to the vehicle.

They are divided in :
- Main circuits including : the pressure source, the steering, the suspension and brakes, with no additional equipment.
- Circuits per function : Steering ; hydraulic suspension ; hydractive suspension ; brakes ; anti-lock braking system (ABS).

Representation of the various hydraulic pipes

——————— High pressure circuit
- - - - - - - - - - - - - - - - - - Operating pressure circuit
——————— Return to reservoir, (rubber pipe)
- - - - - - - - - - - - - - - - - - Return to reservoir, (metal pipe)
——— – ——— – ——— Return to reservoir, (plastic pipe)

Key to the hydraulic items used in the diagrams

Source of pressure

1 : Reservoir
2 : H.P. pump
3 : Pressure regulator
4 : Security valve

Steering POWER ASSISTED steering

10 : Pressure flow regulator
11 : Rotary valve
12 : Hydraulic ram

VARI POWER steering

13 : Centrifugal governor
14 : Straight line position return piston
15 : Control slide-valve
16 : Hydraulic ram
17 : 4-way union with filter

Suspension Hydraulic suspension

20 : Front height corrector
21 : Rear height corrector
22 : RH front cylinder
23 : LH front cylinder
24 : RH rear cylinder
25 : LH rear cylinder

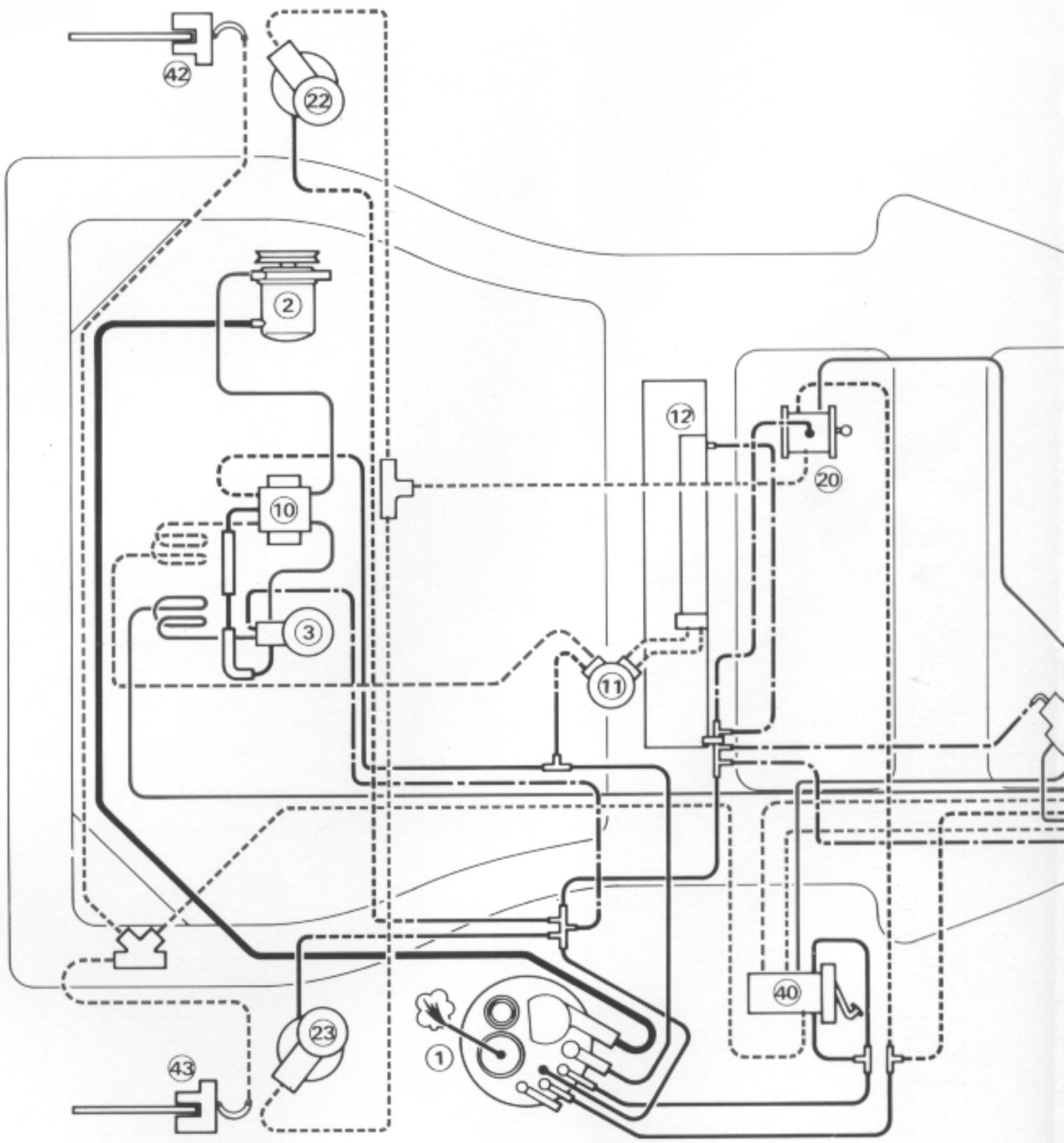
Hydractive suspension

31 : Filter support coupling
32 : Solenoid valve
33 : Front suspension regulator
34 : Rear suspension regulator
35 : 3-way union with pressure switch (front brake) 35 bars

Brakes

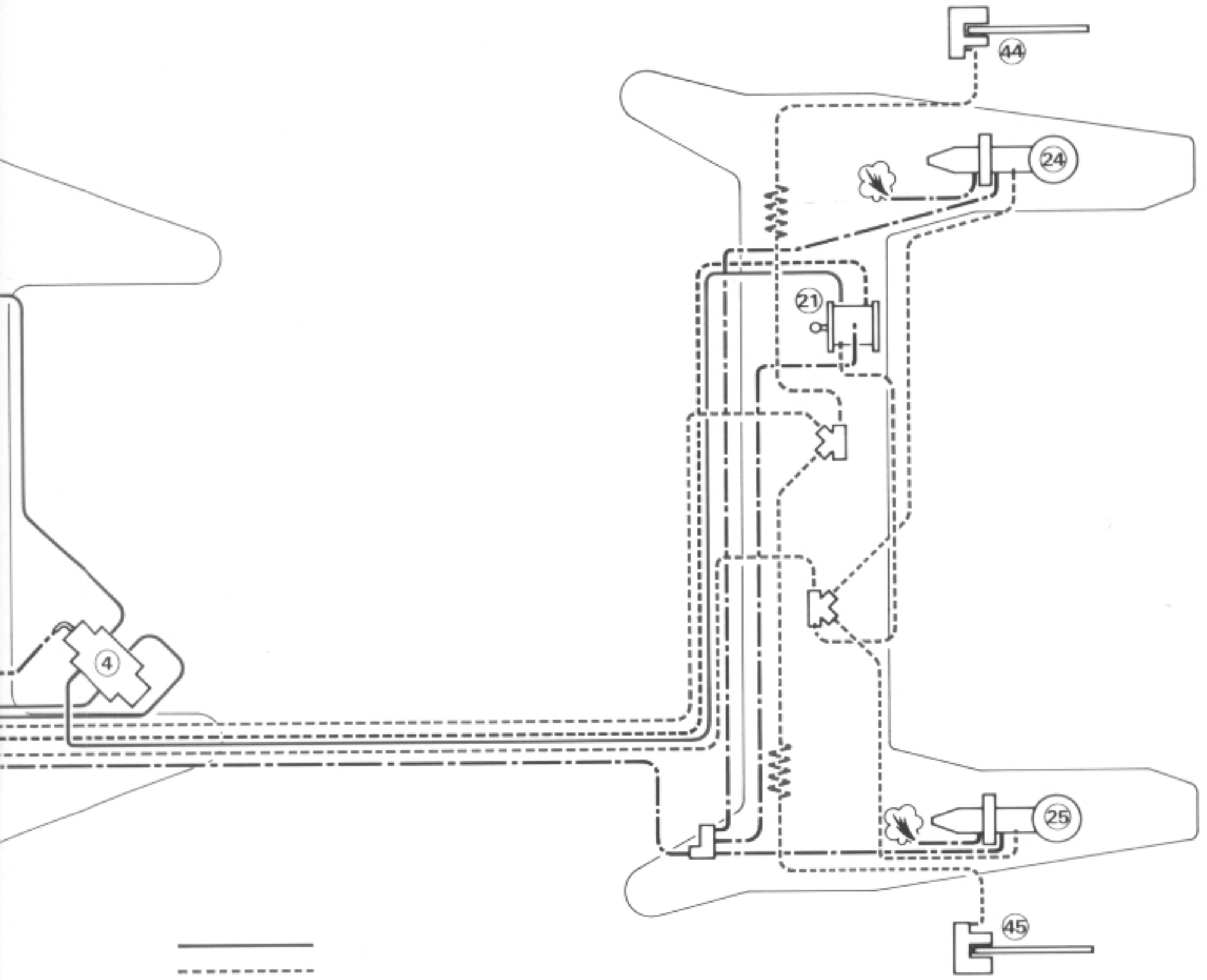
40 : Brake control valve
41 : Brake accumulator (VARI POWER)
42 : RH front brake
43 : LH front brake
44 : RH rear brake
45 : LH rear brake
46 : ABS hydraulic unit

www.WorkshopManuals.co.uk



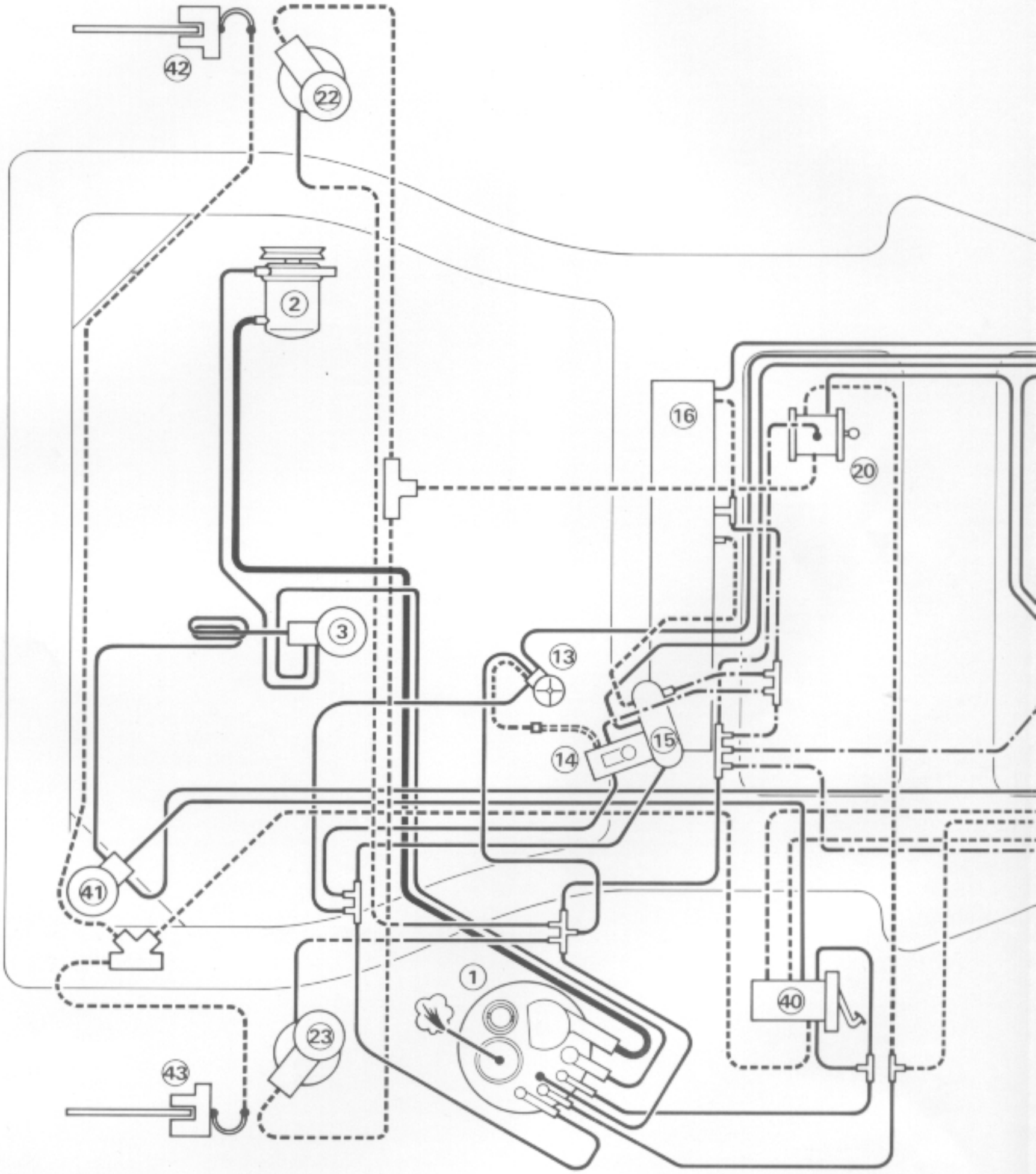
Y.39-4 | Y.39-5

www.WorkshopManuals.co.uk



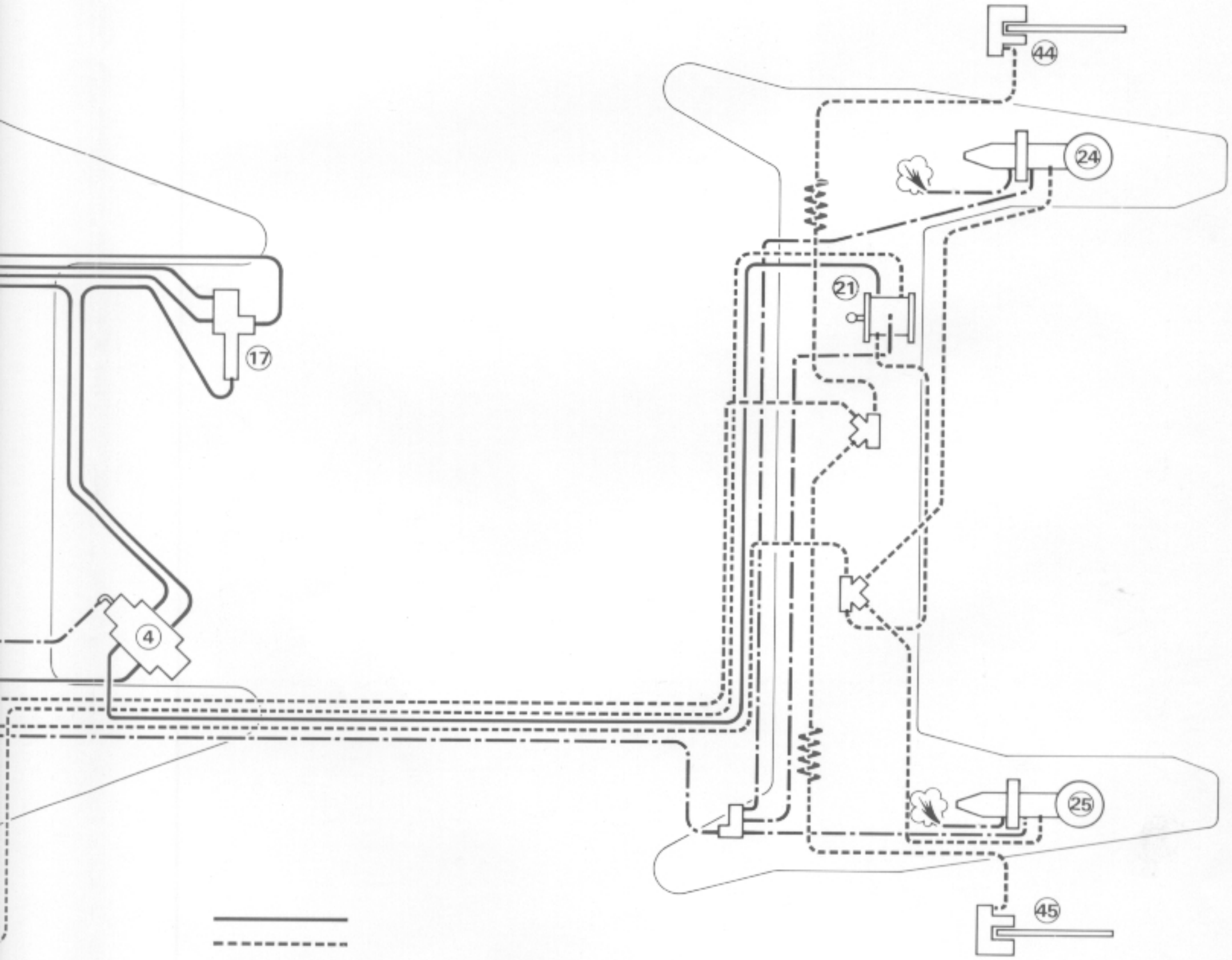
6	XM 390-00/1	6

www.WorkshopManuals.co.uk



Y.39-2 | Y.39-3

www.WorkshopManuals.co.uk



6	XM 390-00/1	6

www.WorkshopManuals.co.uk

I - DEPRESSURIZING THE CIRCUITS

HYDRACTIVE SUSPENSION

Additional spheres (2)
Fig. I and II

Engine running.

Place the height control to the "LOW" position ⇒ .

Set the switch to the "AUTO" position **(1), Fig. I.**

Allow the engine to run for about 1 minute but do not touch the steering wheel, before the two supplementary spheres and the suspension system link up.

NOTE : Should it be impossible to operate the engine :

— slacken the pressure regulator screw **(4), Fig. III,** .

— uncouple solenoid valve feed pipe **(3)** from the security valve,

— couple up tube **(3)** to hydraulic test bench **4034-T**,

— either open a door or switch on ignition,

— send a 150 bar pressure approx. to move the firmness regulator slide valves, enabling both additional spheres to empty.

POWER ASSISTED STEERING

Main circuit

— Set the height corrector to the "LOW" position ⇒ .

— Loosen the pressure regulator release screw **(4).**

VARI POWER STEERING

Complete circuit

+

brake accumulator (5)
Fig. IV

— Raise the front of the vehicle and support it on stands.

— Remove one wheel.

— Set the height corrector to the "LOW" position ⇒ .

— Slacken the pressure regulator release screw **(4).**

— Place a plastic pipe between a brake caliper bleed screw and the reservoir.

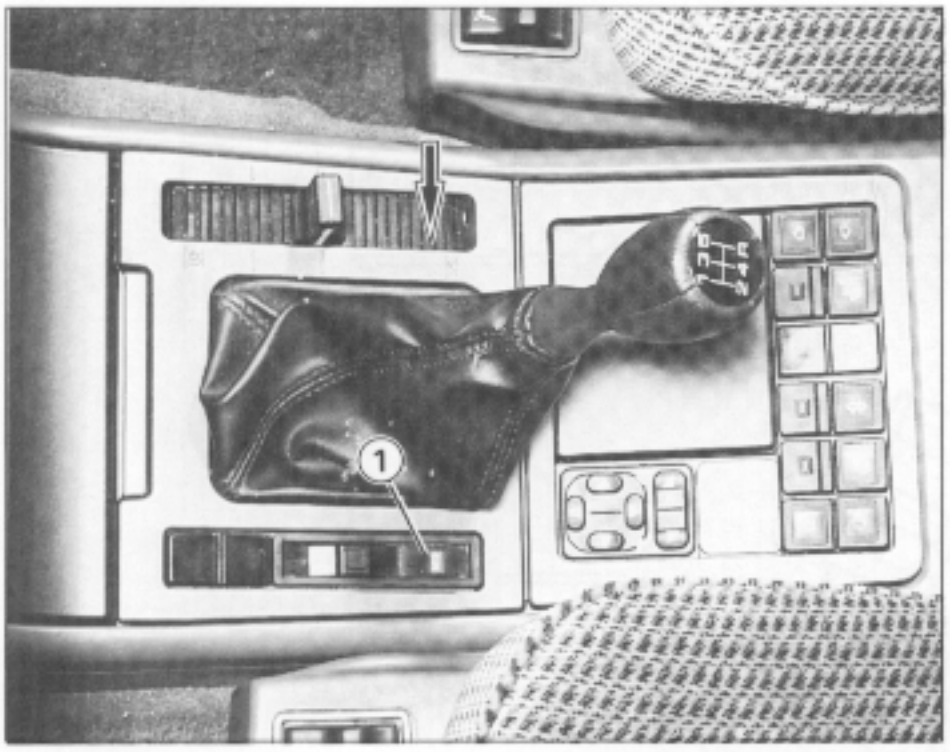
— Open the bleed screw.

— Slightly depress the brake pedal to empty the accumulator.

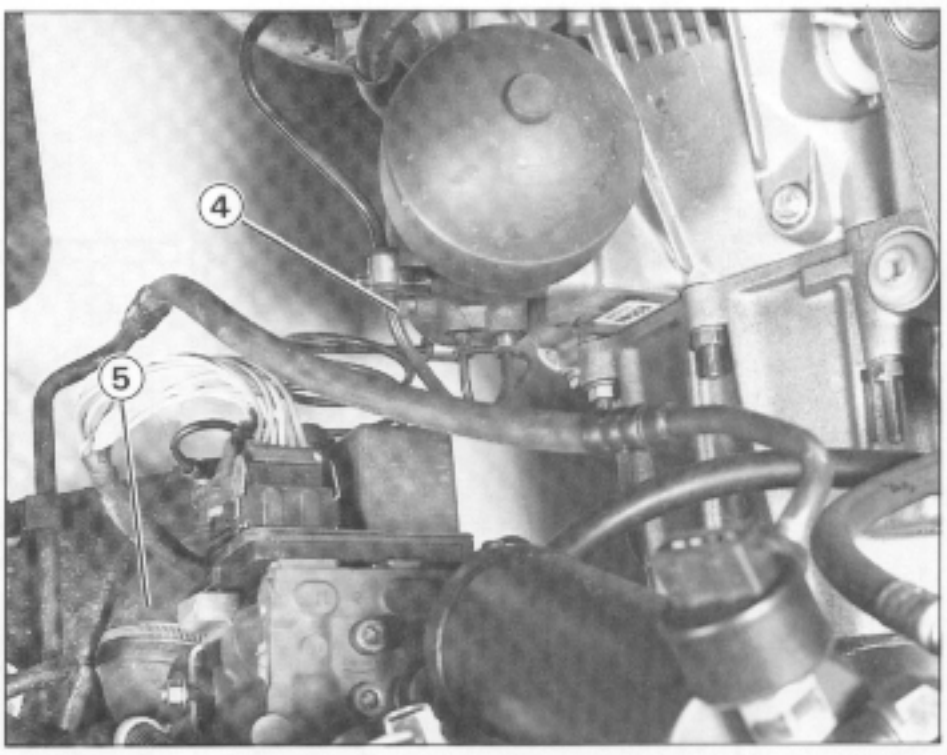
— Retighten the bleed screw.

NOTE : The brake accumulator can also be depressurized by depressing the brake pedal repeatedly (about 50 times).

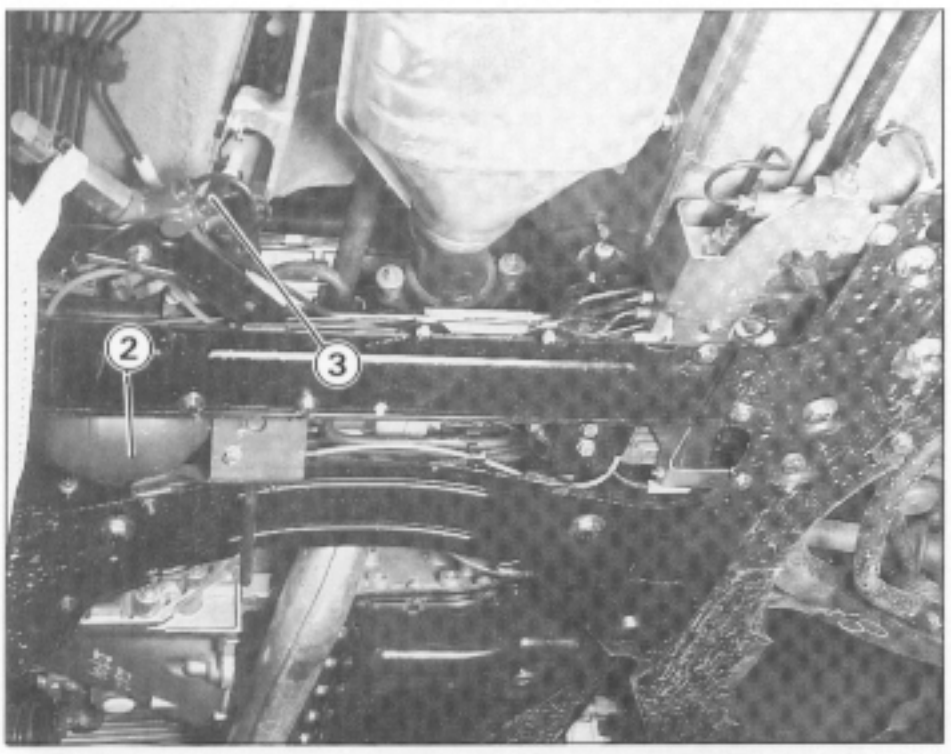
www.WorkshopManuals.co.uk



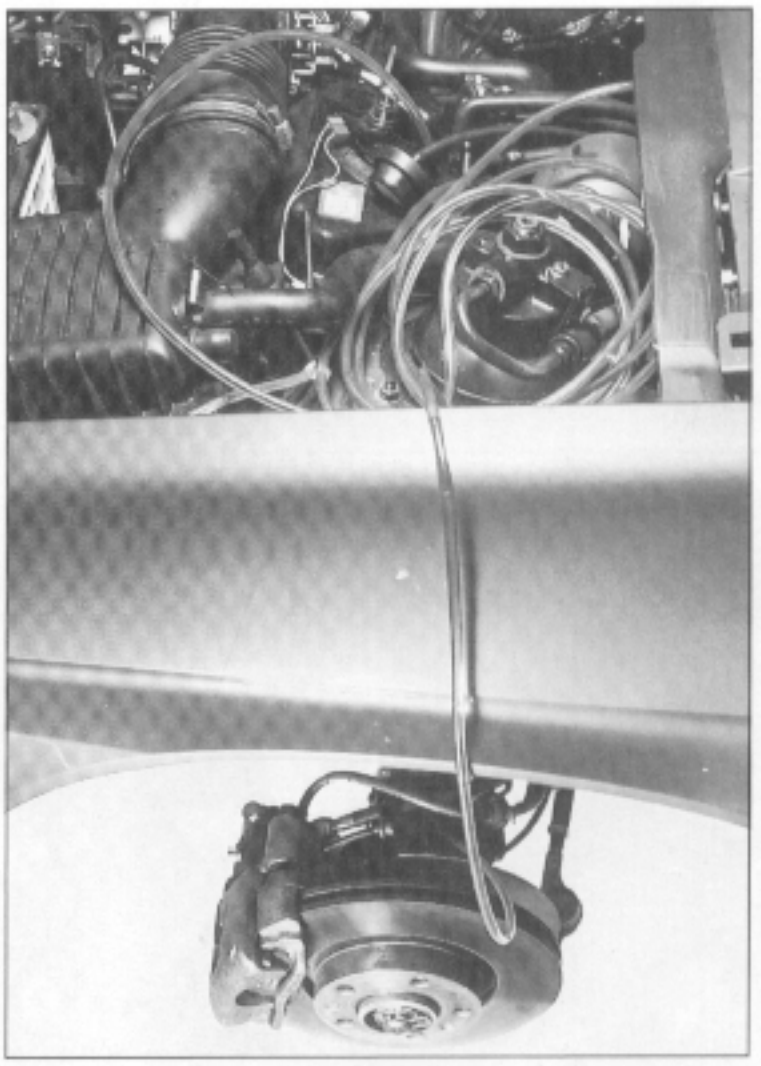
88-574 I



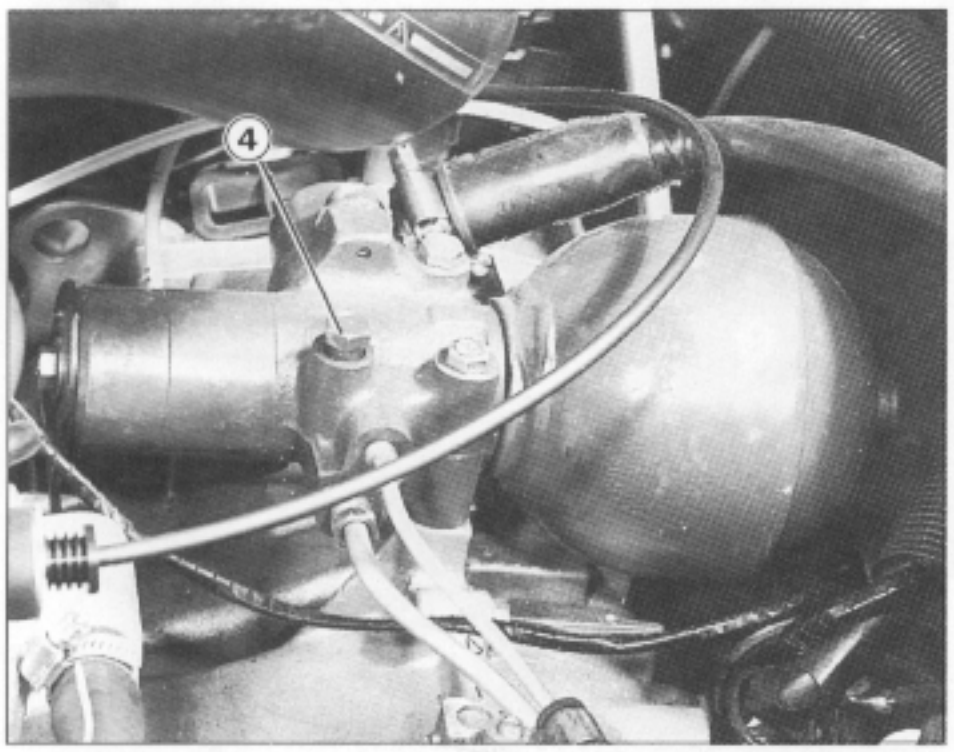
89-149 IV



89-117 II

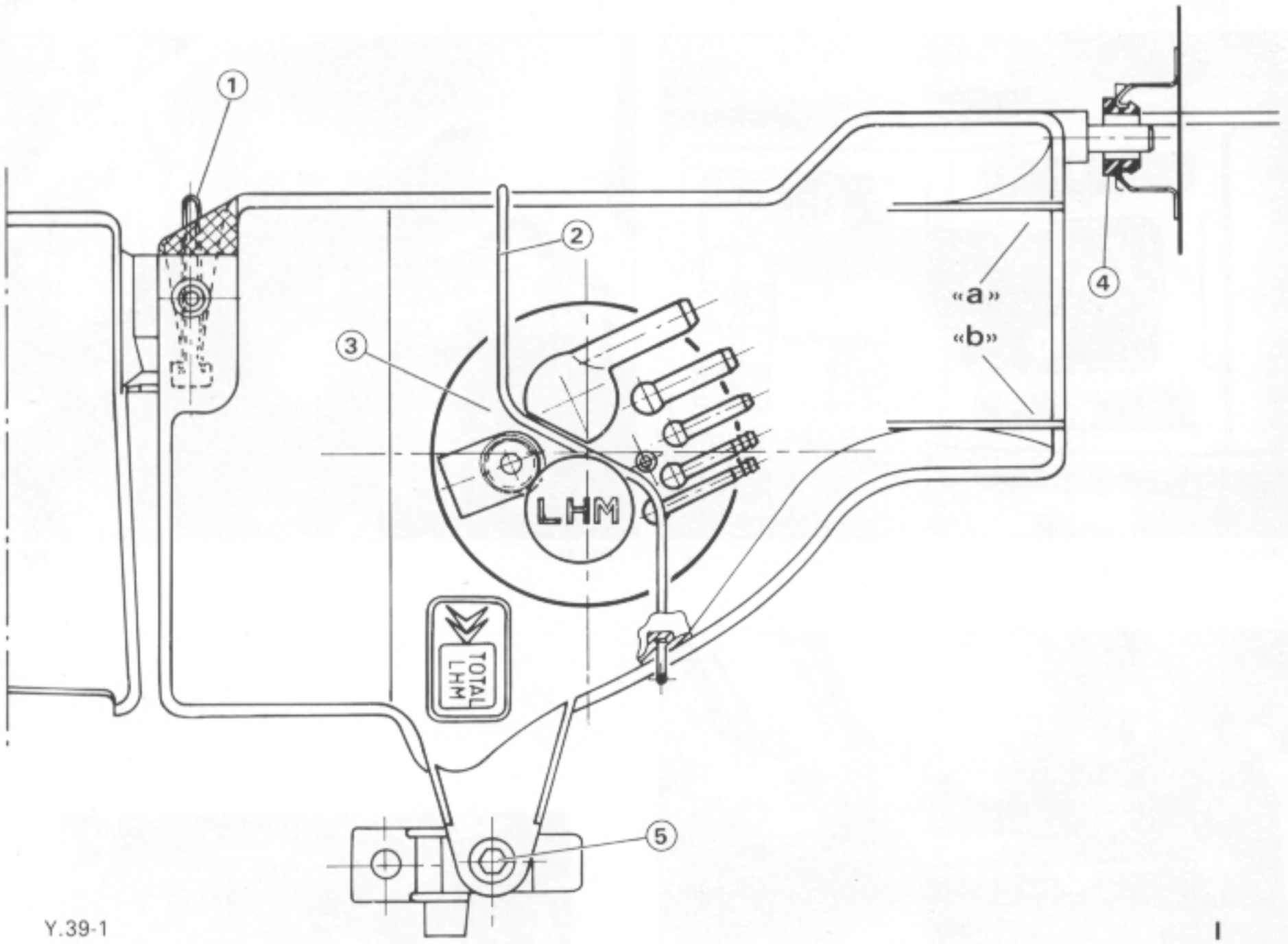


89-130 V

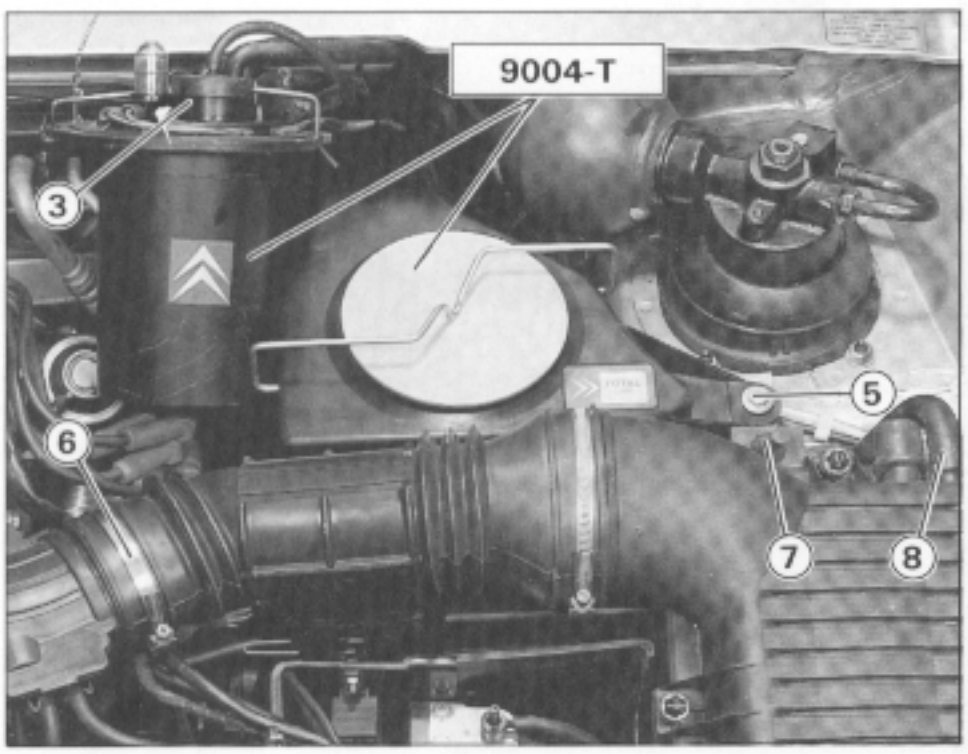


82-1050 III

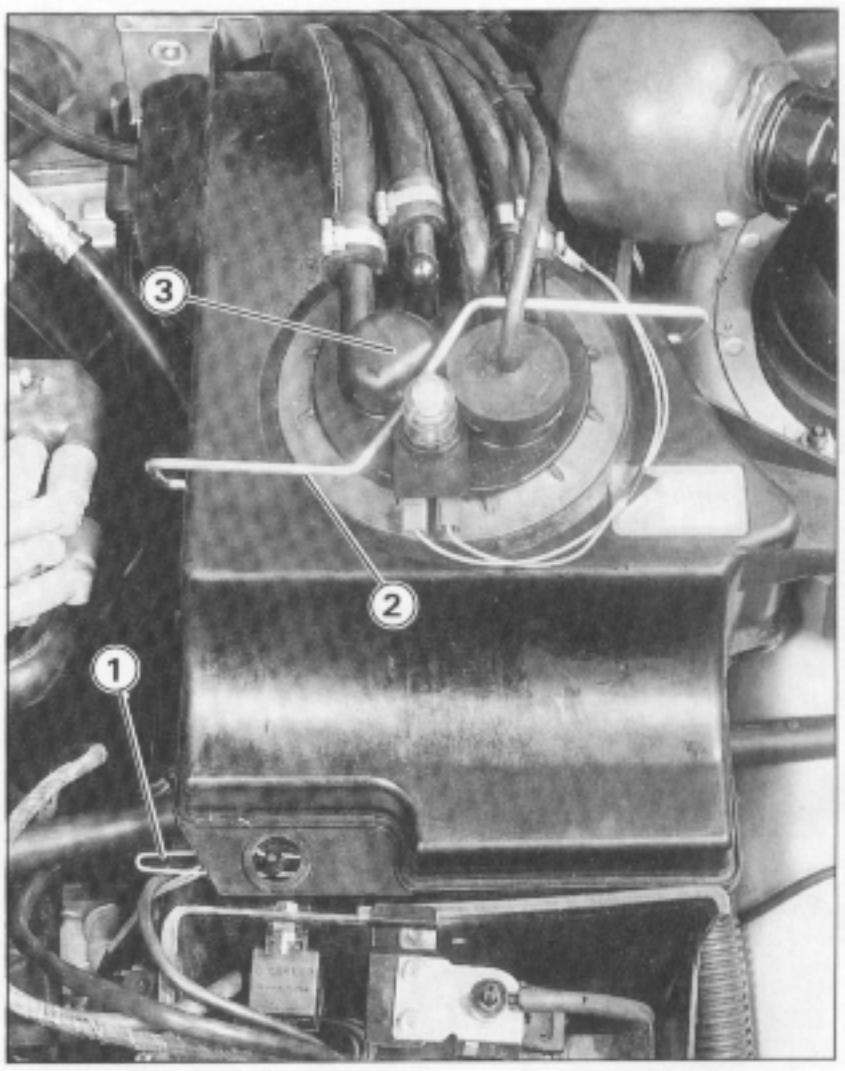
www.WorkshopManuals.co.uk



Y.39-1 I



89-310 II



89-168 III

www.WorkshopManuals.co.uk

II - RESERVOIR REMOVING/REFITTING

REMOVAL

Depressurize the systems.

Removing the air cleaner, **Fig. II :**

- slacken clamping collar **(6)**,
- uncouple pipe **(8)**,
- release the air cleaner from the flexible bracket **(7)**,
- take off the air cleaner assembly.

Extract, Fig. I :

- retaining clamp **(2),**
- screw **(5),**
- clip **(1).**

Disengage hydraulic reservoir filters **(3)** and locate them into protector **9004-T, Fig. II.**

Fit the reservoir with the cover and clip.

Withdraw the reservoir.

Fix protector **9004-T** at the required place.

Note :

Periodical draining :

Clean filters **(3)**, the reservoir and deflector *either with petrol or white spirits, then dry with compressed air.*

REFITTING

Remove the filters from protector **9004-T**. Put them to drain and place them on a clean cloth.

Offer up the reservoir into its rear support **(4)**, positioning the return pipes between ribs **"a"** and **"b"**.

Refit screw **(5)** and clip **(1)**.

Reinstall filters **(3)** into the hydraulic reservoir, and the retaining clamp.

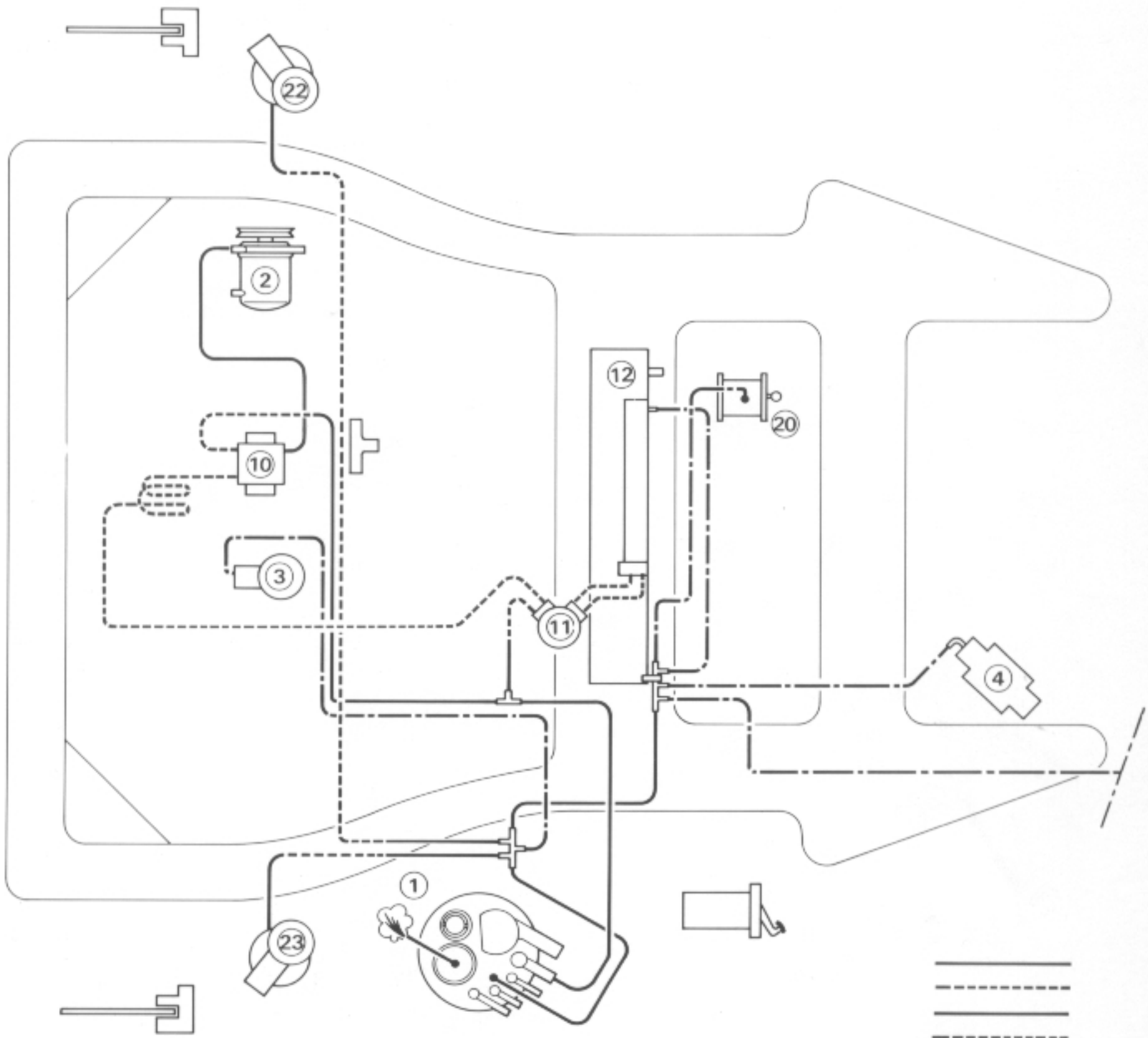
Re-place the air cleaner into its front supports and its flexible bracket **(7)**.

Retighten clamping collar **(6)** ; couple up pipe **(8)**.

The engine starting should be effected with the pressure-regulator release screw **slackened off** so as to facilitate the HP pump priming.

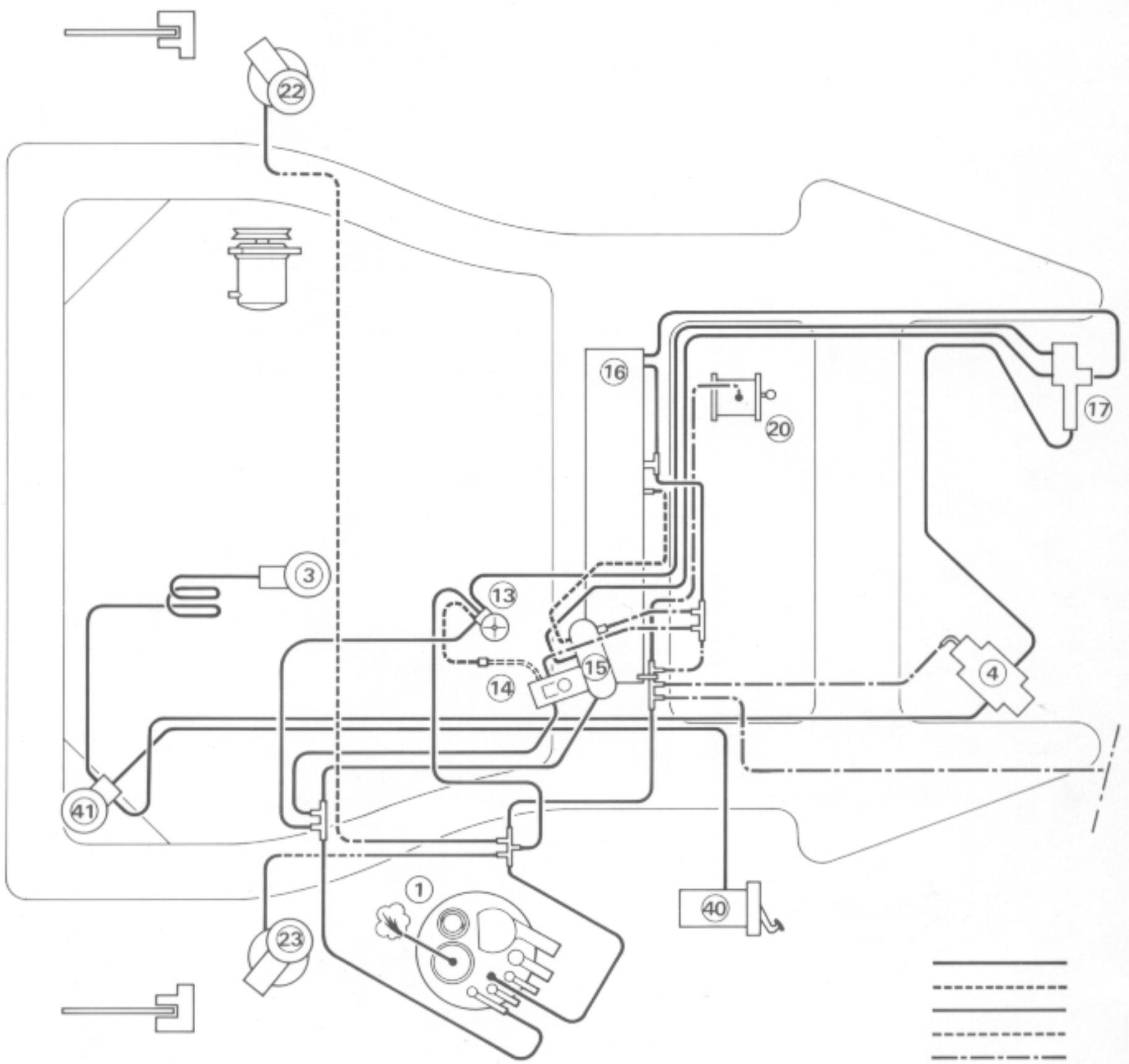
Check the hydraulic fluid level with the vehicle in the "HIGH" position

www.WorkshopManuals.co.uk



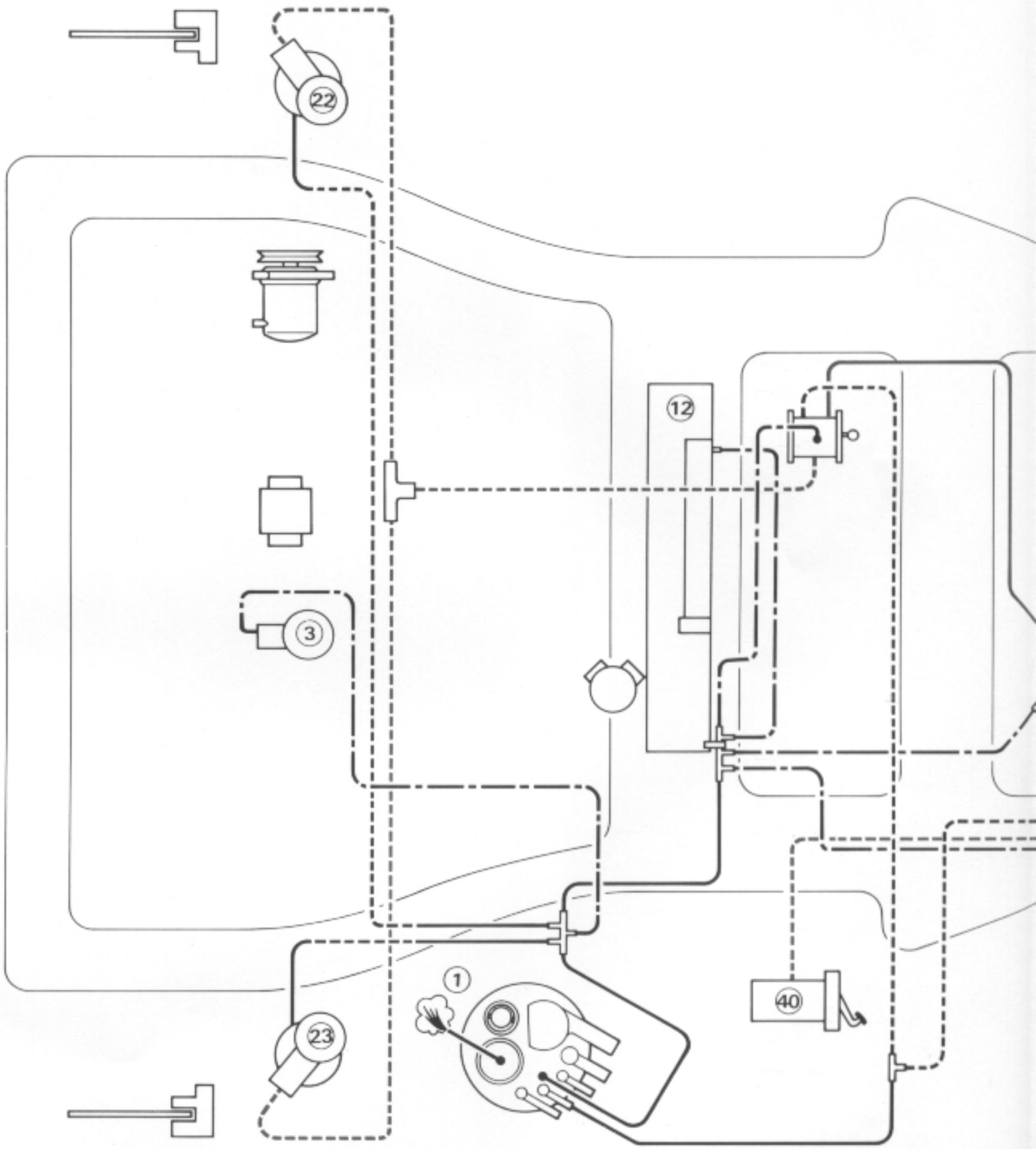
6 | XM 390-00/1 | 6

www.WorkshopManuals.co.uk



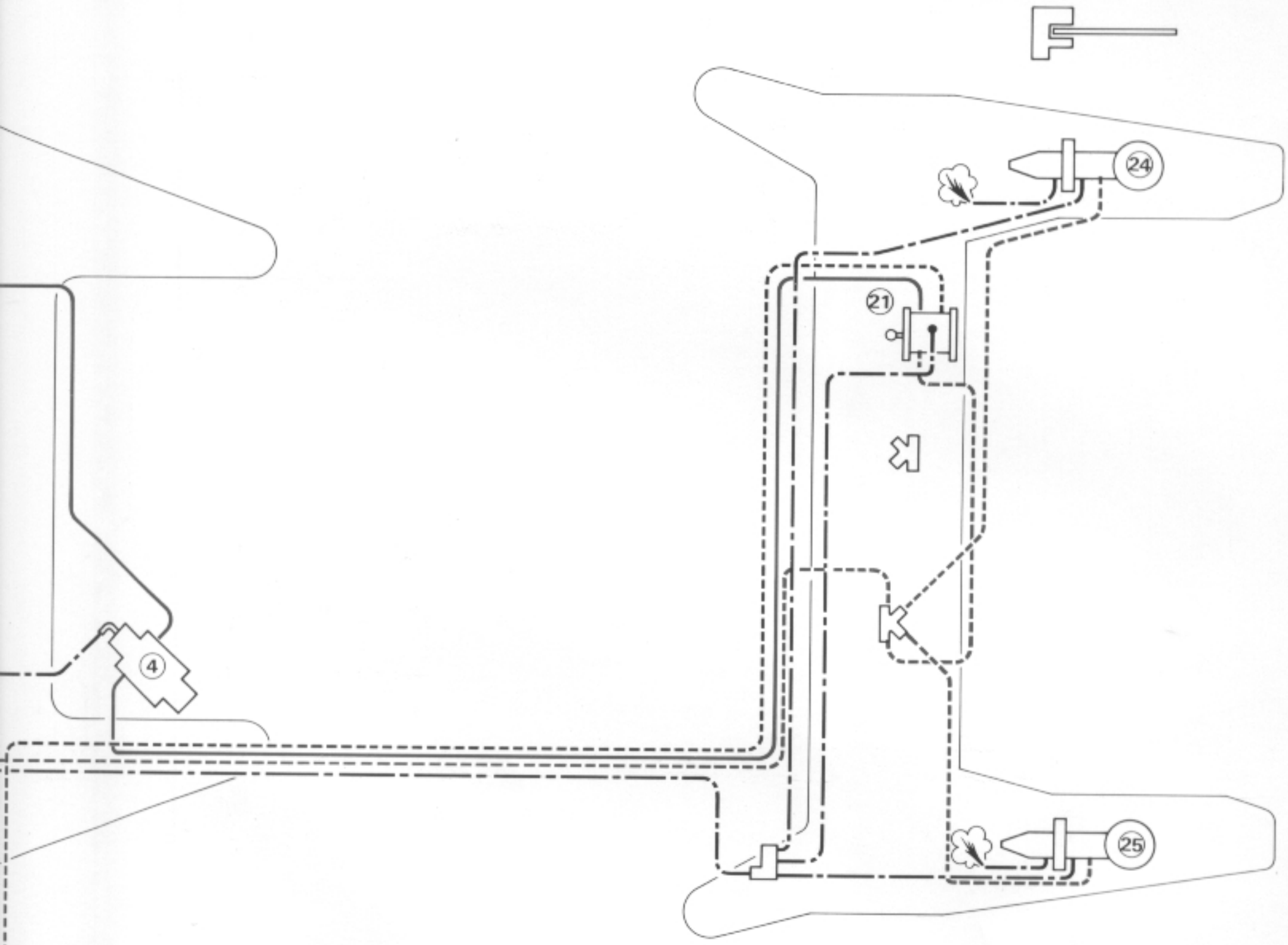
6 | XM 390-00/1 | 6

www.WorkshopManuals.co.uk

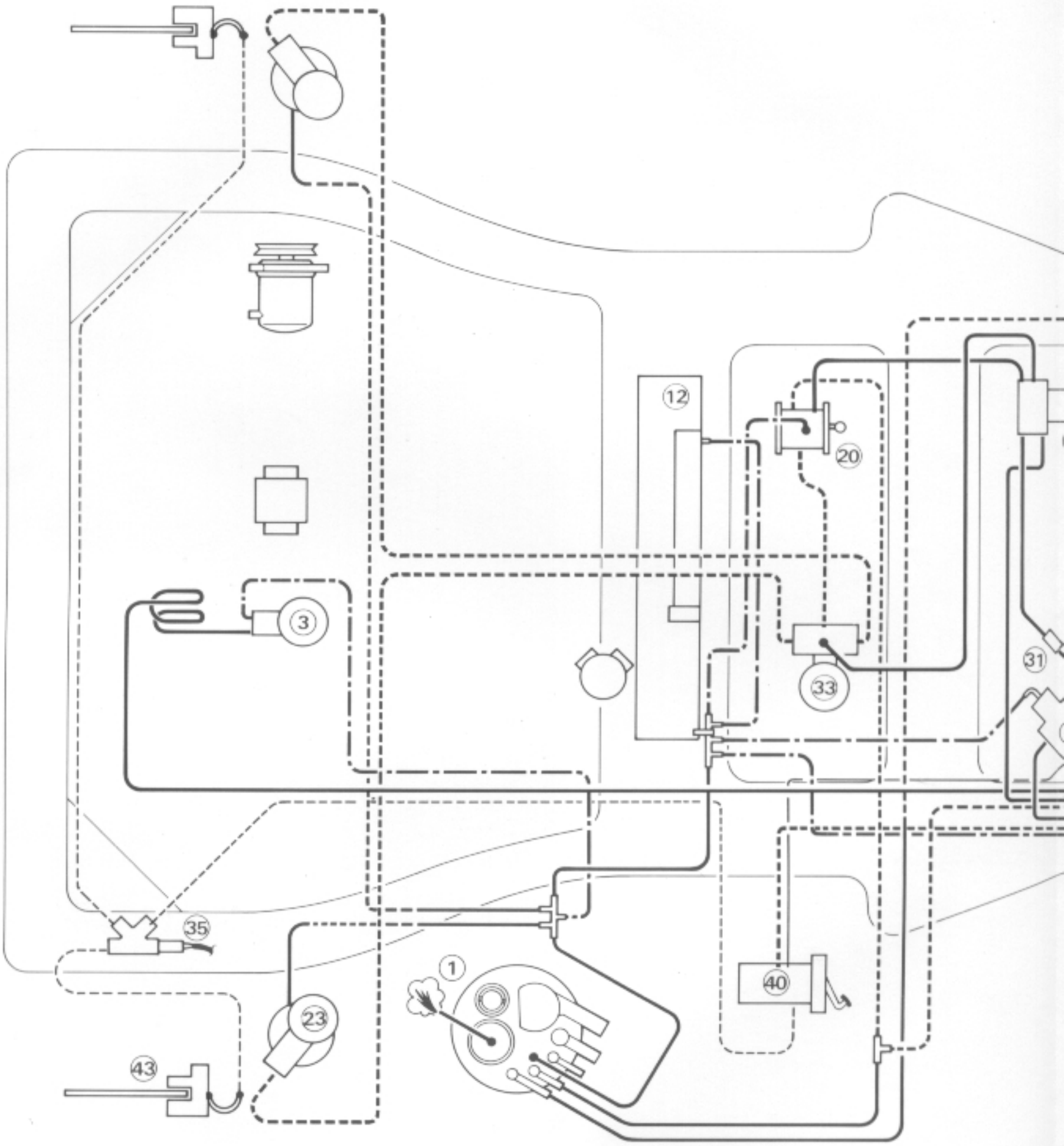


Y.39-14 | Y.39-15

www.WorkshopManuals.co.uk

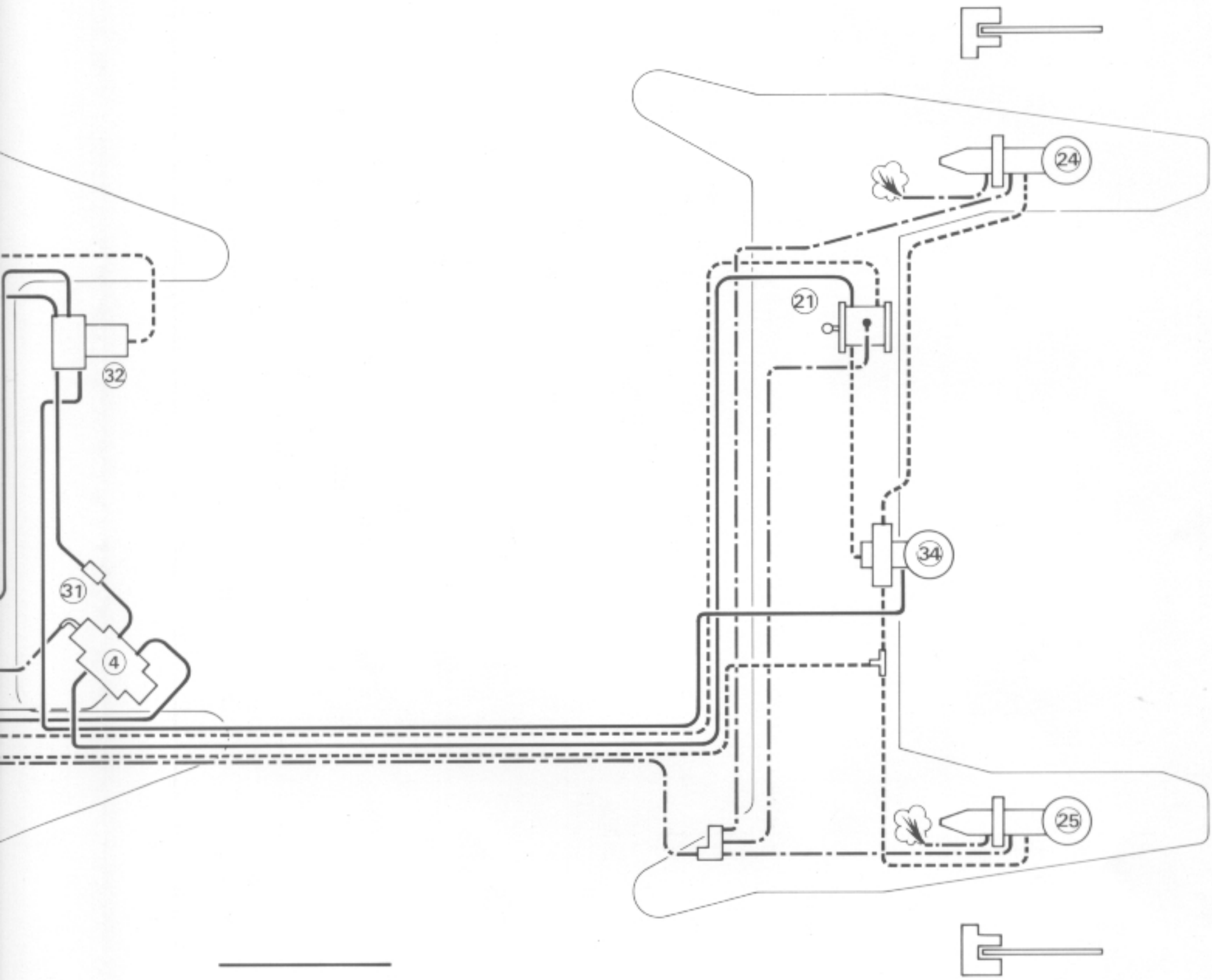


www.WorkshopManuals.co.uk

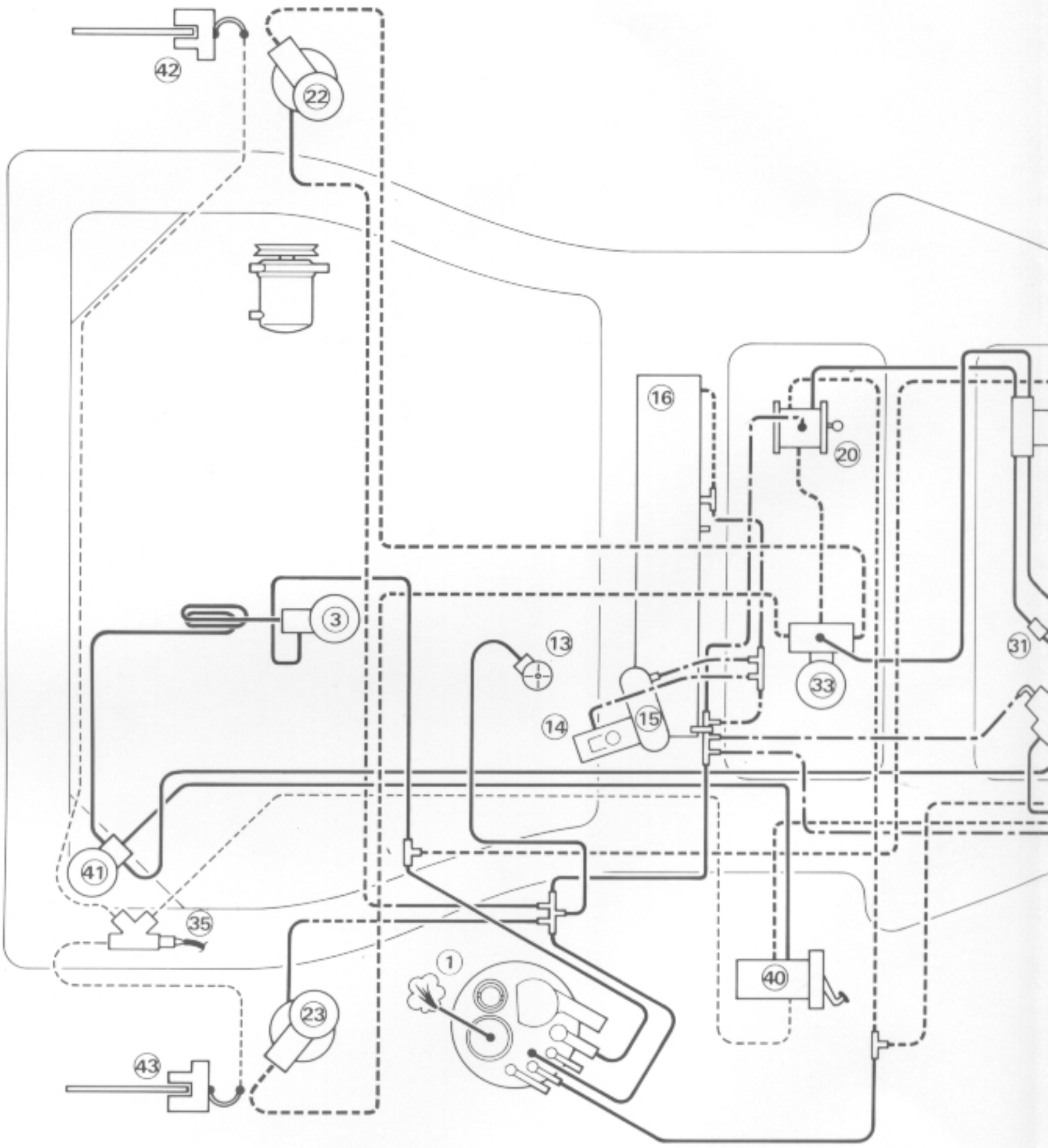


Y.39-6 | Y.39-7

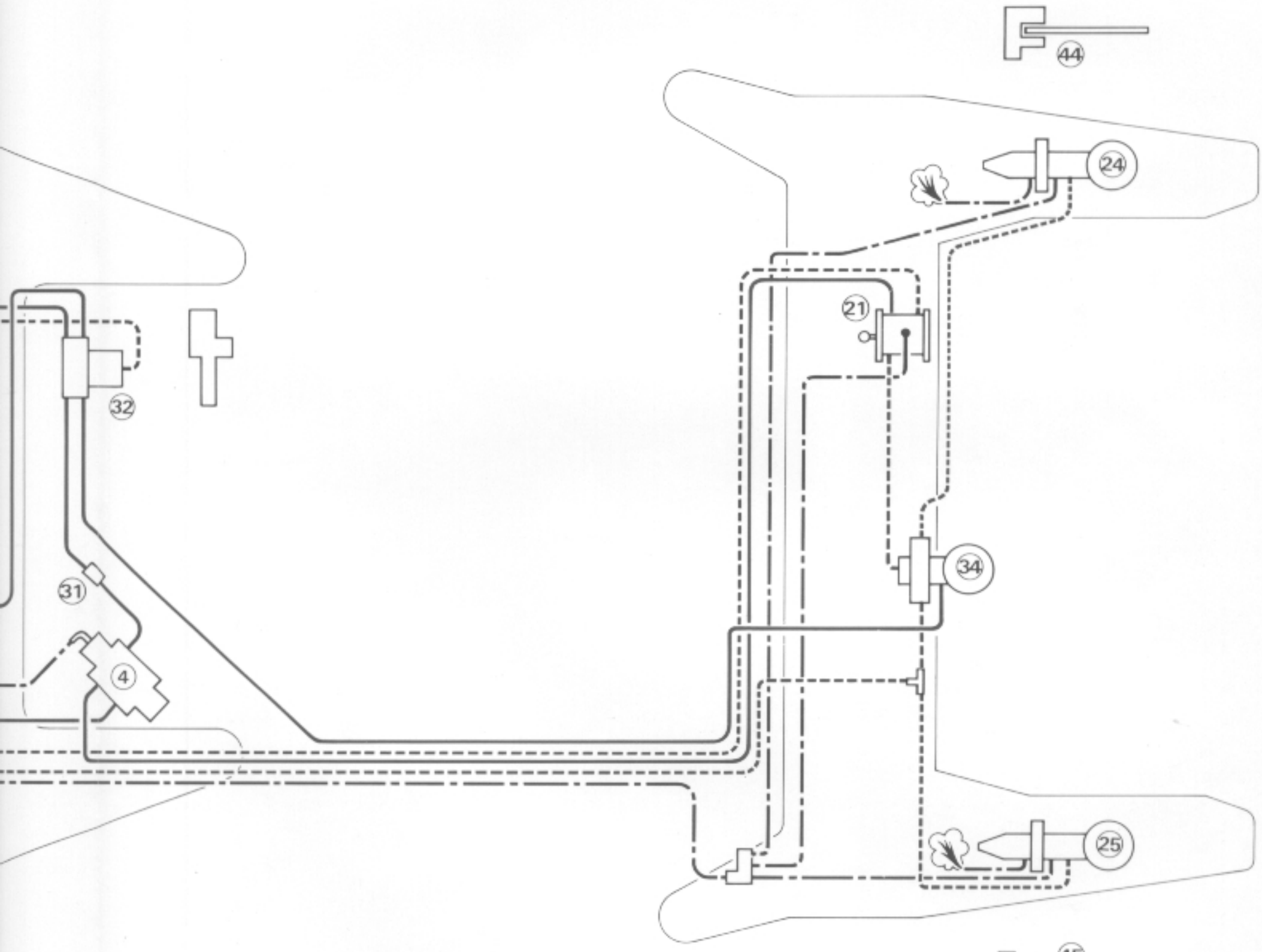
www.WorkshopManuals.co.uk



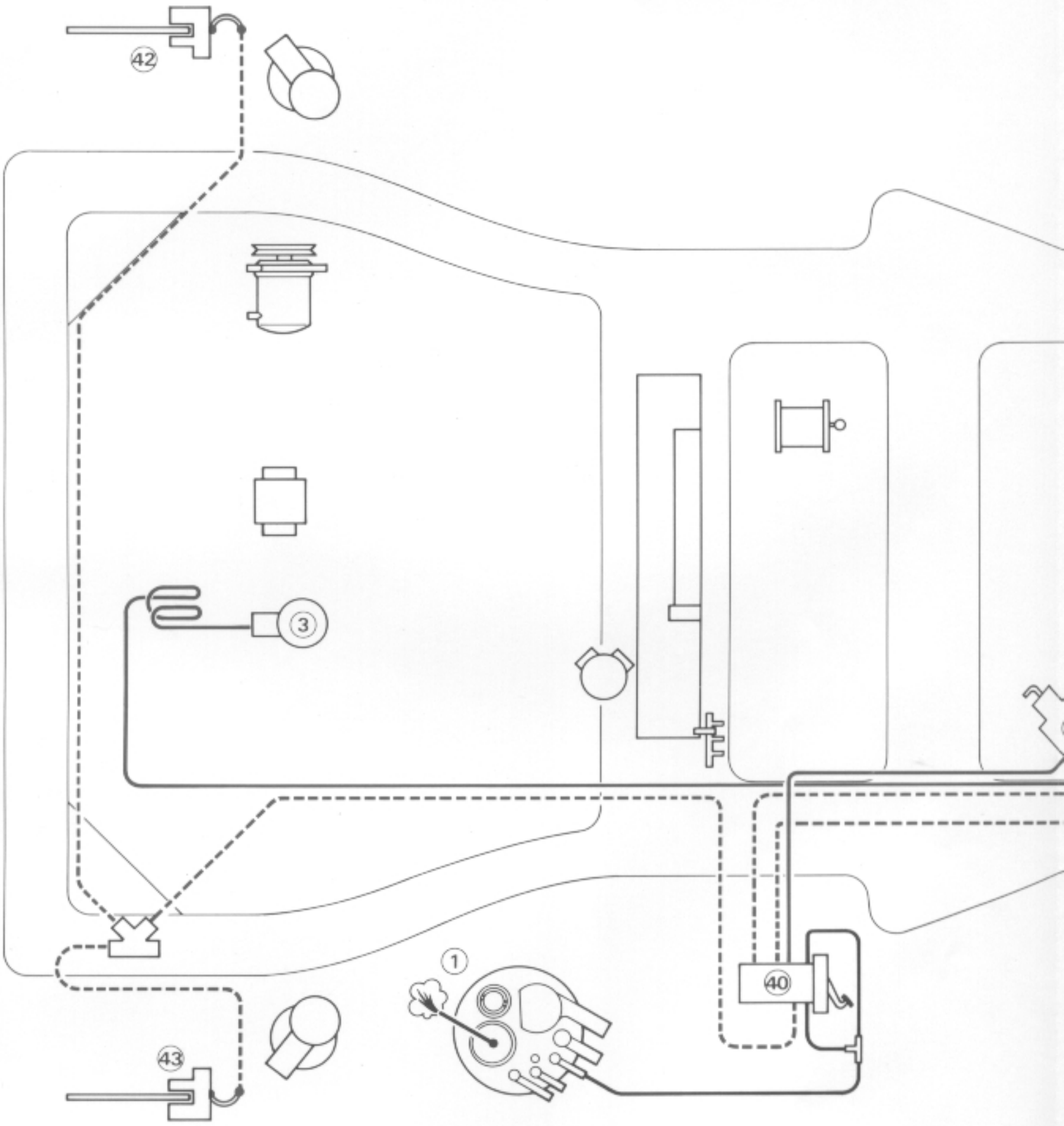
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

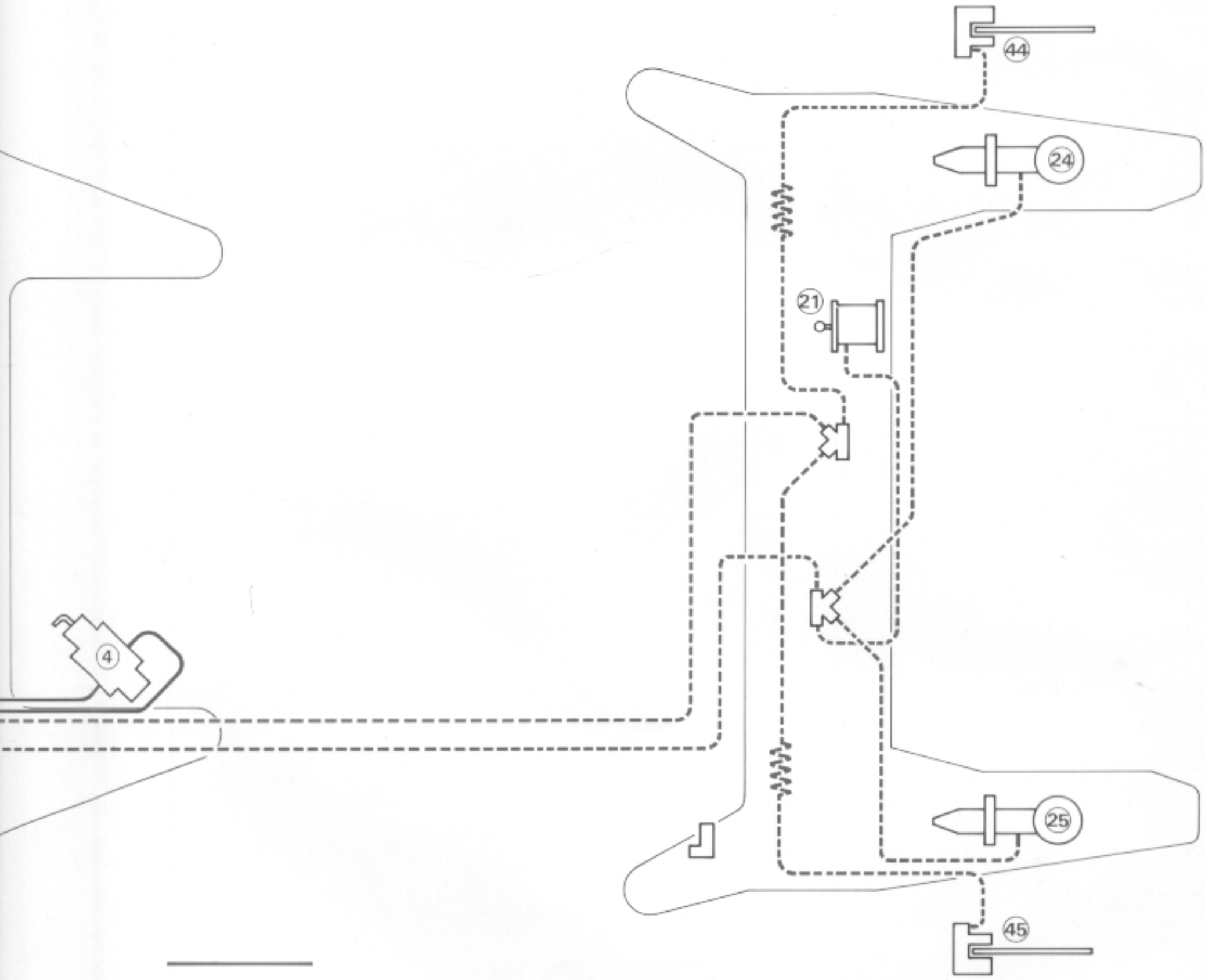


www.WorkshopManuals.co.uk



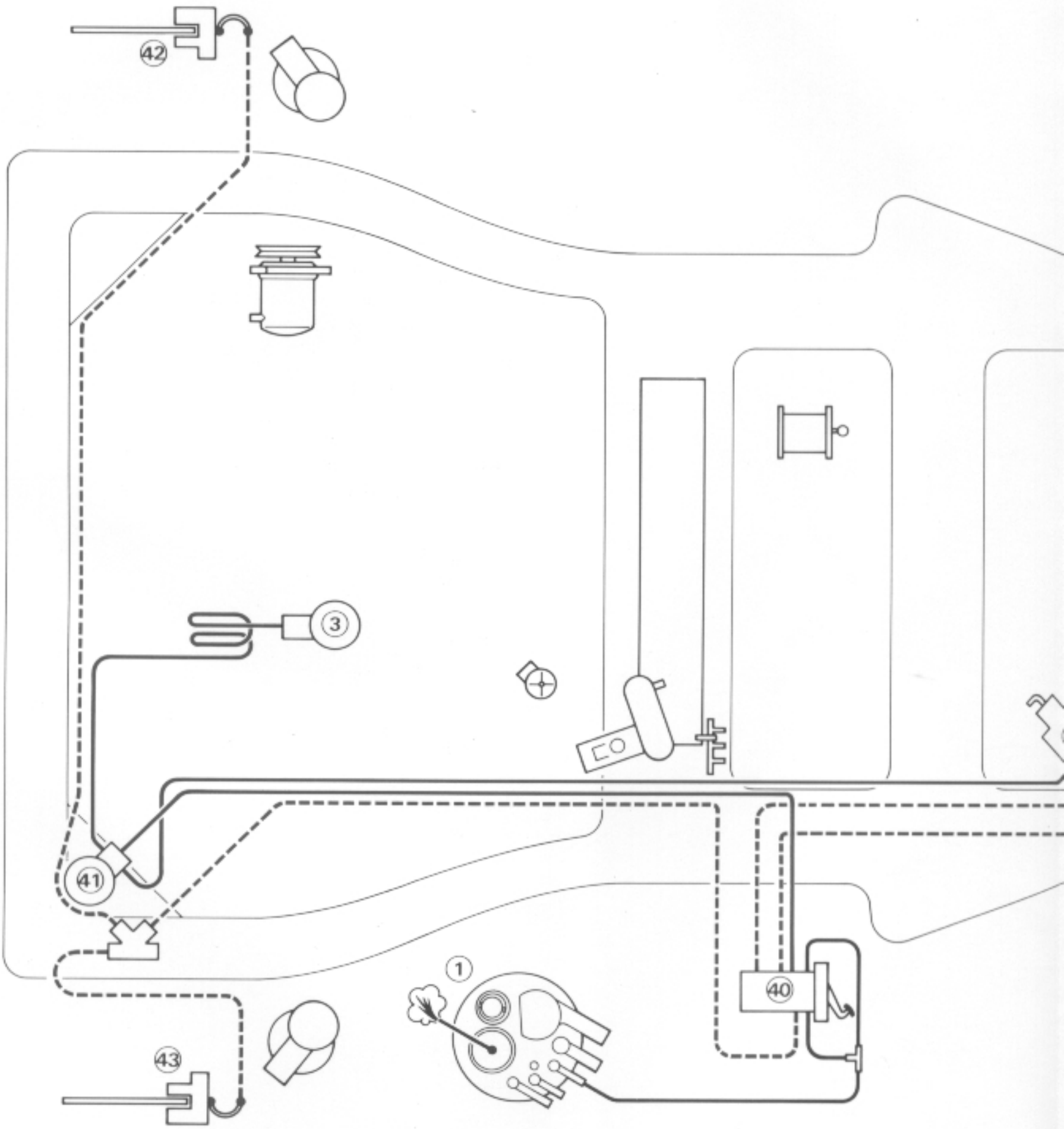
Y.39-20 | Y.39-21

www.WorkshopManuals.co.uk



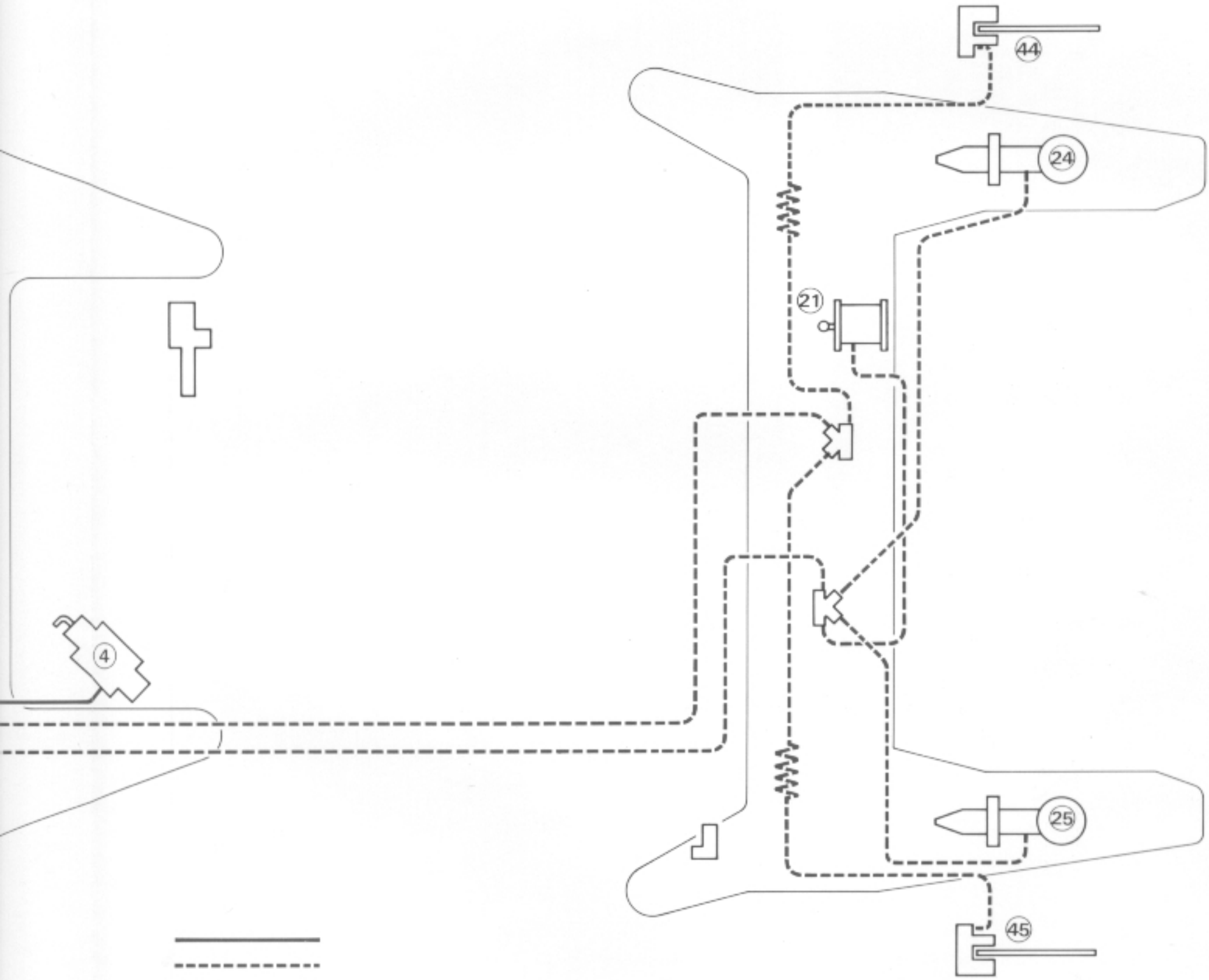
6	XM 390-00/1	6

www.WorkshopManuals.co.uk



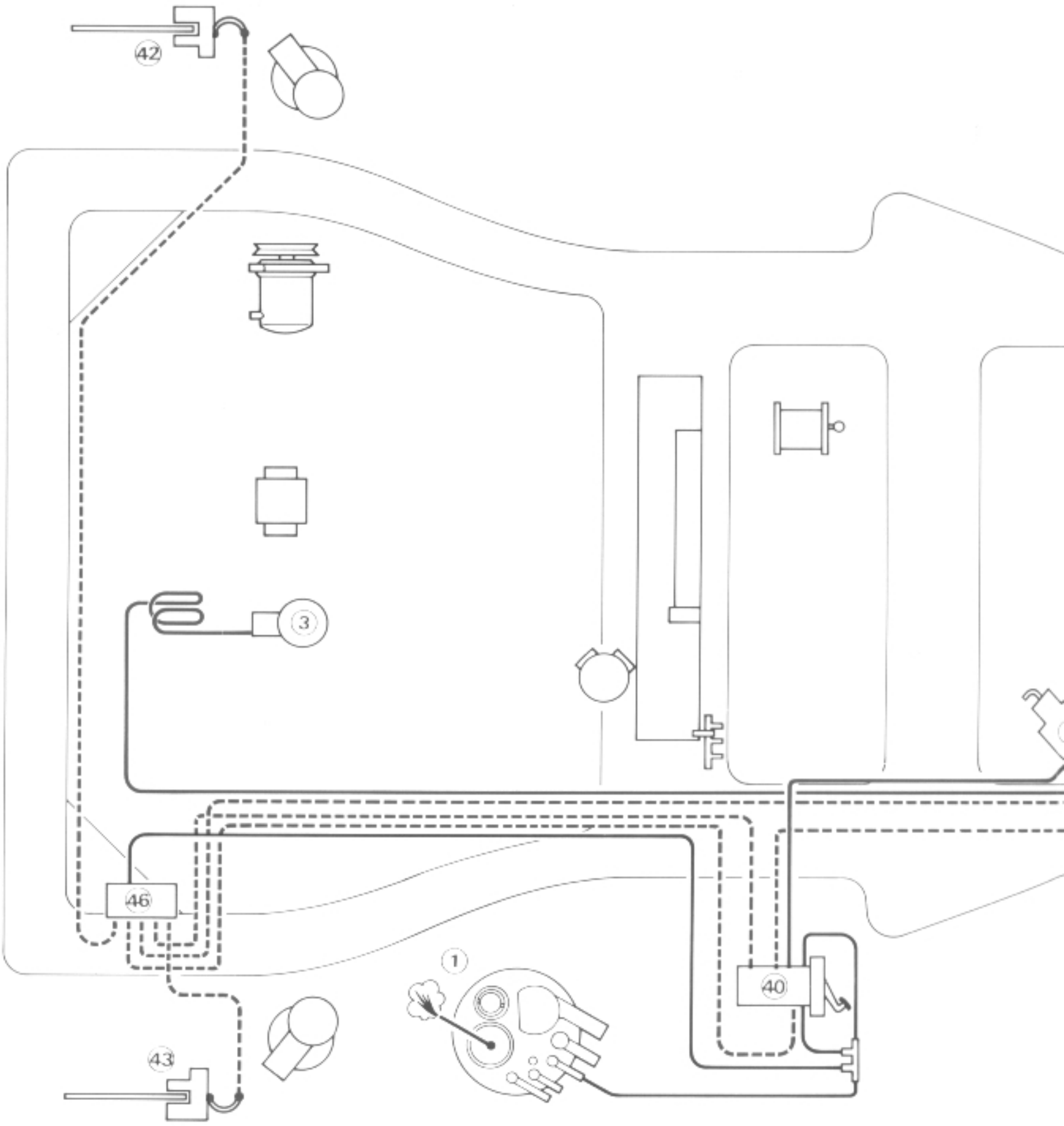
Y.39-22 | Y.39-23

www.WorkshopManuals.co.uk

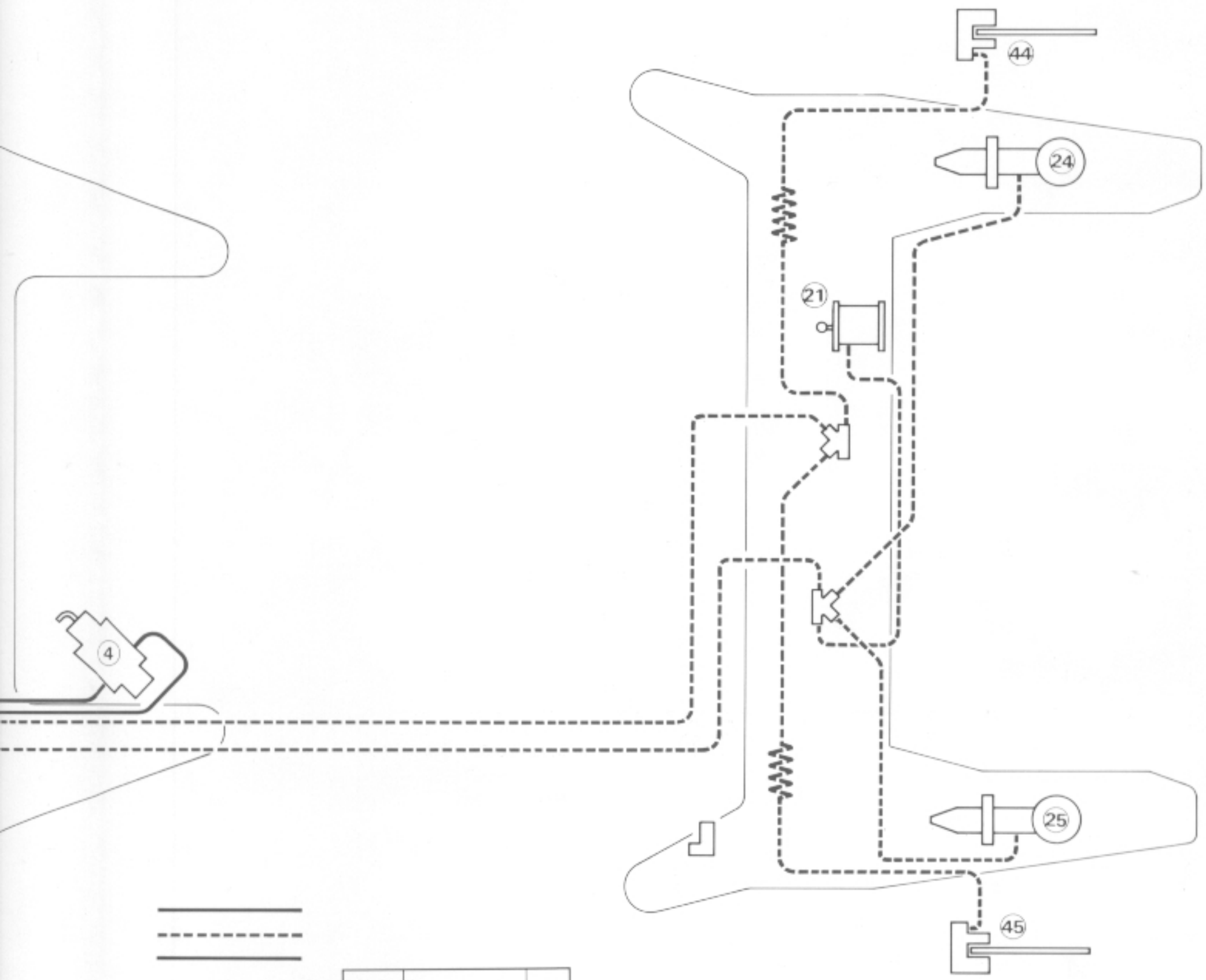


6	XM 390-00/1	6

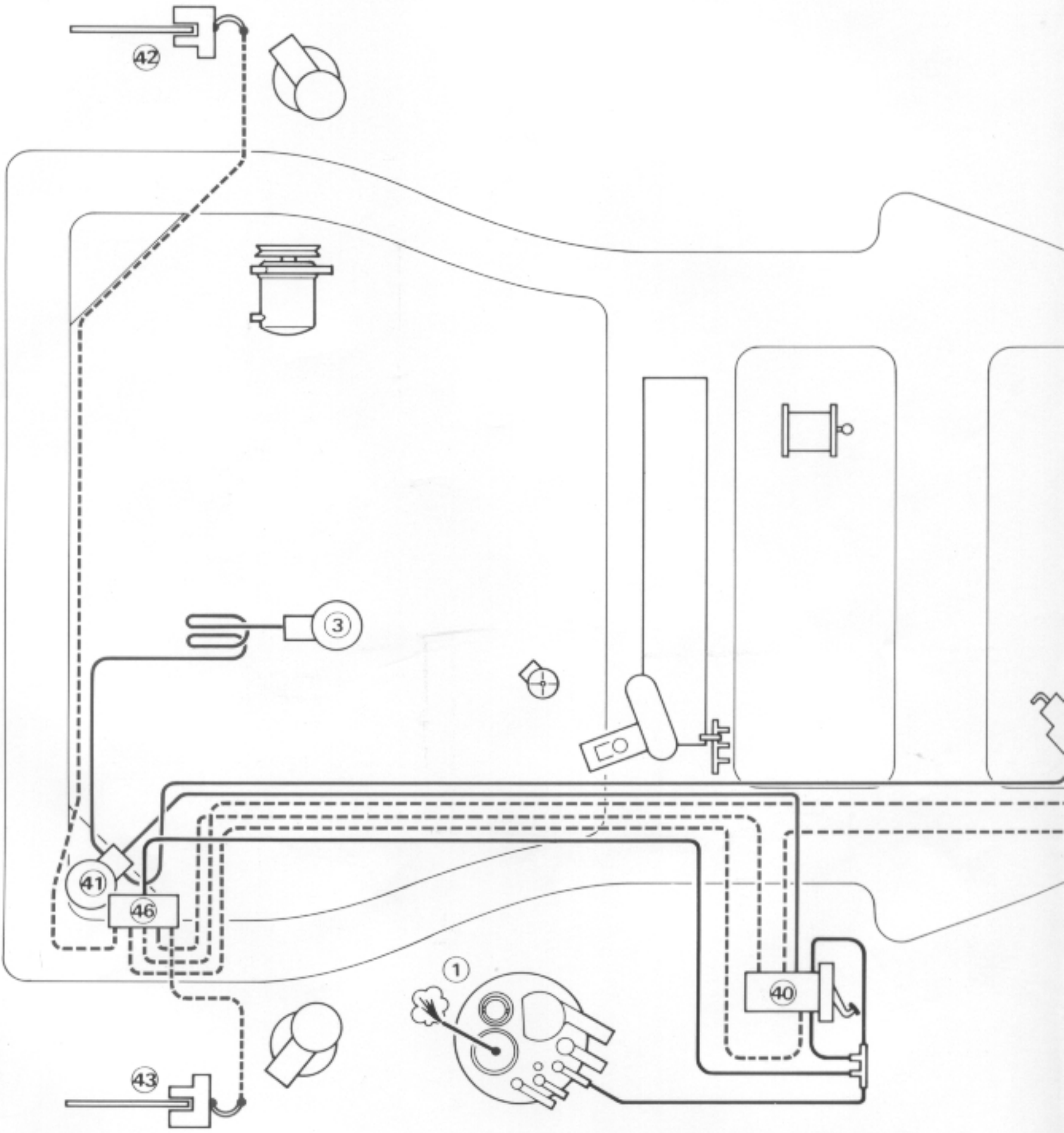
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

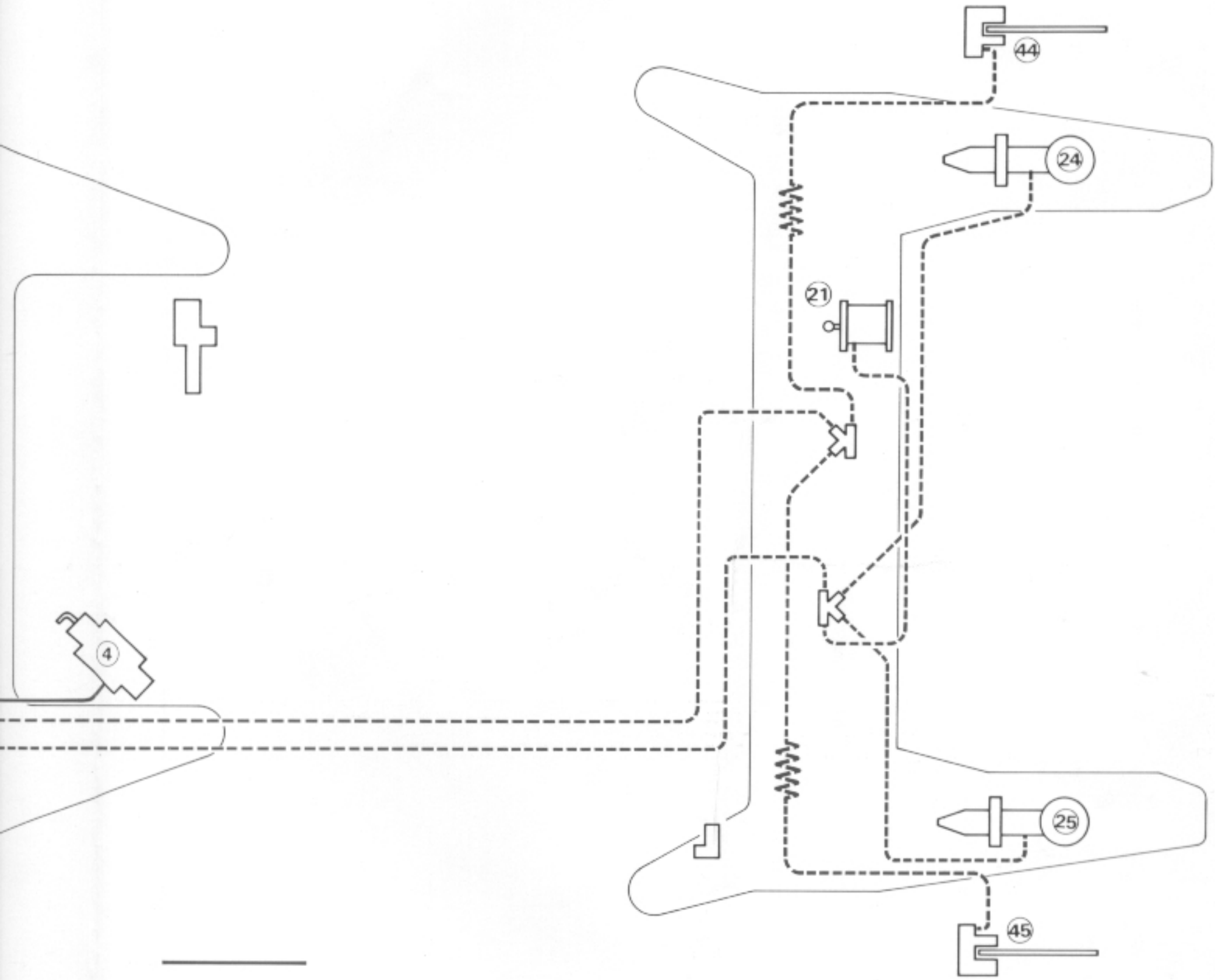


www.WorkshopManuals.co.uk



Y.39-12 | Y.39-13

www.WorkshopManuals.co.uk

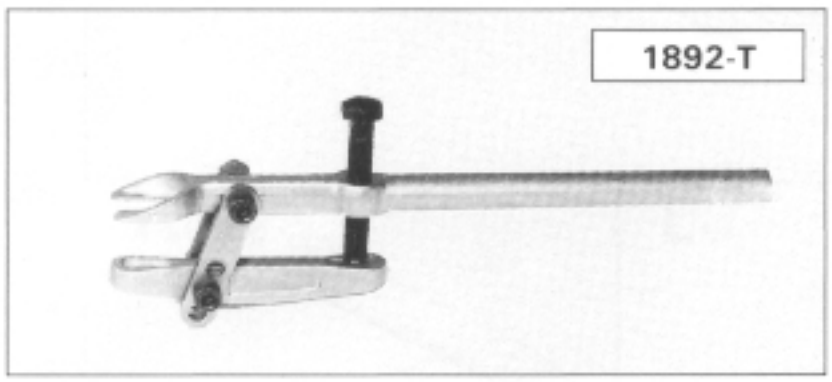


6	XM 390-00/1	6

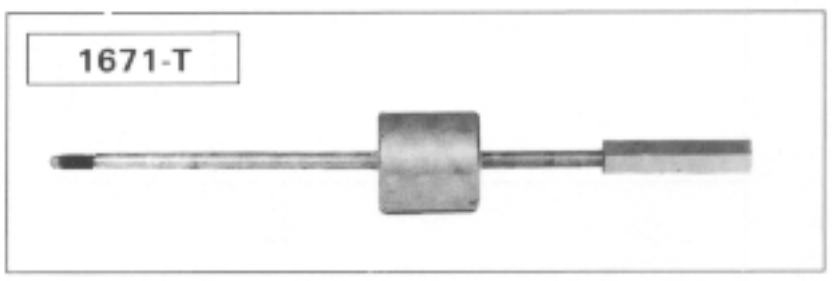
www.WorkshopManuals.co.uk

OPERATION NUMBER	DESCRIPTION	VEHICLE	
		4 cyl. PETROL	6 cyl. PETROL
XM.410-000/1	Operation list : Front axle		
XM.410-000/2	Tools	X	X
XM.410-00/1	Specifications and special points of the front axle	X	X
XM.412-1/1	Removing and refitting a lower axle arm	X	X
XM.416-1/1	Removing and refitting a front swivel	X	X
XM.416-3/1	Overhauling a front wheel hub	X	X

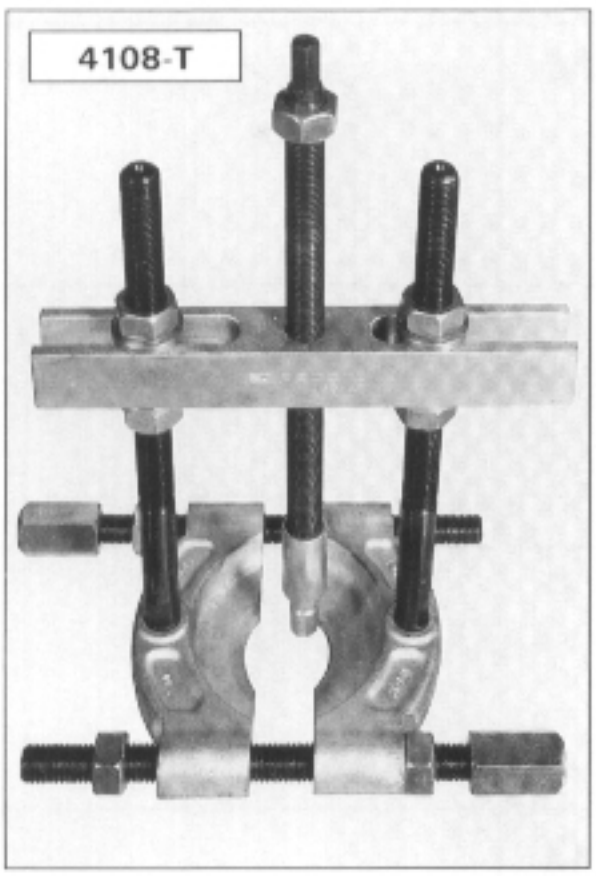
www.WorkshopManuals.co.uk



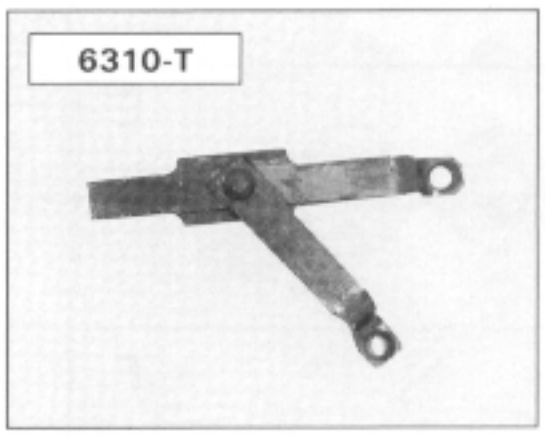
13-549



13-551



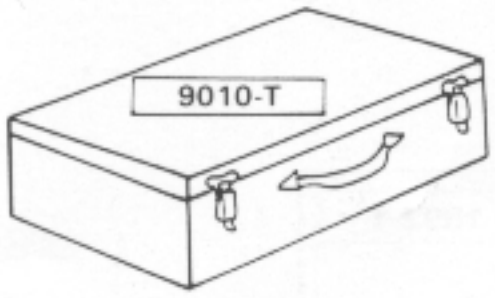
88-120

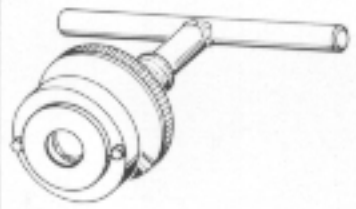
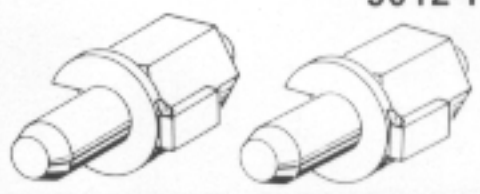
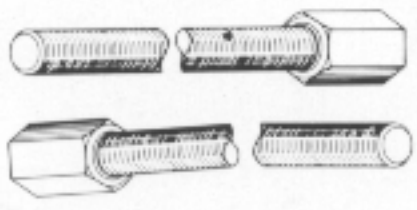
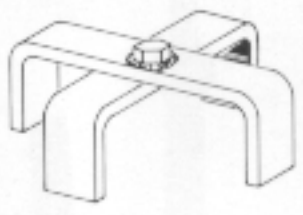
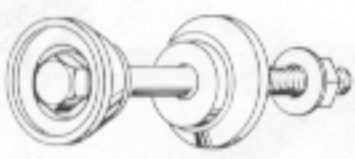
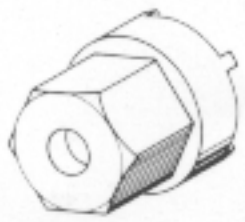


13-723

www.WorkshopManuals.co.uk





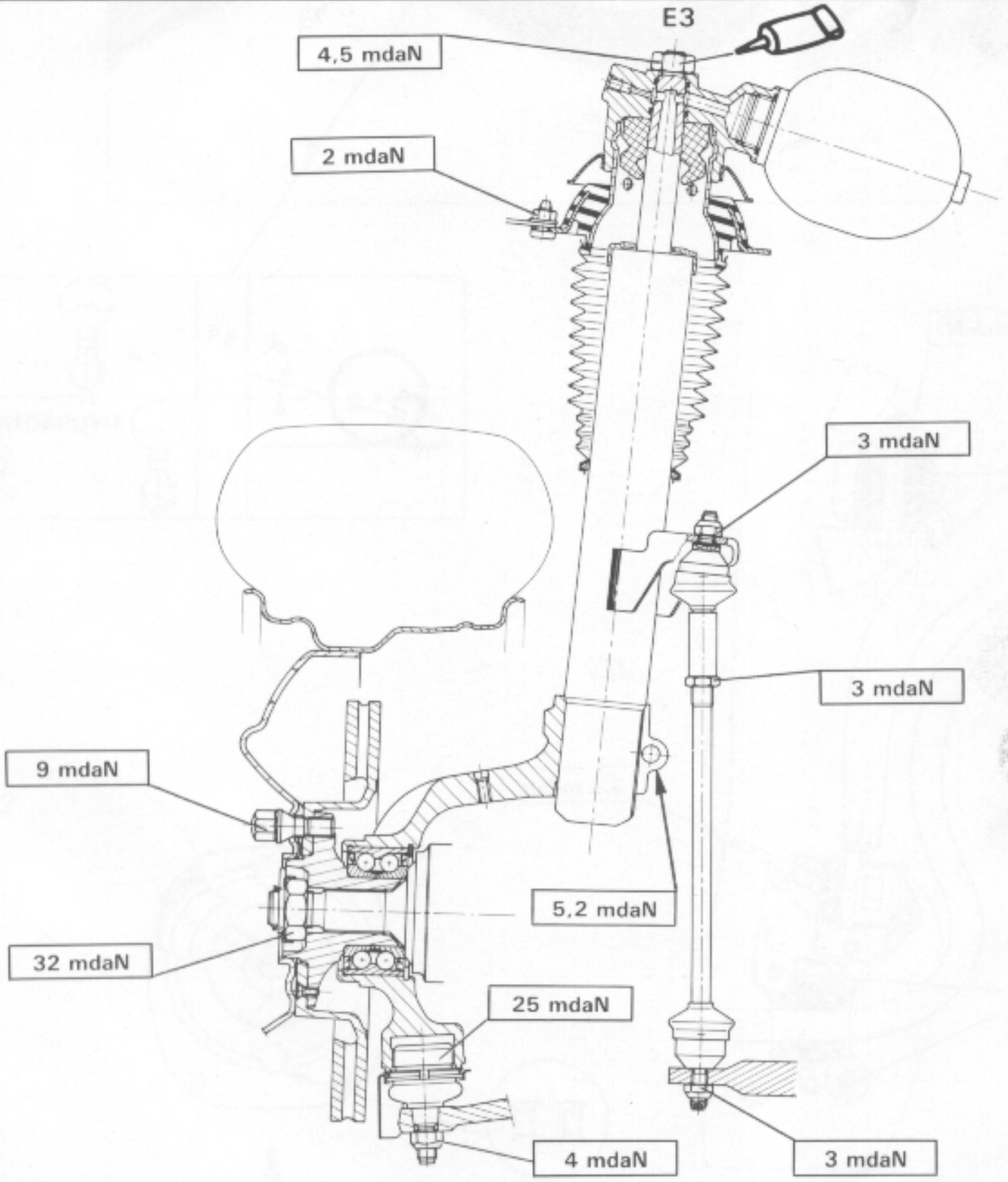
A 	J 	80902-K 
B 	K 	9011-T 
C 	L 	9012-T 
D 	M 	9013-T 
E 	N 	9014-T 
F 	P 	
G 	Q 	
H 	7103-T 	

MR.630-69/27

www.WorkshopManuals.co.uk

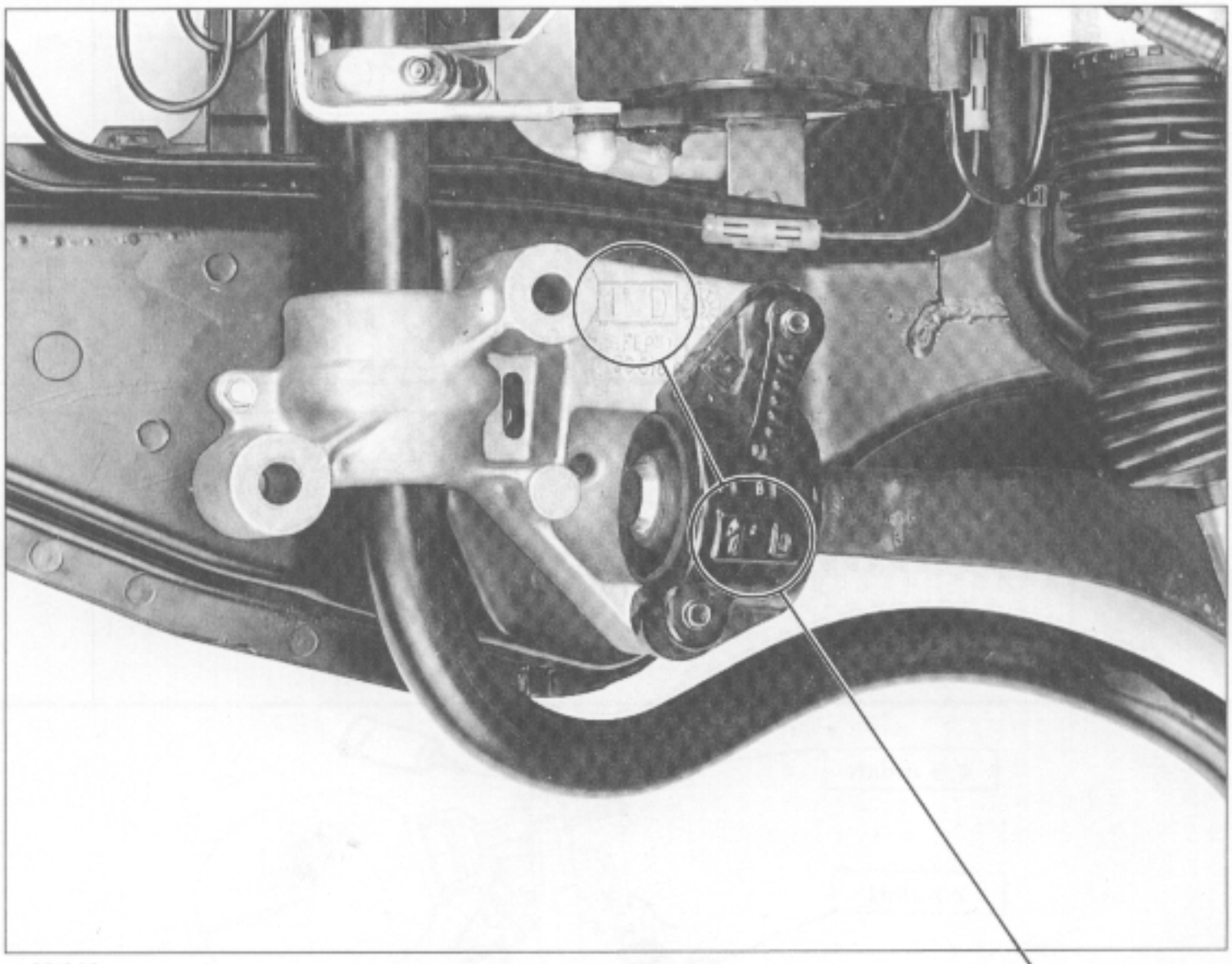
XM					
			⑦ XM 410-00/1 2		

	0° ± 30′	13° 14′	4°	A < B 0 ⟷ – 3 mm	2° 30′
HYDRACTIVE	– 0° 15′	13° 28′	1°	(0 ⟷ – 0° 27′)	

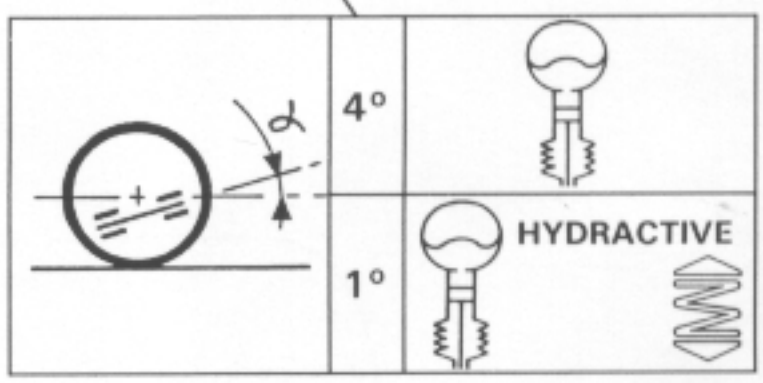


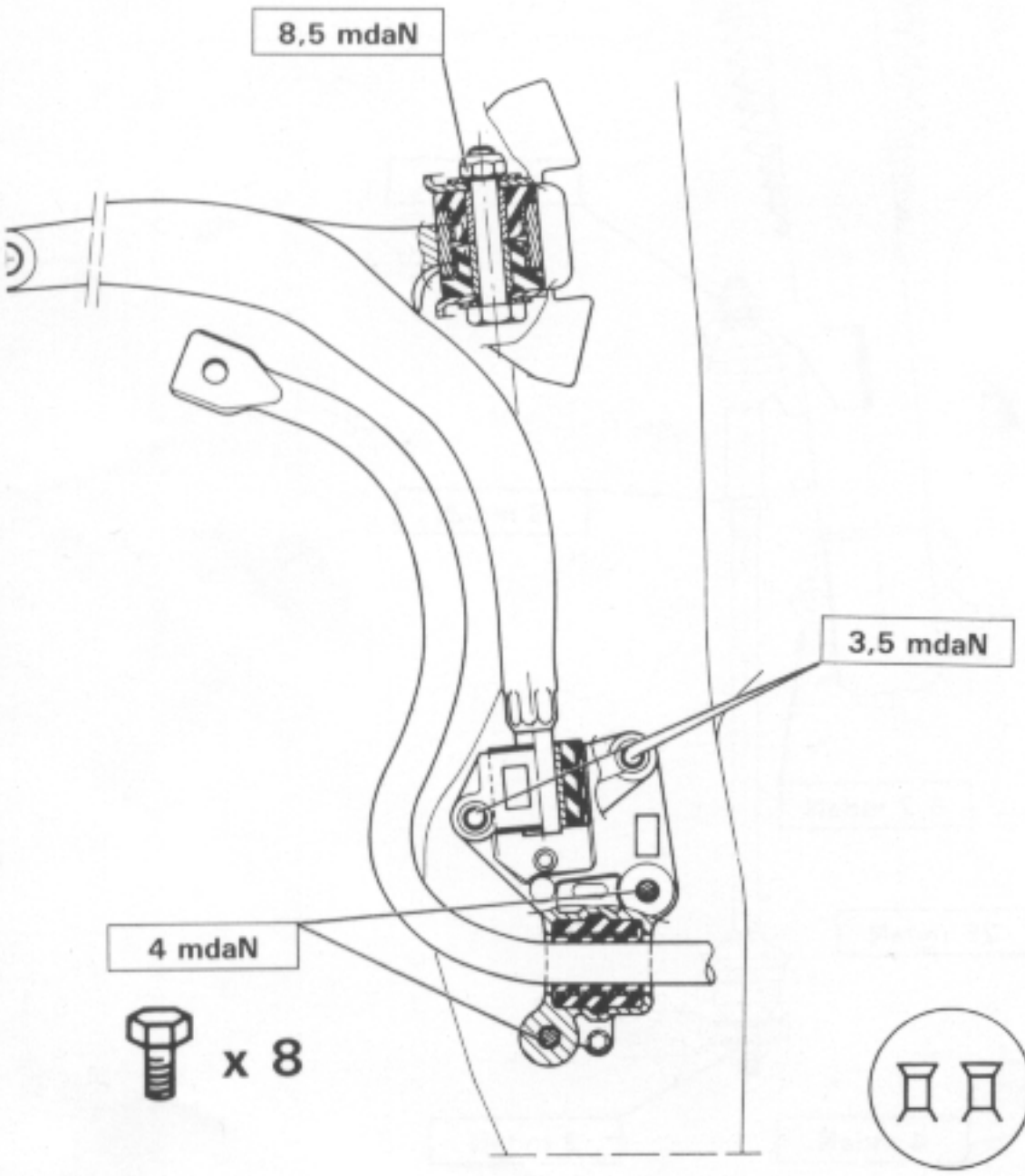
Y.41-1a

www.WorkshopManuals.co.uk

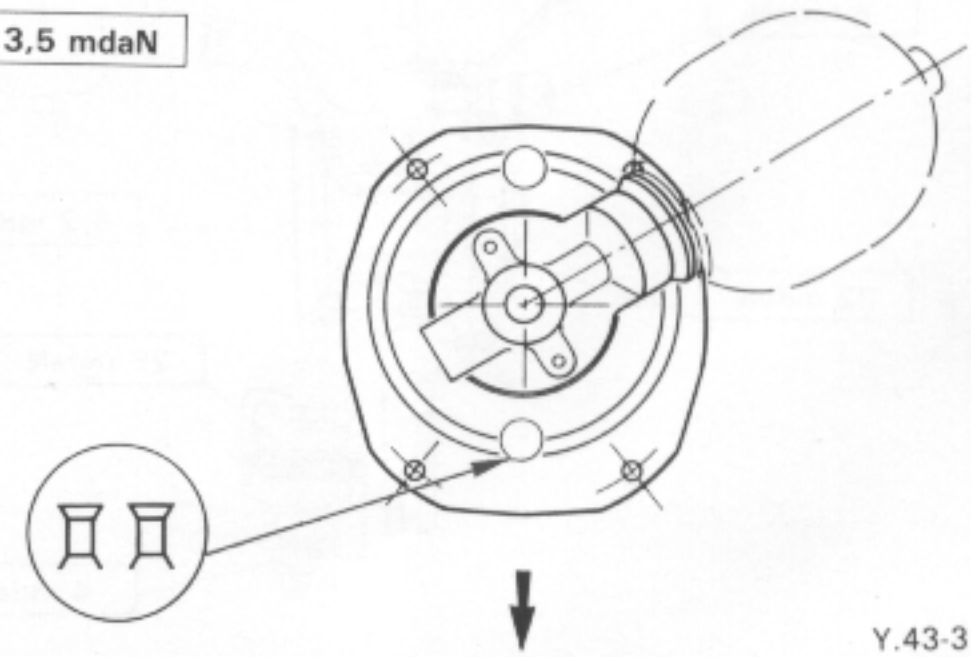


89-340



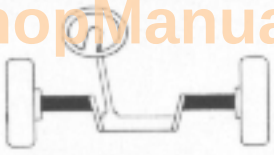


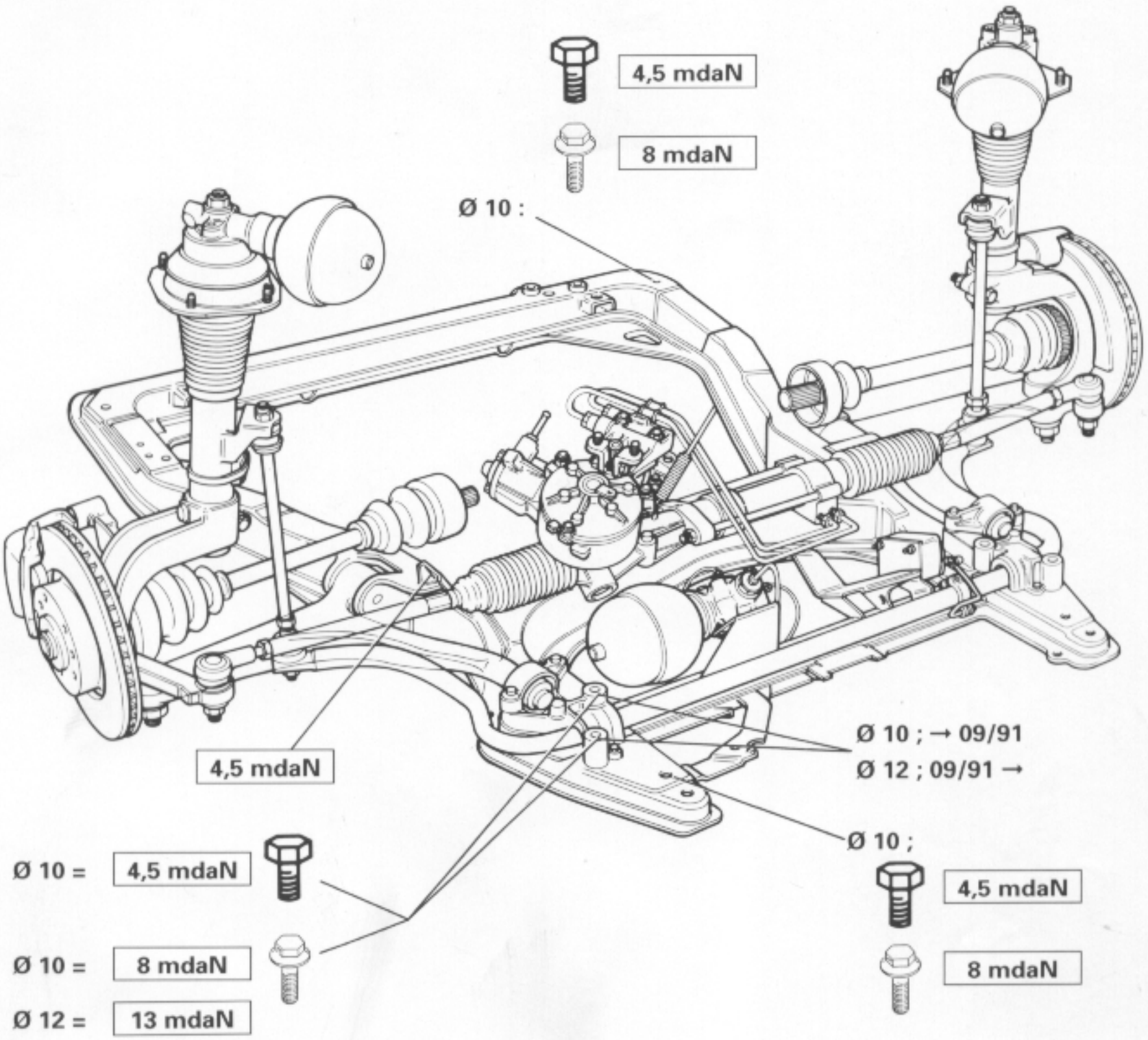
Y.41-2

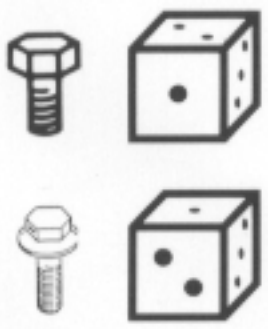


Y.43-3

www.WorkshopManuals.co.uk







www.WorkshopManuals.co.uk

REMOVAL

Raise and support the front part of the vehicle with the wheels clear of the ground.

Remove the wheel.

Set the height control to the "LOW" position.

Uncouple, Fig. I and II :

- the anti-roll bar link rod **(1),**
- the lower axle arm ball joint **(2)**, using puller **1892-T**,

(leave the nut at the same place to protect the thread).

Remove, Fig. III :

- the arm rear bearing cap **(3)**,
- the arm front bearing screw **(4)**,
- the arm.

REFITTING

Insert, Fig. III : the arm into the front and rear bearings **(4)** and **(3)**.

Refit, Fig. V, the front bearing **(4)** screw greased and equipped with a NEW NYLSTOP nut ; hand screw-up by a few turns.

Refit, Fig. III, IV and V, the rear bearing **(3)** cap with two screws **(6)** ; hand tighten.

Line up, Fig. VI the extremity of the arm
→ **"a"** with the lower surface
→ **"b"** from the craddle (underneath the front bearing).

Tighten, Fig. V, the front bearing **(4)** screw.

to : 8.5 mdaN.

Tighten, Fig. IV, the two rear bearing **(3)** cap screws

to 3.5 mdaN.

Recouple, Fig. I, the lower arm **(2)** ball-joint ; wipe the ball-joint stem ; do not use any solvent ; screw on a NEW NYLSTOP nut.

Tighten to : 4 mdaN.

Reconnect, Fig. I, the anti-roll bar link rod **(1)** ; screw on a NEW NYLSTOP nut.

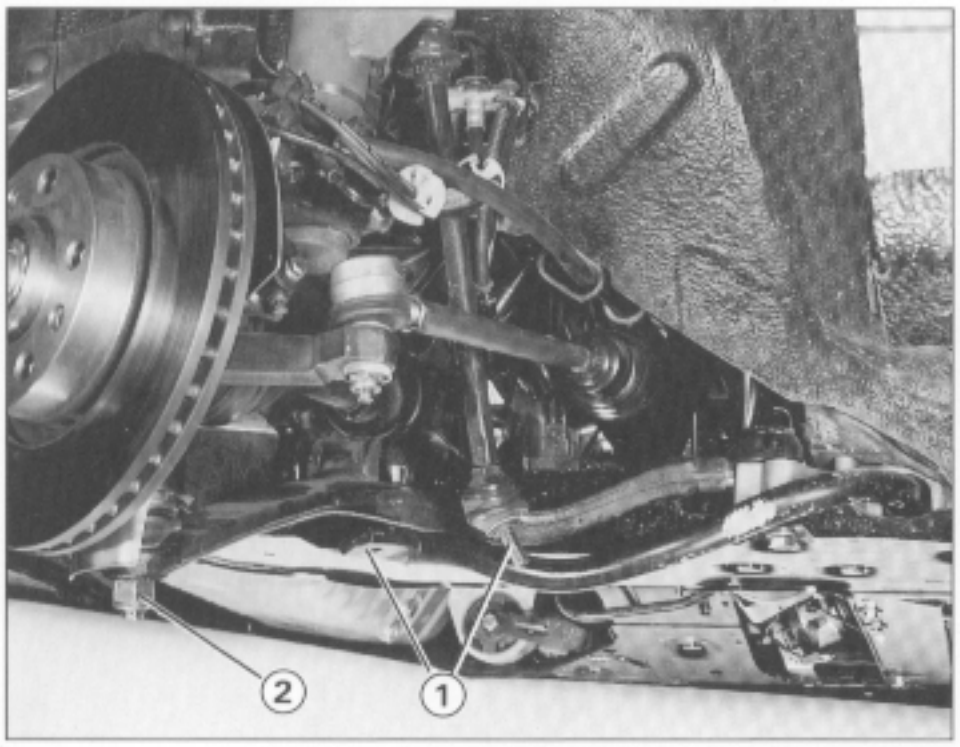
Tighten to : 3 mdaN.

Refit the wheel and lower the vehicle to the ground.

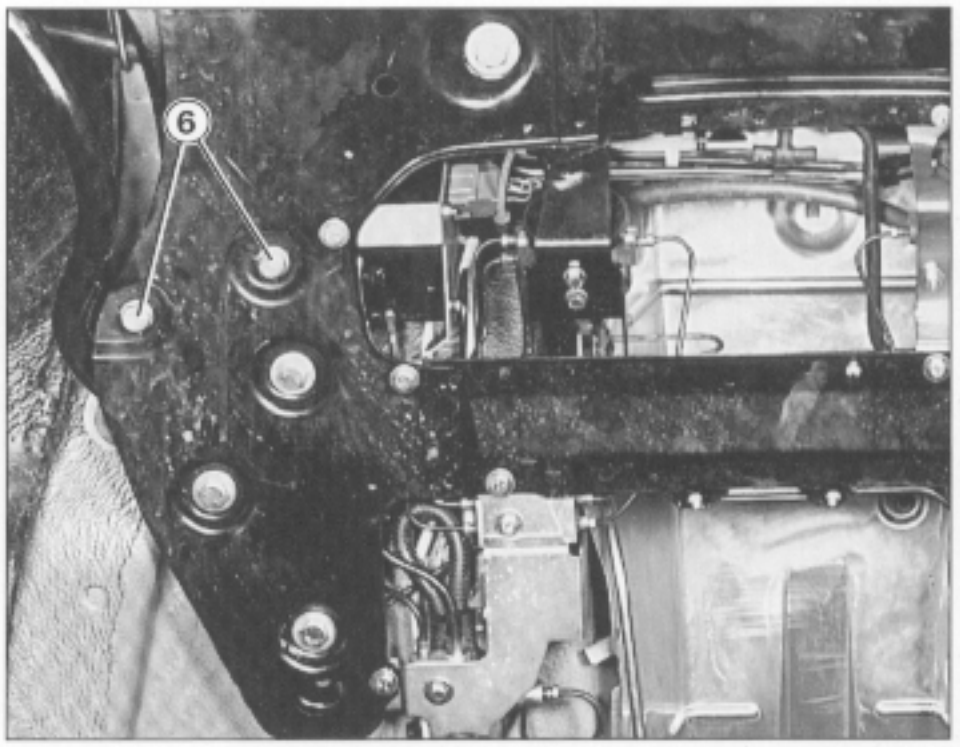
Tighten the wheel fixing screws.

Set the height control lever to the "NORMAL DRIVING" position.

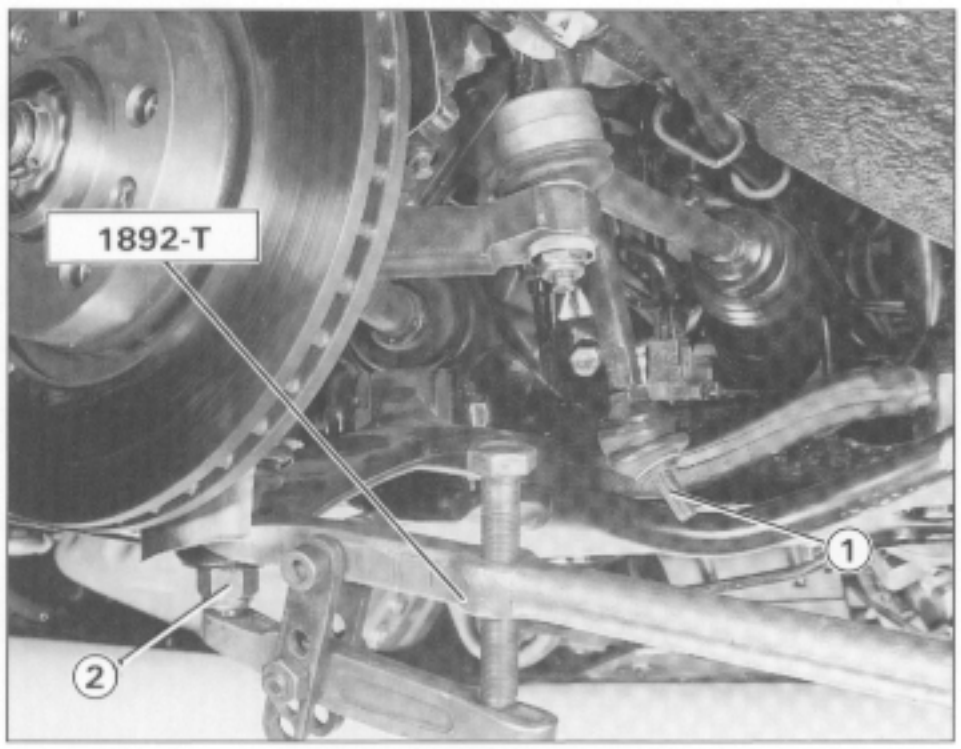
www.WorkshopManuals.co.uk



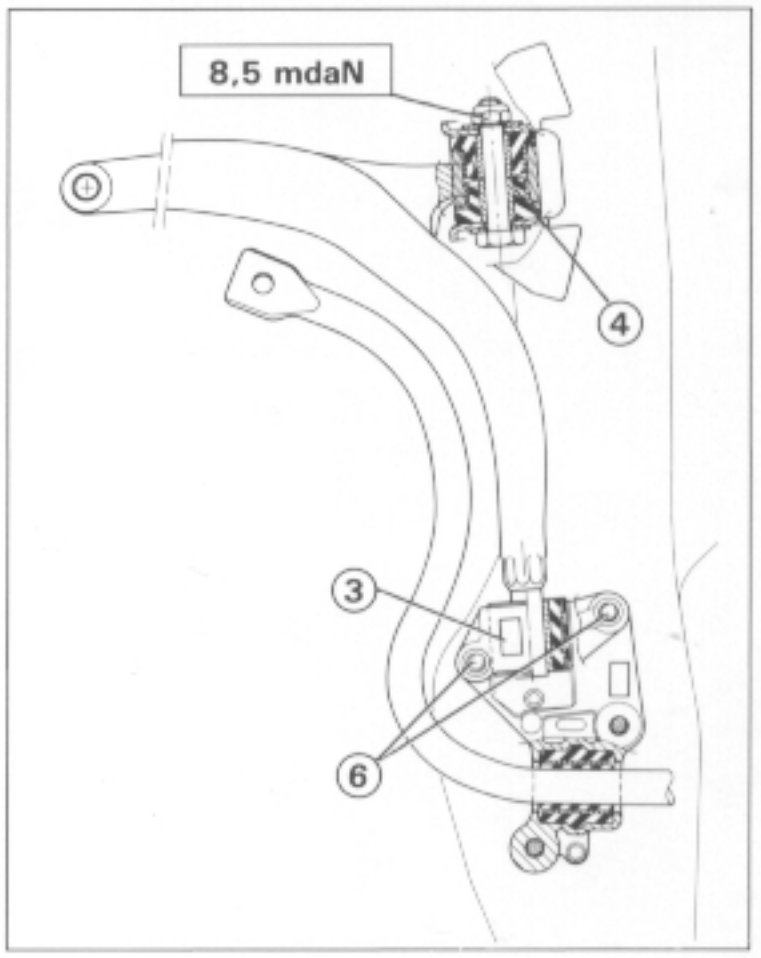
89-703 I



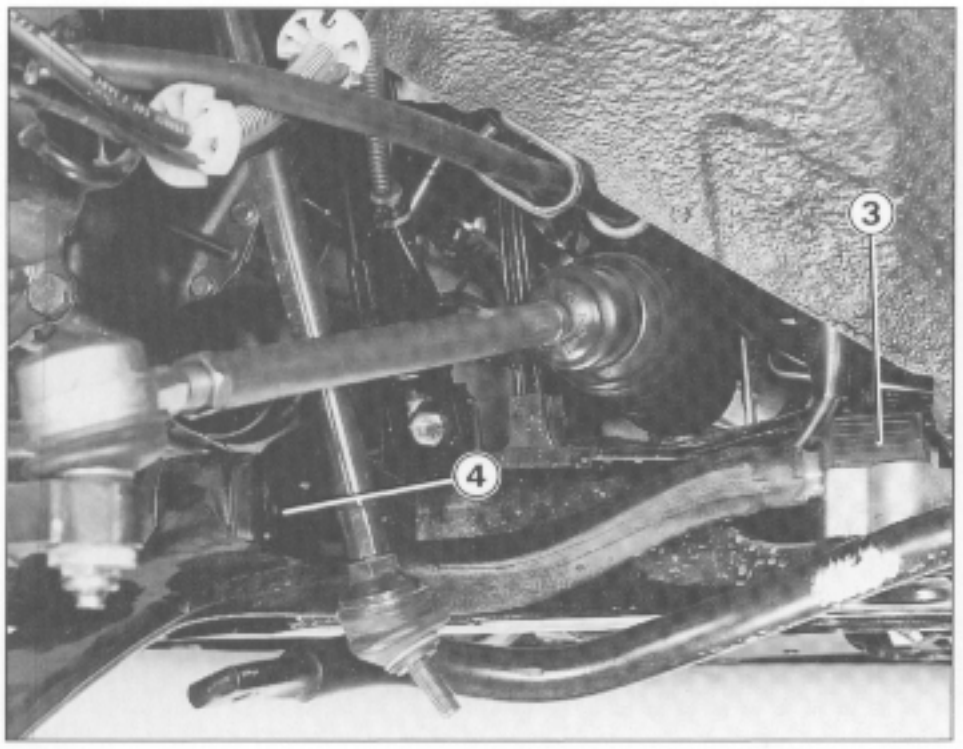
89-522 IV



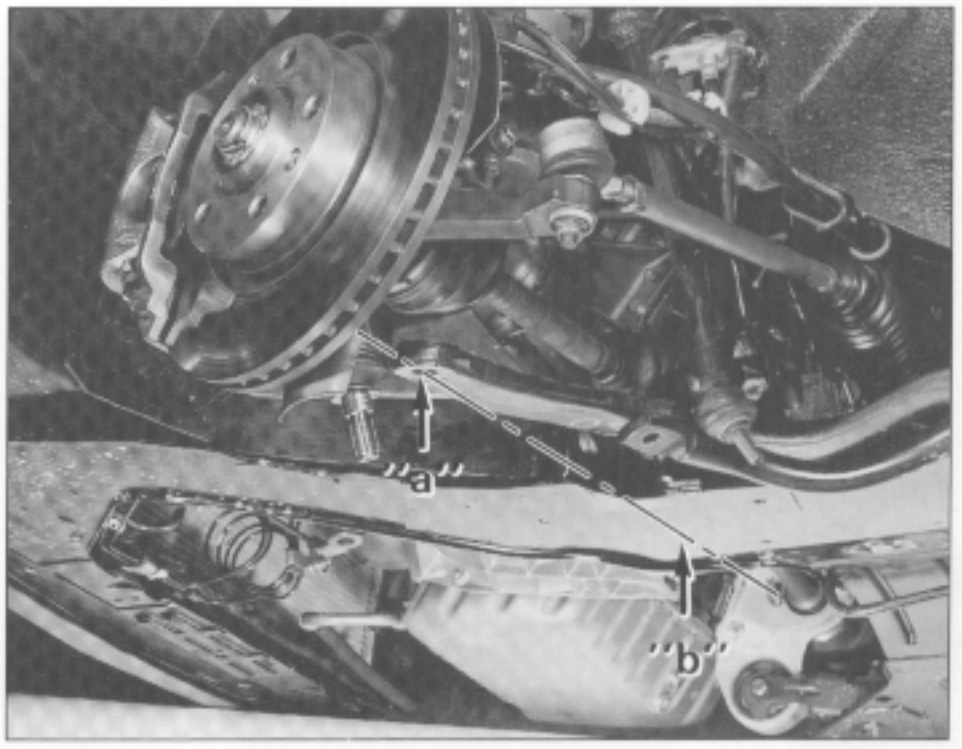
89-702 II



Y.42-2 V

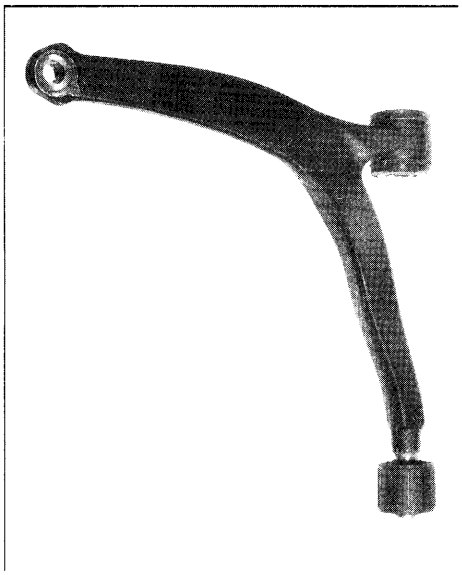


89-699 III



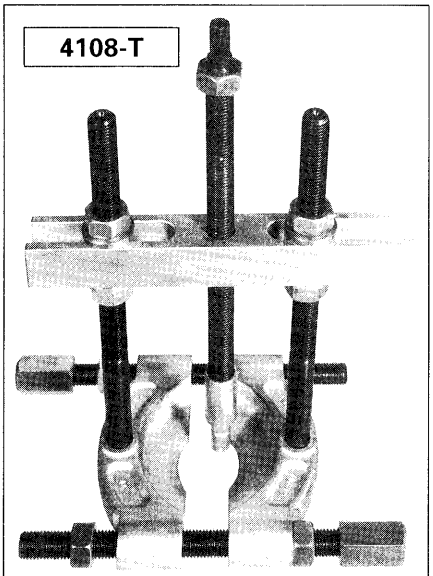
89-701 VI

www.WorkshopManuals.co.uk



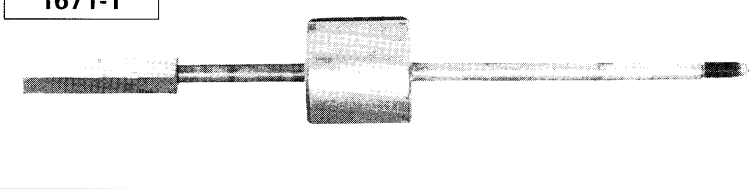
89-722

4108-T

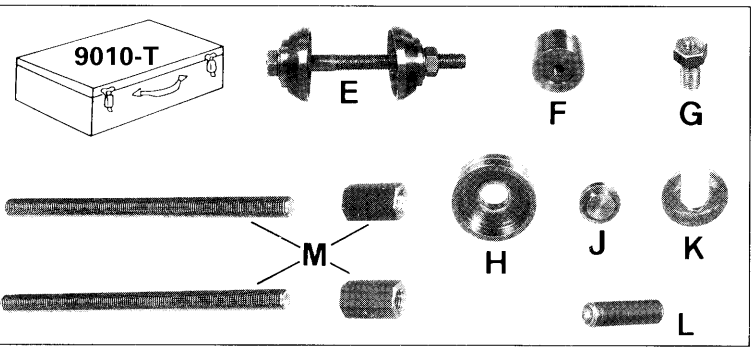


88-120

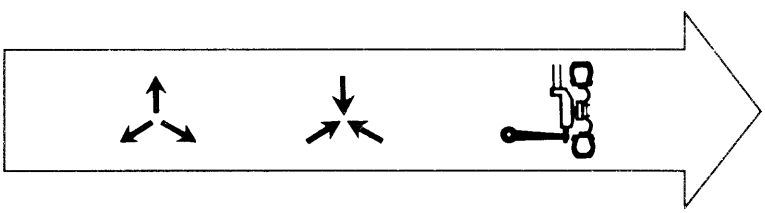
1671-T



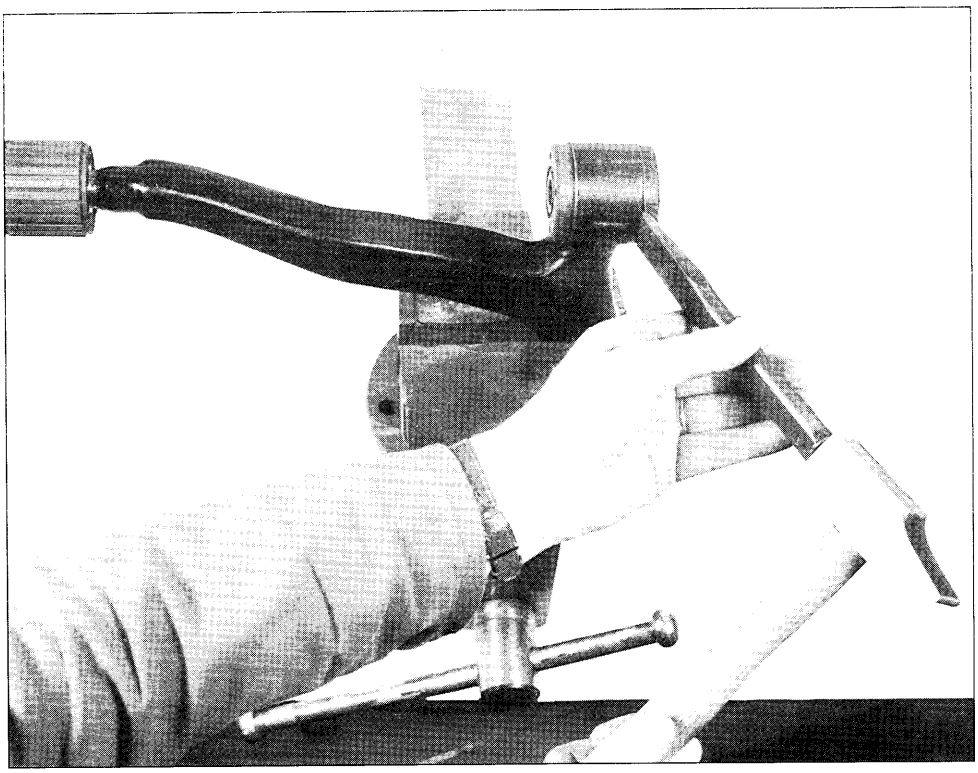
13-551



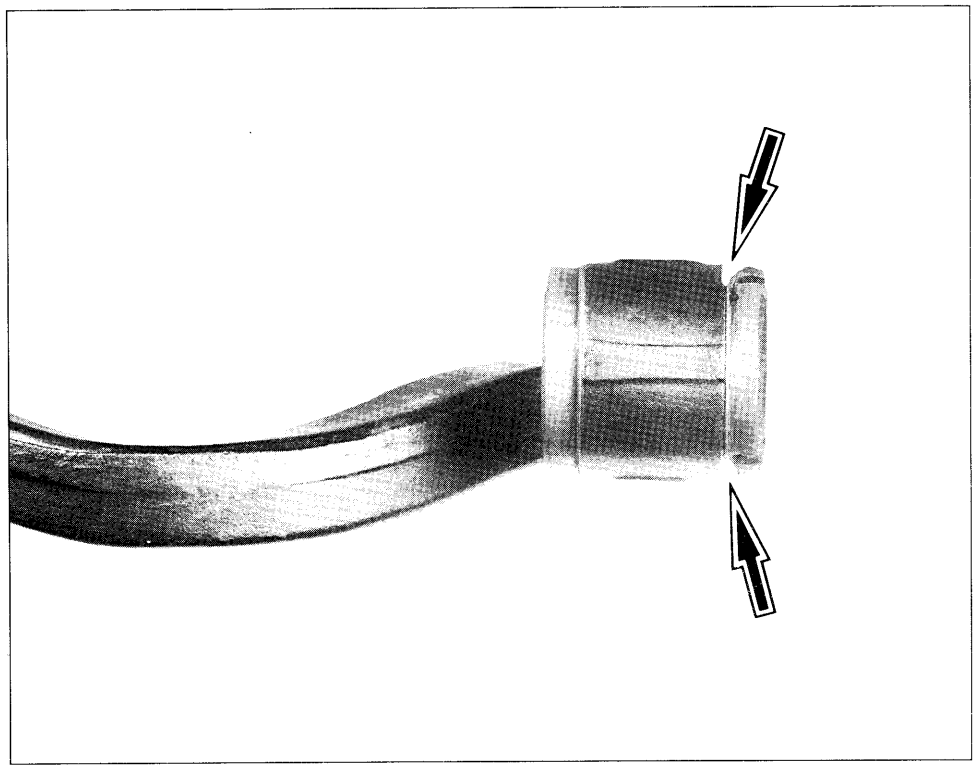
89-860



www.WorkshopManuals.co.uk

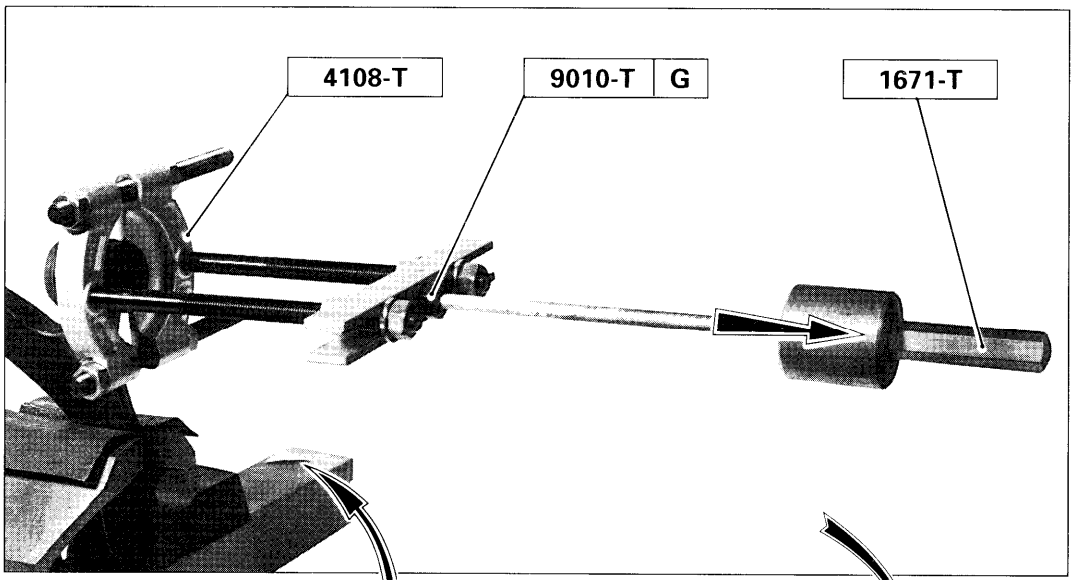


89-824

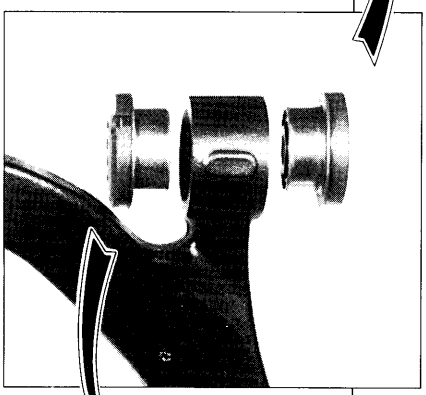


89-831

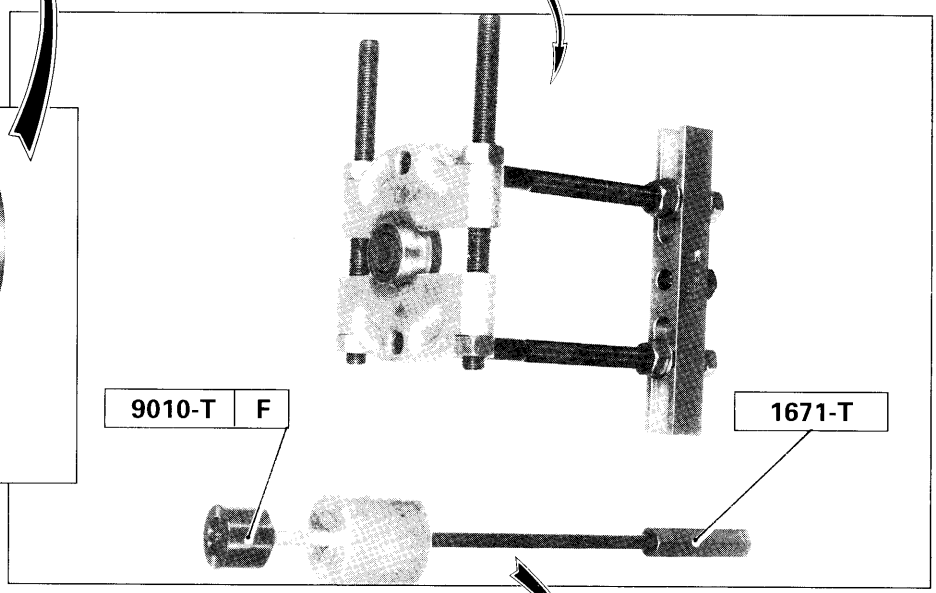
www.WorkshopManuals.co.uk



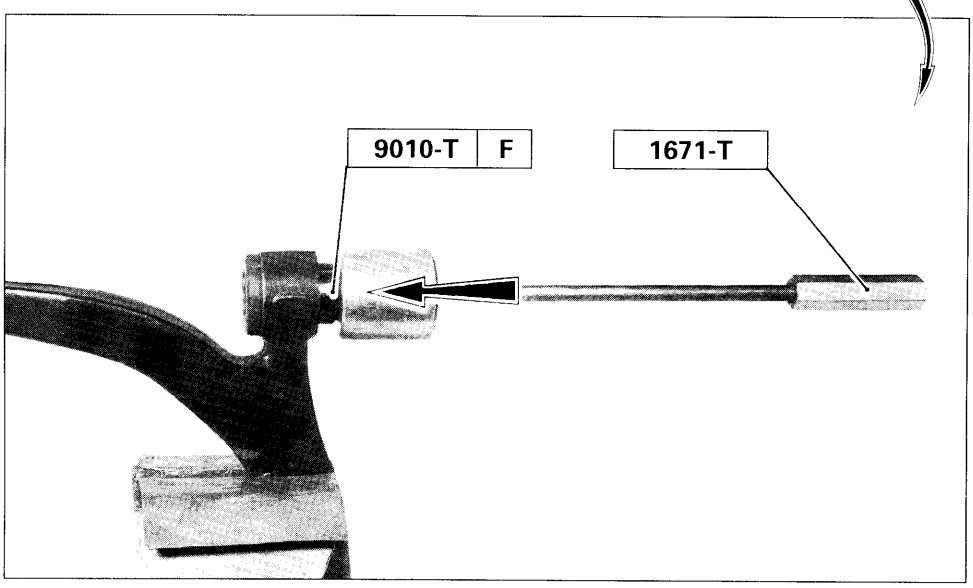
89-830



89-891

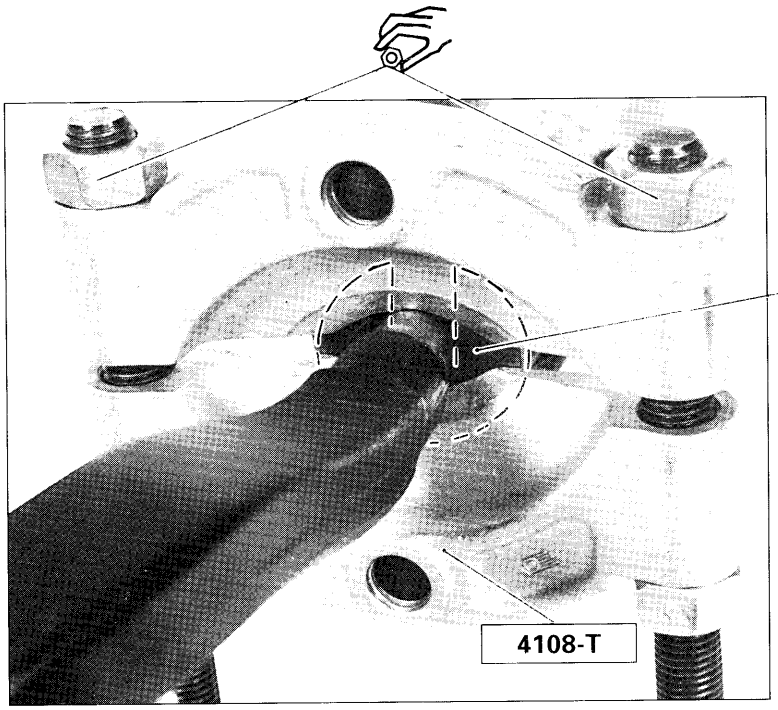


89-890

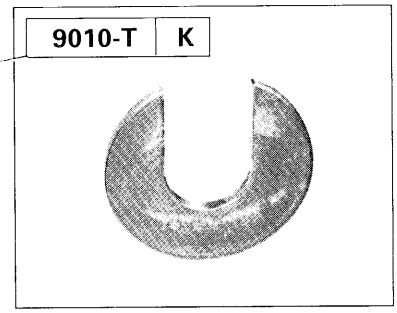


89-827

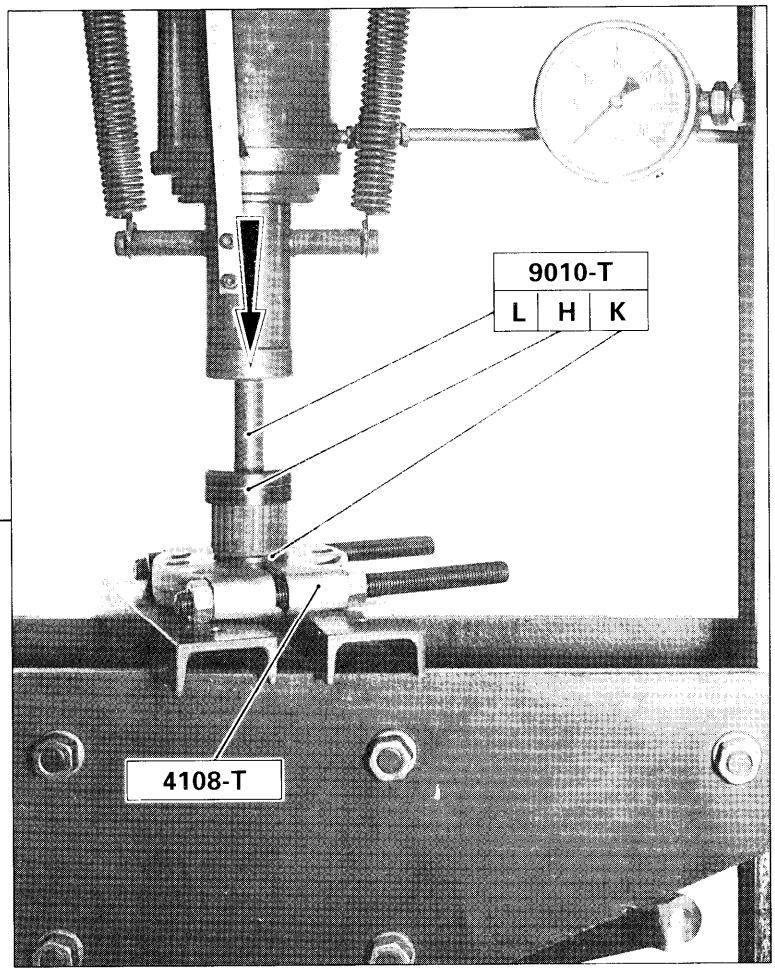
www.WorkshopManuals.co.uk



89-859

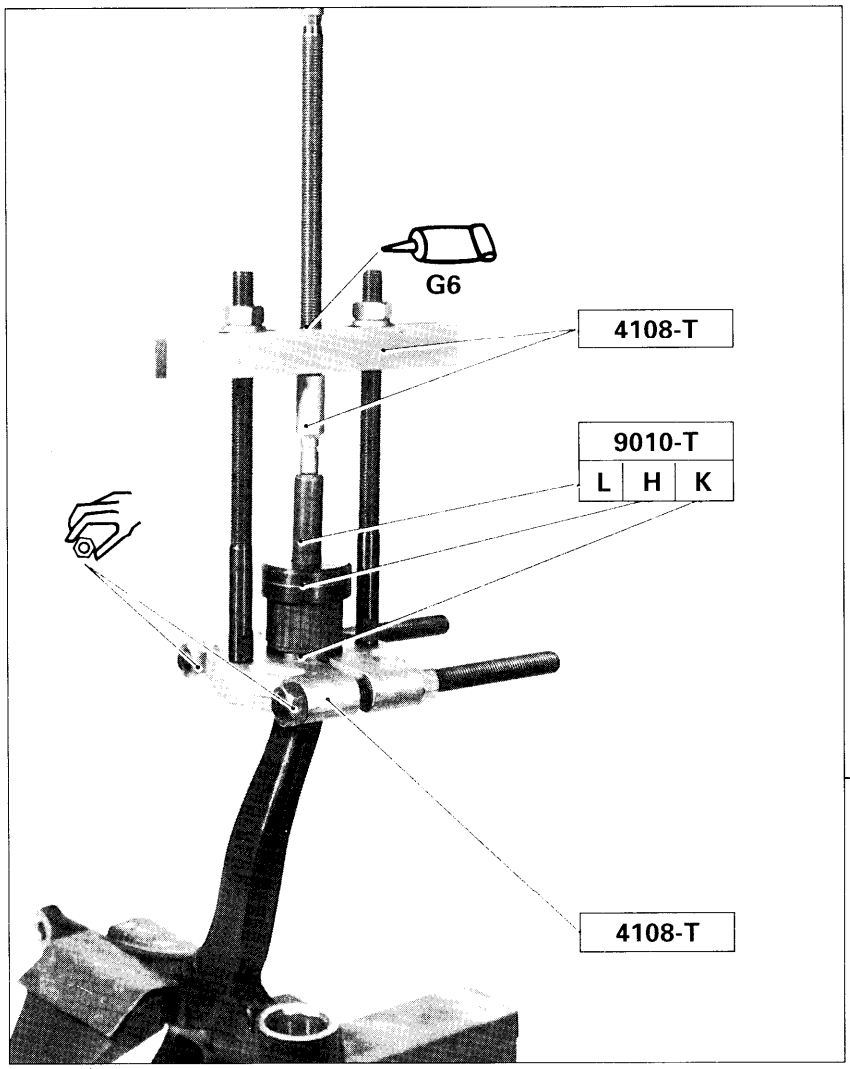


89-860

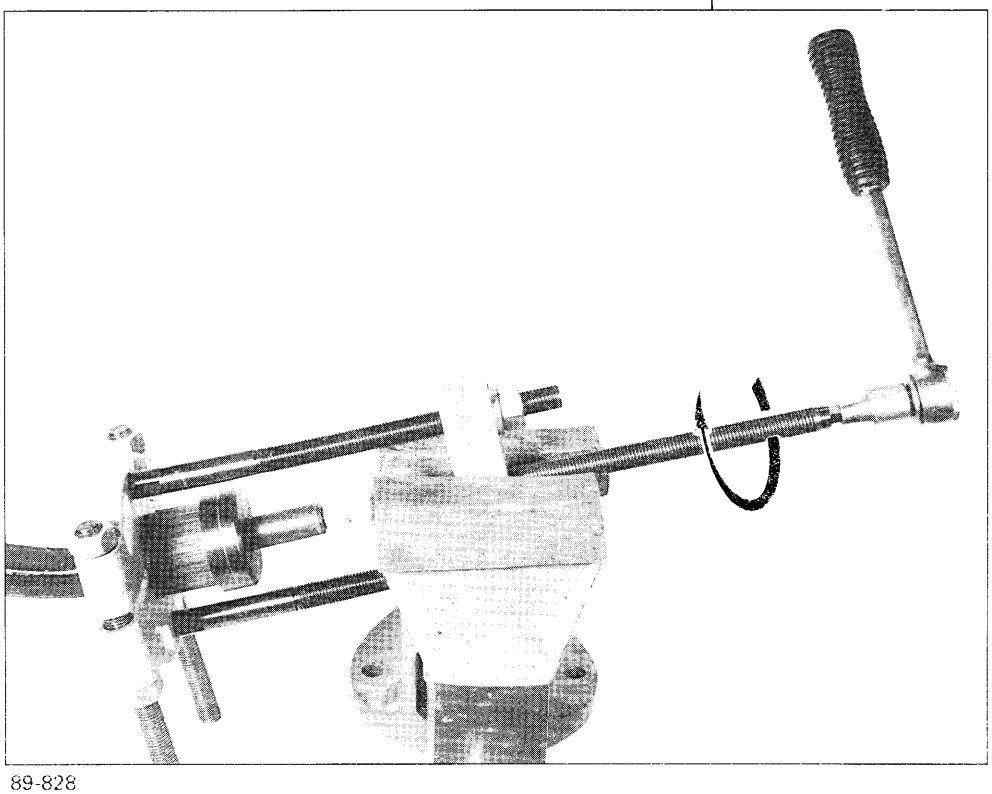


89-822

www.WorkshopManuals.co.uk

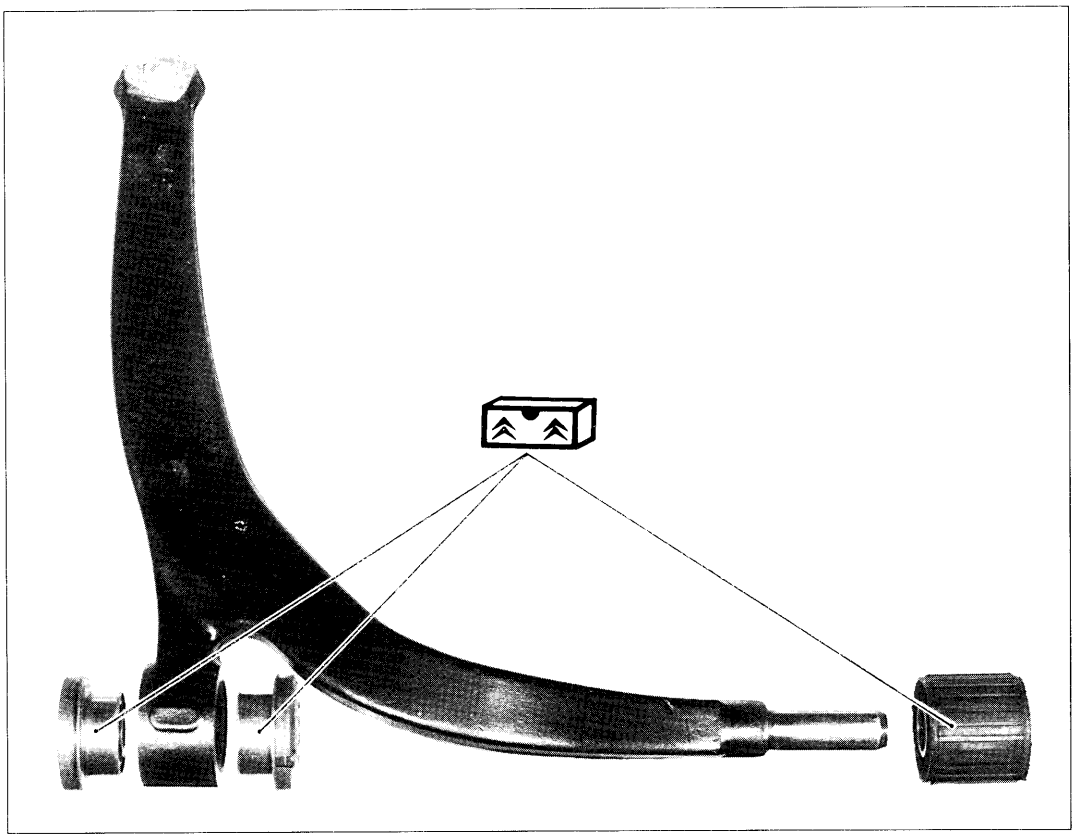


89-829

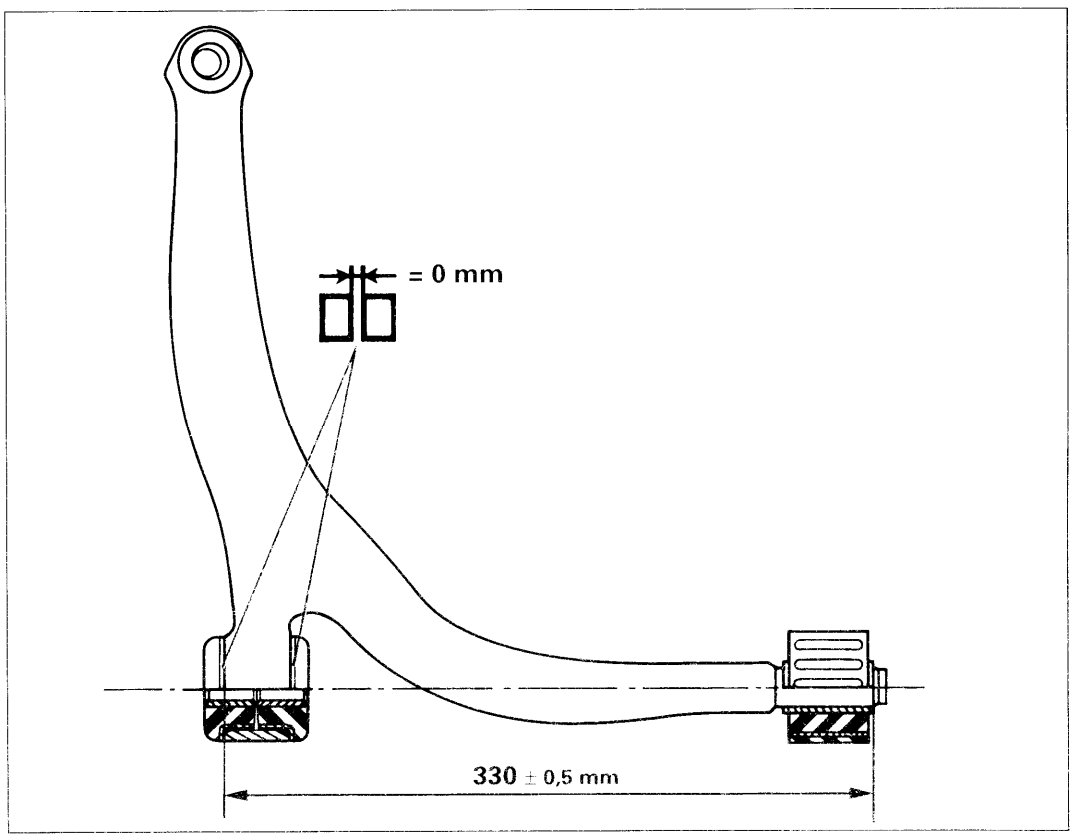


89-828

www.WorkshopManuals.co.uk

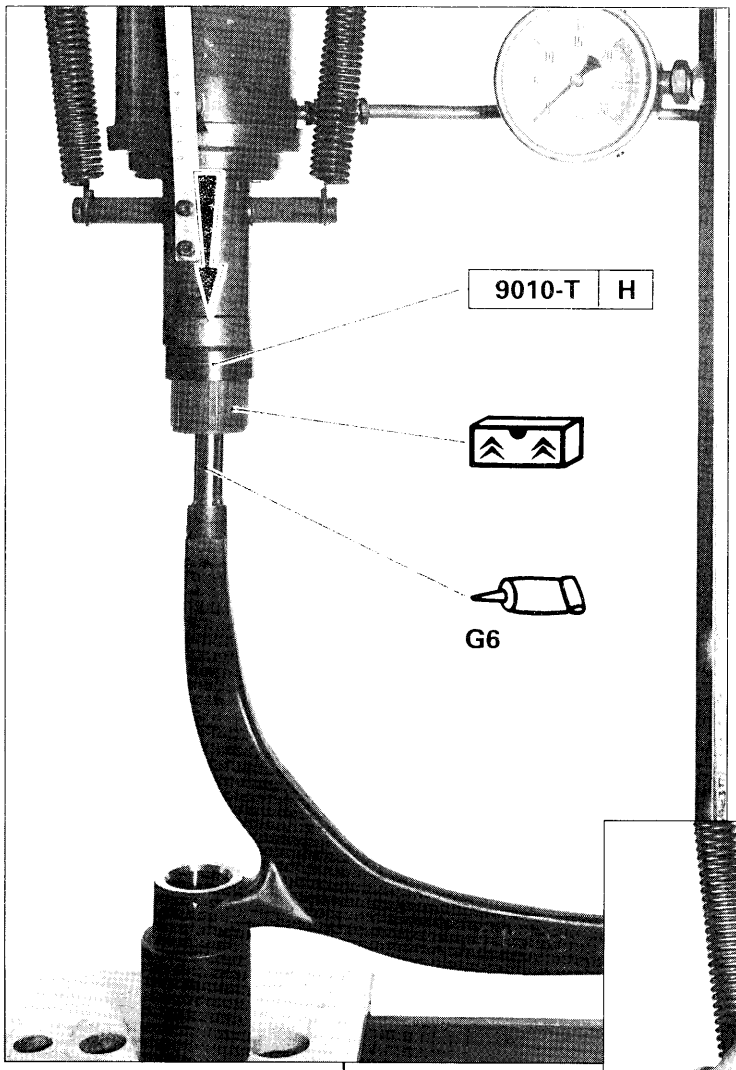


89-891

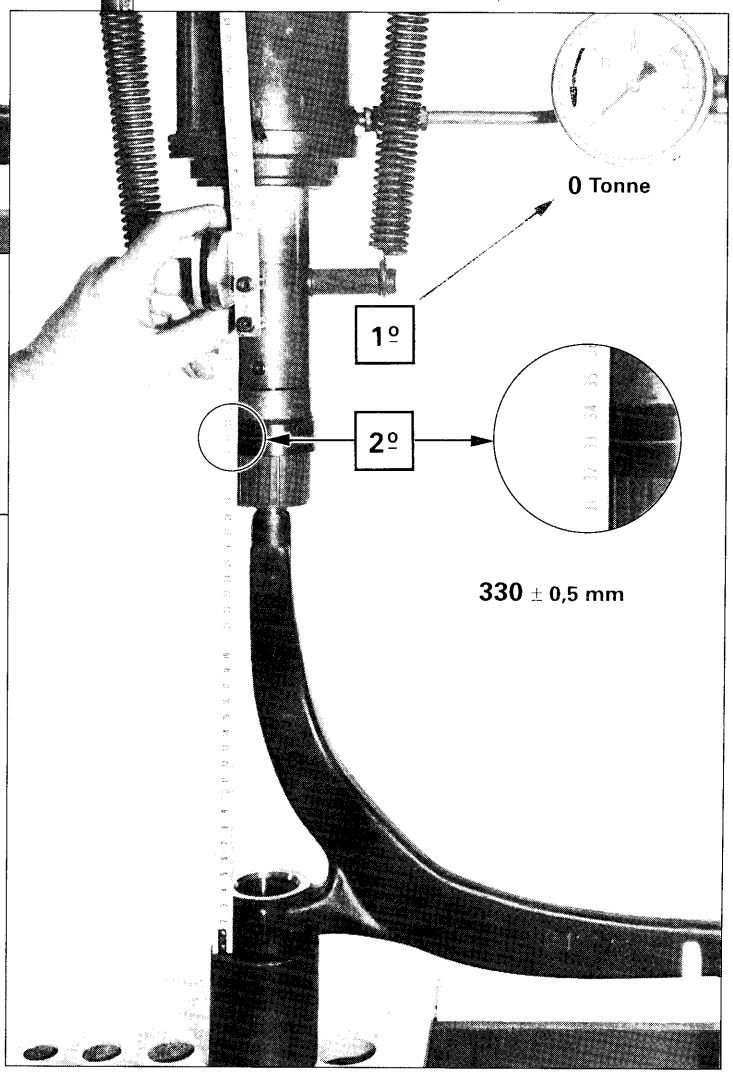


Y 41-7

www.WorkshopManuals.co.uk

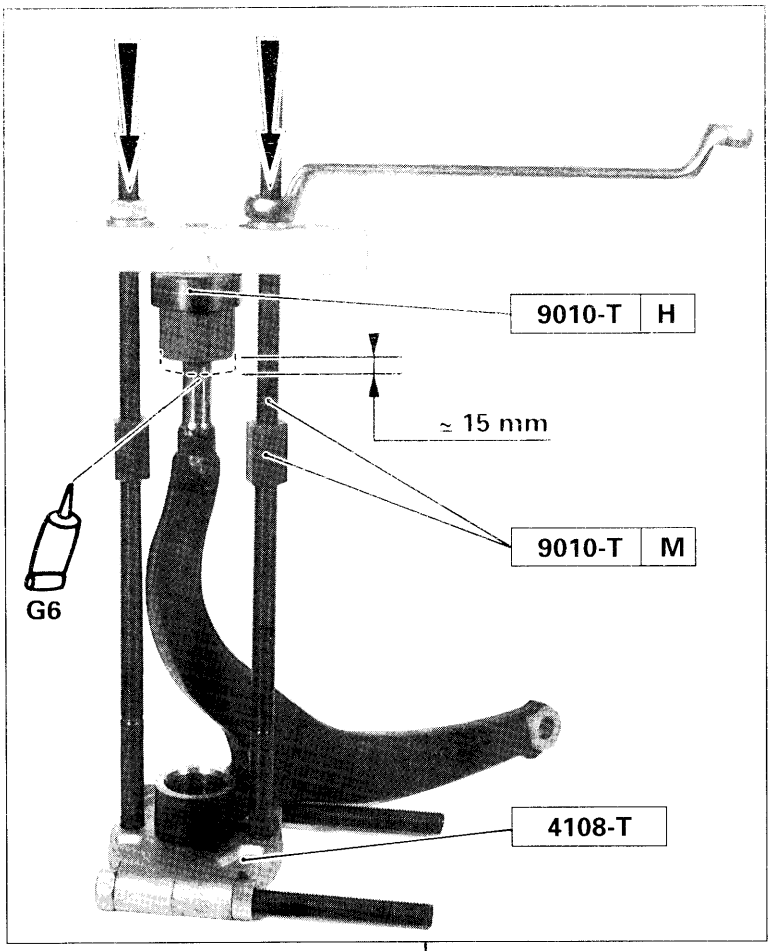


89-821

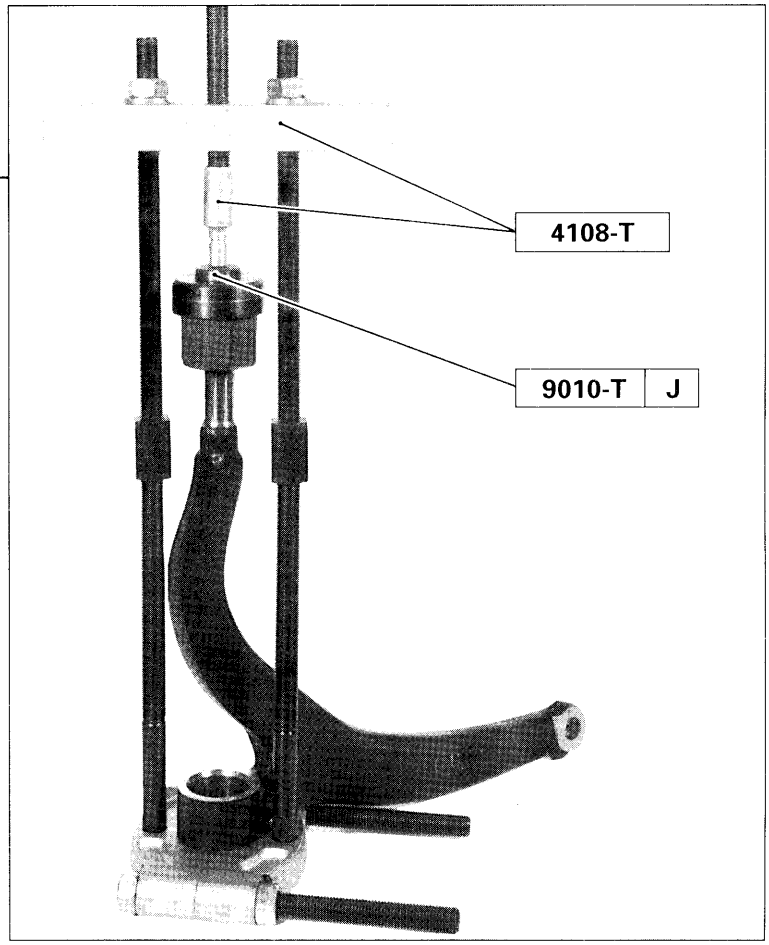


89-823

www.WorkshopManuals.co.uk

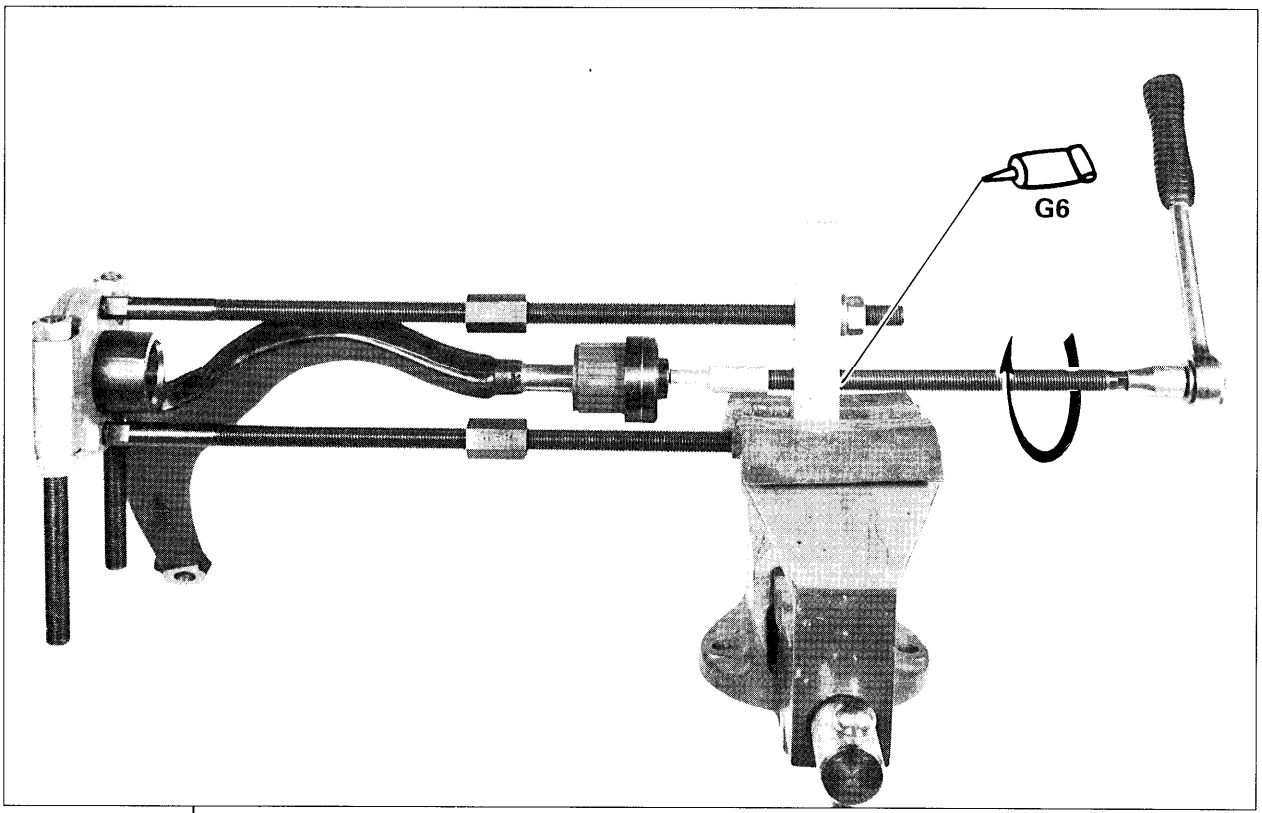


89-877

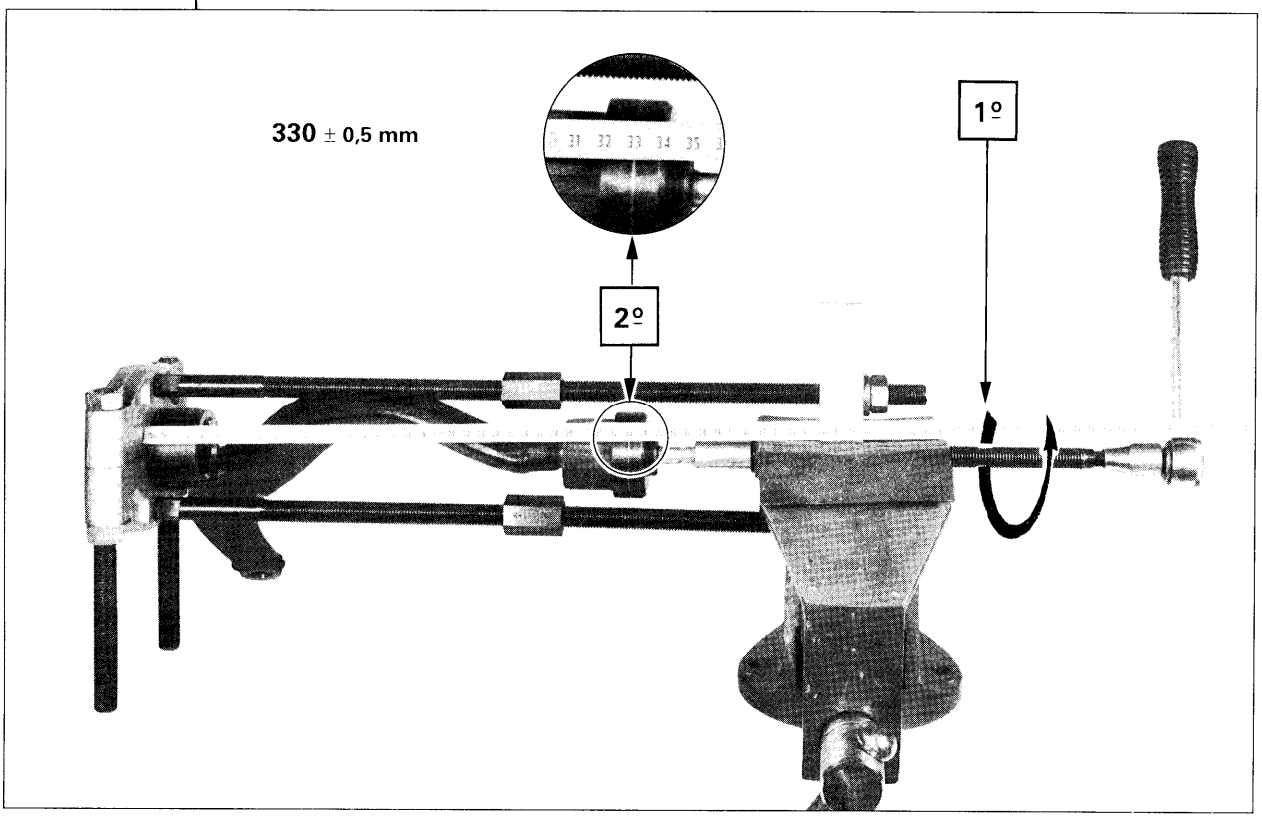


89-876

www.WorkshopManuals.co.uk

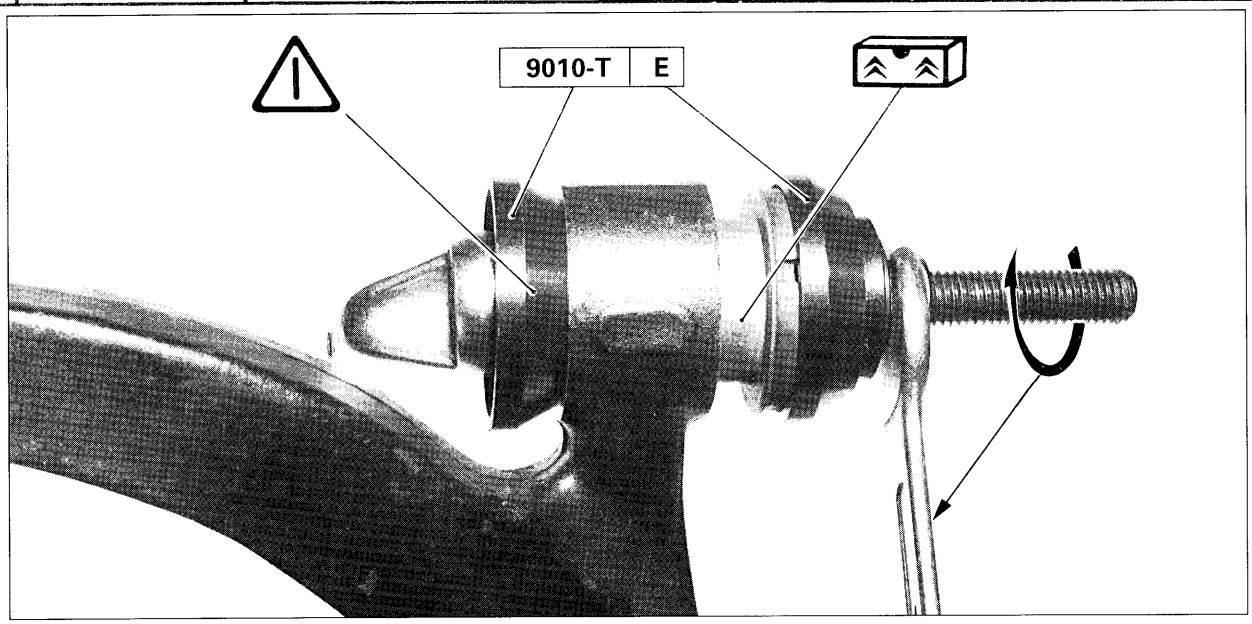


89-874

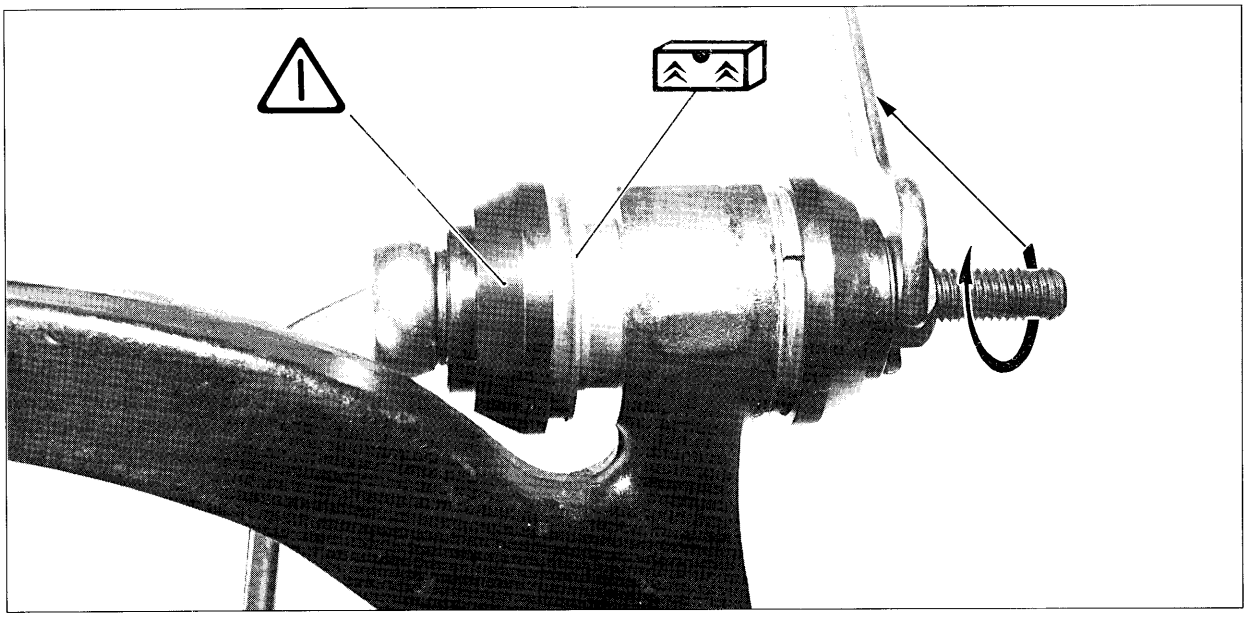


89-872

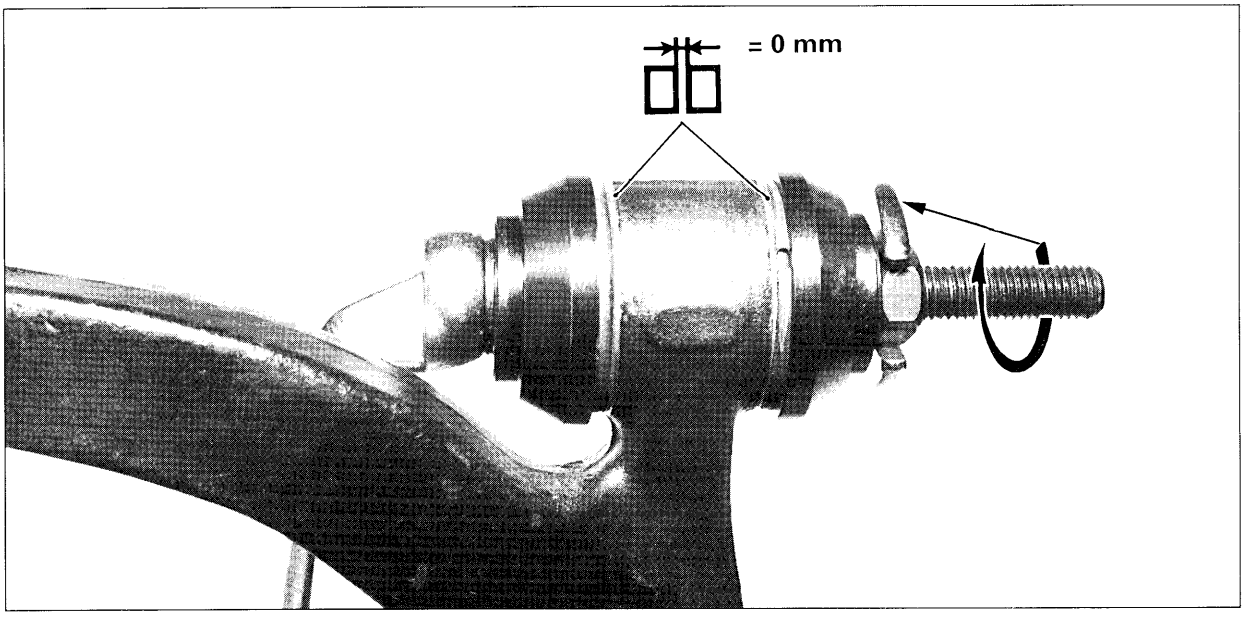
www.WorkshopManuals.co.uk



89-819



89-820



89-818

www.WorkshopManuals.co.uk

REMOVAL

Raise and support the front part of the vehicle, with the wheels clear of the ground.

Open the pressure regulator bleed screw.

Set the height control to the "LOW" position.

DIRAVI vehicle : For more safety, drain the brake accumulator.

Leave the parking-brake released when operating.

Remove, Fig. I, II and III :
- the wheel and disconnect the wear warning lamps **(1)** from the brake pads,
- the pin **(2)** and the nut lock,
- the nut ; clamp the hub with tool **6310-T,**
- the brake hose holder **(3).**

A.B.S. **Fig. III** : remove the sensor **(4)** support screw and the protector **(5)**.

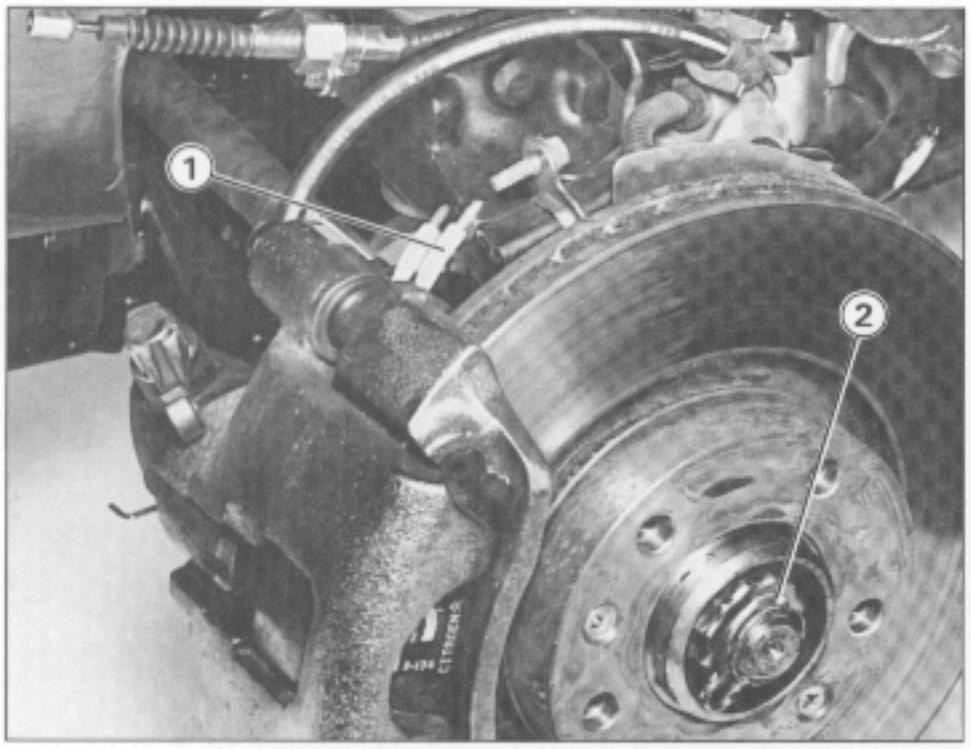
Release, Fig. IV, from the brake caliper, the gaiter and cable **(6)**.

Remove, Fig. IV and V :
- the two pads,
- the two fixing screws **(7)** from the brake unit ; tie assembly **(8)** up,
- the brake disc.

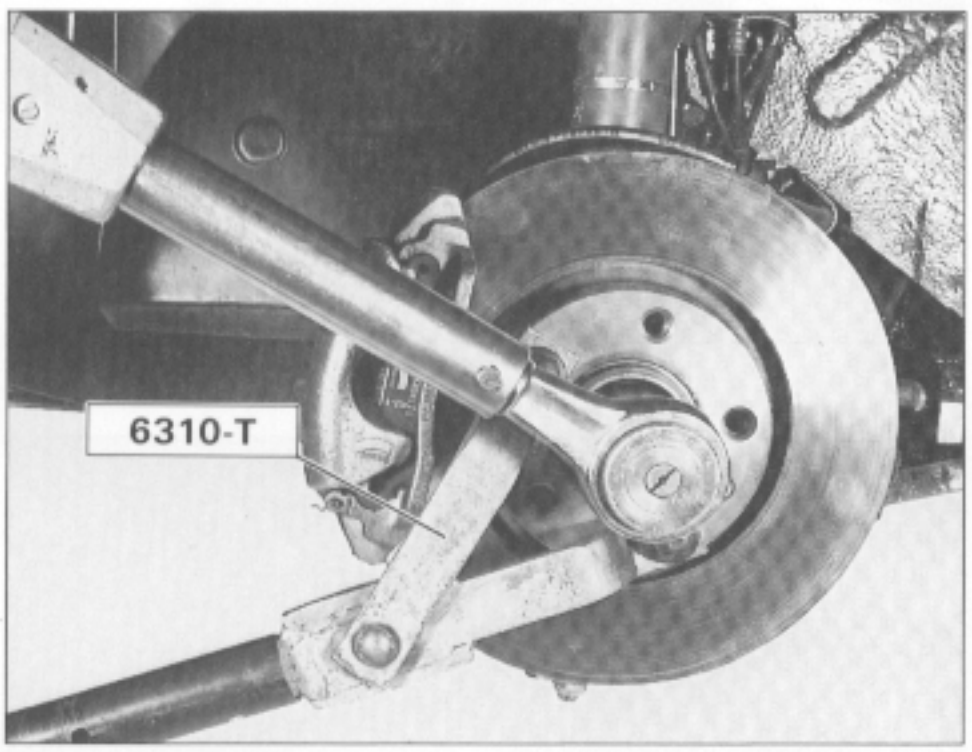
Uncouple, Fig. V :
- the ball-joint from the lower axle arm **(9)** and the steering ball-joint **(10)** using **1892-T.**

(Leave the nut at the same place in order to protect the threads).

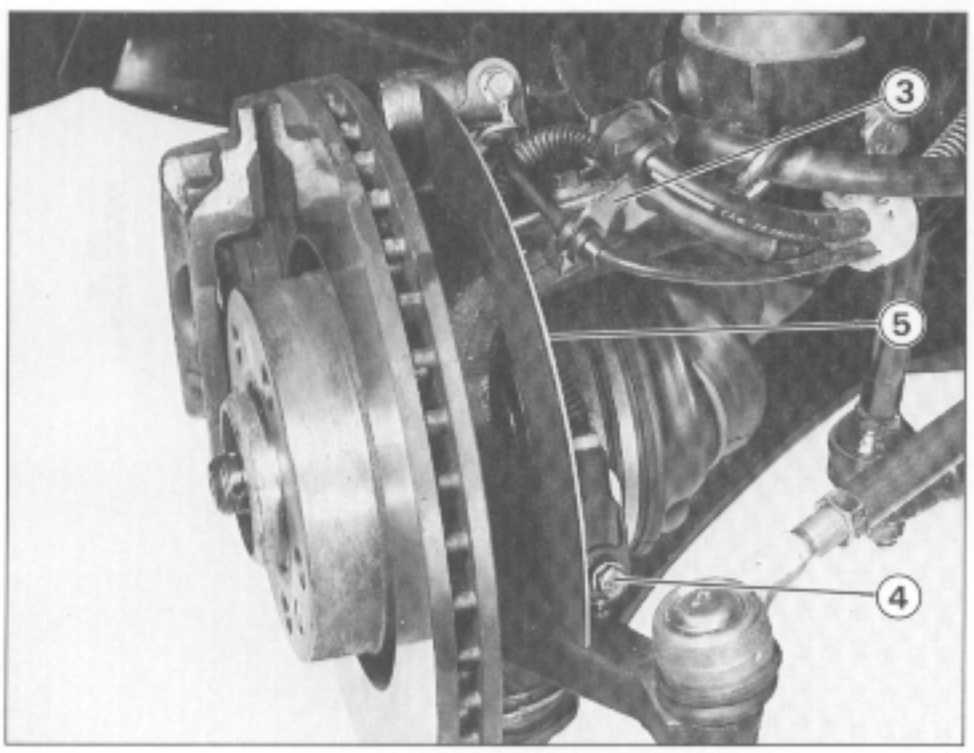
www.WorkshopManuals.co.uk



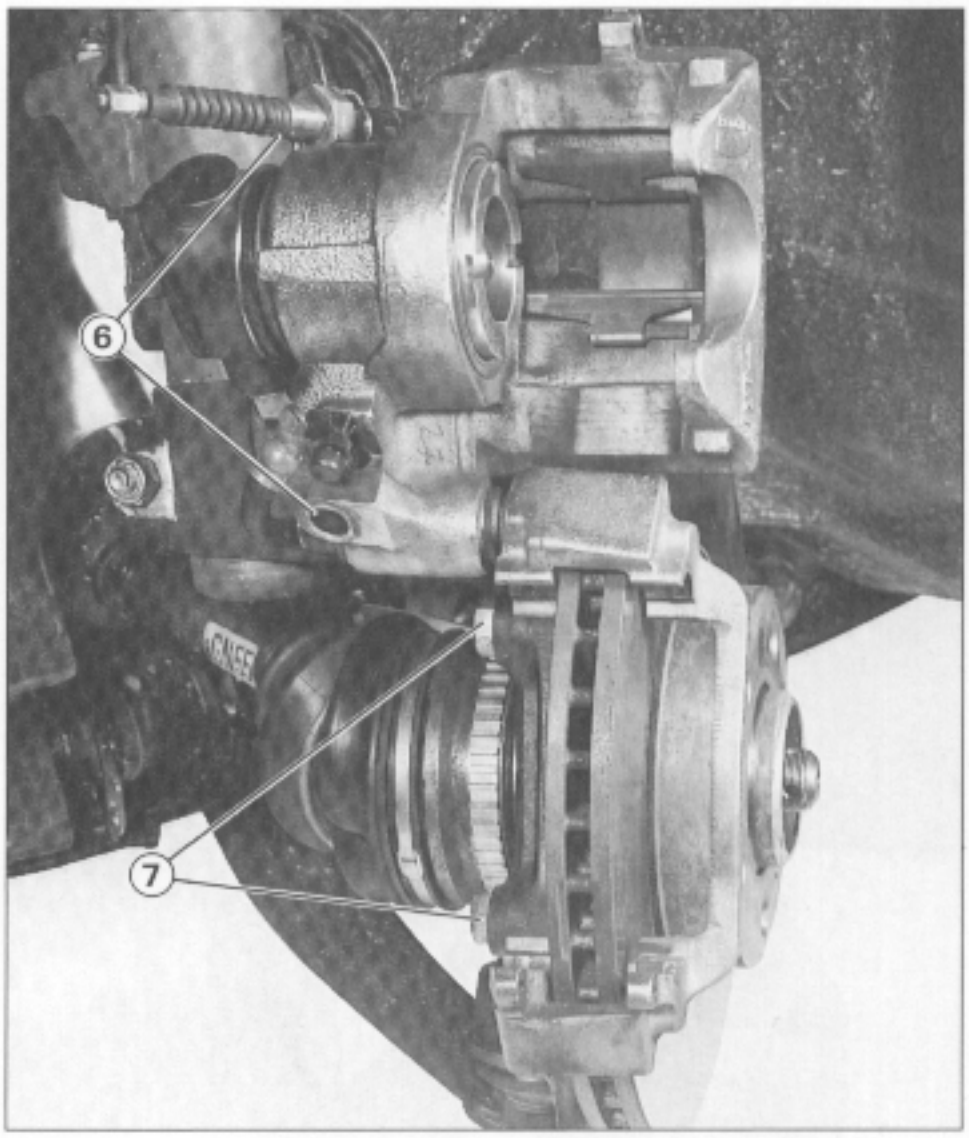
88-483 I



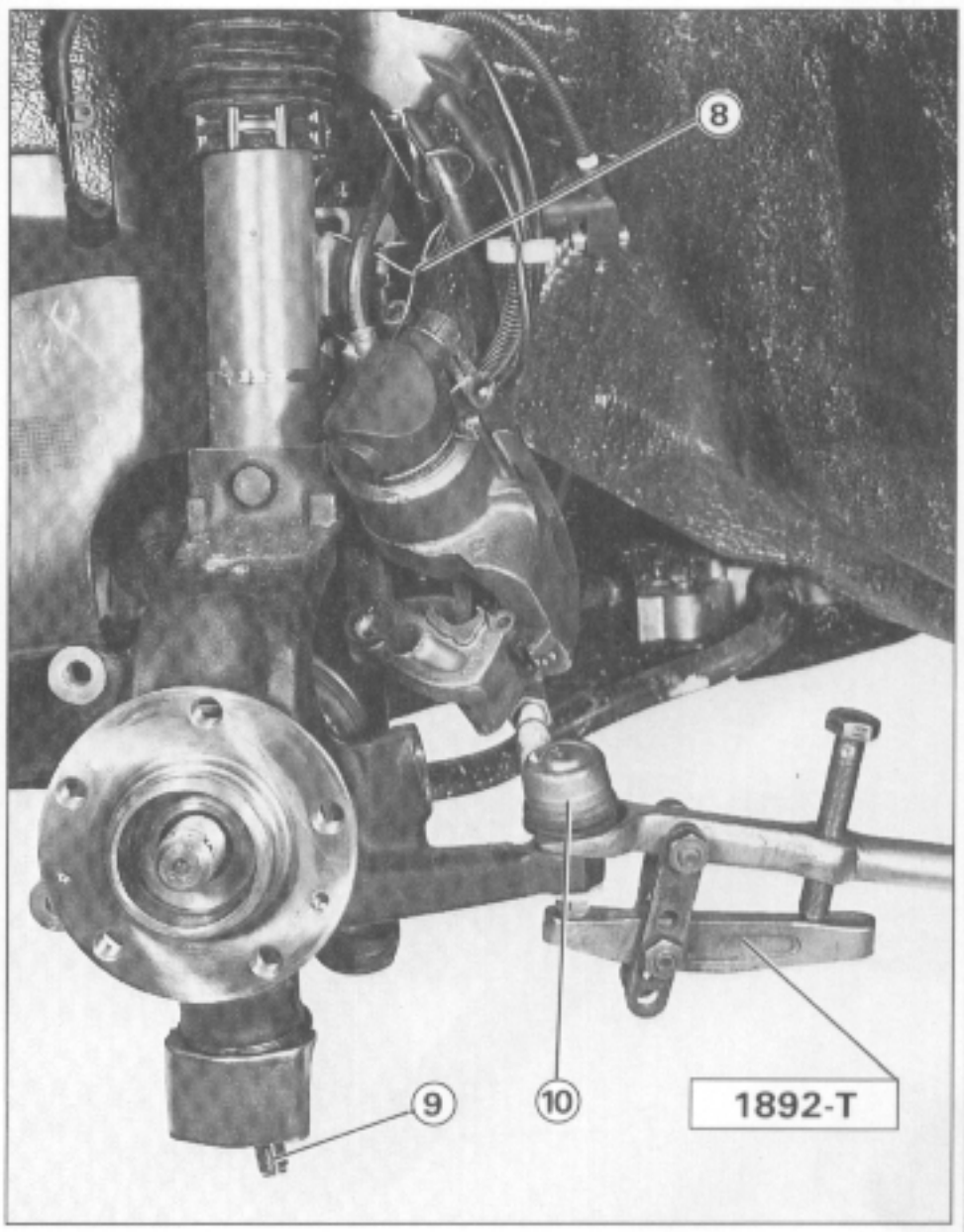
89-129 II



89-125 III

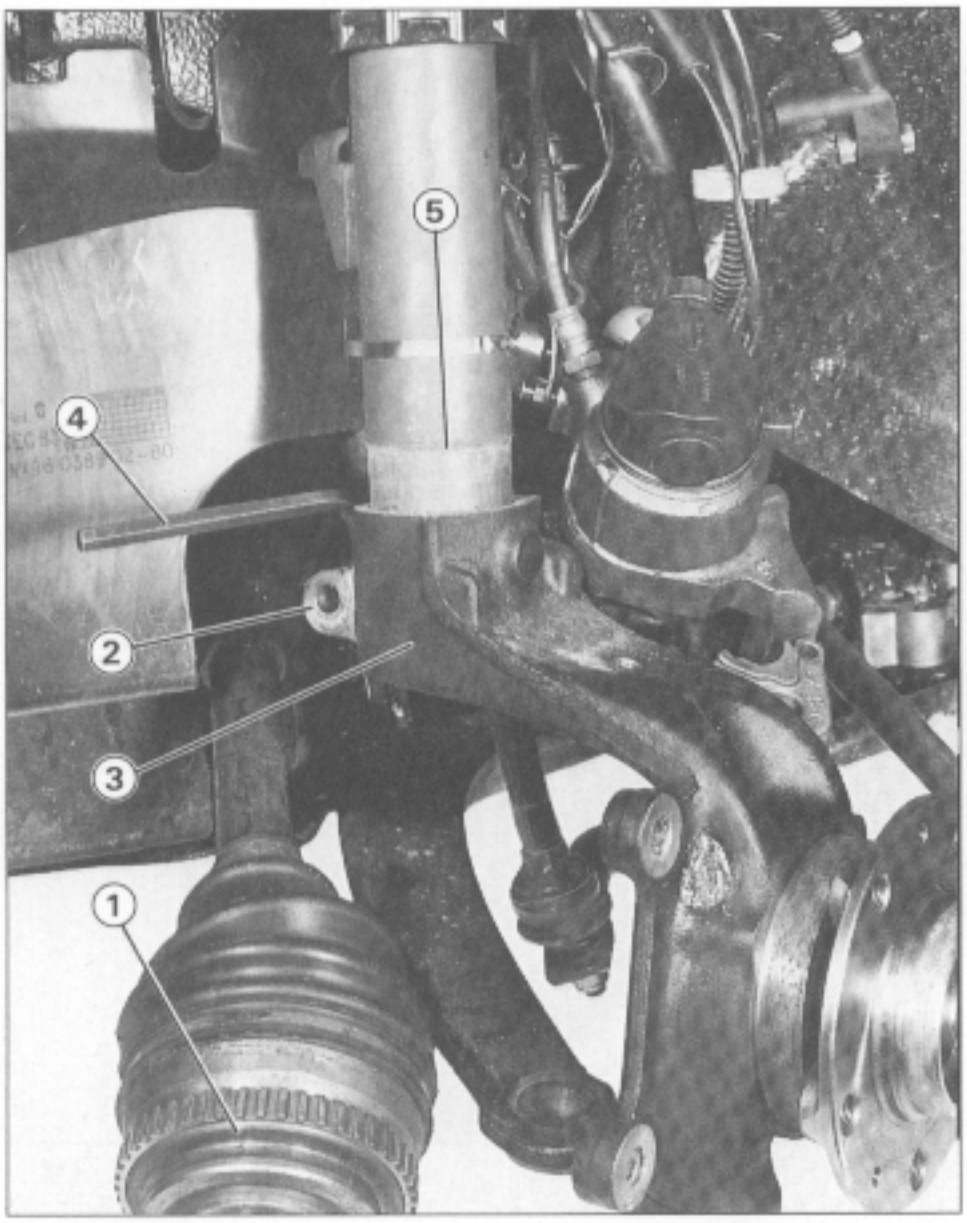


89-127 IV

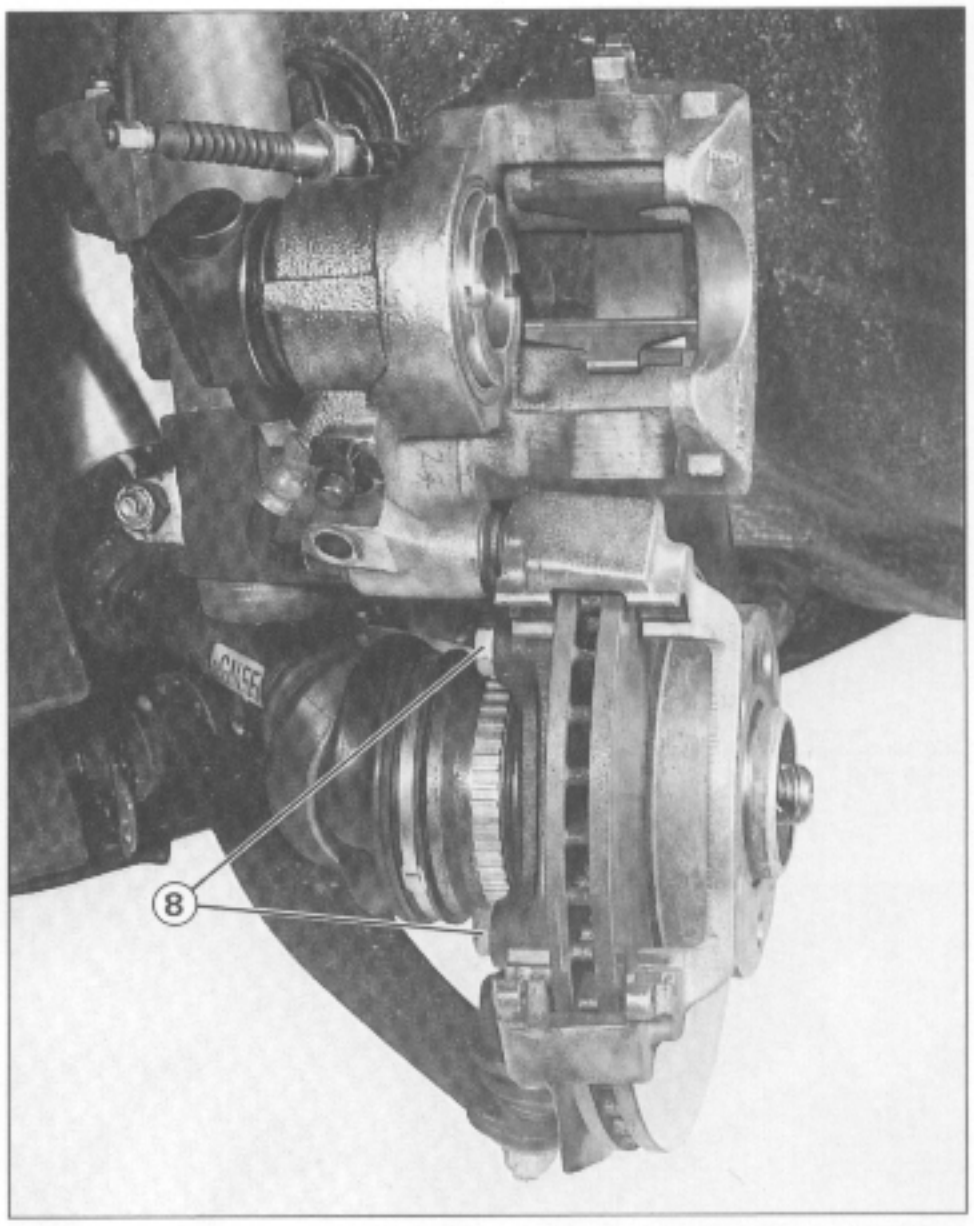


89-131 V

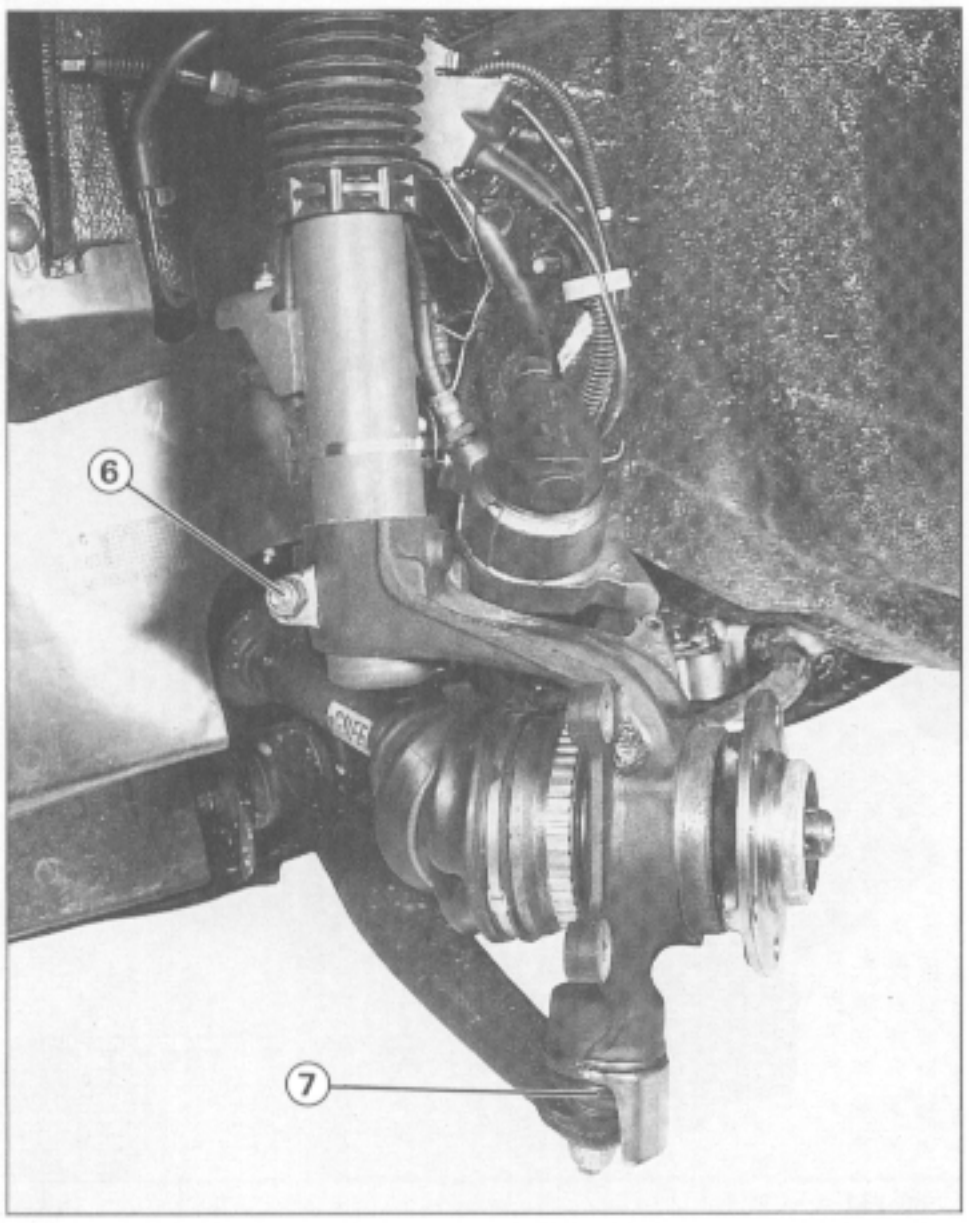
www.WorkshopManuals.co.uk



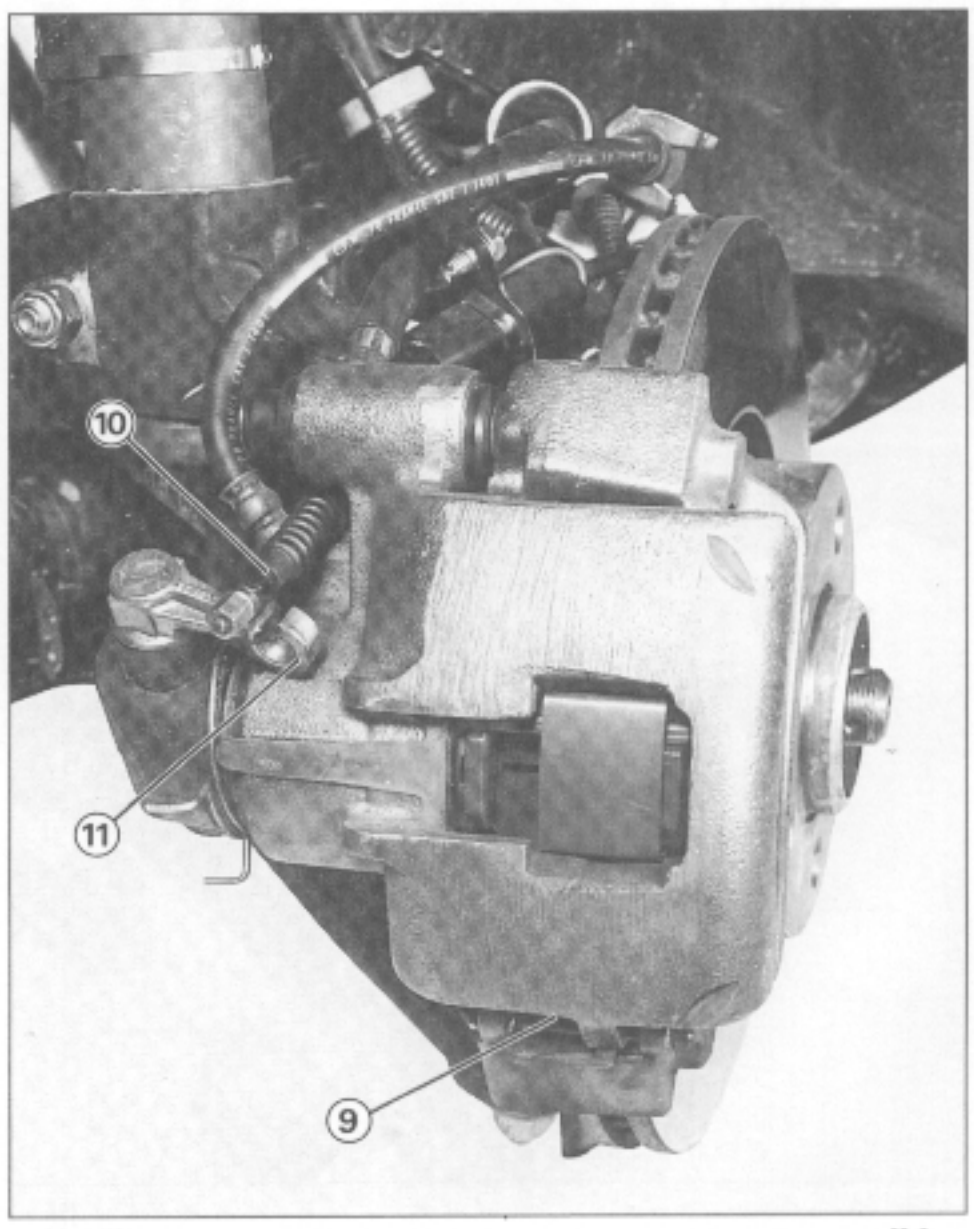
89-123 I



89-127 III



89-132 II



89-133 IV

www.WorkshopManuals.co.uk

Release, Fig. I : the drive shaft **(1)** from hub.

Remove the upper section of the swivel screw **(2)**

Open the upper section **(3)** with an ALLEN key **(4)** (8 mm).

Remove the swivel.

REFITTING

Open, Fig. I : the upper section of the swivel with an ALLEN key, 8 mm, **(4)**.

Engage the suspension unit on stop **(5)** and centre the lug into the upper section slot.

Remove the ALLEN key.

Refit, Flg. II : the screw **(6)** with a NEW NYLSTOP nut.

Tighten to : 5.2 mdaN

Engage, Fig. I : the drive-shaft **(1)** into the hub.

Couple up, Fig II : the lower arm ball-joint **(7)**. Wipe the ball joint end ; do not use any solvent.

Tighten to : 4.5 mdaN *the NEW NYLSTOP* nut.

Refit, Fig. II and III :

- the brake disc,
- the brake unit,
- the brake unit two screws **(8),**

Tighten to : 10.5 mdaN

- the two brake pads.

Close the brake unit (in some cases, it is necessary to push the brake piston back).

(See (11) , op. 451-1/1)

Fit, Fig. IV :

- the pin and clip **(9)**,
- the flexible pipe support bracket.

A.B.S. : Refit the protector and the sensor.

Reconnect the brake pad wear warning lamp wires.

Introduce the gaiter and the parking-brake cable **(10)** in the brake unit and connect the cable to the lever **(11)**.

Refit :

- the drive-shaft nut (head and threads oiled),

Tighten to : 32 mdaN

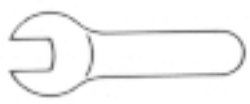
- the nut lock and the dowel,
- the road wheel.

Retighten the pressure regulator bleed screw.

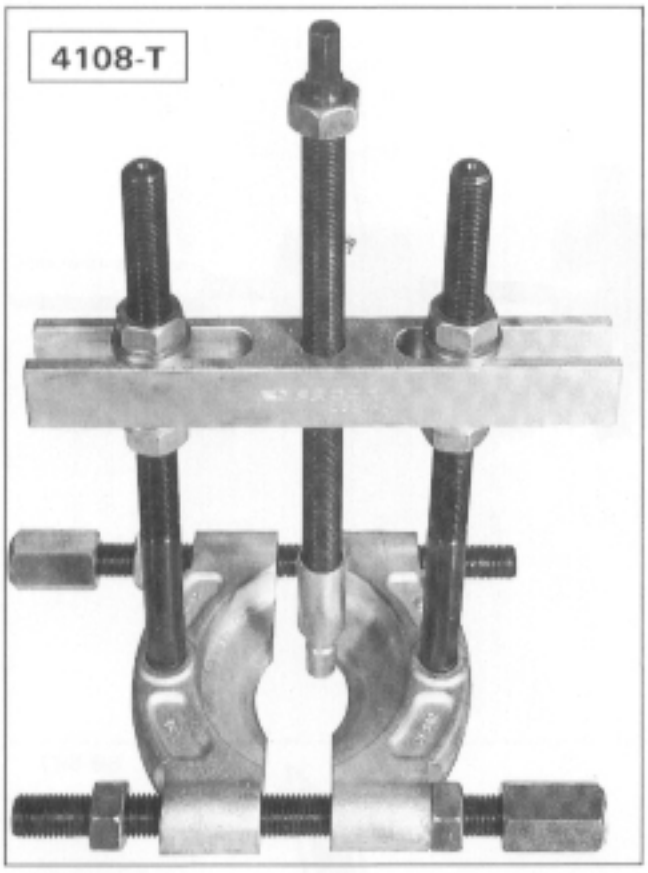
www.WorkshopManuals.co.uk



88-571

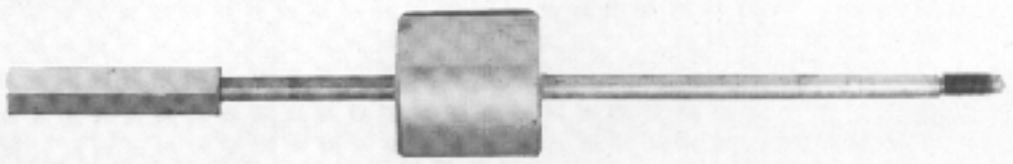


4108-T



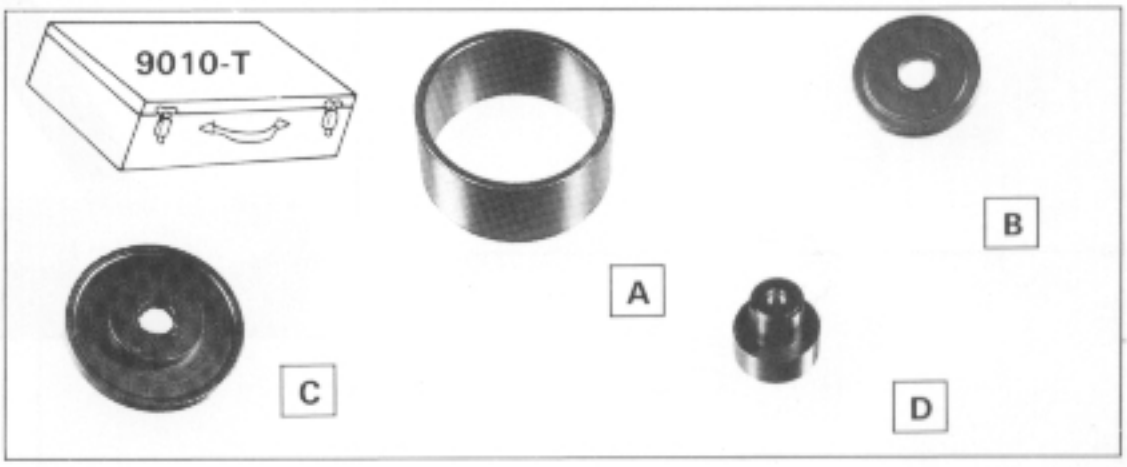
88-120

1671-T

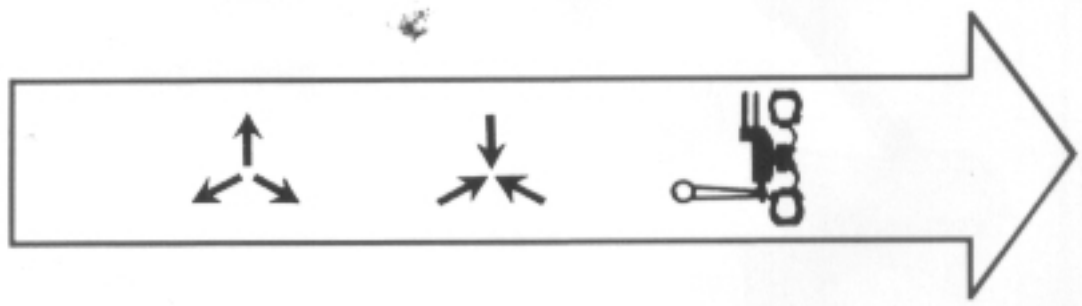


13-551

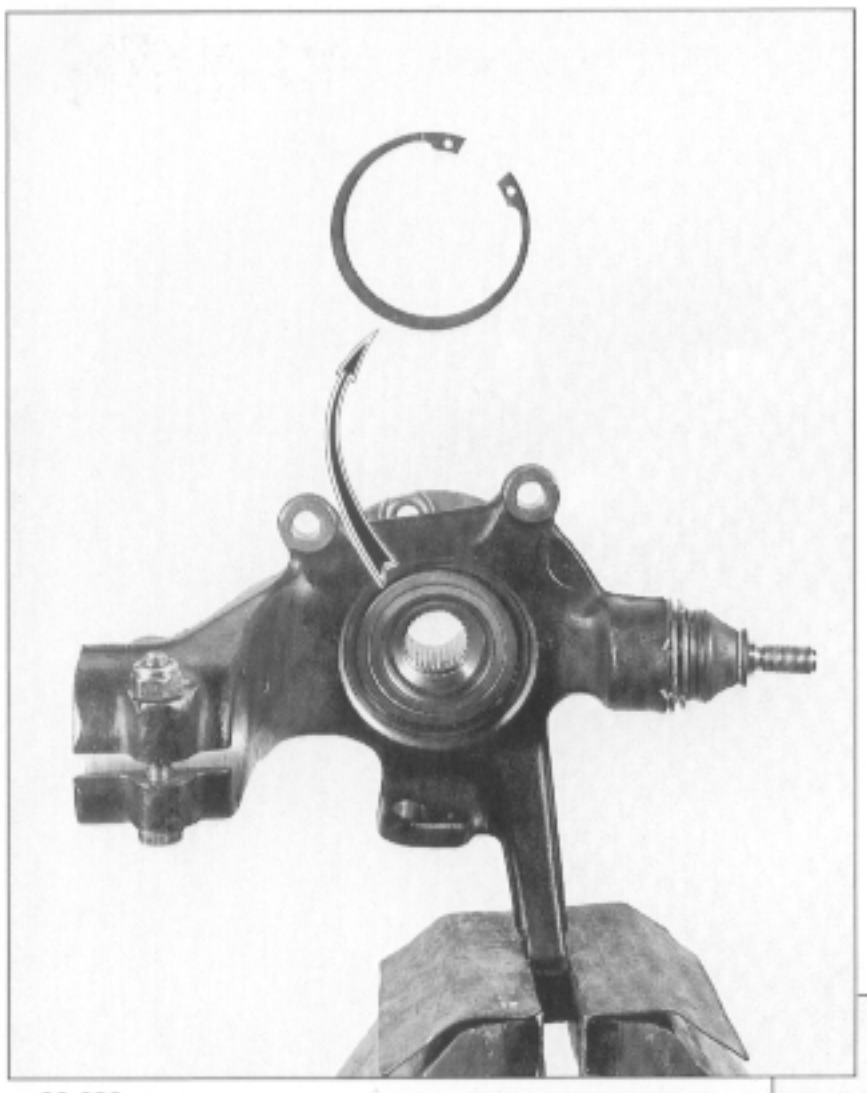
9010-T



88-661

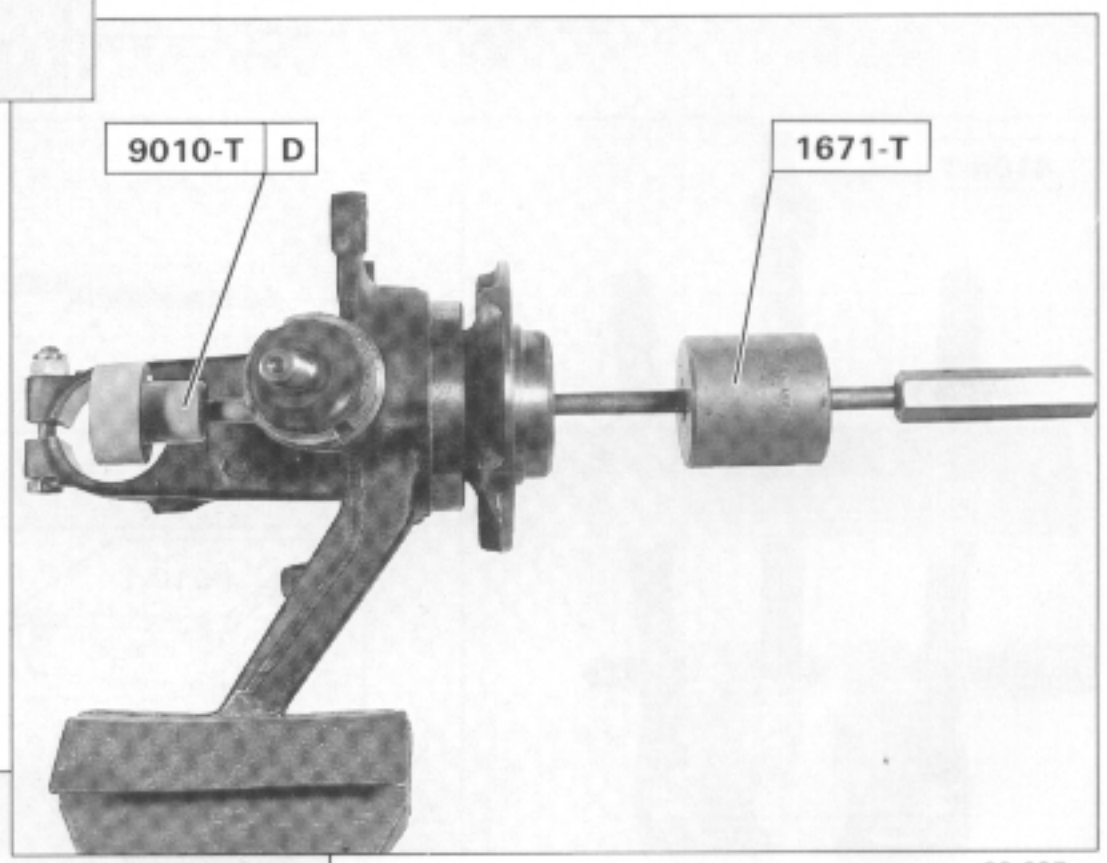


www.WorkshopManuals.co.uk

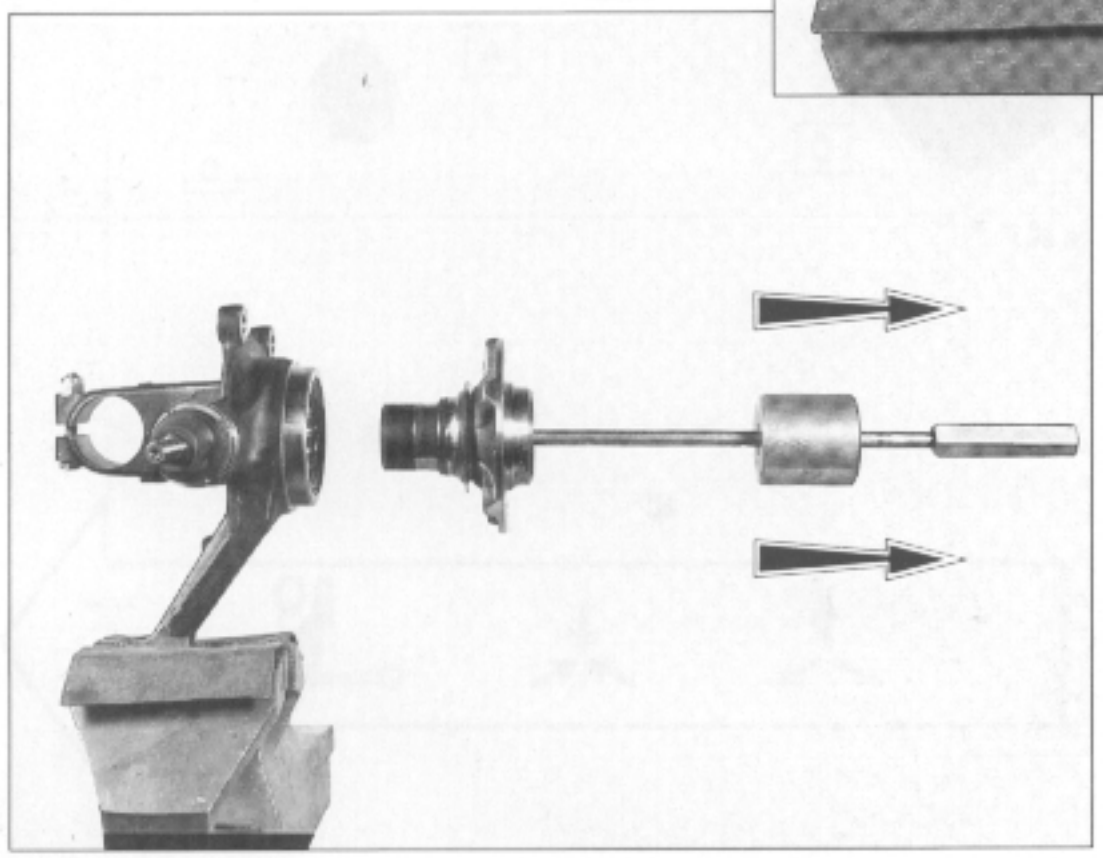


88-689

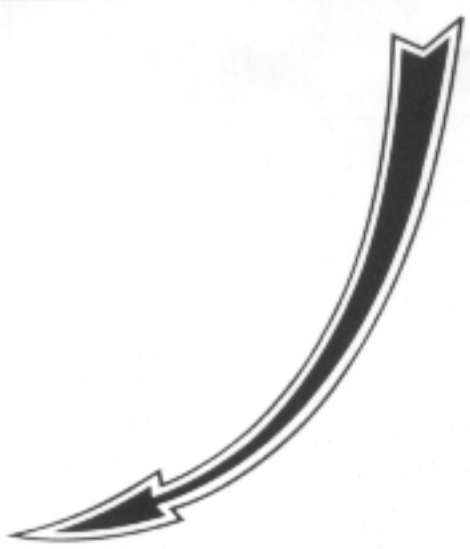




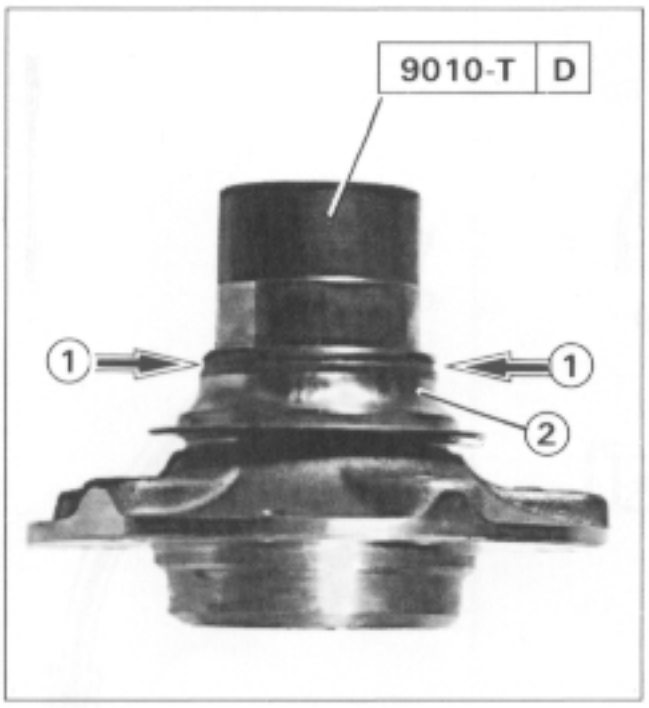
88-687



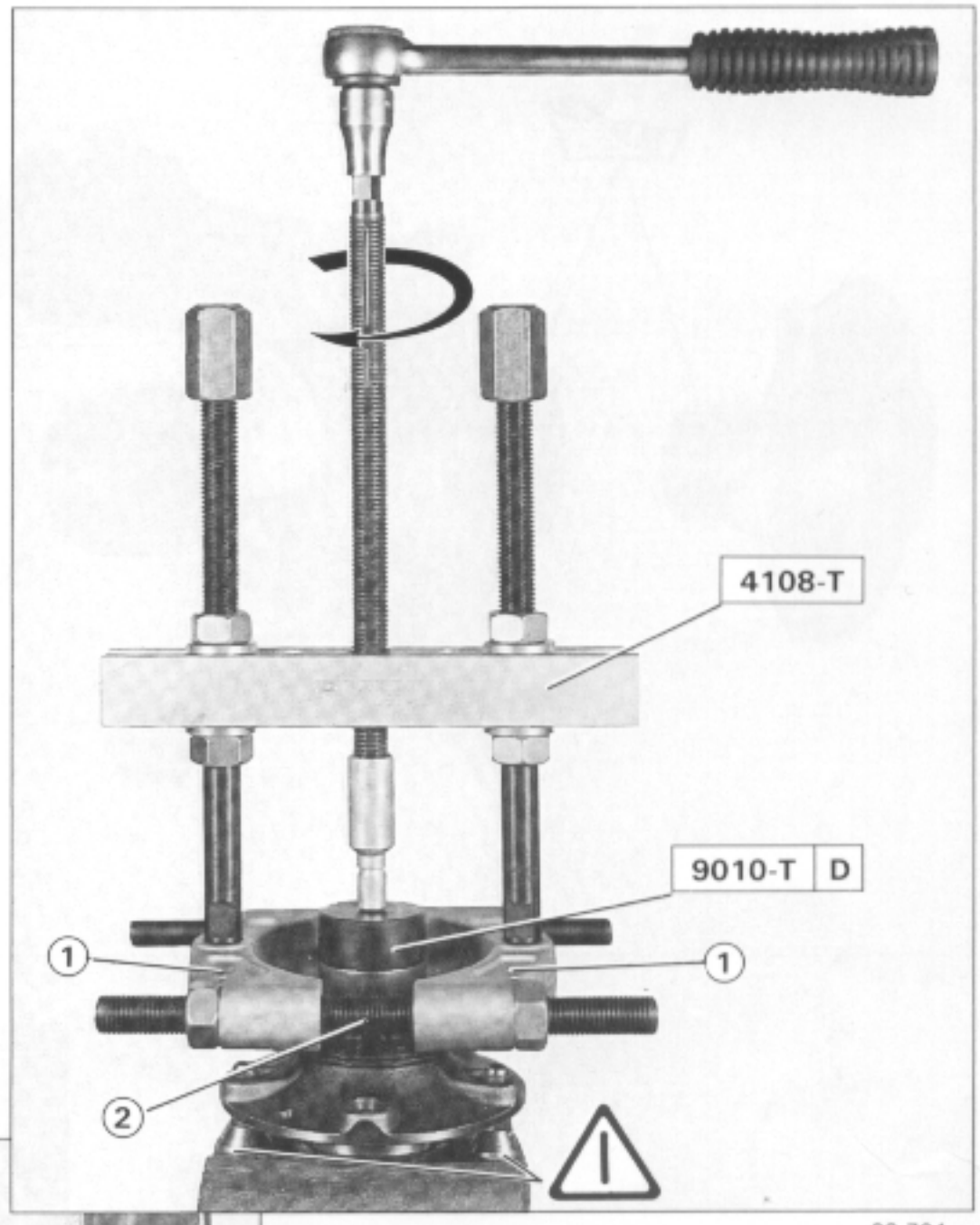
88-688



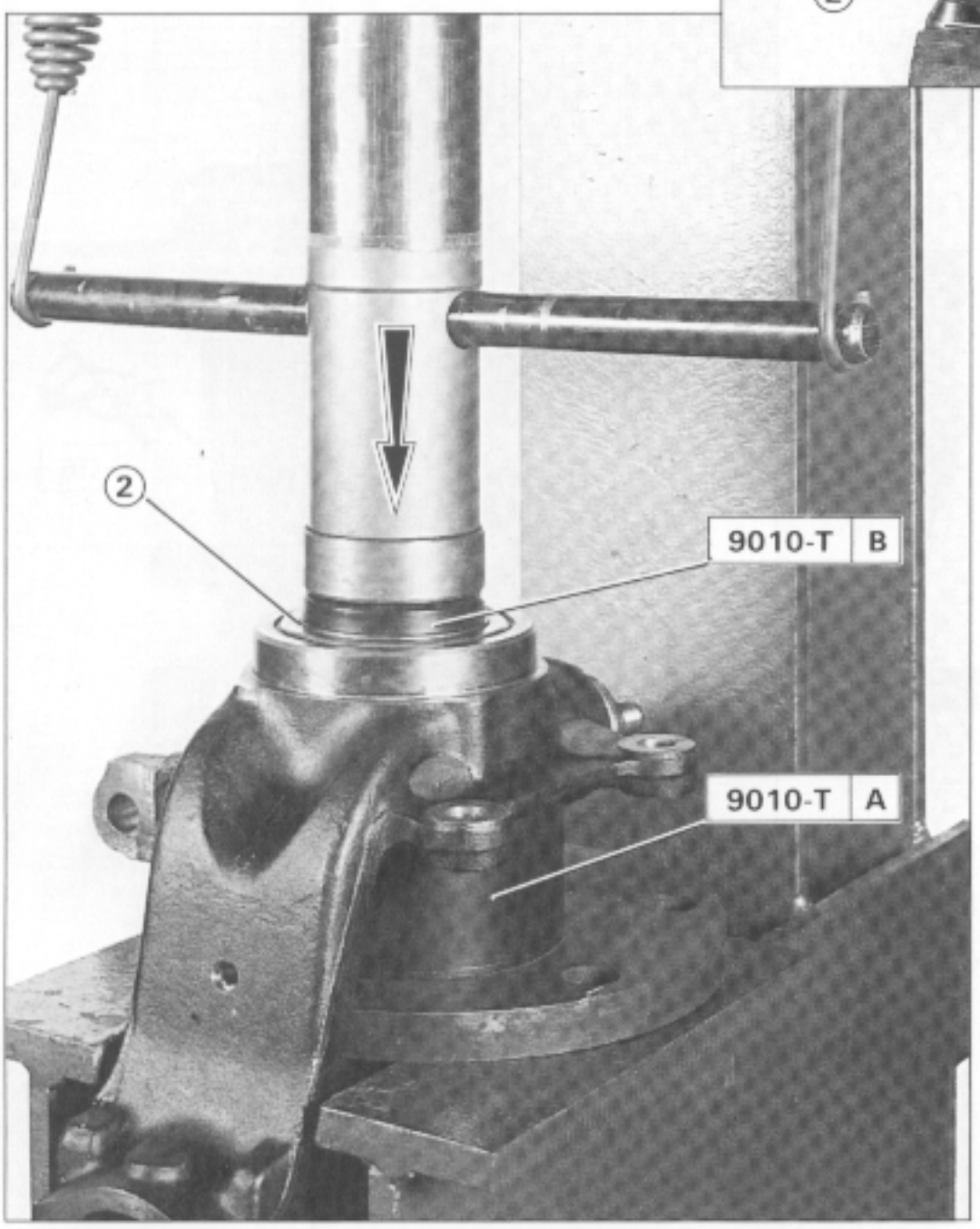
www.WorkshopManuals.co.uk



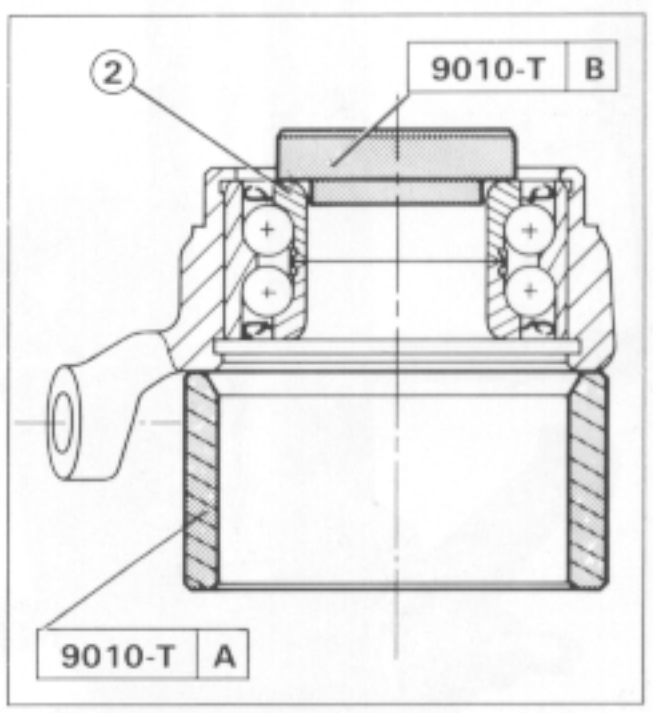
88-688



88-704

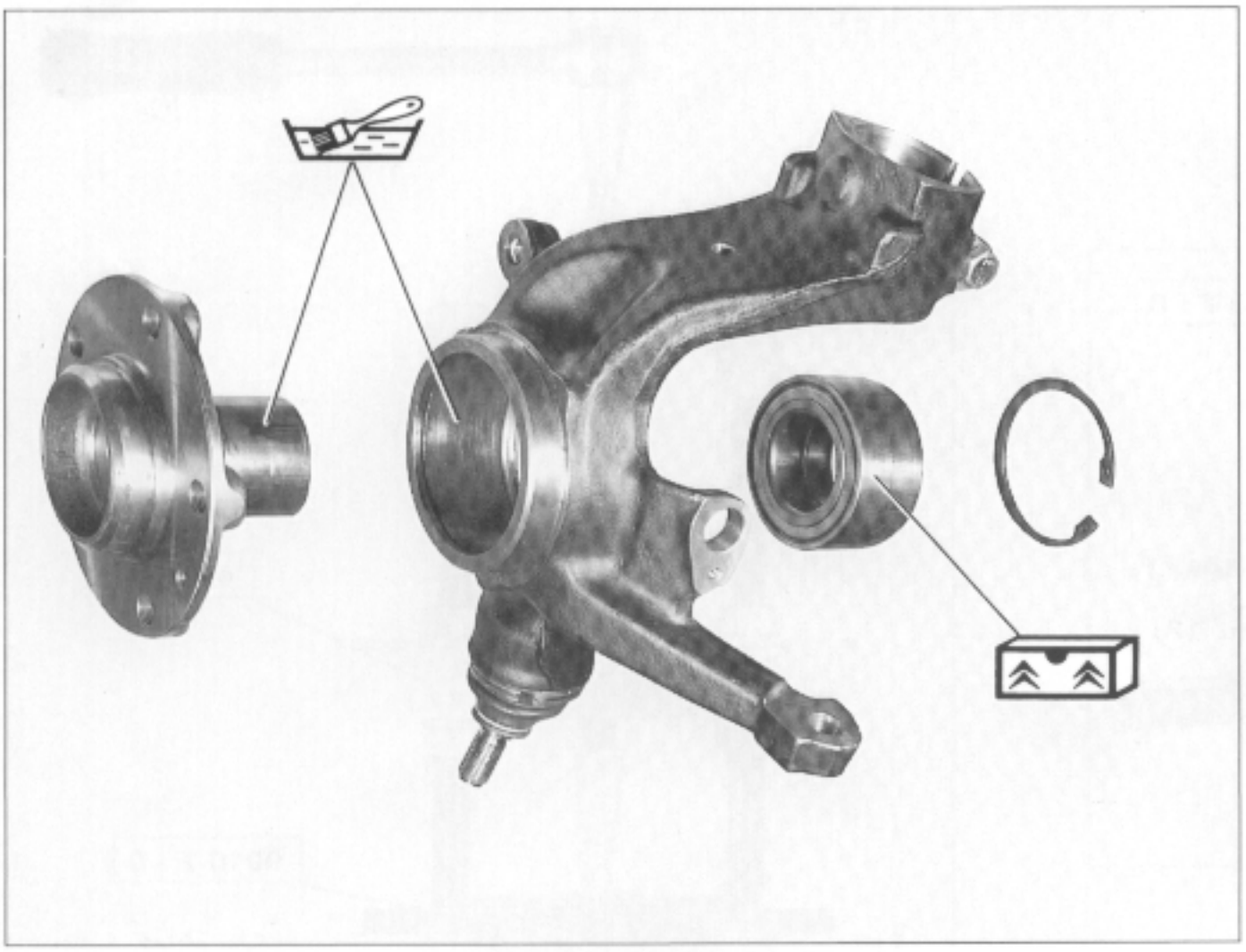


88-710

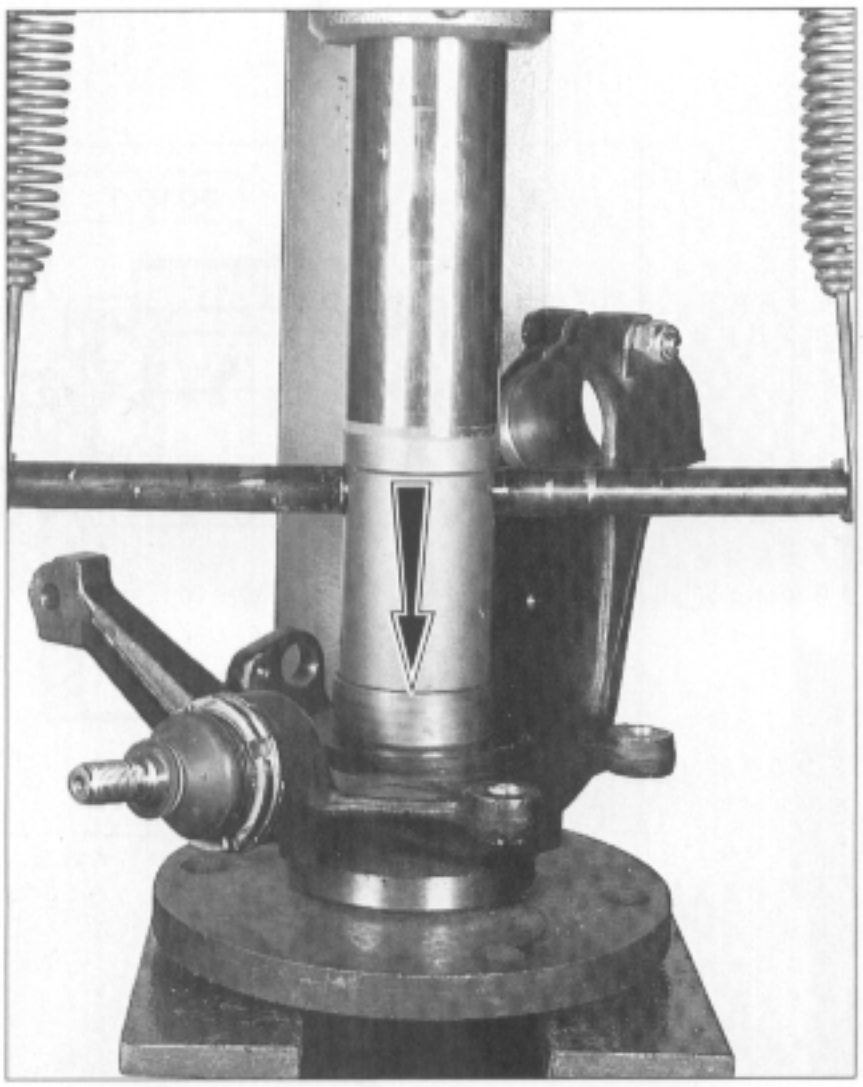


Y.41-3

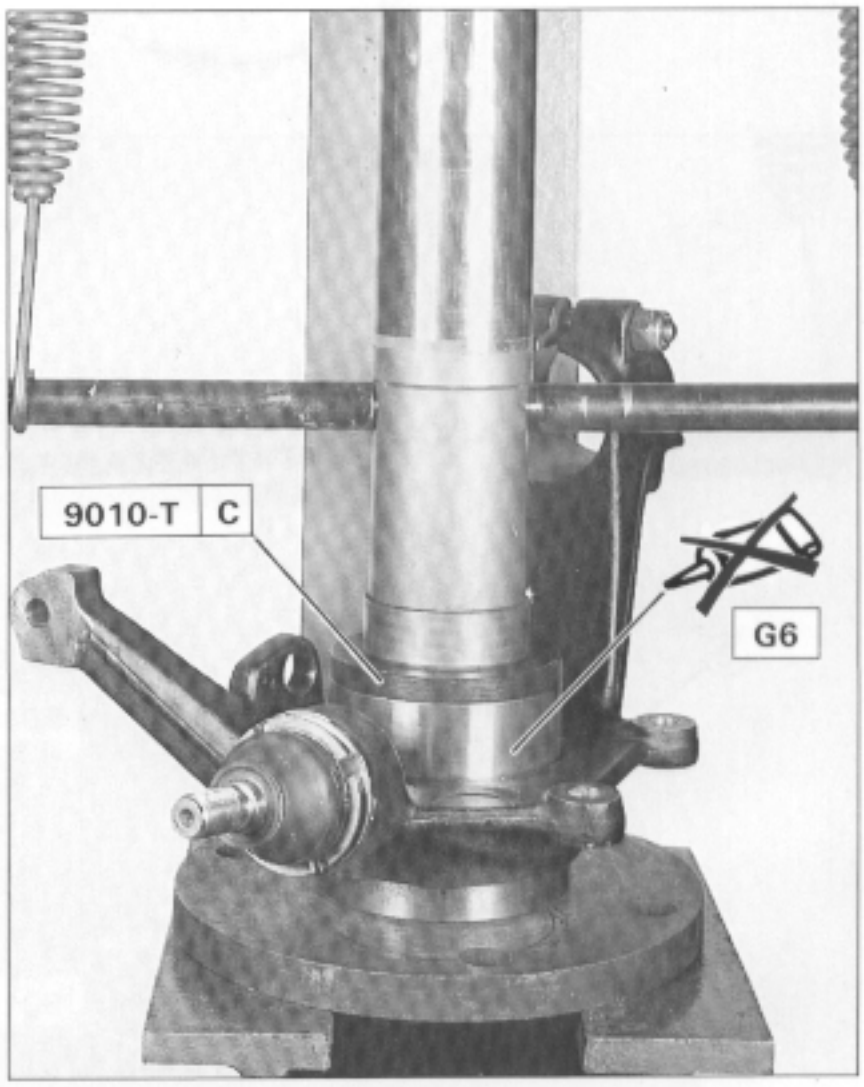
www.WorkshopManuals.co.uk



88-708

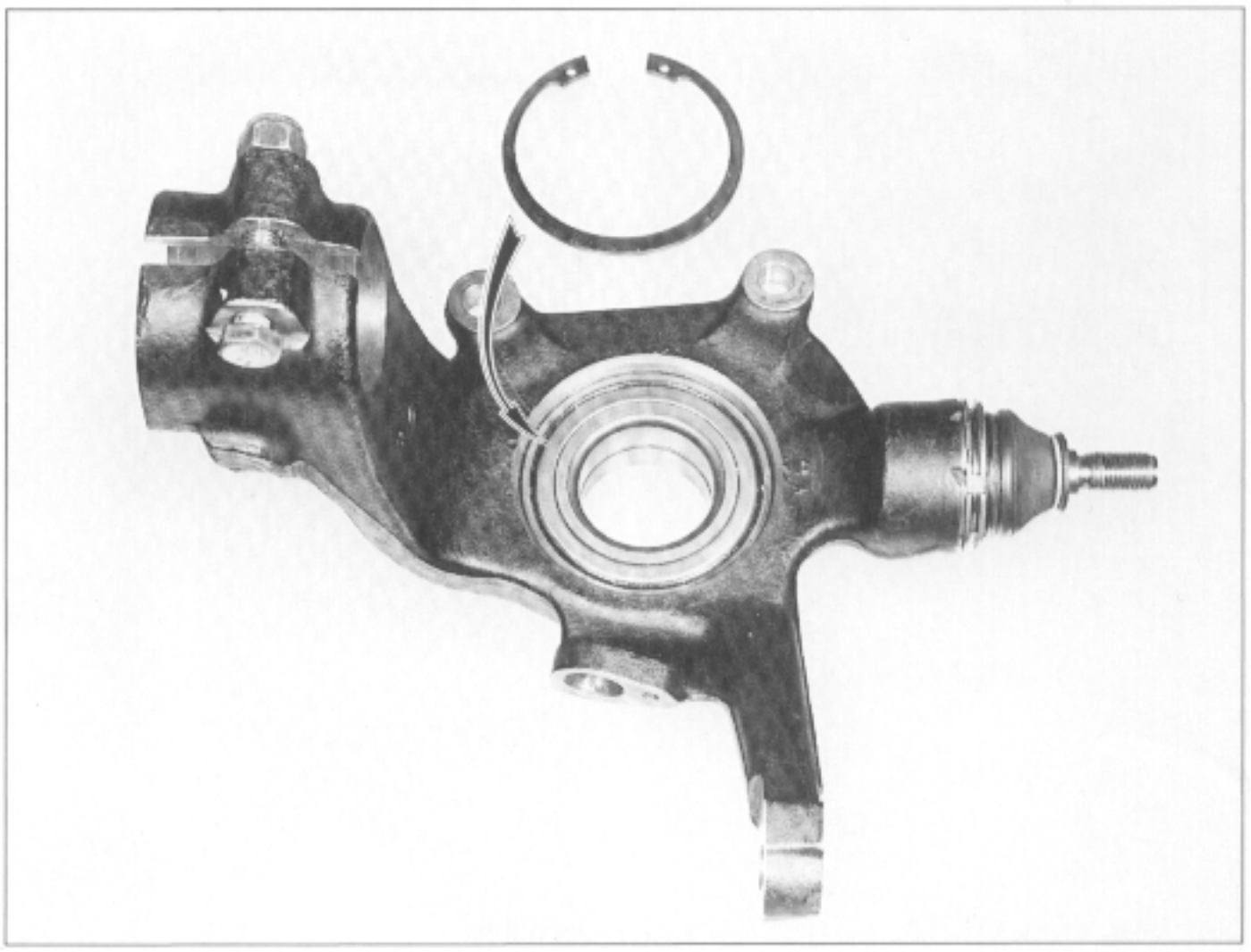


88-711

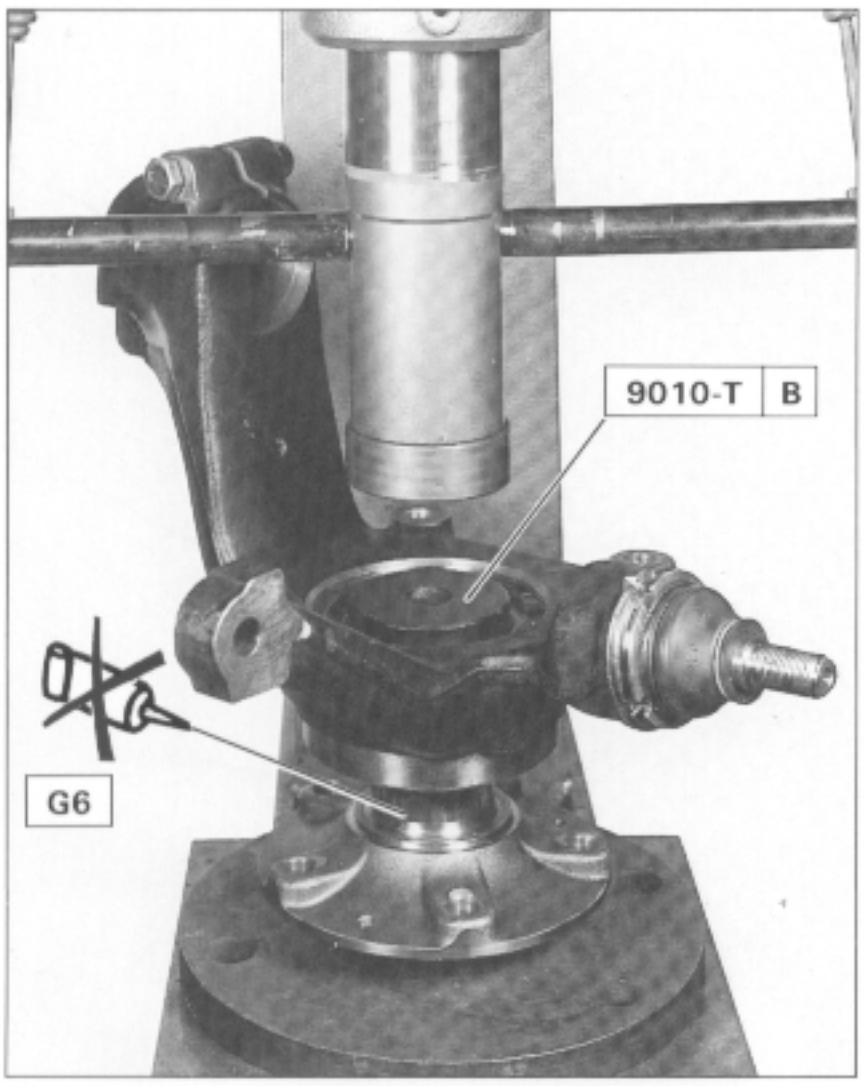


88-707

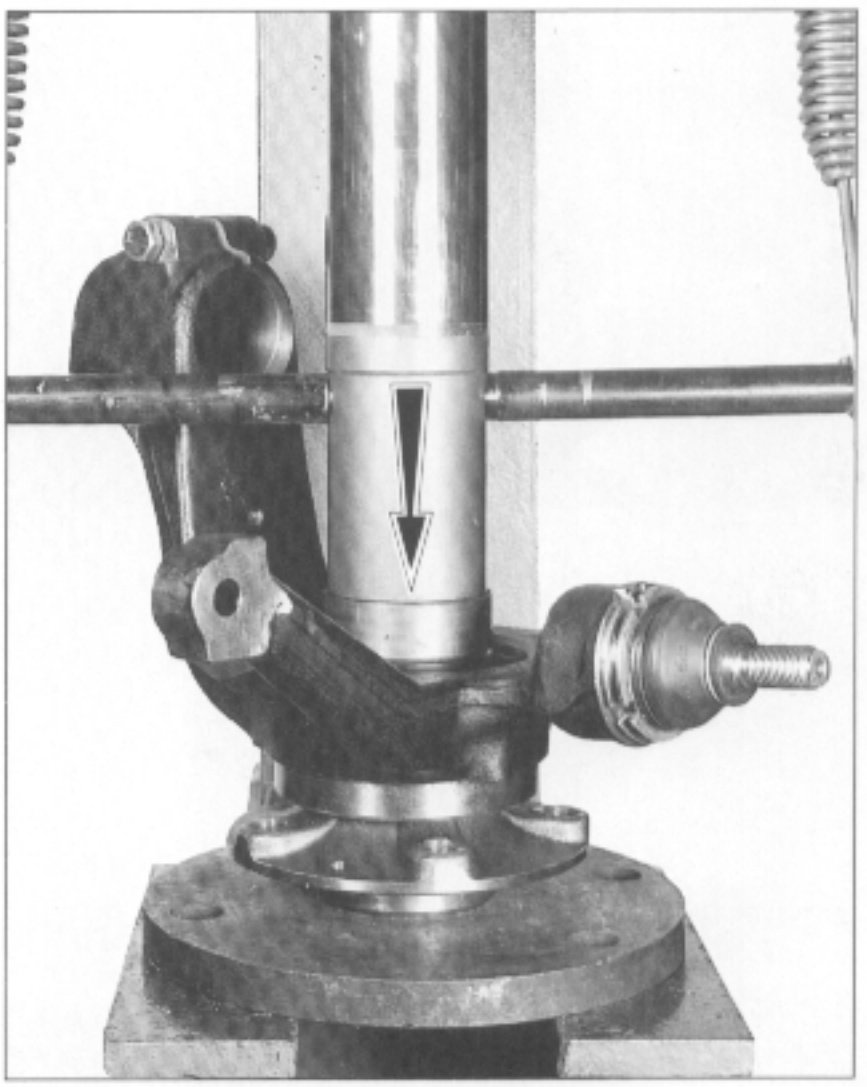
www.WorkshopManuals.co.uk



88-749



88-706



88-709

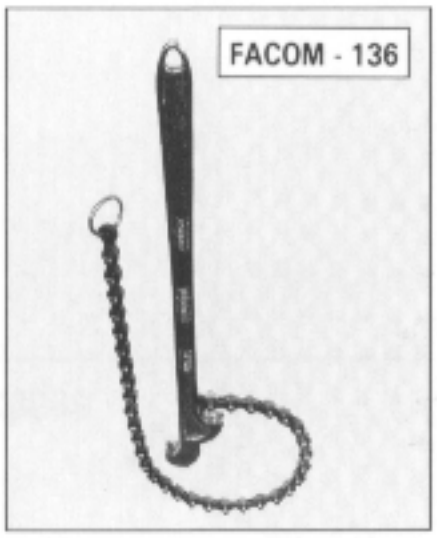
www.WorkshopManuals.co.uk

LIST OF OPERATIONS : REAR AXLE

OPERATION NUMBER	DESCRIPTION	VEHICLE	
		4 cyl. PETROL	6 cyl. PETROL
XM.420-000/1	Operation list : Rear axle		
XM.420-000/2	Tools	X	X
XM.420-00/1	Specifications and special points of the rear axle	X	X
XM.422-1/1	Removing and refitting a rear arm	X	X
XM.422-3/1	Overhauling a rear axle arm	X	X
XM.426-1/1	Removing and refitting a rear wheel hub	X	X
XM.426-3/1	Overhauling a rear wheel hub	X	X

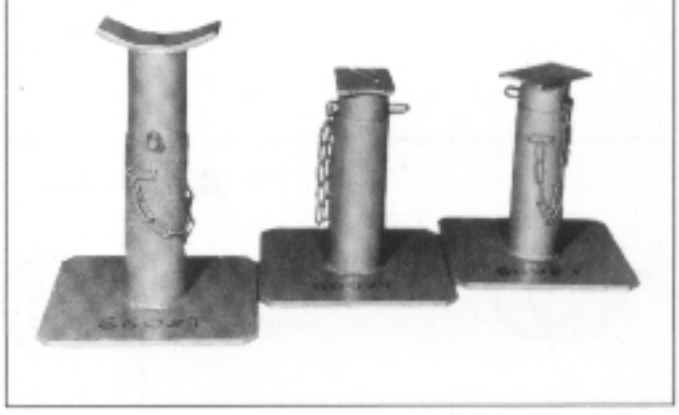
www.WorkshopManuals.co.uk

FACOM - 136



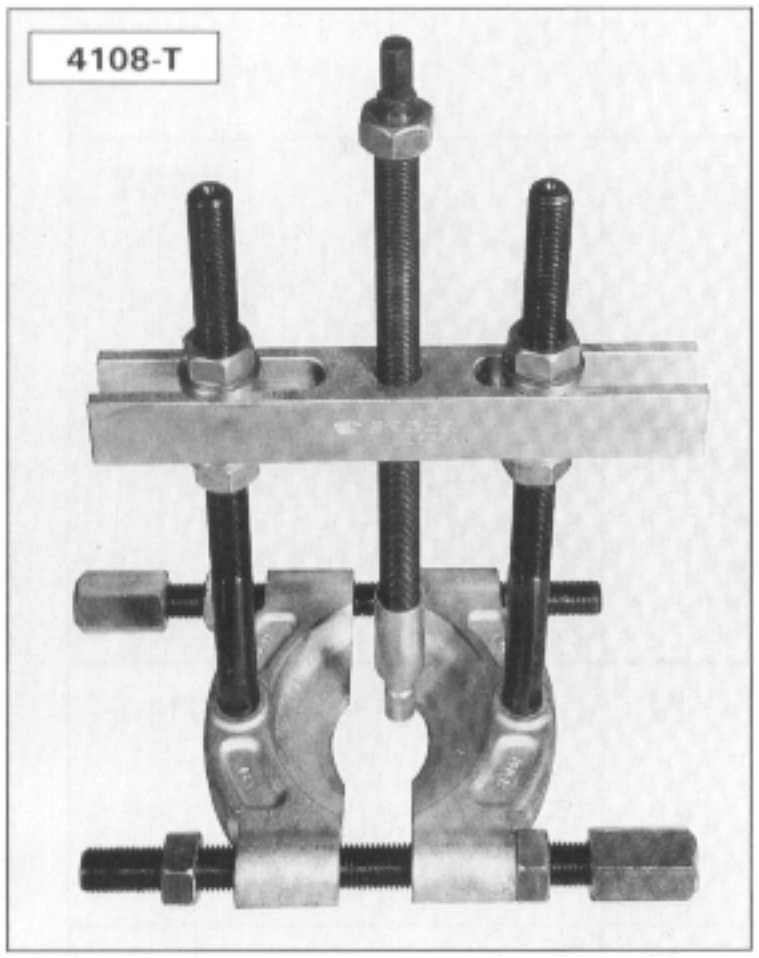
82-827

6602-T



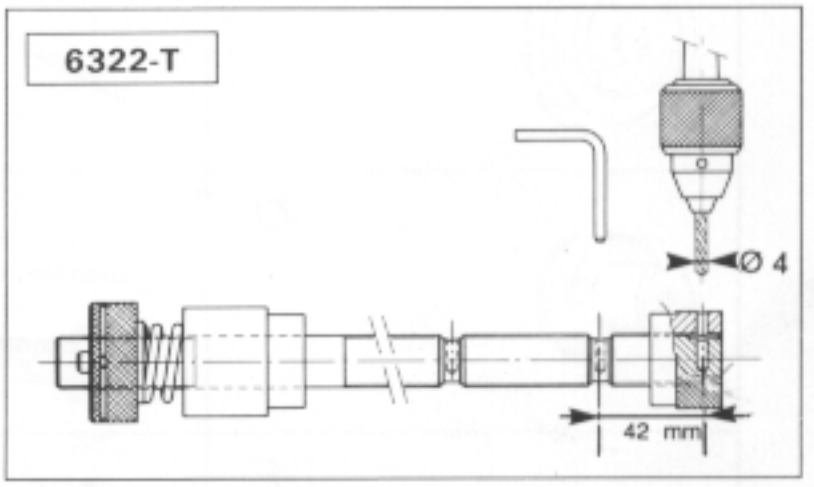
13-815

4108-T



88-120

6322-T



BX 41-6

1671-T



13-551

1672-T



88-714

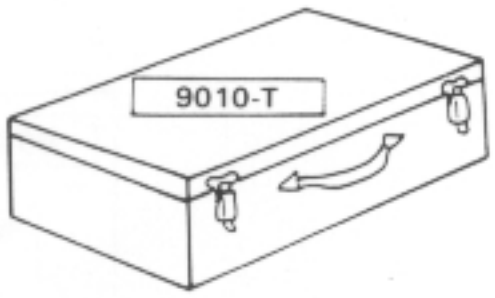
6308-T

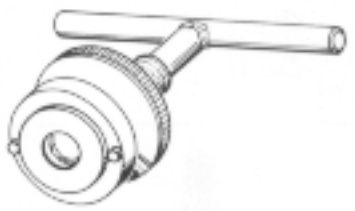
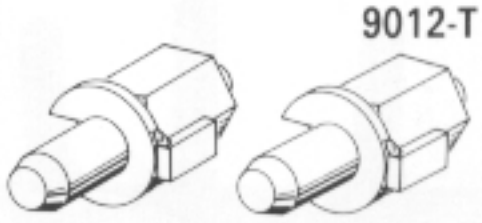
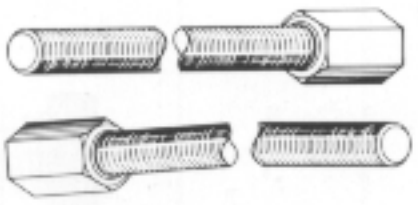
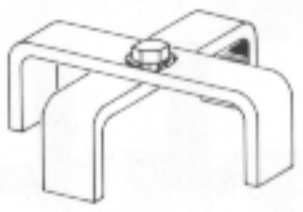
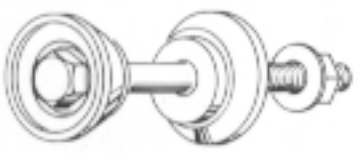
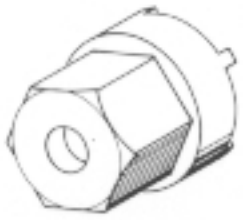


88-713

www.WorkshopManuals.co.uk



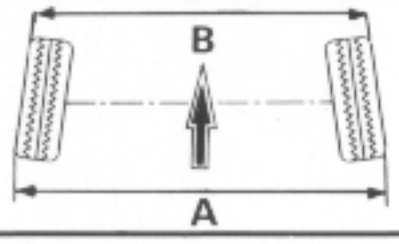


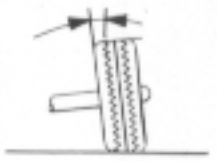
A 	J 	80902-K 
B 	K 	9011-T 
C 	L 	9012-T 
D 	M 	9013-T 
E 	N 	9014-T 
F 	P 	
G 	Q 	
H 	7103-T 	

MR.630-69/27

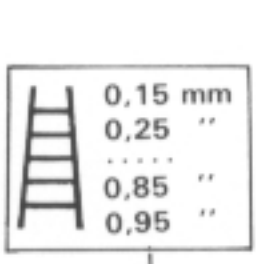
www.WorkshopManuals.co.uk







XM - TT	 A > B +0,5 mm ←→ +6,5 mm (+0°5′ ←→ +1°)	 0° 50′ ± 20′



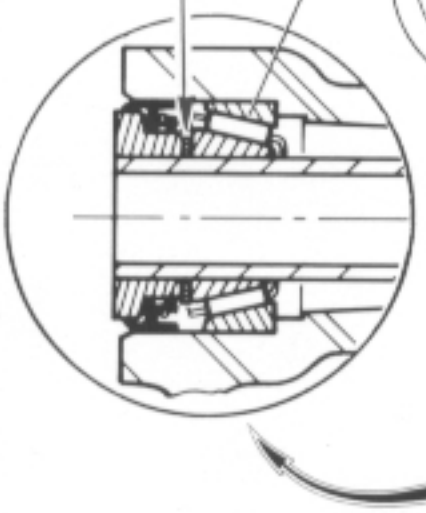
BL : Ø 22 x 41 x 14,5

BK : Ø 22 x 46 x 15,5

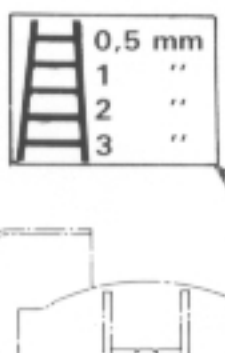
BL : 0°

BK : 30°

6 mdaN



13 mdaN

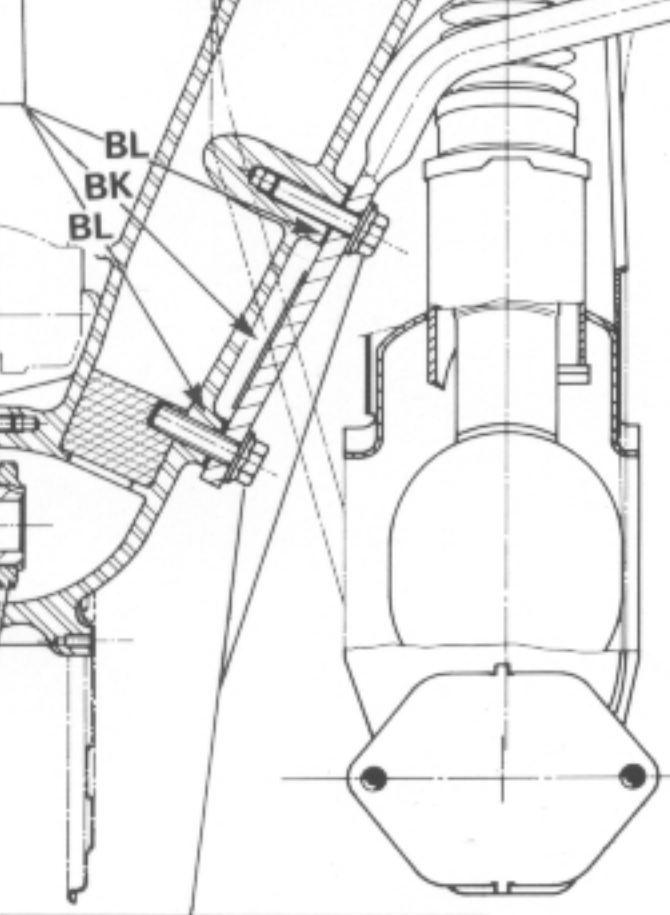


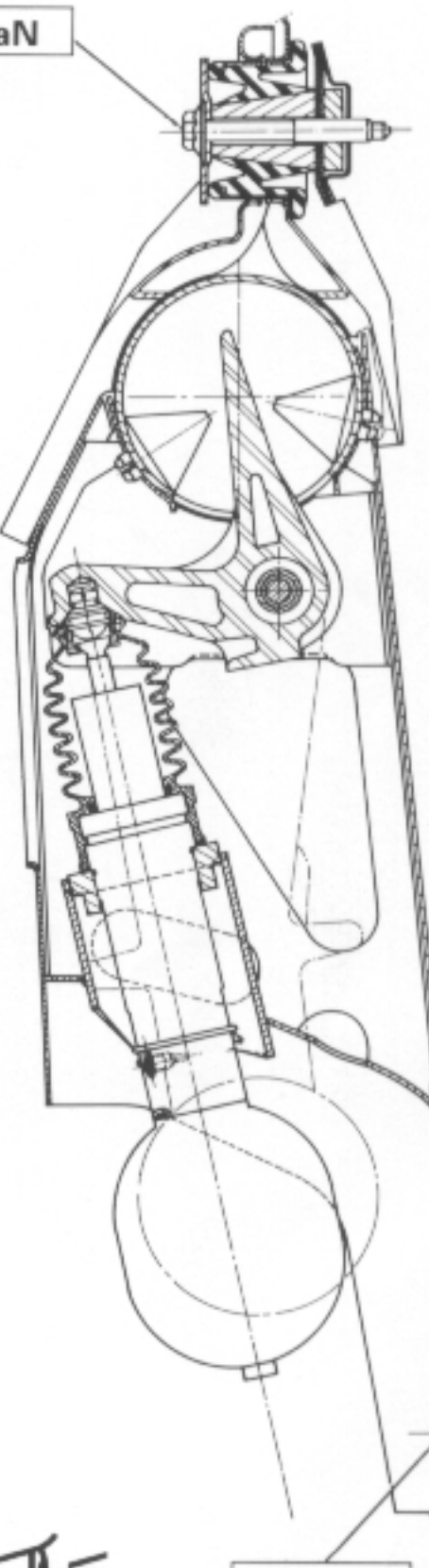
BL
BK
BL

3,2 mdaN

9 mdaN

38 mdaN





3 mdaN

4 mdaN

BK +

BL = M.12.125 : 8 mdaN

BK : M.12.175 : 10 mdaN

Ø

9 XM 430-00/1 2

www.WorkshopManuals.co.uk

REMOVAL

- Raise the rear of the vehicle, with the wheels free from the ground.
- Remove the road wheel.
- Depressurize the pressure-regulator
- Set the height control to the "LOW" position

Remove, Fig. I : the protective panel **(2)**

A.B.S. equipped vehicle

Remove, Fig. I, II : the sensor **(7)** and the protective shield **(3)** ; draw apart the panel **(2)** and sensor, releasing the leads from the maintaining clips.

Remove the cylinder and the pneumatic-unit *(see (9) 433-1/2).*

Uncouple, Fig. I : the supply pipe connection, **(1)**.

Separate, Fig. III : the A.B.S. harness and the supply pipe from the arm.

Remove, Fig. III : the fixing lugs **(9)** and **(10).**

Set the height control to the "NORMAL DRIVING" position.

Uncouple, Fig. II : the anti-roll bar **(4)**. To do so, remove the screws **(5)** and **(6)** and keep the shims situated under each screw ; *(maintain the anti-roll bar at the rear by hooking it up.)*

Remove, Fig. III : the nut **(8)** *(24 mm accross flat)* and shaft.

Withdraw the arm, **Fig. IV**.

REFITTING

Refit the arm, **Fig. IV**
(opposite procedure to removal).

- Apply grease along the entire length of the shaft.

Refit, Fig. III, the *NEW NYLSTOP* nut **(8)**.

Tighten to : 13 mdaN

Recouple, Fig. II : the anti-roll bar **(4)** ; lubricate and refit the screws **(5)** and **(6)** with the shims found when dismantling.

Tighten to : 9.5 mdaN

Reposition the fixing lugs **(9)** and **(10)**, **Fig. III**.

Clip, Fig. III : the A.B.S. harness and the supply pipe to the arm.

Recouple, Fig. I : the supply pipe **(1)**, equipped with a *NEW gasket.*

Refit, the cylinder and the hydropneumatic sphere.

Reinstall the protective panel **(2)**, **Fig. I**.

A.B.S. equipped vehicle, Fig. II :
(lubricate the sensor body with grease).

Place the sensor **(7)** with its protective shield **(3)**

Tighten the screw to : 0.8 mdaN

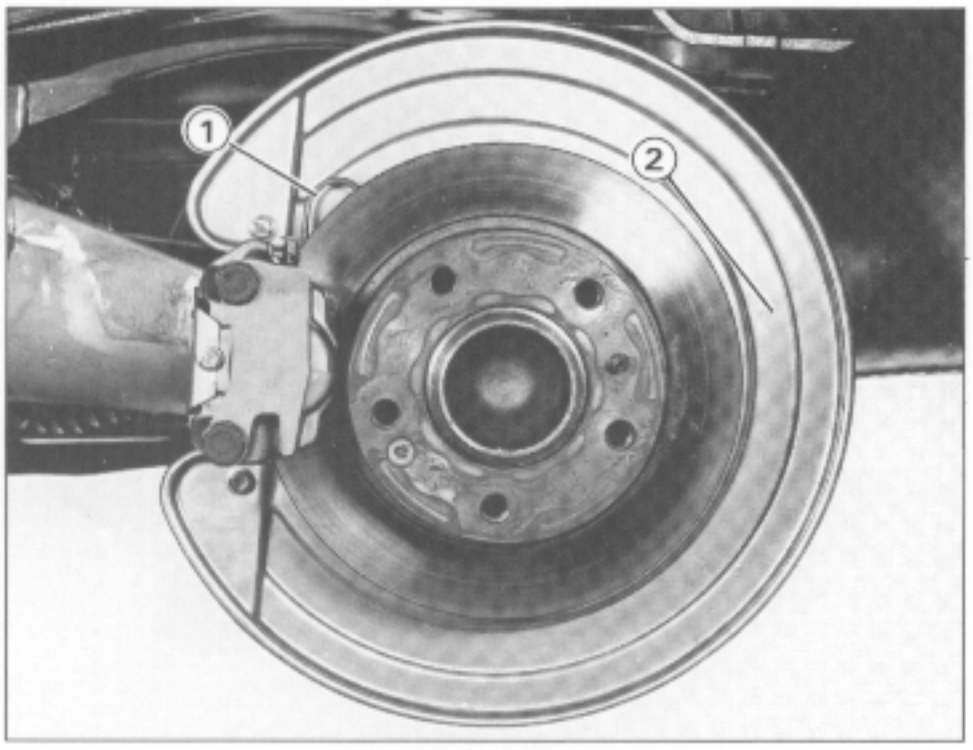
Position and clip : the A.B.S. leads to the sheet-metal **(2)**.

Bleed the rear brakes. (*See (11) 453-0/1).*

Refit the wheel.

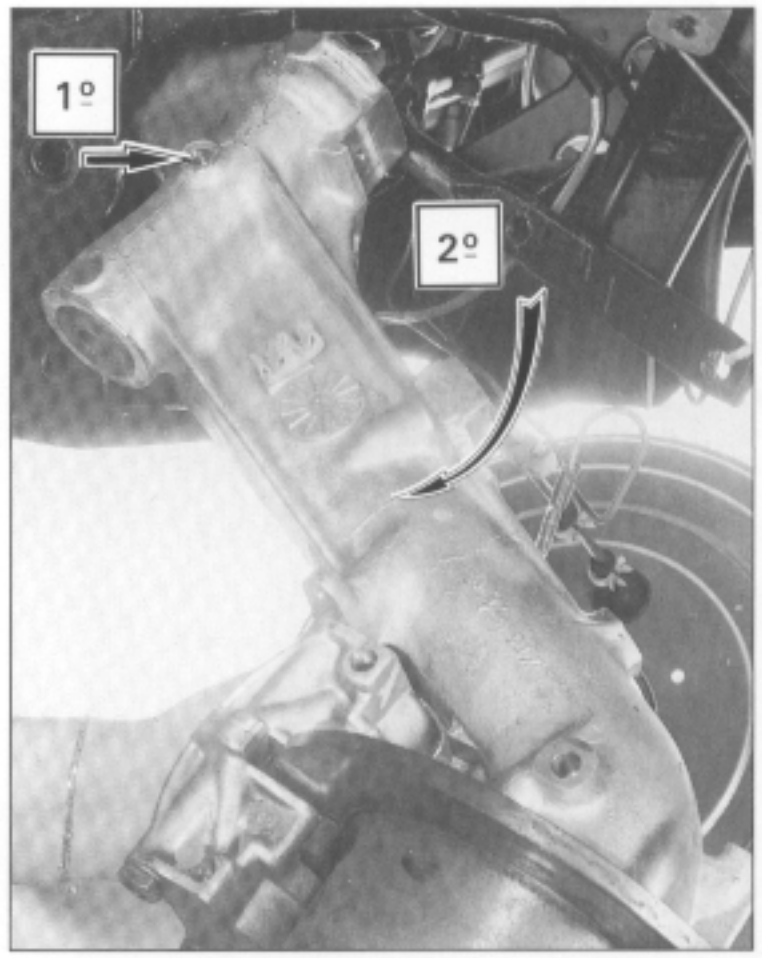
Lower the vehicle to the ground.

www.WorkshopManuals.co.uk



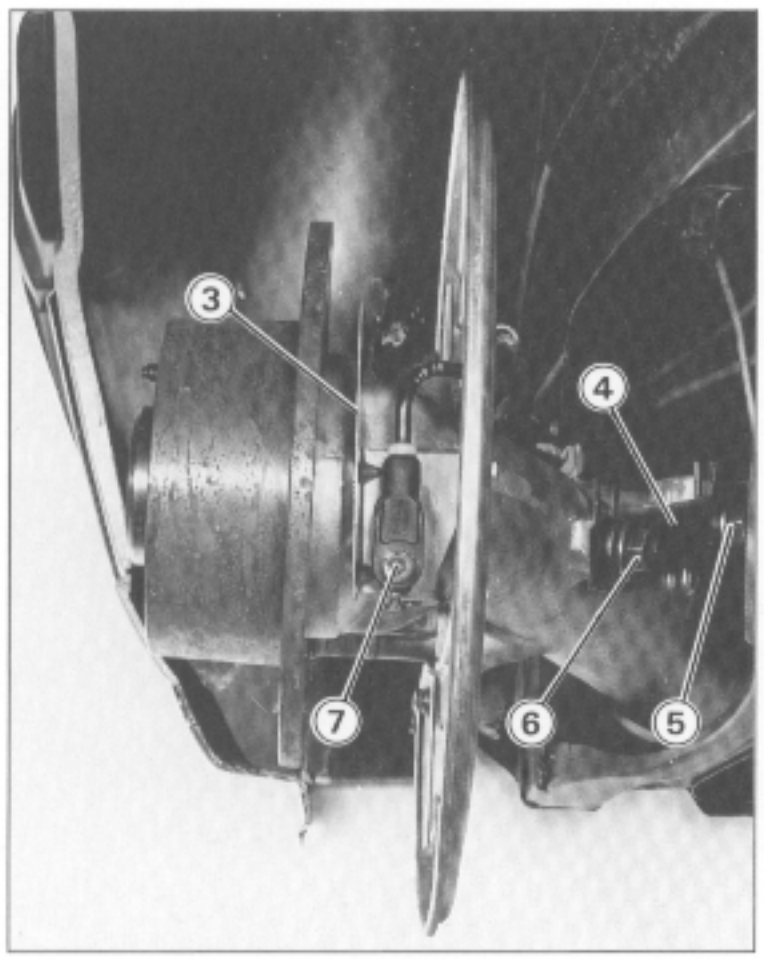
88-597

I



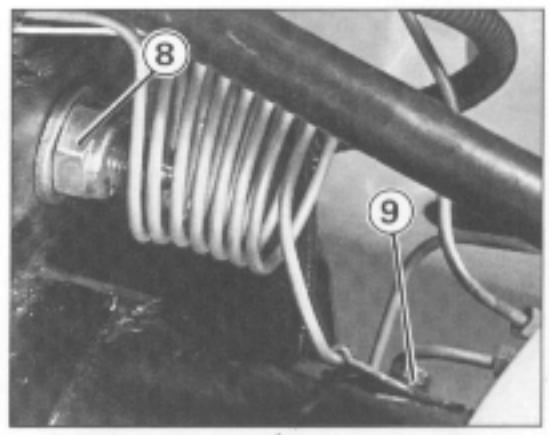
88-616

IV

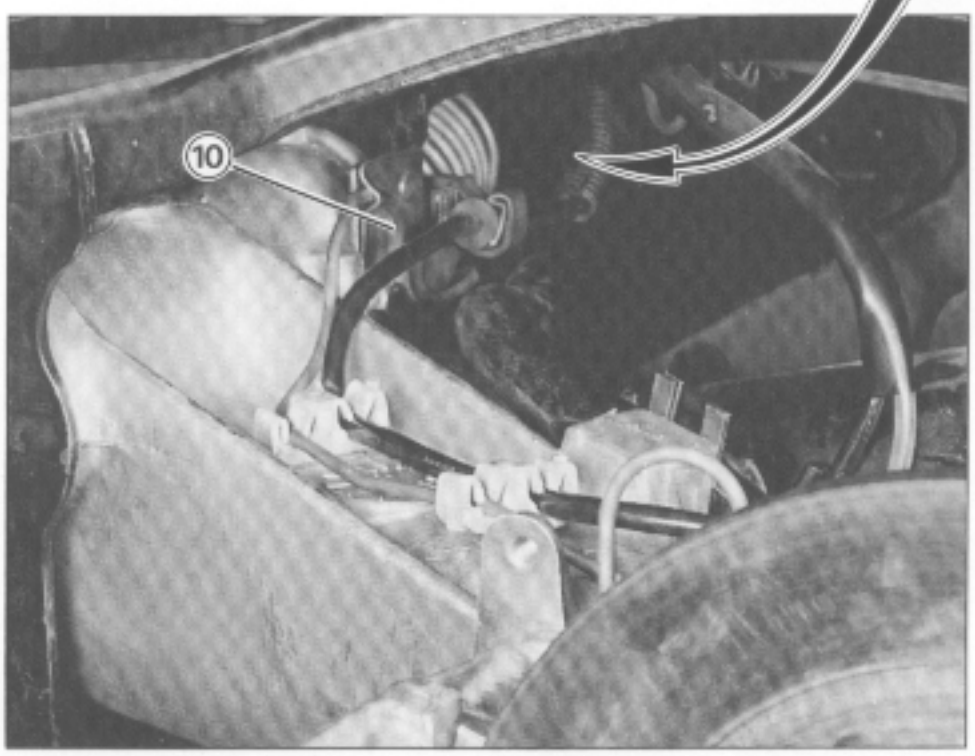


88-599

II



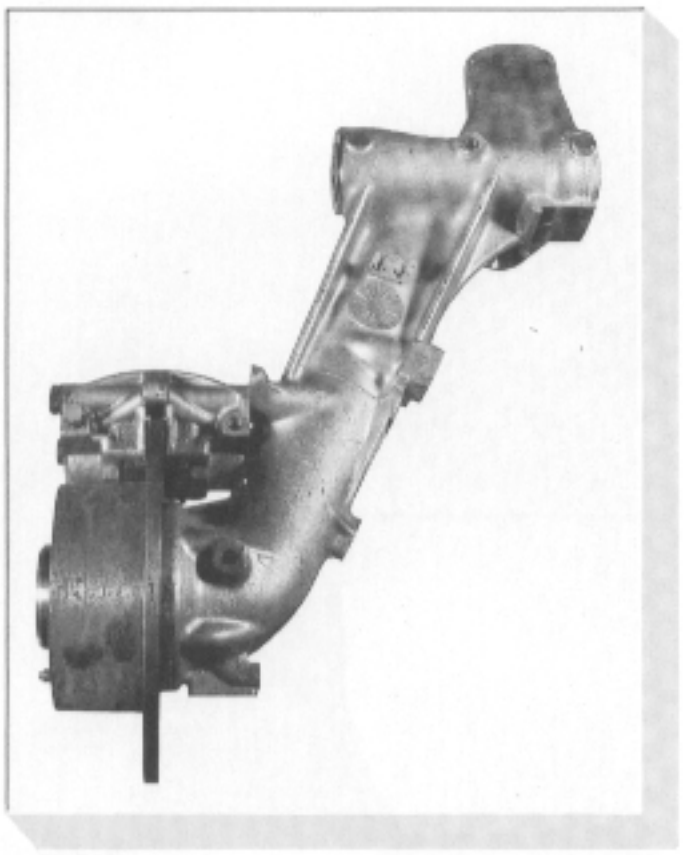
88-605



88-752

III

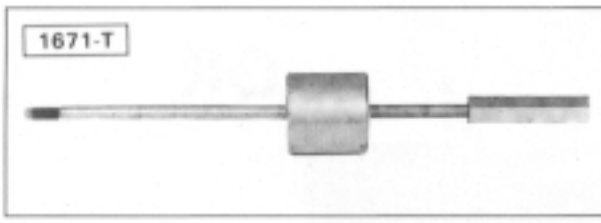
www.WorkshopManuals.co.uk



88-660

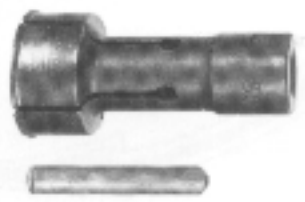


1671-T



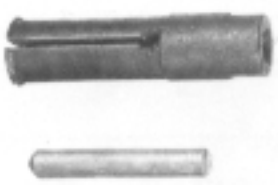
13-551

6308-T



88-713

1672-T



88-714



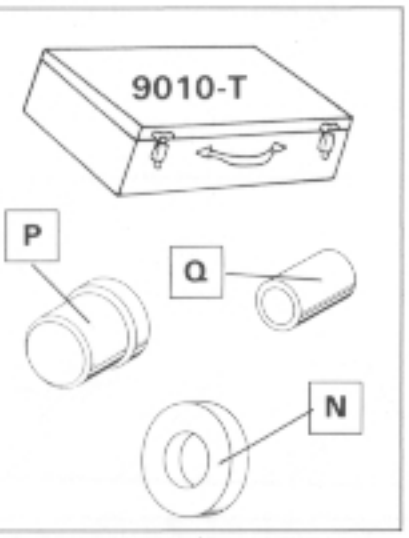
82-827

9010-T

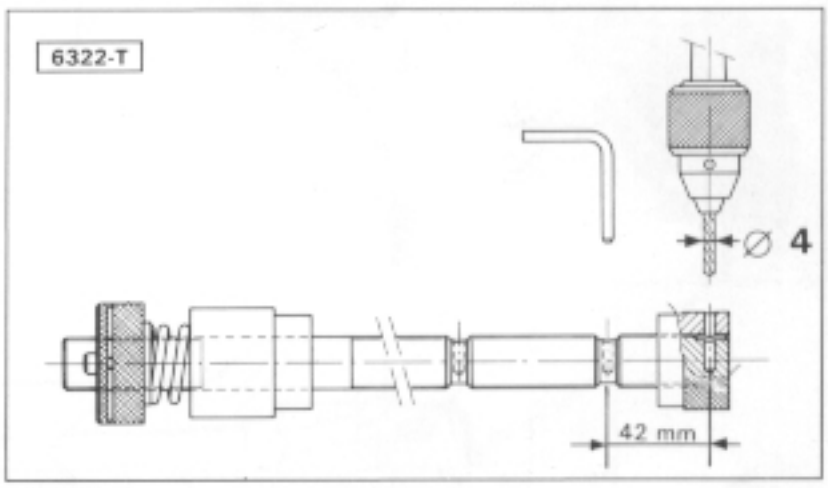
P

Q

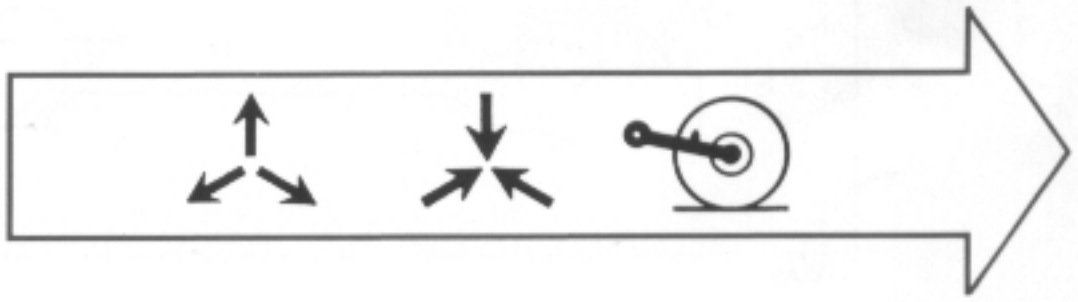
N



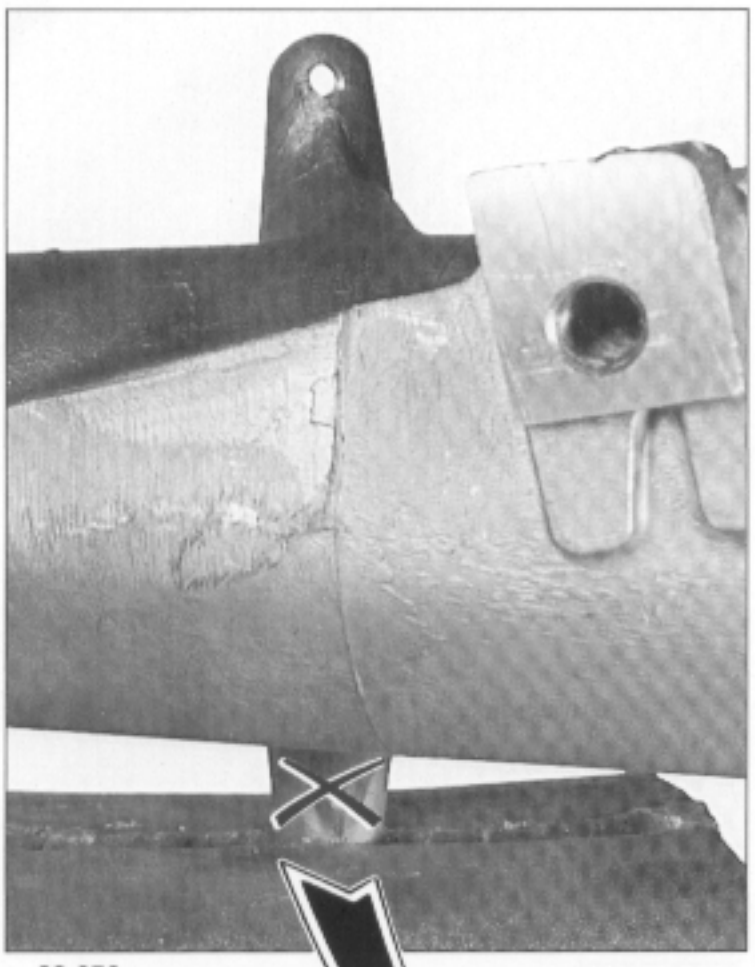
6322-T



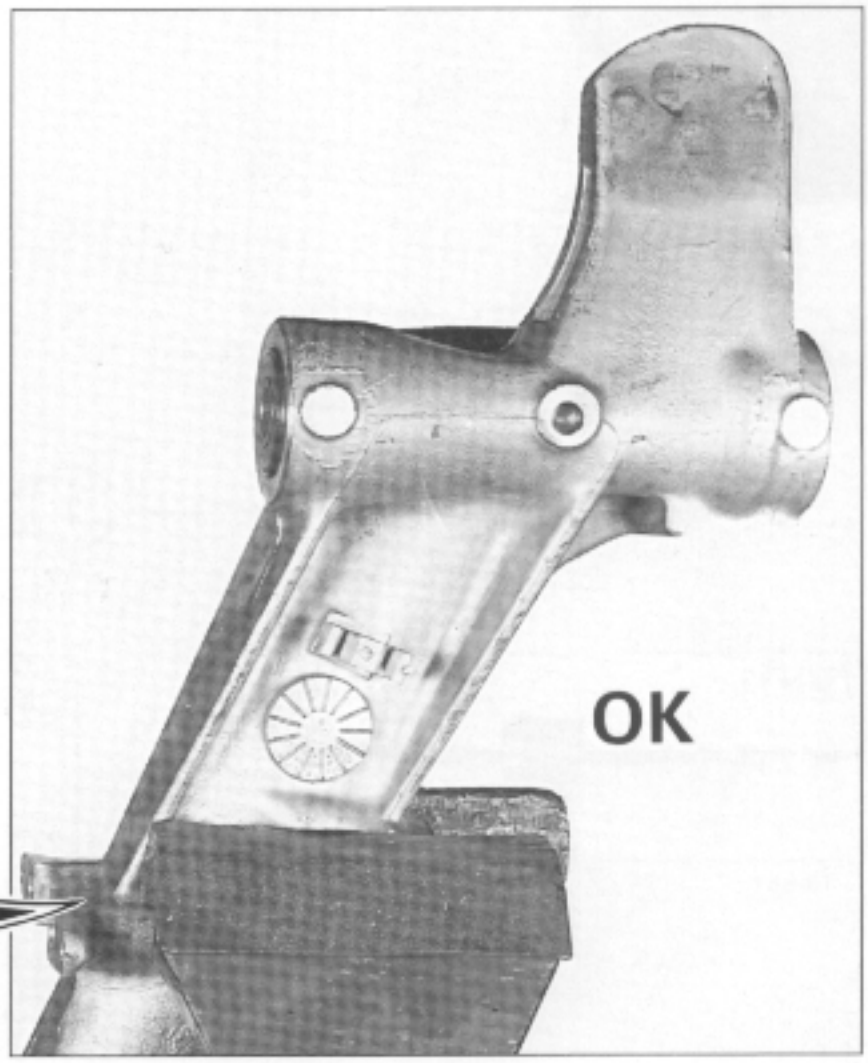
BX-41.6



www.WorkshopManuals.co.uk

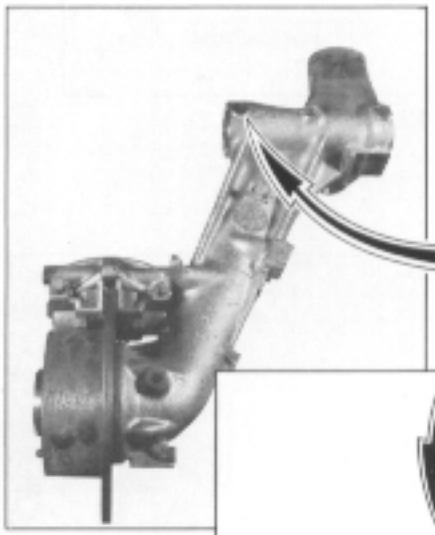


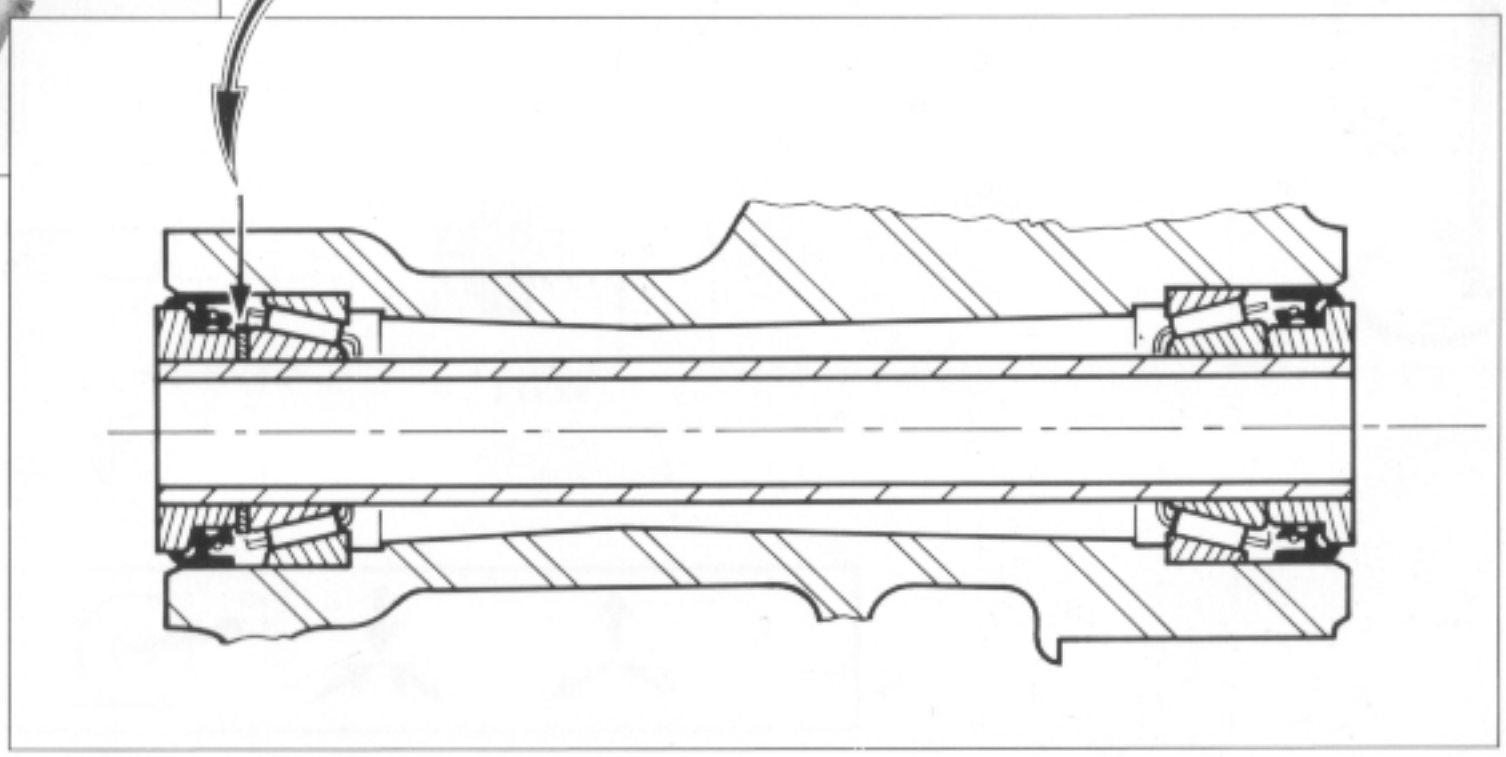
88-676



88-669

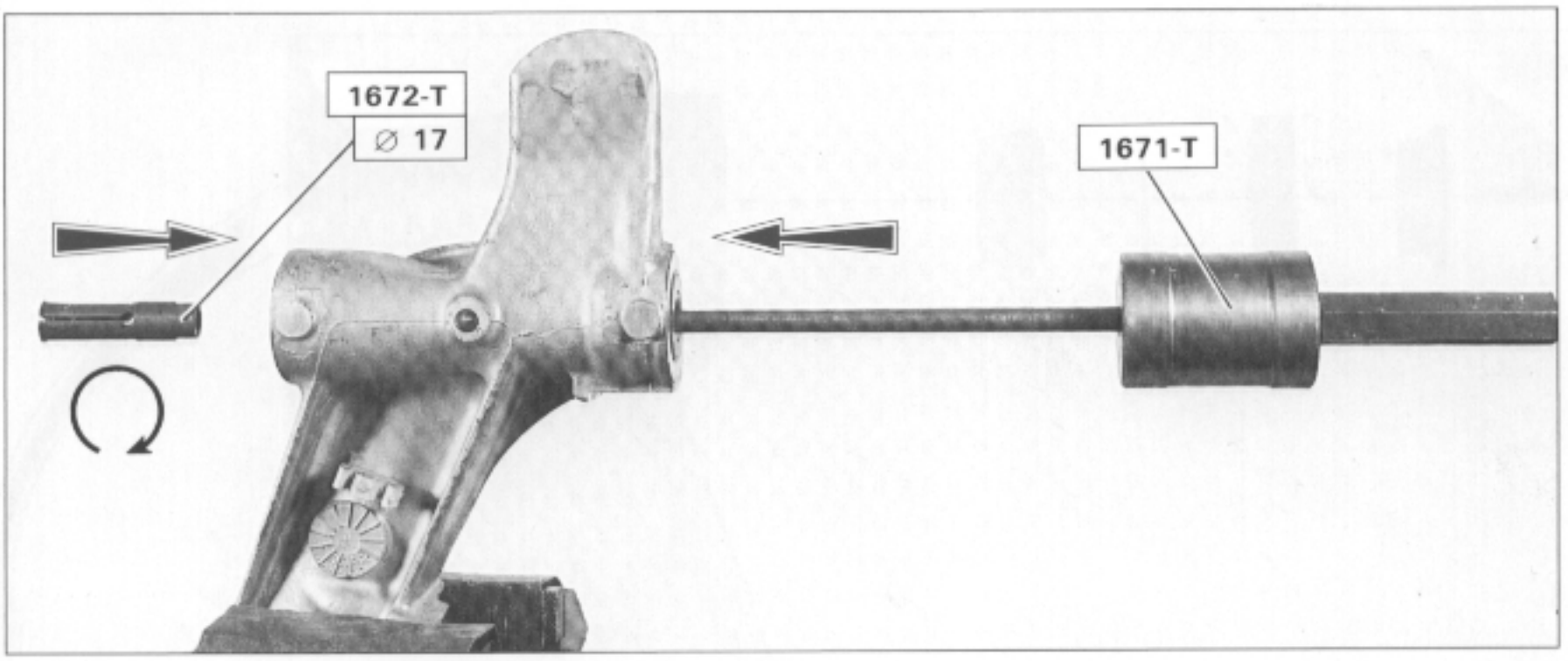
88-660



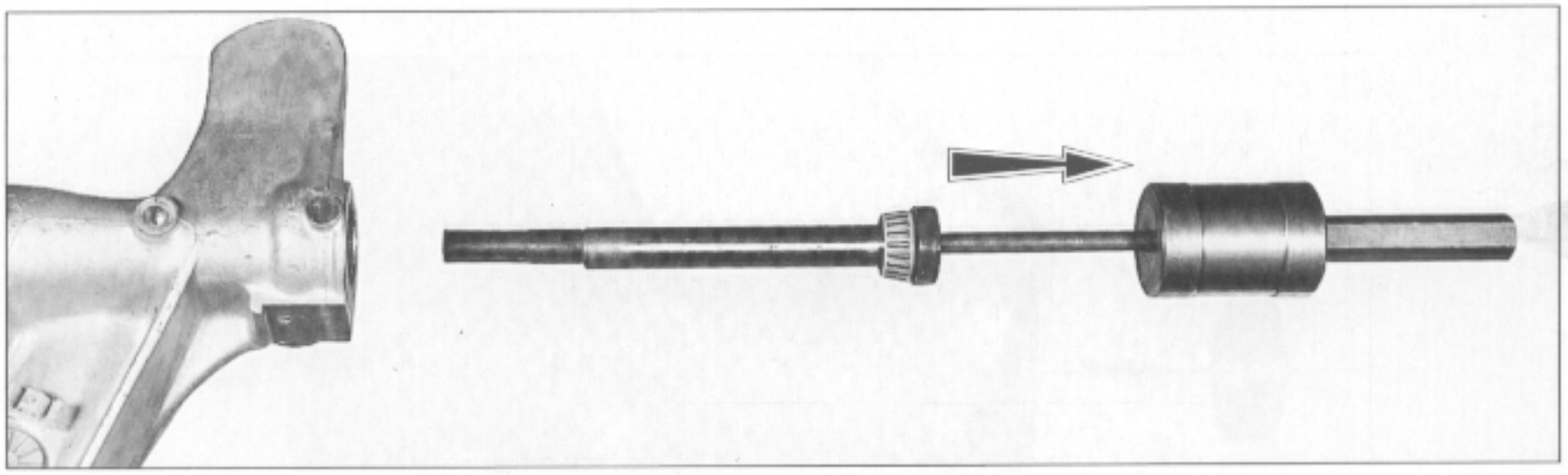


Y-42.2

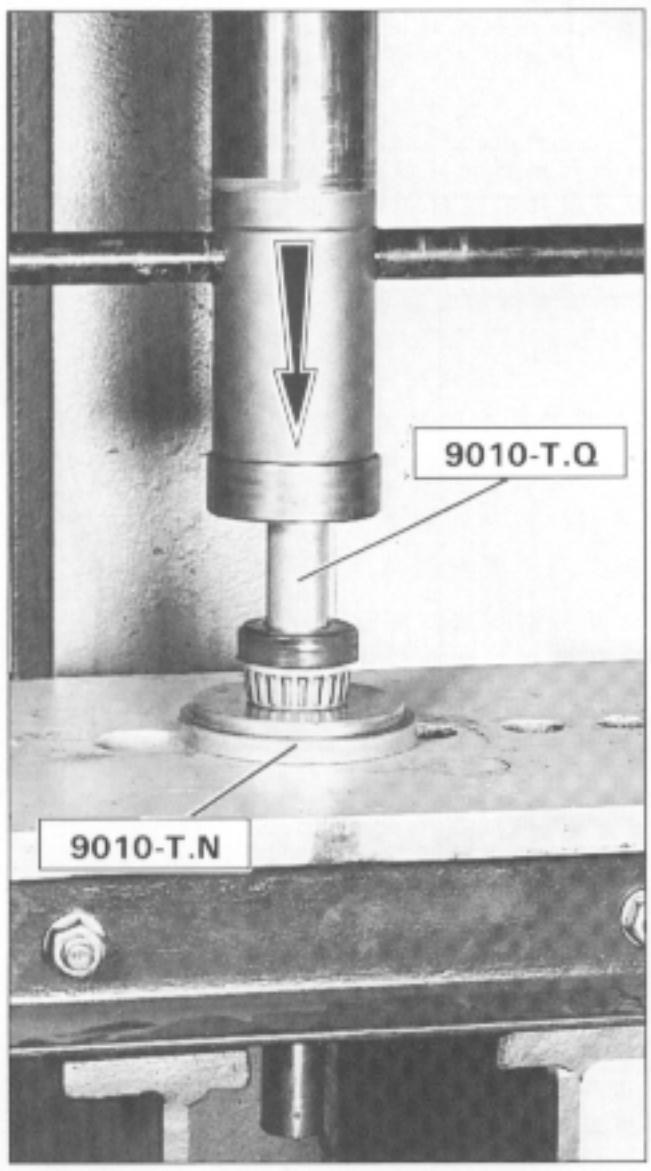
www.WorkshopManuals.co.uk



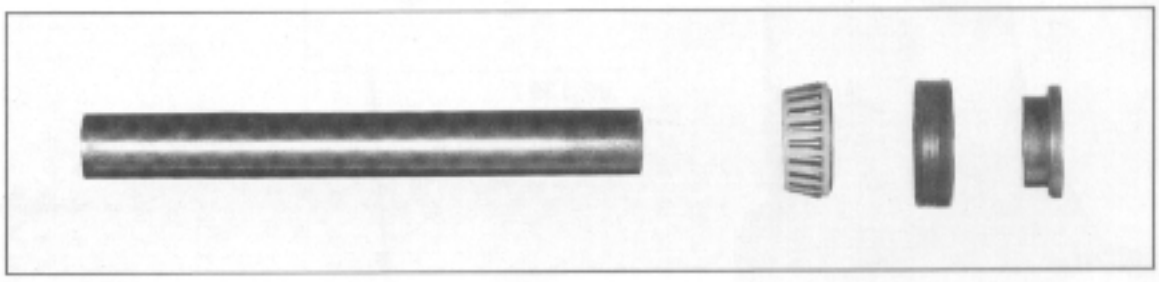
88-692



88-828

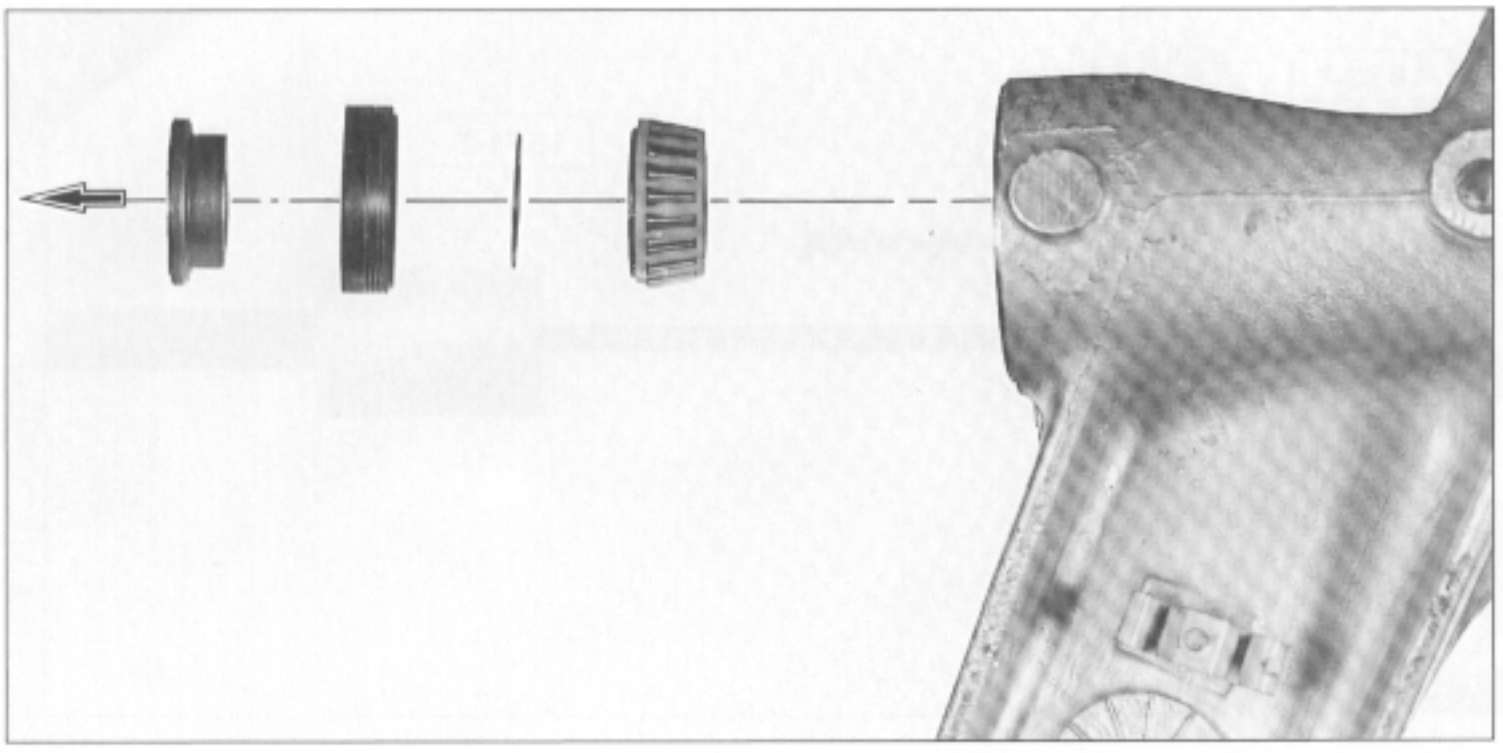


88-827

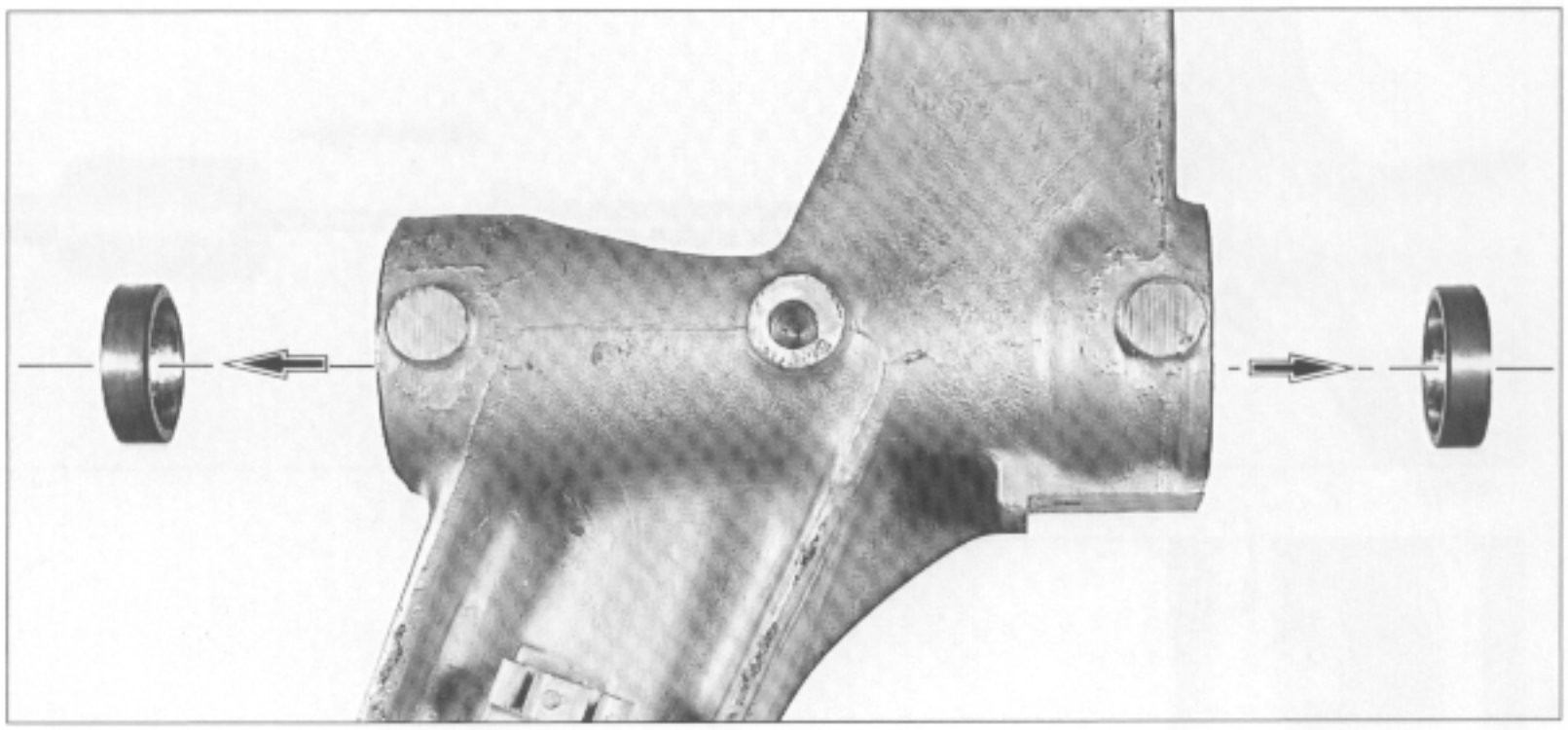


88-693

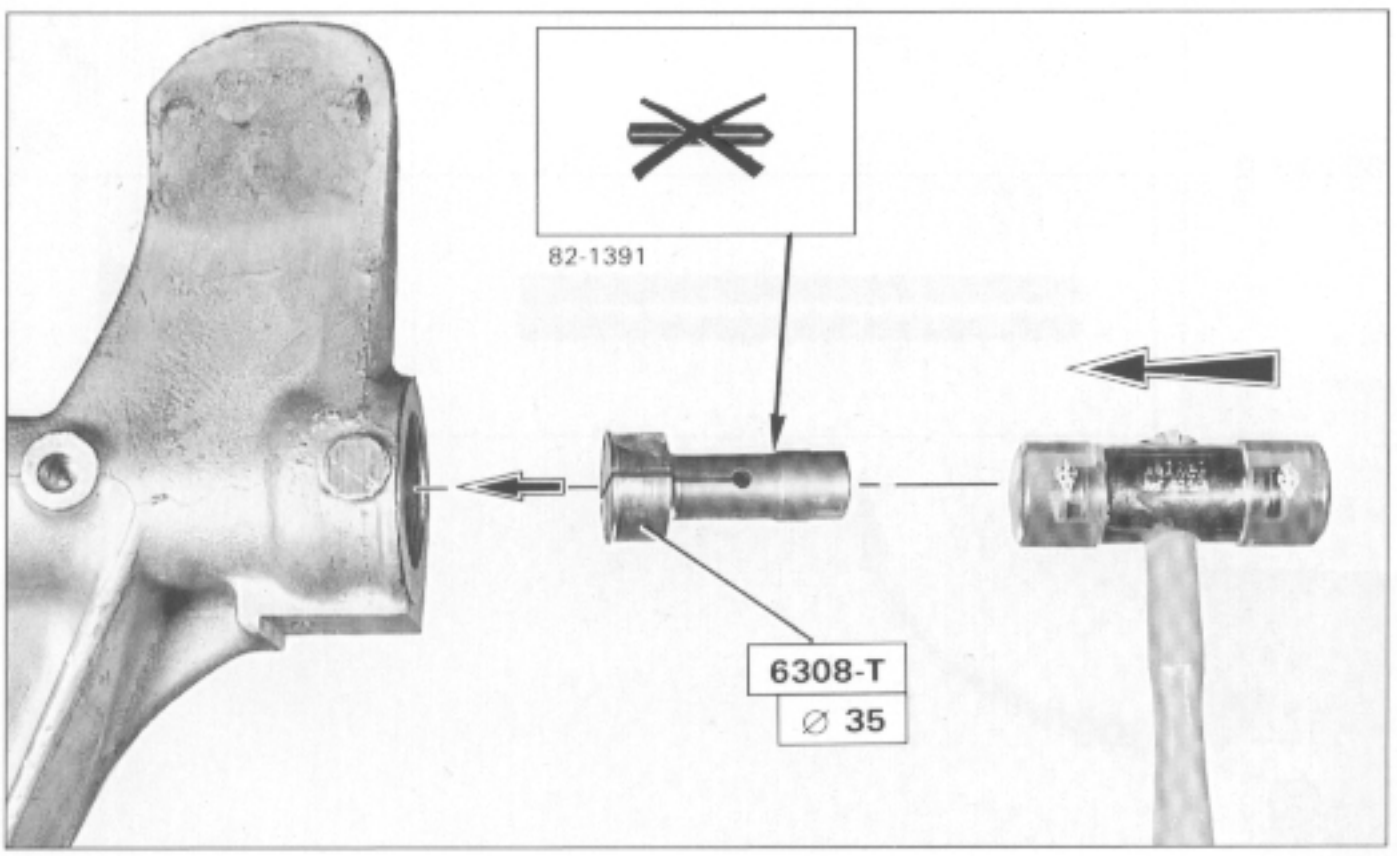
www.WorkshopManuals.co.uk



88-700

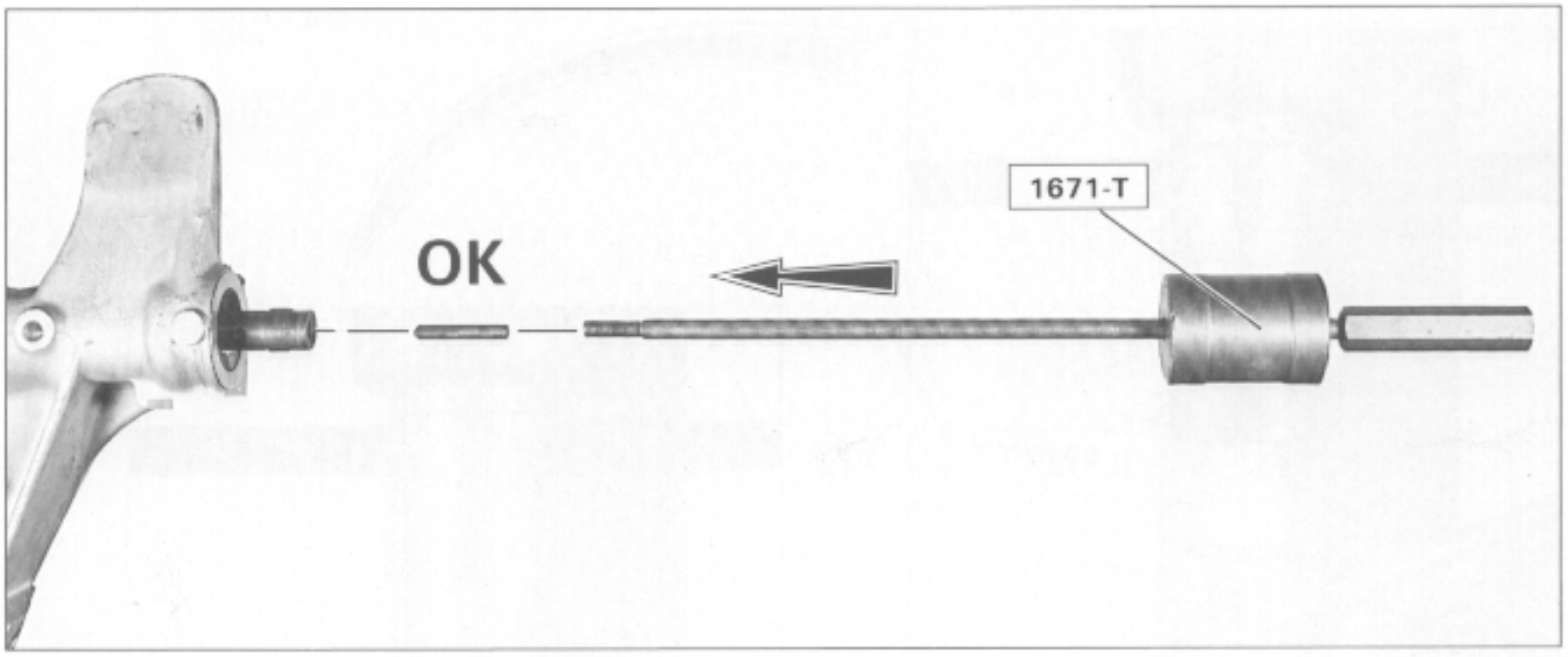


88-712

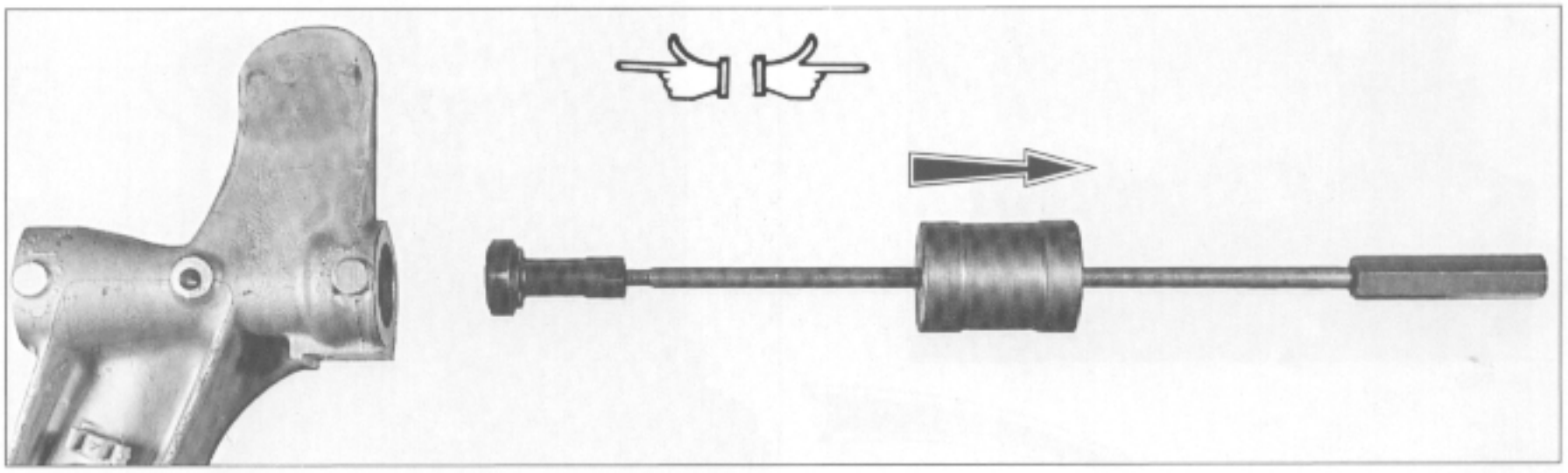


88-718

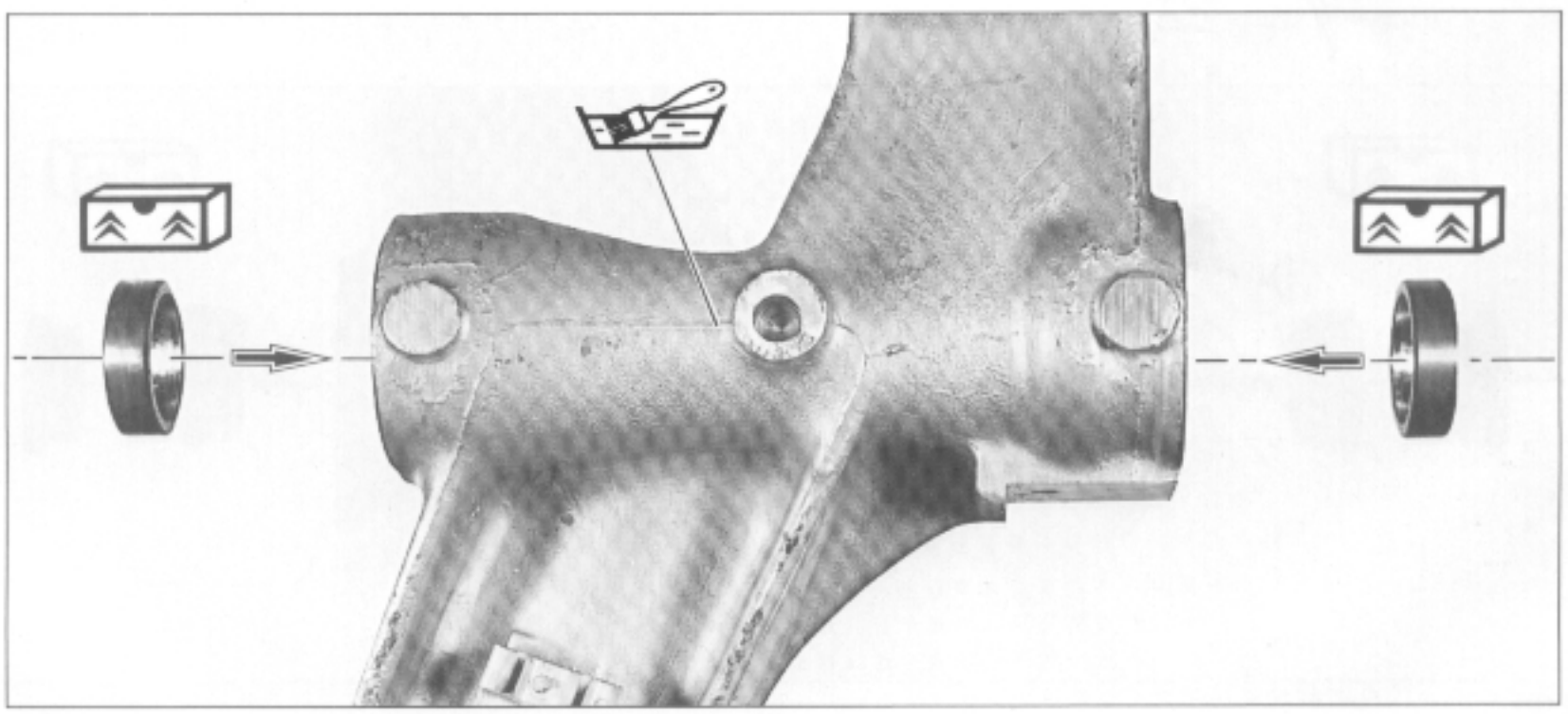
www.WorkshopManuals.co.uk



88-716

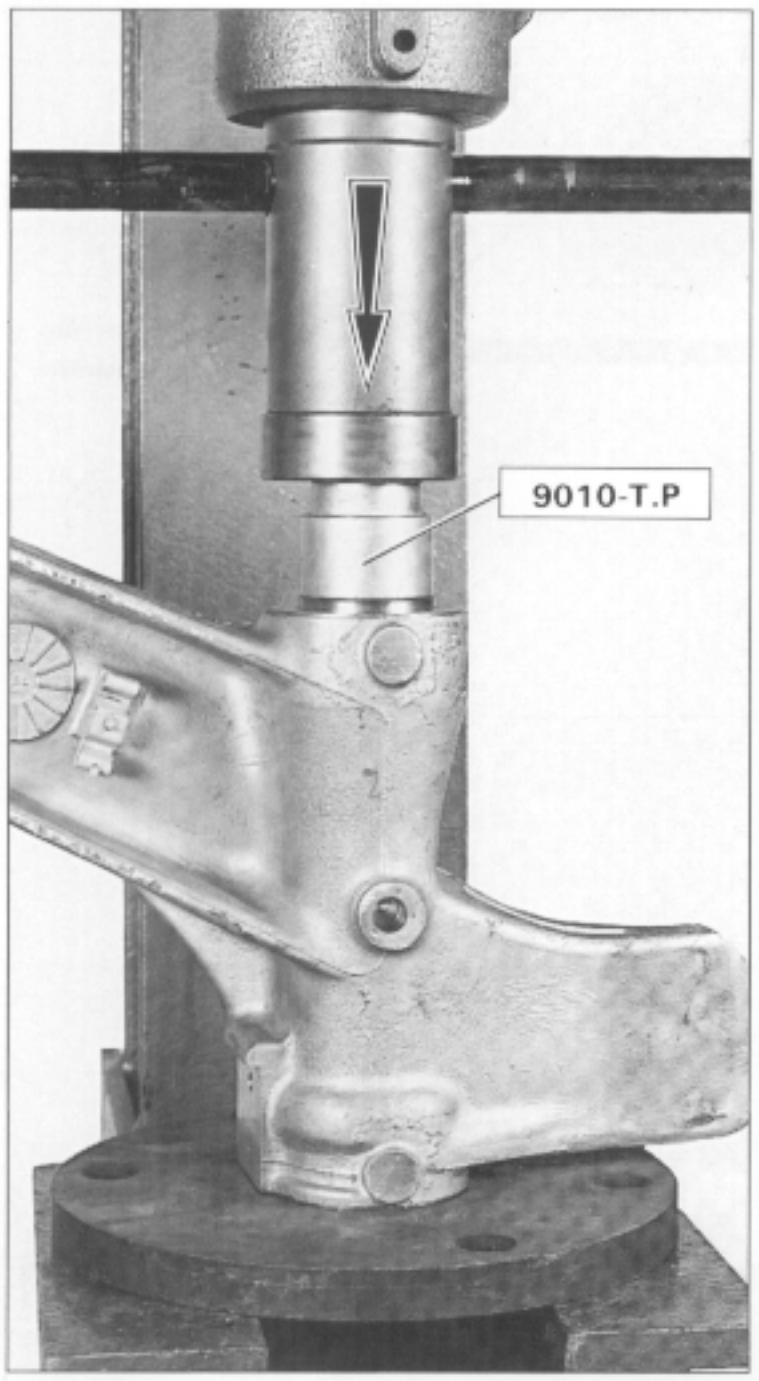


88-717

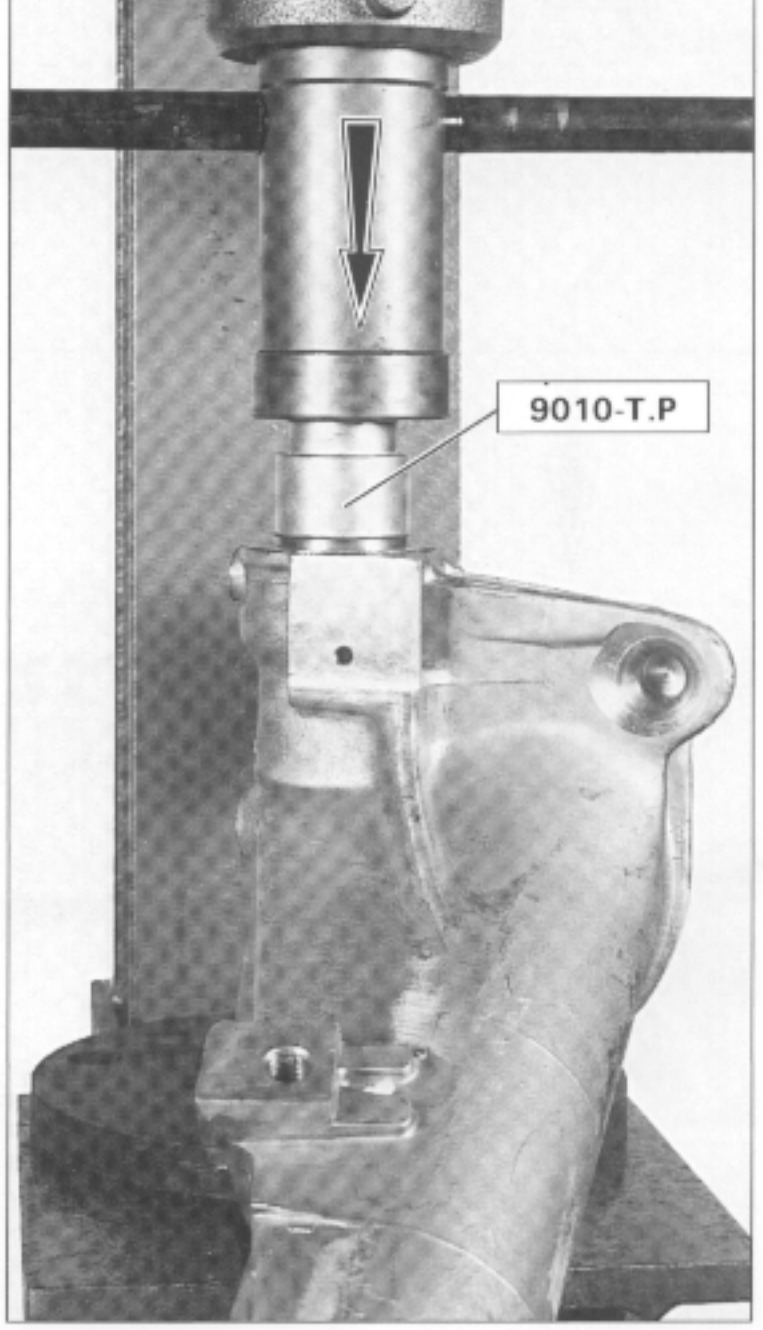


88-712

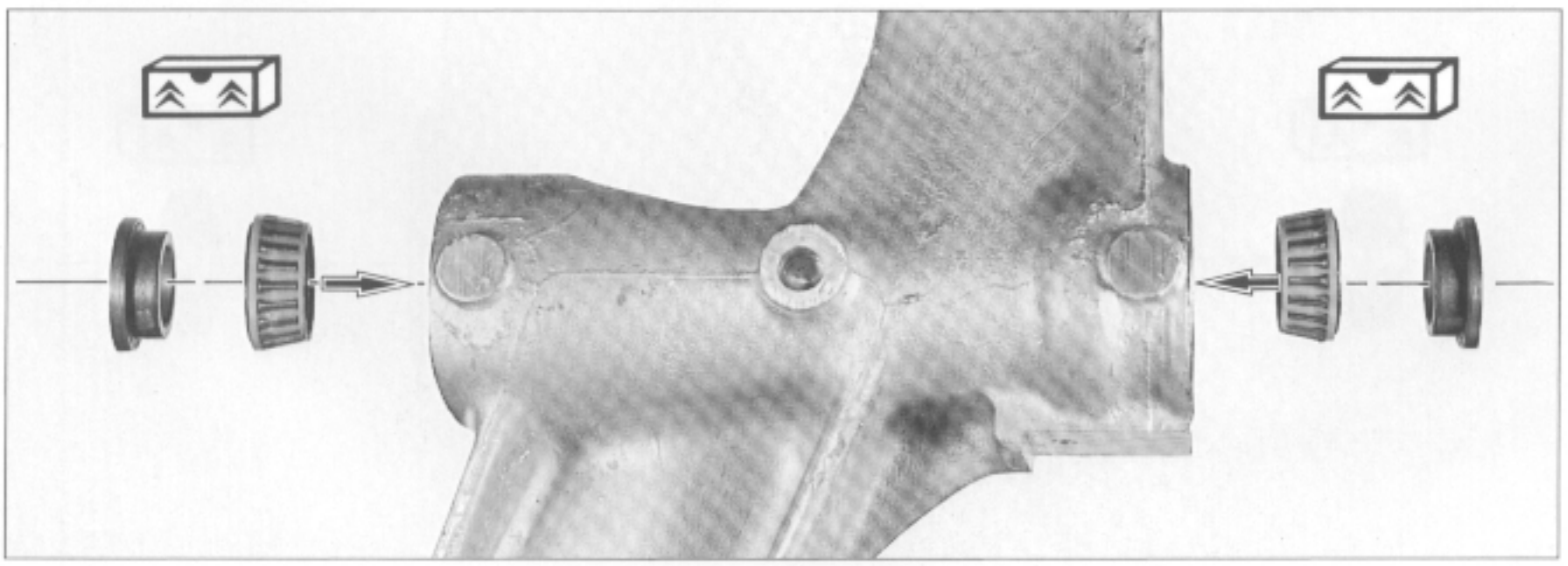
www.WorkshopManuals.co.uk



88-695

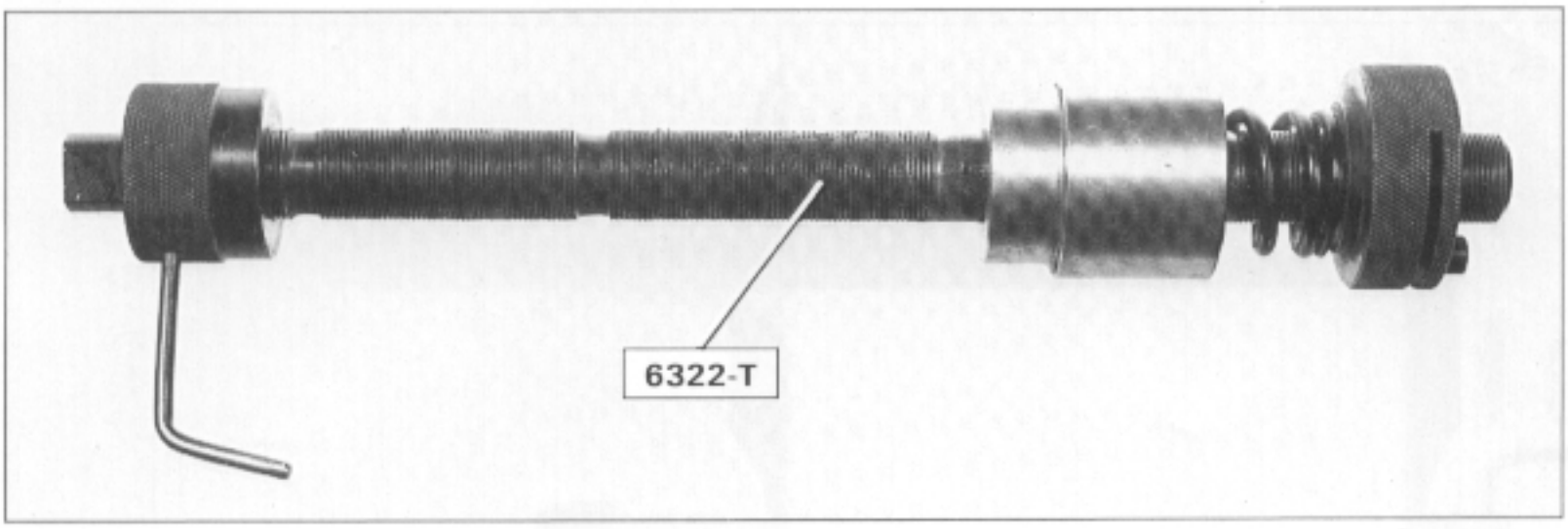


88-698

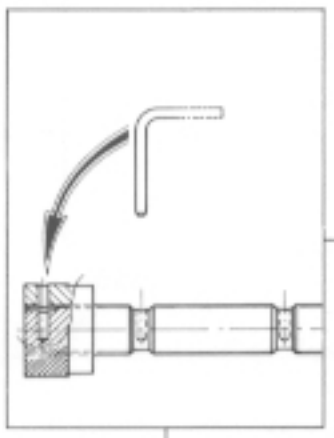


88-694

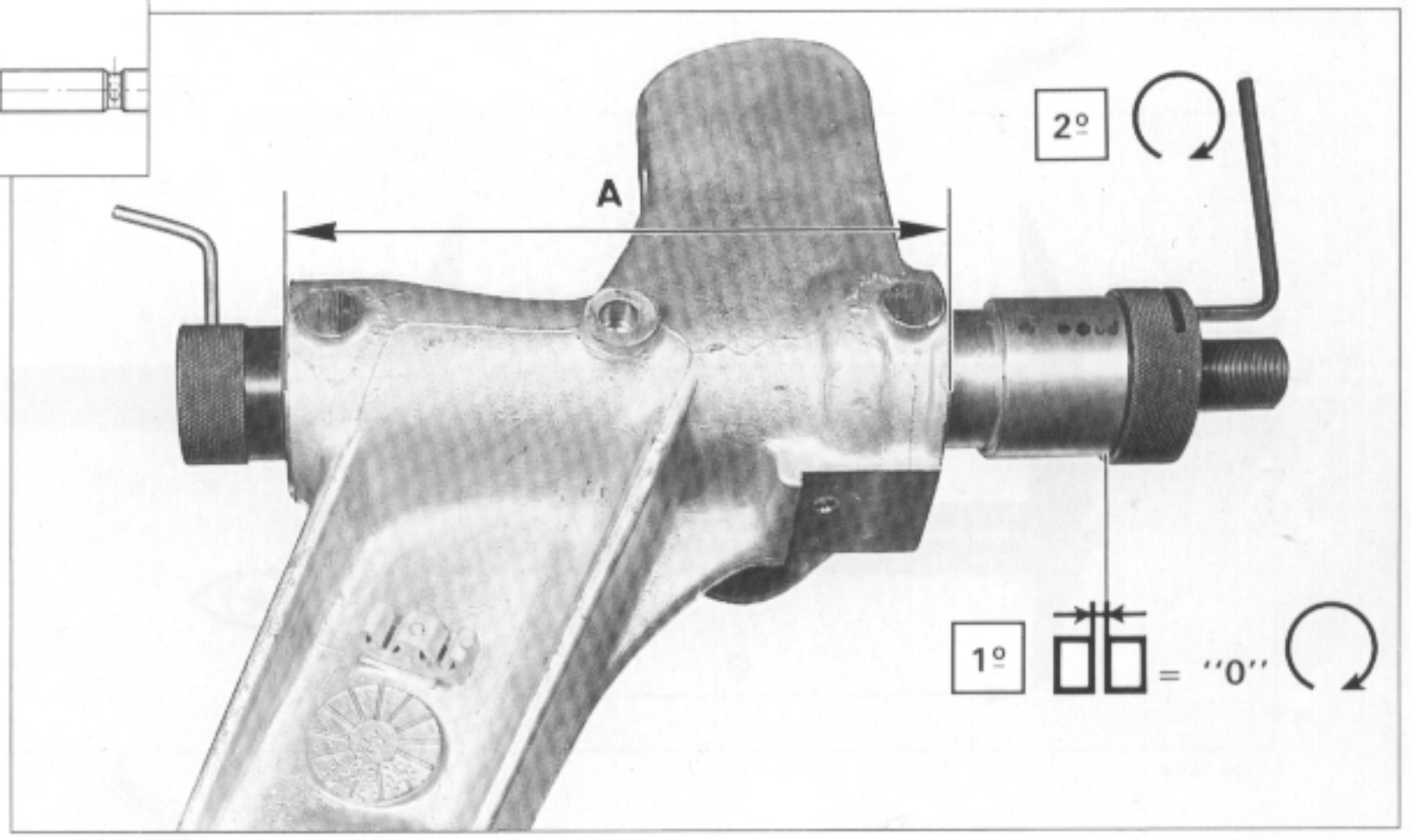
www.WorkshopManuals.co.uk



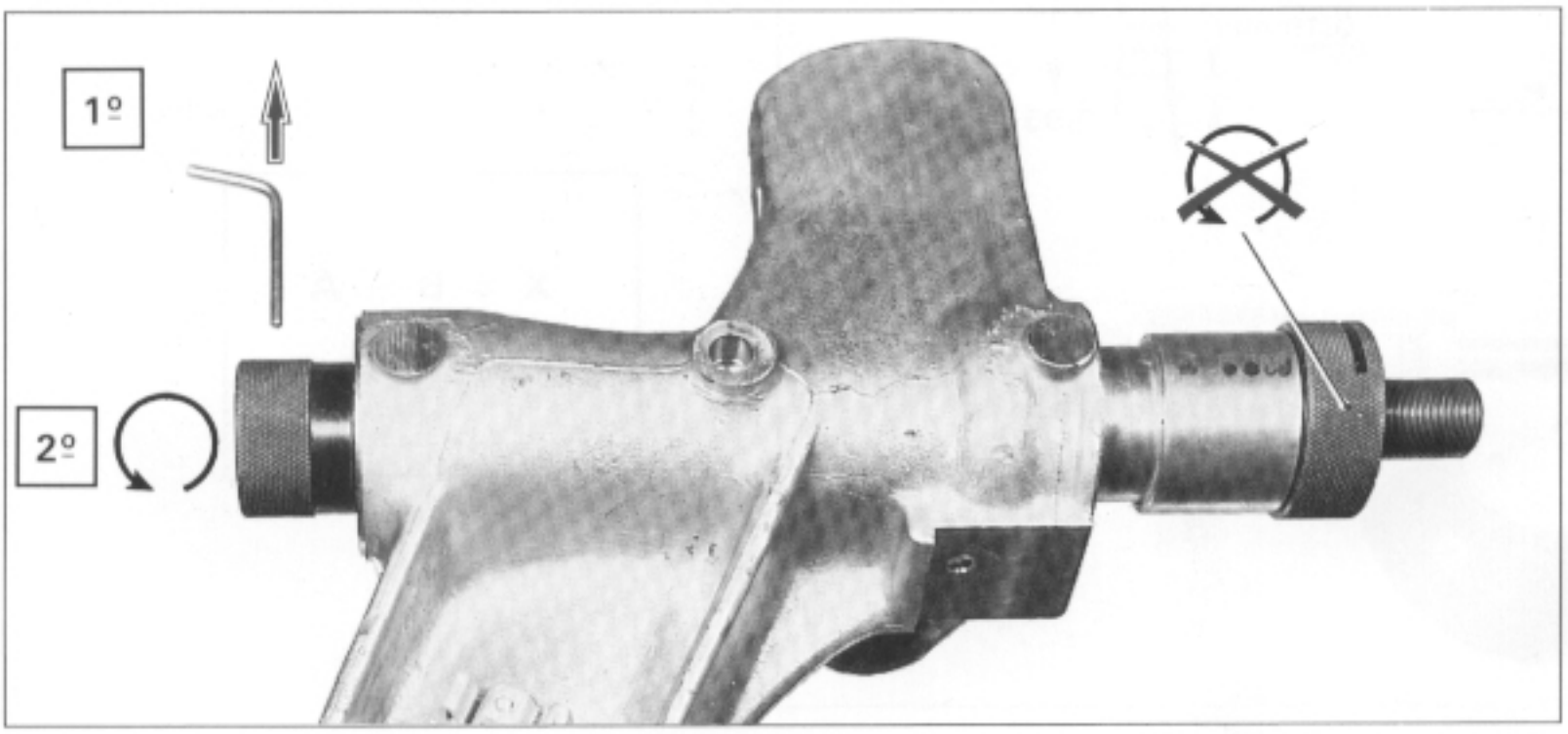
88-824



BX-41.6



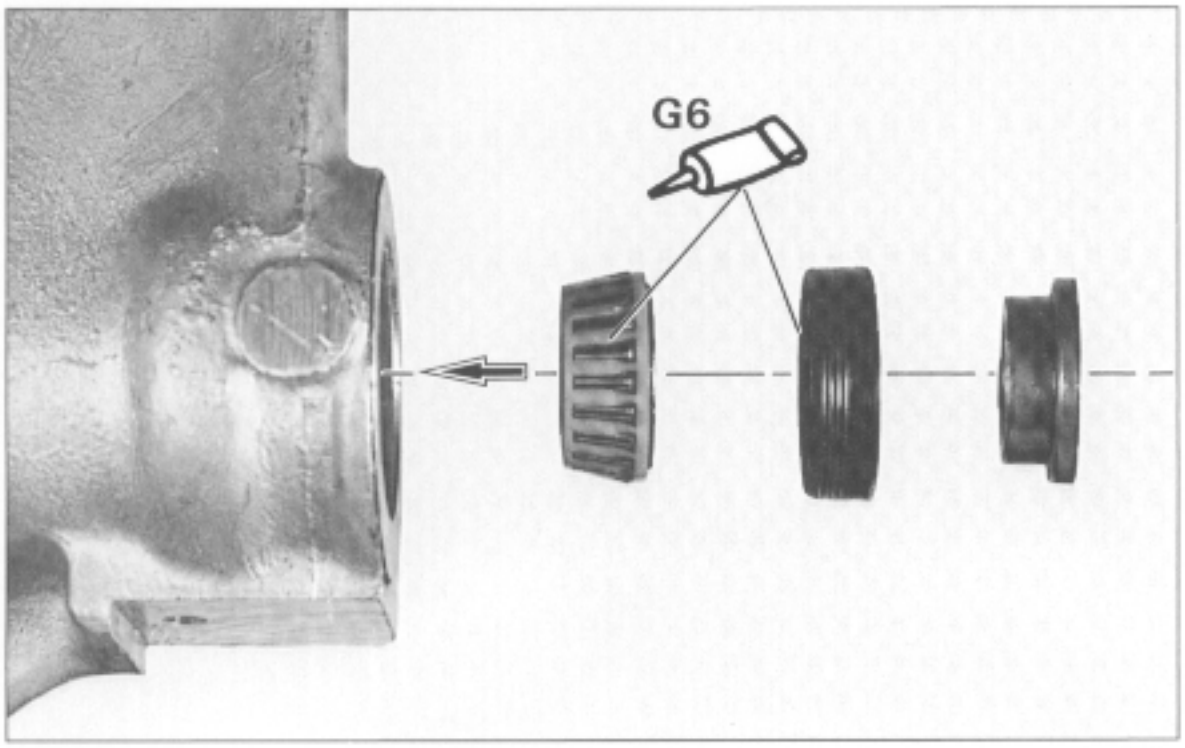
88-825



88-820

8932

www.WorkshopManuals.co.uk

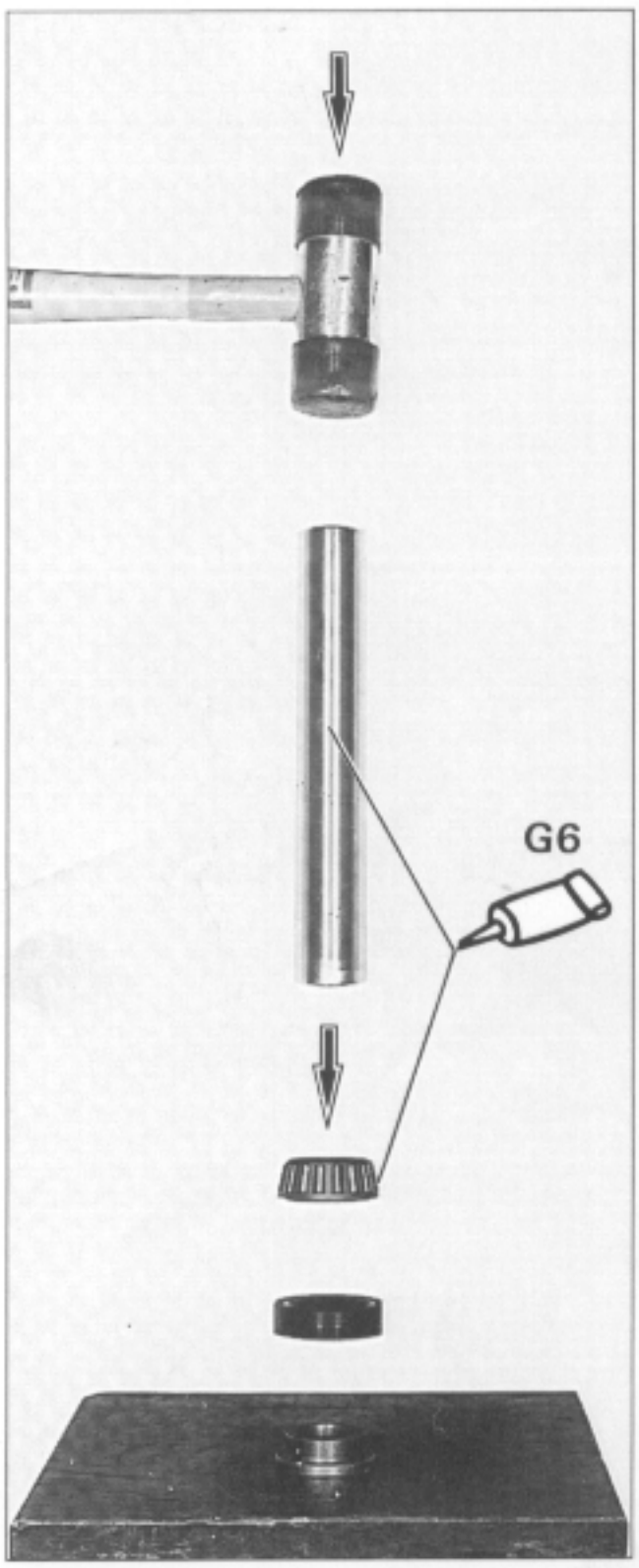


88-691



88-699





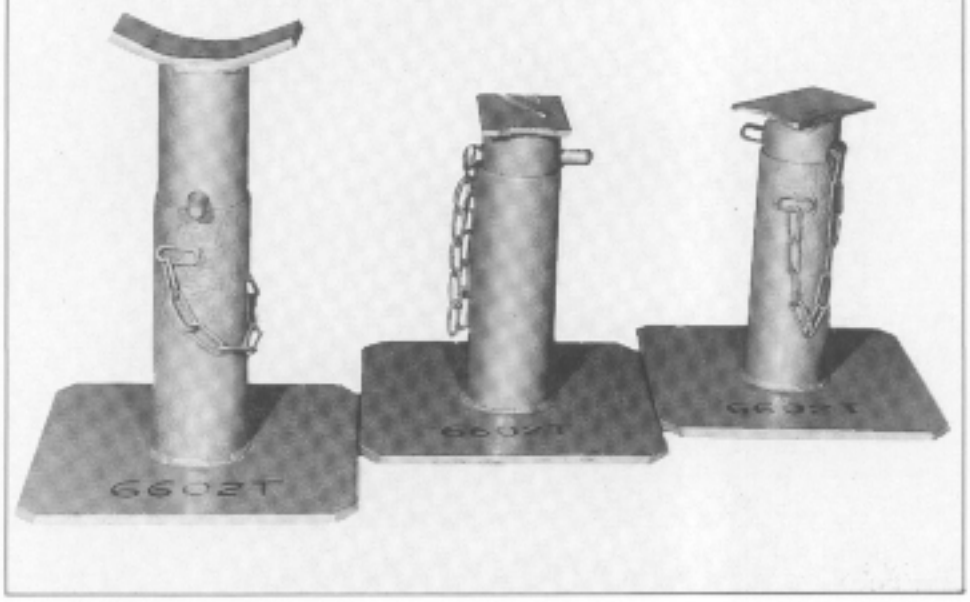
82-1569

www.WorkshopManuals.co.uk

OPERATION NUMBER	DESCRIPTION	VEHICLE	
		4 cyl. PETROL	6 cyl. PETROL
XM.430-000/1	List of operations : Suspension - Wheels - Tyres		
XM.430-000/2	Tools	X	X
XM.430-00/1	Specifications and special points of the suspension	X	X
XM.430-0/1	Checks.and settings of height controls	X	X
XM.430-0/2	Checks and diagnosis of HYDRACTIVE suspension	X	X
XM.433-1/1	Removing and refitting a front suspension cylinder	X	X
XM.433-1/2	Removing and refitting a rear suspension cylinder	X	X
XM.435-1/2	Removing and refitting a rear anti-roll bar	X	X
XM.471-00/1	Specifications of wheels and tyres	X	X

www.WorkshopManuals.co.uk

6602-T



13-815

136

FACOM



82-827

www.WorkshopManuals.co.uk

		Ø mm	Ø mm		HYDRACTIVE	
	4 cyl. ess	22	23	X	X	
	D 12 atmo			X	X	
	D 12 turbo	22	24	X	X	
	V6				X	
	4 cyl. ess	22	25	X	X	
	D12			X	X	
	V6				X	

XM 430-00/1 | 4

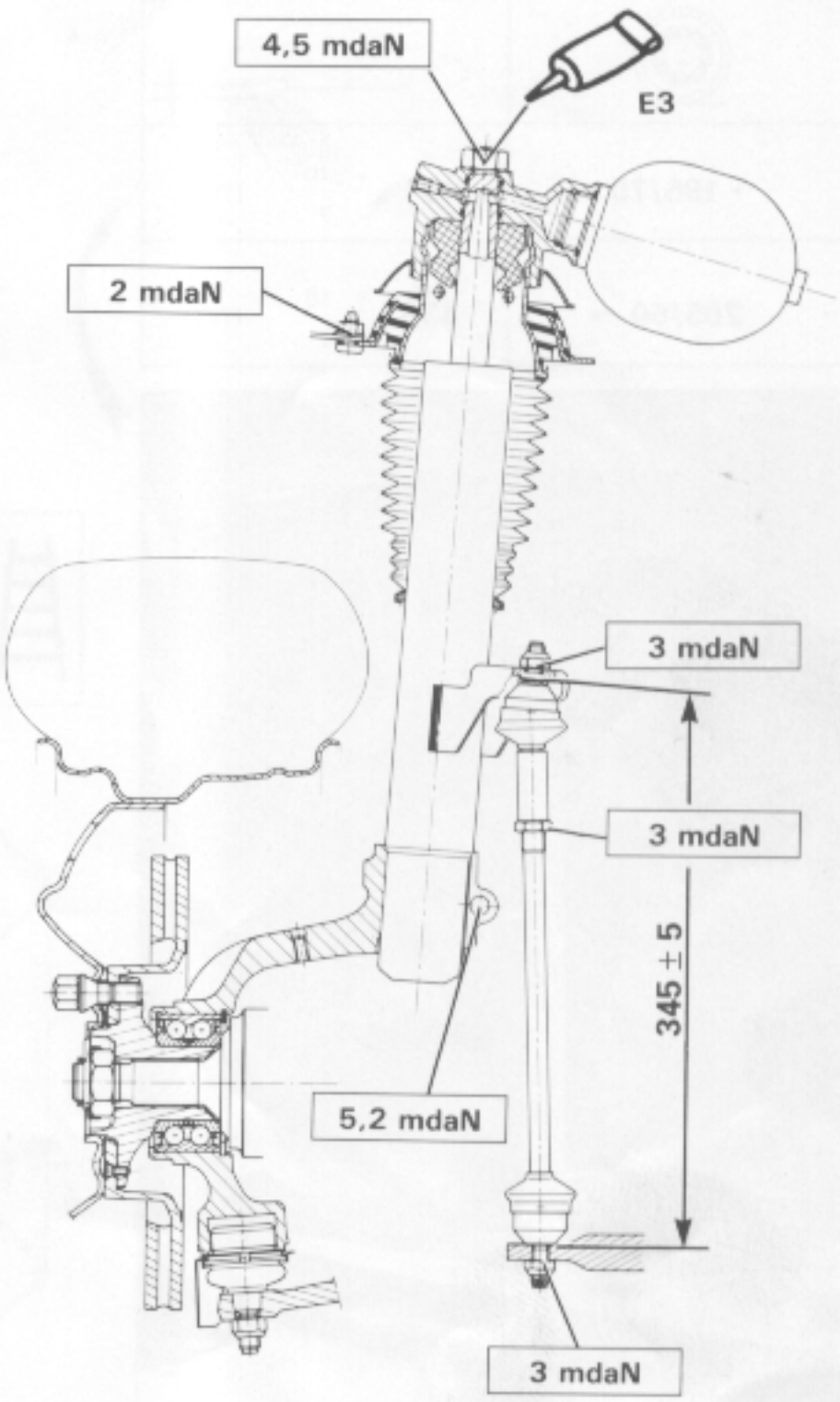
HYDRACTIVE

XM 430-00/1 | 5

→ 195/70	144 +10 -7 mm
205/60 →	149 +10 -7 mm



89-584



Y. 41-1 a

www.WorkshopManuals.co.uk

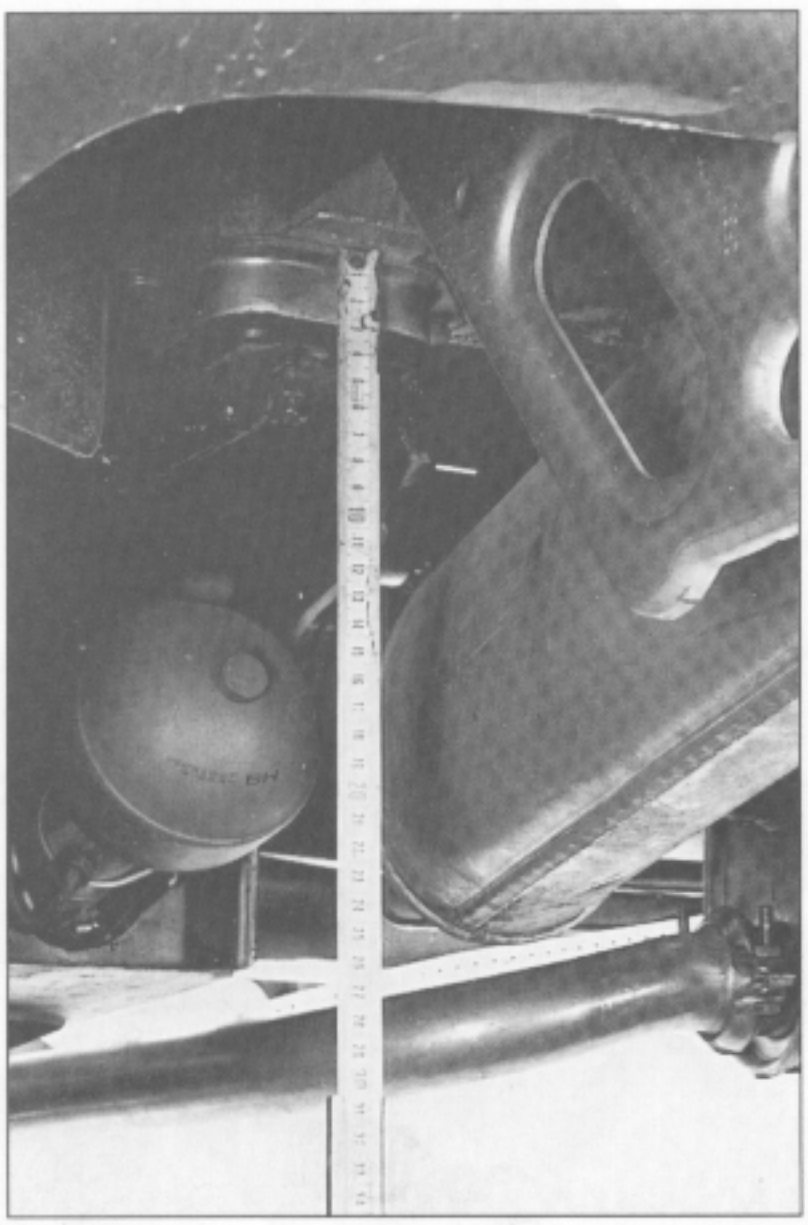
	Ø mm	Ø mm		HYDRACTIVE	
4 cyl. ess.	35	→ 05/91 19,5	X	X	
D 12 atmo		05/91 → 21	X	X	
D 12 Turbo	35	→ 05/91 21	X	X	
V6		05/91 → 22		X	
V6 24	35	22		X	
4 cyl. ess.	42,5	22,5	X	X	
D12			X	X	
V6				X	

XM 430-00/1 | 4

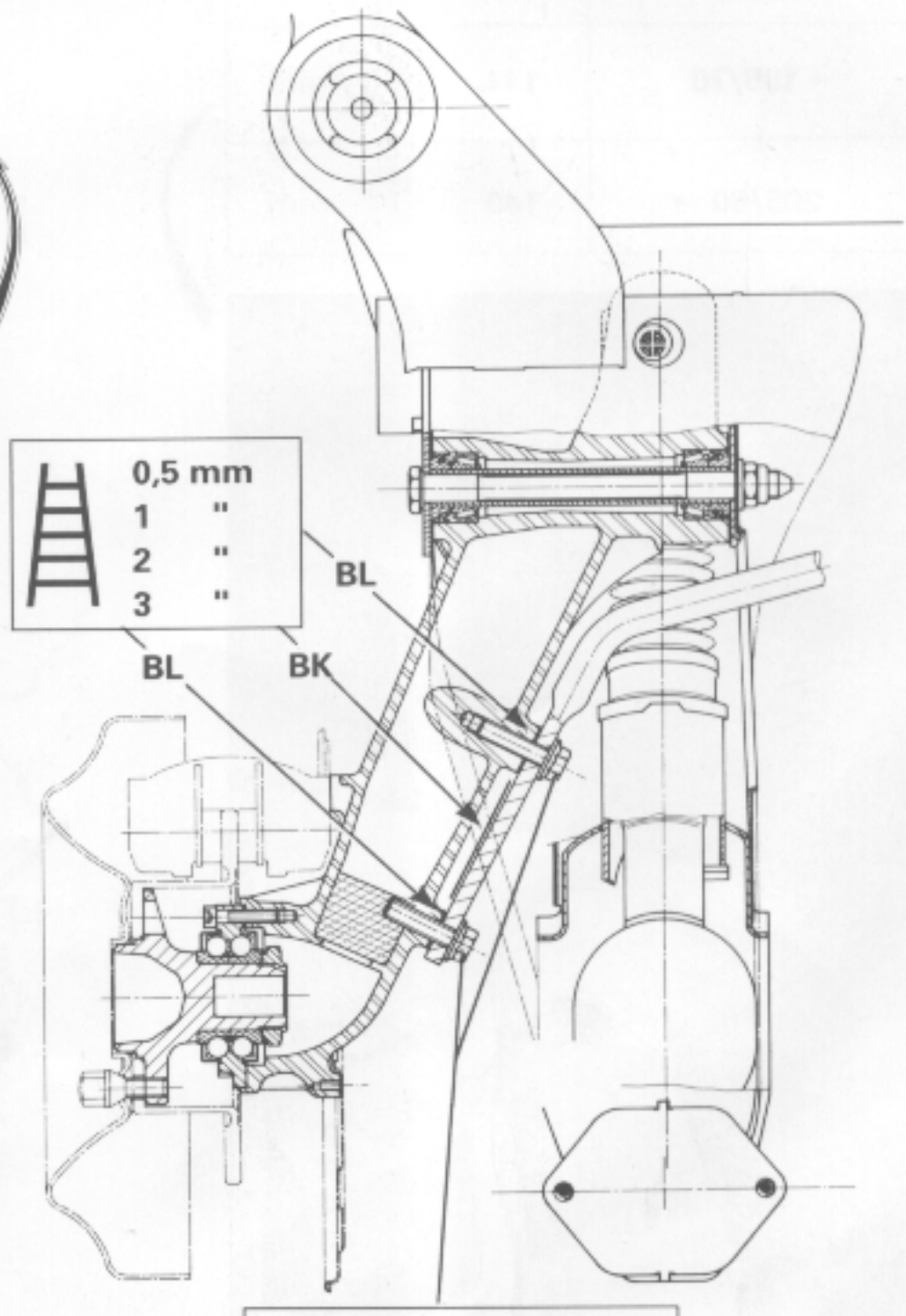
HYDRACTIVE

XM 430-00/1 | 5

→ 195/70	431 +10 -7 mm
205/60 →	436 +10 -7 mm



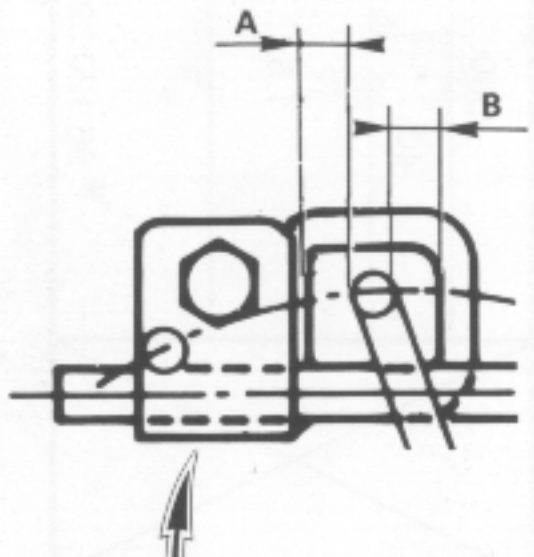
89-582

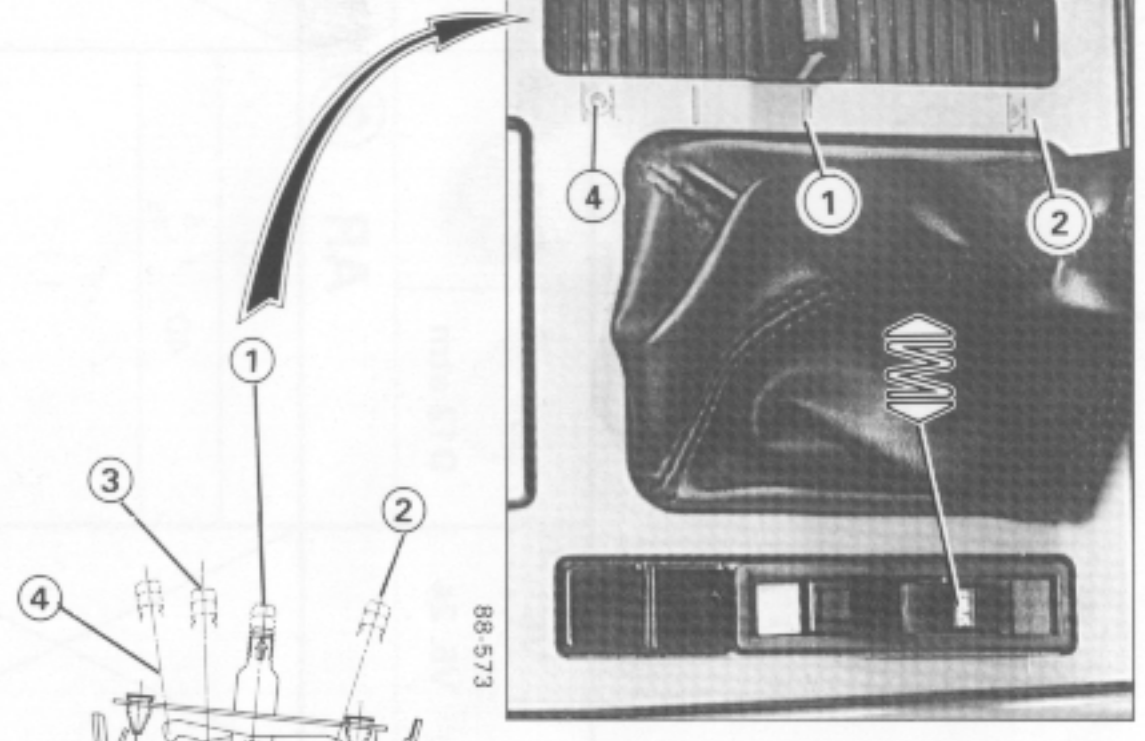


BL : M12. 125 : 8 mdaN
BK : M12. 175 : 10 mdaN

Y. 42-1

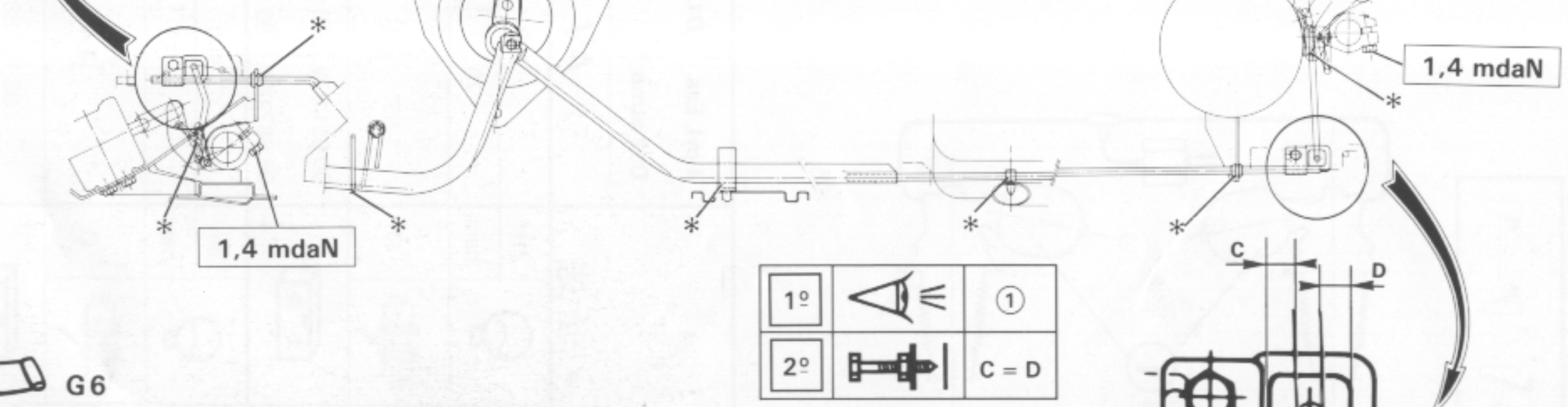
1º		①
2º		A = B





	≤ 195/70	≥ 205/60
①	144 mm	149 mm
②	66 mm	71 mm
③	184 mm	189 mm
④	229 mm	234 mm



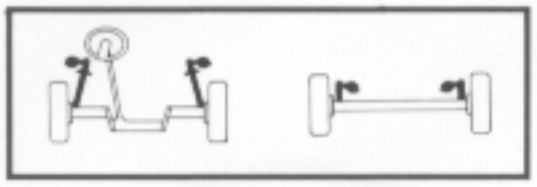


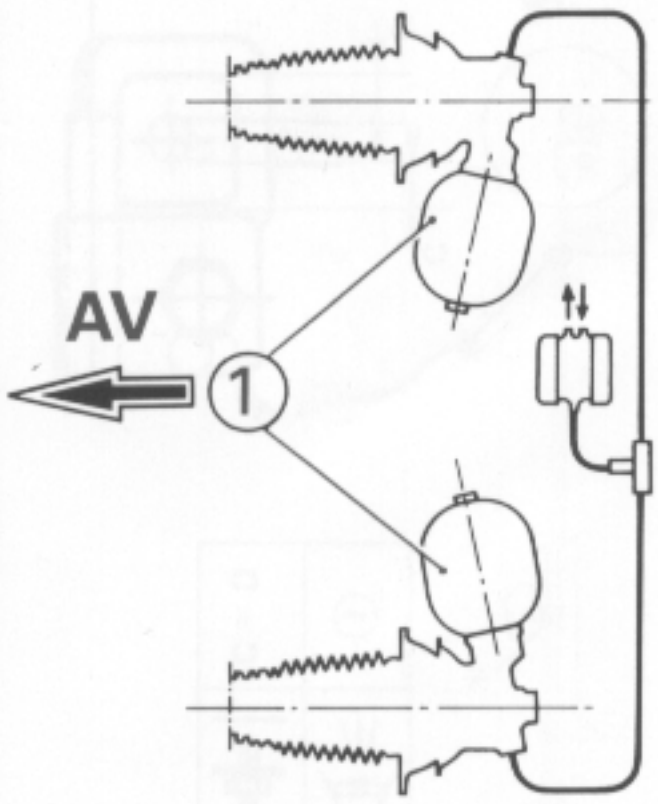
1º		①
2º		C = D

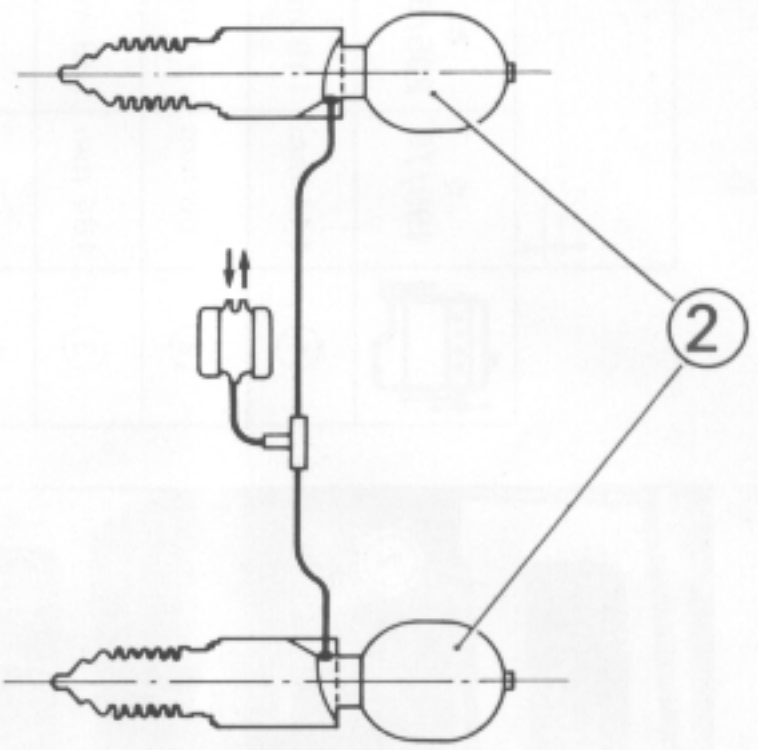
* G6

www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk



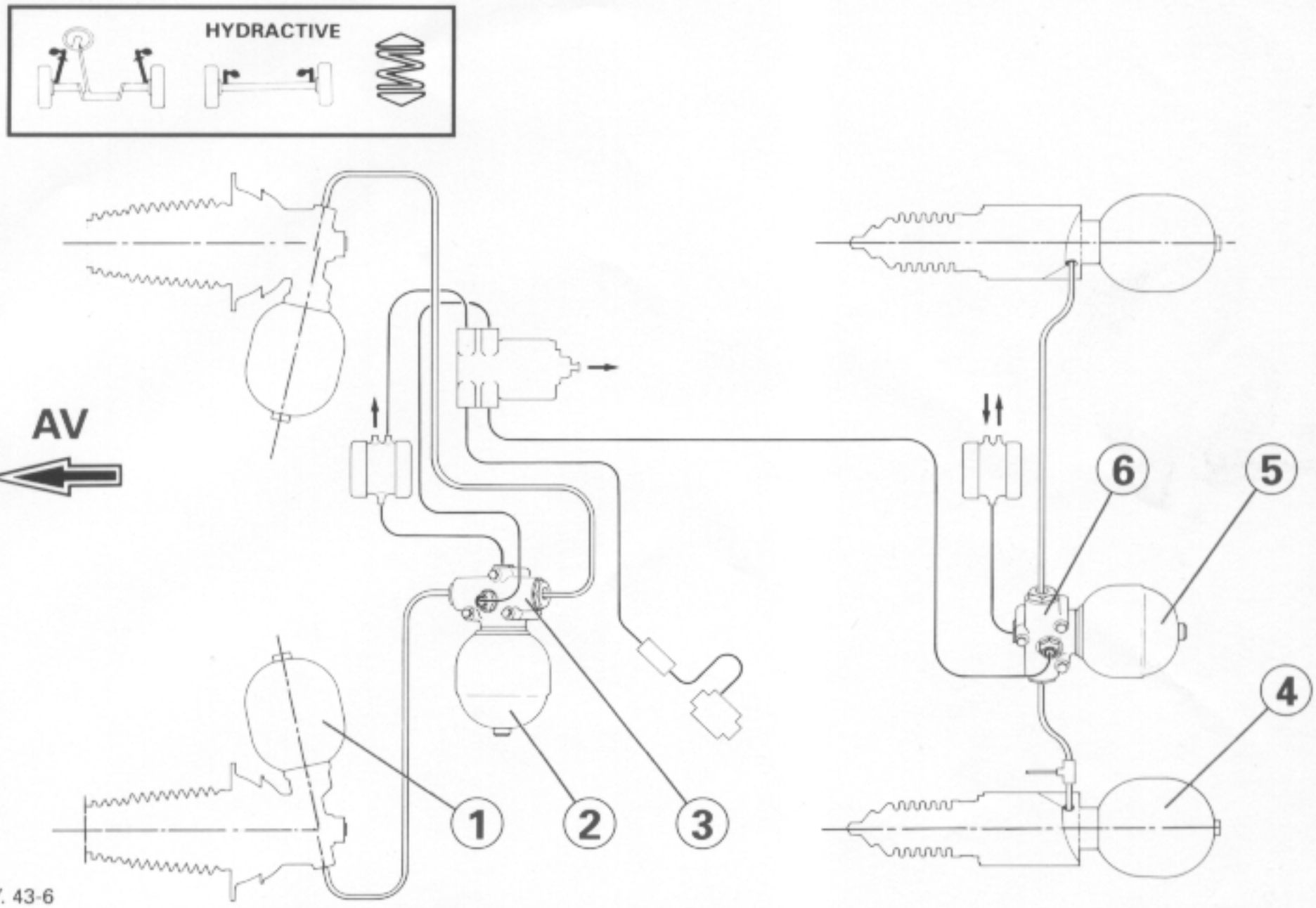




Y. 43-20

			4 cyl. Ess. D12 atmo	D12 turbo	V6 V6. 24	4 cyl. ess. D12 atm	D12 turbo	V6 V6. 24
			AV (1)			AR (2)		
	cm³		400			400		
	bars		70 + 5 - 25			40 + 5 - 15		
	Ø		1,65	1,4		1,1		
			96 051 819	96 069 918		96 051 825		
		*	96 087 005	96 087 008		* 96 635 424		
	cm³		400			500		
	bars		75 + 5 - 25			40 + 5 - 15		
	Ø		1,4			1,5		
			96 133 887					
		*	96 133 888			* 96 120 324		

www.WorkshopManuals.co.uk



Y. 43-6

HYDRACTIVE			4 cyl. ess. D12	D12 turbo V6	Central	4 cyl. ess. D12	D12 turbo V6	Central
				(1) AV	(2)		(4) AR	(5)
		cm³	400	400	500	400		400
		bars	55 +5 -20	50 +5 -20	70 +5 -25	30 +5 -10		50 +5 -20
		Ø	0,7	0,6	(3) 1,25	0,5		(5) 1,25
	*		96 0 51 826 96 045 522	96 065 505 96 087 007	75 520 295	96 051 827 96 045 523		96 045 530
		cm³	400		500	400		500
		bars	50 +5 -20		70 +5 -25	40 +5 -15		40 +5 -15
		Ø	0,6		(3) 1,25	0,7		(6) 1,25
	*		96 065 505 96 087 007		75 520 295	96 119 517 96 119 514		5 468 115

www.WorkshopManuals.co.uk

AUTOMATIC HEIGHT CONTROL ADJUSTMENT

Conditions required to carry out the adjustment :

- Correct tyre pressures.
- Engine at idling speed.
- Manual height control set to "NORMAL DRIVING" position.
- Handbrake released.

When checking the front heights :

After each adjustment and **before each measurement :**

Move the vehicle forward and backward slightly to remove any stress in the front suspension.

This manœuvre can be avoided if the front wheels are placed on turning plates.

Checking sequence : At the front and then the rear.

- Push the vehicle up. Let go when the weight becomes too great. The vehicle will drop then rise and settle. **Measure the height**.
- Push the vehicle down. Let go when the resistance becomes too important. The vehicle will rise, then drop and settle. **Measure the height**.
- **Take an average of the two measurements.**

FRONT

Measured from under the rear of the subframe and the surface on which the road wheels are resting, **Fig. I**

REAR

Measured from the point on which the rear silent block mounting is resting on the bodyshell, and the ground, **Fig. IV**.

144 $\pm^{10}_{7}$ mm : XM 4 cyl. ; (Tyres ➡ 195/70) : 431 $\pm^{10}_{7}$ mm

149 $\pm^{10}_{7}$ mm : XM 6 cyl. ; (Tyres 205/60 ➡) : 436 $\pm^{10}_{7}$ mm

Note : The heights for the 4 cyl. XM are different from the heights for the 6 cyl. XM because of the dimensions of the tyres which are not the same.

Adjustments :

The correct height adjustment is obtained by rotating the automatic control rod clamps **(1)** and **(3)** around the anti-roll bars, **Fig. II et V**.

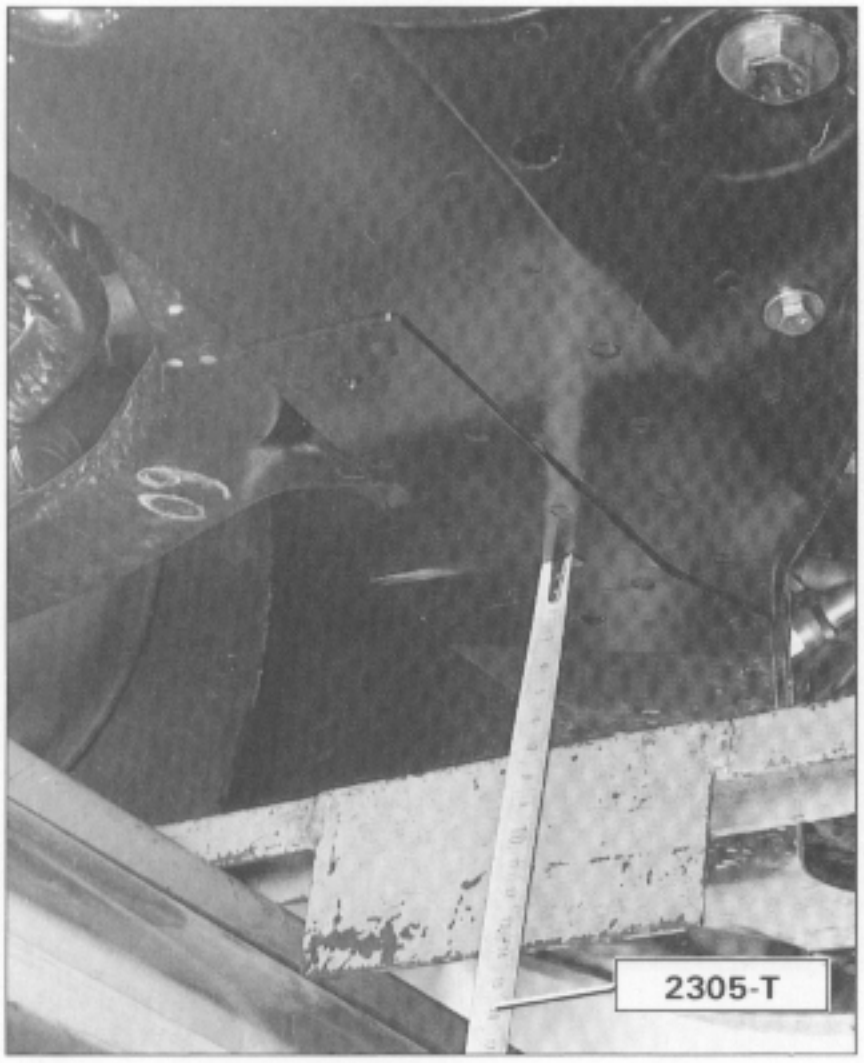
Allow a clearance of **1 mm** between the height corrector ball end and its location in the lever of the automatic control rod ➡ **Fig. II and V**.

The front height must be equal to ± **2 mm** both sides of the vehicle.

If not : reset it using anti-roll bar adjustable link rod **(2)**, **Fig. III**.

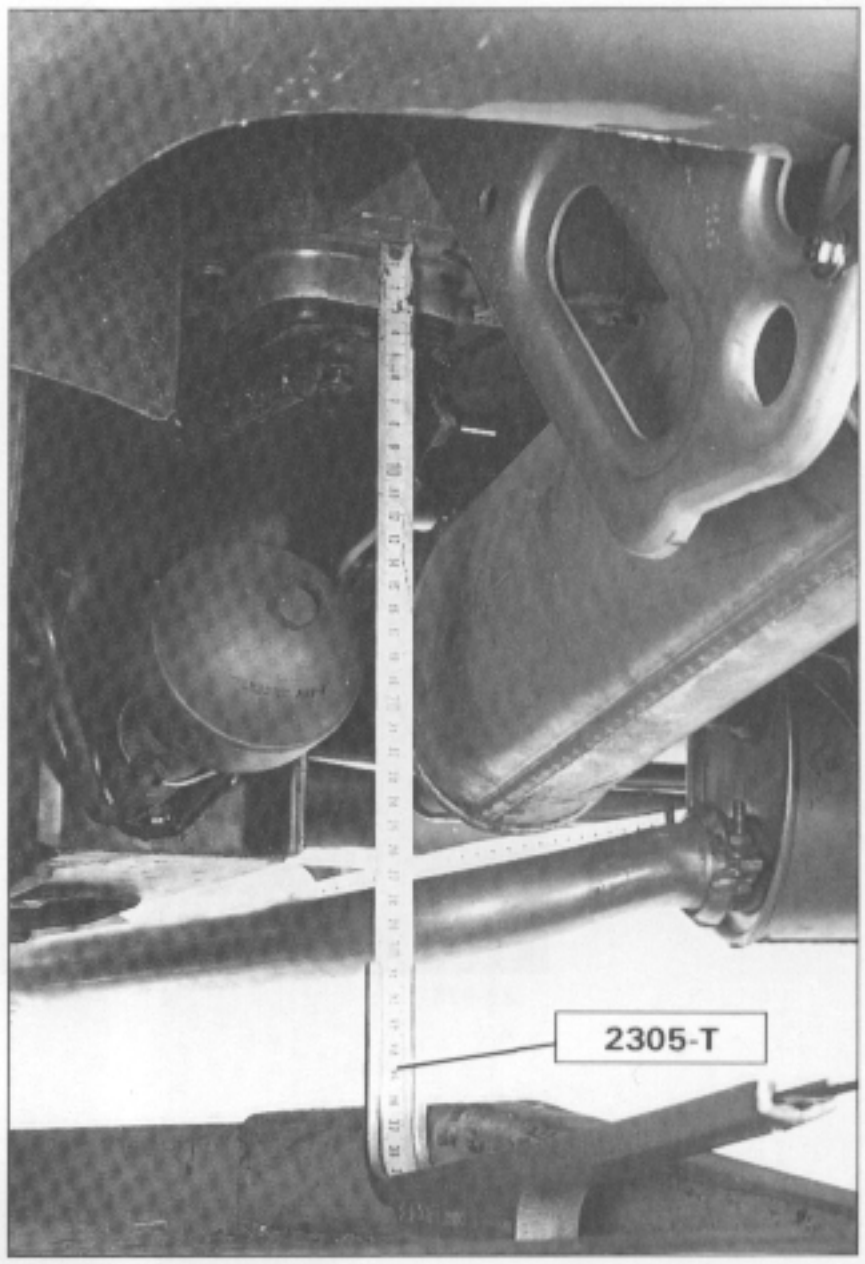
www.WorkshopManuals.co.uk

AV



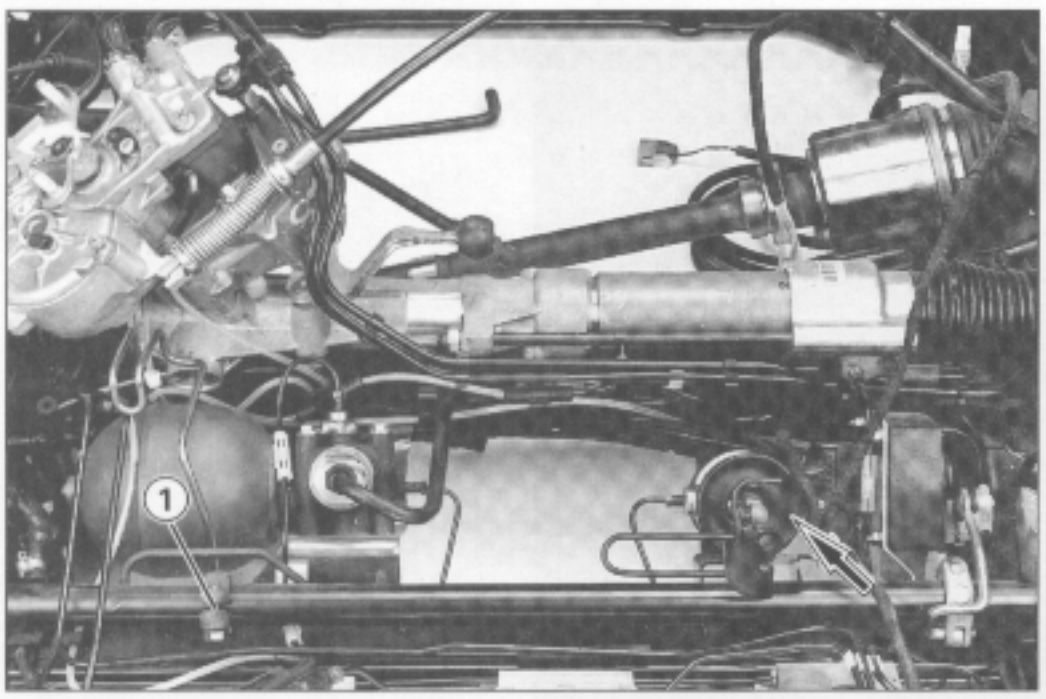
89-584

AR



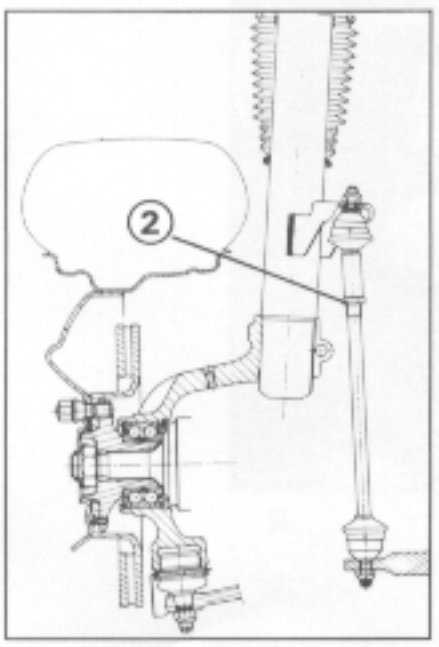
89-582

IV



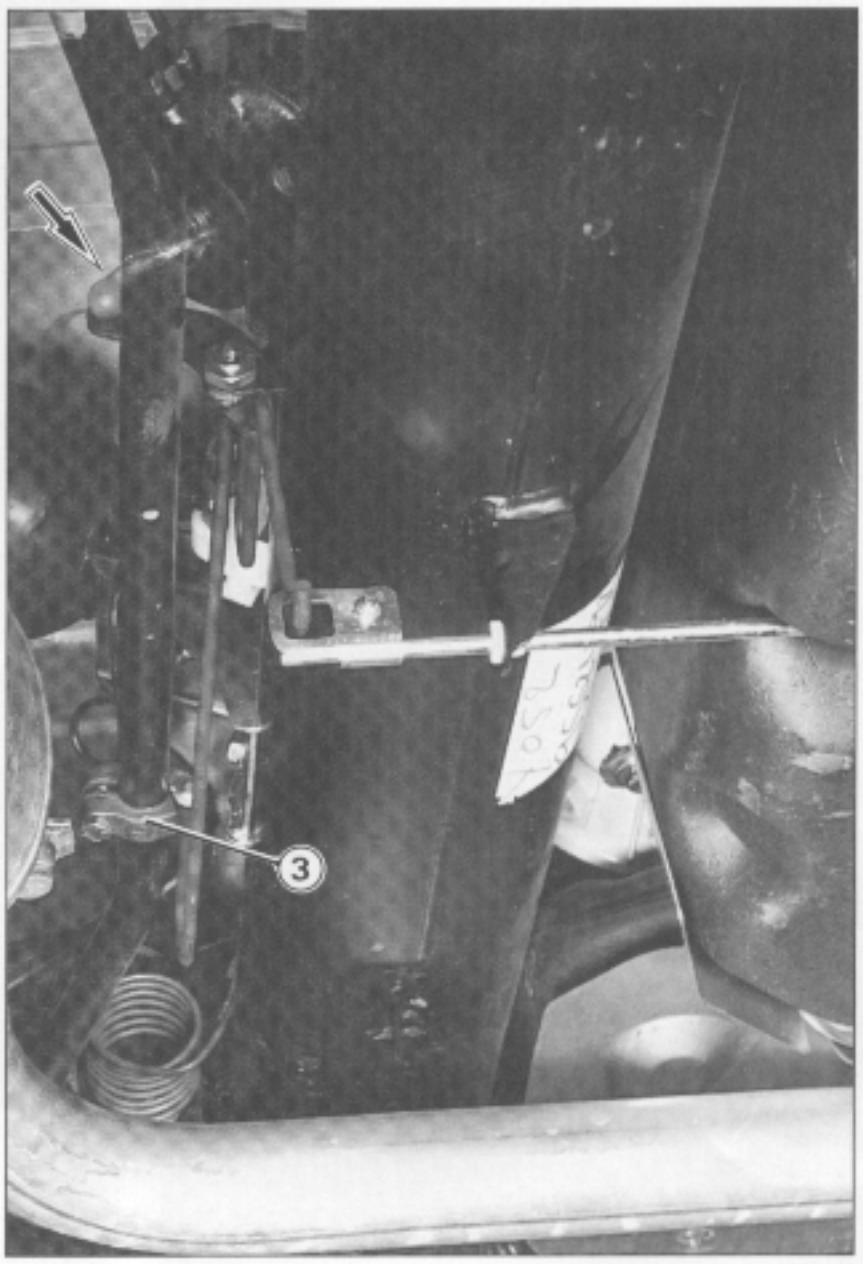
89-338

II



Y.41-1a

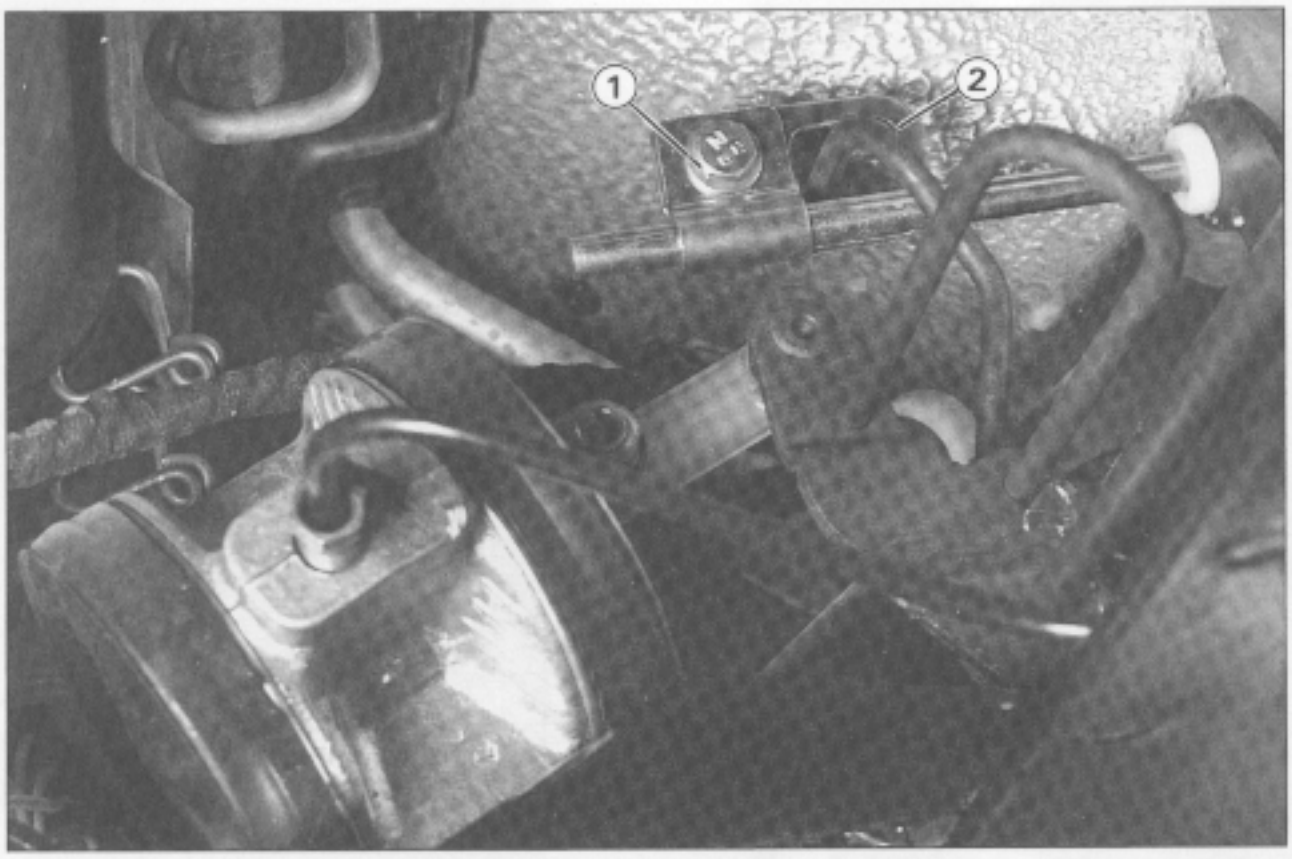
III



89-580

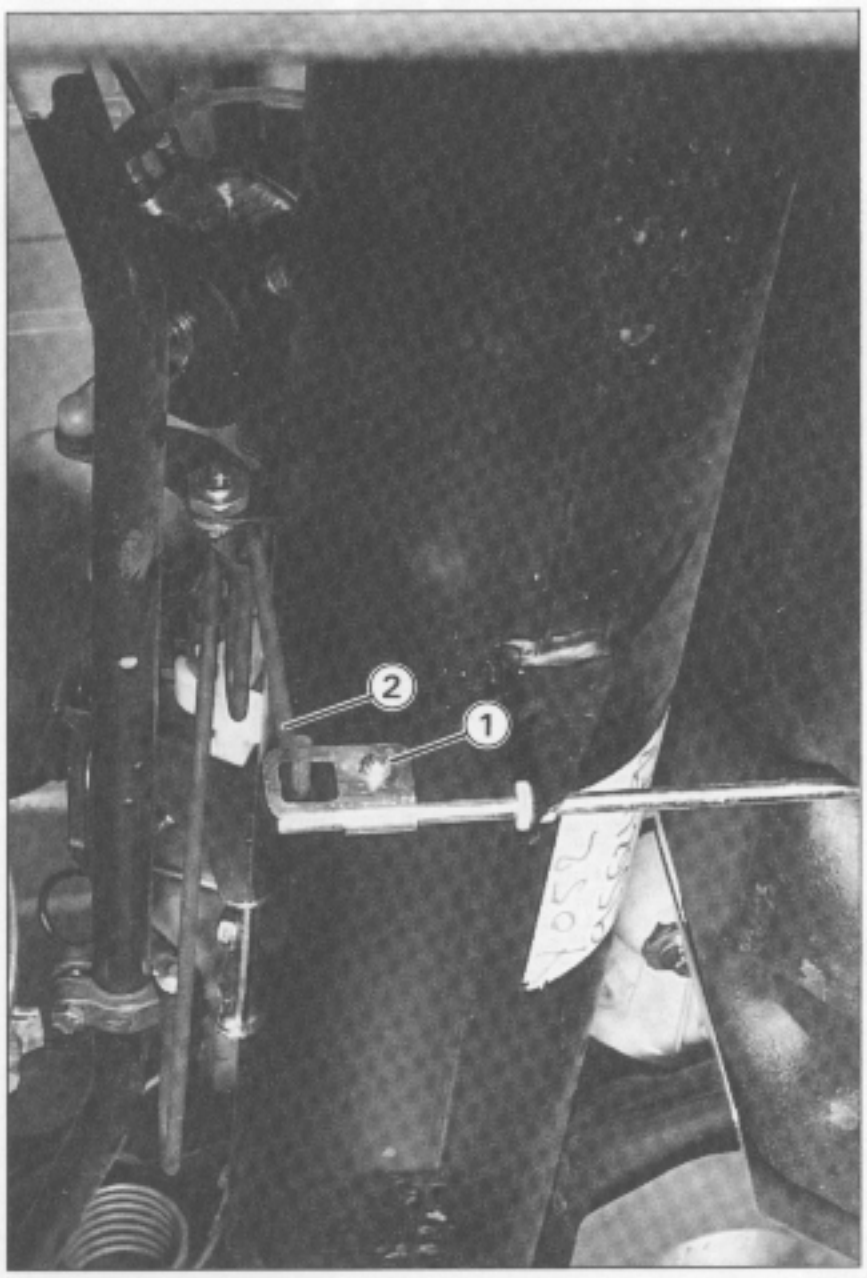
V

www.WorkshopManuals.co.uk



89-576

I



89-580

II

www.WorkshopManuals.co.uk

ADJUSTING THE MANUAL HEIGHT CONTROL

Conditions required to carry out the operation :

- The automatic control must be adjusted.
- The engine running at idling speed, and
  the manual control lever set to the "NORMAL DRIVING" position.

Adjustment

Move the bracket **(1)** in order to centre the corrector control rod into the orifice, **Fig. I and II**.

www.WorkshopManuals.co.uk

TOOLS TO BE USED

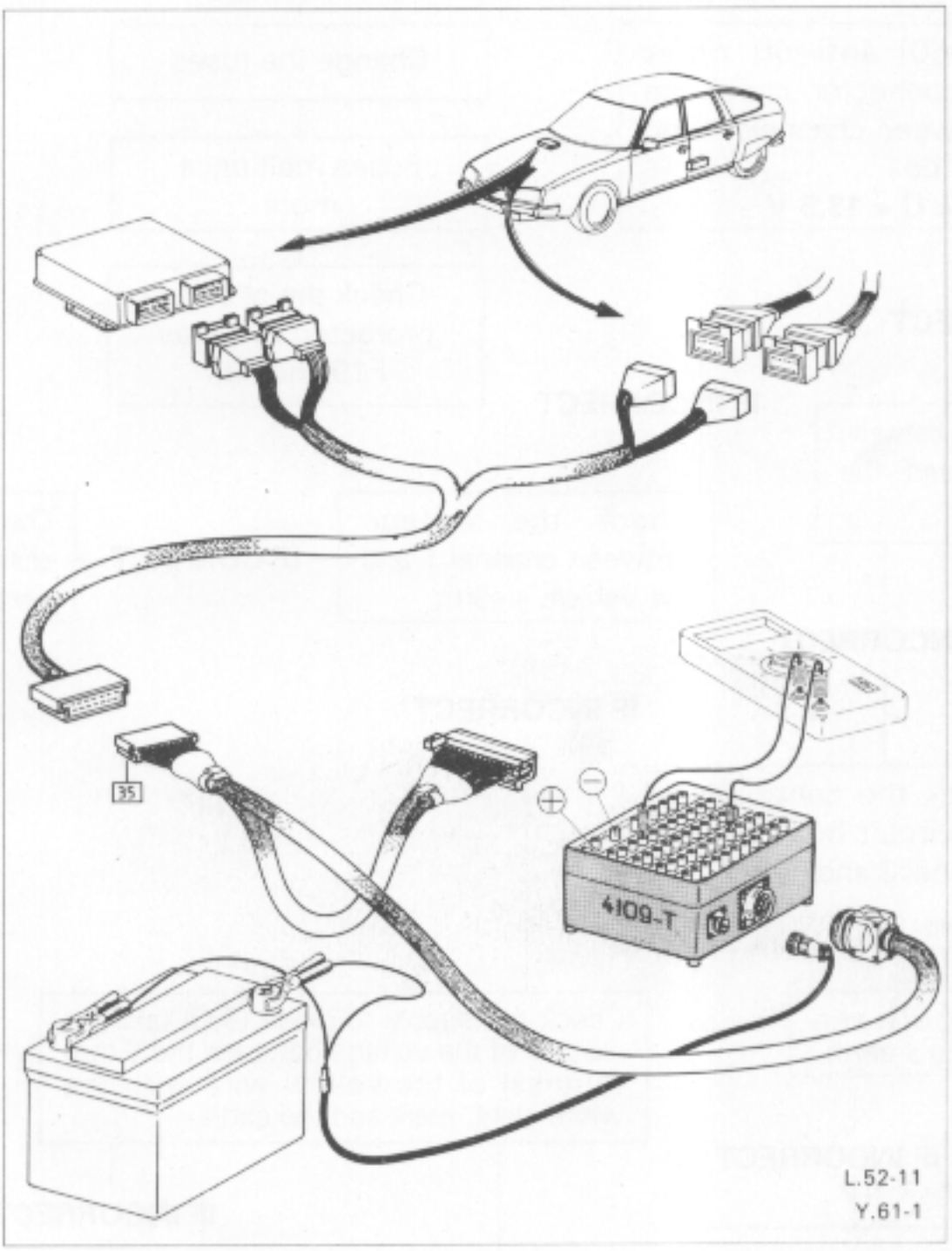
4109-T : Connecting box

4112-T.B : Suspension specific wiring harness

EQP 000-080A or **081A** Multimeter

or

EQP 000-026 Station **26A**



CHECKS AND DIAGNOSIS OF THE HYDRACTIVE SUSPENSION

www.WorkshopManuals.co.uk

CHECKING THE ELECTRICAL SUPPLY TO THE CALCULATOR UNIT

- Switch on the ignition
- the voltage between connections 1 and 28 of the connecting box should be :

12 < U < 13.5 V

IF INCORRECT

Check the fuses
1) - F 19 (15A)
2) - F 34 (30A)

IF CORRECT

On the (960) anti-jolt timer colourless connector, check the voltage between channels 1 and 4 - It should be :

12 < U < 13.5 V

IF CORRECT

Check voltage between channel 3 and the vehicle's earth.

IF CORRECT

Check the voltage between channel 5 and the vehicle's earth

IF CORRECT

Check the circuit between 5lc 5 of part 960 and 15N1 of part 143

IF INCORRECT

Change the timer unit (960)

IF INCORRECT

Check the continuity of the circuit between the channel 3 and fuse F34

(Diagram : SUSPENSION functions)

IF INCORRECT

Check the voltage between channel 1 and the vehicle's earth

IF CORRECT

Check the continuity between channel 4 and the earth of electrical harness SM.

IF INCORRECT

Check the supply to diode (363) taking a reading of the voltage between the 6 mm terminal of the yellow wire with the white ident. mark and the earth.

IF INCORRECT

Check the diode supply circuit for continuity using the circuit diagram of the SUSPENSION function

IF CORRECT

Check the voltage at the diode outlet,, taking a reading between the 5 mm terminal of the green wire with the white ident-mark and the earth.

IF CORRECT

Check for continuity the green wire between the 5 mm terminal and the channel 1 of the timer unit

IF INCORRECT

Change diode (363)

IF INCORRECT

Change the fuses

Fuses melt once more

Check the circuits protected by fuses F19 and F34

www.WorkshopManuals.co.uk

TESTING THE OPERATION OF THE ELECTRICAL CONTROL

Turn on the ignition with the switch on the "SPORT" position.
Will the lamp come on ?

NO

Disconnect the black connector from the E.C.U. Check the switch, measuring the resistance between channels 14 and 15.

Switch, on "AUTO" : **R = 0 Ω**
Switch, on "SPORT" : **R = ∝ Ω**

IF CORRECT

Disconnect the white connector from the E.C.U. Check the warning lamp, measuring the resistance between channels 10 and 28

R ≃ 100 Ω : Power channel 10 with a positive supply. If the lamp comes on consult the E.C.U.'s memory.

R = ∝ : Check the resistance between the channels 2 and 7 of connector 15 BI from the instrument panel if **R = ∝**.
1) Check the lamp
2) Check the continuity between channel 10 of connector 15 N and channel 2 of connector 15 BI.
3) Check continuity between channel 7 of the connector 15 BI and the earth (the side lamp indicator should operate).

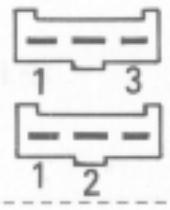
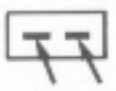
R = 0 Check the continuity between channel 10 of connector 15 N and lamp (broken circuit).

IF INCORRECT

Replace the switch (606)

www.WorkshopManuals.co.uk

CHECKS CARRIED OUT WITH THE FAULTS MEMORISED BY THE E.C.U.

Defect code	Components		Checking equipment	E.C.U. connectors	Connecting box channels
	Description	Connections			
21	Brake pressure switch 670 (sensor)	⊟	Ohm-meter	Disconnected	27 and 28
			Voltmeter	Connected	27 (+) and 28 (–)
22	Potentiometer on accelerator pedal 771 (pedal travel sensor)		Ohm-meter	Disconnected	29 and 31
					29 and 30
			Voltmeter	Connected	29 (+) and 31 (–)
					29 (+) and 30 (–)
23	Steering wheel sensor 159		Voltmeter	Connected	35 (+) and 32 (–)
					26 (+) and 32 (–)
					33 (+) and 32 (–)
24	Mileage sensor 154 (speed sensor)	⊟	Ohm-meter	Disconnected	6 and 13
				—	None
			Voltmeter	Connected	13 (+) and 28 (–)
25	Bodyshell travel sensor 153		Voltmeter	Connected	3 (+) and 28 (–)
					4 (+) and 28 (–)
31	Suspension solenoid 433 (Firmness regulator control)	⊟	Ohm-meter	Disconnected	9 and 28
			Voltmeter	Connected	9 (+) and 28 (–)

www.WorkshopManuals.co.uk

Procedures	Values	Failures P : Primary S : Secondary
Engine rotating : - Brakes not applied - Brake pedal forcibly depressed	**R = 0 Ω** **R = ∝ Ω**	**S**
Engine rotating and brake pedal forcibly depressed	**V ≃ 5 volts**	
Ignition switched off	**R ≃ 4 kΩ**	**P**
Ignition turned off : Pedal released Maximum acceleration :	**R ≃ 6.5 kΩ** **R ≃ 6.5 → 2.6 kΩ**	
Ignition switched on : Pedal released Maximum acceleration :	**V ≃ 4 volts** **V ≃ 4 → 3 volts**	
Ignition switched on : Engine running : Steering wheel not turned	**V ≃ 5 volts**	**P**
Engine running : Slowly turning the steering wheel	**D < V ≃ 5 volts**	
Ignition switched off : On 4 cyl. engine	**R ≃ 300 Ω**	**P**
On 6 cyl. engine : 1°) Directly at sensor terminals	**R ≃ 300 Ω**	
2°) Vehicle driven at 80 kph 50mph	**V ≃ 1.5 volts**	
Engine running : Changing the bodyshell height	**O < V ≃ 6 volts**	**S**
Ignition switched off	**R ≃ 5 Ω**	**P**
Engine running	**V ≃ 6 volts**	

www.WorkshopManuals.co.uk

REMOVING

Place the vehicle on stands, wheels free.
Remove the wheel.

Open the pressure regulator.
Set the height control lever to the "LOW" position.

It is recommended to let as much oil as possible flow out of the cylinder by raising the front suspension arm.

Clean the cylinder and its surroundings.

Remove, Fig. II and III :
- The anti-roll link rod nut **(5)**,
- the swivel jaws screw **(6)**, open the jaws with an 8 mm hexagon spanner, **Fig. III** ; disengage the cylinder.

Uncouple the return pipe **(7).**
There are two cylinder removal possibilities according to the needs :

1st possibility : **Fig IV and VII :**
Removing the cylinder with its head :
- Uncouple the feed pipe **(8).**
- Remove the 4 fixing nuts **(2).**
- Remove the cylinder assembly.

2nd possibility : **Fig. V and VI**
Removing the cylinder, only :
- Release the gaiter **(3)** upper part.
- Slacken the nut **(1)**.
- Detach the cone using a spray.
- Remove the cylinder.

REFITTING

1st possibility : **Fig. IV and VII.**
Refitting the cylinder with its head :
- Refit the cylinder assembly.
- Tighten the 4 fixing nuts **(2) to 2 mdaN.**
- Couple up the feed pipe **(8)**.

2nd possibility : **Fig. V and VI :**
Refitting the cylinder, only :
- Make sure that the stop **(4)** is fitted.
- Lubricate the cone and the sealing area with oil.
- Pour a few drops of **E3** (LOCTITE FRENETANCH) on the threads.
- Refit the cylinder.
  Tighten nut **(1)** to **4.5 mdaN**
- Relocate the gaiter **(3).**

Open the swivel jaws and position the cylinder, rib **"a"** into the jaws.
Tighten the screw **(6)** to **5.2 mdaN**.

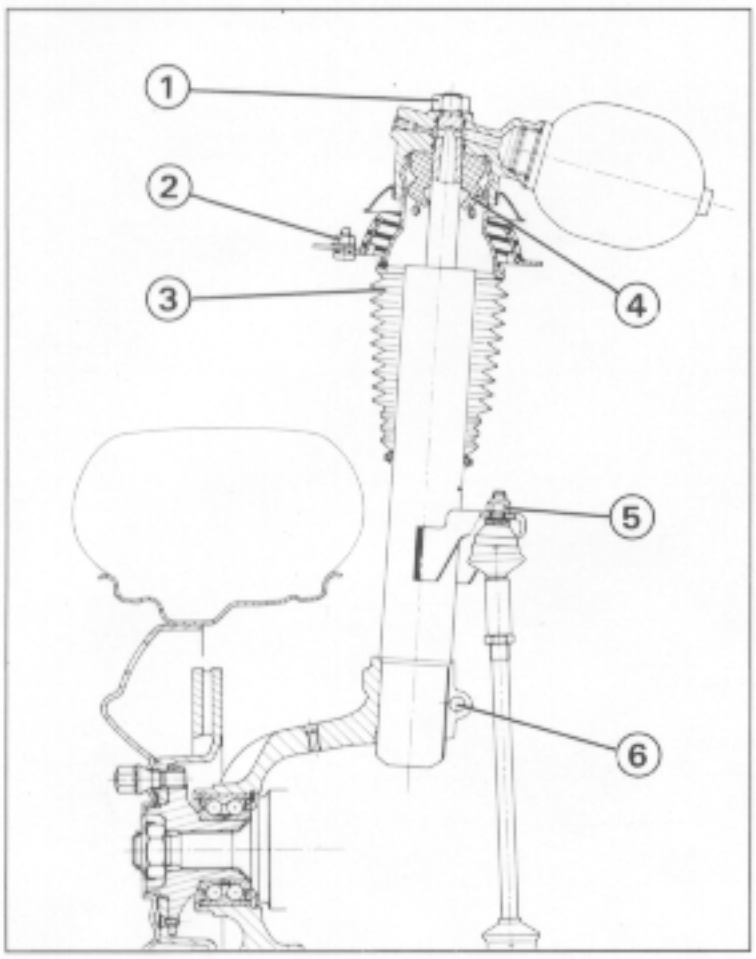
Couple up the anti-roll bar link rod.
Tighten to : 3 mdaN

Recouple the return pipe.

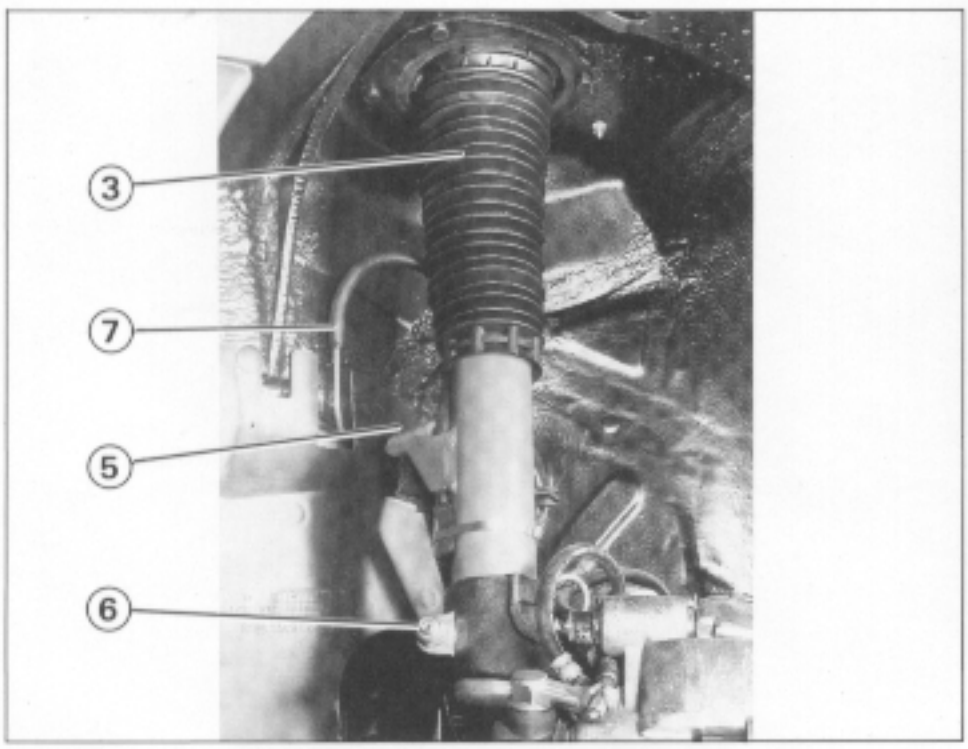
Set the height control lever to the "HIGH" position ; check for leaks.

Lower the vehicle to the ground.

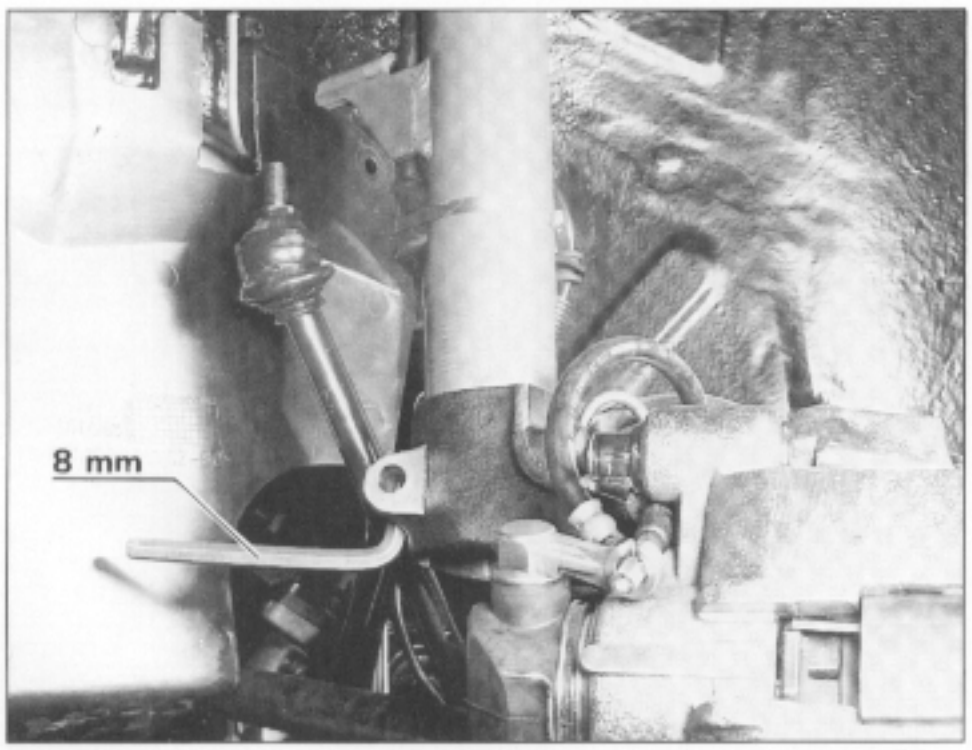
www.WorkshopManuals.co.uk



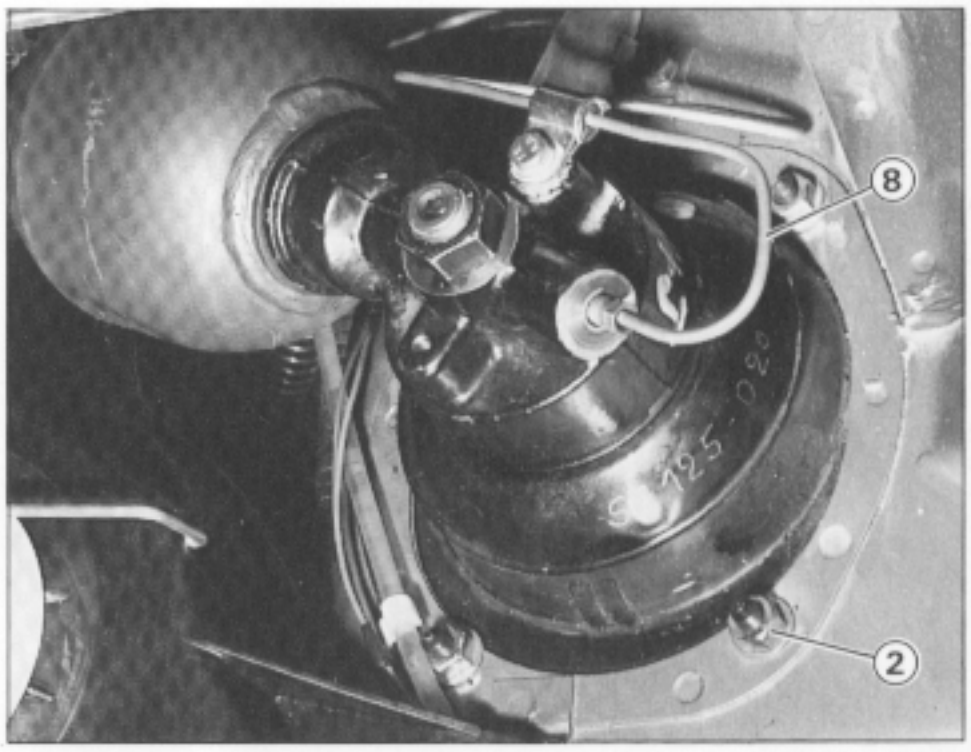
Y.41-1 I



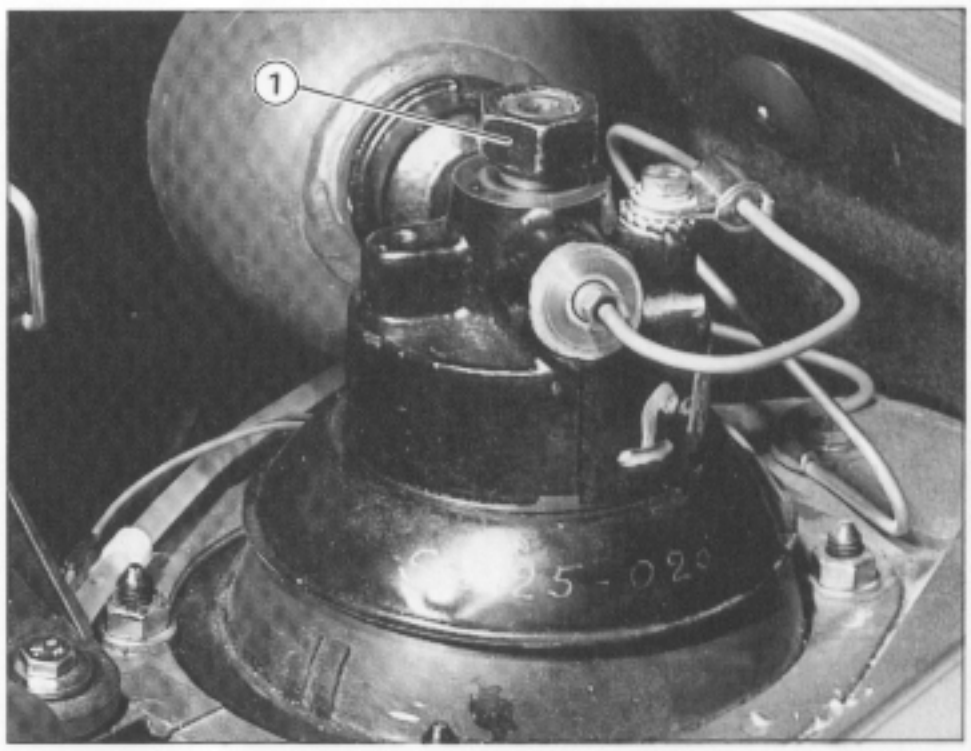
88-750 II



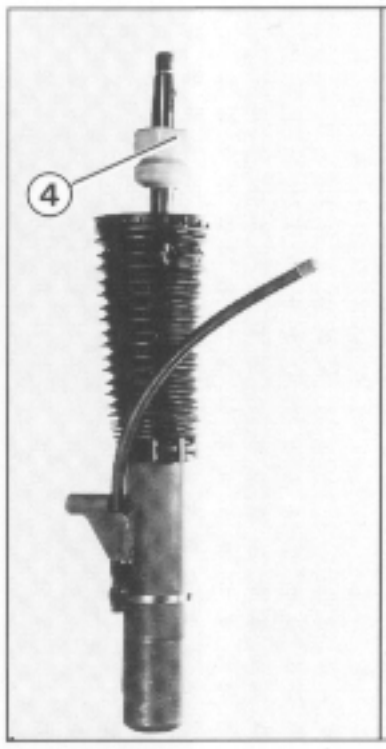
88-751 III



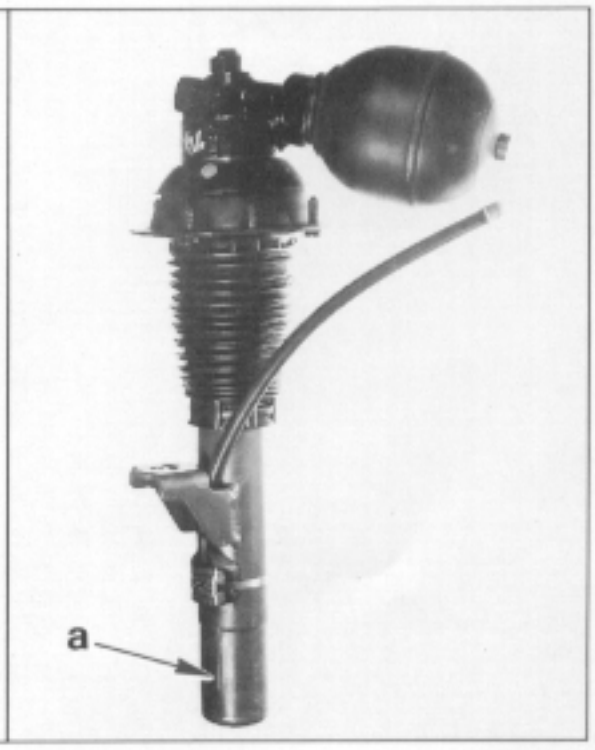
88-514 IV



88-512 V



88.547 VI



88.566 VII

www.WorkshopManuals.co.uk

REMOVAL

- Place the rear of the vehicle on stands, wheels free
- Remove the road wheel.
- Depressurize the pressure regulator.
- Set the height control lever to the "LOW" position.

It is recommended to let as much oil as possible flow out of the cylinder by raising the rear suspension arm.
Clean the cylinder and its surroundings.

Remove, Fig. I : the hydropneumatic sphere **(1)**.

Uncouple, Fig. I : the feed connection **(2)**.

Remove, Fig. II :
- Link rod pin **(4).**
- Cylinder retaining pin **(3).**

Uncouple, Fig. III : overflow return **(5)** and vent **(6)** pipes.

Remove the cylinder.

REFITTING

Refit the suspension cylinder.

Recouple, Fig. III : the overflow return and vent pipes **(5)** and **(6)**.

Refit, Fig. II :
- the cylinder retaining pin **(3),**
- link rod pin **(4).**

Couple up, Fig. I : the feed connection **(2)** *fitted with a NEW seal.*

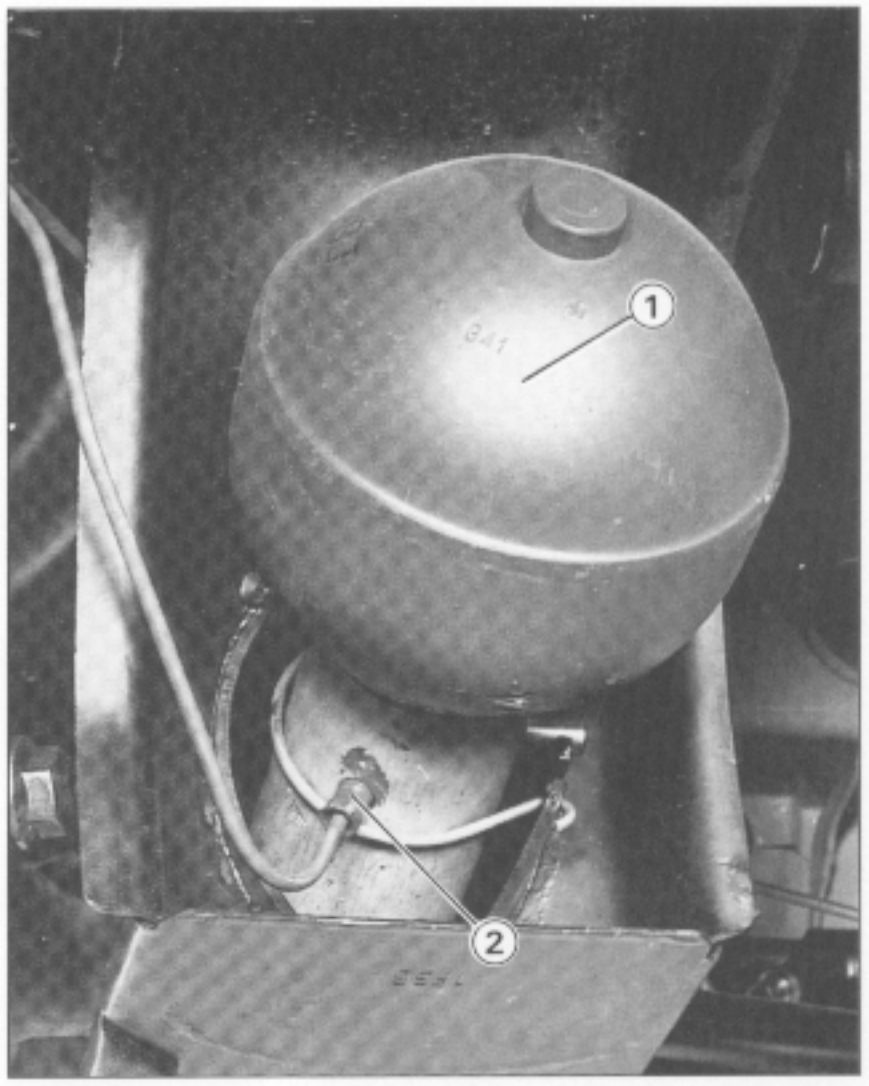
Refit, Fig. I and II : the hydropneumatic sphere **(1)** *(NEW seal oiled ; contact face* **"a"** *slightly greased).*

Start the engine.

Check the system for tightness.

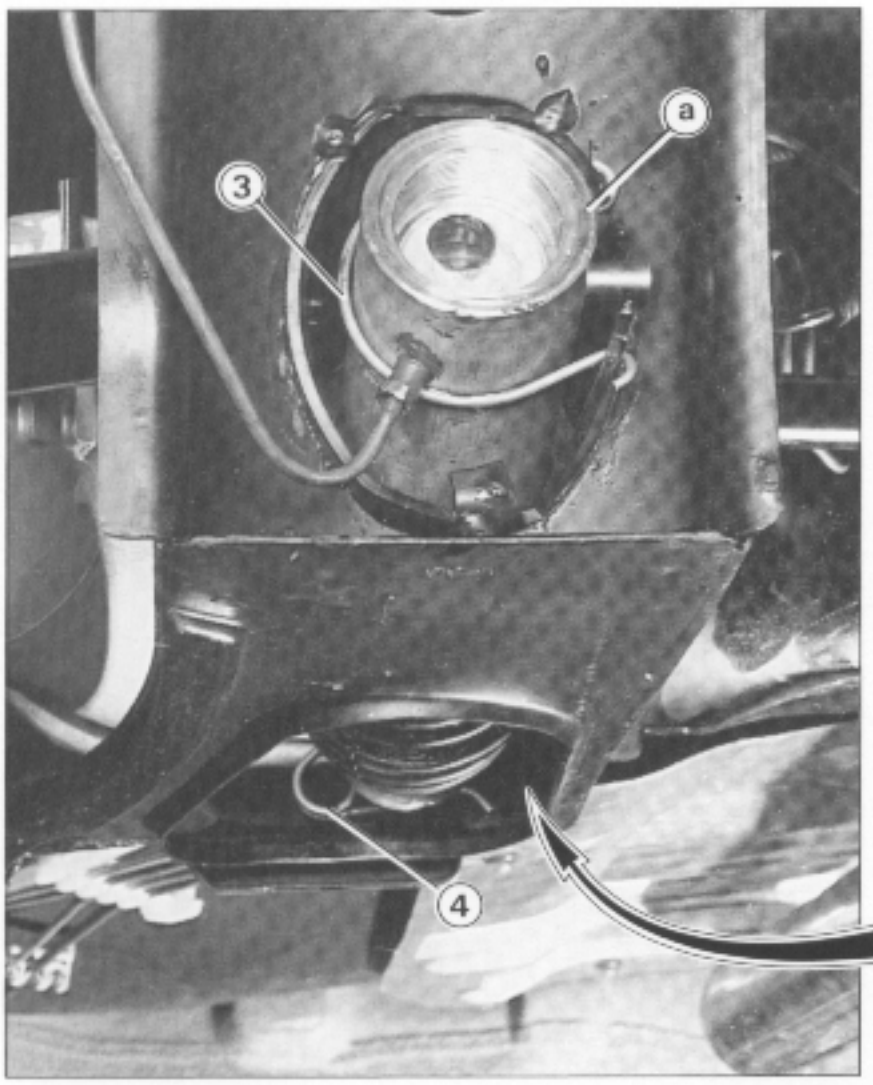
Lower the vehicle to the ground.

www.WorkshopManuals.co.uk



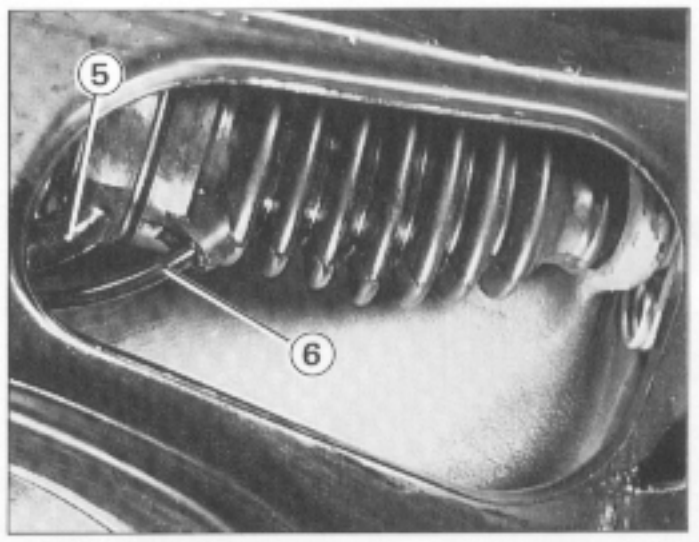
88-598

I



88-608

II



88-605

III

www.WorkshopManuals.co.uk

REMOVAL

Place the rear of the vehicle on stands

Set the manual height control to the "NORMAL DRIVING" position.

Remove the two wheels.

Uncouple, Fig. I : The height corrector automatic control clamp **(1).**

Remove, Fig. I : The height corrector automatic control **(2).**

Uncouple, Fig. III; the anti-roll bar in the following order :
- Release the two screws **(3).**
- Remove the two screws **(4).**

Remove the screws **(3)**, relieving the strain on the arms, *for the screws to be removed.*

Withdraw the anti-roll bar :
- **Liberate** the bar from the subframe on the RH side **Fig. IV**.
- **Liberate** the bar from beneath, **Fig. V**.

REFITTING

Insert the anti-roll bar through the under side of the vehicle ; engage the LH side between the exhaust system and the crossmember pipe, **Fig. V** and **Fig. IV** ; position the bar.

Refit without tightening, **Fig. III** : the screws **(4)** and **(3)**, *with the threads lubricated.*

Setting the end float of the anti-roll bar :

- **Bring** the anti-roll bar **in contact** with one of the two arms.

- **Note, Fig. III** : the distance **"a"** to determine the thickness of the required shims.

- **Position** the shims in order to obtain a **0.5 mm** max. clearance before tightening the screws.

Thickness of available shims :
0.5 - 1 - 2 - 3 mm.

Tighten in the following order, **Fig. III** :

1º the screws **(3)**,

2º the screws **(4)**.

to 9.5 m daN.

Place, Fig. I : the automatic height control **(2)** *with the mounting points greased and the manual height control set to the "NORMAL DRIVING" position.*

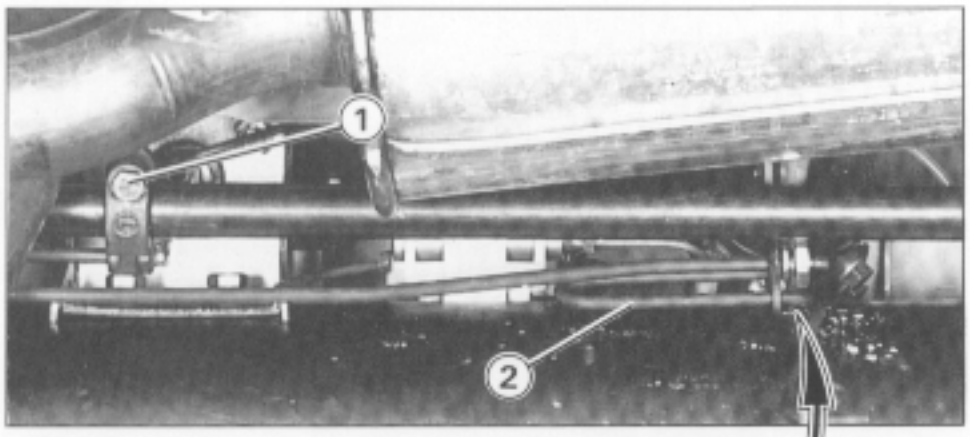
Leave, Fig. II : a **1.5 to 2 mm** clearance at **"b"**, at the articulating point and tighten the clamp.

Refit the wheels.
Tighten to 9 mdaN

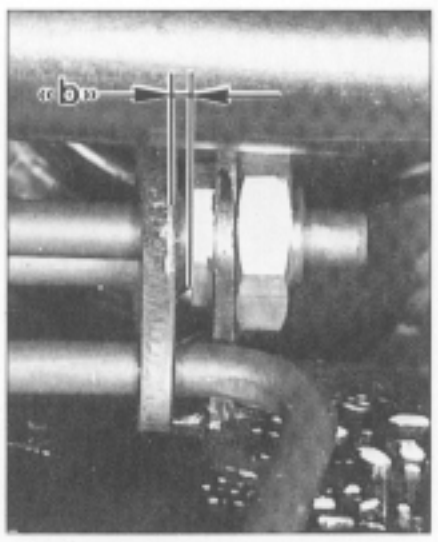
Lower the vehicle to the ground.

Adjust the heights.
(See (9) XM 430-00/1)

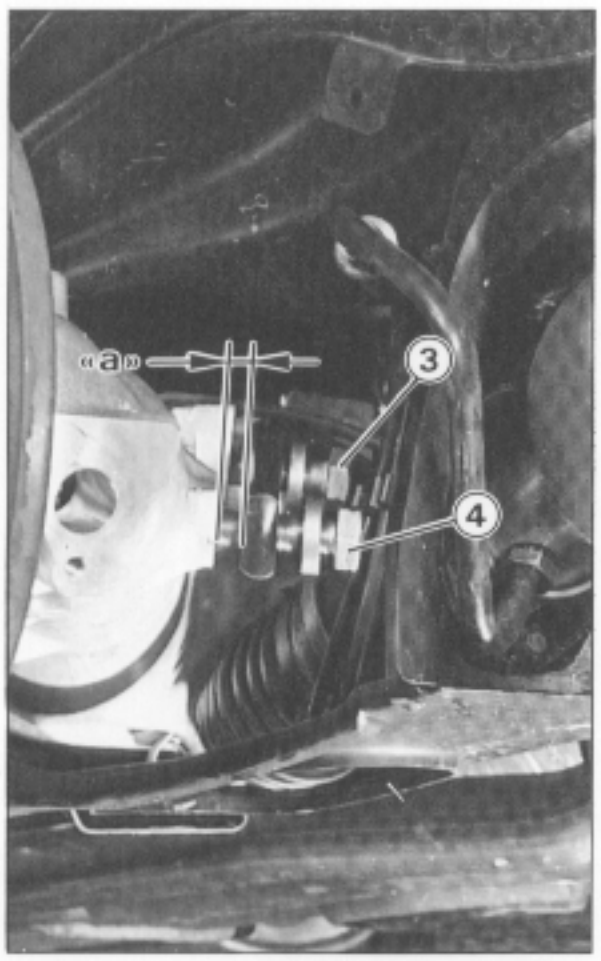
www.WorkshopManuals.co.uk



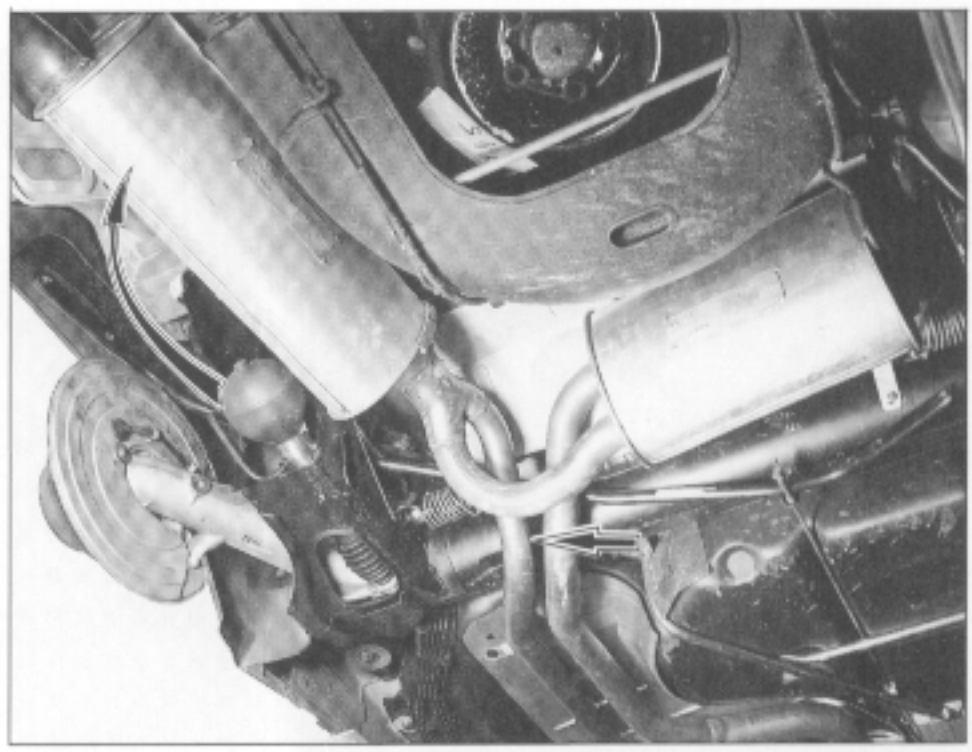
88-944 I



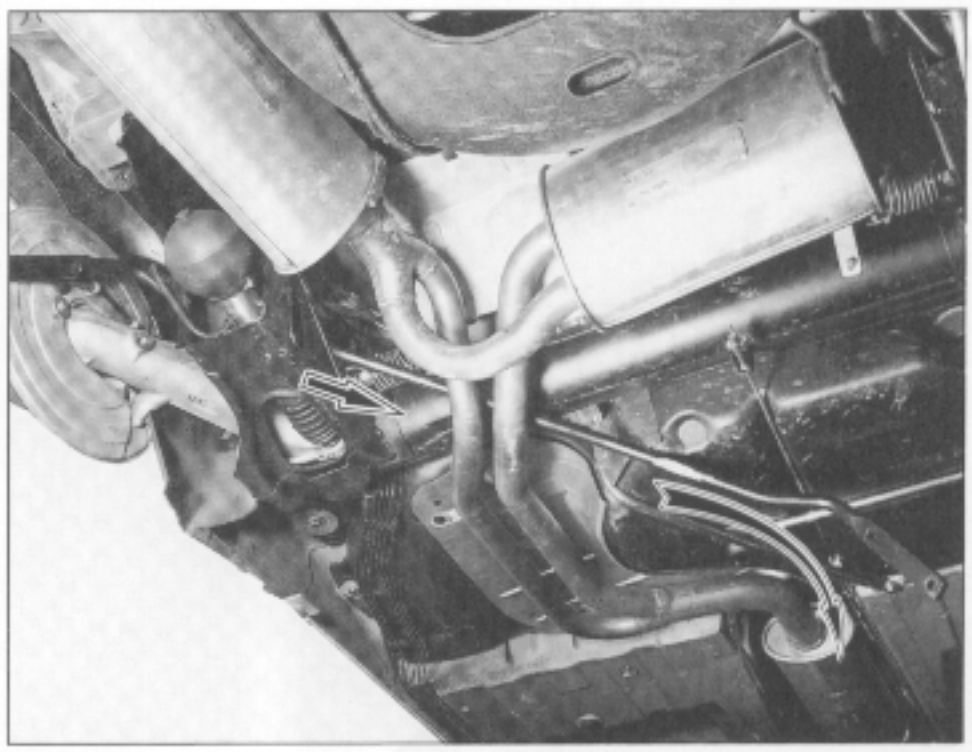
88-945 II



88-943 III

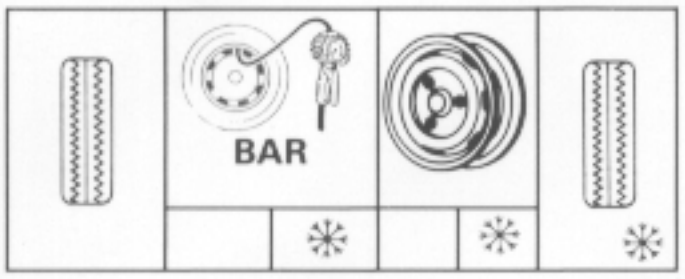


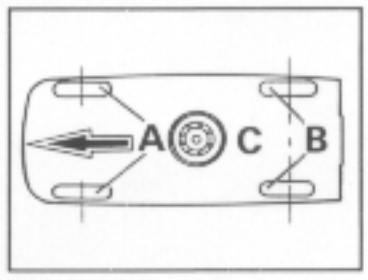
88-931 IV

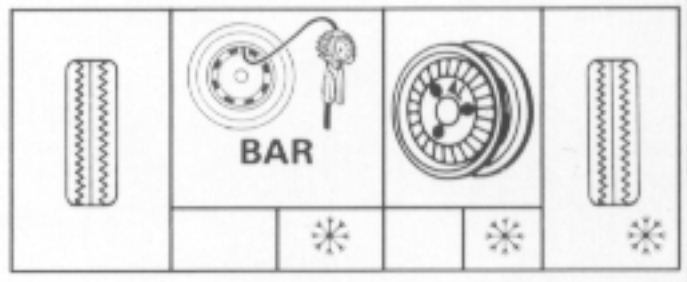


88-932 V

www.WorkshopManuals.co.uk







②	2,1 *	Ⓑ	⑨	A
②	1,9	Ⓑ	⑨	B
①	3	Ⓐ		C

XM Injection

A	②	2,1 *	Ⓙ	⑨
B	②	1,9	Ⓙ	⑨
C	①	3	Ⓑ	

③	2,2	Ⓑ	⑩	A
③	1,9	Ⓑ	⑩	B
③	2,4	Ⓑ		C

XM V6

A	③	2,2	Ⓙ	⑩
B	③	1,9	Ⓙ	⑩
C	③	2,4	Ⓒ	

* **Climat** 2,2 bars

	①	②	③	④	⑤	⑥	⑦	⑧
	175/70 R.15 MXL	195/60 R.15 MXV2	205/60 R.15 MXV2					

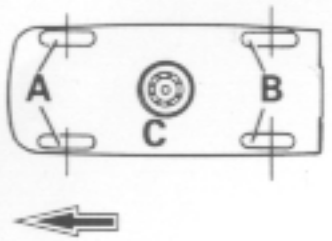
	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯
✳	195/60 R.15 XM + S.100	205/60 R.15 XM + S.300						

9 mdaN

	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ	Ⓗ
	5 1/2 J15 5.40	6 J 15 5.45						

9 mdaN

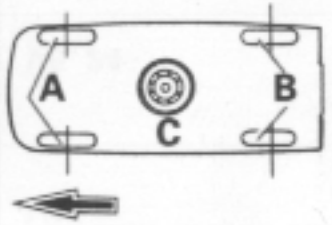
	Ⓙ	Ⓚ	Ⓛ	Ⓜ	Ⓝ	Ⓟ	Ⓠ	Ⓡ
	6 J 15 5.45							



	A-B	C	9 mdaN		BAR	XM + S 100	XM + S 200	XM + S 300
2 L carbu (7 cv)	MXL 175/70 R15 86 T	MXL 175/70 R15 86 T	5 1/2 J.15 - H2 5.40			**185/65 R15**		
2 L carbu (9 cv)	MXL 185/65 R15 87 T	MXL 175/70 R15 86 T	5 1/2 J.15 - H2 5.40	6 J.15 - CH 5.45 / 5.43				
2 L carbu	MXV2 185/65 R15 87 H	MXL 175/70 R15 86 T	5 1/2 J.15 - H2 5.40	6 J.15 - CH 5.45 / 5.43				
2 L Monopoint	MXV2 185/65 R15 87 H	MXL 175/70 R15 86 T	5 1/2 J.15 - H2 5.40	6 J.15 - CH 5.45 / 5.43				
2 L Injection	MXV2 195/60 R15 87 H	MXL 175/70 R15 86 T	6 J15 - H2 5.45	6 J.15 - CH 5.45 / 5.43		**195/60 R15**		**185/60 R15**
D12 → AM 92 Séduction	MXL 175/70 R15 86 T	MXL 175/70 R15 86 T	5 1/2 J.15 - H2 5.40			**185/60 R15**		
D12 AM 92 → Séduction	MXL 185/65 R15 87 H	MXL 175/70 R15 86 T	5 1/2 J.15 - H2 5.40	6 J.15 - CH 5.45 / 5.43				
D12 Harmonie	MXL 185/65 R15 87 T	MXL 175/70 R15 86 T	5 1/2 J. 15 - H2 5.40	6 J.15 - CH 5.45 / 5.43				
D12 Turbo	MXV2 195/65 R15 91 H	MXL 175/70 R15 86 T	6 J.15 - H2 5.45	6 J.15 - CH 5.45 / 5.43		**195/65 R15**		
V6	MXV2 205/60 R15 91 V	* MXL 175/70 R15 MXV2 205/60 R15	6 J.15 - H2 5.45	6 J.15 - CH 5.45 / 5.43		**195/65 R15**		**205/60 R15**
V6. 24	MXV2 205/60 ZR15	MXV2 205/60 ZR15		6 J.15 - CH 5.45 / 5.43		**195/65 R15**		**205/60 R15**

* harmonie → AM 92 : 5.45
AM 92 → : 5.43

www.workshopmanuals.co.uk

	A-B	C	 9 mdaN		 BAR			
							XM + S 100	XM + S 200	XM + S 300
2 L Injection **D 12** **D 12 Turbo**	MXV2 195/65 R15 91 H	MXV2 195/65 R15 91 H	6 J.15 - H2 - 5.45	6 J.15 - CH - 5.43			**195/65 R15**		
V6	MXV2 205/60 R15 91 V	MXV2 205/60 R15 91 V	6 J.15 - H2 - 5.45	6 J.15 - CH - 5.43			**195/65 R15**		**205/60 R15**

www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk

29th DECEMBER 1995

ABONNEMENT GME

9 No XM - 1

EVOLUTION

● EVOLUTION : HYDRACTIVE II E.C.U.

MAN 158931

2

GB

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

EVOLUTION : HYDRACTIVE II E.C.U.

1 – PRELIMINARY NOTES

Mass produced as of December 1994; then only one HYDRACTIVE II E.C.U. part number instead of two as before.

In the factory, the new E.C.U. is adapted to the XM, all petrol models or XM all Diesel models using a "telecoding" procedure .

During the After sales repairs, tbe procedure must be performed using the diagnostic tools (ELIT test unit or SOURIAU 26 A station).

"telecoding" : means of electronically selecting a parameter table corresponding to a vehicle configuration when the E.C.U. can be used (under certain conditions) on various vehicles.

2 – FACTORY

2.1 – Identification of E.C.U.s



Fig. : B3BR013C

1) E.C.U. software index label.

The HYDRACTIVE E.C.U. can be identified label by its software index label.

2.2 – E.C.U.s allocation

2.2.1 – Previously

Software index label	Vehicles	Applicable
H4 S2G2G	All XM types	RPO No. 5929 → 94 Model Year inclusive
	All XM types except DK5ATE	95 Model Year → RPO No. 6609
H4 S2H2G	XM DK5ATE	95 Model Year → RPO No. 6604

2.2.2 – Nowadays

Software index label	Vehicles	Applicable
H4 S2I2G	XM petrol all types	RPO No. 6610 →
	XM diesel all types except DK5ATE	
	XM DK5ATE	RPO No. 6605 →

The new H4 S2I2G E.C.U. contains parameter tables that can be selected for each model of the whole Citroën XM family of vehicles.

3 – AFTER SALES

3.1 – Replacement parts

The Replacement Parts Department sells the three E.C.U. types.

Once the old HYDRACTIVE II E.C.U.s have run out, the Replacement Parts Department will only sell new E.C.U.s (software index label H4 S2I2G).

A "Telecoding" procedure is to be performed during the installation of a new E.C.U. (software index label H4 S2I2G) on the vehicle.

www.WorkshopManuals.co.uk

3.2 – Interchangeability

The new E.C.U. (software index label H4 S2I2G) replaces the old ones (H4 S2G2G), but must be "telecoded".

WARNING : the old E.C.U.s (H4 S2H2G) cannot replace the new one (H4 S2I2G).

IMPERATIVE : observe the E.C.U./vehicle type allocation.

3.3 – Identification during after sales repairs

HYDRACTIVE II, XANTIA, XM petrol and XM Diesel E.C.U.s look identical.

The only means of identifying an E.C.U. is using the ELIT test unit or the SOURIAU 26A station (E.C.U. connected to vehicle harness).

Identification procedure using ELIT unit :
- from the main menu, select "XM"
- select "SUSPENSION"
- select "HYDRACTIVE H4"
- select "AFTER SALES PART NUMBER" (to verify)
- the unit displays "MODEL", XANTIA or XM petrol or XM Diesel

Identification procedure using SOURIAU 26A station :
- from the main menu, select "XM"
- then select "HYDRACTIVE II SUSPENSION"
- select "IDENTIFICATION"
- the display reads "PARAMETER VERSION", XANTIA or XM petrol or XM Diesel

3.4 – "Telecoding"

3.4.1 – Precautions to be taken

The E.C.U. with software index label H4 S2I2G must be "telecoded" using the diagnostic equipment (ELIT unit or SOURIAU 26A station).

WARNING : The E.C.U. with software index label H4 S2I2G can only be "telecoded" once.

During the telecoding operation, observe the vehicle model :
- XM petrol all types
- XM diesel all types

NOTE : An E.C.U. with software index label H4 S2I2G and not "telecoded" causes the HYDRACTIVE warning lamp to light up for 30 seconds every time the ignition is switched on.

IMPERATIVE : always check the "telecoded" model after "telecoding" and read the fault codes.

3.4.2 – Simplified "telecoding" method

"Telecoding" requires using the ELIT test unit or SOURIAU 26A station.

The E.C.U. must be connected to the vehicle harness.

"Telecoding" with ELIT unit :
- from the main menu, select "REPLACEMENT PARTS"
- select "SUSPENSION"
- select "HYDRACTIVE H4"
- select "PROGRAMMING"
- select vehicle model, the "Telecoding" is completed
- switch off and on the ignition
- return to HYDRACTIVE menu
- select "AFTER SALES PART NUMBER" (to verify)
- read the fault codes

"Telecoding" with SOURIAU 26A station :
- from the main menu, select "XM"
- then select "HYDRACTIVE II SUSPENSION"
- then select "REPLACEMENT PARTS PROGRAMMING"
- select the vehicle model ; the "telecoding" is taking place
- switch off and on the ignition
- check the "telecoded" model (select "identification" from "HYDRACTIVE" menu)
- read the fault codes

www.WorkshopManuals.co.uk

CITROËN XM

30th NOVEMBER 1994

REF. 9 No. XM 430-00/2

SUSPENSION

« HYDRACTIVE 2 » SUSPENSION

Operating principle diagnostic

MAN 058932

2

GB

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

SUSPENSION

GENERALITY : HYDRACTIVE SUSPENSION 2 3

OPERATING PRINCIPLE : HYDRACTIVE SUSPENSION 2 4

ELECTRICAL SPECIFICATION : HYDRACTIVE SUSPENSION 2 9

HYDRAULIC SPECIFICATION : HYDRACTIVE SUSPENSION 2 19

FAULT FINDING : HYDRACTIVE SUSPENSION 25

www.WorkshopManuals.co.uk

GENERALITY : HYDRACTIVE SUSPENSION 2

1 – PREAMBLE

Since RP organisation number 5929, the CITROEN XM has been equipped with the HYDRACTIVE suspension 2.

2 – COMPARISON BETWEEN HYDRACTIVE AND HYDRACTIVE 2

2.1 – Control unit

Hydractive suspension	Hydractive suspension 2
Automatic suspension : automatic changeover from the "soft" to the "firm" state	Normal suspension : new laws governing the transition from "soft" to "firm"
Sport suspension : suspension always in the "firm" state	Sport suspension : introduction of laws governing the transition from "soft" to "firm"

2.2 – Hydraulic

Hydractive suspension	Hydractive suspension 2
Electrovalve piloting the "soft"/"firm" states	2 stiffness regulators with integrated electrovalve
Stiffness regulators (one at the front, one at the rear)	The electrovalves are operated simultaneously

NOTE : The new stiffness regulators are fitted in the position of the previous ones.

2.3 – Steering wheel sensor

Hydractive suspension	Hydractive suspension 2
Made up of 2 parts	One–piece type XANTIA (*)

NOTE : (*) this sensor has been fitted since organisation number PR 5852.

2.4 – Distance sensor

No improvement.

2.5 – Suspension switch

Hydractive suspension	Hydractive suspension 2
"AUTO–SPORT" marking	"NORM–SPORT" marking

2.6 – Dot matrix

Messages modified.

Language	Normal suspension	Sport suspension
French	SUSPENSION NORMALE	SUSPENSION SPORT
English	NORMAL SUSPENSION	SPORT SUSPENSION
German	NORMAL ABSTIMMUNG	SPORT ABSTIMMUNG
Italian	SOSPENSIONE NORMALE	SOSPENSIONE SPORTIVA
Spanish	SUSPENSION NORMAL	SUSPENSION SPORT
Dutch	NORMAAL VERING	SPORT VERING

www.WorkshopManuals.co.uk

OPERATING PRINCIPLE : HYDRACTIVE SUSPENSION 2

1 – COMPOSITION

The hydractive suspension system of the XM CITROEN vehicle includes :

- an electronic control unit
- 2 high pressure electrovalves
- distance sensor
- steering wheel sensor
- body movement sensor
- a brake pressure switch sensor
- accelerator pedal potentiometer
- a "sport setting" selector switch
- door switches

2 – OPERATING PRINCIPLE

The operating principle of the hydractive suspension system for the XM CITROEN vehicle is identical to that of the XANTIA CITROEN vehicle.

It is a suspension with two stiffness states and two damping states (soft/firm).

The suspension mode changes are controlled, in anticipation, by one of the five following parameters :

- steering wheel angle
- steering wheel speed
- braking
- accelerator pedal depressed
- body vertical movement

The sensor parameters are compared with threshold figures which vary with the vehicle speed.

As soon as a parameter value exceeds the threshold, a change to the "firm mode" occurs; the suspension will return to the "soft mode" when the parameter value is again lower than the threshold and after a delay.

3 – OPERATING PRINCIPLE LAY OUT

www.WorkshopManuals.co.uk

3.1 – Circuit diagram

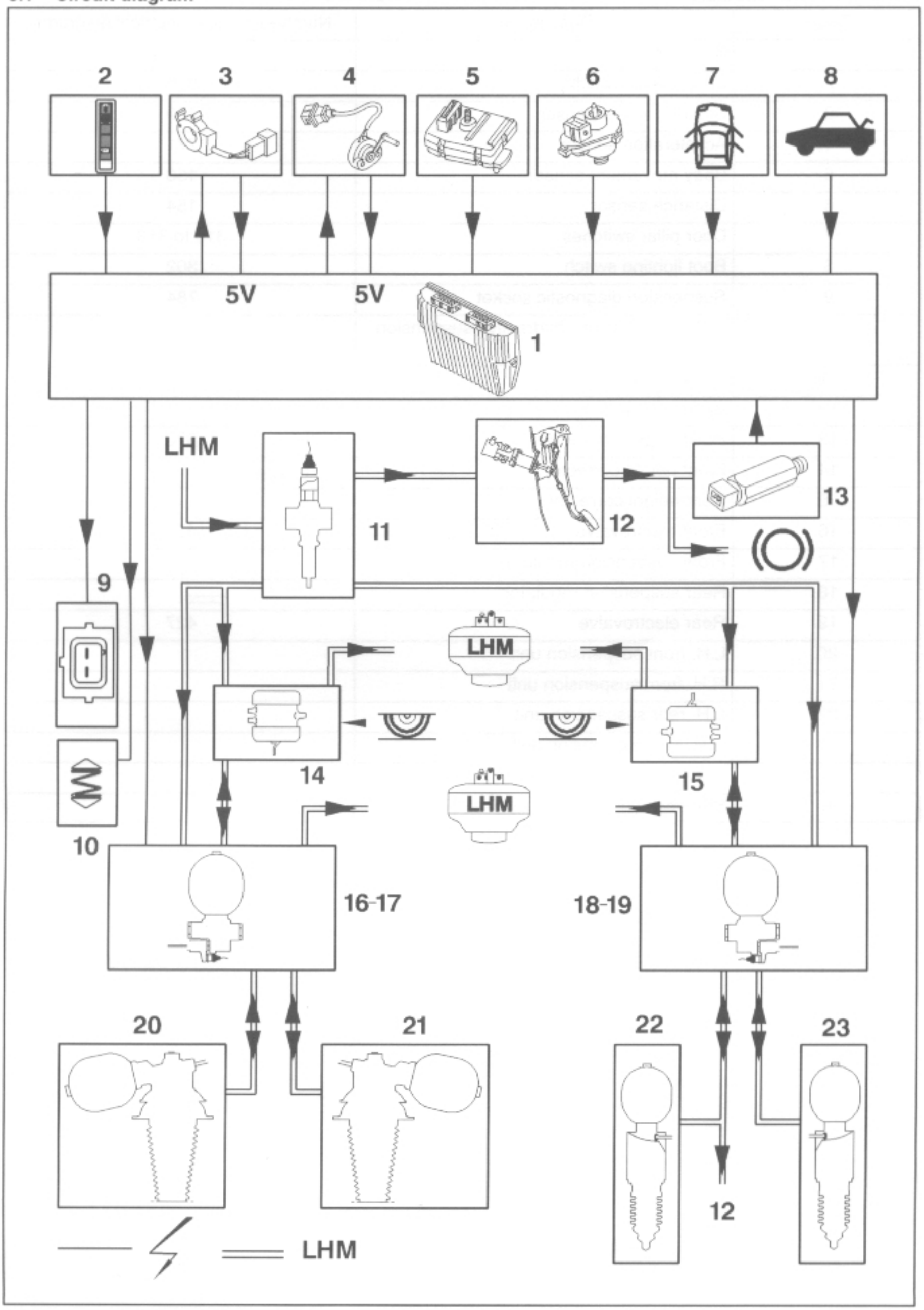


Fig : B3BP041P

www.WorkshopManuals.co.uk

Specific parts nomenclature :

Code	Description	Numbers on the electrical diagrams
1	Suspension E.C.U.	143
2	Suspension switch	606
3	Steering wheel sensor	159
4	Acceleration sensor	771
5	Body movement sensor	153
6	Distance sensor	154
7	Door pillar switches	310 to 313
8	Boot lighting switch	302
9	Suspension diagnostic socket	784
10	Instrument cluster (hydractive suspension warning lamp)	
11	Security valve	
12	Brake control valve	
13	Brake pressure switch	670
14	Front height corrector	
15	Rear height corrector	
16	Front electrovalve	433
17	Front suspension regulator	
18	Rear suspension regulator	
19	Rear electrovalve	427
20	L.H. front suspension unit	
21	R.H. front suspension unit	
22	L.H. rear suspension unit	
23	R.H. rear suspension unit	
A	Additional sphere	
B	Steering system hydraulic circuit	

www.WorkshopManuals.co.uk

3.2 – Circuit diagram – power assisted steering with power return

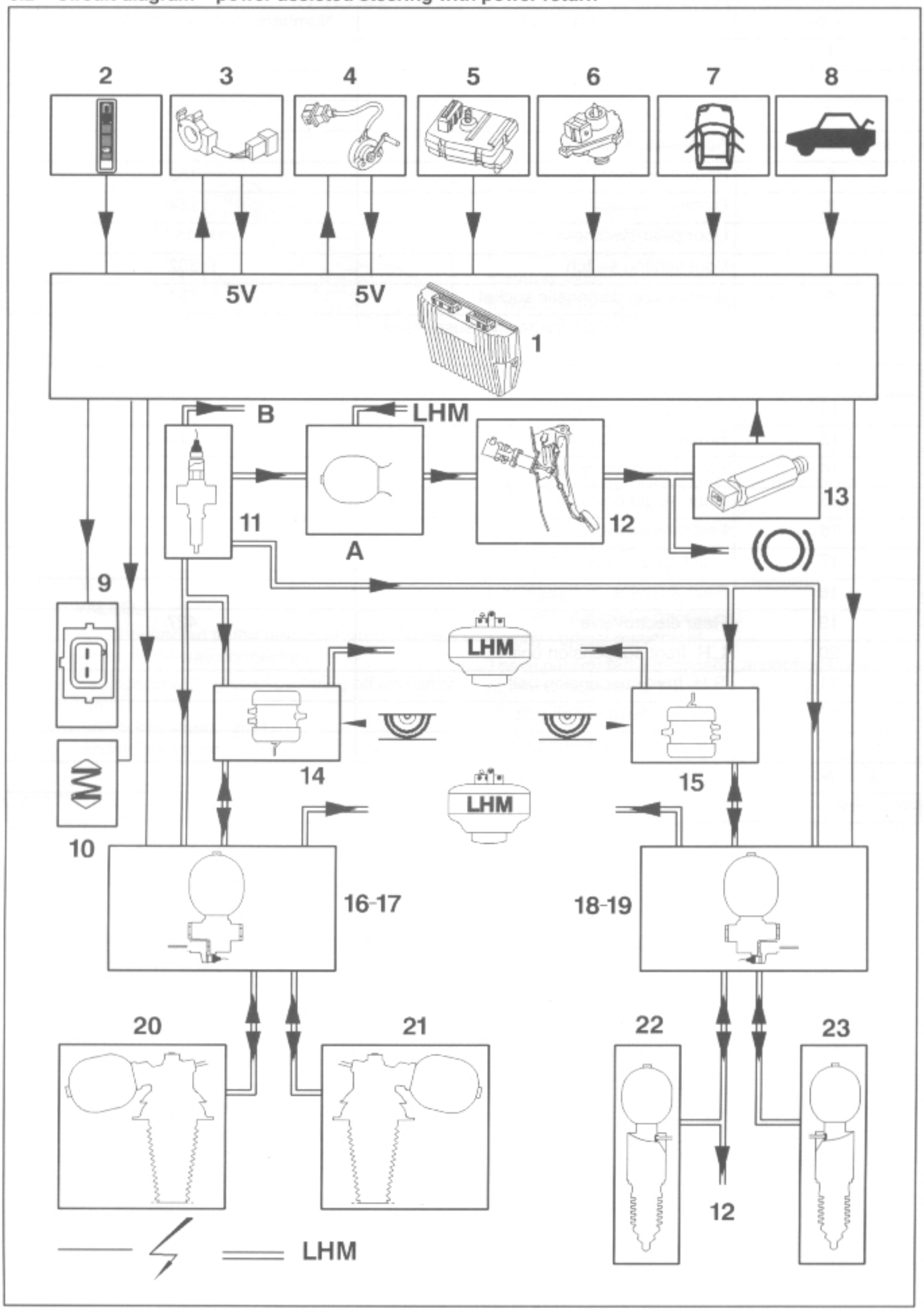


Fig : B3BP042P

www.WorkshopManuals.co.uk

Specific parts nomenclature :

Code	Description	Numbers on the electrical diagrams
1	Suspension E.C.U.	143
2	Suspension switch	606
3	Steering wheel sensor	159
4	Acceleration sensor	771
5	Body movement sensor	153
6	Distance sensor	154
7	Door pillar switches	310 to 313
8	Boot lighting switch	302
9	Suspension diagnostic socket	784
10	Instrument cluster (hydractive suspension warning lamp)	
11	Security valve	
12	Brake control valve	
13	Brake pressure switch	670
14	Front height corrector	
15	Rear height corrector	
16	Front electrovalve	433
17	Front suspension regulator	
18	Rear suspension regulator	
19	Rear electrovalve	427
20	L.H. front suspension unit	
21	R.H. front suspension unit	
22	L.H. rear suspension unit	
23	R.H. rear suspension unit	
A	Additional sphere	
B	Steering system hydraulic circuit	

www.WorkshopManuals.co.uk

ELECTRICAL SPECIFICATION : HYDRACTIVE SUSPENSION 2

1 – SUSPENSION E.C.U.

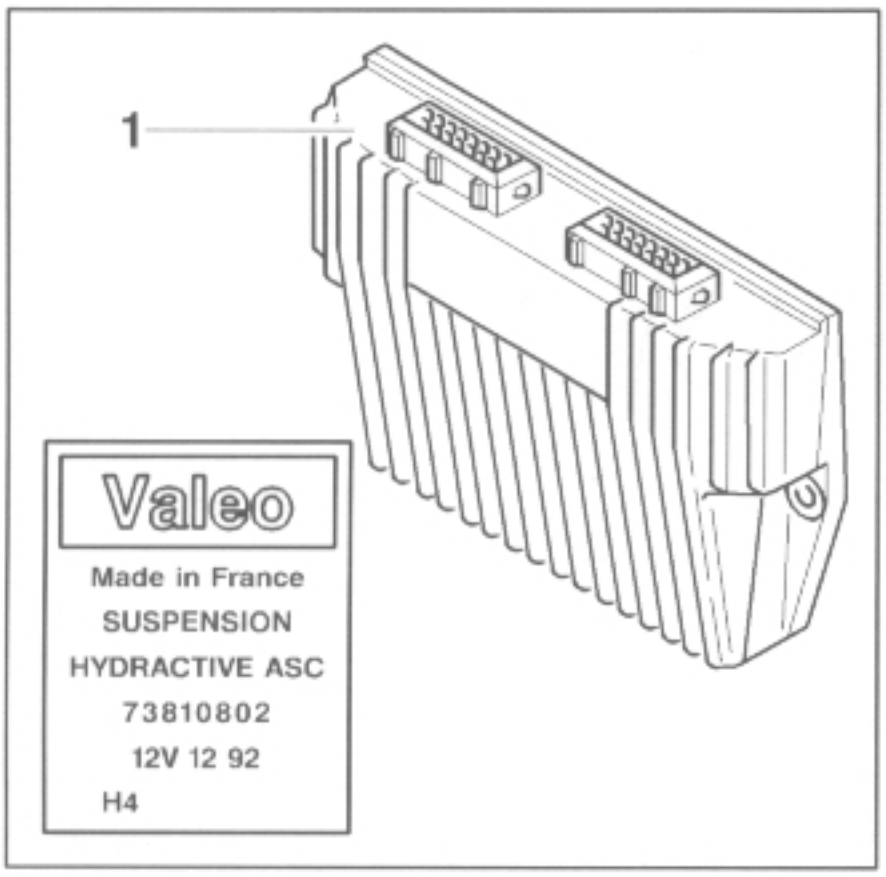


Fig : B3BP043C

Make : VALEO.

E.C.U. (1) is connected to the electrical circuit by two white and black 15–way connectors.

Max. consumption with ignition switched off and after a time delay :
- doors and boot closed : 2mA
- doors and/or boot open : 100mA

ATTENTION : Although the E.C.U.s fitted in production to the CITROEN XM and XANTIA bear the same VALEO reference, their internal parameters are different.

IMPERATIVE : Do not equip a CITROEN XANTIA with a CITROEN XM E.C.U. and vice versa.

1.1 – Purpose of the E.C.U.

E.C.U. (1) manages electrically and simultaneously electrovalves (16) and (19).

Supplied by the E.C.U., the two electrovalves switch the suspension from the"firm" to the "soft" state and vice versa.

The E.C.U. also monitors the components of the system :
- sensors
- actuating motors
- electronic connections
- suspension E.C.U.
- supply system

It watches the operation of the program.

Should a failure occur, the E.C.U. :
- ensures the max. possible security
- programs the system to operate in degraded mode
- carries out an autodiagnostic of the main components and functions

1.2 – Operating principle of the electrovalves

The suspension mode changes are controlled, in anticipation, by one of the five following parameters :
- steering wheel angle
- steering wheel speed
- braking
- accelerator pedal depressed
- body vertical movement

These parameters are chosen, according to the speed of the vehicle, to determine in anticipation the side, longitudinal or vertical accelerations of the vehicle.

2 – SUSPENSION ELECTROVALVES

Supplied by the E.C.U., the two electrovalves switch the suspension from the"firm" to the "soft" state and vice versa.

www.WorkshopManuals.co.uk

3 – SUSPENSION SWITCH

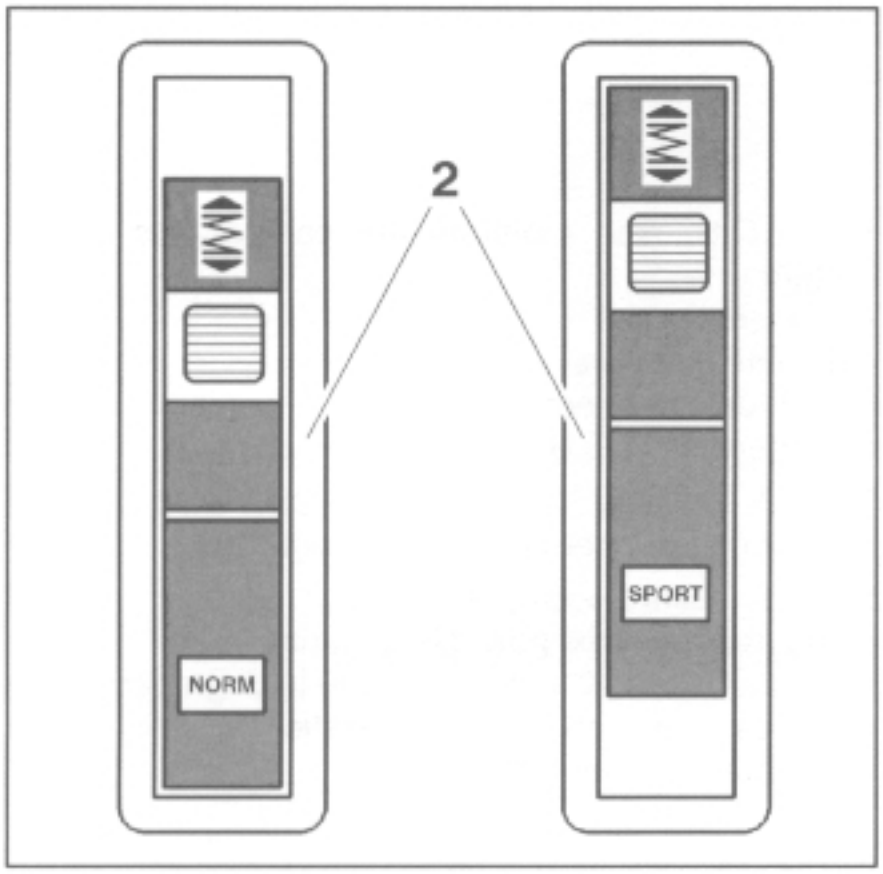


Fig : B3BP044C

Suspension switch (2) makes it possible to choose between the "NORMAL" position or the "SPORT" position.

The switch, enabling above selection, is :
- closed in the "NORMAL" position (E.C.U. earthed)
- open in the "SPORT" position

Normal operation of the warning lamp (with ignition on) :
- switch set to the "NORMAL" position = the warning lamp does not illuminate
- side and tail lamps on = warning lamp slightly illuminated
- switch in the "SPORT" position = warning lamp illuminated

NOTE : Whatever the position of the switch, the suspension can be in the "soft" or the"firm" mode ; but the threshold figures will vary.

4 – VEHICLE SPEED SENSOR

It is a "HALL effect" type sensor :
- 8 impulses per revolution
- 5 impulses per meter

The sensor informs the E.C.U. of the speed of the vehicle.

Receiving a 12 volt supply, the sensor generates a periodic tooth–shaped signal the amplitude of which varies with the speed of the vehicle.

5 – STEERING WHEEL ANGLE SENSOR

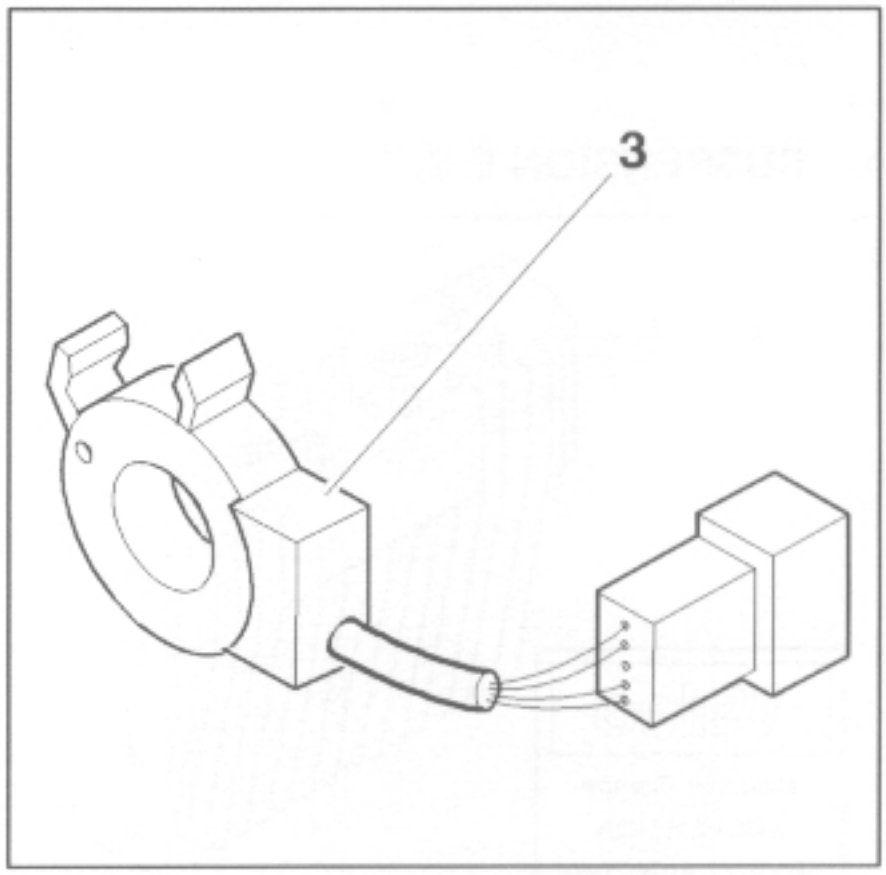


Fig : B3BP045C

Make : VALEO.

Steering wheel angle sensor (3) consists of a rotor with 28 slots and a double opto–electronic sensor.

The rotor is operated by the steering column.

Supplied in 5 volts, the sensor generates an impulse whenever the optical sensor detects a slot in the rotor.

Having processed the signal, the E.C.U. :
- determines the direction of rotation of the steering wheel
- calculates the rotational speed of the steering wheel
- determines the straight–ahead position (if the vehicle speed exceeds 18 miles/h)
- calculates the angular position of the steering wheel (in relation to the straight ahead position)
- compares the value found with the speed of the vehicle
- gives instructions, or not, to change the suspension system to the "firm" mode

The suspension switch–over to "firm" mode is achieved by comparing :
- the steering wheel rotational speed in relation to the vehicle speed
- the rotational angle of the steering wheel in relation to the vehicle speed

www.WorkshopManuals.co.uk

5.1 – Steering wheel speed thresholds

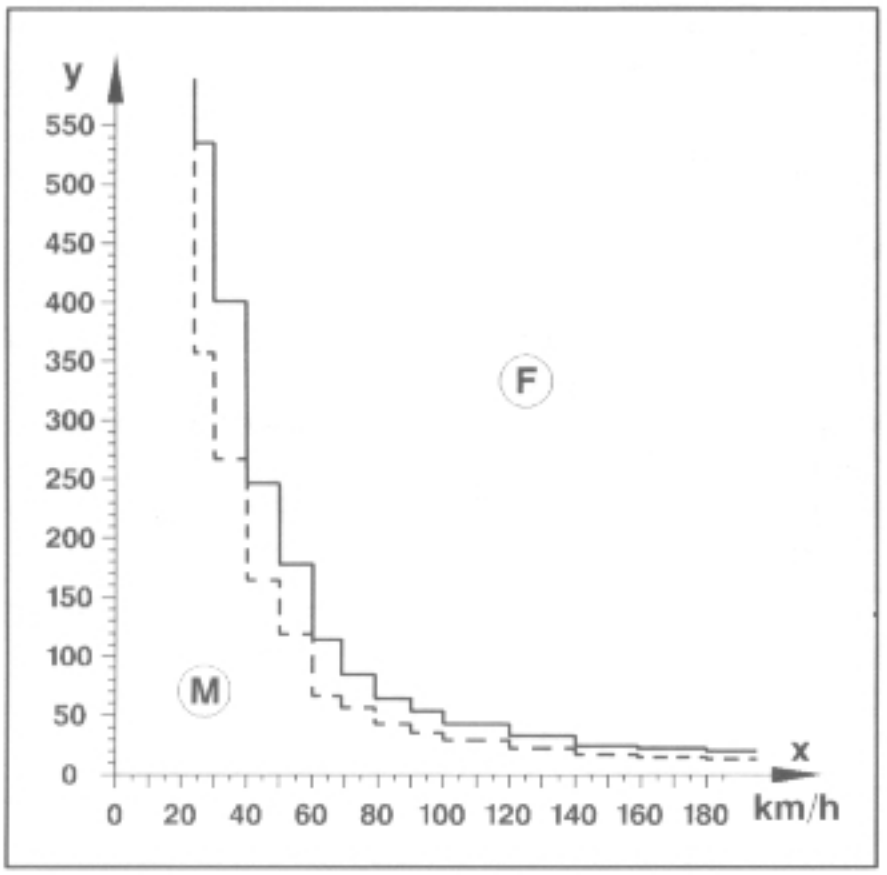


Fig : B3BP01PC

__ : switch set to the "NORMAL" position.

— : switch in the "SPORT" position.

x : vehicle speed (km/h).

y : steering wheel speed (degrees/second).

M : "SOFT" state.

F : "FIRM" state.

Vehicle speed (km/h)	Steering wheel speed (degrees/second)	
	NORMAL	SPORT
24–29	535	357
30–39	401	267
40–49	246	164
50–59	178	119
60–68	110	73
69–78	82	55
79–89	62	41
90–99	53	35
100–119	42	28
120–139	30	20
140–158	22	15
159	20	13

As soon as a parameter value exceeds the threshold, a change to the "firm mode" occurs; the suspension will return to the "soft mode" when the parameter value is again lower than the threshold and after a delay.

Time delay : 1 to 2 seconds.

NOTE : During the steering wheel return to the straight ahead position phase, the transition threshold values are multiplied by 1.5.

5.2 – Steering wheel angle thresholds

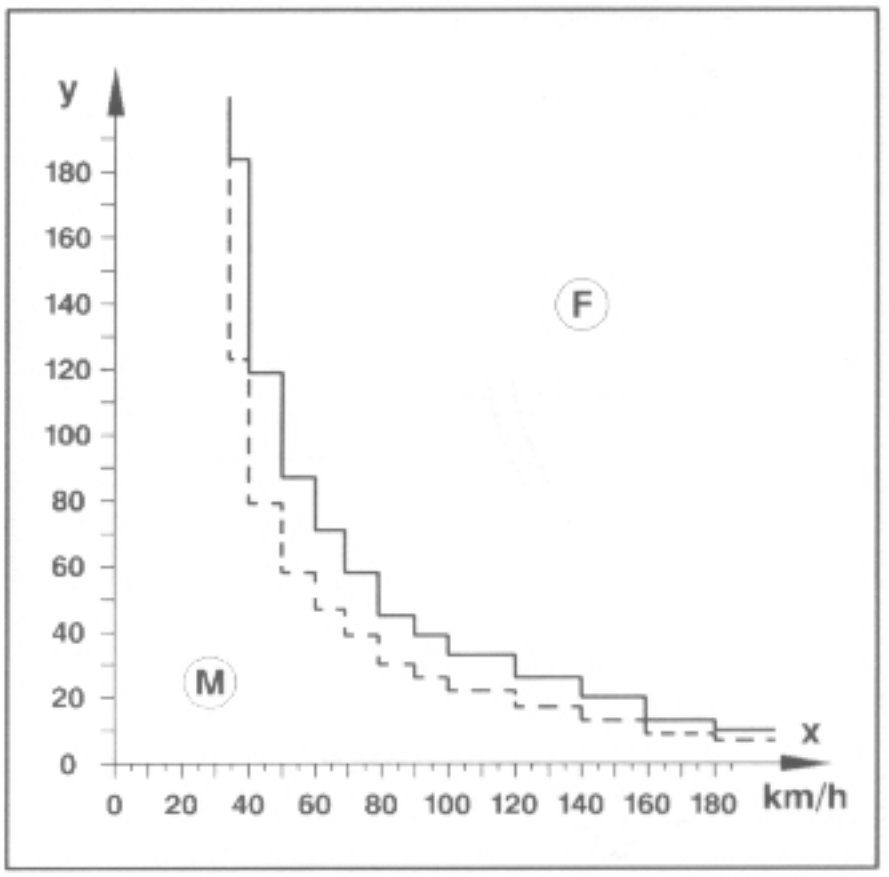


Fig : B3BP01QC

__ : switch set to the "NORMAL" position.

— : switch in the "SPORT" position.

x : vehicle speed (km/h).

y : steering wheel angle (degrees).

M : "SOFT" state.

F : "FIRM" state.

Whenever the sensor data exceeds the threshold value, the suspension system switches into "firm" mode.

Time delay : 1 to 2 seconds.

Vehicle speed (km/h)	Steering wheel angle (degrees)	
	NORMAL	SPORT
34–39	174	119
40–49	100	67
50–59	84	56
60–68	68	45
69–78	55	37
79–89	42	28
90–99	33	22
100–119	26	17
120–139	23	15
140–158	20	13
159–179	13	9
180	10	7

NOTE : If the time taken to change to "firm" state exceeds 2 minutes, the E.C.U. will switch the system back to "soft" state.

www.WorkshopManuals.co.uk

6 – ACCELERATION SENSOR

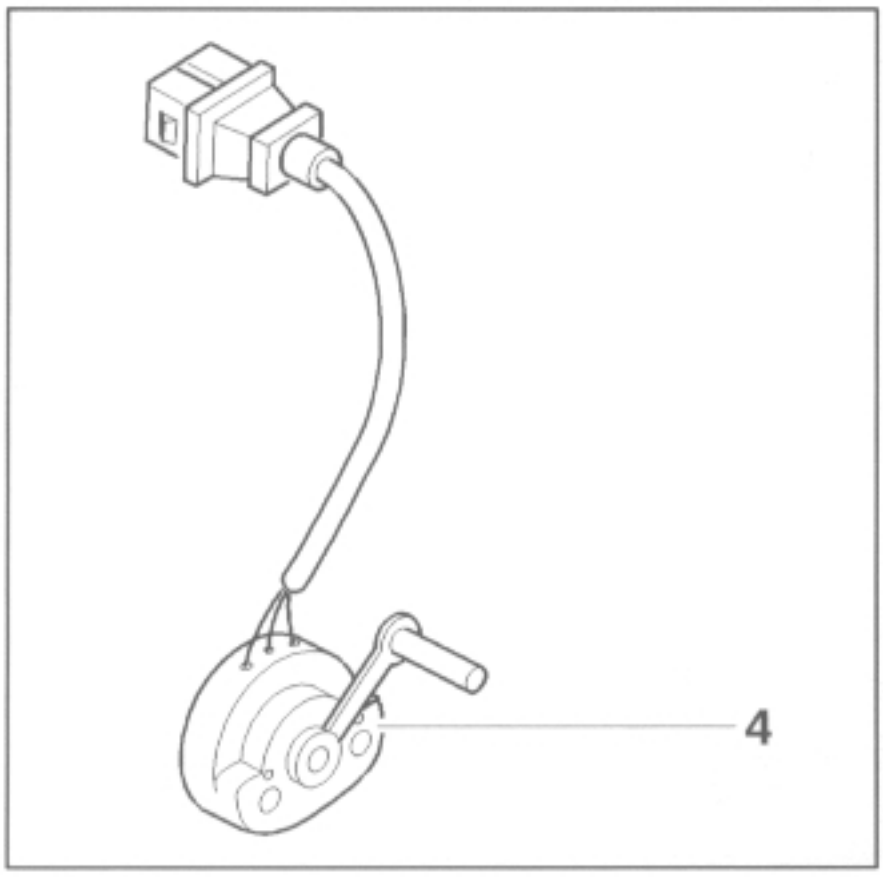


Fig : B3BP046C

Make : VALEO.

Aceleration sensor (4) consists of a potentiometer mechanically linked to the accelerator pedal.

Supplied in 5 volts, the sensor converts this voltage according to the position of the pedal.

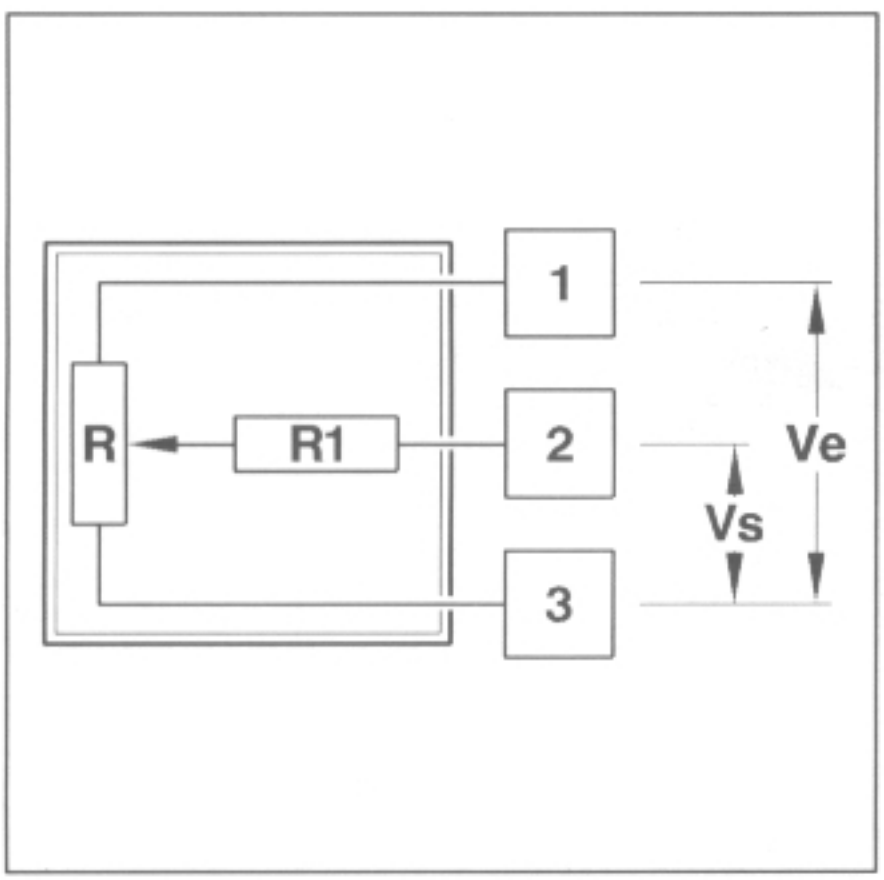


Fig : B3BP01JC

R = 4.2 K.ohms.

R1 = 1.7 K.ohm.

Ve = supply voltage (5 volts).

Vs = output voltage (0–5 volts).

Having processed the signal, the E.C.U. :

- determines the pedal depressed and released speed
- compares the value found with the speed of the vehicle
- gives instructions, or not, to change the suspension system to the "firm" mode
- the suspension switch–over to "firm" mode is achieved by comparing
- the accelerator pedal depressed speed in relation to the speed of the vehicle
- the acelerator pedal release speed in relation to the speed of the vehicle

The E.C.U. divides the overall travel of the acelerator pedal into "n" spaces.

The speed of the accelerator pedal is determined in "spaces" per second.

"n" included between 130 and 220 varies according to the min. pedal adjustment.

The E.C.U. determines the number of "spaces" run in 25 ms.

www.WorkshopManuals.co.uk

6.1 – Accelerator depressed thresholds

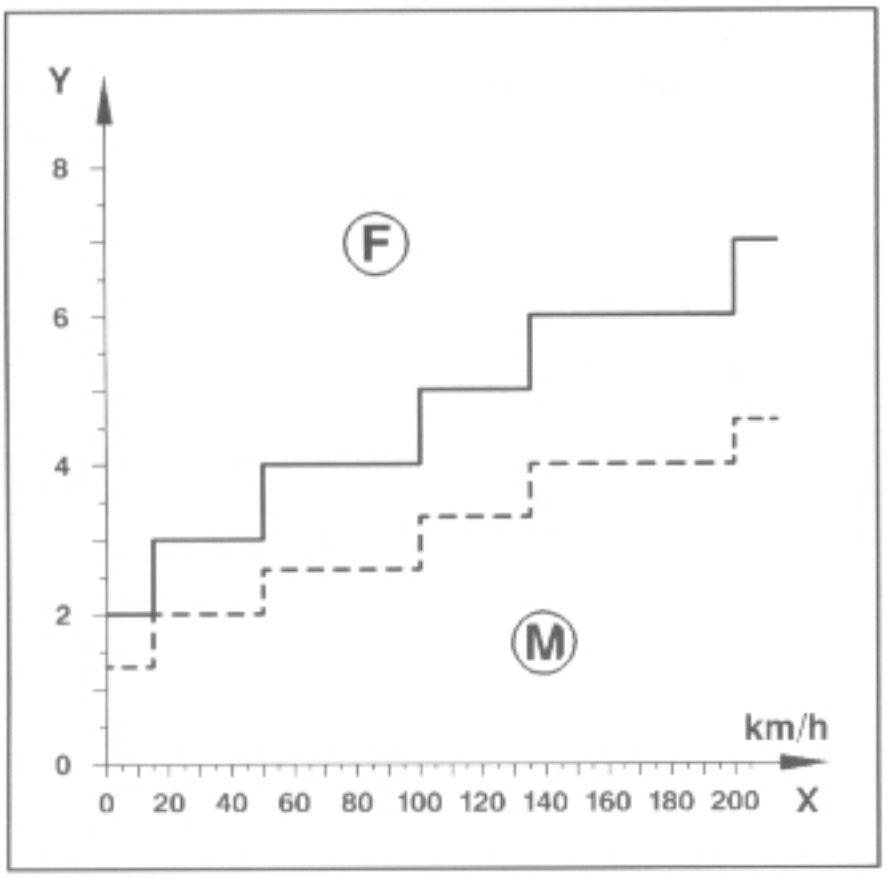


Fig : B3BP049C

__ : switch set to the "NORMAL" position.

— : switch in the "SPORT" position.

x : vehicle speed (km/h).

y : accelerator pedal depressed (spaces/ms).

M : "SOFT" state.

F : "FIRM" state.

Whenever the sensor data exceeds the threshold value, the suspension system switches into "firm" mode.

Time delay 1 to 1.6 seconds.

Vehicle speed (km/h)	Accelerator pedal depressed (spacing/ 25 ms)	
	NORMAL	SPORT
0–14	2	1.3
15–49	3	2
50–99	4	2.6
100–134	5	3.3
135–199	6	4
200	7	4.6

6.2 – Accelerator release thresholds

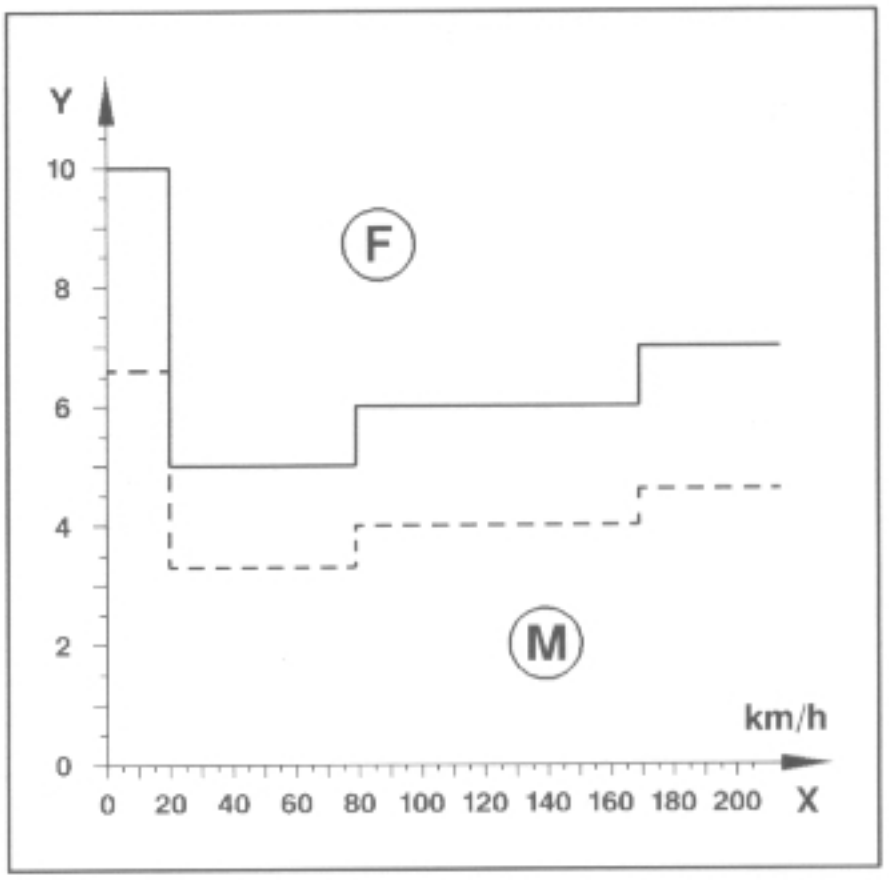


Fig : B3BP04AC

__ : switch set to the "NORMAL" position.

— : switch in the "SPORT" position.

x : vehicle speed (km/h).

y : accelerator pedal foot off (spaces/25ms).

M : "SOFT" state.

F : "FIRM" state.

Whenever the sensor data exceeds the threshold value, the suspension system switches into "firm" mode.

Time delay 1 to 1.6 seconds.

Vehicle speed (km/h)	Accelerator pedal release (spaces/ 25 ms)	
	NORMAL	SPORT
0–19	10	6.6
20–78	5	3.3
79–168	6	4
169	7	4.6

www.WorkshopManuals.co.uk

7 – BODY MOVEMENT SENSOR

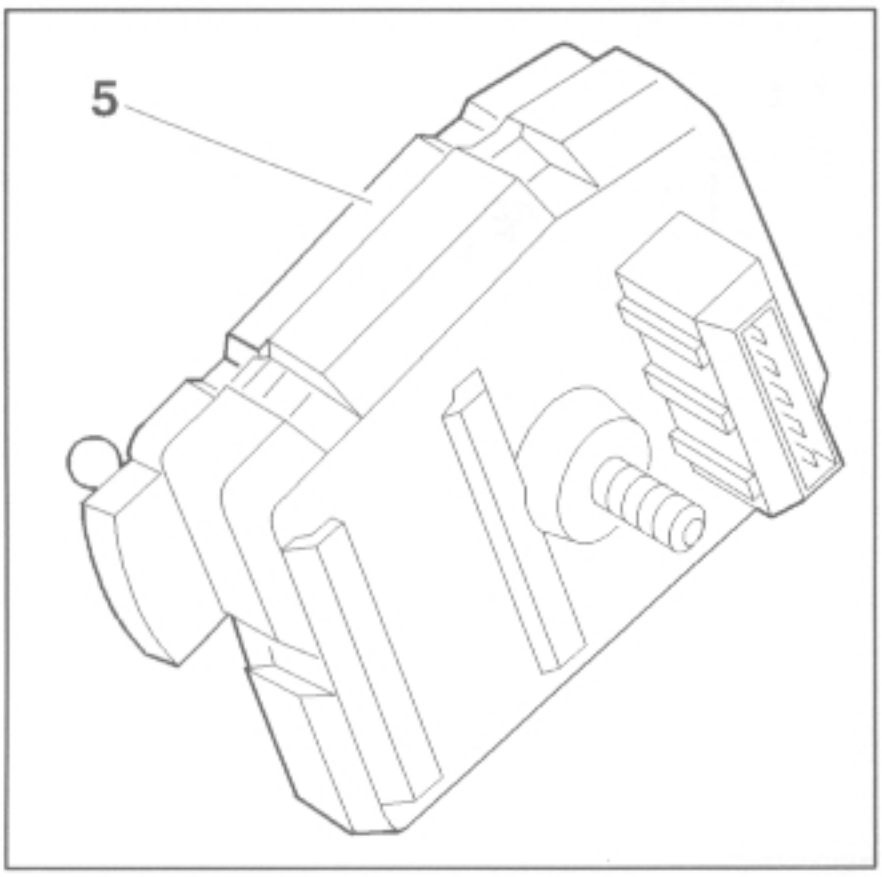


Fig : B3BP047C

Make : VALEO.

Body movement sensor (5) consists of a 45–tooth crown wheel and a double opto–electronic sensor.

The crown wheel is rotated by the front anti–roll bar.

Supplied in 12 volts, the sensor generates an impulse whenever the optical sensor detects a slot in the rotor.

The body movement sensor is situated on the front subframe, to the right of the front height corrector (14).

Having processed the signal, the E.C.U. :
- determines the direction of rotation of the crown wheel
- calculates the speed of the travel
- determines the average height and readjusts it
- calculates the travel by difference with the average height
- compares the value found with the speed of the vehicle
- gives instructions, or not, to change the suspension system to the "firm" mode

The suspension switch–over to "firm" mode is achieved by comparing the movement value with the vehicle speed.

The thresholds for changing into "firm" are identical whatever the position of the switch ("NORMAL" or "SOFT").

7.1 – The thresholds for changing in the "firm" mode can be modified

Correction : "damaged road wheel".

The threshold figures for switching to the "firm" state will be corrected if the speed of the road wheel movement exceeds 300 mm/s. In that case, the threshold values will be equal to 60 mm for 0.4 seconds.

Correction : "damaged roadway".

The threshold figures for changing to "firm" will be applied if the body movements are equal to 60 mm for 0.4 s, more than 3 times in 3 s. In that case, the threshold values will be equal to 60 mm for 2 seconds.

The above corrections are not applied if :
- switch in the "SPORT" position
- vehicle speed over 98 miles/h
- steering wheel angle superior to the threshold values indicated on the tables

www.WorkshopManuals.co.uk

7.2 – Body movement thresholds : compression (mm)

When the front of the vehicle "sinks", the body movement sensor is activated, which may cause a change to "firm" mode.

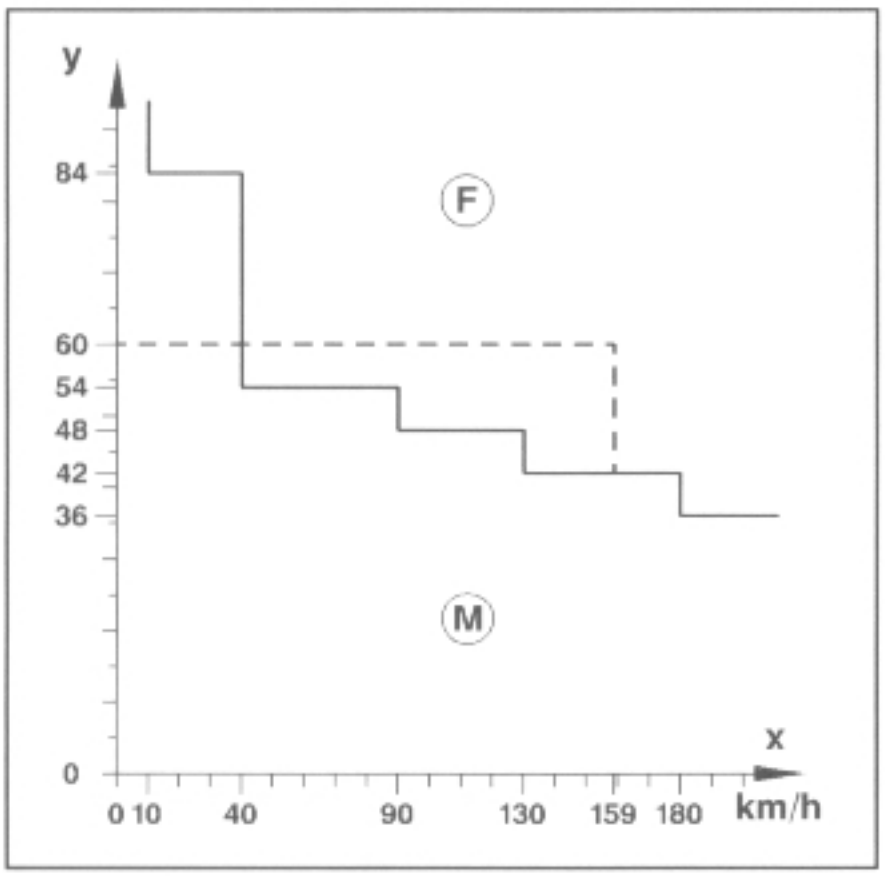


Fig : B3BP01KC

Whenever the sensor data exceeds the threshold value, the suspension system switches into "firm" mode.

Time delay 0.8 seconds.

__ : standard threshold.

— : corrected threshold.

x : vehicle speed (km/h).

y : body vertical movement – compression (mm).

M : "SOFT" state.

F : "FIRM" state.

Vehicle speed (km/h)	Compression (mm)	Correction		Correction cancelled if steering wheel angle upper to (degrees)
		Compression (mm)	Type	
10 – 33	84	60	"wheel shocks" – "damaged roadway"	
34 – 39				87
40 – 49	54			50
50 – 59				42
60 – 68				34
69 – 78				27.5
79 – 89				21
90 – 99	48			16.5
100 – 119				13
120 – 129				11.5
130 – 139	42			
140 – 149				10
150 – 158				
159 – 179				6.5
>179	36			5

www.WorkshopManuals.co.uk

7.3 – Body movement thresholds : rebound (mm)

When the front of the vehicle "rises", the sensor is activated,which may cause a switch–over to "firm" mode.

Whenever the sensor data exceeds the threshold value, the suspension system switches into "firm" mode.

Time delay 0.8 seconds.

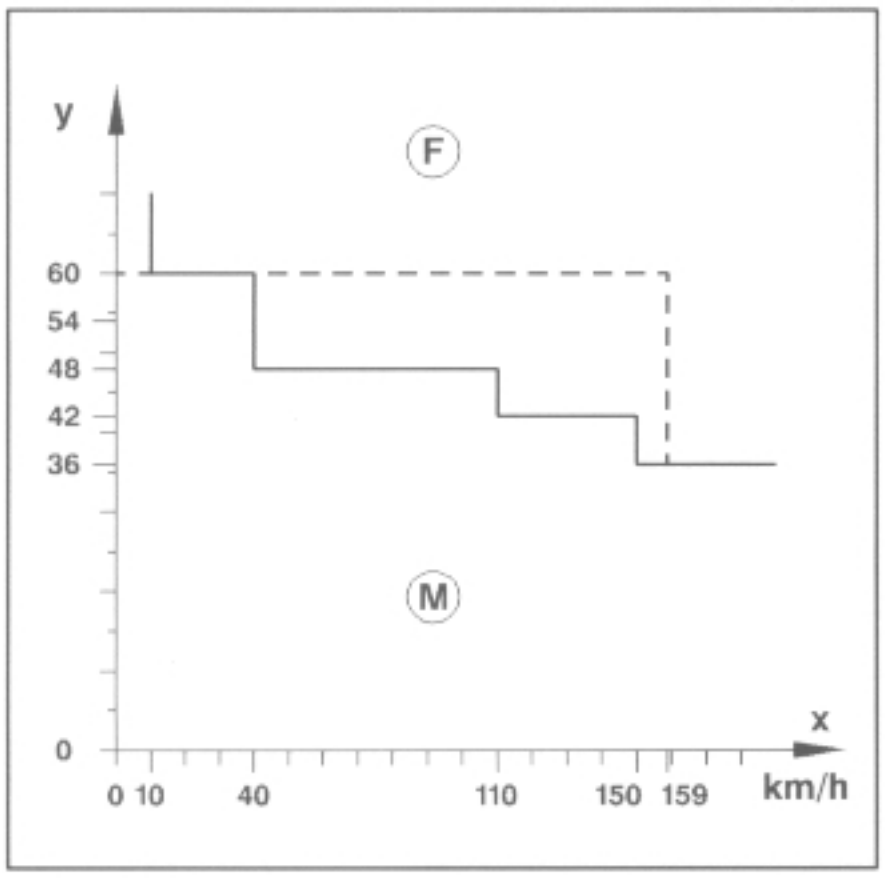


Fig : B3BP01LC

__ : standard threshold.

— : corrected threshold.

x : vehicle speed (km/h).

y : body vertical movement – rebound (mm).

M : "SOFT" state.

F : "FIRM" state.

Vehicle speed (km/h)	Compression (mm)	Correction		Correction cancelled if steering wheel angle upper to (degrees)
		Compression (mm)	Type	
10 – 33	84	60	"wheel shocks" – "damaged roadway"	
34 – 39				87
40 – 49	54			50
50 – 59				42
60 – 68				34
69 – 78				27.5
79 – 89				21
90 – 99	48			16.5
100 – 119				13
120 – 129				11.5
130 – 139	42			
140 – 149				10
150 – 158				
159 – 179				6.5
180	36			5

www.WorkshopManuals.co.uk

Examples :
- switch in the "NORMAL" or "SPORT" position : at 62 miles/h, with a body movement exceeding 48 mm, the suspension will switch to the "firm" setting. The system will revert to "soft" if the rebound is inferior to 48 mm and after a time delay of 0.8 second
- switch set to the "NORMAL" position : at 43 miles/h, with a speed of the body movement exceeding 300 mm/s and a turning angle inferior to 27.5 degrees, the suspension will switch to "firm" mode. The system will revert to "soft" state if the body movement returns to normal conditions and after a time delay of 0.8 second

8 – BRAKE PRESSURE SWITCH

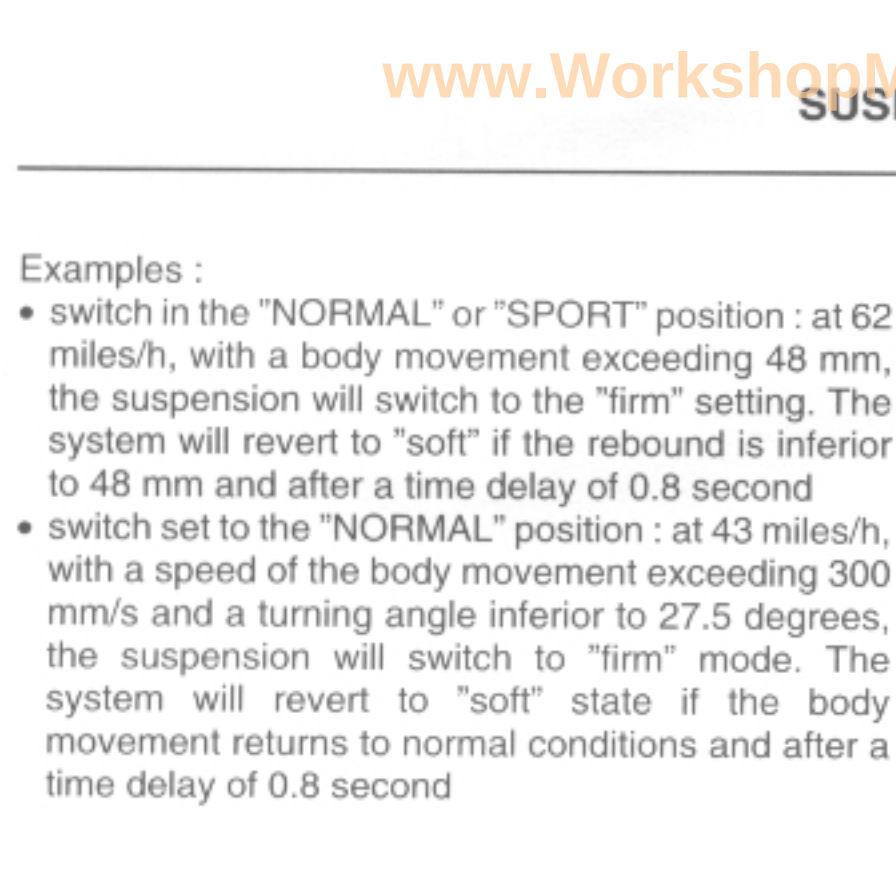


Fig : B3BP048C

Make : BENDIX.

Brake pressure switch (13) consists of a switch hydraulically linked with the brake pedal.

Closed at rest, the switch will open for a pressure, in the brake circuit, of over 30 bars.

The E.C.U. advises the change to "firm" state when :
- the vehicle speed exceeds 15 miles/h
- the pressure in the braking circuit, is above 3 bars

9 – DOORS AND BOOT SWITCHES

The 4 door pillar switches (7) and boot switch (8) are operated by the boot and doors.

Open at rest, a switch will close whenever the corresponding door is opened.

9.1 – Aim of the switches

The doors and boot switches prevent the vehicle from jolting when a door is open.

The anti–jolt function is achieved by balancing the pressure between the spheres of the suspension units and the spheres of the suspension regulators. The E.C.U. supplies the electrovalves, thus inducing "soft" state.

9.2 – Operating principle

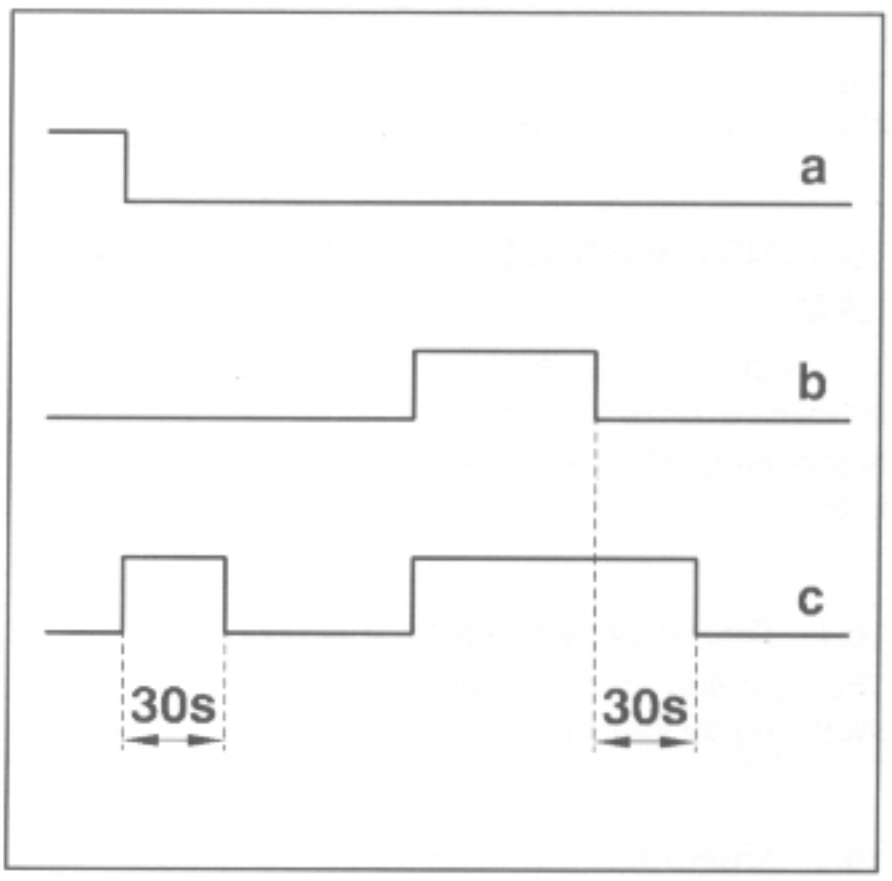


Fig : B3BP020C

a : +via ignition switch.

b : doors and boot switch.

c : solenoid valve.

The electrovalves are supplied :
- for 30 seconds after the ignition switch–off
- during a door opening and for 30 seconds after closing it

www.WorkshopManuals.co.uk

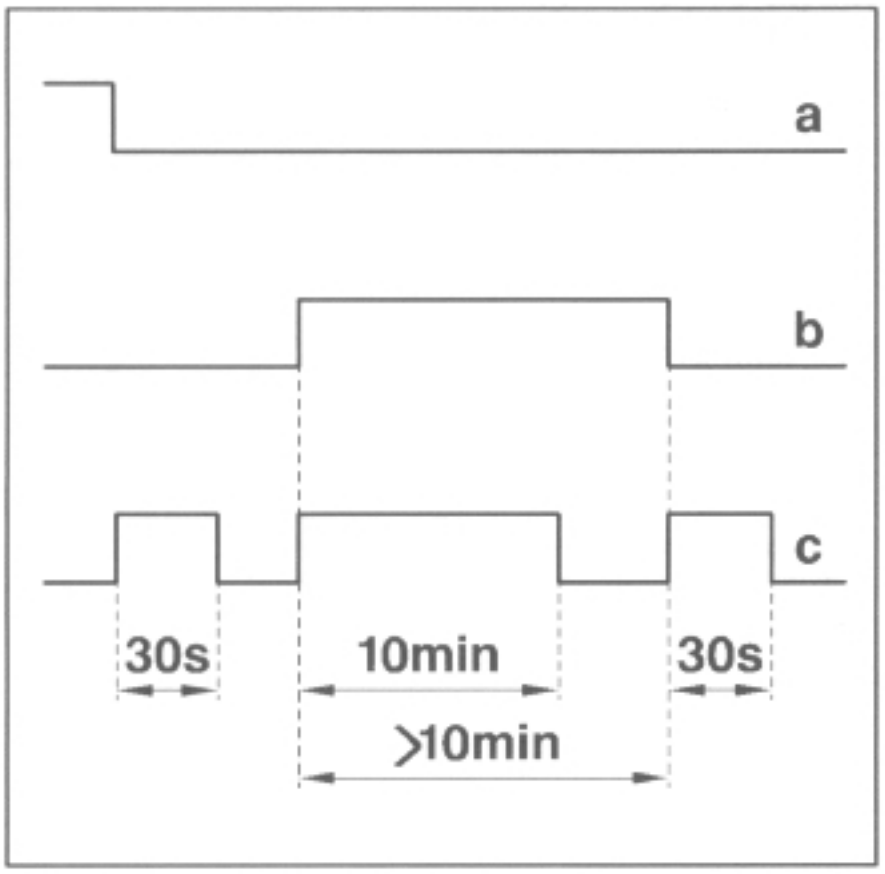


Fig : B3BP021C

The feed to the electrovalves is limited to 10 minutes if a door remains open.

10 – INSTRUMENT CLUSTER WARNING LAMP

The test warning lamp of the instrument cluster receives a 12 volt supply.

In the "SPORT" suspension mode, the warning lamp is on.

10.1 – Operation without fault code

The warning lamp illuminates for 3 seconds on switching on ignition.

10.2 – Operation with fault code

The warning lamp flashes for 3 seconds on confirming the fault and each time the ignition is switched on.

www.WorkshopManuals.co.uk

HYDRAULIC SPECIFICATION : HYDRACTIVE SUSPENSION 2

www.WorkshopManuals.co.uk

1 – CIRCUIT DIAGRAM HYDRAULIC INSTALLATION

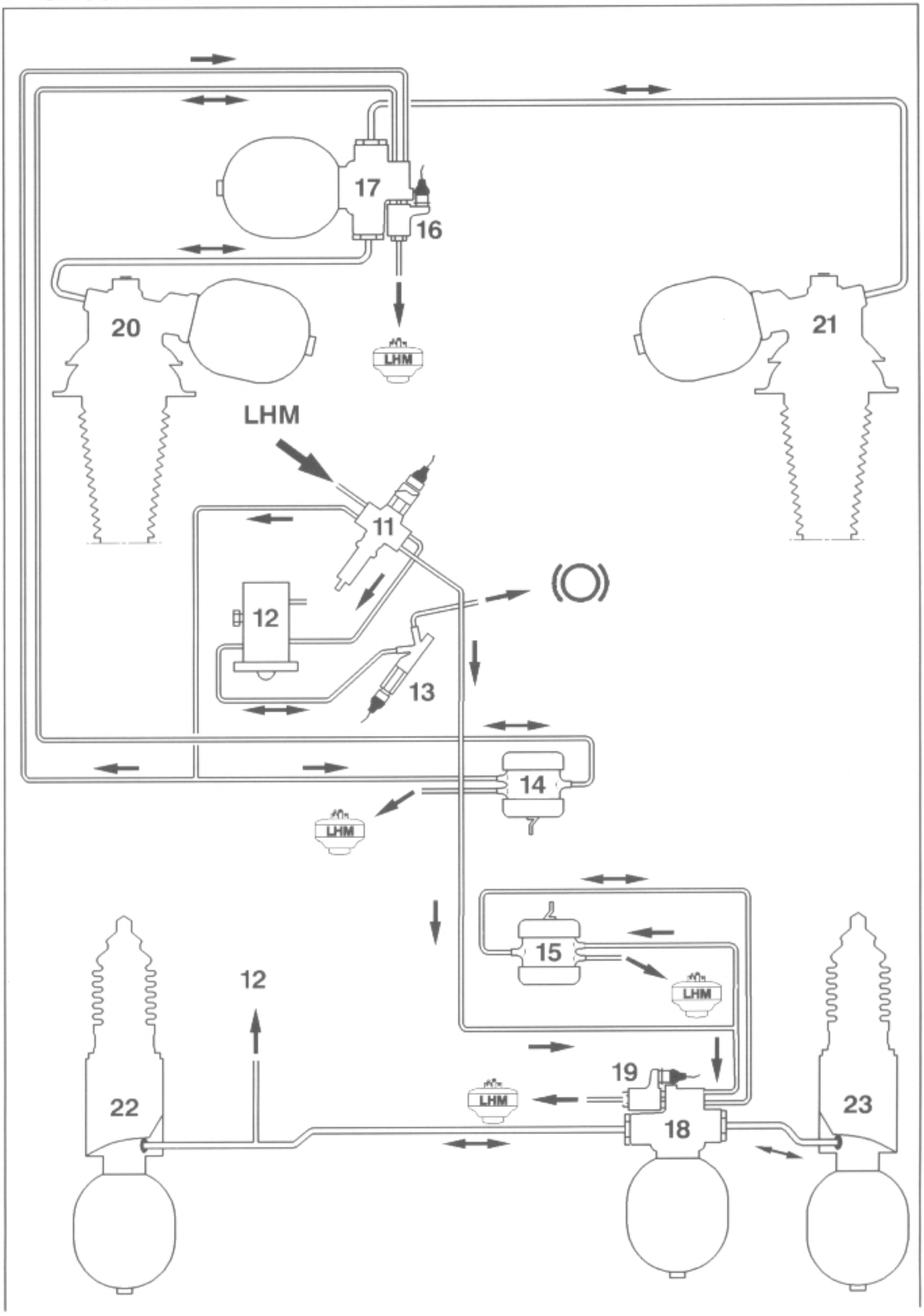


Fig : B3BP02BP

www.WorkshopManuals.co.uk

2 – SUSPENSION ELECTROVALVES

Code : (16) – (19).

Supplier : EATON.

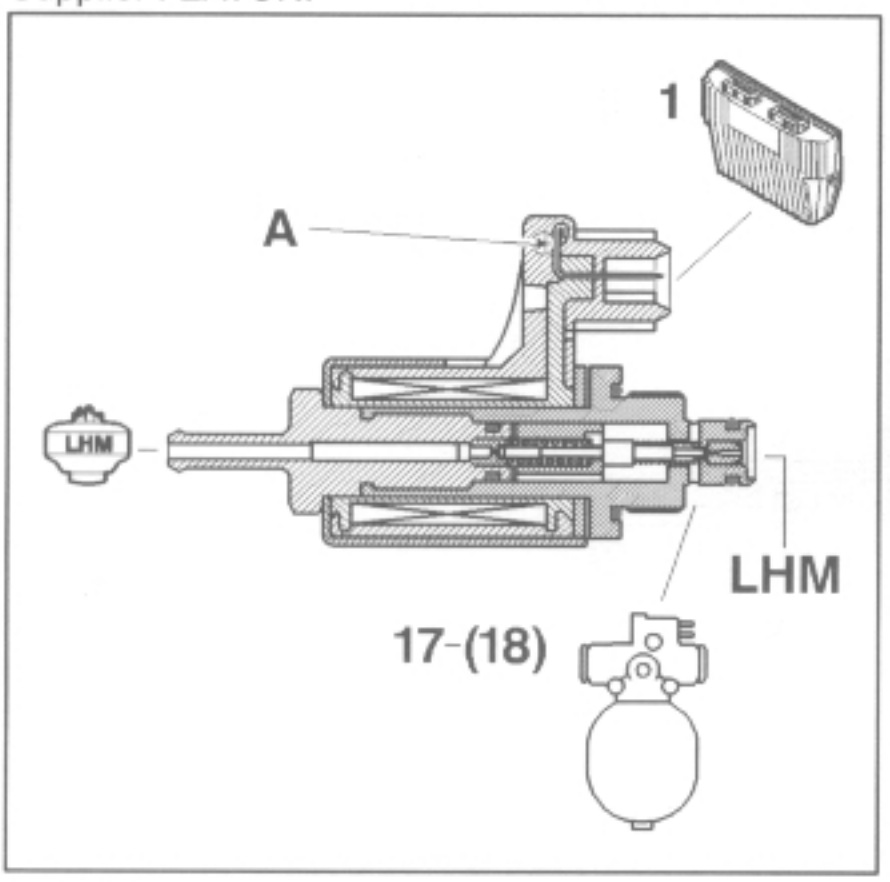


Fig : B3BP01DC

E.C.U. (1) manages electrically and simultaneously electrovalves (16) and (19).

The electrovalves supply suspension regulators (17) and (18) with LHM fluid.

Currently closed at rest, the electrovalve includes a diode (A) with inverted poles, intended to limitate the overvoltages caused by the supply cut off.

Electrovalve energised :
- the E.C.U. controls the operation of the electrovalve
- the suspension regulator is at the supply pressure

Electrovalve at rest :
- the E.C.U. does not control the operation of the electrovalve
- the suspension regulator is linked with the hydraulic fluid reservoir

Supply voltage 2.6 volts.

Coil resistance value : 4 ohms.

Electrovalves (16) and (19) are identical.

3 – SUSPENSION REGULATORS

Suspension regulators (17) and (18) modify the state of the suspension according to :
- suspension electrovalves (16) and (19) which impose the "firm" or the "soft" state
- height correctors (14) and (15) which adjust the body height in relation to the ground
- the regulator valves

In the "firm" state, each valve enables :
- the vehicle roll to be avoided
- the height corrections to be carried out

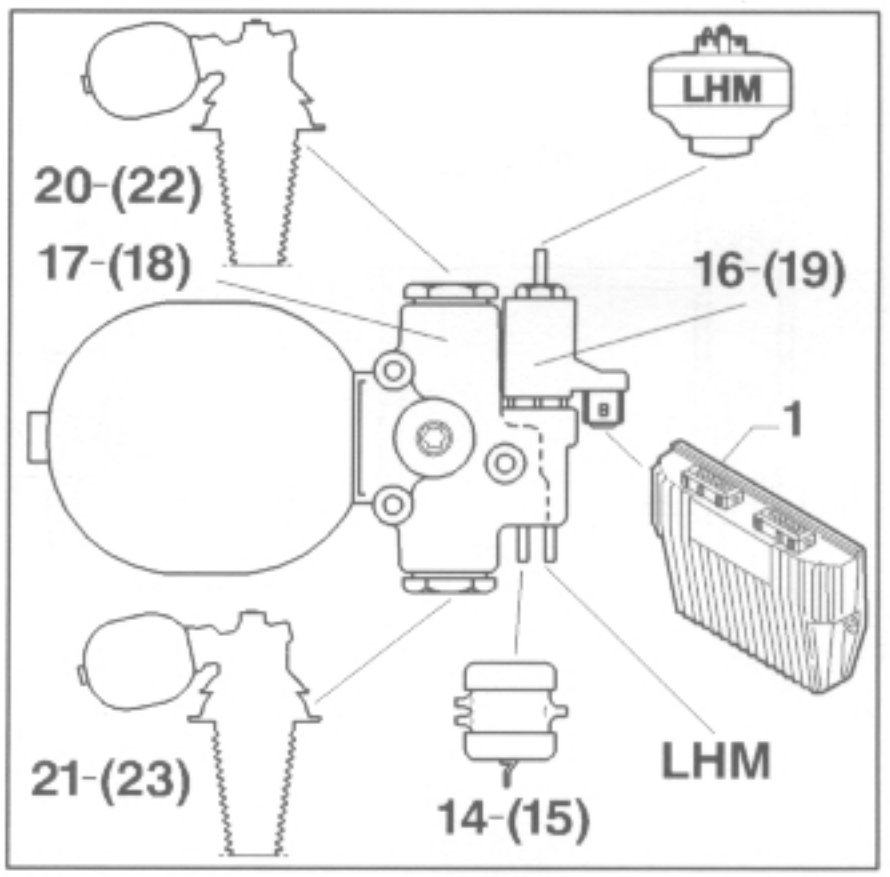


Fig : B3BP01CC

The two front and rear "regulator+electrovalve" assemblies are identical. The pneumatic units are different.

4 – PNEUMATIC UNIT

The hydractive suspension comprises 6 spheres, :
- one pneumatic unit per suspension component
- one pneumatic unit per suspension regulator

Two dampers are incorporated in each regulator.

www.WorkshopManuals.co.uk

5 – "SOFT" MODE

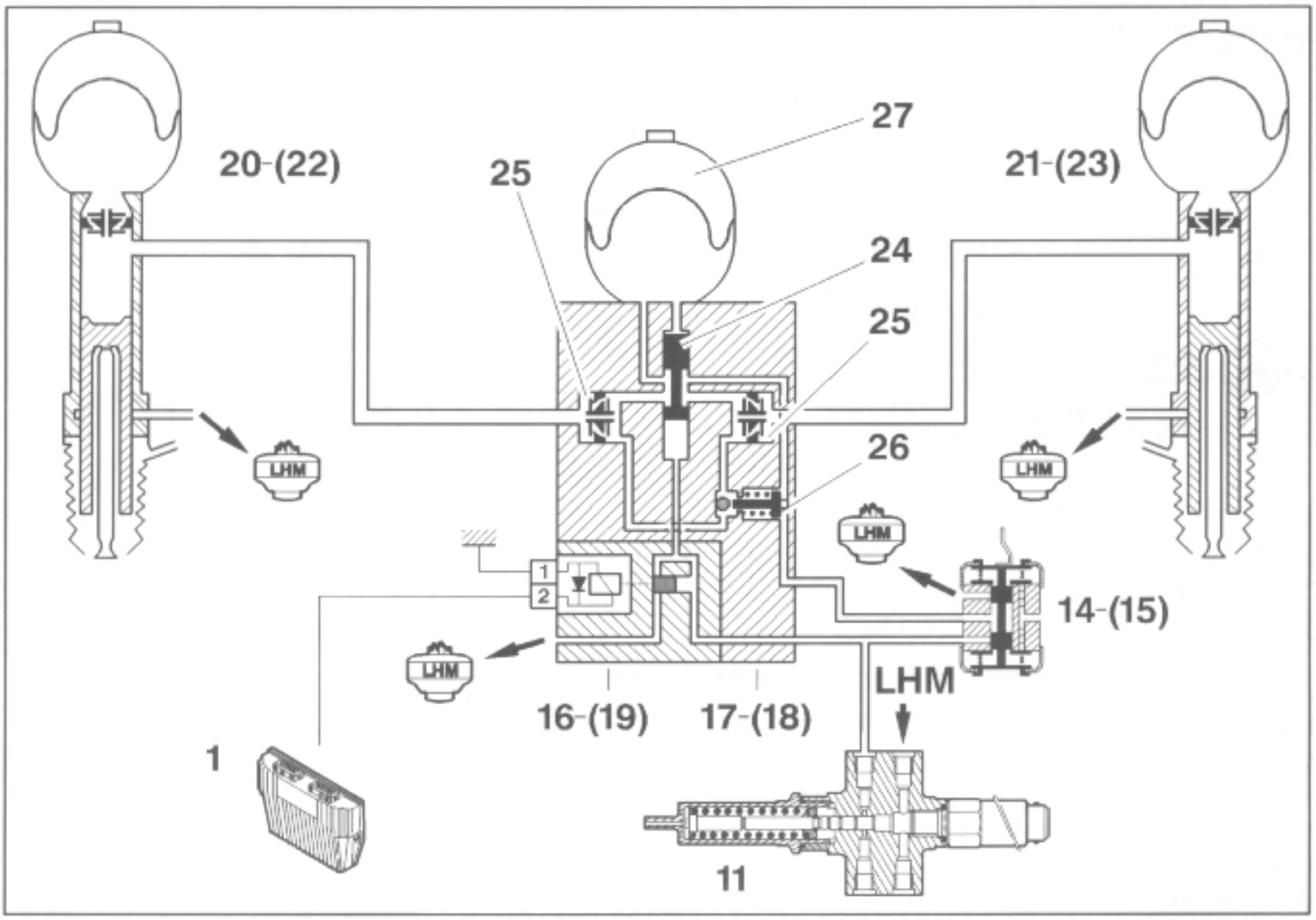


Fig : B3BP01ED

The electrovalve is electrically supplied by the E.C.U..

The supply pressure enters the regulator and pushes slide valve (24) upwards, connecting :

- the 2 suspension units
- additional sphere (27)
- the height corrector

NOTE : During a height correction, the LHM fluid flows directly through dampers (25) to feed the suspension units.

Observations :

- in the "soft" state, valve (26) has no function
- the operating principle is the same for the front and rear circuits

The electrovalve is supplied	
The suspension switches to the "soft" mode	
"soft" suspension	Connection with additional sphere (27)
"soft" damping	The fluid circulates in the two dampers (25)
"soft" anti–roll	The 2 suspension units are linked

www.WorkshopManuals.co.uk

6 – "FIRM" MODE

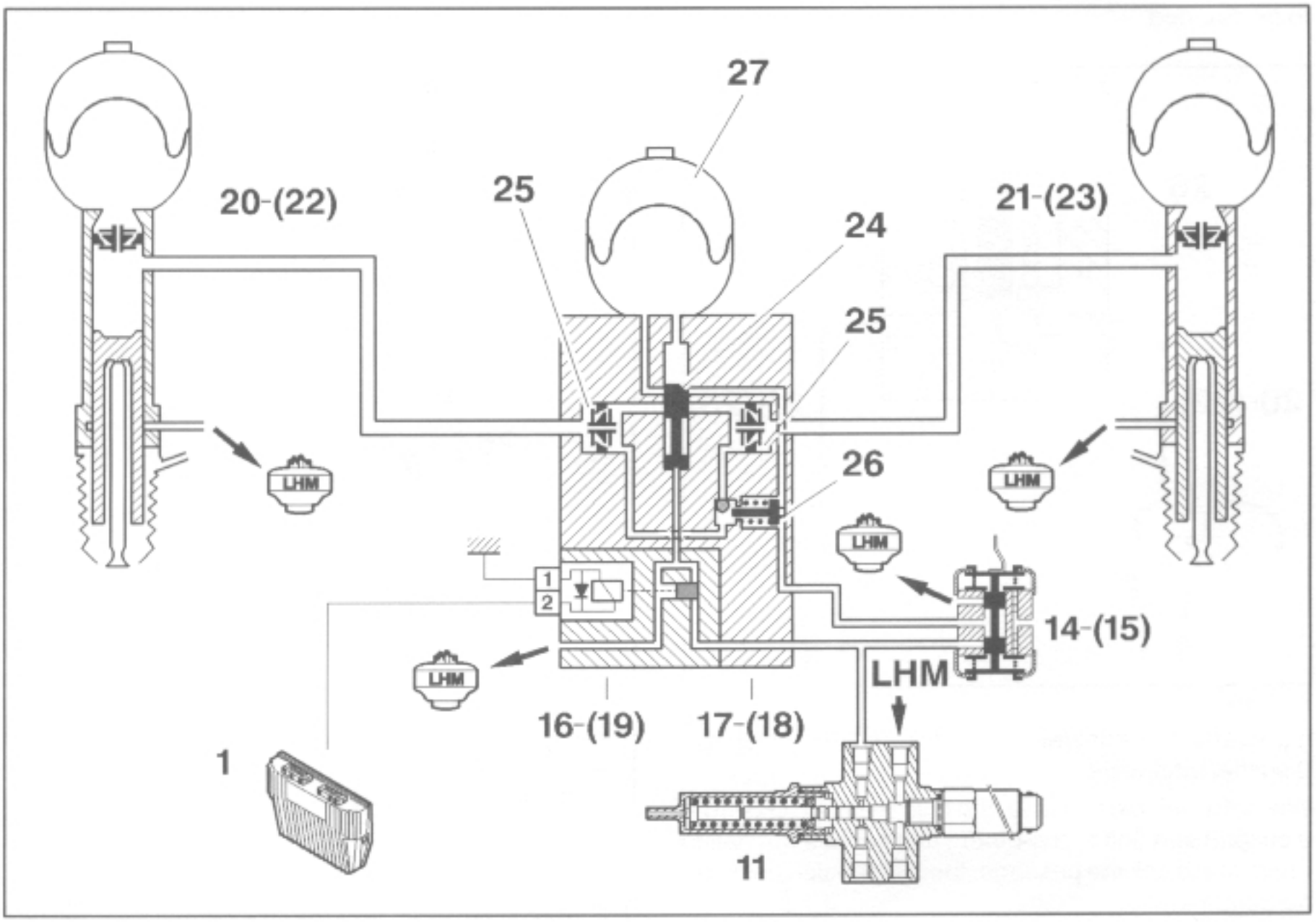


Fig : B3BP01FD

The electrovalve is not electrically supplied by the E.C.U..

The pressure from additional sphere (27) pushes slide valve (24) downwards. The two, L.H. and R.H., suspension units are isolated from the supply and additional sphere (27).

Connection between the two suspension units is allowed, via valve (26), during a height regulation, only.

The electrovalve is not supplied	
The suspension switches to the "firm" state	
"firm" suspension	Additional sphere (27) isolated
"firm" damping	Isolation of dampers (25)
"firm" anti–roll	No connection between the suspension units

www.WorkshopManuals.co.uk

6.1 – Anti–roll function

In the "firm" mode, valve (26) enables the vehicle roll to be avoided.

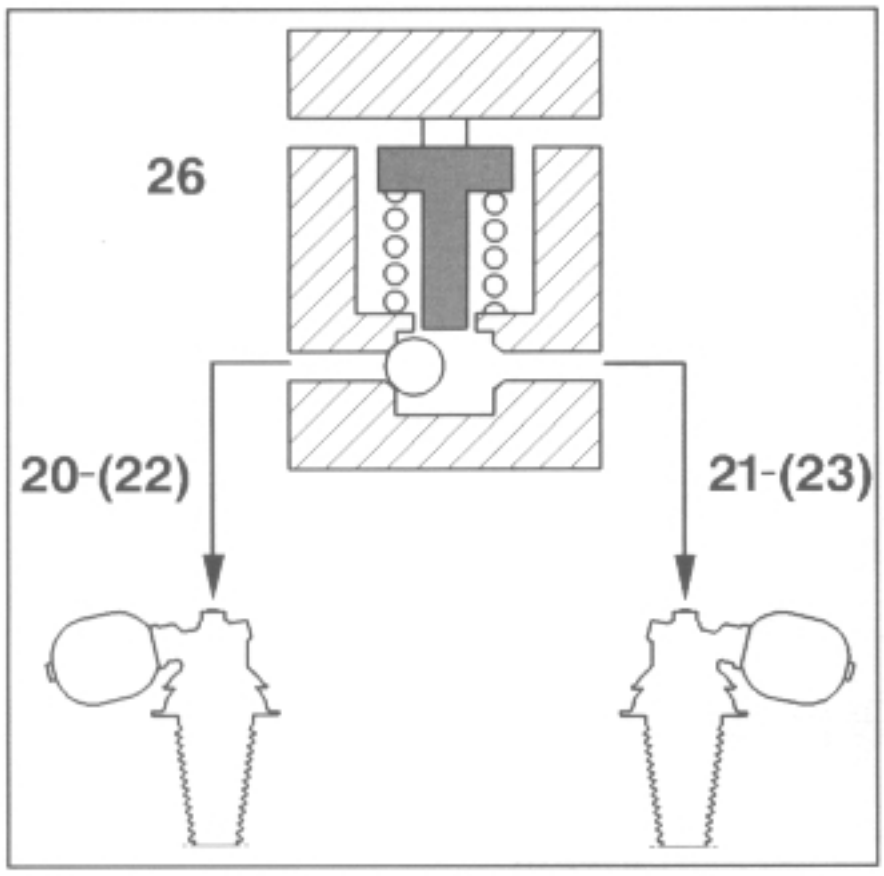


Fig : B3BP01IC

It prevents the transfer of the LHM fluid between the 2 suspension units.

When the vehicle is rolling, the fluid tends to pass from a suspension unit to the other ; this causes the ball to move and block the passage; the suspension units are no longer interconnected.

6.2 – Height correction function

In the "firm" state, valve (26) enables the height of the vehicle to be corrected. It allows the transfer of the LHM fluid from the height corrector to the suspension units.

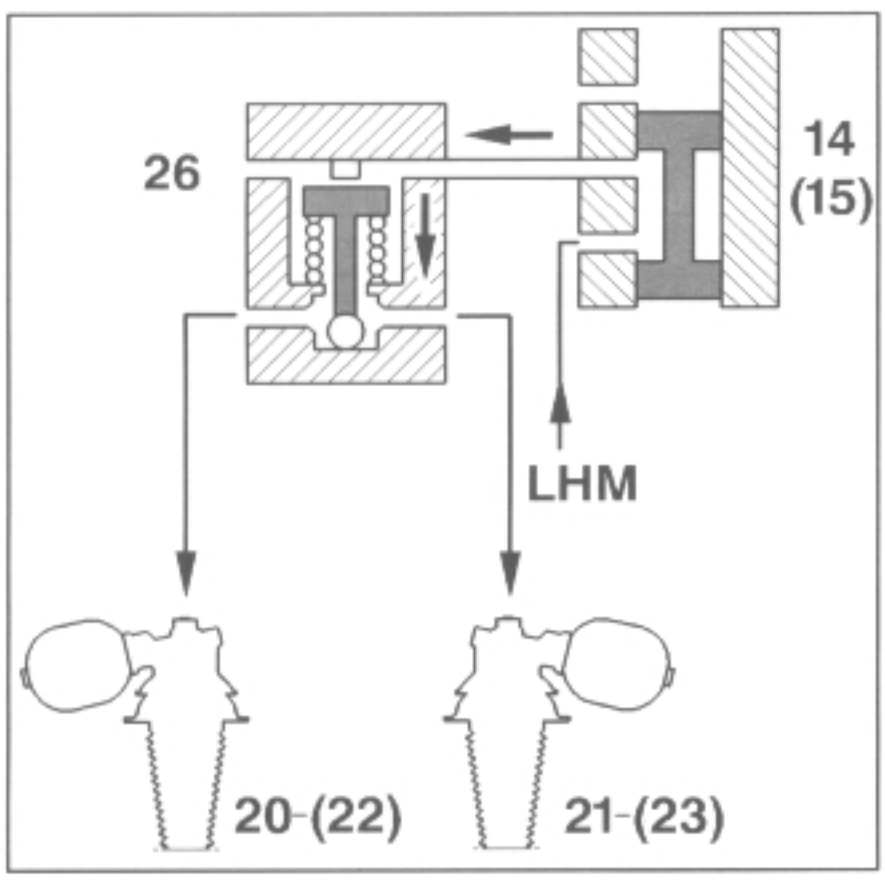


Fig : B3BP01GC

6.2.1 – "fluid admitted" correction

The height corrector is in the "fluid admitted" position.

The supply pressure from the height corrector pushes the ball to the bottom of the valve.

The suspension units are supplied by the corrector.

6.2.2 – "fluid expelled" correction

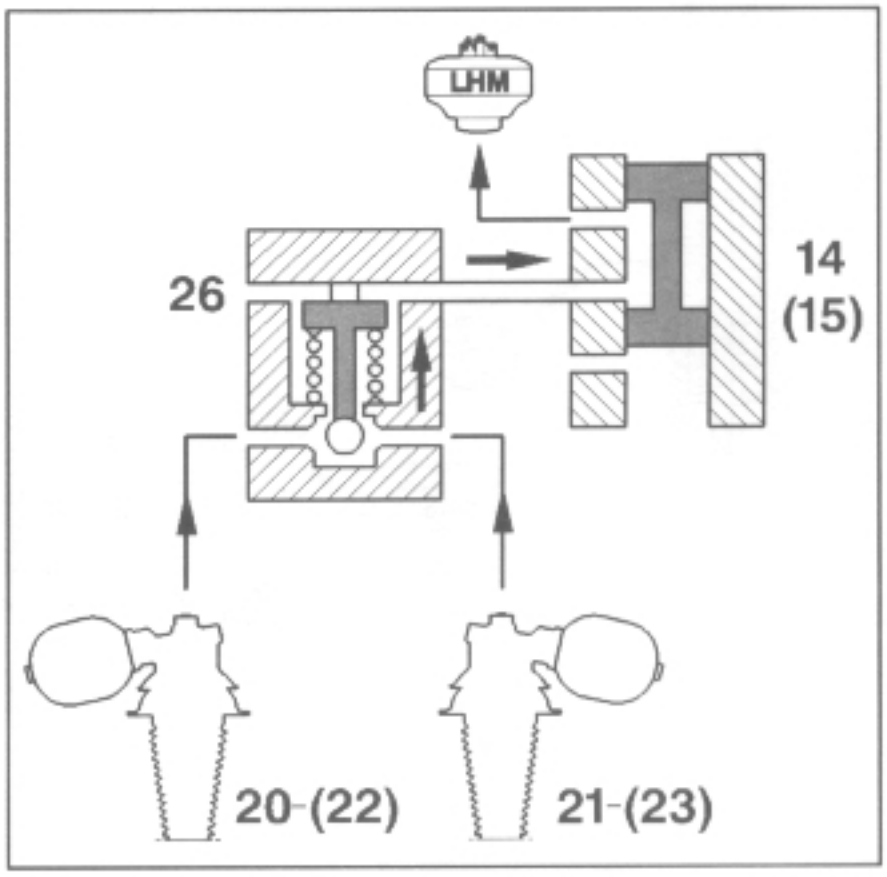


Fig : B3BP01HC

The height corrector is in the "fluid expelled" position.

The ball is released in the valve housing.

The suspension units are linked with the hydraulic fluid reservoir.

www.WorkshopManuals.co.uk

FAULT FINDING : HYDRACTIVE SUSPENSION

1 – PRESENTATION

The E.C.U. is equipped with a memory in which the possible faults (both permanent or intermittent) of the system, are recorded.

The purpose of the diagnostic is to locate the incident precisely, whilst avoiding that the surroundings of the E.C.U. be altered by disconnecting or pulling the electrical harnesses.

The memory of the E.C.U. can be interrogated by the diagnostic connector with the help of the 26A DIAGNOSTIC STATION or the ELIT TEST UNIT.

If a fault is detected, follow the repair procedure described in the "fault finding charts", using the CONNECTOR BOX, wiring harness 4112TB and its plastic mask.

ATTENTION : Adaptor AC92 and hydractive suspension harness 4126T from the ELIT test unit are to be used on hydractive suspension 1, only. Do not utilise above adaptor and harness on hydractive suspension 2.

2 – LIST OF FAULT CODES

Component and function	Code number
Brake pressure switch	21
Accelerator pedal potentiometer	22
Steering wheel sensor	23
Distance sensor	24
Body movement sensor	25
Front suspension electrovalve	31
Rear suspension electrovalve	32
E.C.U. supply	53
Control unit	54
Faulty straight–ahead position calculation	None
Faulty diagnostic connection	None

3 – DIAGNOSTIC TOOLS

3.1 – ELIT + IPC30 test unit

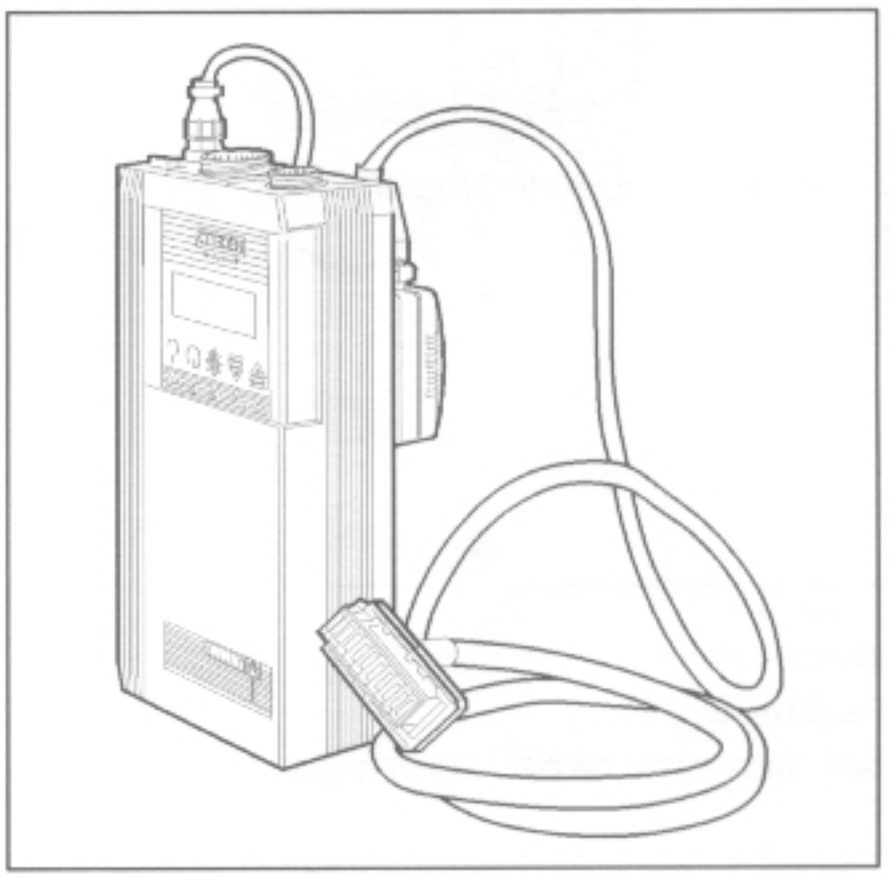


Fig : B3BP039C

Fault reading.

Simulation tests on clearing of faults.

Parameter measurements.

Road testing.

E.C.U. references.

www.WorkshopManuals.co.uk

3.2 – 26A + Y002 + IPC30 diagnostic station

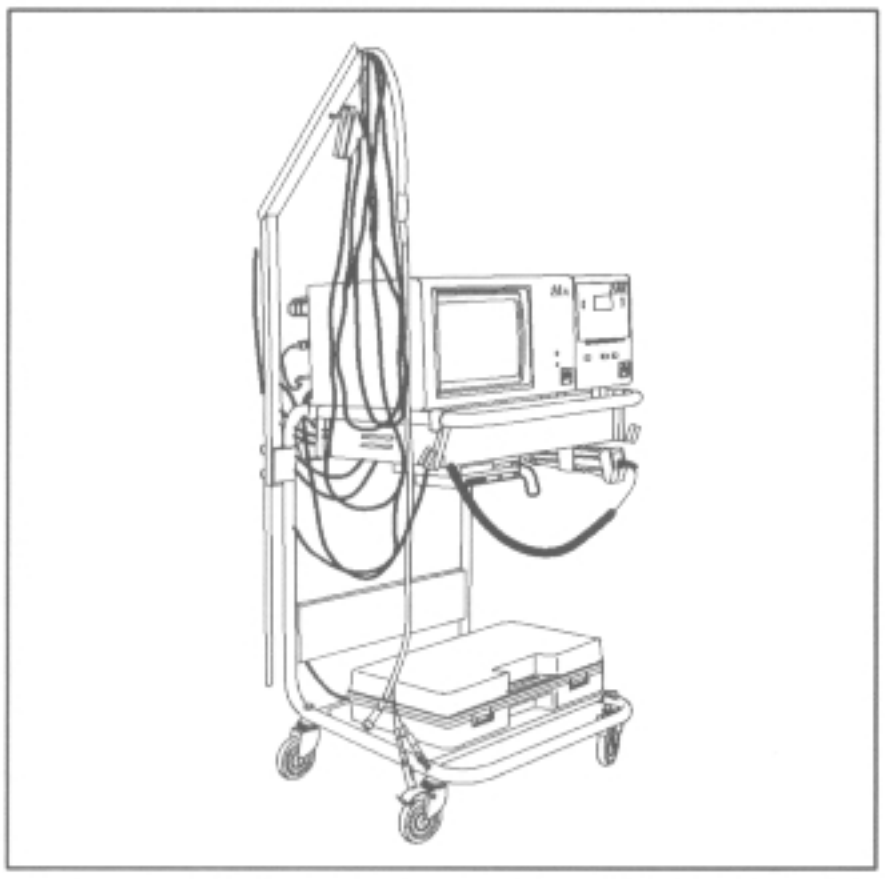


Fig : B3BP031C

Identification.

Fault reading.

Simulation tests on clearing of faults.

3.3 – Test connector box (4109T + 4112TB)

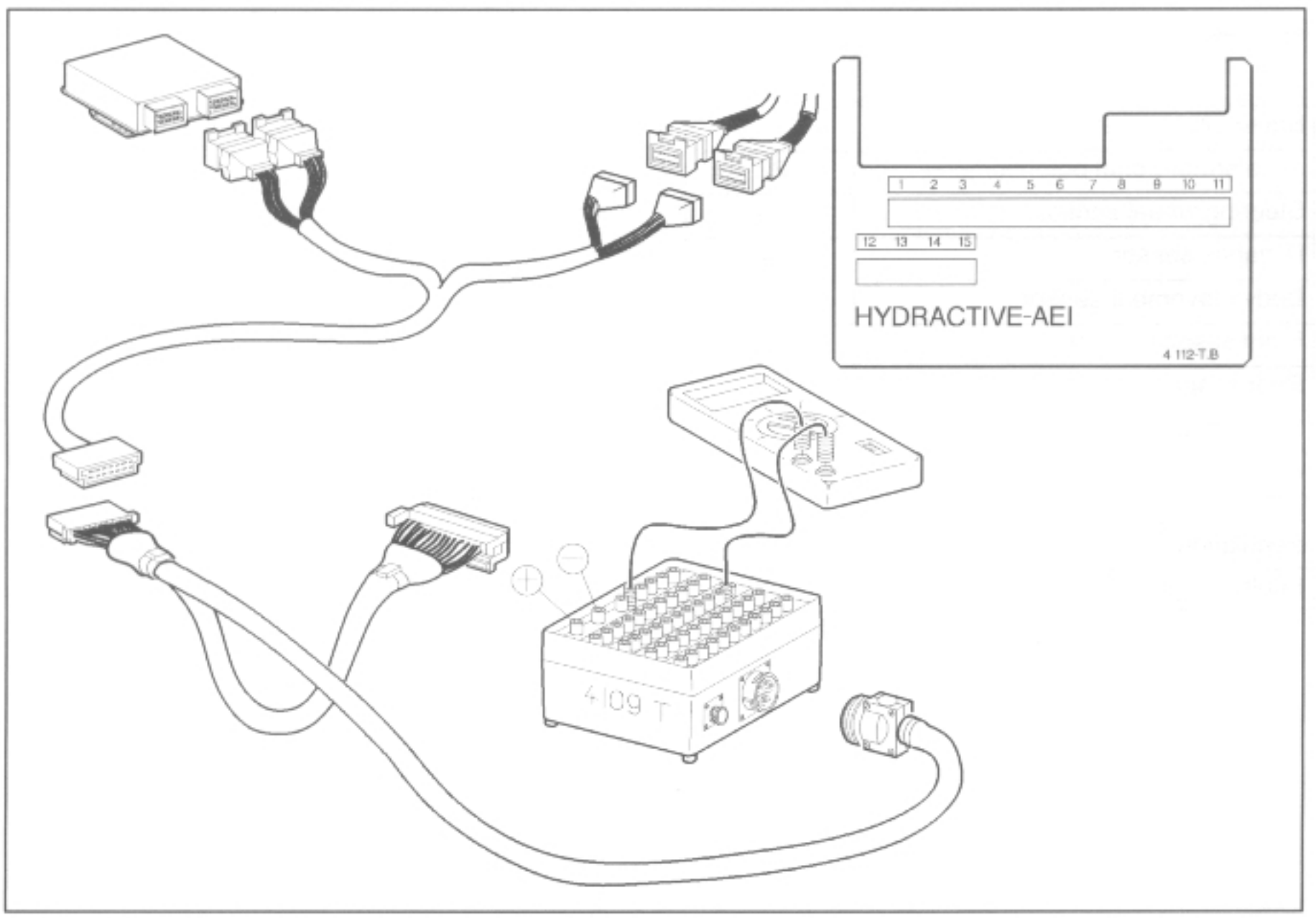


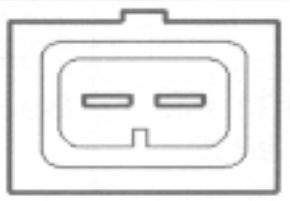
Fig : B3BP032D

www.WorkshopManuals.co.uk

4 – FAULT FINDING CHART

4.1 – Fault code 21

BA = white ; NR = black :

Components and functions	E.C.U. connectors	Test connector box terminals	Terminals	Test values	Emergency strategy
Brake pressure switch : 670	Disconnected	NR11 and BA8 or NR11 and BA15	 Blue	Checks : ohmmeter, voltmeter Engine running, brake pedal released : R = 0 ohm Engine running, brake pedal firmly depressed : R = ∞	Automatic suspension
	Connected	NR11(+) and BA8(–) or NR11(+) and BA15(–)		Engine running, brake pedal firmly depressed : U = 5V	

www.WorkshopManuals.co.uk

4.2 – Fault code 22

BA = white ; NR = black :

Components and functions	E.C.U. connectors	Test connector box terminals	Terminals	Test values	Emergency strategy
Accelerator pedal potentiometer : 771	Disconnected	NR3 and NR12	 Black – checks : 1–3	Checks : ohmmeter, voltmeter R=5 k.ohm (approximately)	Automatic suspension
		NR4 and NR12	 Black – checks : 1–2	Accelerator pedal at rest : R=3 k.ohm (approximately) Fully depressed – R increases for up to 5 k.ohm	
	Connected	NR4(+) and BA8(–)		Accelerator pedal at rest : R = 1.3V Accelerating to full extent : U = 3.2V (approximately)	

4.3 – Fault code 23

BA = white ; NR = black :

Components and functions	E.C.U. connectors	Test connector box terminals	Terminals	Test values	Emergency strategy
Steering wheel sensor : 159	Connected	NR10(+) and BA13(–)		Checks : voltmeter Engine stopped, ignition on : U = 5V	Automatic suspension
		NR15 and BA13		Slowly turning the steering wheel : fluctuations by 0.12 volt approx. at low threshold	
		NR9 and BA13		Fluctuations by 10 volts approx. at high threshold	

www.WorkshopManuals.co.uk

4.4 – Fault code 24

BA = white ; NR = black :

Components and functions	E.C.U. connectors	Test connector box terminals	Terminals	Test values	Emergency strategy
Distance sensor : (154 via 56)	Connected	BA11 and BA8		Checks : voltmeter – DC With the vehicle on the move, read a voltage of 6–7 volts	V = 100 km/h (62 miles)
				Checks : voltmeter – AC – with the vehicle on the move, read a voltage of 7.2 volts	

Voltmeter : DC = continuous current voltage value – AC = alternative current voltage value.

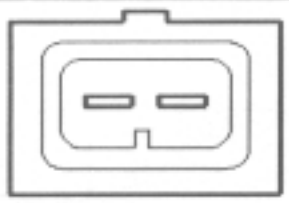
4.5 – Fault code 25

BA = white ; NR = black :

Components and functions	E.C.U. connectors	Test connector box terminals	Terminals	Test values	Emergency strategy
Body movement sensor : 153	Connected	NR13 and BA8(–)		Checks : voltmeter Engine running and varying the height of the vehicle Fluctuations between 0.1 to 5.5 volts	Automatic suspension
		NR14 and BA8(–)			

4.6 – Fault code 31

BA = white ; NR = black :

Components and functions	E.C.U. connectors	Test connector box terminals	Terminals	Test values	Emergency strategy
Front suspension electrovalve : 433	Disconnected	BA1(+) and BA8(–)	 Brown	Checks : ohmmeter, voltmeter R = 6 ohms (approximately)	"firm" suspension
	Connected			Vehicle stationary – engine running : U = 2.6V (approximately)	

www.WorkshopManuals.co.uk

4.7 – Fault code 32

BA = white ; NR = black :

Components and functions	E.C.U. connectors	Test connector box terminals	Terminals	Test values	Emergency strategy
Rear suspension electrovalve : 427	Disconnected	BA2(+) and BA8(–)	 Brown	Checks : ohmmeter, voltmeter R = 6 ohms (approximately)	"firm" suspension
	Connected			Vehicle stationary – engine running : U = 2.6V (approximately)	

4.8 – Fault code 53

BA = white ; NR = black :

Components and functions	E.C.U. connectors	Test connector box terminals	Terminals	Test values	Emergency strategy
E.C.U. supply : 143	Connected	NR1(+) and BA8(–)		Checks : voltmeter The supply voltage should be between 11 and 16.5 volts. Verify : the condition of supply box fuse F34	"firm" suspension
		NR2(+) and BA15(–)		Condition of earth M.1 close to the E.C.U. box – charging circuit	

4.9 – Fault code 54

BA = white ; NR = black :

Components and functions	E.C.U. connectors	Test connector box terminals	Terminals	Test values	Emergency strategy
Control unit : 143				Other fault codes present ?. Verify the confirmity of E.C.U. indexes. E.C.U. not operating : test with a new E.C.U.	"firm" suspension

www.WorkshopManuals.co.uk

4.10 – Without code

BA = white ; NR = black :

Components and functions	E.C.U. connectors	Test connector box terminals	Terminals	Test values	Emergency strategy
Faulty straight–ahead position calculation	Disconnected	NR15 and NR9		See relative tests for code 23 Checks : ohmmeter Continuity between E.C.U. NR15 – and steering sensor harness 5 GR.A3 ; isolation of vehicle harness : NR15 E.C.U. in relation to BA8 Continuity between E.C.U. NR9 – and steering sensor harness 5 GR.A1 ; isolation of vehicle harness : NR9 E.C.U. in relation to BA8	"firm" suspension, for 2 minutes

4.11 – Without code

BA = white ; NR = black :

Components and functions	E.C.U. connectors	Test connector box terminals	Terminals	Test values	Emergency strategy
Faulty diagnostic connection (784)	Disconnected	BA5		Checks : ohmmeter Continuity between E.C.U. BA5 – and terminal 2 from the 2–way blue connector	

www.WorkshopManuals.co.uk

Xm

31st JULY 1995

REF. 9 No XM 430-00/3

ABONNEMENT GME

SUSPENSION

● CONSTANT RIDE HEIGHT KEEPING CITROËN SYSTEM

MAN 058932

GB

2

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

SUSPENSION

PRESENTATION : 'SC/MAC' 3

DESCRIPTION : 'SC/MAC' COMPONENTS 4

OPERATING PRINCIPLE : 'SC/MAC' 7

HYDRAULIC DIAGRAMS

HYDRAULIC CIRCUIT : SC/MAC 9

SOURCE – RESERVE OF PRESSURE

DE–PRESSURIZING : THE 'SC/MAC' HYDRAULIC CIRCUIT 12

www.WorkshopManuals.co.uk

PRESENTATION : 'SC/MAC'

1 – INTRODUCTION

The 'SC/MAC' (CITROEN system allowing maintenance of a constant ground clearance) limits the sinking of the suspension when the vehicle is stationary, with engine off.

When the vehicle is at rest for a long time, the suspensions undergo a loss of pressure :

- at the front, from the height corrector
- at the rear, from the height corrector and the brake control valve

With the 'SC/MAC' device, when the system pressure becomes inferior to that of the suspension circuits, the suspensions are isolated from the rest of the hydraulic circuit, thus limiting the settling of the vehicle.

2 – 'SC/MAC' CIRCUITS

The front suspension circuit is equipped with :

- a 'SC/MAC' valve
- a height corrector
- two suspension cylinders
- an electrovalve/regulator assembly for the hydractive suspension

The rear suspension circuit is equipped with :

- a 'SC/MAC' valve
- a 'SC/MAC' sphere
- a height corrector
- two suspension cylinders
- an electrovalve/regulator assembly for the hydractive suspension

www.WorkshopManuals.co.uk

DESCRIPTION : 'SC/MAC' COMPONENTS

1 – SOURCE AND RESERVE OF PRESSURE

The supply circuit is composed of :

- a 6+2 piston high pressure pump (instead of a 5–piston pump) distributing the hydraulic fluid to the 'steering' and 'suspension/braking' circuits
- a pressure–regulator providing the pressure required for a correct operation of the 'suspension–braking' circuit
- a security valve feeding first the front braking circuit

NOTE : the flow distributor has been deleted.

2 – "SC/MAC' VALVE FOR VEHICLES WITH HYDRACTIVE SUSPENSION

2.1 – Front 'SC/MAC' valve

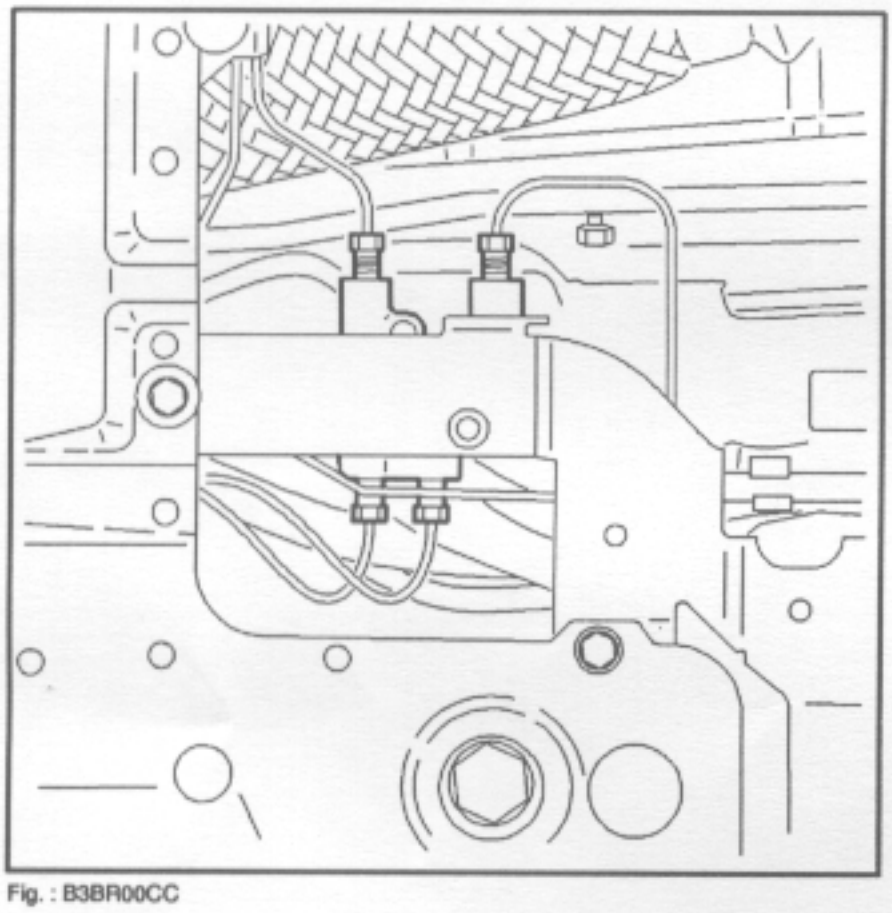


Fig. : B3BR00CC

The valve is located at the R.H. front of the vehicle, on a bracket mounted at the rear of the cradle.

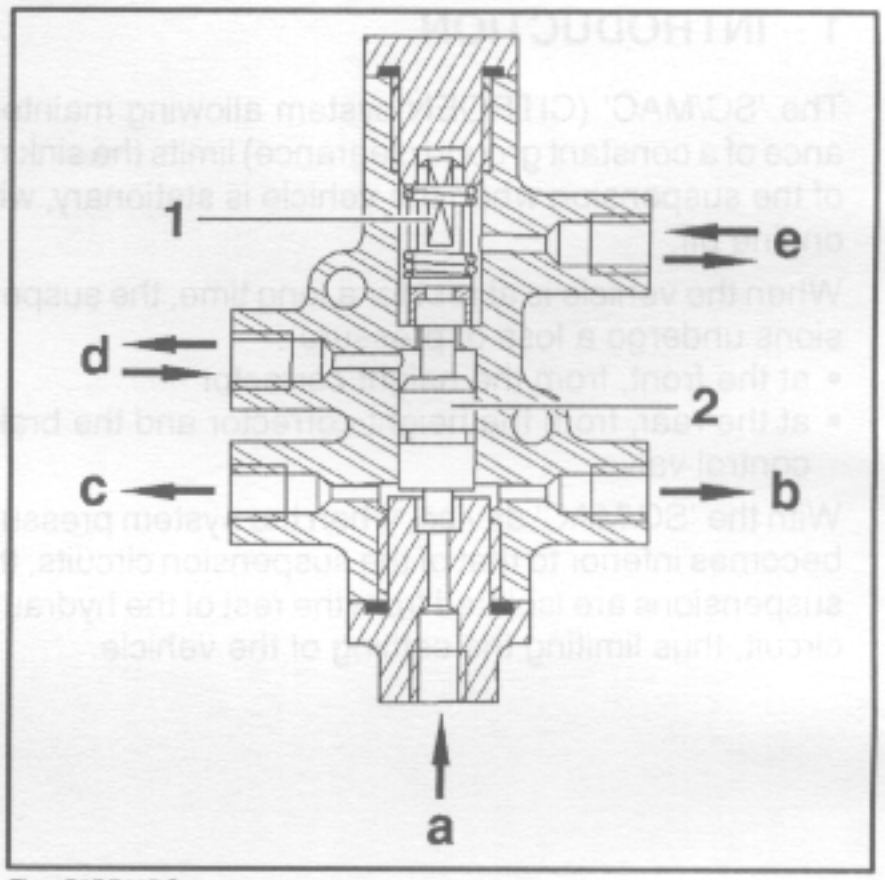


Fig. : B3BR00DC

(a) = system supply.
(b) = supply to the suspension regulator electrovalve.
(c) = supply to the height corector.
(d) = suspension pressure (height corrector and 'SC/MAC' sphere side).
(e) = suspension pressure (suspension regulator side).

2.2 – Rear 'SC/MAC' valve

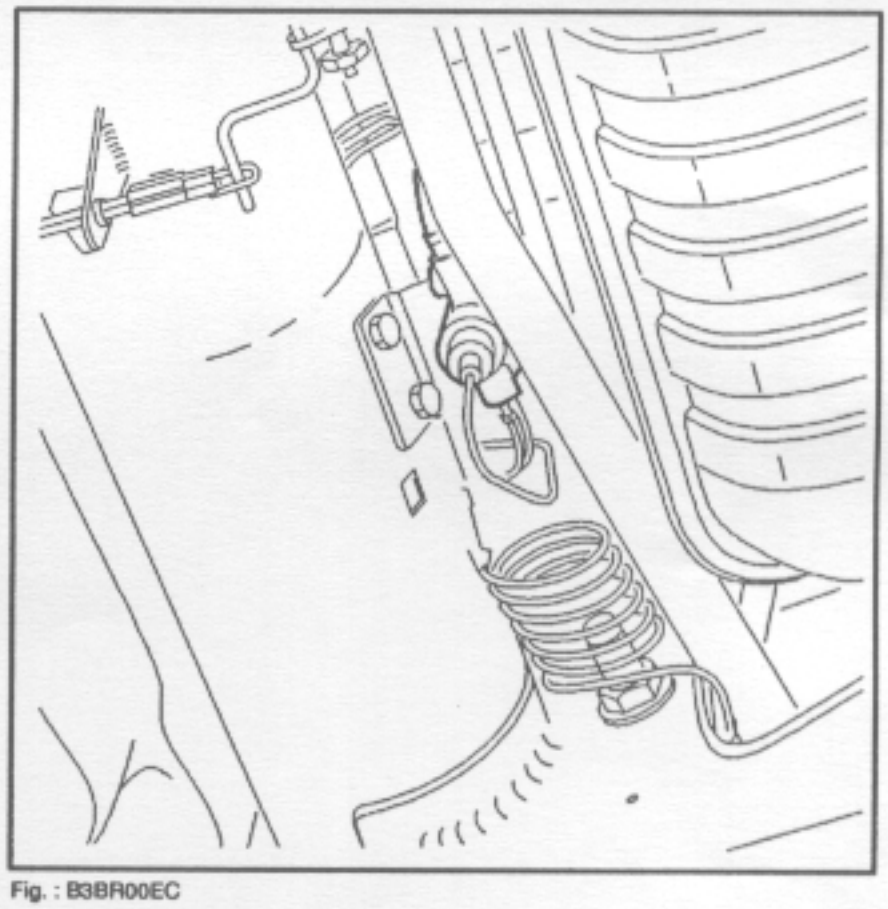


Fig. : B3BR00EC

www.WorkshopManuals.co.uk

The valve is located on the rear axle crossmember.

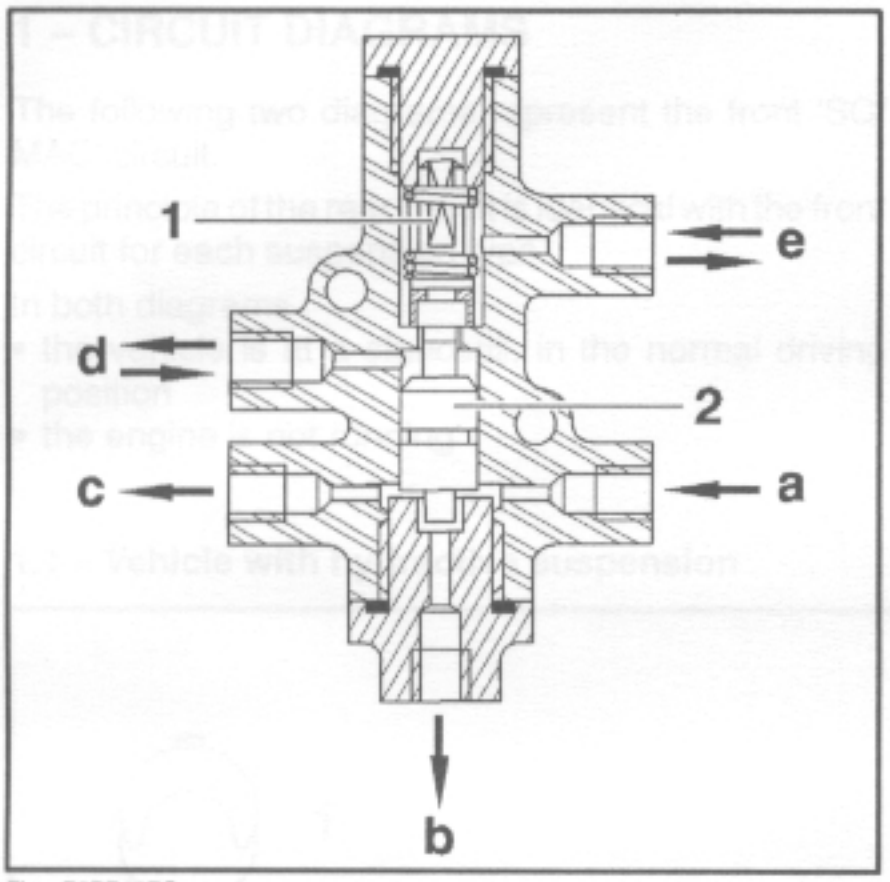


Fig. : B3BR00FC

(a) = system supply.

(b) = supply to the suspension regulator electrovalve.

(c) = supply to the height corector.

(d) = suspension pressure (height corrector and 'SC/MAC' sphere side).

(e) = suspension pressure (suspension regulator side).

2.3 – Description

The valve connects the system supply (a), the regulator electrovalve (b) and the height corrector (c).

When the valve is at rest, plunger 1 remains on its seat ; communication between the suspension pressures, height corrector side (d) and regulator side (e), is impossible.

When the system pressure (a) is sufficient, piston (2) pushes plunger (1), enabling communication between the suspension pressures (d) and (e).

3 – 'SC/MAC' VALVE FOR VEHICLE WITHOUT HYDRACTIVE SUSPENSION

The following description is identical for the front and rear valves.

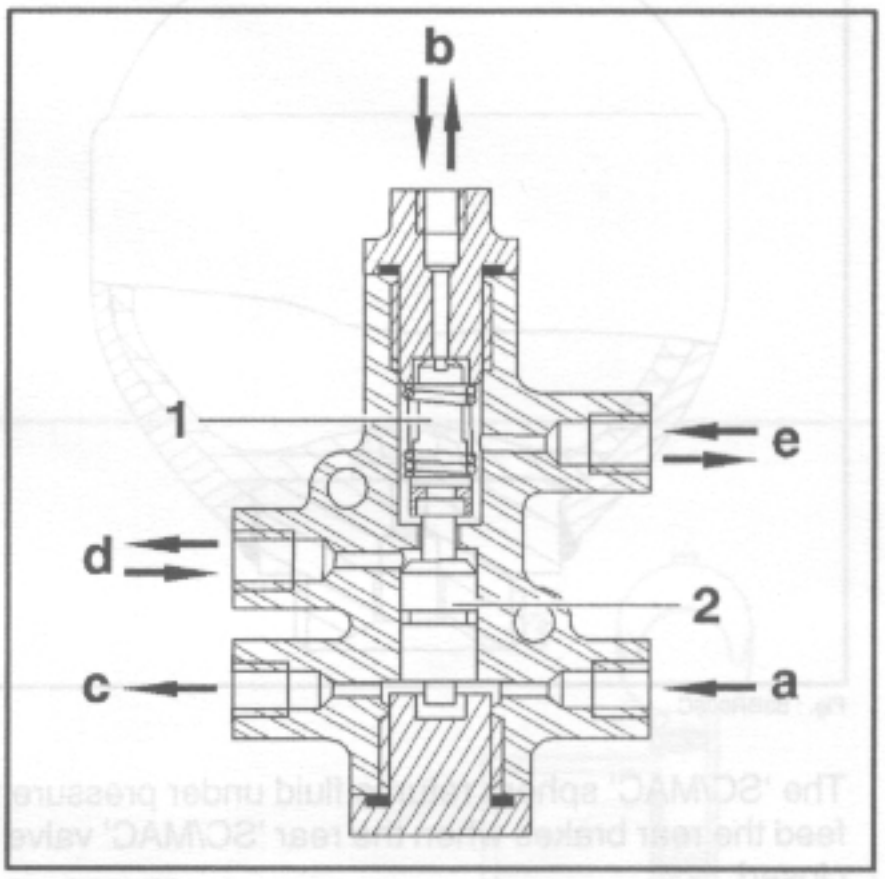


Fig. : B3BR00GC

(a) = system supply.

(b) = suspension pressure (on the side of the L.H. suspension unit).

(c) = supply to the height corector.

(d) = suspension pressure (height corrector and 'SC/MAC' sphere side).

(e) = suspension pressure (R.H. suspension unit side).

The valve connects the supply system (a) to the height corrector (c).

When the valve is at rest, plunger (1) remains on its seat and communication between the suspension pressures, height corrector (d) and suspension units (b) and (e) sides is impossible.

When the system pressure (a) is sufficient, piston (2) pushes plunger (1), enabling communication between the suspension pressures (d), (b) and (e).

www.WorkshopManuals.co.uk

4 – 'SC/MAC' SPHERE

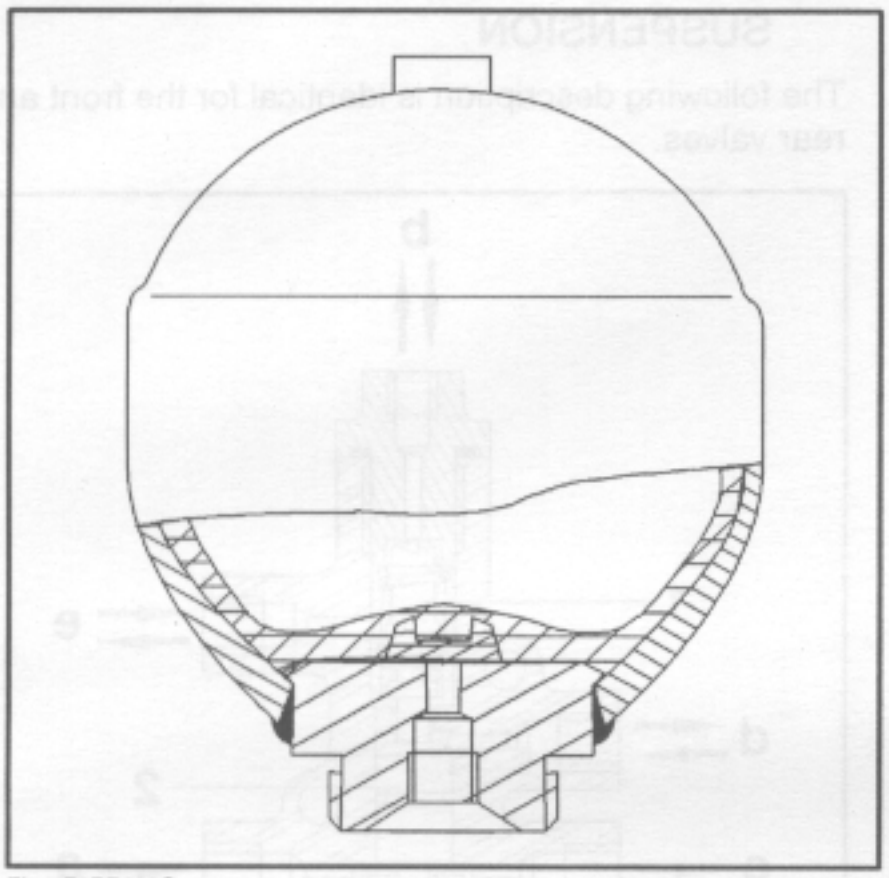


Fig. : B3BR008C

The 'SC/MAC' sphere returns fluid under pressure to feed the rear brakes when the rear 'SC/MAC' valve is closed.

The sphere is situated at the L.H. rear of the vehicle, on the rear axle crossmember.

Specification :

- capacity = 400 cc
- pressure = 50 bars
- diaphragm type = urepan or desmopan according to the country where the vehicle is marketed

www.WorkshopManuals.co.uk

OPERATING PRINCIPLE : 'SC/MAC'

1 – CIRCUIT DIAGRAMS

The following two diagrams represent the front 'SC/MAC' circuit.

The principle of the rear circuit is identical with the front circuit for each suspension type.

In both diagrams :

- the vehicle is at a standstill, in the normal driving position
- the engine is not running

1.1 – Vehicle with hydractive suspension

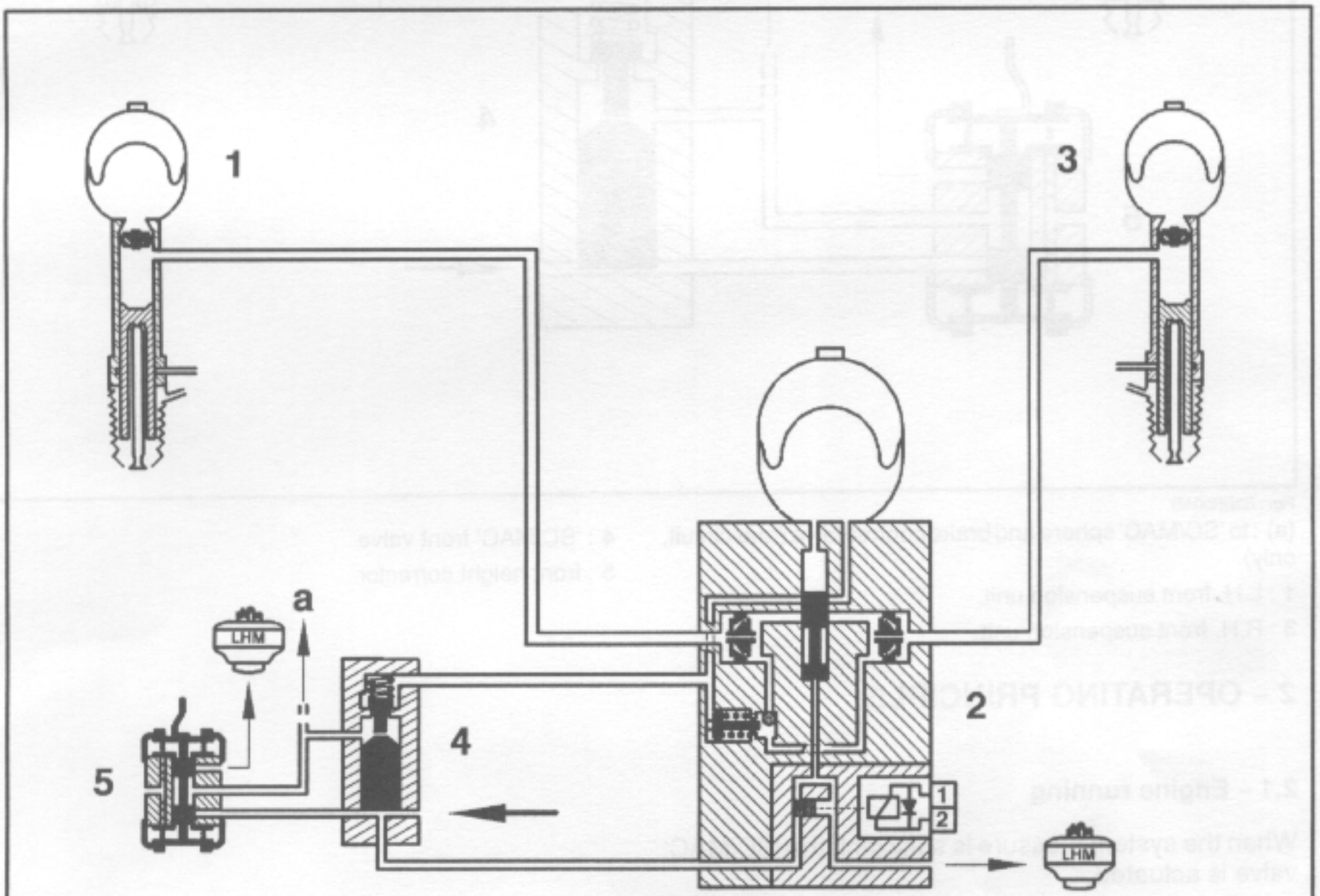


Fig. : B3BR009D

(a) : to 'SC/MAC' sphere and brake control valve (rear circuit, only).

1 : L.H. front suspension unit.

2 : front suspension regulator and electrovalve.

NOTE : the 3 lower orifices of 'SC/MAC' valve (4) can be reversed in the vehicle.

3 : R.H. front suspension unit.

4 : 'SC/MAC' front valve.

5 : front height corrector.

www.WorkshopManuals.co.uk

1.2 – Vehicle without hydractive suspension

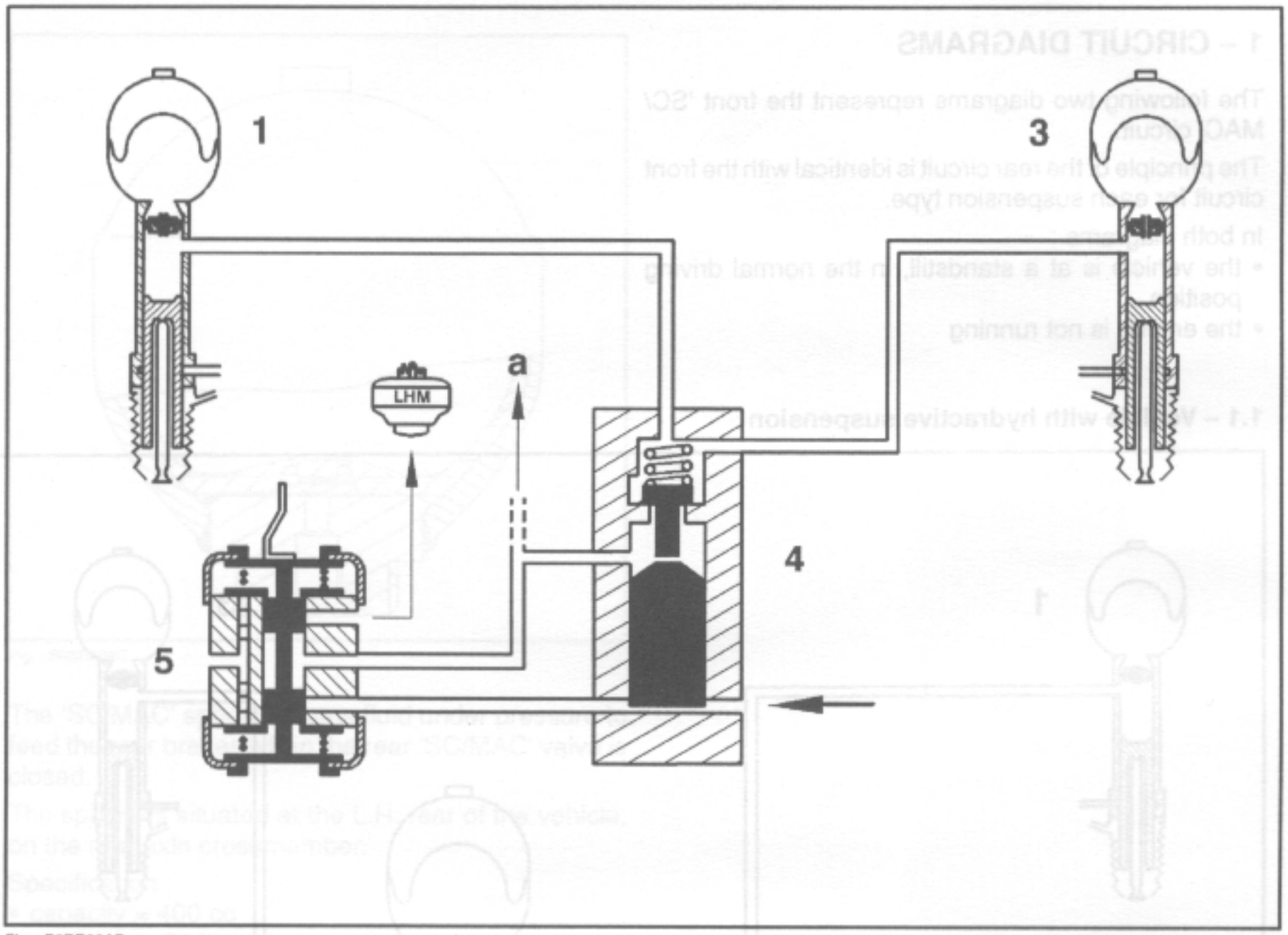


Fig. : B3BR00AD

(a) : to 'SC/MAC' sphere and brake control valve (rear circuit, only).

1 : L.H. front suspension unit.

3 : R.H. front suspension unit.

4 : 'SC/MAC' front valve.

5 : front height corrector.

2 – OPERATING PRINCIPLE

2.1 – Engine running

When the system pressure is sufficient, the 'SC/MAC' valve is actuated.

The suspension units communicate with the height corrector.

2.2 – Engine stopped

The system pressure drops.

When the system pressure is below the pressure in the suspension circuits, the valve closes.

The suspension is isolated from the rest of the hydraulic circuit.

www.WorkshopManuals.co.uk

HYDRAULIC CIRCUIT : SC/MAC

1 – HYDRAULIC CIRCUIT SYNOPTIC

Parts list (versions with or without hydractive suspension) :

Reference	Description
1	L.H. front suspension unit
2	Front suspension regulator and electrovalve
3	R.H. front suspension unit
4	Front 'SC/MAC' valve
5	Front height corrector
6	'6+2' piston pump
7	Pressure regulator
8	Security valve
9	'SC/MAC' rear valve
10	Rear suspension electrovalve and regulator
11	'SC/MAC' sphere
12	Brake control valve
13	Rear height corrector
14	L.H. rear suspension unit
15	R.H. rear suspension unit

www.WorkshopManuals.co.uk

2 – VEHICLE WITH HYDRACTIVE SUSPENSION

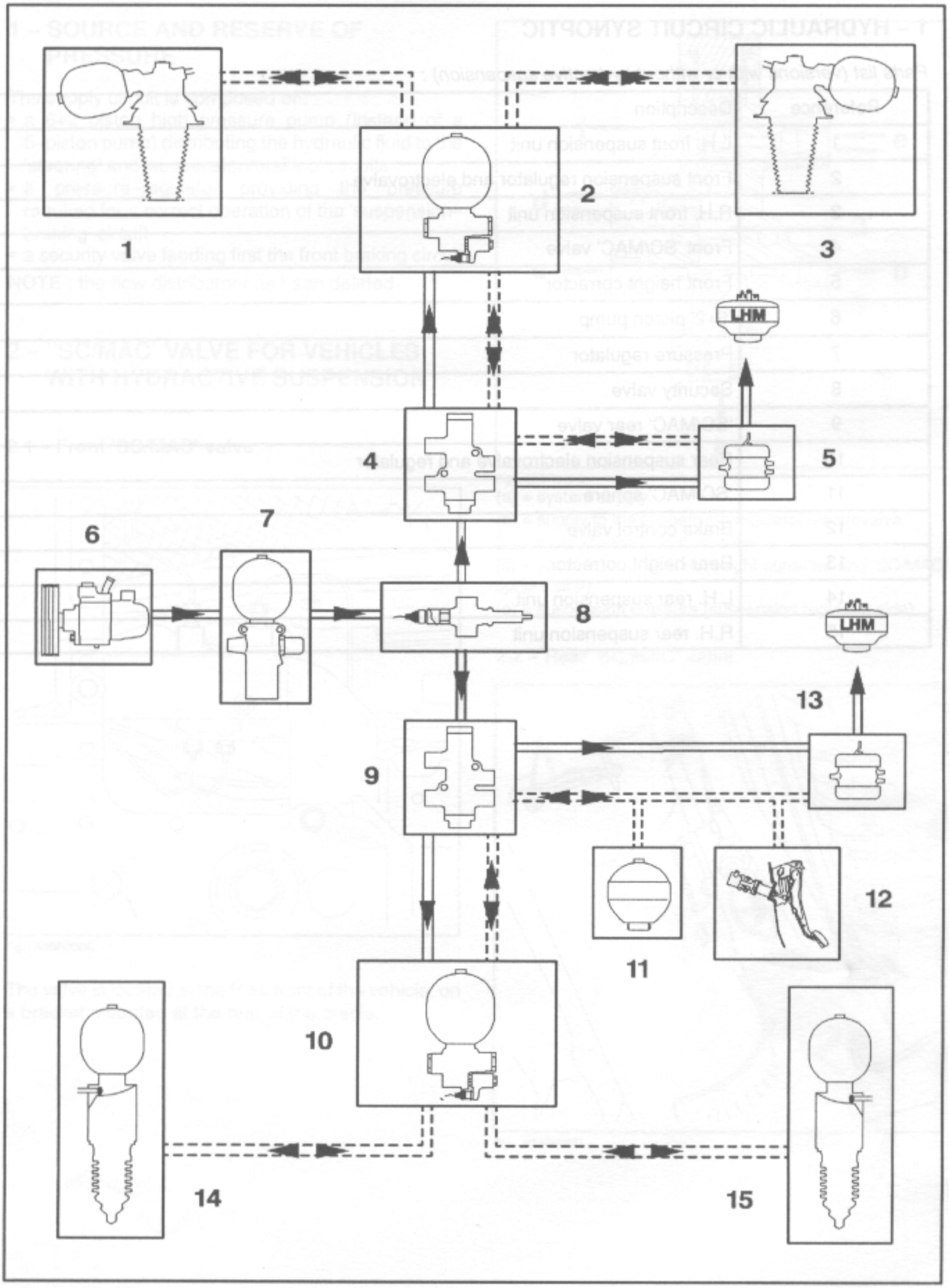


Fig. : B3BR001P

www.WorkshopManuals.co.uk

3 – VEHICLE WITHOUT HYDRACTIVE SUSPENSION

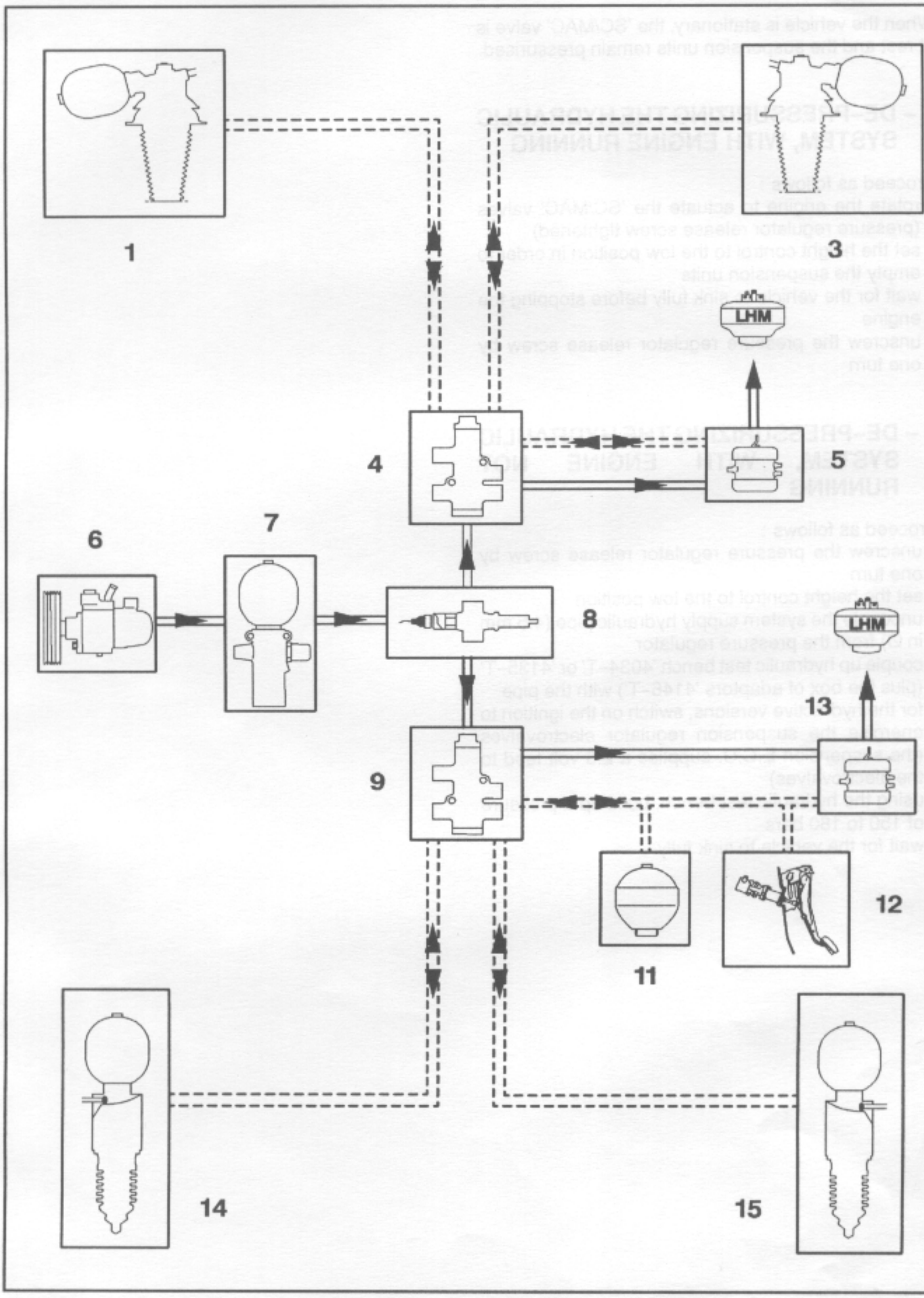


Fig. : B3BR002P

www.WorkshopManuals.co.uk

DE–PRESSURIZING : THE'SC/MAC' HYDRAULIC CIRCUIT

When the vehicle is stationary, the 'SC/MAC' valve is at rest and the suspension units remain pressurised.

1 – DE–PRESSURIZING THE HYDRAULIC SYSTEM, WITH ENGINE RUNNING

Proceed as follows :

- rotate the engine to actuate the 'SC/MAC' valves (pressure regulator release screw tightened)
- set the height control to the low position in order to empty the suspension units
- wait for the vehicle to sink fully before stopping the engine
- unscrew the pressure regulator release screw by one turn

2 – DE–PRESSURIZING THE HYDRAULIC SYSTEM, WITH ENGINE NOT RUNNING

Proceed as follows :

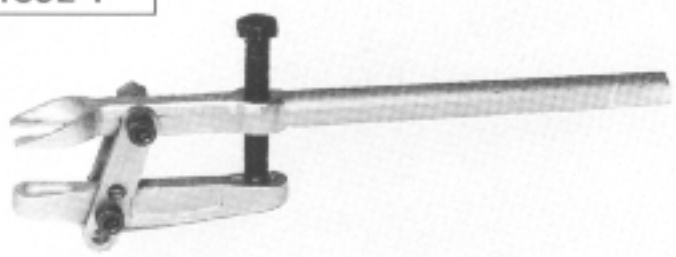
- unscrew the pressure regulator release screw by one turn
- set the height control to the low position
- uncouple the system supply hydraulic pipe (4.5 mm in Ø) from the pressure regulator
- couple up hydraulic test bench '4034–T' or '4135–T' (plus the box of adaptors '4146–T') with the pipe
- for the hydractive versions, switch on the ignition to energise the suspension regulator electrovalves (the suspension E.C.U. supplies a 2.6 volt feed to the electrovalves)
- using the hydraulic test bench, build up a pressure of 150 to 180 bars
- wait for the vehicle to sink fully

www.WorkshopManuals.co.uk

OPERATION NUMBER	DESCRIPTION	VEHICLE	
		4 cyl. PETROL	6 cyl. PETROL
XM.440-000/1	Operation list : Steering system		
XM.440-000/2	Tools	X	X
XM.440-00/1	Steering system - Steering wheel shaft : torque loadings	X	X
XM.440-00/2	Specifications and special points of the POWER ASSISTED steering system	X	
XM.440-00/3	Specifications and special points of the VARI POWER steering system		X
XM.441-1/1	Removing and refitting a steering wheel shaft.	X	X
XM.442-1/1	Removing and refitting a POWER ASSISTED steering system	X	
XM.442-1/2	Removing and refitting a VARI POWER steering system		X
XM.611-1/1	Removing and refitting an anti-theft lock	X	X

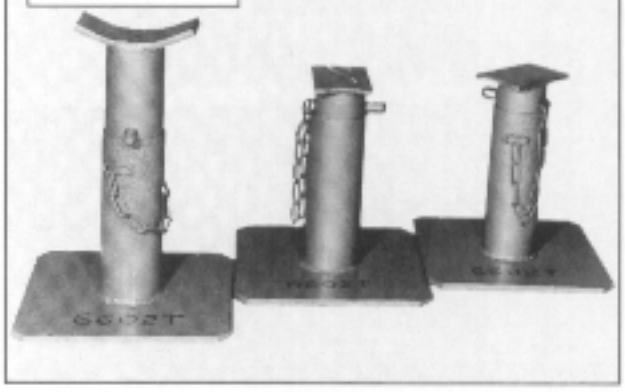
www.WorkshopManuals.co.uk

1892-T



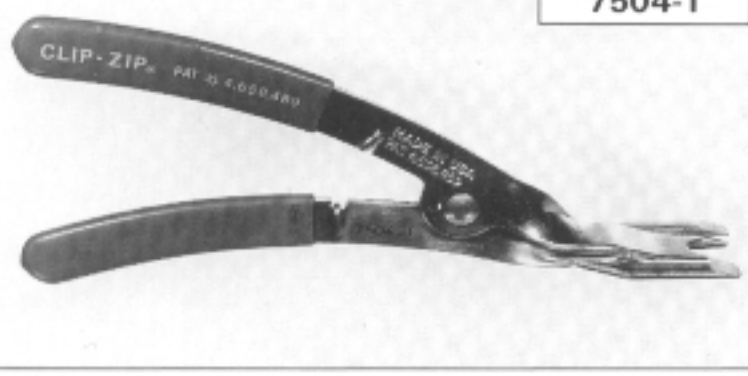
13-549

6602-T



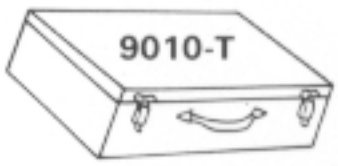
13-815

7504-T

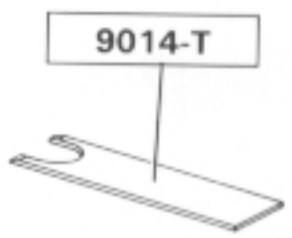


89-228

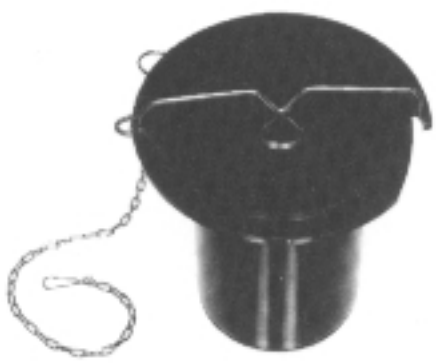
9010-T



9014-T

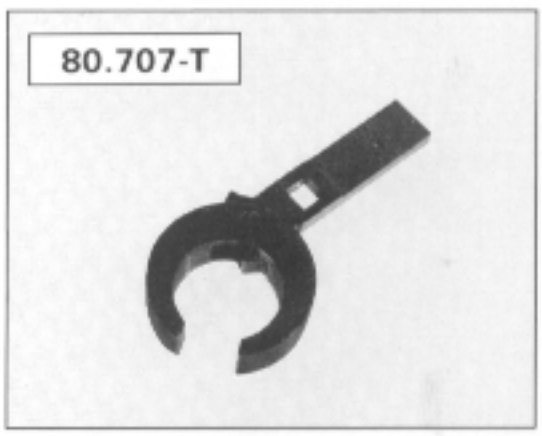


9004-T



89-708

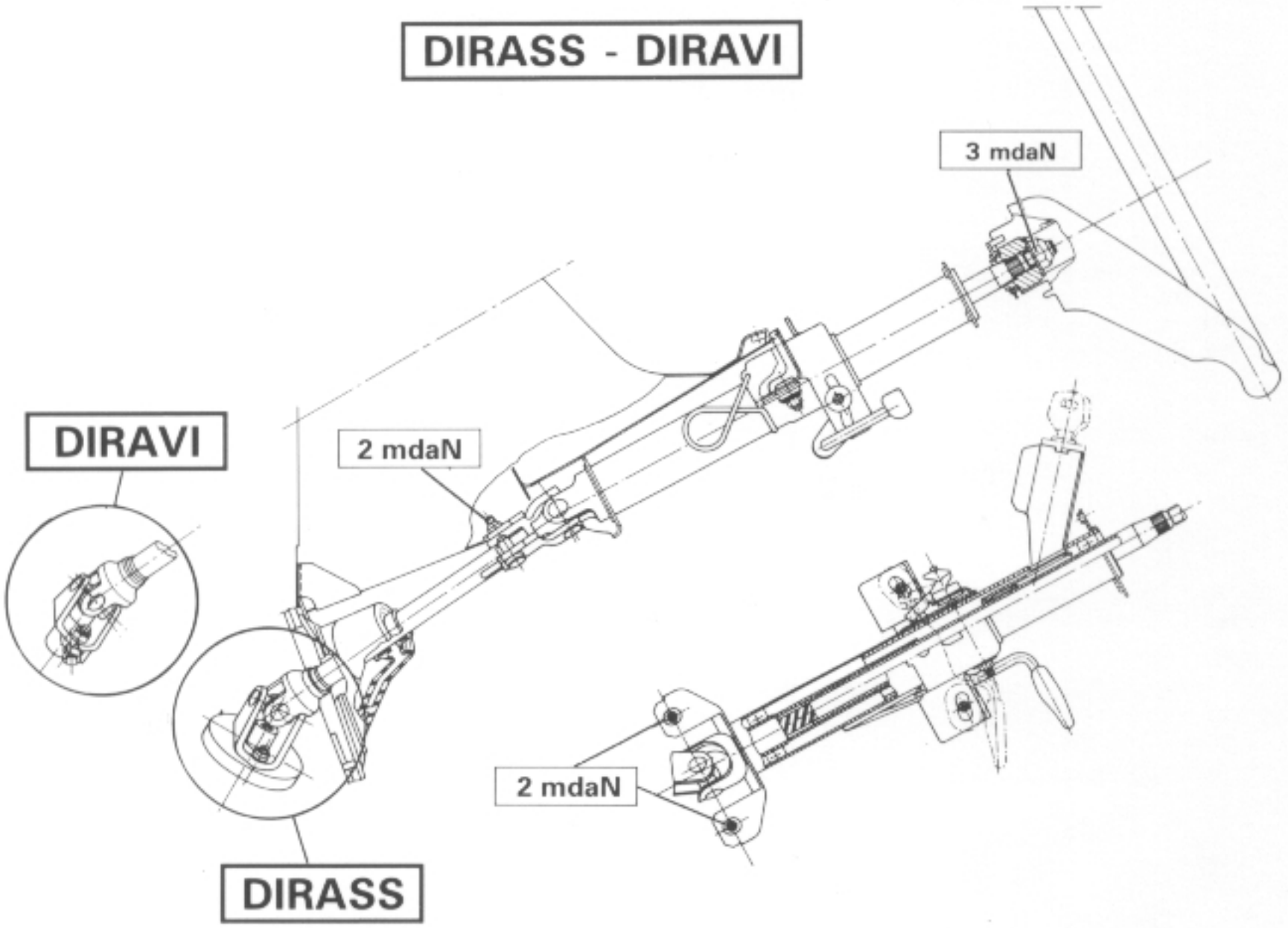
80.707-T

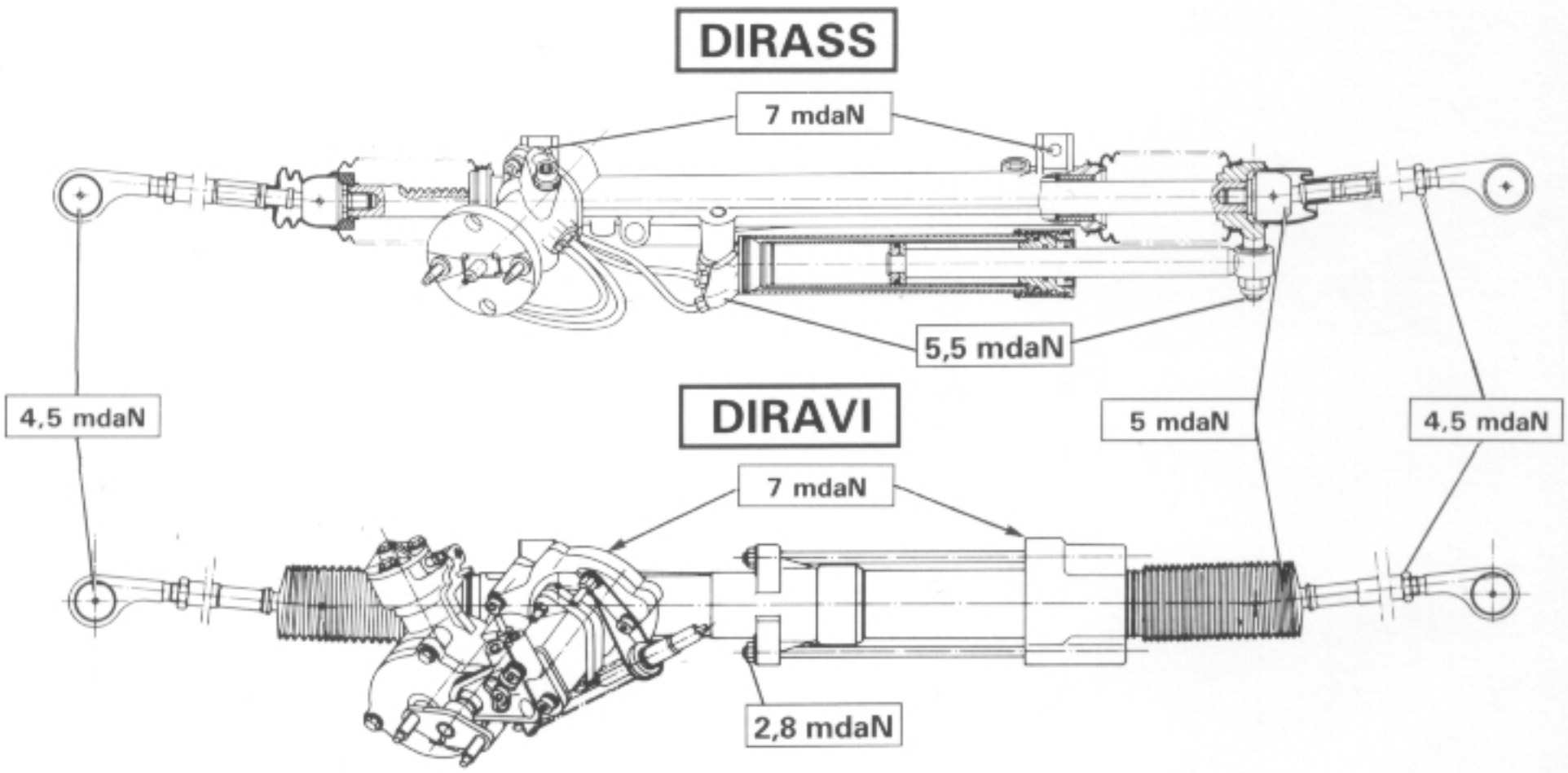


78-912

www.WorkshopManuals.co.uk

DIRASS - DIRAVI



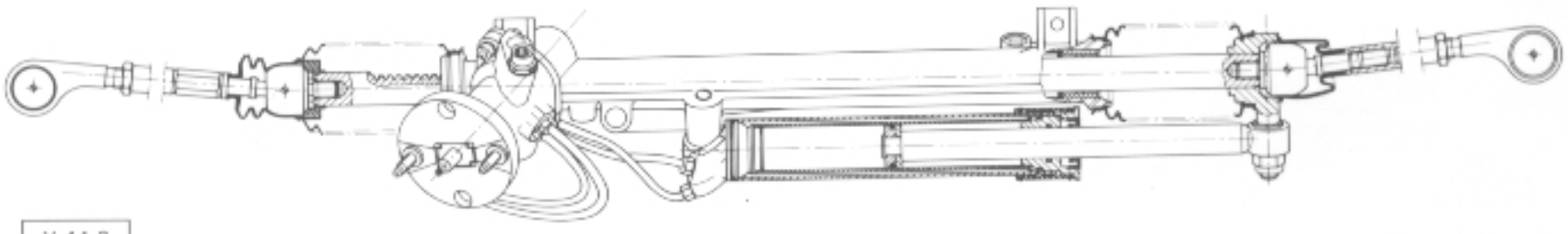


www.WorkshopManuals.co.uk

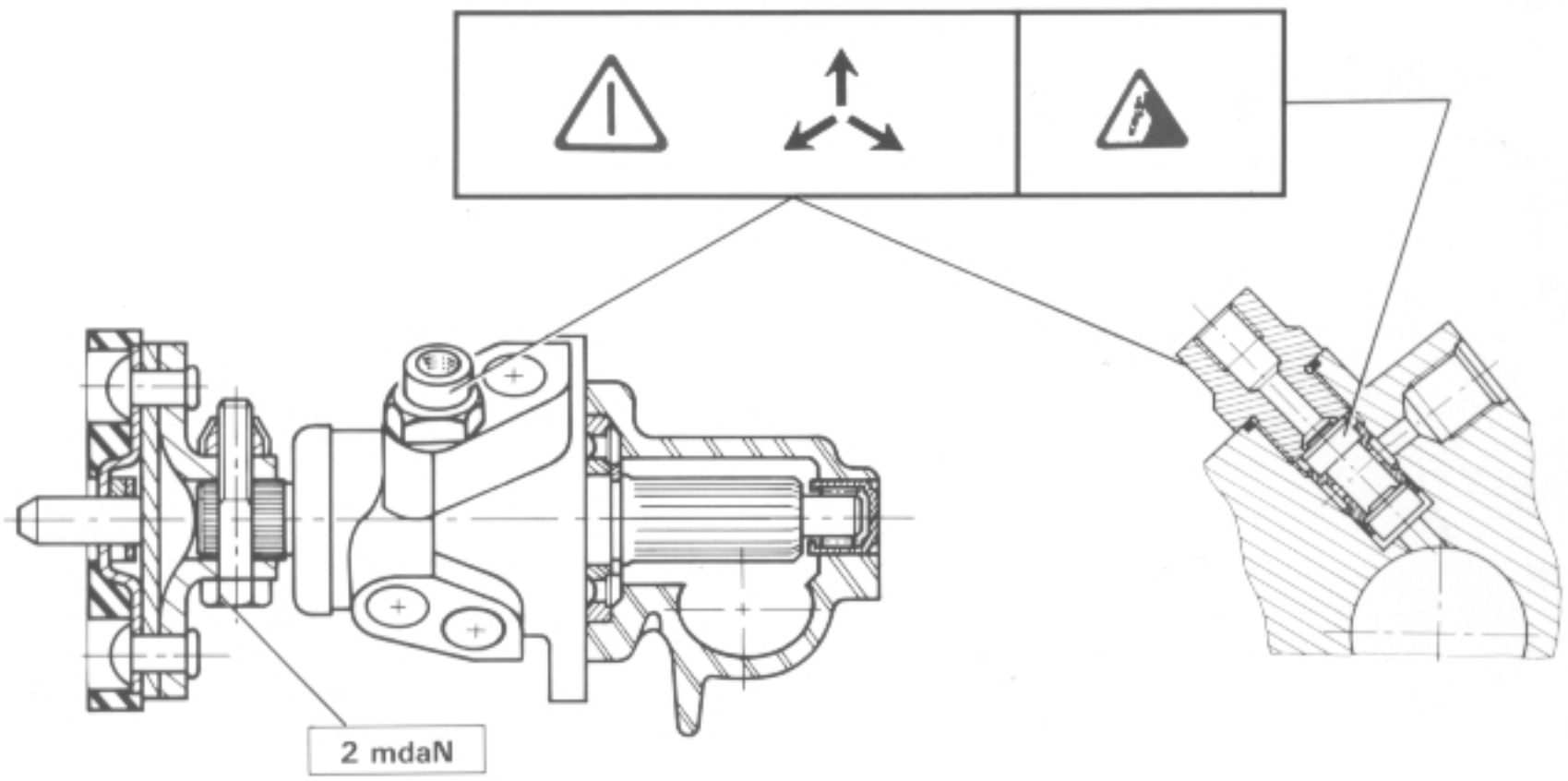
DIRASS



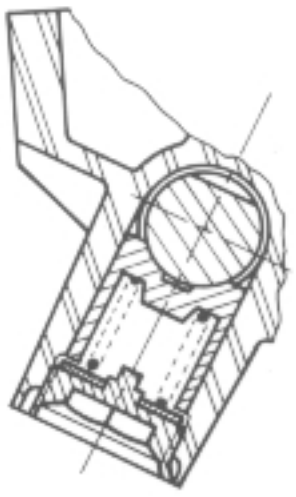
XM 4 cyl.	D1	9	2,94	A 44°	B 33°33'	A < B 0 → 3 mm
	D2	34				
	J	0,02 → 0,05 mm	15,6/1			



Y.44-3

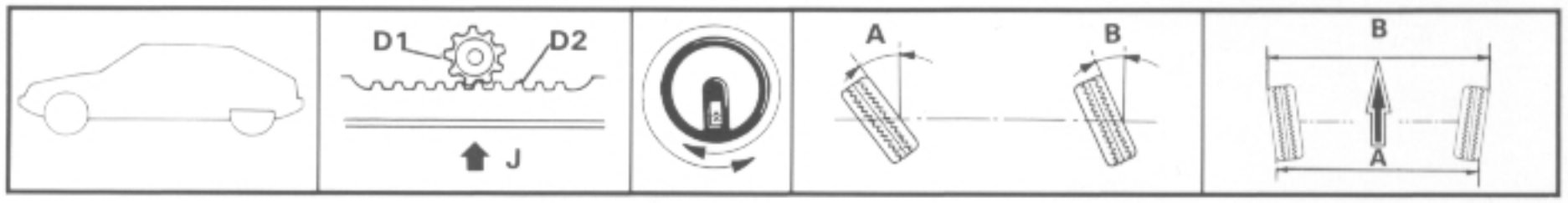


Y.44-3

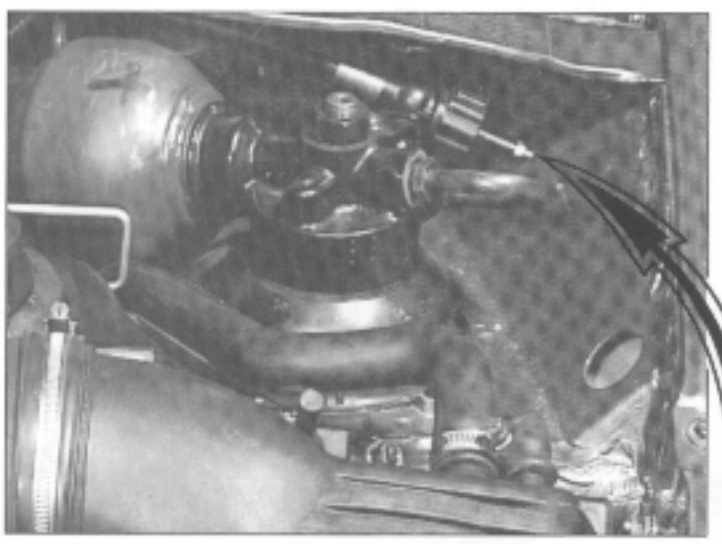


Y.44-4

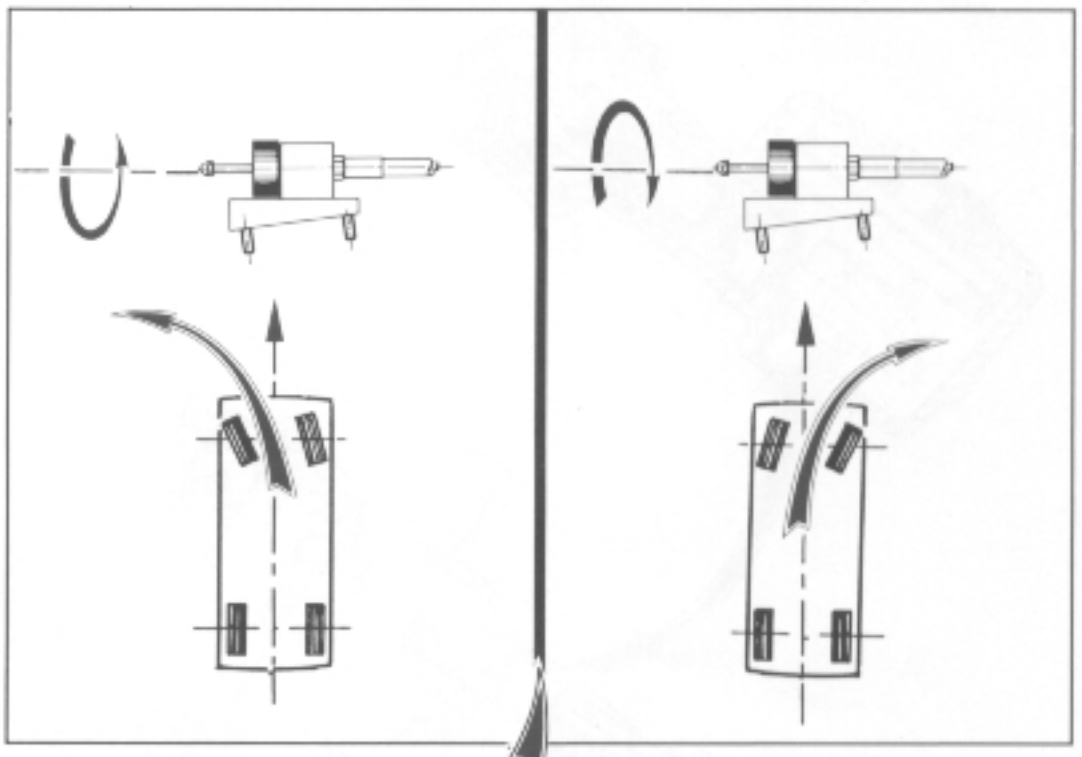
www.WorkshopManuals.co.uk

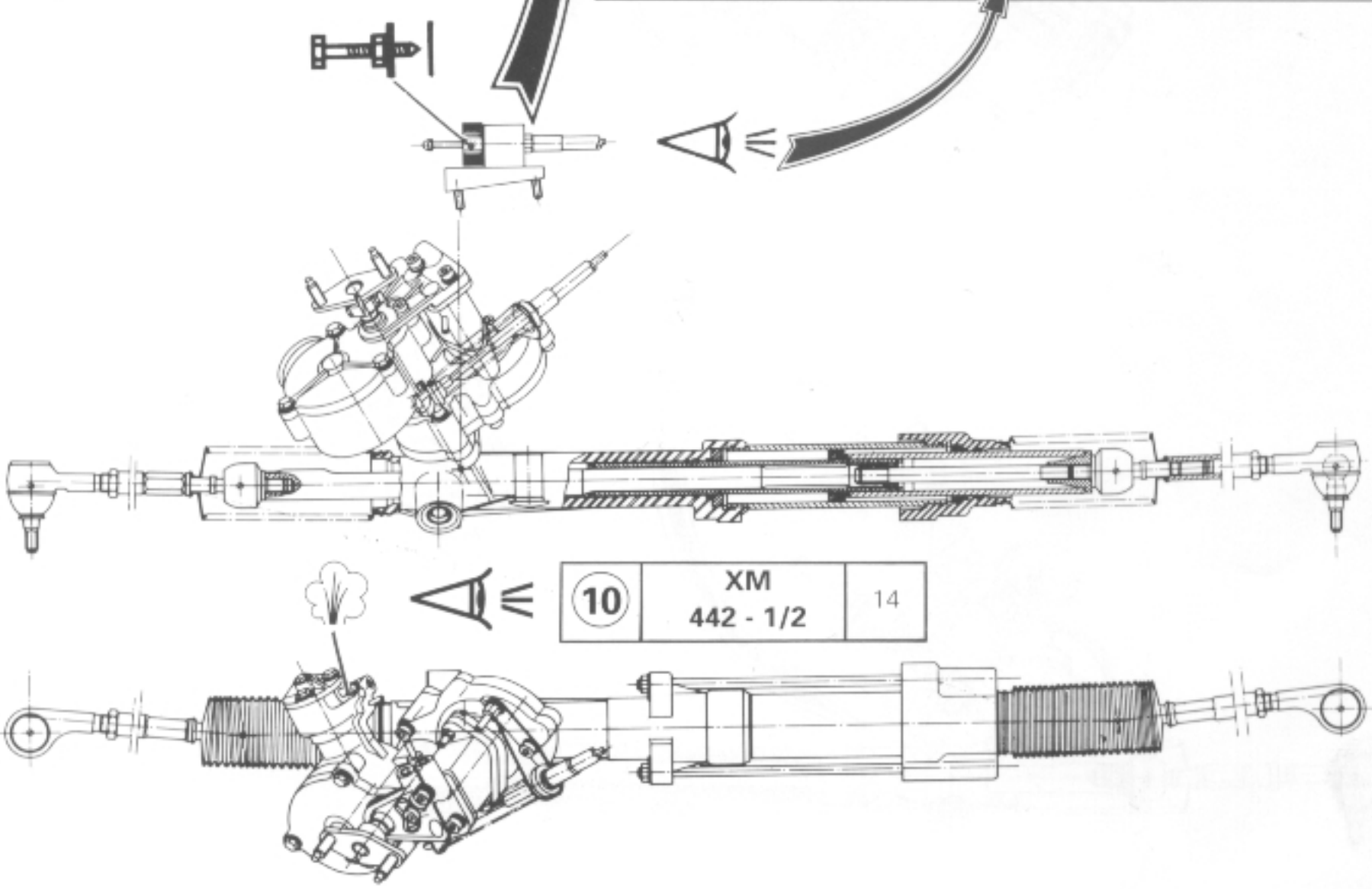


XM 6 cyl.	D1	10	3,26	A 43°	B 33°	A < B 0 → -3 mm
	D2	39				
	J	0,05 → 0,15 mm	17,5/1			



89-145

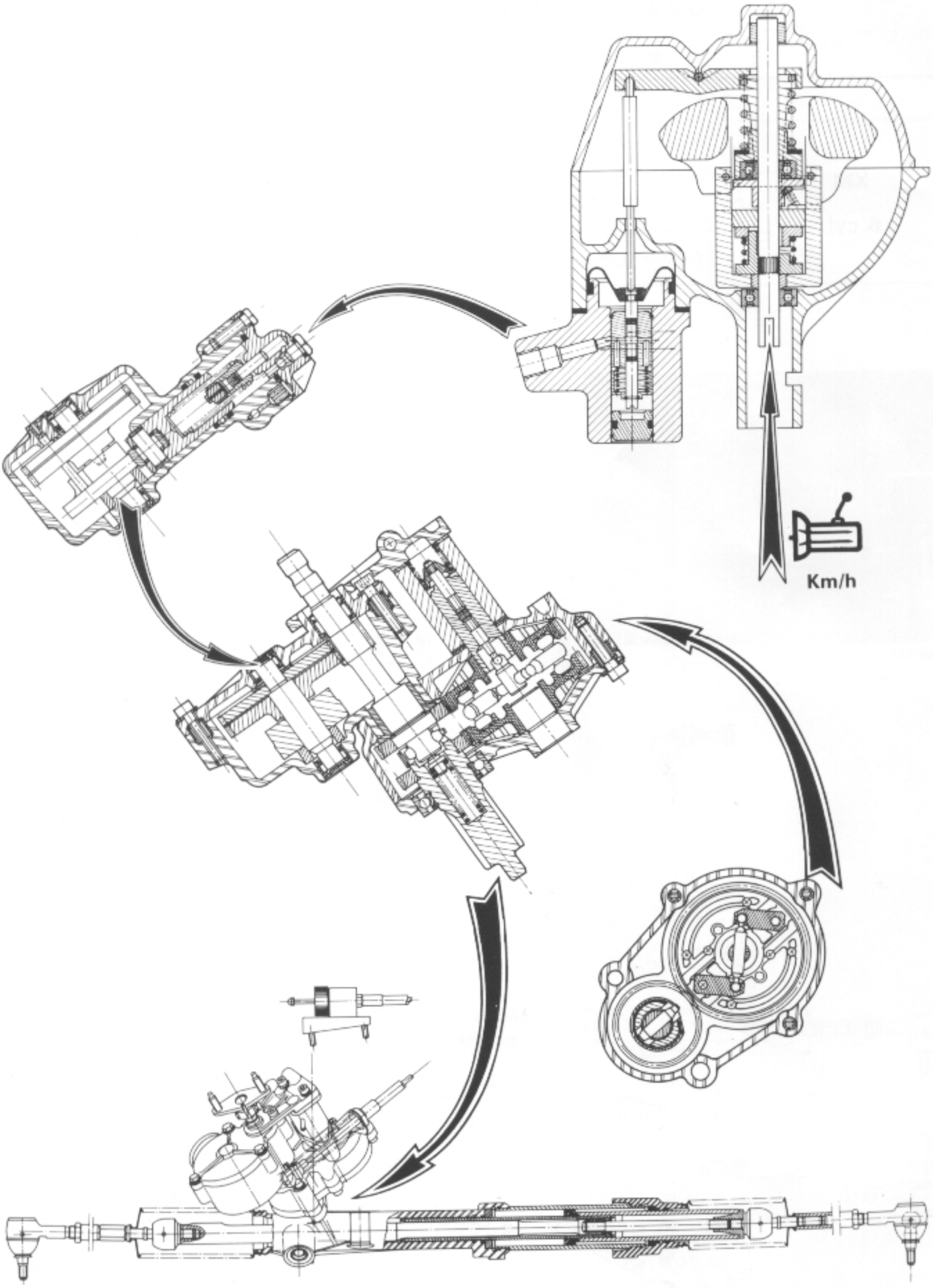




10 | XM 442 - 1/2 | 14

www.WorkshopManuals.co.uk





Y.44-6 | Y.44-7

www.WorkshopManuals.co.uk

REMOVAL

Place the road wheels in the straight ahead position.

Disconnect the battery.

Remove, Fig. I and II :

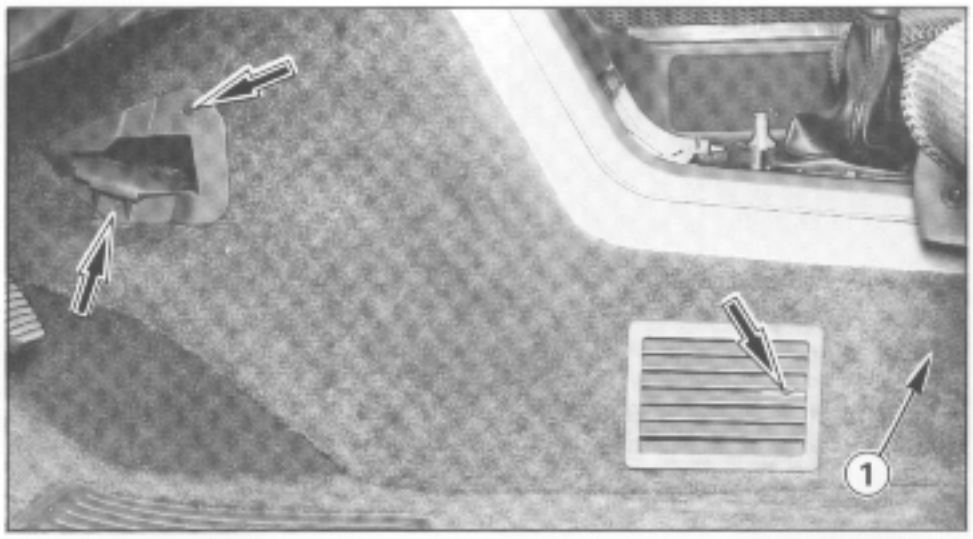
- the steering wheel cap,
- the steering wheel,
- the felt material coating **(2),**
  (two screws and two clips)
- console moquette carpet, **Fig. I,**
  *(3 screws ➡ a nut **(1)** 10 A/F),*
- the dashboard lower trimming, LH side
  (7 screws ➡) **Fig. II**.
- **Uncouple, Fig. III** : the parking brake control **(3)**.

Remove, Fig. IV :

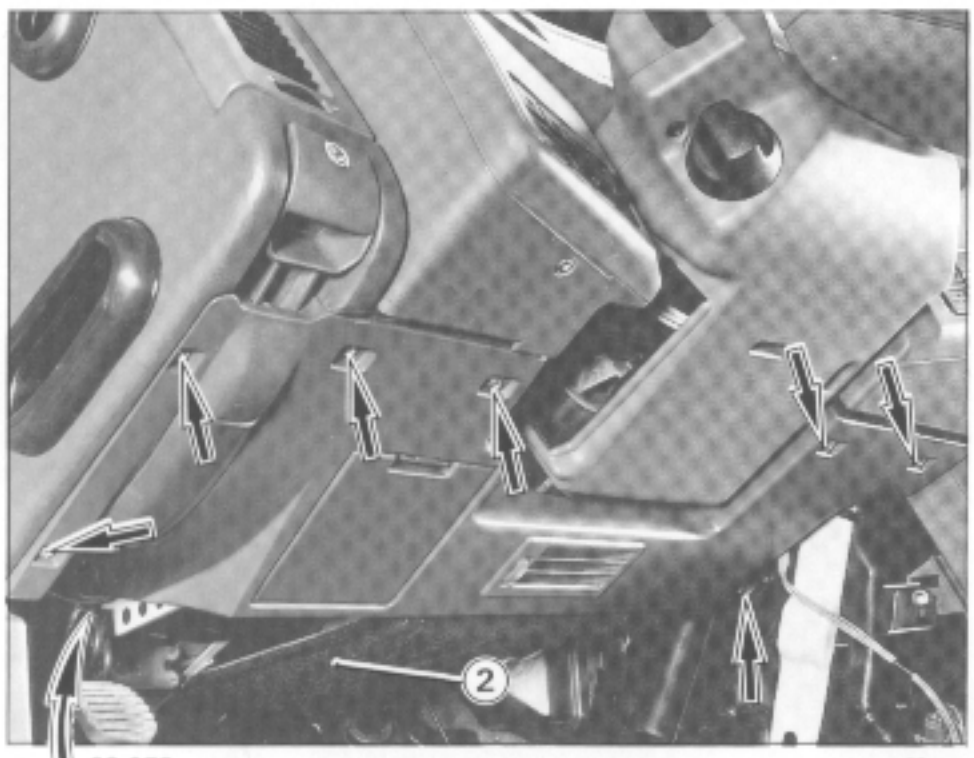
- the air diffusion duct **(5),**
- the selector switch **(4),**
- the column lower gaiter,
  (5 screws ➡).

Disconnect, Fig. IV : the connector **(6).**

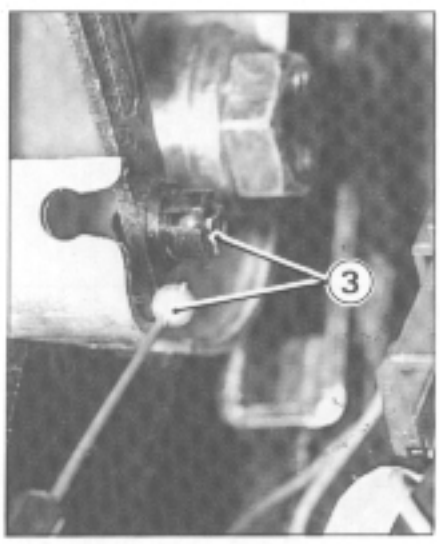
www.WorkshopManuals.co.uk



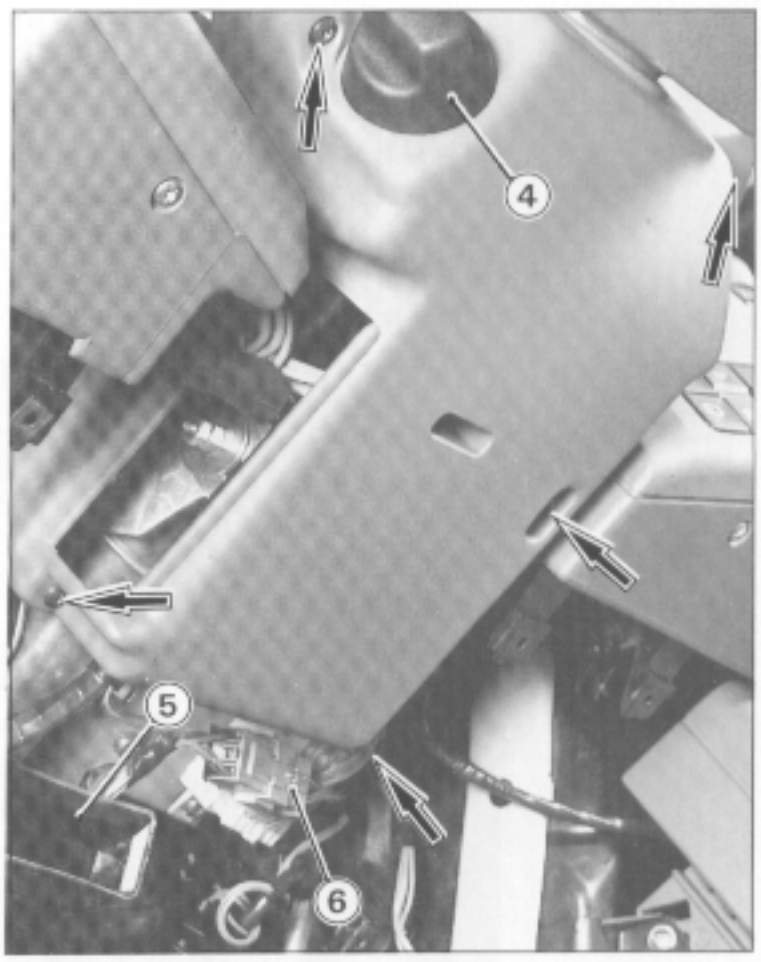
88-988 I



88-975 II



88-977 III

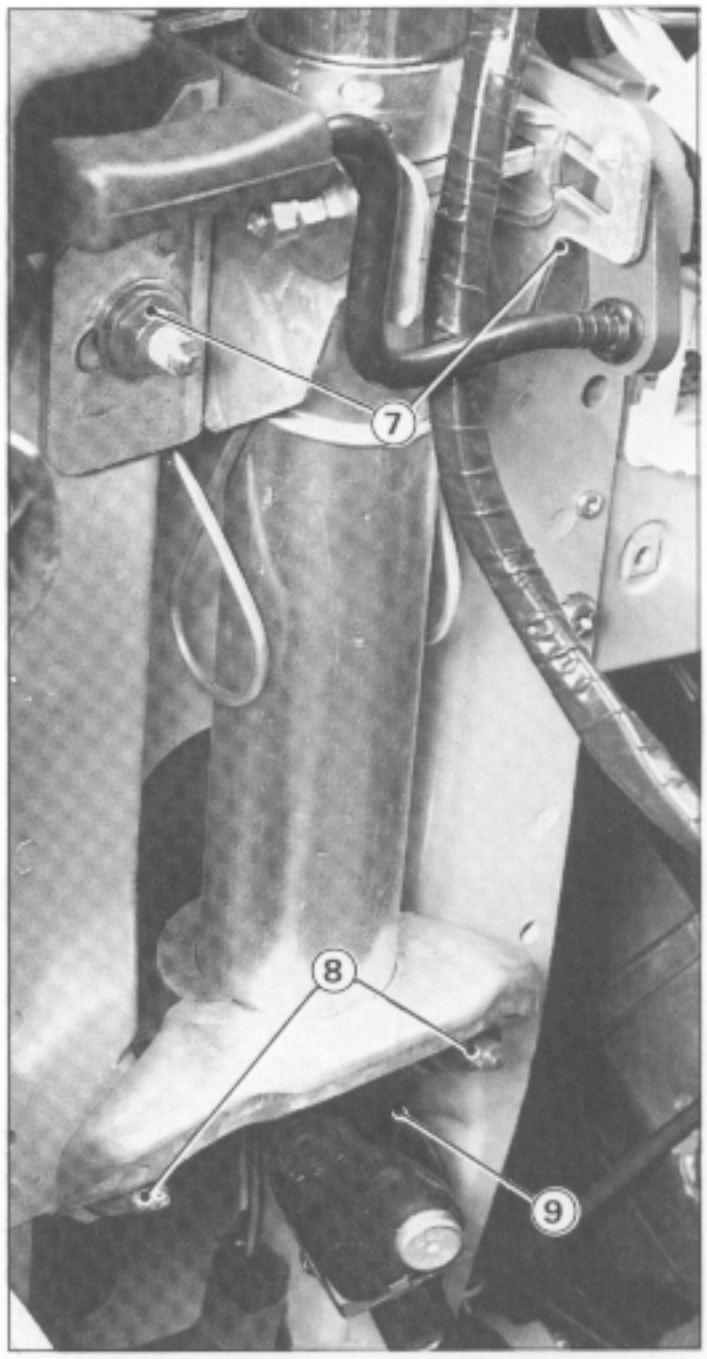


88-978 IV

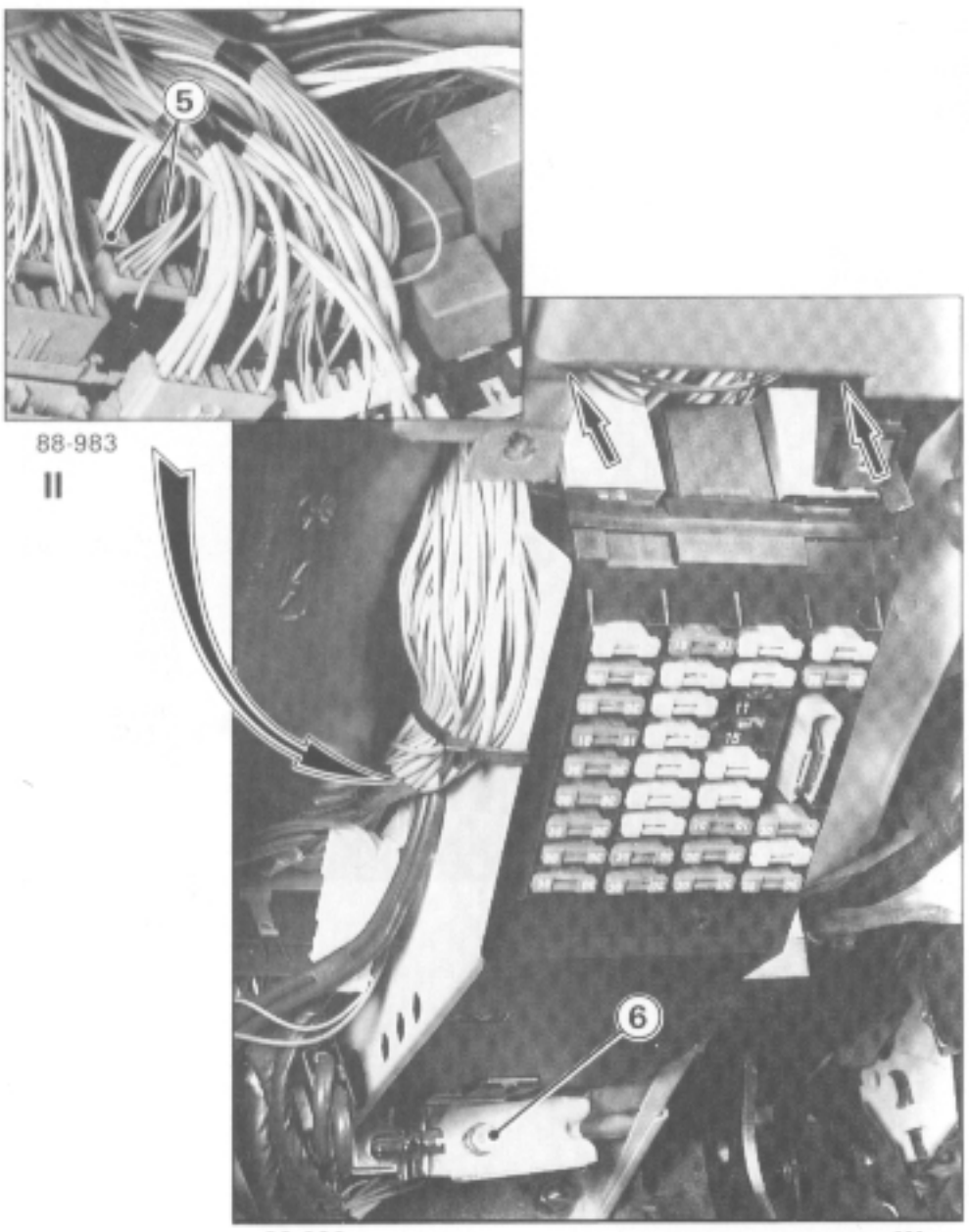
www.WorkshopManuals.co.uk



88-980 I

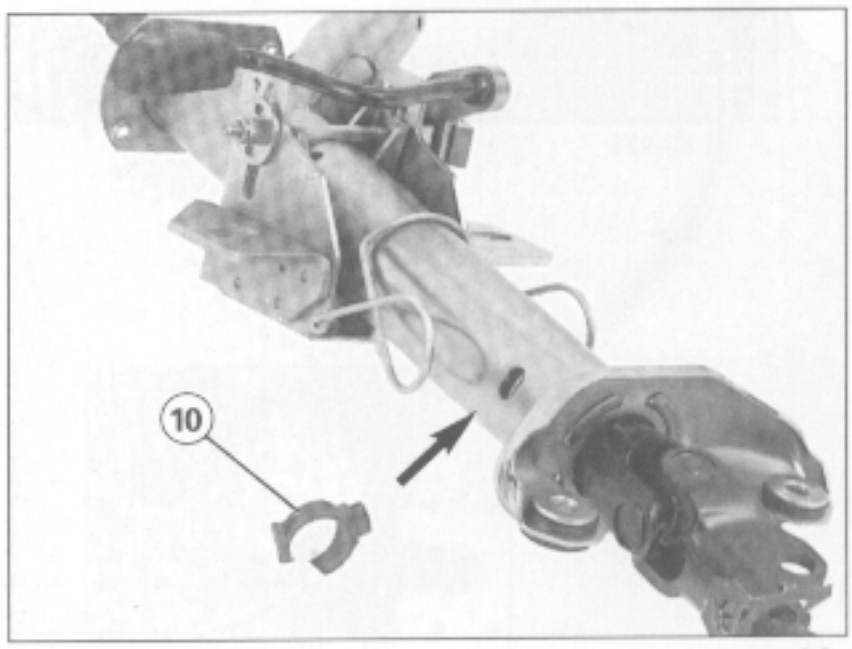


88-989 IV

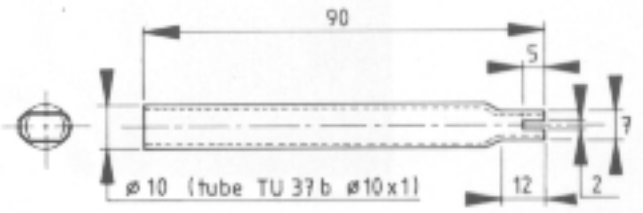


88-983 II

88-982 III



90-1815 V



www.WorkshopManuals.co.uk

REMOVAL

Disconnect, Fig. I, the connectors **(2), (4)** and (⇒).

Unlock (3), Fig. I, the steering wheel shaft ; pull and push down.

Remove, Fig. I, the upper steering column surround **(1)**.

Remove, Fig. III, the screw **(6)** and unclip the fuse box (⇒).

Disconnect, Fig. II, the connectors **(5)**.

Remove, Fig. IV :
- the universal joint nut **(9)**,
- the four steering column nuts **(7)** and **(8)**,
- the steering wheel shaft.

REFITTING

Refit, Fig. IV : the steering wheel shaft.

Put red plastic stop **(10)** into the bearing slot, **Fig. V**.

NOTE : stop **(10)** can be replaced by the **10 mm dia.** tube as shown on sketch.

Screw up, without tightening, the nuts **(7)** and **(8)**.

Fit, Fig. IV, the universal joint nut **(9)**.

Tighten to : 2 mdaN

Tighten, Fig. IV, the nuts **(7)** and **(8)**.

to : 2 mdaN

Remove stop **(10)**.

Reconnect, Fig. II the connectors **(5)**.

Clip, Fig. III, the fuse box (⇒) and refit the screw **(6)**.

Unlock (3), Fig. I, the steering wheel shaft ; pull and push down.

Refit, Fig. I, the upper steering column surround **(1)**.

Place back in position, **Fig. I**, the steering column ; lift up, push ; lock **(3)**.

Reconnect, Fig. I, the connectors **(2), (4)** and (⇒).

www.WorkshopManuals.co.uk

REFITTING

Reconnect, Fig. I : the switch connector **(1)** and the connector **(3)**.

Refit, Fig. I :

- the lower steering column surround,
  (five screws ⇒).

- the switch **(1)**,

- the air diffusion duct **(2)**,
  (together with its seal).

Position the dashboard lower trimming ;
(retain it with two screws).

Fit the air diffusion duct **(2)** to the lower trimming.

Couple up, Fig. III, the parking brake **(5)**.

Refit and tighten, Fig. II, the lower trimming screws,
(seven screws ⇒).

Refit, Fig. II, the felt material coating **(4)**,
(two screws and two clips).

Refit, Fig. IV :

- the console moquette carpet
  *(three screws ⇒ and a nut **(6)** (10 A/F).*

- the steering wheel,
  tighten to : 3 mdaN

- the steering wheel cap.

Reconnect the battery.

Adjusting the steering column, Fig. V :

Unlock the steering column ; pull and push down.

Slacken the counter-nut **(7)**.

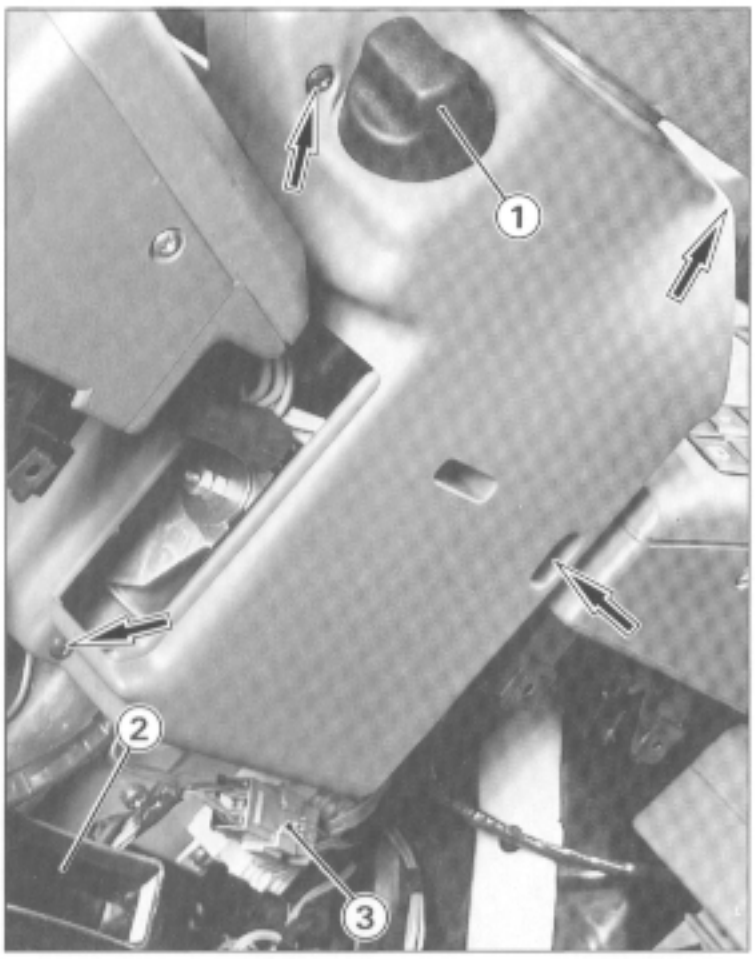
Adjust the nut **(8)** so that the steering column should be sliding both horizontally and vertically WITHOUT RESISTANCE.

Tighten the lock-nut **(7)**,

Check whether the steering column is efficiently locked.

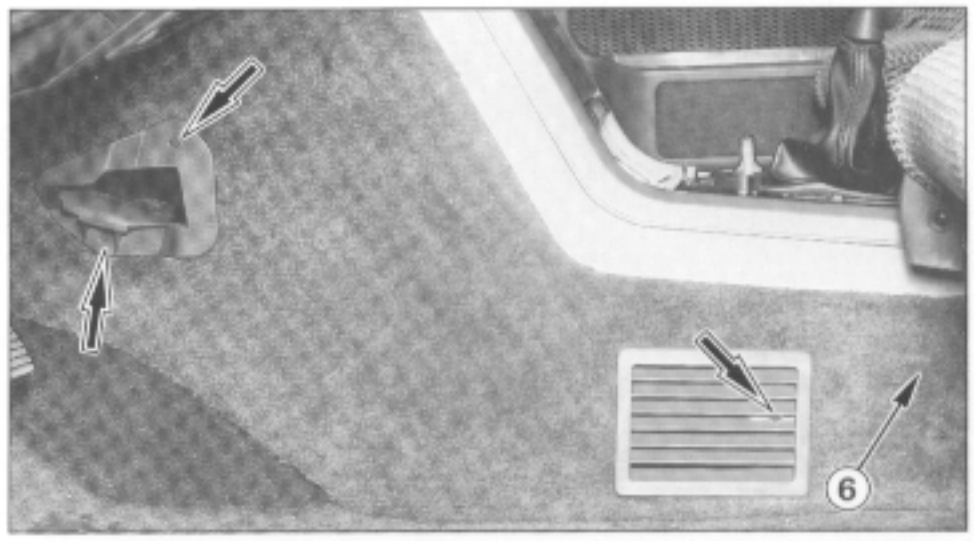
If not, carry out the operation again.

www.WorkshopManuals.co.uk



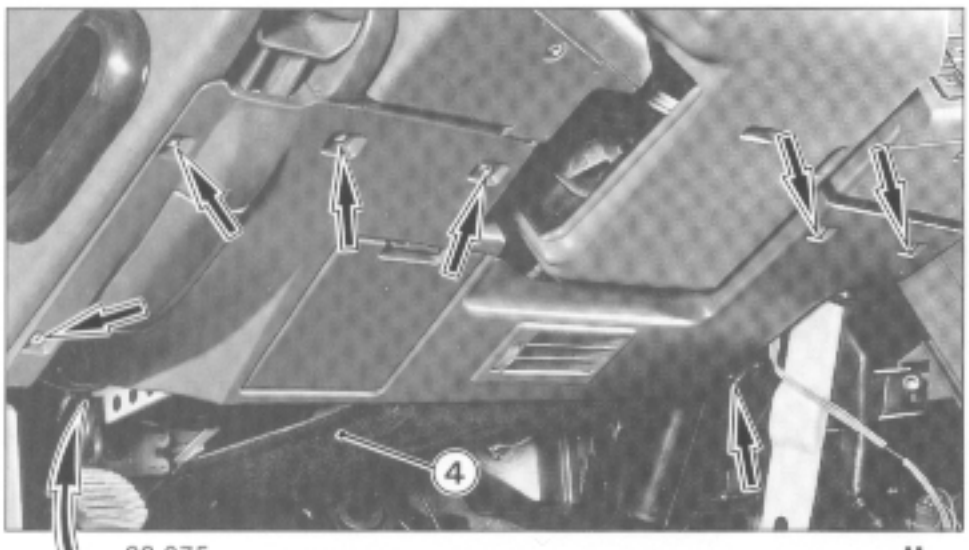
88-978

I



88-988

IV

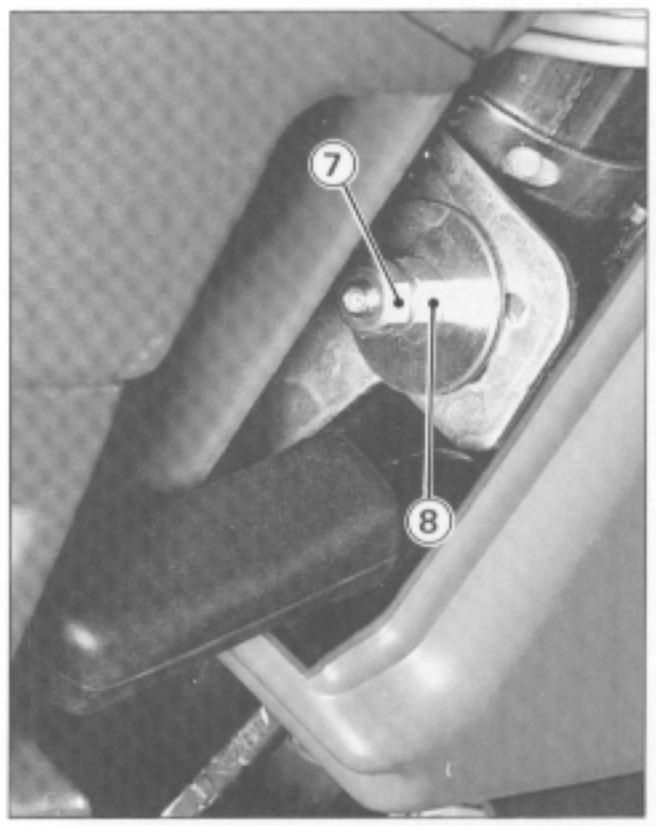


88-975

II

88-977

III



88-986

V

www.WorkshopManuals.co.uk

REMOVAL

Place the vehicle on a car hoist.

Chock the front of the vehicle.

Remove the two wheels.

Slacken the pressure regulator release screw.

Operate the steering system to the left then to the right to drive out the liquid.

Remove the felt material coating from under the lower trim of the instrument panel.

Remove, Fig. I :
- the coupling screw **(1)** placed under the steering column, then release the shaft **(2)** from its housing,
- the flexible coupling screw **(3)** from the rotary valve.

Uncouple, Fig. I and II :
- the rotary valve **(5)** flexible coupling **(4)**,
- the link rods **(6)** and **(7)**, then push the gear control bar **(8)** aside,
- the exhaust swivel-joint **(9)** ; place the pipe **(10)** against the bodyshell,
- the ram overflow return rilsan pipe,
- the feed pipes **(11)** and **(12)**.

WARNING, Fig. I and IV :
Removing the union **(13)** is to be AVOIDED because valve **(14)** could get lost or destroyed during the refitting operation.

Remove, Fig. V, VI and VII :
- the steering ball-joints with puller **1892-T** *(leave the screw in place to protect the threads),*
- the heat protective shield **(15),**
- the two steering fixing screws **(17),**
- the steering system, from the RH side.

Retrieve, Fig. V : the two thrust washers **(16)** placed under the steering control unit.

REFITTING

Relocate, Fig. V :

- the steering system with the two thrust washers **(16)**,
- the screws, their plain washers and two NEW NYLSTOP nuts.

Tighten to : 7 mdaN

Recouple, Fig. II and III :
- the feed pipes **(11)** and **(12),**
- the ram overflow return rilsan pipe,
- the link rods **(6)** and **(7),**
- the gear change control bar **(8),**
- the exhaust swivel-joint **(9).**

Tighten to : 1 mdaN

Refit, Fig. V and VII : the thermal shield **(15).**

Couple up, Fig. VI :
- the steering bars **(18)** to the swivels, fitted with *NEW NYLSTOP* nuts.

Tighten to : 4.5 mdaN

Position :
- the swivels in a straight line,
- the steering wheel spoke downwards,
- the steering column with the shaft **(2).**

Recouple, Fig. I
- the flexible coupling **(4)** with the rotary valve **(5)**,

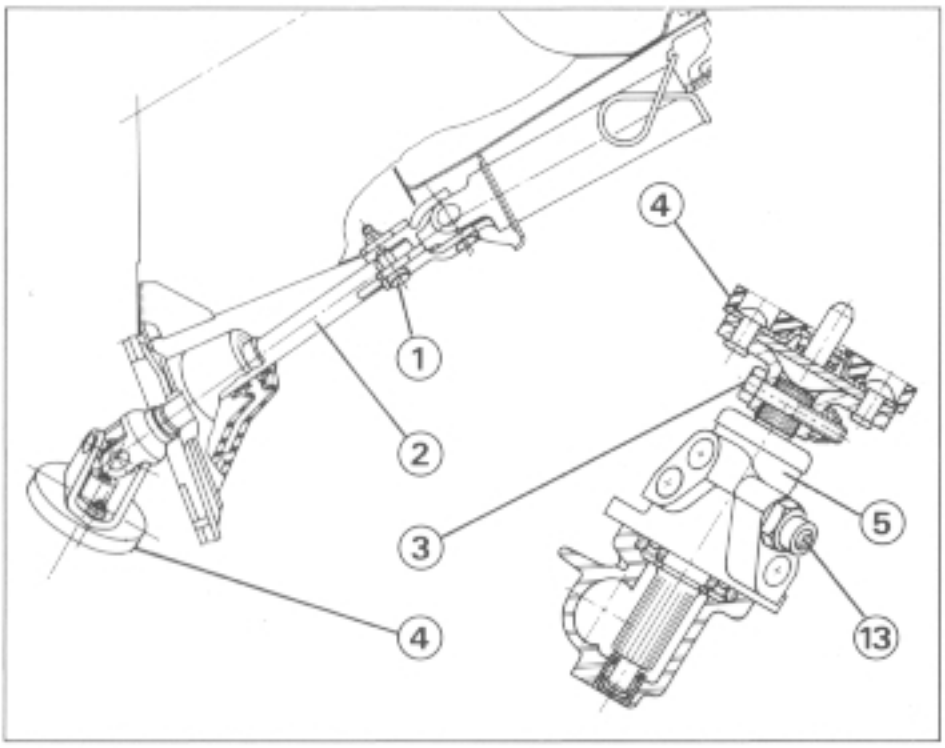
Tighten to : 2 mdaN
- the shaft **(2)** with the steering column

Tightening : 2.3 mdaN

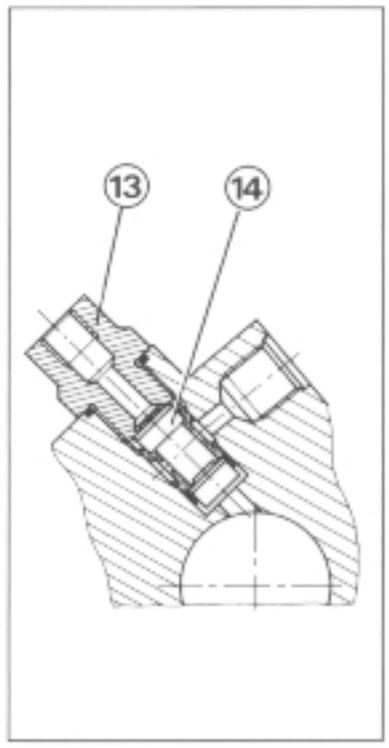
Refit the wheels ; tighten the pressure regulator release screw.

Lower the vehicle to the ground.

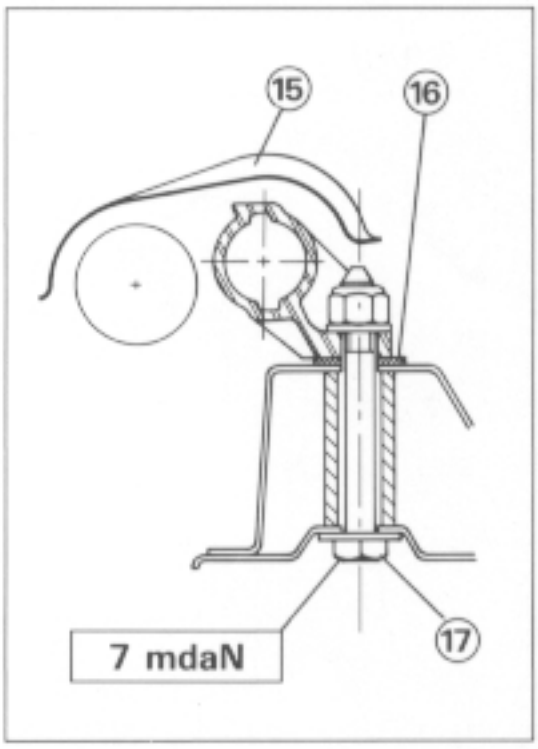
www.WorkshopManuals.co.uk



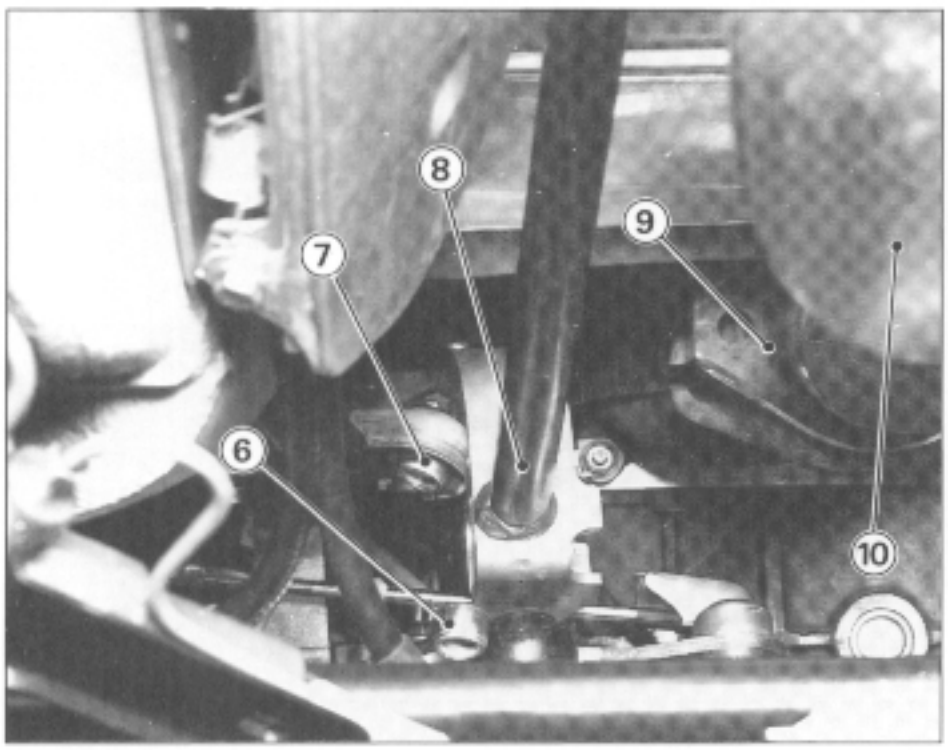
Y.44-9 Y.44-4 I



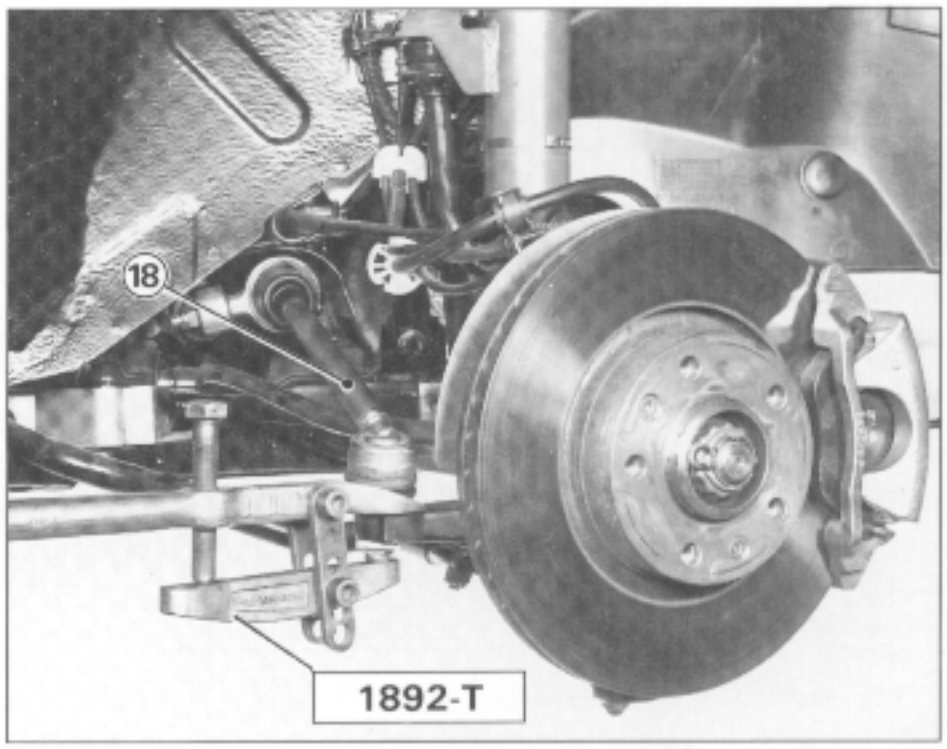
Y.44-3 IV



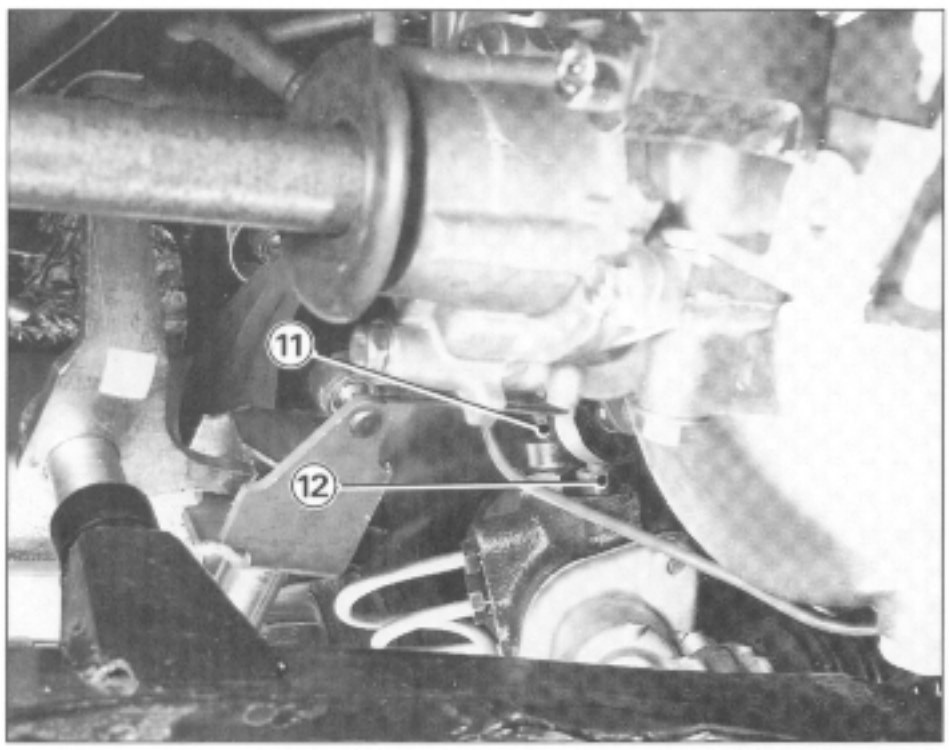
Y.44-11 V



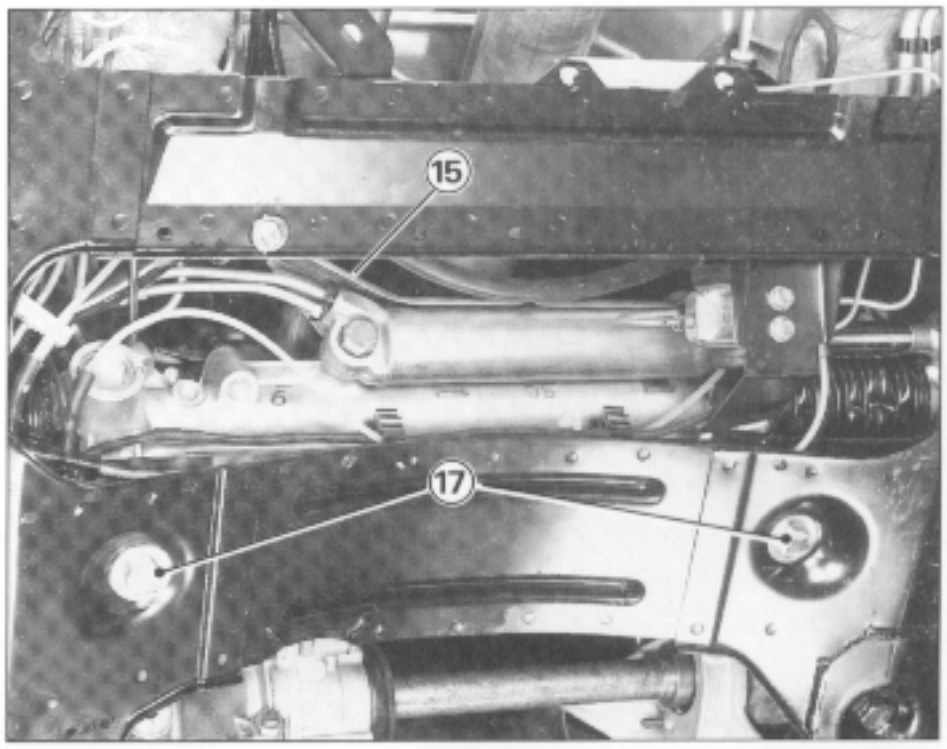
88-904 II



88-878 VI



88-879 III



88-881 VII

www.WorkshopManuals.co.uk

REMOVAL

Place the vehicle on a two column ramp.

or otherwise :

Use a four column ramp, and put the vehicle on stands, with the four wheels clear of the ground.

Depressurize the hydraulic circuits and remove the LHM reservoir,
(see (6) XM 390-0/1).

Disconnect the negative lead from the battery.

Remove, Fig. I :

- the front wheels,
- the mud-shields (➡) using pliers **7504-T**.

Remove the steering coupling link rods, **Fig. II and III** :

- ball-joints, swivel side : use puller **1892-T,**
- ball-joints, steering side : use **80707-T** wrench, and retain the slackening load with an open-end spanner.

Uncouple : Fig. IV
- the front suspension feed pipes **(2)**,

- the fixings from the pipes➡ and free them so that they do not get caught.

Remove, Fig. IV, the straight ahead position **(1)** adjustment control unit fixing screws at **"a"**.

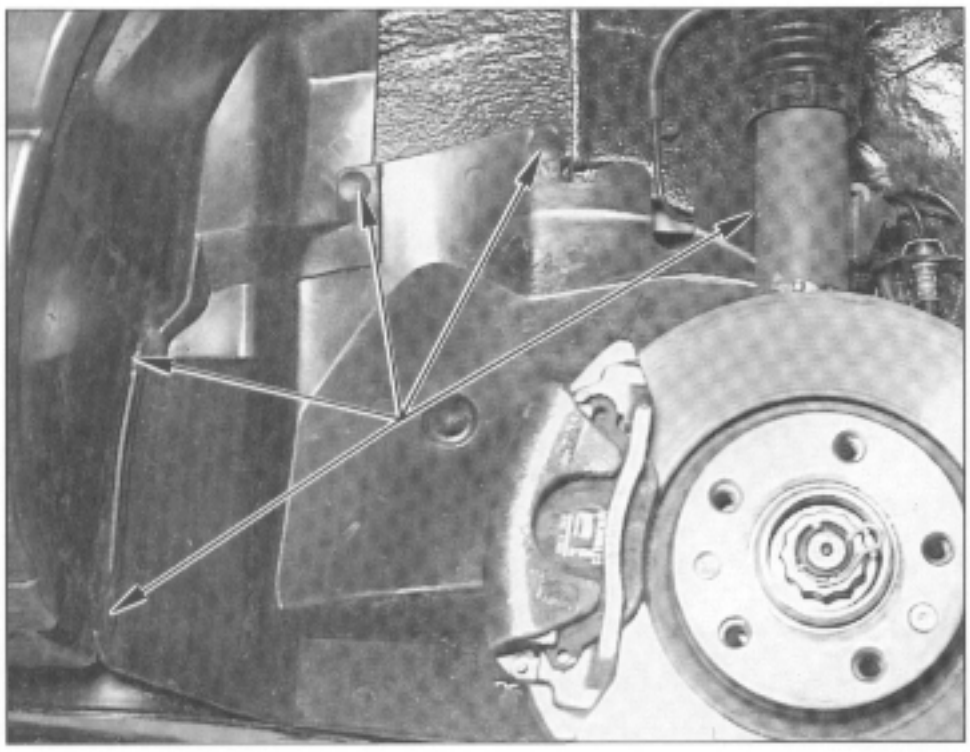
Disconnect the oxygen sensors **(5), Fig. V**.

Uncouple, Fig. V :
- the centrifugal governor and speedometer drive cable **(4)**,

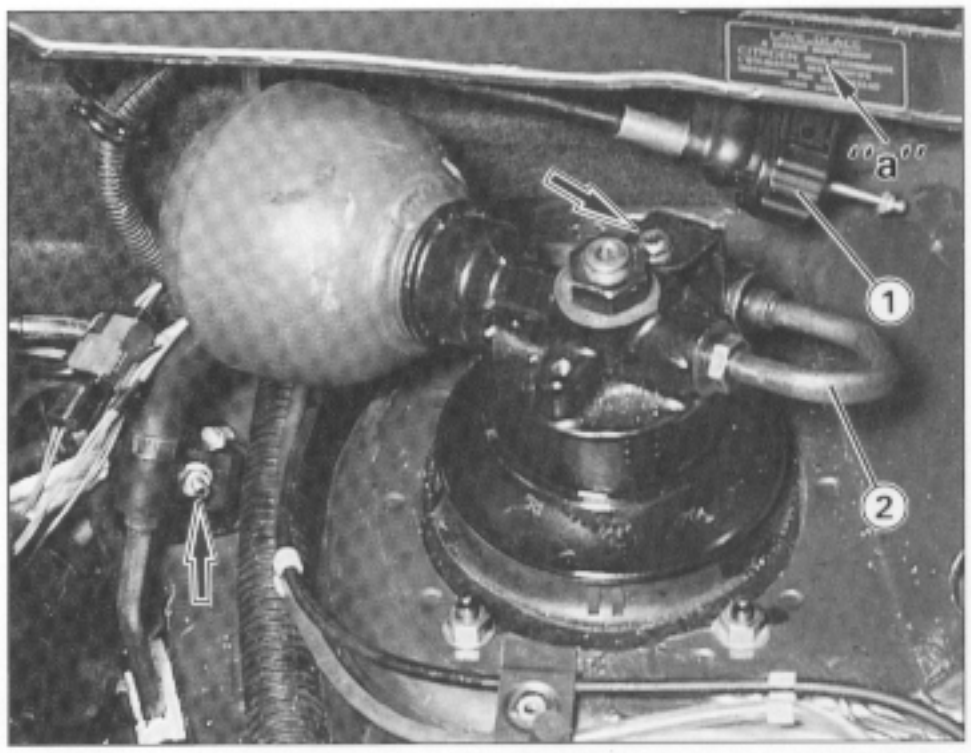
- the centrifugal governor feed pipe **(3)** ; release it from its fixings.

Uncouple : Fig. VI
the vari power feed pipe **(6)** ; take it out of its U bolt, sliding the clip sideways➡.

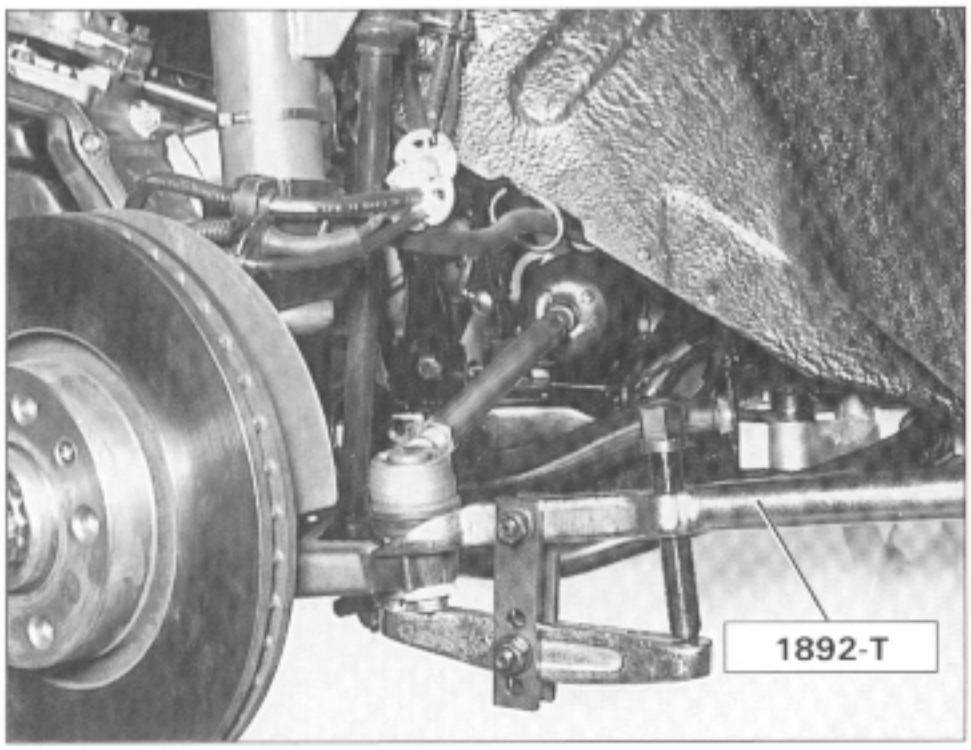
www.WorkshopManuals.co.uk



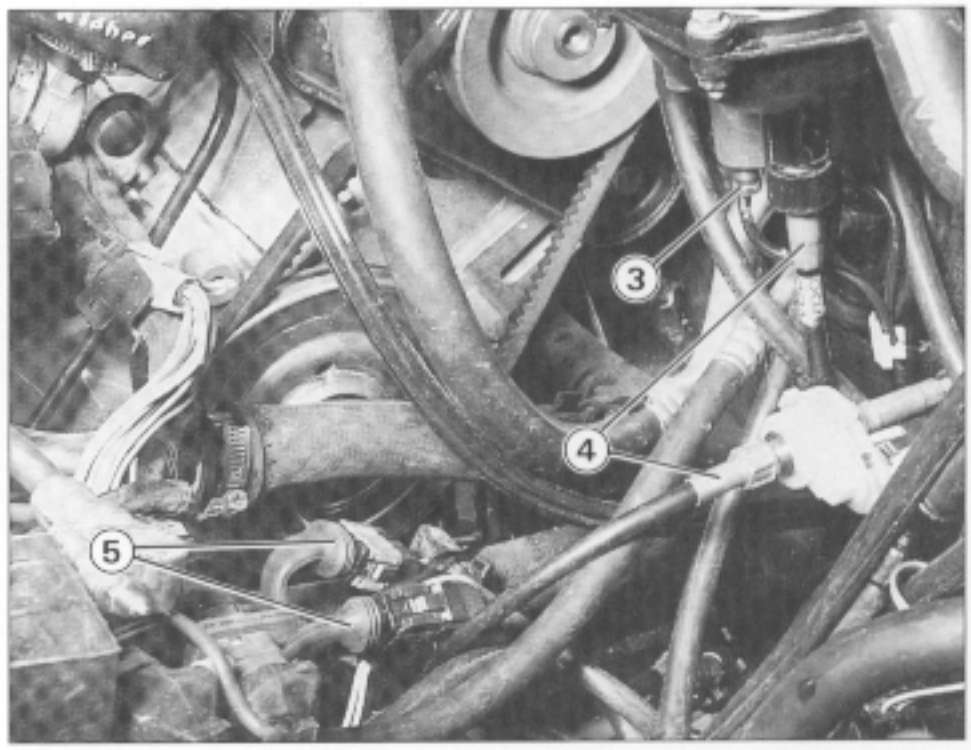
89-119 I



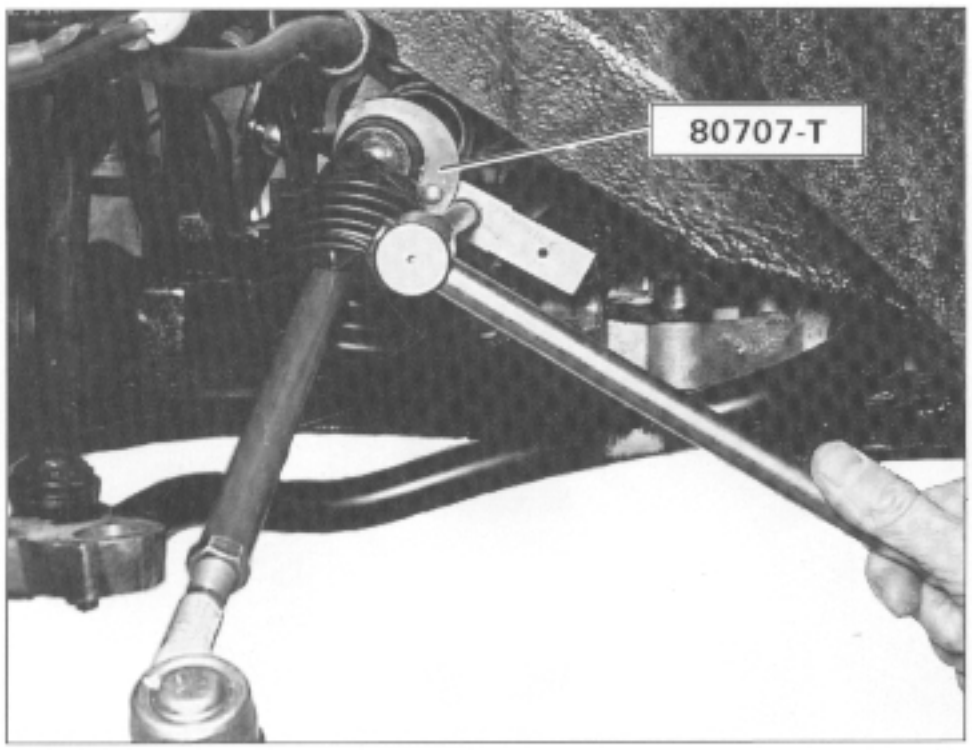
89-506 IV



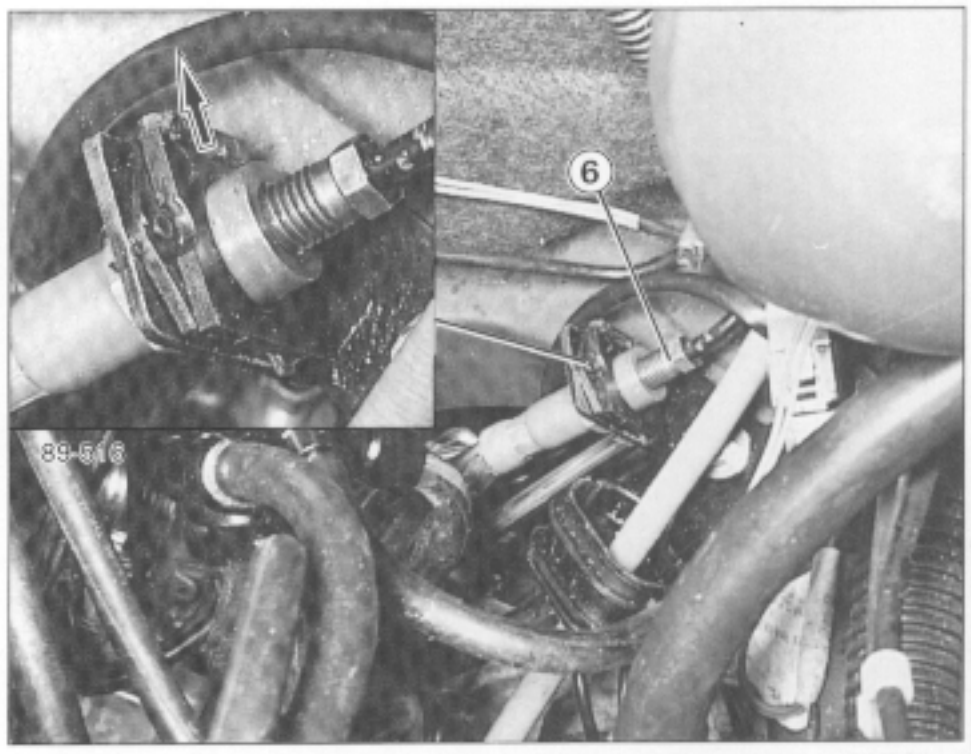
89-490 II



89-505 V

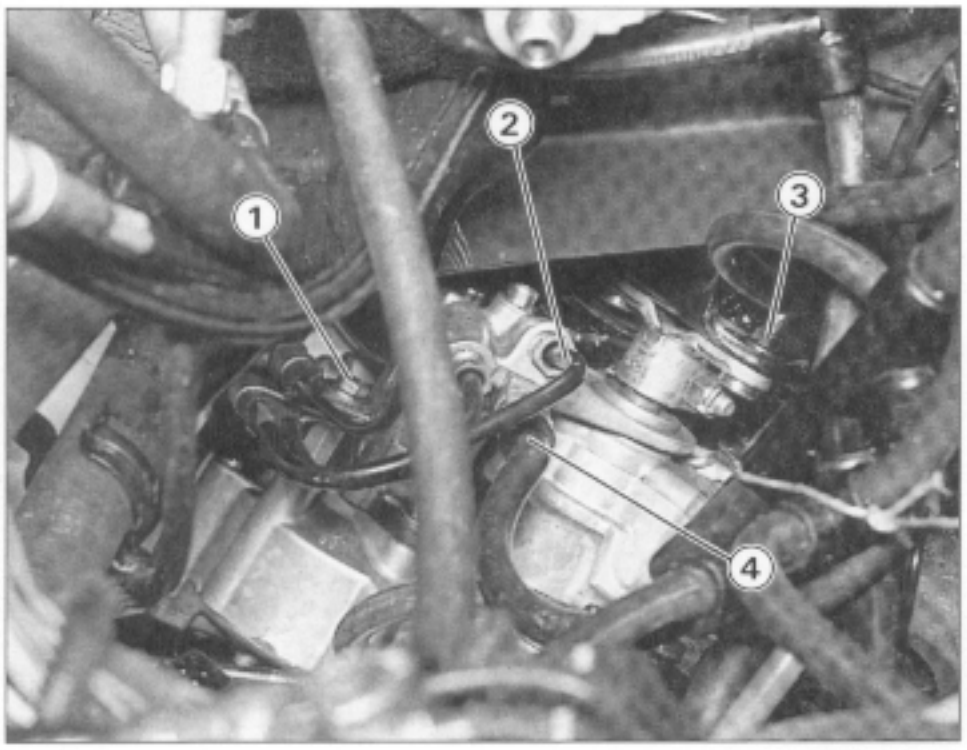


89-489 III

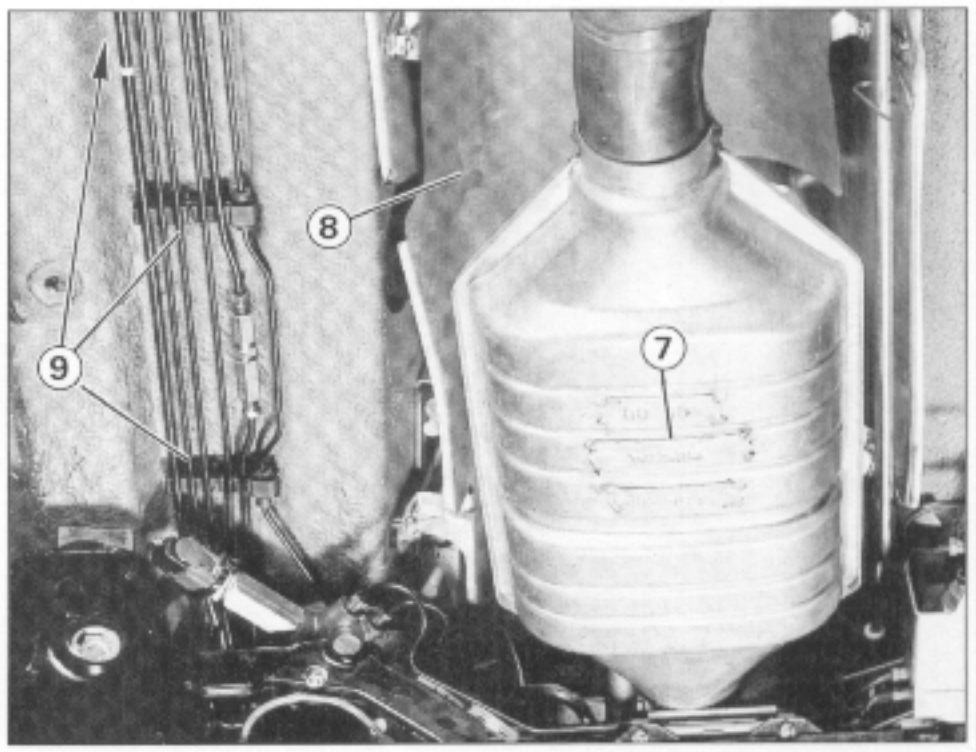


89-517 VI

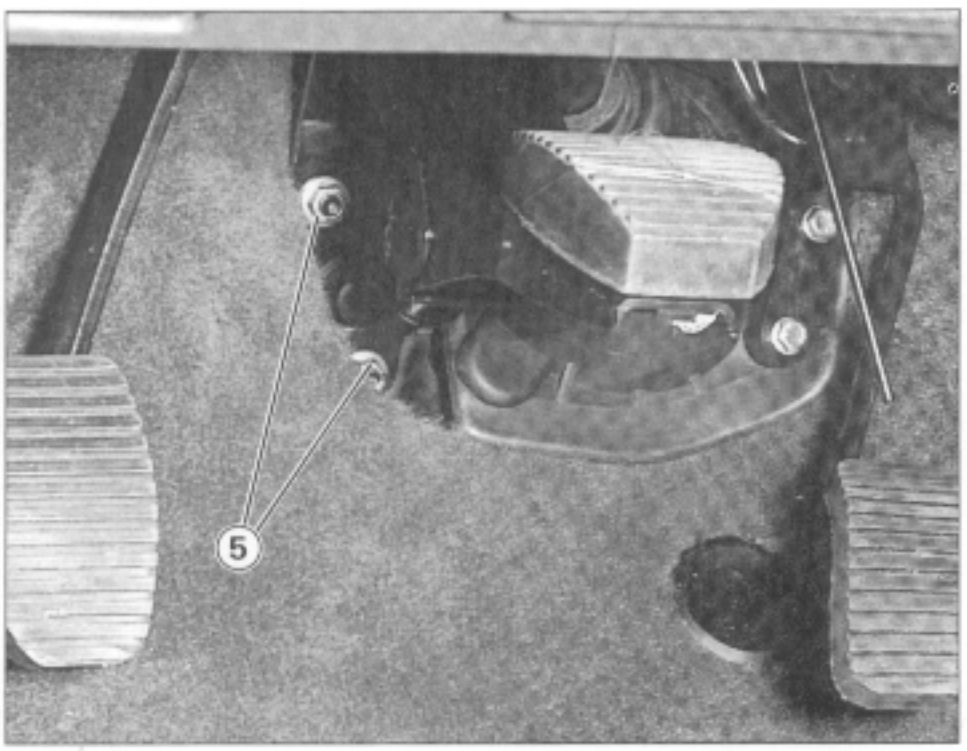
www.WorkshopManuals.co.uk



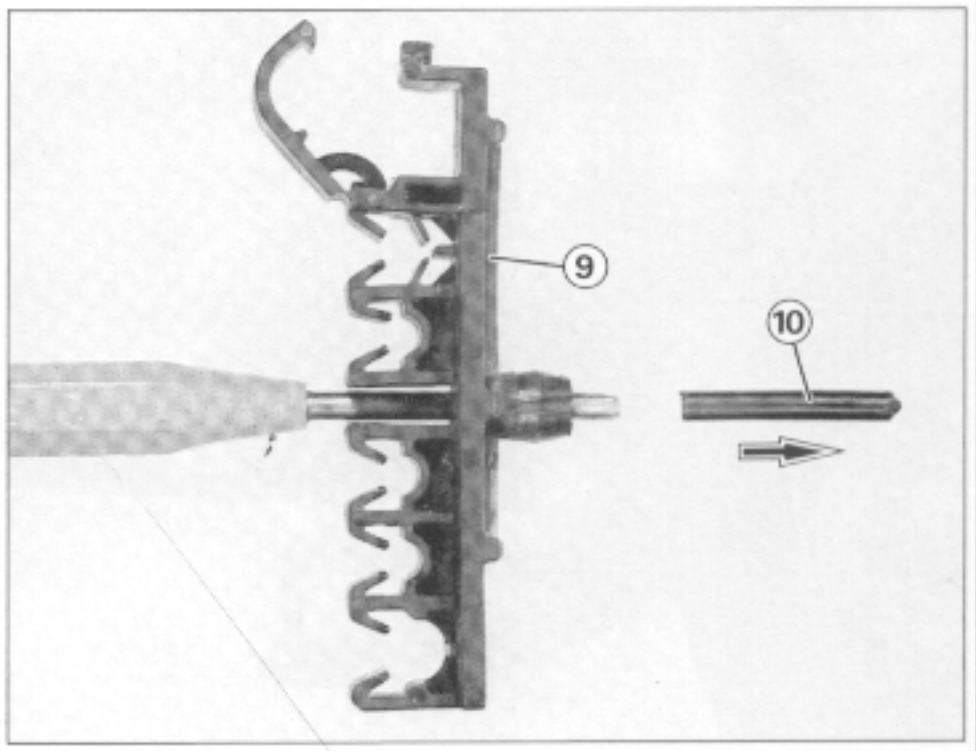
89-518 I



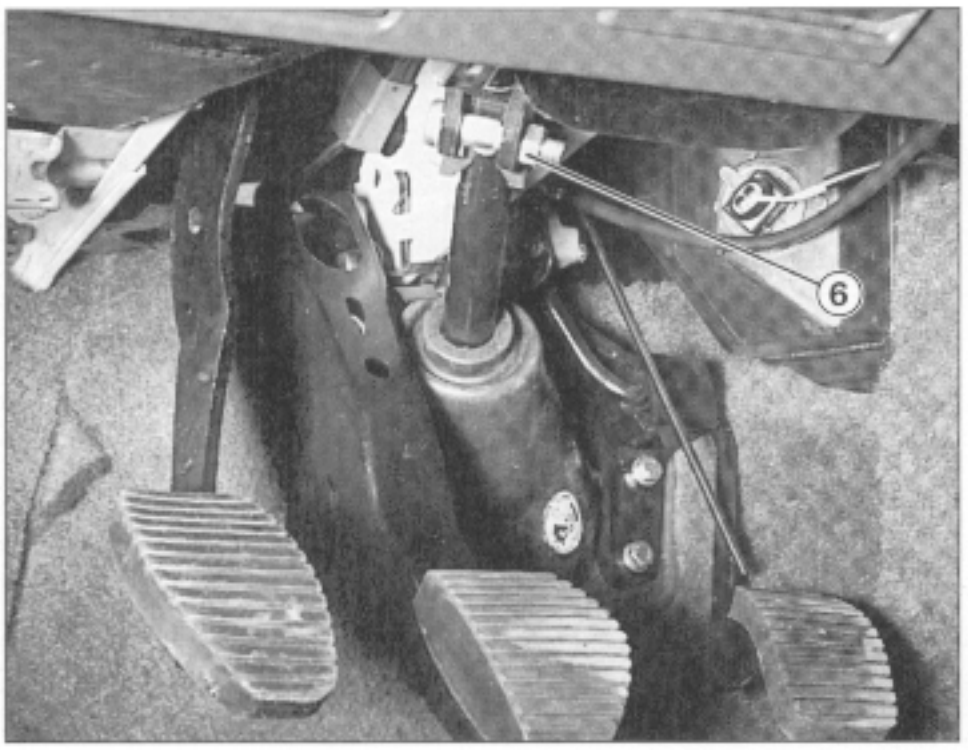
89-565 IV



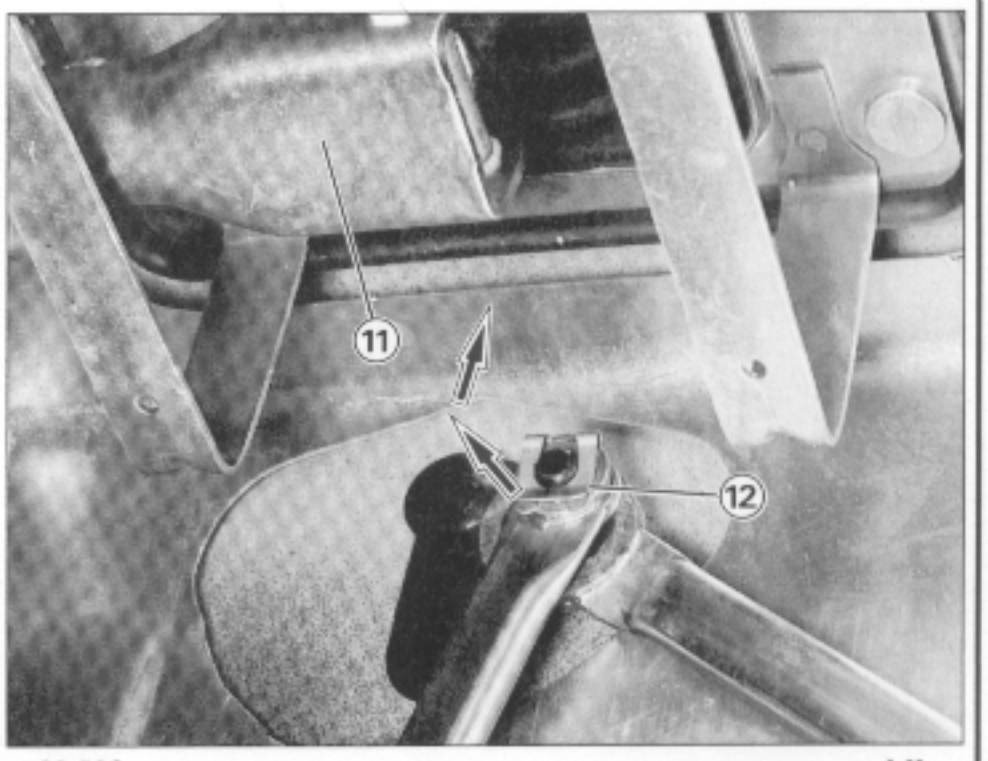
89-519 II



89-549 V



89-512 III



89-566 VI

www.WorkshopManuals.co.uk

Remove, Fig. I :

- the coupling flange two screws **(3)**,

- the hydraulic pipes maintaining screw **(1)** ; liberate the support brackets.

Uncouple, Fig. I :

- the control slide valve feed pipe **(2)**,

- the steering return pipe **(4)**.

Inside the vehicle

Remove, Fig. II and III :

- the under steering-wheel felt lining,

- the brake control valve two fixing nuts **(5)**,

- the screw **(6)** from the steering column.

Under the vehicle

Remove :

- the catalyzer **(7)** plus its sensor,

- the exhaust shield **(8)**.

Unclip the hydraulic leads as far as the reservoir : spread apart the brackets **(9)** as shown on **Fig. V** : by means of a tool, push back the pin **(10)** towards the bodyshell inside parts.

If possible, get the pin **(10)** back.

Uncouple the front height corrector manual control ; raise the clip **(12)** and let it slide, **Fig. VI**.

Remove the gear shifting control bar **(11) Fig. VI**.

Remove the safety brake left-hand cable.

www.WorkshopManuals.co.uk

Remove the tie-rods **(1)** and **(2)** lower screws, **Fig. I**.

Slacken the upper screws.

Slacken the screws **(3)** located at the front of the subframe, **Fig. II**, by 5 mm approximately.

Place a components hydraulic support **(4)** under the rear of the subframe, **Fig. III** or otherwise, use a M10 X 1.50, 200 mm long threaded spindle.

Remove, Fig. IV the subframe rear fixing screws.

Lower the subframe by 150 mm, **Fig. V.** During this operation, uncouple the flange from the steering system.

Remove

- the protective cover from the steering system.

Unclip the hydraulic pipes (⟹) **Fig. VI**.

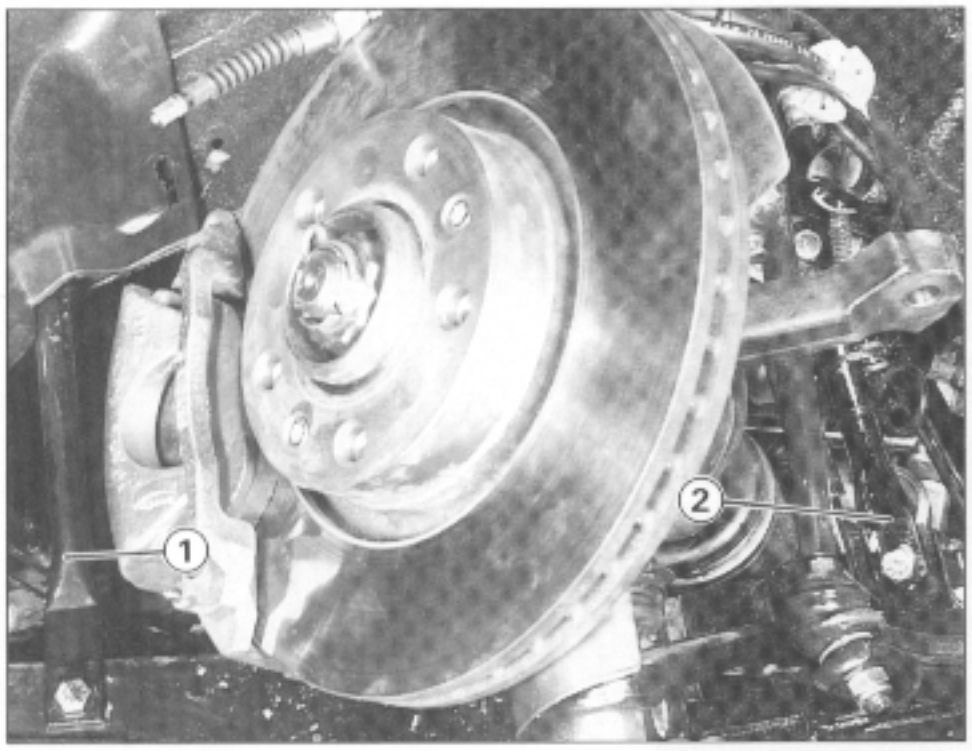
Uncouple, Fig. IV :

- the supply pipe **(7)** from the steering ram,

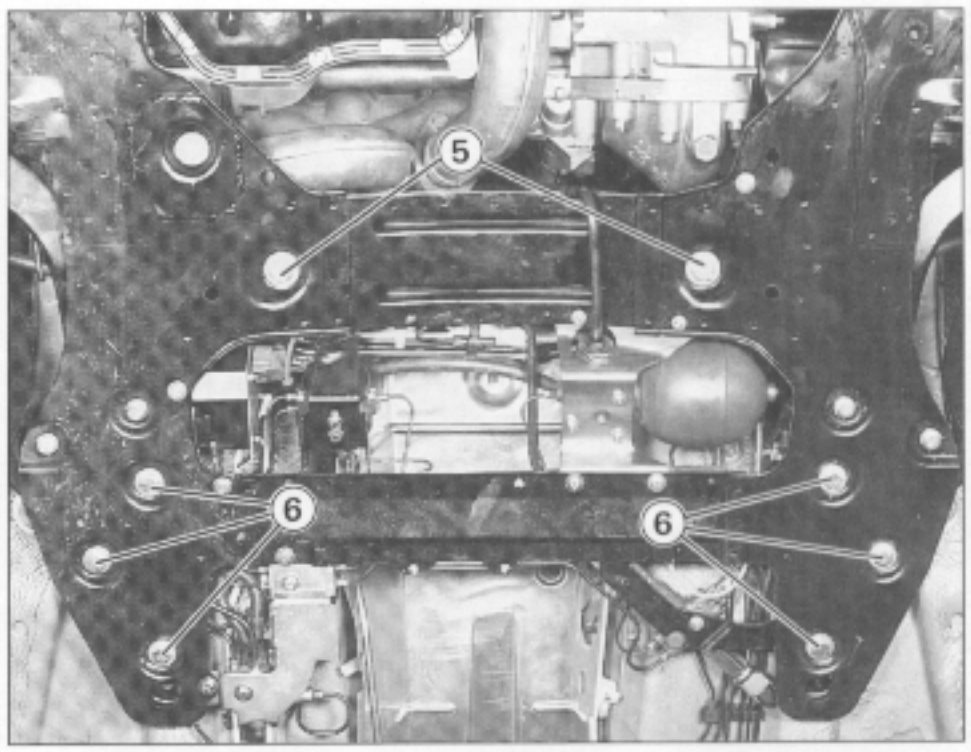
- the flow return pipes **(8).**

Remove, Fig. IV the steering system two fixing screws **(5)** ; keep the shims located under the gearbox casing.

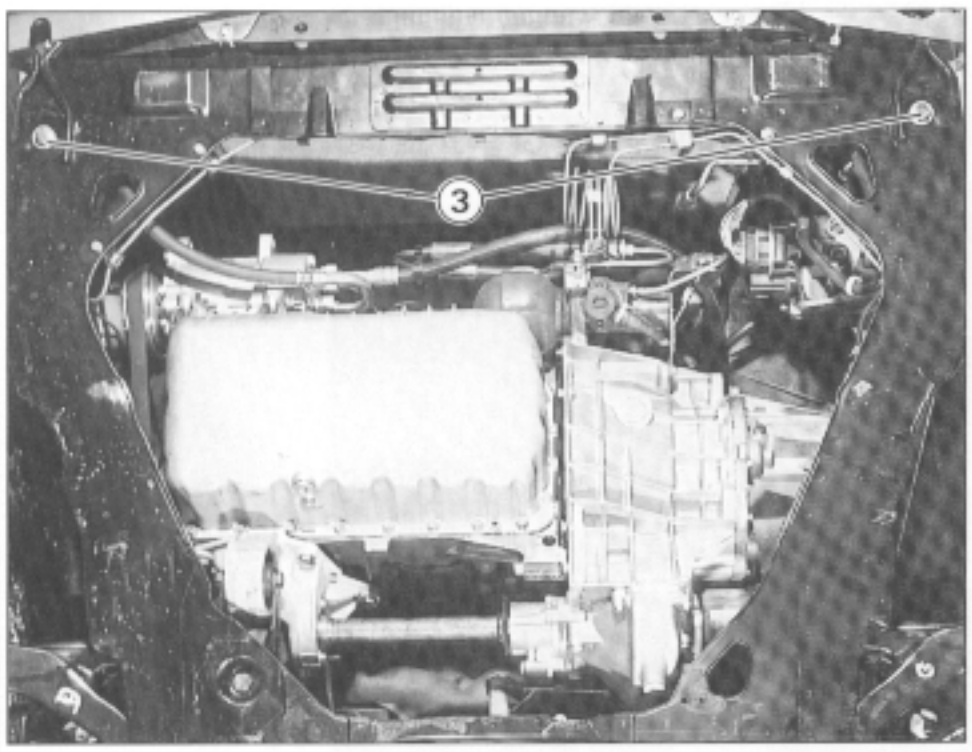
www.WorkshopManuals.co.uk



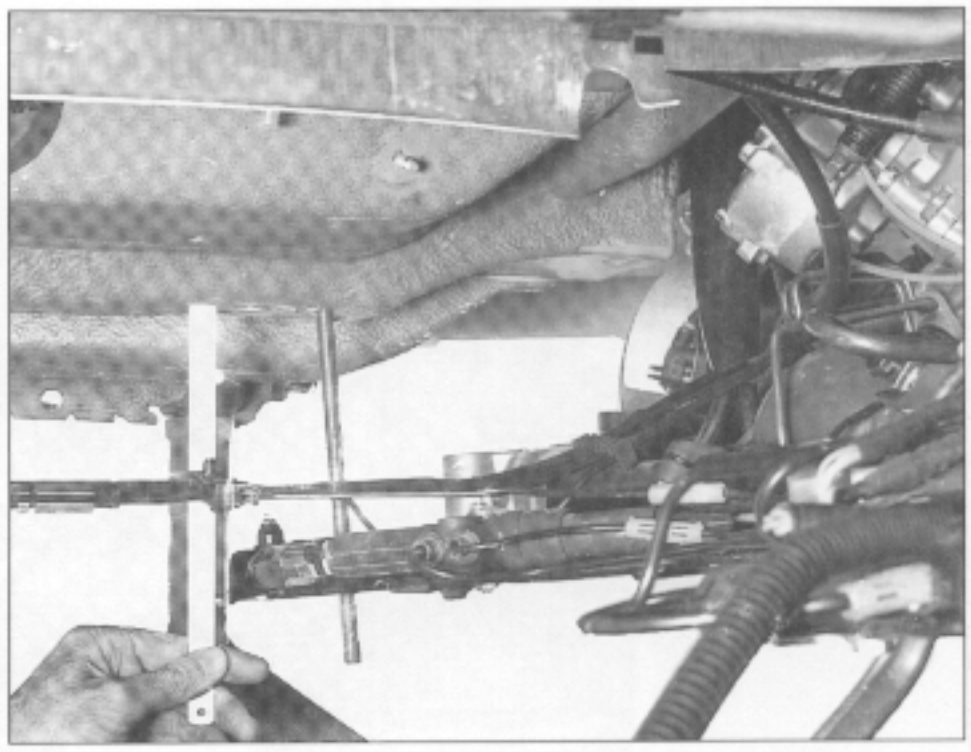
89-523 I



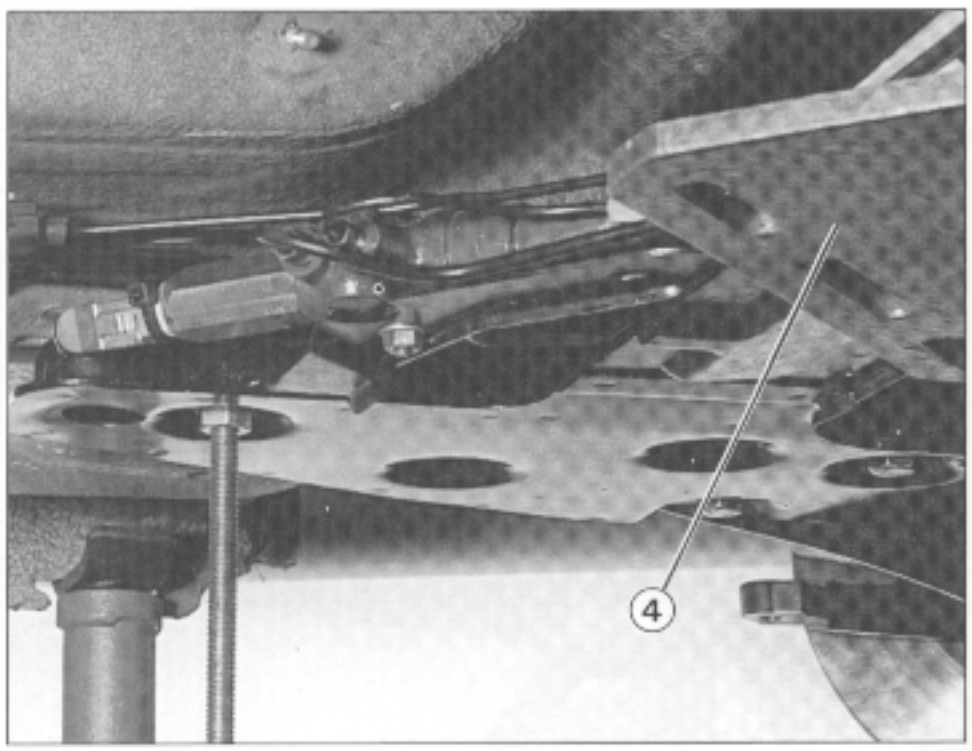
89-522 IV



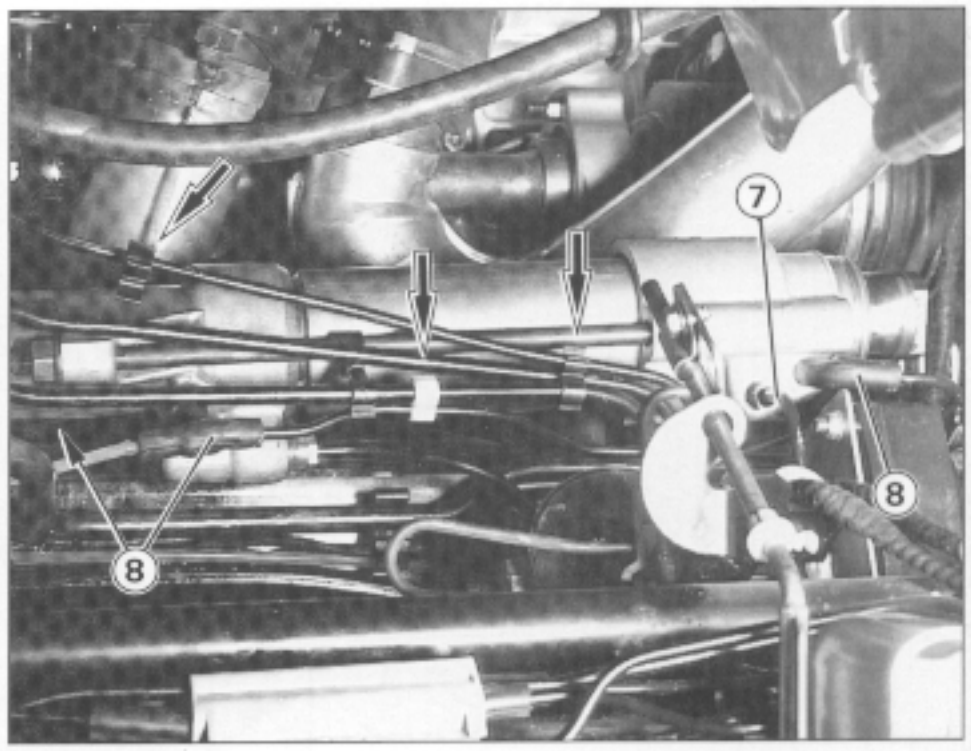
88-448 II



89-525 V

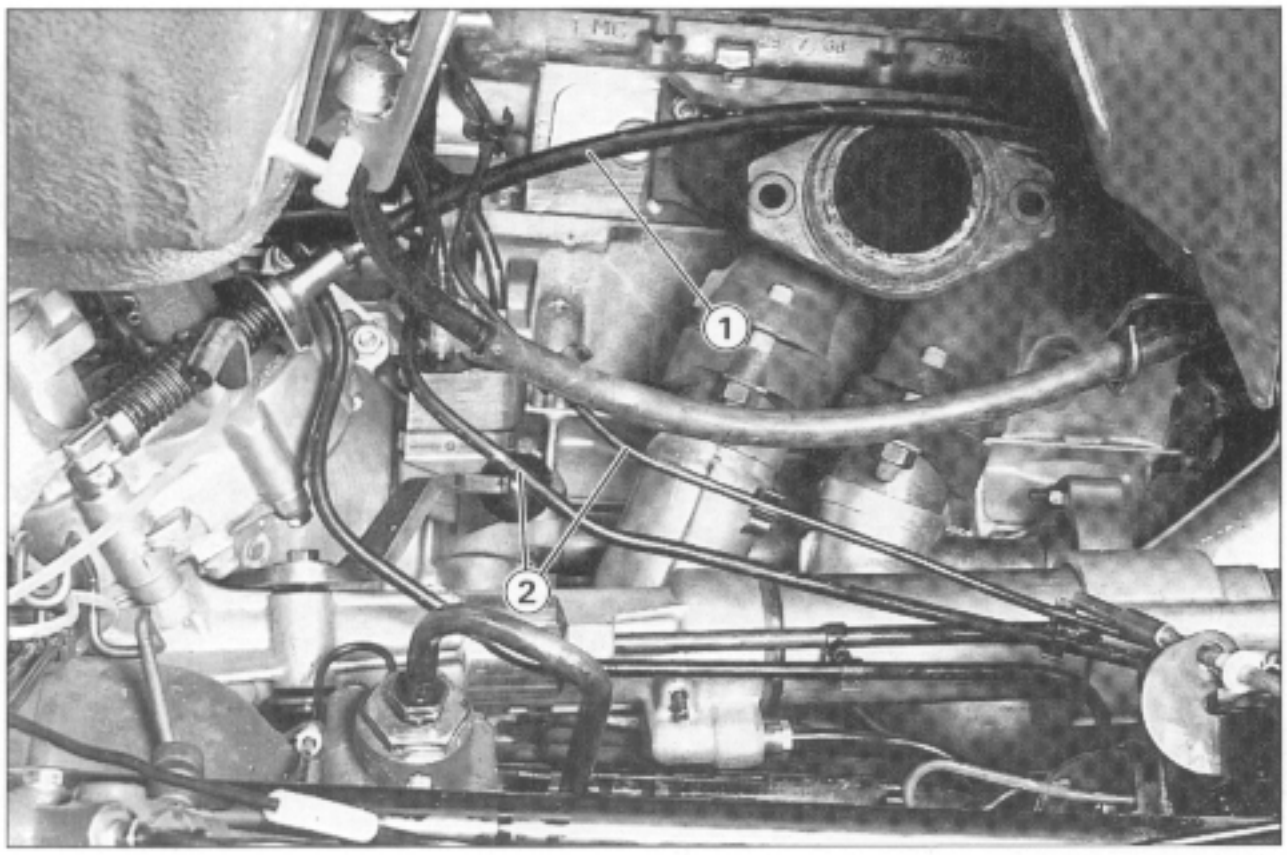


89-524 III



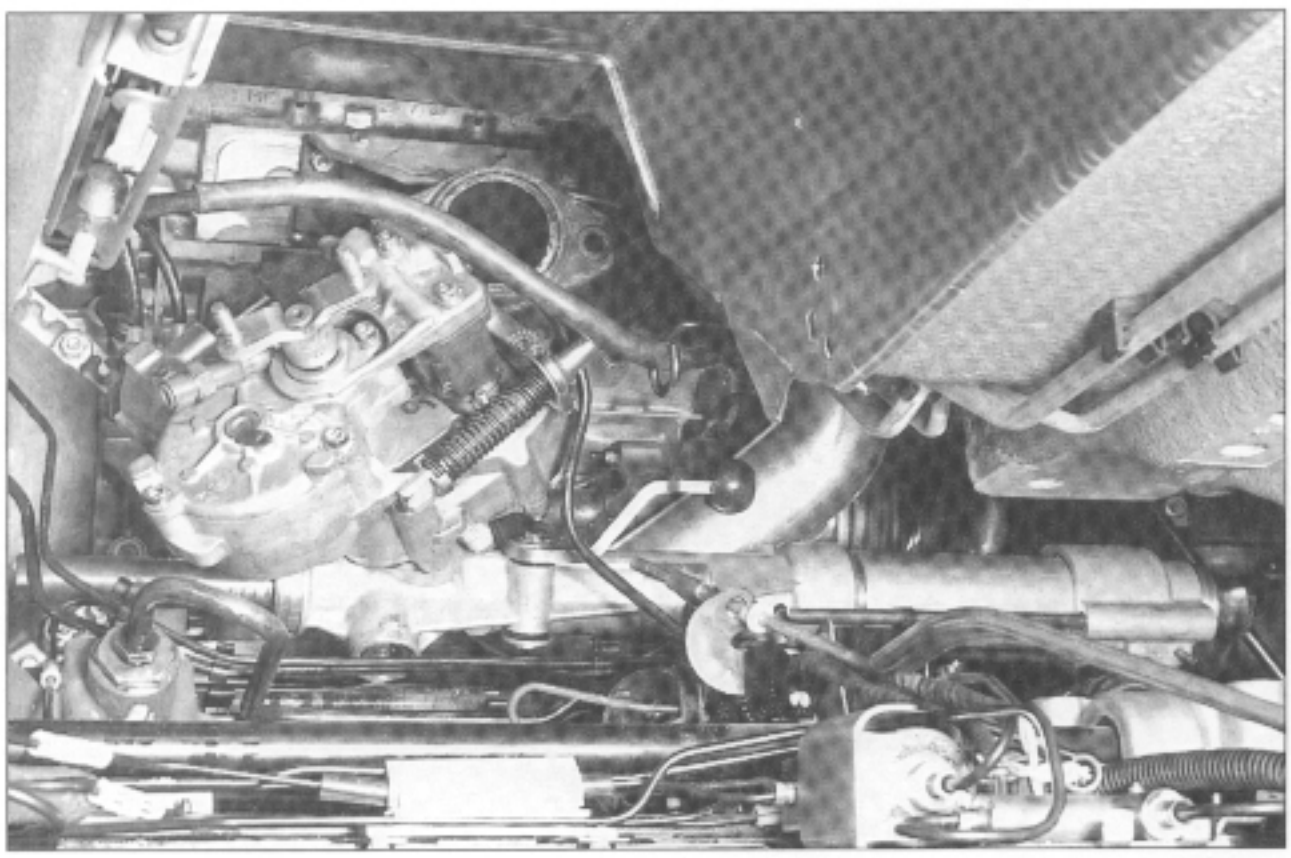
89-514 VI

www.WorkshopManuals.co.uk



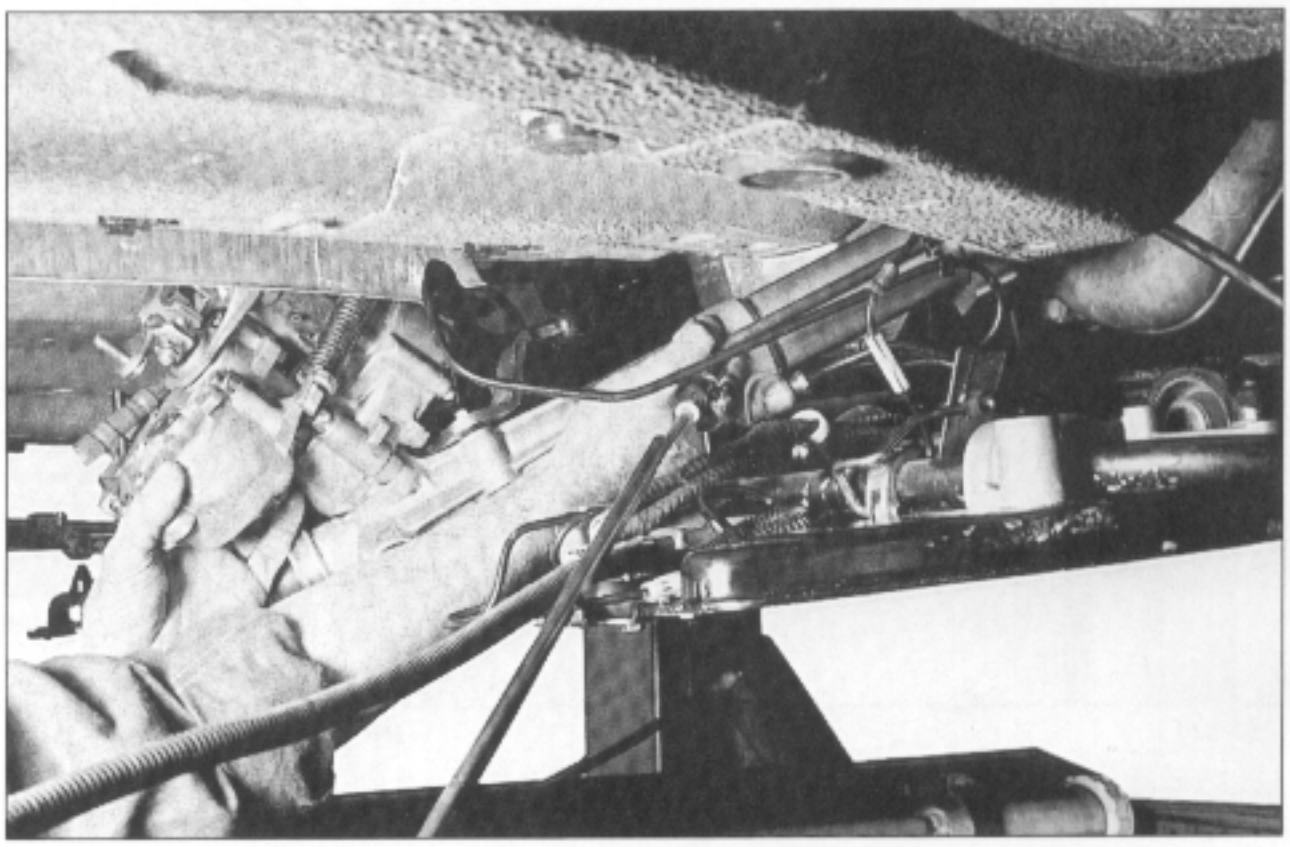
89-515

I



89-513

II



89-508

III

www.WorkshopManuals.co.uk

Bring the straight line adjusting cable **(1)** towards the rack housing, at the hydraulic pipes **(2)** front end, **Fig. I**.

Insert the steering system to the right hand-side tilting the hydraulic control unit towards the rear, **Fig. II**.

Remove the steering system through the exhaust tunnel, **Fig. III**.

REFITTING

Position the steering system in a straight line.

Introduce the steering system through the exhaust tunnel ; insert it to the right then get back to the left, realigning the hydraulic control box.

Bring the straight line adjusting cable **(1) Fig. I** between the hydraulic pipes **(2)** and the bodyshell.

www.WorkshopManuals.co.uk

Couple up :

- the four leak off piping hoses **(1)**, **Fig. I and II,**

- the ram feeding pipe **(2)** without tightening it (NEW seal), **Fig. I**.

Raise the cradle ; couple up the steering flange during the operation, **Fig. I**.

Refit the steering fixing screws (⟹) and the shims **"a"** found when removing, **Fig. II**.

Tighten to : 7 mdaN

Refit the cradle fixing screws.
Tighten the eight front and rear screws to **4 mdaN.**

Tighten the steering flange coupling screws **(3), Fig. III,**

to : 2 mdaN

Couple up, without tightening, **Fig. III and IV** :

- the control slide valve feed pipe **(5)**,

- the steering return pipe **(4)**,

- the centrifugal governor pipe **(7)**.

Fix the hydraulic pipes with the screw **(6)**, **Fig. III**, and the clips (⟹) **Fig. I**.

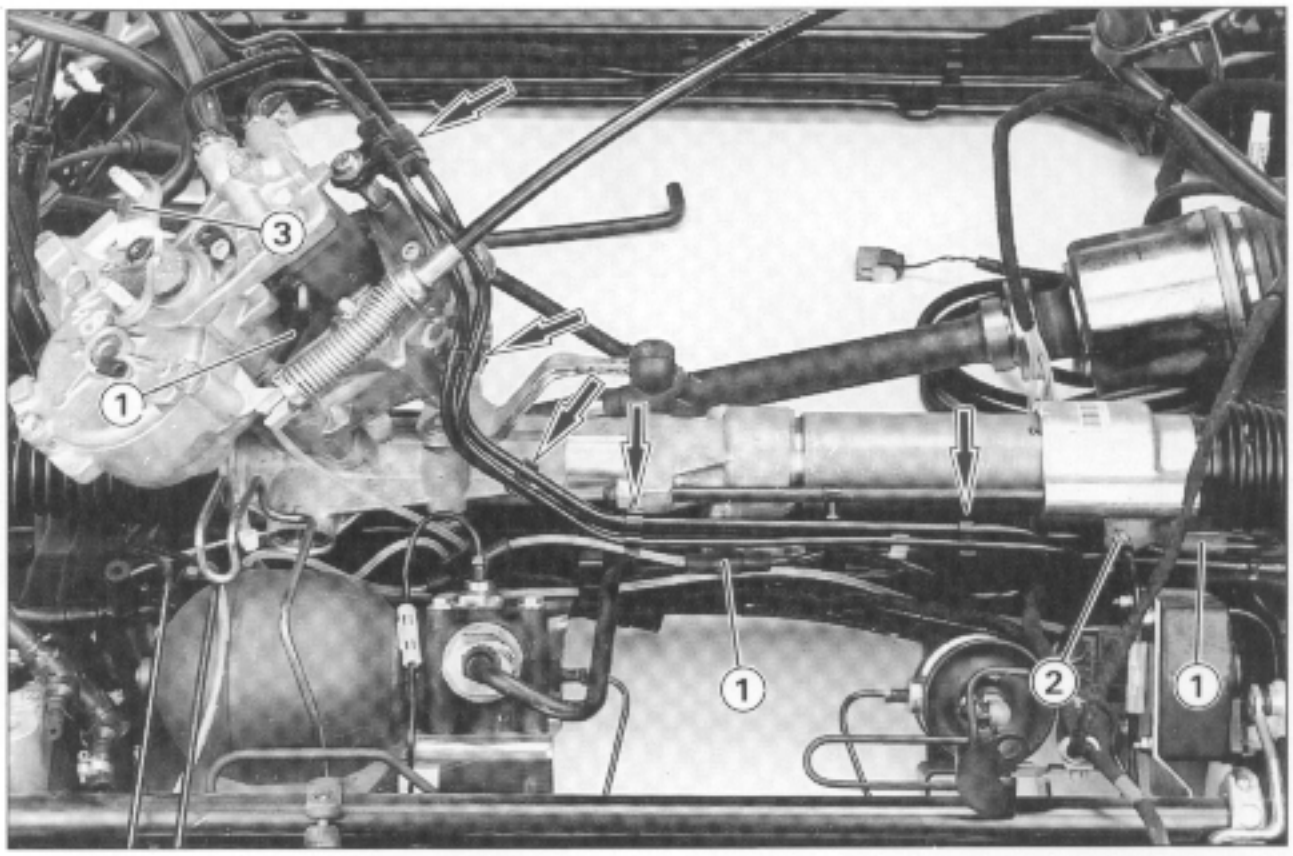
Tighten the hydraulic pipes connections **(2), (5)** and **(7)**, **Fig. I, III and IV**.

Couple up the varipower feed pipe **(9)**.

Refit the clip to the U-bolt (⟹) **Fig. V**.

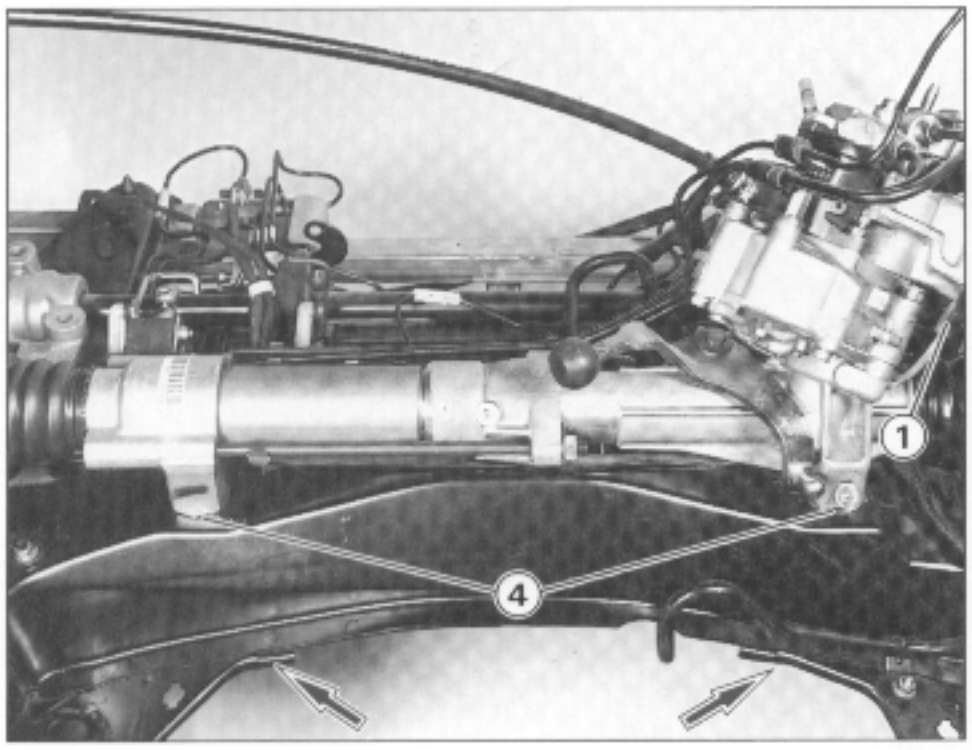
Recouple the centrifugal governor and the speedometer drive cables **(8) Fig. IV**.

www.WorkshopManuals.co.uk



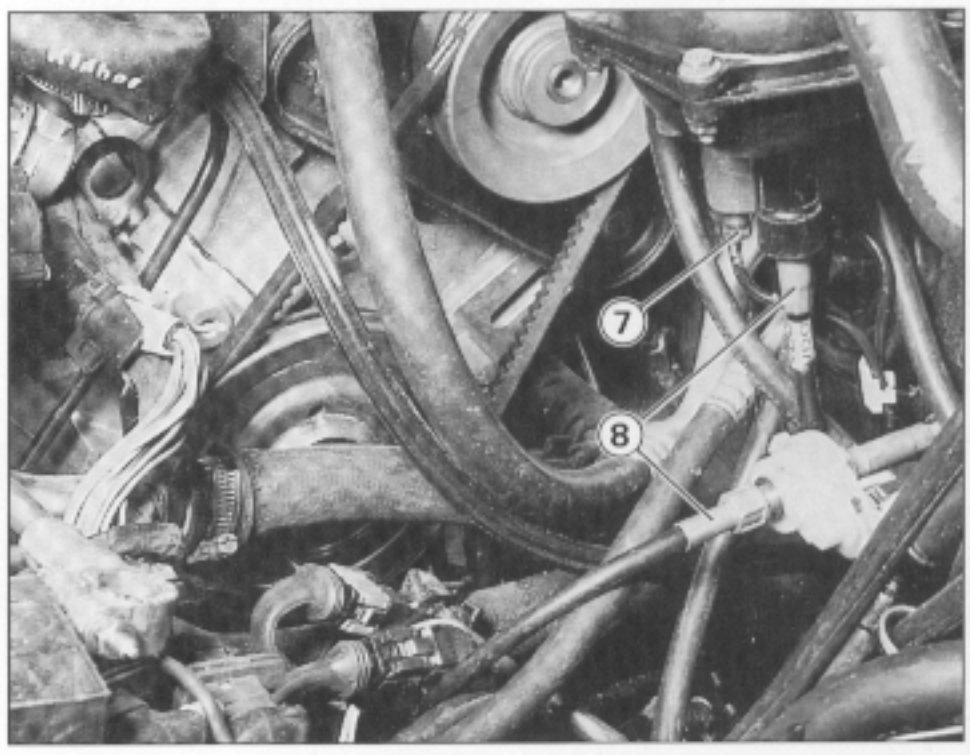
89-338

I



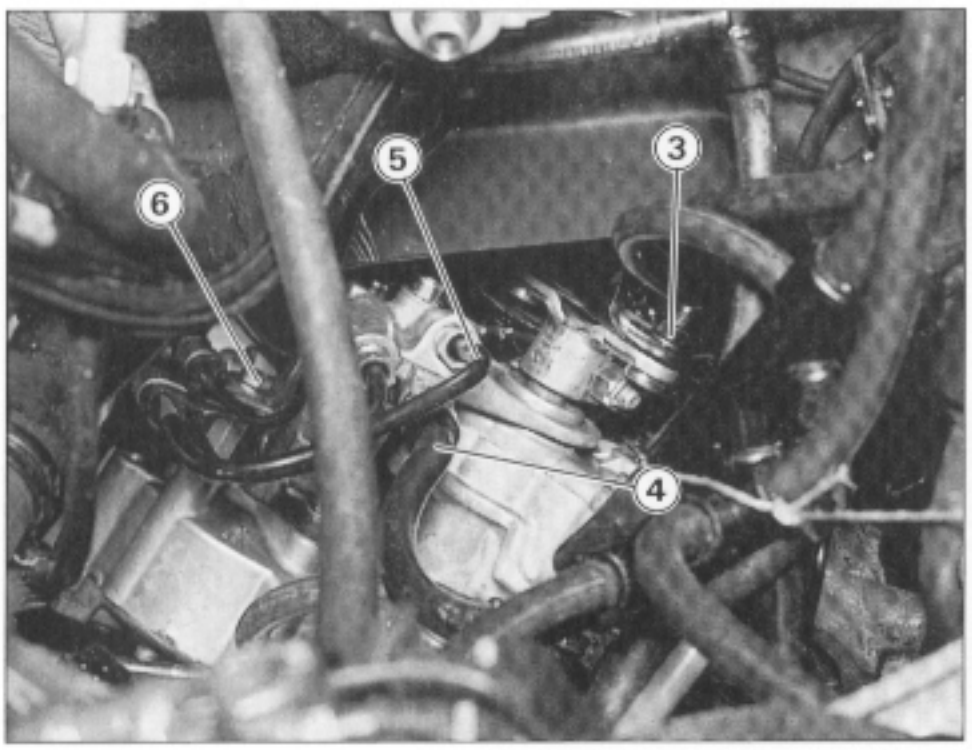
89-587

II



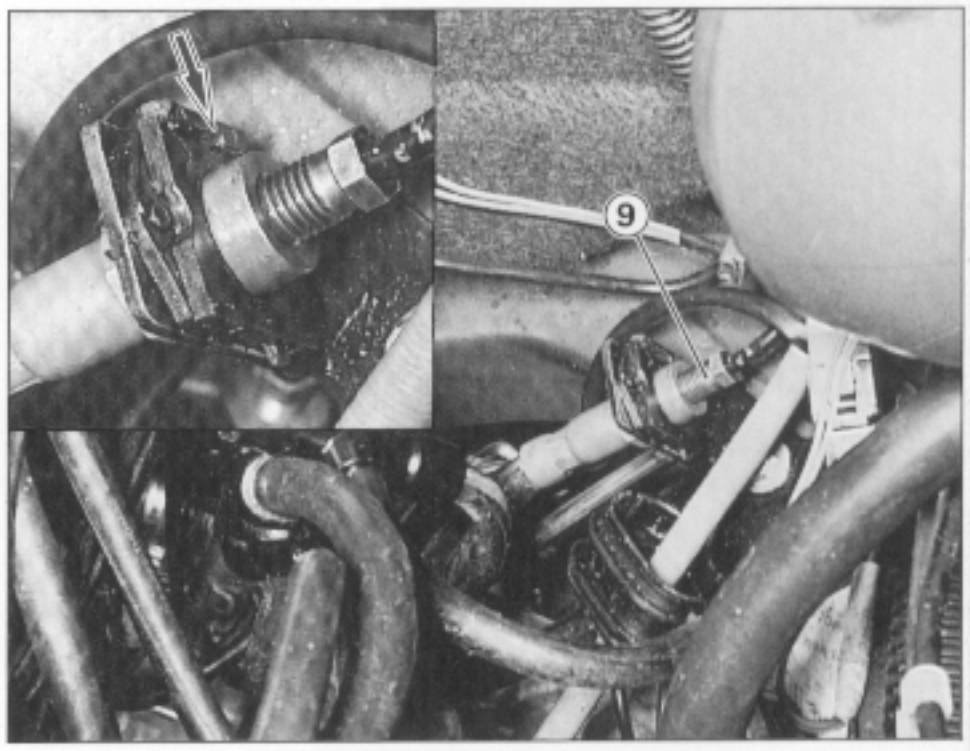
89-505

IV



89-518

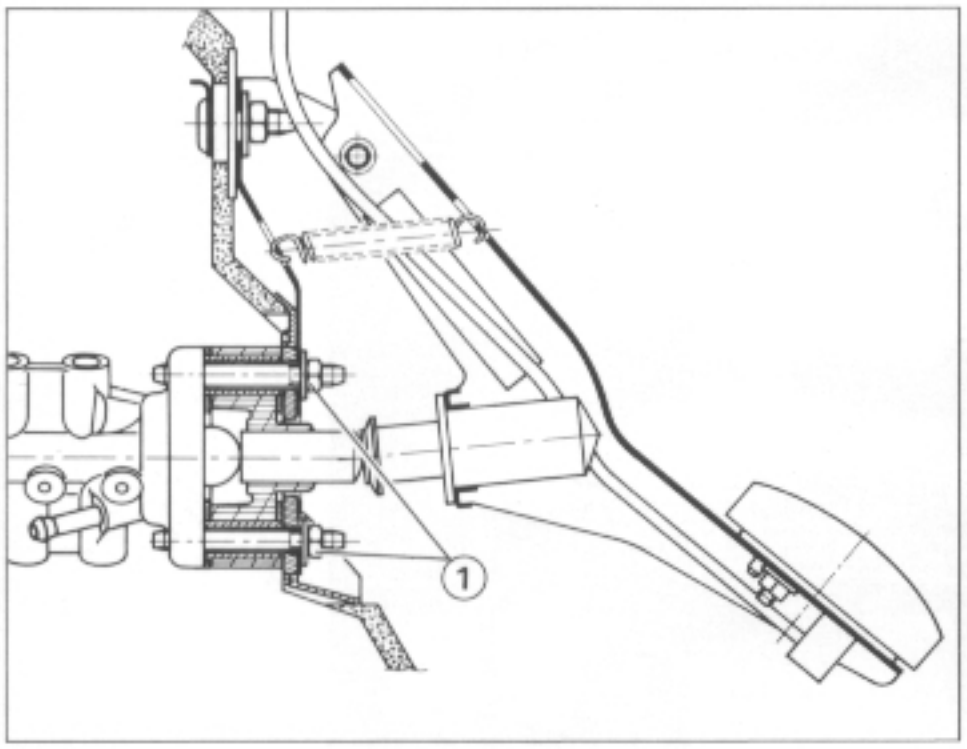
III



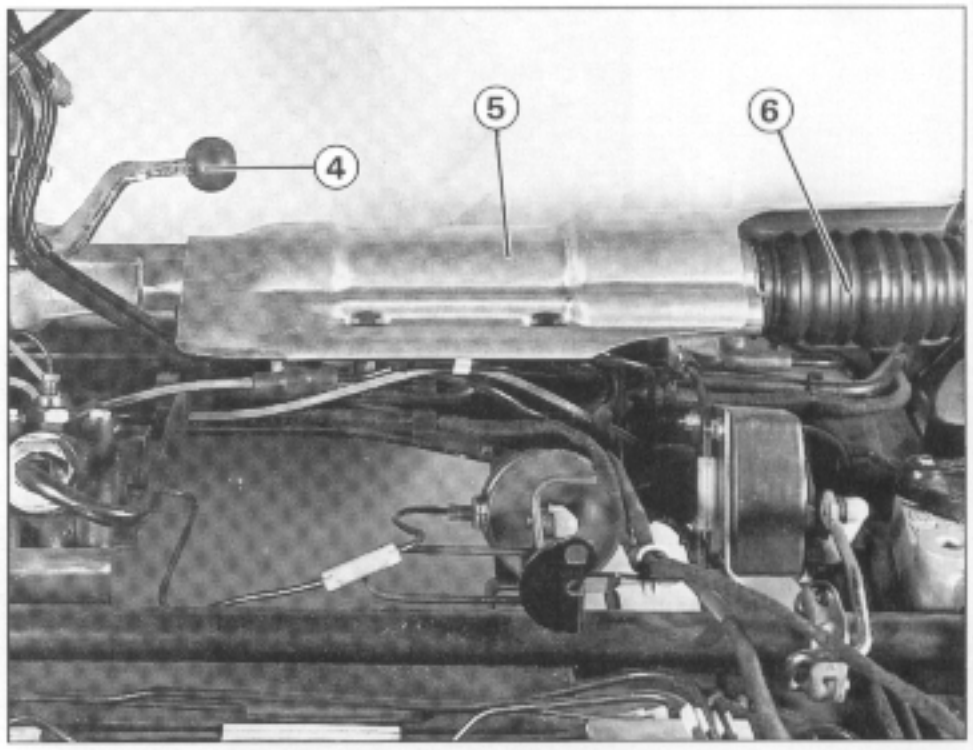
89-517

V

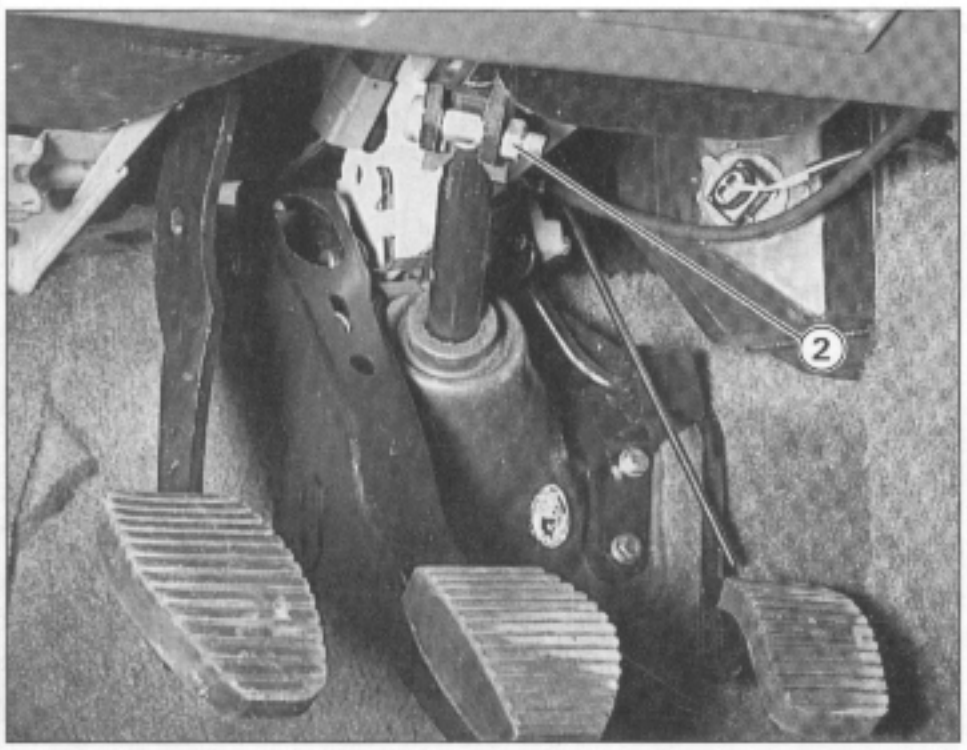
www.WorkshopManuals.co.uk



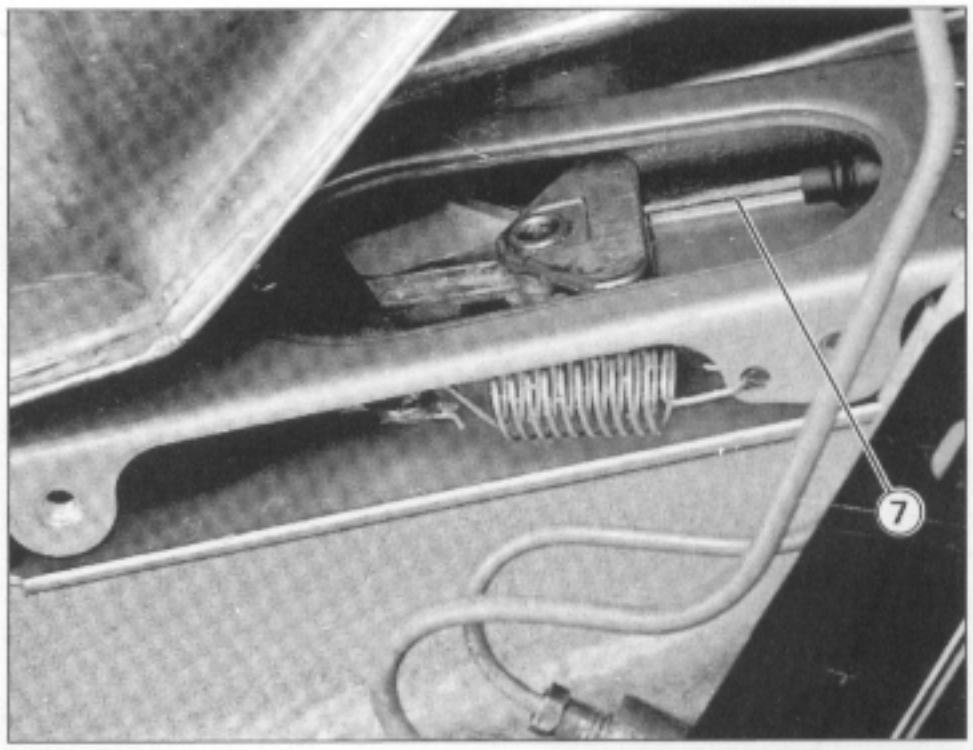
Y.45-1 I



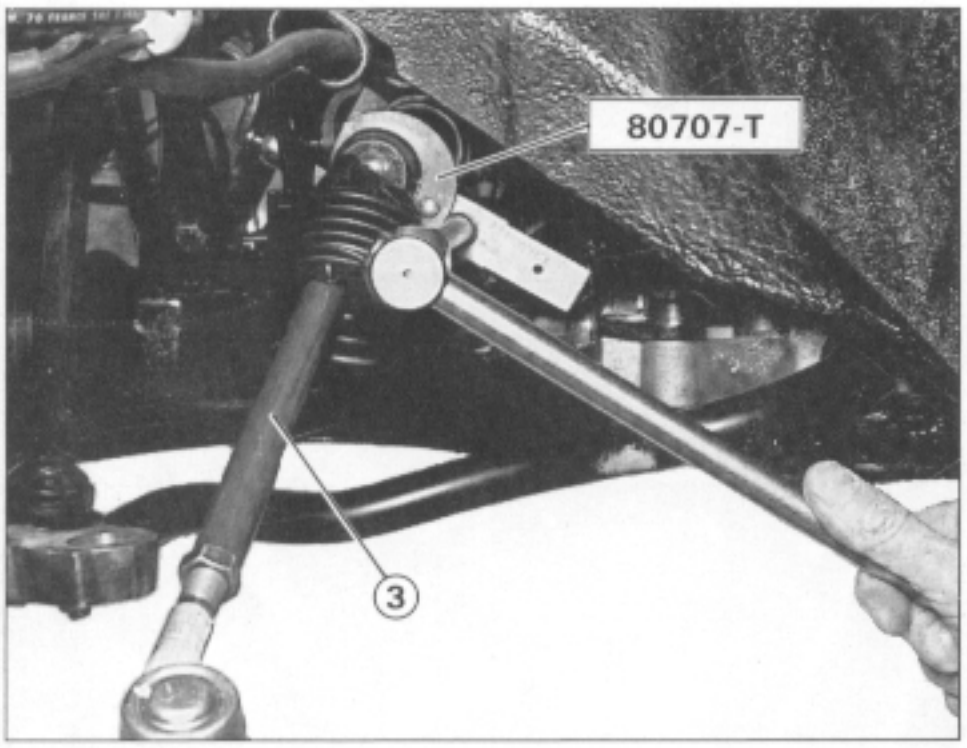
89-588 IV



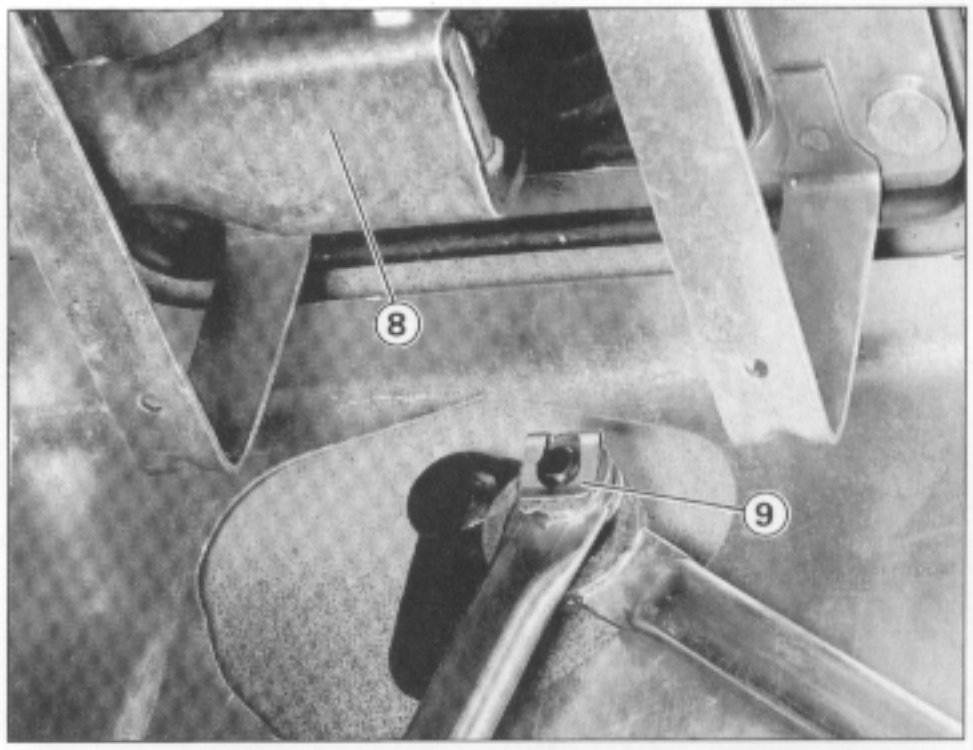
89-512 II



89-595 V



89-489 III



89-566 IV

www.WorkshopManuals.co.uk

Relocate the brake control valve fixing nuts **(1), Fig. I**.

Tighten to : 2 mdaN

Refit, Fig. II, the steering column coupling screw **(2)**, (steering wheel spoke downwards).

Tighten to : 2 mdaN

Put back the felt trim under the steering wheel.

Refit the coupling link rods **(3), Fig. III.**

Tighten the ball-joints, steering side,
to : 5 mdaN.

Use tool **80707-T** and retain the tightening force exerted using an open-end spanner.

Tighten the ball-joints, wheel side, **to 4.5 mdaN** (NEW NYLSTOP ; fixing cone wiped, do not use solvent).

Place protectors **(6), Fig. IV, in position**.

(To make the refitting of the protectors easier, bring the ball-joint at the inlet of the rack housing and use it as a guide).

Refit the shield **(5)** to the steering system, **Fig. IV**.

Refit the safety brake LH cable **(7), Fig. V.**

Install the gear control.
Lubricate the ball-joint **(4), Fig. IV.**
Couple up the gear shift control bar **(8)** and the link rods.

Tighten the shaft to : 1 mdaN

Recouple the front height manual control.

Insert the friction washer and fit the clip **(9), Fig. VI.**

www.WorkshopManuals.co.uk

Refit the exhaust shield **(1), Fig. I**

Refit the exhaust system **(2), Fig. I.**

Tighten the ball-joint to : **1 mdaN,**
the flange to : **3 mdaN.**

Insert the oxygen sensor harness into its supports and connect both sensors.

Clip the hydraulic set of pipes to the bodyshell.

Place the support **(3) in position** ; engage the shaft according to **Fig. II**.

Fix the straight ahead position adjusting control unit **(4)** at **"a", Fig. III.**

Couple up the front suspension feed pipes **(5), Fig. III.**

Refit the fixings (⟹).

Secure tie rods **(6)** and **(7), Fig. IV**.

Tighten to : 4.5 mdaN

Refit the mud shields with the pegs.

Refit the LHM reservoir and the air filter.
(See (6) XM 390-00/1)

Check the safety brake adjustment.

Lower the vehicle to the ground after having checked the hydraulic system for leaks.

Verify the front wheels alignment.

IF NECESSARY : position the steering wheel in the straight ahead position, with the spoke downwards.

Bleed, **Fig. V**, the VARY POWER steering hydraulic ram :
slacken bleed screw **(8)** ; slowly turn the steering to full left and right lock and retighten the screw.

NOTE : the bleed screw is connected to the return set of pipes to reservoir.

Carrying out a road test :

Adjust the course keeping in a straight ahead position, using the 'straight line' position adjustment cable thumbwheel **(4), Fig. VI.**

1st Remove the plastic protector.

2nd Operate as follows :
- Vehicle moving to the left :
unscrew the thumbwheel.

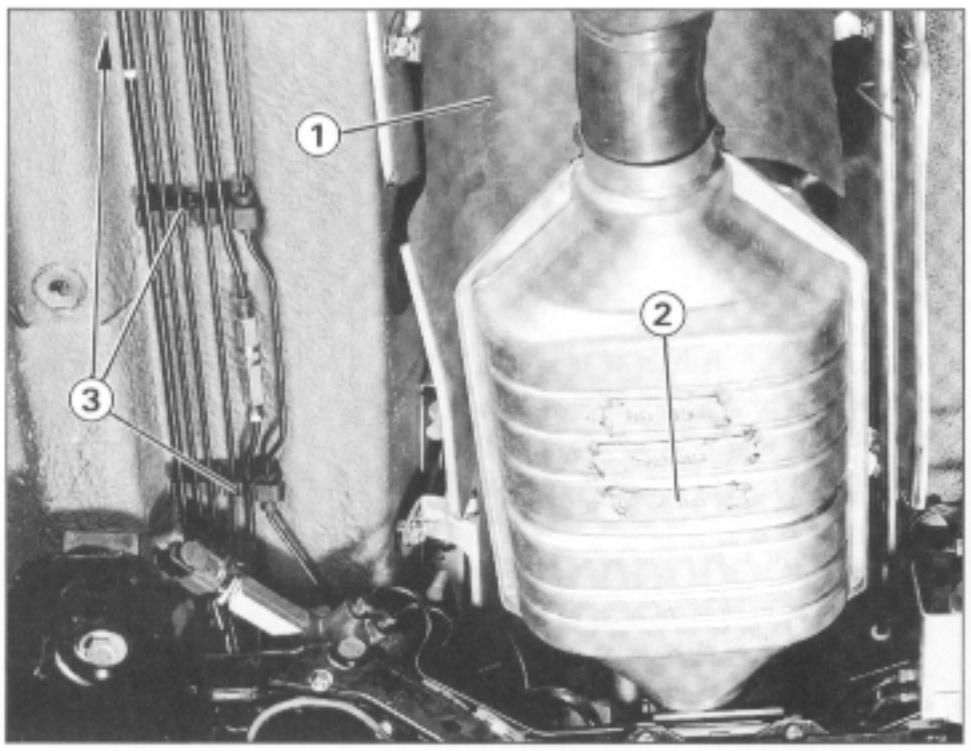


- Vehicle moving to the right :
screw up the thumbwheel.

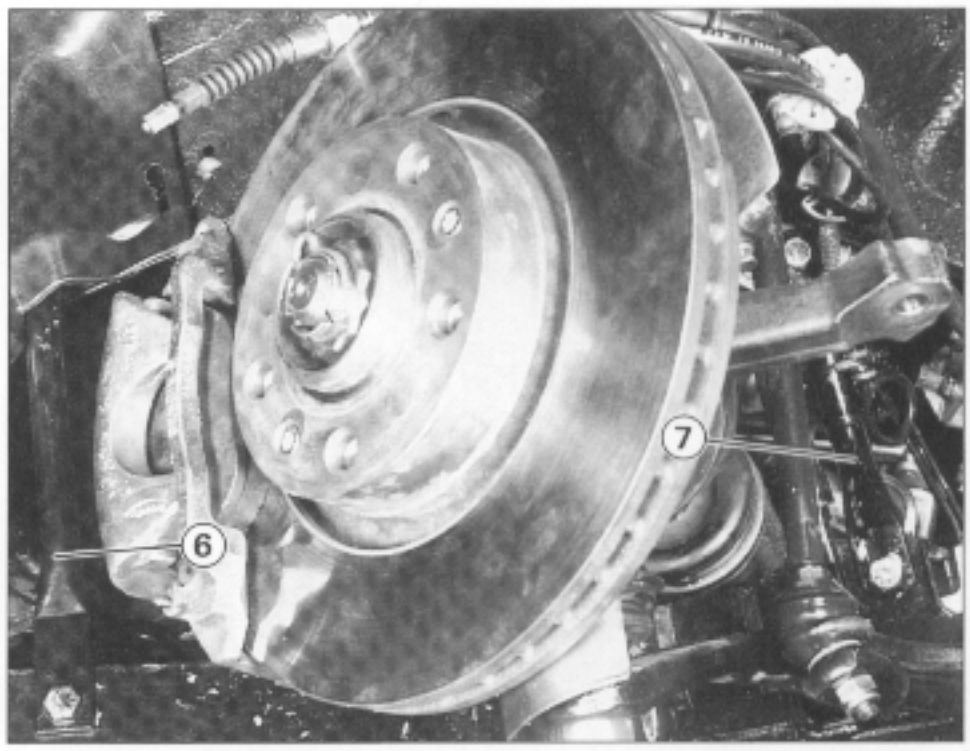


3rd Refit the plastic protector.

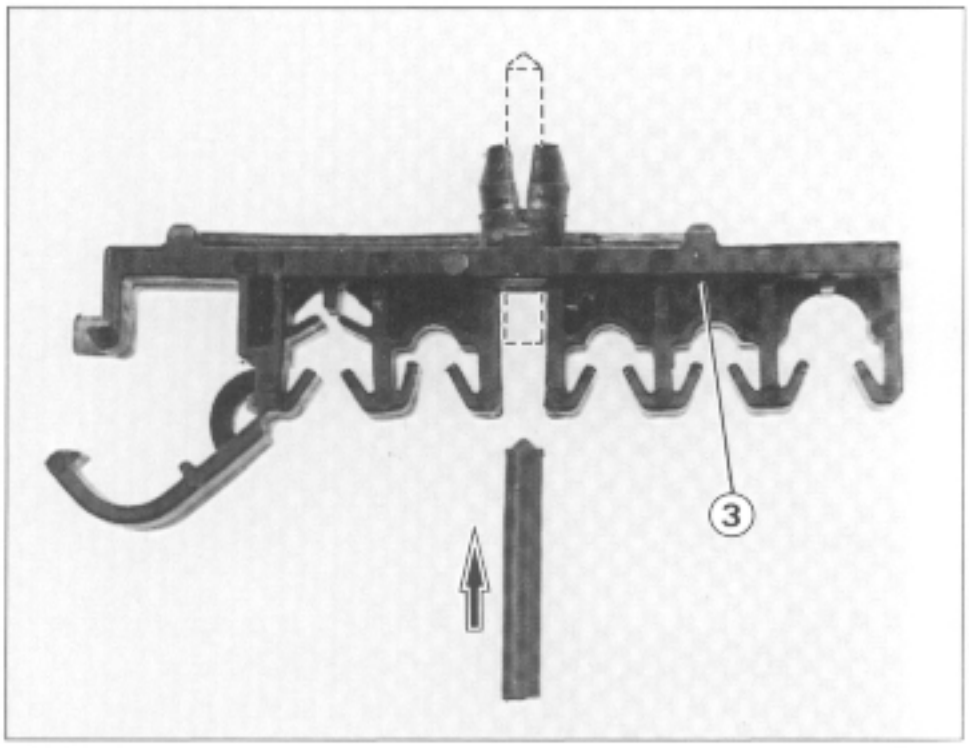
www.WorkshopManuals.co.uk



89-565 I



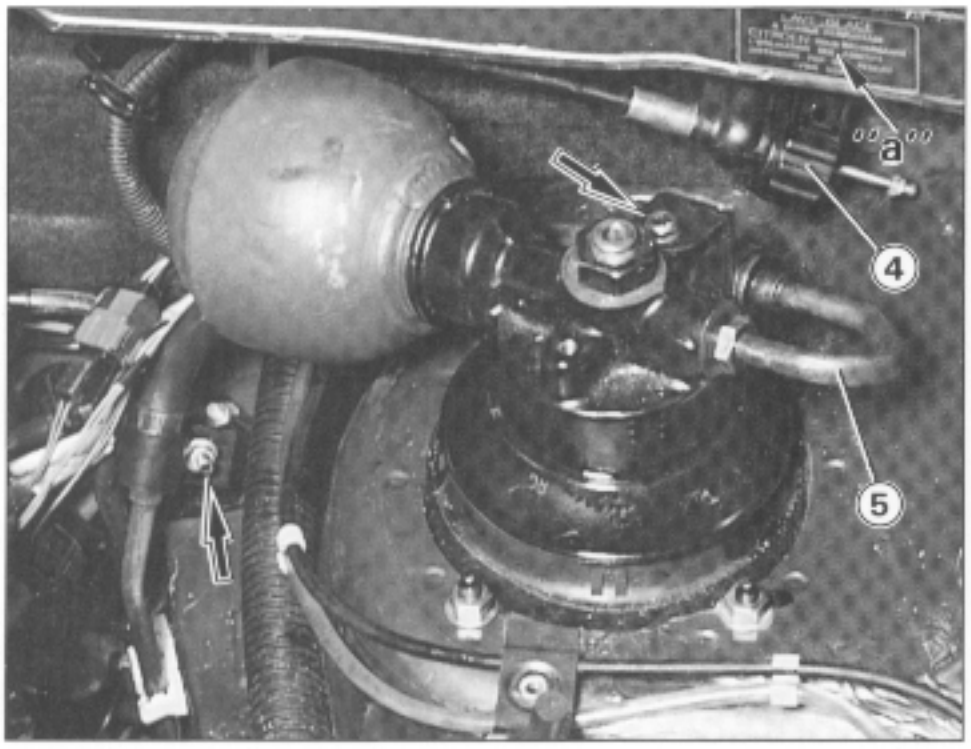
89-523 IV



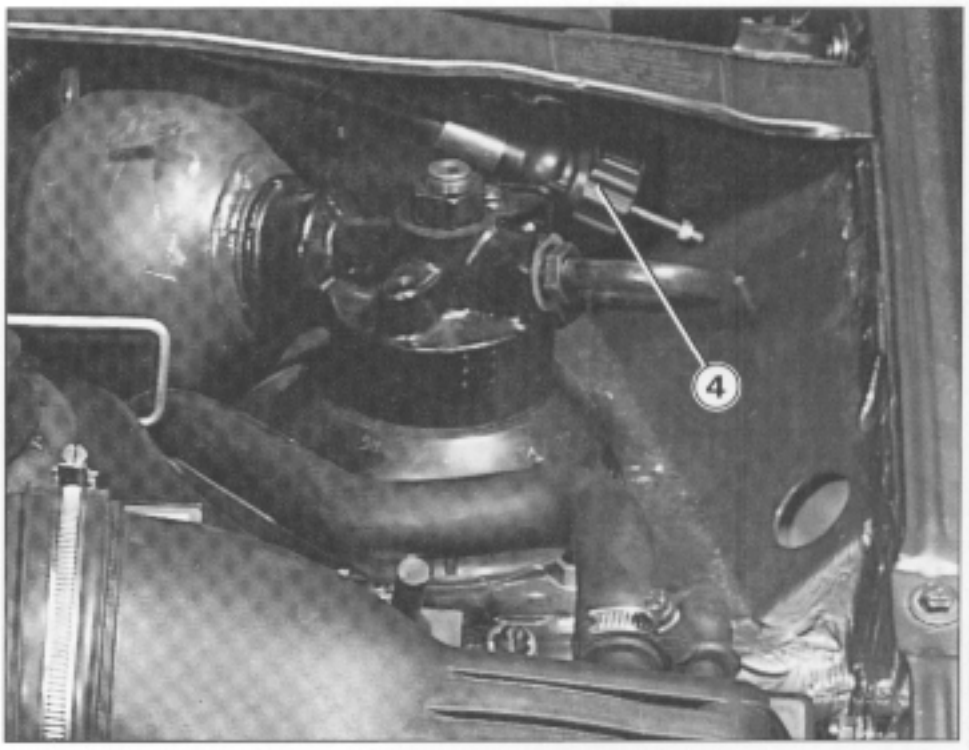
89-547 II



89-251 V



89-506 III



89-145 VI

www.WorkshopManuals.co.uk

REMOVAL

Disconnect the battery

Remove :

- the console **carpet** moquette **(1)**, **Fig. I**
  *(3 screws ➡ and a nut **(2)** 10 A/F),*

- the LH dashboard section lower **trim (3)** and felt **(4) Fig II**,
  (Seven screws ➡ and two clips).

Uncouple, Fig. III the handbrake control **(5).**

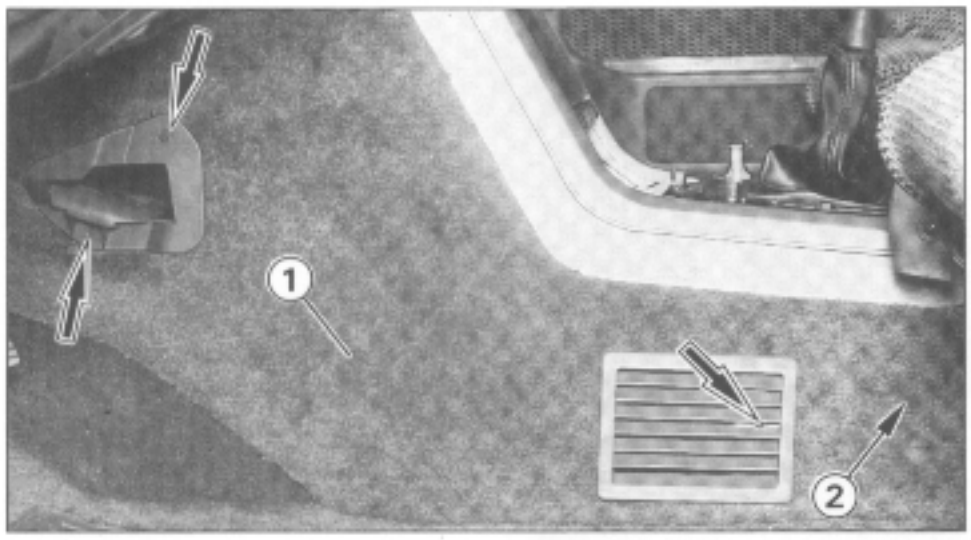
Remove, Fig. IV :

- the air diffusion duct **(8)**,
- the selector switch **(6)**,
- the column lower gaiter **(7),**
  (five screws ➡).

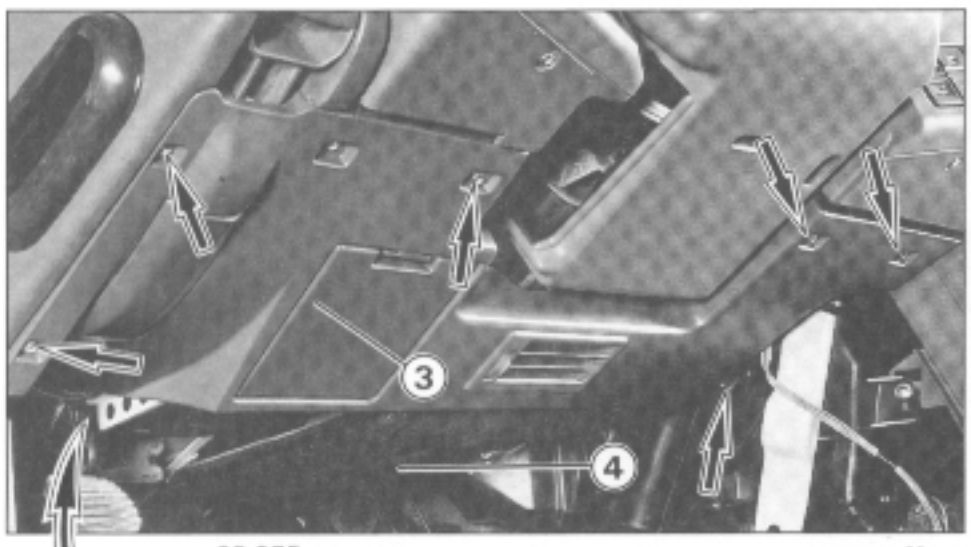
Remove, Fig. V, the lead retaining clip **(9).**

Disconnect, Fig. V, the connector **(10)** from the selector switch.

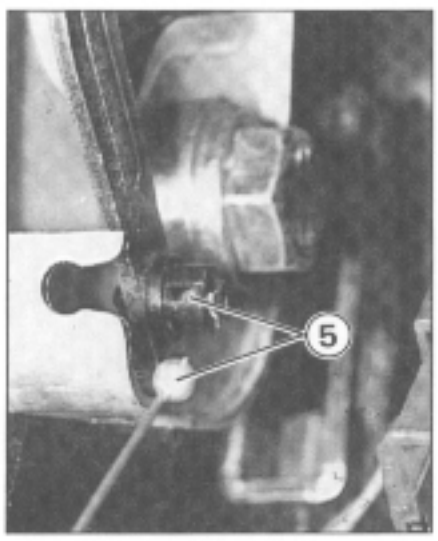
www.WorkshopManuals.co.uk



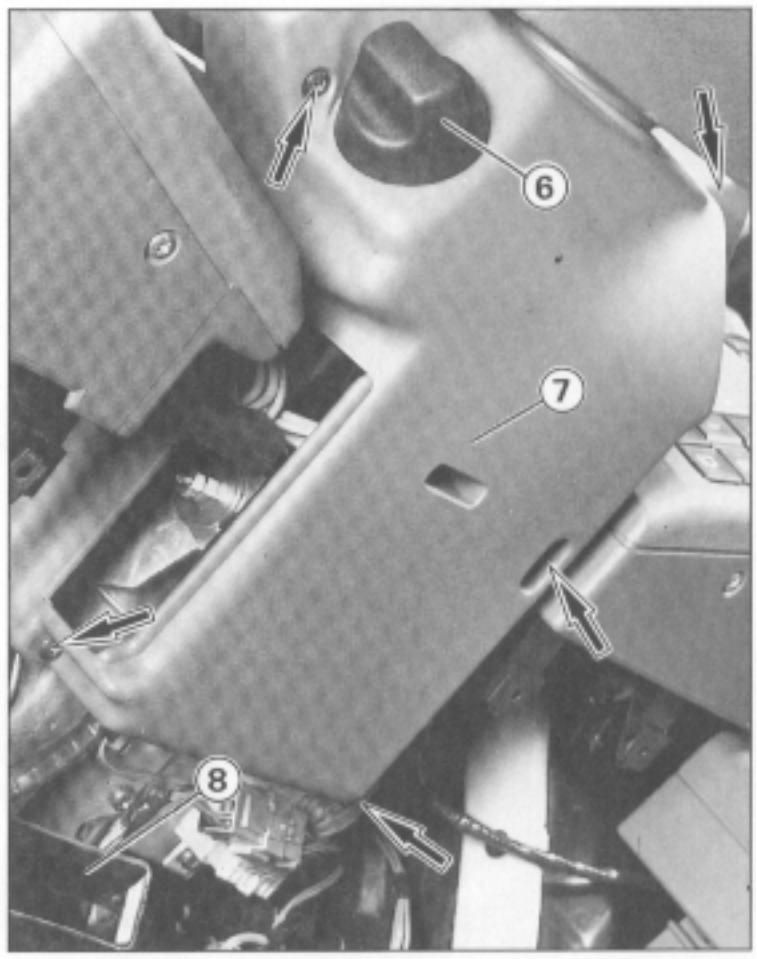
88-988 I



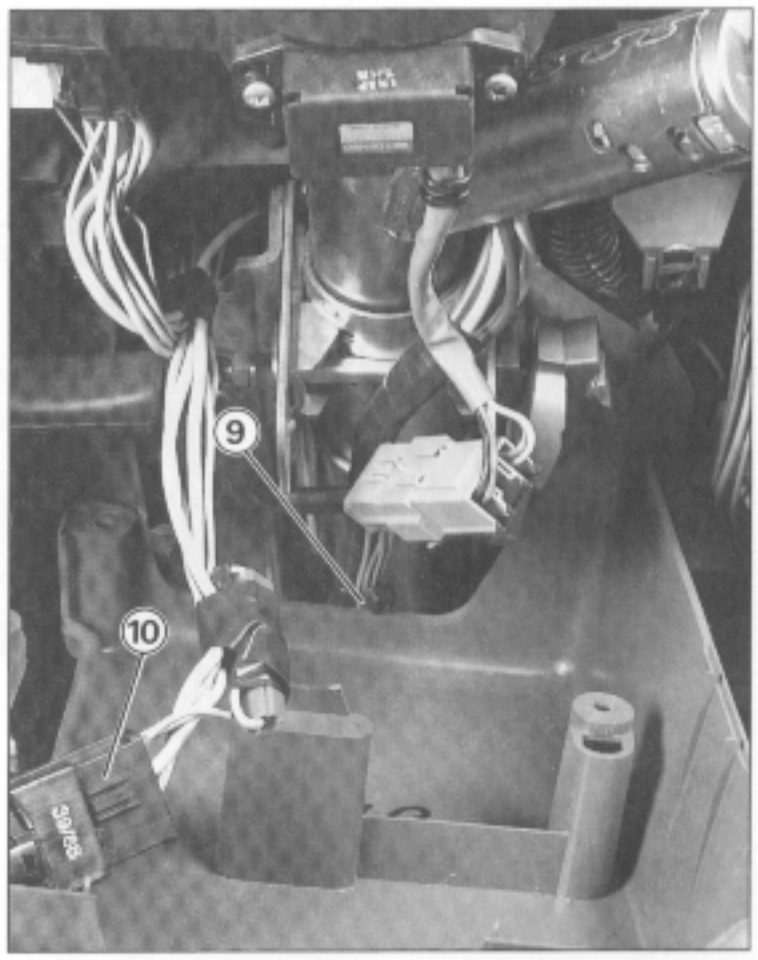
88-975 II



88-977 III



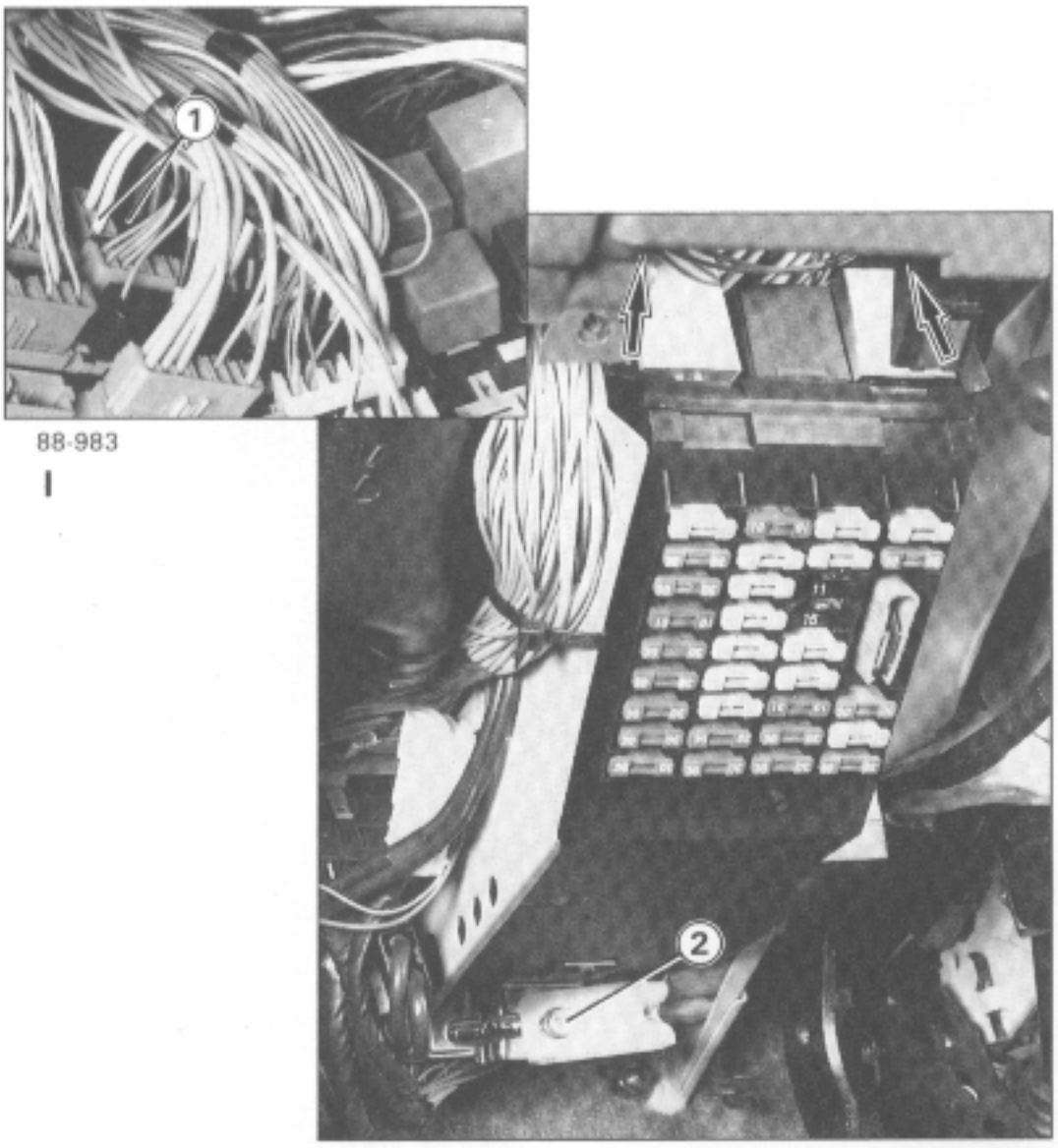
88-978 IV



88-979 V

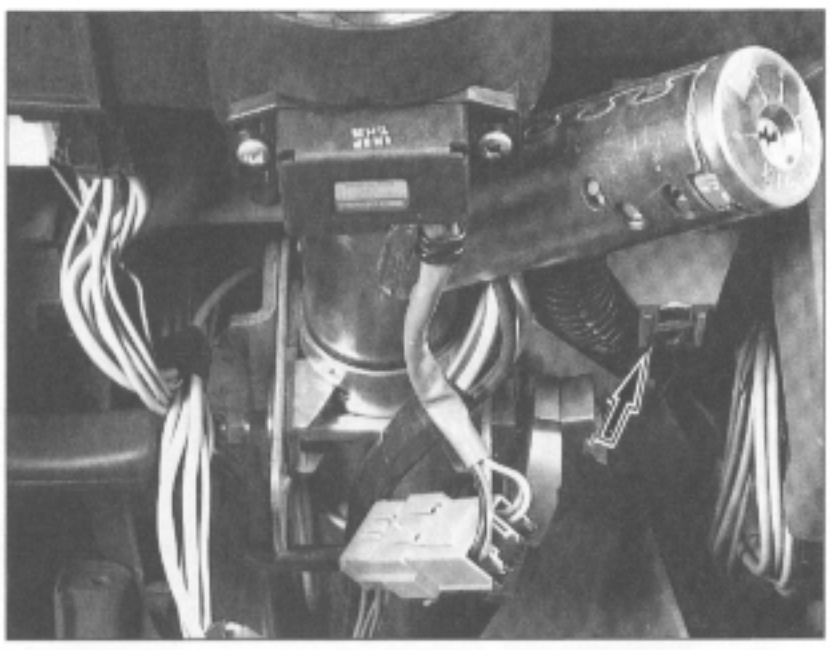
8932

www.WorkshopManuals.co.uk

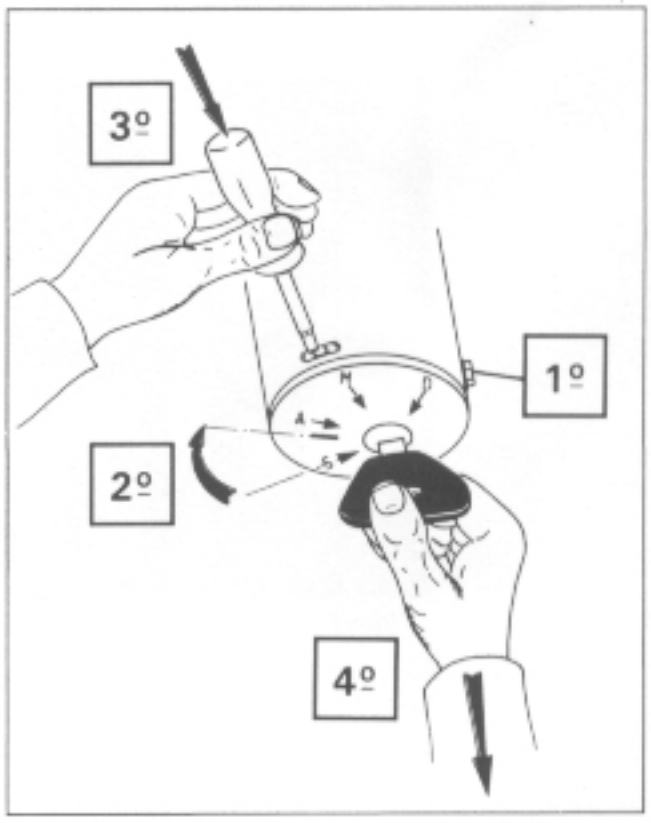


88-983 I

88-982 II



88-979 III



Z.61-1 IV

www.WorkshopManuals.co.uk

REMOVING AND REFITTING AN ANTI-THEFT LOCK

REMOVAL

Withdraw, Fig. II : the screw **(2)** and unclip the fuse box ➡.

Disconnect :
- the connector ➡ **Fig. III,**
- the connectors **(1) Fig. I.**

Removing the anti-theft lock, Fig. IV :

1º Take off the screw.

2º Place the ignition key on the mark, between **A** and **S**

3º Using a screwdriver, push on the lug.

4º Remove the anti-theft lock.

REFITTING

Refitting the anti-theft lock, Fig. IV :

- Position ignition key on the mark, between **A** and **S**.

- Engage the anti-theft,
  (Make sure that the lug is properly locked).

- Refit the fixing screw.

- Take off the key.
  (Check the correct locking of the steering system by removing the ignition key.)

Fit :
- the connector ➡ **Fig. III,**
- the connectors **(1), Fig. I.**

Clip, Fig. II : ➡ the fuse box and refit the screw **(2).**

www.WorkshopManuals.co.uk

REFITTING (continued)

Refit, Fig. I : the leads retaining clamp **(1)**.

Reconnect, Fig. I : the selector switch connector **(2)**.

Refit, Fig. II :

- the lower column gaiter **(4)**,
  (five screws ➡),

- the selector switch **(3)**.

Reposition, Fig. III, the dashboard LH side, lower trim **(6)**,

(hold it with two screws).

Refit, Fig. II and III : air distribution duct **(5)** to the trim.

Recouple, Fig. IV : the hand-brake **(8)**.

Refit and tighten, Fig. III : the trim screws ➡ **(6)** and clip the felt material **(7)**,

(seven screws ➡ and two clips).

Refit, Fig. V : console moquette carpet **(9)**,

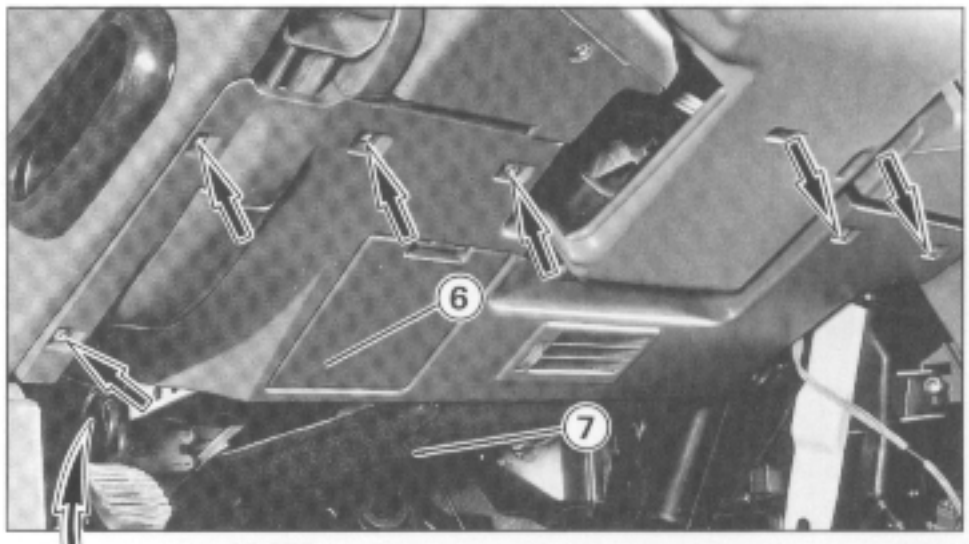
*(three screws ➡ and a nut **(10)**, 10 A/F).*

Reconnect the battery.

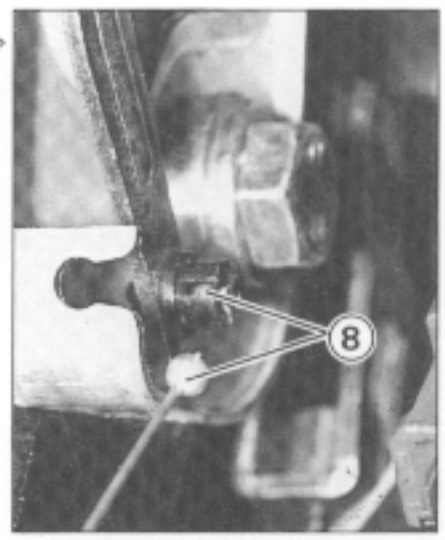
www.WorkshopManuals.co.uk



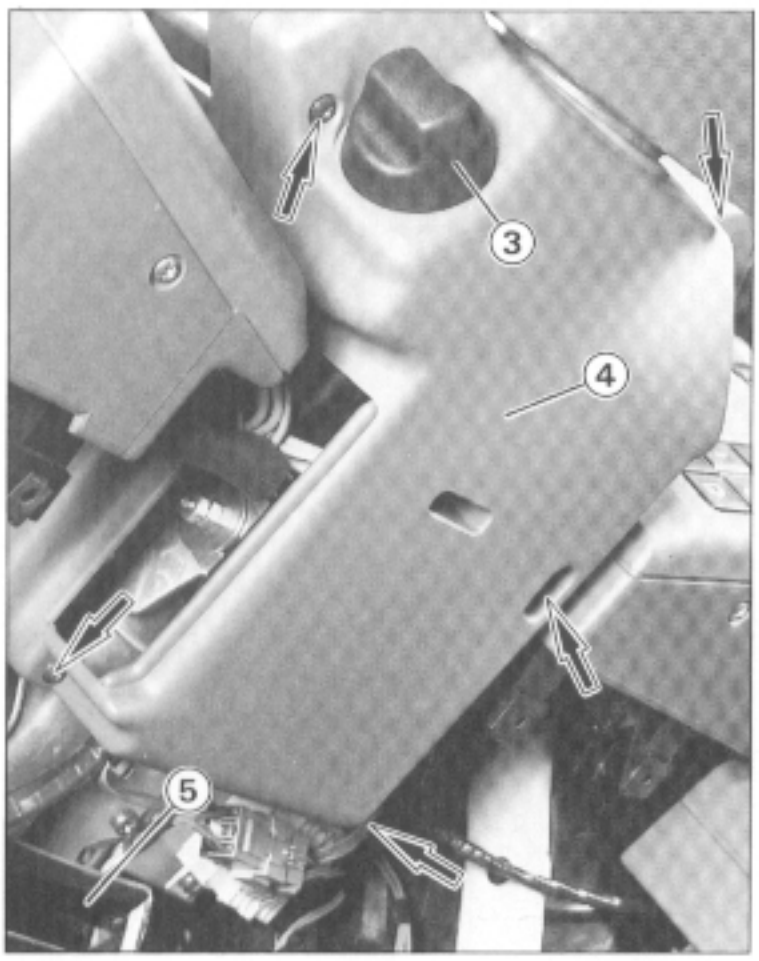
88-979 I



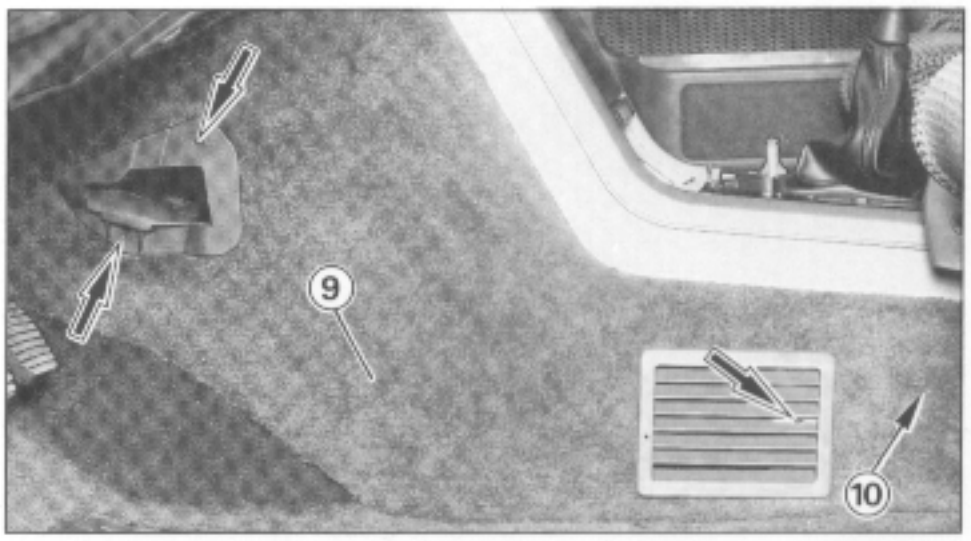
88-975 III



88-977 IV



88-978 II



88-988 V

www.WorkshopManuals.co.uk



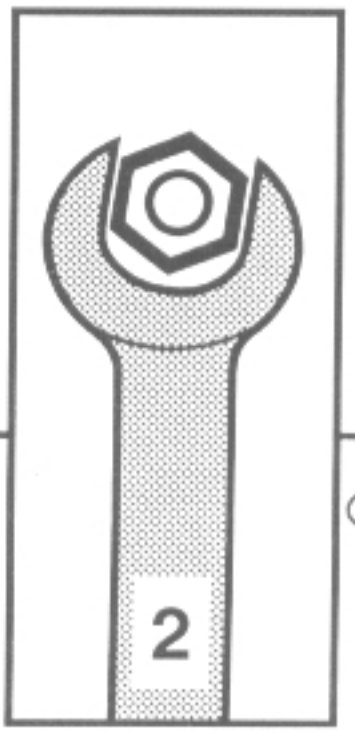
JANUARY 1997

REF. 10 No. XM 442-1/3

STEERING

- REMOVING - REFITTING : STEERING RACK THRUST PLUNGER

MAN 158932



GB

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

REMOVING–FITTING : POWER STEERING THRUST PLUNGER

1 – RECOMMENDED TOOLS

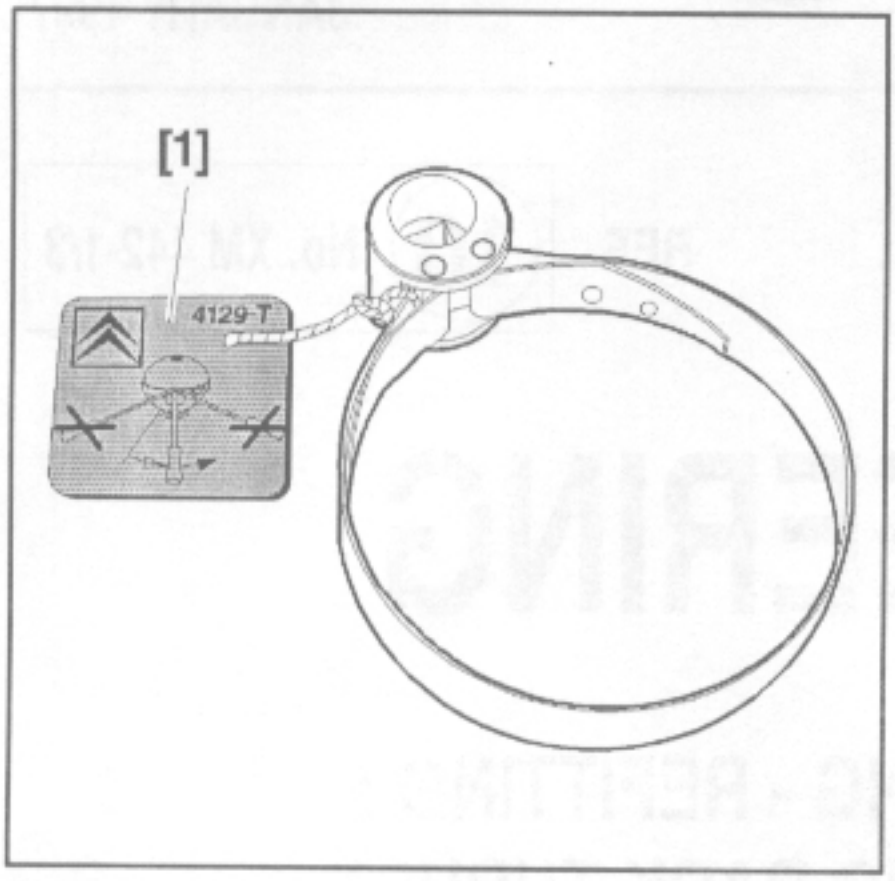


Fig : B3BP006C

[1] wrench 4129–T for removing the suspension spheres.

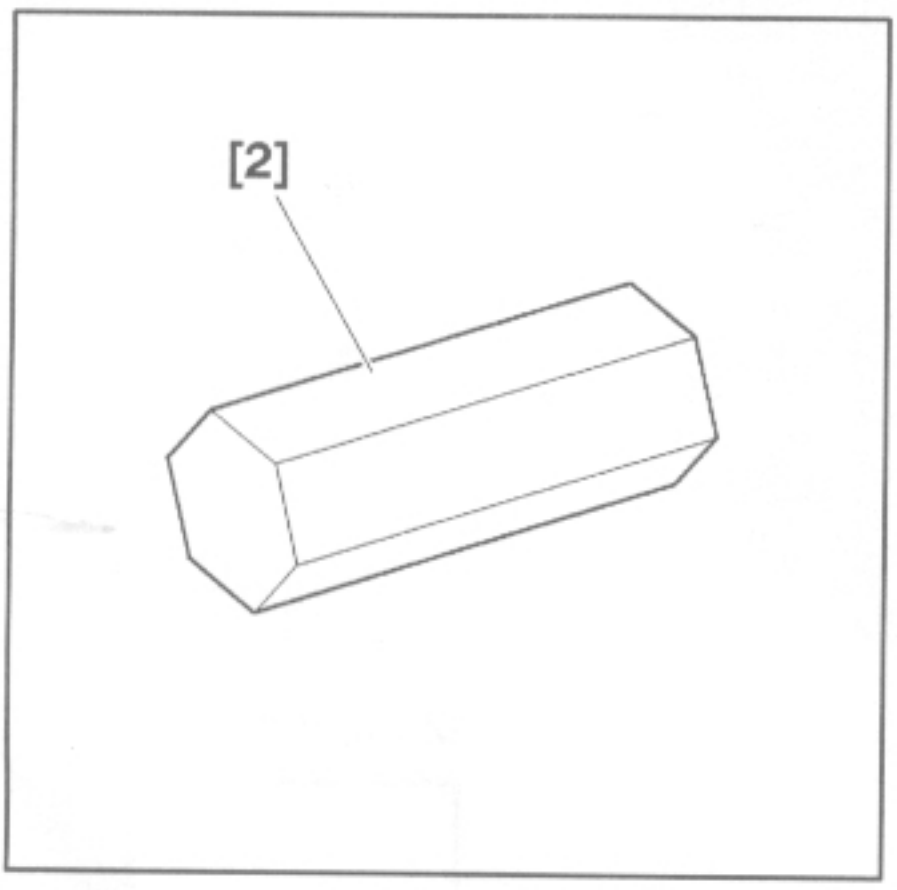


Fig : E5AP059C

[2] tool for tightening the steering thrust plunger 9046–T.

2 – REMOVING

Raise and support the vehicle.

Exhaust the pressure from the hydractive suspension circuit (see the relevant operation).

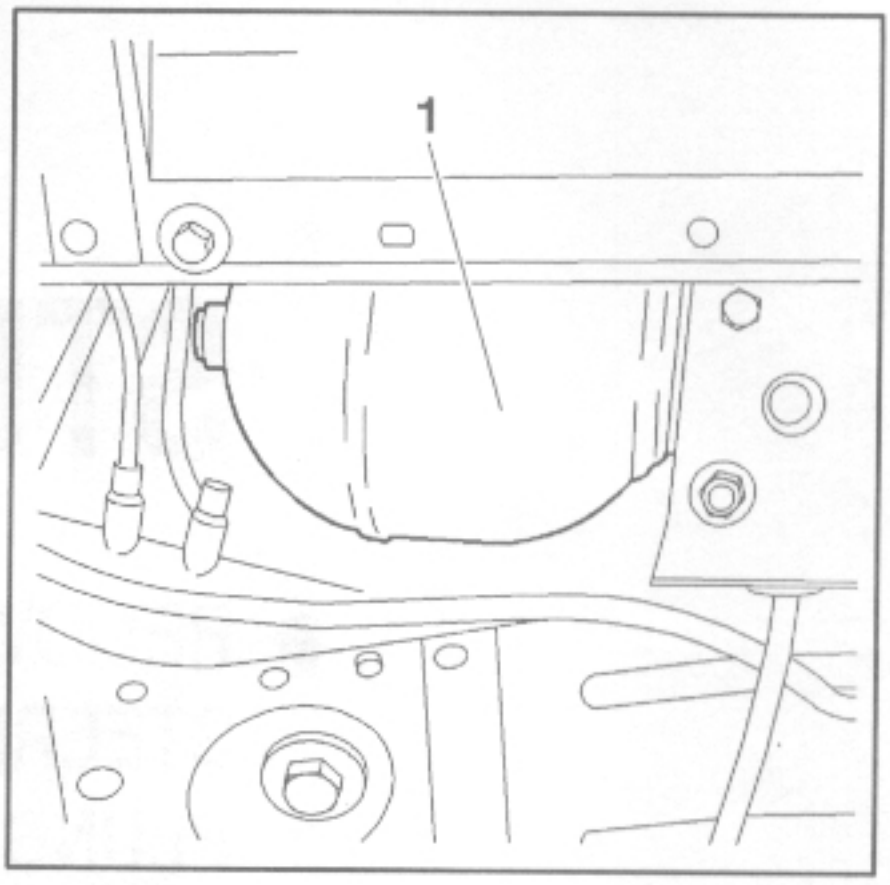


Fig : B3EP06FC

Remove :

- the protective plate under the engine
- the sphere (1) from the front hydractive stiffness regulator by means of tool [1]

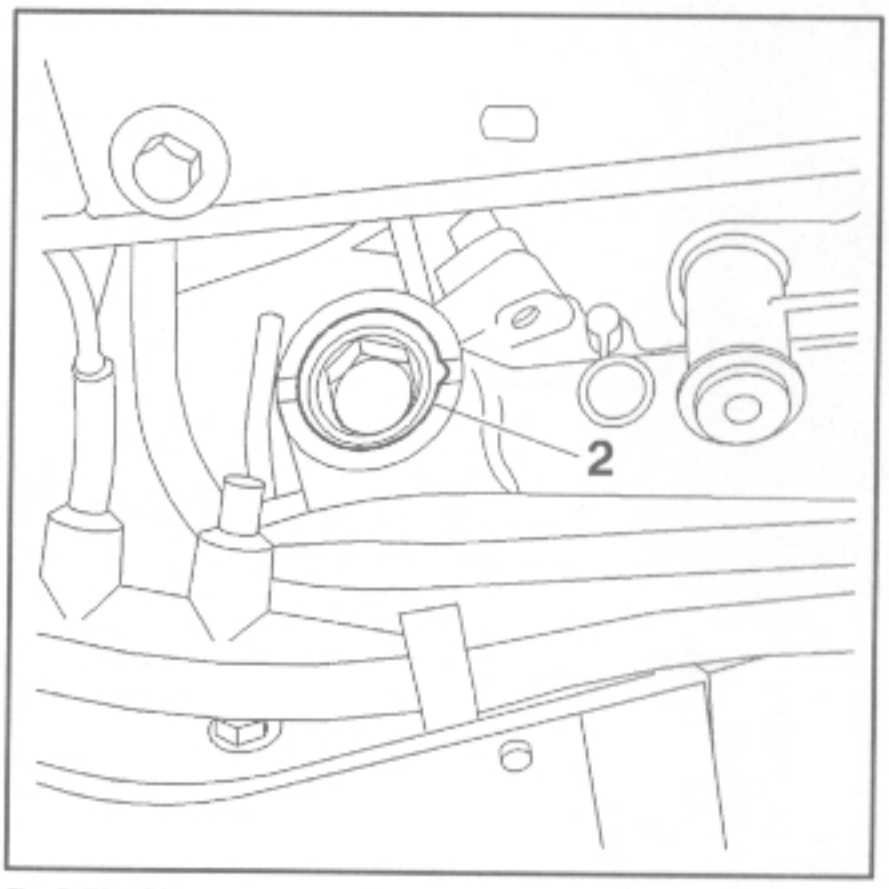


Fig : B3EP06GC

Slacken the cap (2).

www.WorkshopManuals.co.uk

3 – REFITTING

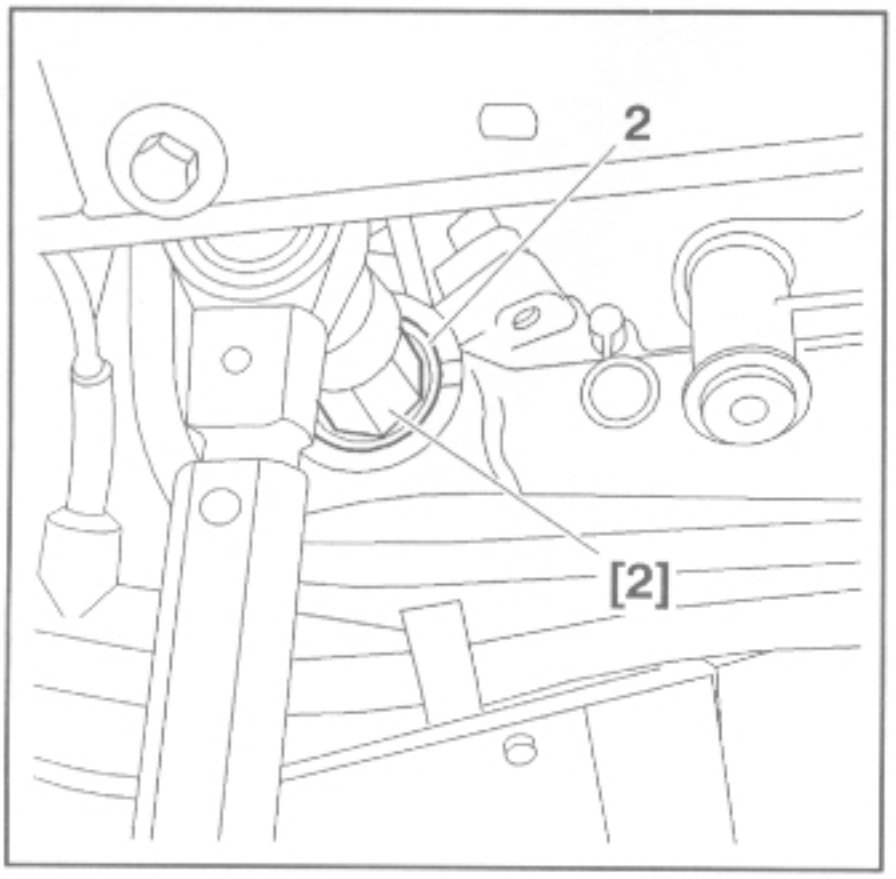


Fig : B3EP06HC

Unscrew and remove the plug (2) ; using tool [2] and a Ø = 19 mm socket.

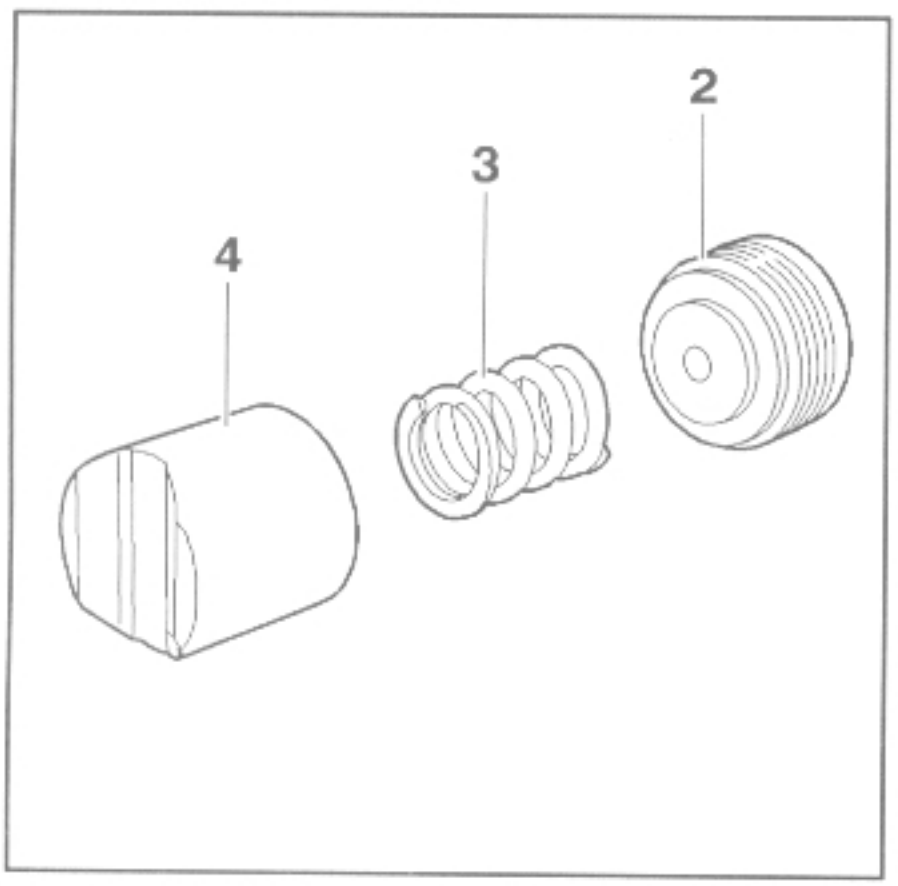


Fig : B3EP06JC

Remove :
- spring (3)
- the plunger (4)

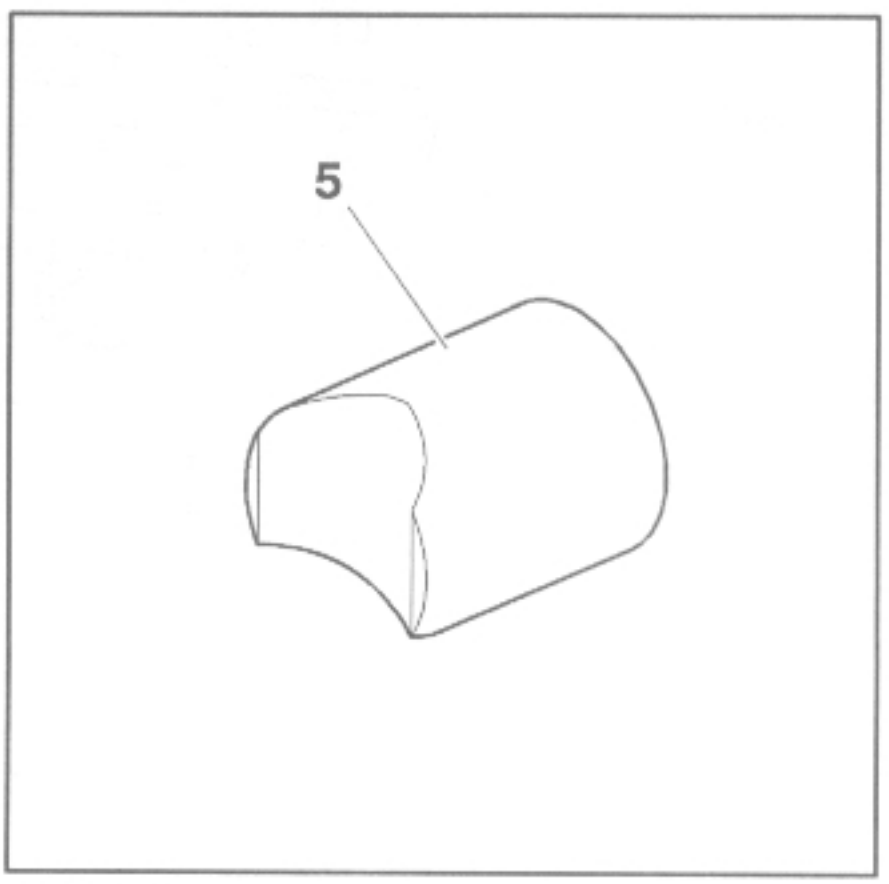


Fig : B3EP06KC

Smear grease on the contact faces of the rack and the new plunger (5).

Fit :
- the new plunger (5)
- spring (3)

Refit and tighten the new cap (2) ; using tool [2] and a Ø = 19 mm socket.

Apply a tightening torque of 1 m.daN.

www.WorkshopManuals.co.uk

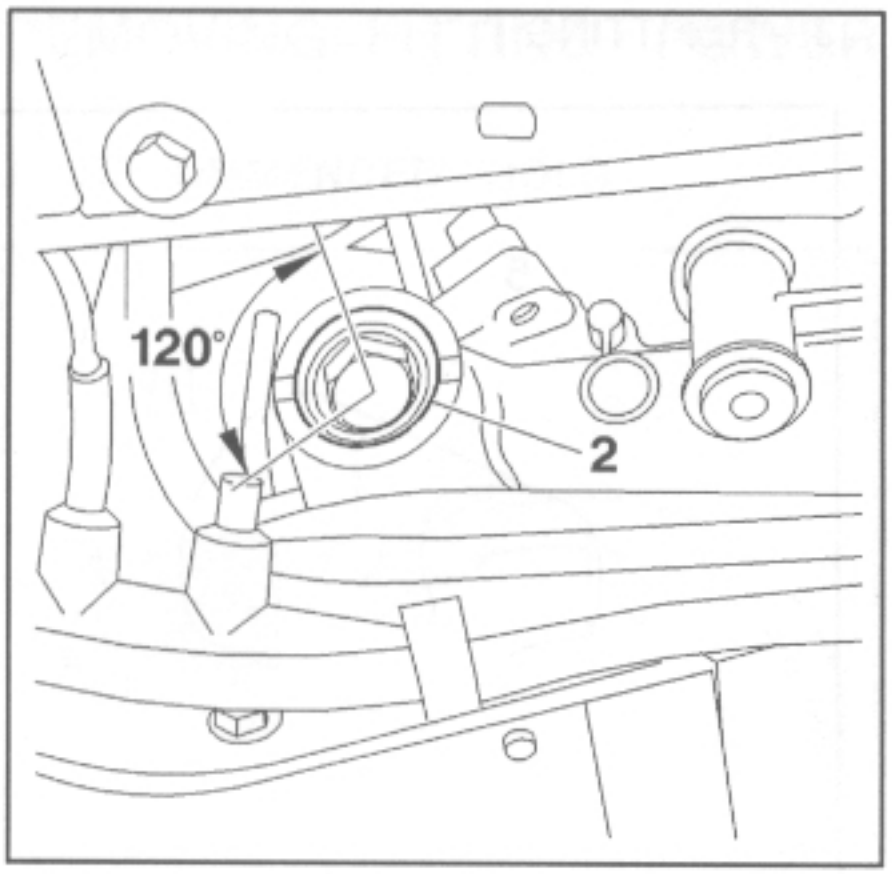


Fig : B3EP06LC

Slacken the cap (2) by 120° or by 1/3 of a turn.

Test the operation of the steering to ensure that there are no high spots or stiffness when turning from lock to lock, front wheels clear of the ground :

- if there is a high spot, slacken the cap (2) slightly
- if the plunger is noisy, slightly tighten the cap (2)

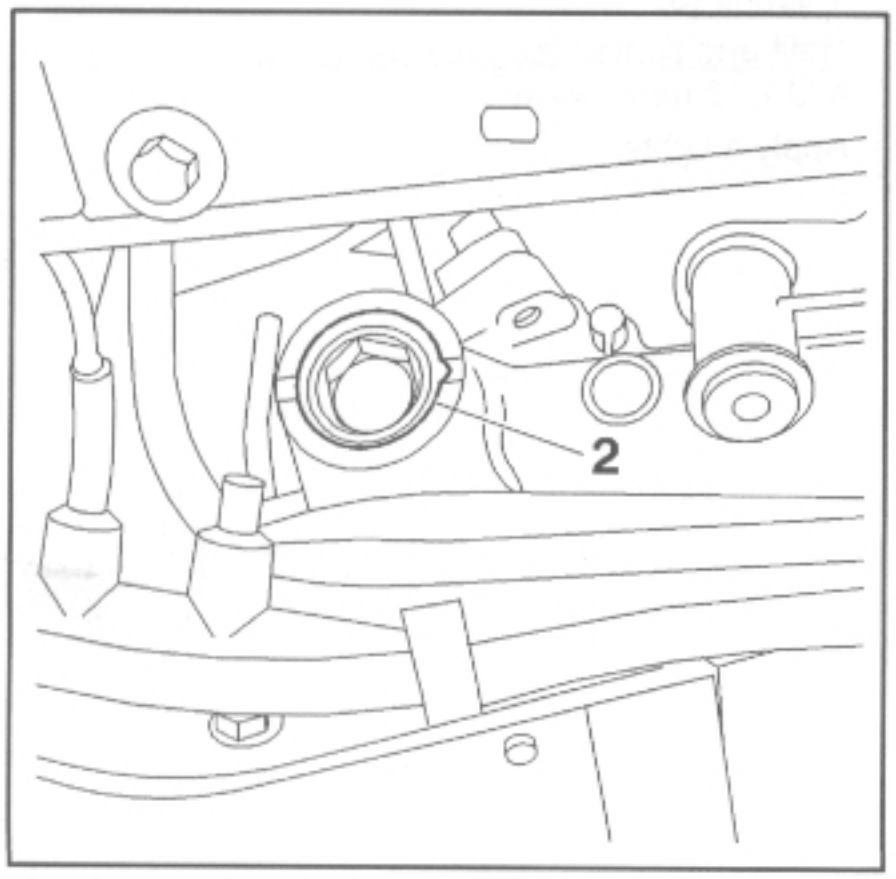


Fig : B3EP06GC

Peen the new cap (2).

Refit the front hydractive regulator sphere (1) with a new seal.

Test the operation of the steering by turning from lock to lock, wheels on the ground and the engine running.

Refit the protective plate under the engine.

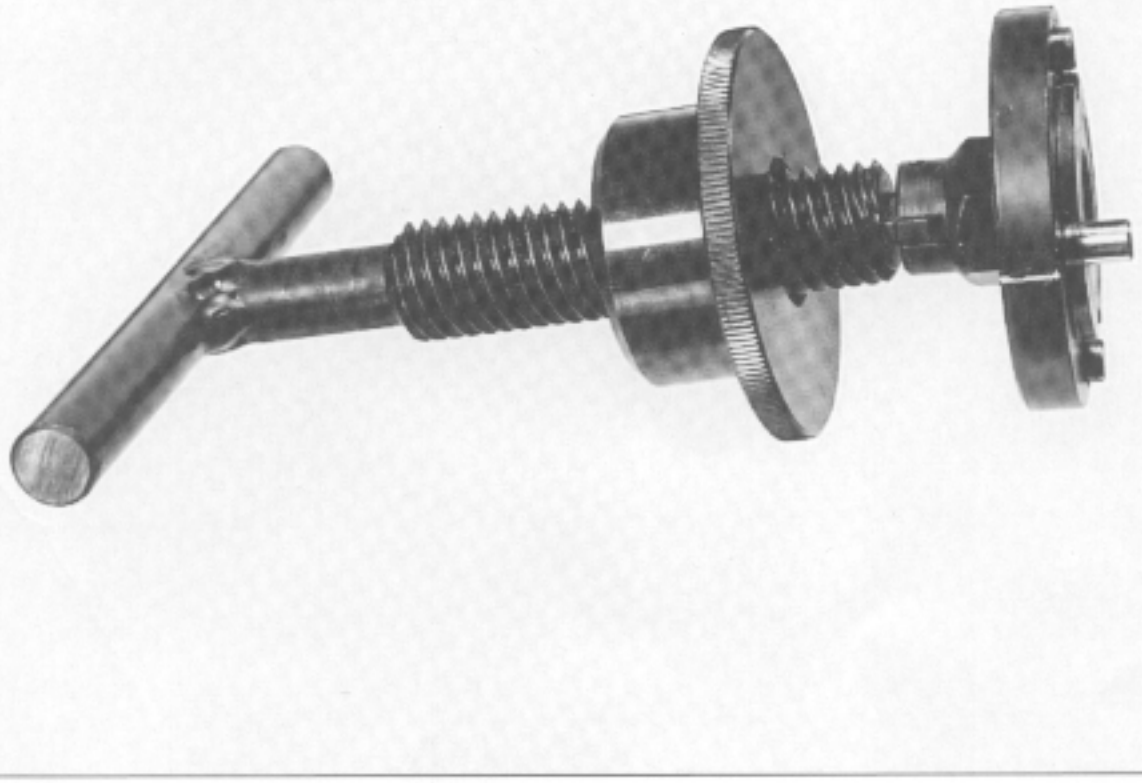
© Reproduction ou traduction même partielle interdite sans l'autorisation écrite des Automobiles CITROËN

www.WorkshopManuals.co.uk

OPERATION NUMBER	DESCRIPTION	VEHICLE	
		4 cyl. PETROL	6 cyl. PETROL
XM.450-000/1	List of operations : Braking system		
XM.450-000/2	Tools	X	X
XM.450-00/1	Specifications and special points of the braking system	X	X
XM.451-1/1	Removing and refitting the front brake pads or the brake discs	X	X
XM.451-1/2	Removing and refitting a brake disc and the brake pads	X	X
XM.453-0/1	Bleeding the braking system and the A.B.S. hydraulic block	X	X
XM.456-0/2	Checks and diagnostic of the anti-locking braking system	X	X

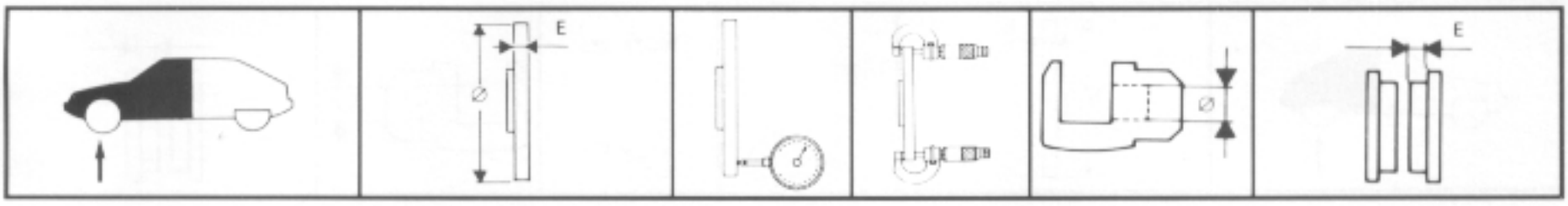
www.WorkshopManuals.co.uk

9011-T

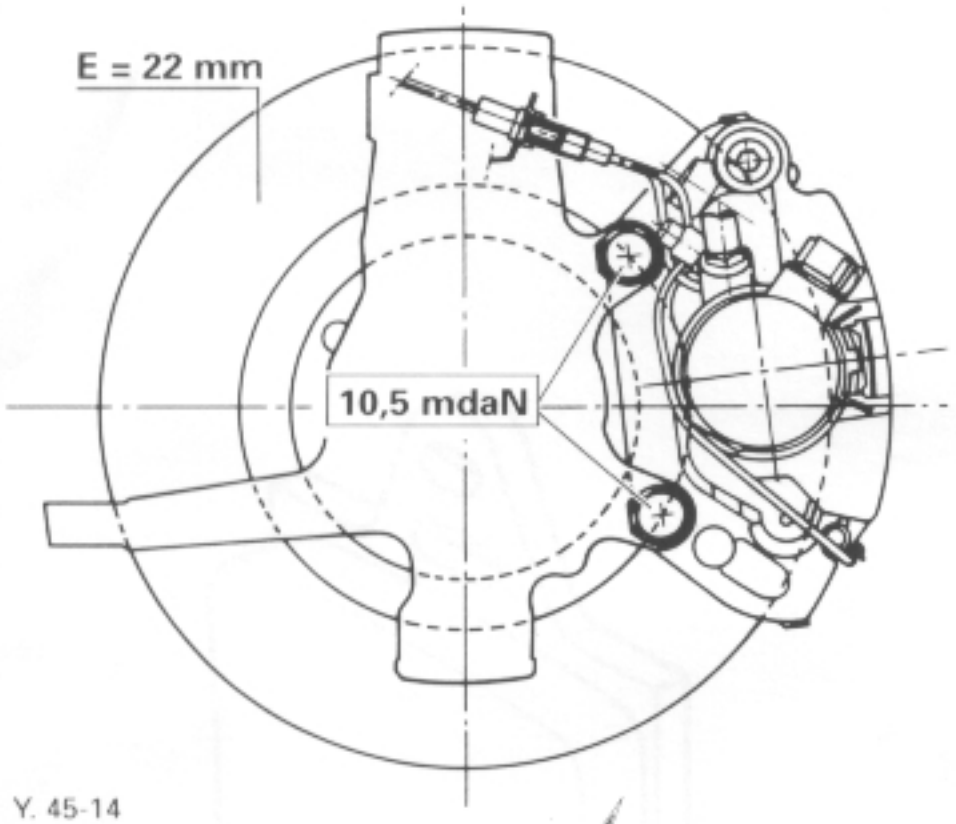


89-577

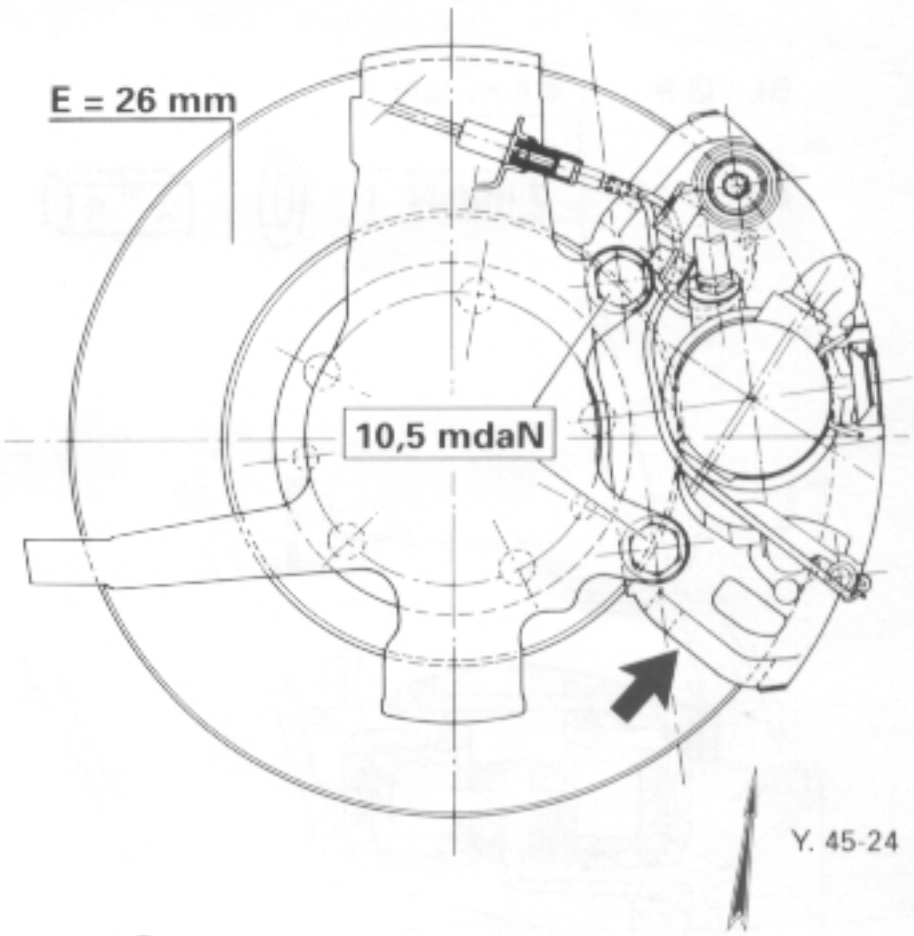
www.WorkshopManuals.co.uk



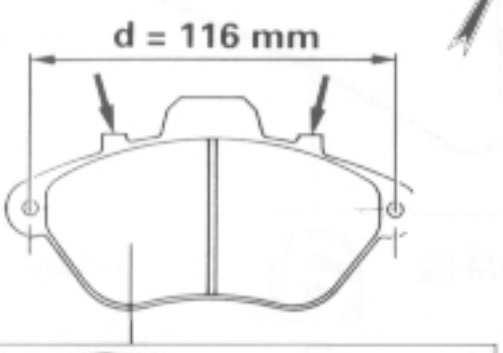
→ OPR 5228	Ø	276 mm	0,05 mm MAXI	0,01 mm	57 mm	S = 45 cm²	
03/91	E	22 mm				E	12 mm
XM - BL	E mini	20 mm				E mini	3 mm
XM - BL - BK	Ø	283 mm			57 mm	S = 50 cm²	
O.PR 5229 →	E	26 mm				E	12 mm
03/91	E mini	24 mm				E mini	3 mm



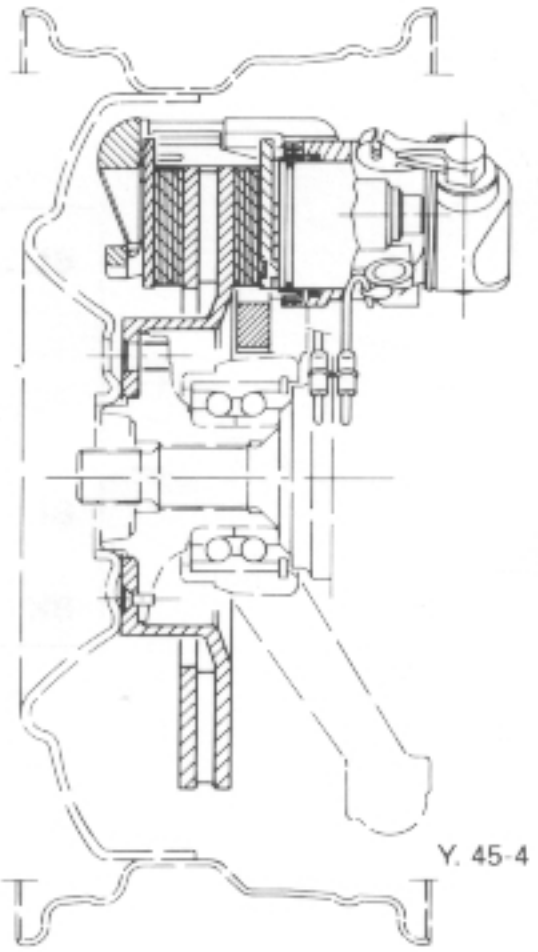
Y. 45-14



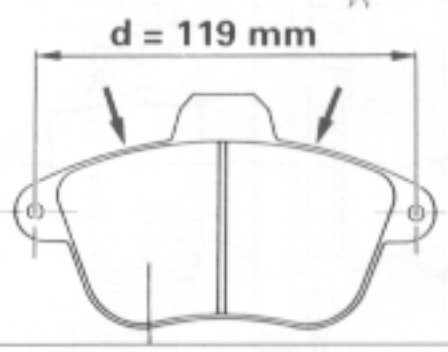
Y. 45-24



BL	ABEX 349
	TEXTAR. T441

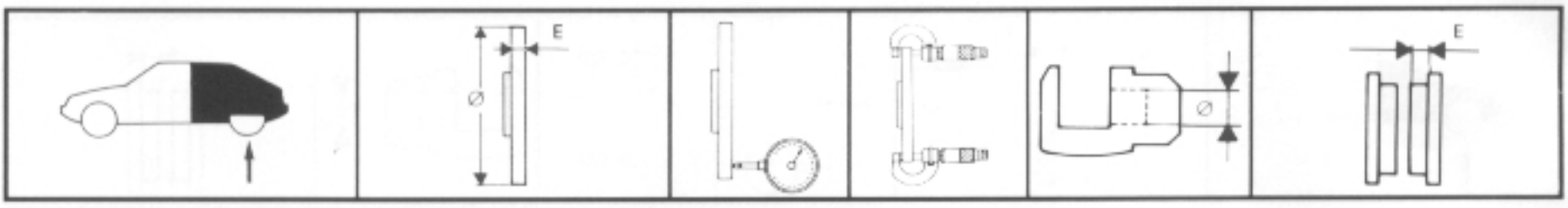


Y. 45-4



BL → AM 92	ABEX 349
BL AM 92 → BK	ABEX 949

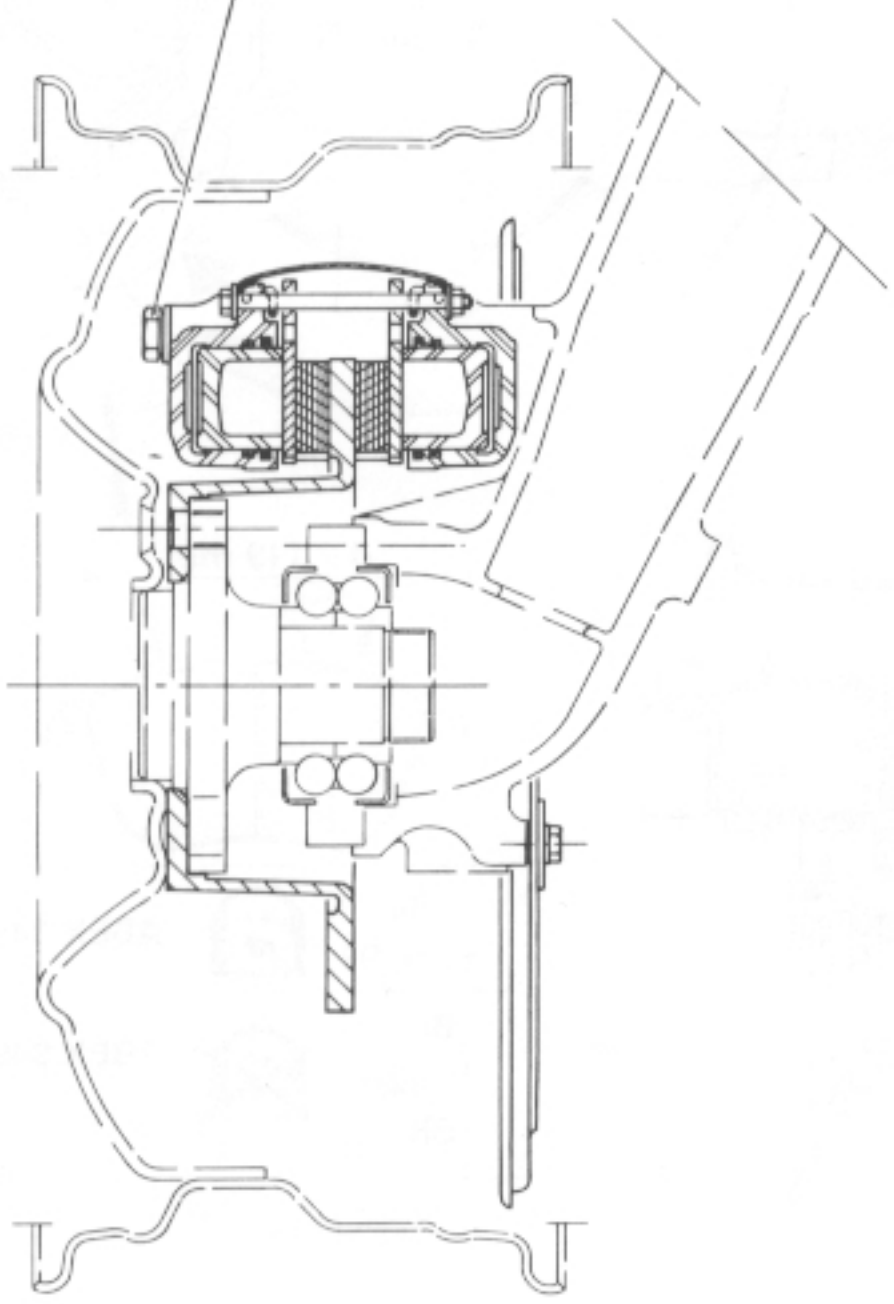
www.WorkshopManuals.co.uk



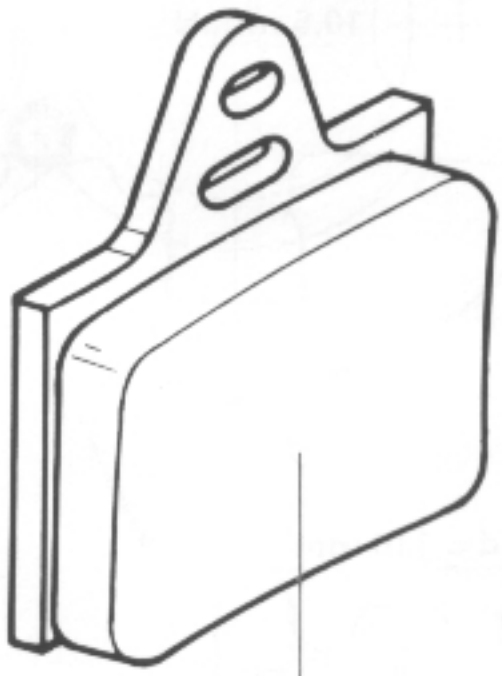
BL	Ø	224 mm	0,05 mm MAXI	0,01 mm	33 mm	S = 17 cm²	
	E	9 mm				E	11,4 mm
	E mini	7 mm				E	2 mm
BK	Ø	251 mm			40 mm	S = 35 cm²	
	E	12 mm				E	11,4 mm
	E mini	10 mm				E mini	2 mm

BL : Ø 9 — **4,5 mdaN**

BK : Ø 10 — **7 mdaN**



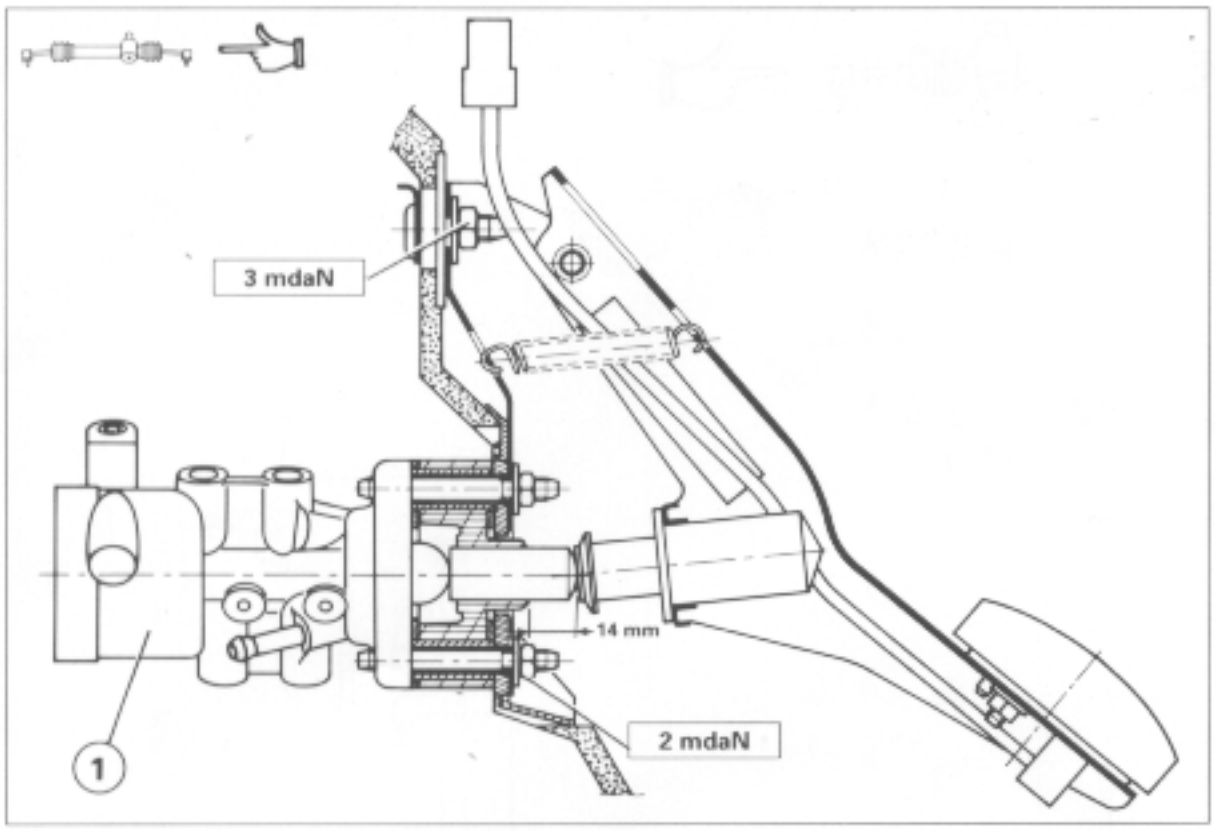
Y. 45-5



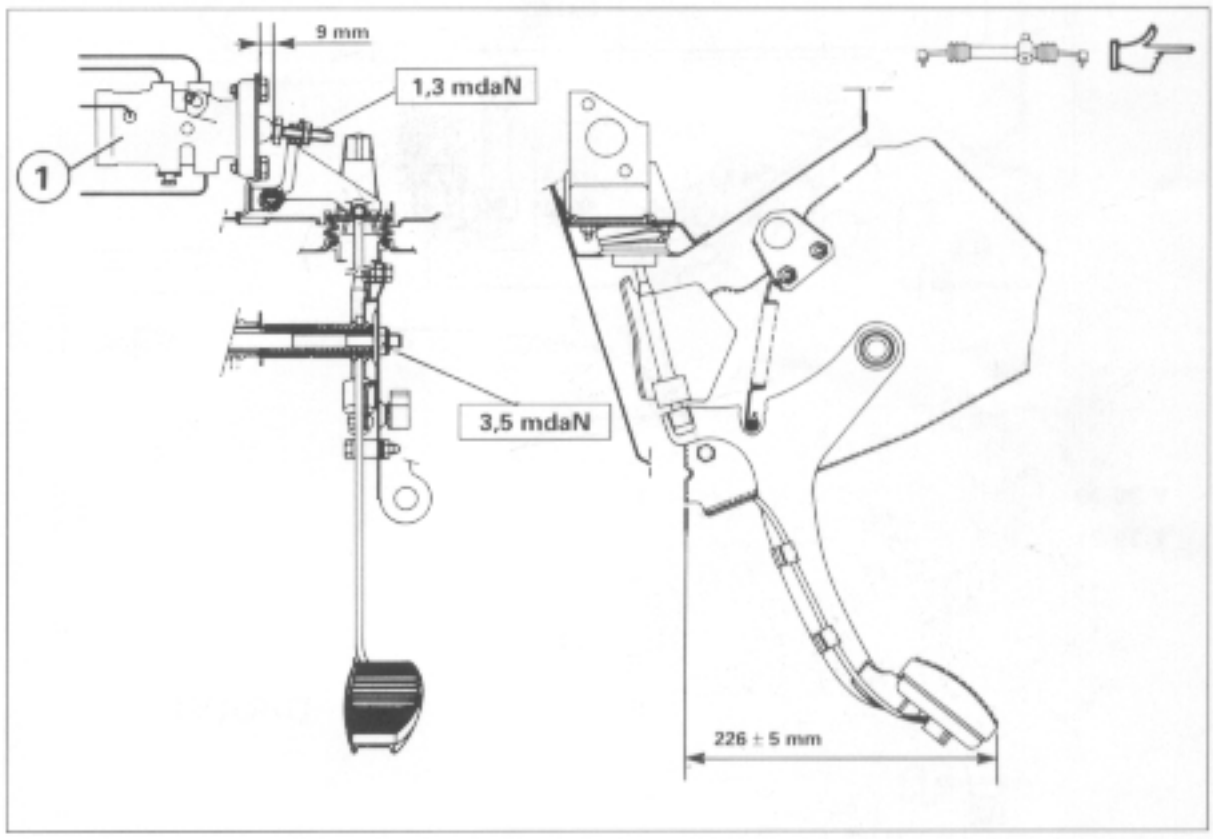
BX. 45-27

BL	→ AM 92	ABEX 349
	→ AM 91	TEXTAR. T441
	AM 91 →	ABEX 949
BL	AM 92 →	ABEX 949
BK		

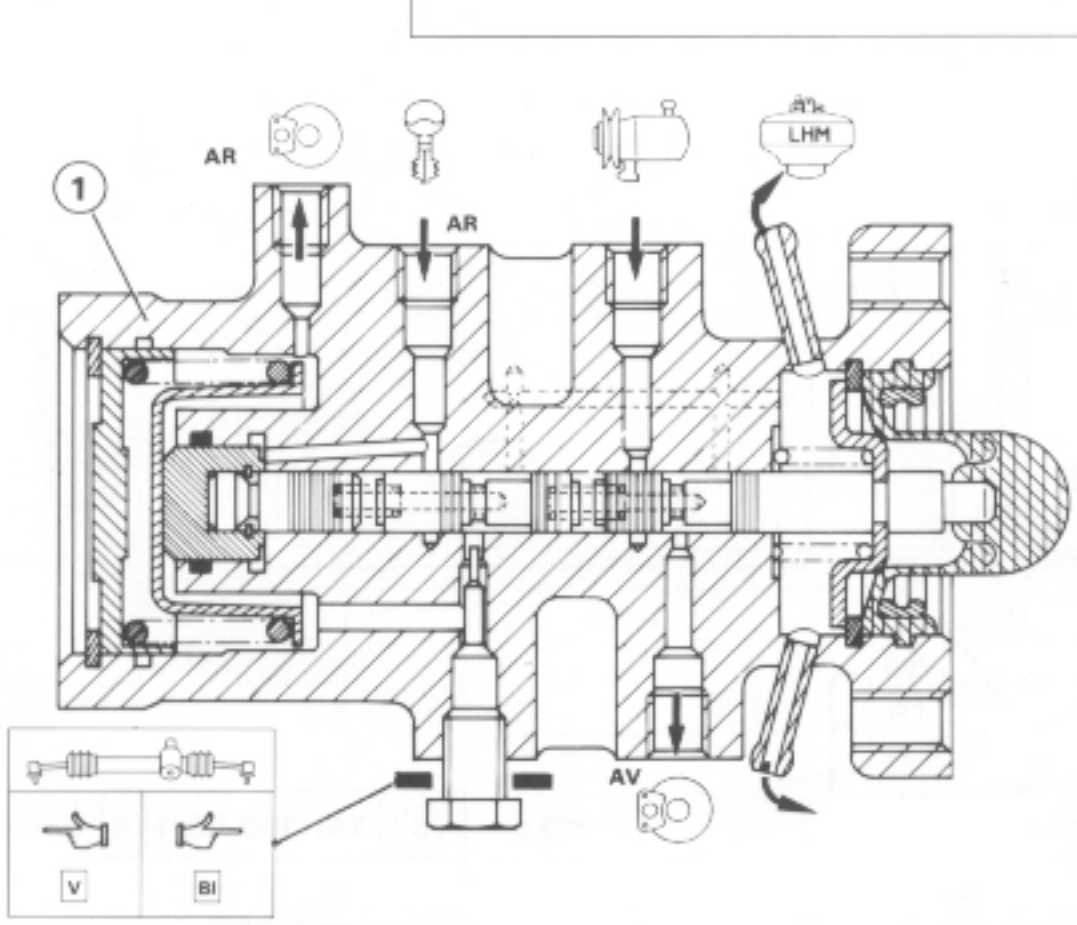
www.WorkshopManuals.co.uk



Y. 45-1

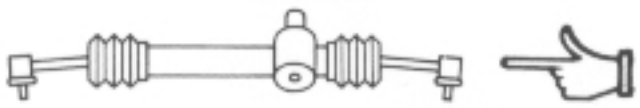


Y. 45-15

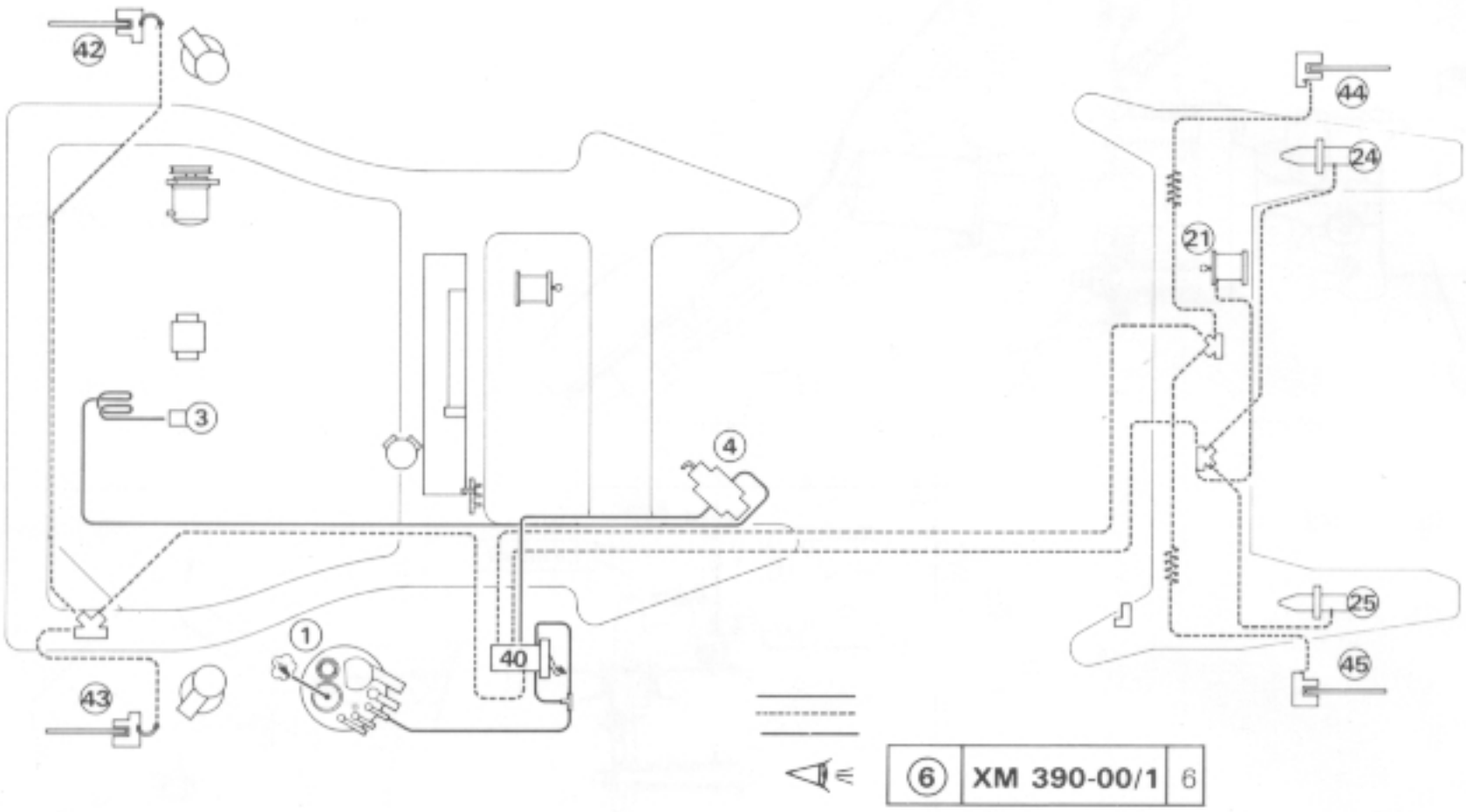


BX. 45-30

www.WorkshopManuals.co.uk

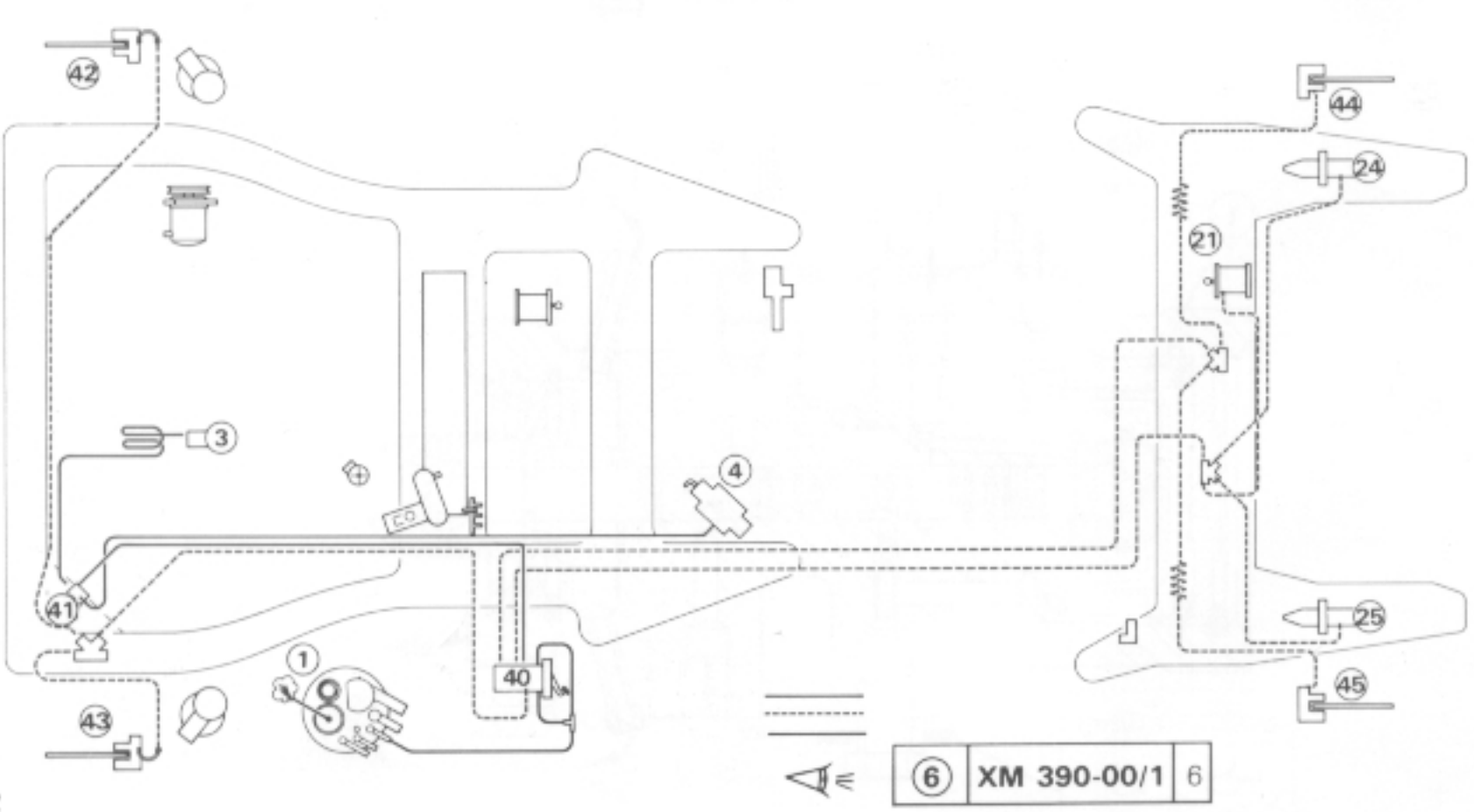


DIRASS



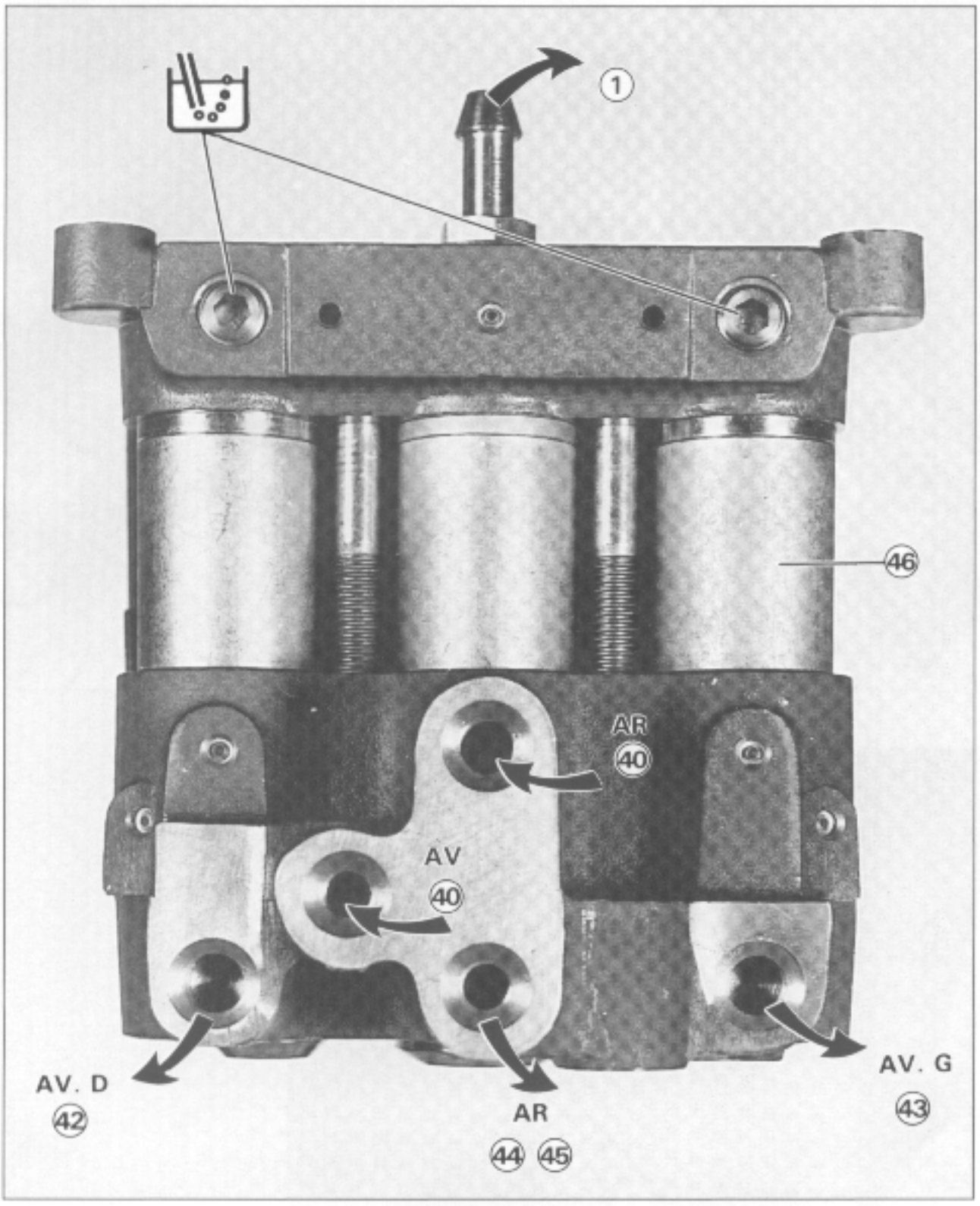
Y.39-20
Y.39-21

DIRAVI

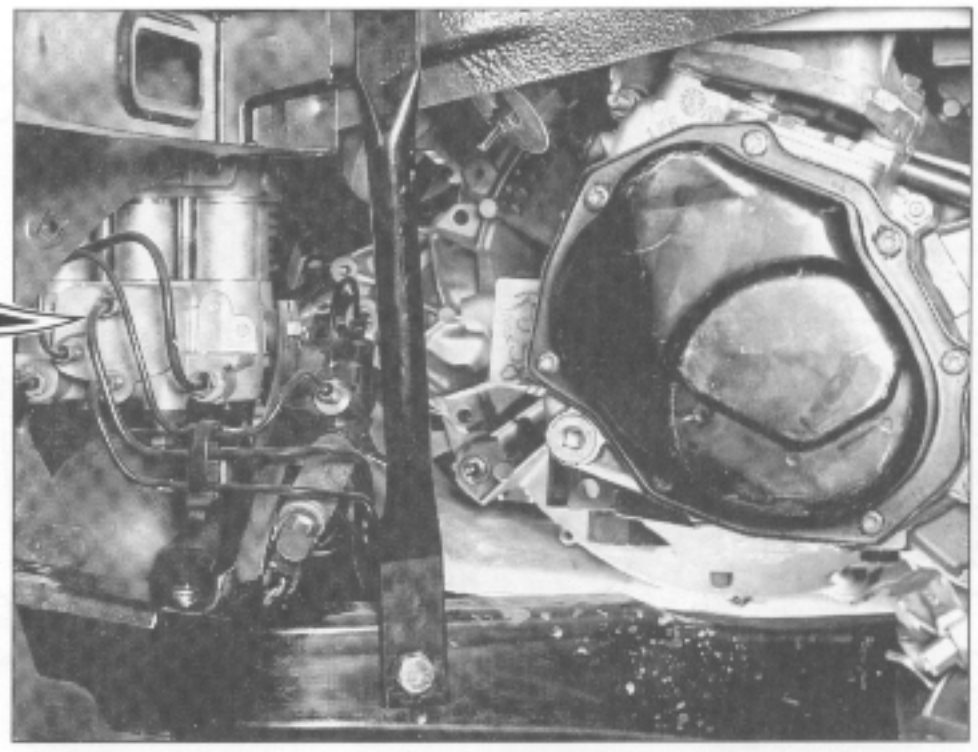


Y.39-22
Y.39-23

www.WorkshopManuals.co.uk

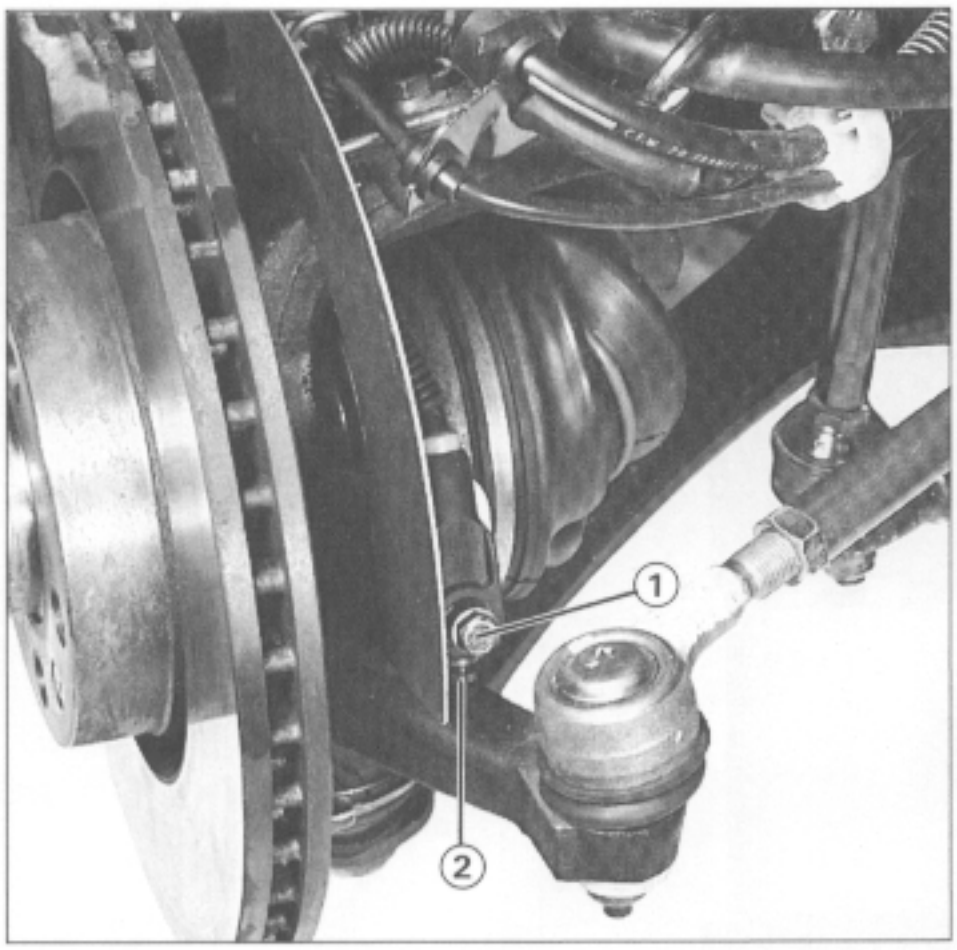


88-703

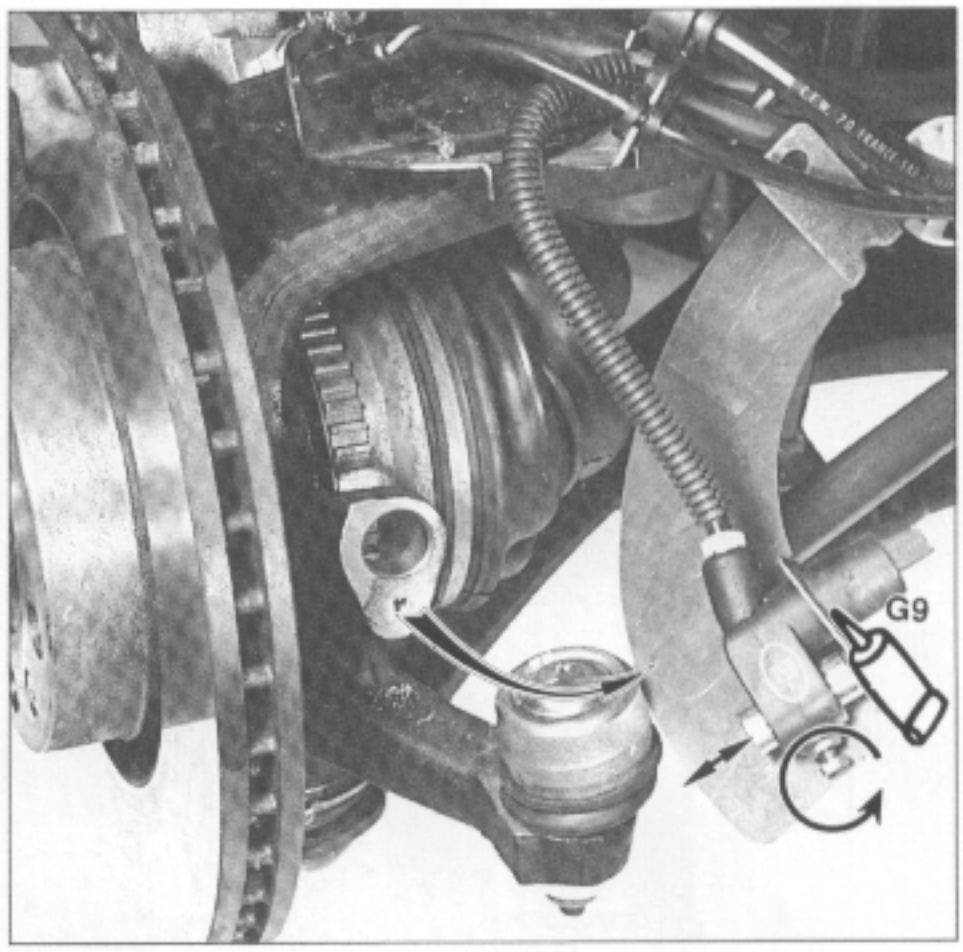


89-398

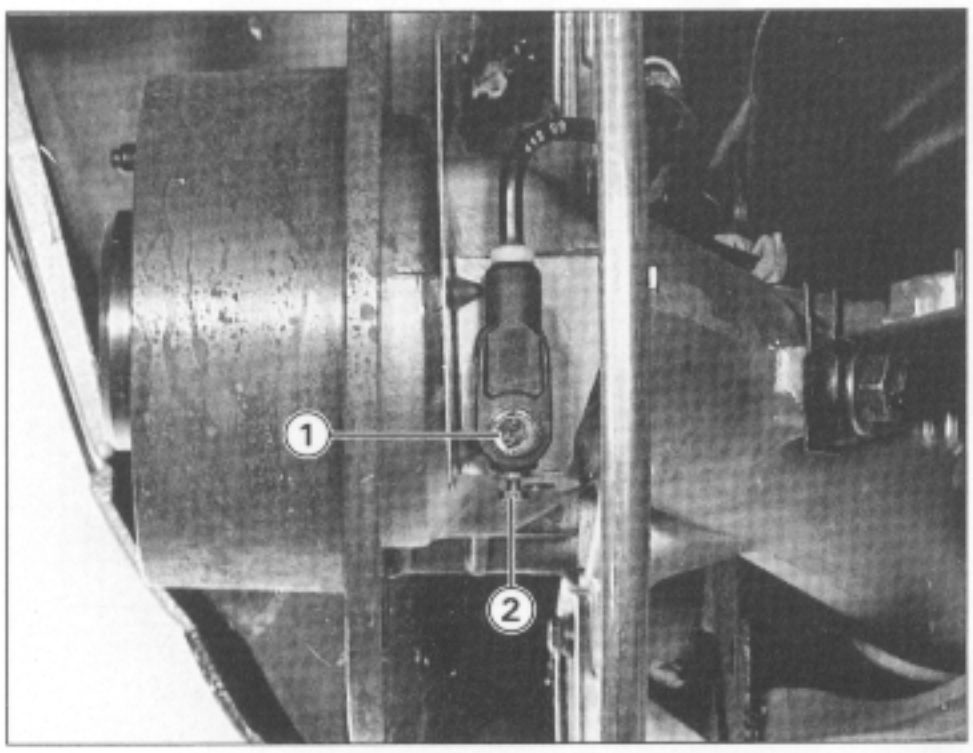
www.WorkshopManuals.co.uk



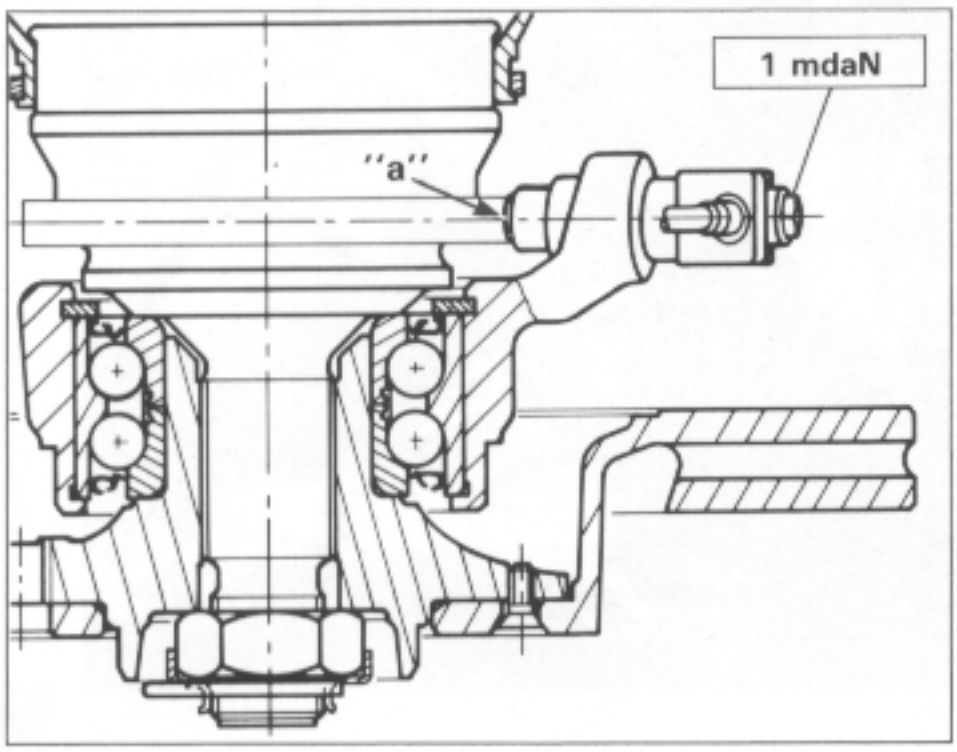
89-125 I



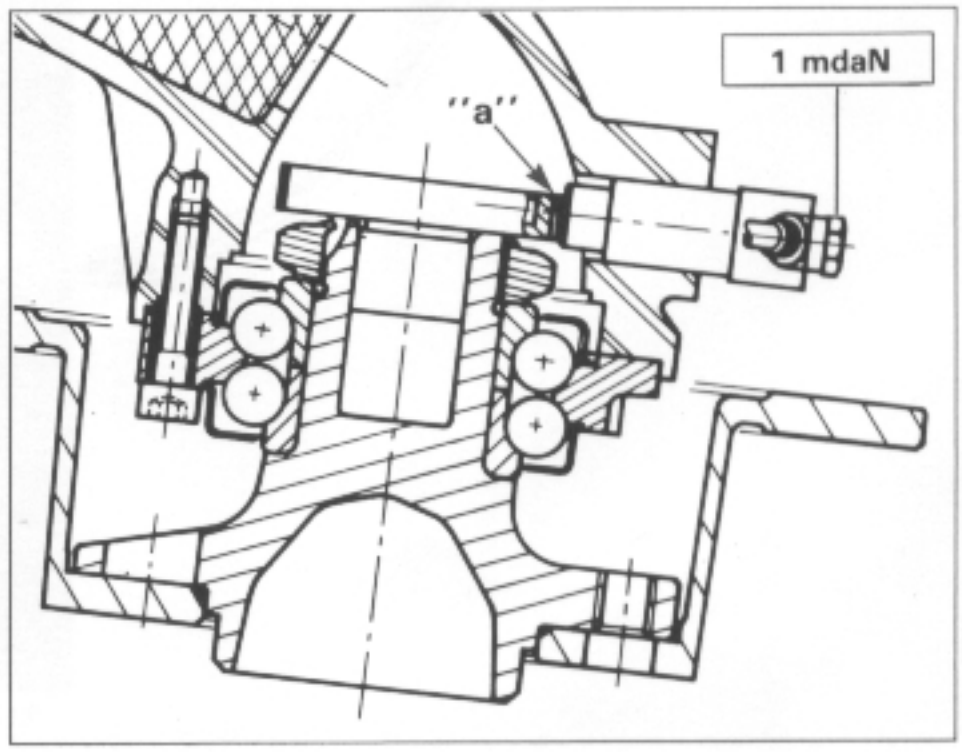
89-128 II



88-599 III



Y.45-2 IV



Y.45-3 V

www.WorkshopManuals.co.uk

SECONDARY BRAKE

The secondary brake operates on the front wheels.

It is controlled by the pedal **(6).**

The brake can be locked and unlocked with handle **(5)**.

Compensator **(4)** controls the two front calipers ; it is located in the exhaust tunnel.

The two front calipers are provided with pistons having a secondary brake travel automatic wear take up device.

Adjustment

The secondary brake travel lever must not be adjusted by the cables.
The adjustment of the clearances created by pad wear is ensured by the hydraulic pressure, thanks to a system incorporated into the caliper piston.

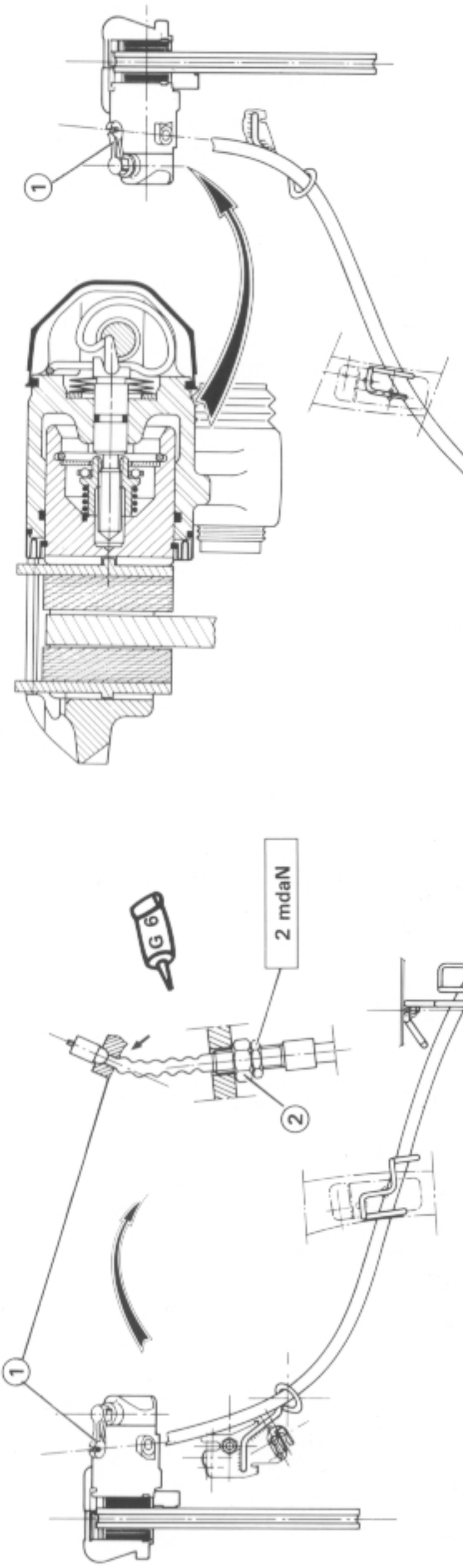
• *Automatic taking-up of free-play*

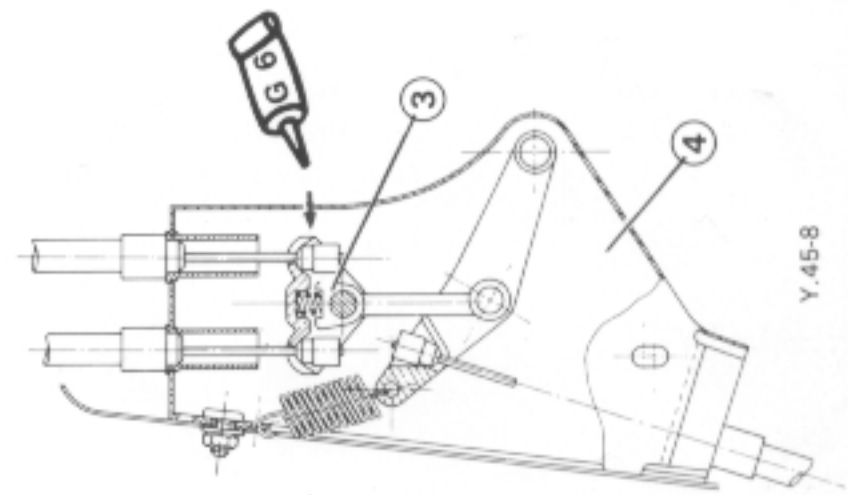
- Engine running.
- Safety brake lever at rest position
- Push the brake pedal right down ; the automatic wear adjustment is achieved by the pressure.
- When the pedal is released, the safety brake lever travel must be between 4 and 12 notches, depending on the effort applied.

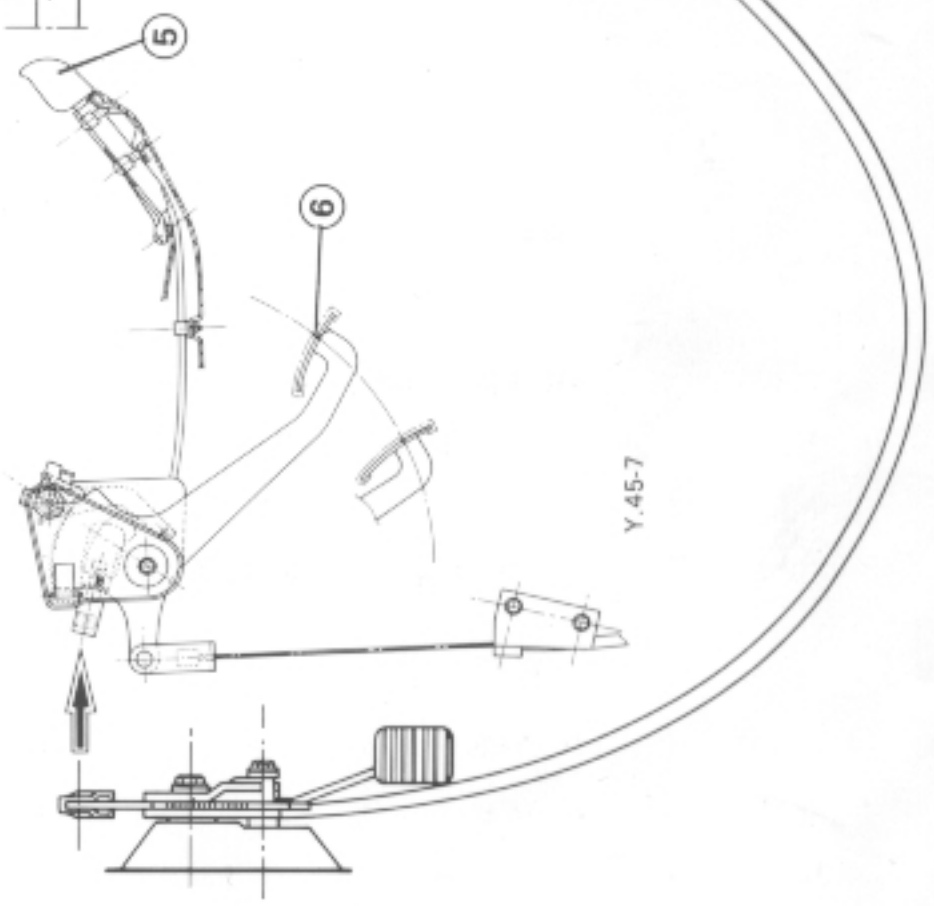
• *Adjusting the brake cables*

- Apply the main brake pedal, in order to bring the pads into contact with the discs ; release the pressure.
- Set the handle **(5)** to the locking position.
- Depress the pedal **(6)** down to the 4th notch of the toothed sector.
- Turn the nuts **(2)** until a balance of caliper **(3)** within 1.5 mm, is obtained.
- Unlock the handle **(5)** ; the pedal must resume its rest position.
- The levers **(1)** should not be operated by the cables, no matter which the steering-angle and the height of the vehicle are.
- Tighten the lock nuts to **2 mdaN**.
- Depress the pedal several times ; make sure that it is back to rest position.
- The pedal should be between the 6th and 12th notch of the toothed sector.

www.WorkshopManuals.co.uk







www.WorkshopManuals.co.uk

I - REMOVING AND REFITTING THE PADS

REMOVAL

Slacken off the front wheels.

Raise and support the front of the vehicle, wheels clear of the ground.

Remove the wheels.

Disconnect, Fig. I, the wear warning lamps **(1)**.

Uncouple, Fig. I, the safety brake cable **(2)** and release it from its housing **(3).**

Remove, Fig. II, the safety pin **(4)** and the locking spindle **(5)**.

Beware : do not lose clip **"a"**.

Open, Fig. III and IV, the caliper and withdraw the pads.

Dust remove and clean ; check the unit for leaks and make sure that the condition of the assembly is correct (lubrication etc.).

Push, Fig. V : the piston back in its housing using tool **9011-T**, the casting slot mark **(6)** facing the piston grooved notch. This mark should be directed towards guide pin **(7).**
While holding the ring in position, screw up the tool end at **(9)** with an open end spanner (19 mm).

At the end of the operation, mark **(6)** should be directed towards the guide pin **(7),** ➡ *(bleed screw side).*

To retain a correct brake-power distribution, the four pads must be replaced at the same time.

NOTE : before refitting, it is ESSENTIAL to take off the protective sheet of paper from the bi-material support of the pads covered with above paper, **Fig. IV.**

REFITTING

Engage, Fig. III, the pads ;
(each pad is provided with a lug ; it should be located on the piston side).

Reclose, Fig. II and III, the caliper, making sure that the pad lug engages correctly into the piston grooved notch at **"b"**.

Refit the locking pin **(5)** and safety clip **(4)**.
Beware : make sure that clip **"a"** is fitted.

Connect, Fig. I the wear warning lamps **(1)**.

Recouple the handbrake **(2)** cable.

Make sure that the brakes and the handbrake are working properly.

Refit the wheels and lower the vehicle to the ground.

Tighten the wheels fixing screws.

II - REMOVING AND REFITTING A BRAKE DISC

REMOVAL

Remove the brake pads.

Remove, Fig. IV and VI :
- the two screws **(10)**,
- the brake unit,
- the disc two maintaining screws **(11)**,
- the disc.

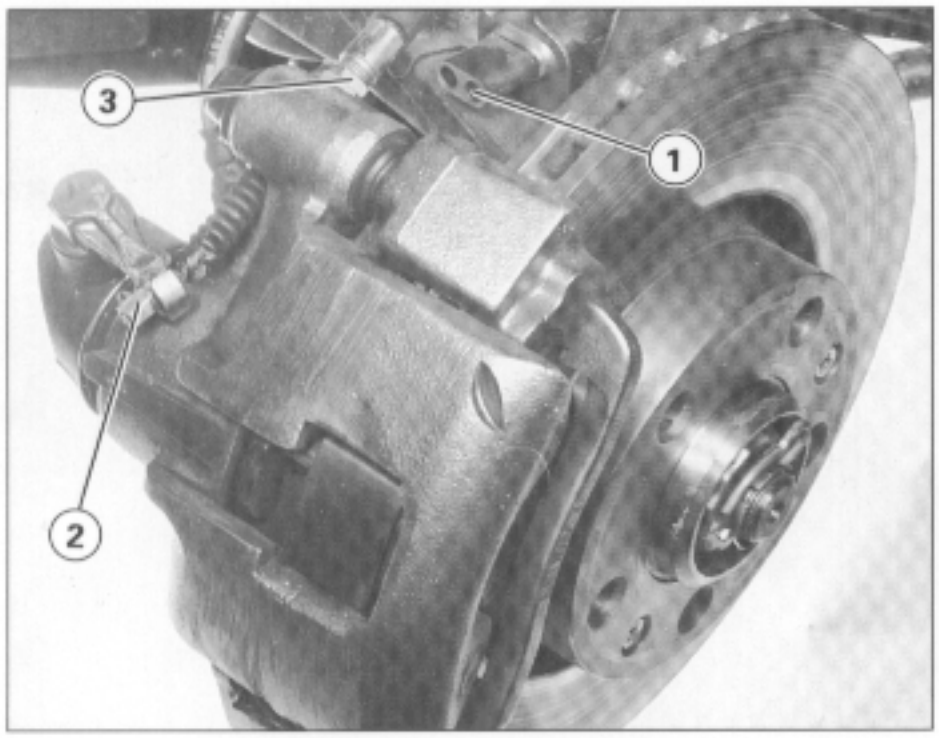
IMPORTANT : Fig. IV
Never remove the guide pin **(7).**

REFITTING

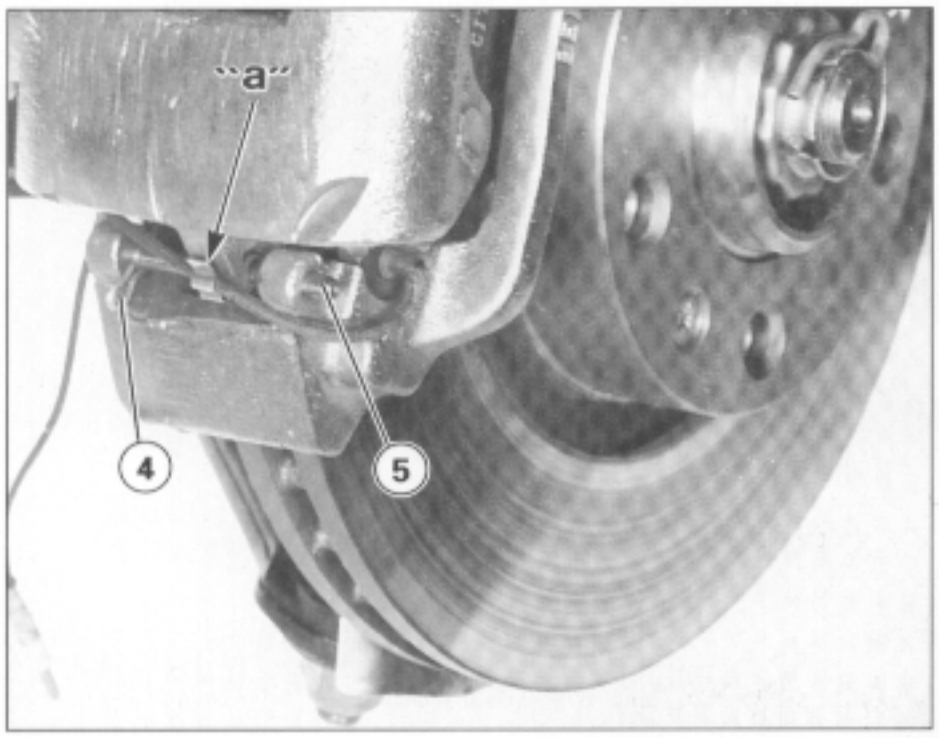
Refit :
- the disc
- the two screws **(11)**
- the caliper and the two screws **(10).**

Tighten to : 10.5 mdaN

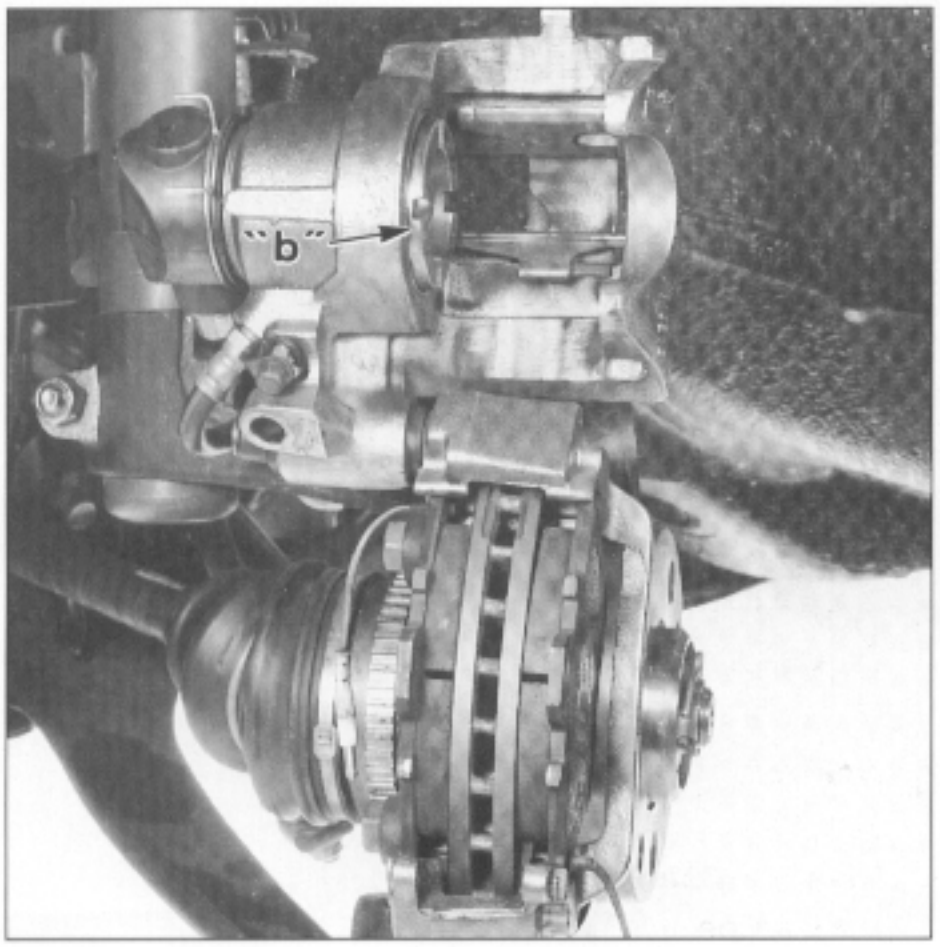
www.WorkshopManuals.co.uk



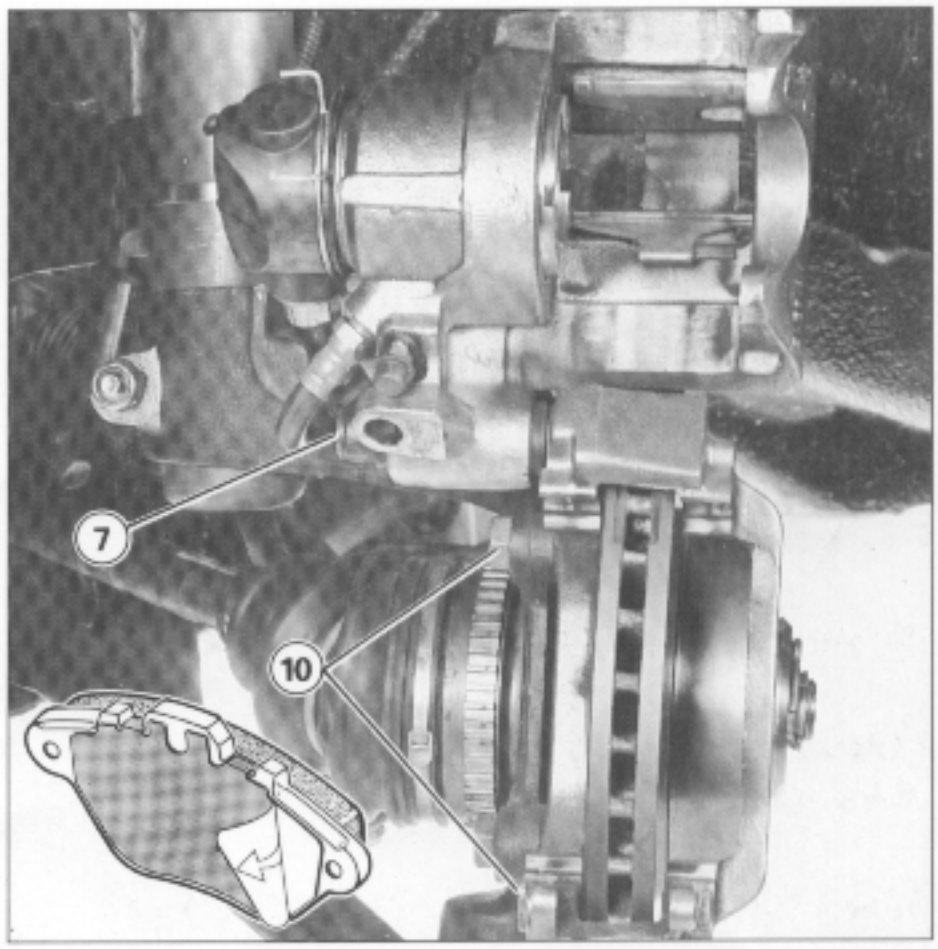
89-607 I



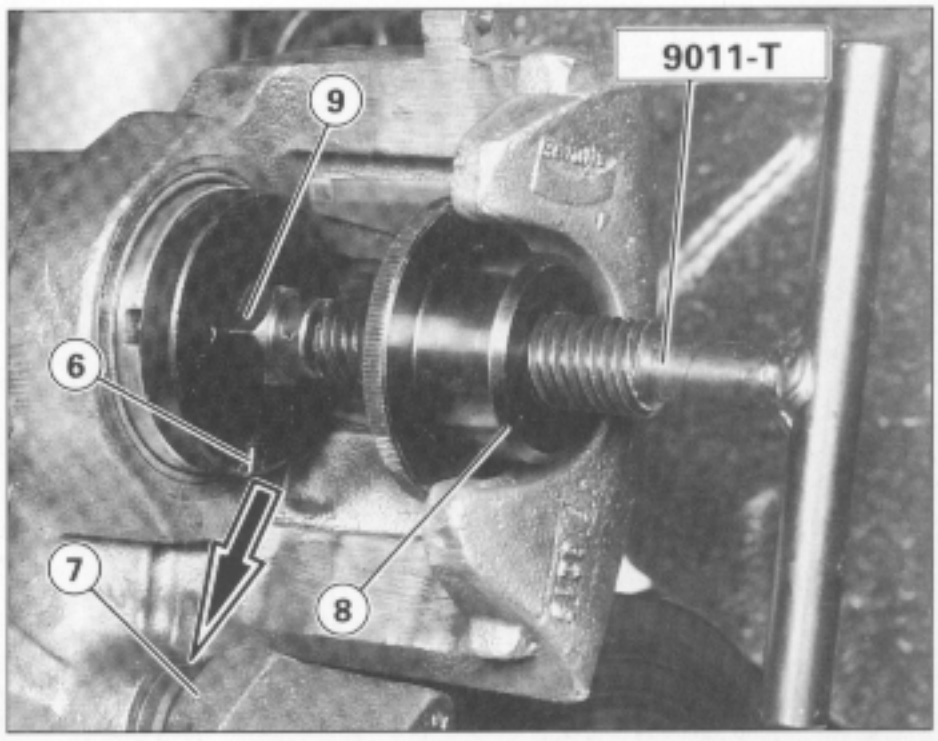
89-606 II



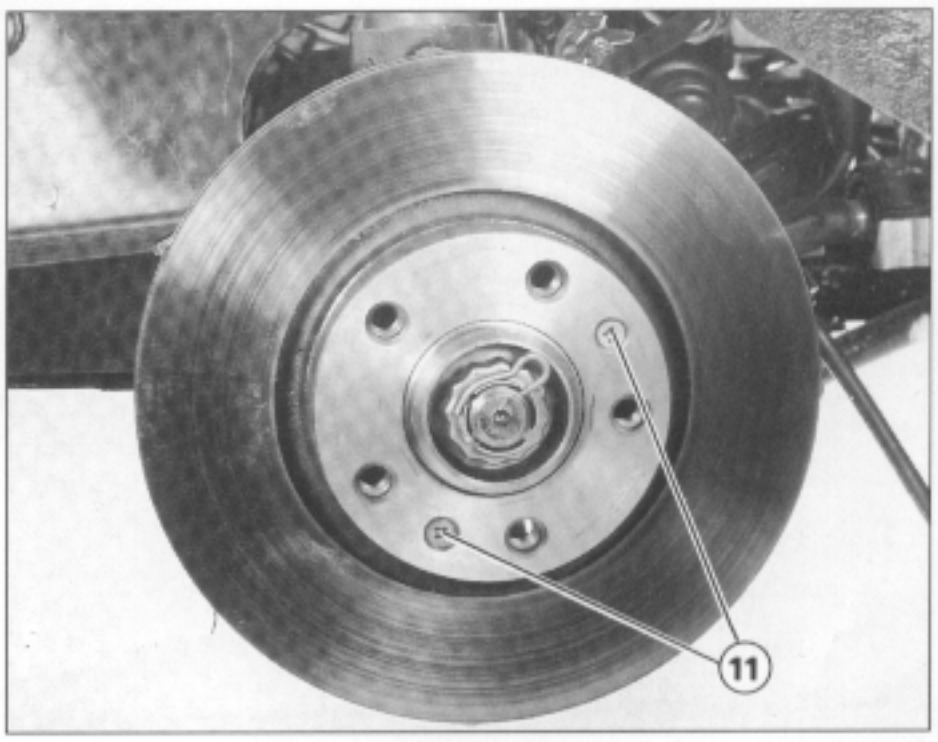
89-604 III



89-603 IV



89-605 V



89-609 VI

www.WorkshopManuals.co.uk

REPLACING THE REAR BRAKE PADS Fig. I, II, III.

REMOVAL

Remove the wheels.

Slacken the nut **(1)** and remove the sheet metal **(2).**

Slightly push on each pad at **"a"** to enable them to be withdrawn.

Remove the nut **(1)**, spindle **(5)**, the spring **(6)** and the pads.

Pour a few drops of LHM on the pistons after cleaning them with petrol.

Refit the former pads and spindle **(5)** then press at **"a"** to push the pistons to the bottom of their housing.

Remove the pads, spindle **(5)** and clean the housing of the pads.

To preserve an adequate brake power distribution, always replace the four pads at the same time.

REFITTING

Refit the pad, wheel side, and insert spindle **(5)**.

Place the second pad and the spring **(6)** ; push in spindle **(5)** and refit the nut **(1)**.

Respect the fitting direction of the spring (6) Fig. II

Refit the sheet metal **(2)** ; tighten the nut **(1).**

REMOVING AND REFITTING A REAR BRAKE DISC, Fig. I, II, III, IV and V.

Slacken the pressure regulator relief screw and set the height control to the "LOW" position.

REMOVAL

Remove the pads.
(See former chapter)

Refit spindle (5) and tighten nut (1) in order to keep the two half calipers gripped.

Remove
- the caliper screws **(7),**
- the disc screw **(3)**.

Remove the brake disc, slightly disengaging the caliper.
Maintain the caliper with a screw **(7)**.

REFITTING

Reverse above procedure.

Tighten screws (7) to 4.7 mdaN
(Head and threads oiled).

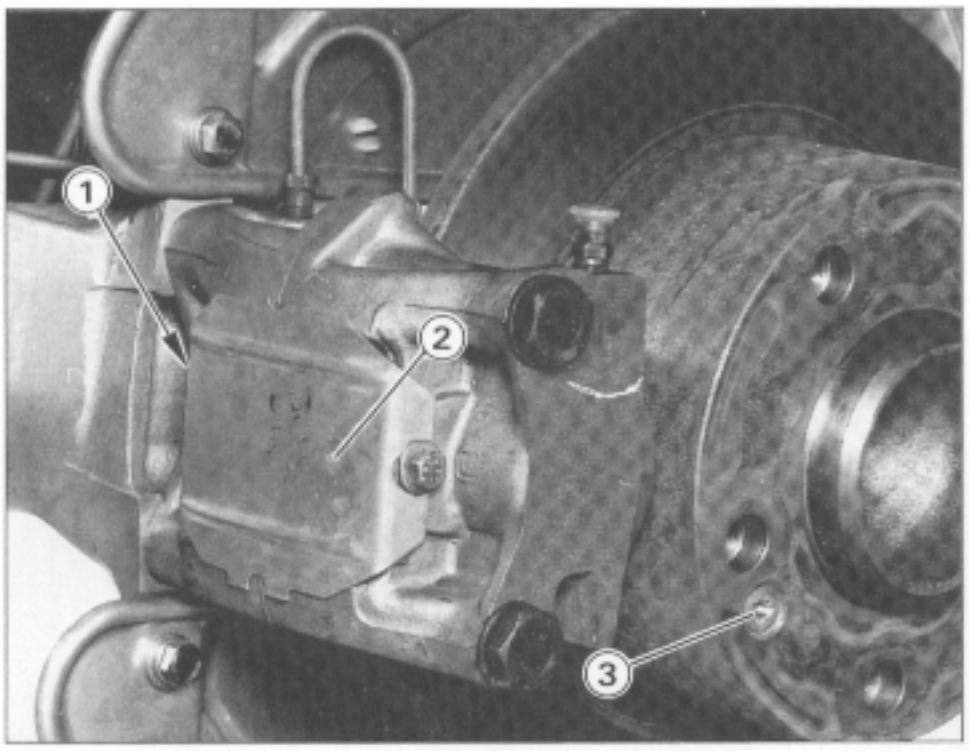
REMOVING AND REFITTING A REAR BRAKE CALIPER, Fig. II :

- Same as above procedure, without removing the disc.

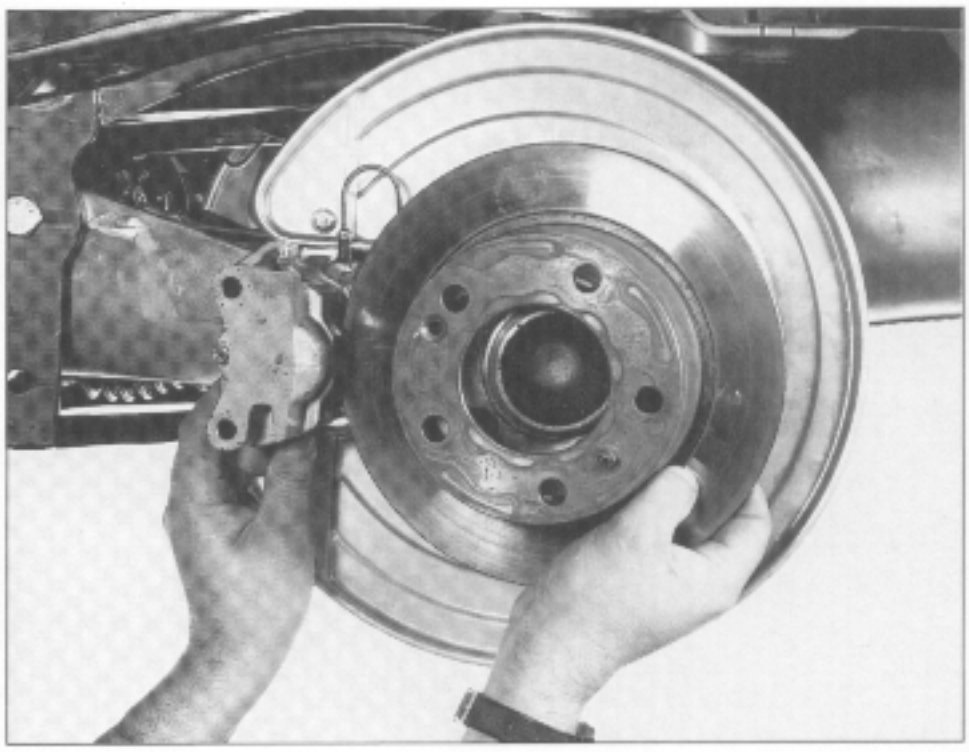
Uncouple the feed pipe **(4).**

Side to be removed :
Bleed the braking system,
(See (11) 453.0/1).

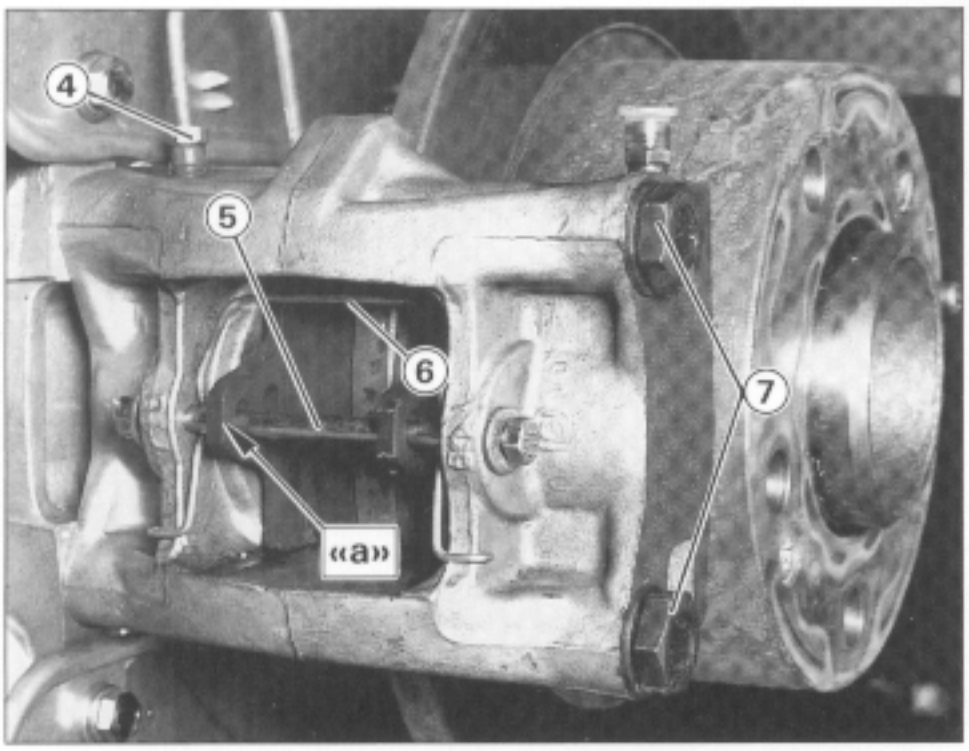
www.WorkshopManuals.co.uk



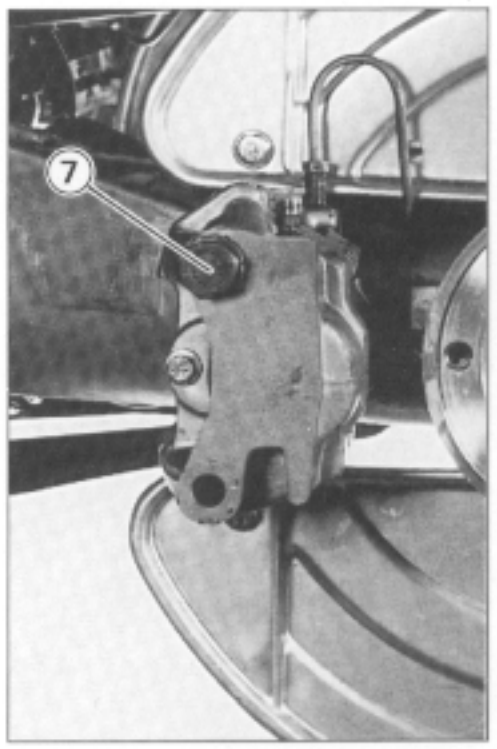
88-596 I



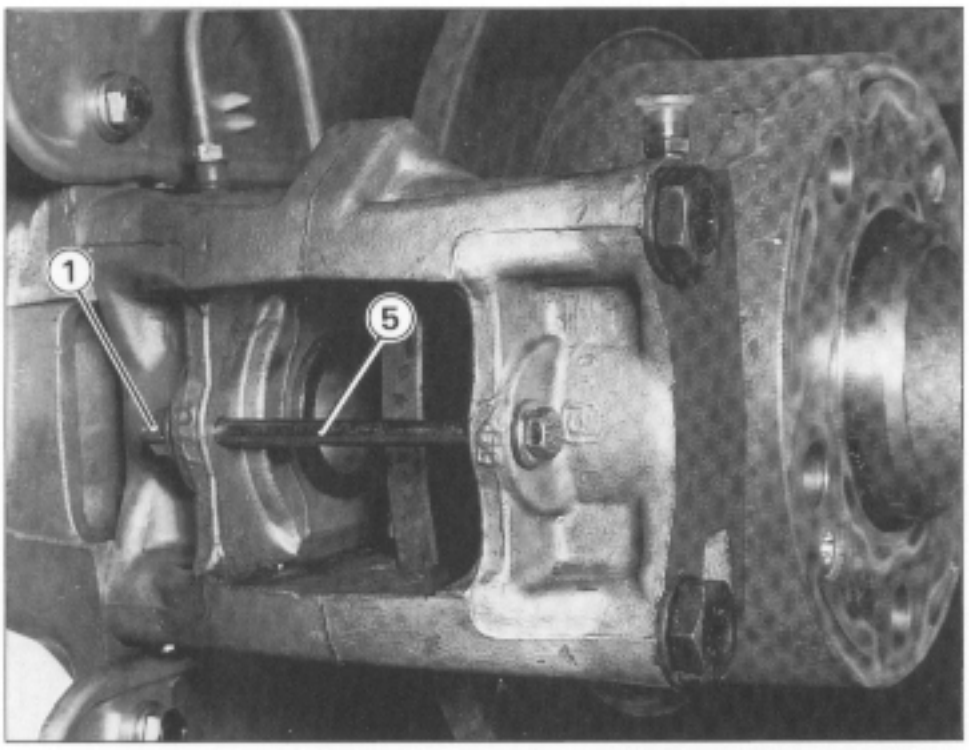
88-607 IV



88-593 II



88-606 V



88-551 III

www.WorkshopManuals.co.uk

XM ALL TYPES :
Bleed the brakes with the suspension of the vehicle in the HIGH position, having first moved the suspension as follows :
LOW ⟶ HIGH ⟶ LOW ⟶ HIGH.

Preparation :

Jack up the vehicle and support it on stands with the wheels free :
Remove the road wheels.

ABS FITTED XM :
Bleeding the hydraulic valve block
- Remove mud shields **(1)** and **(2), Fig. I,** in order to gain access to the hydraulic valve block, **Fig. II**.
- Run the engine,
- Loosen the two bleed screws **(3), Fig. II and III**, using a 5 mm, 6 face spanner or a 11 mm open-end spanner.
- **Slightly** depress the brake pedal : the fluid will flow through the valve block return circuit. Keep the pedal depressed for a few seconds, then release it.
- Tighten the two bleed screws to **0.9 mdaN**.

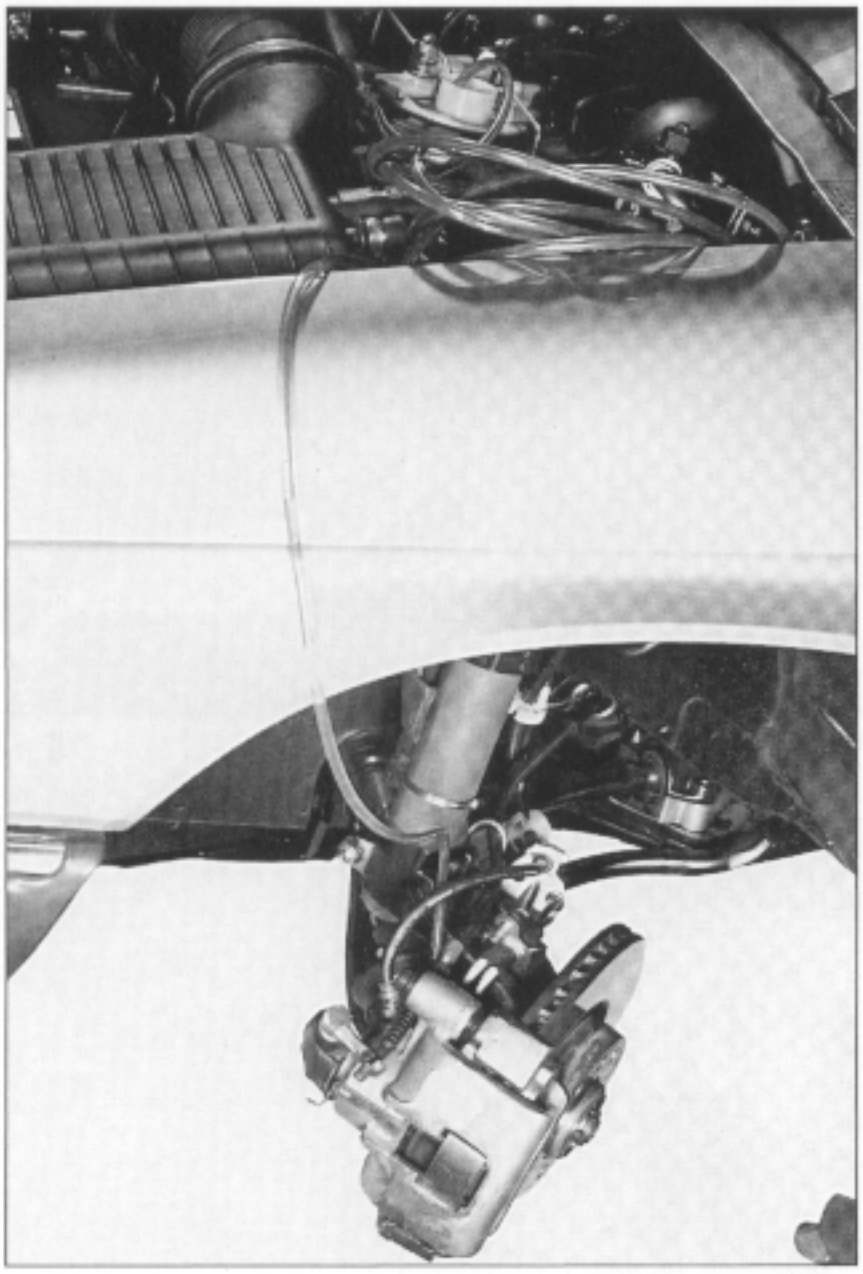
XM ALL TYPES :
Bleeding the brakes, Fig. IV and V

Proceed in the following order : RH rear
LH rear
RH front
LH front

- Engine running.
- Fit a transparent tube to the bleed screw and connect it up to a receptacle.
- **Slightly** depress the brake pedal or load the pedal with a 5 to 6 kg weight.
- Slacken the bleed screw and let the fluid escape till free of air bubbles.
- Retighten the screw.

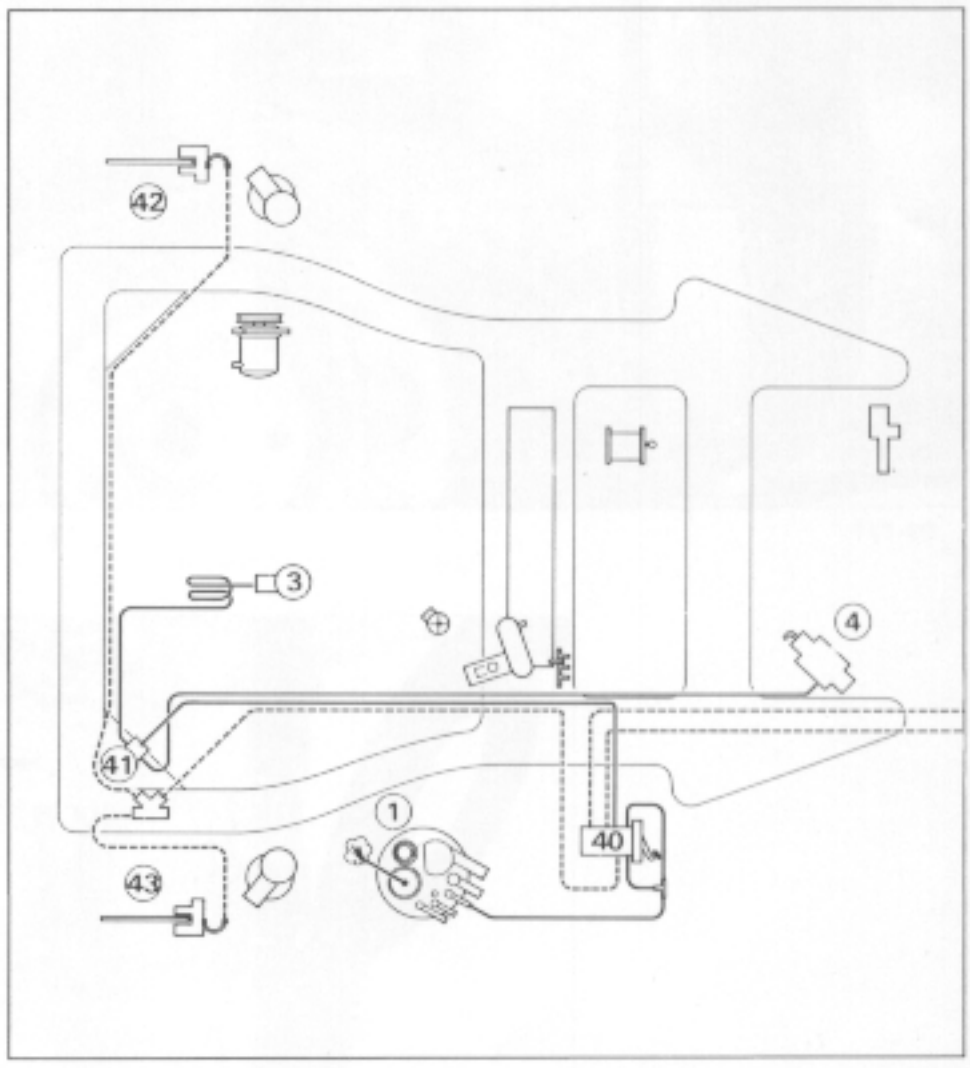
Refit the mud-shields.
Fit the road wheels.
Top up the LHM fluid reservoir.

www.WorkshopManuals.co.uk

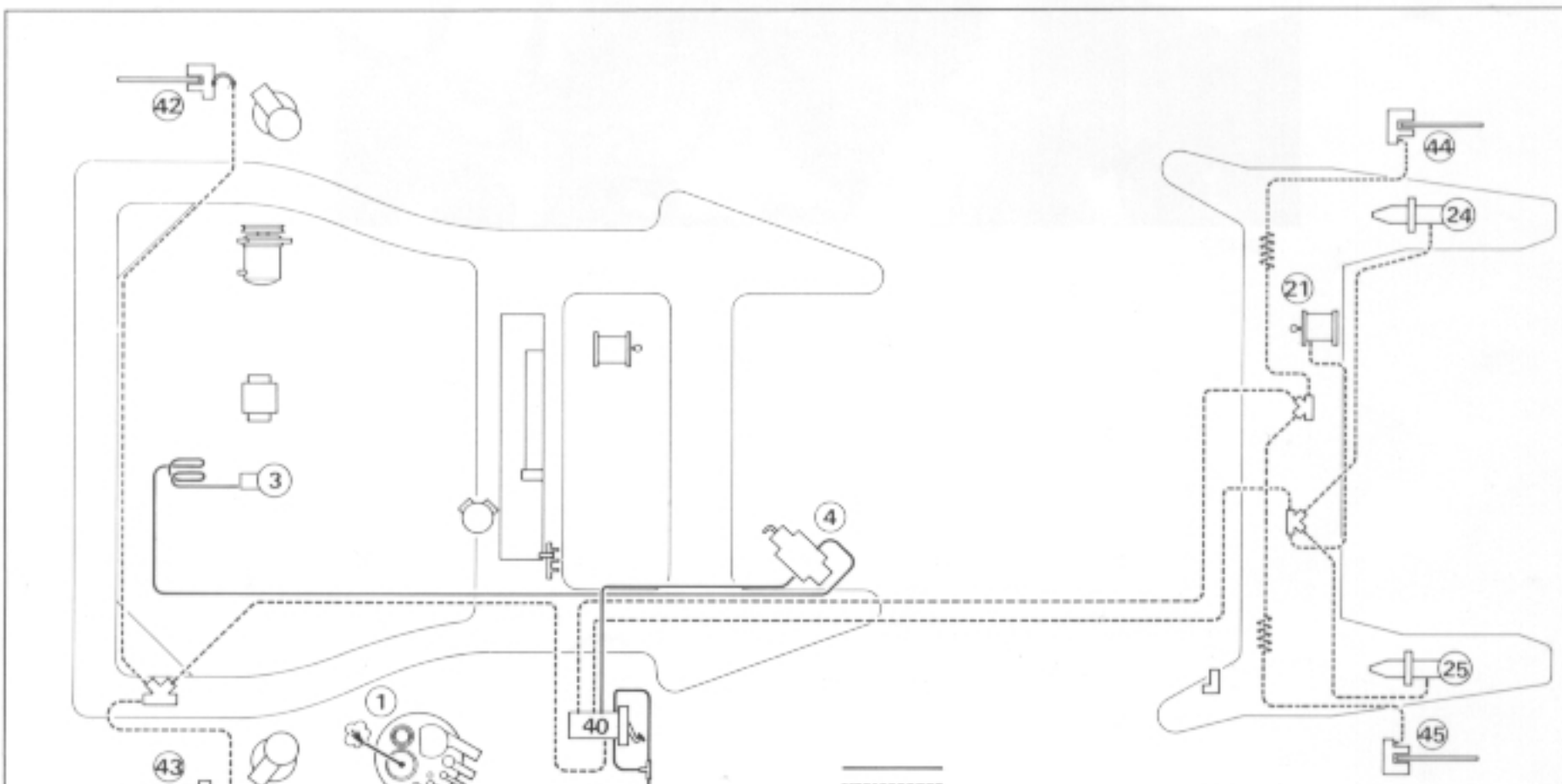


88-902

I

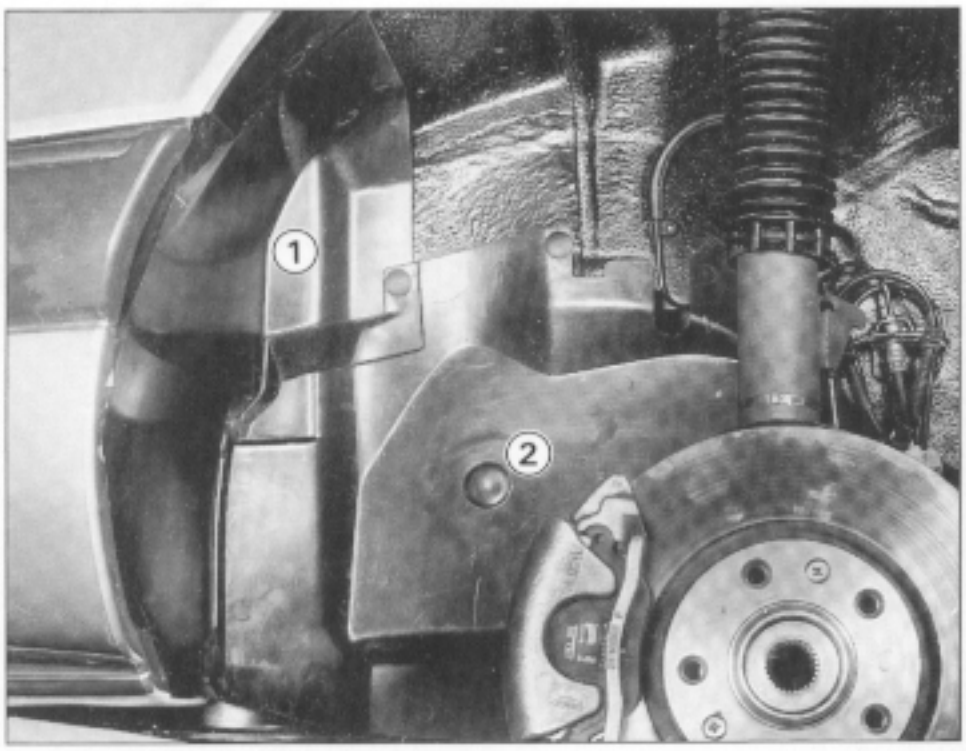


II

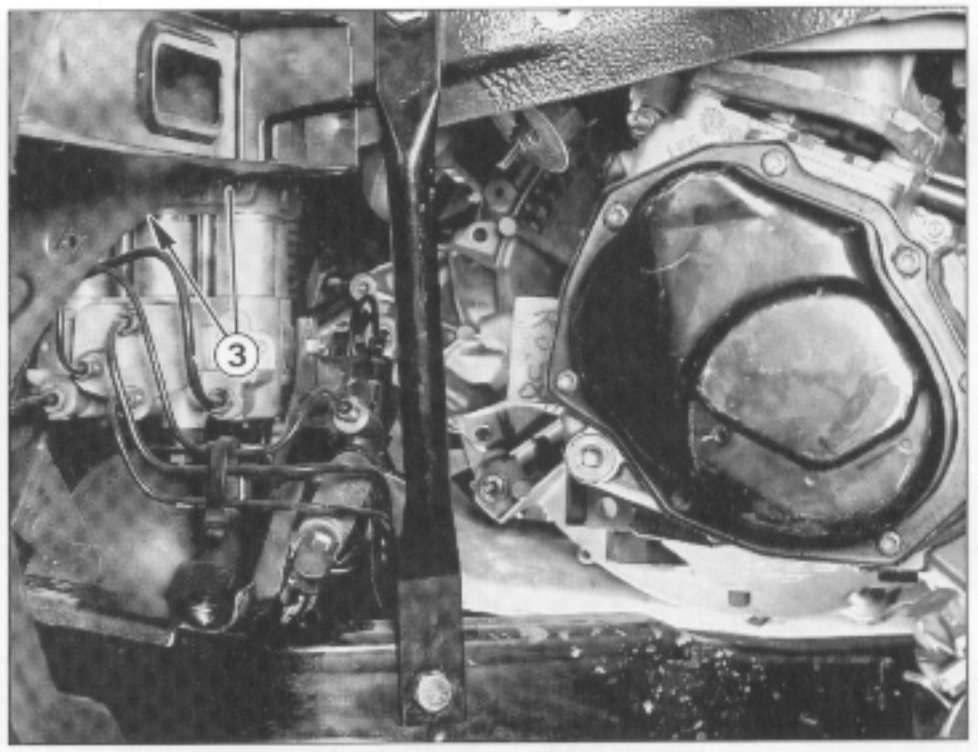


III

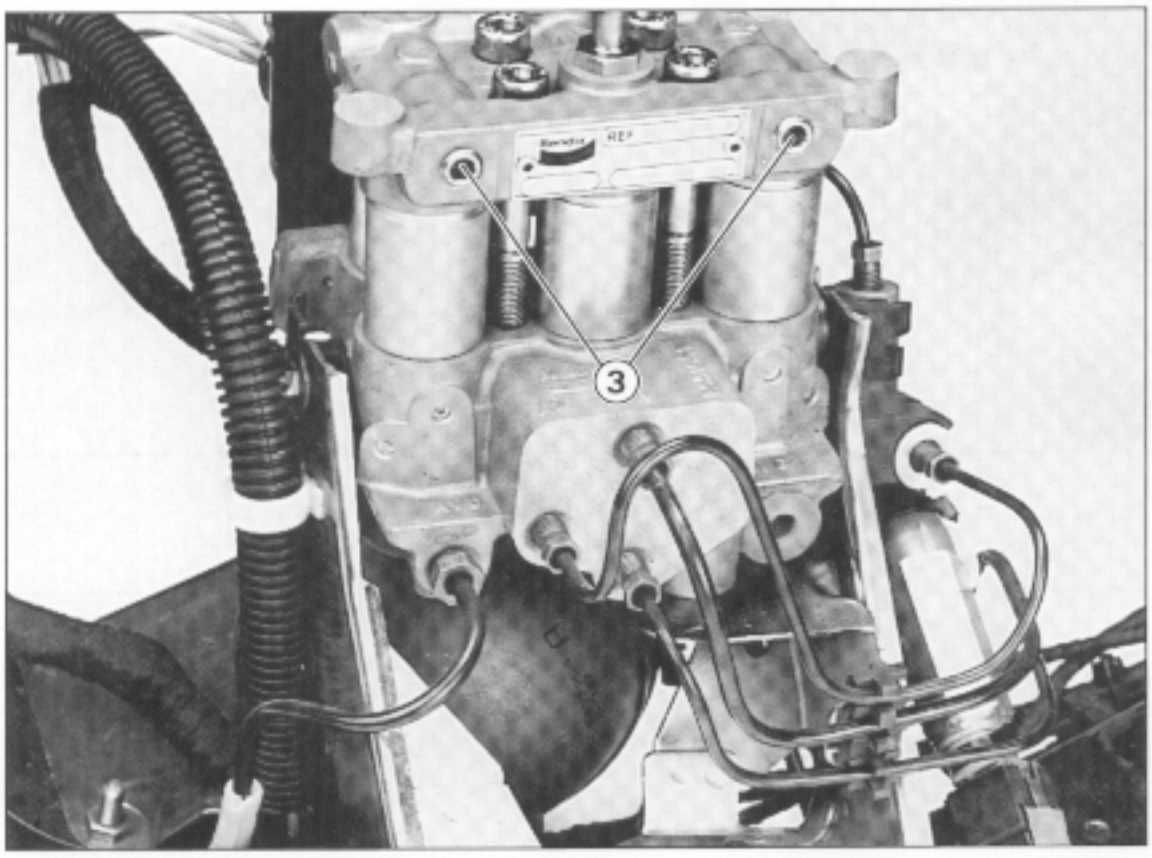
www.WorkshopManuals.co.uk



89-177 I



89-398 II



89-432 II

www.WorkshopManuals.co.uk

BLEEDING THE ABS HYDRAULIC CONTROL UNIT

Bleeding is necessary if the hydraulic control unit or the unit feed system have been serviced.

Preparation

- Support the L.H. front part of the vehicle on stands.
- Remove the wheel.
- Remove the mud-shields **(1)** and **(2)**, **Fig. I**, to gain access to the hydraulic control unit, **Fig. II**.

Bleeding

- Engine running.
- Slacken the two bleed screws **(3), Fig. II and III** (5 mm, 6 face spanner).
- Apply the brake pedal, the fluid runs through the return circuit ; hold pedal for a few seconds, then release it.
- Moderately tighten the two bleed screws : to **0.9 mdaN**.

Refit the mud-shields and road wheel.

www.WorkshopManuals.co.uk

TOOLS TO BE USED

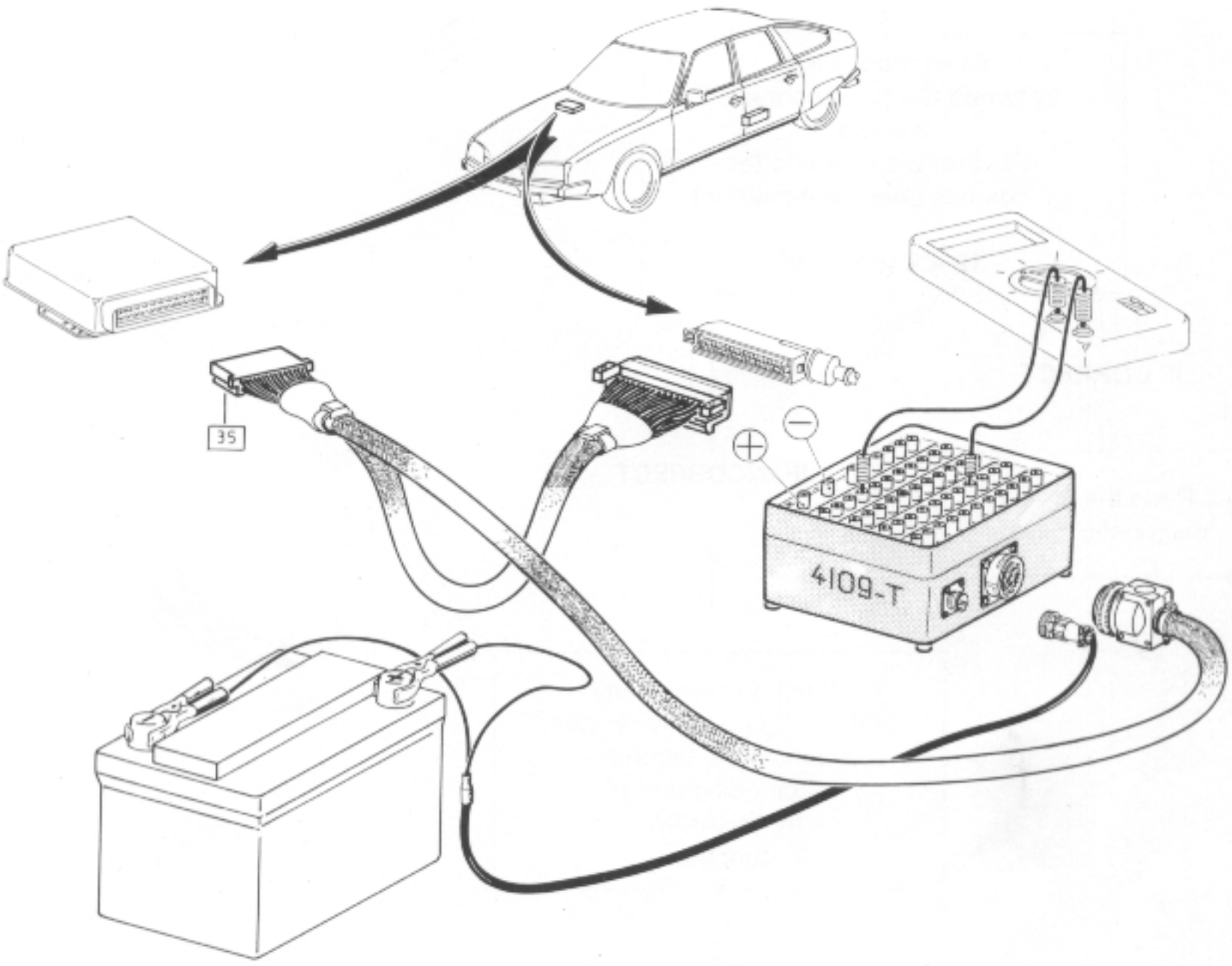
4109-T : Connecting box

EQP 000.080A or 081A : Multi-meter

or

EQP 000.026 : Station 26A

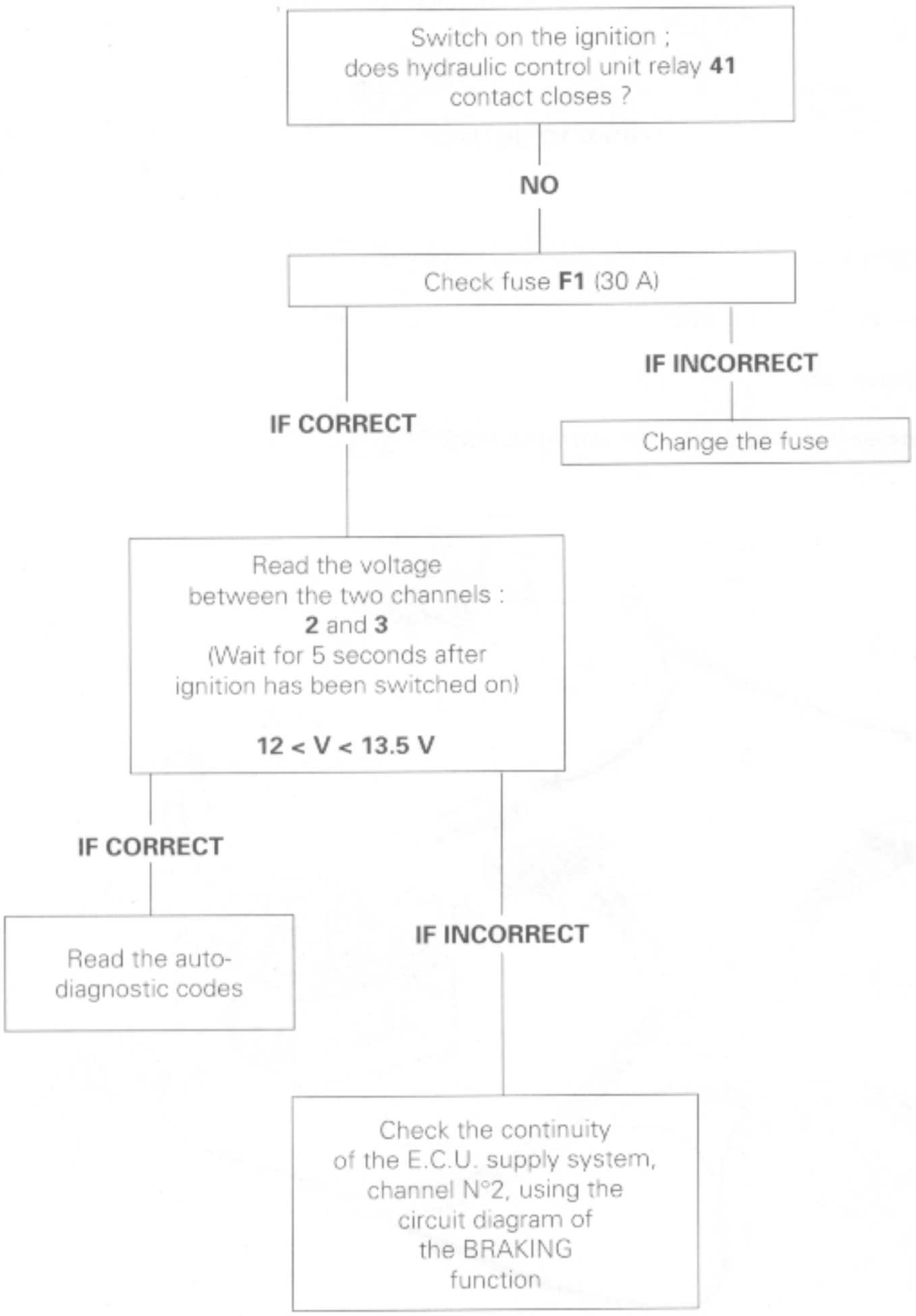
Analogue voltmeter (to measure the alternating current)



ANTI-LOCKING BRAKE SYSTEM :
CHECKS AND FAULT FINDING

www.WorkshopManuals.co.uk

CHECKING THE ELECTRICAL SUPPLY TO THE E.C.U



www.WorkshopManuals.co.uk

WARNING LAMP CHECKS

The lamp comes on with ignition on

YES

The lamp will extinguish after 3 seconds

YES

Right operation

NO

Does the lamp blink ?

YES

The current can circulate in the diode in both directions ; change the hydraulic control unit.

NO

Check the electrical supply to the computer

NO

Check fuse **F23** (15A)

IF INCORRECT

Change the fuse

IF CORRECT

Place a shunt accross the channels **1** and **5** of the five-way connector, of the hydraulic control unit. Does the lamp come on ?

YES

Change the hydraulic control unit.

NO

Connect the five-way connector channel **1** to earth. Does the lamp come on ?

YES

Check the continuity between the hydraulic control unit, channel **5**, earth and the vehicle earth

NO

Check the printed circuit supply.
- + : connector 15R, channel 9
- Earth : car earth, channel 3

IF CORRECT

Is the warning lamp in good order ?

IF NOT

Change the lamp

www.WorkshopManuals.co.uk

Fault code	Checked components		Checking equipment	Connectors on electronic control unit (ECU)	Connecting box channels
	Description	Terminals			
13	ABS hydraulic control block **41** (solenoid)	7N1 – 7N2 7N2 – 7N3 7N3 – 7N4 7N4 – 7N5 and 5N5	Ohm-meter	Connected leads side	24 and – 25 and – 22 and – 4 and – 21 and –
15	ABS hydraulic control block **41** (Coil side relay)	5N2 and 5N3	Ohm-meter	Connected leads side	8 and 19
21	ABS hydraulic control block **41** (Front body side relay)	5N2 and 5N3	Ohm-meter	Connected leads side	8 and 19

www.WorkshopManuals.co.uk

Procedures	Readings	Changes in the operation
A) On the connecting box Read the resistance : **2 Ω < R < 4 Ω** 1) R correct : (intermittent defect) check AB harness 2) R incorrect : see B **B)** Directly on hydraulic control unit connectors Read the resistance : **2 Ω < R < 4 Ω** 1) R correct : check AB harness 2) R incorrect : change the hydraulic control unit		the anti-locking brake system is cancelled
A) On the connecting box Read the resistance : **50 Ω < R < 60 Ω** 1) R correct : (intermittent defect) check AB harness 2) R incorrect : see B **B)** Directly on hydraulic control unit 5N connector Read the resistance : **50 Ω < R < 60 Ω** 1) R correct : check AB harness 2) R incorrect : change the hydraulic control unit		the anti-locking brake system is cancelled
A) On the connecting box Read the resistance : $\infty = R \neq \infty$ 1) $R \neq \infty$: check the AB harness 2) $R = \infty$: see B **B)** Directly on hydraulic control unit 5N connector Read the resistance : $\infty = R \neq \infty$ 1) $R \neq \infty$: check AB harness 2) $R \neq \infty$: change the hydraulic control unit		the anti-locking brake system is cancelled

www.WorkshopManuals.co.uk

Fault code	Checked components		Checking equipment	Connectors on electronic control unit	Connecting box channels
	Description	Terminals			
22	Anti-locking hydraulic control block **41** (Ignition side relay)		Without	Connected	8 and 19
24	LH rear wheel sensor **157**		Ohm-meter	Connected	15 and 32
31	RH rear wheel sensor **156**				16 and 33
25	RH front wheel sensor **158**		Ohm-meter	Connected	17 and 34
32	LH front wheel sensor **155**				18 and 35

www.WorkshopManuals.co.uk

Procedures Readings	Changes in the operation
– On the connecting box : - Connect terminal **8** to terminal – - Connect terminal **19** to terminal + – Through connector 2N channel **1** (harness AB), connect the hydraulic control unit channel **5N4** to the vehicle earth. – Check : when turning on the ignition, the warning lamp **(40)** must come on.	The anti-locking system is out of operation
Ignition switch off : **1000 Ω < R < 1400 Ω** (supplier VDO) **2200 Ω < R < 3200 Ω** (supplier SIEMENS) 1) R correct : (intermittent defect) – check the A.B. harness 2) R incorrect : – check the sensor, only, resistance – check the A.B. harness	The system operates. The opposed wheel takes the control over
	Operation of the system on the other wheels

www.WorkshopManuals.co.uk

Fault code	Checked components		Checking equipment	Connectors on electronic control unit	Connecting box channels
	Description	Terminals			
33	LH rear wheel sensor signal **157**		Analogue voltmeter	Connected	15 and 32
35	RH rear wheel sensor signal				17 and 34
34	RH front wheel sensor signal **156**		Analogue voltmeter	Connected	16 and 33
41	LH front wheel sensor signal				18 and 34
42	ABS hydraulic control block **41** (RH front inlet solenoid)	7N2 and 5N5	Ohm-meter	Connected, harness side	5 and –
44	ABS hydraulic control block **41** (LH front inlet electrovalve)	7N3 and 5N5			22 and –

www.WorkshopManuals.co.uk

Procedures	Readings	Changes in the operation
- Raise the vehicle and rotate the wheel by 1 tps (turn per second).	**50 mV < V < 2000 mV**	The system keeps operating. The opposed wheel takes the control over.
1) V correct : (intermittent defect) - check harness AB.		
2) V incorrect : - check the sensor fitting - make sure that the toothed wheel is in good order (rotor).		The system continues to operate on the other wheels.
A) With the connecting box :	Measure the resistance : **2 Ω < R < 4 Ω**	
1) R correct : (intermittent defect) - check harness AB.		
2) R incorrect : see B.		The system continues to operate on the other wheels.
B) Directly on the hydraulic control unit connectors	Measure the resistance : **2 Ω < R < 4 Ω.**	
1) R correct : - check harness AB.		
2) R incorrect : - change the hydraulic control unit.		

www.WorkshopManuals.co.uk

Procedures	Readings	Changes in the operation
A) Using the connecting box : Read the resistance : **2 Ω < R < 4 Ω** 1) R correct : (intermittent defect) - check AB harness. 2) R incorrect : see B.		Rising pressure no longer slowed down. (fast build up of pressure)
B) Directly on the hydraulic control unit connectors : Read the resistance : **2 Ω < R < 4 Ω** 1) R correct : - check AB harness 2) R incorrect : - change the hydraulic control unit.		The anti-locking system does not operate.

www.WorkshopManuals.co.uk

JULY 1996

ABONNEMENT GME

REF. 12 No XM 500-0/3

FAULT FINDING

- BRAKES
  - Fault finding and checks on the TEVES ABS system

MAN 158932

GB

2

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

CONTENTS

TOOLS

PRESENTATION : DIAGNOSTIC TOOLS 1

1 – ELIT test unit : 4125–T 1
2 – Test connector box : 4109–T –
3 – 26 A diagnostic station –

ABS

FAULT FINDING : TEVES / ITT ANTI–LOCK BRAKE SYSTEM (ABS) 2

1 – Diagnostic tools 2
2 – Fault finding chart –
3 – Electrical checks 8

www.WorkshopManuals.co.uk

PRESENTATION : DIAGNOSTIC TOOLS

1 – ELIT TEST UNIT : 4125–T

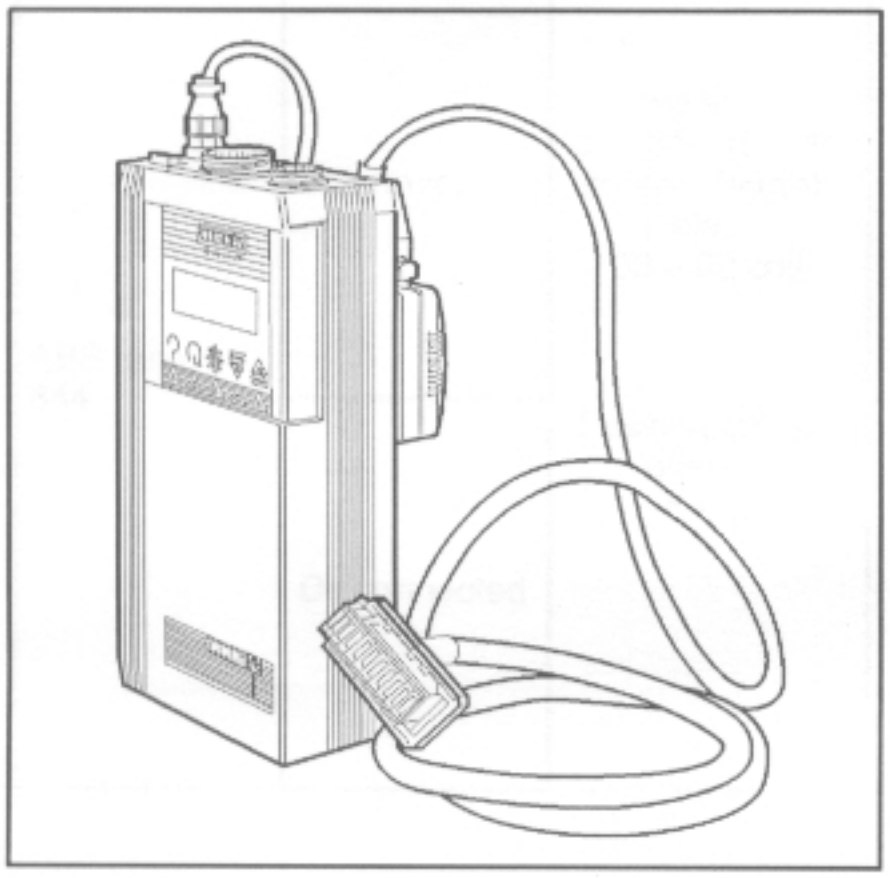


Fig : B3BP039C

3 – 26 A DIAGNOSTIC STATION

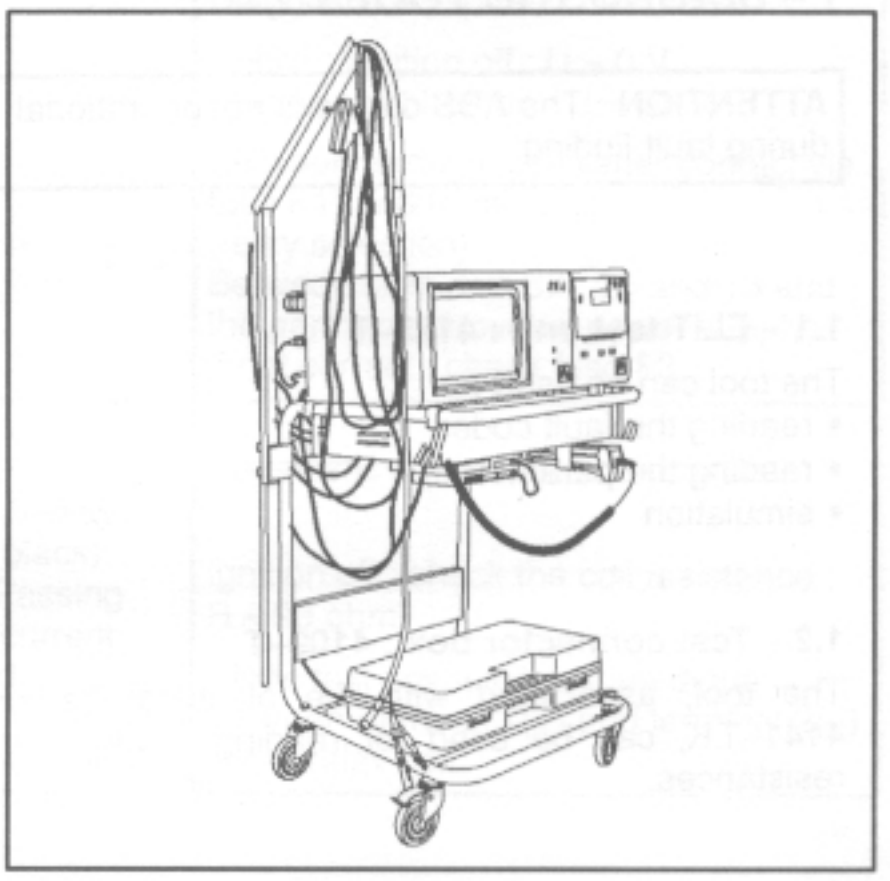


Fig : B3BP031C

2 – TEST CONNECTOR BOX : 4109–T

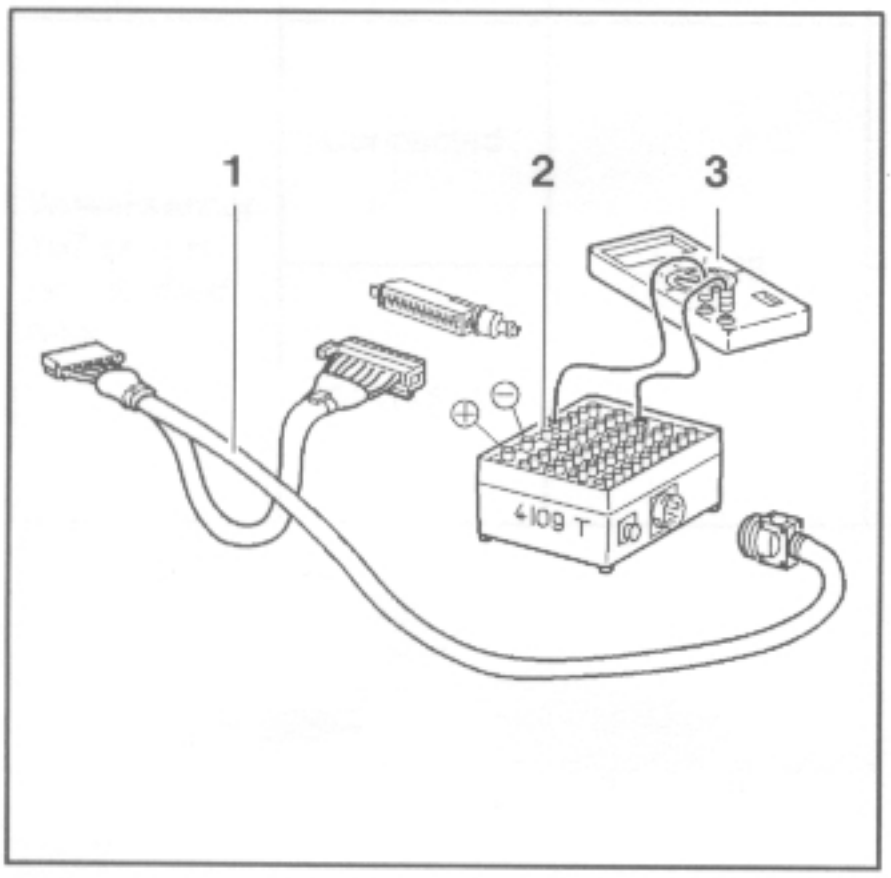


Fig : B1HP074C

(1) electrical harness (according to function).

(2) test connector box.

(3) multimeter.

www.WorkshopManuals.co.uk

FAULT FINDING : TEVES / ITT ANTI–LOCK BRAKE SYSTEM (ABS)

1 – DIAGNOSTIC TOOLS

ATTENTION : The ABS device is not operational during fault finding.

1.1 – ELIT test unit : 4125–T

The tool can be used for :
- reading the fault codes
- reading the parameters
- simulation

1.2 – Test connector box : 4109–T

The tool, associated with the electrical harness 4141–T.K, can be used for reading voltages and resistances.

1.3 – 26 A diagnostic station

The tool can be used for :
- reading the fault codes
- reading the parameters
- testing the actuators
- simulation

2 – FAULT FINDING CHART

2.1 – Fault list

1 – safety relays.
2 – rear left wheel's sensor.
3 – front right wheel's sensor.
4 – rear right wheel's sensor.
5 – front left wheel's sensor.
6 – rear wheel input electrovalves.
7 – rear wheel output electrovalves.
8 – front R.H. side wheel input electrovalve.
9 – front R.H. side wheel output electrovalve.
10 – front L.H. side wheel input electrovalve.
11 – front L.H. side wheel output electrovalve.
12 – ABS E.C.U..

www.WorkshopManuals.co.uk

2.2 – Fault code 1. Safety relays (electrovalve power supply)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values
ABS relay 844	Connected	Relay : 37 ; 25 ; 13 – 11 contact (earth). Relay : 33 – 32 coil		Diagnostic equipment : voltmeter Check : ignition off : U = 0 V. Ignition switched on : U = 12 V Between terminal 33 (+after contact via fuse F1) and terminal 32 (relay selection). Between terminals 37 ; 25 and 13 and the earth (electrovalve power supply). If not correct : check fuse F3
	Disconnected	Passing current diode : 16 – 37	Relay : 4 – 6 coil (9–way black). Passing current diode : 1 – 2 (9–way black)	Diagnostic equipment : ohmmeter Ignition off : check the coil resistance : R ≈ 90 ohm Diode test : passing current diode between terminal 1(+) and terminal 2(–) of the relay coil

2.3 – Fault code 2. Rear left wheel's sensor

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values
Wheel sensor 157 on L.H. rear toothed rotor	Connected	19 – 28		Diagnostic equipment : voltmeter (in AC position) Check the operation of the sensor by turning the wheel : U > 0,1 volt (varies with speed)
	Disconnected		1 – 2 (2–way blue)	Diagnostic equipment : ohmmeter Check the value of the sensor resistance : R ≈ 1,1 Kohms Check insulation from earth : R > 20 Mohms

www.WorkshopManuals.co.uk

2.4 – Fault code 3. Front right wheel's sensor

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values
Wheel sensor 156 on R.H. front toothed rotor	Connected	01 – 06		Diagnostic equipment : voltmeter (in AC position) Check the operation of the sensor by turning the wheel : U > 0,1 volt (varies with speed)
	Disconnected		1 – 2 (2–way blue)	Diagnostic equipment : ohmmeter Check the value of the sensor resistance : R ≈ 1,1 Kohms Check insulation from earth : R > 20 Mohms

2.5 – Fault code 4. Rear right wheel's sensor

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values
Wheel sensor 158 on R.H. rear toothed rotor	Connected	29 – 31		Diagnostic equipment : voltmeter (in AC position) Check the operation of the sensor by turning the wheel : U > 0,1 volt (varies with speed)
	Disconnected		1 – 2 (2–way blue)	Diagnostic equipment : ohmmeter Check the value of the sensor resistance : R ≈ 1,1 Kohms Check insulation from earth : R > 20 Mohms

2.6 – Fault code 5. Front left wheel's sensor

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values
Wheel sensor 155 on L.H. front toothed rotor	Connected	15 – 30		Diagnostic equipment : voltmeter (in AC position) Check the operation of the sensor by turning the wheel : U > 0,1 volt (varies with speed)
	Disconnected		1 – 2 (2–way blue)	Diagnostic equipment : ohmmeter Check the value of the sensor resistance : R ≈ 1,1 Kohms Check insulation from earth : R > 20 Mohms

www.WorkshopManuals.co.uk

2.7 – Fault code 6. Rear wheel input electrovalves

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values
Rear wheel input electrovalves. Built into hydraulic valve block	Connected	Relay : 37 ; 25 ; 13 – 11 contact (earth)		Diagnostic equipment : voltmeter Check the power supply of the electrovalves : ignition switched on : U = 12 V
	Disconnected		ABS hydraulic valve block : 5 – 7 or 14. 14–way connector	Diagnostic equipment : ohmmeter Remove the ABS hydraulic valve block and separate it from the E.C.U. Check the resistance of the electrovalve : R ≈ 7 ohms. Check the isolation from the body : R > 20 Mohms

NOTE : Refit the E.C.U. and the ABS hydraulic valve block.

2.8 – Fault code 7. Rear wheel output electrovalves

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values
Rear wheel output electrovalves. Built into hydraulic valve block	Connected	Relay : 37 ; 25 ; 13 – 11 contact (earth)		Diagnostic equipment : voltmeter Check the power supply of the electrovalves : ignition switched on : U = 12 V
	Disconnected		ABS hydraulic valve block : 12 – 7 or 14. 14–way connector	Diagnostic equipment : ohmmeter Remove the ABS hydraulic valve block and separate it from the E.C.U. Check the resistance of the electrovalve : R ≈ 4,7 ohms. Check the isolation from the body : R > 20 Mohms

NOTE : Refit the E.C.U. and the ABS hydraulic valve block.

www.WorkshopManuals.co.uk

2.9 – Fault code 8. Front R.H. side wheel input electrovalve

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values
Front R.H. side wheel input electrovalve. Built into hydraulic valve block	Connected	Relay : 37 ; 25 ; 13 – 11 contact (earth)		Diagnostic equipment : voltmeter Check the power supply of the electrovalves : ignition switched on : U = 12 V
	Disconnected		ABS hydraulic valve block : 8 – 7 or 14. 14–way connector	Diagnostic equipment : ohmmeter Remove the ABS hydraulic valve block and separate it from the E.C.U. Check the resistance of the electrovalve : R ≈ 7 ohms. Check the isolation from the body : R > 20 Mohms

NOTE : Refit the E.C.U. and the ABS hydraulic valve block.

2.10 – Fault code 9. Front R.H. side wheel output electrovalve

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values
Front R.H. side wheel output electrovalve. Built into hydraulic valve block	Connected	Relay : 37 ; 25 ; 13 – 11 contact (earth)		Diagnostic equipment : voltmeter Check the power supply of the electrovalves : ignition switched on : U = 12 V
	Disconnected		ABS hydraulic valve block : 13 – 7 or 14. 14–way connector	Diagnostic equipment : ohmmeter Remove the ABS hydraulic valve block and separate it from the E.C.U. Check the resistance of the electrovalve : R ≈ 4,7 ohms. Check the isolation from the body : R > 20 Mohms

NOTE : Refit the E.C.U. and the ABS hydraulic valve block.

www.WorkshopManuals.co.uk

2.11 – Fault code 10. Front L.H. side wheel input electrovalve

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values
Front L.H. side wheel input electrovalve. Built into hydraulic valve block	Connected	Relay : 37 ; 25 ; 13 – 11 contact (earth)		Diagnostic equipment : voltmeter Check the power supply of the electrovalves : ignition switched on : U = 12 V
	Disconnected		ABS hydraulic valve block : 3 – 7 or 14. 14–way connector	Diagnostic equipment : ohmmeter Remove the ABS hydraulic valve block and separate it from the E.C.U. Check the resistance of the electrovalve : R ≈ 7 ohms. Check the isolation from the body : R > 20 Mohms

NOTE : Refit the E.C.U. and the ABS hydraulic valve block.

2.12 – Fault code 11. Front L.H. side wheel output electrovalve

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values
Front L.H. side wheel output electrovalve. Built into hydraulic valve block	Connected	Relay : 37 ; 25 ; 13 – 11 contact (earth)		Diagnostic equipment : voltmeter Check the power supply of the electrovalves : ignition switched on : U = 12 V
	Disconnected		ABS hydraulic valve block : 10 – 7 or 14. 14–way connector	Diagnostic equipment : ohmmeter Remove the ABS hydraulic valve block and separate it from the E.C.U. Check the resistance of the electrovalve : R ≈ 4,7 ohms. Check the isolation from the body : R > 20 Mohms

NOTE : Refit the E.C.U. and the ABS hydraulic valve block.

2.13 – Fault code 12. ABS E.C.U.

Fault finding condition(s) : ignition switched on.
Erase the faults.
Check that fault doesn't reoccur.
If the fault reoccurs : test with a new E.C.U..

www.WorkshopManuals.co.uk

3 – ELECTRICAL CHECKS

3.1 – Brake lamps switch

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values
Brake pedal contact 319	Connected	22 – 24		Diagnostic equipment : voltmeter Ignition switched on : U = 0 V : brake pedal released. U ≈ battery U : brake pedal applied
	Disconnected	22 – F19. Fuse box 52	1 – 2 (3–way brown)	Diagnostic equipment : ohmmeter Stop lamps disconnected (third stop lamp included) : R = ∞ : brake pedal released. R ≈ 0 ohm : brake pedal applied

3.2 – ABS fault warning lamp

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values
Instrument cluster warning lamp 40	Connected	16 – 24		Diagnostic equipment : voltmeter Ignition switched on : U ≈ 0 volt : warning lamp illuminated. U = U battery : the warning lamp does not illuminate
	Disconnected		3 (15–way red) – 5 (15–way blue)	Diagnostic equipment : multimeter, used in diode test function. Presence of a diode serial with the indicator light

© Reproduction ou traduction même partielle interdite sans l'autorisation écrite des Automobiles CITROËN

www.WorkshopManuals.co.uk

Xm

MARCH 1999

RPO No: 8029 ⟼

REF. 12 No XM 500-0/8

DIAGNOSIS

● BRAKES
- Fault finding : TEVES MK20 anti-lock braking system (ABS)

MAN 158932

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

GB

2

www.WorkshopManuals.co.uk

FAULT FINDING : TEVES / ITT Mk 20 ABS SYSTEM

1 – DIAGNOSTIC TOOLS

WARNING : The ABS is not operational during the diagnosis.

1.1 – ELIT test unit : 4125–T

The tool can be used for :
- reading the fault codes
- reading the parameters
- simulation
- bleeding the secondary brake system

1.2 – PROXIA diagnostic station

The tool can be used for :
- reading the fault codes
- reading the parameters
- testing the actuators
- simulation
- bleeding the secondary brake system

1.3 – LEXIA diagnostic station

The tool can be used for :
- reading the fault codes
- reading the parameters
- simulation
- bleeding the secondary brake system

1.4 – Test connector box : 4109–T or 4212–T

The tool, associated with the electrical harness 4198–T, can be used for reading voltages and resistances.

2 – FAULT FINDING CHART

2.1 – Fault list

1 – ECU.
2 – overvoltage.
3 – undervoltage.
4 – safety relays.
5 – L.H. front toothed wheel coherence.
6 – L.H. front wheel sensor.
7 – L.H. rear wheel information.
8 – L.H. front wheel regulation.
9 – R.H. front toothed wheel coherence.
10 – R.H. front wheel sensor.
11 – R.H. front wheel information.
12 – R.H. front wheel regulation.
13 – L.H. rear toothed wheel coherence.
14 – L.H. rear wheel sensor.
15 – L.H. front wheel information.
16 – L.H. rear wheel regulation.
17 – R.H. rear toothed wheel coherence.
18 – R.H. rear wheel sensor.
19 – R.H. rear wheel information.
20 – R.H. rear wheel regulation.

Each wheel related fault provides a description of the conditions at the appearance of the fault :
- ABS active (regulation)
- the speed of the vehicle
- the condition of the brake switch

2.2 – Fault code 1 : ECU

Clear the fault and check that the fault does not reappear, otherwise, perform the test with a new ECU.

www.WorkshopManuals.co.uk

2.3 – Fault codes 2 and 3 : overvoltage – undervoltage (ECU supply)

The battery voltage is greater than 18 volts (too high) or less than 9,5 volts (too low).

Location of components	ECU connector	Test connector box terminals	Component connections	Test values
ECU supply (ignition switched +)	Connected	4 – 24	Fuse F1 (52)	Diagnostic equipment : voltmeter Check the voltage between terminals 4 and 24 : 4 (ignition switched +) – 24 (earth) Ignition off : U = 0 V Ignition switched on : U = 12 V Otherwise, check the fuse F1 (52) Check both the battery condition and the charging circuit
	Disconnected	4		Diagnostic equipment : ohmmeter Check the continuity and insulation from earth

2.4 – Fault code 4 : safety relays (electrovalve power supply)

Location of components	ECU connector	Test connector box terminals	Component connections	Test values
Safety relays, integral with the ECU unit	Connected	9 – 24	Fuse F5 (50)	Diagnostic equipment : voltmeter Check the voltage between terminals 9 and 24 : 9 (electrovalve power supply), 24 (earth) U = 12 V Otherwise, check the fuse F5 (50) If the supply is correct, the fault may be confused with an ECU fault
	Disconnected	9	F5	Diagnostic equipment : ohmmeter Check the continuity and insulation from earth

www.WorkshopManuals.co.uk

2.5 – Fault code 5 : L.H. front toothed wheel coherence

Location of components	ECU connector	Test connector box terminals	Component connections	Test values
Wheel sensor (155) on L.H. front toothed rotor	Connected	2 – 1		Diagnostic equipment : voltmeter in position AC Check that the sensor is working properly by turning the wheel; the reading should be : U > 0,1 V (variable according to speed). Check the condition of the toothed wheel as well as the condition of the rims and tyres
	Disconnected		1 – 2 (2–way blue)	Diagnostic equipment : ohmmeter Check the value of the sensor resistance : R equals approximately 1 Kohm Check insulation from earth : R > 20 Mohms

2.6 – Fault code 6 : L.H. front wheel sensor

Location of components	ECU connector	Test connector box terminals	Component connections	Test values
Wheel sensor (155) on L.H. front toothed rotor	Disconnected	2 – 1	1 – 2 (2–way blue)	Diagnostic equipment : ohmmeter Check the value of the sensor resistance : R equals approximately 1 Kohm Check the continuity and connections Check insulation from earth : R > 20 Mohms

www.WorkshopManuals.co.uk

2.7 – Fault code 7 : L.H. rear wheel information

No wheel speed information.

Location of components	ECU connector	Test connector box terminals	Component connections	Test values
Wheel sensor (155) on L.H. front toothed rotor	Connected	2 – 1		Diagnostic equipment : voltmeter in position AC Check that the sensor is working properly by turning the wheel; the reading should be : U > 0,1 V (variable according to speed). Check the condition of the toothed wheel as well as the sensor fixing
				Diagnostic equipment : diagnostic equipment Reading the parameters : turn the wheel to check its speed as seen by the ECU Reading the faults : display the variables associated with the fault to discover the speed of the vehicle on appearance of the fault

WARNING : The ABS is not operational during the diagnosis.

2.8 – Fault code 8 : L.H. front wheel regulation

Check the condition of the toothed wheel as well as the sensor fixing.

Check the condition of the brake.

Bleed the hydraulic circuit.

www.WorkshopManuals.co.uk

2.9 – Fault code 9 : R.H. front toothed wheel coherence

Location of components	ECU connector	Test connector box terminals	Component connections	Test values
Wheel sensor (156) on R.H. front toothed rotor	Connected	20 – 19		Diagnostic equipment : voltmeter in position AC Check that the sensor is working properly by turning the wheel; the reading should be : U > 0,1 V (variable according to speed) Check the condition of the toothed wheel as well as the condition of the rims and tyres
	Disconnected		1 – 2 (2–way blue)	Diagnostic equipment : ohmmeter Check the value of the sensor resistance : R equals approximately 1 Kohm Check insulation from earth : R > 20 Mohms

2.10 – Fault code 10 : R.H. front wheel sensor

Location of components	ECU connector	Test connector box terminals	Component connections	Test values
Wheel sensor (156) on R.H. front toothed rotor	Disconnected	20 – 19	1 – 2 (2–way blue)	Diagnostic equipment : ohmmeter Check the value of the sensor resistance : R equals approximately 1 Kohm Check the continuity and connections Check insulation from earth : R > 20 Mohms

www.WorkshopManuals.co.uk

2.11 – Fault code 11 : R.H. front wheel information

No wheel speed information.

Location of components	ECU connector	Test connector box terminals	Component connections	Test values
Wheel sensor (156) on R.H. front toothed rotor	Connected	20 – 19		Diagnostic equipment : voltmeter in position AC Check that the sensor is working properly by turning the wheel; the reading should be : U > 0,1 V (variable according to speed) Check the condition of the toothed wheel as well as the sensor fixing
	Disconnected			Diagnostic equipment : diagnostic equipment Reading the parameters : turn the wheel to check its speed as seen by the ECU Reading the faults : display the variables associated with the fault to discover the speed of the vehicle on appearance of the fault

WARNING : The ABS is not operational during the diagnosis.

2.12 – Fault code 12 : R.H. front wheel regulation

Check the condition of the toothed wheel as well as the sensor fixing.

Check the condition of the brake.

Bleed the hydraulic circuit.

www.WorkshopManuals.co.uk

2.13 – Fault code 13 : L.H. rear toothed wheel coherence

Location of components	ECU connector	Test connector box terminals	Component connections	Test values
Wheel sensor (157) on L.H. rear toothed rotor	Connected	6 – 5		Diagnostic equipment : voltmeter in position AC Check that the sensor is working properly by turning the wheel; the reading should be : U > 0,1 V (variable according to speed) Check the condition of the toothed wheel as well as the condition of the rims and tyres
	Disconnected		1 – 2 (2–way blue)	Diagnostic equipment : ohmmeter Check the value of the sensor resistance : R equals approximately 1 Kohm Check insulation from earth : R > 20 Mohms

2.14 – Fault code 14 : L.H. rear wheel's sensor

Location of components	ECU connector	Test connector box terminals	Component connections	Test values
Wheel sensor (157) on L.H. rear toothed rotor	Disconnected	6 – 5	1 – 2 (2–way blue)	Diagnostic equipment : ohmmeter Check the value of the sensor resistance : R equals approximately 1 Kohm Check the continuity and connections. Check insulation from earth : R > 20 Mohms

www.WorkshopManuals.co.uk

2.15 – Fault code 15 : L.H. front wheel information

No wheel speed information.

Location of components	ECU connector	Test connector box terminals	Component connections	Test values
Wheel sensor (157) on L.H. rear toothed rotor	Connected	6 – 5		Diagnostic equipment : voltmeter in position AC Check that the sensor is working properly by turning the wheel; the reading should be : U > 0,1 V (variable according to speed) Check the condition of the toothed wheel as well as the sensor fixing
	Disconnected			Diagnostic equipment : diagnostic equipment Reading the parameters : turn the wheel to check its speed as seen by the ECU Reading the faults : display the variables associated with the fault to discover the speed of the vehicle on appearance of the fault

WARNING : The ABS is not operational during the diagnosis.

2.16 – Fault code 16 : L.H. rear road wheel regulation

Check the condition of the toothed wheel as well as the sensor fixing.

Check the condition of the brake.

Bleed the hydraulic circuit.

www.WorkshopManuals.co.uk

2.17 – Fault code 17 : R.H. rear toothed wheel coherence

Location of components	ECU connector	Test connector box terminals	Component connections	Test values
Wheel sensor (158) on R.H. rear toothed rotor	Connected	22 – 23		Diagnostic equipment : voltmeter in position AC Check that the sensor is working properly by turning the wheel; the reading should be : U > 0,1 V (variable according to speed) Check the condition of the toothed wheel as well as the condition of the rims and tyres
	Disconnected		1 – 2 (2–way blue)	Diagnostic equipment : ohmmeter. Check the value of the sensor resistance : R equals approximately 1 Kohm Check insulation from earth : R > 20 Mohms

2.18 – Fault code 18 : R.H. rear wheel sensor

Location of components	ECU connector	Test connector box terminals	Component connections	Test values
Wheel sensor (158) on R.H. rear toothed rotor	Disconnected	22 – 23	1 – 2 (2–way blue)	Diagnostic equipment : ohmmeter Check the value of the sensor resistance : R equals approximately 1 Kohm Check the continuity and connections Check insulation from earth : R > 20 Mohms

www.WorkshopManuals.co.uk

2.19 – Fault code 19 : R.H. rear wheel information

No wheel speed information.

Location of components	ECU connector	Test connector box terminals	Component connections	Test values
Wheel sensor (158) on R.H. rear toothed rotor	Connected	22 – 23		Diagnostic equipment : voltmeter in position AC Check that the sensor is working properly by turning the wheel; the reading should be : U > 0,1 V (variable according to speed) Check the condition of the toothed wheel as well as the sensor fixing
	Disconnected			Diagnostic equipment : diagnostic equipment Reading the parameters : turn the wheel to check its speed as seen by the ECU Reading the faults : display the variables associated with the fault to discover the speed of the vehicle on appearance of the fault

WARNING : The ABS is not operational during the diagnosis.

2.20 – Fault code 20 : R.H. rear road wheel regulation

Check the condition of the toothed wheel as well as the sensor fixing.

Check the condition of the brake.

Bleed the hydraulic circuit.

www.WorkshopManuals.co.uk

3 – ELECTRICAL CHECKS

3.1 – Brake lamps switch

Location of components	ECU connector	Test connector box terminals	Component connections	Test values
Brake pedal switch (319)	Connected	18 – 24		Diagnostic equipment : voltmeter Ignition switched on : Brake pedal released : U = 0 V Brake pedal depressed : U ≈ U battery
	Disconnected	18 – F2 (52)	1 – 2 (3–way brown)	Diagnostic equipment : ohmmeter Stop lamps disconnected (including additional lamps) Brake pedal released : R = ∞ Brake pedal depressed : R = 0 Ω

3.2 – ABS fault warning lamp

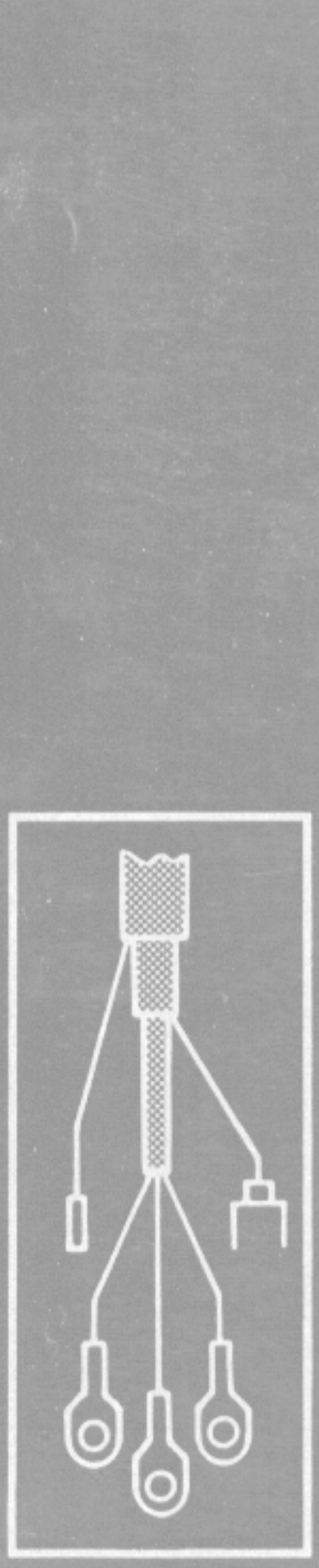
Location of components	ECU connector	Test connector box terminals	Component connections	Test values
Instrument panel warning lamp (40)	Connected	16 – 24		Diagnostic equipment : voltmeter Ignition switched on : Warning lamp illuminated : U = 0 V The warning lamp not illuminated : U = U battery
	Disconnected		3 (15–way red) – 5 (15–way blue)	Diagnostic equipment : multimeter, used in diode test function Presence of a diode in series with the warning light

www.WorkshopManuals.co.uk

3.3 – Diagnostic link

Location of components	ECU connector	Test connector box terminals	Component connections	Test values
Central diagnostic socket (280)	Connected	7 – 24	E1 central plug	Diagnostic equipment : voltmeter Ignition switched on, without diagnostic equipment : U ≈ 10 V If U = 0 V and warning lamp lit : check the fuse F1
	Disconnected	7		Diagnostic equipment : ohmmeter Check, in relation to the earth and battery +, the continuity and insulation of the link

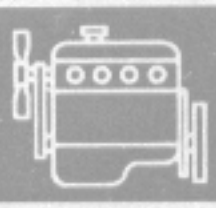
www.WorkshopManuals.co.uk



30



51



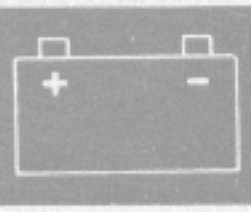
52

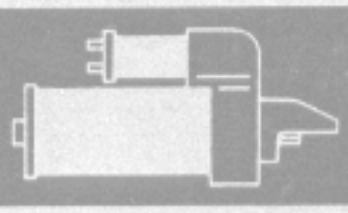


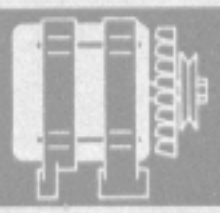




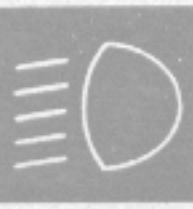
53







54







55

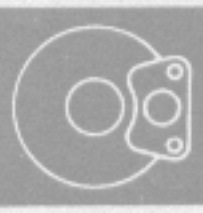




56



57

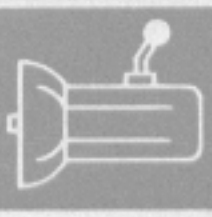


58



59

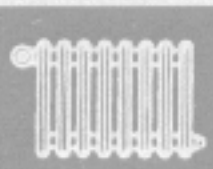




63



64



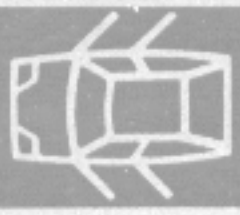


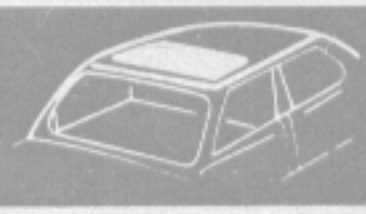


65

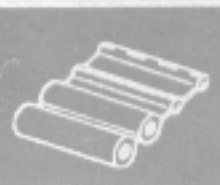


67

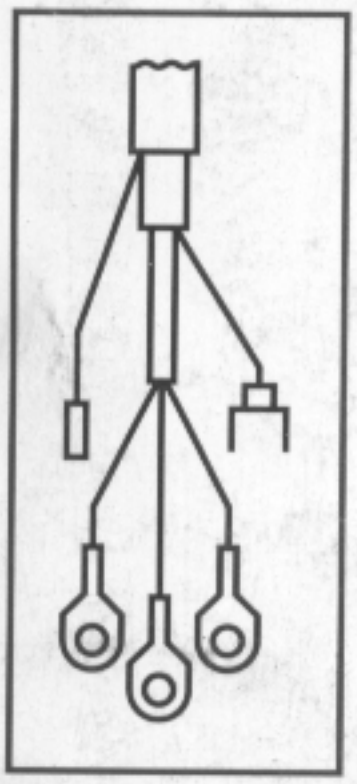




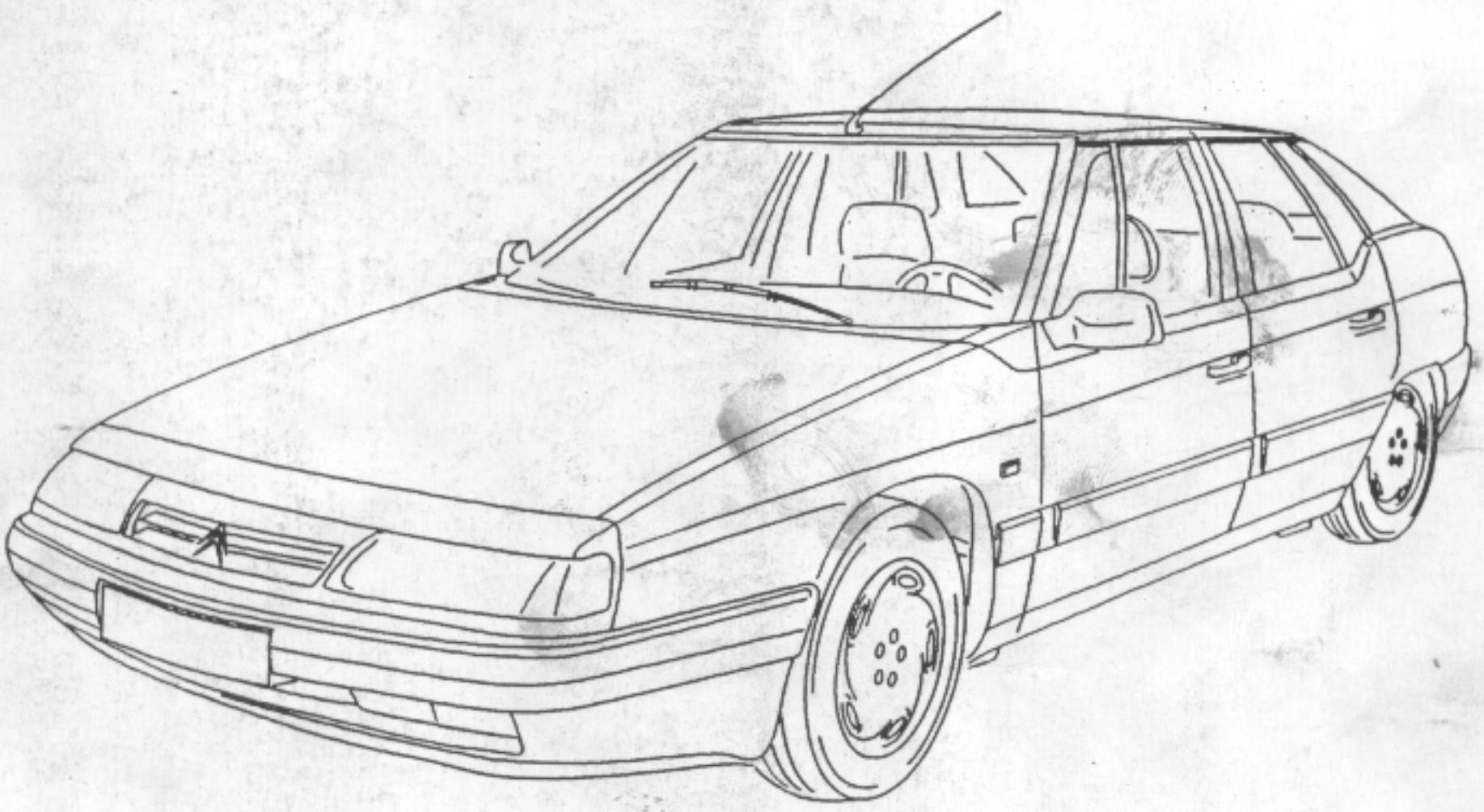
90



www.WorkshopManuals.co.uk



MAN : 11/94
ADD 1 : 6/95
ADD 2 : 6/95
ADD 3 : 12/02



Xm

www.WorkshopManuals.co.uk

USE OF THE MANUAL

PRESENTATION

The Electrical System Repair Manual 008935 GB is presented with a "ring" type mechanism to facilitate the filing of additive sheets or the removal of an electrical diagram for an operation in the workshop.

It is divided into 15 chapters separated by numbered "vinyl" tabbed inserts

- **50** : Vehicle general characteristics
- **51** : Engine
- **52** : Instrument panel
- **53** : Battery charge and engine starting
- **54** : Exterior lighting and signalling
- **55** : Interior lighting and fittings
- **56** : Visibility
- **57** : Braking system
- **58** : Suspension
- **59** : Automatic gearbox and cruise control
- **63** : Seat base
- **64** : Heating, ventilation and air-conditioning
- **65** : Radio equipment
- **67** : Doors, boot and bonnet
- **90** : Multiplexing

COMPOSITION OF A SECTION

Each section comprises :

- the list of electrical diagrams in it,
- circuit diagrams,
- wiring diagrams.

NUMBERING

The numbers of the electrical diagrams are as follows :

AA	99	9	-	999	/	99	a
1	2	3		4		5	6

1 - Vehicle code letters
2 - Chapter reference number
3 - Details on the function in the chapter
4 - Area of operation of the diagram
5 - Figure standing for a variant
6 - Letter standing for an evolution

The drawings are made with :

- Drawings
- Symbols
- Figures
- Letters

The information required to understand the diagrams are contained in chapter **50**.

UP-DATING THE MANUALS WITH SUPPLEMENTS

The updated sheets must be added to the existing pages in the Manual or substituted to the corresponding ones.

The figure between brackets, situated at the bottom left hand side of each recto page, corresponds to the Supplement number.

Example : (6) Supplement No.6

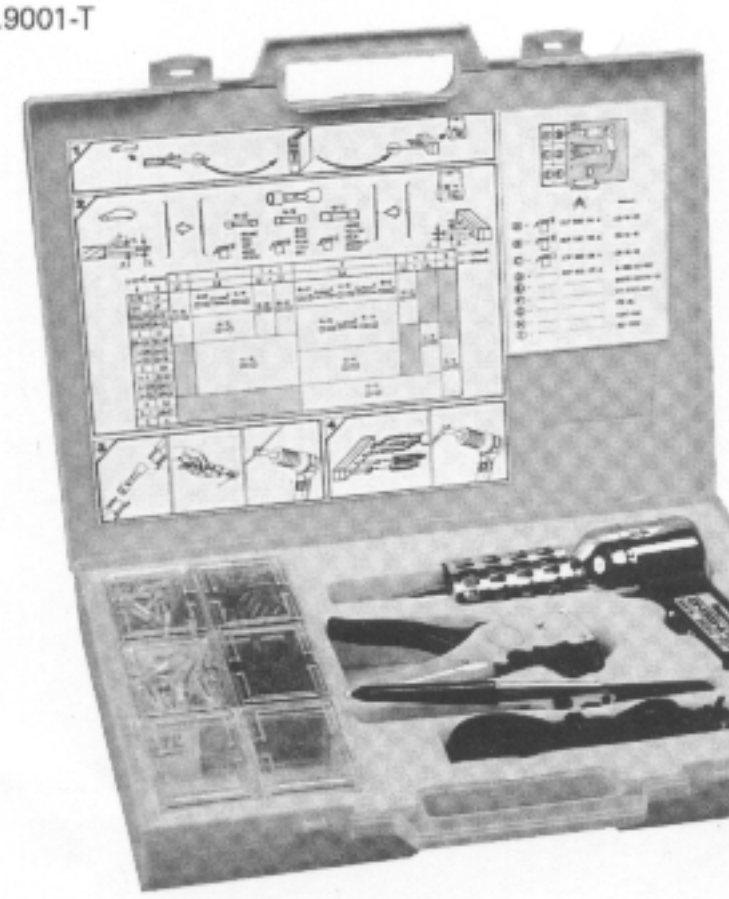
IMPORTANT NOTE :

For all technical information, please contact :

TECHNICAL DESK Tel. 0753 822 100
CITROEN U.K. LTD
221, Bath Road
SLOUGH SL1 4B4
BERKSHIRE (England)

www.WorkshopManuals.co.uk

OUT.9001-T



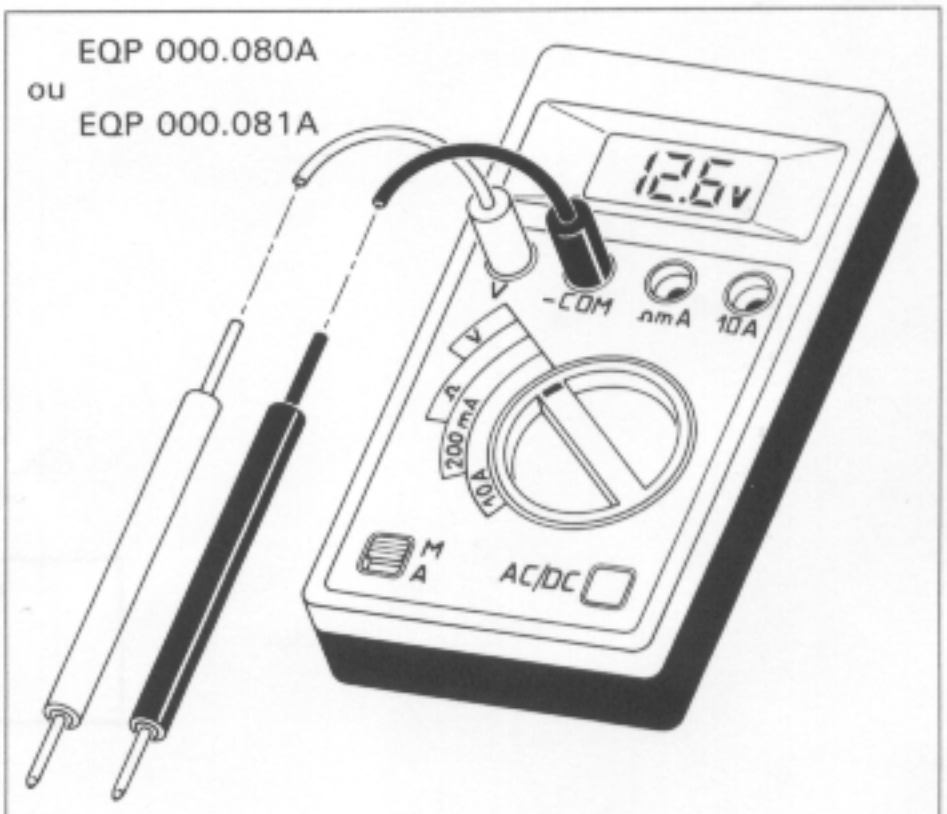
89-644

EQP 000.026



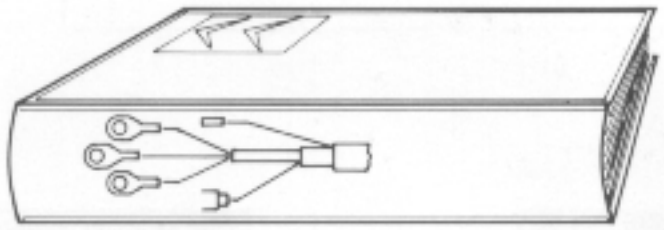
88-302

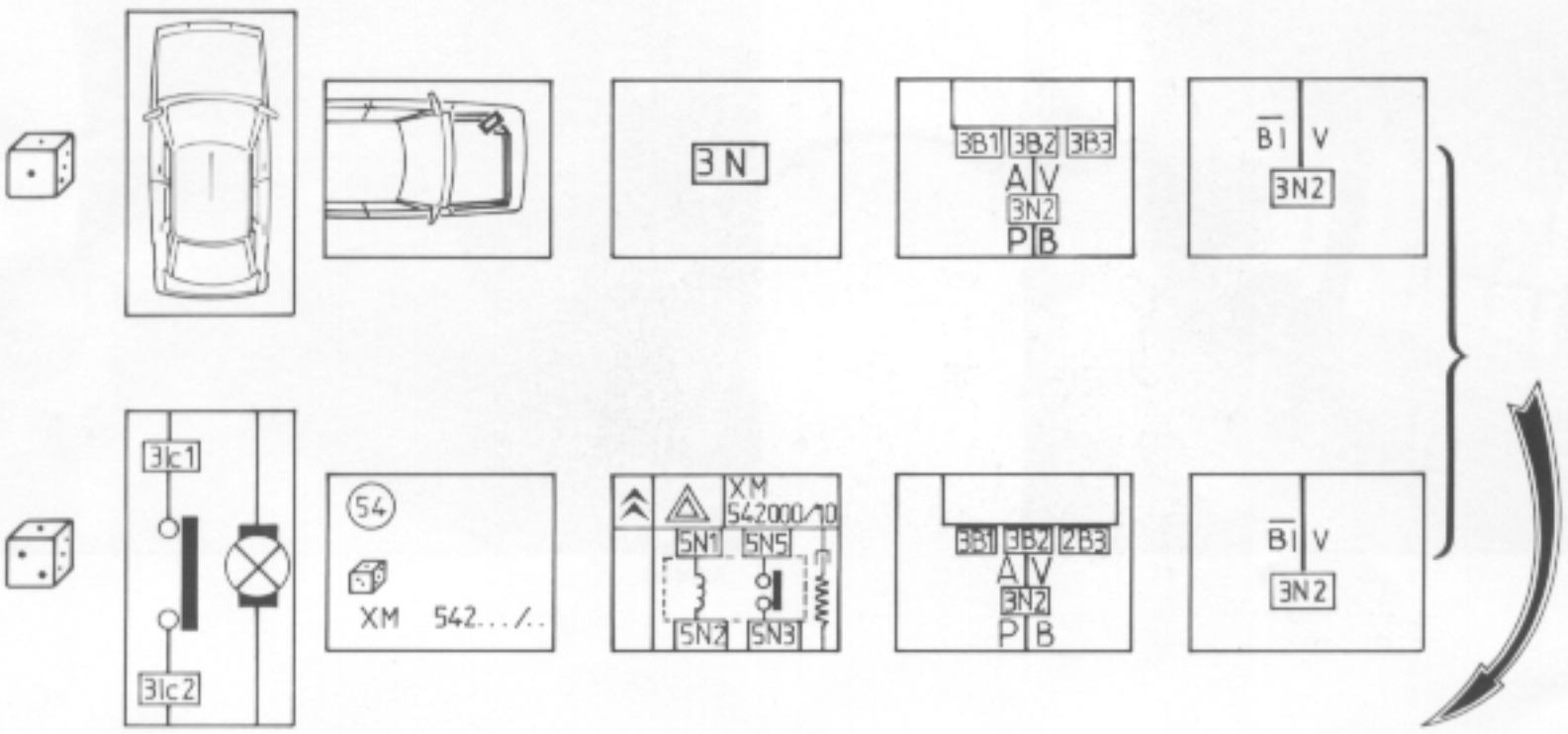
EQP 000.080A
ou
EQP 000.081A



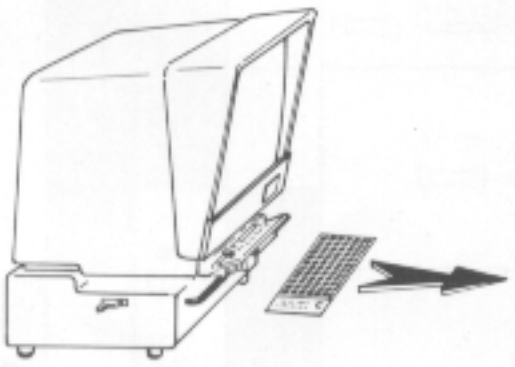
L 45-29

www.WorkshopManuals.co.uk





mm²								
AV	3N2	V	BI	1	PB	3	n2 - n3 , F	XM 542-00/10



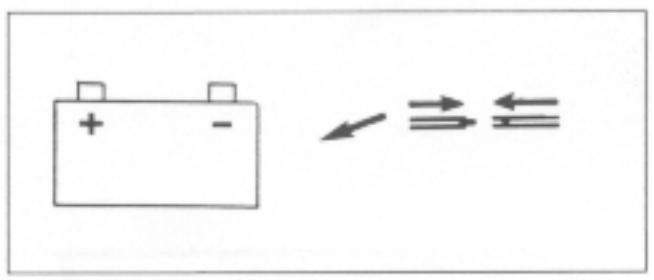
Connecteur Rep 03		Manchon			Capuchon
N°de code	Jtion	Rouge	Bleu	Jaune	Noir
1	1mm²	3			2
2	1mm²				
	1mm²				

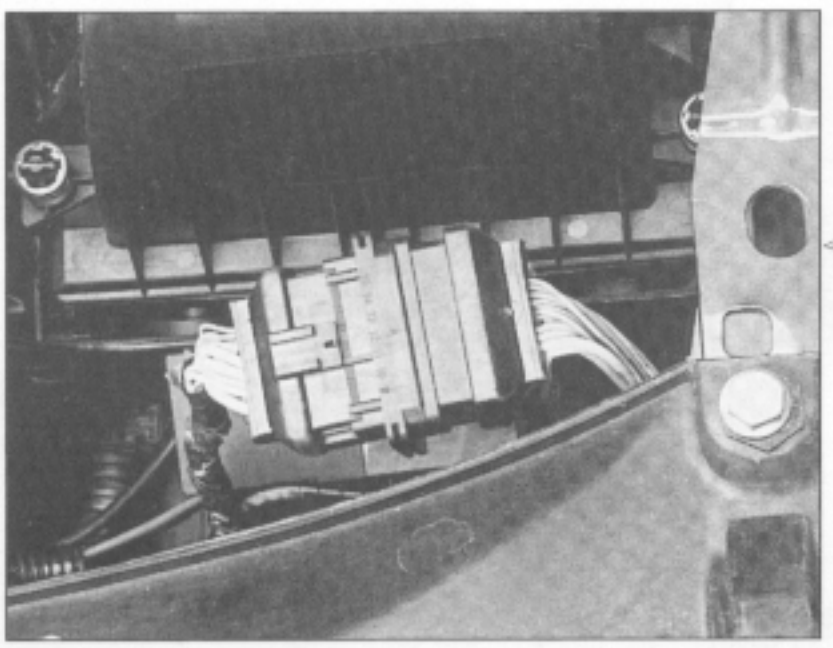
03	9 456 501 045	01	3 VOIES DE 3	



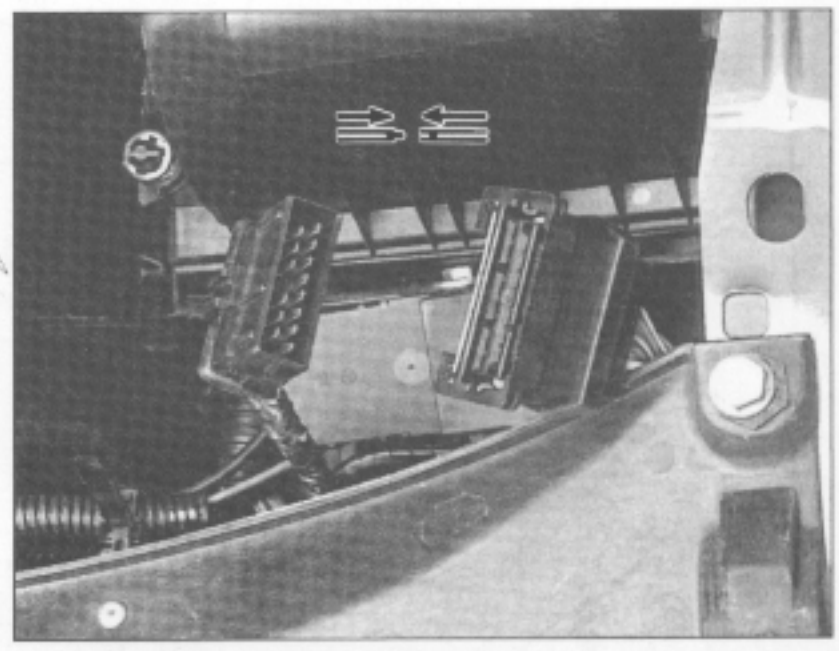
Y.51-7

www.WorkshopManuals.co.uk

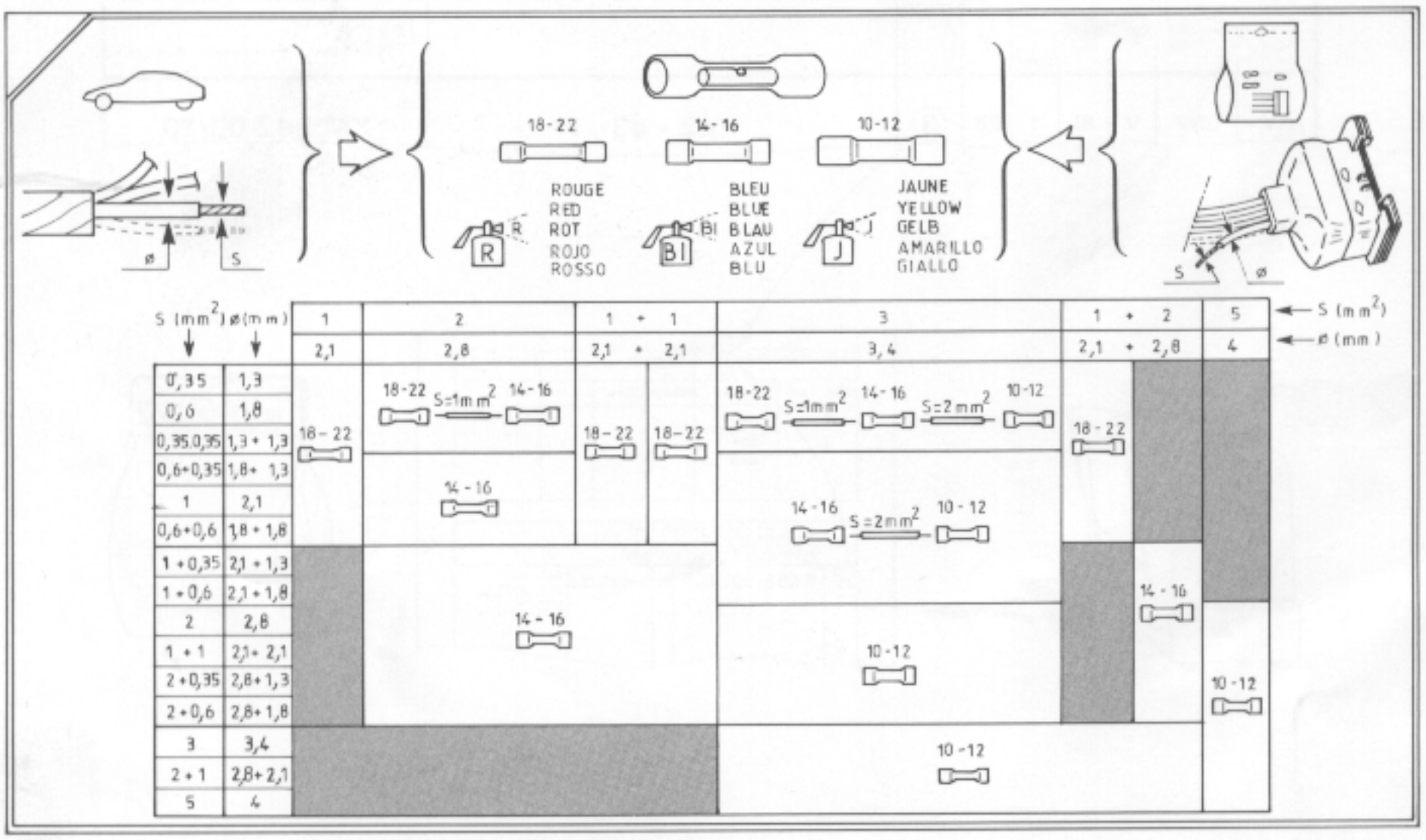




89-485

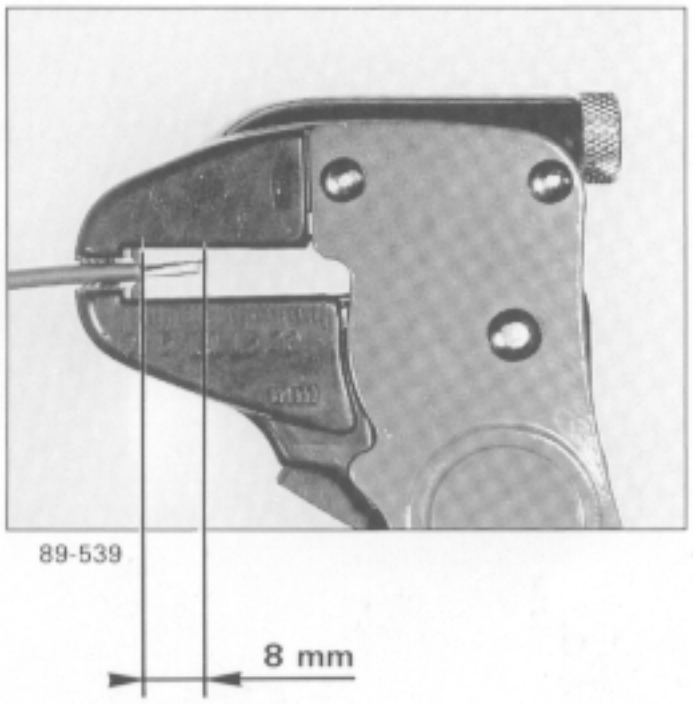


89-486

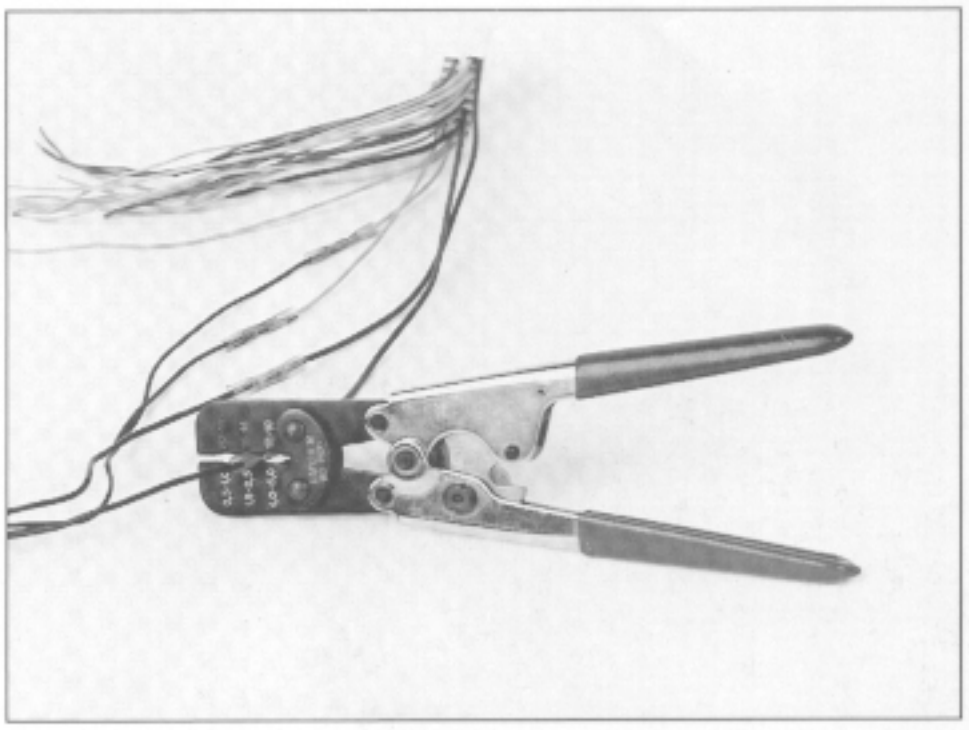


Y.51-5

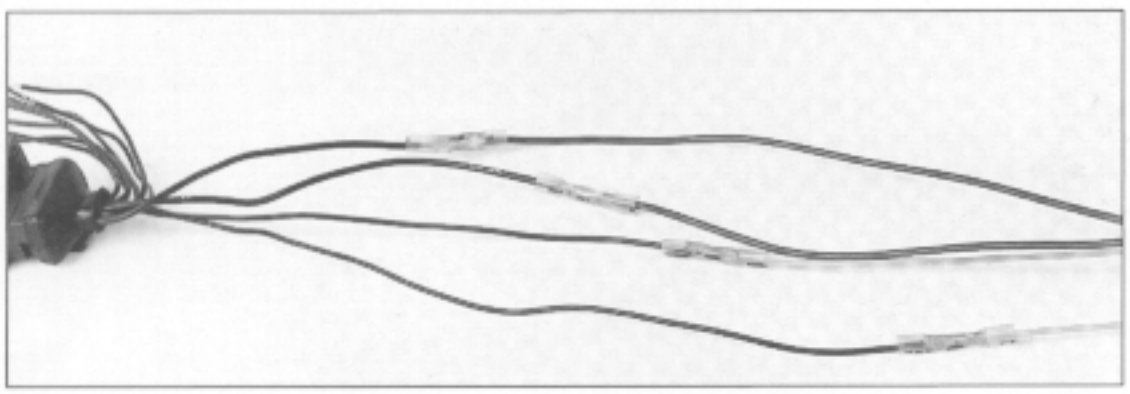
www.WorkshopManuals.co.uk



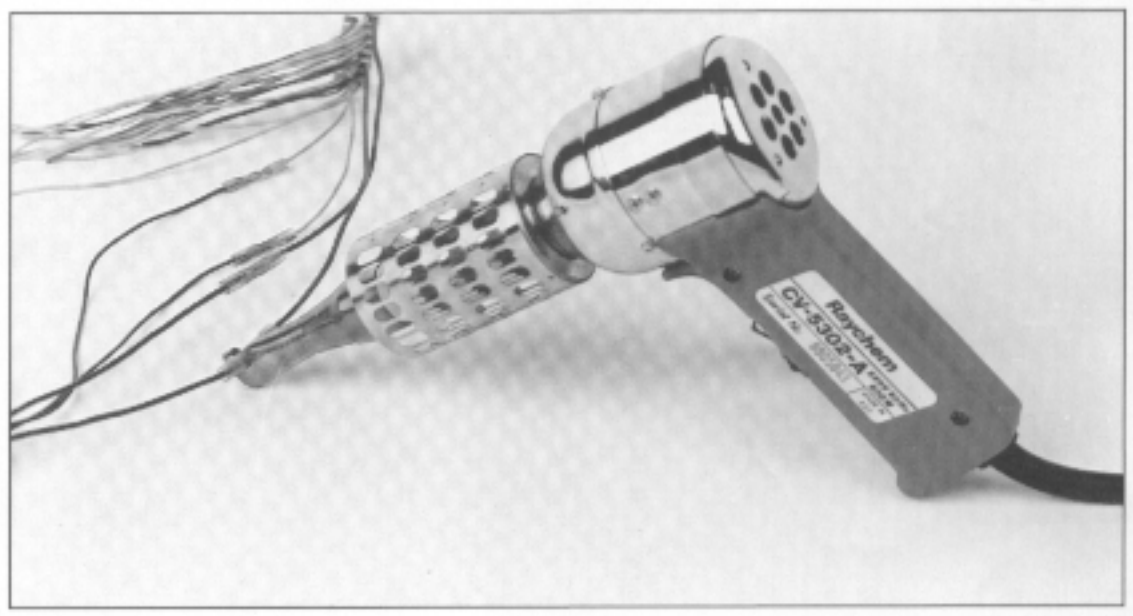
89-539



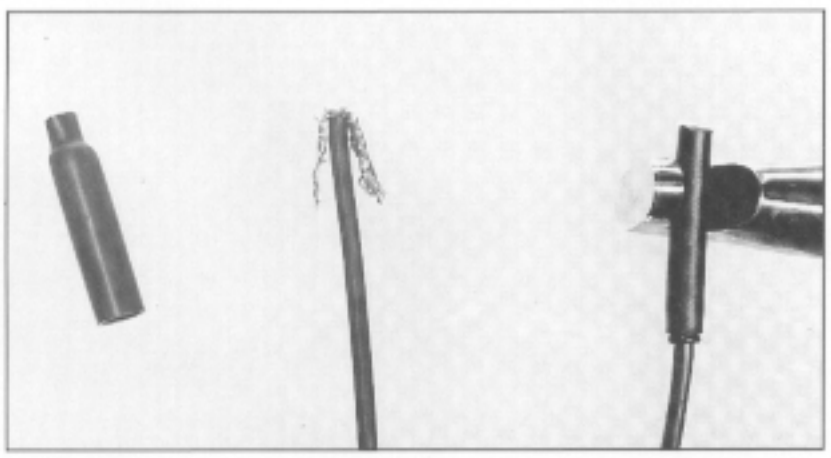
89-481



89-482



89-480



89-540

www.WorkshopManuals.co.uk

Xm

MAY 1998

RPO No: 6947 ⟼
RPO No: 7329 ⟼

REF. 12 No XM 500-0/7

DIAGNOSIS

- CENTRALLY CONTROLLED AIRBAG
- SIDE AIRBAG

MAN 158932

"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, the information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer".
"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates".

AUTOMOBILES CITROËN
DIRECTION EXPORT EUROPE
DOCUMENTATION APRÈS VENTE

GB

2

www.WorkshopManuals.co.uk

CONTENTS

TOOLS

PRESENTATION : DIAGNOSTIC TOOLS **1**

1 – ELIT test unit : 4125–T 1
2 – LEXIA diagnostic station : 4171–T –
3 – PROXIA diagnostic station : 4165–T –

PROTECTION AND SAFETY SYSTEMS

FAULT FINDING : CENTRALLY CONTROLLED AIRBAG **2**

1 – Precautions to be taken before carrying out any work 2
2 – Precautions –
3 – Diagnostic tools 3
4 – Fault finding chart 4
5 – Electrical checks 8
6 – Programming 9

FAULT FINDING : SIDE AIRBAGS **12**

1 – Precautions to be taken before carrying out any work 12
2 – Precautions –
3 – Fault finding chart 14
4 – Electrical checks 17

www.WorkshopManuals.co.uk

PRESENTATION : DIAGNOSTIC TOOLS

1 – ELIT TEST UNIT : 4125–T

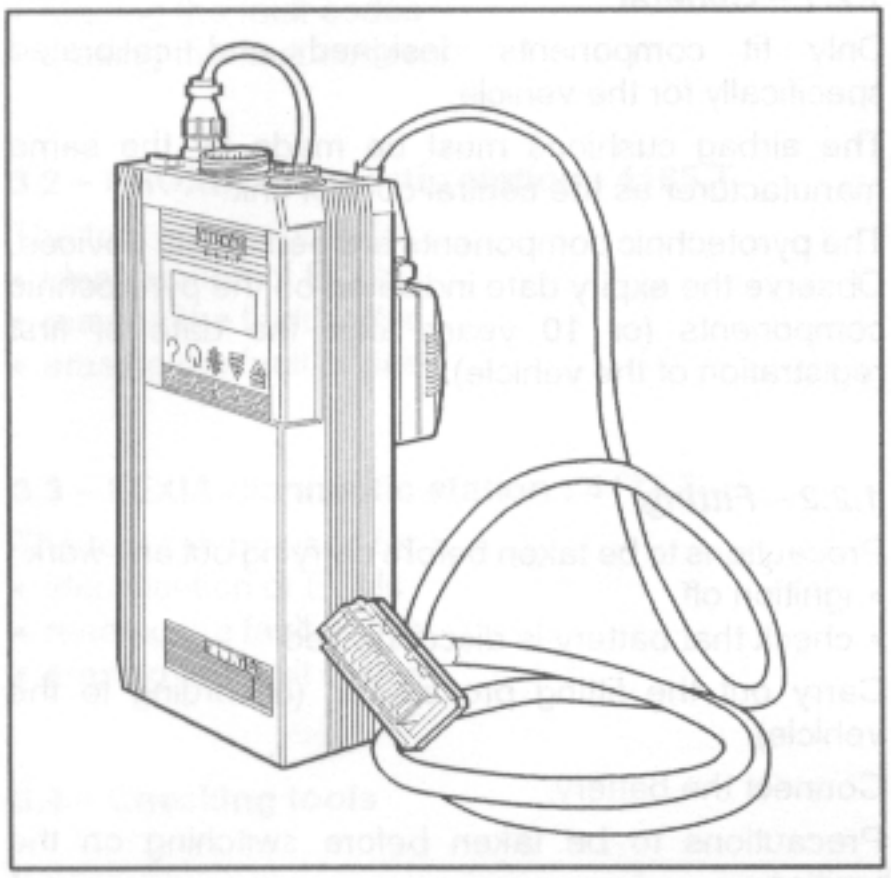


Fig : B3BP039C

2 – LEXIA DIAGNOSTIC STATION : 4171–T



Fig : E5AP088C

3 – PROXIA DIAGNOSTIC STATION : 4165–T

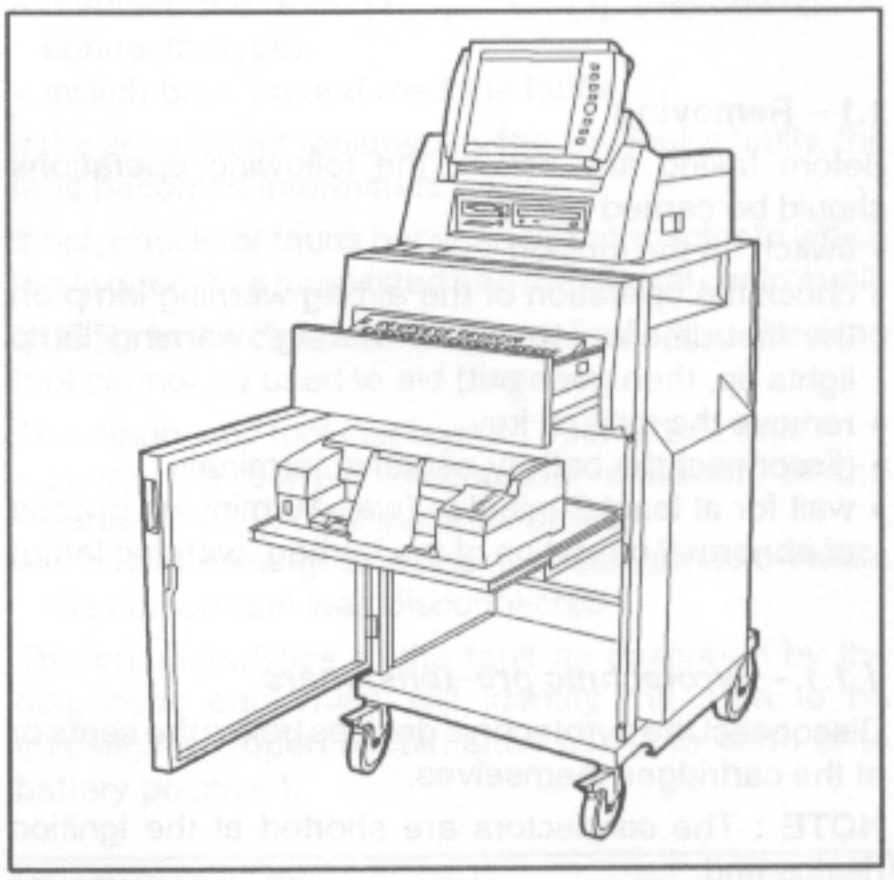


Fig : E5AP087C

www.WorkshopManuals.co.uk

FAULT FINDING : CENTRALLY CONTROLLED AIRBAG

1 – PRECAUTIONS TO BE TAKEN BEFORE CARRYING OUT ANY WORK

1.1 – Removing

Before taking any action, the following operations should be carried out :

- switch on the ignition
- check the operation of the airbag warning lamp on the instrument panel (the "airbag" warning lamp lights up, then goes out)
- remove the ignition key
- disconnect the battery negative terminal
- wait for at least 2 minutes (wait 10 minutes in case of abnormal operation of the "airbag" warning lamp)

1.1.1 – Pyrotechnic pre–tensioners

Disconnect the pyrotechnic devices below the seats or at the cartridges themselves.

NOTE : The connectors are shorted at the ignition device end.

The main dangers regarding the pyrotechnic pre–tensioners are :

- whiplash effect caused by the rapid retraction of the buckle
- protrusion of the cable and blast of air from the end of the cylinder

NOTE : A pretensioner must only be held by the casing and never by the buckle or steel cable.

1.1.2 – Operational airbag

Remove the airbag.

Store the unit with the airbag cushion uppermost – connector at the bottom (in case of triggering, there will be less projection).

1.1.3 – Deployed airbag

Remove the airbag.

Wash hands after completing the procedure.

If you get any particle residue in your eyes, immediately rinse eyes with running water.

1.2 – Fitting

1.2.1 – General

Only fit components designed and calibrated specifically for the vehicle.

The airbag cushions must be made by the same manufacturer as the central control unit.

The pyrotechnic components are perishable devices. Observe the expiry date indicated on the pyrotechnic components (or 10 years after the date of first registration of the vehicle).

1.2.2 – Fitting

Precautions to be taken before carrying out any work :

- ignition off
- check that battery is disconnected

Carry out the fitting procedures (according to the vehicle).

Connect the battery.

Precautions to be taken before switching on the ignition :

- do not rest your hand on the seat belt buckle if the pretensioner is on the seat
- do not touch the seat belt if the pretensioner is mounted on the centre pillar
- keep your head clear of the "airbag" deployment zone

Check the operation of the airbag warning lamp on the instrument panel.

2 – PRECAUTIONS

Wearing safety belts remains mandatory.

To avoid any risk of facial injuries if the airbag is deployed never attach or stick any objects to the steering wheel airbag.

Never leave an object on the dashboard that may hamper the inflation of the passenger airbag, or injure the front passenger in the event of an impact.

Never rest your feet nor parts of the body against the dashboard.

Never drive the vehicle while holding the steering wheel by its spokes or while placing your hands on the airbag.

Never drive with objects on your lap, in front of your chest nor when smoking a pipe or with something in your mouth.

IMPERATIVE : Do not fit a child's seat to the front passenger's seat in a vehicle equipped with a passenger's airbag.

www.WorkshopManuals.co.uk

3 – DIAGNOSTIC TOOLS

3.1 – ELIT test unit : 4125–T

The tool can be used for :
- identification of ECUs
- reading the fault codes
- erasing the fault codes

3.2 – PROXIA diagnostic station : 4165.T

The tool can be used for :
- identification of ECUs
- reading the fault codes
- erasing the fault codes

3.3 – LEXIA diagnostic station : 4171.T

The tool can be used for :
- identification of ECUs
- reading the fault codes
- erasing the fault codes

3.4 – Checking tools

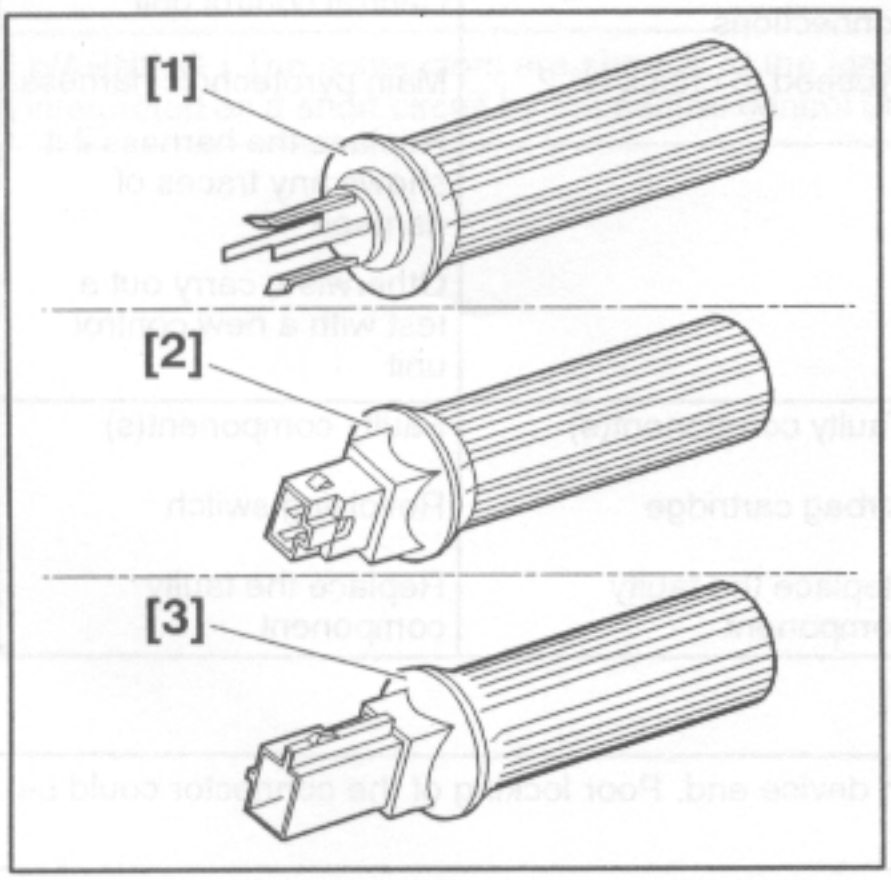


Fig : E5AP15KC

[1] tool for checking pyrotechnic devices 4181–T.A.

[2] tool for checking the pyrotechnic wiring harness 4181–T.B1.

[3] tool for checking the pyrotechnic wiring harness 4181–T.E.

The tools posses the same resistance as a pyrotechnic device in order to :
- simplify fault finding
- check the operation of the system after repairs

3.5 – Using the checking equipment

Permanent fault recorded :
- switch off ignition
- wait for the central control unit to deactivate
- disconnect the pyrotechnic device or its intermediate harness
- connect the tool [1], [2] or [3] (depending on connector type)
- switch back on and read the faults

If the component replaced by the test tool is faulty, the fault becomes intermittent.

If not, check for faults between the connector to which the test tool has been fitted and the central control unit.

NOTE : In the case of intermittent faults, the checking tool cannot be used to aid diagnosis.

The diagnostic tool displays an intermittent fault :
- check the correct mechanical condition of the contacts and of the electric harness
- check that the ignition has not been turned on while the component was disconnected

The characteristics of the fault as described by the diagnostic equipment will identify the area to be investigated (open circuit, short circuit to earth or to battery positive).

WARNING : The connectors are shorted at the ignition device end. Poor locking of the connector could be interpreted as a short circuit by the central control unit.

IMPERATIVE : The deployment of a pretensioner is triggered by an electric current, the use therefore of an ohmmeter or any other current generating device on its electrical circuit is forbidden.

www.WorkshopManuals.co.uk

4 – FAULT FINDING CHART

4.1 – Fault list

1. Driver's airbag cartridge.
2. Passenger's airbag cartridge.
3. Seat belt cartridge 1.
4. Seat belt cartridge 2.
5. Warning lamp.
6. Control unit.
7. Deployment of airbag(s) and pretensioners.
8. Pretensioner deployment.
9. Energy reserve.

4.2 – Fault code 1 (permanent). Driver's airbag cartridge

Checks	Diagnostic tool	Connections : component	Result of fault code reading	
			Intermittent cartridge fault	Permanent cartridge fault
1	[2] or [3]	Revolving switch (2–way orange)	The fault concerns one of the components substituted by the tool Re–establish the original connections Proceed to check N° 2	Faulty component(s) Central control unit Main pyrotechnic harness Replace the harness if it shows any traces of damage Otherwise, carry out a test with a new control unit
2	[1]	Airbag cartridge (remove the airbag cushion)	Faulty component(s) Airbag cartridge Replace the faulty component	Faulty component(s) Revolving switch Replace the faulty component

WARNING : The connectors are shorted at the ignition device end. Poor locking of the connector could be interpreted as a short circuit by the central control unit.

www.WorkshopManuals.co.uk

4.3 – Fault code 2 (permanent). Passenger's airbag cartridge

Checks	Diagnostic tool	Connections : component	Result of fault code reading	
			Intermittent cartridge fault	Permanent cartridge fault
1	[2] or [3]	Behind the glove compartment (2–way orange)	The defect concerns one of the components substituted by the tool Re–establish the original connections Proceed to check N° 2	Faulty component(s) Central control ECU Main pyrotechnic harness Replace the harness if it shows any traces of damage Otherwise, carry out a test with a new control unit
2	[1]	Airbag cartridge (remove the airbag cushion)	Faulty component(s) Airbag cartridge Replace the faulty component	Faulty component(s) Intermediate harness Replace the faulty component

WARNING : The connectors are shorted at the ignition device end. Poor locking of the connector could be interpreted as a short circuit by the central control unit.

www.WorkshopManuals.co.uk

4.4 – Fault codes 3 and 4 (permanent). Seat belt cartridge 1, seat belt cartridge 2

Checks	Diagnostic tool	Connections : component	Result of fault code reading	
			Intermittent cartridge fault	Permanent cartridge fault
1	[2] or [3]	Orange connector below the seat (2–way orange)	The fault concerns one of the components substituted by the tool Re–establish the original connections Proceed to check N° 2	Faulty component(s) Central control ECU Main pyrotechnic harness Replace the harness if it shows any traces of damage Otherwise, carry out a test with a new control unit
2	[1]	Pretensioner cartridge connector Remove the seat Remove the intermediate harness Reconnect the harness	Faulty component(s) Pretensioner cartridge Replace the faulty component	Faulty component(s) Intermediate harness Replace the faulty component

WARNING : The connectors are shorted at the ignition device end. Poor locking of the connector could be interpreted as a short circuit by the central control unit.

www.WorkshopManuals.co.uk

4.5 – Fault code 5 (permanent). Warning lamp

The "airbag" fault warning lamp is common to the various units.

Location of components	ECU connector	Test connector box terminals	Component terminals	Test values
Airbag warning lamp (40) (incorporated into the instrument panel)	Disconnected		Instrument panel : 5 or 7 (depending on the version) – 1 (15–way blue)	Diagnostic equipment : ohmmeter Ignition off Check the resistance of the warning lamp : R ≈ 15 ohms Check the continuity and insulation of wires Check the fuse F19 (passenger's compartment)
	Connected			Diagnostic equipment : voltmeter Ignition switched on Warning lamp not illuminated : U = U battery Warning lamp illuminated : U = 1 V

NOTE : Ignition switched on, when the orange 18–way connector of the control unit is disconnected, channels 1 (earth) and 2 ("airbag" warning lamp control) are shunted, the "airbag" warning lamp illuminates.

4.6 – Fault code 6 : control unit

If the fault cannot be erased, replace the control unit.

Configure the new central control unit as a function of the vehicle.

4.7 – Fault code 7 : deployment of airbag(s) and pretensioners

After an impact, if a pyrotechnic device (or devices) has deployed :

Replace all the components of the system :

- central control unit
- harnesses
- airbags
- pyrotechnic pre–tensioners

Configure the new central control unit as a function of the vehicle.

4.8 – Fault code 8 : pretensioner deployment

After an impact, if a pyrotechnic device (or devices) has deployed, but the impact was not of sufficient intensity to warrant the deployment of the airbag :

Replace all the components of the system.

Configure the new central control unit as a function of the vehicle.

4.9 – Fault code 9 : energy reserve

This fault normally corresponds to an internal fault.

A succession of brief short–circuits to earth on a cartridge line can also generate this fault.

Check the condition of the cartridge wiring and of the rotary contact.

www.WorkshopManuals.co.uk

5 – ELECTRICAL CHECKS

5.1 – Diagnostic link

Connector on the control unit :

Location of components	ECU connector	Component terminals	Test values
Link with terminal F3 of the diagnostic socket (30–way brown)	Disconnected		Diagnostic equipment : ohmmeter Check the continuity and insulation from earth
	Connected	F3 (30–way brown)	Diagnostic equipment : voltmeter Connect the diagnostic tool to the vehicle central socket Switch on ignition : U = U battery

5.2 – The control unit supply

Perform the check directly on the connector without disconnecting it :

Location of components	ECU connector	Test connector box terminals	Component terminals	Test values
Ignition controlled + supply	Connected		Passenger compartment fuse–box : A3 (13–way brown)	Diagnostic equipment : voltmeter Ignition switched on : U = U battery

www.WorkshopManuals.co.uk

6 – PROGRAMMING

6.1 – "configuration" procedure

WARNING : A new "Replacement Part" central control unit can only be programmed once.

This procedure allows a reduction in the number of control unit references.

The programming consists of selecting by means of the diagnostic equipment, the appropriate functions available in the unit.

WARNING : If a non–configured central ECU is installed, the "airbag" warning lamp does not go out (the system is however operational for maximum vehicle equipment, i.e. driver's and passenger's airbag).

Programming using an "ELIT" test unit :

1	Fit the central control unit to the vehicle
2	Connect the ECU to the vehicle's electric harness
3	Connect the diagnostic tool to the vehicle central socket
	Make the following selections
4	"REPLACEMENT PARTS" (menu "choice of vehicle")
5	"AIRBAG/SEAT BELT"
6	"PROGRAMMING"
7	"WITHOUT PASSENGER AIRBAG" or "WITH PASSENGER AIRBAG" (according to equipment)
8	"WARNING, ECU CAN BE PROGRAMMED ONCE ONLY" : validate to carry out programming
9	Disconnect the diagnostic tool
10	Switch off the ignition, then switch it on
11	Connect the diagnostic tool
	Make the following selections
12	The vehicle (menu "choice of vehicle")
13	"TEST BY FUNCTION"
14	"AIRBAG/SEAT BELT"
15	Read the fault codes
16	Erase the fault codes

www.WorkshopManuals.co.uk

Programming using a "SOURIAU 26A" station :

1	Fit the central control unit to the vehicle
2	Connect the ECU to the vehicle's electric harness
3	Connect the diagnostic tool to the vehicle central socket
	Make the following selections
4	The vehicle (menu "vehicle type")
5	"OTHER EQUIPMENT" (menu "type of device")
6	"AIRBAG"
7	"A–S PROGRAMMING"
8	"DRIVER" or "DRIVER AND PASSENGER" (according to equipment)
9	"IF CORRECT PRESS *" : validate to carry out programming
10	Disconnect the diagnostic tool
11	Switch off the ignition, then switch it on
12	Connect the diagnostic tool
	Make the following selections
13	The vehicle (menu "vehicle type")
14	"OTHER EQUIPMENT" (menu "type of device")
15	"AIRBAG"
16	Read the fault codes
17	Erase the fault codes

Programming using a "PROXIA" station :

1	Fit the central control unit to the vehicle
2	Connect the ECU to the vehicle's electric harness
3	Connect the diagnostic tool to the vehicle central socket
	Make the following selections
4	"REPLACEMENT PARTS PROGRAMMING" ("DOWNLOADING" menu)
5	The vehicle (menu "vehicle type")
6	Enter the vehicle RPO n°
7	Select (if necessary) the central airbag from the "PROTECTION" group
8	"DRIVER" or "DRIVER AND PASSENGER" (according to equipment)
9	Validate to carry out programming
10	Disconnect the diagnostic tool
11	Switch off the ignition, then switch it on
12	Connect the diagnostic tool
	Make the following selections
13	The vehicle ("DIAGNOSTIC" menu)
14	Enter the vehicle RPO n°
15	Select (if necessary) the central airbag from the "PROTECTION" group
16	Read the fault codes
17	Erase the fault codes

www.WorkshopManuals.co.uk

6.2 – Checks after "programming"

WARNING : The fitting of an incorrectly programmed control unit is ABSOLUTELY forbidden.

Select the function "identification".

LEXIA diagnostic station or ELIT test unit :

Parameters	Remarks
PSA reference : xx xxx xxx xx	Reference written on the identification label
Vehicle	
Supplier	
Version index : x	
Seat belts : 2	Number of pyrotechnic seat belts on the vehicle
Driver's airbag : 1	
Passenger's airbag : 0 or 1	0 –> control unit programmed without passenger's airbag 1 –> control unit programmed with passenger's airbag
Supplier's check : 1	1 –> supplier's check
CITROEN check : 0 or 1	0 –> new "Replacement Part" control unit –> control unit programmed by After Sales 1 –> factory fitted control unit
After Sales check : 0 or 1	0 –> new "Replacement Part" control unit –> "Replacement Part" control unit programmed by After Sales
Prog counter : xxx	0 –> new "Replacement Part" control unit 1 –> "Replacement Part" control unit programmed by After Sales > or = 001 –> factory fitted control unit
After Sales counter : xxx	Number incremented whenever the fault codes are erased

"26A" and "PROXIA" diagnostic stations :

Parameters	Remarks
ECU connected	Vehicle for which the unit is destined
PSA reference : xx xxx xxx xx	Reference written on the identification label
Diag index : xxx	
Supplier	
Configuration	"DRIVER" or "DRIVER AND PASSENGER", depending on configuration
Supplier's check : yes/no	
Factory inspection : yes/no	No –> new "Replacement Part" control unit –> control unit programmed by After Sales Yes –> factory fitted control unit
After Sales check : yes/no	No –> new "Replacement Part" control unit Yes –> "Replacement Part" control unit programmed by After Sales
Prog counter : xxx	0 –> new "Replacement Part" control unit 001 –> "Replacement Part" control unit programmed by After Sales > or = 001 –> factory fitted control unit
After Sales counter : xxx	Number incremented whenever the fault codes are erased

www.WorkshopManuals.co.uk

FAULT FINDING : SIDE AIRBAGS

1 – PRECAUTIONS TO BE TAKEN BEFORE CARRYING OUT ANY WORK

1.1 – Removing

Before taking any action, the following operations should be carried out :
- switch on the ignition
- check the correct operation of the side airbag warning lamp in the instrument panel (the "airbag" warning lamp lights up, then goes out)
- remove the ignition key
- disconnect the battery negative terminal
- wait for at least 2 minutes (wait 10 minutes in case of abnormal operation of the "airbag" warning lamp)

1.1.1 – Operational airbag

Remove the airbag cushion.

Store the side airbag, cushion uppermost and fixings downwards (in case of triggering, there will be less projection).

1.1.2 – Deployed airbag

Remove the airbag cushion.

Wash hands after completing the procedure.

If you get any particle residue in your eyes, immediately rinse eyes with running water.

1.2 – Fitting

1.2.1 – General

Only fit components designed and calibrated specifically for the vehicle.

The airbag cushions must be made by the same manufacturer as the central control unit.

The pyrotechnic components are perishable devices : observe the expiry date indicated on the pyrotechnic components (or 10 years after the date of first registration of the vehicle).

1.2.2 – Fitting

Precautions to be taken before carrying out any work :
- ignition off
- check that battery is disconnected

Carry out the fitting procedures (according to the vehicle).

Connect the battery.

Check the operation of the airbag warning lamp on the instrument panel.

2 – PRECAUTIONS

IMPERATIVE : Never fit covers to a seat equipped with a side airbag.

2.1 – ELIT test unit : 4125–T

The tool can be used for :
- identification of ECUs
- reading the fault codes
- erasing the fault codes
- activation of the diagnostic warning lamp (from the left hand or right hand unit)

2.2 – PROXIA diagnostic station : 4165.T

The tool can be used for :
- identification of ECUs
- reading the fault codes
- erasing the fault codes
- activation of the diagnostic warning lamp (from the left hand or right hand unit)

2.3 – LEXIA diagnostic station : 4171.T

The tool can be used for :
- identification of ECUs
- reading the fault codes
- erasing the fault codes
- activation of the diagnostic warning lamp (from the left hand or right hand unit)

www.WorkshopManuals.co.uk

2.4 – Checking tools

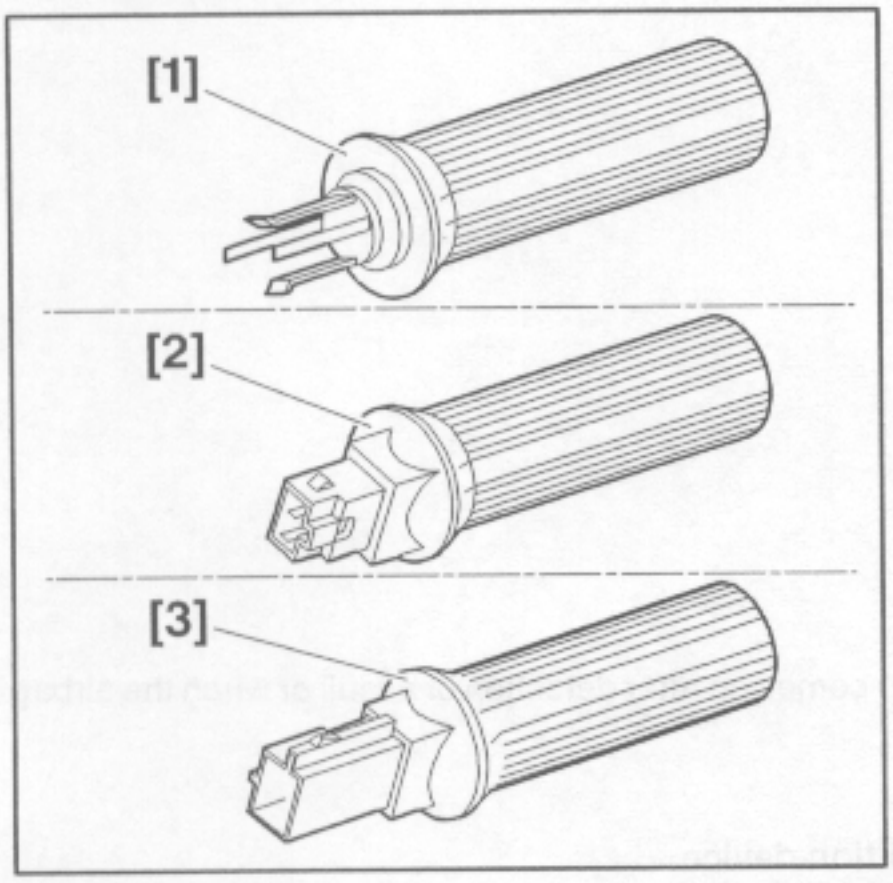


Fig : E5AP15KC

[1] tool for checking pyrotechnic devices 4181–T.A.

[2] tool for checking the pyrotechnic wiring harness 4181–T.B3.

[3] tool for checking the pyrotechnic wiring harness 4181–T.E.

The tools posses the same resistance as a pyrotechnic device in order to :

- simplify fault finding
- check the operation of the system after repairs

2.5 – Using the checking equipment

Permanent fault recorded :

- switch off ignition
- disconnect the pyrotechnic device or its intermediate harness
- connect the tool [1], [2] or [3] (depending on connector type)
- switch back on and read the faults

If the component replaced by the test tool is faulty, the fault becomes intermittent.

If not, check for faults between the connector to which the test tool has been fitted and the central control unit.

NOTE : In the case of intermittent faults, the checking tool cannot be used to aid diagnosis.

The diagnostic tool displays an intermittent fault :

- check the correct mechanical condition of the contacts and of the electric harness
- check that the ignition has not been turned on while the component was disconnected

The characteristics of the fault as described by the diagnostic equipment will identify the area to be investigated (open circuit, short circuit to earth or to battery positive).

WARNING : The connectors are shorted at the ignition device end. Poor locking of the connector could be interpreted as a short circuit by the central control unit.

IMPERATIVE : The deployment of a pretensioner is triggered by an electric current, the use therefore of an ohmmeter or any other current generating device on its electrical circuit is forbidden.

www.WorkshopManuals.co.uk

3 – FAULT FINDING CHART

3.1 – Fault list

1 activation of the warning lamp.
2 side module ignition device.
3 twin ECUs wiring.
4 battery voltage.
5 energy reserve.
6 warning lamp.
7 control unit.
8 deployment of the pyrotechnic pretensioners.

3.2 – Fault code 1 : activation of the warning lamp

This information is memorised each time the warning lamp comes on after detection of a fault or when the airbag control unit is in back–up mode.

3.3 – Fault code 2 : permanent fault, side module ignition device

Checks	Diagnostic tool	Connections : component	Result of fault code reading	
			Intermittent cartridge fault	Permanent cartridge fault
1	[2]	Beneath the passenger seat (orange connector)	The fault concerns one of the components substituted by the tool. Re–establish the original connections. Proceed to check N° 2	Faulty component(s) : electronic control unit. Main pyrotechnic harness. Replace the harness if it shows any traces of damage. Otherwise carry out a test with a new control unit
2	[1]	Airbag cartridge, remove the seat	Faulty component(s) : airbag cartridge. Replace the faulty component	Faulty component(s) : intermediate harness. Replace the faulty component

WARNING : The connectors are shorted at the ignition device end. Poor locking of the connector could be interpreted as a short circuit by the central control unit.

www.WorkshopManuals.co.uk

3.4 – Fault code 3 : twin ECUs wiring

The 2 side airbag control units communicate between themselves via the warning lamp control line.

The opposite side airbag control unit has not responded to the switching on of the ignition.

Check that the side airbag control unit of the opposite side is correctly connected and electrically supplied.

The 2 side airbag control units must be connected before switching on the ignition.

Distinction between the side airbag control units :
- the left side airbag control unit has an ignition switched + feed from terminal 5
- the right side airbag is fed by terminal 6

3.5 – Fault code 4 : battery voltage

Perform the check directly on the connector without disconnecting it.

Location of components	Connector on the control unit	Test connector box terminals	Component terminals	Test values
Ignition controlled + supply	Connected		Fuse box (passenger's compartment) A3 (13–way brown) Or connection with the console A4 (11–way brown)	Diagnostic equipment : voltmeter Ignition switched on : U = U battery

Distinction between the side airbag control units :
- the left side airbag control unit has an ignition switched + feed from terminal 5
- the right side airbag is fed by terminal 6

3.6 – Fault code 5 : energy reserve

This fault normally corresponds to an internal fault.

A succession of brief short–circuits to earth on a cartridge line can also generate this fault.

Check the condition of the pyrotechnic cartridge harnesses.

www.WorkshopManuals.co.uk

3.7 – Fault code 6 : warning lamp

The side airbag warning lamp is common to both side airbag control units.

When the ignition is switched on, only the left hand control unit detects an open circuit on the warning lamp line, the right hand control unit will only detect this fault if it is trying to illuminate the lamp to indicate a further fault.

Location of components	Connector on the control unit	Test connector box terminals	Component terminals	Test values
Side airbag warning lamp instrument panel (40)	Disconnected		Instrument panel 5 – 13 (15–way blue)	Diagnostic equipment : ohmmeter Ignition off : Check the resistance of the warning lamp : R ≈ 15 ohms Check the continuity and insulation of wires, check the fuse F19 (passenger's compartment)
	Connected			Diagnostic equipment : voltmeter Ignition switched on The warning lamp not illuminated : U = U battery Warning lamp illuminated : U = 1 volt

NOTE : Ignition switched on, when the 12 way orange connector is disconnected from the control unit, terminals 9 (earth) and 10 (airbag warning lamp) are shunted and the side airbag warning lamp lights.

3.8 – Fault code 7 : control unit

If the fault cannot be erased, replace the control unit.

3.9 – Fault code 8 : deployment of the pyrotechnic pretensioners

After an impact, if a pyrotechnic device (or devices) has deployed.

Replace all the components of the system :

- ECU
- harnesses
- airbag

www.WorkshopManuals.co.uk

4 – ELECTRICAL CHECKS

4.1 – Diagnostic link

Both units are connected in parallel.

Location of components	ECU connector	Component terminals	Test values
Link with terminal F3 of the diagnostic socket (30–way brown)	Disconnected (left hand and right hand units)	12 (12–way orange) – F3 (30–way brown)	Diagnostic equipment : ohmmeter Check the continuity and insulation from earth
	Connected	F3 (30–way brown)	Diagnostic equipment : voltmeter Connect the diagnostic tool to the vehicle central socket Switch on ignition : U = U battery

4.2 – Supply to the units

Both units are connected in parallel.

Perform the check directly on the connector without disconnecting it.

Location of components	Connector on the control unit	Test connector box terminals	Component terminals	Test values
Ignition controlled + supply	Connected	None	Fuse box (passenger's compartment) A3 (13–way brown) Or connection with the console A4 (11–way brown)	Diagnostic equipment : voltmeter Ignition switched on : U = U battery

www.WorkshopManuals.co.uk

CITROËN XM

23rd DECEMBER 1994

REF. 12 N° XM 610-00/1

ABONNEMENT GME

ELECTRICAL EQUIPMENT

CODED ANTI-THEFT DEVICE

Operating instructions

MAN 058932

GB

2

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

GUIDE TO USING : CODED ANTI–THEFT DEVICE

The coded anti–theft device prevents the engine from being started until a 4 figure personal code has been introduced.

The red diode blinks continuously with ignition off, which increases dissuasion (device locked or not).

1 – EVOLUTION

1.1 – 1994 Model Year

The coded anti–theft keyboard allows :

- automatic or deferred locking of the fuel injection E.C.U.
- unlocking of the fuel injection E.C.U.
- putting the fuel injection E.C.U. in the neutral mode
- changing the code

The fuel injection E.C.U. is locked automatically, with ignition off :

- as soon as the doors are locked
- on opening the driver's door
- 1 hour after the ignition has been switched off, at the latest

1.2 – 1995 Model Year

From the 1995 Model Year onwards, the vehicles marketed in certain countries are equipped with a coded anti–theft device without neutralisation and deferred locking possibilities.

The markings on keys 0 and D/N of the keyboard have been suppressed (and replaced by a dash).

2 – CODED ANTI–THEFT DEVICE WITH NEUTRALISATION AND DEFERRED LOCKING POSSIBILITIES

2.1 – The keyboard

The keyboard consists of 12 keys and 2 warning lamps :

- 10 keys (numbered 0 to 9) to enter the code
- one key C to change or confirm the code
- one key D/N to defer or neutralise the locking operation
- 2 green and red LED diodes

The inscriptions on the keyboard are illuminated on switching on the ignition. They are no longer illuminated :

- on switching off ignition
- on operating the starter motor
- with engine running

Each time a key is pressed, a beep is audible and the green LED flashes.

The orders sent by the keyboard are :

- unlocking
- locking
- code changing

2.2 – Initial operations

Introduction of the first "user's" code :

1	The red LED flashes
2	Switch on ignition
3	The red LED lights up
4	Introduce code 0 0 0 1 (factory code)
5	The green LED will flash 4 times with 4 audible beeps
	If the red LED stays on, repeat stage 4 entering code 1 1 1 1
6	Press key C
7	Introduce the user's code (example : 1 2 3 4)
8	Press key C
9	The green LED will flash 4 times with 4 audible beeps

In case of an error when introducing the new code (example : less or more than 4 figures have been entered), a signal will sound for 2 seconds : the whole process is cancelled.

Switch off ignition.

Start the whole process again.

NOTE : If the confidential code is lost, the fuel injection E.C.U. has to be replaced.

www.WorkshopManuals.co.uk

2.3 – Routine use – starting

1	The red LED flashes
2	Switch on ignition
3	The red LED lights up
4	Introduce the user's code (example : 1 2 3 4)
5	The green LED lights up
6	The engine will start

If the E.C.U. is neutralised :
- the red LED flashes
- switch on ignition
- the green LED lights up
- the engine will start

In case of an error when introducing the new code : the red LED remains on, accompanied by 4 audible beeps.

If attempts to start are made, a signal can be heard.

If a wrong code is entered for the third time, the keyboard will be locked for one minute (red LED together with audible beeps).

After one minute, introduce the user's code.

If the red and green LEDs light up simultaneously, this indicates an incorrect entry or a malfunction.

2.4 – Routine use – locking

The device can be locked, engine stopped.

2.4.1 – 1st possibility

The device locks on opening the driver's door or operating the central locking system.

1	Switch off ignition
2	The device locks on opening the driver's door or operating the central locking system
3	The red LED lights up (for 10 seconds)
4	The red LED flashes

2.4.2 – 2nd possibility

The device locks after an hour without driver's door opening and without operation of the central locking system.

1	Switch off ignition
2	After 30 seconds, the red LED lights up
3	After one hour, the red LED lights up (for 10 seconds)
4	The injection E.C.U. is locked
5	The red LED flashes (dissuasion)

2.4.3 – 3rd possibility

Locking deferred by one hour with driver's door opening or operation of the central locking system.

1	Switch off ignition
2	Press key D/N 20 seconds before opening the driver's door or operating the central locking system
3	The green LED will flash 4 times with 4 audible beeps
4	The deferred locking is recorded
5	The green LED flashes (for 20 seconds)
6	The red LED flashes
7	After one hour, the red LED lights up (for 10 seconds)
8	The injection E.C.U. is locked
9	The red LED flashes (dissuasion)

NOTE : In that case, opening the driver's door or operating the central locking system does not lock the E.C.U.

Observations :
- the deferred locking continues after each ignition switch–off
- to cancel the deferred locking : press key D/N, 20 seconds after switching off ignition
- if the battery is disconnected, the E.C.U. will be locked automatically, except in the neutral mode (refer to neutralisation)

www.WorkshopManuals.co.uk

2.5 – Code changing

2 possibilities :
- the green LED lights up : E.C.U. unlocked
- the red LED lights up : E.C.U. locked

1	The red LED flashes	
2	Switch on ignition	
	1st possibility	2nd possibility
3	The green LED lights up	The red LED lights up
4	Introduce the user's code (example : 1 2 3 4)	Introduce the user's code (example : 1 2 3 4)
5	The green LED will flash 4 times with 4 audible beeps	The green LED lights up
6	Press key C	
7	Enter the new code (example : 5 6 7 8)	
8	Press key C	
9	The green LED will flash 4 times with 4 audible beeps	

ATTENTION : The new code will not be entered before confirmation of this one.

The new code is entered temporarily in the E.C.U. memory.

Code confirmation : locking then unlocking operations carried out with this same code.

Unlocking the device with the old code reactivates the latter and erases the new code from the memory.

NOTE : In case of an error when introducing the new code (example : less or more than 4 figures have been entered), a signal will sound for 2 seconds.

Switch off ignition.

Resume the operation from the start.

2.6 – Neutralisation

The user can choose between two possibilities.

2.6.1 – 1st possibility

Using key D/N :

1	The red LED flashes	
2	Switch on ignition	
	1st possibility	2nd possibility
3	The green LED lights up	The red LED lights up
4	Introduce the user's code (example : 1 2 3 4)	Introduce the user's code (example : 1 2 3 4)
5	The green LED will flash 4 times with 4 audible beeps	The green LED lights up
6	Press key D/N (for over 2 seconds)	
7	The green LED will flash 4 times with 4 audible beeps	

2.6.2 – 2nd possibility

Using code 0 0 0 0 :

1	The red LED flashes	
2	Switch on ignition	
	1st possibility	2nd possibility
3	The green LED lights up	The red LED lights up
4	Introduce the user's code (example : 1 2 3 4)	Introduce the user's code (example : 1 2 3 4)
5	The green LED will flash 4 times with 4 audible beeps	The green LED lights up
6	Press key C	
7	Introduce code 0 0 0 0	
8	Press key C	
9	The green LED will flash 4 times with 4 audible beeps	

Observations :
- in these 2 cases, having switched off ignition, the neutralisation is indicated : the green LED lights up for 10 seconds, with 4 audible beeps at the beginning
- the red LED blinks (dissuasion) for 30 seconds after the ignition being switched off

www.WorkshopManuals.co.uk

2.7 – Return to the user's code

1	The red LED flashes
2	Switch on ignition
3	The green LED lights up
4	Introduce the user's code (example : 1 2 3 4)
5	The green LED will flash 4 times with 4 audible beeps

3 – CODED ANTI–THEFT DEVICE WITHOUT NEUTRALISATION OR DEFERRED LOCKING POSSIBILITY

3.1 – The keyboard

The keyboard consists of 12 keys and 2 warning lamps :

- 10 keys (numbered 0 to 9) to enter the code
- one key C to change or confirm the code
- 2 keys marked with a dash "–" for a future use
- 2 green and red LED diodes

The inscriptions on the keyboard are illuminated on switching on the ignition. They are no longer illuminated :

- on switching off ignition
- on operating the starter motor
- with engine running

Each time a key is pressed, a beep is audible and the green LED flashes.

The orders sent by the keyboard are :

- unlocking
- locking
- code changing

3.2 – Initial operations

Introduction of the first "user's" code :

1	The red LED flashes
2	Switch on ignition
3	The red LED lights up
4	Introduce code 1 1 1 1
5	The green LED will flash 4 times with 4 audible beeps
6	Press key C
7	Introduce the user's code (example : 1 2 3 4)
8	Press key C
9	The green LED will flash 4 times with 4 audible beeps

3.3 – Routine use – starting

1	The red LED flashes
2	Switch on ignition
3	The red LED lights up
4	Introduce the user's code (example : 1 2 3 4)
5	The green LED lights up
6	The engine will start

In case of an error when introducing the new code : the red LED remains on, accompanied by 4 audible beeps.

If engine starting is attempted, a signal can be heard.

If a wrong code is entered for the third time, the keyboard will be locked for one minute (red LED together with audible beeps).

After one minute, introduce the user's code.

If the red and green LEDs light up simultaneously, this indicates an incorrect entry or a malfunction.

3.4 – Routine use – locking

The device can be locked, engine stopped.

3.4.1 – 1st possibility

The device locks on opening the driver's door or operating the central locking system.

1	Switch off ignition
2	The device locks on opening the driver's door or operating the central locking system
3	The red LED lights up (for 10 seconds)
4	The red LED flashes

3.4.2 – 2nd possibility

The device locks after an hour without driver's door opening and without operation of the central locking system.

1	Switch off ignition
2	After 30 seconds, the red LED flashes
3	After one hour, the red LED lights up (for 10 seconds)
4	The injection E.C.U. is locked
5	The red LED flashes (dissuasion)

www.WorkshopManuals.co.uk

3.5 – Code changing

2 possibilities :

- the green LED lights up : E.C.U. unlocked
- the red LED lights up : E.C.U. locked

1	The red LED flashes	
2	Switch on ignition	
	1st possibility	2nd possibility
3	The green LED lights up	The red LED lights up
4	Introduce the user's code (example : 1 2 3 4)	Introduce the user's code (example : 1 2 3 4)
5	The green LED will flash 4 times with 4 audible beeps	The green LED lights up
6	Press key C	
7	Enter the new code (example : 5 6 7 8)	
8	Press key C	
9	The green LED will flash 4 times with 4 audible beeps	

ATTENTION : The new code will not be entered before confirmation of this one.

The new code is entered temporarily in the E.C.U. memory.

Code confirmation : locking then unlocking operations carried out with this same code.

Unlocking the device with the old code reactivates the latter and erases the new code from the memory.

NOTE : In case of an error when introducing the new code (example : less or more than 4 figures have been entered), a signal will sound for 2 seconds.

Switch off ignition.

Resume the operation from the start.

4 – REPAIRS

4.1 – Coded anti–theft device with neutralisation and deferred locking possibilities

4.1.1 – Replacing the injection E.C.U.

Initial operations – introduction of the first "user's" code :

1	The red LED flashes	
2	Switch on ignition	
3	The red LED lights up	
4	Introduce code 0 0 0 1	
	1st possibility	2nd possibility
5	–	The red LED stays on
6	–	Introduce code 1 1 1 1
7	The green LED will flash 4 times with 4 audible beeps	
8	Carry on the initial operations procedure	

4.1.2 – Replacing the keyboard

Both keyboard versions are available from the Replacement Parts Department.

Refit a keyboard corresponding with the original definition.

www.WorkshopManuals.co.uk

4.2 – Coded anti–theft device without neutralisation or deferred locking possibility

4.2.1 – Replacing the injection E.C.U.

Initial operations – introduction of the first "user's" code :

1	The red LED flashes	
2	Switch on ignition	
3	The red LED lights up	
4	Introduce code 1 1 1 1	
	1st possibility	2nd possibility
5	The green LED will flash 4 times with 4 audible beeps	The red LED stays on
6	–	Obtain a keyboard with keys 0 and D/N and connect it up
7	–	Introduce code 0 0 0 1
8	–	The green LED will flash 4 times with 4 audible beeps
9	–	Press key C
10	–	Introduce code 1 1 1 1
11	–	Press key C
12	–	The green LED will flash 4 times with 4 audible beeps
13	–	Refit the original keyboard
14	Carry on the initial operations procedure	

4.2.2 – Replacing the keyboard

Both keyboard versions are available from the Replacement Parts Department.

Refit a keyboard corresponding with the original definition.

www.WorkshopManuals.co.uk

Xm

23rd DECEMBER 1994

REF. 12 N° ZX 653-1/1

ABONNEMENT GME

ELECTRICAL EQUIPMENT

- **REMOVAL - REFITTING :**

  Car radio (7/94⟶)

MAN 058932

2

GB

AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

www.WorkshopManuals.co.uk

REMOVING – REFITTING : THE CAR RADIO

1 – REMOVAL

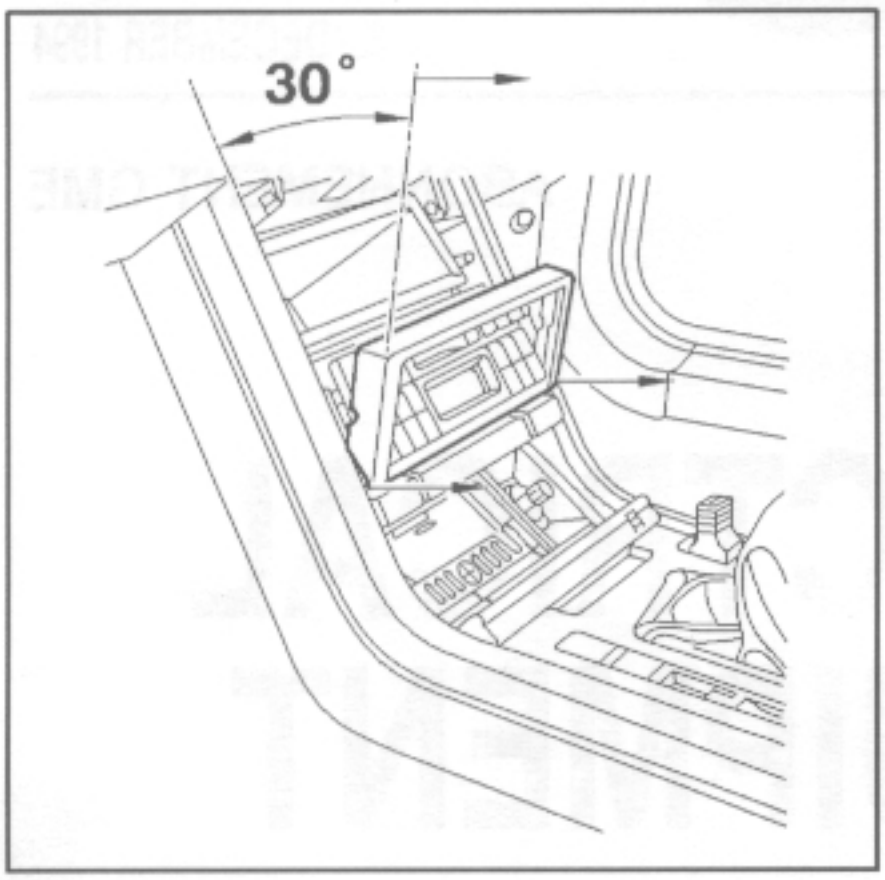


Fig : D5AP004C

Unclip the upper section of the fascia surround.

Tilt the surround by 30 °.

Remove the fascia surround.

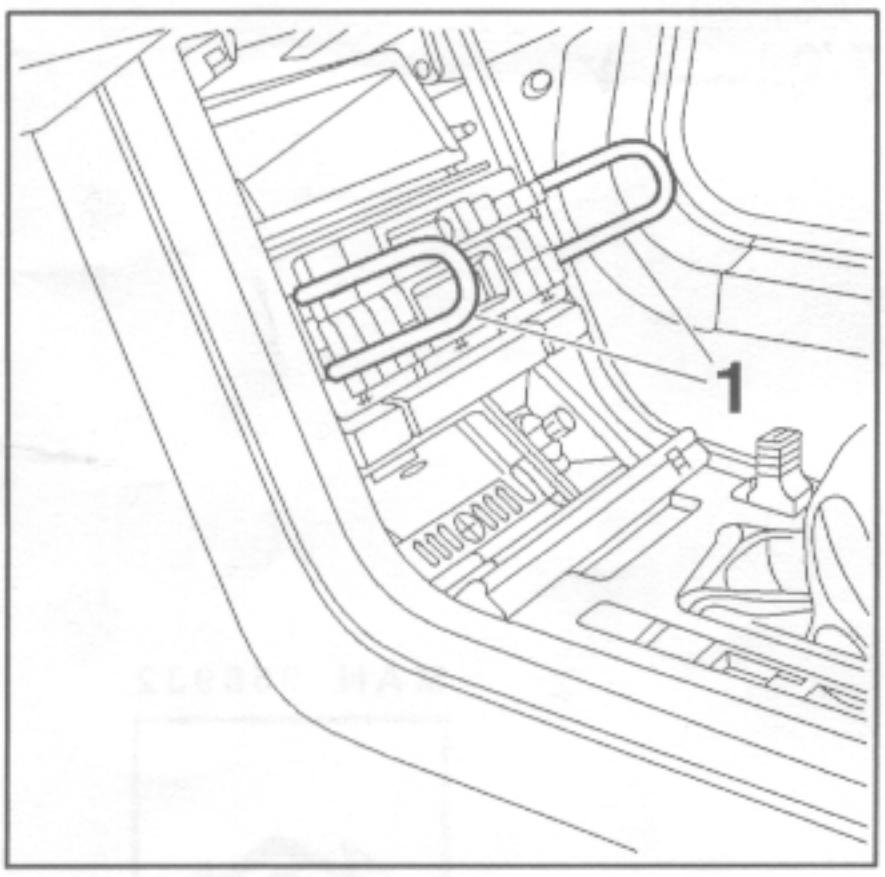


Fig : D5AP005C

Insert U–shaped clips (1) on each side of the car radio until engaged.

Withdraw the car radio with the help of the clips.

Disconnect the connectors.

Take out the car radio.

Remove the clips.

2 – REFITTING

Proceed in the reverse order to removal.

www.WorkshopManuals.co.uk

GENERAL FEATURES

www.WorkshopManuals.co.uk

NUMBER	APPLICABLE	DESCRIPTION
500-00/1	6383 →	**ELECTRICAL INSTALLATION GENERAL INFORMATION**
501-00/1	6383 →	**PARTS LIST**
501-00/2	6383 → → 6568	**LIST AND LOCATION OF THE ELECTRICAL HARNESSES** XMSO-I
501-00/2a	6568 → → 6749	Evolution a : Modification to the interconnection of electrical harnesses SM and JN XMSOA-I
501-00/2b	6749 → → 6947	Evolution b : Modification to the interconnection of electrical harnesses AV and AB XMSOB-I
501-00/2c	6947 → → 7483	Evolution c : Removal of electrical harness UD XMA001-I
501-00/2d	7483 →	Evolution d : Removal of electrical harness PA XMA003-I
502-00/1	6383 → → 6568	**JUNCTION BOX AND LIST OF FUSES** XMSOD+XMSOE
502-00/1a	6568 → → 6749	Evolution a : Modified fuse box and fuse location XMSOF & XMSOG
502-00/1b	6749 → → 6947	Evolution b : Modified fuse box and fuse location XMSOH & XMSOJ
502-00/1c	6947 → → 7084	Evolution c : Fuses location modified
502-00/1d	7084 → → 7483	Evolution d : Fuse 10 = 10A instead of 5A
502-00/1e	7483 →	Evolution e : supply to F16 modified
502-00/2	6383 → → 7483	**ENGINE FUSE BOX**
502-00/2a	7483 →	Evolution a : Location of fuses F10, F12, F14 XMA006-XMA007
503-00/1	6383 → → 6749	**DIAGNOSTIC** XMSOA
503-00/1a	6749 → → 6947	Evolution a : Modified ADC diagnostic XMSOK
503-00/1b	6947 →	Evolution b : Modified diagnostic test for seat belt pretensioners XMA002
503-00/1c	7483 →	Evolution c : Electrical harness PB modified XMA008
504-00/1	6383→	**TABLE OF THE BULBS**

www.WorkshopManuals.co.uk

PARTS LIST

www.WorkshopManuals.co.uk

Ref.	Description	Func.
1	Warning lamps central display unit	52
2	R.H. display unit (computer, clock, exterior temperature)	52
3	L.H. display unit (electronic or silhouette)	52
4	Automatic gearbox gear selector display unit	59
5	Front cigar lighter	55
6	Rear cigar lighter	55
10	Ignition distributor	51
15	Alternator	53
20	L.H. horn	54
21	R.H. horn	54
35	Battery	TT
40	Instrument cluster	52
41	ABS hydraulic control block	57
42	Auto. gearbox electro-hydraulic control block	59
45	Ignition coil	51
48	Max. fuse box (single or No.1)	64
49	Max. fuse box No.2	64
50	Supply box	TT
51	Branch box	TT
52	Junction box	52-64
53	Water temperature control unit	52-64
54	Bulb failure detection unit	67
55	Door locking control unit	51-58
56	Distance sensor interface	67
57	Electric windows control unit	67
58	Door locking receiver control unit	51
59	Preheater control unit	59
60	Cruise control control unit	51
61	Catalytic converter control unit	TT
62	Earth control unit	-
63	Additional fuse box	-
64	Fuel transfer pump control unit	-
65	Water level control unit	67
67	Anti-theft alarm control unit	56
68	Electric rear view mirror control unit	55
70	Pyrotechnic seat belts control unit	63
71	L.H. front heated seat regul. control unit	63
72	R.H. front heated seat regul. control unit	63
73	L.H. rear heated seat regul. control unit	63
74	R.H. rear heated seat regul. control unit	63
100	Sparking plugs	51
101	Preheater plugs	51
130	Lights-on audible warning	54
131	Overspeed audible warning	59
132	Radio-telephone audible warning	65
133	Hydraulic pressure and/or fluid level audible warning	52
139	Automatic gearbox E.C.U.	59
140	ABS E.C.U.	57
141	Air conditioning E.C.U.	64
142	Injection E.C.U.	51
143	Suspension E.C.U.	58
144	Recycling control E.C.U.	51
145	Airbag E.C.U.	55
146	L.H. side airbag E.C.U.	55
147	R.H. side airbag E.C.U.	55
150	Front knock sensor	51
151	Rear knock sensor	51
152	Engine speed sensor	51
153	Body movement sensor	58
154	Distance sensor	51
155	L.H. front wheel sensor	57
156	R.H. front wheel sensor	57
157	L.H. rear wheel sensor	57
158	R.H. rear wheel sensor	57
159	Steering wheel sensor	58
160	TDC sensor	51
161	Fuel pressure sensor	-
162	Reference cylinder sensor	51
163	L.H. volumetric sensor	67
164	R.H. volumetric sensor	67
165	Injector needle lift sensor	51
166	Delivery valve position sensor	51
167	Auto. gearbox inlet speed sensor	59
168	Auto. gearbox outlet speed sensor	59
170	Flasher unit	54
173	Compact disc loader	65
176	Coded anti-theft device keyboard	51
178	Radio-telephone set	65
180	Additional air control	51
181	Radio control	65
182	Heater control	64
183	Air blower control	64
184	Air conditioning control	64
185	Cold start control	51
186	Cooled air blower control	64
210	Lighting selector switch (headlamp position)	54
211	L.H. selector switch (lighting, direction indicator, horn)	54
212	R.H. selector switch (windscreen wiper, computer)	56
213	Parking selector switch	52
214	Cruise control selector switch	59
215	Rear view mirrors selector switch	56
216	Automatic gearbox selector switch (on the gearbox)	59
217	Automatic gearbox selector switch (on the lever)	59
218	Folding rear view mirrors switch	56
254	Horn compressor	54
255	Refrigeration compressor	64
260	Tachometer	51-52
270	HT coil suppressor	51
280	Diagnostic connector	TT
294	Driver's seat belt switch	52
295	L.H. front door deadlocking switch	67
296	R.H. front door deadlocking switch	67
297	L.H. rear door deadlocking switch	67
298	R.H. rear door deadlocking switch	67
299	Horn switch	52
300	Anti-theft switch	TT
301	Glove box lighting switch	55
302	Boot lighting contact	55
303	Bonnet L.H. closing contact (w.l.)	67
304	Bonnet R.H. closing contact (w.l.)	67
305	Driver's door closing contact (w.l.)	67
306	Passenger's door closing contact (w.l.)	67
307	L.H. rear door closing contact (w.l.)	67
308	R.H. rear door closing contact (w.l.)	67
309	Tailgate closing contact (w.l.)	67
310	L.H. front door pillar contact	55
311	R.H. front door pillar contact	55
312	L.H. rear door pillar contact	55

www.WorkshopManuals.co.uk

Ref.	Description	Func.
313	R.H. rear door pillar contact	55
314	Reversing lamps contact	54
315	Handbrake switch	52
316	Coolant level switch	52
317	Hydraulic fluid level switch	52
318	Throttle butterfly spindle switch	51
319	Stoplamp switch	54
320	Rotary switch	65
321	Tailgate locking switch	67
322	Atmospheric pressure switch	51
323	Sun roof closed position switch	67
324	Sun roof end of travel switch	67
325	Sun roof end of travel tilt position switch	67
326	Choke switch	52
327	Differential locking switch	-
328	Clutch switch	-
329	Recycling switch	51
330	Post-heater switch	51
340	Flowmeter	51
350	Starter motor	53
361	Door anti-jolt diode	58
362	Tailgate anti-jolt diode	58
363	Supply anti-jolt diode	58
375	Ignition distributor	51
380	L.H. front door sill lighting	55
381	R.H. front door sill lighting	55
382	L.H. rear door sill lighting	55
383	R.H. rear door sill lighting	55
384	Glove box lighting	55
385	Front ashtray lighting	55
386	Rear ashtray lighting	55
387	Ashtray lid control lamp	55
388	Radio flap control lamp	55
389	Boot lighting	55
390	Passenger's sun visor mirror lighting	55
391	Registration plate L.H. lamp	54
392	Registration plate R.H. lamp	54
393	Under bonnet lighting	55
394	Heater control lighting	64
396	Anti-theft lighting	55
397	L.H. boot lamp	55
398	R.H. boot lamp	55
399	Boot lamp on tailgate	55
400	Driver's sun visor mirror lighting	55
427	Rear suspension electrovalve	58
428	OCR air electrovalve	51
429	Fuel pump cut-out electrovalve	51
430	Canister discharge electrovalve	51
431	Fast idling electrovalve	51
432	Idling actuator	51
433	Suspension electrovalve (single or front)	58
434	Canister electrovalve	51
435	Float chamber venting solenoid	51
436	Idle cut off electrovalve	51
437	Recycling proportional electrovalve	51
438	Cruise control electrovalve	59
439	ACAV C electrovalve	51
440	ACAV L electrovalve	51
441	Ignition distr. vacuum electrovalve	51
442	Recycling electrovalve	51
443	Advance correction electrovalve	51
444	Turbo control electrovalve	51
445	Injection delivery control electrovalve	51
446	Throttle butterfly control electrovalve	51
447	Automatic gearbox electrovalve assembly	59

Ref.	Description	Func.
470	Radio-telephone sender unit	65
474	L.H. front door lock assembly	67
475	R.H. front door lock assembly	67
476	L.H. rear door lock assembly	67
477	R.H. rear door lock assembly	67
478	Driver's pyrotechnic seat belt reel	55
479	Passenger's pyrotechnic seat belt reel	55
480	L.H. rear lamp cluster	54
481	R.H. rear lamp cluster	54
482	L.H. front fog lamp	54
483	R.H. front fog lamp	54
484	L.H. rear fog lamp	54
485	R.H. rear fog lamp	54
486	L.H. dipped beam	54
487	R.H. dipped beam	54
488	L.H. front direction indicator	54
489	R.H. front direction indicator	54
490	L.H. rear direction indicator	54
491	R.H. rear direction indicator	54
492	L.H. side lamp	54
493	R.H. side lamp	54
494	L.H. rear stop and tail lamp	54
495	R.H. rear stop and tail lamp	54
496	L.H. tail lamp on tailgate	54
497	R.H. tail lamp on tailgate	54
498	L.H. reversing lamp	54
499	R.H. reversing lamp	54
500	L.H. direction indicator repeater	54
501	R.H. direction indicator repeater	54
502	L.H. headlamp	54
503	R.H. headlamp	54
504	L.H. stoplamp	54
505	R.H. stoplamp	54
506	L.H. tail lamp	54
507	R.H. tail lamp	54
508	Additional stoplamp	54
509	L.H. rear lamp cluster (on tailgate)	54
510	R.H. rear lamp cluster (on tailgate)	54
540	Fuse (F...)	-
541	L.H. heated windscreen washer jet	56
542	R.H. heated windscreen washer jet	56
548	Refrigeration unit	64
550	L.H. front loudspeaker	65
551	R.H. front loudspeaker	65
552	L.H. front tweeter loudspeaker	65
553	R.H. front tweeter loudspeaker	65
554	L.H. rear loudspeaker	65
555	R.H. rear loudspeaker	65
563	Fault finding indicator (vehicle silhouette)	-
570	Injectors	51
580	Driver's seat position switch	63
581	Passenger's seat position switch	63
582	Air conditioning switch	64
583	Rear function locking switch	55-67
584	Driver's backrest switch	63
585	Passenger's backrest switch	63
586	Rear screen wipe/wash switch	56
587	Front fog lamp switch	54
588	Rear fog lamp switch	54
589	Hazard warning lamps switch	54
590	Driver's electric window switch	67

www.WorkshopManuals.co.uk

Ref.	Description	Func.
591	Passenger's electric window switch (on the driver's door)	67
592	Passenger's electric window switch (on the passenger's door)	67
593	L.H. electric rear window switch on door	67
594	L.H. electric rear window switch on console	67
595	R.H. electric rear window switch on door	67
596	R.H. electric rear window switch on console	67
597	Heated rear screen switch	56
598	Interior lamp switch	55
599	Recycling switch	64
600	Driver's seat height adjustment switch	63
601	Driver's heated seat switch	63
602	Passenger's heated seat switch	63
603	L.H. rear heated seat switch	63
604	R.H. rear heated seat switch	63
605	Central armrest switch	63
606	Suspension switch	58
607	Sun roof switch	67
608	Headlights adjustment device switch	54
609	Map reading lamp switch	55
610	Differential locking switch	59
611	Cruise control switch	59
613	Rear screen wiper switch	56
615	Alarm switch (volumetric protection)	67
620	Inertia switch	51
650	Fuel gauge	52
660	Map reading lamp	55
670	Brake pressure switch (suspension)	51-58
671	Engine oil pressure switch	51
672	Hydraulic pressure switch	52
673	Air filter pressure switch	51
674	Turbo overcharging pressure switch	51
680	Ignition module	51
681	Air blower control module	64
682	Eurobag steering wheel module	55
683	Diesel injection pump module	51
685	Clock	55
690	Driver's seat pull/push motor	63
691	Passenger's seat pull/push motor	63
692	Driver's seat backrest motor	63
693	Passenger's seat backrest motor	63
694	Windscreen wiper motor	56
695	Rear screen wiper motor	56
696	L.H. electric front window motor	67
697	R.H. electric front window motor	67
698	L.H. electric rear window motor	67
699	R.H. electric rear window motor	67
700	Air mixing motor	64
701	Driver's seat raising motor	63
702	Sun roof motor	67
703	Driver's door locking motor	67
704	Passenger's door locking motor	67
705	L.H. rear door locking motor	67
706	R.H. rear door locking motor	67
707	Fuel filler flap locking motor	67
708	Tailgate locking motor	67
709	Central armrest motor	63
710	Air distribution motor	64
711	Air recycling motor (single or L.H.)	64
712	Idling regulation stepper motor	51
713	R.H. air recycling motor	64
714	ABS hydraulic pump motor	57
715	L.H. headlamp adjusting device motor	54
716	R.H. headlamp adjusting device motor	54
717	Differential locking motor	59
720	Electric cooling fan (single or L.H.)	64
721	R.H. electric cooling fan	64
724	Anti-pinch electric window reduction motor	67
730	L.H. front door deadlocking motor	67
731	R.H. front door deadlocking motor	67
732	L.H. rear door deadlocking motor	67
733	R.H. rear door deadlocking motor	67
740	L.H. rear interior lamp	55
741	R.H. rear interior lamp	55
742	Front centre interior lamp	55-65
743	Rear centre interior lamp	55
750	L.H. front brake pads	52
751	R.H. front brake pads	52
755	Fuel pump	51
756	Headlamp washer pump	56
757	Windscreen washer pump	56
758	Rear screen washer pump	56
759	Recycling vacuum pump	51
760	Cruise control vacuum pump	59
761	Fuel transfer pump	-
763	Diesel injection pump	51
765	Radio set	65
770	Throttle spindle potentiometer	51
771	Accelerator pedal potentiometer	58
772	Richness potentiometer	51
773	Throttle lever potentiometer	51
775	Pressostat	64
778	Electric cooling fan test plug	64
779	T.D.C. sensor plug	51
780	Supply socket (accessories)	55
781	ABS diagnostic socket	67
782	Air conditioning diagnostic socket	64
783	Injection diagnostic socket	51
784	Suspension diagnostic socket	58
785	Emission control diagnostic socket	51
786	Headlamp : L.H. main and dipped beams	55
787	Headlamp : R.H. main and dipped beams	55
790	Air blower (single or L.H.)	64
791	R.H. air blower	64
793	Coded anti-theft device relay	51
795	Anti-theft alarm relay	67
800	Anti-jolt relay	58
801	Automatic gearbox relay	59
802	Injection E.C.U. relay	51
804	Air conditioning relay	64
805	Refrigeration compressor cut-off relay	64
806	Front fog lamps relay	54
807	Injection relay	51
807A	Power multifunction double relay	51
807B	Engine test multifunction double relay	51
808	Headlamp washer relay	56
809	Electric front window relay	67
810	Electric rear window relay	67
811	Driver's seat handling relay	63
812	Passenger's seat handling relay	63
813	Cooling fan relay (slow/fast speed)	64

www.WorkshopManuals.co.uk

Ref.	Description	Func.
814	Cooling fan relay (fast speed)	64
815	Cooling fan relay (speed inverter)	64
816	Fuel pump relay	51
817	Front heated seats relay	63
818	Oxygen sensor relay	51
819	Rear fog lamps relay	54
820	Heated rear screen relay	56
821	Air conditioning additional relay	64
822	Injection refrigeration compressor cut-off relay	51
823	Sun roof relay	67
824	Rear heated seats and/or sun roof relay	63
825	Dipped beams relay	54
826	Choke heating relay	51
827	Dipped beams (day time) or Dim-dip relay	54
828	Cooling fan relay (against fuel vapour lock)	64
829	Side and tail lamps (day time) relay	54
830	Recycling relay	51
831	Cruise control relay	59
832	Sun roof sliding relay	67
833	Sun roof tilt position relay	67
834	Headlamps relay	54
836	Ignition relay	51
837	Lighting timer relay	55
838	Automatic gearbox idling speed relay	51-59
839	Cooling fan relay (air conditioning)	51-64
840	Fuel injection correction relay	51
841	Electric window re-energising relay	67
842	Air blower relay	64
843	Horn compressor relay	57
844	ABS main relay	57
845	ABS hydraulic pump relay	57
846	Fuel transfer pump relay	–
848	Engine running information relay	TT
850	L.H. rear seat base resistance	63
851	R.H. rear seat base resistance	63
852	L.H. rear seat backrest resistance	63
853	R.H. rear seat backrest resistance	63
854	L.H. front seat resistance	63
855	R.H. front seat resistance	63
856	Choke heater resistance relay	51
857	Carburettor base heating resistance	51
858	Dipped beams resistance	54
859	Air blower speed resistance	64
860	Coding resistance	51
861	Inlet air heating resistance	51
862	Injector additional resistance	51
863	Atmospheric pressure switch resistance	51
864	Electric cooling fan resistance	64
865	Oil fumes heating element	51
866	Emission control resistance	51
867	Automatic gearbox pressure regulators assembly	59
874	Sun roof supply relay	67
875	L.H. rear view mirror	56
876	R.H. rear view mirror	56
880	Lighting rheostat	52-65
884	Driver's airbag	55
885	Passenger's airbag module	55
886	L.H. side airbag	55
887	R.H. side airbag	55
888	Siren	67
899	Front oxygen sensor	51

Ref.	Description	Func.
900	Rear or single oxygen sensor	51
901	Screen washer water level sensor	52-56
902	Engine oil level sensor	52
903	Injection air pressure sensor	51
904	Engine oil pressure sensor	51-52
905	Turbo air pressure sensor	51
906	Exterior air temperature sensor	52
907	Injection air temperature sensor	51
908	Air conditioning duct temperature sensor	64
909	Engine water temperature sensor (injection)	51
910	Engine water temperature sensor	52-64
911	Engine water temperature sensor (dial)	52
912	Evaporator temperature sensor	64
913	Vehicle interior air temperature sensor	64
914	Water-in-fuel sensor	51
915	Water temperature switch sensor	52
916	Air conditioning water temperature sensor	64
917	Catalytic converter temperature sensor	51
918	Engine oil temperature sensor	52
919	Engine water level sensor	52
920	Oil temperature switch sensor (on automatic gearbox)	51
921	Engine water temperature sensor (emission control)	51
922	Fuel temperature sensor	52
923	Engine water temperature switch sensor (emission control)	51
924	Automatic gearbox oil temperature sensor	59
940	Advance timing system	51
960	Anti-jolt timer	58
961	Lighting timer	55
962	Windscreen wiper timer	56
963	Rear screen wiper timer	56
964	Cooling fan timer	64
969	Engine water pre-warning thermal switch	52
970	Engine water warning thermal switch	51-52
971	Radiator coolant thermal switch	64
972	Engine coolant thermal switch (against fuel vapour lock)	64
973	Coolant thermal switch (air con.)	64
974	Coolant thermal switch (emission control)	51
975	Engine oil contact switch	51
990	Heated rear screen	56
991	Anti-theft alarm warning lamp	67
992	Airbag warning lamp	55

www.WorkshopManuals.co.uk

A – LIST OF THE DOCUMENTS COVERING THE ELECTRICAL INSTALLATION OF A VEHICLE
B – DESCRIPTION OF AN ELECTRICAL DIAGRAM
C – HOW TO READ AN ELECTRICAL DIAGRAM
D – SYMBOLS
E – COLOUR CODE

A – ELECTRICAL INSTALLATION OF A VEHICLE

Documents covering the electrical installation :

- parts list;
- list of the wiring harnesses and connectors;
- circuit diagram;
- wiring diagram;
- supply and junction box;
- fuse chart;
- chart of the bulbs.

B – CONTENTS AND DESCRIPTION OF AN ELECTRICAL DIAGRAM

Contents :

An electrical diagram consists of 2 parts :

- a circuit diagram, complete, for the function concerned;
- the corresponding wiring diagram.

Description :

• **The circuit diagram** presents the various circuits in a functional way :

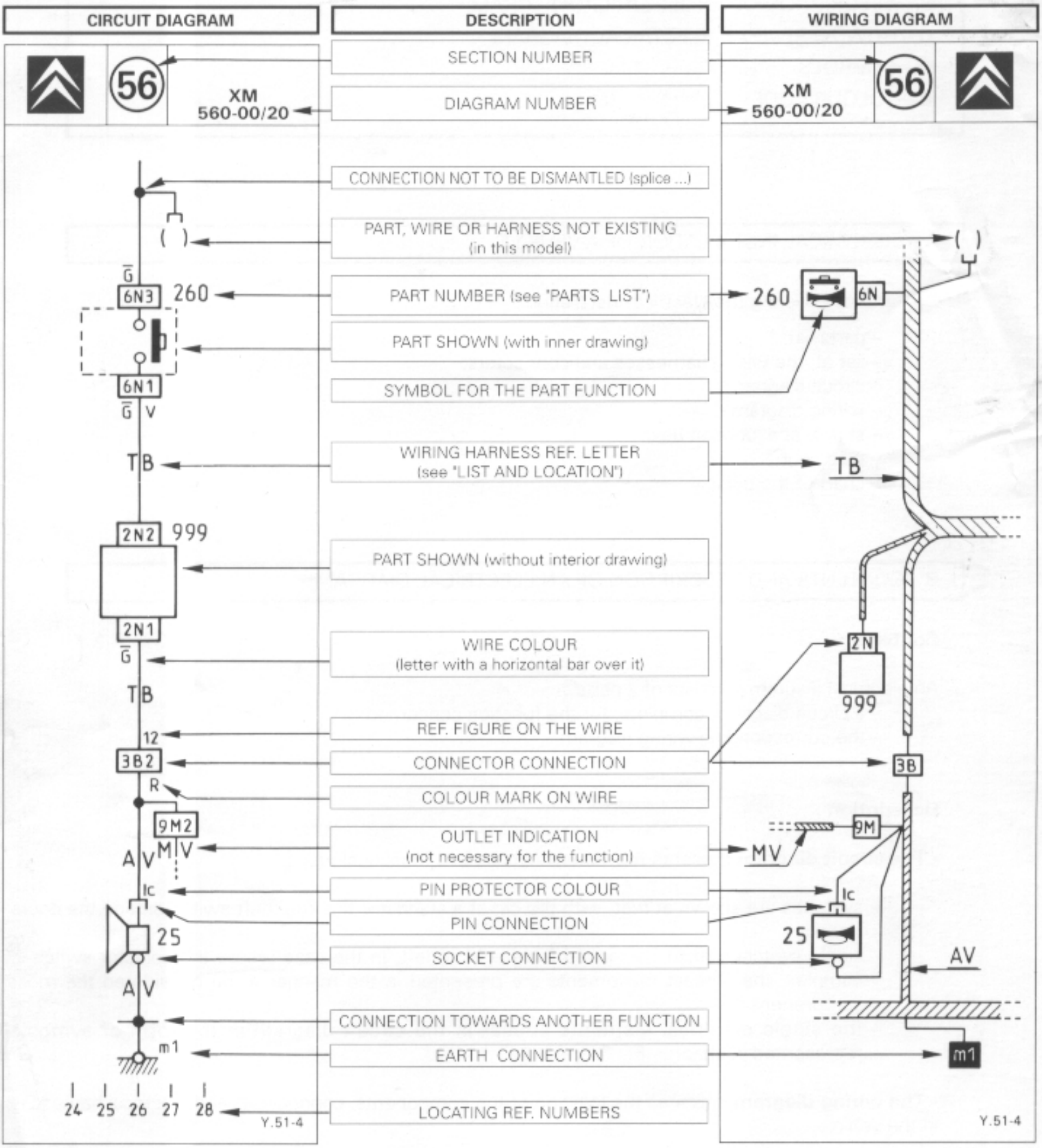
- switches are shown at rest, with the car at a standstill, the anti-theft switch on and the doors closed;
- single switches must be moved from right to left. In the case where the selector switch is complex, the contact movements are presented in the manner to be considered the most comprehensible ;
- the single electrical elements appear in the circuit diagram in the form of symbols represented in chapter E.

• **The wiring diagram** indicates the location of the components, connections and electrical harnesses in the vehicle.

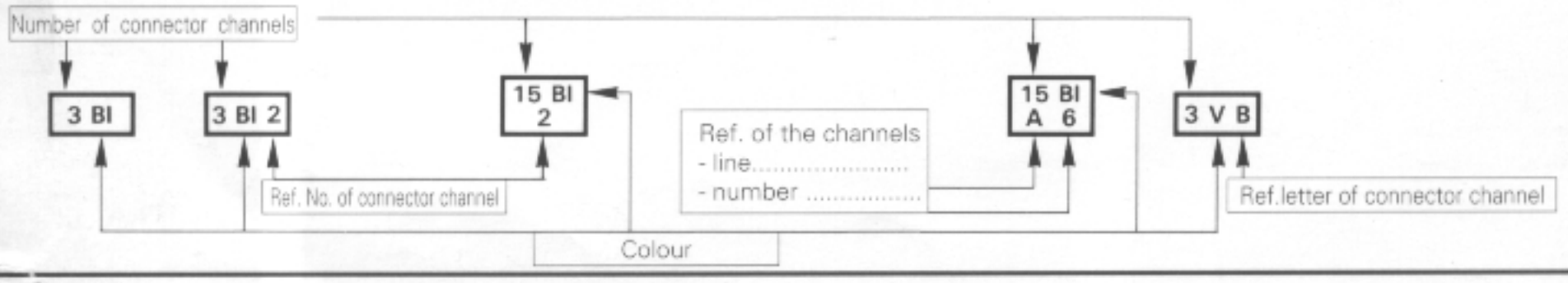
www.WorkshopManuals.co.uk

C – HOW TO READ AN ELECTRICAL DIAGRAM

Circuit and wiring diagrams coding *(the following example is fictitious, it should not be used for repair operations).*



Connector coding : A connector can be referenced by 2, 3 or 4 symbols :



www.WorkshopManuals.co.uk

D - SYMBOLS

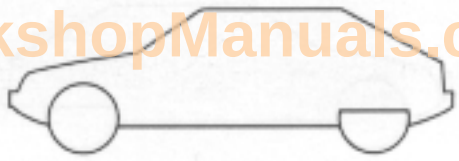
- Description of the symbols

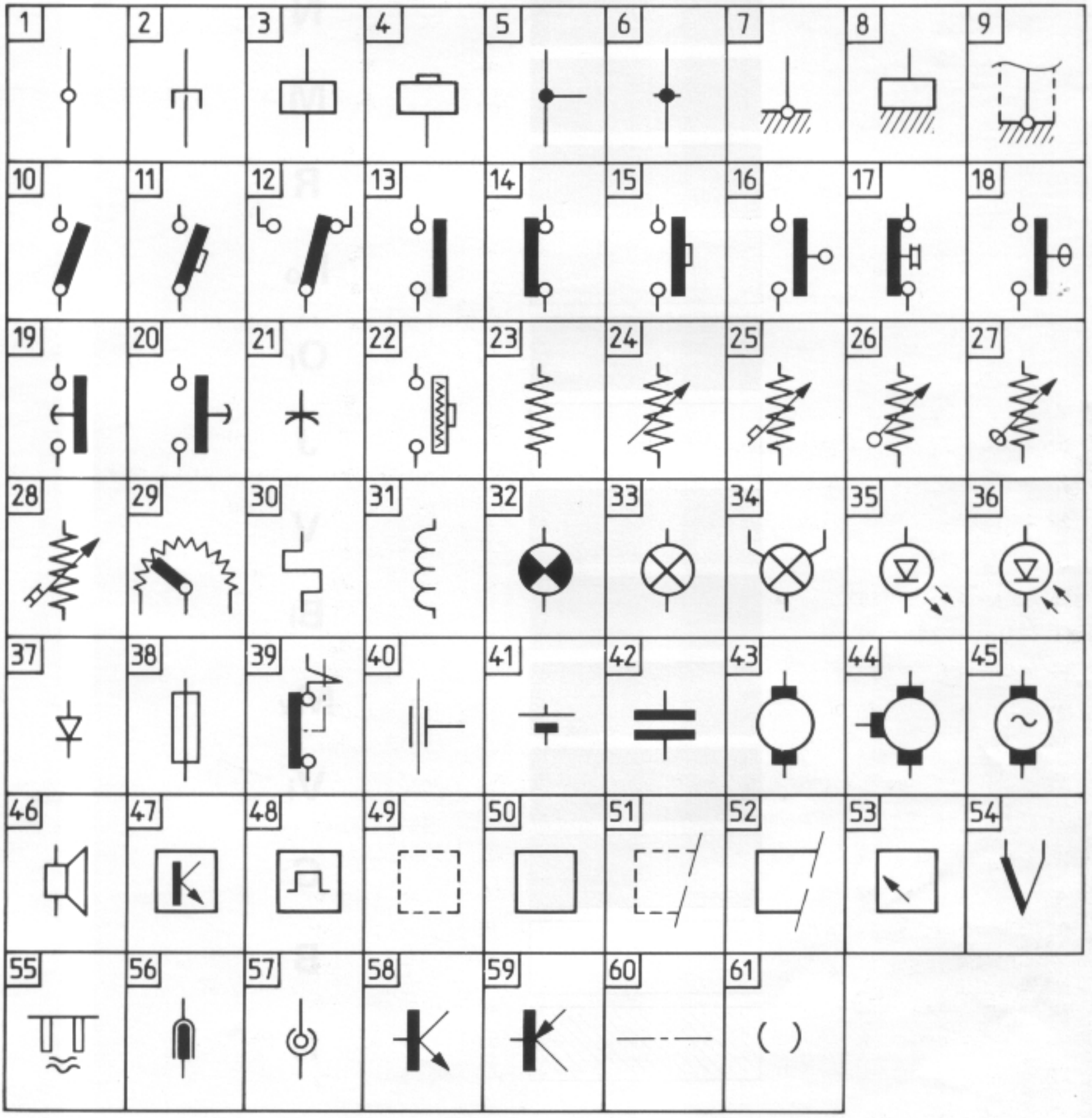
www.WorkshopManuals.co.uk

No.	Description
1	Socket connection
2	Pin connection
3	Connector connection
4	Connector connection (with index for differenciation)
5	Junction not to be dismantled (splice)
6	Junction not to be dismantled (with other connection possibilities)
7	Socket earthing
8	Connector earthing
9	Part body earth connection
10	Switch (non automatic return)
11	Manual switch
12	Selector switch
13	Switch open at rest (automatic return)
14	Switch closed at rest (automatic return)
15	Manual contact switch
16	Mechanical contact switch
17	Pressure contact switch
18	Thermal switch
19	Contact delayed on opening
20	Contact delayed on closing
21	Friction contact switch
22	Manual contact switch(cigar-lighter with resistance)
23	Resistance
24	Rheostat
25	Manual rheostat
26	Mechanical rheostat
27	Temperature rheostat
28	Pressure rheostat
29	Rheostat
30	Shunt
31	Coil (relay, electrovalve)

No.	Description
32	Warning lamp
33	Light bulb
34	Double-filament light bulb (LED)
35	Light emitting diode)
36	Photo-diode
37	Diode
38	Fuse
39	Thermal circuit breaker
40	Screening
41	Battery cell
42	Suppressor
43	Motor
44	2-speed motor
45	Alternative power generator
46	Sound equipment (horn, loudspeaker)
47	Electronic control unit
48	Delay unit
49	Part framing (with its circuit diagram)
50	Part framing (with its circuit diagram)
51	Part extract
52	Part extract
53	Indicator
54	Thermocouple
55	Electrodes
56	Oxygen sensor
57	Supply socket
58	NPN transistor
59	PNP transistor
60	Connection indicating line
61	No extremity

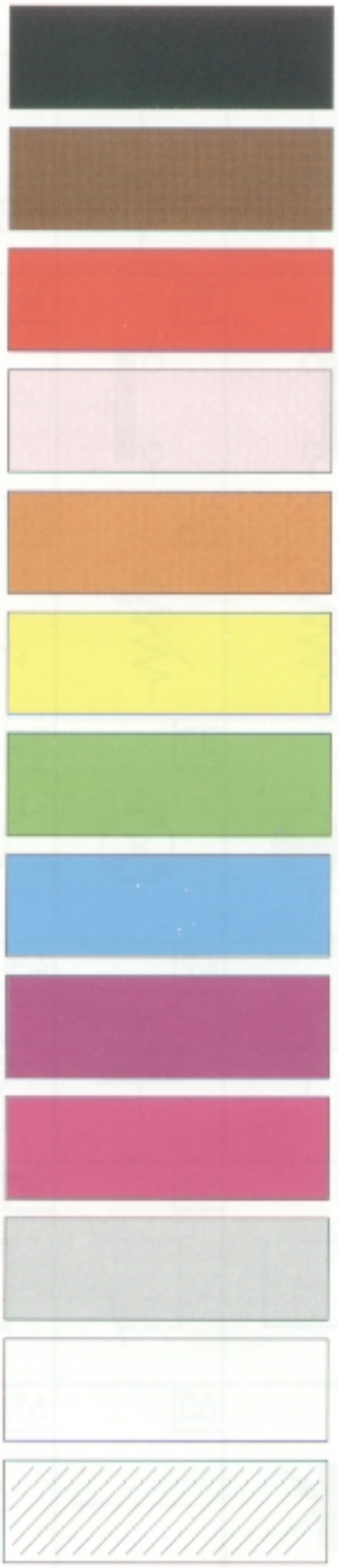
www.WorkshopManuals.co.uk





www.WorkshopManuals.co.uk

E



N

M

R

Ro

Or

J

V

Bl

Mv

Vi

G

B

Ic

www.WorkshopManuals.co.uk

Ref.	Description	Funct.
1	Warning lamps central display unit	52
2	R.H. display (computer, clock, ext.air temp.)	52
3	L.H. display (electronic display or silhouette)	52
4	Auto-gb gear selector display	59
5	Front cigar lighter	55
6	Rear cigar lighter	55
10	Ignition distributor	51
15	Alternator	53
20	L.H. horn	54
21	R.H. horn	54
35	Battery	TT*
40	Instrument clusters	52
41	ABS hydraulic control block	57
45	Ignition coil	51
48	Max.fuse box (alone or No.1)	64
49	Max.fuse box No.2	64
50	Supply box	TT*
51	Branch box	TT*
52	Junction box	TT*
53	Water temperature control unit	52-64
54	Bulb failure detection unit	52-64
55	Door locking control unit	67
56	Distance sensor interface	51-58
57	Electric window control unit	67
58	Door lock receiver control unit	67
59	Pre-heater control unit	51
60	Cruise control control unit	59
61	Catalytic converter control unit	51
62	Earth control unit	TT*
63	Additional fuse box	-
64	Fuel transfer pump control unit	-
65	Water level control unit	-
67	Burglar alarm control unit	67
68	Electric rear view mirror control unit	56
70	Pyrotechnic seat belts control unit	55
71	L.H. front heated seat regul. contr. unit	63
72	R.H. front heated seat regul. contr. unit	63
73	L.H. rear heated seat regul. contr. unit	63
74	R.H. rear heated seat regul. contr. unit	63
100	Sparking plugs	51
101	Heater plugs	51
130	Lights-on audible warning	54
131	Overspeed audible warning	59
132	Radio-telephone audible warning	65
133	Hydraulic pressure and/or level audible warning	52
140	ABS E.C.U.	57
141	Air conditioning E.C.U.	64
142	Fuel injection E.C.U.	51
143	Suspension E.C.U.	58
144	Recyling control E.C.U.	51
145	Airbag E.C.U.	55
150	Front knock sensor	51
151	Rear knock sensor	51
152	Engine speed sensor	51
153	Body movement sensor	58
154	Distance sensor	51-58
155	L.H. front wheel sensor	57
156	R.H. front wheel sensor	57
157	L.H. rear wheel sensor	57
158	R.H. rear wheel sensor	57
159	Steering wheel sensor	58
160	TDC sensor	51
161	Fuel pressure sensor	-
162	Reference cylinder sensor	51
163	L.H. volumetric sensor	67
164	R.H. volumetric sensor	67
165	Injector needle lift sensor	51
166	Delivery valve position sensor	51
170	Flasher unit	54
173	Compact disc loader	65
176	Coded antitheft device keyboard	51
178	Radio-telephone set	65
180	Additional air control	51
181	Radio control	65
182	Heater control	64
183	Air blower control	64
184	Air conditioning control	64
185	Cold start control	51
186	Cooled air blower control	64
210	Light switch (headlamp position)	54
211	L.H. selector switch (lighting, flasher, horn)	54
212	R.H. selector switch (windscreen wiper, computer)	56
213	Parking selector unit	52
214	Cruise control switch	59
215	Rear view mirror switch	56
216	Automatic gearbox switch (on the gearbox)	59
217	Automatic gearbox switch (on the lever)	59
218	Foldable rear view mirrors switch	56
254	Horn compressor	54
255	Refrigeration compressor	64
260	Tachometer	51-52
270	HT coil suppressor	51
280	Diagnostic connector	TT*
294	Driver's safety belt switch	52
295	L.H. front door deadlocking switch	67
296	R.H. front door deadlocking switch	67
297	L.H. rear door deadlocking switch	67
298	R.H. rear door deadlocking switch	67
299	Horn switch	52
300	Anti-theft switch	TT*
301	Glove box lighting switch	55
302	Boot lighting switch	55
303	Bonnet L.H. closing switch (w.l.)	67
304	Bonnet R.H. closing switch (w.l.)	67
305	Driver's door closing switch (w.l.)	67
306	Passenger's door closing switch (w.l.)	67
307	L.H. rear door closing switch (w.l.)	67
308	R.H. rear door closing switch (w.l.)	67
309	Tailgate closing switch (w.l.)	67
310	L.H. front door pillar switch	55
311	R.H. front door pillar switch	55
312	L.H. rear door pillar switch	55
313	R.H. rear door pillar switch	55
314	Reversing lamp switch	54
315	Handbrake switch	52
316	Coolant level switch	52
317	Hydraulic level switch	52
318	Throttle butterfly spindle switch	51

*TT = All Types

www.WorkshopManuals.co.uk

Ref.	Description	Funct.
319	Stop lamp switch	54
320	Rotary switch	65
321	Tailgate locking switch	67
322	Atmospheric pressure switch	51
323	Sun-roof closed position switch	67
324	Sun-roof end of travel switch	67
325	Sun-roof end of travel tilt position switch	67
326	Choke switch	52
327	Differential locking switch	-
328	Clutch switch	-
329	Recycling switch	51
330	Post-heater switch	51
340	Flowmeter	51
350	Starter motor	53
361	Door anti-jolt diode	58
362	Tailgate anti-jolt diode	58
363	Supply anti-jolt diode	58
375	Ignition distributor	51
380	L.H. front door sill lighting	55
381	R.H. front door sill lighting	55
382	L.H. rear door sill lighting	55
383	R.H. rear door sill lighting	55
384	Glove box lighting	55
385	Front ashtray lighting	55
386	Rear ashtray lighting	55
387	Ashtray lid control lighting	55
388	Radio flap control lighting	55
389	Boot lighting	55
390	Sun visor mirror lighting, passenger's side	54
391	Registration plate L.H. lamp	54
392	Registration plate R.H. lamp	55
393	Under bonnet lighting	64
394	Heater control lighting	55
396	Anti-theft lighting	55
397	L.H. boot lamp	55
398	R.H. boot lamp	55
399	Tailgate boot lamp	55
400	Sun visor mirror lighting, driver's side	55
427	Rear suspension electrovalve	58
428	OCR air electrovalve	51
429	Fuel pump cut out solenoid	51
430	Canister discharge electrovalve	51
431	Fast idling electrovalve	51
432	Idling actuator	51
433	Suspension electrovalve (single or front)	58
434	Canister electrovalve	51
435	Float chamber venting solenoid	51
436	Idle cut off electrovalve	51
437	Recycling proportional electrovalve	51
438	Cruise control electrovalve	59
439	ACAV* C electrovalve	51
440	ACAV* L electrovalve	51
441	Ignition distr. vacuum electrovalve	51
442	Recycling electrovalve	51
443	Advance correction electrovalve	51
444	Turbo driving electrovalve	51
445	Injection delivery control electrovalve	51
470	Radio-telephone sender unit	65
474	L.H. front door lock assembly	67
475	R.H. front door lock assembly	67
476	L.H. rear door lock assembly	67
477	R.H. rear door lock assembly	67
478	Pyrotechnic seat belt reel, driver's side	55
479	Pyrotechnic seat belt reel, passenger's side	55
480	L.H. rear lamp	54
481	R.H. rear lamp	54
482	L.H. front foglamp	54
483	R.H. front foglamp	54
484	L.H. rear foglamp	54
485	R.H. rear foglamp	54
486	L.H. dipped beams	54
487	R.H. dipped beams	54
488	L.H. front direction indicator	54
489	R.H. front direction indicator	54
490	L.H. rear direction indicator	54
491	R.H. rear direction indicator	54
492	L.H. side lamp	54
493	R.H. side lamp	54
494	L.H. rear stop and tail lamp	54
495	R.H. rear stop and tail lamp	54
496	L.H. tail lamp on tailgate	54
497	R.H. tail lamp on tailgate	54
498	L.H. reversing lamp	54
499	R.H. reversing lamp	54
500	L.H. direction indicator repeater	54
501	R.H. direction indicator repeater	54
502	L.H. headlamp	54
503	R.H. headlamp	54
504	L.H. stop lamp	54
505	R.H. stop lamp	54
506	L.H. tail lamp	54
507	R.H. tail lamp	54
508	Additional stop lamp	54
509	L.H. rear lamp (on tailgate)	54
510	R.H. rear lamp (on tailgate)	54
540	Fuse (F...)	-
541	Windscreen L.H. heated washer jet	56
542	Windscreen R.H. heated washer jet	56
548	Refrigeration unit	64
550	L.H. front loudspeaker	65
551	R.H. front loudspeaker	65
552	L.H. front tweeter loudspeaker	65
553	R.H. front tweeter loudspeaker	65
554	L.H. rear loudspeaker	65
555	R.H. rear loudspeaker	65
563	Fault finding indicator (vehicle silhouette)	-
570	Injectors	51
580	Driver's seat pull/push switch	63
581	Passenger's seat pull/push switch	63
582	Air conditioning switch	64
583	Rear function locking switch	55-67
584	Driver's backrest switch	63
585	Passenger's backrest switch	63
586	Rear screen wipe/wash switch	56
587	Front foglamps switch	54
588	Rear foglamps switch	54
589	Hazard warning device switch	54
590	Electric window switch, driver's side	67
591	Electric window switch, passenger's side (on driver's door)	67
592	Electric window switch, passenger's side (on passenger's door)	67
593	L.H. electric rear window switch on door	67
594	L.H. electric rear window switch on console	67
595	R.H. electric rear window switch on door	67
596		
597		
598		
599		
600		
601		
602		
603		
604		
605		
606		
607		
608		
609		
610		
611		
613		
615		
620		
650		
660		
670		
671		
672		
673		
674		
680		
681		
682		
685		
690		
691		
692		
693		
694		
695		
696		
697		
698		
699		
700		
701		
702		
703		
704		
705		
706		
707		
708		
709		
710		
711		
712		
713		
714		
715		
716		
717		
720		
721		
724		

*ACAV : Variable Acoustics Characteristics Induction

www.WorkshopManuals.co.uk

Ref.	Description	Funct.
596	R.H. electric rear window switch on console	67
597	Heated rear screen switch	56
598	Roof light switch	55
599	Recycling switch	64
600	Driver's seat height adjustment switch	63
601	Driver's heated seat switch	63
602	Passenger's heated seat switch	63
603	L.H. rear heated seat switch	63
604	R.H. rear heated seat switch	63
605	Centre armrest switch	63
606	Suspension switch	58
607	Sun roof switch	67
608	Headlights adjustment device switch	54
609	Map reading lamp switch	55
610	Differential locking switch	59
611	Cruise control switch	59
613	Rear screen wiper switch	56
615	Alarm switch (volumetric protection)	67
620	Inertia switch	51
650	Fuel gauge	52
660	Map reading lamp	55
670	Brake pressure switch (suspension)	58
671	Engine oil pressure switch	51
672	Hydraulic pressure switch	52
673	Air filter pressure switch	51
674	Turbo overcharging pressure switch	51
680	Ignition module	51
681	Blower fan control module	64
682	Eurobag steering wheel module	55
685	Clock	55
690	Driver's seat pull/push motor	63
691	Passenger's seat pull/push motor	63
692	Driver's seat backrest motor	63
693	Passenger's seat backrest motor	63
694	Windscreen wiper motor	56
695	Rear screen wiper motor	56
696	L.H. electric front window motor	67
697	R.H. electric front window motor	67
698	L.H. electric rear window motor	67
699	R.H. electric rear window motor	67
700	Air mixing motor	64
701	Driver's seat raising motor	63
702	Sun roof motor	67
703	Driver's door lock motor	67
704	Passenger's door lock motor	67
705	L.H. rear door lock motor	67
706	R.H. rear door lock motor	67
707	Fuel filler flap lock motor	67
708	Tailgate lock motor	67
709	Centre armrest motor	63
710	Air distribution motor	64
711	Air recycling motor (single or L.H.)	64
712	Idling speed stepper motor	51
713	R.H. air recycling motor	64
714	ABS hydraulic pump motor	57
715	L.H. headlamp adjusting device motor	54
716	R.H. headlamp adjusting device motor	54
717	Differential locking motor	64
720	Single or L.H. electric cooling fan	64
721	R.H. electric cooling fan	64
724	Anti-pinch electric window reduction motor	67

Ref.	Description	Funct.
730	L.H. front door deadlocking motor	67
731	R.H. front door deadlocking motor	67
732	L.H. rear door deadlocking motor	67
733	R.H. rear door deadlocking motor	67
740	L.H. rear roof light	55
741	R.H. rear roof light	55
742	Front centre interior lamp	55-65
743	Rear centre interior lamp	55
750	L.H. front brake pads	52
751	R.H. front brake pads	52
755	Fuel pump	51
756	Headlamp washer pump	56
757	Windscreen washer pump	56
758	Rear screen washer pump	56
759	Recycling vacuum pump	51
760	Cruise control vacuum pump	59
761	Fuel transfer pump	-
763	Diesel injection pump	51
765	Radio set	65
770	Throttle spindle potentiometer	51
771	Accelerator pedal potentiometer	58
772	Co mixture potentiometer	51
773	Load lever potentiometer	51
775	Pressostat	64
778	Electric cooling fan test plug	64
779	T.D.C. sensor plug	51
780	Supply socket (accessories)	55
781	ABS diagnostic socket	67
782	Air conditioning diagnostic socket	64
783	Injection diagnostic socket	51
784	Suspension diagnostic socket	58
785	Anti-pollution system diag. socket	51
786	Headlamp : L.H. main and dipped beams	55
787	Headlamps : R.H. main and dipped beams	55
790	Air blower (single or L.H.)	64
791	R.H. air blower	64
795	Antitheft alarm relay	67
800	Anti-jolt relay	58
801	Automatic gearbox relay	59
802	Injection E.C.U. relay	51
804	Air conditioning relay	64
805	Refrigeration compressor cut-off relay	64
806	Front foglamps relay	54
807	Injection relay	51
808	Headlamp washer relay	56
809	Electric front window relay	67
810	Electric rear window relay	67
811	Driver's seat operating relay	63
812	Passenger's seat operating relay	63
813	Cooling fan (fast/slow speed) relay	64
814	Electric cooling fan (fast speed) relay	64
815	Cooling fan relay (speed inverter)	64
816	Fuel pump relay	51
817	Front heated seat relay	63
818	Oxygen sensor relay	51
819	Rear foglamps relay	54
820	Heated rear screen relay	56
821	Air conditioning additional relay	64
822	Injection refrigeration compressor cut-off relay	51-64

www.WorkshopManuals.co.uk

Ref.	Description	Funct.
823	Sun roof relay	67
824	Heated rear seats and/or sun roof relay	63
825	Dipped beams relay	54
826	Choke heating relay	51
827	Dipped beams (day time) or Dim-dip relay	54
828	Cooling fan relay (against fuel vapour lock)	64
829	Side and tail lamps (day time) relay	54
830	Recycling relay	51
831	Cruise control relay	59
832	Sun roof sliding relay	67
833	Sun roof tilt position relay	67
834	Headlamps relay	54
836	Ignition relay	51
837	Lighting timer relay	55
838	Automatic gearbox idling speed relay	51-59
839	Cooling fan relay (air conditioning)	51-64
840	Fuel injection correction relay	51
841	Electric window re-energising relay	67
842	Air blower motor relay	64
843	Air horn compressor relay	57
844	ABS main relay	57
845	ABS hydraulic pump relay	57
846	Fuel transfer pump relay	–
848	Engine running information relay	TT
850	L.H. rear seat base resistance	63
851	R.H. rear seat base resistance	63
852	L.H. rear seat backrest resistance	63
853	R.H. rear seat backrest resistance	63
854	L.H. front seat resistance	63
855	R.H. front seat resistance	63
856	Choke heater resistance	51
857	Carburettor base heating resistance	51
858	Dipped beams resistance	54
859	Air blower speed resistance	64
860	Coding resistance	51
861	Intake air heating resistance	51
862	Injector additional resistance	51
863	Atmospheric pressure switch resistance	51
864	Electric cooling fan resistance	64
865	Oil fumes heating resistance	51
866	Emission control resistance	51
874	Sun roof supply relay	67
875	L.H. rear view mirror	56
876	R.H. rear view mirror	56
880	Lighting rheostat	52-65
884	Driver's airbag	55
888	Siren	67
899	Front oxygen sensor	51
900	Rear or single oxygen sensor	51
901	Screen washer water level sensor	52-56
902	Engine oil level sensor	52
903	Injection air pressure sensor	51
904	Engine oil pressure sensor	51-52
905	Turbo air pressure sensor	51
906	Exterior air temperature sensor	52
907	Injection air temperature sensor	51
908	Air conditioning duct temperature sensor	64
909	Engine water temperature sensor (injection)	51
910	Engine water temperature sensor	52-64
911	Engine water temp. sensor (dial)	52
912	Evaporator temperature sensor	64
913	Veh. interior air temp. sensor	64
914	Water-in-fuel filter sensor	51
915	Water temperat. switch sensor	52
916	Air con.water temperat. sensor	64
917	Catal. converter temp. sensor	51
918	Engine oil temperature sensor	52
919	Engine water level sensor	52
920	Oil temperat. switch sensor (on automatic gearbox)	51
921	Engine water temperat. sensor (emission control)	51
922	Fuel temperature sensor	52
923	Engine water temperature switch sensor (emission control)	51
940	Advance timing system	51
960	Anti-jolt timer	58
961	Lighting timer	55
962	Windscreen wiper timer	56
963	Rear screen wiper timer	56
964	Cooling fan timer unit	64
969	Engine water pre-warning thermal switch	52
970	Engine water warn.therm.switch	51-52
971	Radiator coolant thermal switch	64
972	Engine coolant thermal switch (against fuel vapour lock)	64
973	Coolant thermal switch (air con.)	64
974	Coolant thermal switch (emission control)	51
975	Engine oil thermal switch	51
990	Heated rear screen	56
991	Burglar alarm warning lamp	67
992	Airbag warning lamp	55

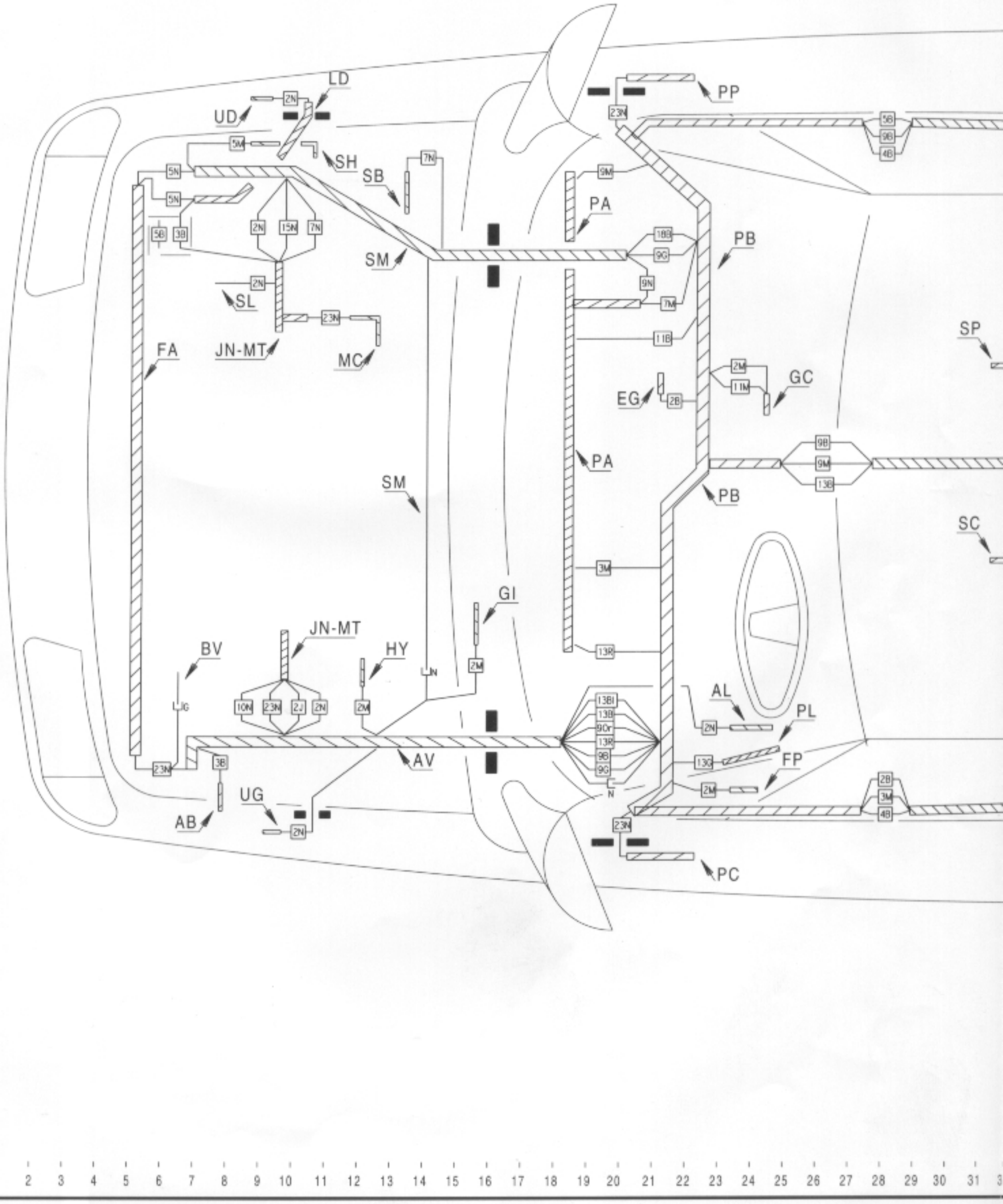
www.WorkshopManuals.co.uk

LIST AND LOCATION OF THE ELECTRICAL HARNESSES

www.WorkshopManuals.co.uk

REF.	DESCRIPTION	REF.	DESCRIPTION
AB	ABS	VD	R.H. SIDE TAILGATE
AL	BATTERY POWER SUPPLY	VG	L.H. SIDE TAILGATE
AV	FRONT		
BV	GEARBOX CONNECTION		
CD	DISTANCE SENSOR		
CL	CONSOLE		
CN	NEGATIVE CABLE		
CP	POSITIVE CABLE		
EF	BOOT LIGHTING		
EG	GLOVE BOX LIGHTING		
FP	PARKING BRAKE		
GC	HEATING SYSTEM		
GI	WINDSCREEN WASHER JET		
HY	HYDRAULICS		
JN	INJECTION		
LD	R.H. FRONT WING		
MC	ENGINE, SUPPLEMENTARY HARNESS		
MT	ENGINE		
PA	DASHBOARD, ADDITIONAL HARNESS		
PB	DASHBOARD		
PC	DRIVER'S DOOR		
PD	R.H. REAR DOOR		
PG	L.H. REAR DOOR		
PL	INTERIOR LAMP		
PP	PASSENGER'S DOOR		
RD	R.H. REAR		
RG	L.H. REAR		
RT	RADIO TELEPHONE		
SB	SUSPENSION, FRONT SUBFRAME SECTION		
SC	DRIVER'S SEAT		
SD	R.H. REAR SEAT		
SG	L.H. REAR SEAT		
SH	HYDRACTIVE SUSPENSION		
SL	AUTO./MAN. GEARBOX SELECTOR LEVER		
SM	SUSPENSION, ENGINE SECTION		
SP	PASSENGER'S SEAT		
TO	SUN ROOF		
UD	R.H. BRAKE PAD WEAR		
UG	L.H. BRAKE PAD WEAR		

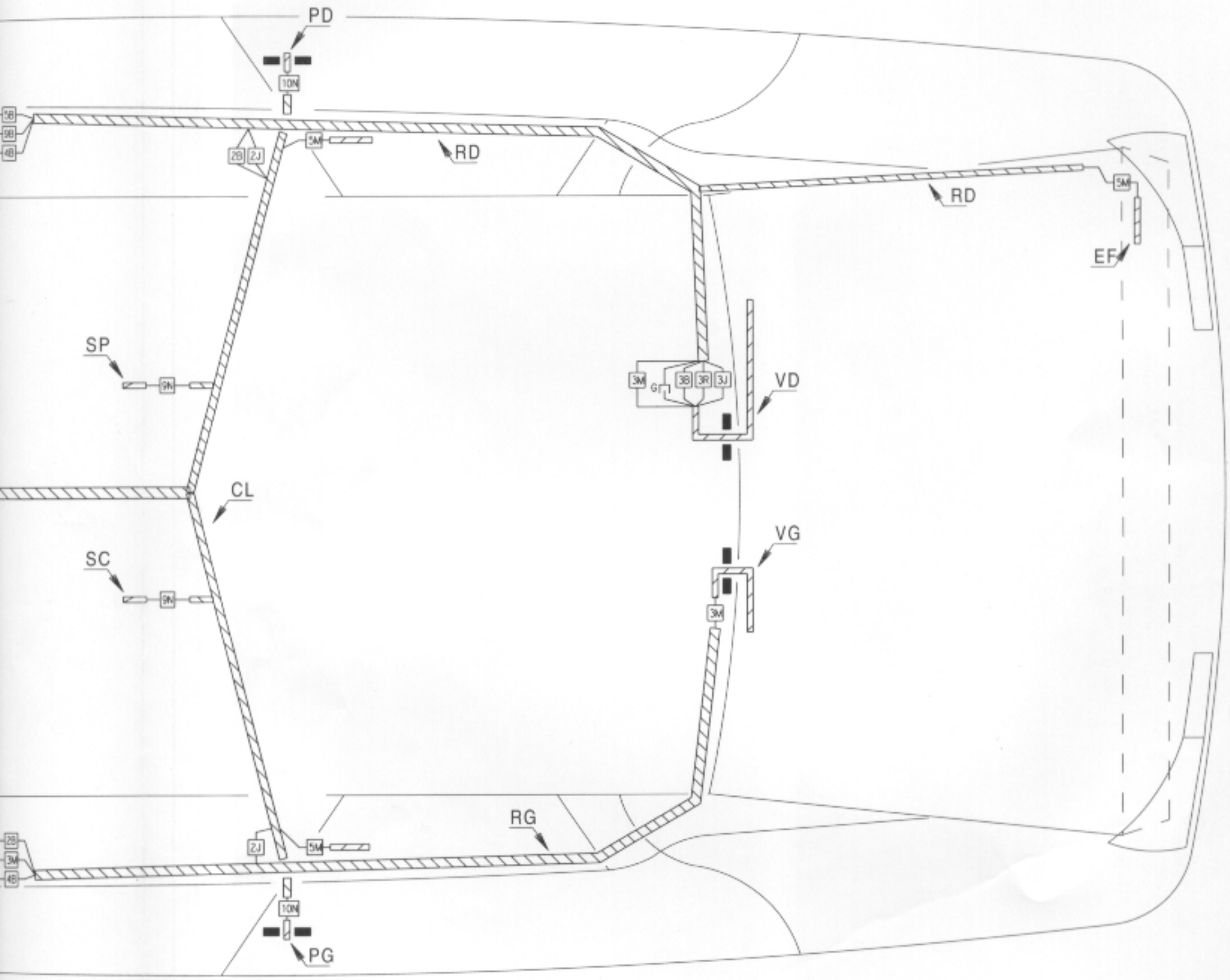
www.WorkshopManuals.co.uk



501 00/2

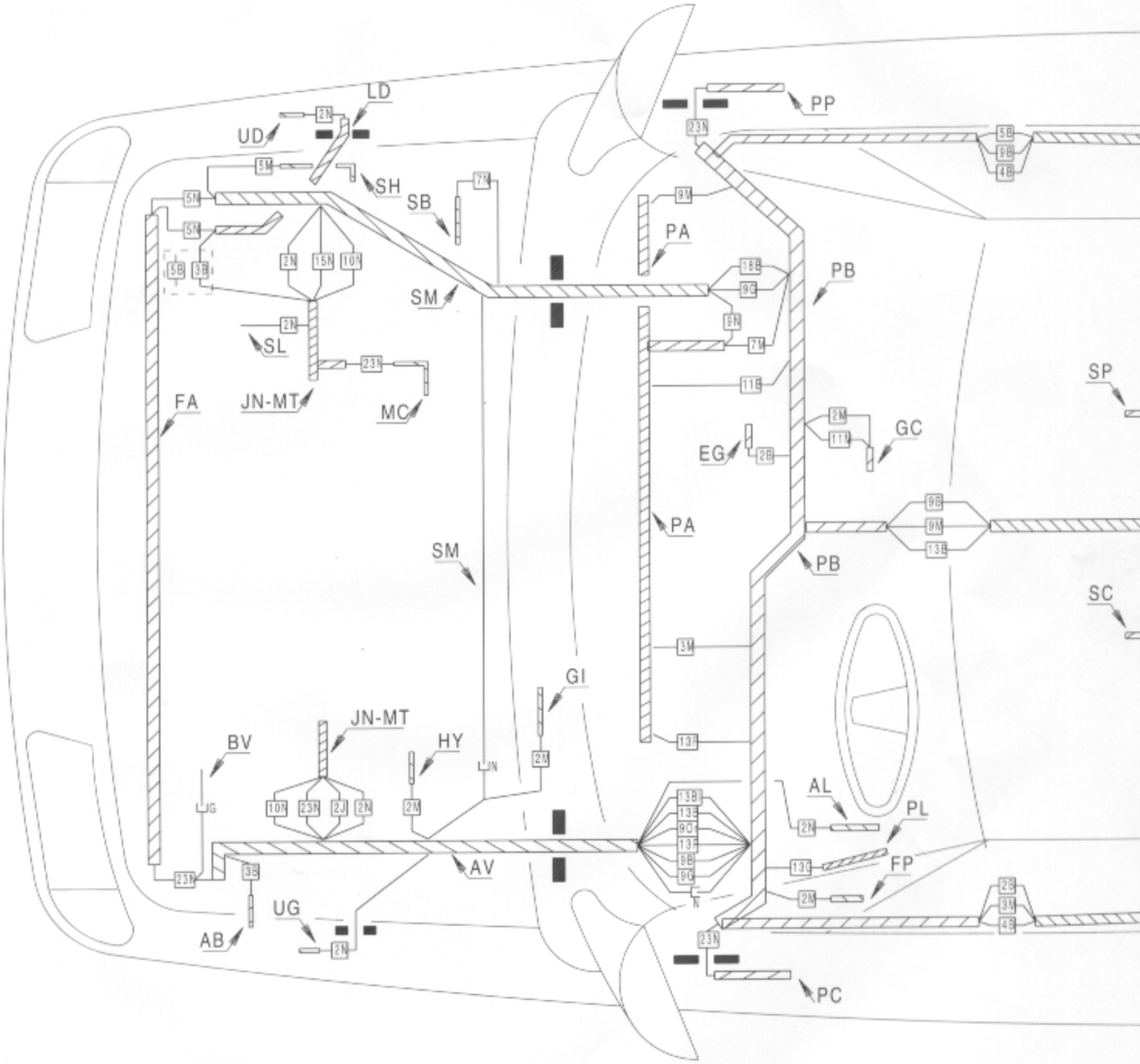
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

www.WorkshopManuals.co.uk



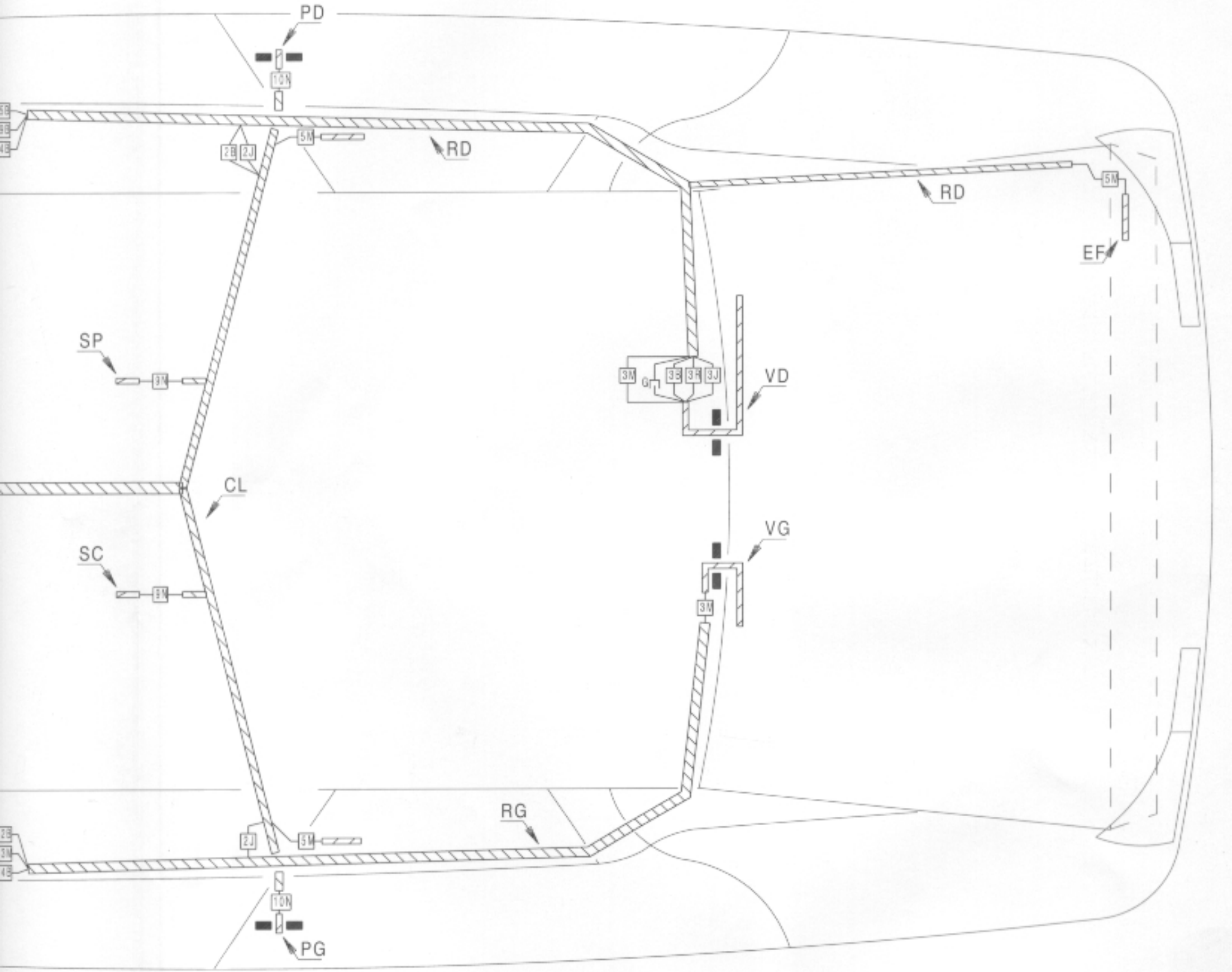
28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

www.WorkshopManuals.co.uk

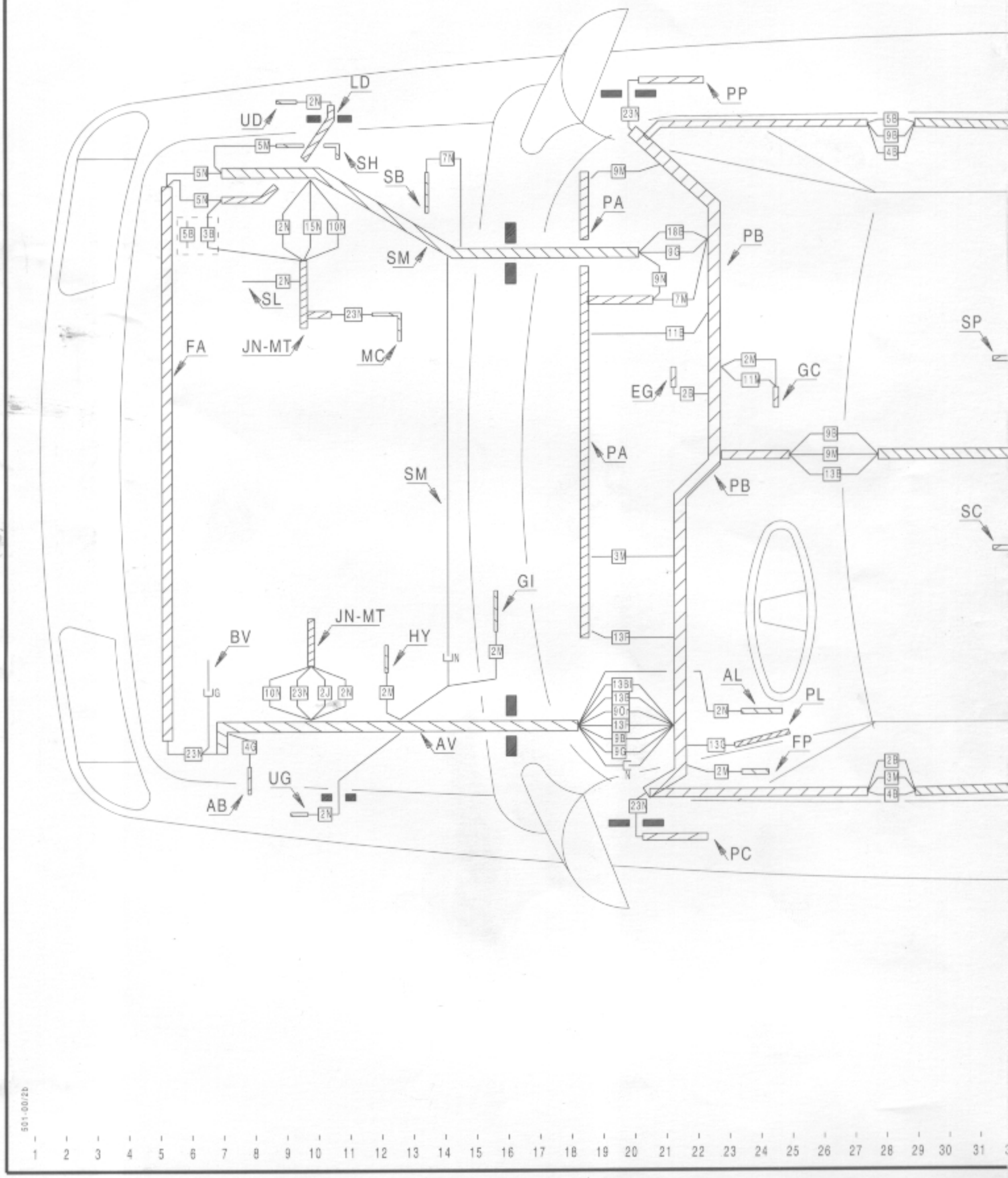


501-00/2a

www.WorkshopManuals.co.uk



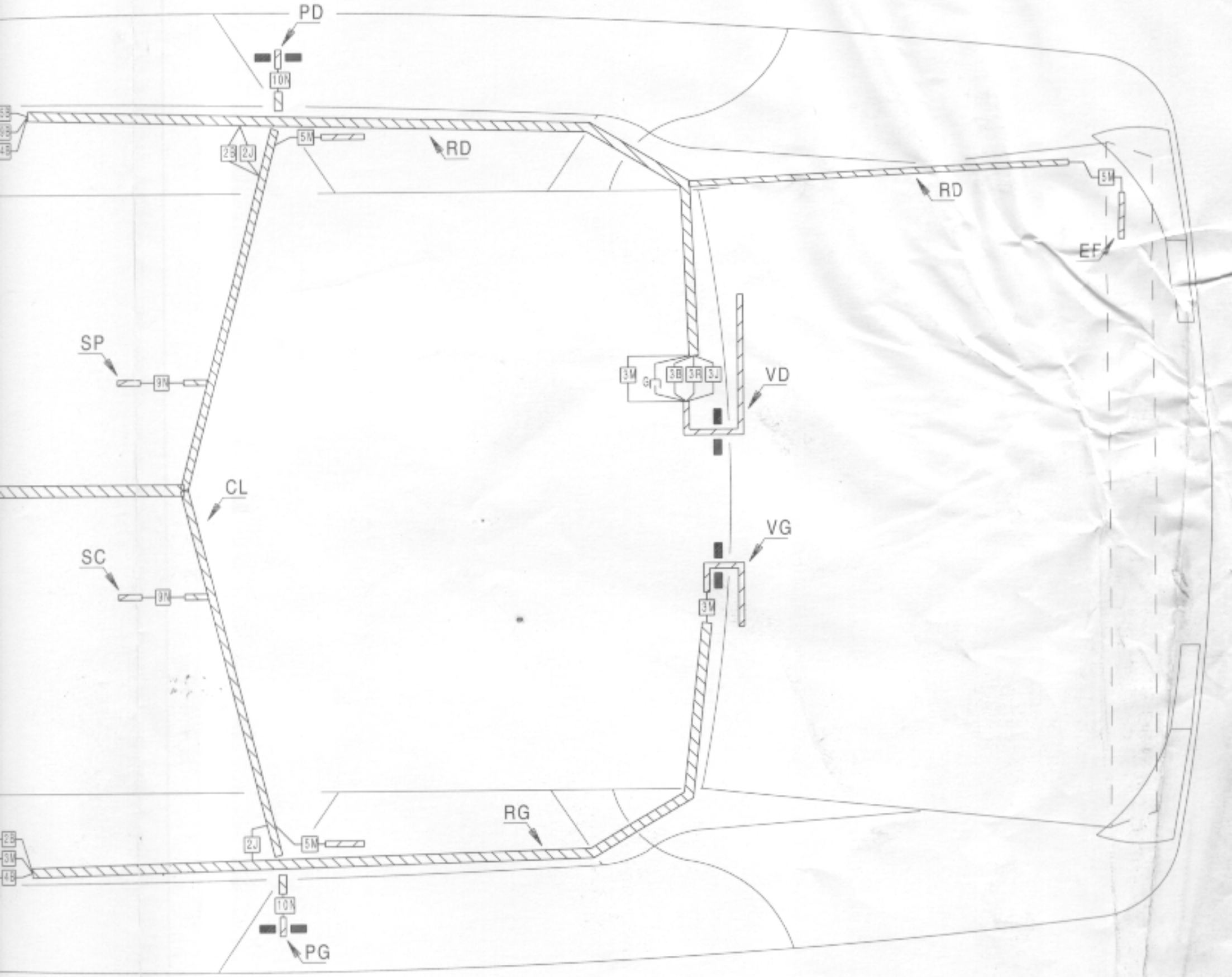
www.WorkshopManuals.co.uk



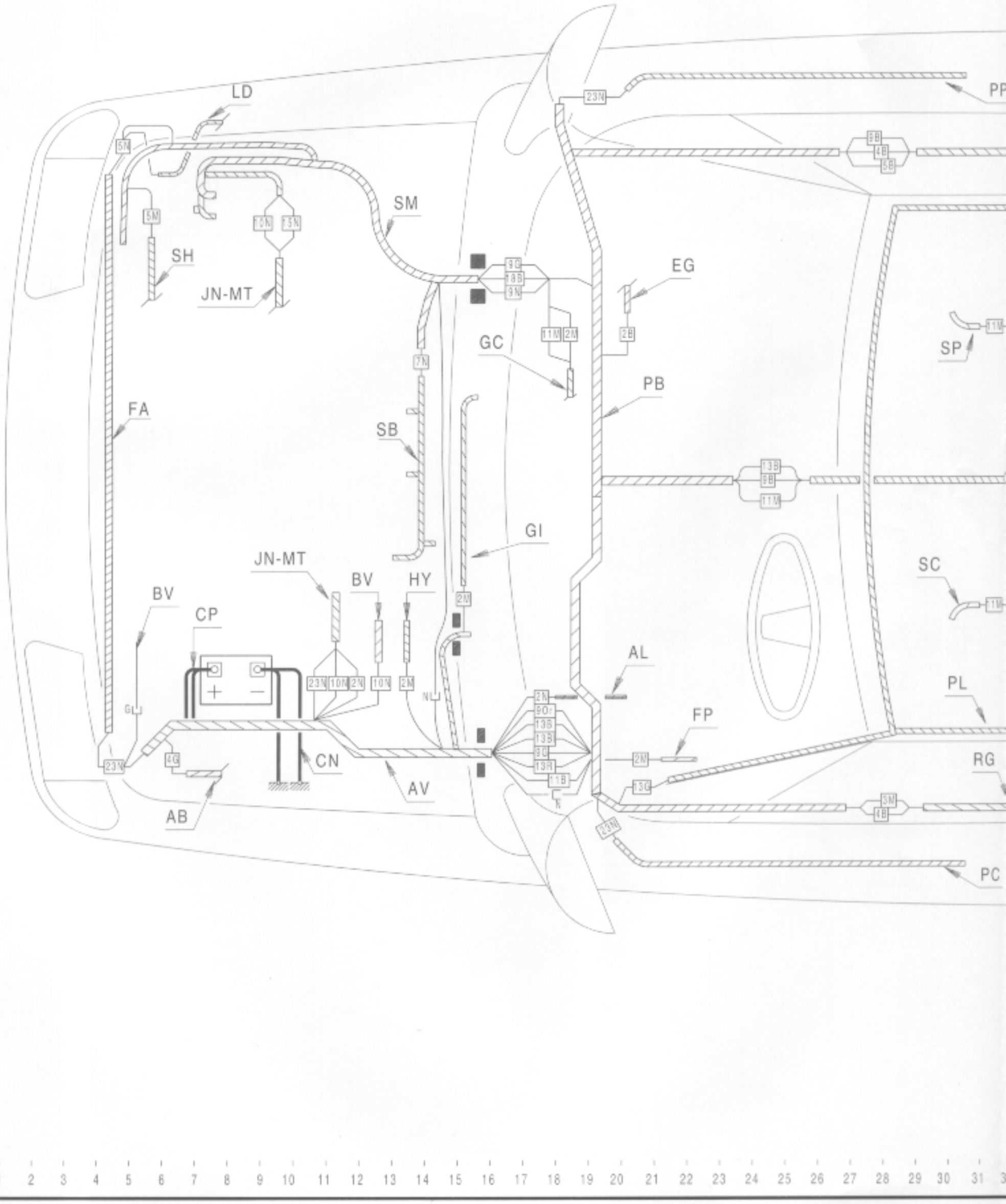
501-00/2b

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

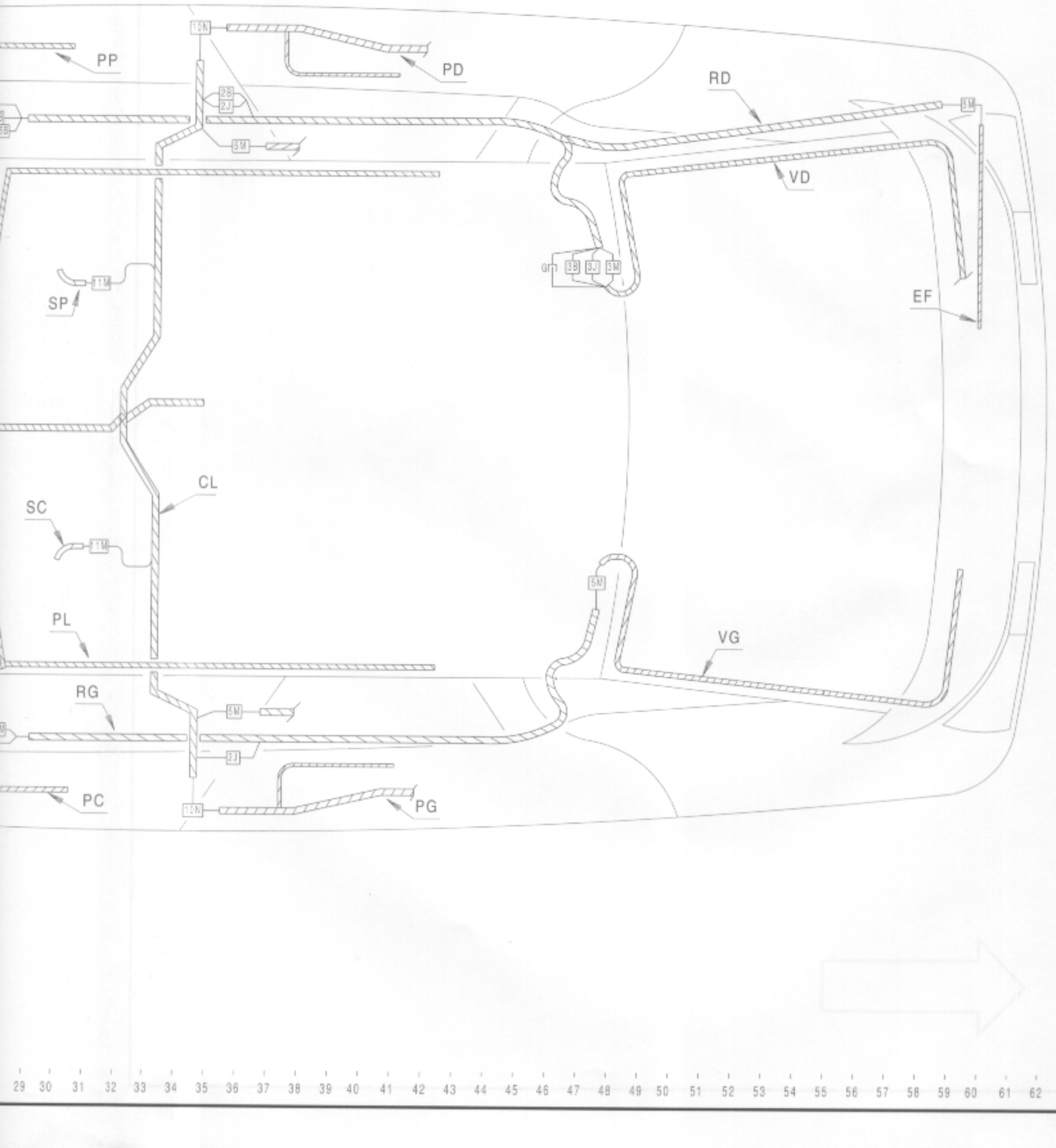
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

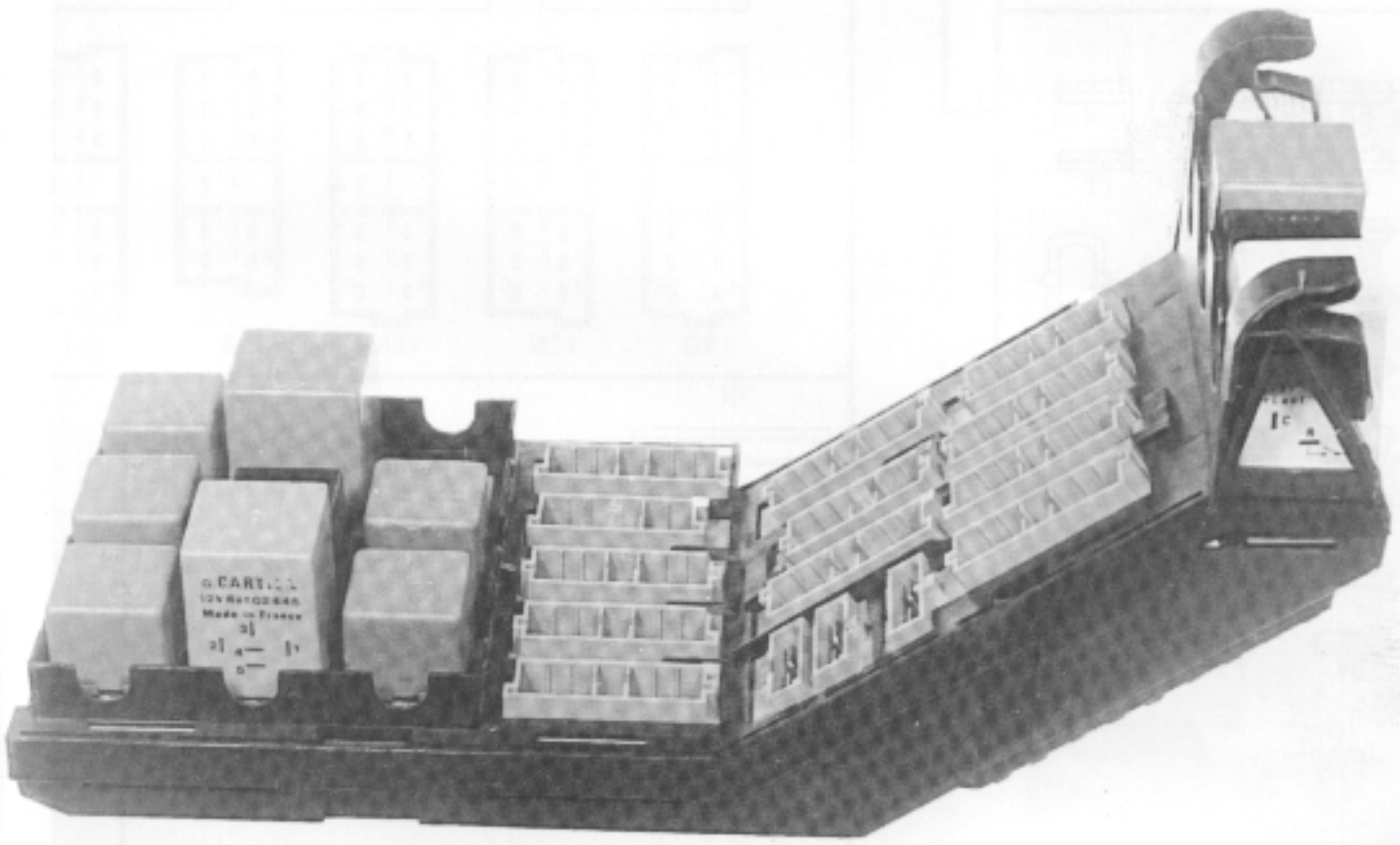


www.WorkshopManuals.co.uk



29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

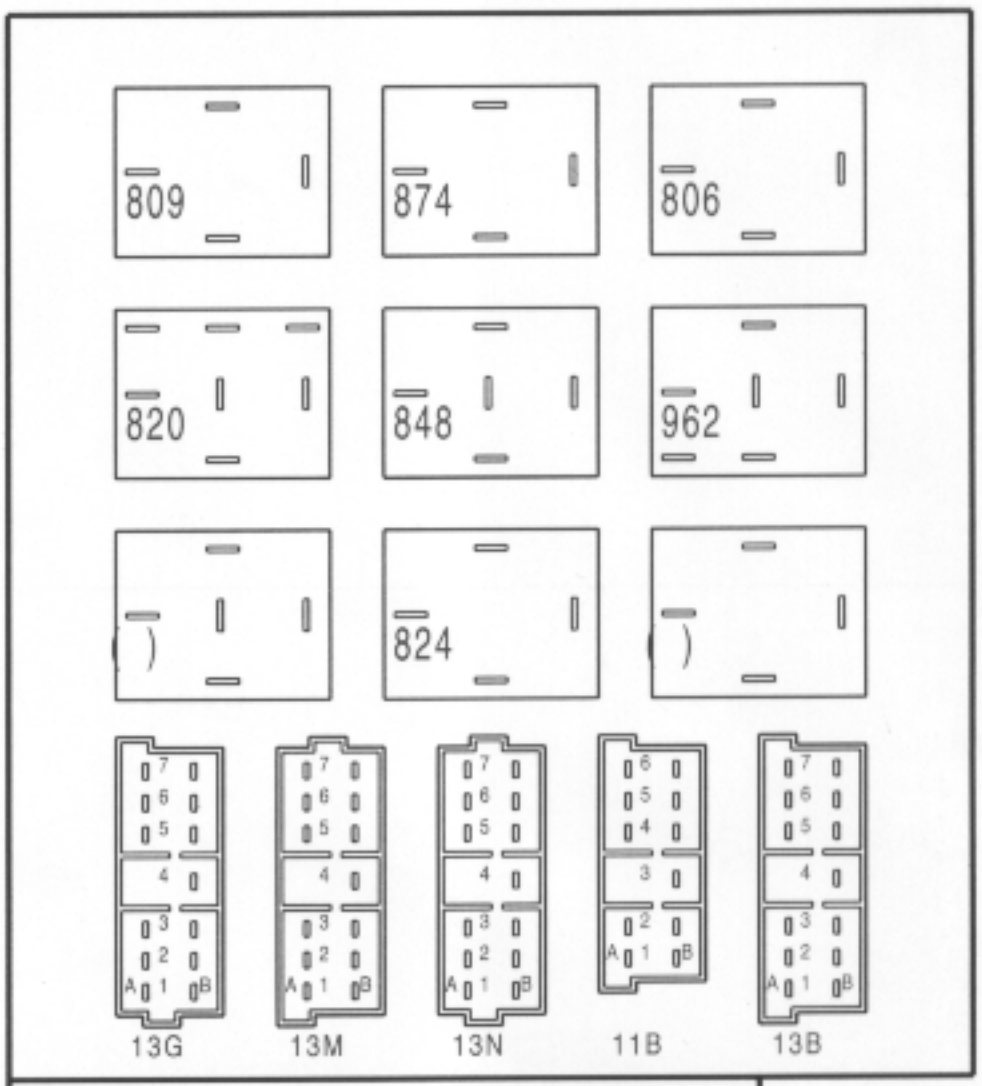
www.WorkshopManuals.co.uk

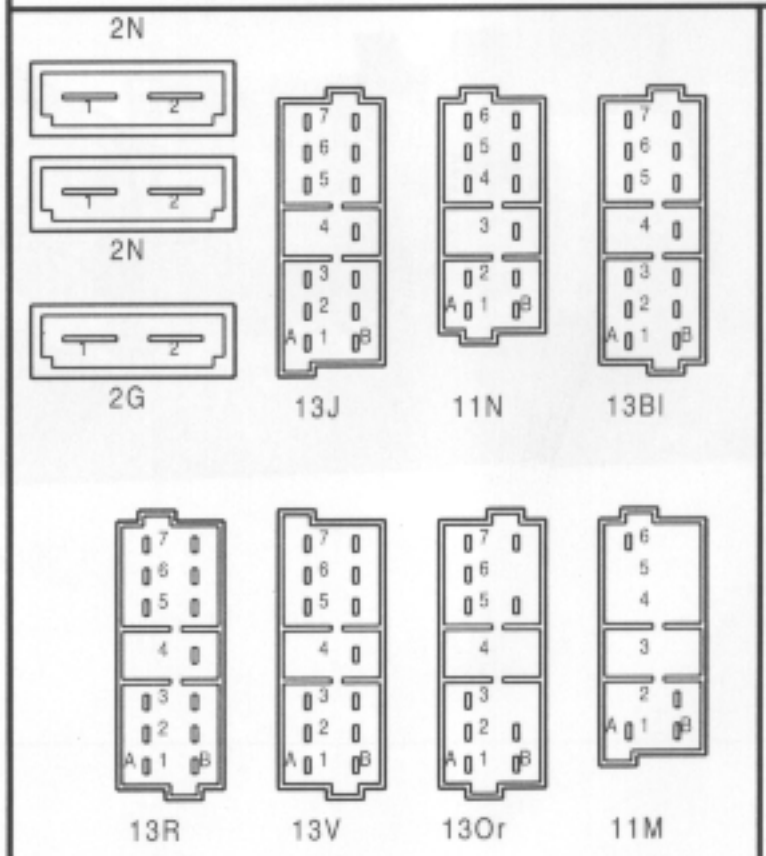


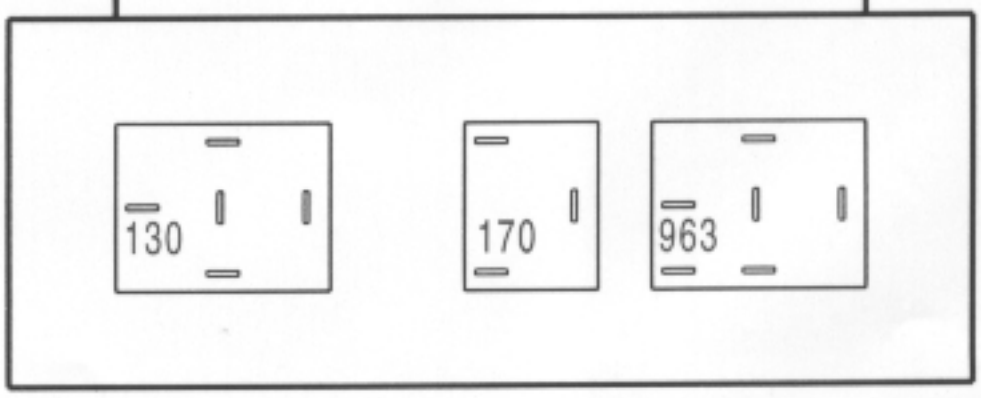
89-536

www.WorkshopManuals.co.uk

52





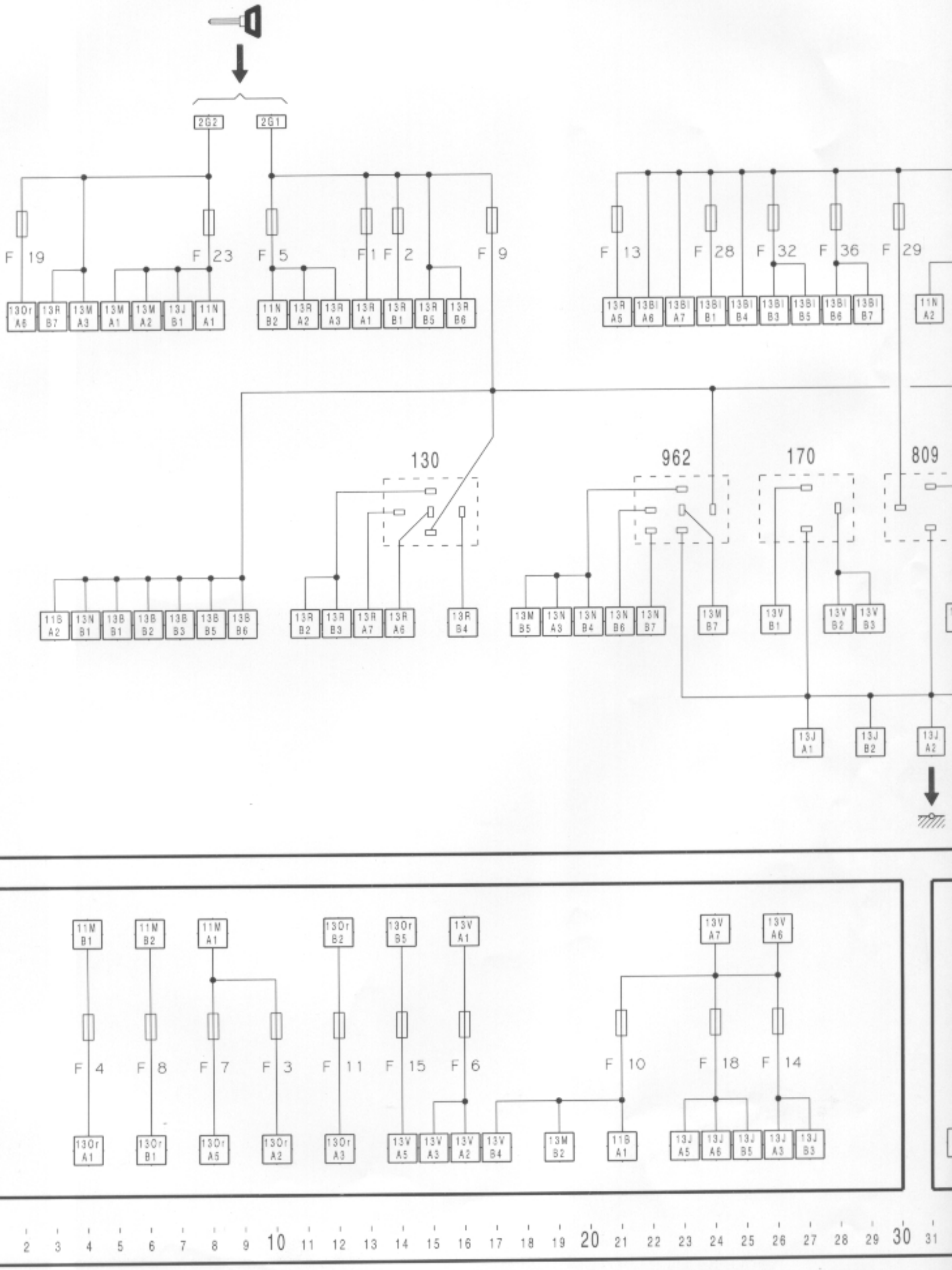


502-00/1

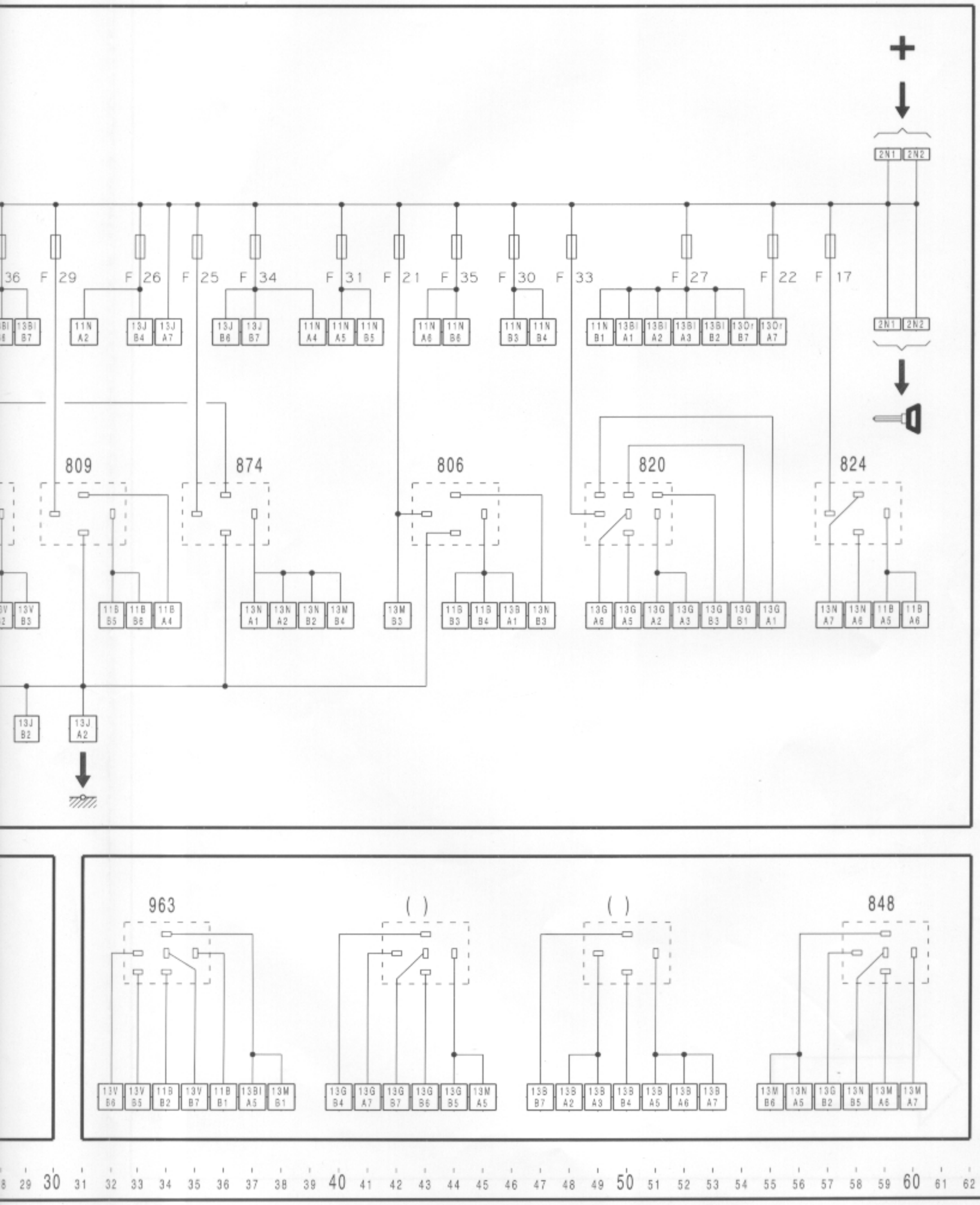
502-00/1

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

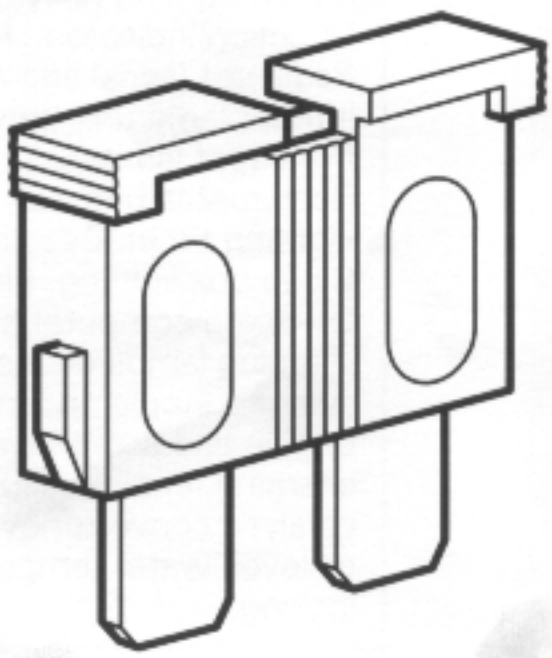
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



FUSES

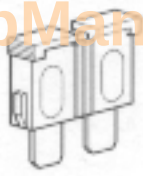
www.WorkshopManuals.co.uk



1° JUNCTION BOX

SUPPLY	FUSES			PROTECTED CIRCUITS
	No	Rating	Colour	
+ Accessories	1	10A	Red	Anti-lock brake system.
	2	10A	Red	Stop lamps and brake pad wear warning lamp,cruise regulation Water temperature control unit. Hydraulic system audible warning.
	3	10A	Red	Air conditioning, heated rear screen, heated seats, heated rear view mirrors relays.
Side and tail lamps	4	10A	Red	Alarm switch lighter. Side and tail lamps warning lamps on instrument panel. Electronic display lighting. Instrument cluster display lighting. On-board computer lighting.
+ Accessories	5	30A	Green	Engine turning relay. Direction indicators. Rear view mirror operation. Radio set (aerial and accessories), radio-telephone. Interior lamp unit (temperature sensor turbine and centre and front spot lamps). Rear spot lamps, rear view mirror lighting. Lighting timer. Deadlocking. Glove box lighting. Electronic display unit. On-board computer supply. Warning lamps on instrument panel strip for : hydraulic system, stoplamp, engine oil pressure, water temperature, engine and screen washer reservoir water level, battery charging, engine failure, parking brake, water-in-fuel filter, catalytic converter overheat, engine oil temperature, engine oil level, water temperature pre-warning, driver's seat belt locking.
Rear fog lamps	6	5A	Brown	Rear fog lamps and warning
	7	10A	Red	Suspension E.C.U., body movement sensor.
	8	30A	Green	Not used (Replacement fuse)
+ Accessories	9	30A	Green	Relay coils for : electric front and rear windows, sun-roof Electronic timer units for front and rear screen wipers. Front and rear screen wiper/washer motors. L.H. and R.H. front seats operation relay coils. Lights-on audible warning. Electric cooling fan relay coils (slow speed).
Side and tails lamps	10	5A	Brown	Illumination for switches of : rear door functions, electric window, armrest operation, cruise control, car radio, cigar lighter, ashtray, radio set. Instrument cluster lighting. Illumination for switches of : front and rear foglamps, screen washer, rear screen wiper, heated rear screen, hazard warning device, interior lamp, suspension, sun-roof, air conditioning control, air conditioning. Side lamps and rear number plate lamp. Headlamp washer relay. Lights-on audible warning.

www.WorkshopManuals.co.uk



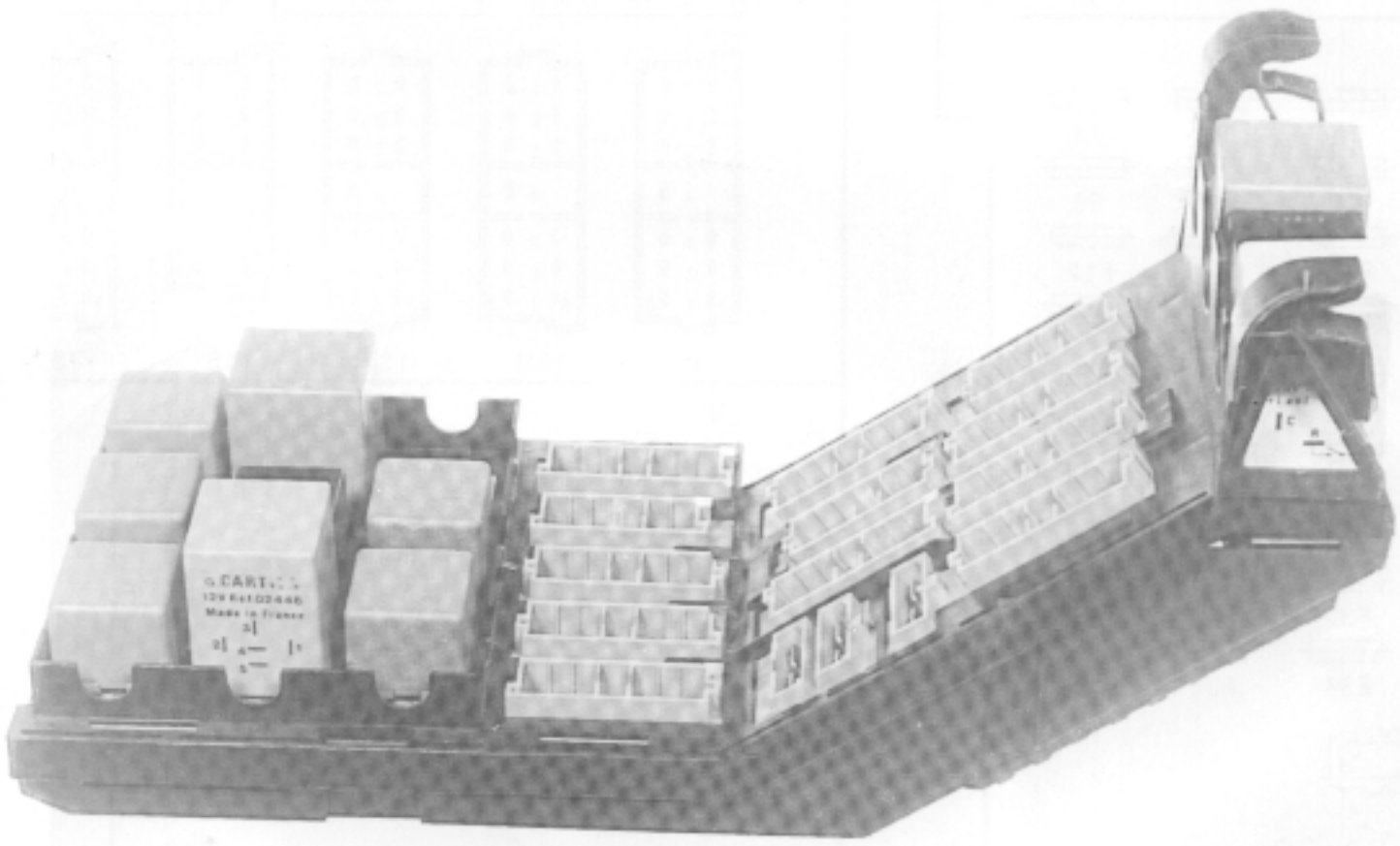
SUPPLY	FUSES			PROTECTED CIRCUITS
	No	A	Colour	
Electronic display unit	11	5A	Dark brown	Display unit language
	12			No fuse
+ Battery	13	10A	Red	Hazard warning device
Side lamps	14	5A	Dark brown	R.H. tail lamps
Electronic display unit	15	5A	Dark brown	Display unit language
	16			No fuse
+ Battery	17	30A	Green	Heated rear seats and seat backrests
Side lamps	18	5A	Dark brown	L.H. tail lamps
	20			No fuse
Side lamps	21	15A	Blue	Front and rear fog lamps and warning lamps
+ Battery	22	30A	Green	Radio telephone. Anti-theft horn. Deadlocking control unit. Remote control deadlocking control unit.
+Ignition	23	15A	Blue	Speed sensor. Interior lamp lighting timer. Coolant level control unit. Automatic gearbox. Reversing lamps, alarm siren. Coils for refrigeration compressor cut-off relay, lighting timer and day time lamps Engine water temperature, alarm and rear view mirror setting control units Instrument clusters : tachometer and oil temperature gauge, water temperature gauge, electronic system supply, road wheel ABS.
	24			No fuse
+ Battery	25	30A	Green	Sun roof
+ Battery	26	20A	Yellow	Not used (replacement fuse)
+ Battery	27	20A	Yellow	On-board computer memory. Electronic system instrument cluster, clock. Doors and boot sill lightings. Interior lamps and interior lamp timer units. Horns.
+ Battery	28	30A	Green	Passenger's front seats operations.
+ Battery	29	30A	Green	Driver and passenger's electric front windows. Rear view mirrors operation control unit.
+ Battery	30	30A	Green	Driver's seat operations.
+ Battery	31	30A	Green	Electric rear windows. Anti-pinch electric front window.
+ Battery	32	30A	Green	Headlamp washer pump.
+ Battery	33	30A	Green	Heated rear screen and heated rear view mirrors.

www.WorkshopManuals.co.uk



SUPPLY	FUSES			PROTECTED CIRCUITS
	No	A	Colour	
+ Battery	34	30A	Green	Water temperature control unit. Central door locking control unit. PLIP remote control control unit. Hydractive suspension system. Alarm. Burglar alarm relay coil. Burglar alarm warning lamp.
+ Battery	35	30A	Green	Front heated seats. Front centre armrest adjusting motor. Cigar lighter.
+ Battery	36	30A	Green	Cigar lighter. Car radio memory.

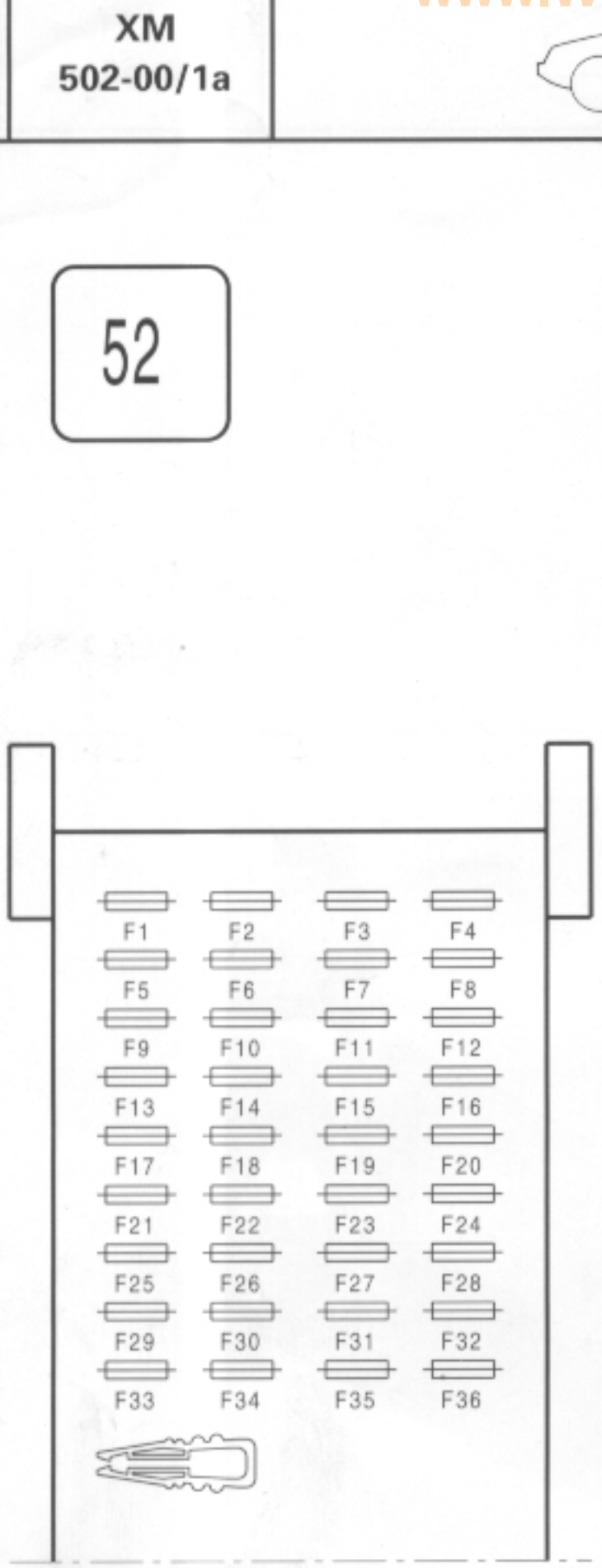
www.WorkshopManuals.co.uk

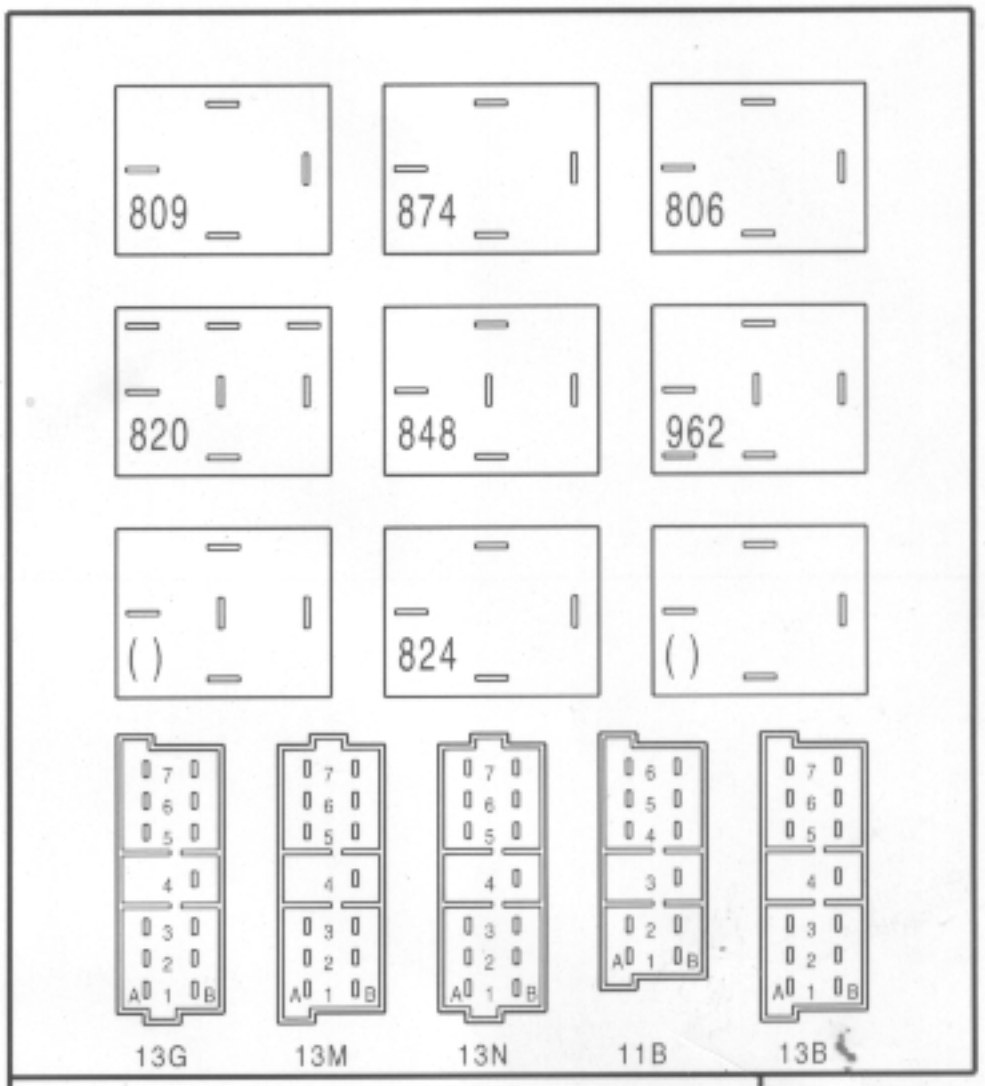


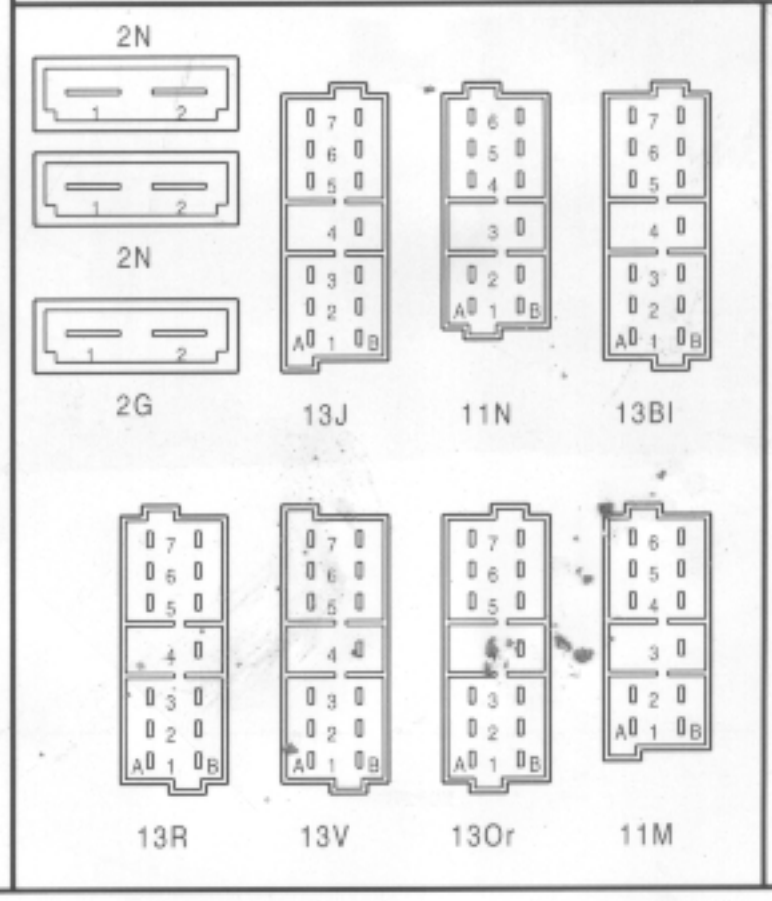
89-536

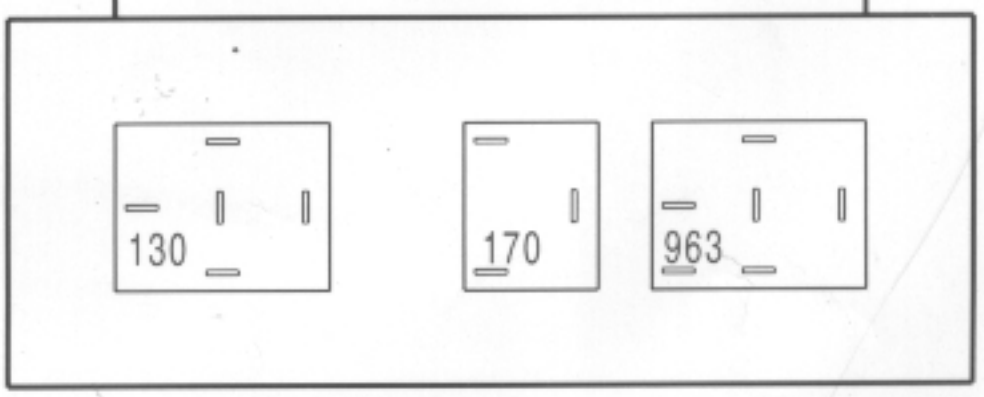
www.WorkshopManuals.co.uk

52



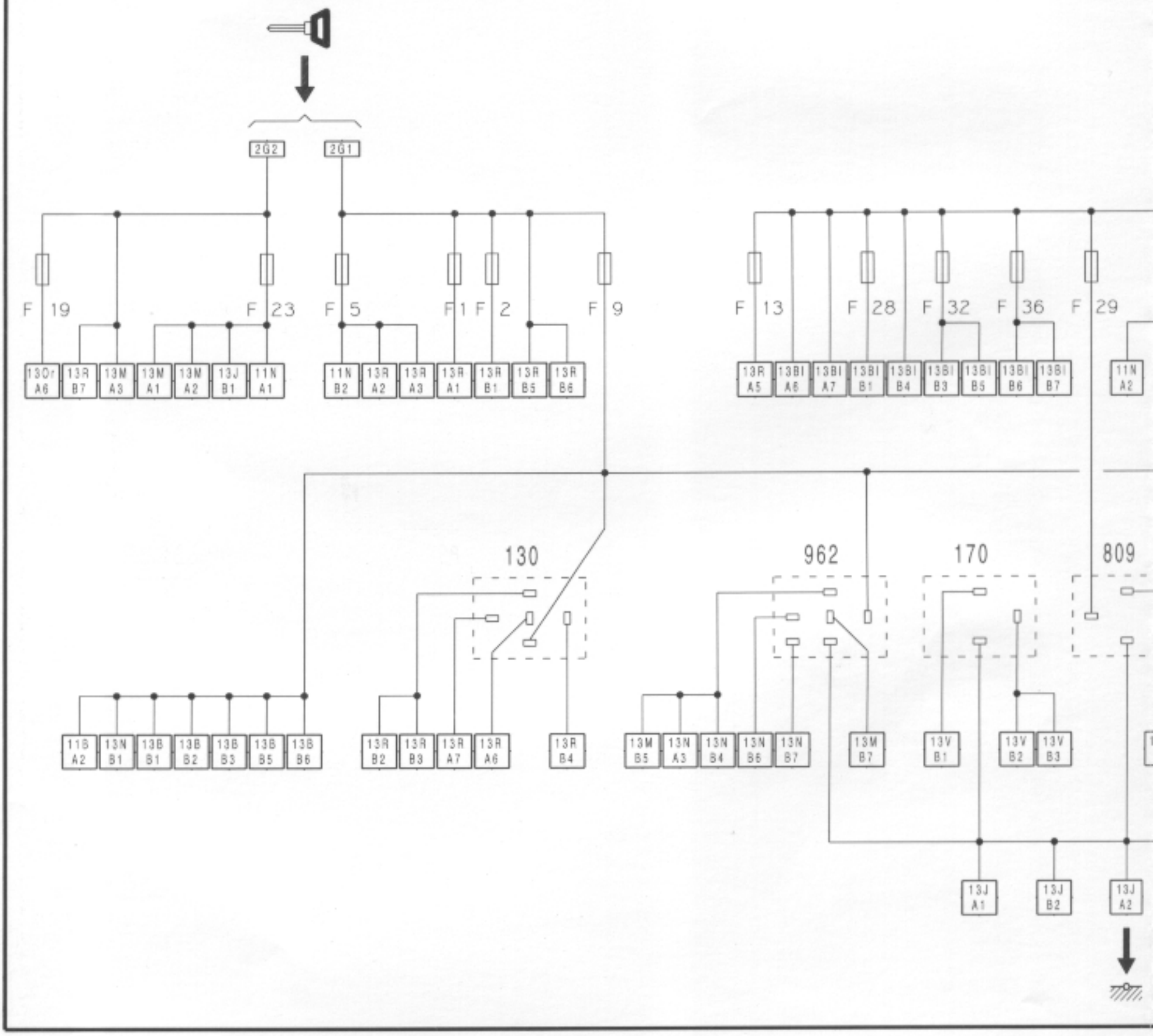


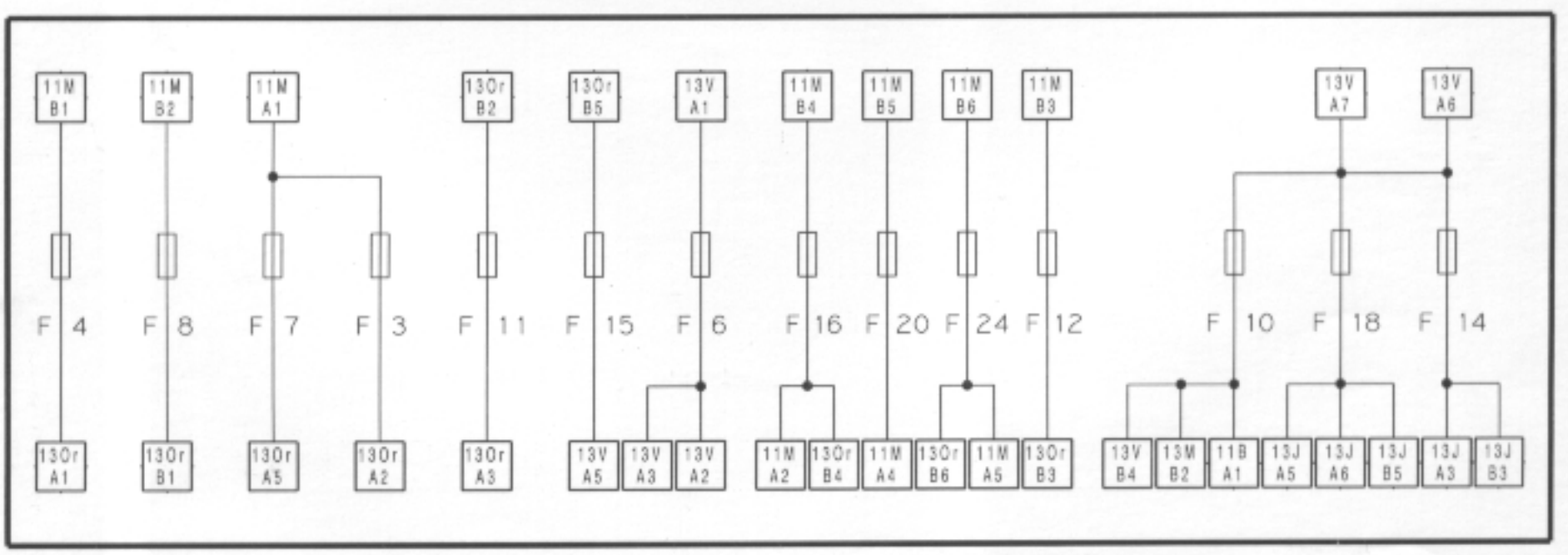




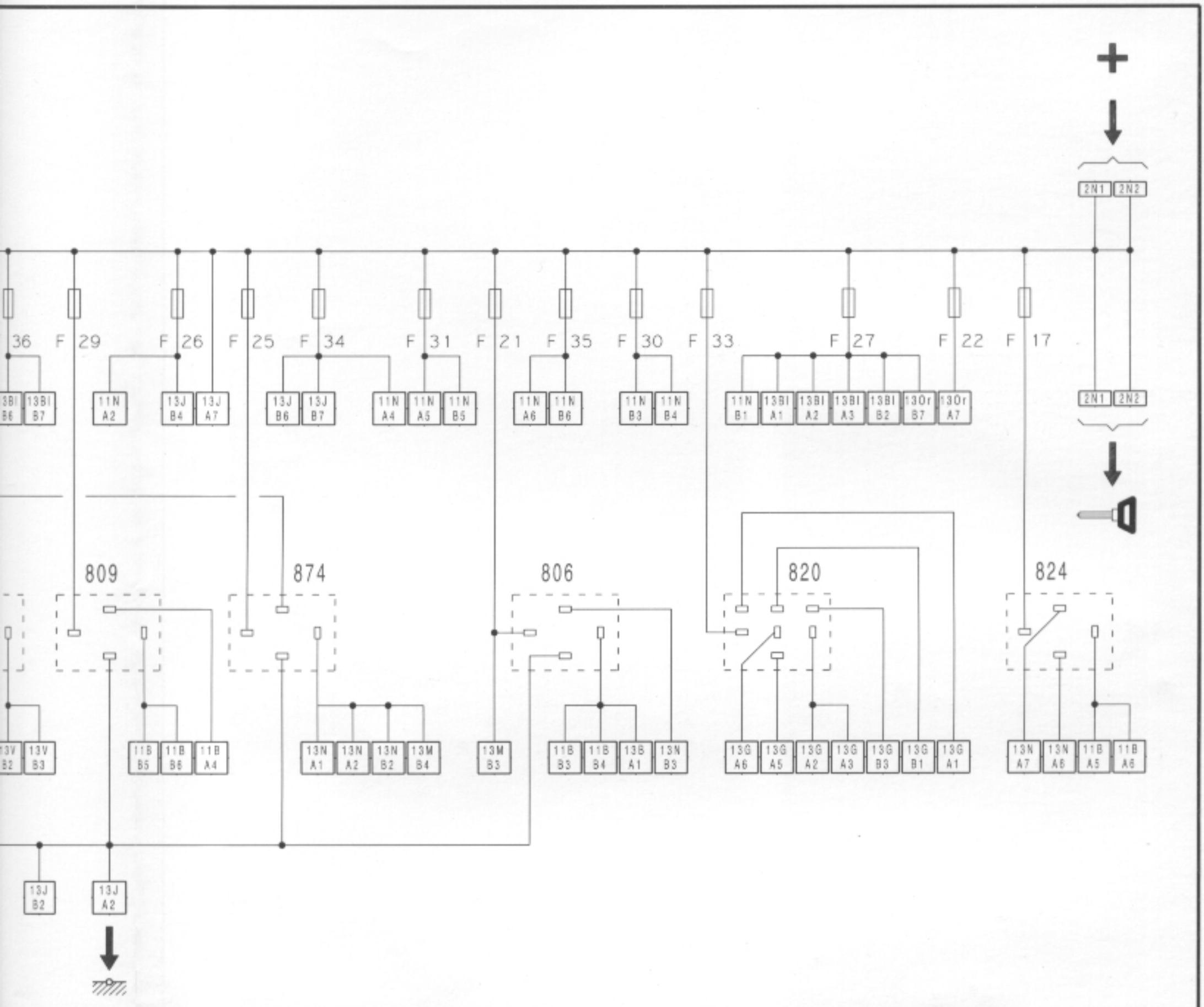
www.WorkshopManuals.co.uk



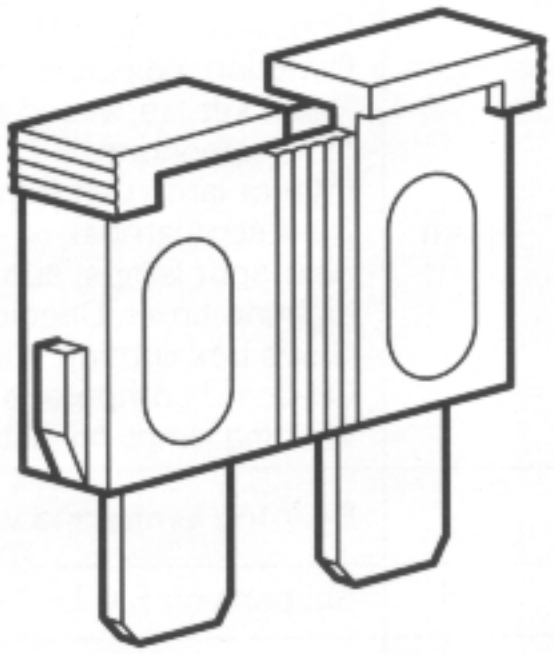




www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



FUSES

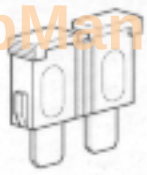
www.WorkshopManuals.co.uk



1° JUNCTION BOX

SUPPLY	FUSES			PROTECTED CIRCUITS
	No	Rating	Colour	
+ Accessories	1	10A	Red	Anti-lock brake system.
	2	10A	Red	Stop lamps and brake pad wear warning lamp,cruise regulation. Water temperature control unit. Hydraulic system audible warning.
	3	10A	Red	Air conditioning, heated rear screen, heated seats, heated rear view mirrors relays.
Side and tail lamps	4	10A	Red	Alarm switch lighter. Side and tail lamps warning lamps on instrument panel. Electronic display lighting. Instrument cluster display lighting. On-board computer lighting. Clock lighting.
+ Accessories	5	30A	Green	Engine turning relay. Direction indicators. Rear view mirror operation. Radio set (aerial and accessories...), radio-telephone. Interior lamp unit (temperature sensor turbine and centre and front spot lamps). Rear spot lamps, sun visor mirror lighting. Lighting timer. Deadlocking. Glove box lighting. Electronic display unit. On-board computer supply, clock. Warning lamps on instrument panel strip for : battery charging.
Rear fog lamps	6	5A	Dark brown	Rear fog lamps and warning lamp.
	7	10A	Red	Suspension E.C.U., body movement sensor.
	8	30A	Green	Not used (Replacement fuse).
+ Accessories	9	30A	Green	Relay coils for : electric front and rear windows, sun-roof. Electronic timer units for front and rear screen wipers. Front and rear screen wiper/washer motors. L.H. and R.H. front seats operation relay coils. Lights-on audible warning. Electric cooling fan relay coils (slow speed).
Side and tail lamps	10	5A	Dark brown	Illumination for switches of : rear locking functions, electric window, armrest operation, cruise control, car radio, cigar lighter, ashtray, radio set. Instrument cluster lighting. Illumination for switches of : front and rear foglamps, screen washer, rear screen wiper, heated rear screen, hazard warning device, interior lamp, suspension, sun-roof, air conditioning control, air conditioning. Side lamps and rear number plate lamp. Headlamp washer relay. Lights-on audible warning.
Electronic display unit	11	5A	Dark brown	Display unit language.
	12			No fuse.

www.WorkshopManuals.co.uk



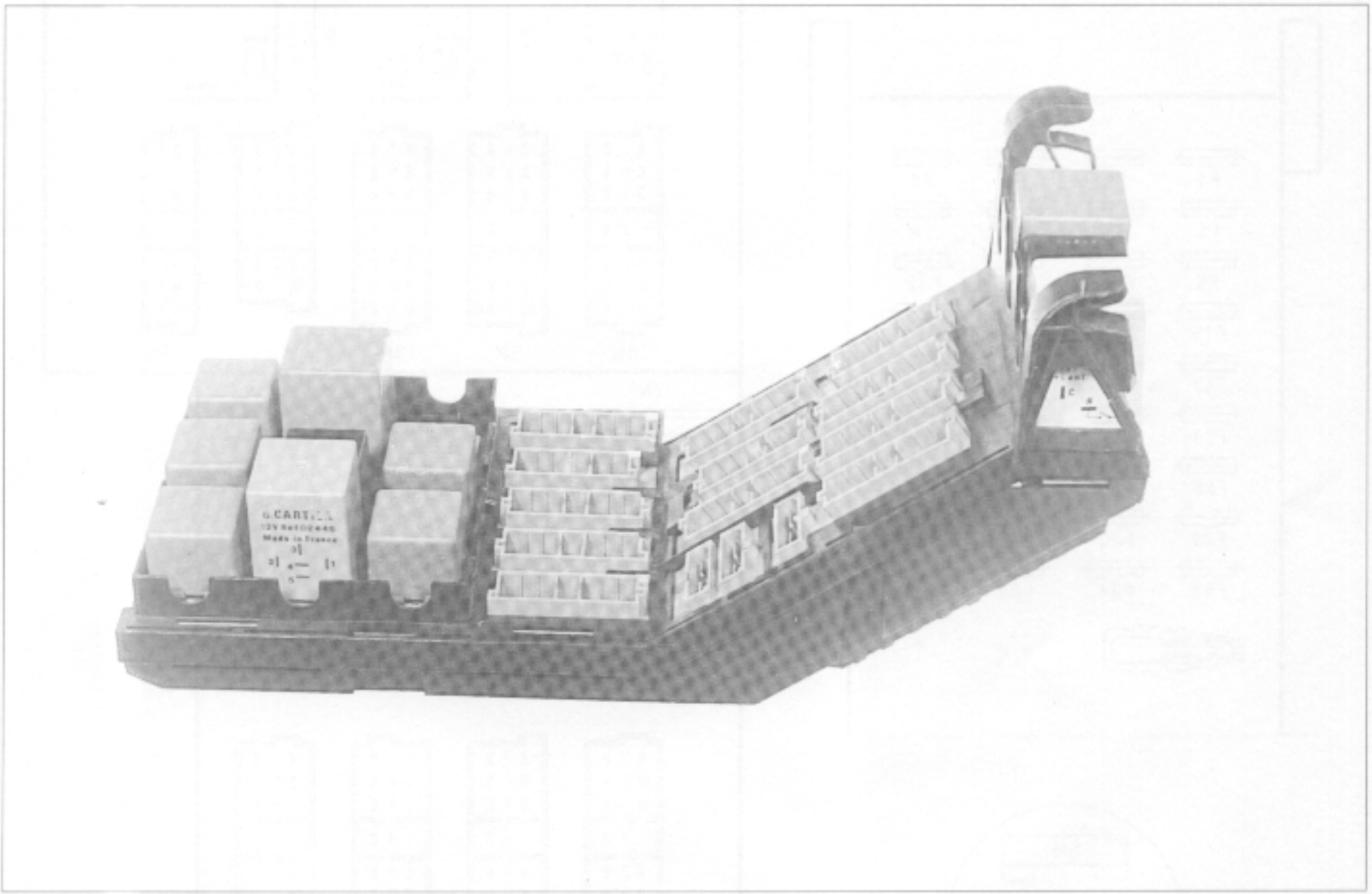
SUPPLY	FUSES			PROTECTED CIRCUITS
	No	A	Colour	
+ Battery	13	10A	Red	Hazard warning device.
Side lamps	14	5A	Dark brown	R.H. tail lamps.
Electronic display unit	15	5A	Dark brown	Display unit language.
	16			No fuse.
+ Battery	17	30A	Green	Heated rear seats and seat backrests.
Side lamps	18	5A	Dark brown	L.H. tail lamps.
	20			No fuse.
Side lamps	21	15A	Blue	Front and rear fog lamps and warning lamps.
+ Battery	22	30A	Green	Radio telephone. Anti-theft horn. Deadlocking control unit. Remote control deadlocking control unit.
+ Ignition	23	15A	Blue	Speed sensor. Interior lamp lighting timer. Coolant level control unit. Automatic gearbox. Reversing lamps, alarm siren. Coils for refrigeration compressor cut-off relay, lighting timer and day time lamps. Engine water temperature, alarm and rear view mirror setting E.C.U.s. Instrument clusters : tachometer and oil temperature gauge, water temperature gauge, electronic system supply, road wheel ABS. Warning lamps on instrument panel strip for : hydraulic system, stoplamp, engine oil pressure, water temperature, engine and screen washer reservoir water level, , engine failure, parking brake, water-in-fuel filter, catalytic converter overheat, engine oil temperature, engine oil level, water temperature pre-warning, driver's seat belt locking.
	24			No fuse.
+Battery	25	30A	Green	Sun roof.
+ Battery	26	20A	Yellow	Not used (replacement fuse).
+ Battery	27	20A	Yellow	On-board computer memory, clock. Instrument cluster electronic system. Doors and boot sill lightings. Interior lamps and interior lamp timer units. Horns.
+ Battery	28	30A	Green	Passenger's front seats operations.
+ Battery	29	30A	Green	Driver and passenger's electric front windows. Rear view mirrors operation control unit.
+ Battery	30	30A	Green	Driver's seat operations.
+ Battery	31	30A	Green	Electric rear windows. Anti-pinch electric front window.
+ Battery	32	30A	Green	Headlamp washer pump.
+ Battery	33	30A	Green	Heated rear screen and heated rear view mirrors.

www.WorkshopManuals.co.uk



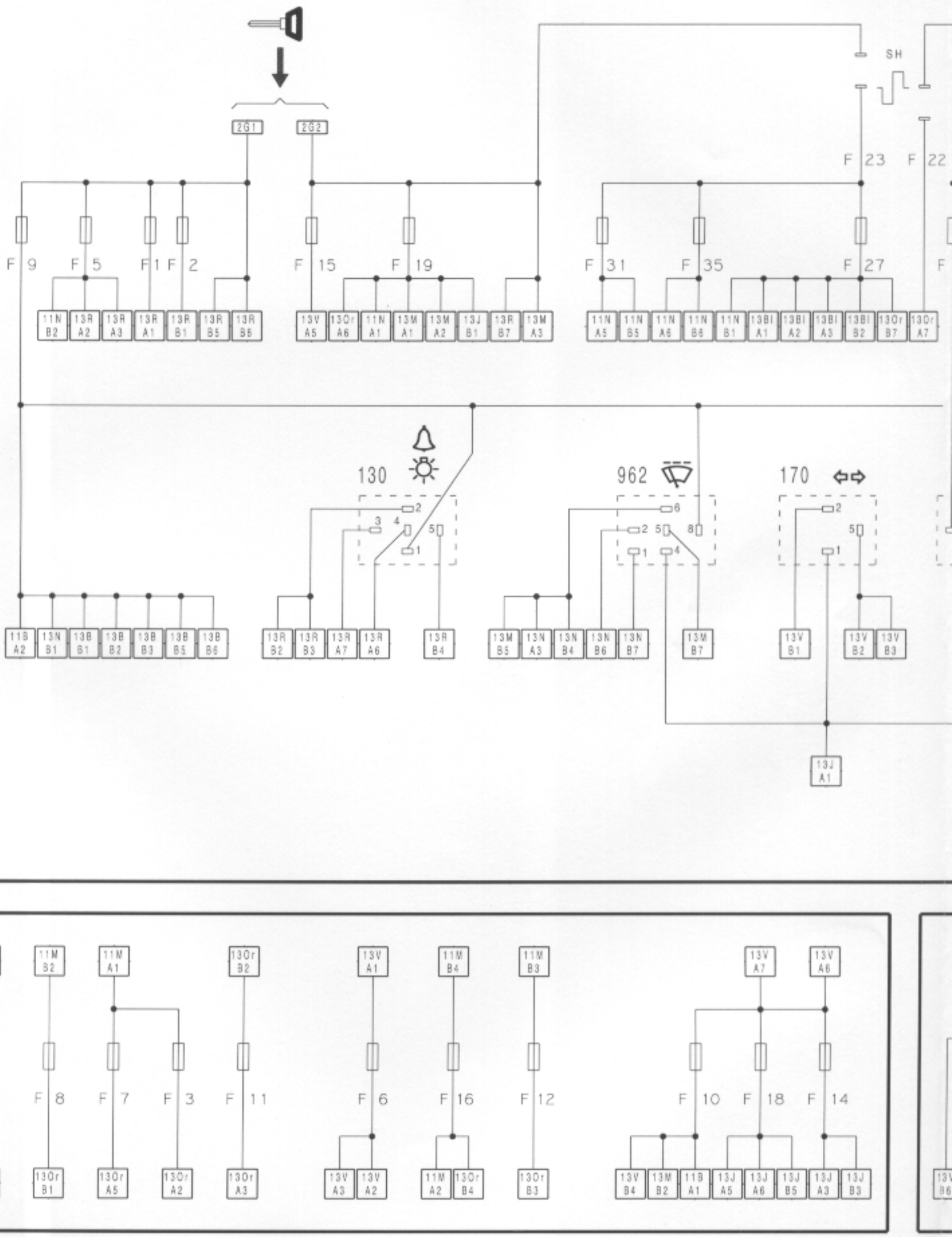
SUPPLY	FUSES			PROTECTED CIRCUITS
	No	A	Colour	
+ Battery	34	30A	Green	Water temperature control unit. Central door locking control unit. PLIP remote control control unit. Hydractive suspension system. Alarm. Burglar alarm relay coil. Burglar alarm warning lamp.
+ Battery	35	30A	Green	Front heated seats. Front centre armrest adjusting motor. Cigar lighter.
+ Battery	36	30A	Green	Cigar lighter. Car radio memory.

www.WorkshopManuals.co.uk

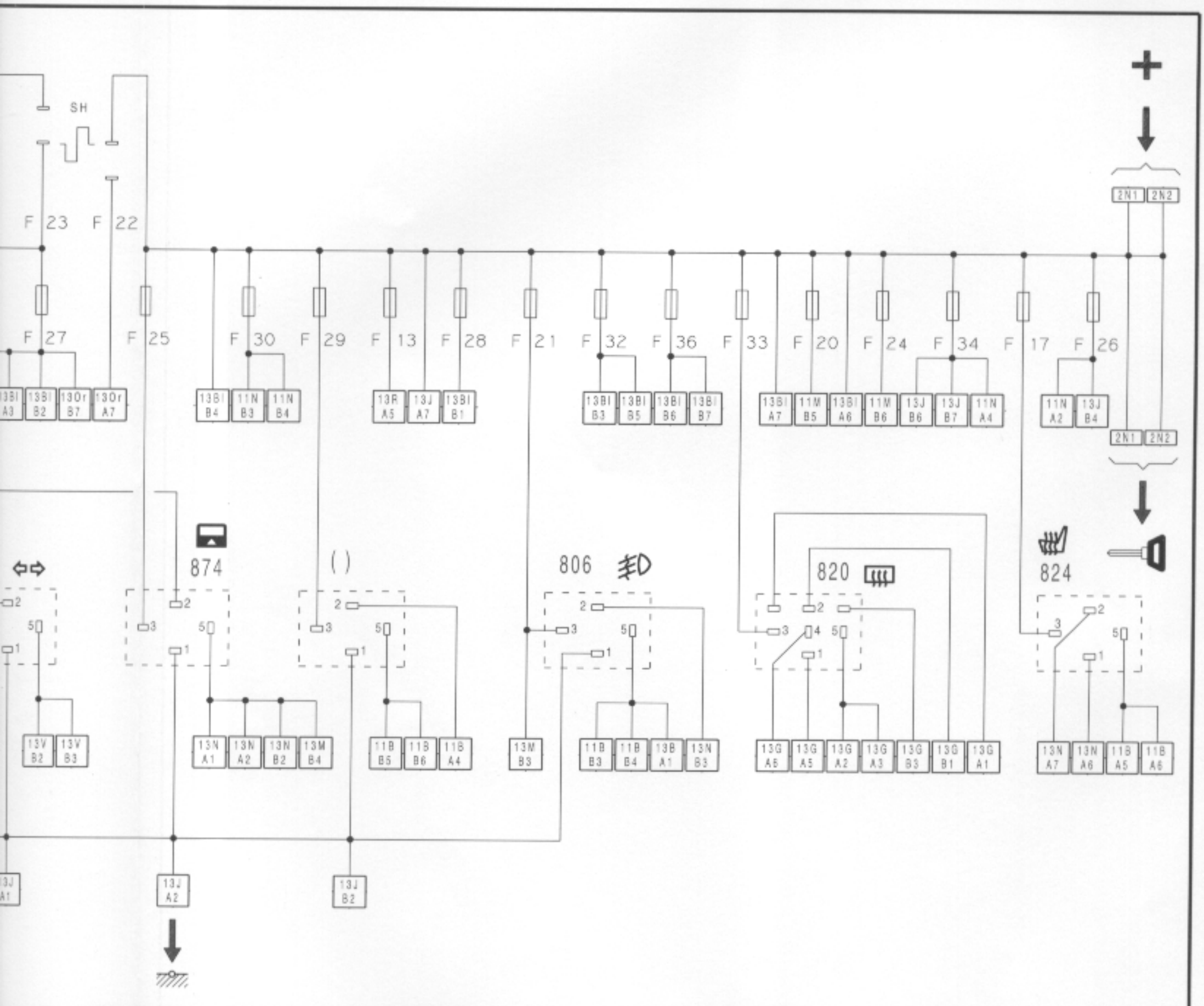


89-536

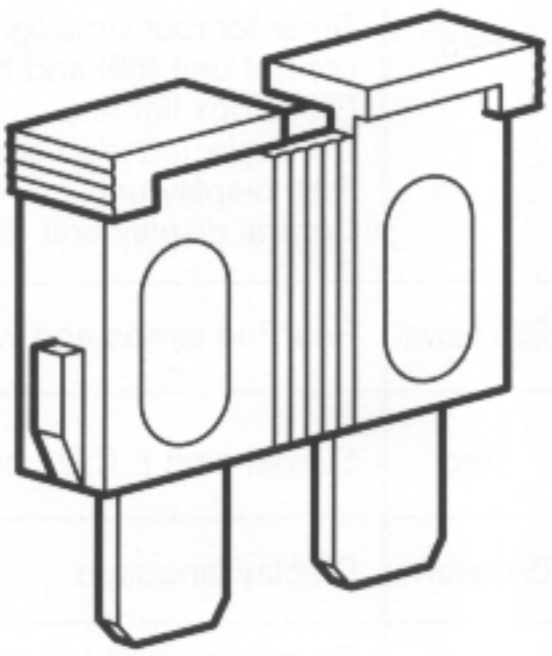
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



FUSES

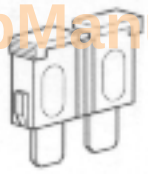
www.WorkshopManuals.co.uk



1° JUNCTION BOX

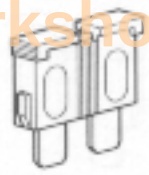
SUPPLY	FUSES			PROTECTED CIRCUITS
	No	Rating	Colour	
+ Accessories	1	10A	Red	Anti-lock brake system.
+ Accessories	2	10A	Red	Stop lamp function. Cruise control. Water temperature control unit.
+ After ignition switched off	3	10A	Red	Air conditioning relay control (821), Front heated seats relay control (817, 824). Heated rear screen/rear view mirrors delay timer (820).
Electronic display unit	4	5A	Dark brown	Display language.
Side and tail lamps	4	10A	Red	Engine running relay control (848). Hazard warning device switch (589). Radio set. Interior lamp unit (front, centre, rear ... spotlamps). Timer for roof lamp lighting (961), door locking control unit (55) and high frequency receiver (58). Glove box lighting. L.H. display unit (electronic display). Adjustable rear view mirror function. R.H. display unit. Central display unit (battery warning lamp).
Rear fog lamps	6	5A	Dark brown	Rear fog lamps and warning lamp.
+ After ignition switched off	7	10A	Red	Suspension E.C.U., body movement sensor.
Electronic display unit	8	5A	Dark brown	Display language.
+ Accessories	9	30A	Green	Electric cooling fan relay control (814). Sun roof relay control (874). Electric windows relay control (809, 810). Lights-on audible warning (130). Front and rear screen wiper/washer motors and switches: Front and rear screen wiper timers. Overspeed audible warning.
+ Side and tail lamps	10	5A	Dark brown	Illumination for switches of : rear locking functions, electric window, armrest operation, cruise control, cigar lighter, radio flap, ashtrays. Instrument cluster and radio lighting. Illumination for switches of : front and rear foglamps, screen washer, rear screen wiper, heated rear screen, hazard warning device, interior lamp, suspension, sun-roof, air conditioning control, air conditioning. Side lamps and rear number plate lighting. Headlamp washer relay. Lights-on audible warning.
+ Side and tail lamps	11	10A	Red	Cruise control and alarm switches lamps. Electronic display lighting. Instrument cluster display lighting. On-board computer lighting. Clock lighting.

www.WorkshopManuals.co.uk



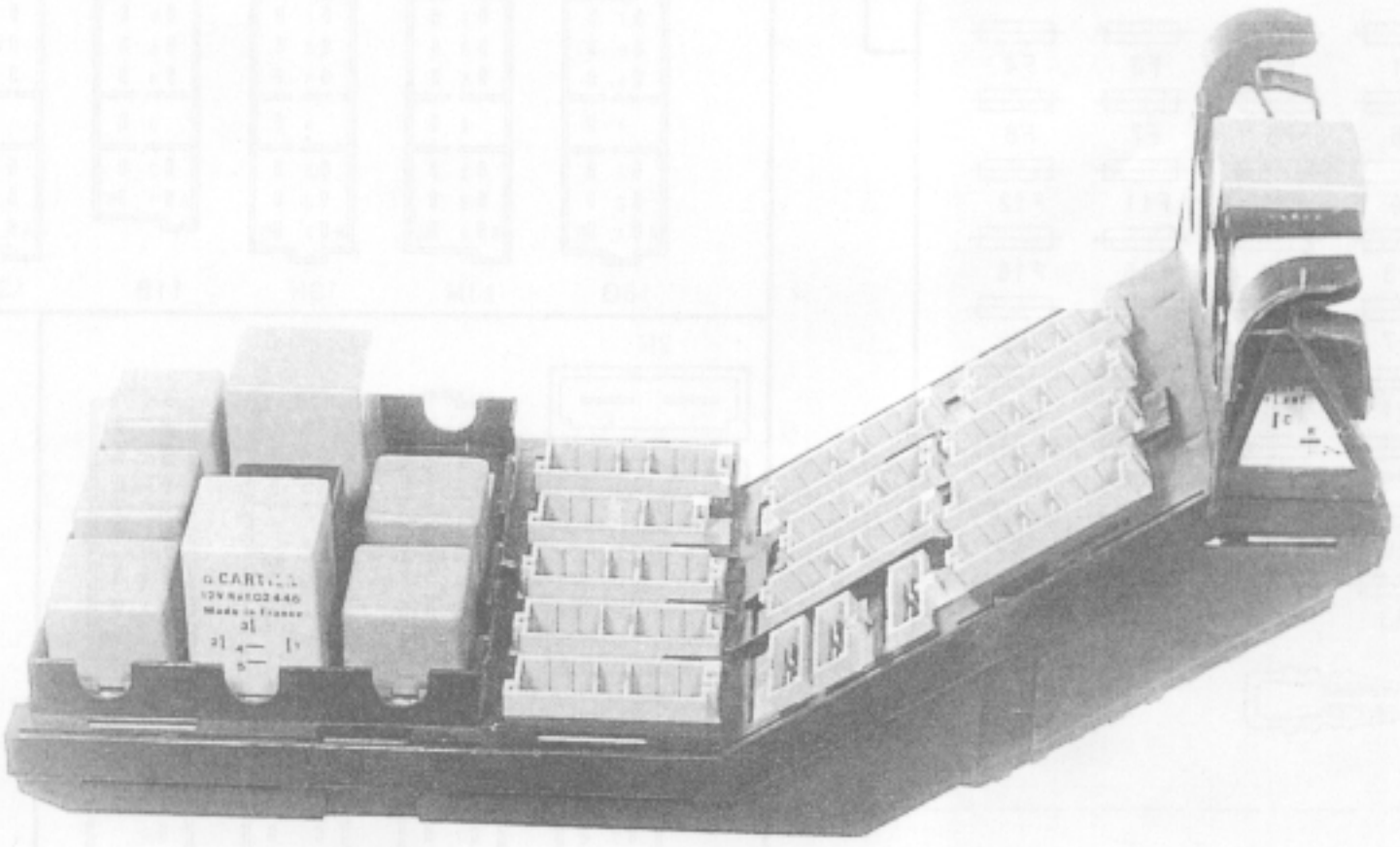
SUPPLY	FUSES			PROTECTED CIRCUITS
	No	A	Colour	
Electronic display unit	12	5A	Dark brown	Display language.
+ Battery	13	10A	Red	Diagnostic connector. Hazard warning device.
+ Side and tail lamps	14	5A	Dark brown	R.H. tail lamps.
+ After ignition	15	30A	Green	Not used (Replacement).
	16	5A	Dark brown	Not used (Replacement).
+ Battery	17	20A	Yellow	Rear heated seats relay power (824).
+ Side and tail lamps	18	5A	Dark brown	L.H. tail lamps.
+ After ignition	19	15A	Blue	Speed sensor. Interior lighting timer unit. Coolant level control unit, automatic gearbox. Reversing lamps, alarm siren. Coils for refrigeration compressor cut-off relay. Day time lamps. Engine water temperature, alarm and rear view mirror setting E.C.U.s. Instrument clusters : tachometer and oil temperature gauge, water temperature gauge, electronic system supply, road wheel ABS warning lamp. Central display unit (warning lamps). Diagnostic connector. Catalytic converter control unit.
+ Battery	20	10A	Red	Not used (Replacement).
+ Side and tail lamps	21	15A	Blue	Foglamp relay power (806).
+ Battery	22			Factory arrangement : F15 (without fuse) F22 (without fuse) F23 (fuse 30A) Consequence : fuses F27, F31 and F35 are supplied with "+ after ignition".
+ After ignition	23			Customer arrangement : F23 fuse moved at F15 Shunt fitted between F22 and F23. Consequence : fuses F27, F31 and F35 are supplied with "+ battery".
+ Battery	24	20A	Yellow	Front heated seats relay power (817).
+ Battery	25	20A	Yellow	Sun roof relay power.
+ Battery	26	30A	Green	Electric rear window relay power (810).
+ Battery (with shunt)	27	15A	Blue	Car radio. Alarm : control unit, LED, alarm relay control. Interior lighting timer. Instrument cluster electronic assembly. R.H. display unit. Boot lighting.

www.WorkshopManuals.co.uk



SUPPLY	FUSES			PROTECTED CIRCUITS
	No	A	Colour	
+ Battery	28	30A	Green	R.H. front seat operations.
+ Battery	29	20A	Yellow	Not used (Replacement).
+ Battery	30	30A	Green	L.H. front seat operations.
+ Battery (with shunt)	31	10A	Red	Water temperature control unit. Injection E.C.U.
+ Battery	32	30A	Green	Headlamp washer pump. Horns.
+ Battery	33	30A	Green	Heated rear screen/rear view mirror delay timer (820).
+ Battery	34	30A	Green	Central door locking control unit. PLIP remote control control unit. Hydractive suspension system. Burglar alarm relay power (795). Central locking control unit + H.F. receiver.
+ Battery (with shunt)	35	30A	Green	Electric front window relay power (809). Electric window anti-pinch motor.
+ Battery	36	30A	Green	Front and rear cigar lighter.

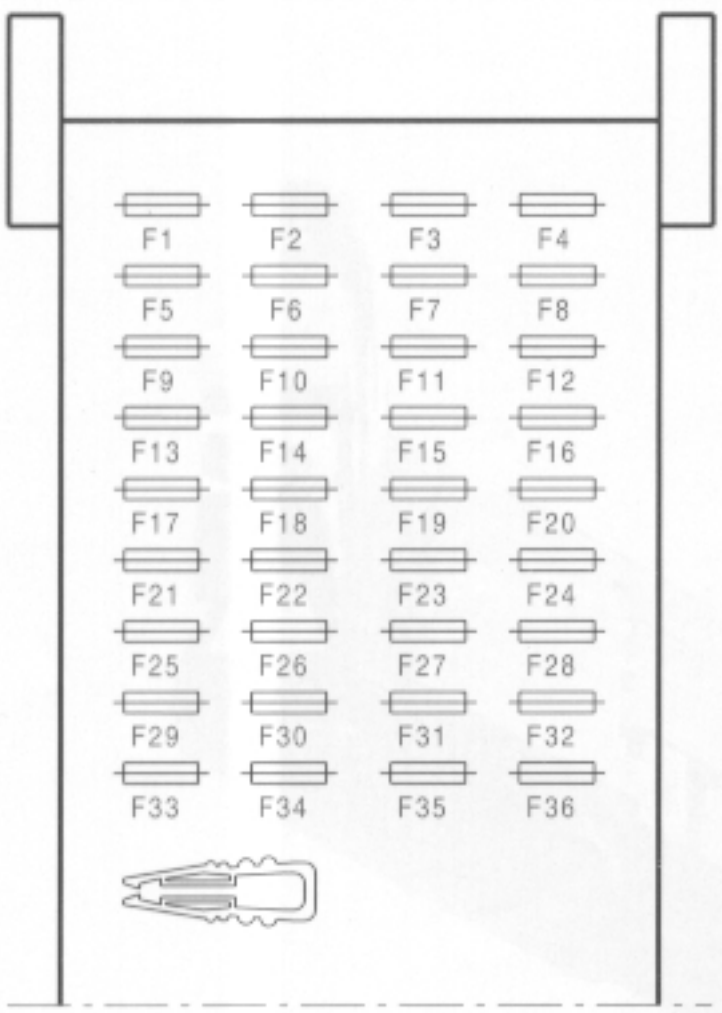
www.WorkshopManuals.co.uk

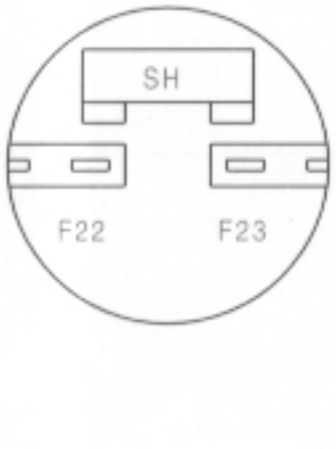


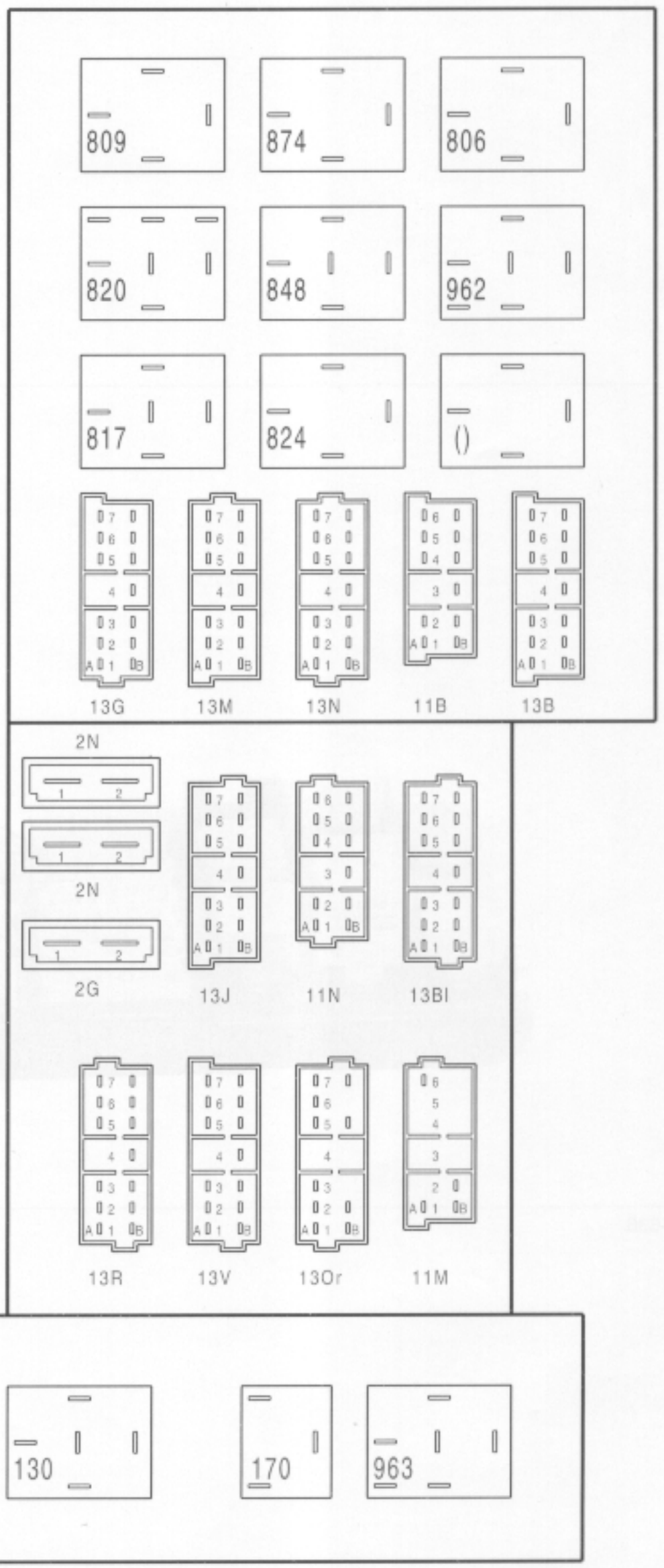
89-536

www.WorkshopManuals.co.uk

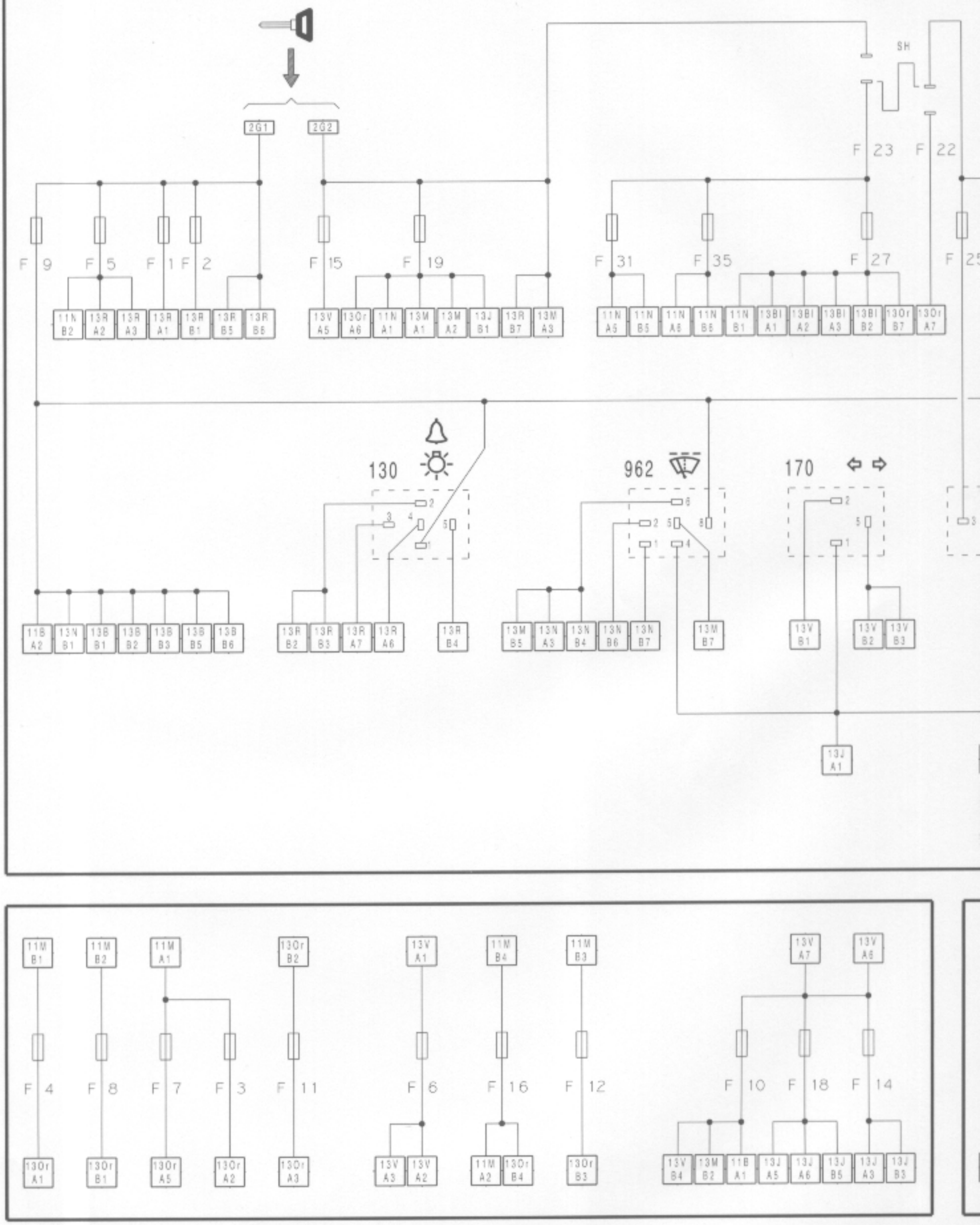
52







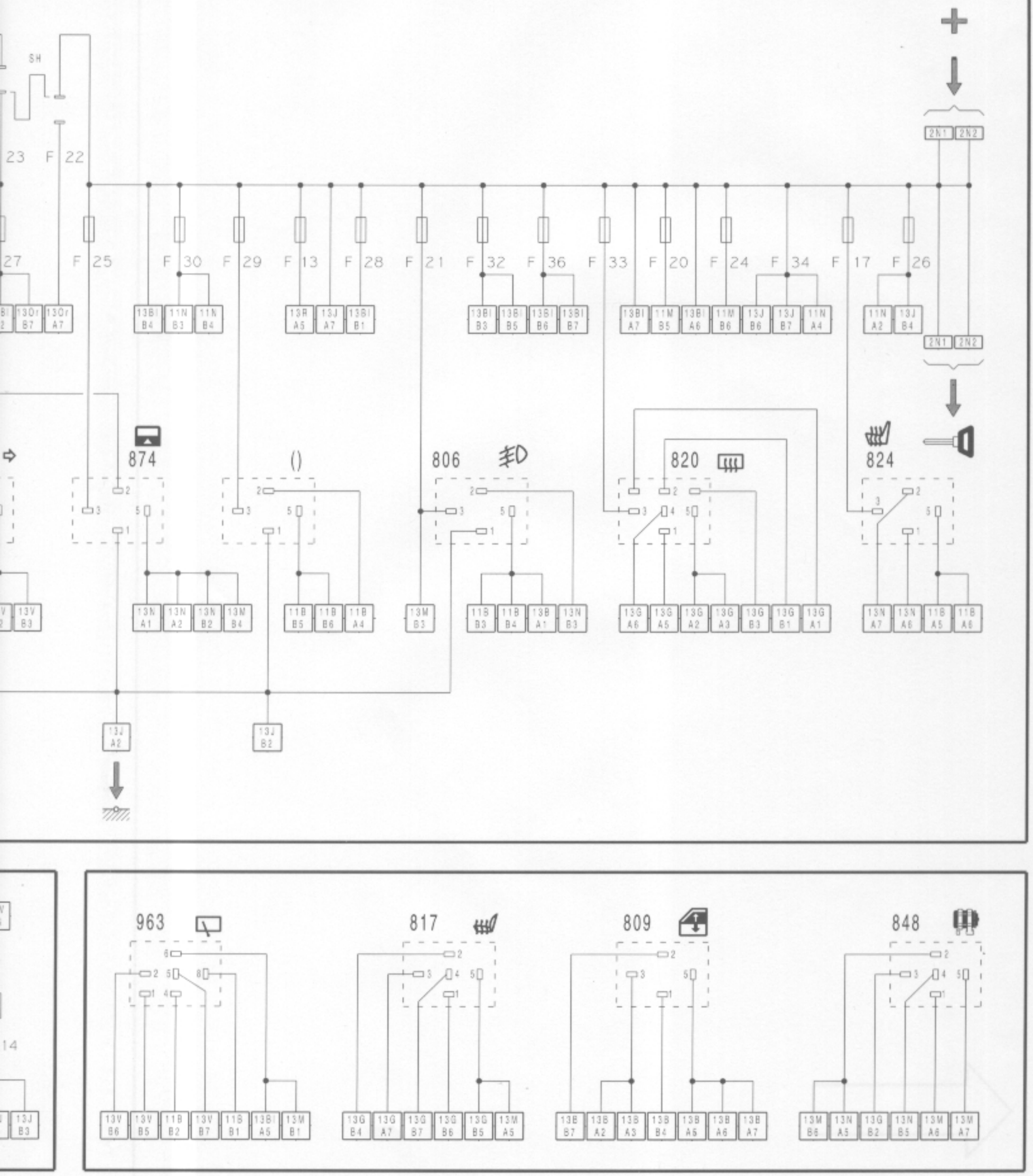
www.WorkshopManuals.co.uk



502-00/1e

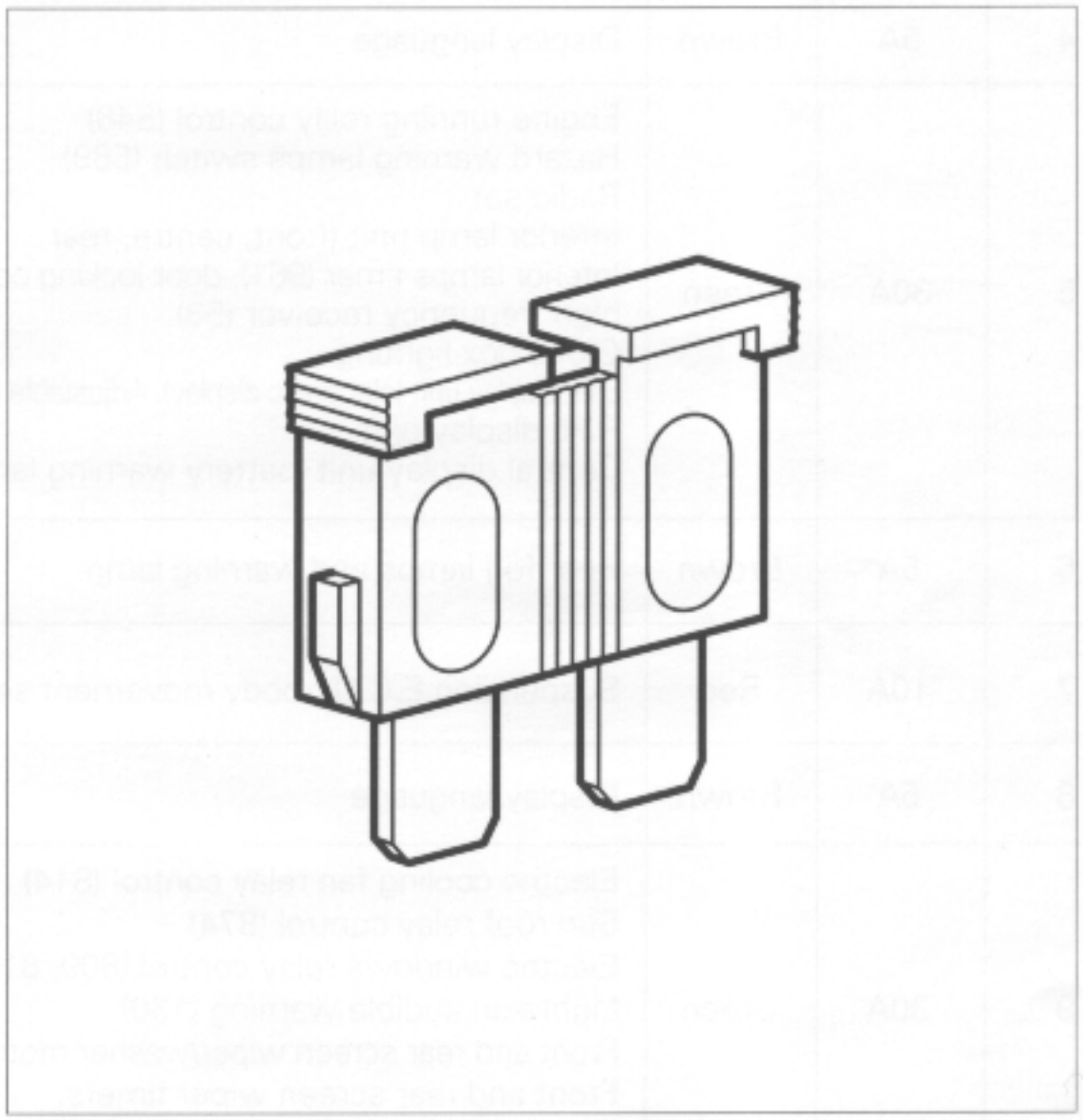
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

www.WorkshopManuals.co.uk



29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

www.WorkshopManuals.co.uk



FUSES

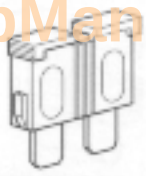
www.WorkshopManuals.co.uk



1° JUNCTION BOX

SUPPLY	FUSES			PROTECTED CIRCUITS
	No	Rating	Colour	
+ Accessories	1	10A	Red	ABS system.
+ Accessories	2	10A	Red	Stoplamp function Cruise control Water temperature control unit.
+ After ignition switched off	3	10A	Red	Air conditioning relay control (821), Front heated seats relay control (817, 824) Heated rear screen/rear view mirrors delay timer (820)
Electronic display unit	4	5A	Brown	Display language
+ Accessories	5	30A	Green	Engine running relay control (848) Hazard warning lamps switch (589) Radio set Interior lamp unit (front, centre, rear ... spotlamps) Interior lamps timer (961), door locking control unit (55) and high frequency receiver (58) Glove box lighting L.H. display unit (electronic display). Adjustable rear view mirror function R.H. display unit Central display unit (battery warning lamp)
Rear fog lamps	6	5A	Brown	Rear fog lamps and warning lamp.
+ After ignition switched off	7	10A	Red	Suspension E.C.U., body movement sensor.
Electronic display unit	8	5A	Brown	Display language
+ Accessories	9	30A	Green	Electric cooling fan relay control (814) Sun roof relay control (874) Electric windows relay control (809, 810) Lights-on audible warning (130) Front and rear screen wiper/washer motors and switches: Front and rear screen wiper timers. Overspeed audible warning.
+ Side and tail lamps	10	10A	Red	Illumination for switches of : rear locking functions, electric window, armrest operation, cruise control, cigar lighter, radio flap, ashtrays Instrument cluster and radio lighting. Illumination for switches of : front and rear fog lamps, screen washer, rear screen wiper, heated rear screen, hazard warning device, interior lamp, suspension, sun roof, air conditioning control, air conditioning. Front side lamps and rear number plate lighting Headlamp washer relay. Lights-on audible warning.
+ Side and tail lamps	11	10A	Red	Cruise control and alarm switches lamps Electronic display lighting Instrument cluster display lighting On-board computer lighting Clock lighting

www.WorkshopManuals.co.uk



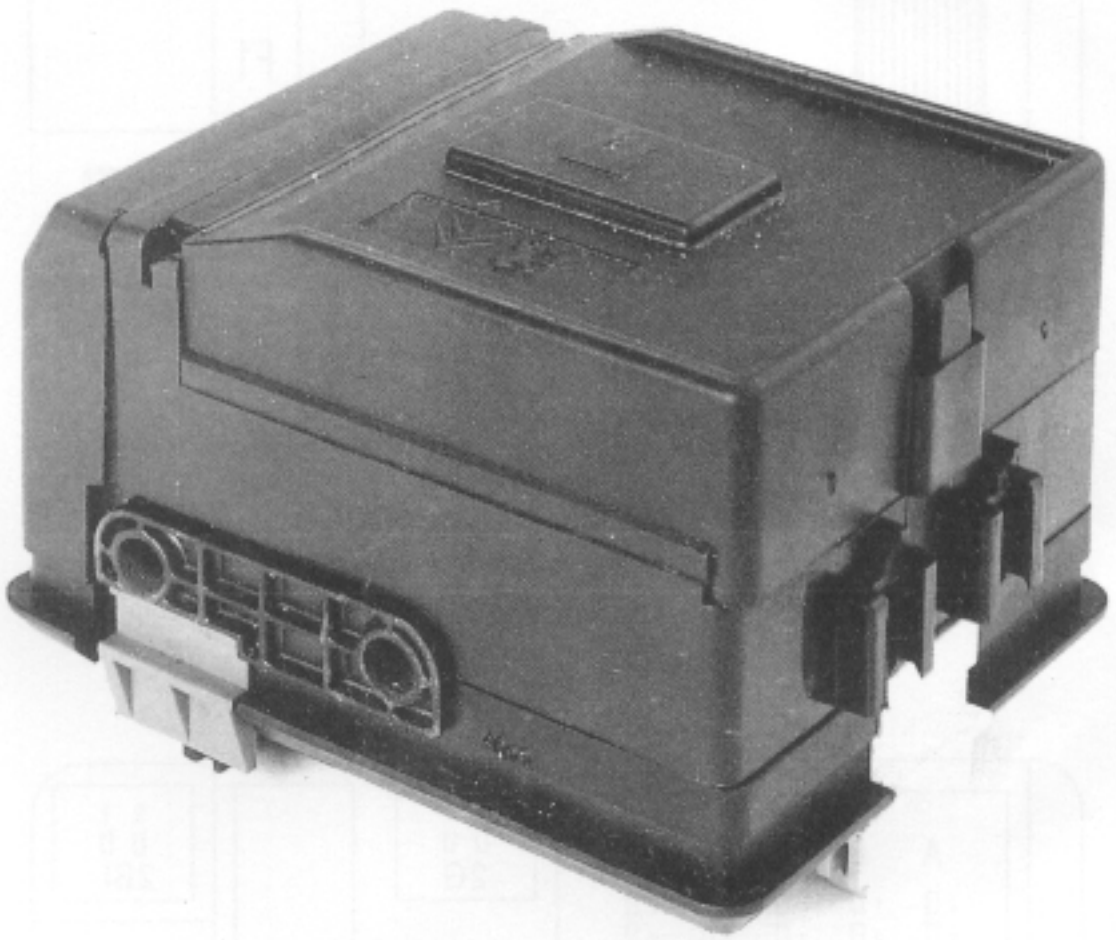
SUPPLY	FUSES			PROTECTED CIRCUITS
	No	Rating	Colour	
Electronic display unit	12	5A	Brown	Display language
+ Battery	13	10A	Red	Diagnostic connector Hazard warning lamps
+ Side and tail lamps	14	5A	Brown	Rear R.H. sidelamps.
+ After ignition	15	5A	Brown	Water temperature control unit
+ After ignition	16	5A	Brown	High temperature warning lamp
+ Battery	17	20A	Yellow	Rear heated seats relay power (824)
+ Side and tail lamps	18	5A	Brown	Rear L.H. sidelamps
+ After ignition	19	15A	Blue	Speed sensor. Interior lighting timer unit Coolant level control unit, automatic gearbox Reversing lamps, alarm siren. Coils for refrigeration compressor cut-off relay Day time lamps. Engine water temperature, alarm and rear view mirror setting E.C.U.s. Instrument clusters : tachometer and oil temperature gauge water temperature gauge, electronic system supply, ABS warning lamp Central display unit (warning lamps) Diagnostic connector Catalytic converter control unit
+ Battery	20	5A	Brown	Not used (Replacement)
+ Battery	21	15A	Blue	Fog lamp relay power (806)
+ Battery	22	Shunt		Factory arrangement : F15 (no fuse) F22 (no fuse) F23 (30A fuse) Consequence : fuses F27, F31 and F35 are supplied with with "+ after ignition".
+ After ignition	23			Customer arrangement : F23 fuse moved at F15 Shunt fitted between F22 and F23 Consequence : fuses F27, F31 and F35 are supplied with "+ battery"
+ Battery	24	20A	Yellow	Front heated seats relay power (817)
+ Battery	25	20A	Yellow	Sun roof relay power.
+ Battery	26	30A	Green	Electric rear window relay power (810)
+ Battery (with shunt)	27	15A	Blue	Car radio Alarm : control unit, LED, alarm relay control Interior lighting timer Instrument cluster electronic assembly R.H. display unit Boot lighting

www.WorkshopManuals.co.uk



SUPPLY	FUSES			PROTECTED CIRCUITS
	No	Rating	Colour	
+ Battery	28	30A	Green	R.H. front seat operations
+ Battery	29	15A	Blue	Not used (Replacement)
+ Battery	30	30A	Green	L.H. front seat operations
+ Battery (with shunt)	31	10A	Red	Water temperature control unit Injection E.C.U.
+ Battery	32	30A	Green	Headlamp washer pump Horns
+ Battery	33	30A	Green	Heated rear screen/rear view mirror delay timer (820)
+ Battery	34	30A	Green	Central door locking control unit. PLIP remote control control unit. (I.R.) Hydractive suspension system. Anti-theft alarm relay power (795). Central locking control unit + H.F. receiver
+ Battery (with shunt)	35	30A	Green	Electric front window relay power (809) Electric window anti-pinch motor
+ Battery	36	30A	Green	Front and rear cigar lighter

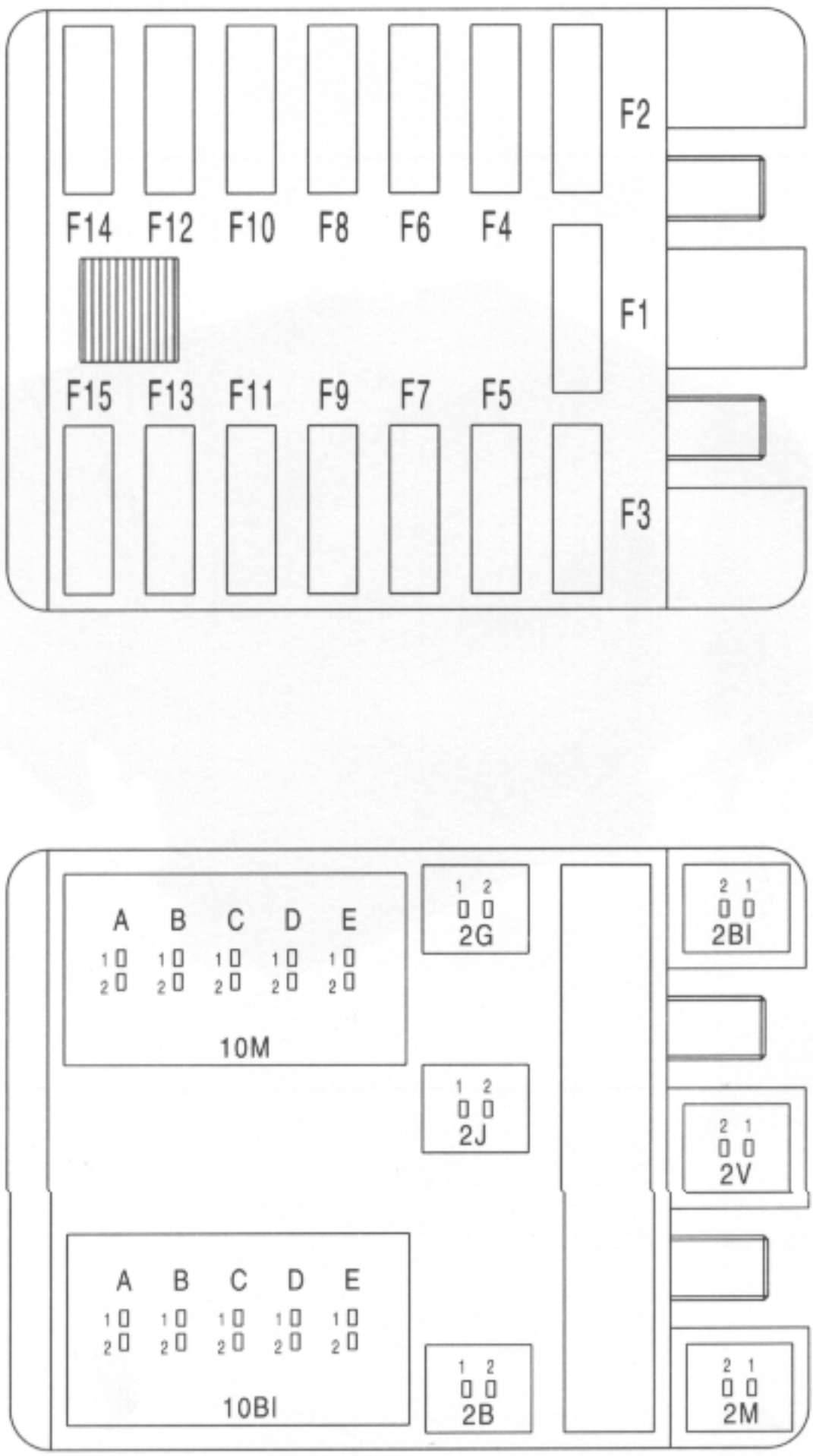
www.WorkshopManuals.co.uk



94-935

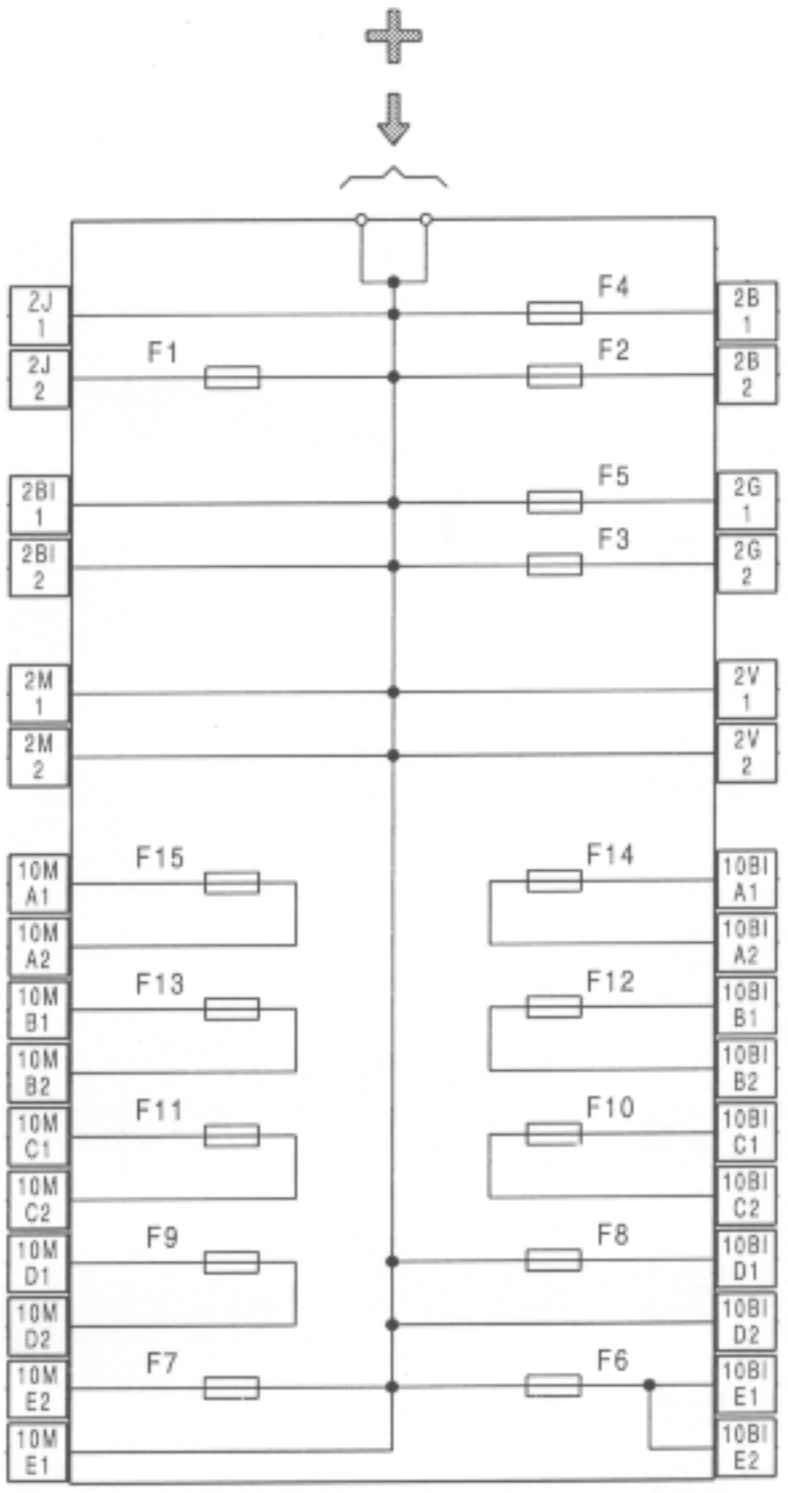
www.WorkshopManuals.co.uk

50



www.WorkshopManuals.co.uk





F1	10A	EGR control box supply Pre-heater plug supply
F2	30A	Air conditioning or refrigeration supply
F3	30A	ABS hydraulic valve block
F4	–	Not used
F5	–	Not used
F6	–	Not used
F7	–	Not used
F8	–	Not used
F9	10A	R.H. main beam
F10	–	Not used
F11	10A	L.H. main beam
F12	–	Not used
F13	10A	L.H. dipped beam
F14	–	Not used
F15	10A	R.H. dipped beam

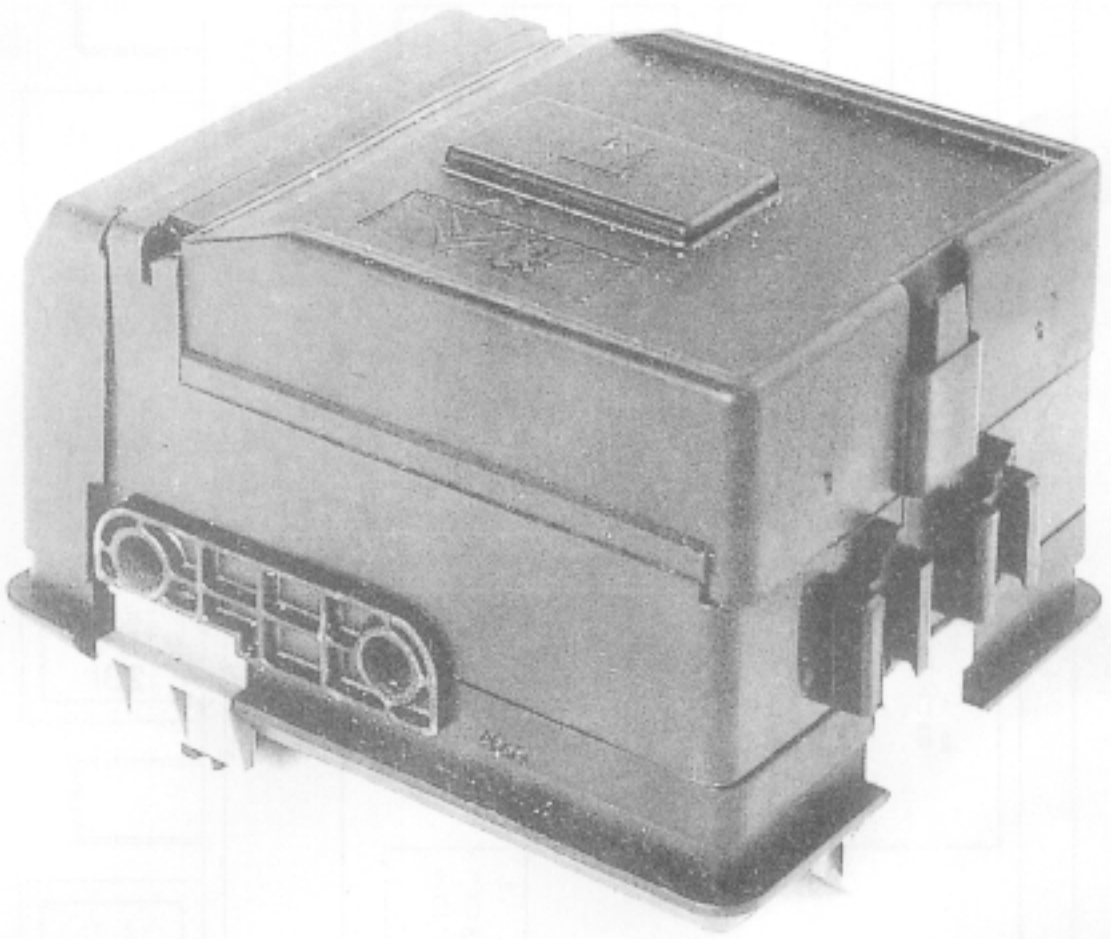
Max. Fuse

48	40A	L.H. and R.H. electric cooling fans
49	30A	R.H. electric cooling fan

502-00/2

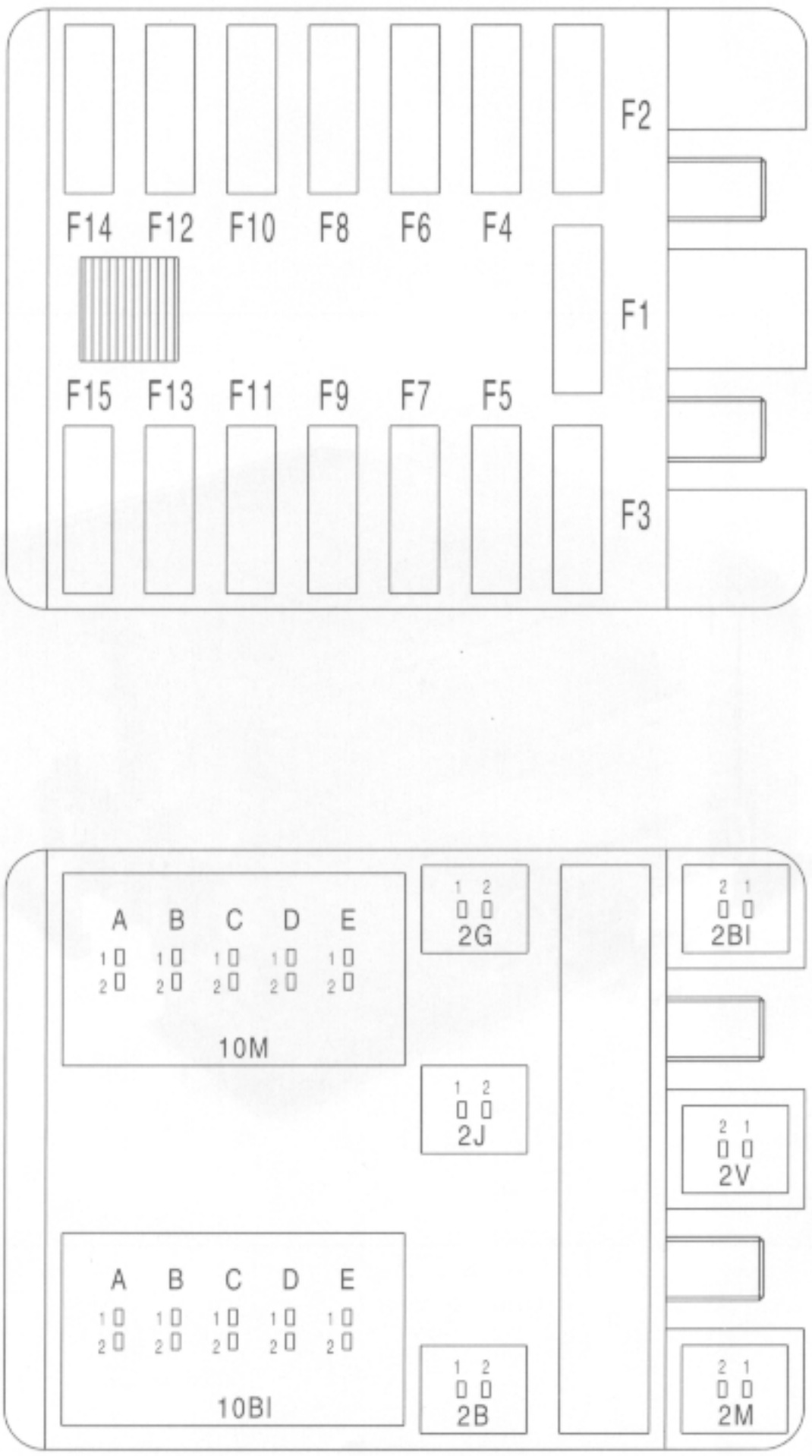
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

www.WorkshopManuals.co.uk

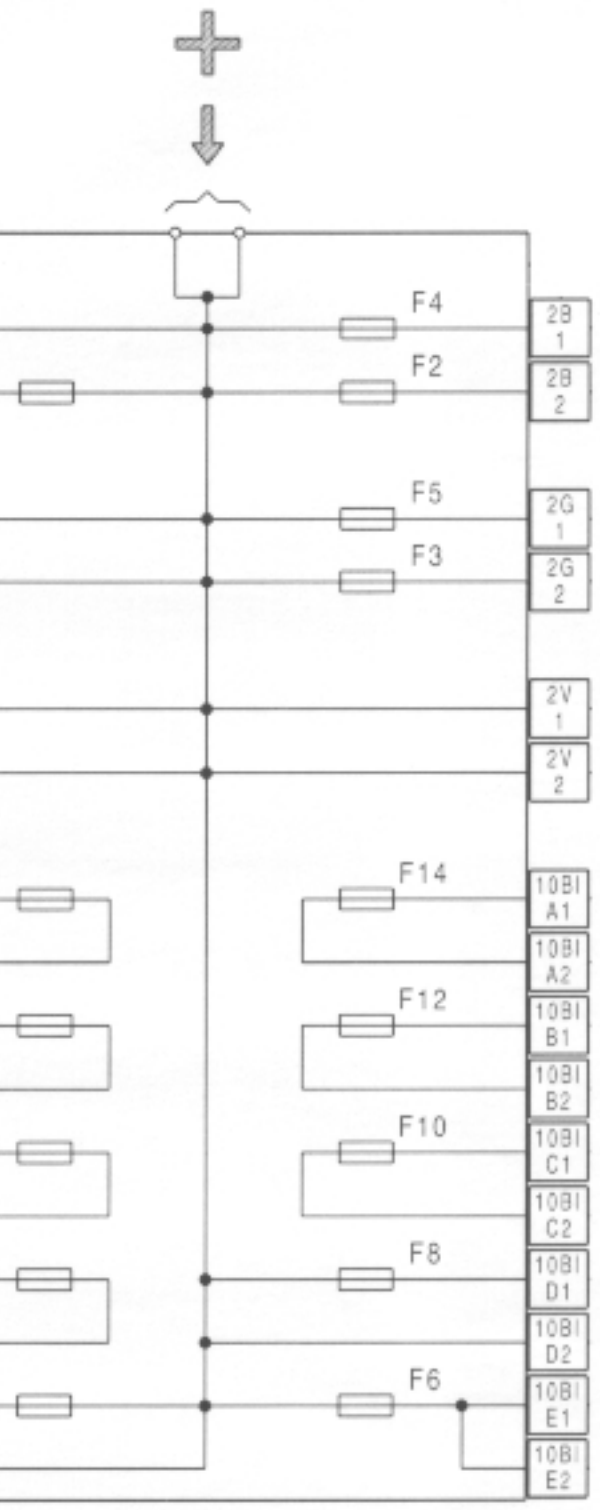


94-935

www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



F1	10 A	EGR control box supply Preheater plugs supply
F2	40A	Air conditioning or refrigeration supply
F3	30A	ABS hydraulic valve block
F4	–	Not used
F5	–	Not used
F6	–	Not used
F7	–	Not used

Max. Fuse

48	40A	L.H. and R.H. electric cooling fans

F8	–	Not used
F9	10A	R.H. main beam
F10	10A	Auto. gearbox 4HP20 or not used
F11	10A	L.H. main beam
F12	10A	Oxygen sensor
F13	10A	L.H. dipped beam
F14	15A	Fuel pump
F15	10A	R.H. dipped beam

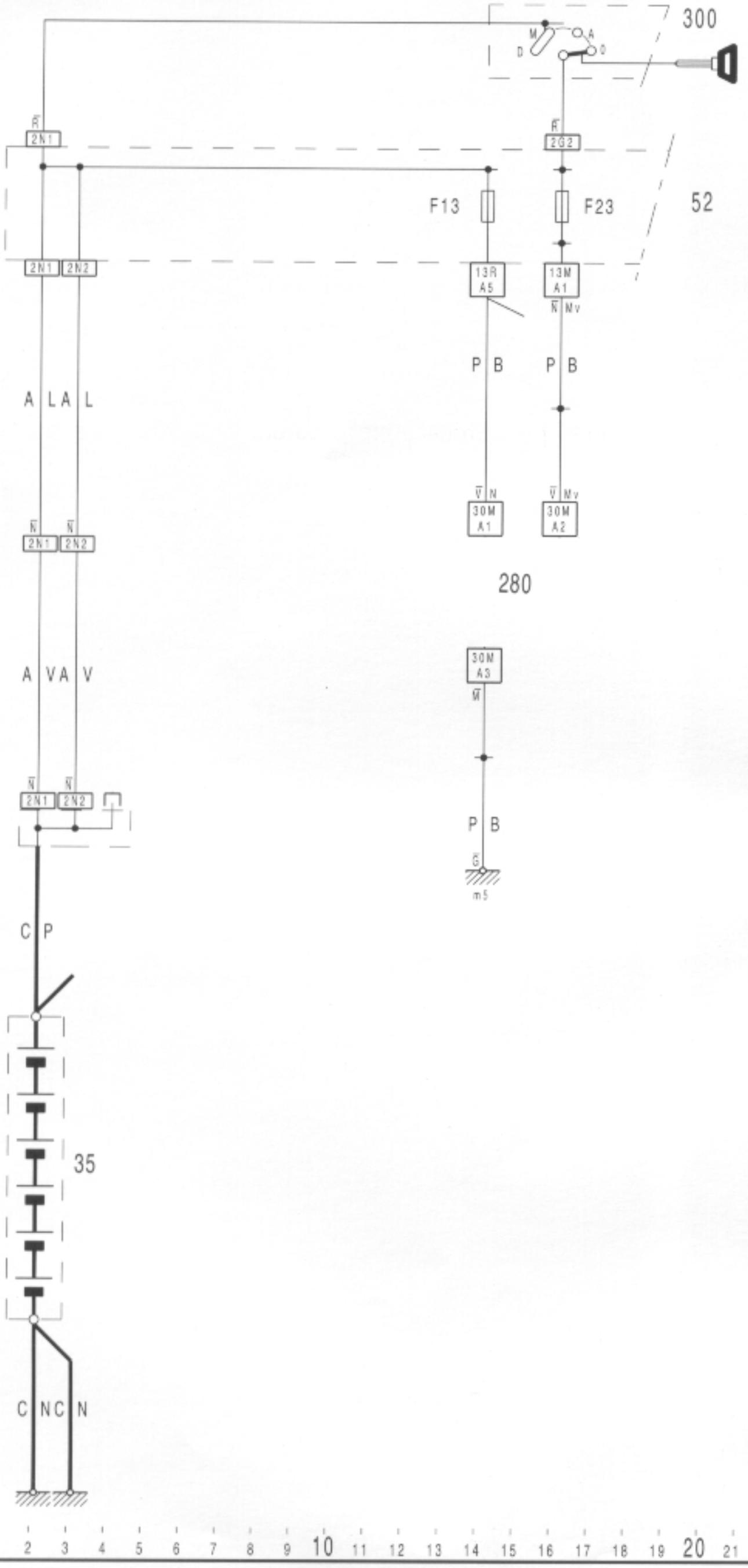
49	40A	R.H. electric cooling fan

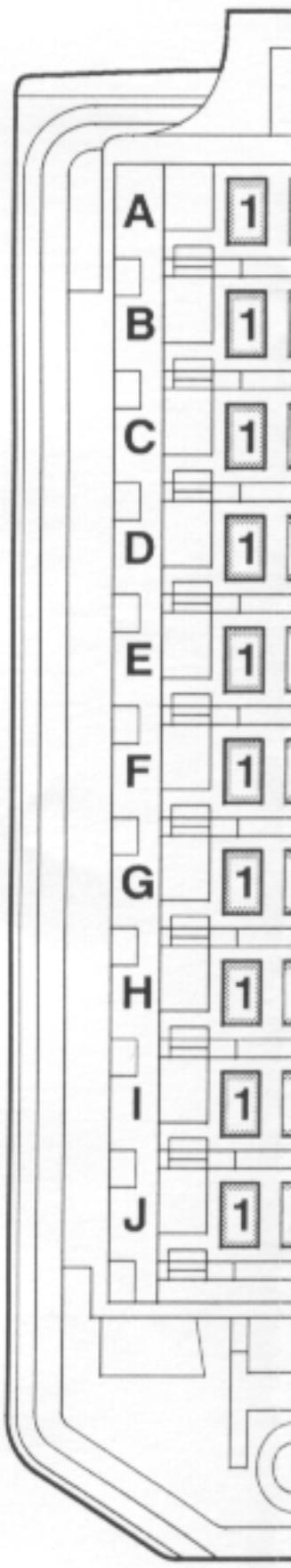
502-00/2a

www.WorkshopManuals.co.uk

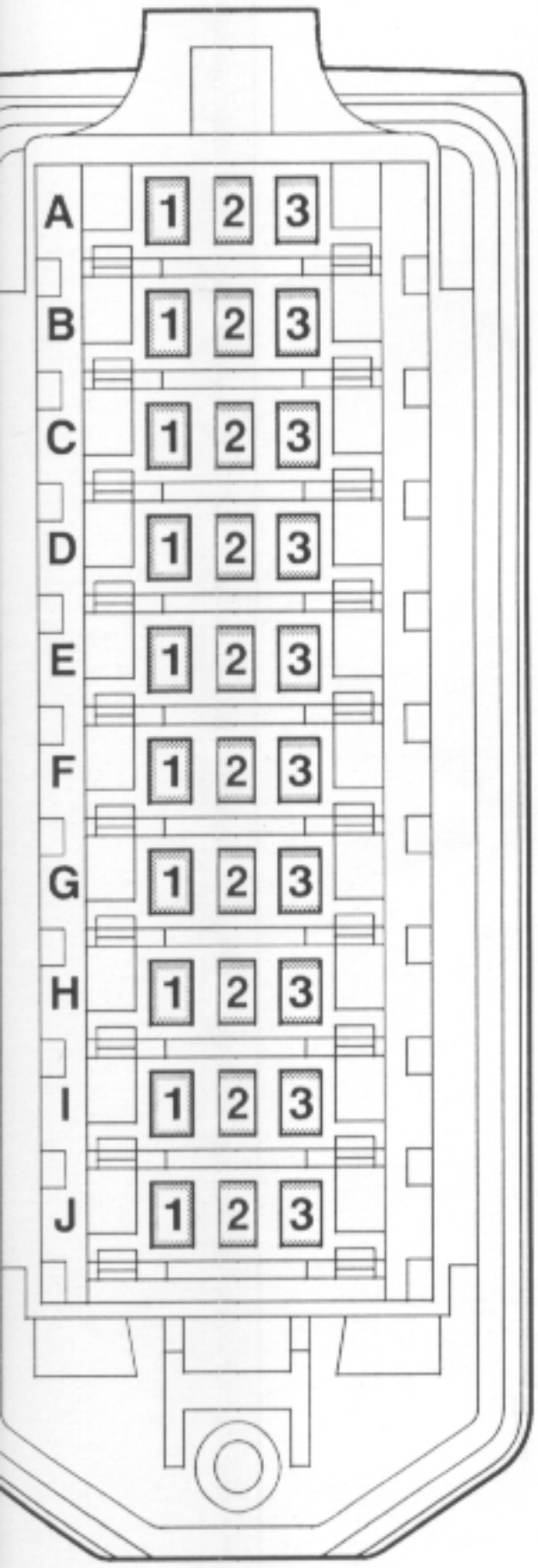
DIAGNOSIS

www.WorkshopManuals.co.uk





www.WorkshopManuals.co.uk

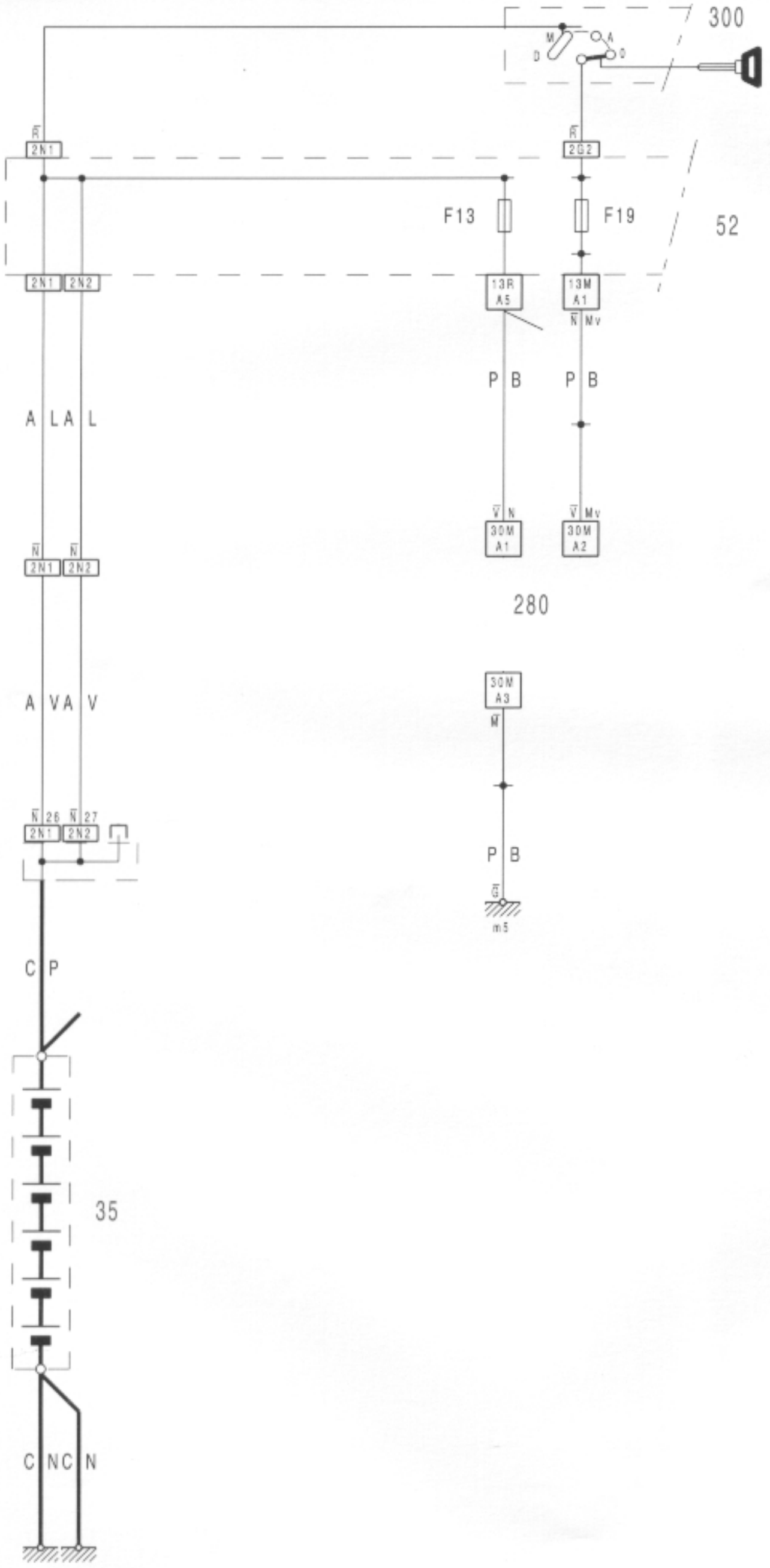


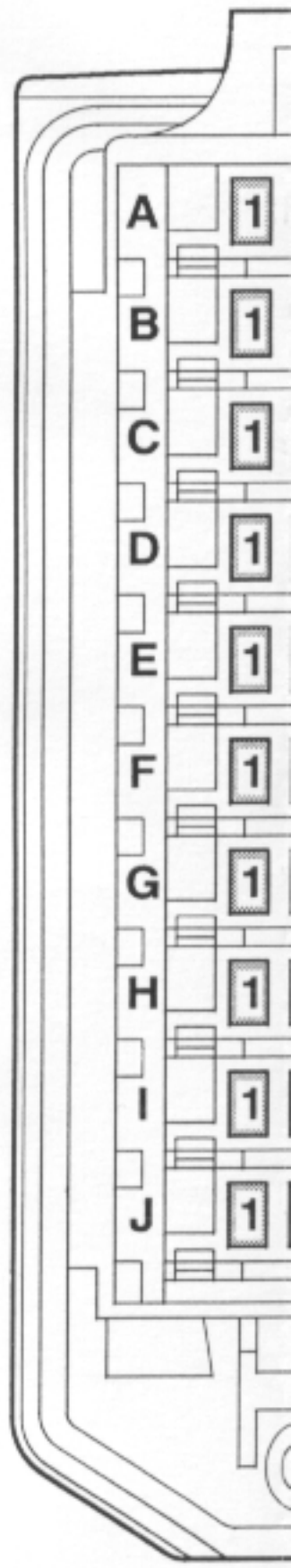
DIAGNOSTIC SOCKET

A1	+ Permanent	Electrical supply tester (4A max.)
A2	+ After ignition switch	
A3	Earth	
B1	Tachometer signal / - TDC Diesel sensor	
B2	TDC Diesel sensor screening	
B3	Tachometer signal / + TDC Diesel sensor	
C1	Engine testing (line ISO bus K)	
C2	Engine testing (line ISO bus L)	
C3	Engine testing (coded bursts outlet connection)	
D2	Pyrotechnic seat belt	
D3	Engine running information	
E1	Road wheel ABS	
E2	Variable suspension	
F1	Air conditioning	
H3	Deadlocking	
I1	Rear view mirror control	
I2	Alarm	

www.WorkshopManuals.co.uk

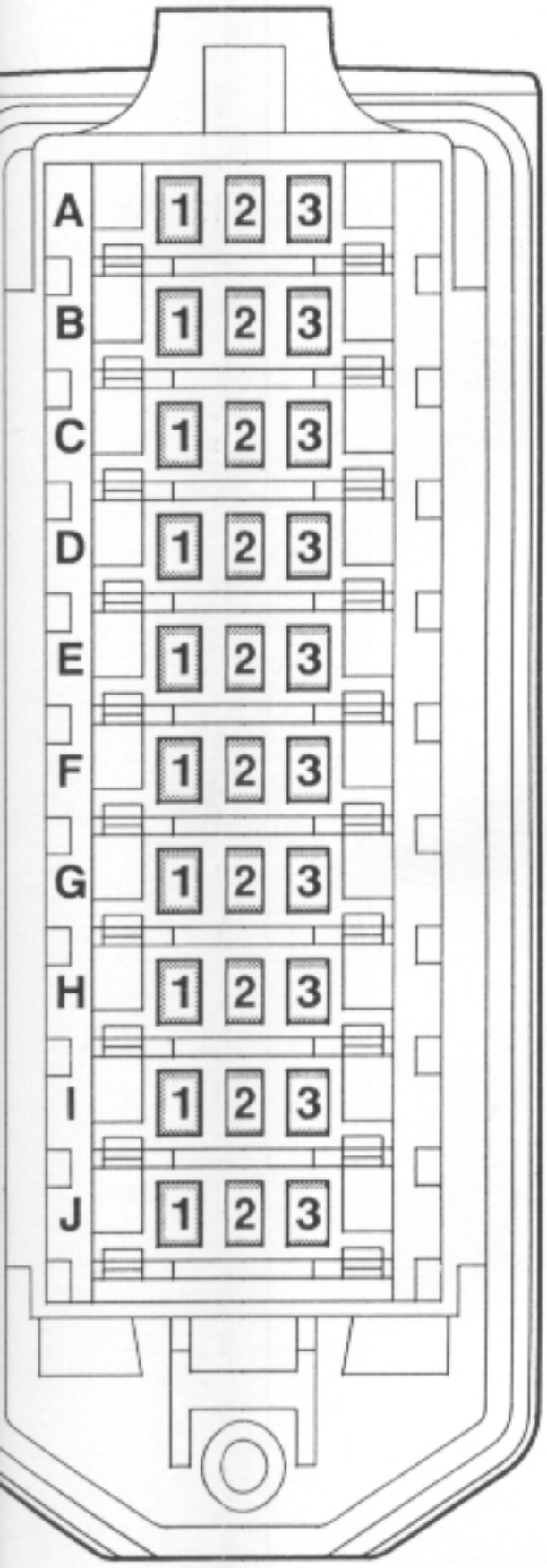






1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 3

www.WorkshopManuals.co.uk



DIAGNOSTIC SOCKET

A1	+ Permanent	Tester supply socket (4A max.)
A2	+ After ignition switch	
A3	Earth	

B1 Tachometer / - TDC sensor signal (Diesel)
B2 TDC sensor screening (Diesel)
B3 Tachometer / + TDC sensor signal (Diesel)

C1 Engine testing (line ISO bus K)
C2 Engine testing (line ISO bus L)
C3 Engine testing (coded bursts outlet connection)

D2 Pyrotechnic seat belt
D3 Engine running information

E1 Road wheel ABS
E2 Variable suspension

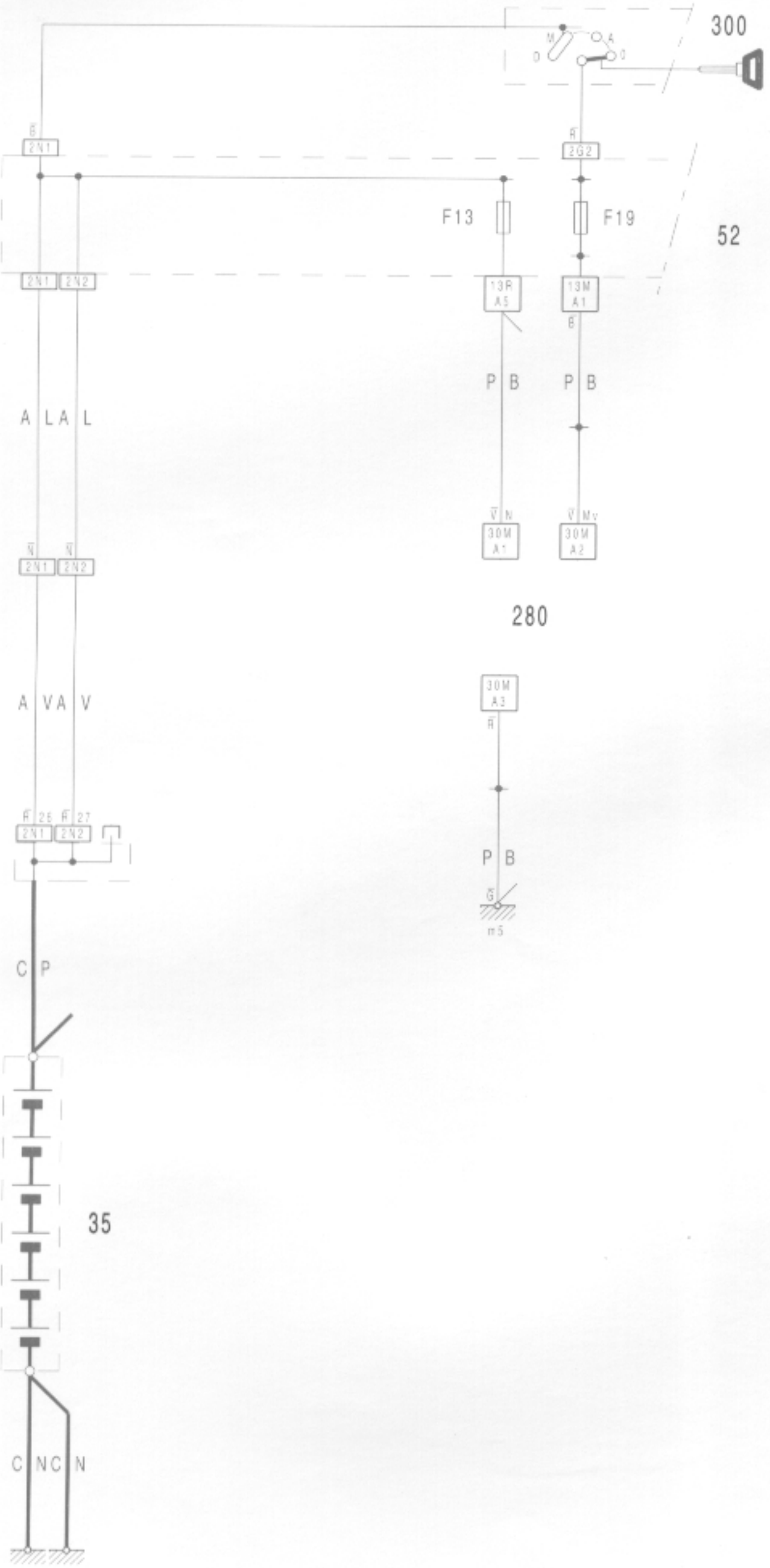
F1 Air conditioning

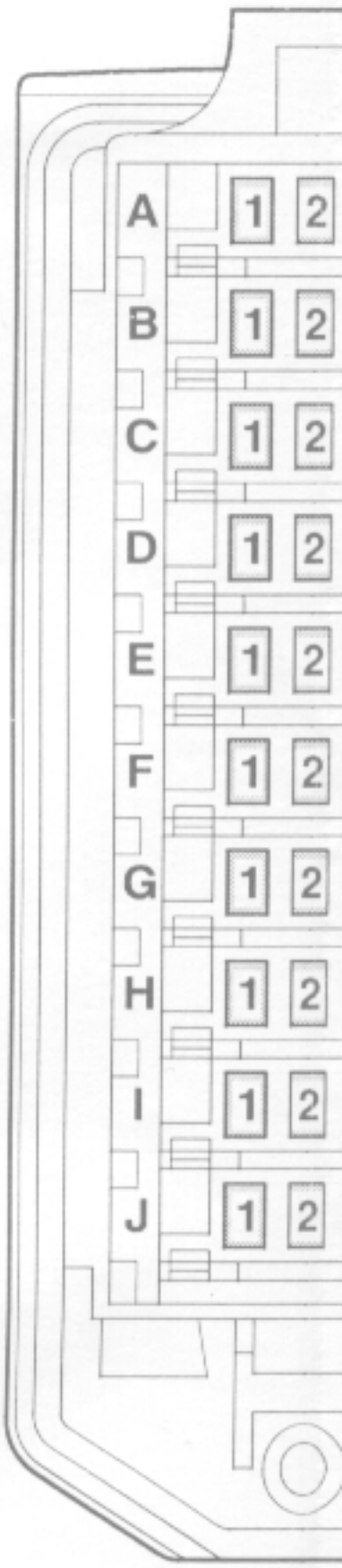
H3 Deadlocking

I1 Rear view mirror control
I2 Alarm
I3 Coded anti-theft device

www.WorkshopManuals.co.uk





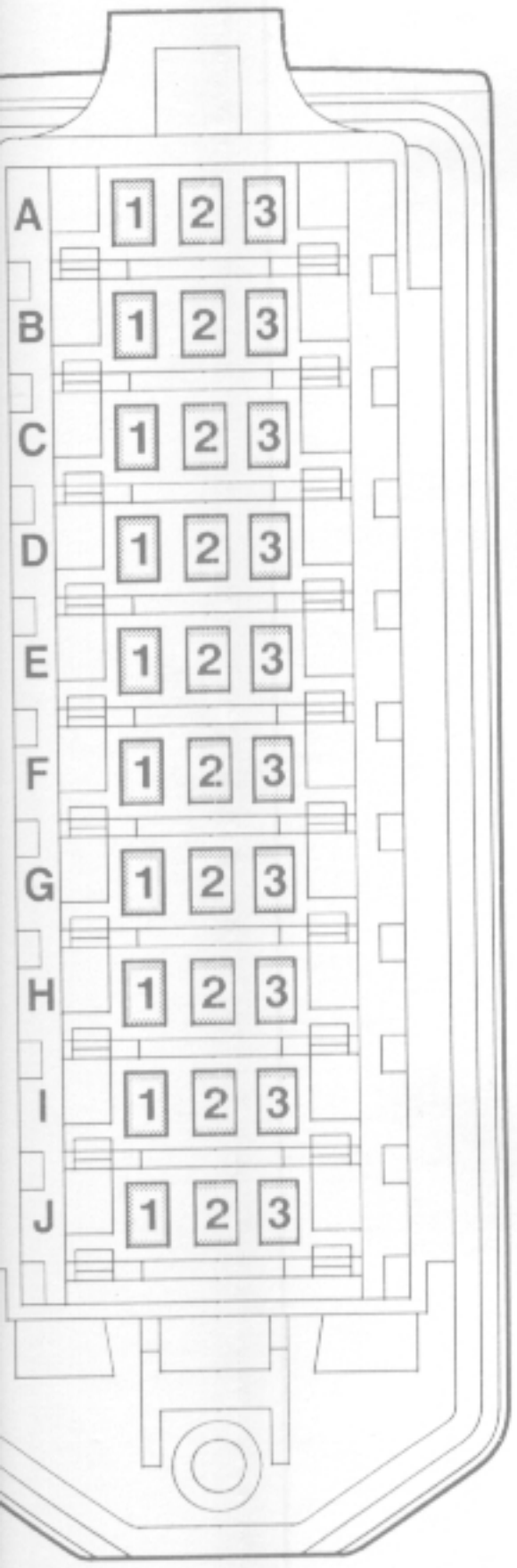


503-00/1c

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

www.WorkshopManuals.co.uk

DIAGNOSTIC SOCKET



A1 + Permanent
A2 + After ignition switch } Electrical supply tester (4A max.)
A3 Engine earth

B1 - TDC sensor (diesel)
B2 Body earth
B3 Tachometer signal / + TDC sensor (diesel)

C1 Engine testing, line K ISO bus
C2 Engine testing, line L ISO bus
C3 Supply to engine testing warning lamp

D1 GMV1/BITRON control unit testing : reading
D2 Seat belt pre-tensioner test
D3 Engine running supply relay control

E1 ABS/traction control auto-diagnostic
E2 Variable suspension auto-diagnostic
E3 Power assisted steering auto-diagnostic

F1 Air-conditioning auto-diagnostic
F2 Seats with memory auto-diagnostic
F3 Airbag auto-diagnostic

G1 Automatic gearbox/piloted clutch auto-diagnostic
G2 Rear wheel steering auto-diagnostic
G3 Piloted differential auto-diagnostic

H1 Cruise control auto-diagnostic
H2 Trip computer auto-diagnostic
H3 Deadlocking auto-diagnostic

I1 Rear view mirrors control auto-diagnostic
I2 Alarm auto-diagnostic
I3 Coded anti-theft device auto-diagnostic

J1 Multiplex auto-diagnostic
J2 Reserved
J3 Reserved

www.WorkshopManuals.co.uk

TABLE OF BULBS

Function	Quantity	Bulb base	Voltage	Power	Type
Main and dipped beams	4	P 14.5 s	12 V	55 W	H1
Front fog lamps	2	PK 22 s		55 W	H3
Front and rear direction indicators	4	BA 15 s		21 W	P21/1
Reversing lamps Rear fog lamps Stop lamps	2 2 2	BA 15 s		21 W	P25/1
Stop and side lamps on wing	2	BAY 15 d		21/5 W	P25/2
Tail lamps	2	BA 15 s		5 W	R5W
Side lamps Direction indicators repeater Registration plate lighting Boot lighting Glove box lighting Rear spot lights	2 2 2 1 1 2	Wedge base dia. = 10 mm		5 W	W5W
Front centre interior lamp	1	BA 9 s		5 W halogen	HT 5W
Rear interior lamp	2	Wedge base dia. = 10 mm		5 W halogen	HW 5W
Front spot lights	2	Wedge base dia. = 10 mm		3 W	W3W
Sun visor mirror	2	Festoon type dia. = 5/36		3 W	C34
Door sill lighting	4	Festoon type		5 W	C11
Instrument panel warning lamps Instrument panel lighters Illumination for : heater control, cigar lighter, ashtray	– – –	Wedge base dia. = 5 mm		1.2 W	–
Illumination for switches	– – –	Without base (not removable)		0.36 W	–
Switch warning lamps	– – –	LED (not removable)		–	–

www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk

ENGINE FUNCTION

PARTS LIST
LIST OF THE ELECTRICAL DIAGRAMS

www.WorkshopManuals.co.uk

Ref.	Description	Func.
1	Warning lamps central display unit	52
2	R.H. display unit (computer, clock, exterior temperature)	52
3	L.H. display unit (electronic or silhouette)	52
10	Ignition distributor	51
15	Alternator	53
35	Battery	TT
40	Instrument cluster	52
45	Ignition coil	51
50	Supply box	TT
51	Branch box	-
52	Junction box	TT
55	Door locking control unit	67
59	Preheater control unit	51
67	Anti-theft alarm control unit	67
100	Sparking plugs	51
101	Preheater plugs	51
142	Injection ECU	51
143	Suspension ECU	58
144	Recycling control ECU	51
150	Front knock sensor	51
151	Rear knock sensor	51
152	Engine speed sensor	51
154	Distance sensor	51
160	TDC sensor	51
162	Reference cylinder sensor	51
165	Injector needle lift sensor	51
166	Delivery valve position sensor	51
176	Coded anti-theft device keyboard	51
180	Additional air control	51
216	Automatic gearbox selector switch	59
255	Refrigeration compressor	64
270	HT coil suppressor	51
280	Diagnostic connector	TT
300	Anti-theft switch	TT
318	Throttle butterfly spindle switch	51
319	Stoplamp switch	51-54
322	Atmospheric pressure switch	51
328	Clutch switch	-
329	Recycling switch	51
340	Flowmeter	51
375	Ignition distributor	51
429	Fuel pump cut-out electrovalve	51
430	Canister discharge electrovalve	51
432	Idling actuator	51
434	Canister electrovalve	51
437	Recycling proportional electrovalve	51
439	ACAV C electrovalve	51
440	ACAV L electrovalve	51
442	Recycling electrovalve	51
443	Advance correction electrovalve	51
444	Turbo control electrovalve	51
445	Injection delivery control electrovalve	51
446	Throttle butterfly control electrovalve	51
570	Injectors	51
620	Inertia switch	51
670	Brake pressure switch	51-58
671	Engine oil pressure switch	52-51
680	Ignition module	51
683	Diesel injection pump module	51
703	Driver's door locking motor	67
712	Idling regulation stepper motor	51
755	Fuel pump	51
759	Recycling vacuum pump	51
763	Diesel injection pump	51
770	Throttle spindle potentiometer	51
773	Throttle lever potentiometer	51
793	Coded anti-theft device relay	51
801	Automatic gearbox relay	59
802	Injection ECU relay	51
807	Injection relay	51
807A	Power multifunction double relay	51
807B	Engine test multifunction double relay	51
818	Oxygen sensor relay	51
822	Injection refrigeration compressor cut-off relay	51
830	Recycling relay	51
861	Inlet air heating element	51
865	Oil fumes heating element	51
868	Fuel heater	51
899	Front oxygen sensor	51
900	Rear or single oxygen sensor	51
903	Injection air pressure sensor	51
907	Injection air temperature sensor	51
909	Engine water temperature sensor (injection)	51
914	Water-in-fuel sensor	51
919	Engine water level sensor	52
922	Fuel temperature sensor	52
940	Advance timing system	51
974	Coolant thermal switch (emission control)	51

www.WorkshopManuals.co.uk

COMPLEMENTARY FUNCTION

NUMBER	STEERING	APPLICABLE	DESCRIPTION
510-00/10	L.H.D.	6383 → → 6568	**CODED ANTI-THEFT DEVICE** XMS72
510-00/10a	L.H.D.	6568 → → 6749	Evolution a : Modification to the inter-connection between electrical harnesses JN and SM XMS108
510-00/10b	L.H.D.	6749 → → 7084	Evolution b : ADC fitted to Diesel models XMS184
510-00/10c	L.H.D.	7084 → → 7329	Evolution c : H.F. PLIP (PB) XMB005
510-00/10d	L.H.D.	7329 → → 7483	Evolution d : Electrical harness PB modified XMB019
510-00/10e	L.H.D.	7483 →	Evolution e : Removal of electrical harness PA XMB031
510-20/10	R.H.D.	7483 →	**CODED ANTI-THEFT DEVICE** XMB044

4-CYL. PETROL INJECTION

NUMBER	STEERING	APPLICABLE	DESCRIPTION
513-01/10	L.H.D.	6383 → → 7084	**R6A XU10J2 R.1504** BOSCH LE2 JETRONIC multipoint injection XMS62
513-01/30	L.H.D.	6383 → → 6749	**R6A XU10J2 R.1504** MAGNETI MARELLI multipoint injection XMS137
513-01/30a	L.H.D.	6749 → → 7084	Evolution a : Fuse box modified XMS176
513-04/10	L.H.D.	6383 → → 6568	**RFV XU10J4R EEC93** BOSCH MP5.1.1 multipoint injection without ADC XMS56
513-04/10a	L.H.D.	6568 → → 6749	Evolution a : Inertia switch integrated XMS109
513-04/11	L.H.D.	6383 → → 6568	**RFV XU10J4R EEC93** BOSCH MP5.1.1 multipoint injection with ADC XMS70
513-04/11a	L.H.D.	6568 → → 6749	Evolution a : Inertia switch integrated XMS110
513-04/11b	L.H.D.	6749 → → 7147	Evolution b : Fuse box modified XMS177
513-04/12	L.H.D.	7147→ → 7329	**RFV XU10J4R EEC6** BOSCH MP5.2 multipoint injection XMB006
513-04/12a	L.H.D.	7329 → → 7483	Evolution a : Electrical harnesses JN and PB modified XMB020
513-04/12b	L.H.D.	7483 →	Evolution b : Fuse box (AV) modified XMB032

www.WorkshopManuals.co.uk

4-CYL. PETROL INJECTION (cont.)

NUMBER	STEERING	APPLICABLE	DESCRIPTION
513-21/10	R.H.D.	6383 → → 7084	**R6A XU10J2 R.1504** BOSCH LE2 JETRONIC multipoint injection XMS65
513-24/10	R.H.D.	6383 → → 6568	**RFV XU10J4R EEC93** BOSCH MP5.1.1 multipoint injection without ADC XMS66
513-24/10a	R.H.D.	6568 → → 6749	Evolution a : Inertia switch integrated XMS111
513-24/11	R.H.D.	6383 → → 6568	**RFV XU10J4R EEC93** BOSCH MP5.1.1 multipoint injection with ADC XMS69
513-24/11a	R.H.D.	6568 → → 6749	Evolution a : Inertia switch integrated XMS112
513-24/11b	R.H.D.	6749 → → 7147	Evolution b : Fuse box modified XMS178
513-24/12	R.H.D.	7147 → → 7329	**RFV XU10J4R EEC96** BOSCH MP5.2 multipoint injection XMB007
513-24/12a	R.H.D.	7329 → → 7483	Evolution a : Electrical harnesses JN and PB modified XMB021
513-24/12b	R.H.D.	7483 →	Evolution b : Fuse box (AV) modified XMB033

4-CYL. TURBO PETROL INJECTION

NUMBER	STEERING	APPLICABLE	DESCRIPTION
514-02/20	L.H.D.	6383 → → 6568	**RGX XU10J2TE US83** BOSCH MP.3.2. multipoint injection XMS61
514-02/20a	L.H.D.	6568 → → 6749	Evolution a : Inertia switch integrated XMS106
514-02/20b	L.H.D.	6749→ → 6947	Evolution b : Fuse box modified XMS179
514-02/20c	L.H.D.	6947→ → 7084	Evolution c : Electrical harnesses JN and SM modified XMB001
514-02/20d	L.H.D.	7084→ → 7329	Evolution d : Electrical harness JN modified XMB008
514-02/20e	L.H.D.	7329 → → 7483	Evolution e : Electrical harnesses JN and PB modified XMB022
514-05/20	L.H.D.	7483 → → 7728	**RGX XU10J2TE EEC96** BOSCH MP.3.2. multipoint injection XMB034
514-05/20a	L.H.D.	7728 →	Evolution a : Electrical harness JN modified XMB045

www.WorkshopManuals.co.uk

4-CYL. TURBO PETROL INJECTION (cont.)

NUMBER	STEERING	APPLICABLE	DESCRIPTION	
514-22/20	R.H.D.	6383 → → 6568	**RGX XU10J2TE US83** BOSCH MP.3.2 multipoint injection	XMS67
514-22/20a	R.H.D.	6568 → → 6749	Evolution a : Inertia switch integrated	XMS107
514-22/20b	R.H.D.	6749→ → 6947	Evolution b : Fuse box modified	XMS180
514-22/20c	R.H.D.	6947→ → 7084	Evolution c : Electrical harnesses JN and SM modified	XMB002
514-22/20d	R.H.D.	7084→ → 7329	Evolution d : Electrical harness JN modified	XMB009
514-22/20e	R.H.D.	7329 → → 7483	Evolution e : Electrical harnesses JN and PB modified	XMB023
514-25/20	R.H.D.	7483 → →7728	**RGX XU10J2TE EEC96** BOSCH MP.3.2 multipoint injection	XMB035
514-25/20a	R.H.D.	7728 →	Evolution a : Electrical harness JN modified	XMB046

6-CYL. PETROL INJECTION

NUMBER	STEERING	APPLICABLE	DESCRIPTION	
515-02/40	L.H.D.	6383 → → 6568	**UFZ ZPJ US83** SIEMENS FENIX 3 injection	XMS59
515-02/40a	L.H.D.	6568 → → 6749	Evolution a : Inertia switch integrated	XMS113
515-02/40b	L.H.D.	6749 → → 7084	Evolution b : Fuse box modified	XMS181
515-02/40c	L.H.D.	7084→ → 7329	Evolution c : Siemens 3B ECU replaces Siemens 3 ECU	XMB010
515-02/40d	L.H.D.	7329 → → 7483	Evolution d : Electrical harness PB modified	XMB024
515-02/50	L.H.D.	6383 → → 6568	**UKZ ZPJ4 US83** SIEMENS FENIX 4 injection	XMS60
515-02/50a	L.H.D.	6568 → → 6749	Evolution a : Inertia switch integrated	XMS115
515-02/50b	L.H.D.	6749 → → 7084	Evolution b : Fuse box modified	XMS182
515-02/50c	L.H.D.	7084 → → 7329	Evolution c : Electrical harness SM modified	XMB011

www.WorkshopManuals.co.uk

6-CYL. PETROL INJECTION (cont.)

NUMBER	STEERING	APPLICABLE	DESCRIPTION	
515-05/30	L.H.D.	7483 → → 7847	**XFZ ES9J4 EEC96** BOSCH MOTRONIC MP 7.0	XMB036
515-05/30a	L.H.D.	7847 →	Evolution a : Electrical harness JN modified	XMB044
515-22/40	R.H.D	6383 → → 6568	**UFZ ZPJ US83** SIEMENS FENIX 3 injection	XMS71
515-22/40a	R.H.D	6568 → → 6749	Evolution a : Inertia switch integrated	XMS114
515-22/40b	R.H.D	6749 → → 6947	Evolution b : Fuse box modified	XMS183
515-22/40c	R.H.D	6947→ → 7084	Evolution c : Electrical harness SM modified	XMB003
515-22/40d	R.H.D	7084→ → 7329	Evolution d : Siemens 3B ECU replaces Siemens 3 ECU	XMB012
515-22/40e	R.H.D	7329→	Evolution e : Electrical harness PB modified	XMB025
515-25/30	R.H.D	7483 → → 7847	**XFZ ES9 J4 EEC96** BOSCH MOTRONIC MP 7.0	XMB037
515-25/30a	R.H.D	7847 →	Evolution a : Electrical harness JN modified	XMB045

4-CYL. DIESEL INJECTION

NUMBER	STEERING	APPLICABLE	DESCRIPTION	
517-04/10	L.H.D.	6383 → → 6568	**PJZ XUD11A EEC93**	XMS58
517-04/10a	L.H.D.	6568 → → 7084	Evolution a : Inertia switch integrated	XMS116

www.WorkshopManuals.co.uk

4-CYL. TURBO DIESEL INJECTION

NUMBER	STEERING	APPLICABLE	DESCRIPTION
518-04/10	L.H.D.	6383 → → 6568	**P8B XUD11ATE EEC93** XMS64 Evolution a : Inertia switch integrated XMS117 Evolution b : ADC integrated Fuse box modified XMS185 Evolution c : Electrical harnesses PB and SM modified XMB013
518-04/10a	L.H.D.	6568 → → 6749	
518-04/10b	L.H.D.	6749 → → 7084	
518-04/10c	L.H.D.	7084 → → 7252	
518-04/20	L.H.D.	6383 → → 6568	**THY DK5ATE EEC93** BOSCH MSA 11 3.6 injection XMS57 Evolution a : Inertia switch integrated XMS119 Evolution b : ADC integrated Fuse box modified XMS188 Evolution c : Electrical harnesses MT and PB modified XMB026
518-04/20a	L.H.D.	6568 → → 6811	
518-04/20b	L.H.D.	6811 → → 7084	
518-04/20c	L.H.D.	7084 → → 7205	
518-04/60	L.H.D.	6749 → → 6947	**P8C XUD11BTE EEC93** LUCAS DIESEL DCUP2 injection XMS121
518-05/10	L.H.D.	6383 → → 6568	**PHZ XUD11ATE US87** XMS63 Evolution a : Inertia switch integrated XMS120 Evolution b : ADC integrated Fuse box modified XMS186 Evolution c : Electrical harnesses PB and SM modified XMB018
518-05/10a	L.H.D.	6568 → → 6811	
518-05/10b	L.H.D.	6811 → → 7084	
518-05/10c	L.H.D.	7084 → → 7252	
518-05/20	L.H.D.	6749 → → 7084	**THY DK5ATE EEC96** BOSCH MSA 11 7.6 injection XMS135 Evolution a : Electrical harness MT modified XMB014 Evolution b : Electrical harnesses MT and PB modified XMB027 Evolution c : Inertia switch removed XMB038
518-05/20a	L.H.D.	7084 → → 7329	
518-05/20b	L.H.D.	7329 → → 7483	
518-05/20c	L.H.D.	7483 → → 7847	

www.WorkshopManuals.co.uk

4-CYL. TURBO DIESEL INJECTION (cont.)

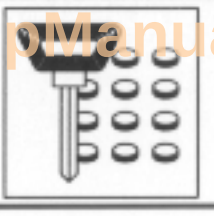
NUMBER	STEERING	APPLICABLE	DESCRIPTION	
518-05/20d	L.H.D.	7847 →	Evolution d : Fuel heater	XMB046
518-05/60	L.H.D.	6749 → → 6947	**P8C XUD11BTE EEC96** LUCAS DIESEL DCUP2 injection	XMS189
518-05/60a	L.H.D.	6947 → → 7084	Evolution a : LUCAS pedal sensor replaces BOSCH pedal sensor	XMB004
518-05/60b	L.H.D.	7084 → → 7267	Evolution b : Electrical harness MT modified	XMB015
518-05/60c	L.H.D.	7267 → → 7483	Evolution c : Electrical harnesses MT and PB modified	XMB028
518-05/60d	L.H.D.	7483 →	Evolution d : Inertia switch removed	XMB039
518-05/61	L.H.D.	7252 → → 7483	**P8C XUD11BTE EEC96** LUCAS DIESEL DCUP2 injection (Cruise control)	XMB029
518-05/61a	L.H.D.	7483 →	Evolution a : Inertia switch removed	XMB040
518-05/62	L.H.D.	7602 →	**P8C XUD11BTE EEC96 Auto. gearbox** LUCAS DIESEL DCUP2 injection	XMB048
518-05/63	L.H.D.	7602 →	**P8C XUD11BTE EEC96 Auto. gearbox** LUCAS DIESEL DCUP2 injection (Cruise control)	XMB049
518-06/60	L.H.D.	7755 →	**P8C XUD11BTE L4 EEC2000** LUCAS DIESEL DCUP2 injection	XMB041
518-24/10	R.H.D	6383 → → 6568	**P8B XUD11ATE EEC3**	XMS68
518-24/10a	R.H.D	6568 → → 6749	Evolution a : Inertia switch integrated	XMS118
518-24/10b	R.H.D	6749 → → 7084	Evolution b : ADC integrated Fuse box modified	XMS187
518-24/10c	R.H.D	7084 → → 7252	Evolution c : Electrical harnesses PB and SM modified	XMB016
518-25/20	R.H.D	7084 → → 7329	**THY DK5ATE EEC96** BOSCH MSA 11 7.6	XMB017
518-25/20a	R.H.D	7329 → → 7483	Evolution a : Electrical harnesses MT and PB modified	XMB030
518-25/20b	R.H.D	7483 →	Evolution b : Inertia switch removed	XMB042

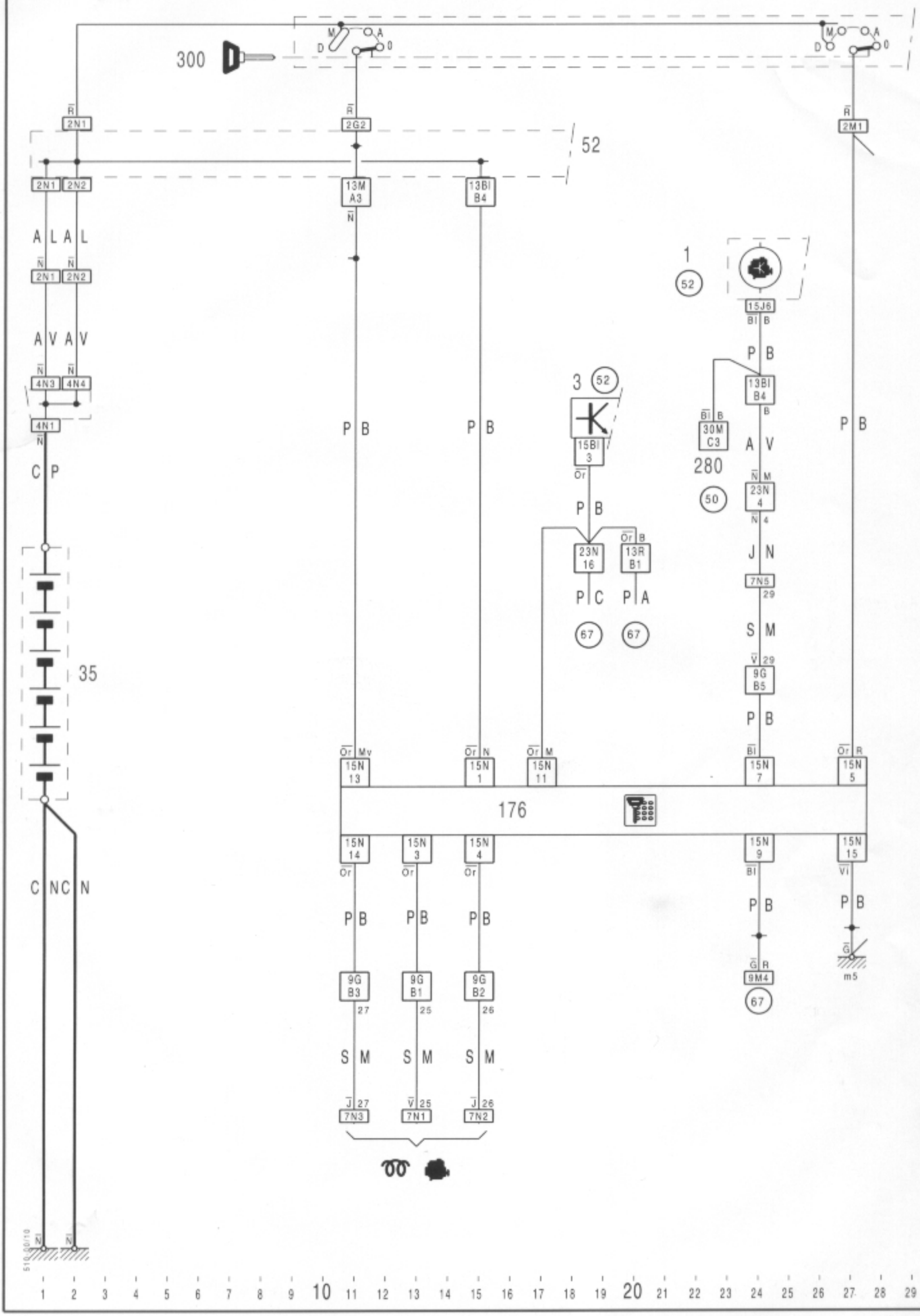
www.WorkshopManuals.co.uk

4-CYL. TURBO DIESEL INJECTION (cont.)

NUMBER	STEERING	APPLICABLE	DESCRIPTION	
518-25/20c	R.H.D.	7847 →	Evolution c : Fuel heater	XMB047
518-25/61	R.H.D.	7483 →	**P8C XUD11BTE EEC96** LUCAS DIESEL DCUP2 injection	XMB043
518-25/62	R.H.D.	7602 →	**P8C XUD11BTE EEC96 Auto. gearbox** LUCAS DIESEL DCUP2 injection	XMB050

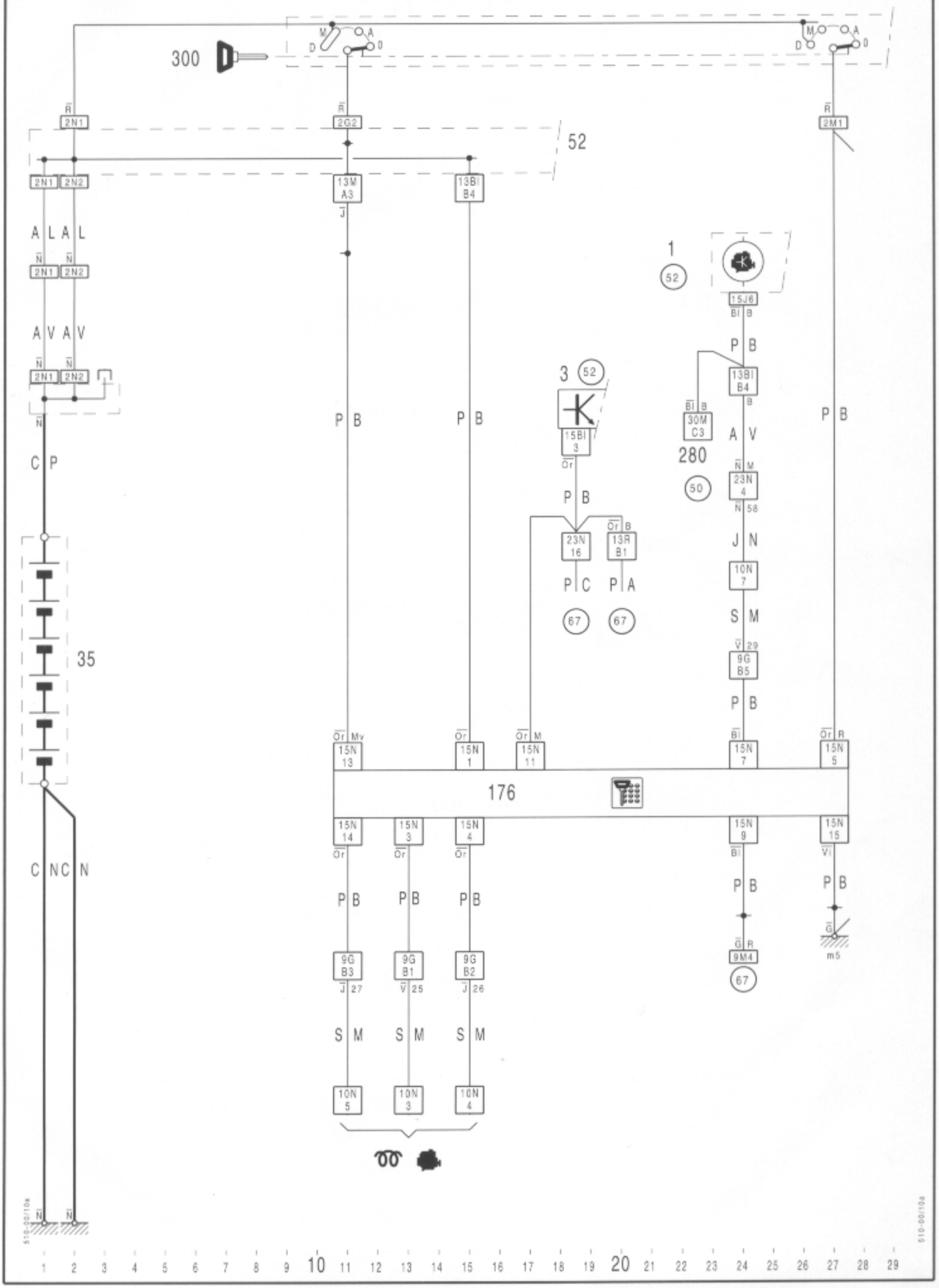
www.WorkshopManuals.co.uk



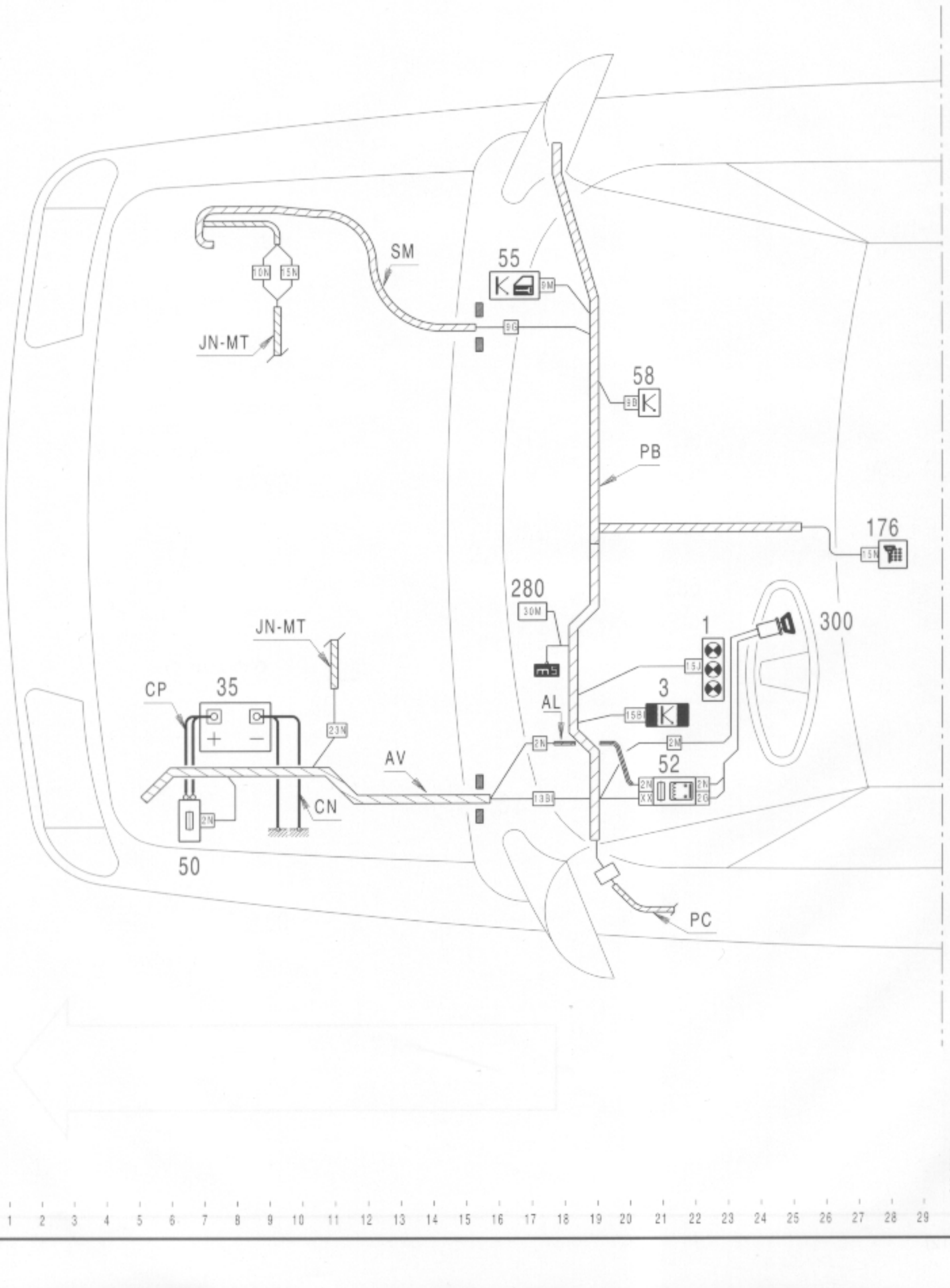


www.WorkshopManuals.co.uk

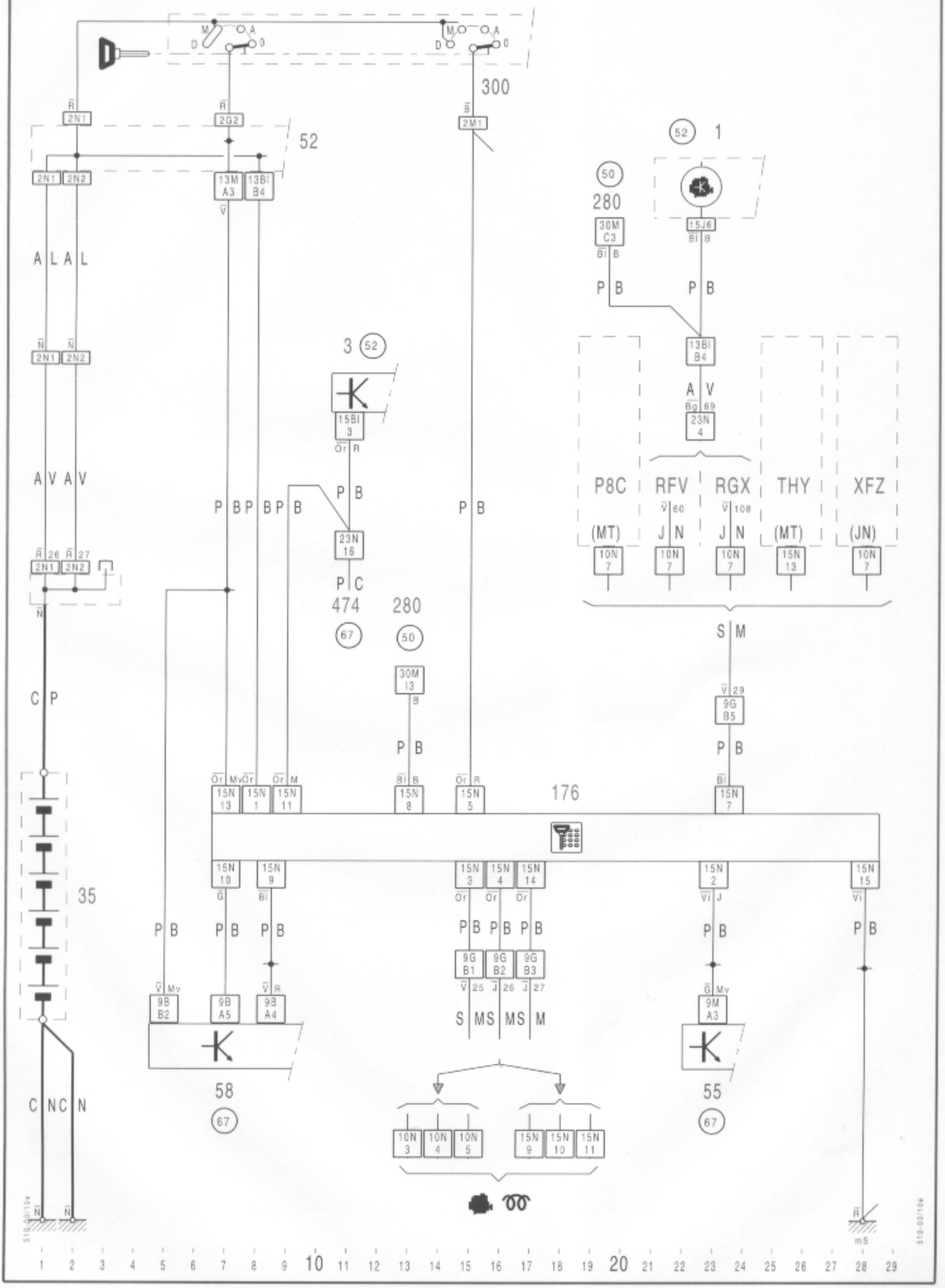




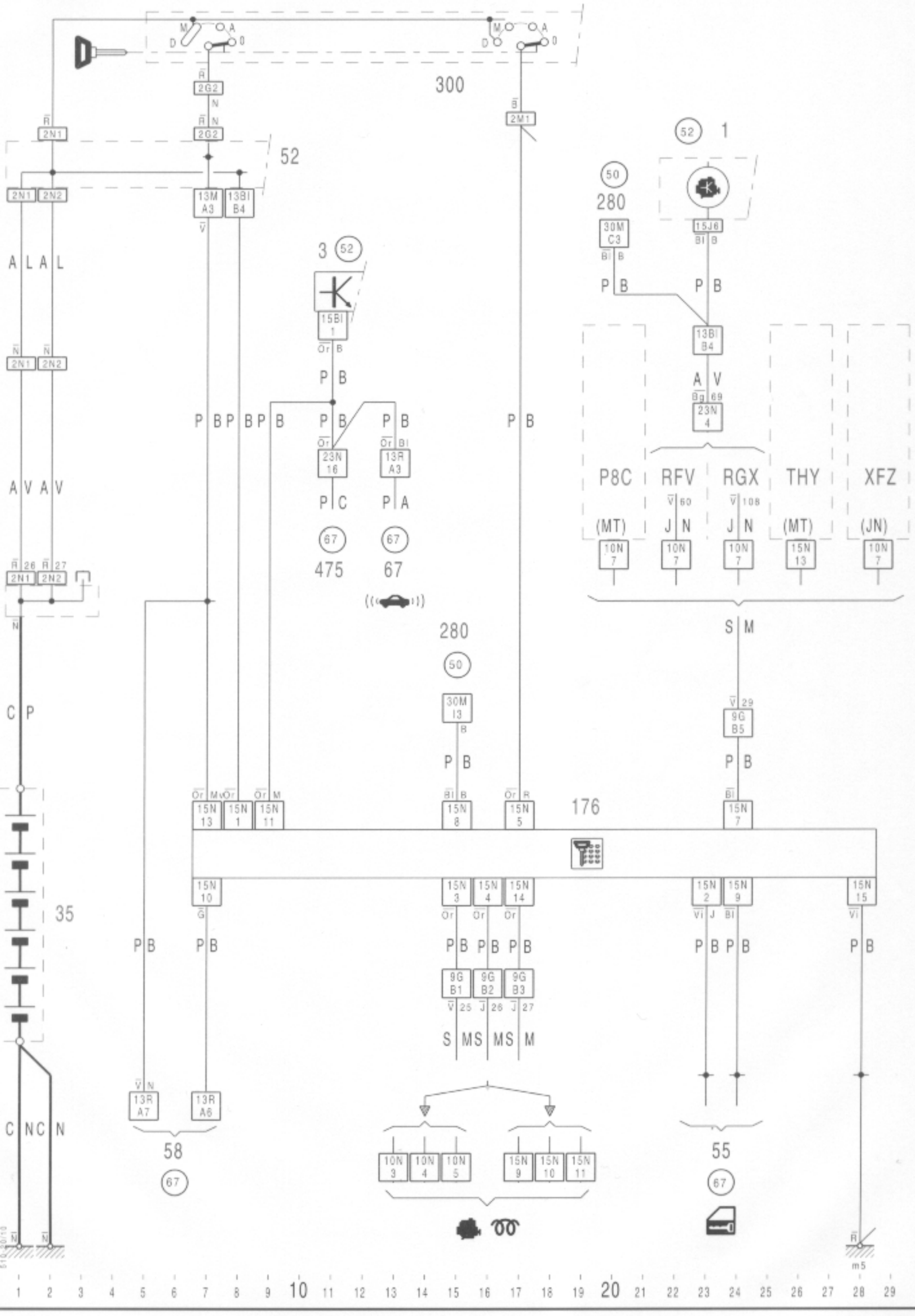
www.WorkshopManuals.co.uk



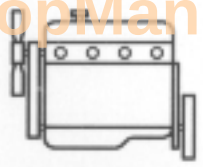
www.WorkshopManuals.co.uk

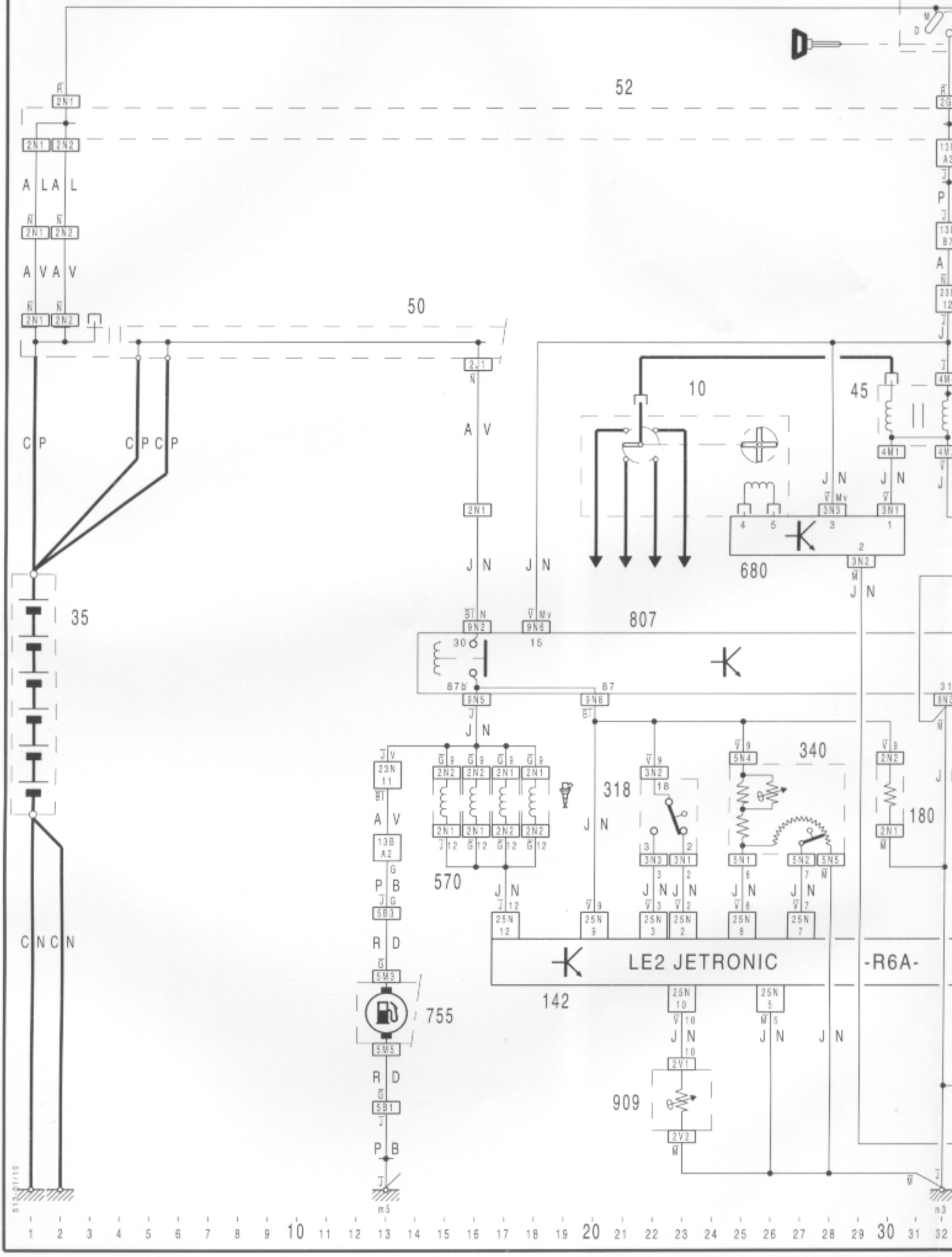


www.WorkshopManuals.co.uk

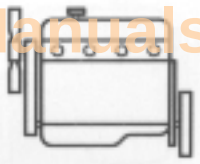


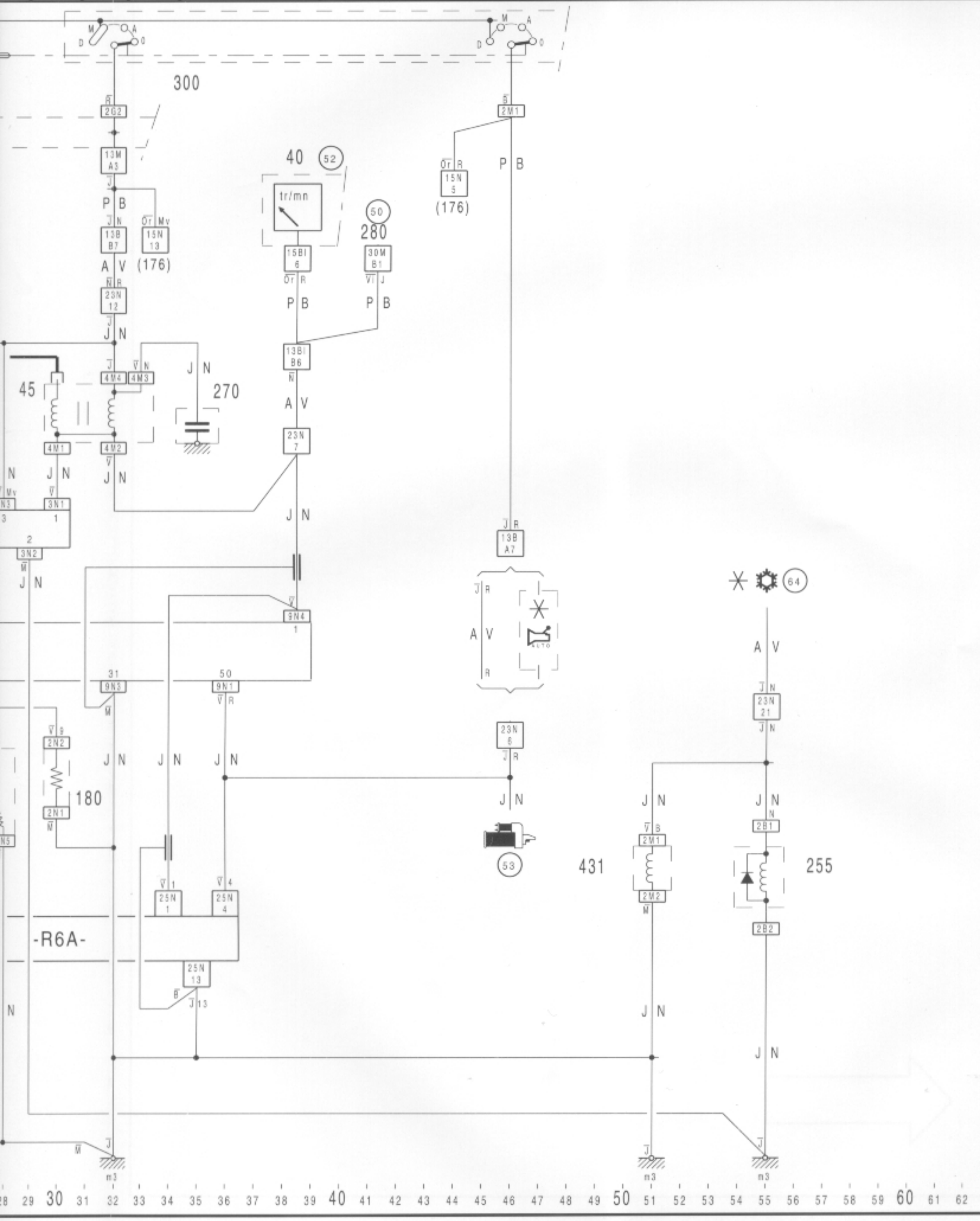
www.WorkshopManuals.co.uk



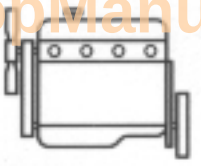


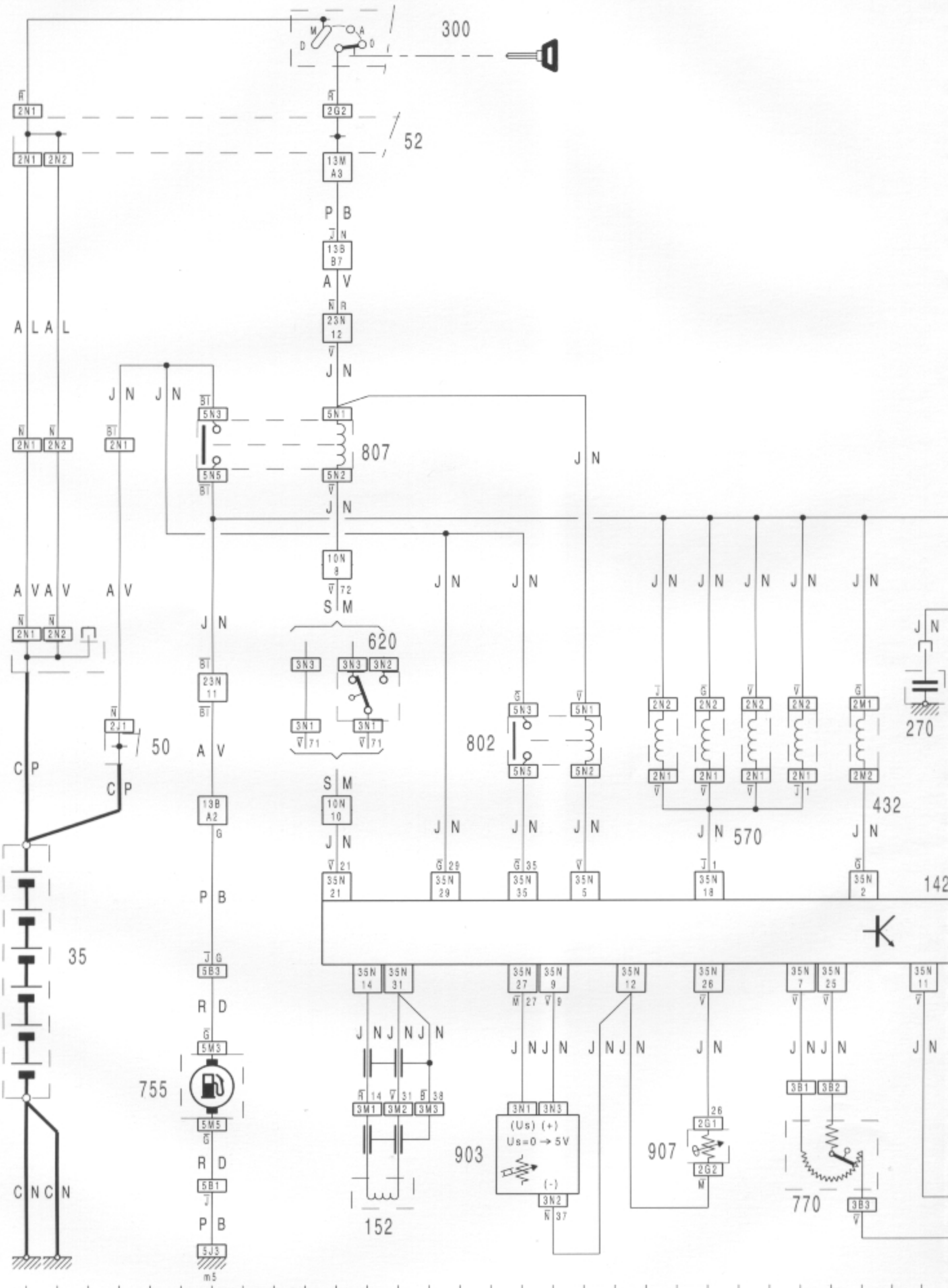
www.WorkshopManuals.co.uk



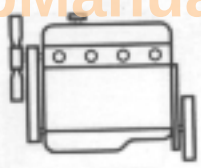


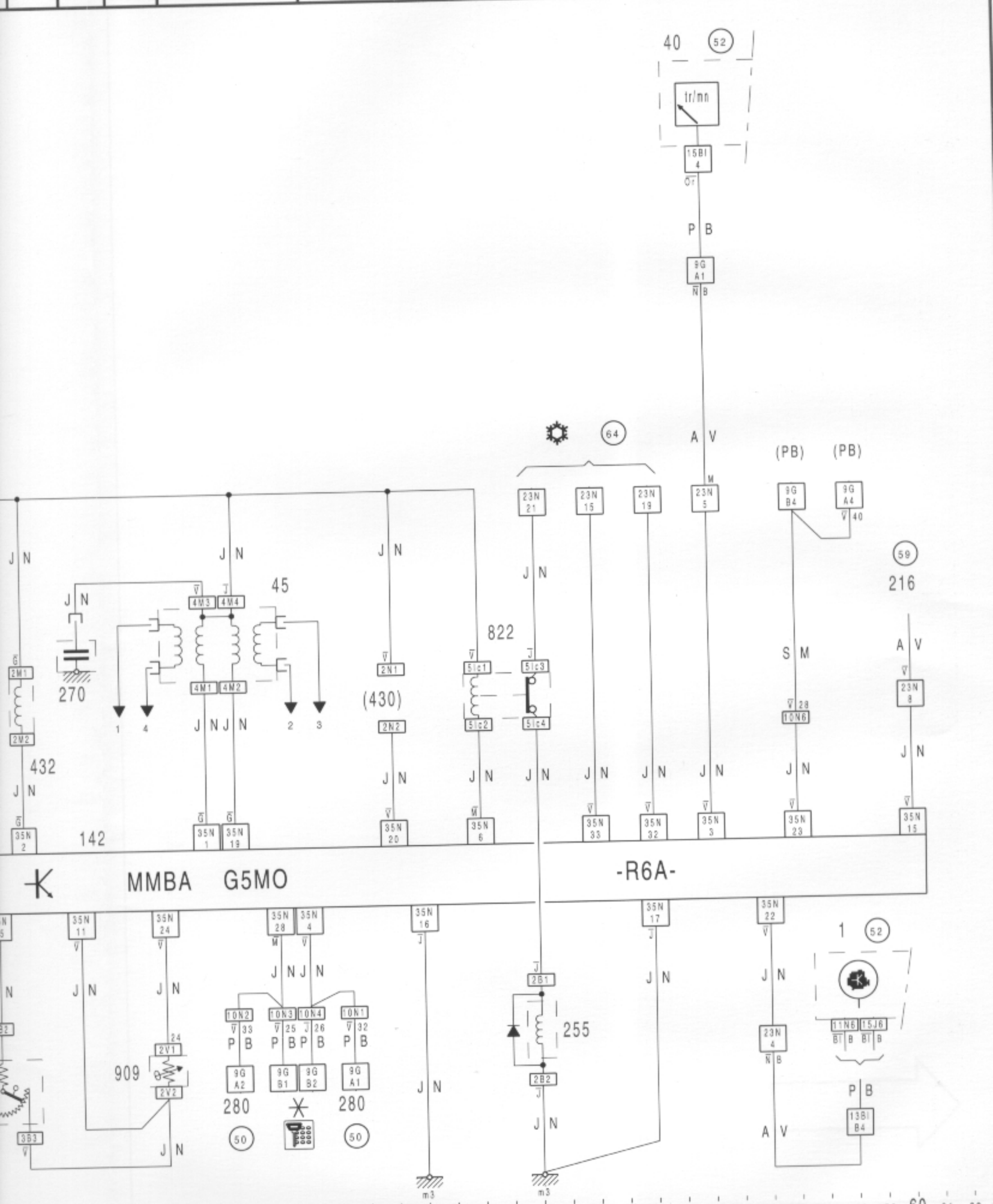
www.WorkshopManuals.co.uk



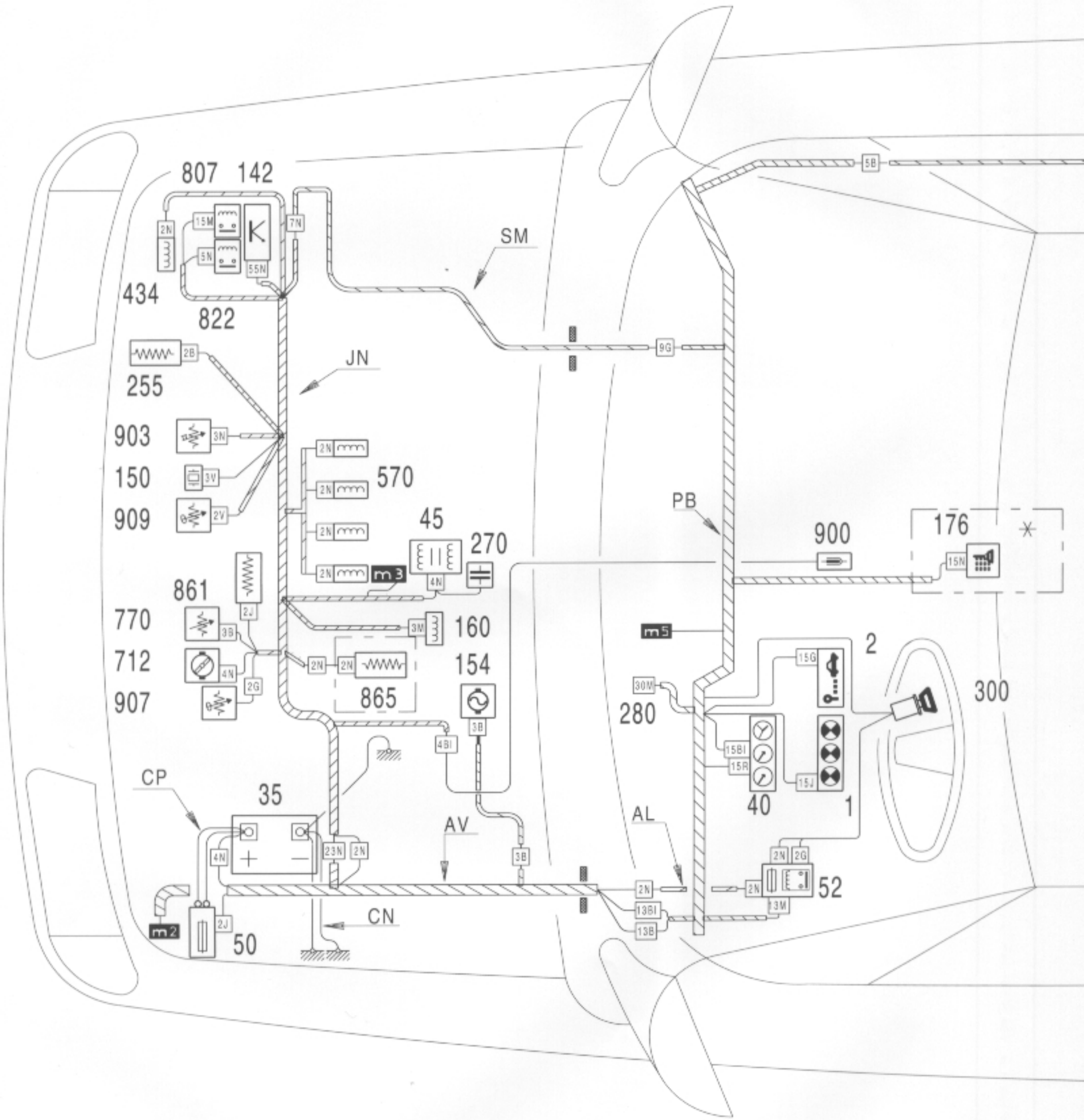


www.WorkshopManuals.co.uk





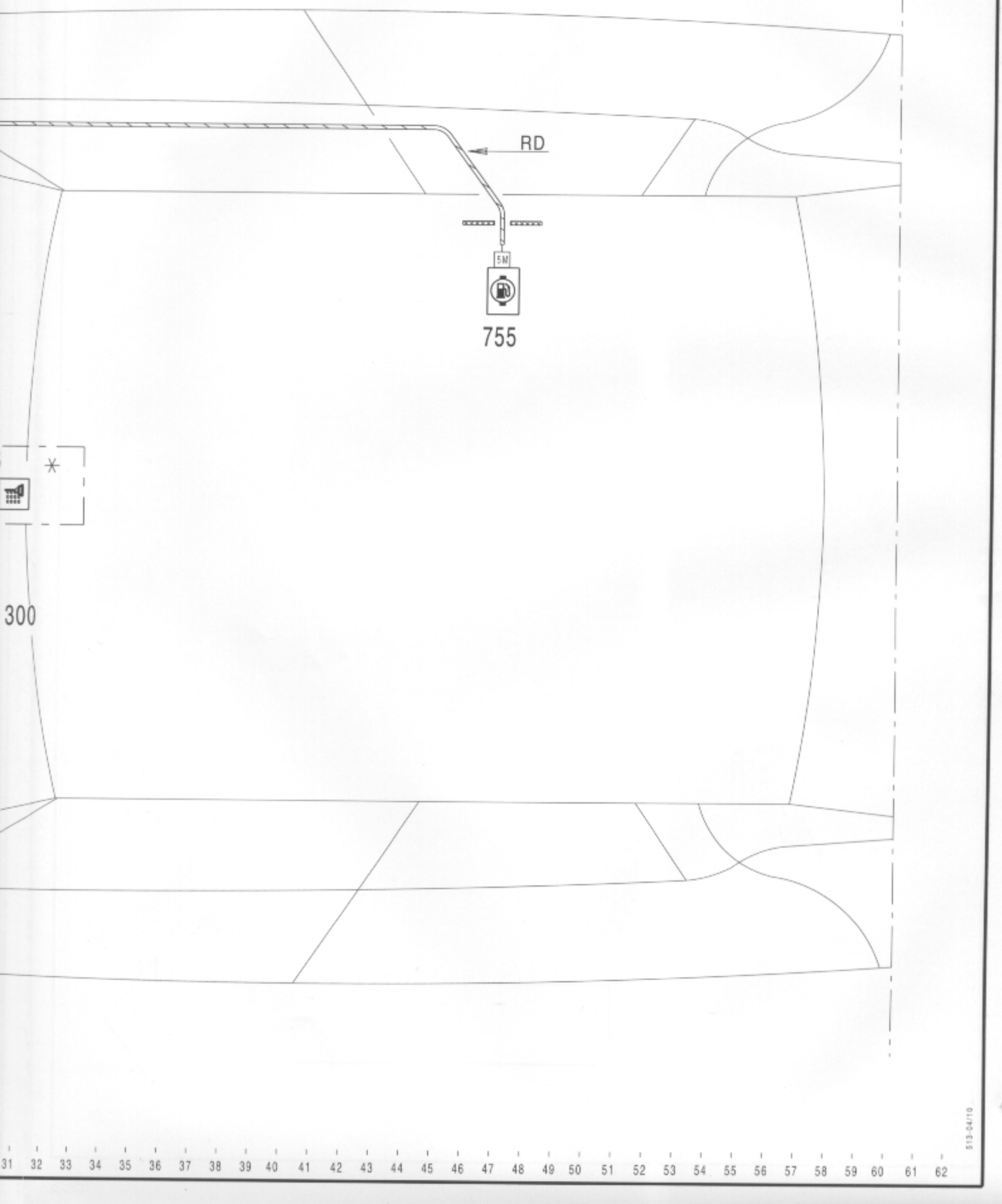
www.WorkshopManuals.co.uk



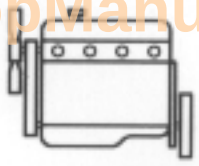
513-04/10

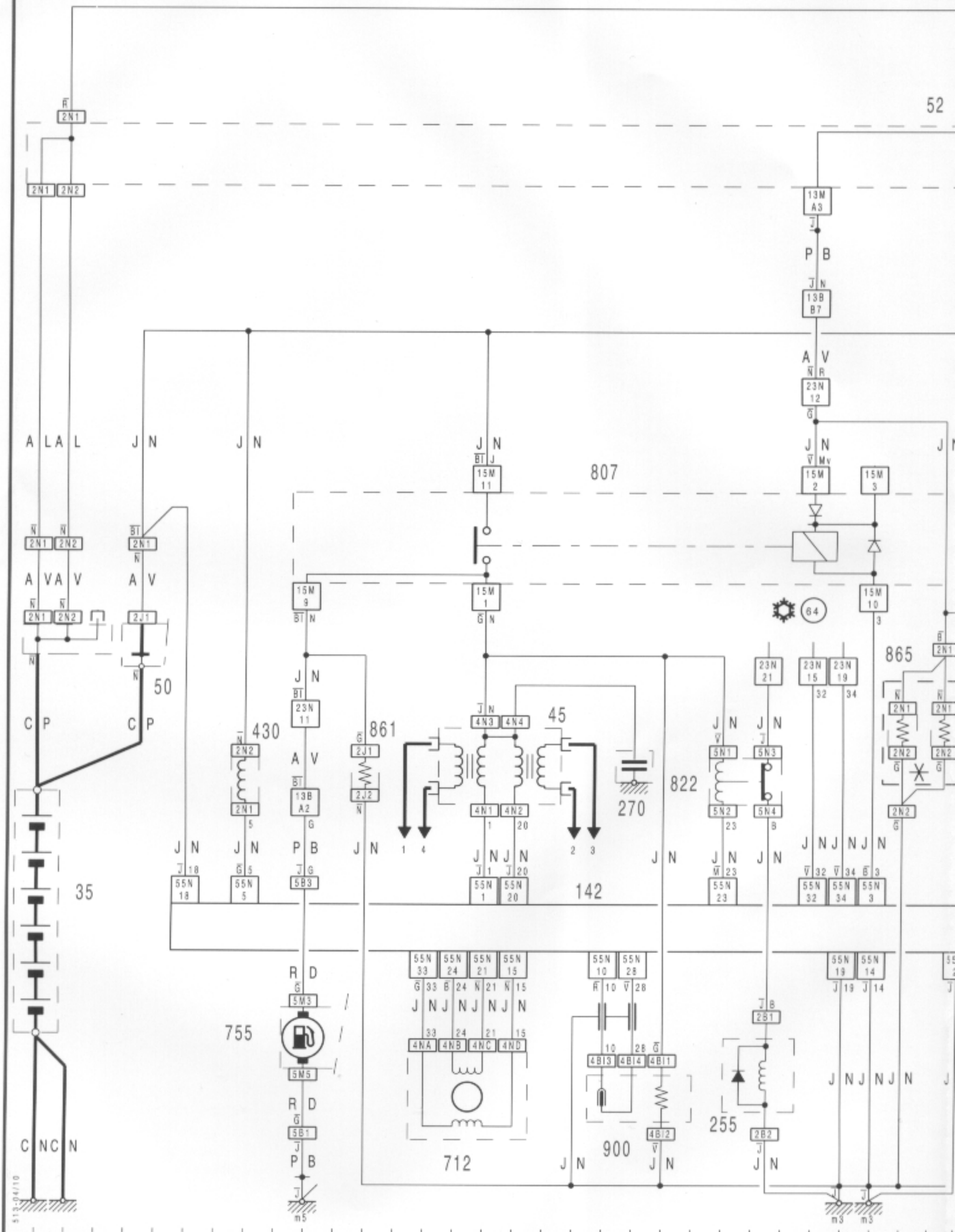
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34

www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



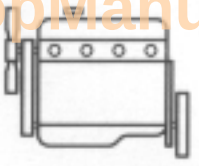


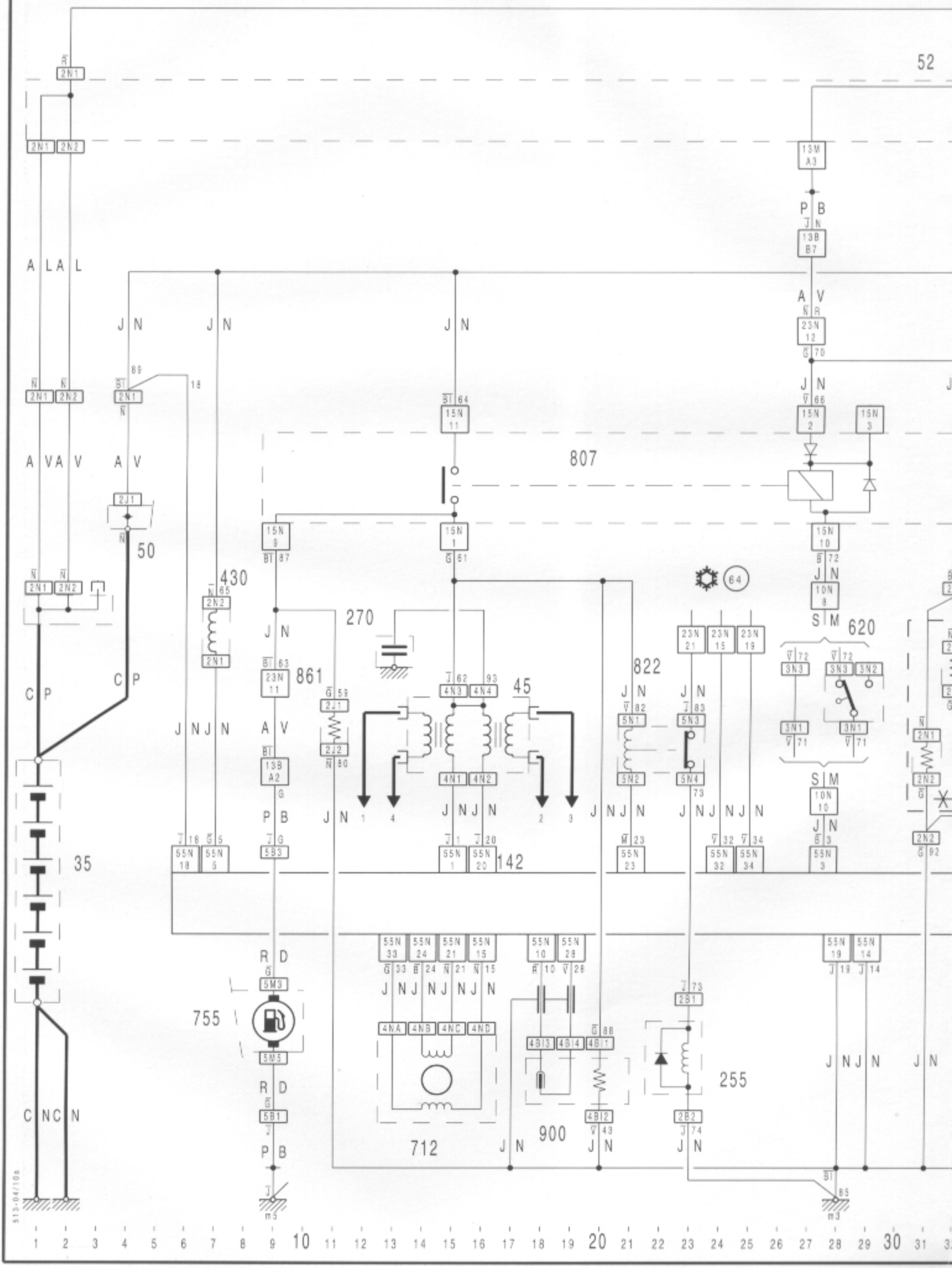
www.WorkshopManuals.co.uk

BOSCH MP.5.1.1

RFV

www.WorkshopManuals.co.uk

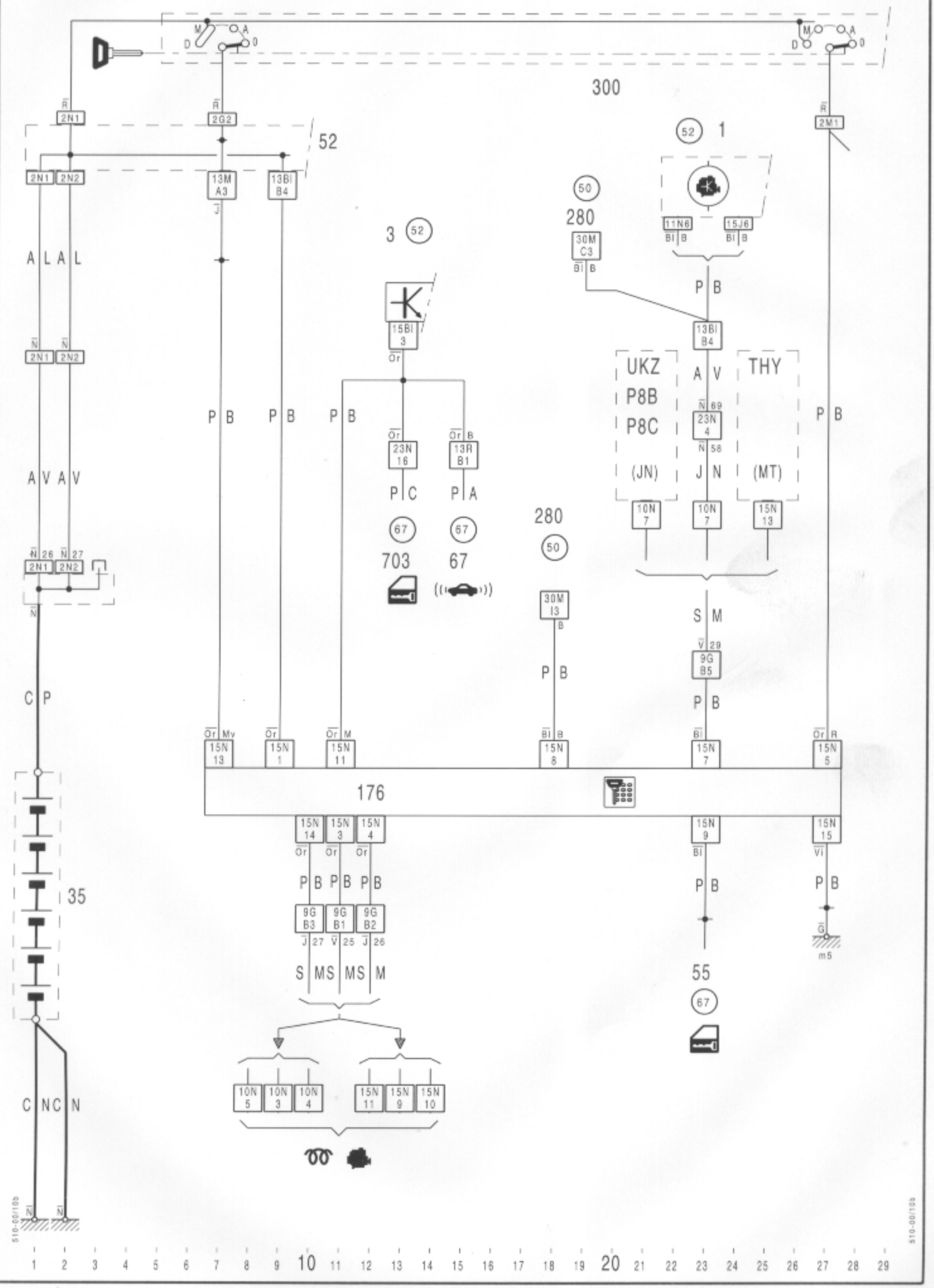




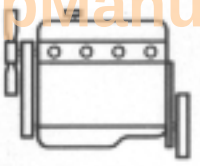
www.WorkshopManuals.co.uk

K BOSCH MP.5.1.1 -RFV-

www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



52

176

SH F31

2N1 2N2 11N B5

P B

9B A2

A L A L

J N A V

2N1 2N2 2N1 2N2

A V A V A V

2J1

50

C P C P

35

J N A V

2N1 2N2 2N1 2N2

807

15N 11 15N 2 15N 3

15N 9 15N 1

15N 10

10N 6

S M 620

64

861

23N 11 13B A2 2J1 2J2

J N P B J N

55N 18 5B3

755

5M3 5M5 5B1

R D P B

712

4N3 4N4 4N1 4N2

45 270

142

822

5B1 5B2 5B3 5B4

23N 21 23N 15 23N 19

3N3 3N1 3N2

S M 10N 10

55N 33 55N 24 55N 21 55N 15 55N 10 55N 28

4NA 4NB 4NC 4ND 4BI3 4BI4 4BI1 4BI2

900

255

2B1 2B2

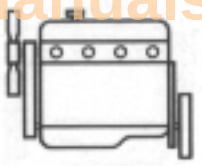
55N 19 55N 14 55N 2

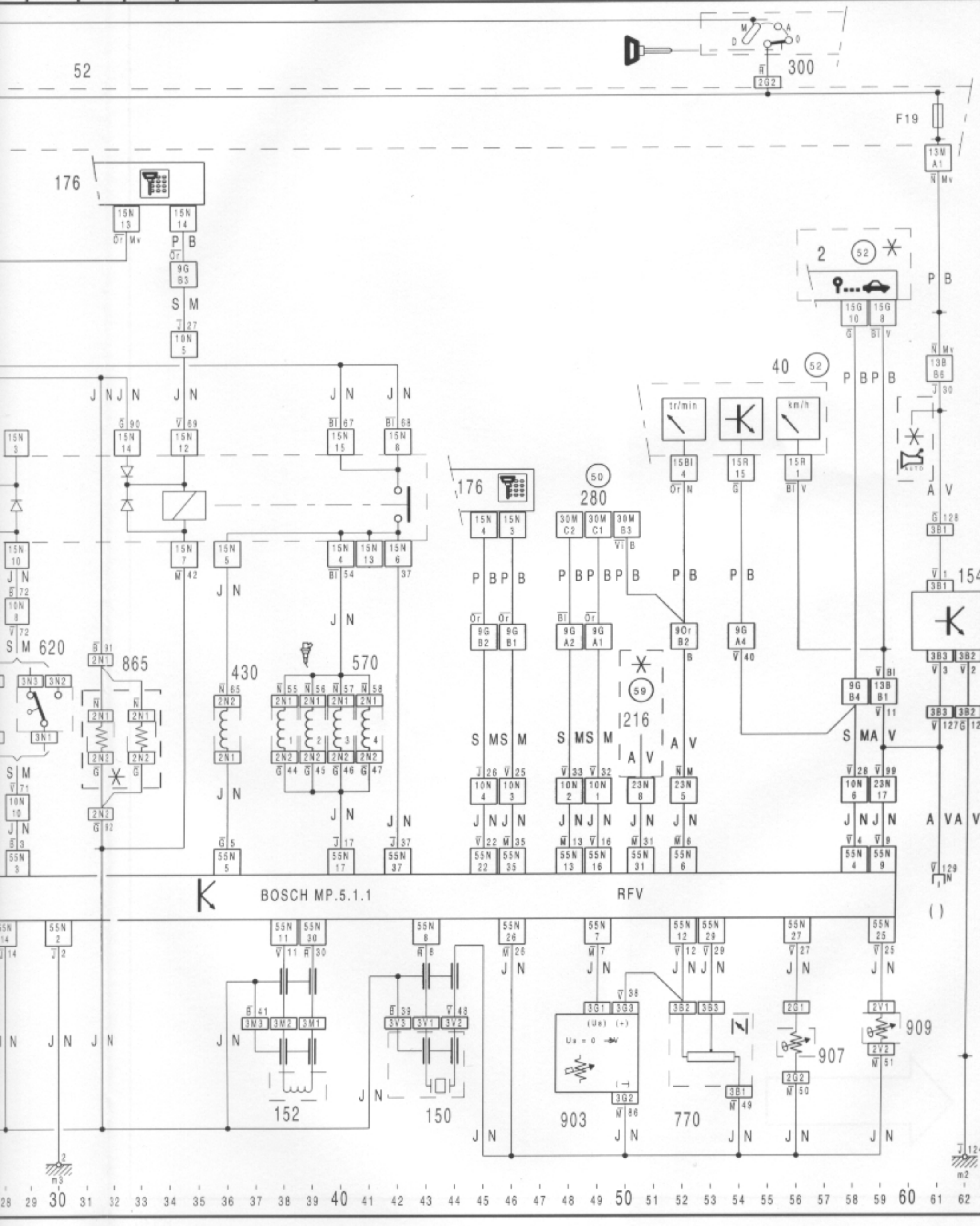
C NC N

513-04/11b

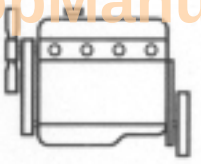
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

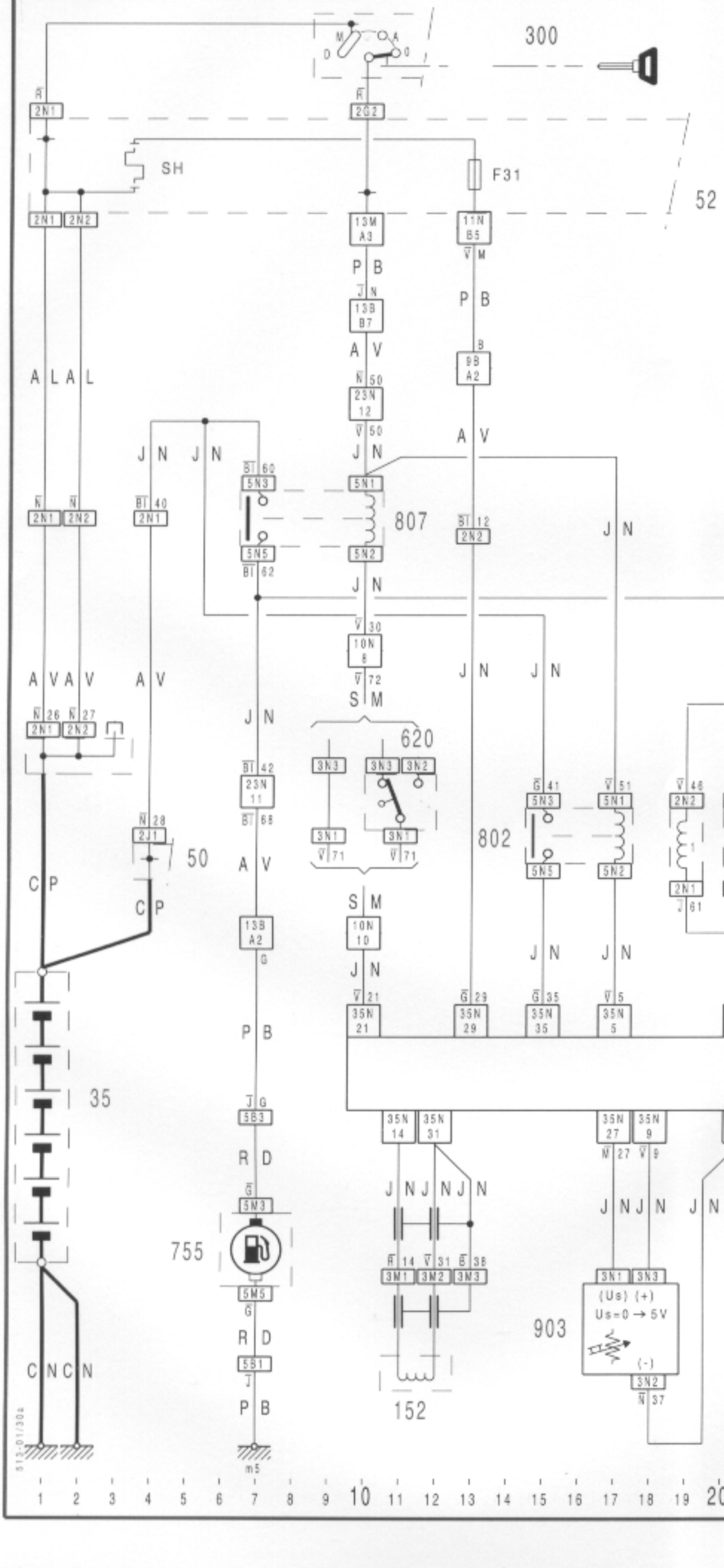
www.WorkshopManuals.co.uk



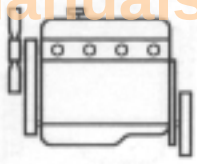


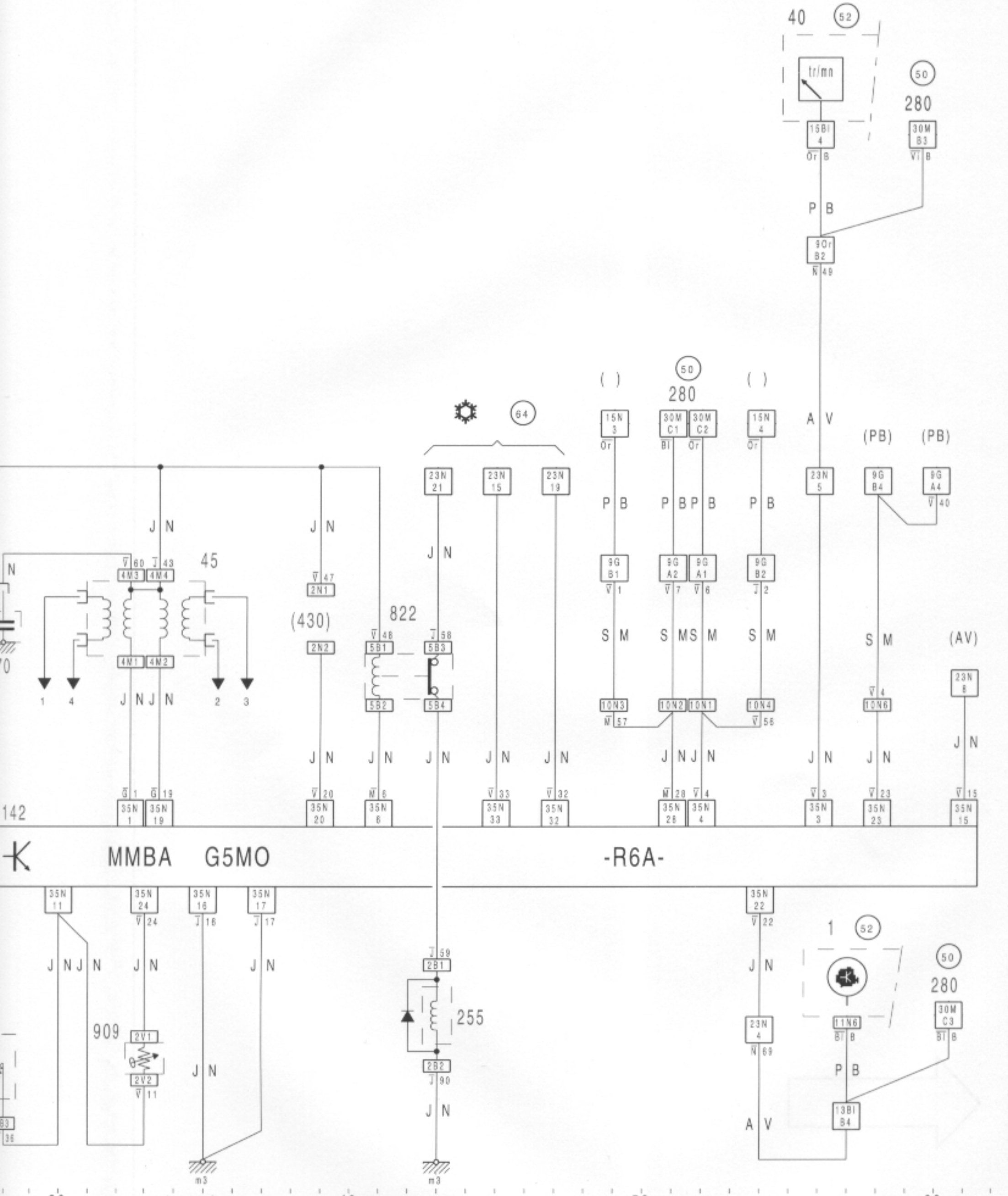
www.WorkshopManuals.co.uk



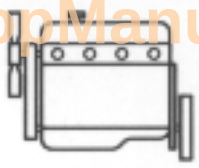


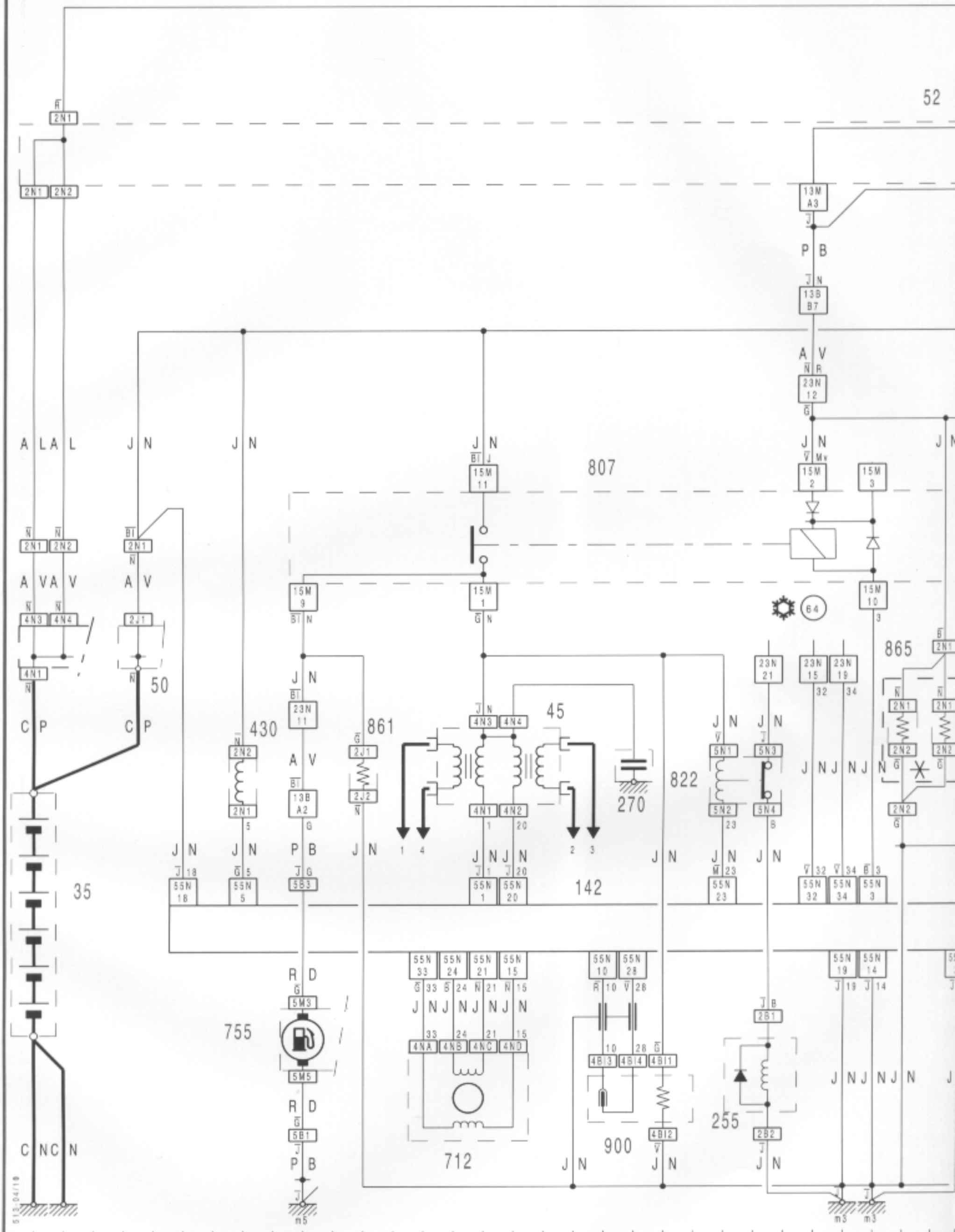
www.WorkshopManuals.co.uk



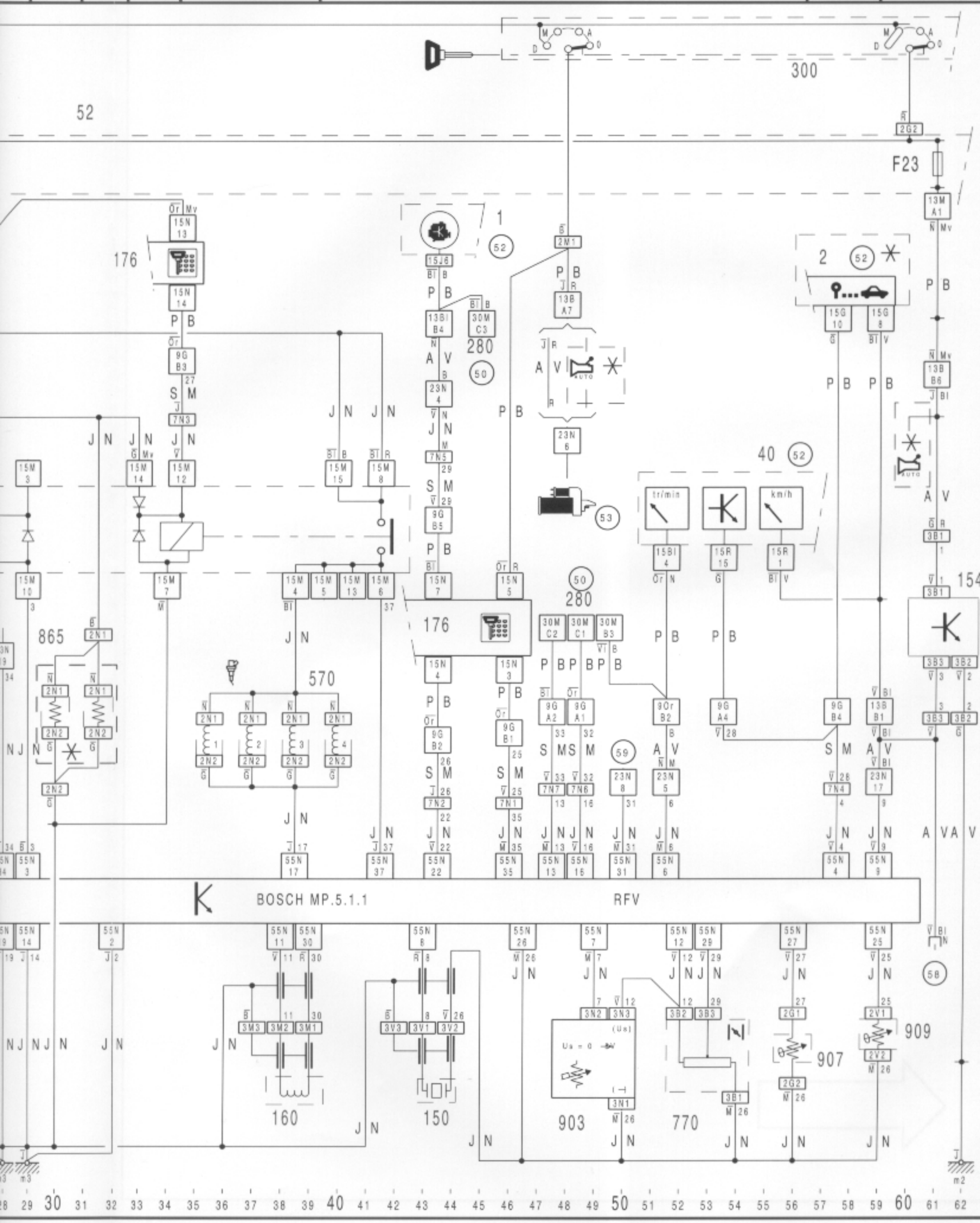


www.WorkshopManuals.co.uk

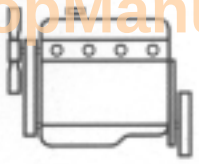


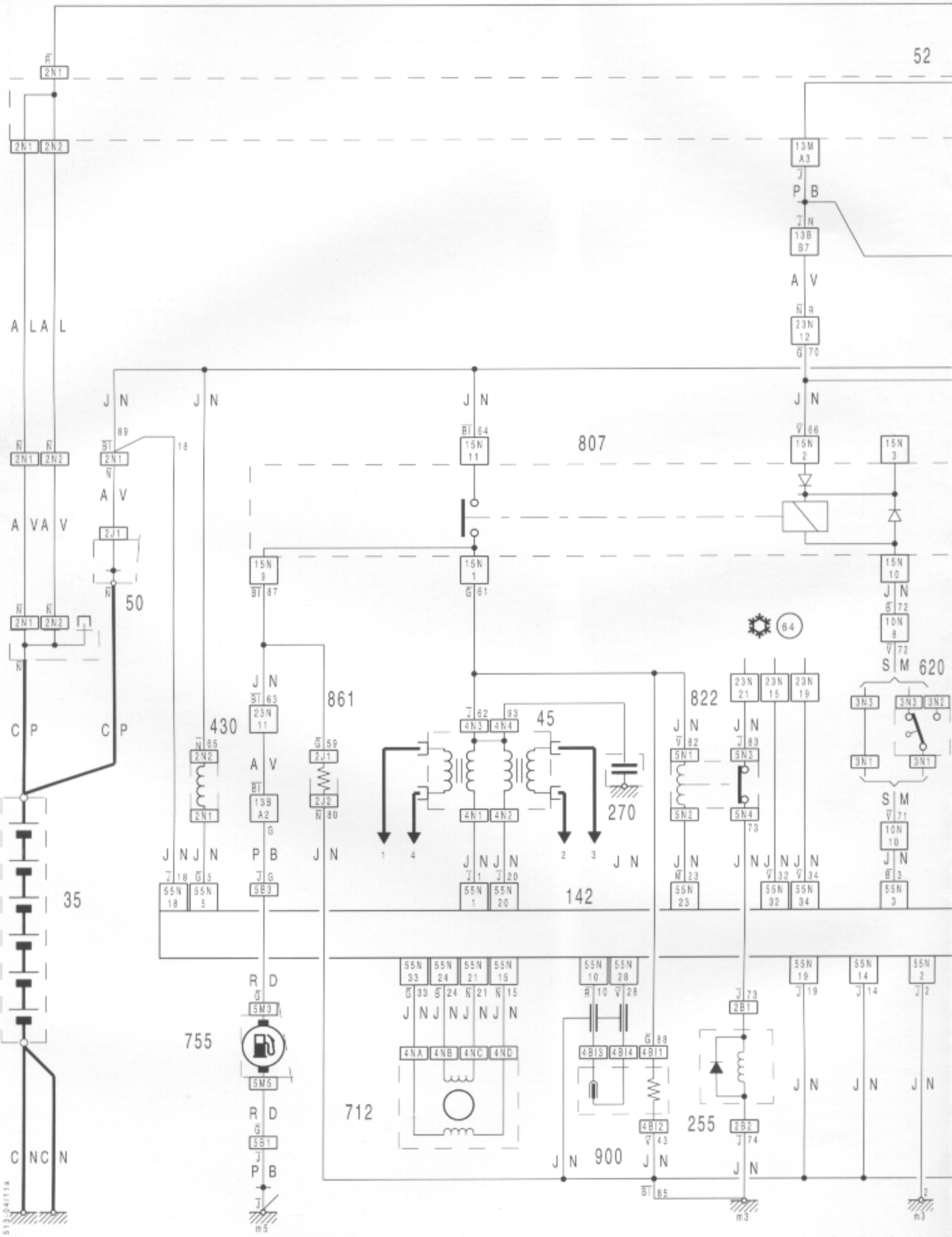


www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

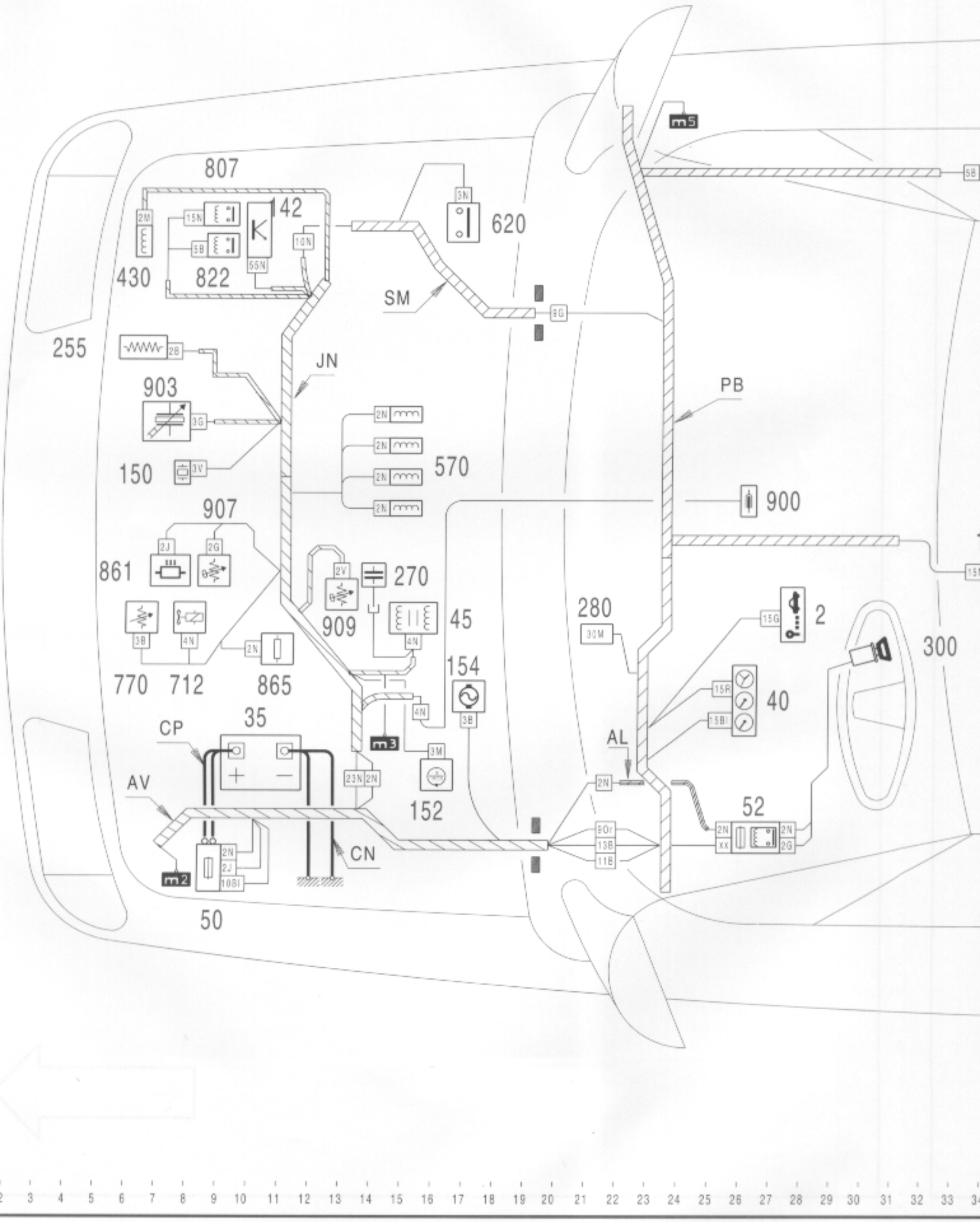




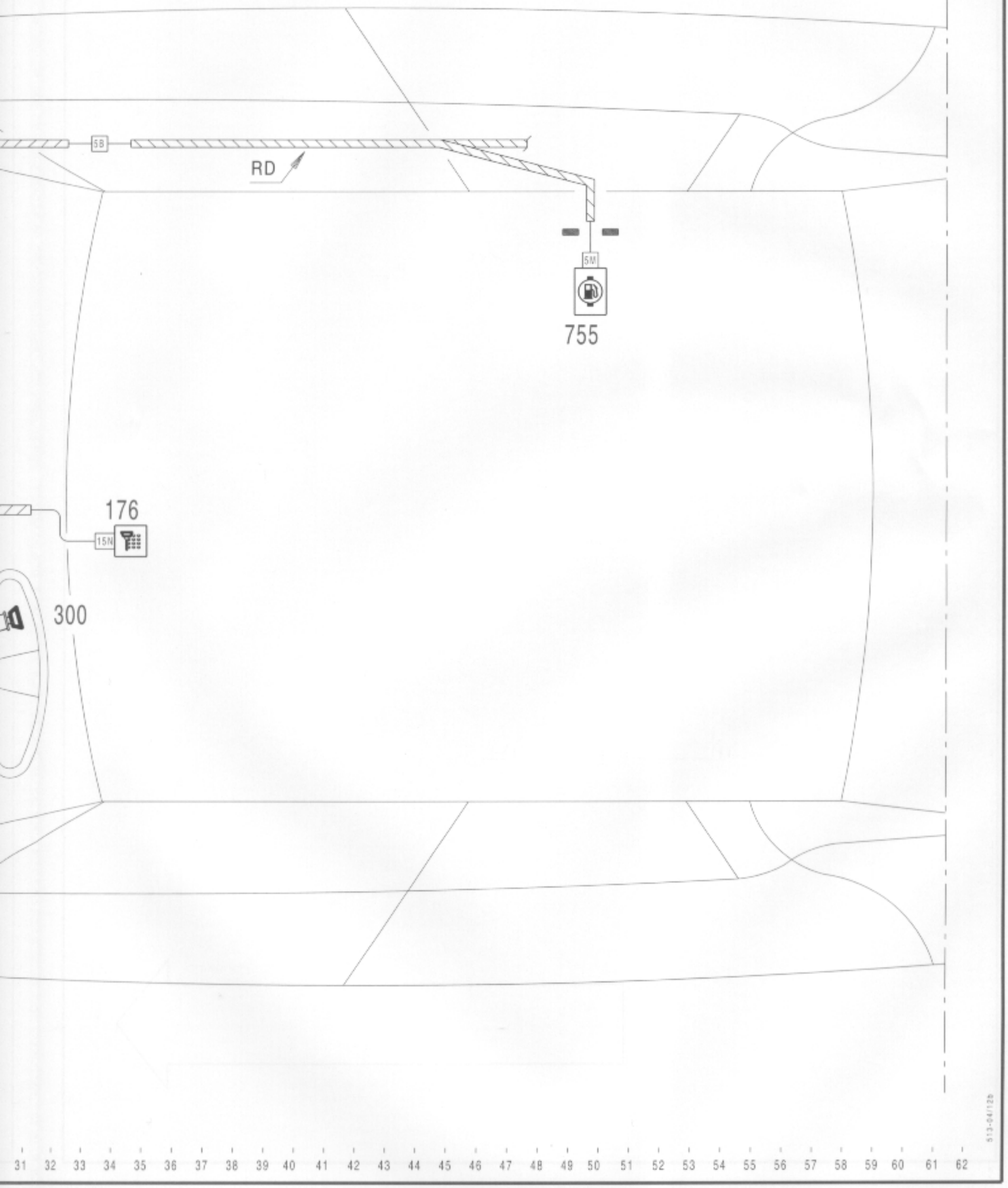
www.WorkshopManuals.co.uk

K BOSCH MP.5.1.1 RFV

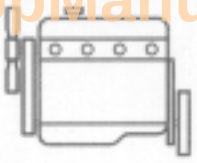
www.WorkshopManuals.co.uk

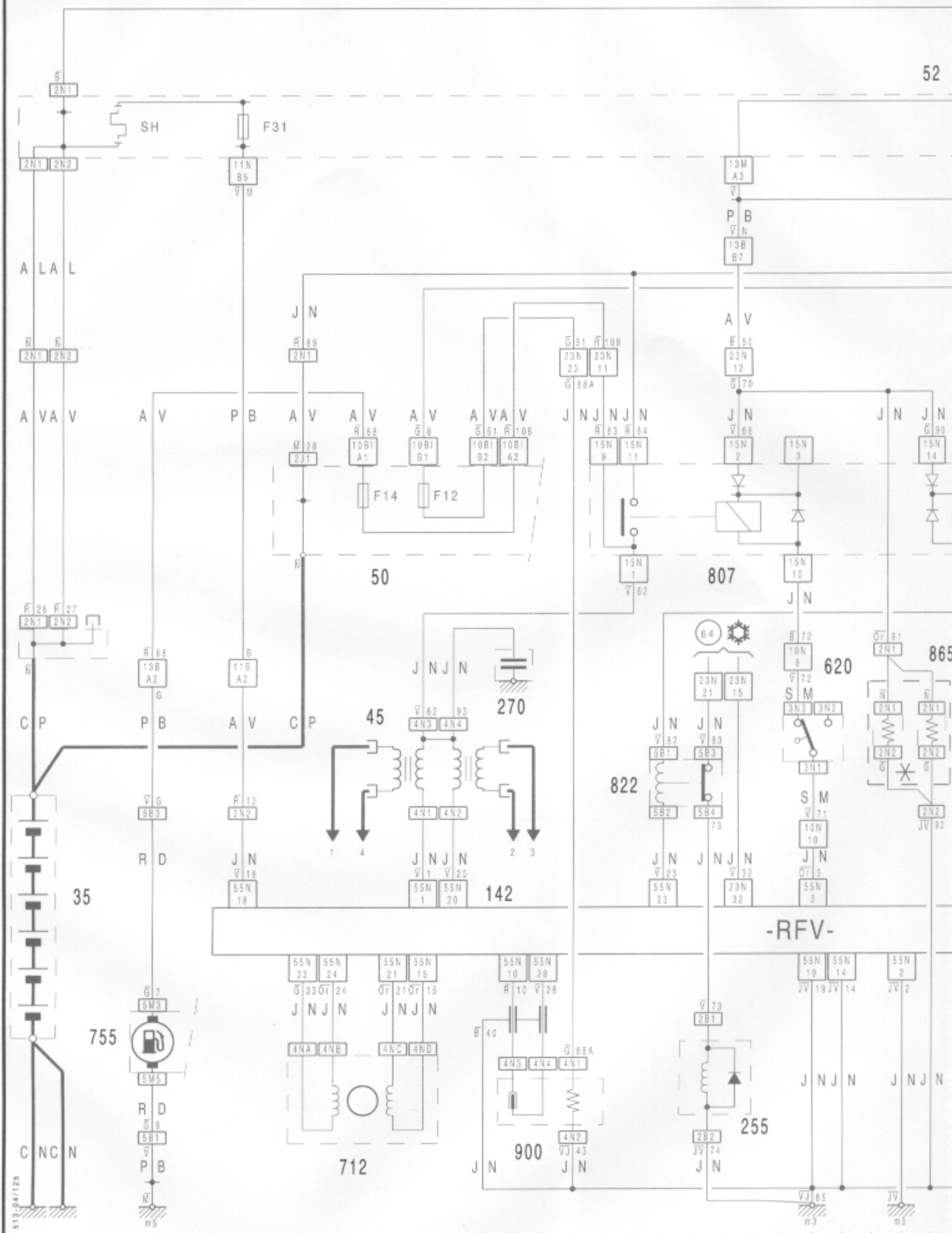


www.WorkshopManuals.co.uk

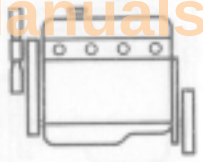


www.WorkshopManuals.co.uk





www.WorkshopManuals.co.uk



300

2G2

F19

13M A1

P B

2 52

15G 10 15G 6

13B B6

40 52

176

15N 13 15N 14 15N 4 15N 3

865

620

570

861 430

280

50

216

59

tr/min km/h

15BI 4 15R 15 15R 1

9Or B2

9G B4 13B B1

9G A4

9G B3 9G B2 9G B1

9G A2 9G A1

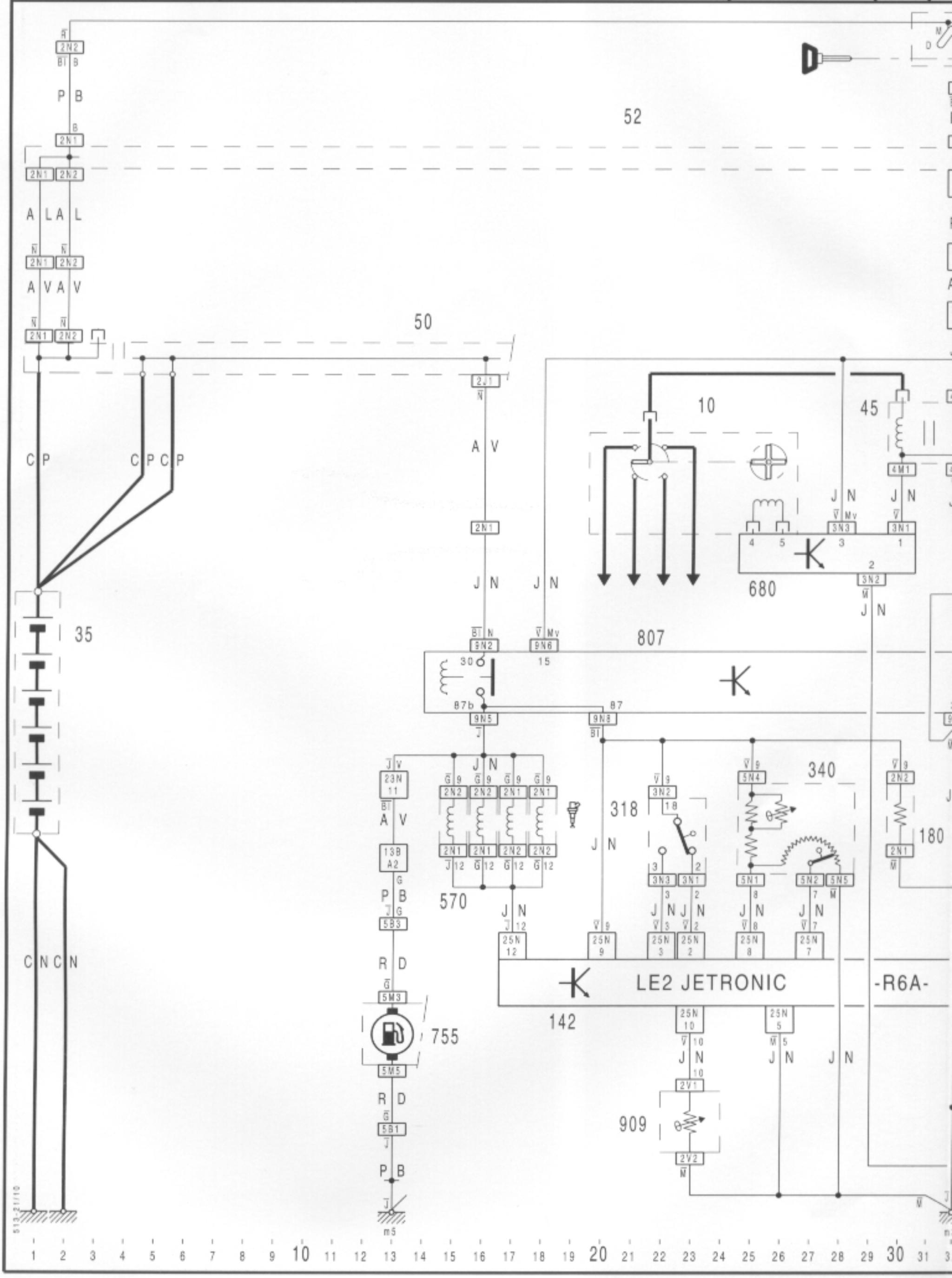
10N 5 10N 4 10N 3 10N 2 10N 1 10N 6 23N 17 23N 8 23N 5

55N 34 55N 22 55N 35 55N 13 55N 16 55N 31 55N 6 55N 4 55N 9

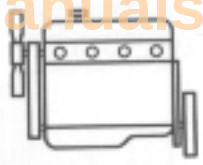
K BOSCH MP 5.2

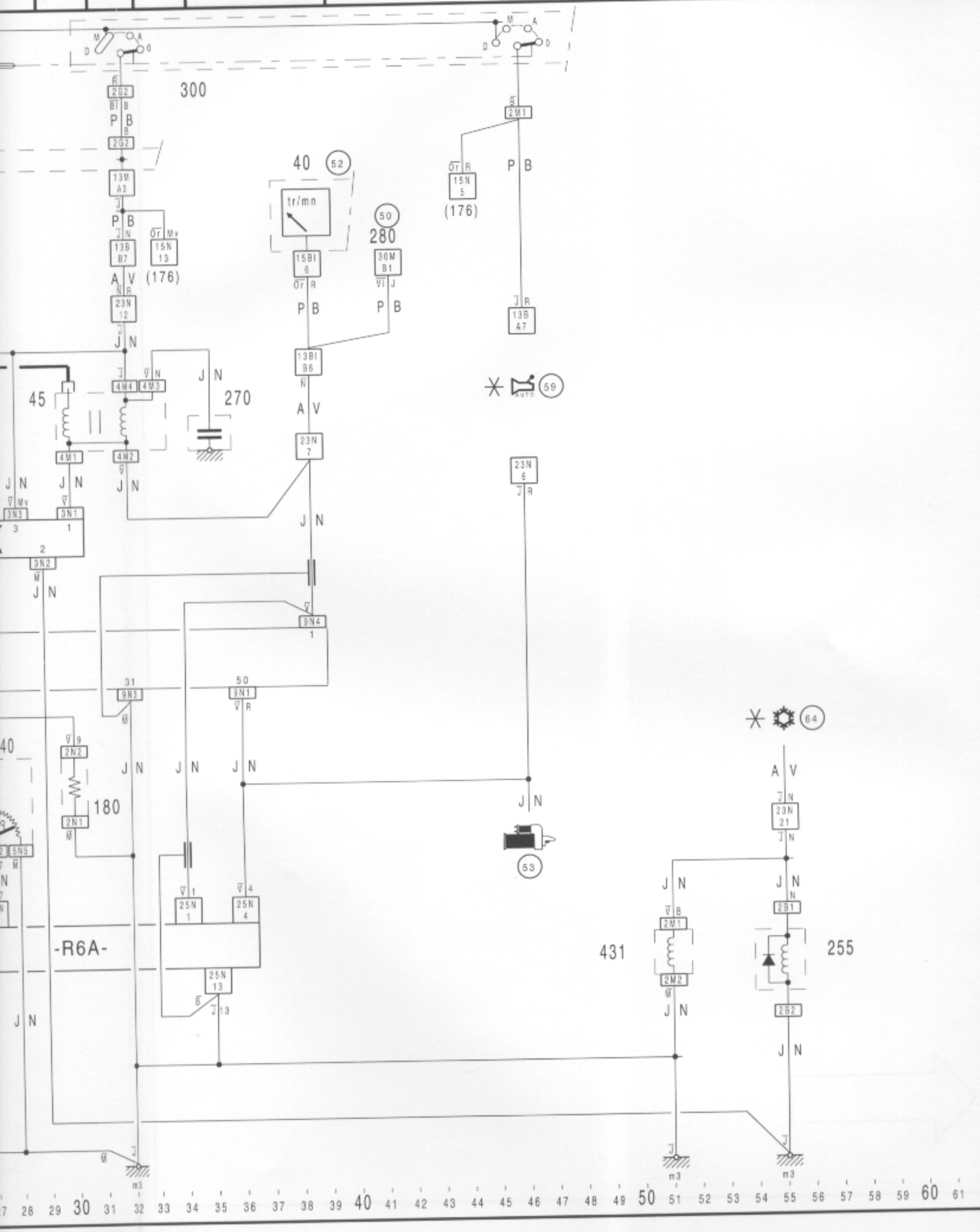
152 150 903 770 907 909

www.WorkshopManuals.co.uk

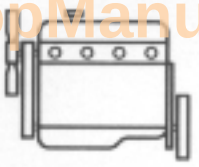


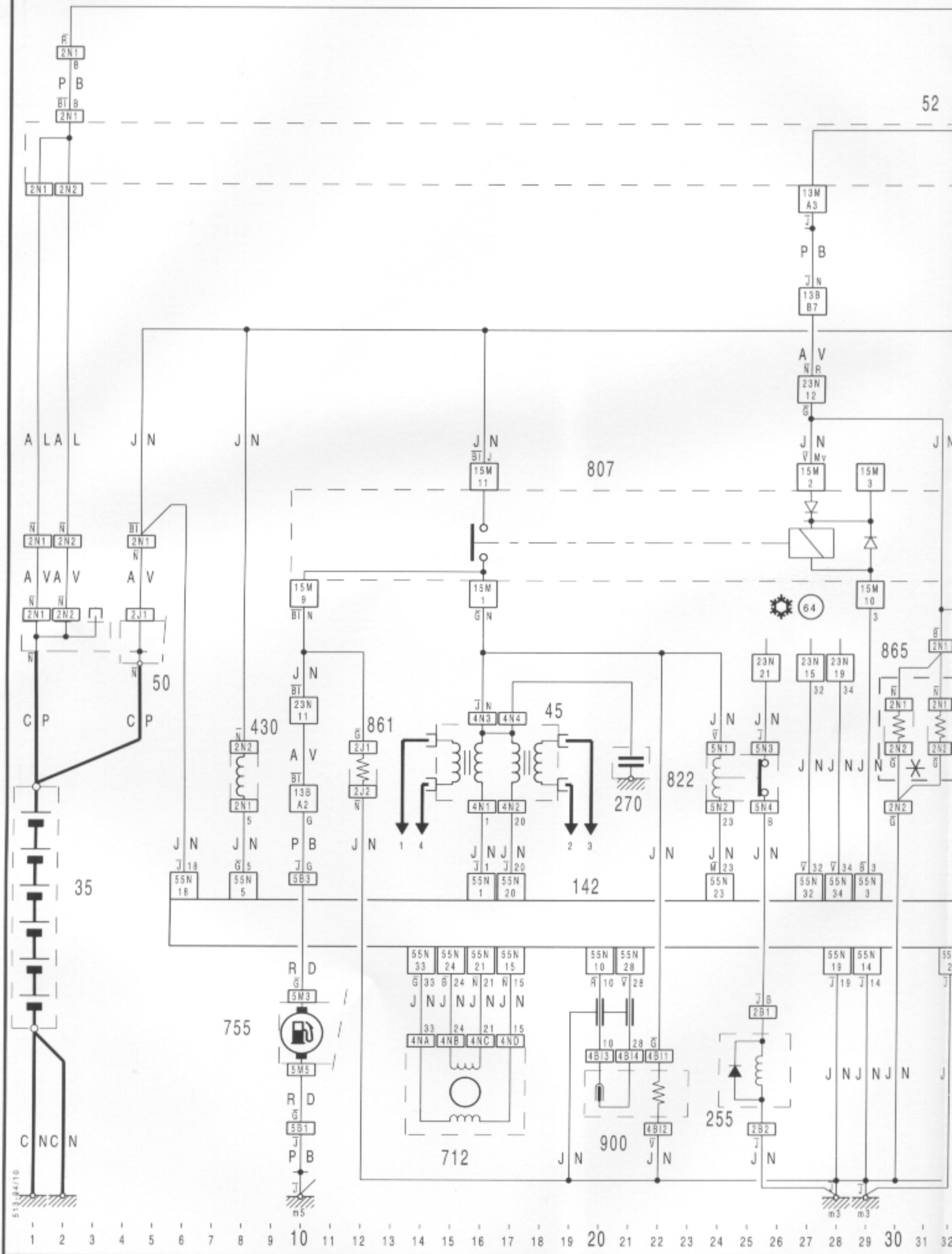
www.WorkshopManuals.co.uk



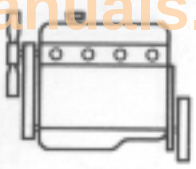


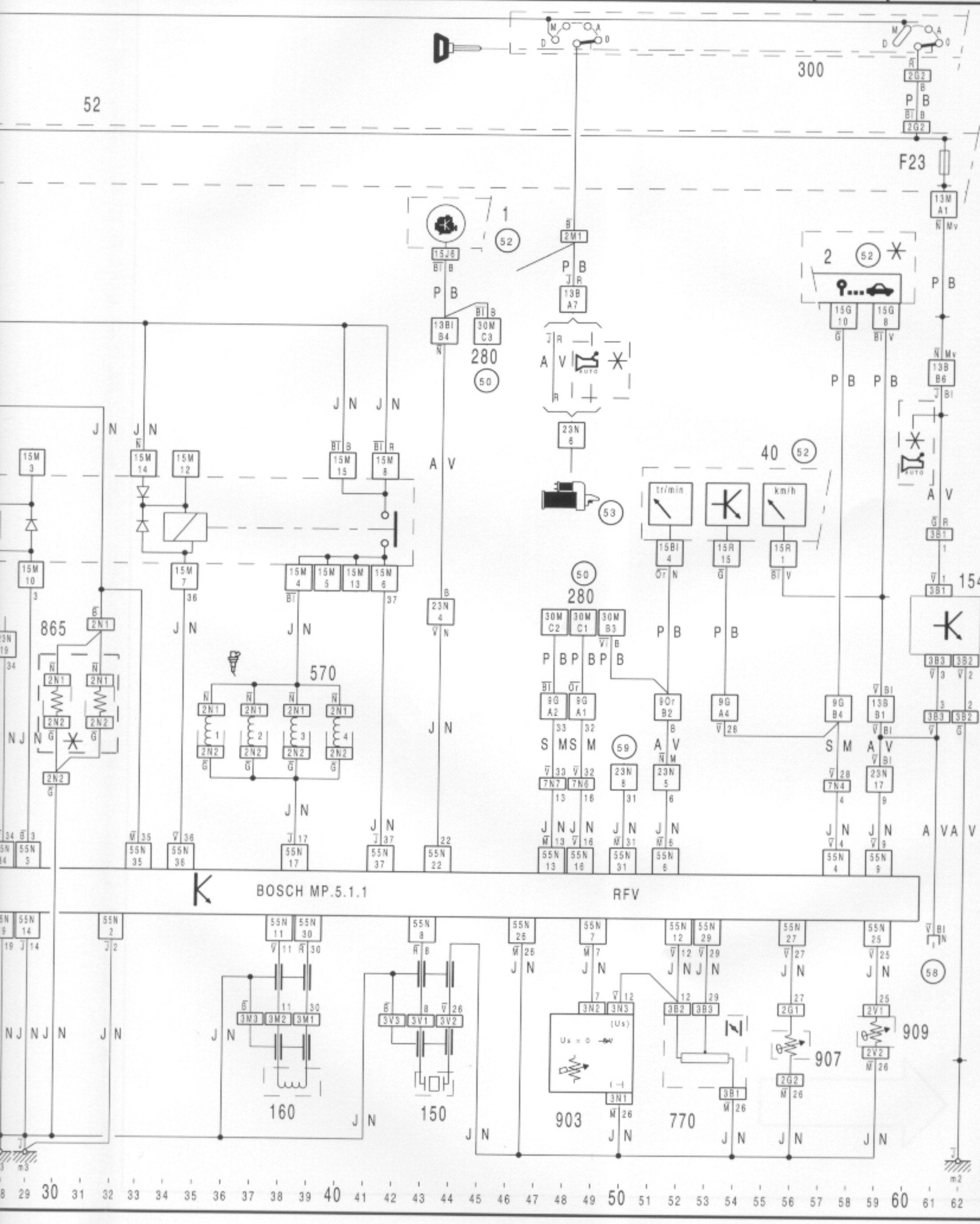
www.WorkshopManuals.co.uk



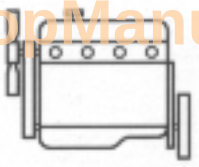


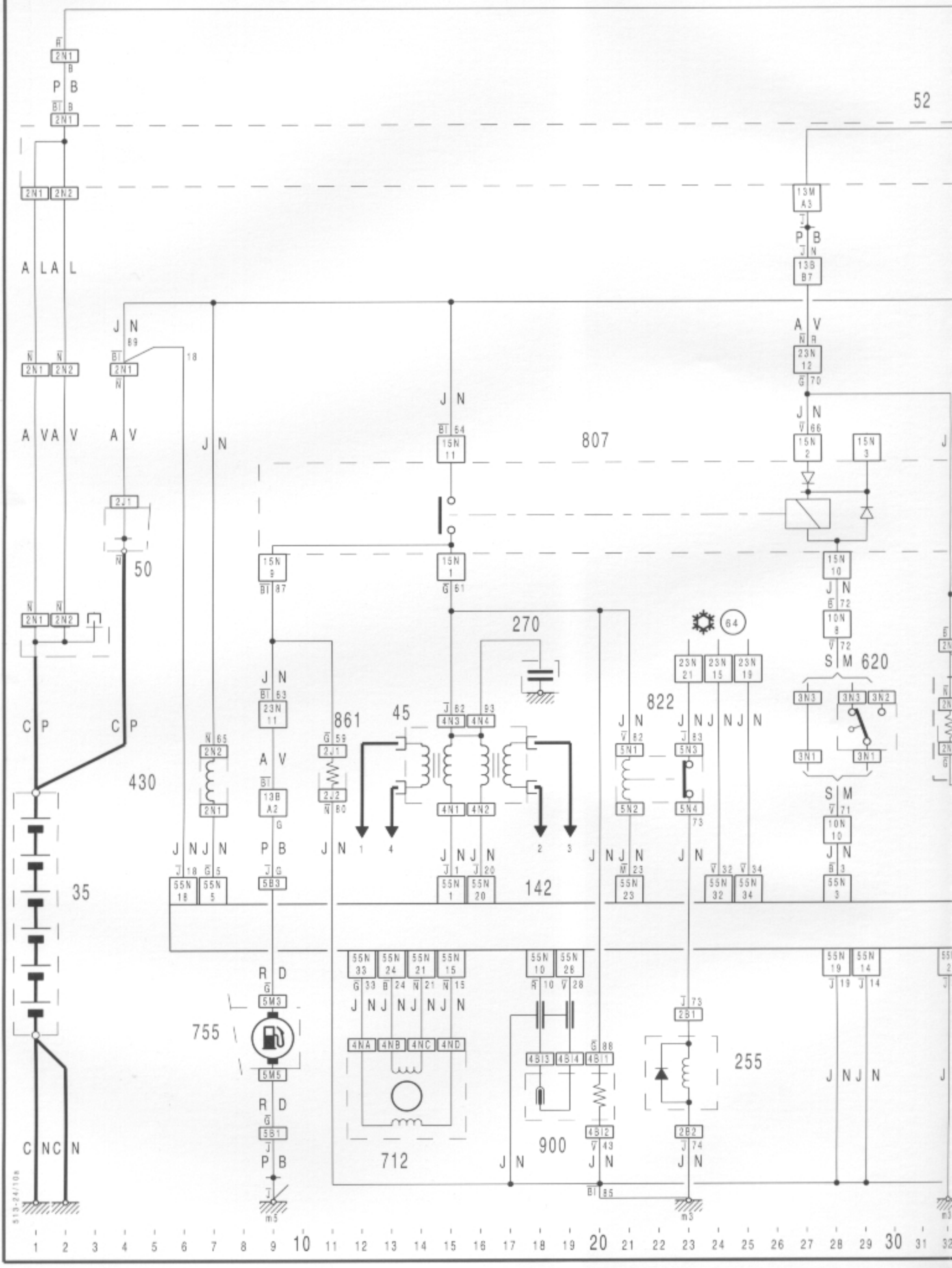
www.WorkshopManuals.co.uk



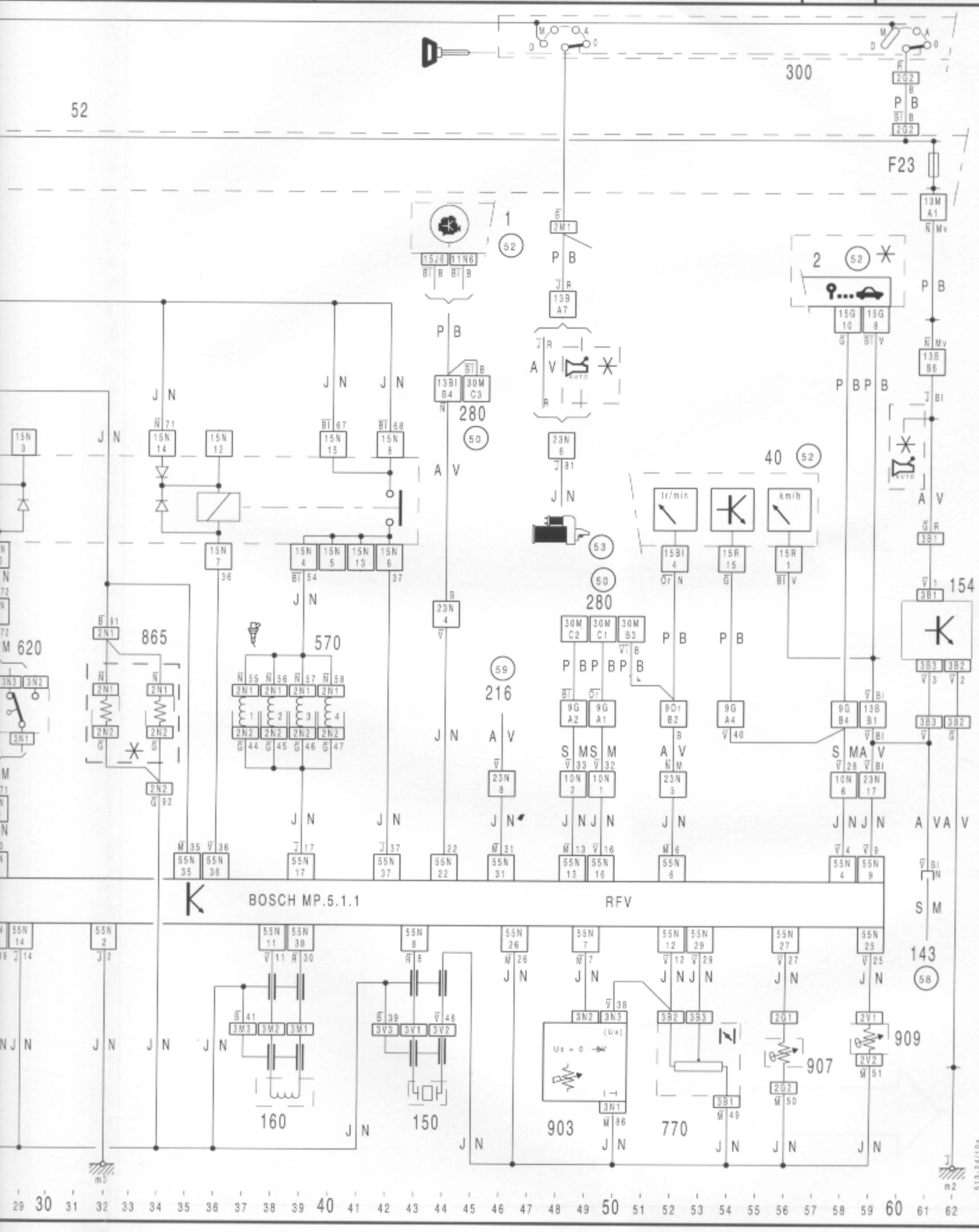


www.WorkshopManuals.co.uk

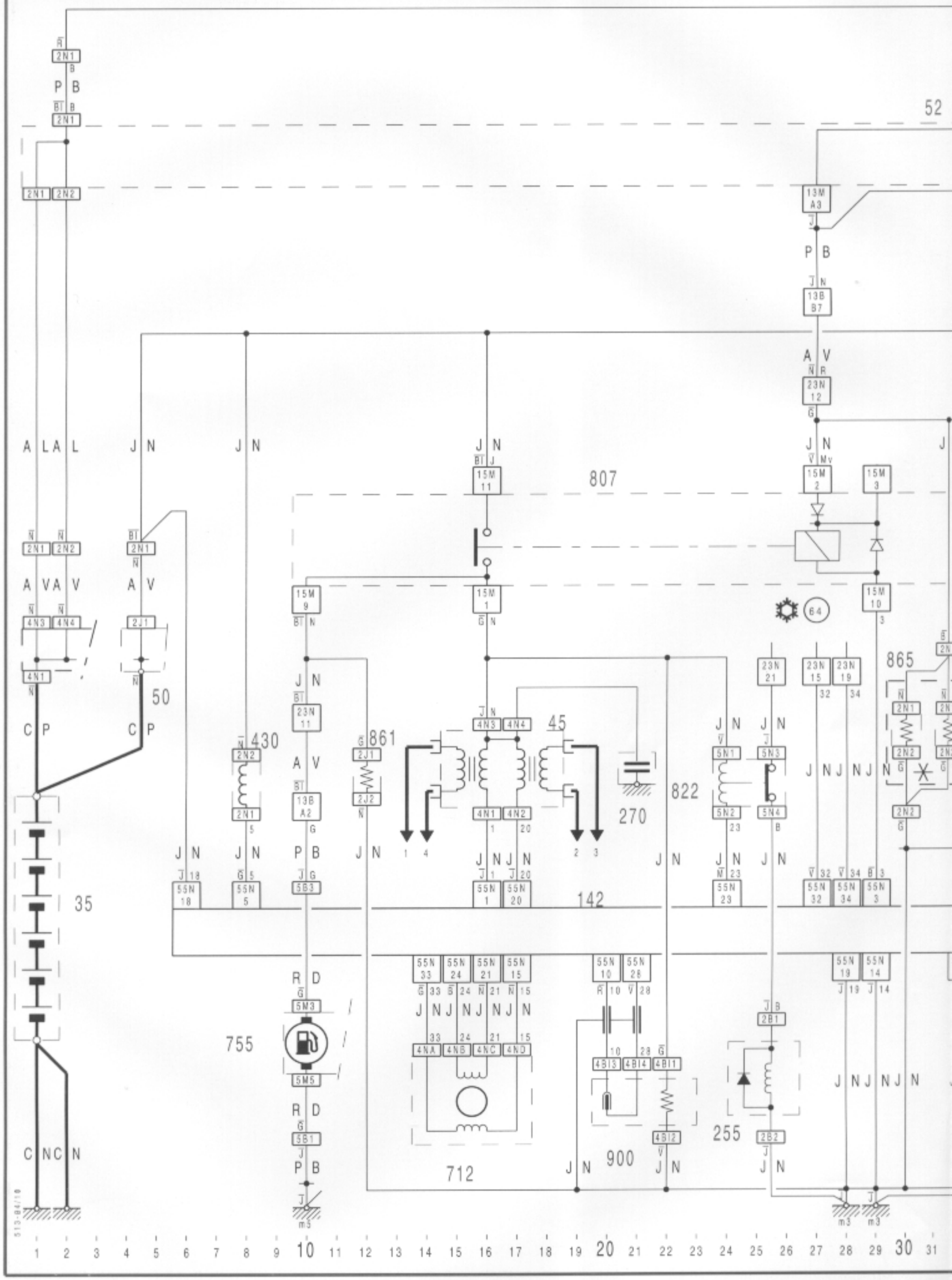




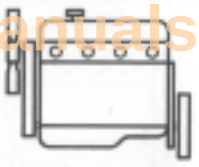
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

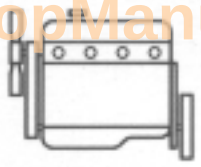


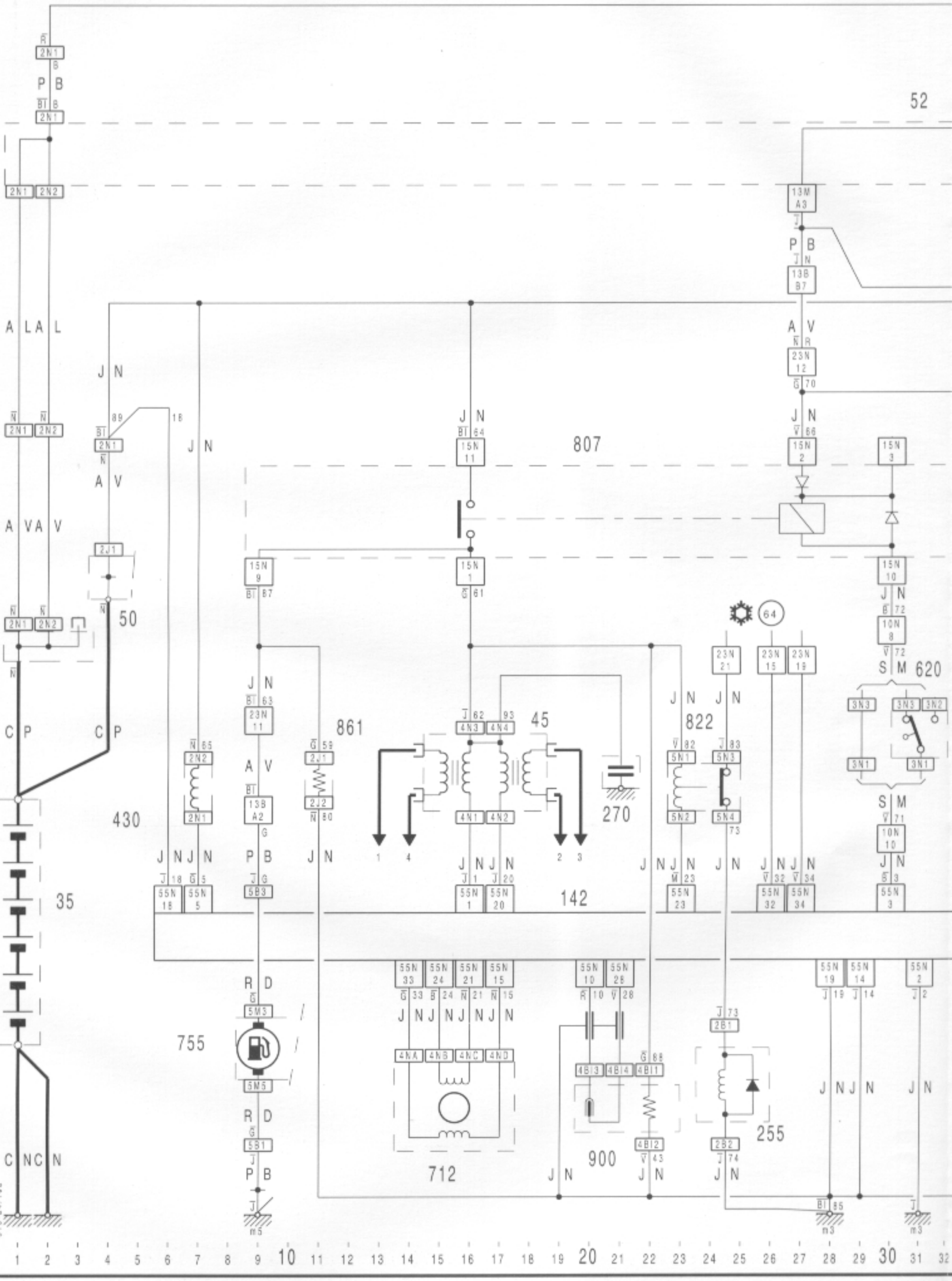
www.WorkshopManuals.co.uk



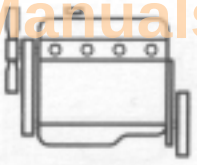
K BOSCH MP.5.1.1 RFV

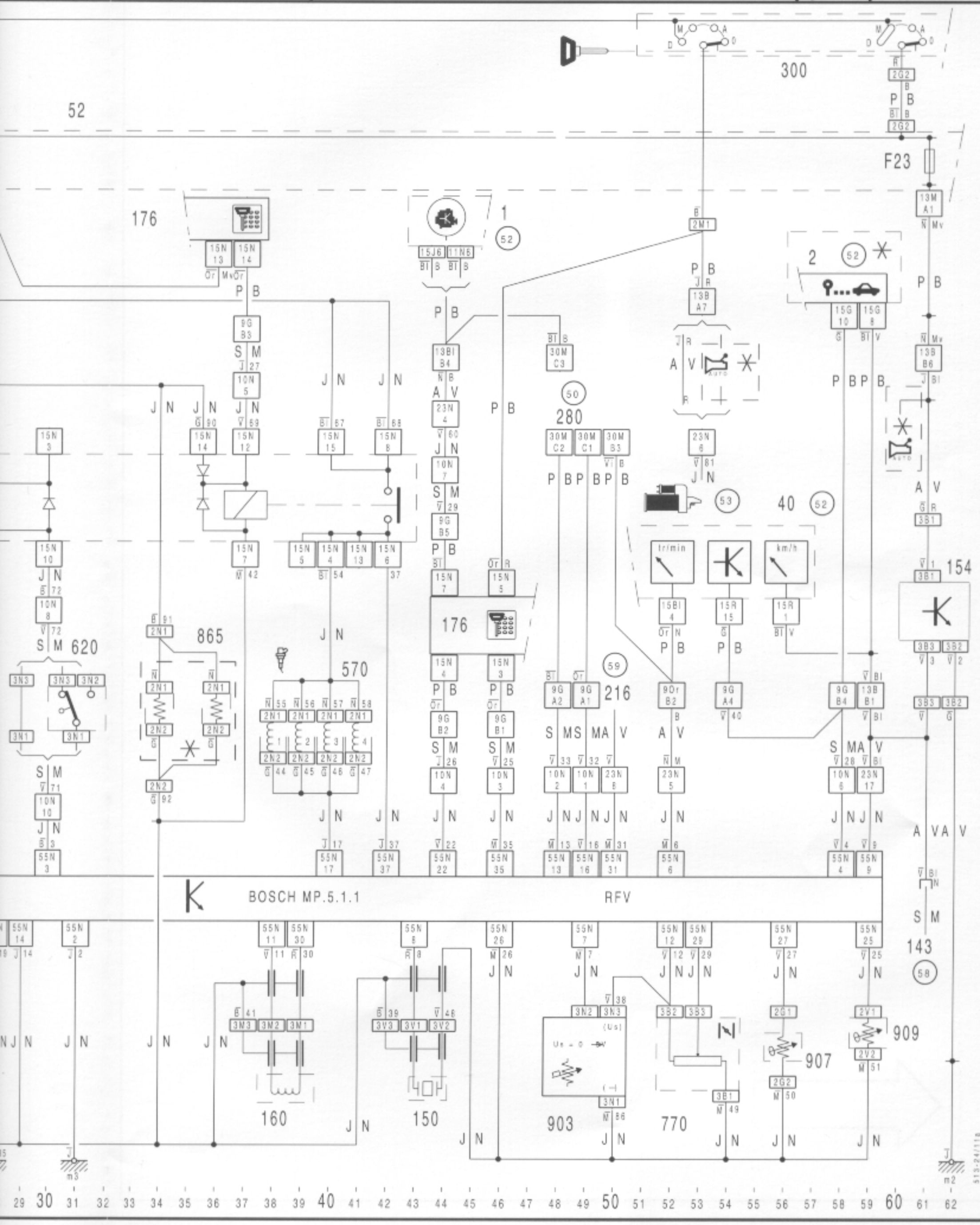
www.WorkshopManuals.co.uk



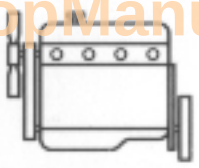


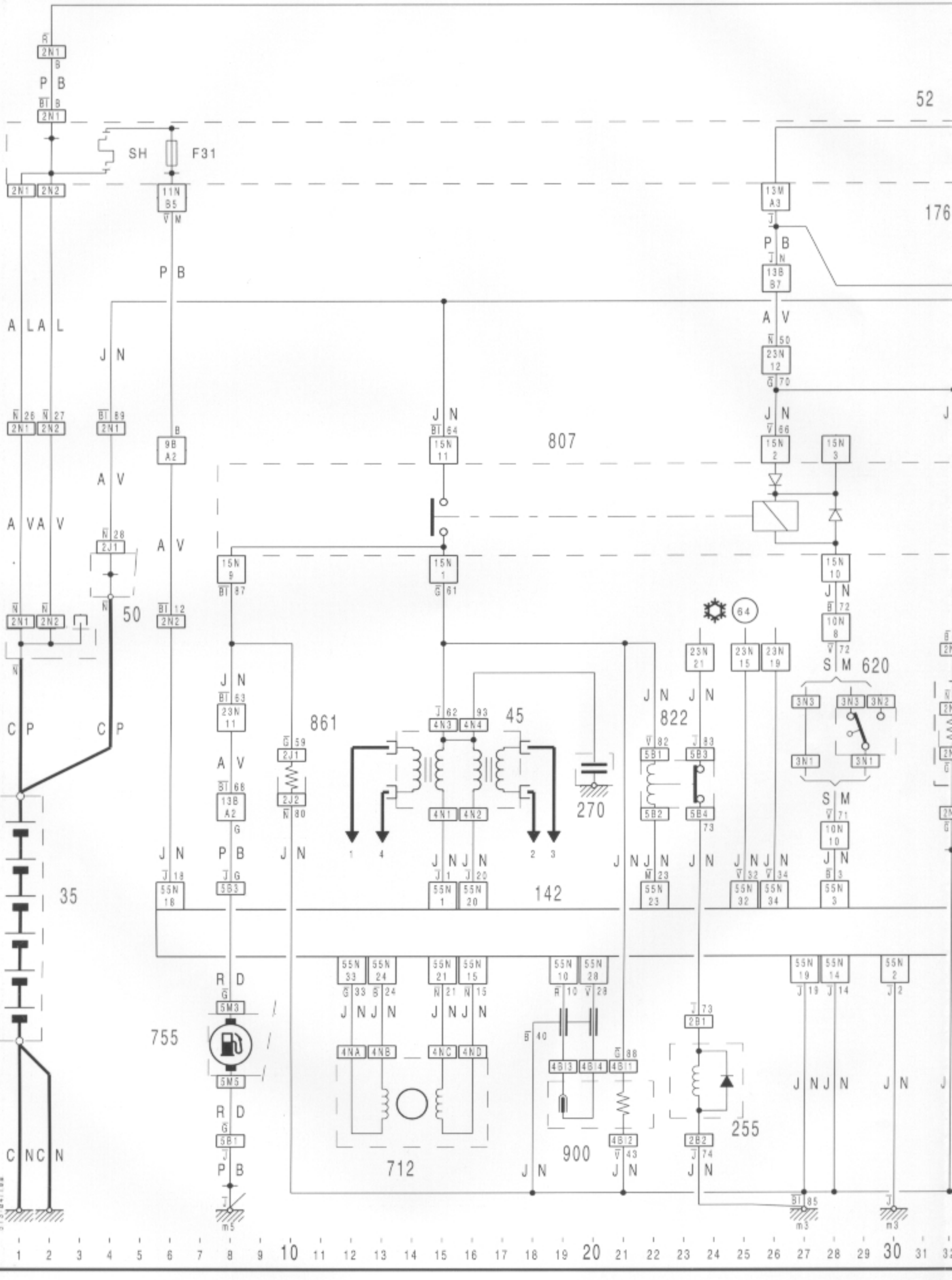
www.WorkshopManuals.co.uk



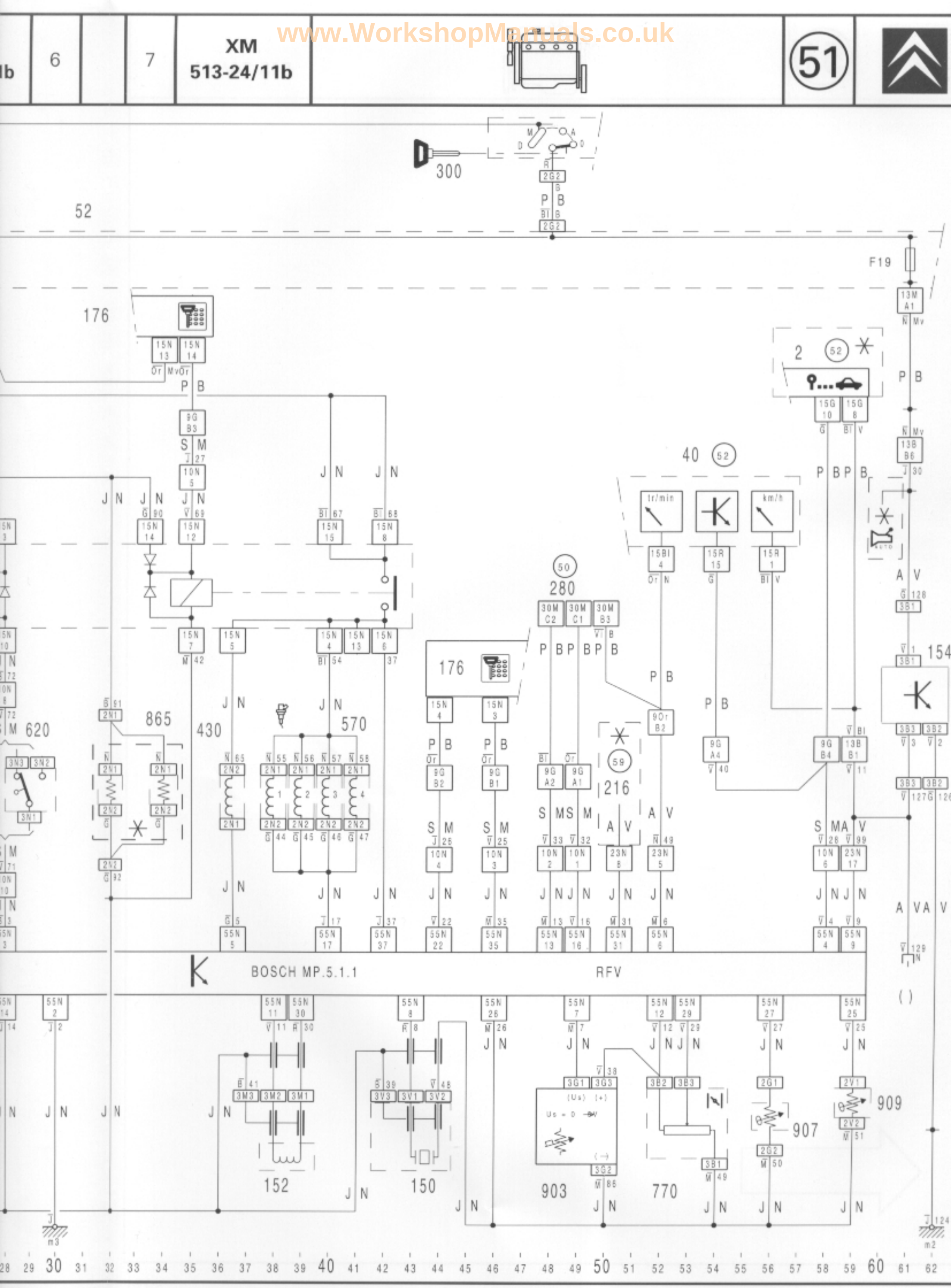


www.WorkshopManuals.co.uk

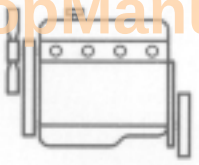




www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



52

50

807

620

865

822

45

270

142

-RFZ-

755

712

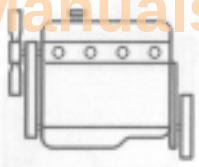
900

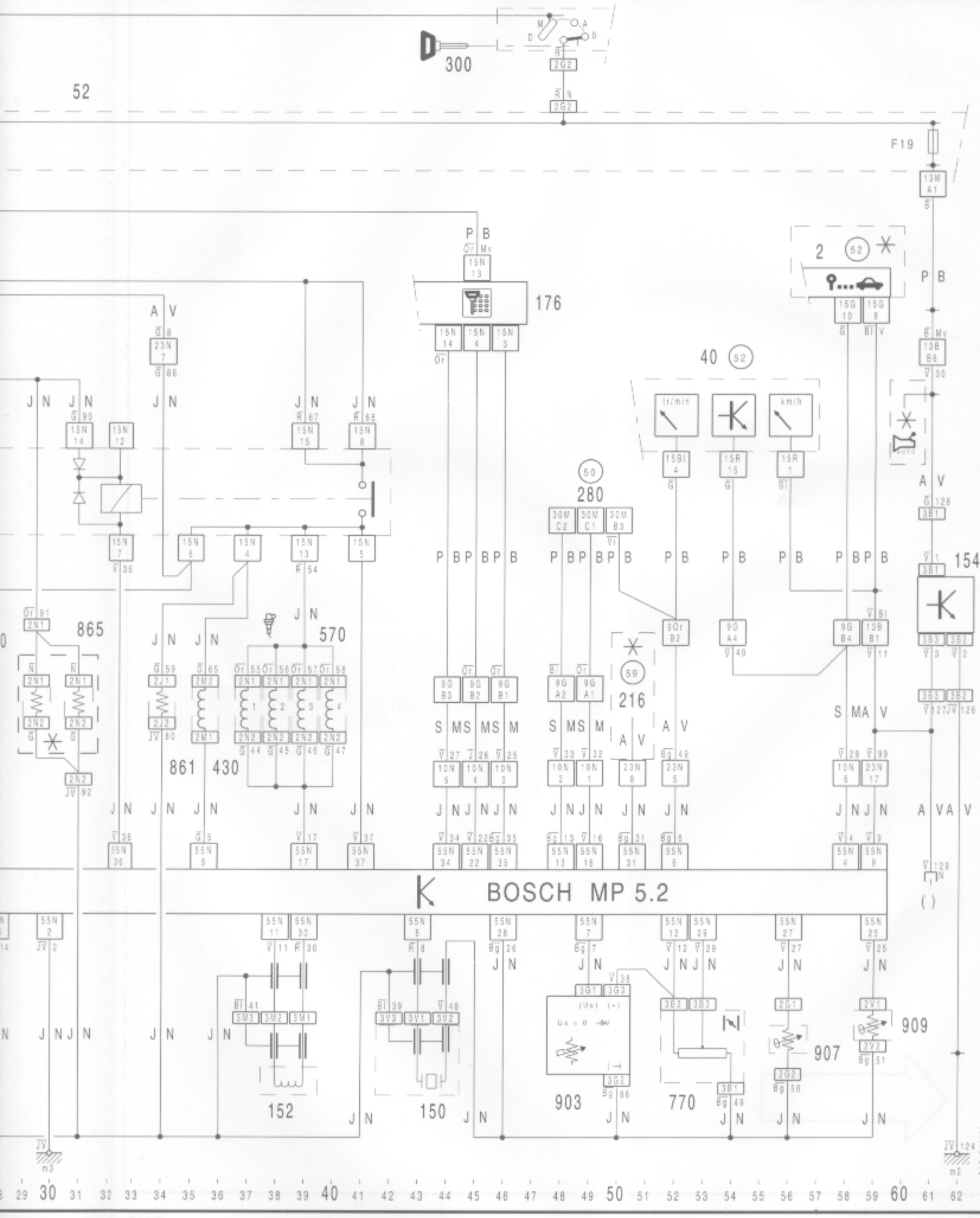
255

35

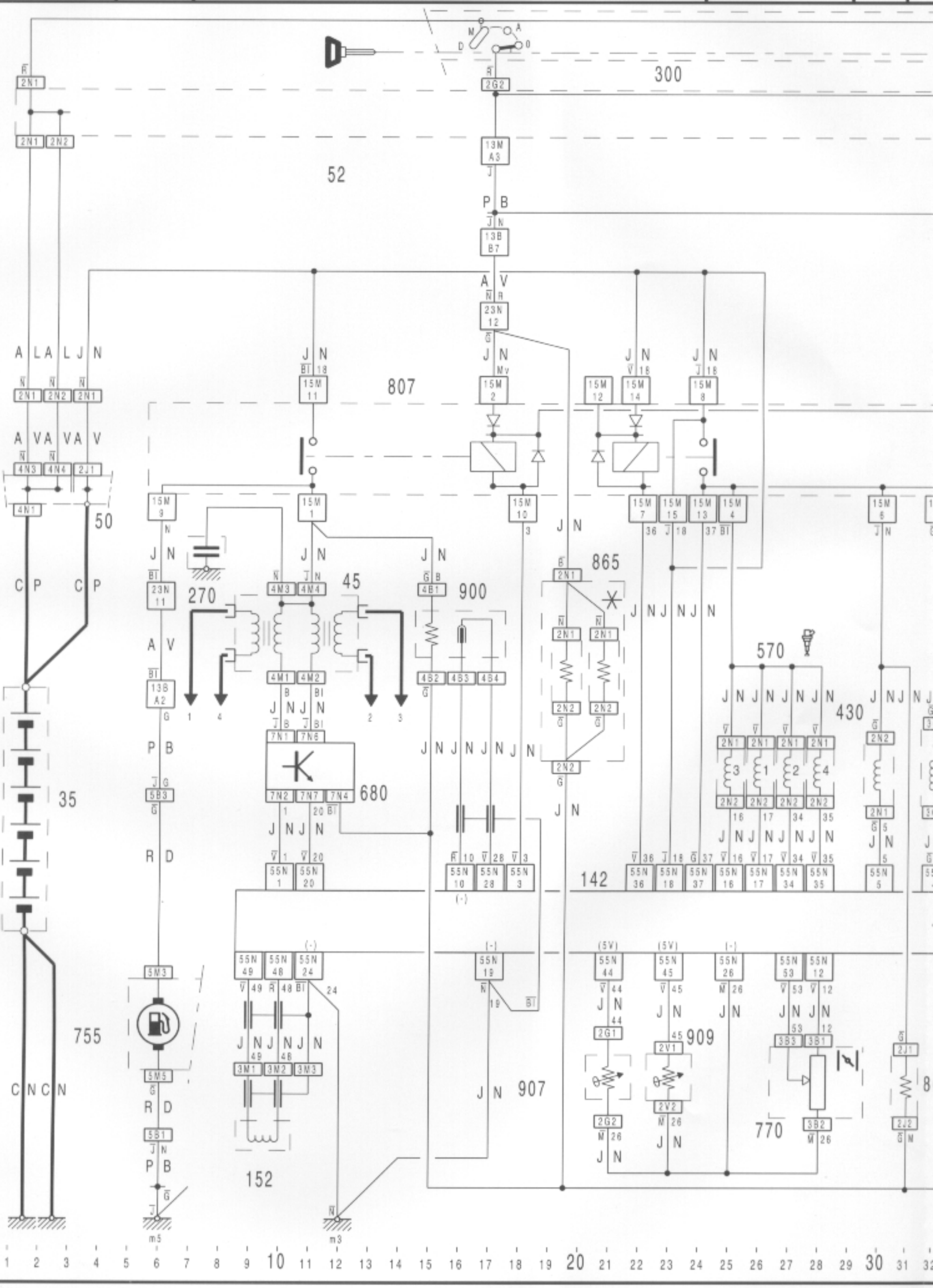
513-24/12b

www.WorkshopManuals.co.uk

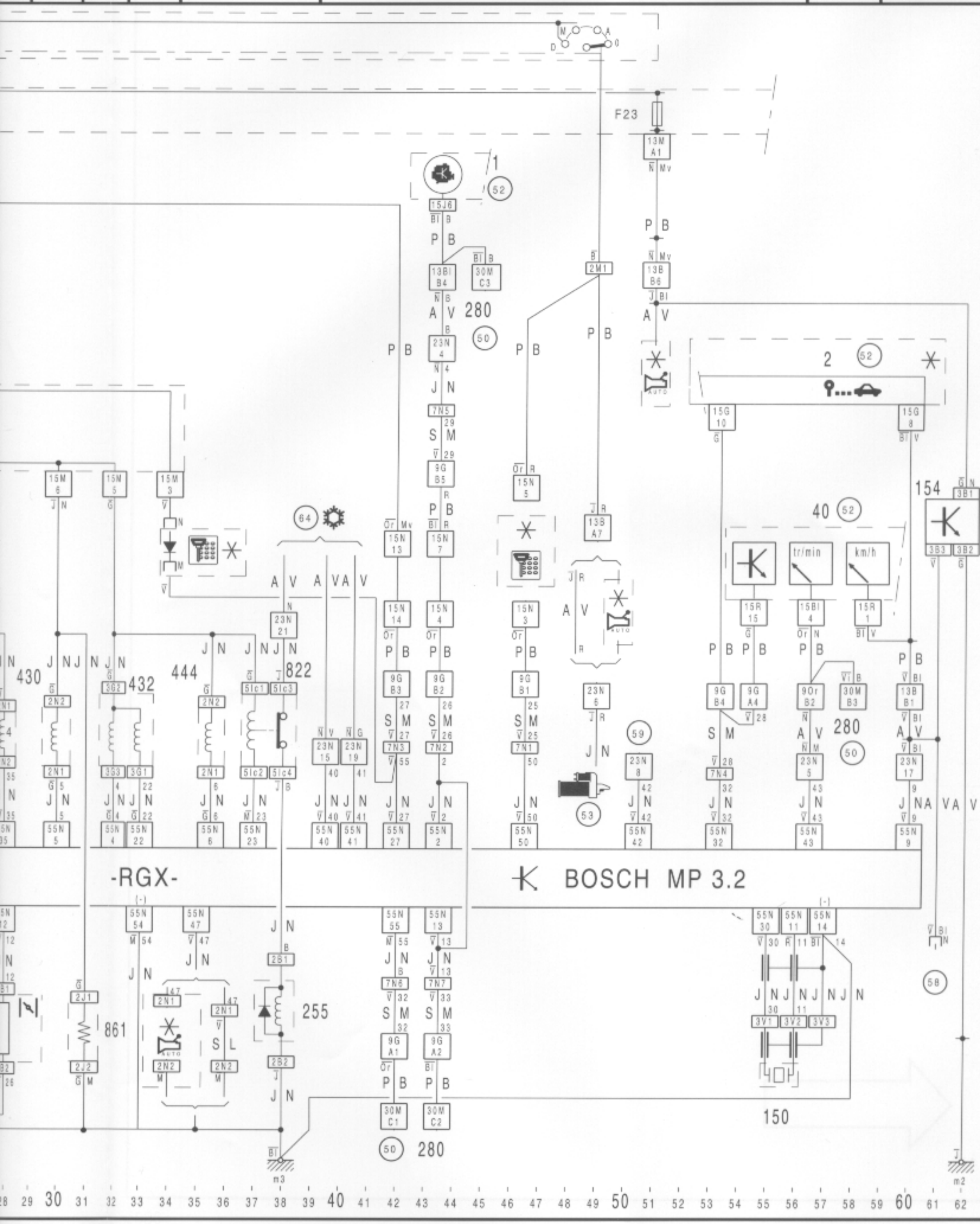




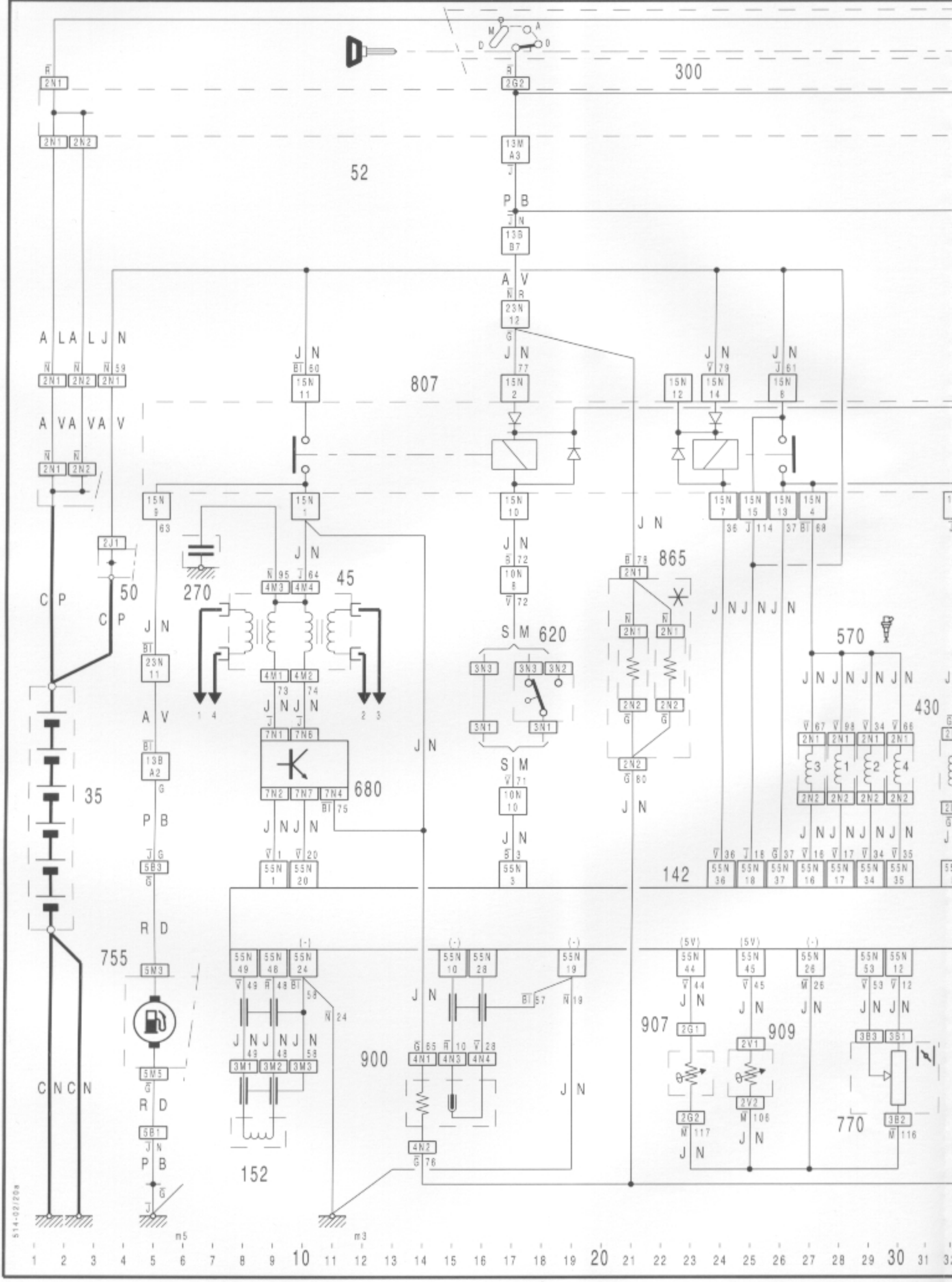
www.WorkshopManuals.co.uk



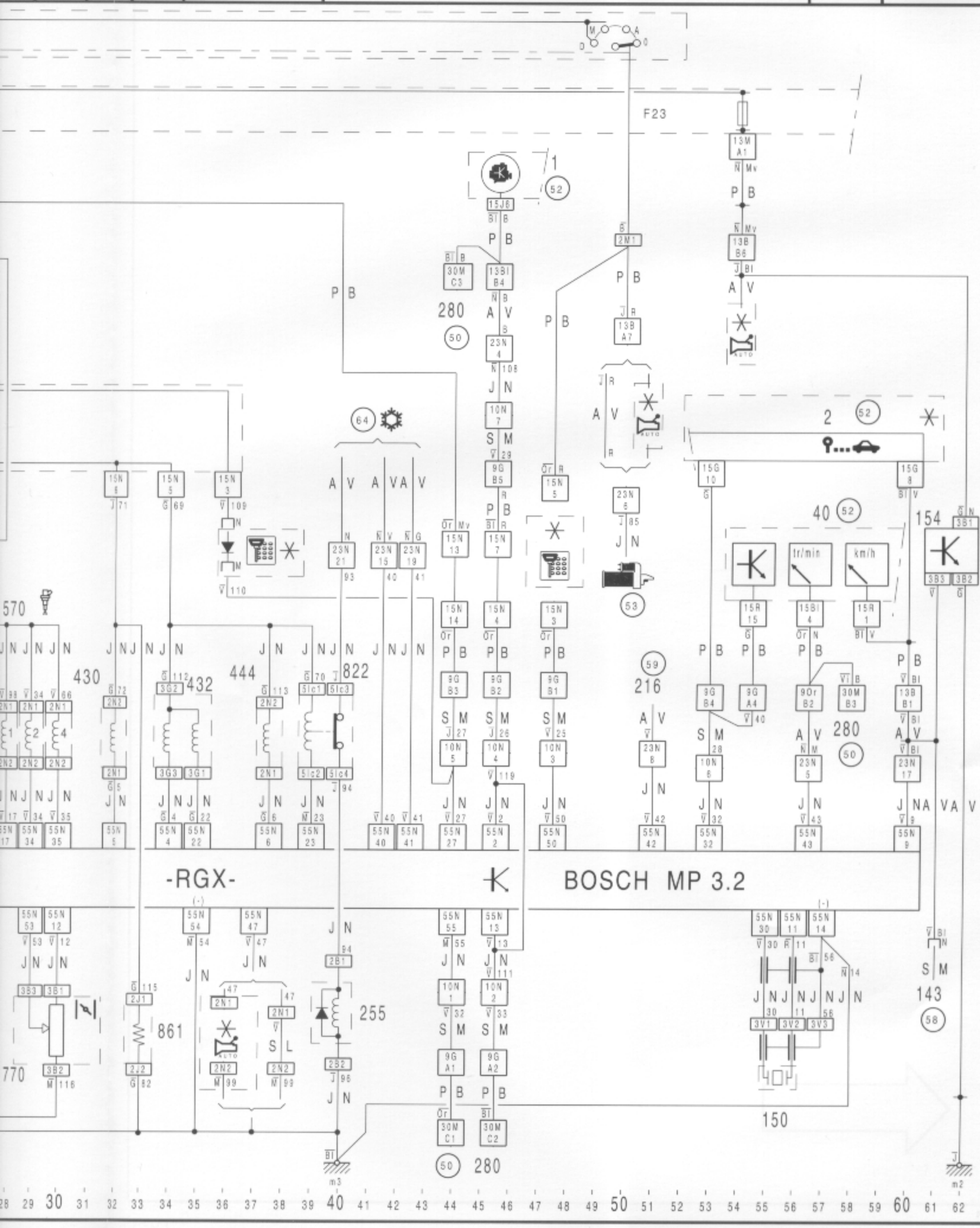
www.WorkshopManuals.co.uk



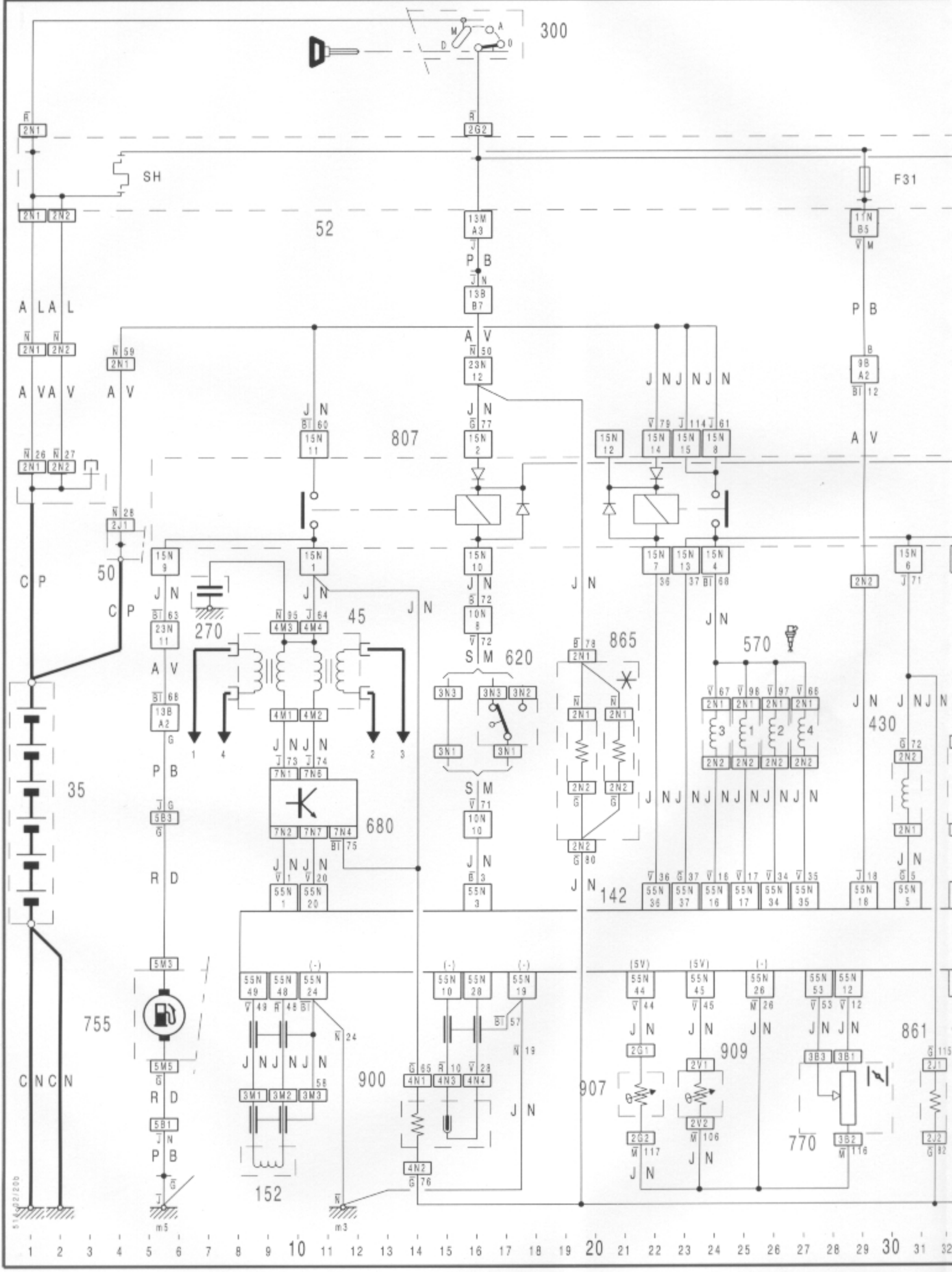
www.WorkshopManuals.co.uk



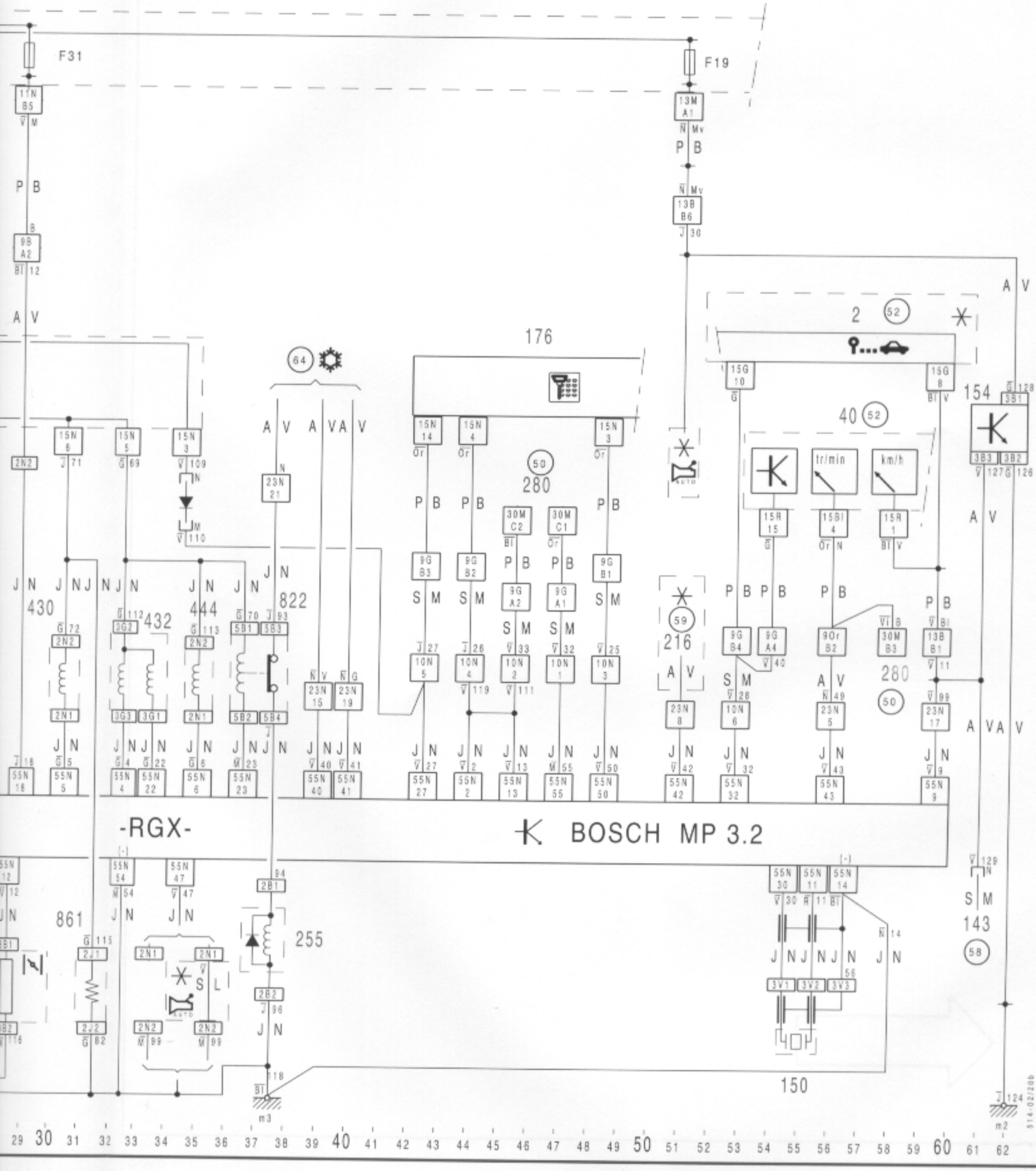
www.WorkshopManuals.co.uk



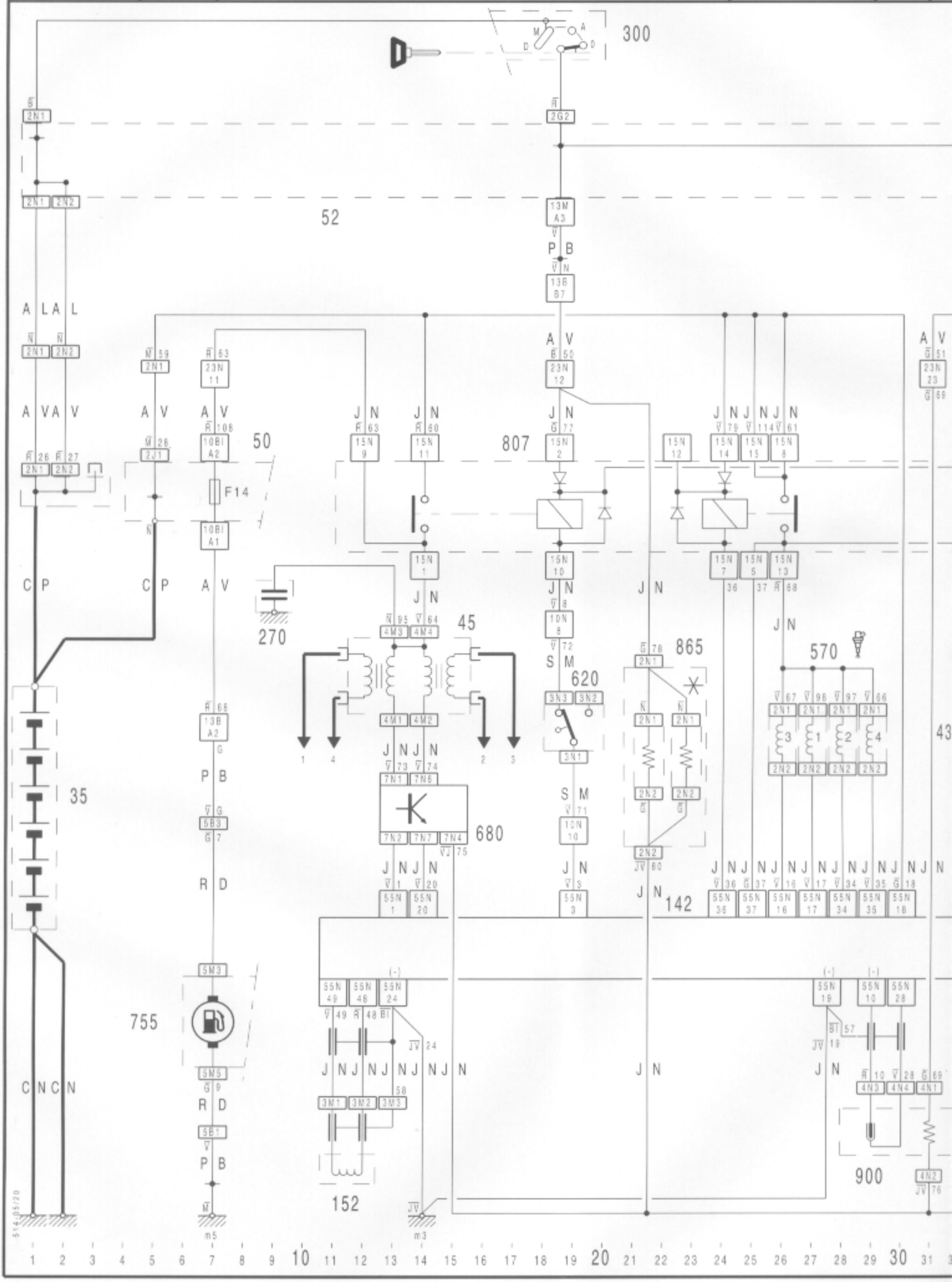
www.WorkshopManuals.co.uk



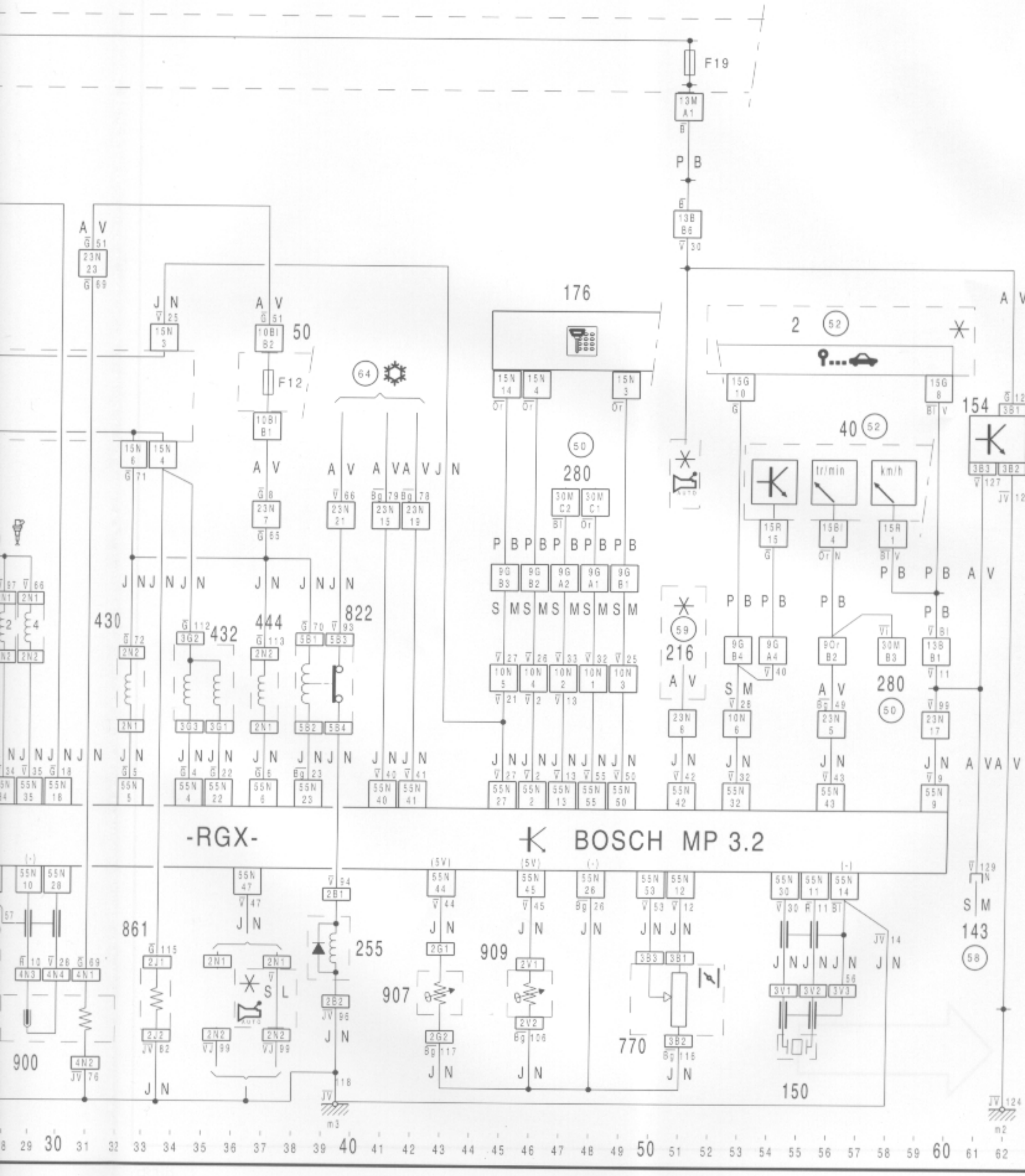
www.WorkshopManuals.co.uk



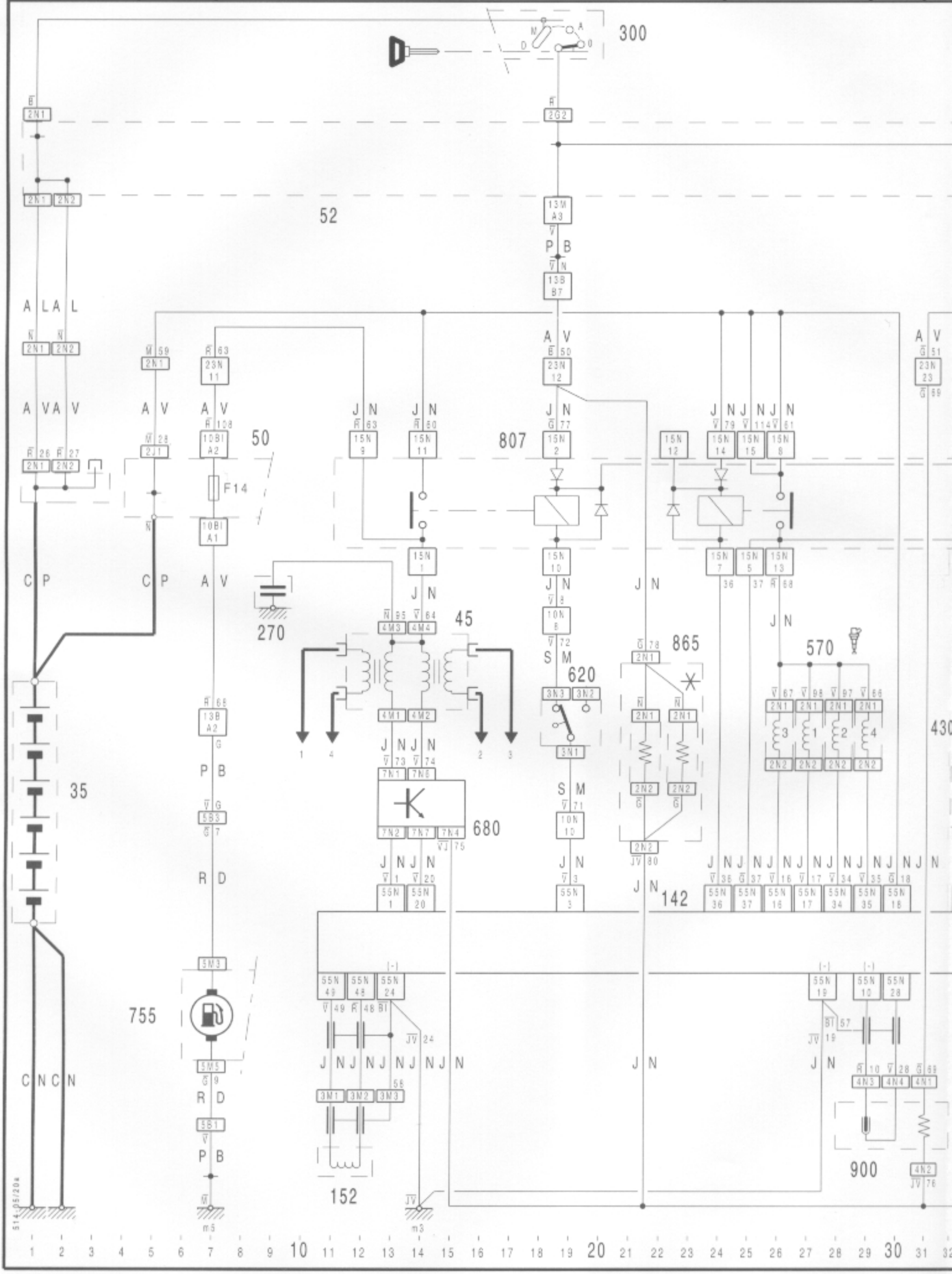
www.WorkshopManuals.co.uk



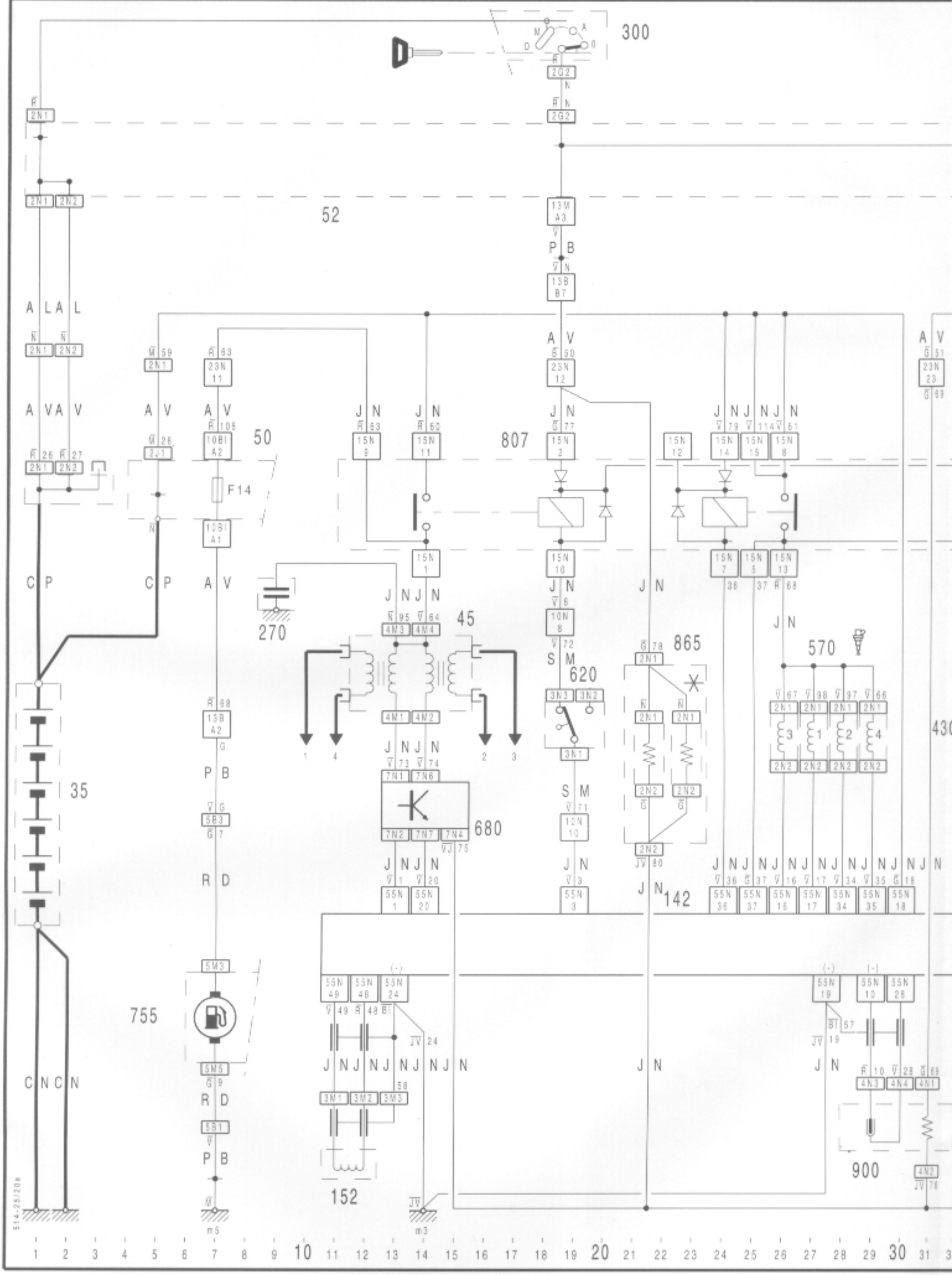
www.WorkshopManuals.co.uk



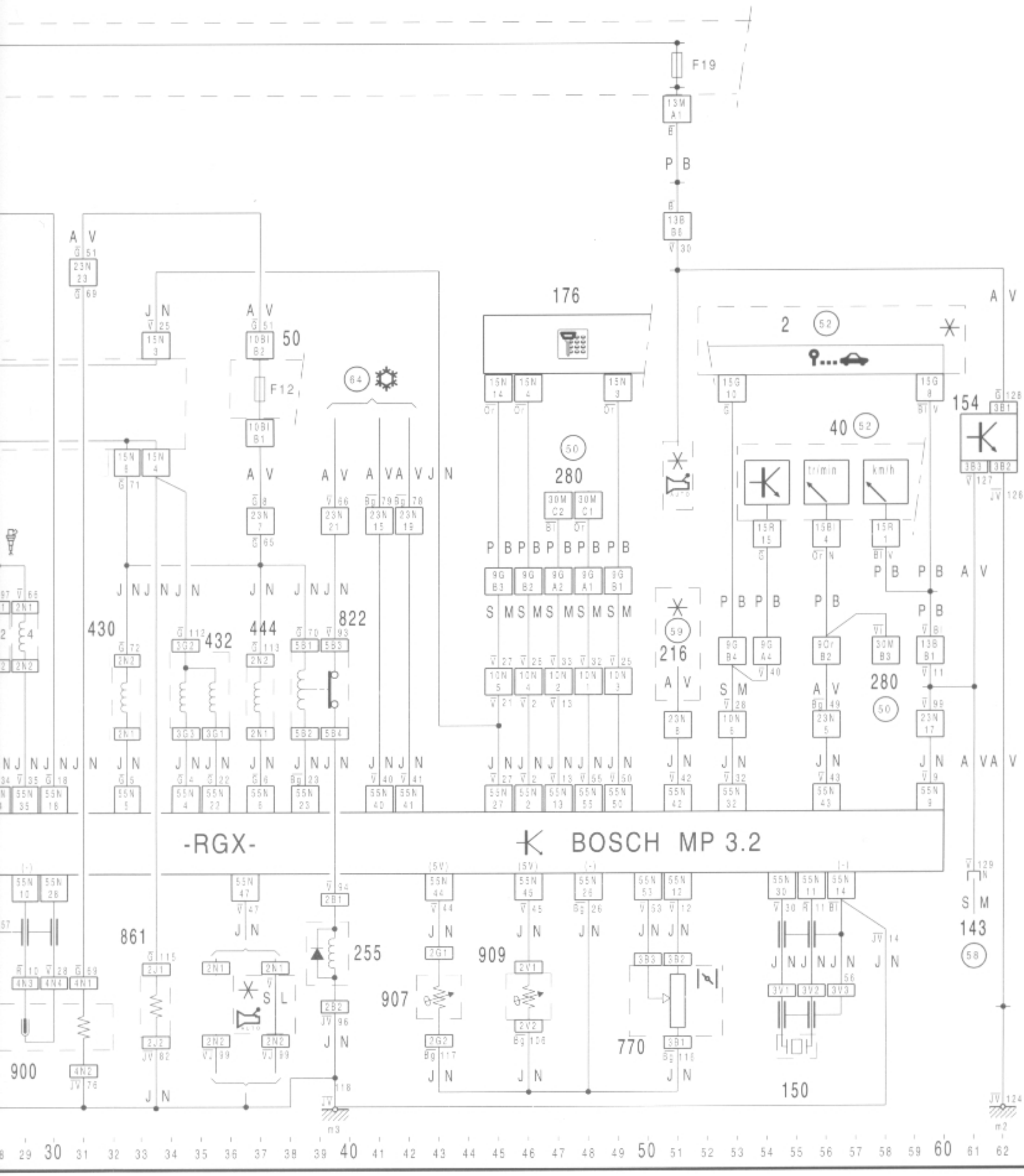
www.WorkshopManuals.co.uk



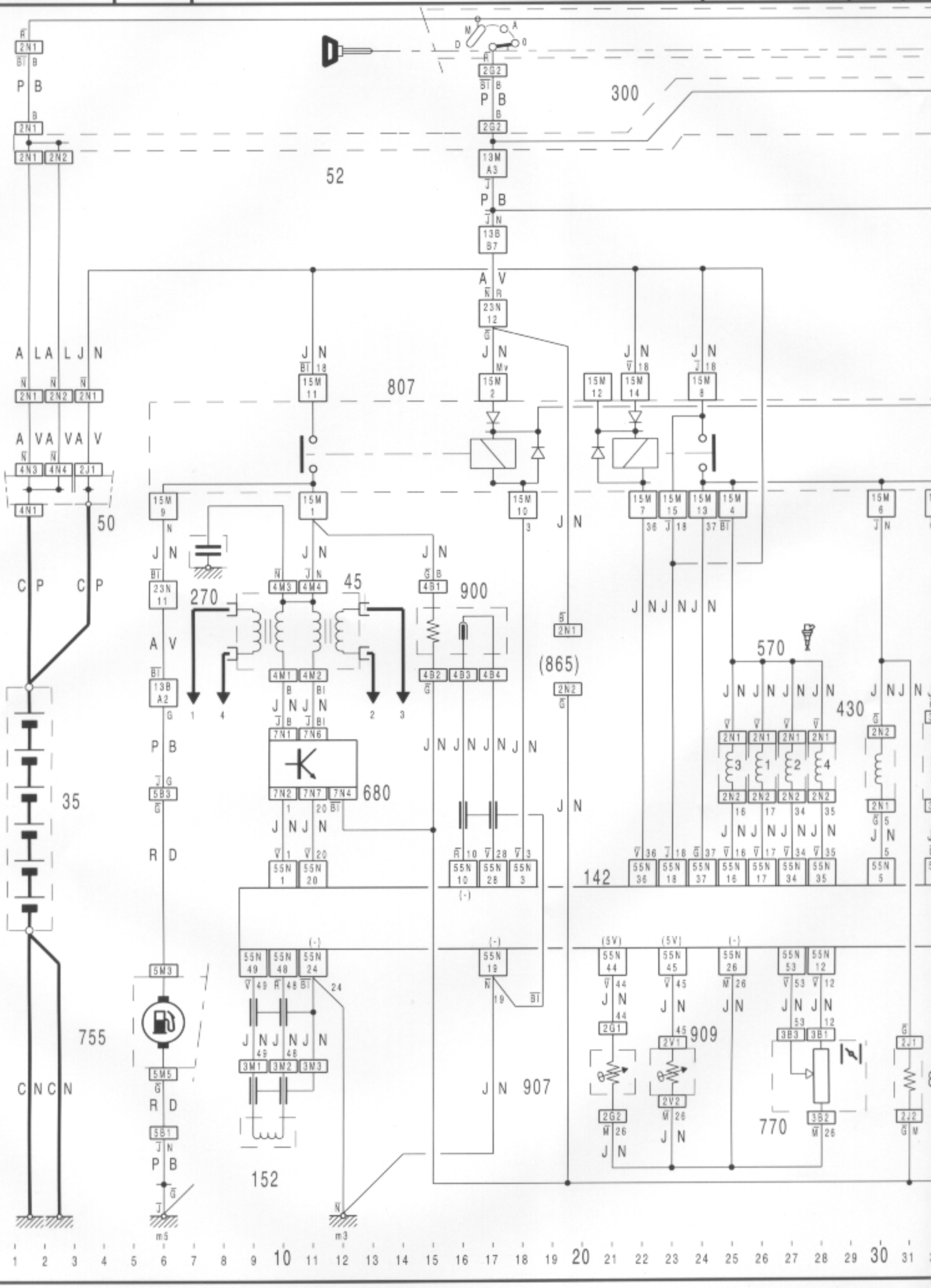
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

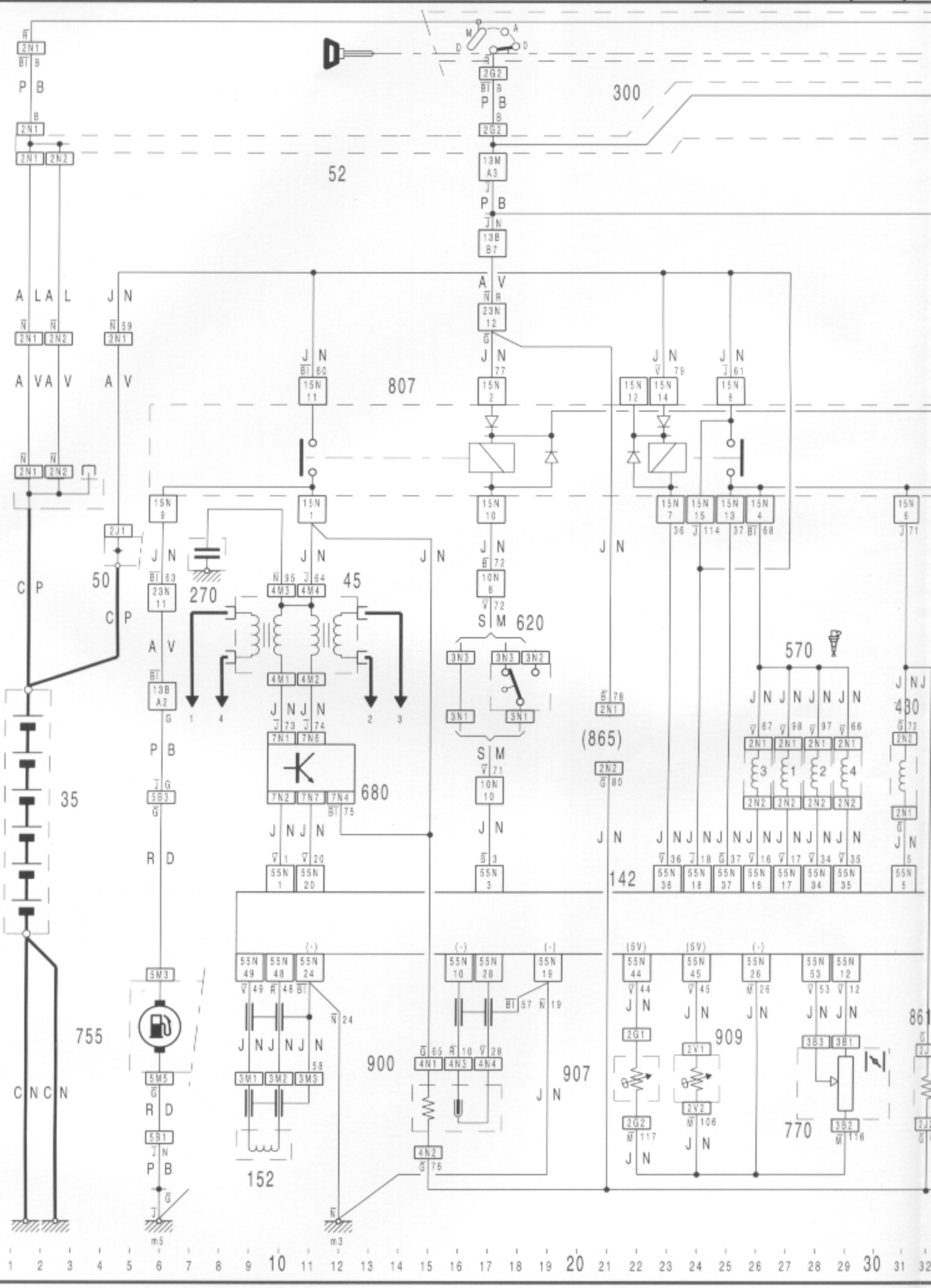


www.WorkshopManuals.co.uk

-RGX-

BOSCH MP 3.2

www.WorkshopManuals.co.uk

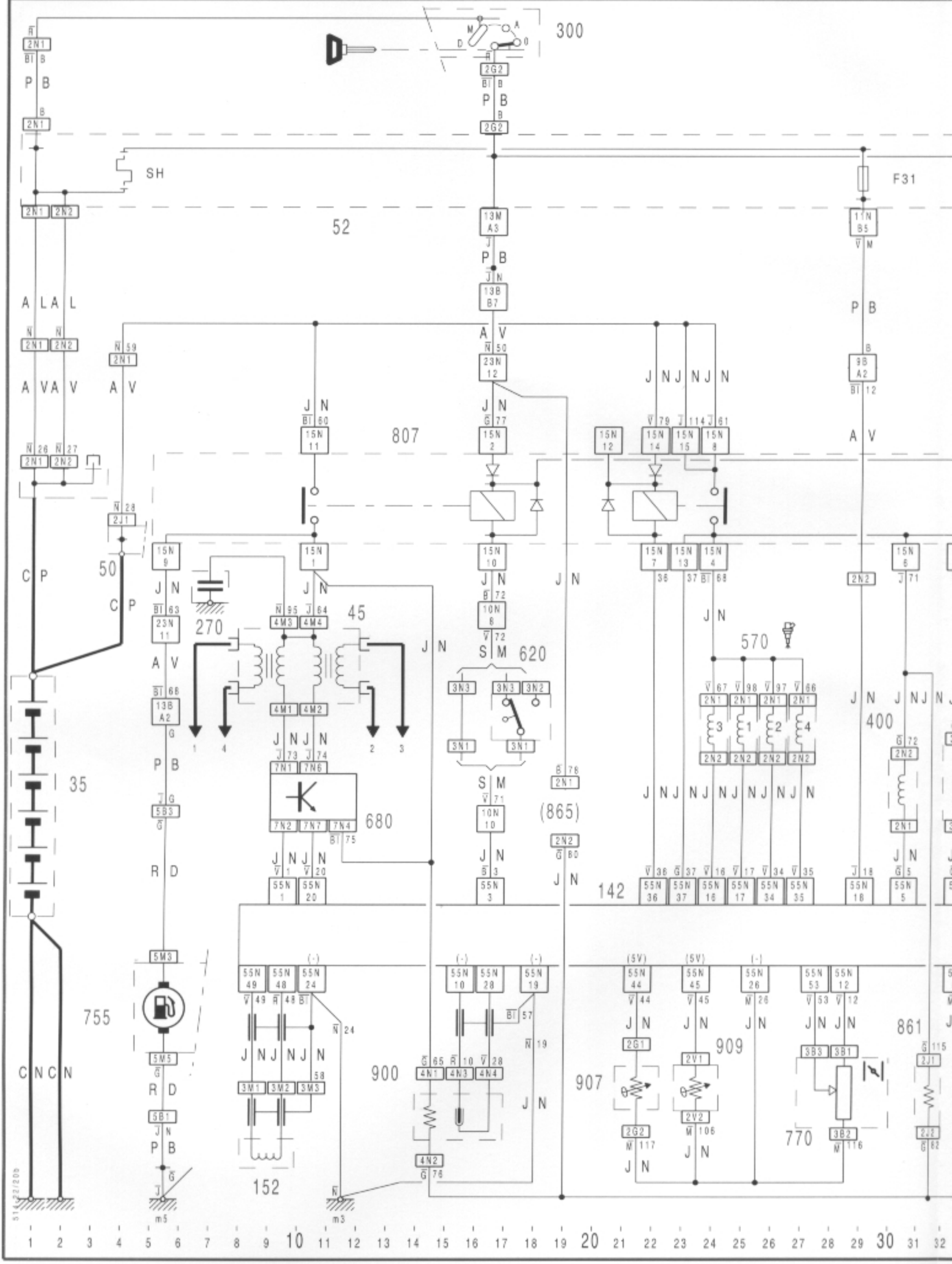


www.WorkshopManuals.co.uk

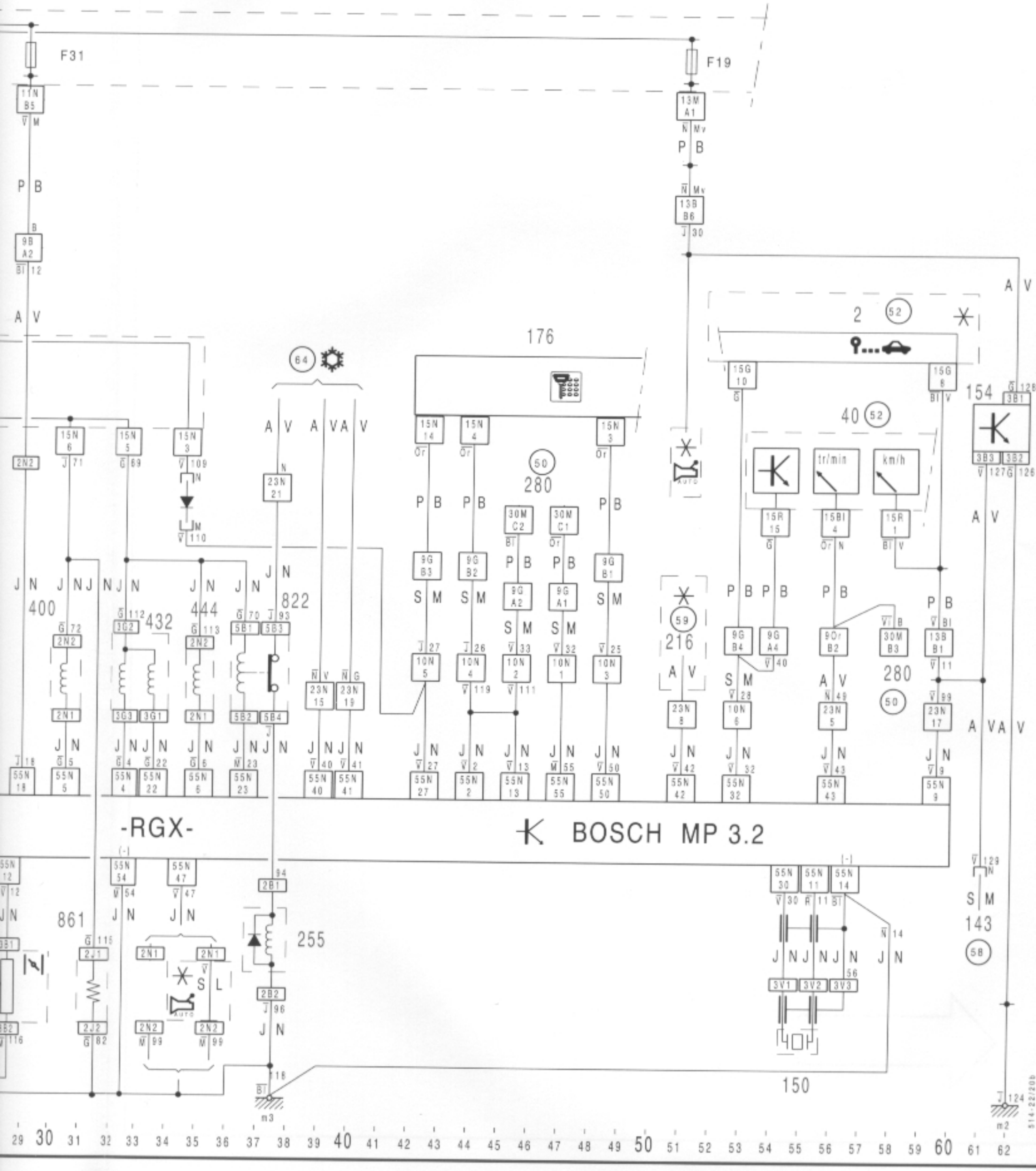
-RGX-

BOSCH MP 3.2

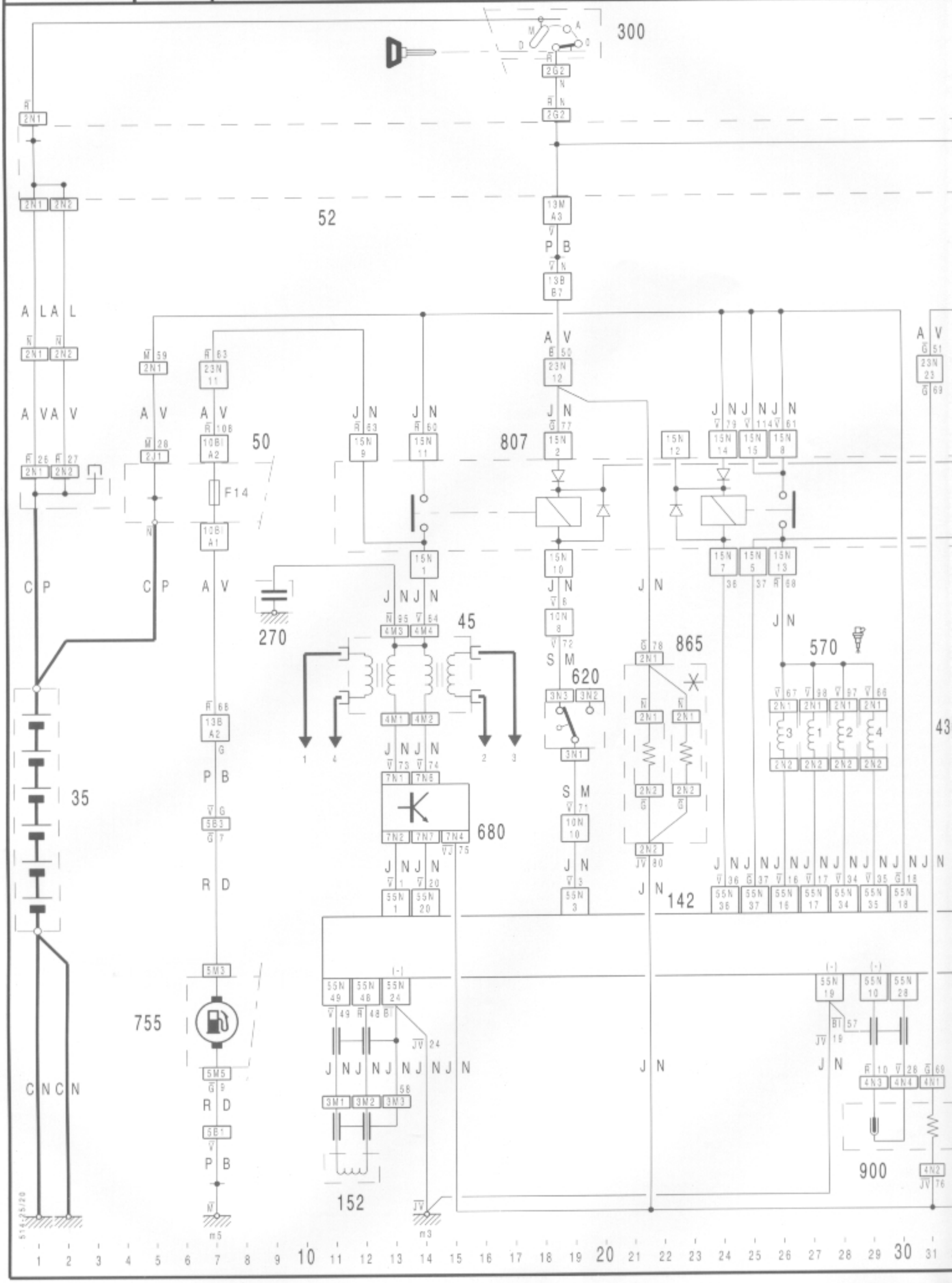
www.WorkshopManuals.co.uk



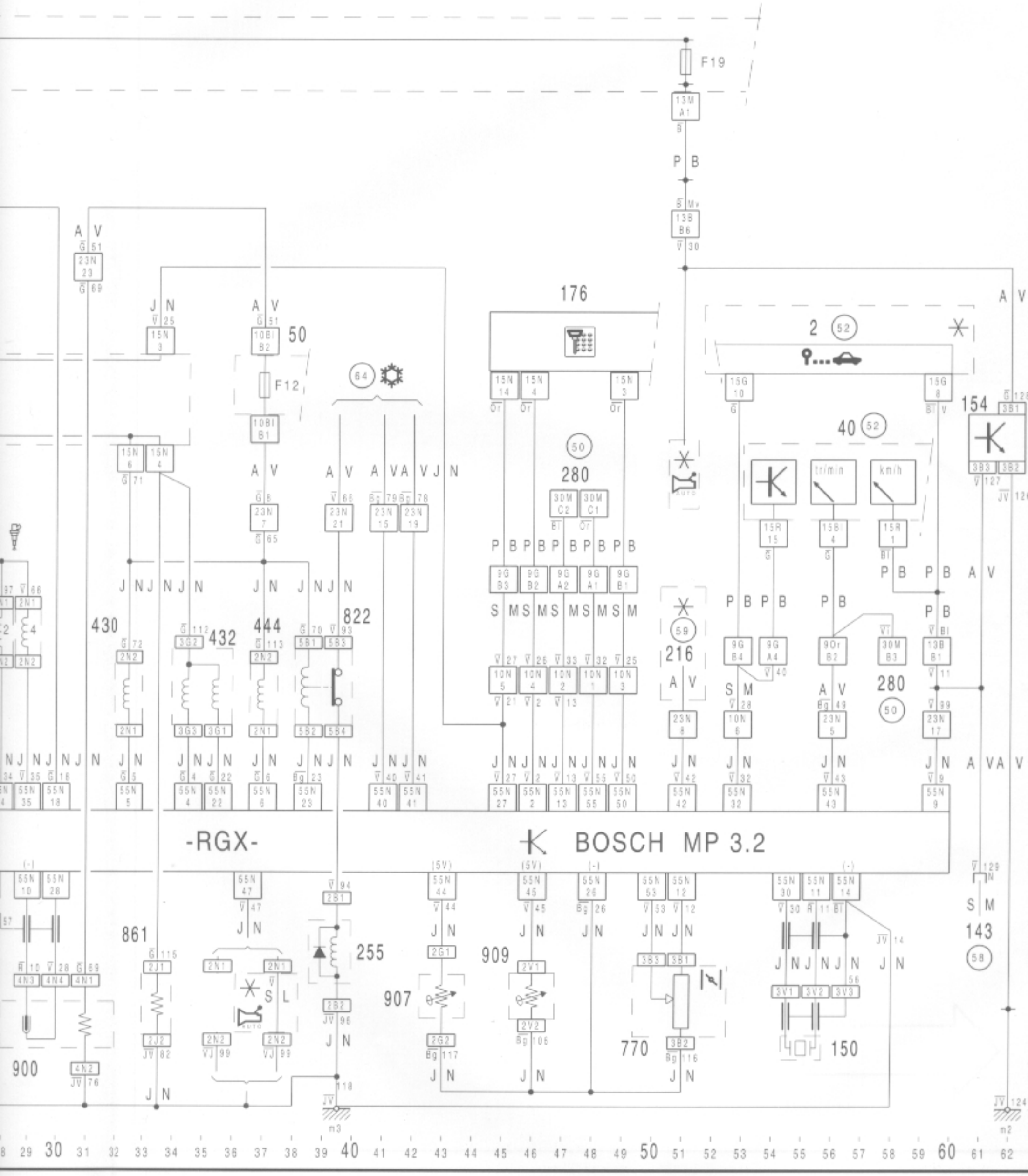
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

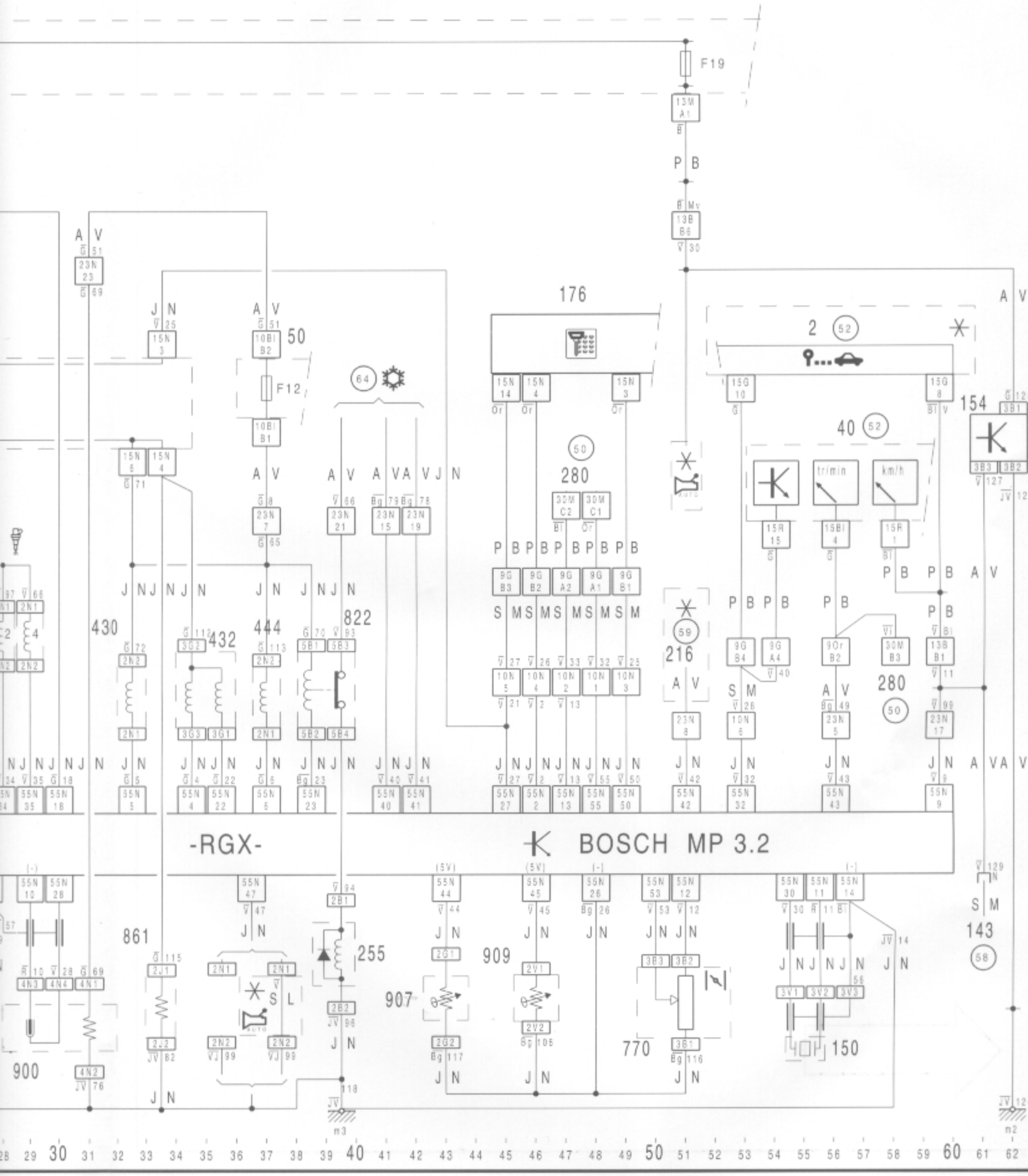


www.WorkshopManuals.co.uk

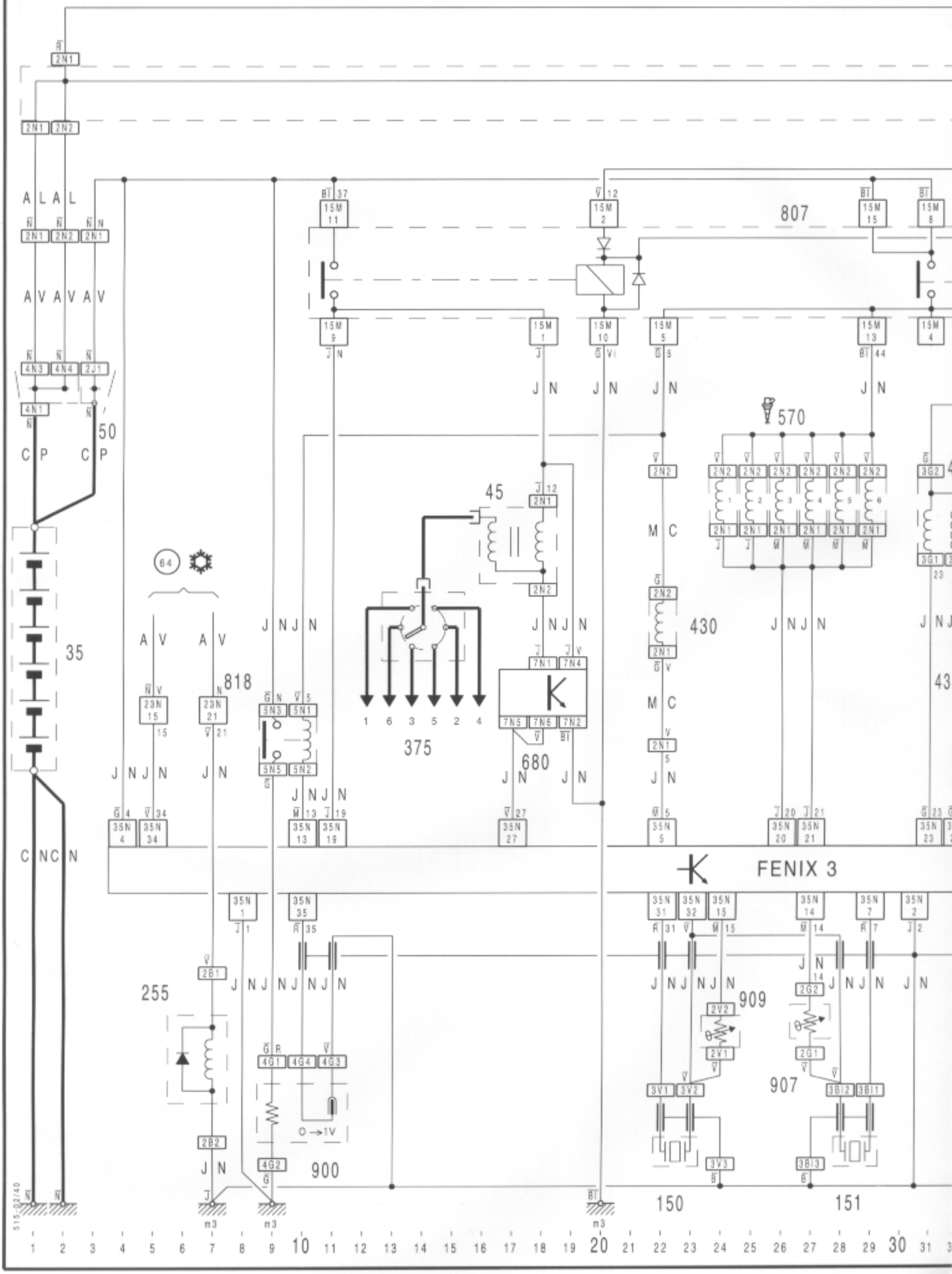


XMB035

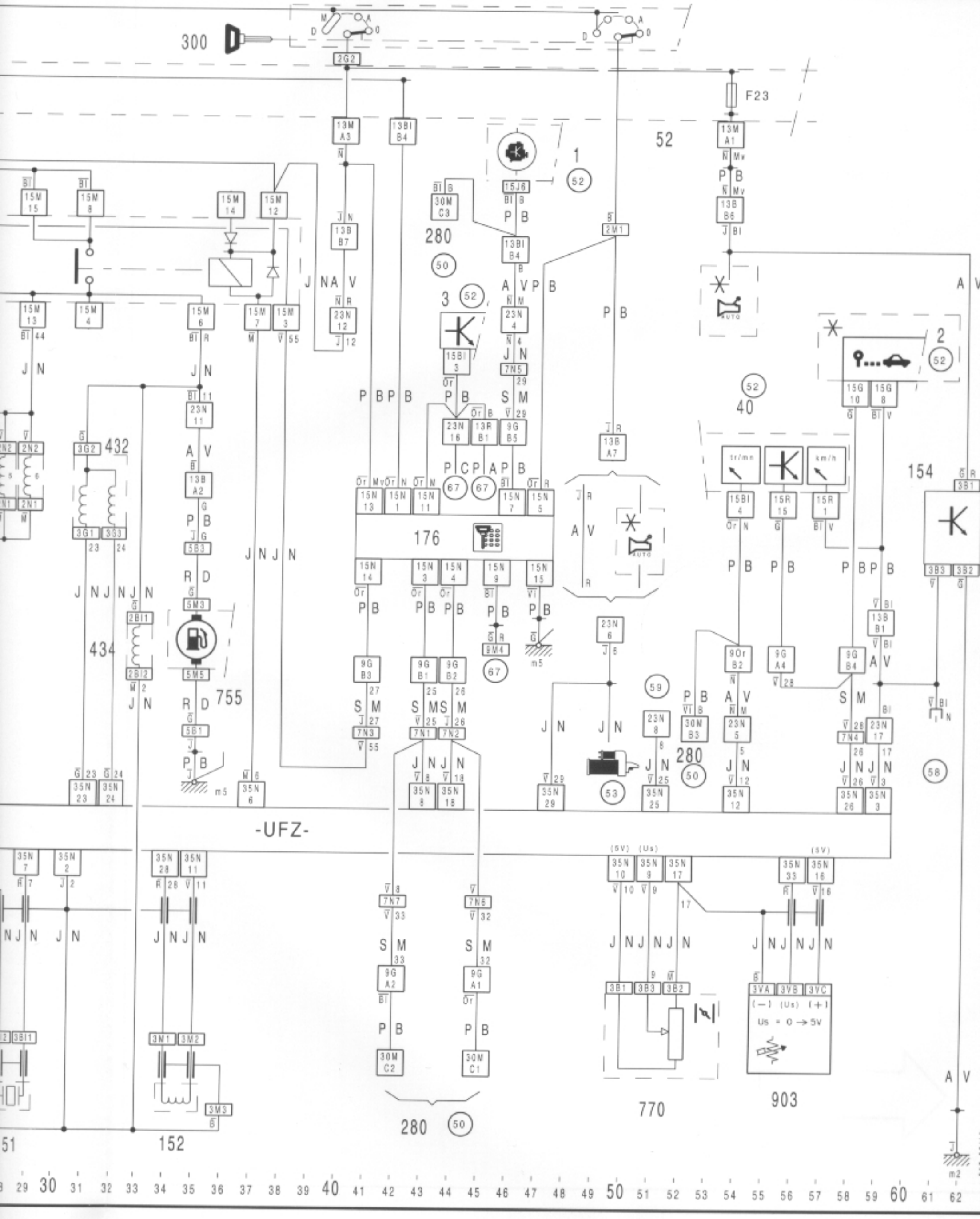
www.WorkshopManuals.co.uk



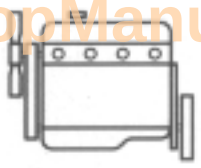
www.WorkshopManuals.co.uk

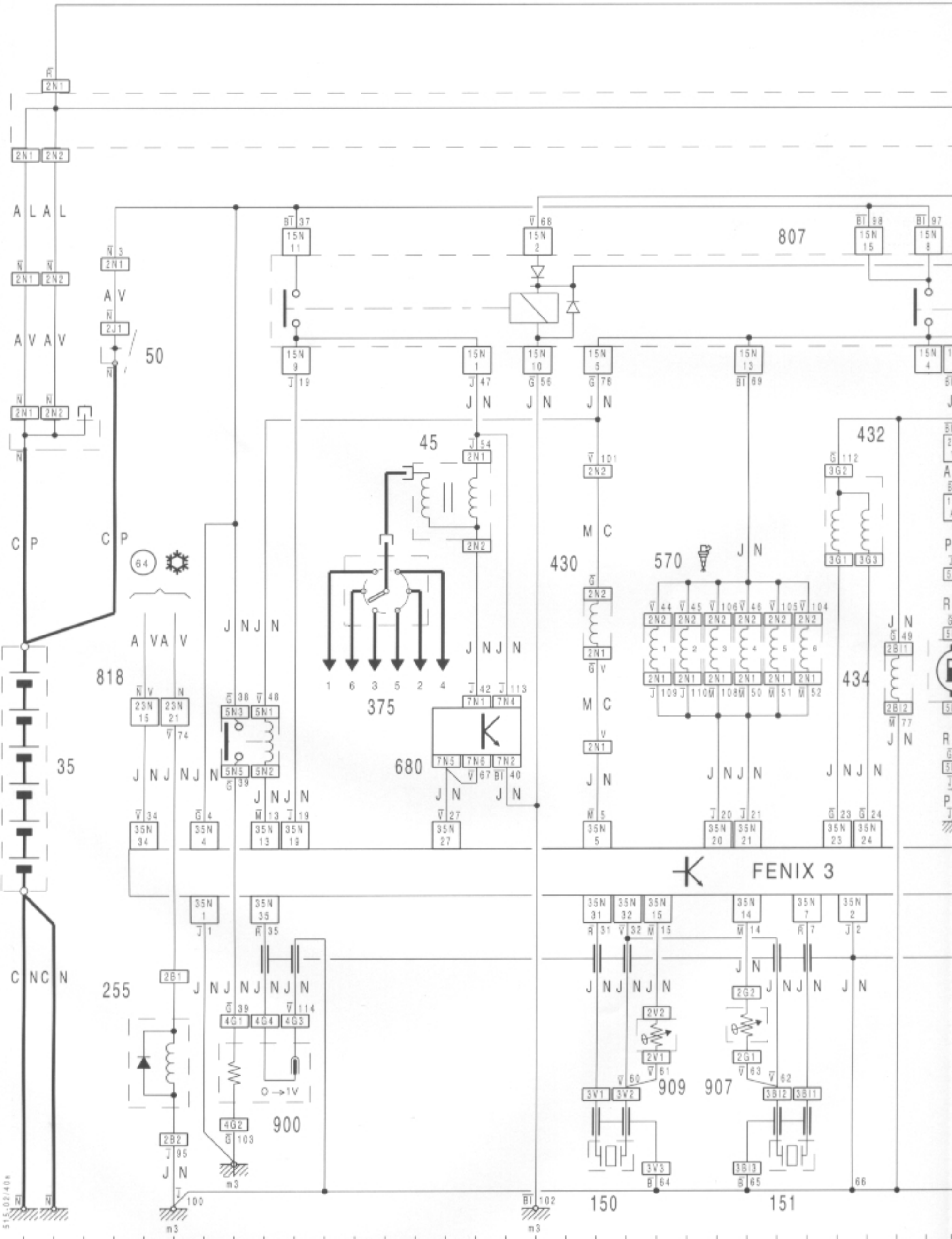


www.WorkshopManuals.co.uk

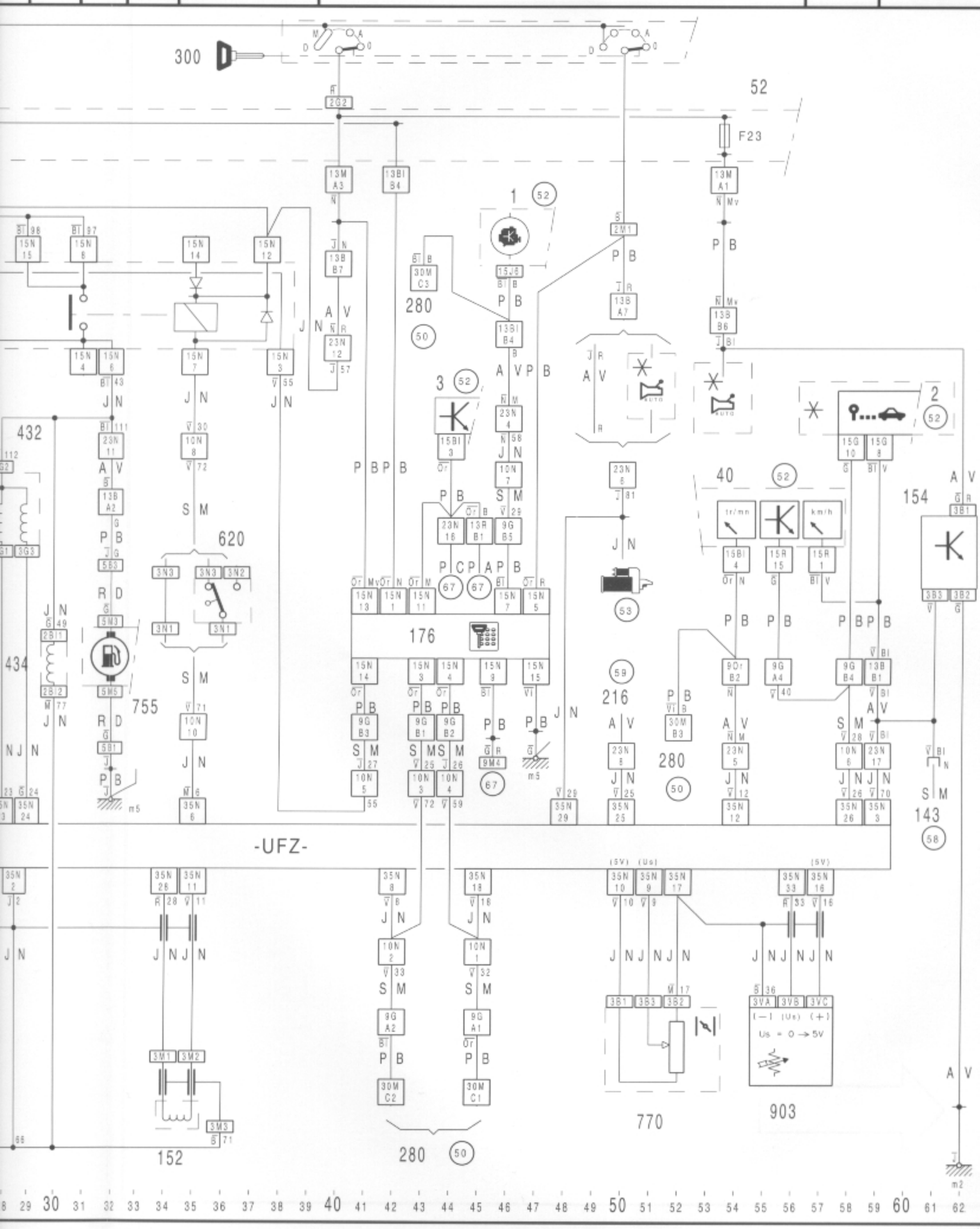


www.WorkshopManuals.co.uk

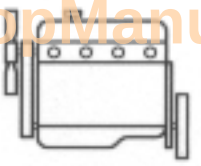




www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



SH F31

2N1 2N2 11N B5

A L A L

A V A V

C P C P

35

64

A V A V J N J N

255

2B1 2S2

4G1 4G4 4G3 4G2

O → 1V

900

m3

45

375

818

680

7N1 7N4 7N5 7N6 7N2

807

15N 11 15N 9 15N 1 15N 2 15N 10 15N 5 15N 13 15N 15 15N 8 15N 4

430

M C

570

J N J N J N J N J N J N

432

3G2 3G1 3G3

FENIX 3

35N 34 35N 4 35N 1 35N 35 35N 13 35N 19 35N 27 35N 5 35N 20 35N 21 35N 23 35N 24 35N 31 35N 32 35N 15 35N 14 35N 7 35N 2

2V2 2V1 3V1 3V2 3V3 909

2G2 2G1 3BI2 3BI1 3BI3 907

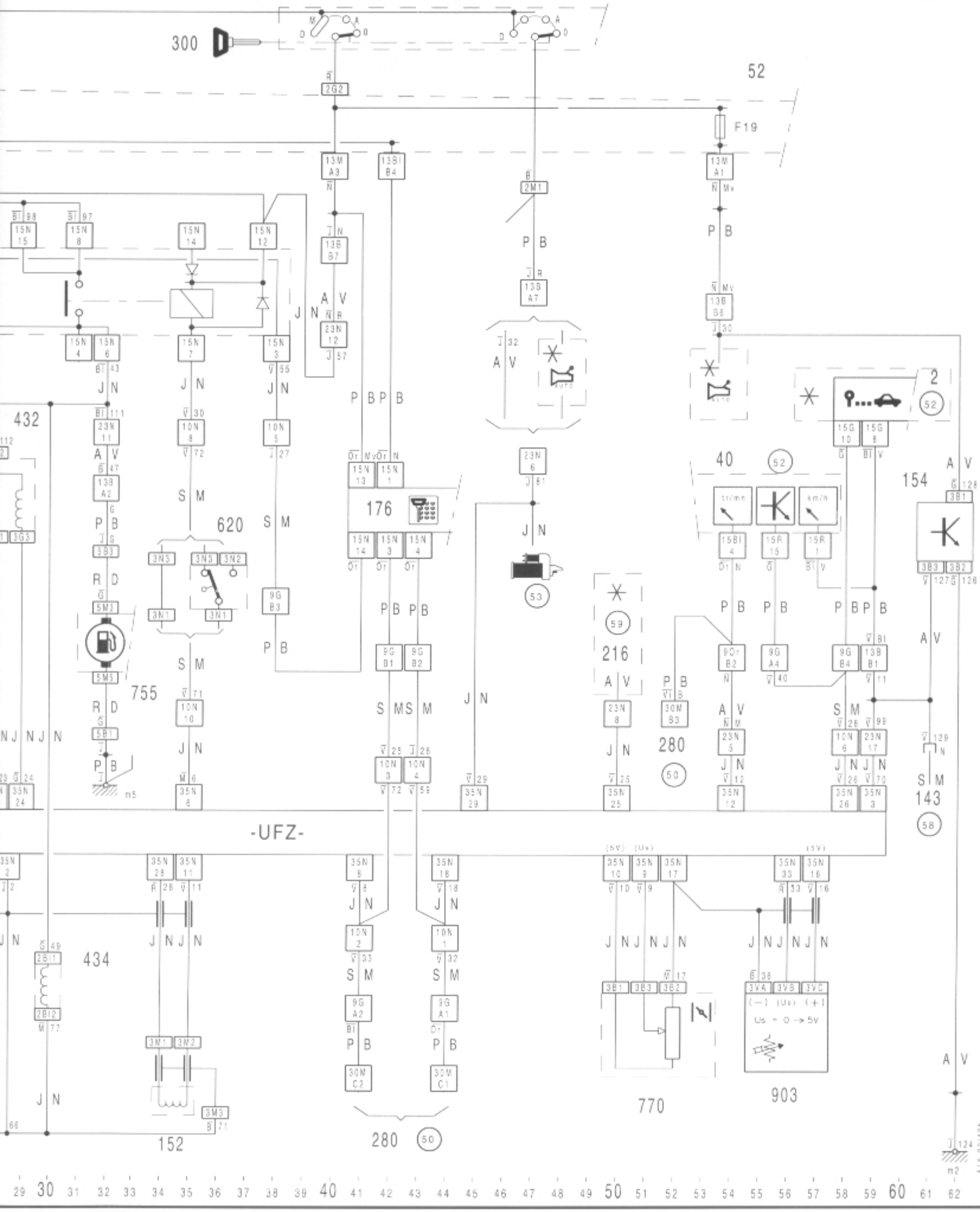
2BI1 2BI2 434

150 151

515-02/40b

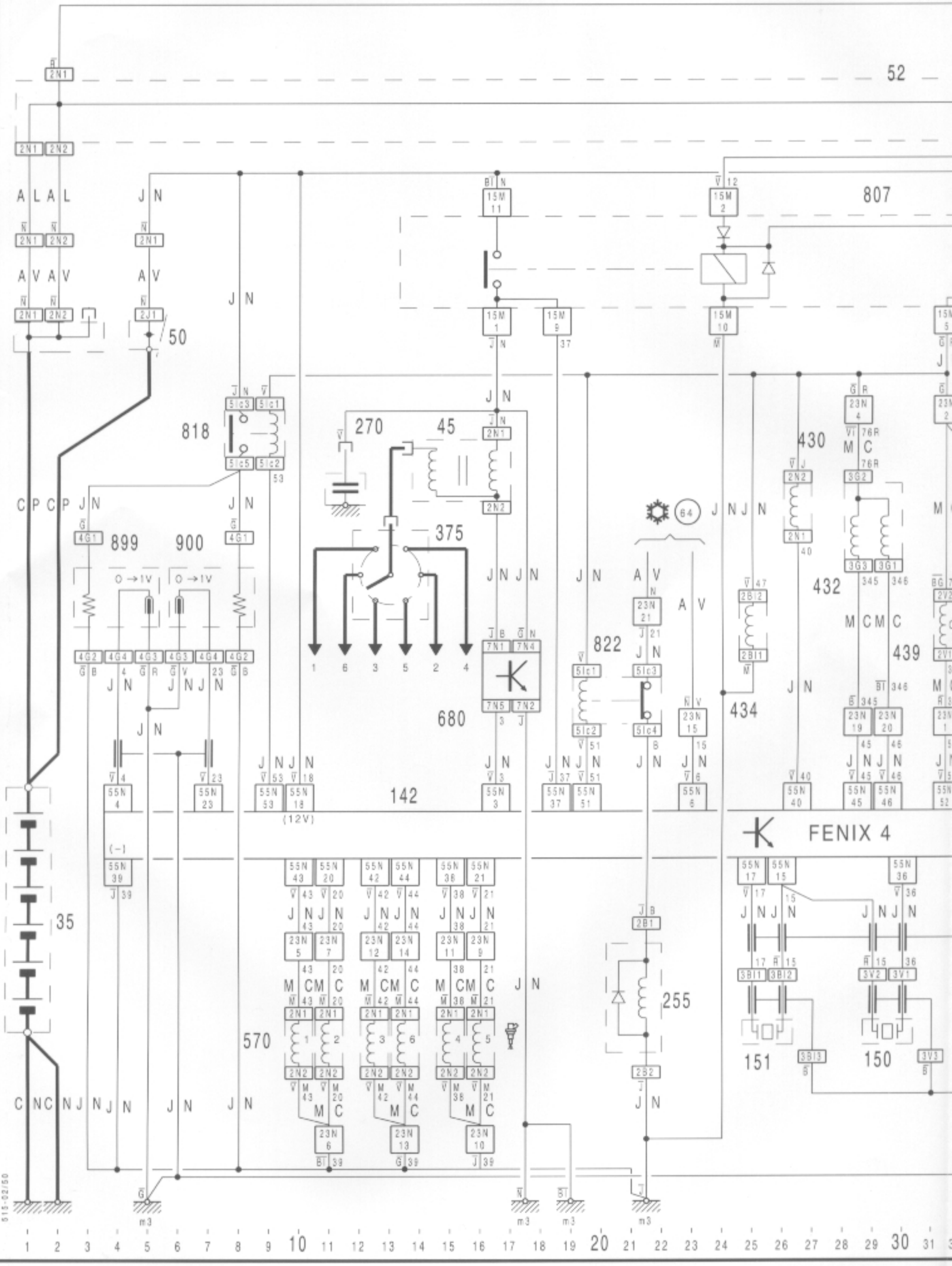
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

www.WorkshopManuals.co.uk



29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

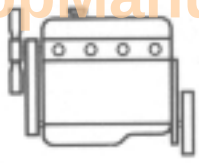
www.WorkshopManuals.co.uk

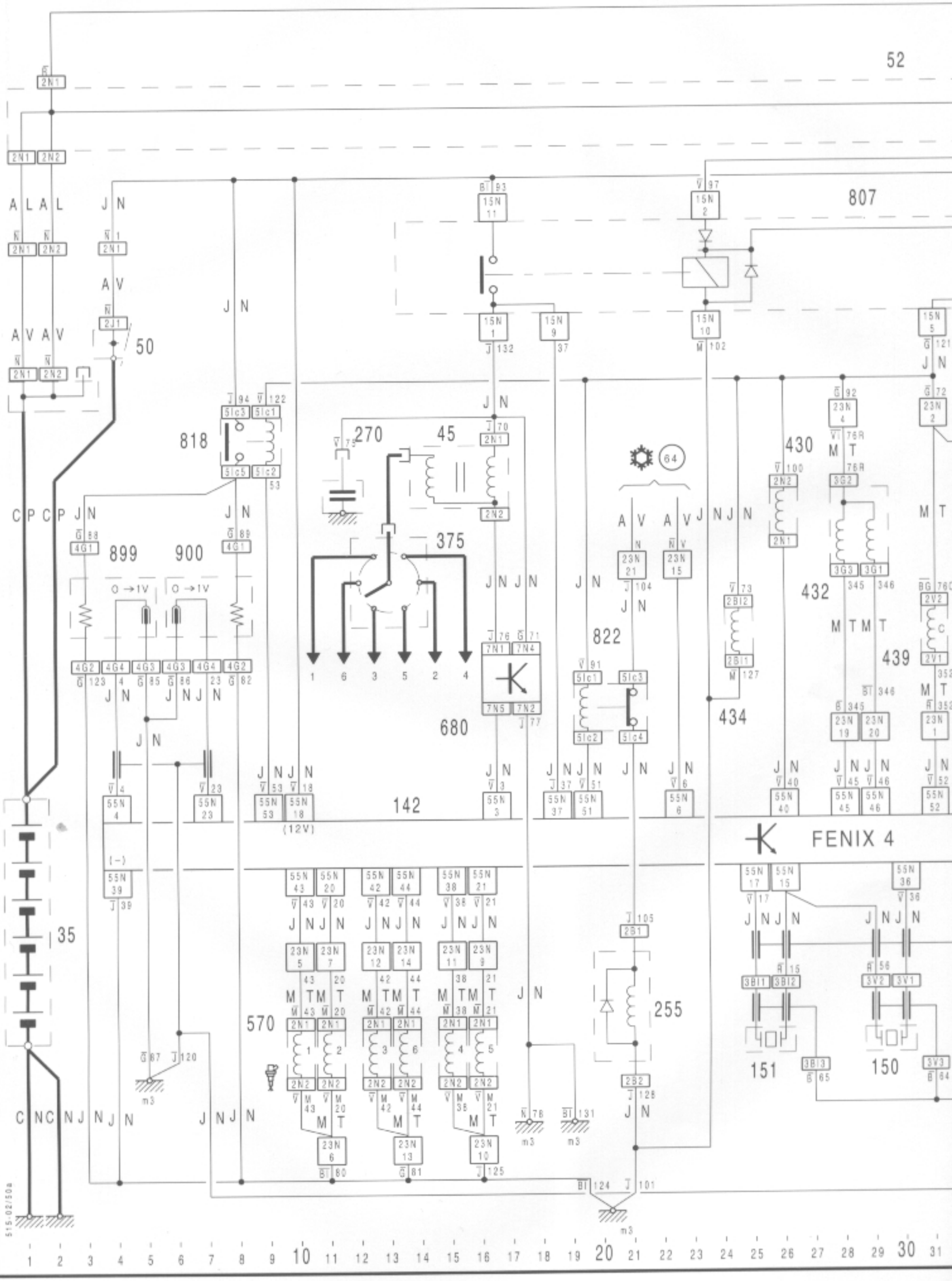


www.WorkshopManuals.co.uk

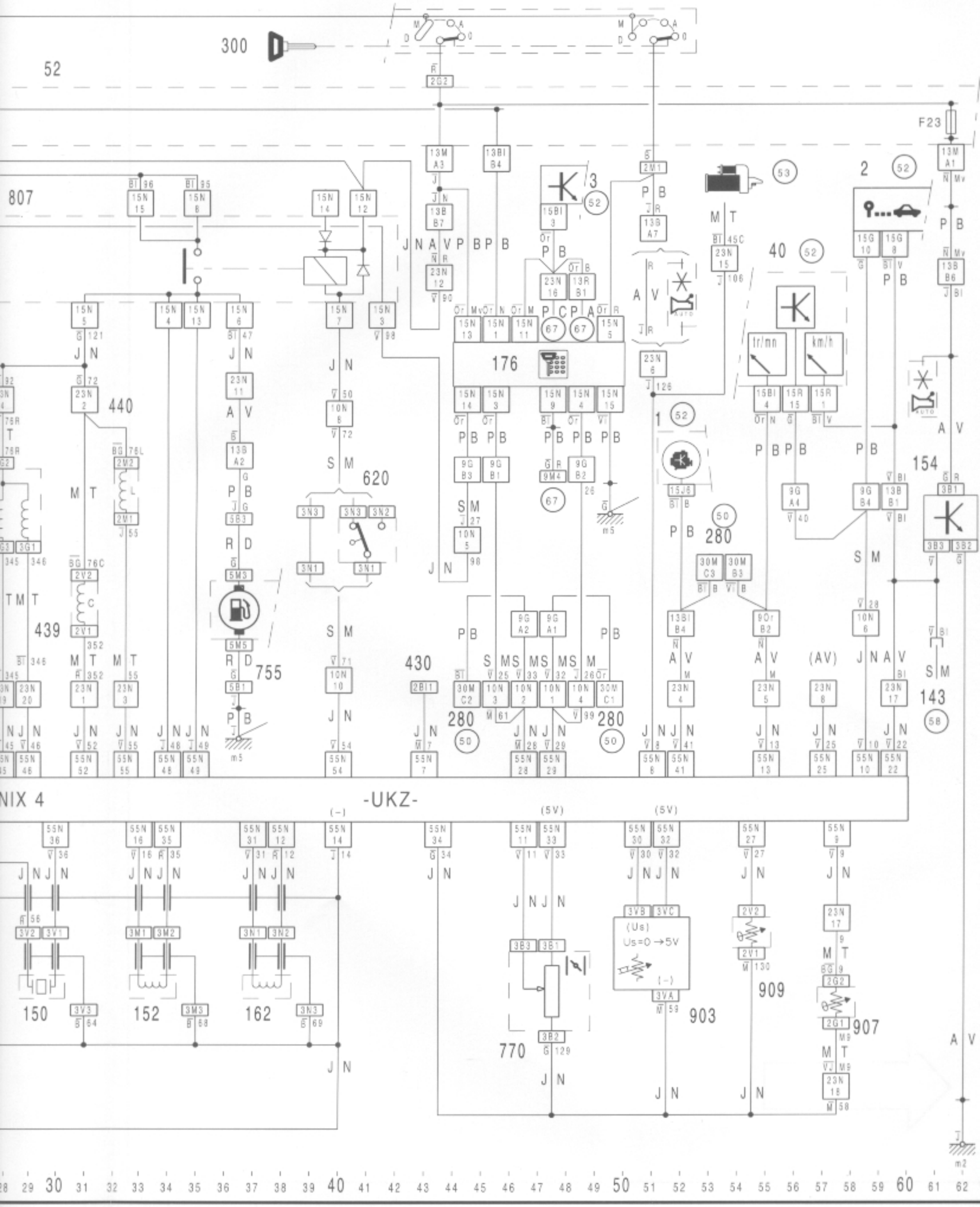
300 52 807 176 755 439 440 150 152 162 770 903 909 907 280 280 280 (430) 154 -UKZ- NIX 4

www.WorkshopManuals.co.uk

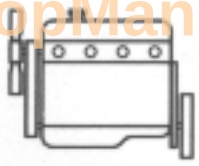




www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



52

807

SH

F31

A L A L

J N

P B

A V A V

50

818

270

45

375

680

142

(12V)

C P C P J N

899

900

0 → 1V

J N J N

822

64

430

432

439

434

FENIX 4

35

570

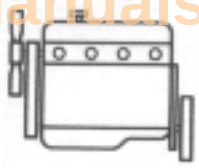
255

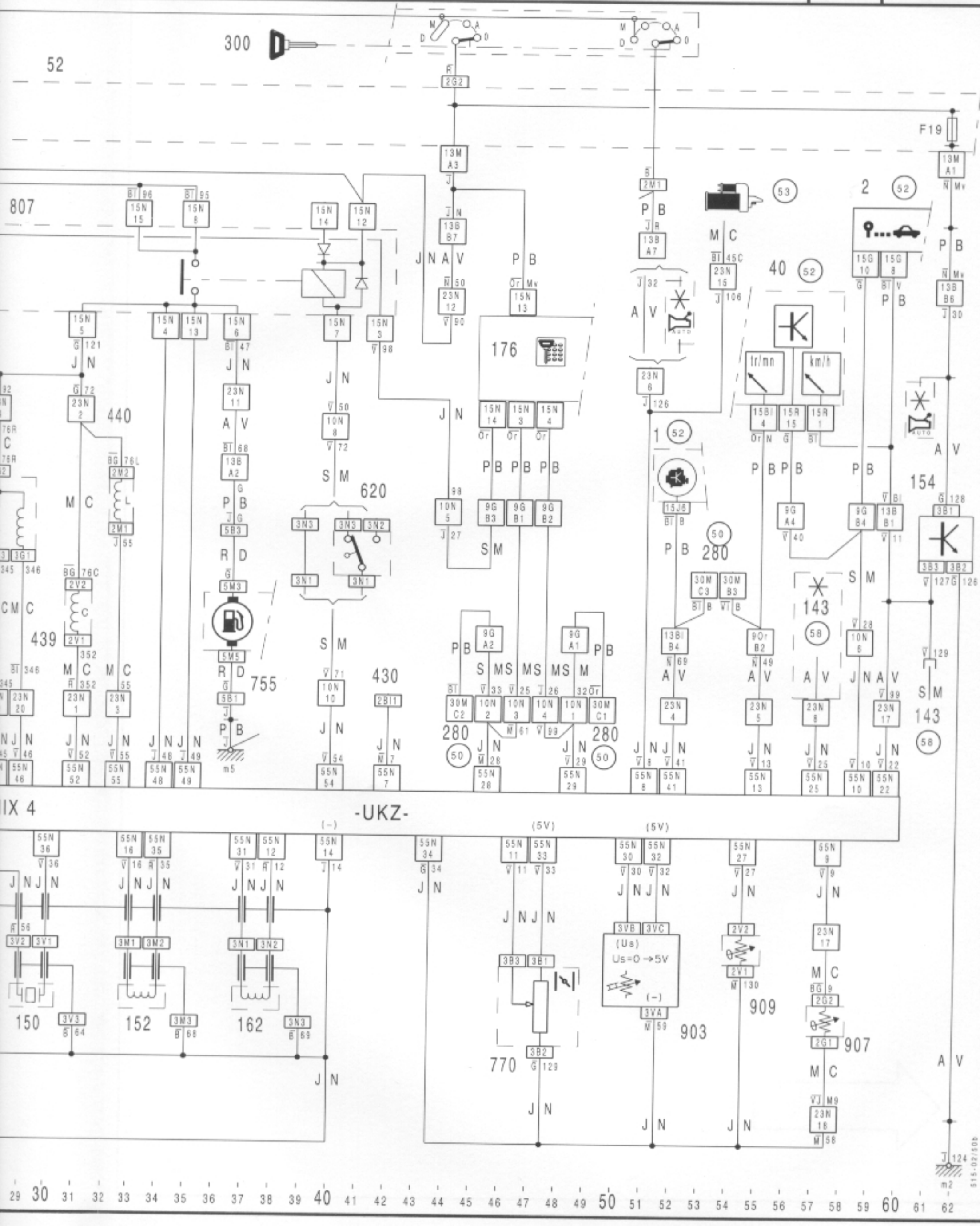
151

150

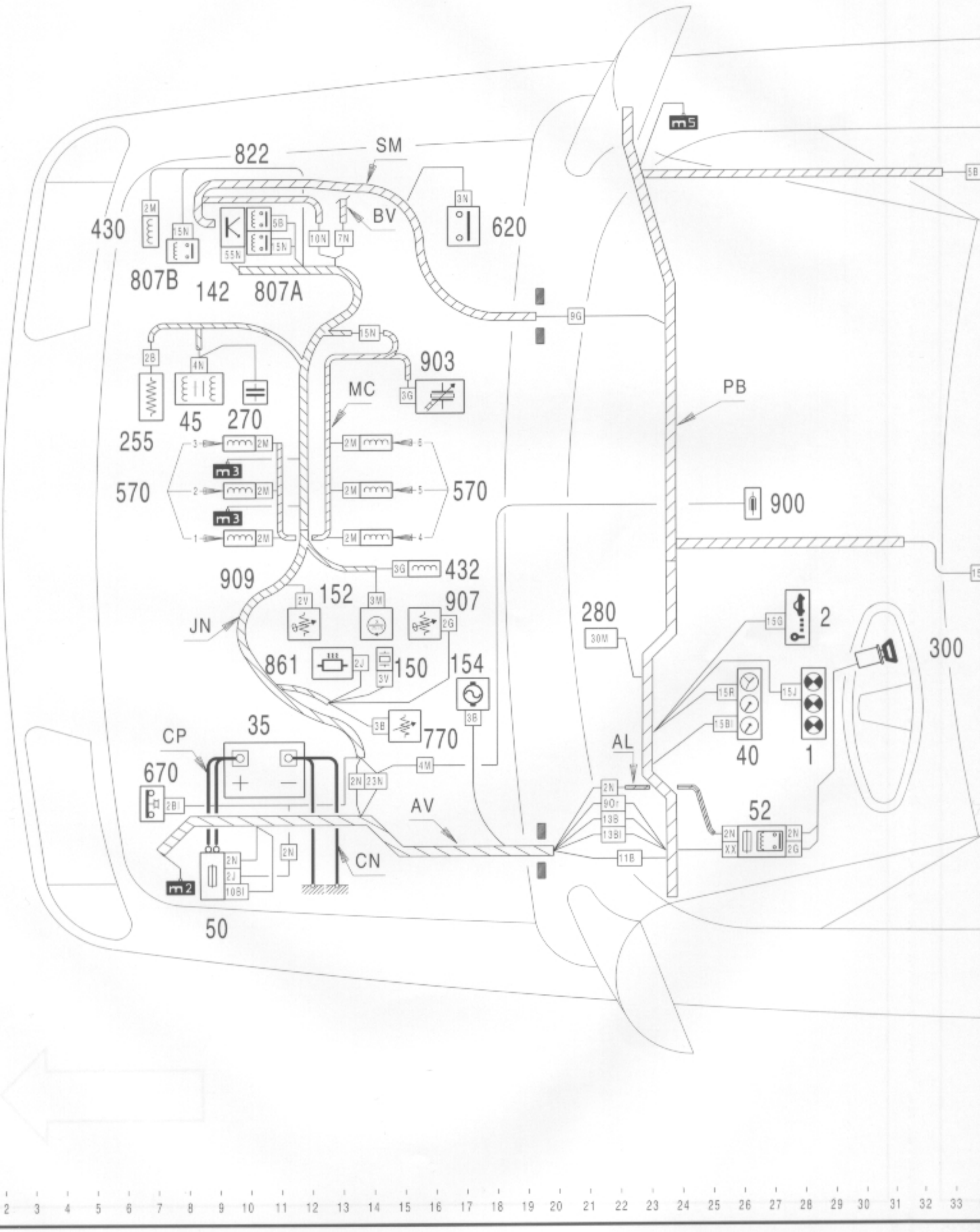
J N J N J N

www.WorkshopManuals.co.uk

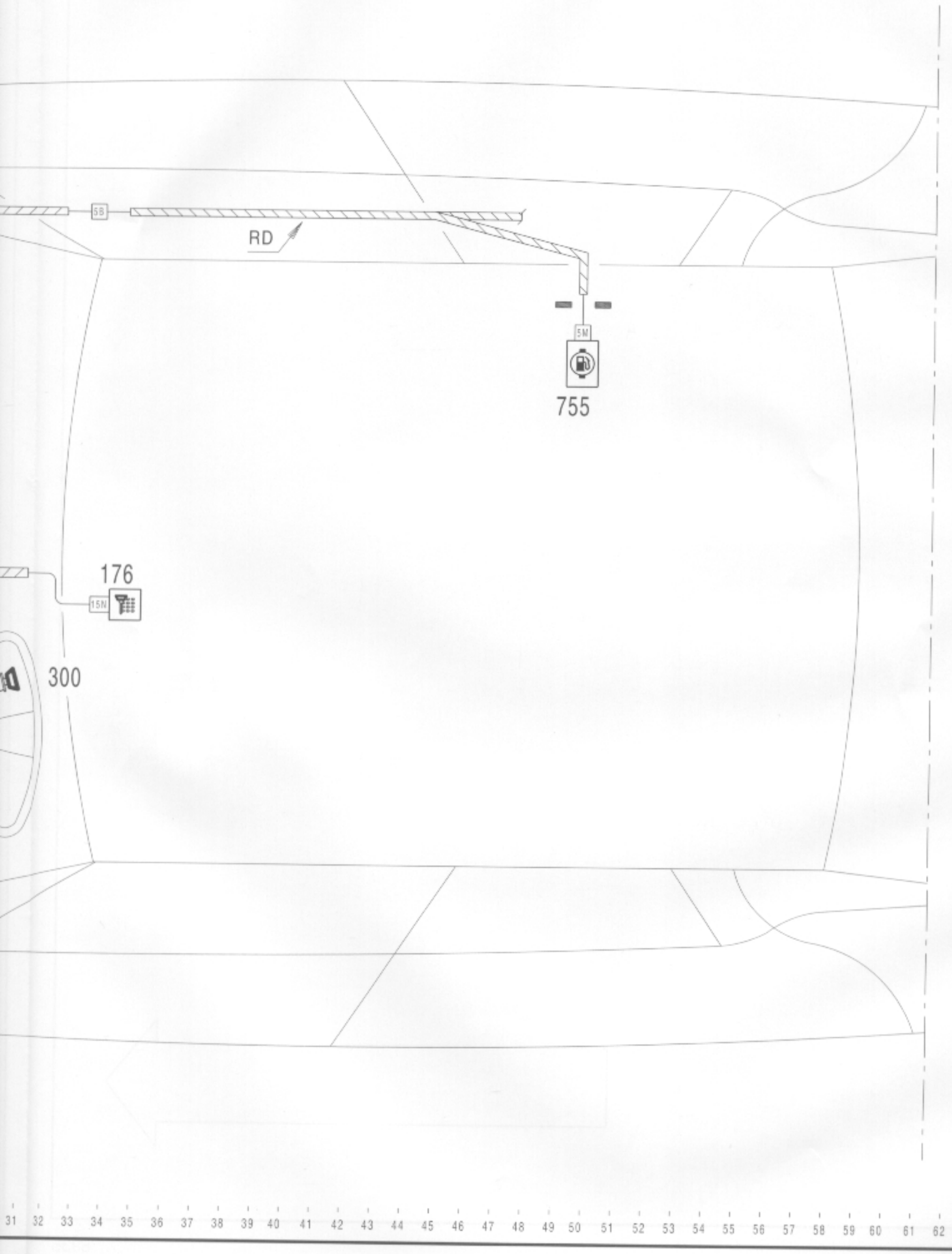




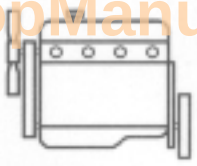
www.WorkshopManuals.co.uk

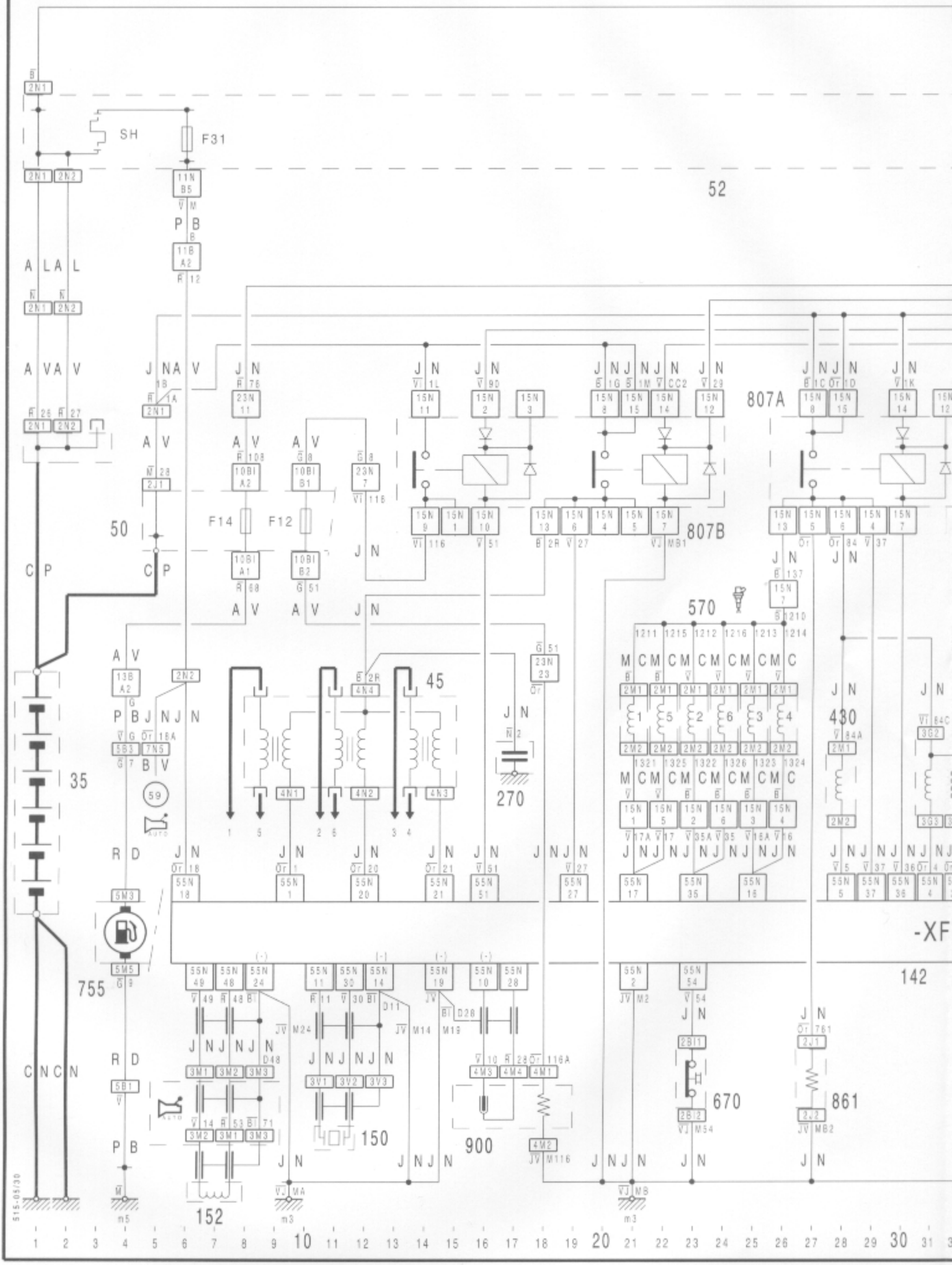


www.WorkshopManuals.co.uk

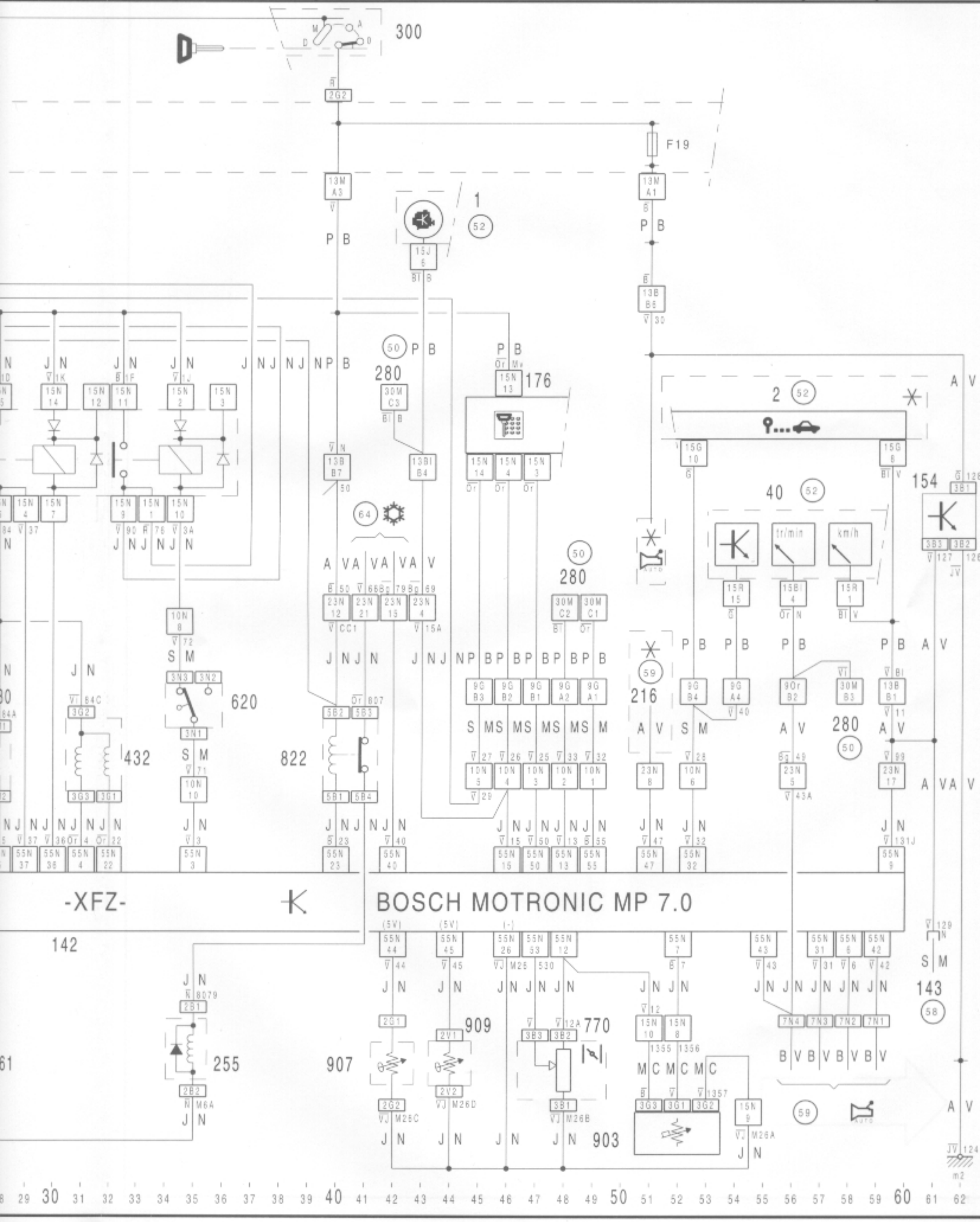


www.WorkshopManuals.co.uk

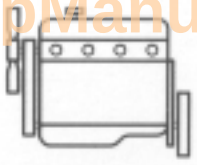


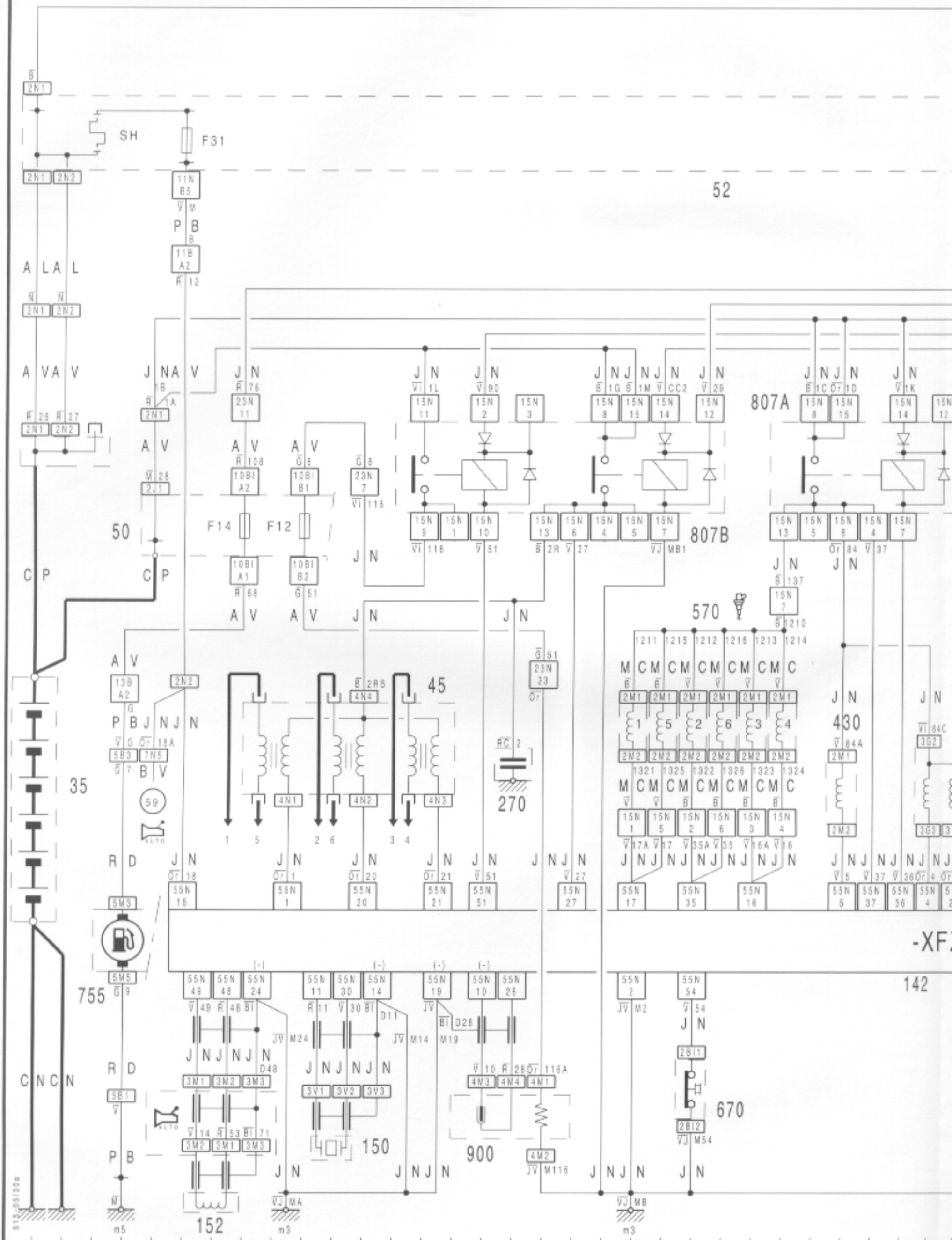


www.WorkshopManuals.co.uk

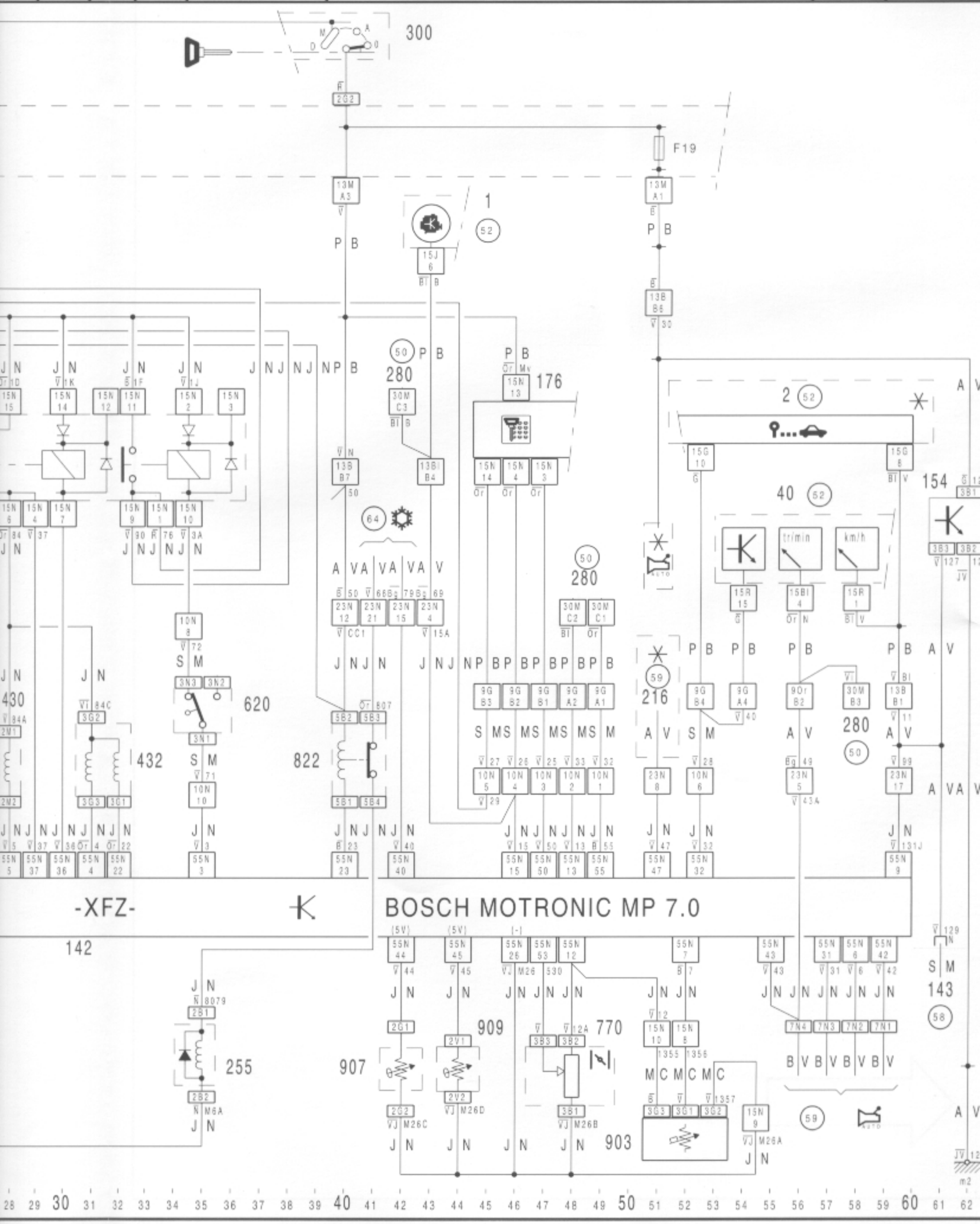


www.WorkshopManuals.co.uk

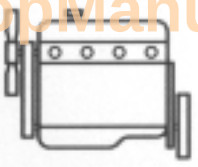


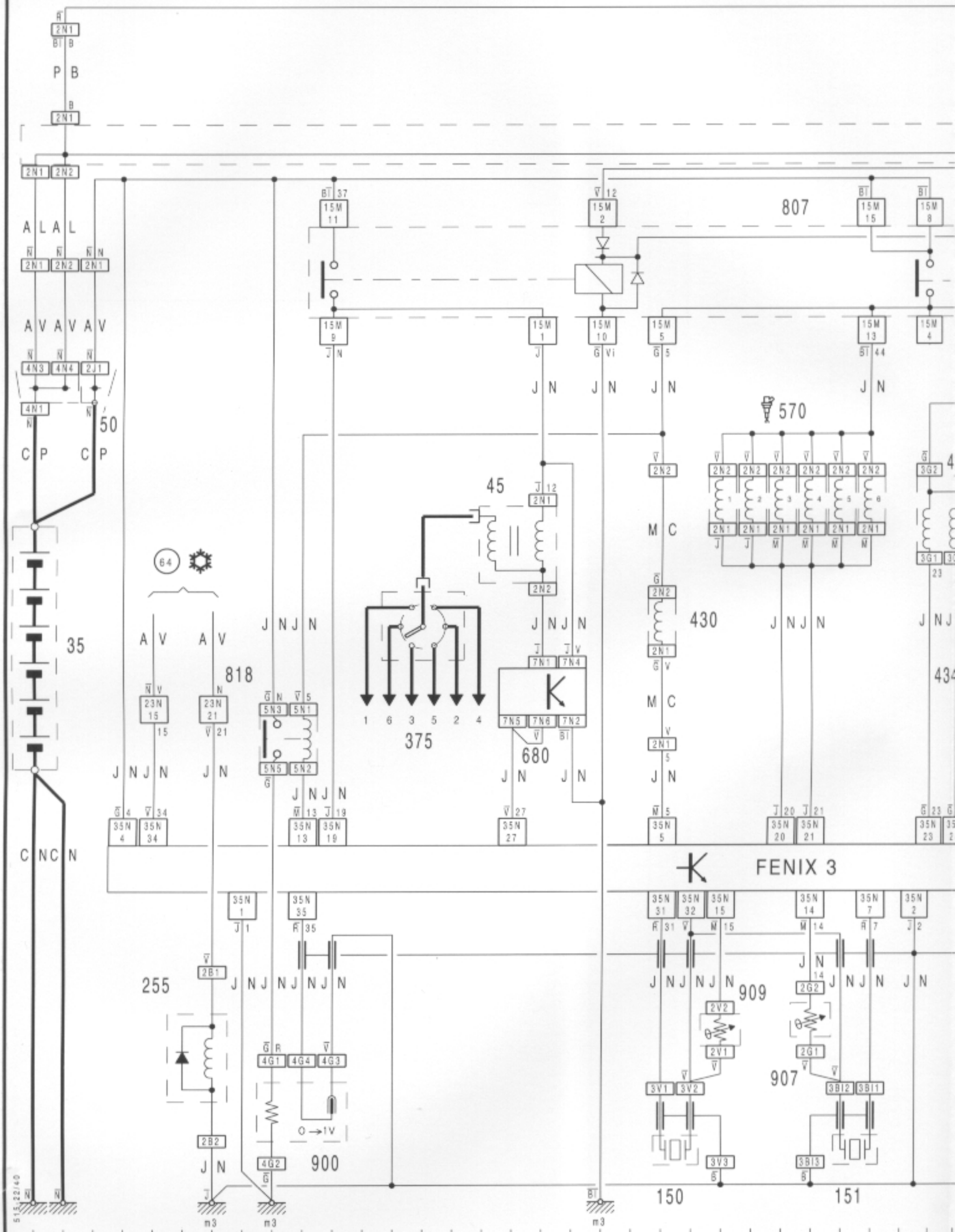


www.WorkshopManuals.co.uk

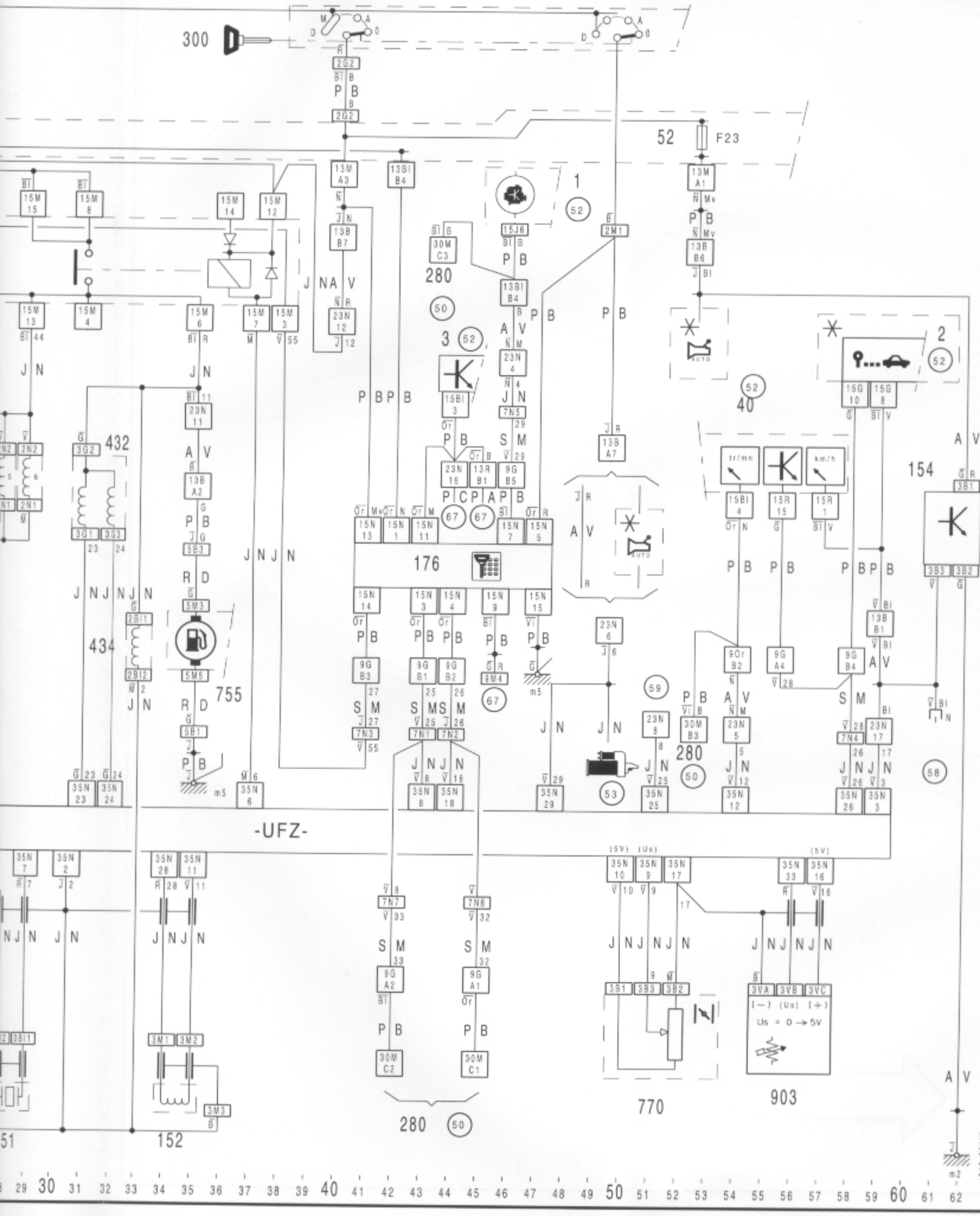


www.WorkshopManuals.co.uk

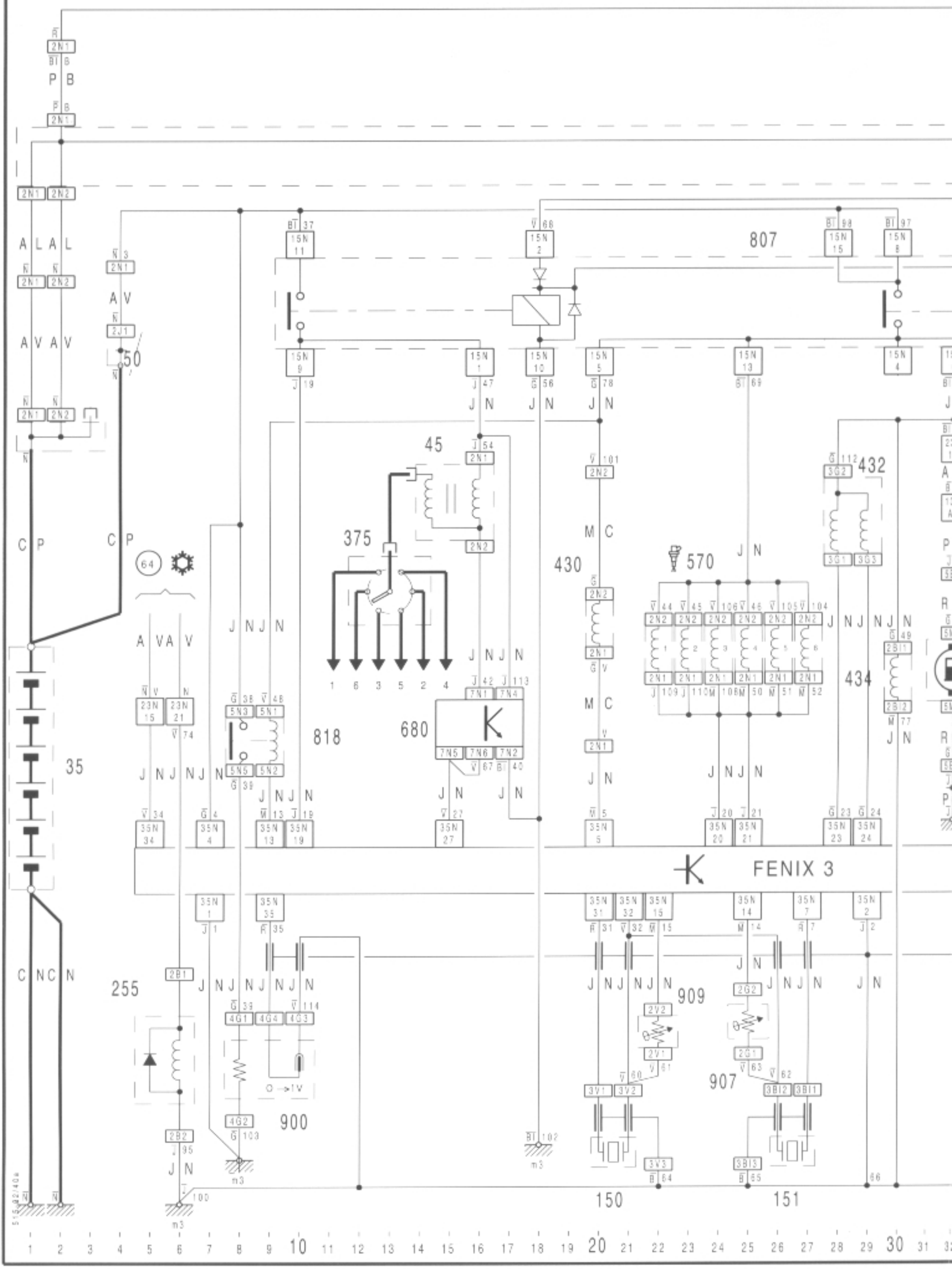




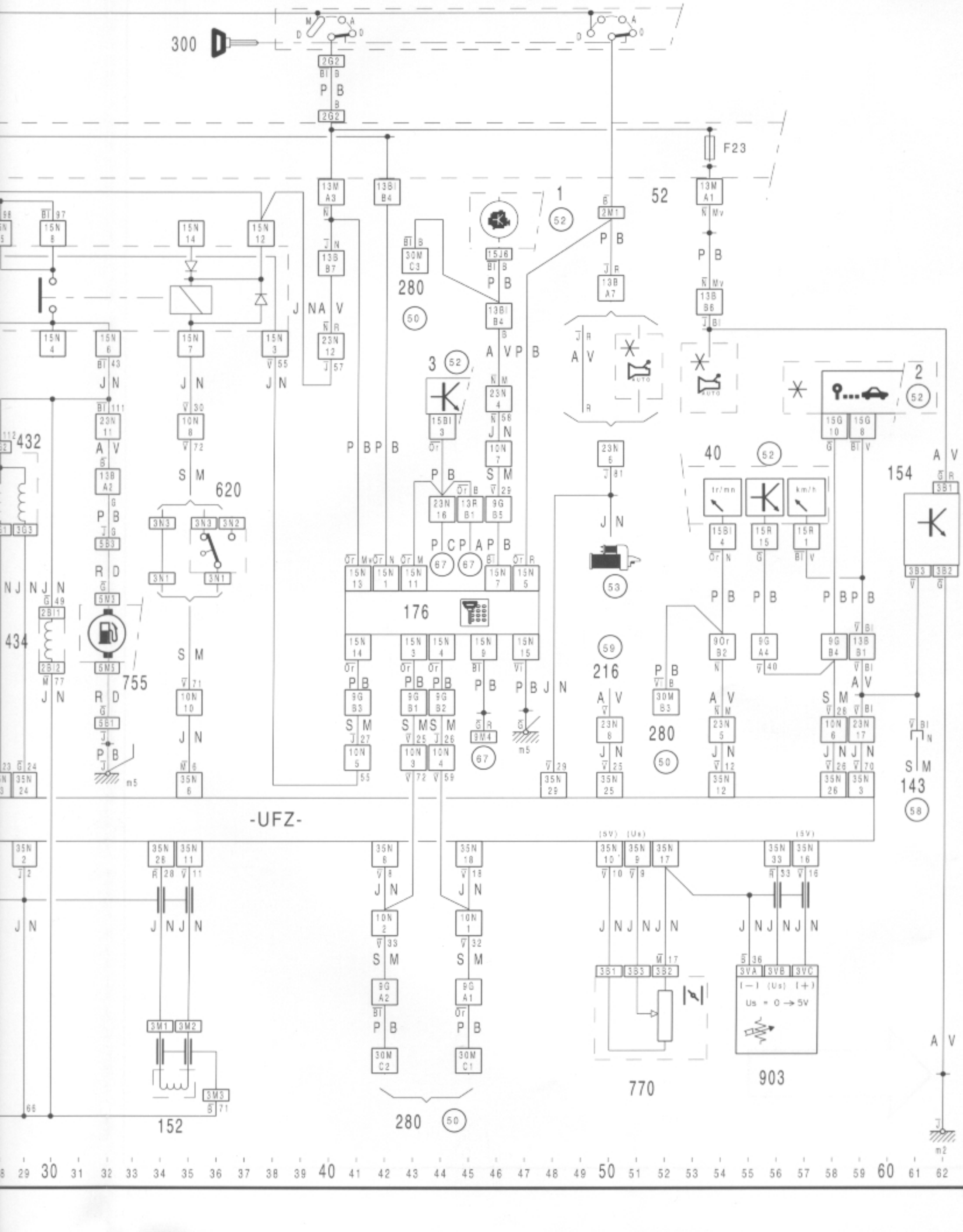
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

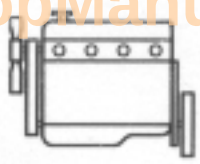


www.WorkshopManuals.co.uk



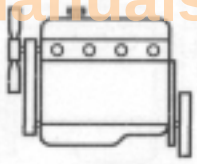
29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

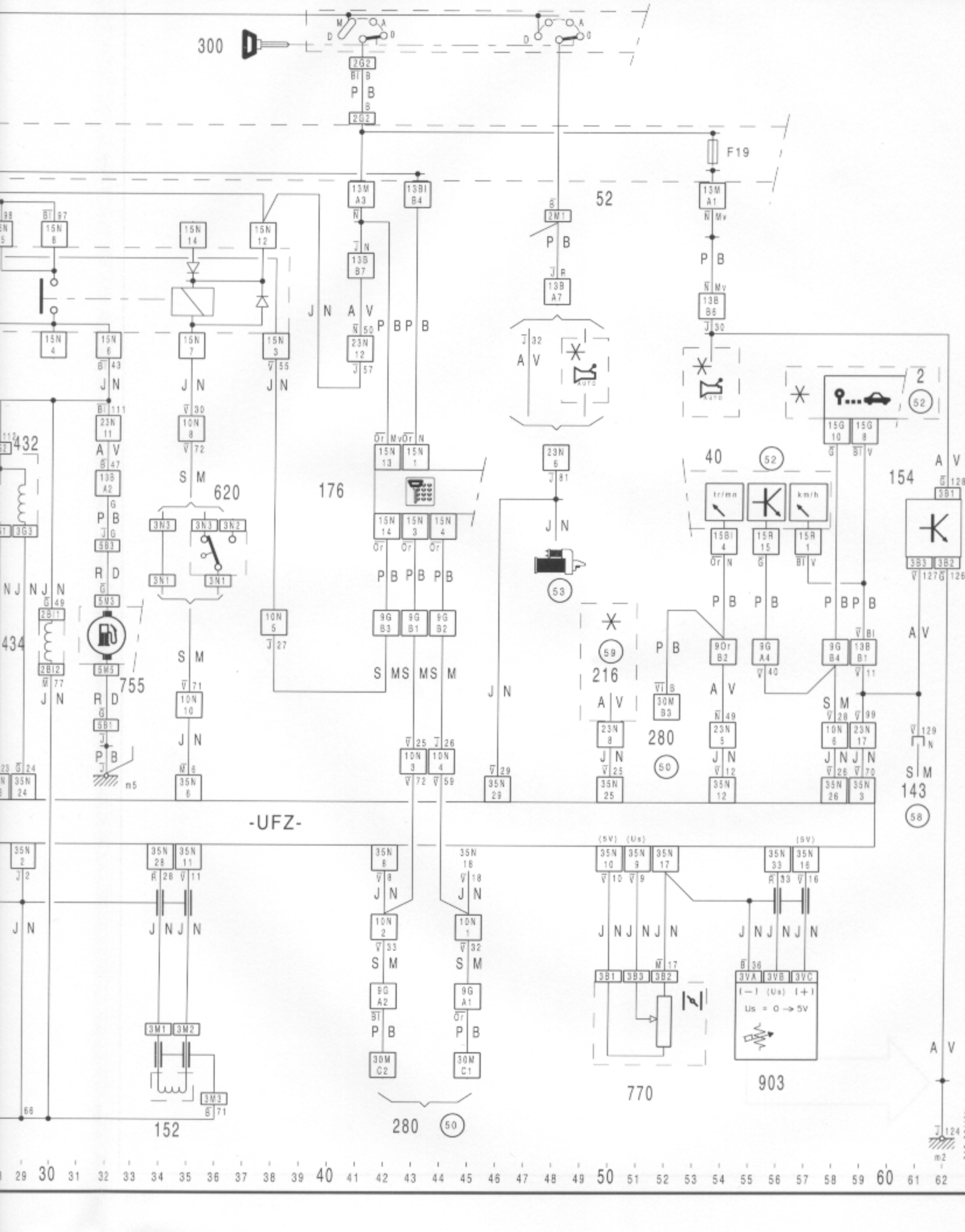
www.WorkshopManuals.co.uk



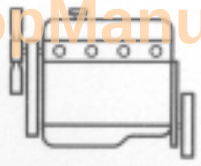
FENIX 3

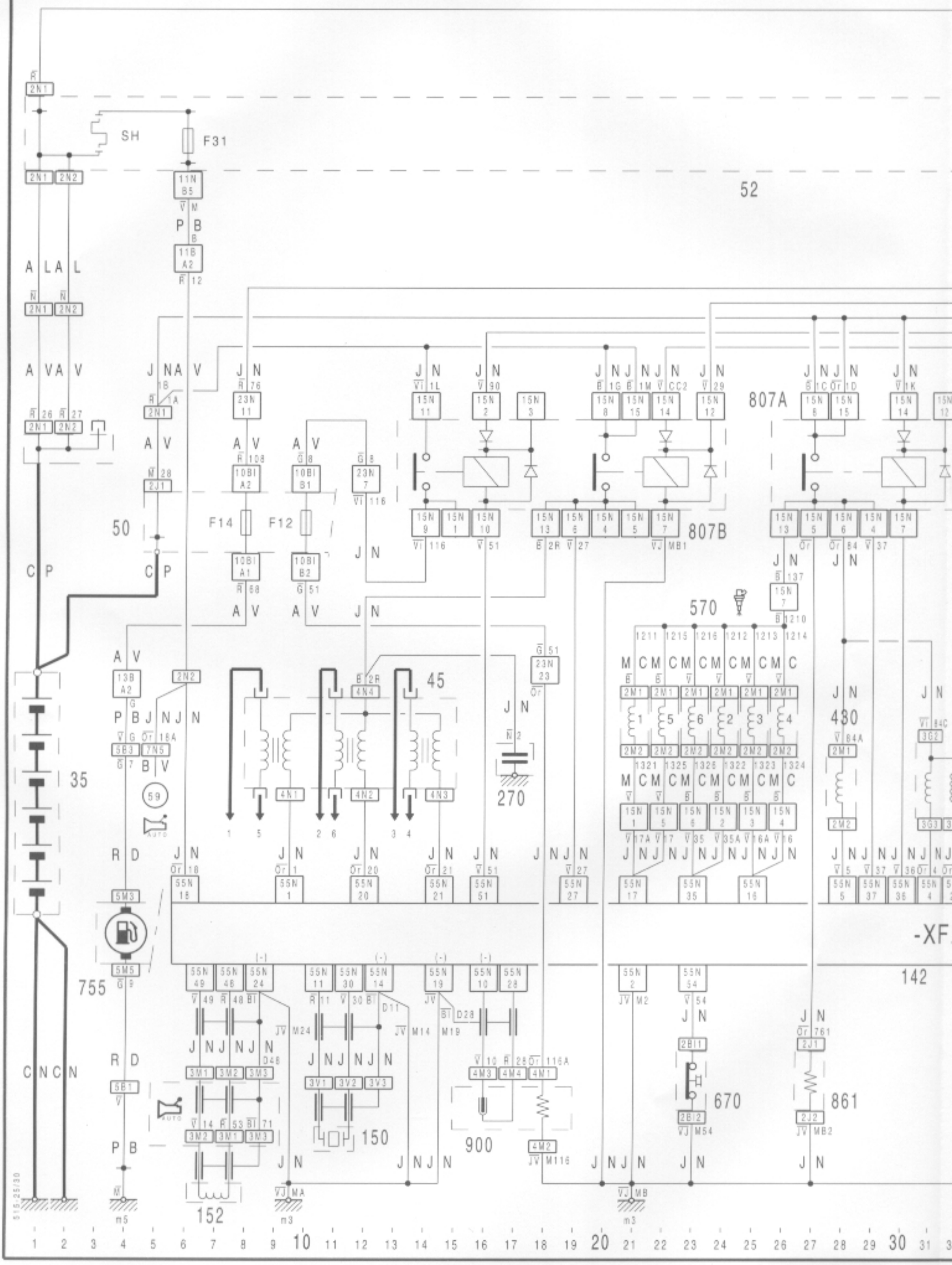
www.WorkshopManuals.co.uk



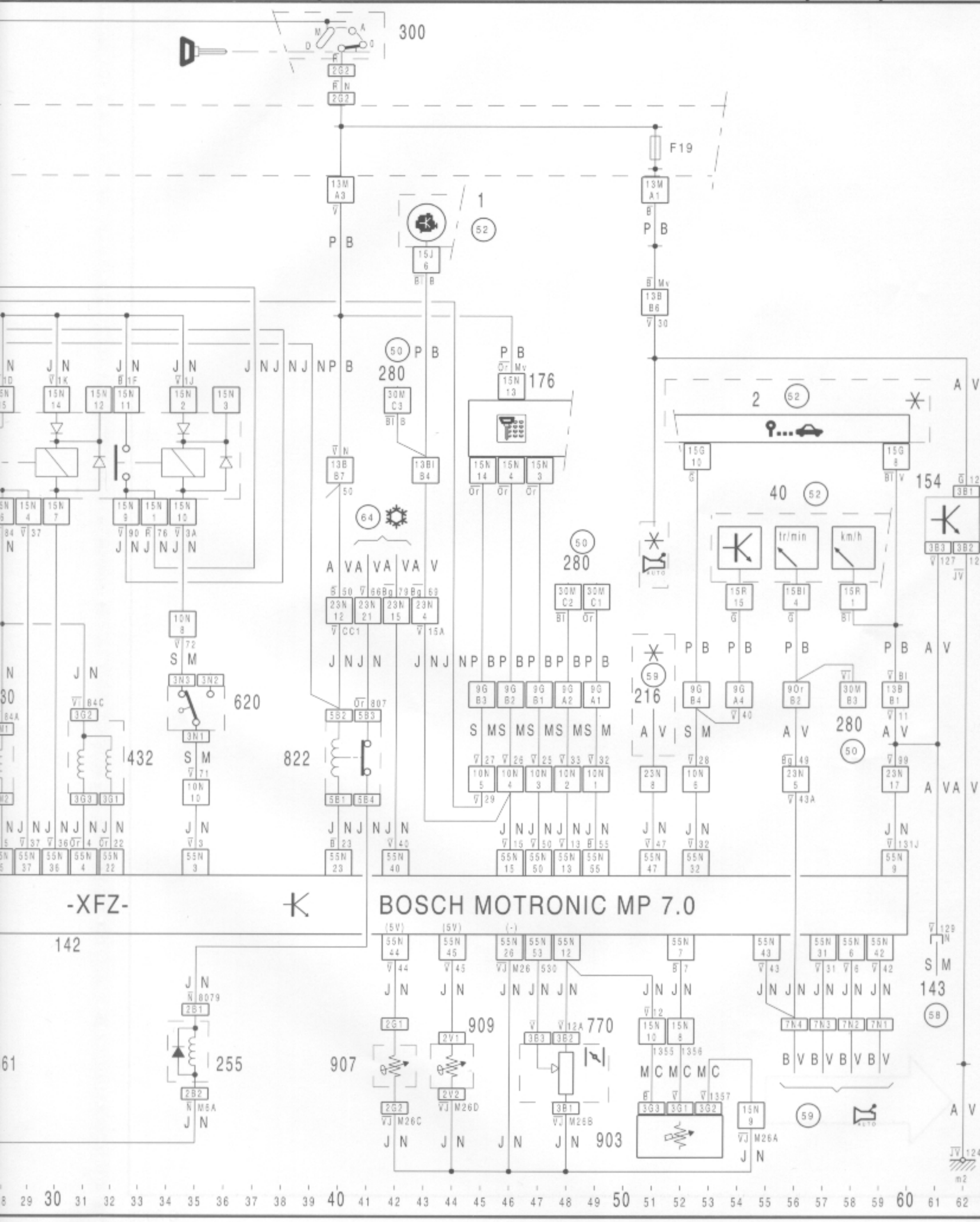

300
M
A
D
D
2G2
BI B
P B
B
2G2
F19
13M A3
13BI B4
52
2M1
P B
13M A1
N Mv
P B
N Mv
13B B6
J 30
13B A7
J 32
A V
AUTO
AUTO
2
52
15G 10
15G 8
G
BT V
40
52
154
A V
G 128
3B1
tr/mn
km/h
15BI 4
15R 15
15R 1
Or N
G
BT V
3B3 3B2
V 127 G 126
P B
P B
P B P B
V BI
A V
15N 14
15N 3
15N 4
Or Or Or
P B P B P B
9G B3
9G B1
9G B2
S MS MS M
9Or B2
9G A4
V 40
9G B4
13B B1
V 11
A V
S M
V 28 V 99
10N 6
23N 17
J N J N
V 26 V 70
35N 26
35N 3
S M
V 129 N
143
58
15N 13
15N 1
Or Mv Or N
23N 6
J 81
J N
53
J N
176
620
3N3
3N3 3N2
3N1
3N1
S M
V 71
10N 10
J N
N 6
35N 6
10N 5
J 27
V 25 J 26
10N 3
10N 4
V 72 V 59
J N
V 29
35N 29
59
216
A V
23N 8
J N
V 25
35N 25
P B
VI 8
30M B3
280
50
15N 4
15N 6
15N 7
15N 3
15N 12
15N 14
15N 11
BT 43
J N
BI 111
23N 11
A V
B 47
13B A2
G
P B
J G
5B3
R D
G
5M3
5M5
755
R D
G
5B1
J
P B
J
m5
J N
V 30
10N 8
V 72
S M
J N
V 55
J N
J 57
23N 12
N 50
P B P B
15N 15N 15N
15N 15N 15N
15N 15N 15N

www.WorkshopManuals.co.uk

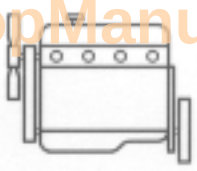




www.WorkshopManuals.co.uk

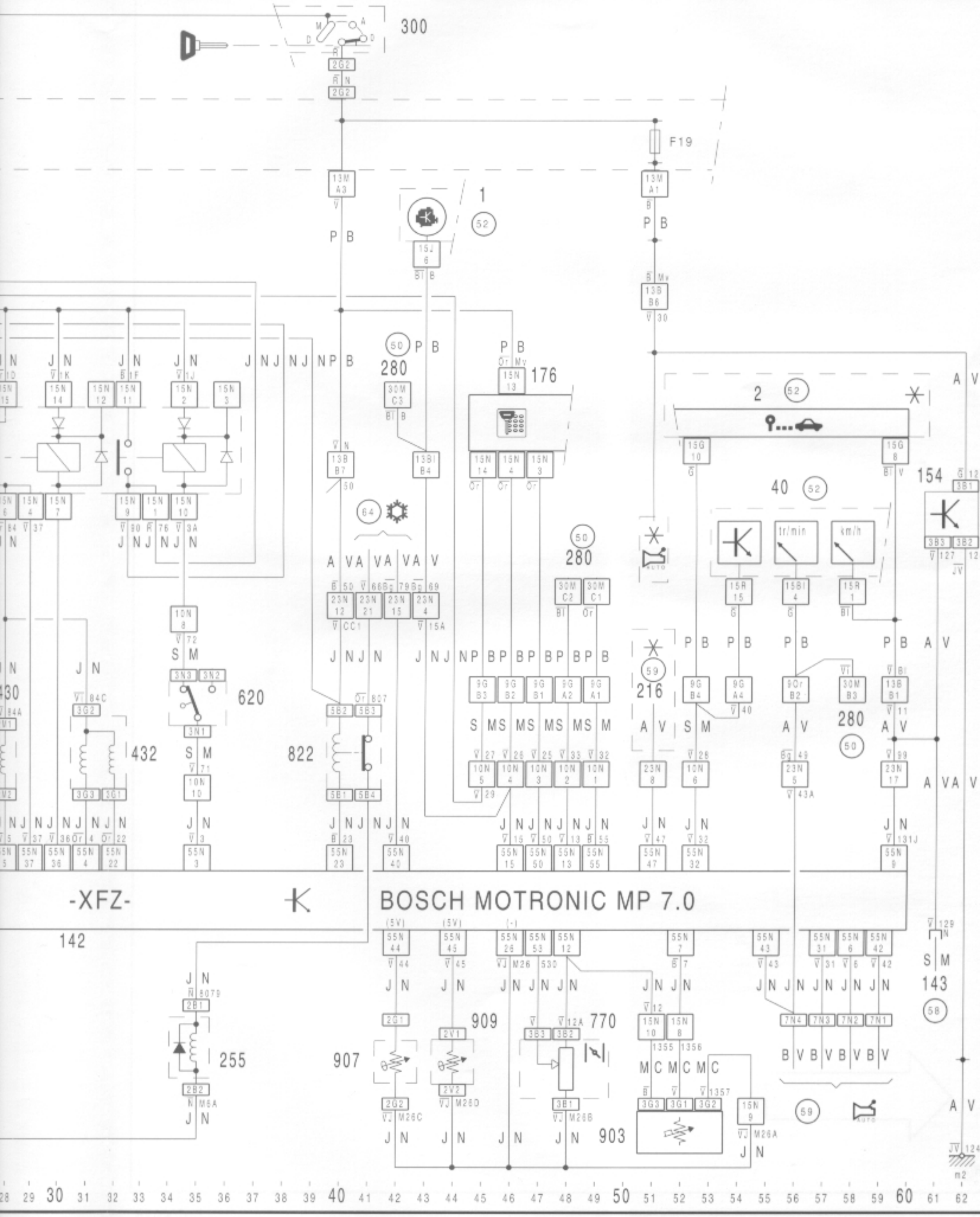


www.WorkshopManuals.co.uk

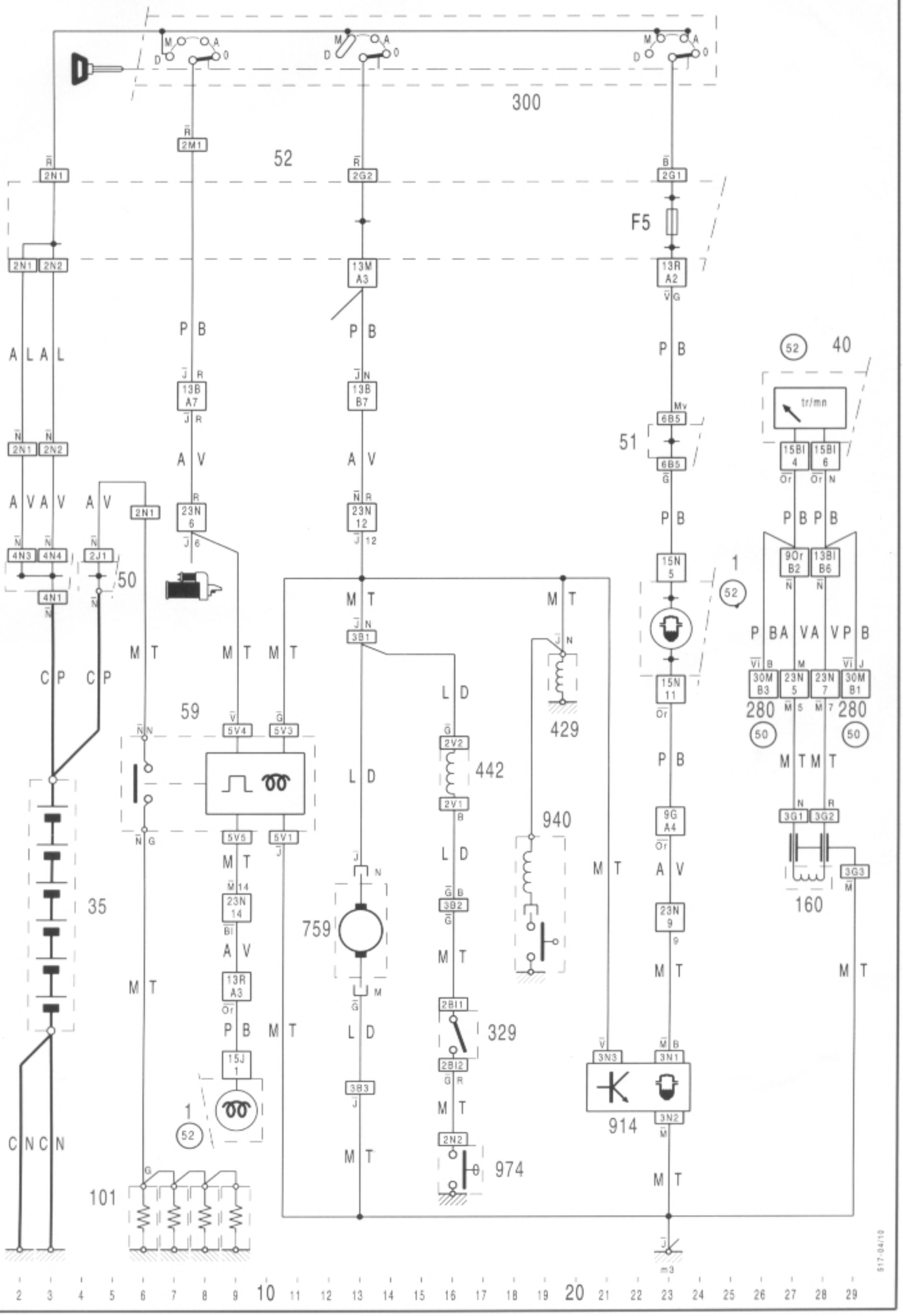


SH F31 F14 F12 F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F13 F15 F16 F17 F18 F19 F20 F21 F22 F23 F24 F25 F26 F27 F28 F29 F30 F32 F33 F34 F35 F36 F37 F38 F39 F40 F41 F42 F43 F44 F45 F46 F47 F48 F49 F50 F51 F52 F53 F54 F55 F56 F57 F58 F59 F60 F61 F62 F63 F64 F65 F66 F67 F68 F69 F70 F71 F72 F73 F74 F75 F76 F77 F78 F79 F80 F81 F82 F83 F84 F85 F86 F87 F88 F89 F90 F91 F92 F93 F94 F95 F96 F97 F98 F99 F100 F101 F102 F103 F104 F105 F106 F107 F108 F109 F110 F111 F112 F113 F114 F115 F116 F117 F118 F119 F120 F121 F122 F123 F124 F125 F126 F127 F128 F129 F130 F131 F132 F133 F134 F135 F136 F137 F138 F139 F140 F141 F142 F143 F144 F145 F146 F147 F148 F149 F150 F151 F152 F153 F154 F155 F156 F157 F158 F159 F160 F161 F162 F163 F164 F165 F166 F167 F168 F169 F170 F171 F172 F173 F174 F175 F176 F177 F178 F179 F180 F181 F182 F183 F184 F185 F186 F187 F188 F189 F190 F191 F192 F193 F194 F195 F196 F197 F198 F199 F200 F201 F202 F203 F204 F205 F206 F207 F208 F209 F210 F211 F212 F213 F214 F215 F216 F217 F218 F219 F220 F221 F222 F223 F224 F225 F226 F227 F228 F229 F230 F231 F232 F233 F234 F235 F236 F237 F238 F239 F240 F241 F242 F243 F244 F245 F246 F247 F248 F249 F250 F251 F252 F253 F254 F255 F256 F257 F258 F259 F260 F261 F262 F263 F264 F265 F266 F267 F268 F269 F270 F271 F272 F273 F274 F275 F276 F277 F278 F279 F280 F281 F282 F283 F284 F285 F286 F287 F288 F289 F290 F291 F292 F293 F294 F295 F296 F297 F298 F299 F300 F301 F302 F303 F304 F305 F306 F307 F308 F309 F310 F311 F312 F313 F314 F315 F316 F317 F318 F319 F320 F321 F322 F323 F324 F325 F326 F327 F328 F329 F330 F331 F332 F333 F334 F335 F336 F337 F338 F339 F340 F341 F342 F343 F344 F345 F346 F347 F348 F349 F350 F351 F352 F353 F354 F355 F356 F357 F358 F359 F360 F361 F362 F363 F364 F365 F366 F367 F368 F369 F370 F371 F372 F373 F374 F375 F376 F377 F378 F379 F380 F381 F382 F383 F384 F385 F386 F387 F388 F389 F390 F391 F392 F393 F394 F395 F396 F397 F398 F399 F400 F401 F402 F403 F404 F405 F406 F407 F408 F409 F410 F411 F412 F413 F414 F415 F416 F417 F418 F419 F420 F421 F422 F423 F424 F425 F426 F427 F428 F429 F430 F431 F432 F433 F434 F435 F436 F437 F438 F439 F440 F441 F442 F443 F444 F445 F446 F447 F448 F449 F450 F451 F452 F453 F454 F455 F456 F457 F458 F459 F460 F461 F462 F463 F464 F465 F466 F467 F468 F469 F470 F471 F472 F473 F474 F475 F476 F477 F478 F479 F480 F481 F482 F483 F484 F485 F486 F487 F488 F489 F490 F491 F492 F493 F494 F495 F496 F497 F498 F499 F500 F501 F502 F503 F504 F505 F506 F507 F508 F509 F510 F511 F512 F513 F514 F515 F516 F517 F518 F519 F520 F521 F522 F523 F524 F525 F526 F527 F528 F529 F530 F531 F532 F533 F534 F535 F536 F537 F538 F539 F540 F541 F542 F543 F544 F545 F546 F547 F548 F549 F550 F551 F552 F553 F554 F555 F556 F557 F558 F559 F560 F561 F562 F563 F564 F565 F566 F567 F568 F569 F570 F571 F572 F573 F574 F575 F576 F577 F578 F579 F580 F581 F582 F583 F584 F585 F586 F587 F588 F589 F590 F591 F592 F593 F594 F595 F596 F597 F598 F599 F600 F601 F602 F603 F604 F605 F606 F607 F608 F609 F610 F611 F612 F613 F614 F615 F616 F617 F618 F619 F620 F621 F622 F623 F624 F625 F626 F627 F628 F629 F630 F631 F632 F633 F634 F635 F636 F637 F638 F639 F640 F641 F642 F643 F644 F645 F646 F647 F648 F649 F650 F651 F652 F653 F654 F655 F656 F657 F658 F659 F660 F661 F662 F663 F664 F665 F666 F667 F668 F669 F670 F671 F672 F673 F674 F675 F676 F677 F678 F679 F680 F681 F682 F683 F684 F685 F686 F687 F688 F689 F690 F691 F692 F693 F694 F695 F696 F697 F698 F699 F700 F701 F702 F703 F704 F705 F706 F707 F708 F709 F710 F711 F712 F713 F714 F715 F716 F717 F718 F719 F720 F721 F722 F723 F724 F725 F726 F727 F728 F729 F730 F731 F732 F733 F734 F735 F736 F737 F738 F739 F740 F741 F742 F743 F744 F745 F746 F747 F748 F749 F750 F751 F752 F753 F754 F755 F756 F757 F758 F759 F760 F761 F762 F763 F764 F765 F766 F767 F768 F769 F770 F771 F772 F773 F774 F775 F776 F777 F778 F779 F780 F781 F782 F783 F784 F785 F786 F787 F788 F789 F790 F791 F792 F793 F794 F795 F796 F797 F798 F799 F800 F801 F802 F803 F804 F805 F806 F807 F808 F809 F810 F811 F812 F813 F814 F815 F816 F817 F818 F819 F820 F821 F822 F823 F824 F825 F826 F827 F828 F829 F830 F831 F832 F833 F834 F835 F836 F837 F838 F839 F840 F841 F842 F843 F844 F845 F846 F847 F848 F849 F850 F851 F852 F853 F854 F855 F856 F857 F858 F859 F860 F861 F862 F863 F864 F865 F866 F867 F868 F869 F870 F871 F872 F873 F874 F875 F876 F877 F878 F879 F880 F881 F882 F883 F884 F885 F886 F887 F888 F889 F890 F891 F892 F893 F894 F895 F896 F897 F898 F899 F900 F901 F902 F903 F904 F905 F906 F907 F908 F909 F910 F911 F912 F913 F914 F915 F916 F917 F918 F919 F920 F921 F922 F923 F924 F925 F926 F927 F928 F929 F930 F931 F932 F933 F934 F935 F936 F937 F938 F939 F940 F941 F942 F943 F944 F945 F946 F947 F948 F949 F950 F951 F952 F953 F954 F955 F956 F957 F958 F959 F960 F961 F962 F963 F964 F965 F966 F967 F968 F969 F970 F971 F972 F973 F974 F975 F976 F977 F978 F979 F980 F981 F982 F983 F984 F985 F986 F987 F988 F989 F990 F991 F992 F993 F994 F995 F996 F997 F998 F999 F1000 F1001 F1002 F1003 F1004 F1005 F1006 F1007 F1008 F1009 F1010 F1011 F1012 F1013 F1014 F1015 F1016 F1017 F1018 F1019 F1020 F1021 F1022 F1023 F1024 F1025 F1026 F1027 F1028 F1029 F1030 F1031 F1032 F1033 F1034 F1035 F1036 F1037 F1038 F1039 F1040 F1041 F1042 F1043 F1044 F1045 F1046 F1047 F1048 F1049 F1050 F1051 F1052 F1053 F1054 F1055 F1056 F1057 F1058 F1059 F1060 F1061 F1062 F1063 F1064 F1065 F1066 F1067 F1068 F1069 F1070 F1071 F1072 F1073 F1074 F1075 F1076 F1077 F1078 F1079 F1080 F1081 F1082 F1083 F1084 F1085 F1086 F1087 F1088 F1089 F1090 F1091 F1092 F1093 F1094 F1095 F1096 F1097 F1098 F1099 F1100 F1101 F1102 F1103 F1104 F1105 F1106 F1107 F1108 F1109 F1110 F1111 F1112 F1113 F1114 F1115 F1116 F1117 F1118 F1119 F1120 F1121 F1122 F1123 F1124 F1125 F1126 F1127 F1128 F1129 F1130 F1131 F1132 F1133 F1134 F1135 F1136 F1137 F1138 F1139 F1140 F1141 F1142 F1143 F1144 F1145 F1146 F1147 F1148 F1149 F1150 F1151 F1152 F1153 F1154 F1155 F1156 F1157 F1158 F1159 F1160 F1161 F1162 F1163 F1164 F1165 F1166 F1167 F1168 F1169 F1170 F1171 F1172 F1173 F1174 F1175 F1176 F1177 F1178 F1179 F1180 F1181 F1182 F1183 F1184 F1185 F1186 F1187 F1188 F1189 F1190 F1191 F1192 F1193 F1194 F1195 F1196 F1197 F1198 F1199 F1200 F1201 F1202 F1203 F1204 F1205 F1206 F1207 F1208 F1209 F1210 F1211 F1212 F1213 F1214 F1215 F1216 F1217 F1218 F1219 F1220 F1221 F1222 F1223 F1224 F1225 F1226 F1227 F1228 F1229 F1230 F1231 F1232 F1233 F1234 F1235 F1236 F1237 F1238 F1239 F1240 F1241 F1242 F1243 F1244 F1245 F1246 F1247 F1248 F1249 F1250 F1251 F1252 F1253 F1254 F1255 F1256 F1257 F1258 F1259 F1260 F1261 F1262 F1263 F1264 F1265 F1266 F1267 F1268 F1269 F1270 F1271 F1272 F1273 F1274 F1275 F1276 F1277 F1278 F1279 F1280 F1281 F1282 F1283 F1284 F1285 F1286 F1287 F1288 F1289 F1290 F1291 F1292 F1293 F1294 F1295 F1296 F1297 F1298 F1299 F1300 F1301 F1302 F1303 F1304 F1305 F1306 F1307 F1308 F1309 F1310 F1311 F1312 F1313 F1314 F1315 F1316 F1317 F1318 F1319 F1320 F1321 F1322 F1323 F1324 F1325 F1326 F1327 F1328 F1329 F1330 F1331 F1332 F1333 F1334 F1335 F1336 F1337 F1338 F1339 F1340 F1341 F1342 F1343 F1344 F1345 F1346 F1347 F1348 F1349 F1350 F1351 F1352 F1353 F1354 F1355 F1356 F1357 F1358 F1359 F1360 F1361 F1362 F1363 F1364 F1365 F1366 F1367 F1368 F1369 F1370 F1371 F1372 F1373 F1374 F1375 F1376 F1377 F1378 F1379 F1380 F1381 F1382 F1383 F1384 F1385 F1386 F1387 F1388 F1389 F1390 F1391 F1392 F1393 F1394 F1395 F1396 F1397 F1398 F1399 F1400 F1401 F1402 F1403 F1404 F1405 F1406 F1407 F1408 F1409 F1410 F1411 F1412 F1413 F1414 F1415 F1416 F1417 F1418 F1419 F1420 F1421 F1422 F1423 F1424 F1425 F1426 F1427 F1428 F1429 F1430 F1431 F1432 F1433 F1434 F1435 F1436 F1437 F1438 F1439 F1440 F1441 F1442 F1443 F1444 F1445 F1446 F1447 F1448 F1449 F1450 F1451 F1452 F1453 F1454 F1455 F1456 F1457 F1458 F1459 F1460 F1461 F1462 F1463 F1464 F1465 F1466 F1467 F1468 F1469 F1470 F1471 F1472 F1473 F1474 F1475 F1476 F1477 F1478 F1479 F1480 F1481 F1482 F1483 F1484 F1485 F1486 F1487 F1488 F1489 F1490 F1491 F1492 F1493 F1494 F1495 F1496 F1497 F1498 F1499 F1500 F1501 F1502 F1503 F1504 F1505 F1506 F1507 F1508 F1509 F1510 F1511 F1512 F1513 F1514 F1515 F1516 F1517 F1518 F1519 F1520 F1521 F1522 F1523 F1524 F1525 F1526 F1527 F1528 F1529 F1530 F1531 F1532 F1533 F1534 F1535 F1536 F1537 F1538 F1539 F1540 F1541 F1542 F1543 F1544 F1545 F1546 F1547 F1548 F1549 F1550 F1551 F1552 F1553 F1554 F1555 F1556 F1557 F1558 F1559 F1560 F1561 F1562 F1563 F1564 F1565 F1566 F1567 F1568 F1569 F1570 F1571 F1572 F1573 F1574 F1575 F1576 F1577 F1578 F1579 F1580 F1581 F1582 F1583 F1584 F1585 F1586 F1587 F1588 F1589 F1590 F1591 F1592 F1593 F1594 F1595 F1596 F1597 F1598 F1599 F1600 F1601 F1602 F1603 F1604 F1605 F1606 F1607 F1608 F1609 F1610 F1611 F1612 F1613 F1614 F1615 F1616 F1617 F1618 F1619 F1620 F1621 F1622 F1623 F1624 F1625 F1626 F1627 F1628 F1629 F1630 F1631 F1632 F1633 F1634 F1635 F1636 F1637 F1638 F1639 F1640 F1641 F1642 F1643 F1644 F1645 F1646 F1647 F1648 F1649 F1650 F1651 F1652 F1653 F1654 F1655 F1656 F1657 F1658 F1659 F1660 F1661 F1662 F1663 F1664 F1665 F1666 F1667 F1668 F1669 F1670 F1671 F1672 F1673 F1674 F1675 F1676 F1677 F1678 F1679 F1680 F1681 F1682 F1683 F1684 F1685 F1686 F1687 F1688 F1689 F1690 F1691 F1692 F1693 F1694 F1695 F1696 F1697 F1698 F1699 F1700 F1701 F1702 F1703 F1704 F1705 F1706 F1707 F1708 F1709 F1710 F1711 F1712 F1713 F1714 F1715 F1716 F1717 F1718 F1719 F1720 F1721 F1722 F1723 F1724 F1725 F1726 F1727 F1728 F1729 F1730 F1731 F1732 F1733 F1734 F1735 F1736 F1737 F1738 F1739 F1740 F1741 F1742 F1743 F1744 F1745 F1746 F1747 F1748 F1749 F1750 F1751 F1752 F1753 F1754 F1755 F1756 F1757 F1758 F1759 F1760 F1761 F1762 F1763 F1764 F1765 F1766 F1767 F1768 F1769 F1770 F1771 F1772 F1773 F1774 F1775 F1776 F1777 F1778 F1779 F1780 F1781 F1782 F1783 F1784 F1785 F1786 F1787 F1788 F1789 F1790 F1791 F1792 F1793 F1794 F1795 F1796 F1797 F1798 F1799 F1800 F1801 F1802 F1803 F1804 F1805 F1806 F1807 F1808 F1809 F1810 F1811 F1812 F1813 F1814 F1815 F1816 F1817 F1818 F1819 F1820 F1821 F1822 F1823 F1824 F1825 F1826 F1827 F1828 F1829 F1830 F1831 F1832 F1833 F1834 F1835 F1836 F1837 F1838 F1839 F1840 F1841 F1842 F1843 F1844 F1845 F1846 F1847 F1848 F1849 F1850 F1851 F1852 F1853 F1854 F1855 F1856 F1857 F1858 F1859 F1860 F1861 F1862 F1863 F1864 F1865 F1866 F1867 F1868 F1869 F1870 F1871 F1872 F1873 F1874 F1875 F1876 F1877 F1878 F1879 F1880 F1881 F1882 F1883 F1884 F1885 F1886 F1887 F1888 F1889 F1890 F1891 F1892 F1893 F1894 F1895 F1896 F1897 F1898 F1899 F1900 F1901 F1902 F1903 F1904 F1905 F1906 F1907 F1908 F1909 F1910 F1911 F1912 F1913 F1914 F1915 F1916 F1917 F1918 F1919 F1920 F1921 F1922 F1923 F1924 F1925 F1926 F1927 F1928 F1929 F1930 F1931 F1932 F1933 F1934 F1935 F1936 F1937 F1938 F1939 F1940 F1941 F1942 F1943 F1944 F1945 F1946 F1947 F1948 F1949 F1950 F1951 F1952 F1953 F1954 F1955 F1956 F1957 F1958 F1959 F1960 F1961 F1962 F1963 F1964 F1965 F1966 F1967 F1968 F1969 F1970 F1971 F1972 F1973 F1974 F1975 F1976 F1977 F1978 F1979 F1980 F1981 F1982 F1983 F1984 F1985 F1986 F1987 F1988 F1989 F1990 F1991 F1992 F1993 F1994 F1995 F1996 F1997 F1998 F1999 F2000 F2001 F2002 F2003 F2004 F2005 F2006 F2007 F2008 F2009 F2010 F2011 F2012 F2013 F2014 F2015 F2016 F2017 F2018 F2019 F2020 F2021 F2022 F2023 F2024 F2025 F2026 F2027 F2028 F2029 F2030 F2031 F2032 F2033 F2034 F2035 F2036 F2037 F2038 F2039 F2040 F2041 F2042 F2043 F2044 F2045 F2046 F2047 F2048 F2049 F2050 F2051 F2052 F2053 F2054 F2055 F2056 F2057 F2058 F2059 F2060 F2061 F2062 F2063 F2064 F2065 F2066 F2067 F2068 F2069 F2070 F2071 F2072 F2073 F2074 F2075 F2076 F2077 F2078 F2079 F2080 F2081 F2082 F2083 F2084 F2085 F2086 F2087 F2088 F2089 F2090 F2091 F2092 F2093 F2094 F2095 F2096 F2097 F2098 F2099 F2100 F2101 F2102 F2103 F2104 F2105 F2106 F2107 F2108 F2109 F2110 F2111 F2112 F2113 F2114 F2115 F2116 F2117 F2118 F2119 F2120 F2121 F2122 F2123 F2124 F2125 F2126 F2127 F2128 F2129 F2130 F2131 F2132 F2133 F2134 F2135 F2136 F2137 F2138 F2139 F2140 F2141 F2142 F2143 F2144 F2145 F2146 F2147 F2148 F2149 F2150 F2151 F2152 F2153 F2154 F2155 F2156 F2157 F2158 F2159 F2160 F2161 F2162 F2163 F2164 F2165 F2166 F2167 F2168 F2169 F2170 F2171 F2172 F2173 F2174 F2175 F2176 F2177 F2178 F2179 F2180 F2181 F2182 F2183 F2184 F2185 F2186 F2187 F2188 F2189 F2190 F2191 F2192 F2193 F2194 F2195 F2196 F2197 F2198 F2199 F2200 F2201 F2202 F2203 F2204 F2205 F2206 F2207 F2208 F2209 F2210 F2211 F2212 F2213 F2214 F2215 F2216 F2217 F2218 F2219 F2220 F2221 F2222 F2223 F2224 F2225 F2226 F2227 F2228 F2229 F2230 F2231 F2232 F2233 F2234 F2235 F2236 F2237 F2238 F2239 F2240 F2241 F2242 F2243 F2244 F2245 F2246 F2247 F2248 F2249 F2250 F2251 F2252 F2253 F2254 F2255 F2256 F2257 F2258 F2259 F2260 F2261 F2262 F2263 F2264 F2265 F2266 F2267 F2268 F2269 F2270 F2271 F2272 F2273 F2274 F2275 F2276 F2277 F2278 F2279 F2280 F2281 F2282 F2283 F2284 F2285 F2286 F2287 F2288 F2289 F2290 F2291 F2292 F2293 F2294 F2295 F2296 F2297 F2298 F2299 F2300 F2301 F2302 F2303 F2304 F2305 F2306 F2307 F2308 F2309 F2310 F2311 F2312 F2313 F2314 F2315 F2316 F2317 F2318 F2319 F2320 F2321 F2322 F2323 F2324 F2325 F2326 F2327 F2328 F2329 F2330 F2331 F2332 F2333 F2334 F2335 F2336 F2337 F2338 F2339 F2340 F2341 F2342 F2343 F2344 F2345 F2346 F2347 F2348 F2349 F2350 F2351 F2352 F2353 F2354 F2355 F2356 F2357 F2358 F2359 F2360 F2361 F2362 F2363 F2364 F2365 F2366 F2367 F2368 F2369 F2370 F2371 F2372 F2373 F2374 F2375 F2376 F2377 F2378 F2379 F2380 F2381 F2382 F2383 F2384 F2385 F2386 F2387 F2388 F2389 F2390 F2391 F2392 F2393 F2394 F2395 F2396 F2397 F2398 F2399 F2400 F2401 F2402 F2403 F2404 F2405 F2406 F2407 F2408 F2409 F2410 F2411 F2412 F2413 F2414 F2415 F2416 F2417 F2418 F2419 F2420 F2421 F2422 F2423 F2424 F2425 F2426 F2427 F2428 F2429 F2430 F2431 F2432 F2433 F2434 F2435 F2436 F2437 F2438 F2439 F2440 F2441 F2442 F2443 F2444 F2445 F2446 F2447 F2448 F2449 F2450 F2451 F2452 F2453 F2454 F2455 F2456 F2457 F2458 F2459 F2460 F2461 F2462 F2463 F2464 F2465 F2466 F2467 F2468 F2469 F2470 F2471 F2472 F2473 F2474 F2475 F2476 F2477 F2478 F2479 F2480 F2481 F2482 F2483 F2484 F2485 F2486 F2487 F2488 F2489 F2490 F2491 F2492 F2493 F2494 F2495 F2496 F2497 F2498 F2499 F2500 F2501 F2502 F2503 F2504 F2505 F2506 F2507 F2508 F2509 F2510 F2511 F2512 F2513 F2514 F2515 F2516 F2517 F2518 F2519 F2520 F2521 F2522 F2523 F2524 F2525 F2526 F2527 F2528 F2529 F2530 F2531 F2532 F2533 F2534 F2535 F2536 F2537 F2538 F2539 F2540 F2541 F2542 F2543 F2544 F2545 F2546 F2547 F2548 F2549 F2550 F2551 F2552 F2553 F2554 F2555 F2556 F2557 F2558 F2559 F2560 F2561 F2562 F2563 F2564 F2565 F2566 F2567 F2568 F2569 F2570 F2571 F2572 F2573 F2574 F2575 F2576 F2577 F2578 F2579 F2580 F2581 F2582 F2583 F2584 F2585 F2586 F2587 F2588 F2589 F2590 F2591 F2592 F2593 F2594 F2595 F2596 F2597 F2598 F2599 F2600 F2601 F2602 F2603 F2604 F2605 F2606 F2607 F2608 F2609 F2610 F2611 F2612 F2613 F2614 F2615 F2616 F2617 F2618 F2619 F2620 F2621 F2622 F2623 F2624 F2625 F2626 F2627 F2628 F2629 F2630 F2631 F2632 F2633 F2634 F2635 F2636 F2637 F2638 F2639 F2640 F2641 F2642 F2643 F2644 F2645 F2646 F2647 F2648 F2649 F2650 F2651 F2652 F2653 F2654 F2655 F2656 F2657 F2658 F2659 F2660 F2661 F2662 F2663 F2664 F2665 F2666 F2667 F2668 F2669 F2670 F2671 F2672 F2673 F2674 F2675 F2676 F2677 F2678 F2679 F2680 F2681 F2682 F2683 F2684 F2685 F2686 F2687 F2688 F2689 F2690 F2691 F2692 F2693 F2694 F2695 F2696 F2697 F2698 F2699 F2700 F2701 F2702 F2703 F2704 F2705 F2706 F2707 F2708 F2709 F2710 F2711 F2712 F2713 F2714 F2715 F2716 F2717 F2718 F2719 F2720 F2721 F2722 F2723 F2724 F2725 F2726 F2727 F2728 F2729 F2730 F2731 F2732 F2733 F2734 F2735 F2736 F2737 F2738 F2739 F2740 F2741 F2742 F2743 F2744 F2745 F2746 F2747 F2748 F2749 F2750 F2751 F2752 F2753 F2754 F2755 F2756 F2757 F2758 F2759 F2760 F2761 F2762 F2763 F2764 F2765 F2766 F2767 F2768 F2769 F2770 F2771 F2772 F2773 F2774 F2775 F2776 F2777 F2778 F2779 F2780 F2781 F2782 F2783 F2784 F2785 F2786 F2787 F2788 F2789 F2790 F2791 F2792 F2793 F2794 F2795 F2796 F2797 F2798 F2799 F2800 F2801 F2802 F2803 F2804 F2805 F2806 F2807 F2808 F2809 F2810 F2811 F2812 F2813 F2814 F2815 F2816 F2817 F2818 F2819 F2820 F2821 F2822 F2823 F2824 F2825 F2826 F2827 F2828 F2829 F2830 F2831 F2832 F2833 F2834 F2835 F2836 F2837 F2838 F2839 F2840 F2841 F2842 F2843 F2844 F2845 F2846 F2847 F2848 F2849 F2850 F2851 F2852 F2853 F2854 F2855 F2856 F2857 F2858 F2859 F2860 F2861 F2862 F2863 F2864 F2865 F2866 F2867 F2868 F2869 F2870 F2871 F2872 F2873 F2874 F2875 F2876 F2877 F2878 F2879 F2880 F2881 F2882 F2883 F2884 F2885 F2886 F2887 F2888 F2889 F2890 F2891 F2892 F2893 F2894 F2895 F2896 F2897 F2898 F2899 F2900 F2901 F2902 F2903 F2904 F2905 F2906 F2907 F2908 F2909 F2910 F2911 F2912 F2913 F2914 F2915 F2916 F2917 F2918 F2919 F2920 F2921 F2922 F2923 F2924 F2925 F2926 F2927 F2928 F2929 F2930 F2931 F2932 F2933 F2934 F2935 F2936 F2937 F2938 F2939 F2940 F2941 F2942 F2943 F2944 F2945 F2946 F2947 F2948 F2949 F2950 F2951 F2952 F2953 F2954 F2955 F2956 F2957 F2958 F2959 F2960 F2961 F2962 F2963 F2964 F2965 F2966 F2967 F2968 F2969 F2970 F2971 F2972 F2973 F2974 F2975 F2976 F2977 F2978 F2979 F2980 F2981 F2982 F2983 F2984 F2985 F2986 F2987 F2988 F2989 F2990 F2991 F2992 F2993 F2994 F2995 F2996 F2997 F2998 F2999 F3000 F3001 F3002 F3003 F3004 F3005 F3006 F3007 F3008 F3009 F3010 F3011 F3012 F3013 F3014 F3015 F3016 F3017 F3018 F3019 F3020 F3021 F3022 F3023 F3024 F3025 F3026 F3027 F3028 F3029 F3030 F3031 F3032 F3033 F3034 F3035 F3036 F3037 F3038 F3039 F3040 F3041 F3042 F3043 F3044 F3045 F3046 F3047 F3048 F3049 F3050 F3051 F3052 F3053 F3054 F3055 F3056 F3057 F3058 F3059 F3060 F3061 F3062 F3063 F3064 F3065 F3066 F3067 F3068 F3069 F3070 F3071 F3072 F3073 F3074 F3075 F3076 F3077 F3078 F3079 F3080 F3081 F3082 F3083 F3084 F3085 F3086 F3087 F3088 F3089 F3090 F3091 F3092 F3093 F3094 F3095 F3096 F3097 F3098 F3099 F3100 F3101 F3102 F3103 F3104 F3105 F3106 F3107 F3108 F3109 F3110 F3111 F3112 F3113 F3114 F3115 F3116 F3117 F3118 F3119 F3120 F3121 F3122 F3123 F3124 F3125 F3126 F3127 F3128 F3129 F3130 F3131 F3132 F3133 F3134 F3135 F3136 F3137 F3138 F3139 F3140 F3141 F3142 F3143 F3144 F3145 F3146 F3147 F3148 F3149 F3150 F3151 F3152 F3153 F3154 F3155 F3156 F3157 F3158 F3159 F3160 F3161 F3162 F3163 F3164 F3165 F3166 F3167 F3168 F3169 F3170 F3171 F3172 F3173 F3174 F3175 F3176 F3177 F3178 F3179 F3180 F3181 F3182 F3183 F3184 F3185 F3186 F3187 F3188 F3189 F3190 F3191 F3192 F3193 F3194 F3195 F3196 F3197 F3198 F3199 F3200 F3201 F3202 F3203 F3204 F3205 F3206 F3207 F3208 F3209 F3210 F3211 F3212 F3213 F3214 F3215 F3216 F3217 F3218 F3219 F3220 F3221 F3222 F3223 F3224 F3225 F3226 F3227 F3228 F3229 F3230 F3231 F3232 F3233 F3234 F3235 F3236 F3237 F3238 F3239 F3240 F3241 F3242 F3243 F3244 F3245 F3246 F3247 F3248 F3249 F3250 F3251 F3252 F3253 F3254 F3255 F3256 F3257 F3258 F3259 F3260 F3261 F3262 F3263 F3264 F3265 F3266 F3267 F3268 F3269 F3270 F3271 F3272 F3273 F3274 F3275 F3276 F3277 F3278 F3279 F3280 F3281 F3282 F3283 F3284 F3285 F3286 F3287 F3288 F3289 F3290 F3291 F3292 F3293 F3294 F3295 F3296 F3297 F3298 F3299 F3300 F3301 F3302 F3303 F3304 F3305 F3306 F3307 F3308 F3309 F3310 F3311 F3312 F3313 F3314 F3315 F3316 F3317 F3318 F3319 F3320 F3321 F3322 F3323 F3324 F3325 F3326 F3327 F3328 F3329 F3330 F3331 F3332 F3333 F3334 F3335 F3336 F3337 F3338 F3339 F3340 F3341 F3342 F3343 F3344 F3345 F3346 F3347 F3348 F3349 F3350 F3351 F3352 F3353 F3354 F3355 F3356 F3357 F3358 F3359 F3360 F3361 F3362 F3363 F3364 F3365 F3366 F3367 F3368 F3369 F3370 F3371 F3372 F3373 F3374 F3375 F3376 F3377 F3378 F3379 F3380 F3381 F3382 F3383 F3384 F3385 F3386 F3387 F3388 F3389 F3390 F3391 F3392 F3393 F3394 F3395 F3396 F3397 F3398 F3399 F3400 F3401 F3402 F3403 F3404 F3405 F3406 F3407 F3408 F3409 F3410 F3411 F3412 F3413 F3414 F3415 F3416 F3417 F3418 F3419 F3420 F3421 F3422 F3423 F3424 F3425 F3426 F3427 F3428 F3429 F3430 F3431 F3432 F3433 F3434 F3435 F3436 F3437 F3438 F3439 F3440 F3441 F3442 F3443 F3444 F3445 F3446 F3447 F3448 F3449 F3450 F3451 F3452 F3453 F3454 F3455 F3456 F3457 F3458 F3459 F3460 F3461 F3462 F3463 F3464 F3465 F3466 F3467 F3468 F3469 F3470 F3471 F3472 F3473 F3474 F3475 F3476 F3477 F3478 F3479 F3480 F3481 F3482 F3483 F3484 F3485 F3486 F3487 F3488 F3489 F3490 F3491 F3492 F3493 F3494 F3495 F3496 F3497 F3498 F3499 F3500 F3501 F3502 F3503 F3504 F3505 F3506 F3507 F3508 F3509 F3510 F3511 F3512 F3513 F3514 F3515 F3516 F3517 F3518 F3519 F3520 F3521 F3522 F3523 F3524 F3525 F3526 F3527 F3528 F3529 F3530 F3531 F3532 F3533 F3534 F3535 F3536 F3537 F3538 F3539 F3540 F3541 F3542 F3543 F3544 F3545 F3546 F3547 F3548 F3549 F3550 F3551 F3552 F3553 F3554 F3555 F3556 F3557 F3558 F3559 F3560 F3561 F3562 F3563 F3564 F3565 F3566 F3567 F3568 F3569 F3570 F3571 F3572 F3573 F3574 F3575 F3576 F3577 F3578 F3579 F3580 F3581 F3582 F3583 F3584 F3585 F3586 F3587 F3588 F3589 F3590 F3591 F3592 F3593 F3594 F3595 F3596 F3597 F3598 F3599 F3600 F3601 F3602 F3603 F3604 F3605 F3606 F3607 F3608 F3609 F3610 F3611 F3612 F3613 F3614 F3615 F3616 F3617 F3618 F3619 F3620 F3621 F3622 F3623 F3624 F3625 F3626 F3627 F3628 F3629 F3630 F3631 F3632 F3633 F3634 F3635 F3636 F3637 F3638 F3639 F3640 F3641 F3642 F3643 F3644 F3645 F3646 F3647 F3648 F3649 F3650 F3651 F3652 F3653 F3654 F3655 F3656 F3657 F3658 F3659 F3660 F3661 F3662 F3663 F3664 F3665 F3666 F3667 F3668 F3669 F3670 F3671 F3672 F3673 F3674 F3675 F3676 F3677 F3678 F3679 F3680 F3681 F3682 F3683 F3684 F3685 F3686 F3687 F3688 F3689 F3690 F3691 F3692 F3693 F3694 F3695 F3696 F3697 F3698 F3699 F3700 F3701 F3702 F3703 F3704 F3705 F3706 F3707 F3708 F3709 F3710 F3711 F3712 F3713 F3714 F3715 F3716 F3717 F3718 F3719 F3720 F3721 F3722 F3723 F3724 F3725 F3726 F3727 F3728 F3729 F3730 F3731 F3732 F3733 F3734 F3735 F3736 F3737 F3738 F3739 F3740 F3741 F3742 F3743 F3744 F3745 F3746 F3747 F3748 F3749 F3750 F3751 F3752 F3753 F3754 F3755 F3756 F3757 F3758 F3759 F3760 F3761 F3762 F3763 F3764 F3765 F3766 F3767 F3768 F3769 F3770 F3771 F3772 F3773 F3774 F3775 F3776 F3777 F3778 F3779 F3780 F3781 F3782 F3783 F3784 F3785 F3786 F3787 F3788 F3789 F3790 F3791 F3792 F3793 F3794 F3795 F3796 F3797 F3798 F3799 F3800 F3801 F3802 F3803 F3804 F3805 F3806 F3807 F3808 F3809 F3810 F3811 F3812 F3813 F3814 F3815 F3816 F3817 F3818 F3819 F3820 F3821 F3822 F3823 F3824 F3825 F3826 F3827 F3828 F3829 F3830 F3831 F3832 F3833 F3834 F3835 F3836 F3837 F3838 F3839 F3840 F3841 F3842 F3843 F3844 F3845 F3846 F3847 F3848 F3849 F3850 F3851 F3852 F3853 F3854 F3855 F3856 F3857 F3858 F3859 F3860 F3861 F3862 F3863 F3864 F3865 F3866 F3867 F3868 F3869 F3870 F3871 F3872 F3873 F3874 F3875 F3876 F3877 F3878 F3879 F3880 F3881 F3882 F3883 F3884 F3885 F3886 F3887 F3888 F3889 F3890 F3891 F3892 F3893 F3894 F3895 F3896 F3897 F3898 F3899 F3900 F3901 F3902 F3903 F3904 F3905 F3906 F3907 F3908 F3909 F3910 F3911 F3912 F3913 F3914 F3915 F3916 F3917 F3918 F3919 F3920 F3921 F3922 F3923 F3924 F3925 F3926 F3927 F3928 F3929 F3930 F3931 F3932 F3933 F3934 F3935 F3936 F3937 F3938 F3939 F3940 F3941 F3942 F3943 F3944 F3945 F3946 F3947 F3948 F3949 F3950 F3951 F3952 F3953 F3954 F3955 F3956 F3957 F3958 F3959 F3960 F3961 F3962 F3963 F3964 F3965 F3966 F3967 F3968 F3969 F3970 F3971 F3972 F3973 F3974 F3975 F3976 F3977 F3978 F3979 F3980 F3981 F3982 F3983 F3984 F3985 F3986 F3987 F3988 F3989 F3990 F3991 F3992 F3993 F3994 F3995 F3996 F3997 F3998 F3999 F4000 F4001 F4002 F4003 F4004 F4005 F4006 F4007 F4008 F4009 F4010 F4011 F4012 F4013 F4014 F4015 F4016 F4017 F4018 F4019 F4020 F4021 F4022 F4023 F4024 F4025 F4026 F4027 F4028 F4029 F4030 F4031 F4032 F4033 F4034 F4035 F4036 F4037 F4038 F4039 F4040 F4041 F4042 F4043 F4044 F4045 F4046 F4047 F4048 F4049 F4050 F4051 F4052 F4053 F4054 F4055 F4056 F4057 F4058 F4059 F4060 F4061 F4062 F4063 F4064 F4065 F4066 F4067 F4068 F4069 F4070 F4071 F4072 F4073 F4074 F4075 F4076 F4077 F4078 F4079 F4080 F4081 F4082 F4083 F4084 F4085 F4086 F4087 F4088 F4089 F4090 F4091 F4092 F4093 F4094 F4095 F4096 F4097 F4098 F4099 F4100 F4101 F4102 F4103 F4104 F4105 F4106 F4107 F4108 F4109 F4110 F4111 F4112 F4113 F4114 F4115 F4116 F4117 F4118 F4119 F4120 F4121 F4122 F4123 F4124 F4125 F4126 F4127 F4128 F4129 F4130 F4131 F4132 F4133 F4134 F4135 F4136 F4137 F4138 F4139 F4140 F4141 F4142 F4143 F4144 F4145 F4146 F4147 F4148 F4149 F4150 F4151 F4152 F4153 F4154 F4155 F4156 F4157 F4158 F4159 F4160 F4161 F4162 F4163 F4164 F4165 F4166 F4167 F4168 F4169 F4170 F4171 F4172 F4173 F4174 F4175 F4176 F4177 F4178 F4179 F4180 F4181 F4182 F4183 F4184 F4185 F4186 F4187 F4188 F4189 F4190 F4191 F4192 F4193 F4194 F4195 F4196 F4197 F4198 F4199 F4200 F4201 F4202 F4203 F4204 F4205 F4206 F4207 F4208 F4209 F4210 F4211 F4212 F4213 F4214 F4215 F4216 F4217 F4218 F4219 F4220 F4221 F4222 F4

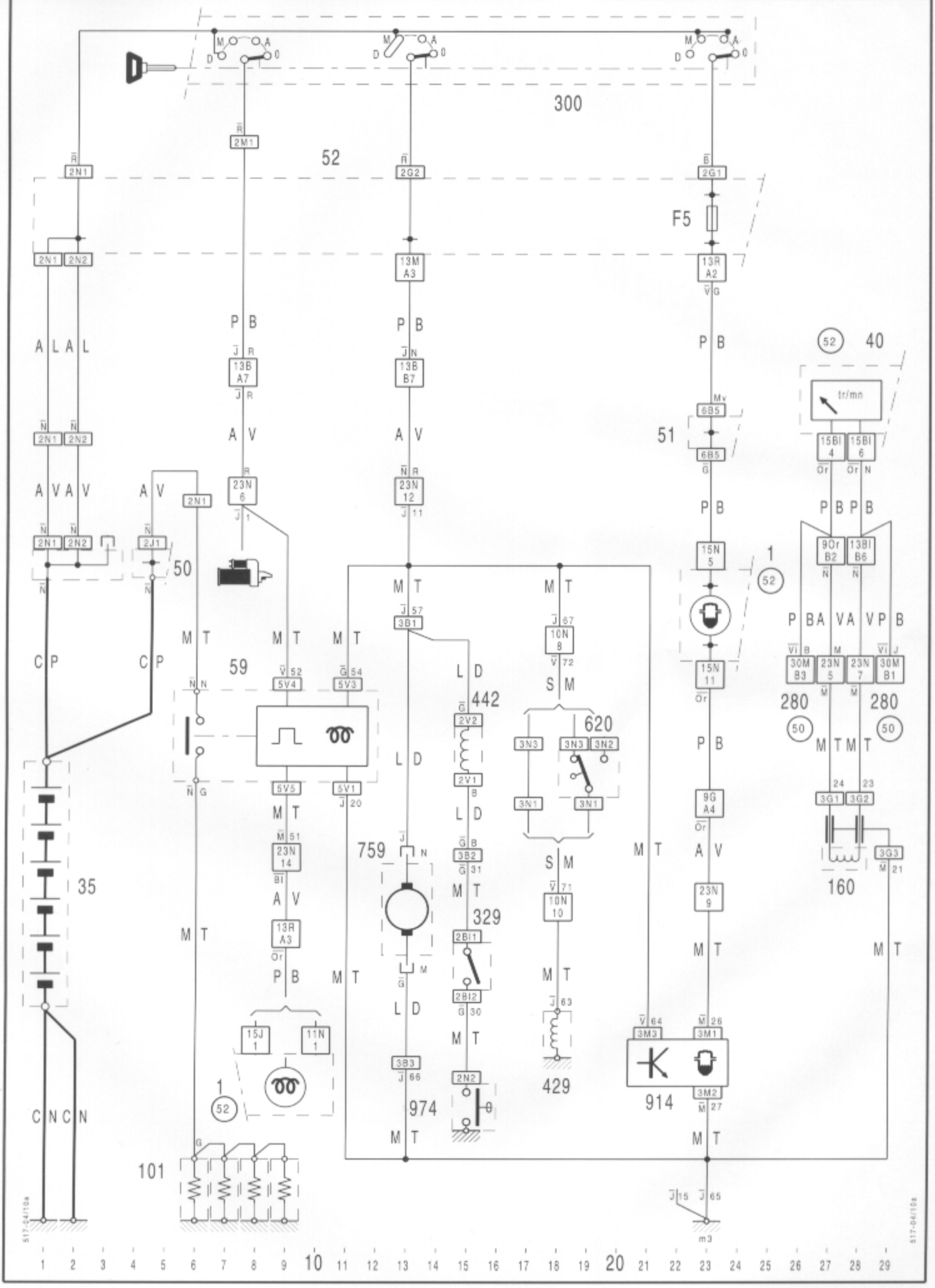
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



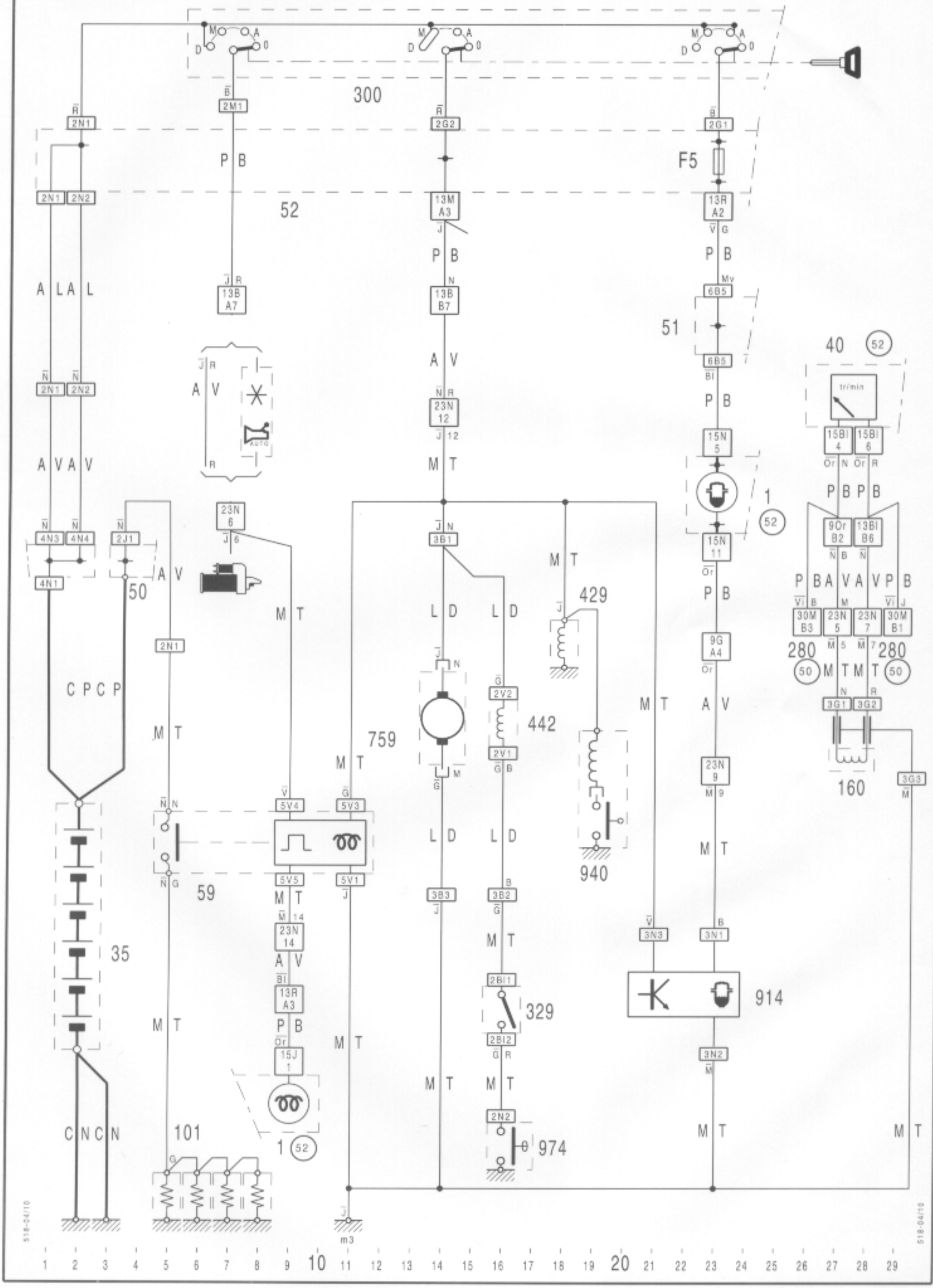
www.WorkshopManuals.co.uk



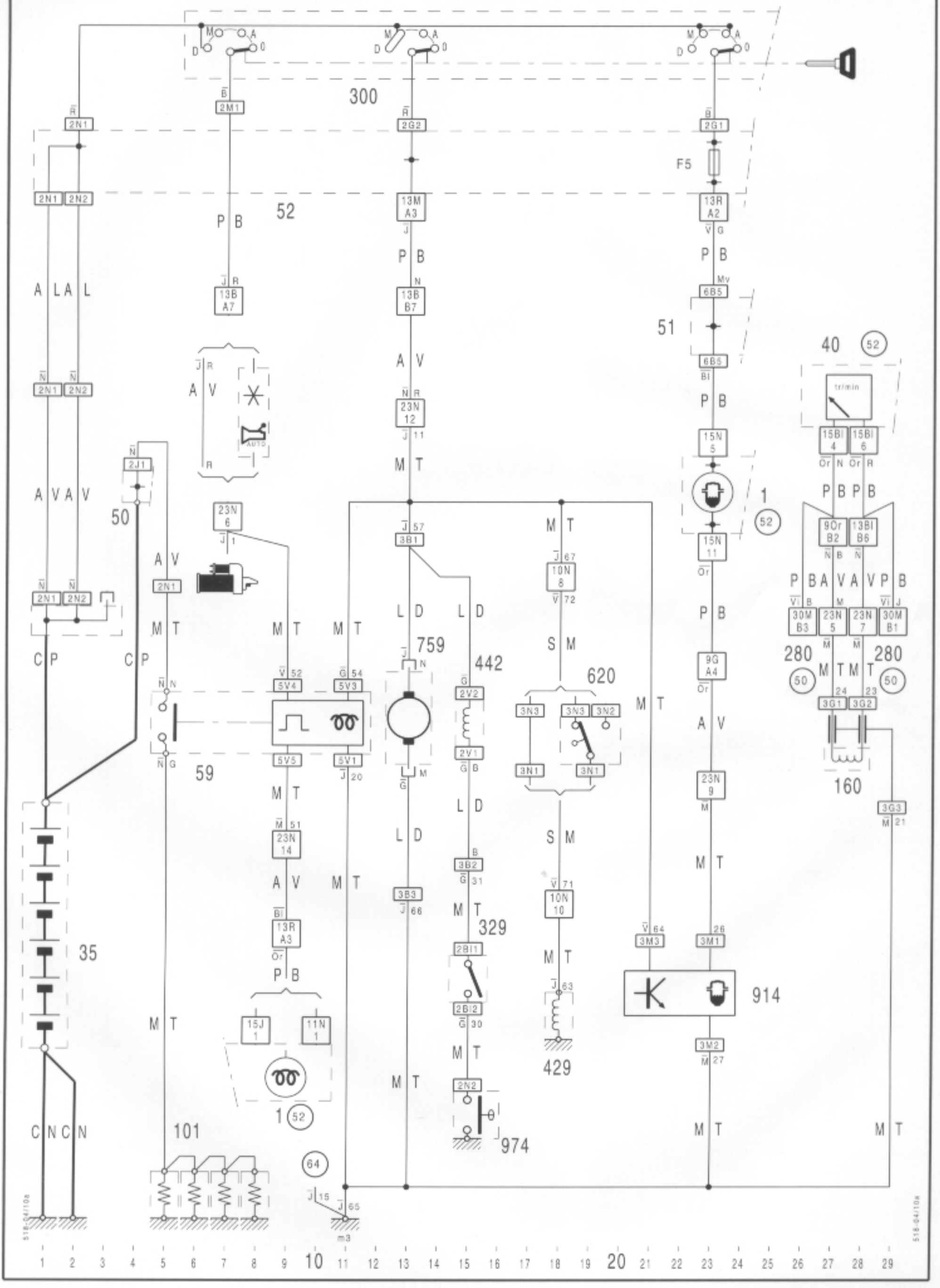
(1)

8935

www.WorkshopManuals.co.uk

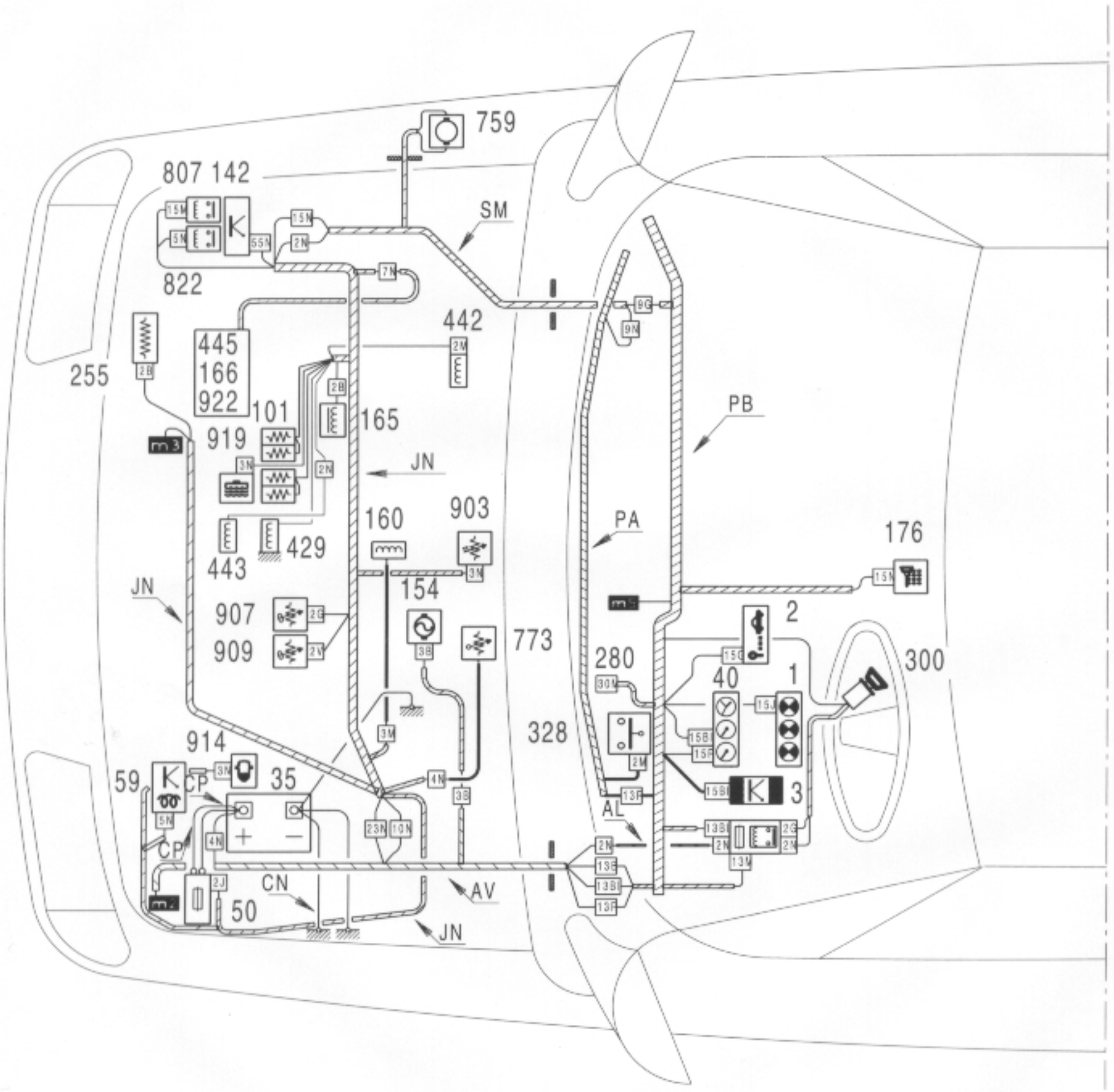


www.WorkshopManuals.co.uk

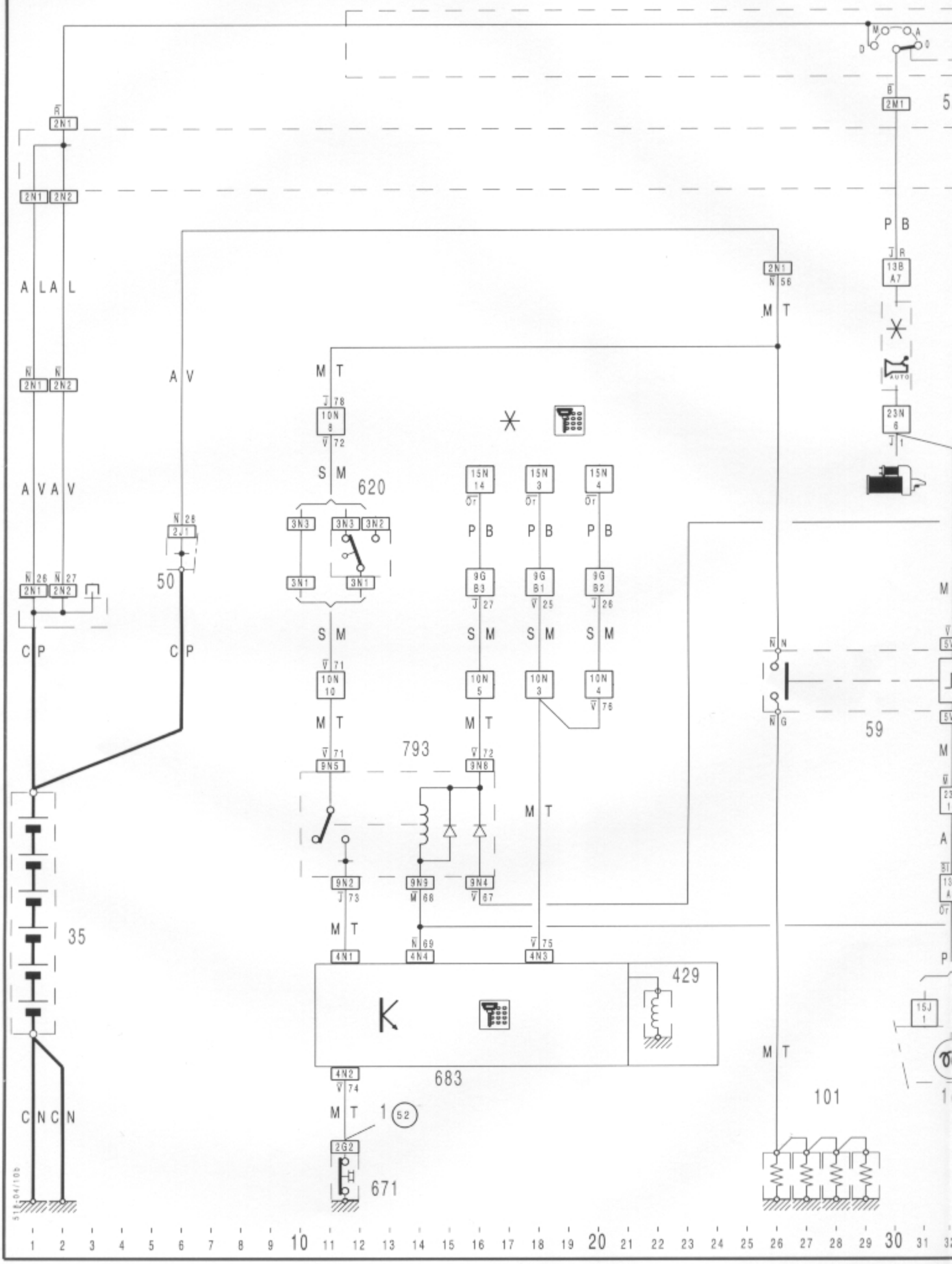


(1)

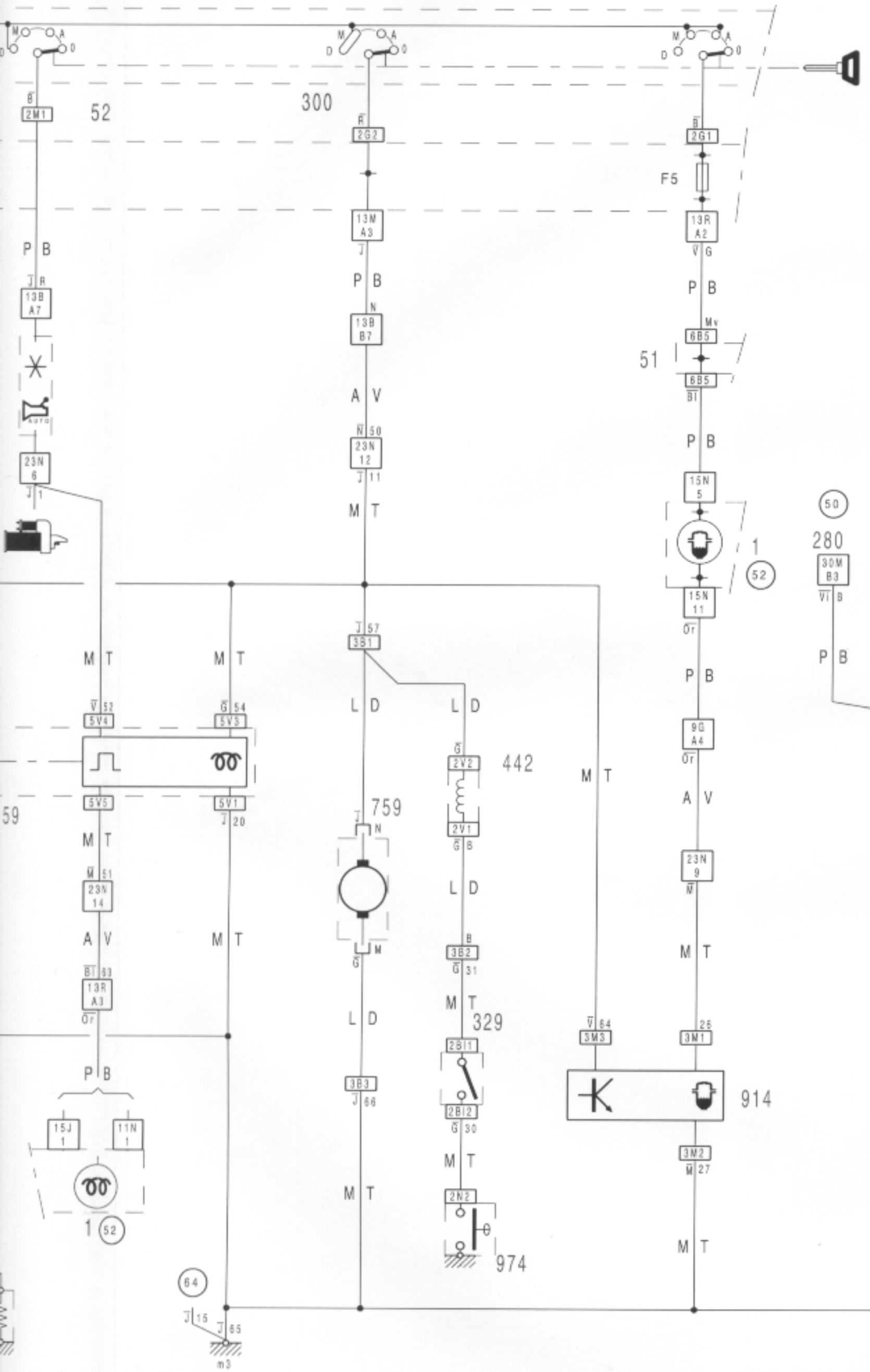
www.WorkshopManuals.co.uk



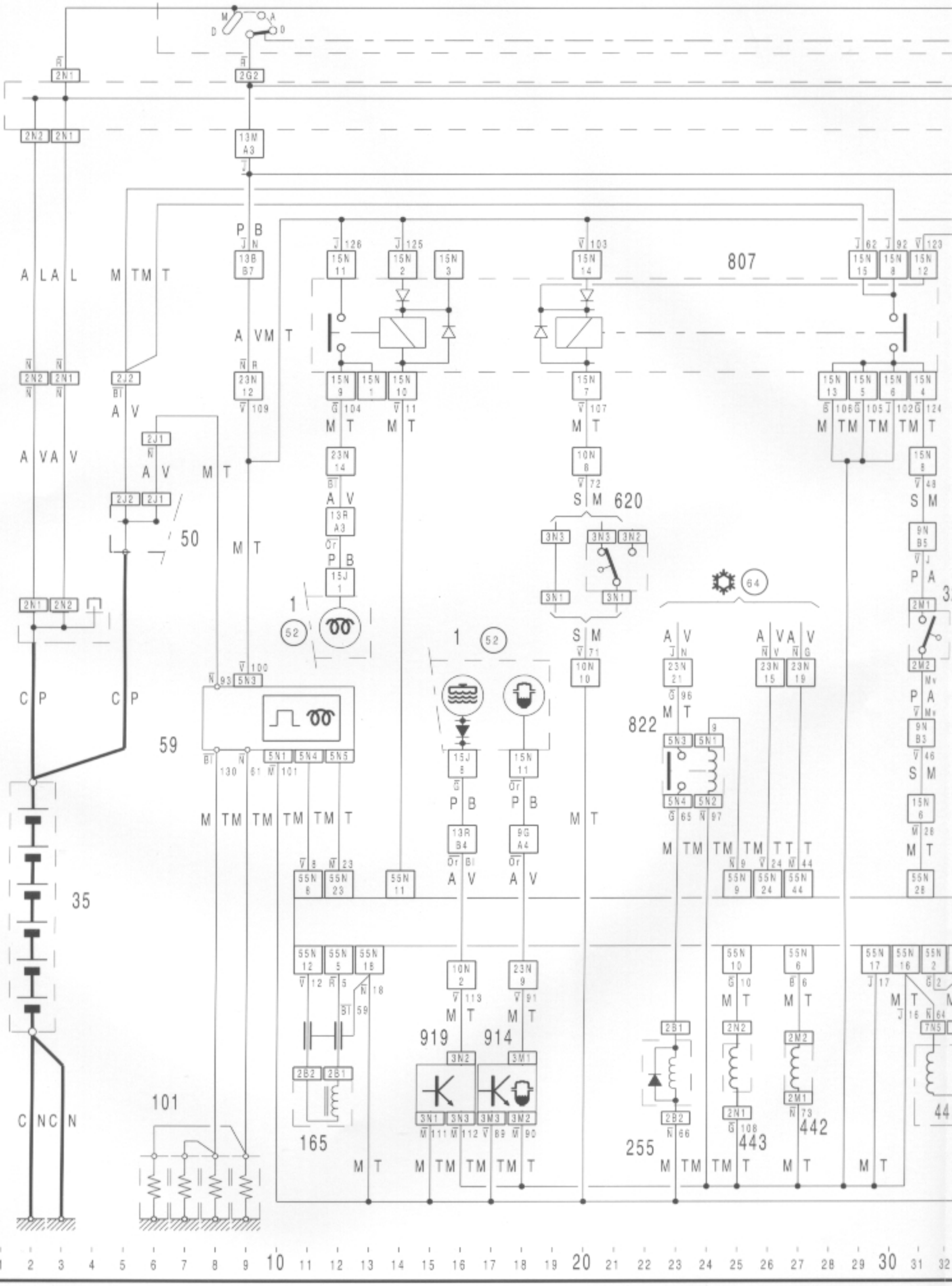
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

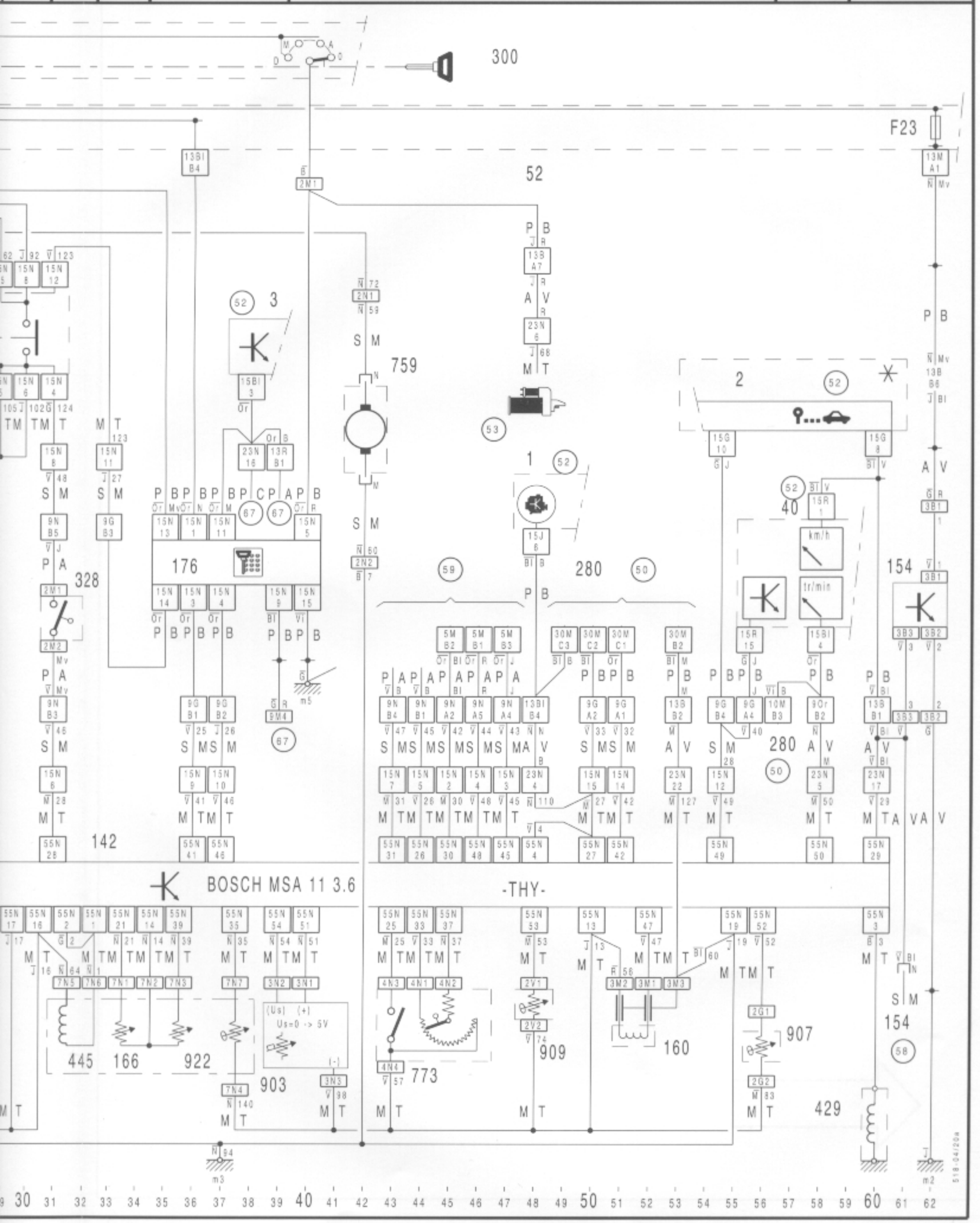


www.WorkshopManuals.co.uk

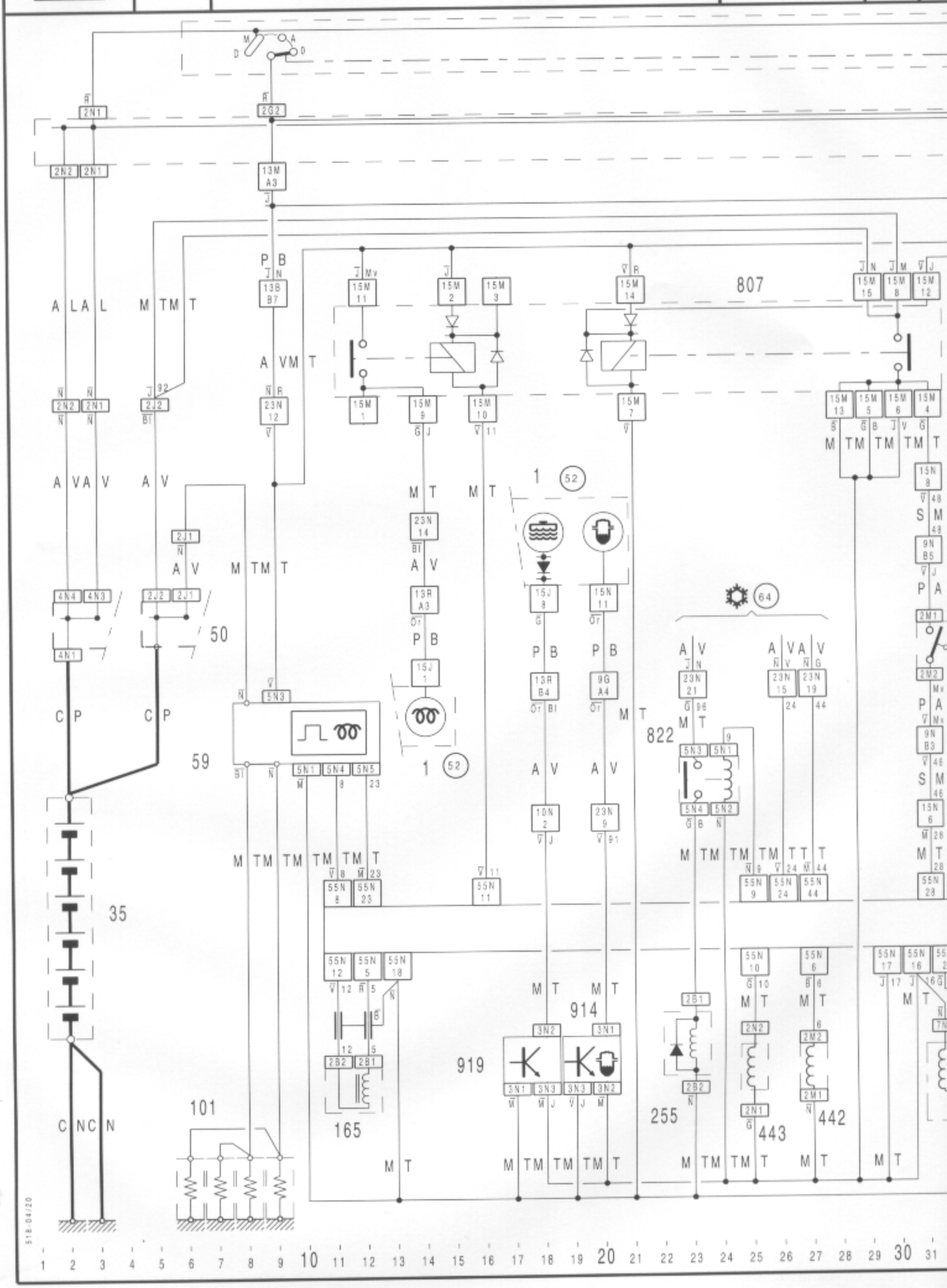


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

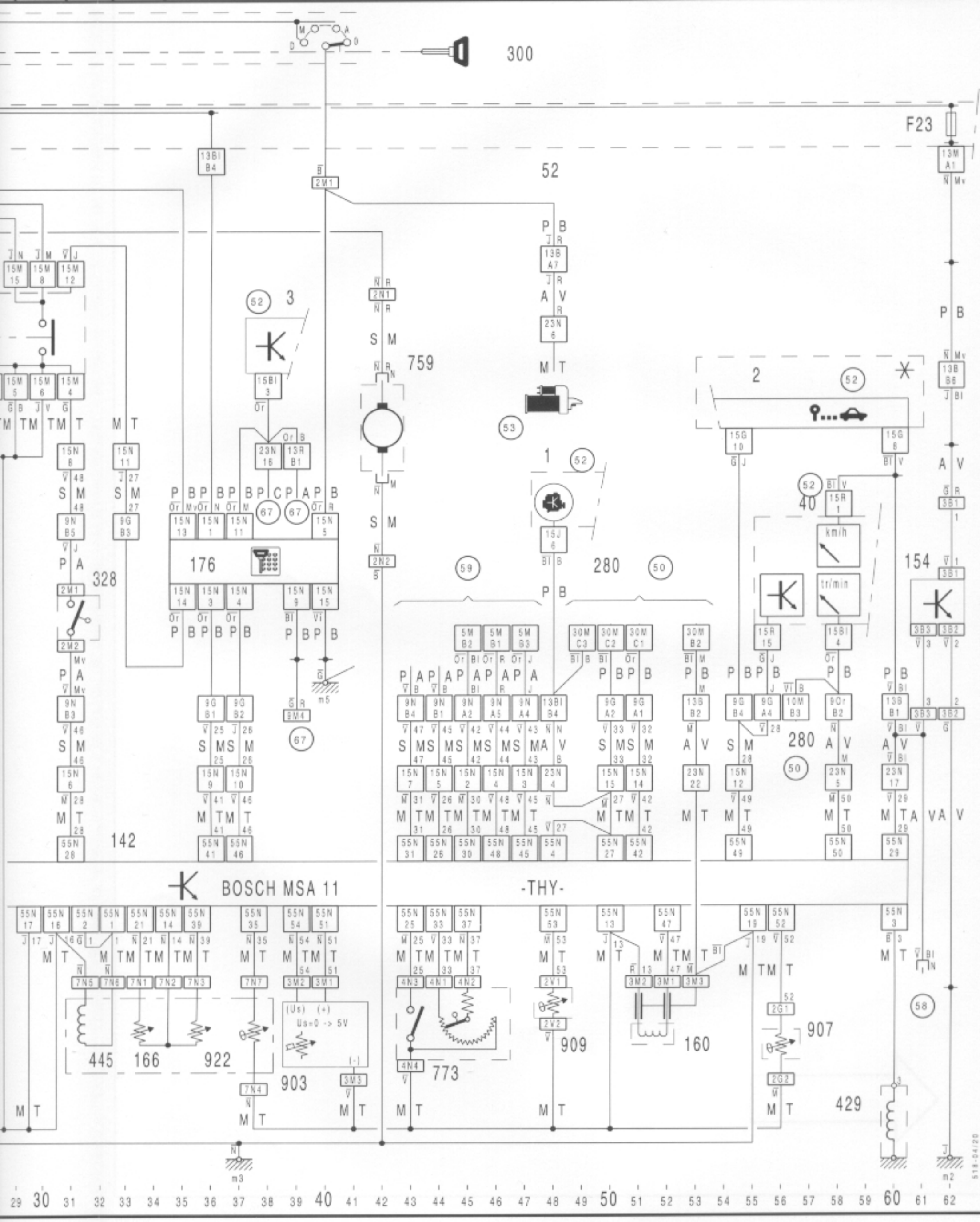
www.WorkshopManuals.co.uk



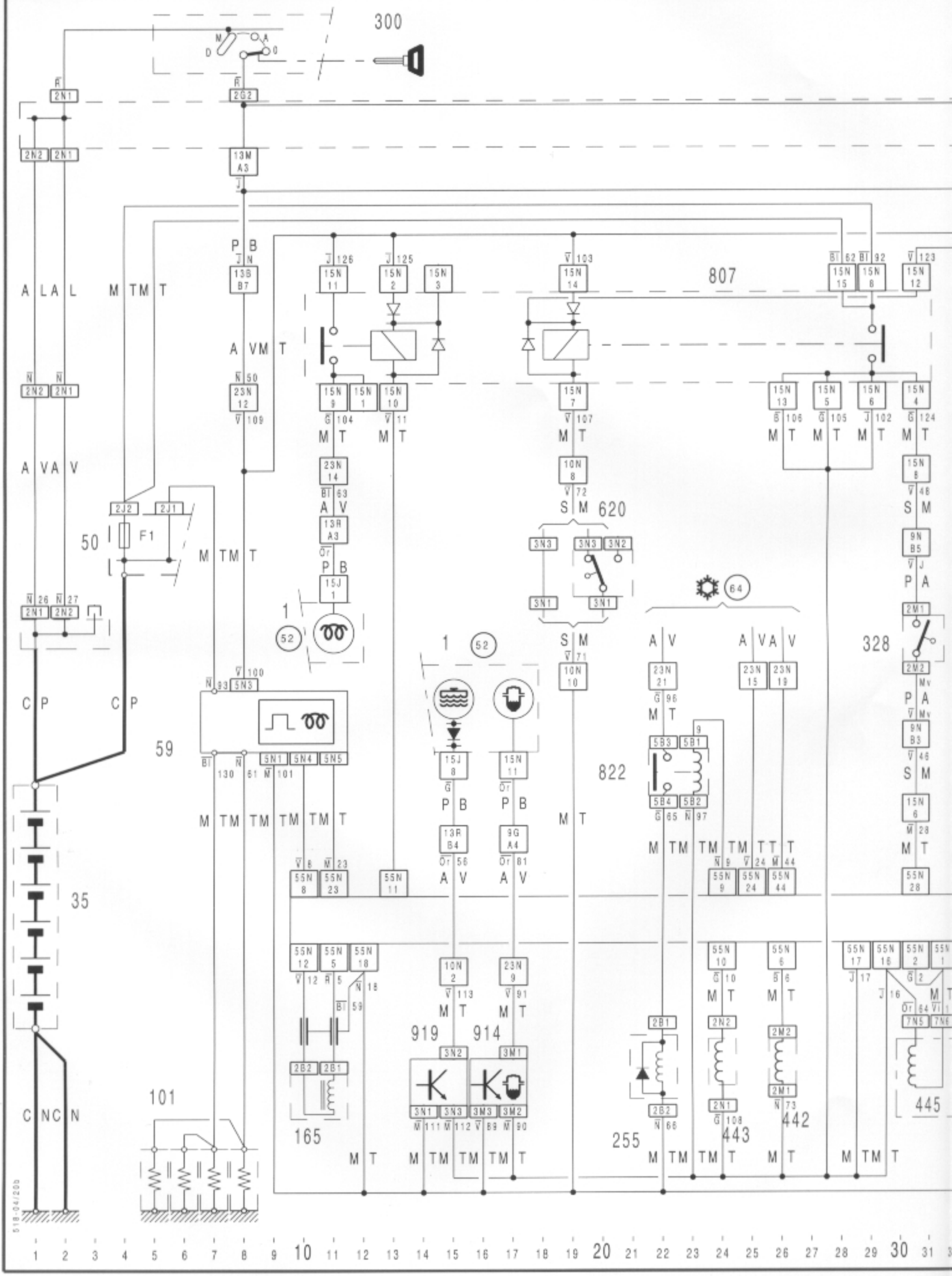
www.WorkshopManuals.co.uk



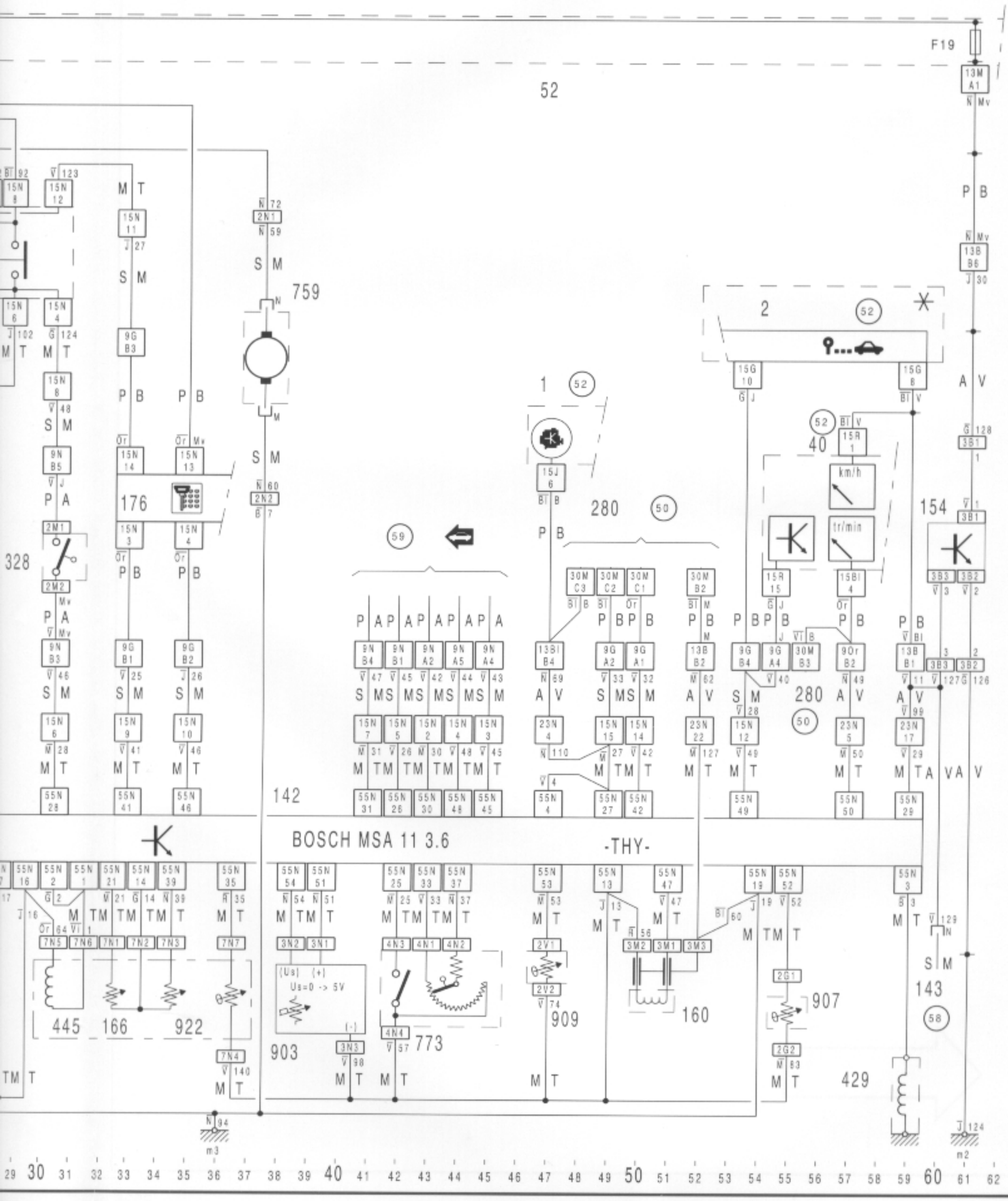
www.WorkshopManuals.co.uk



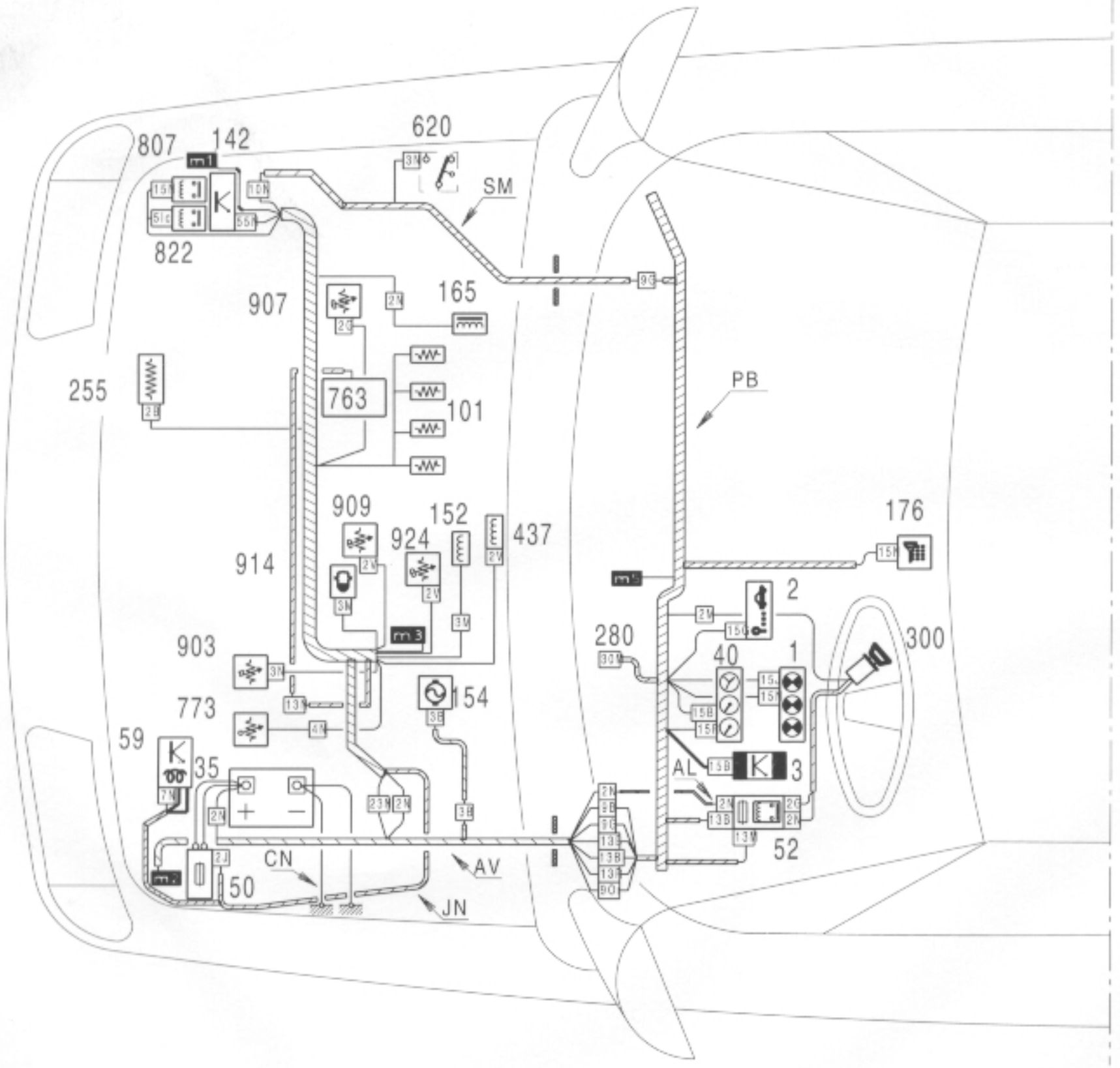
www.WorkshopManuals.co.uk



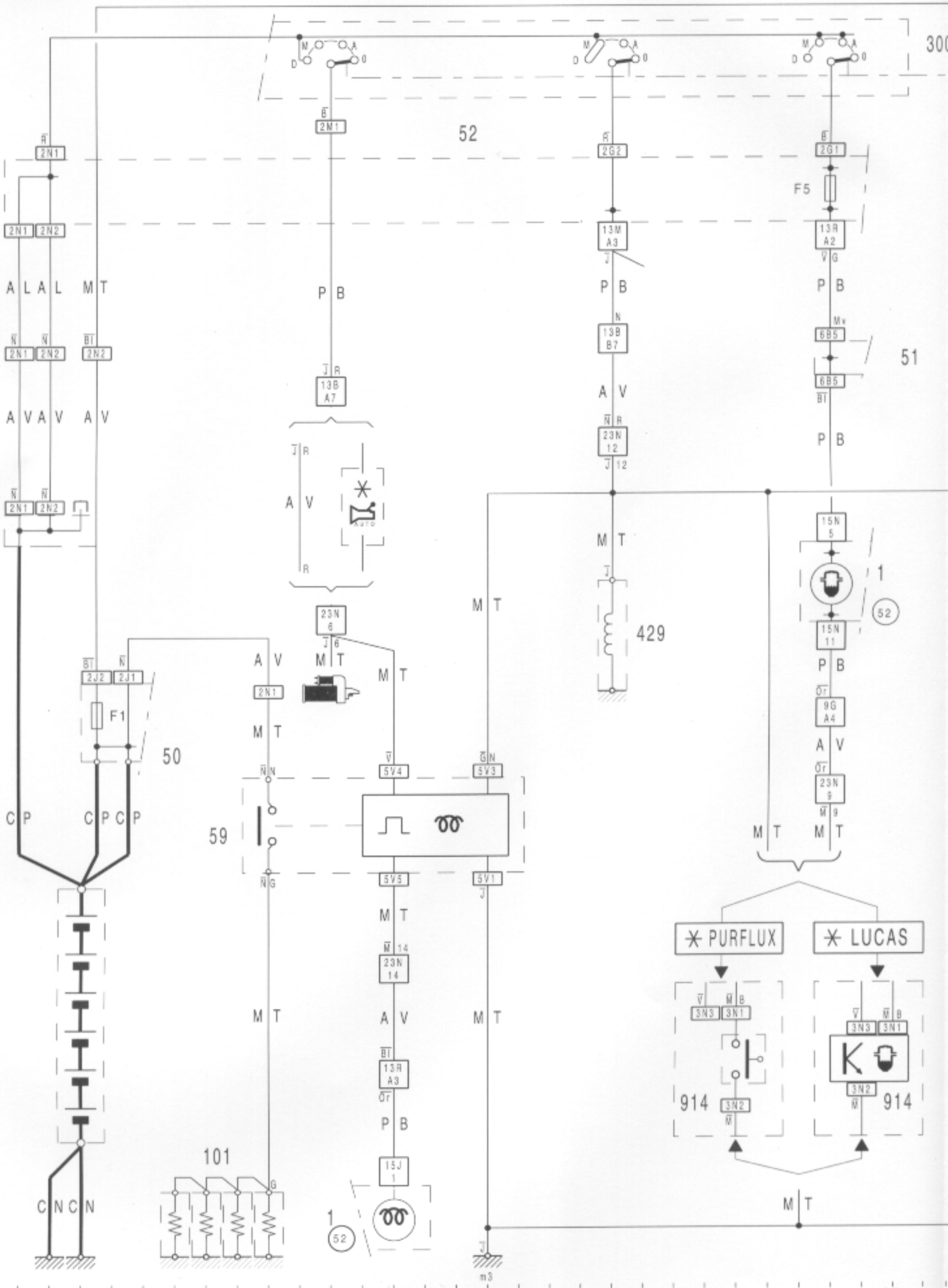
www.WorkshopManuals.co.uk



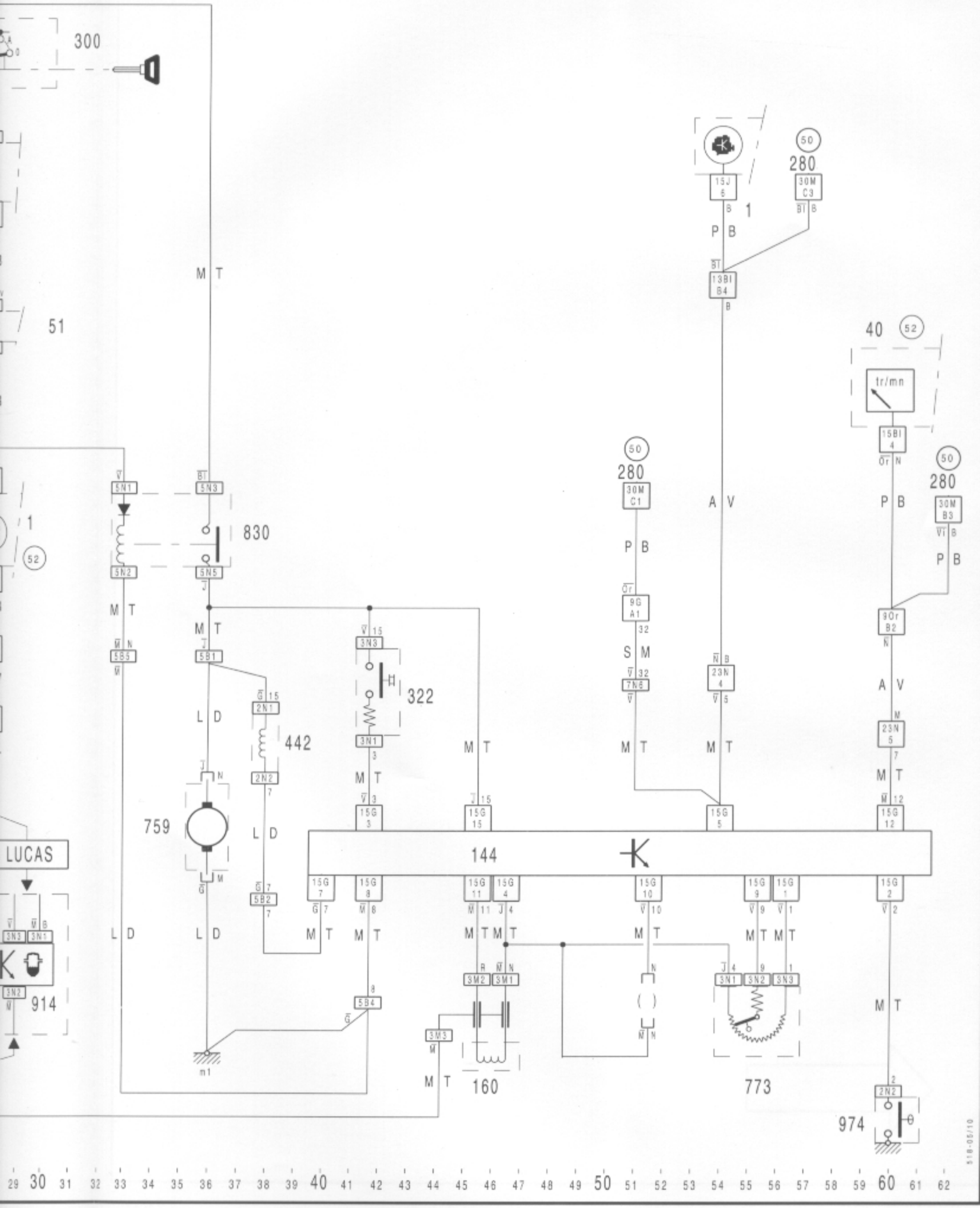
www.WorkshopManuals.co.uk



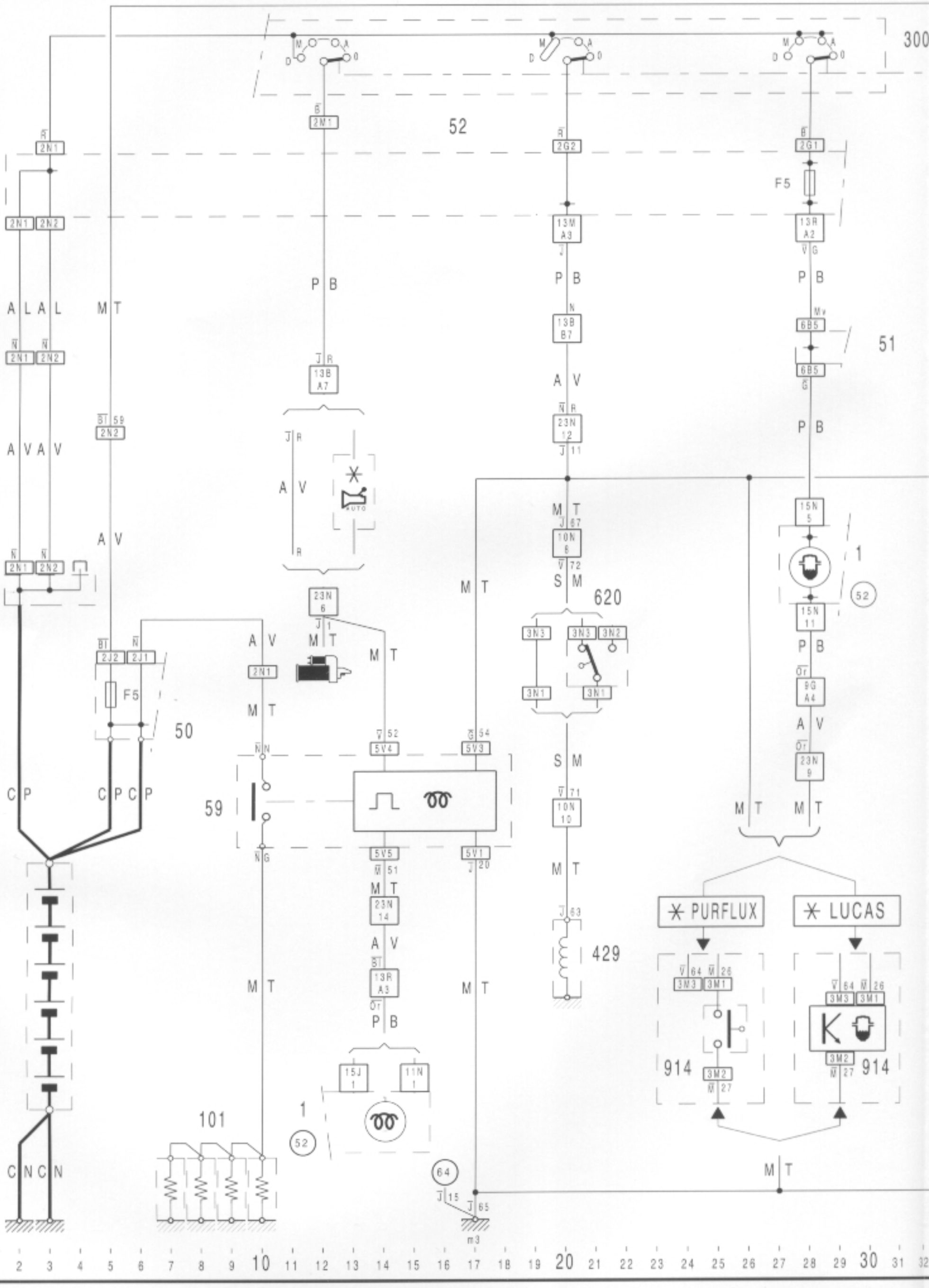
www.WorkshopManuals.co.uk



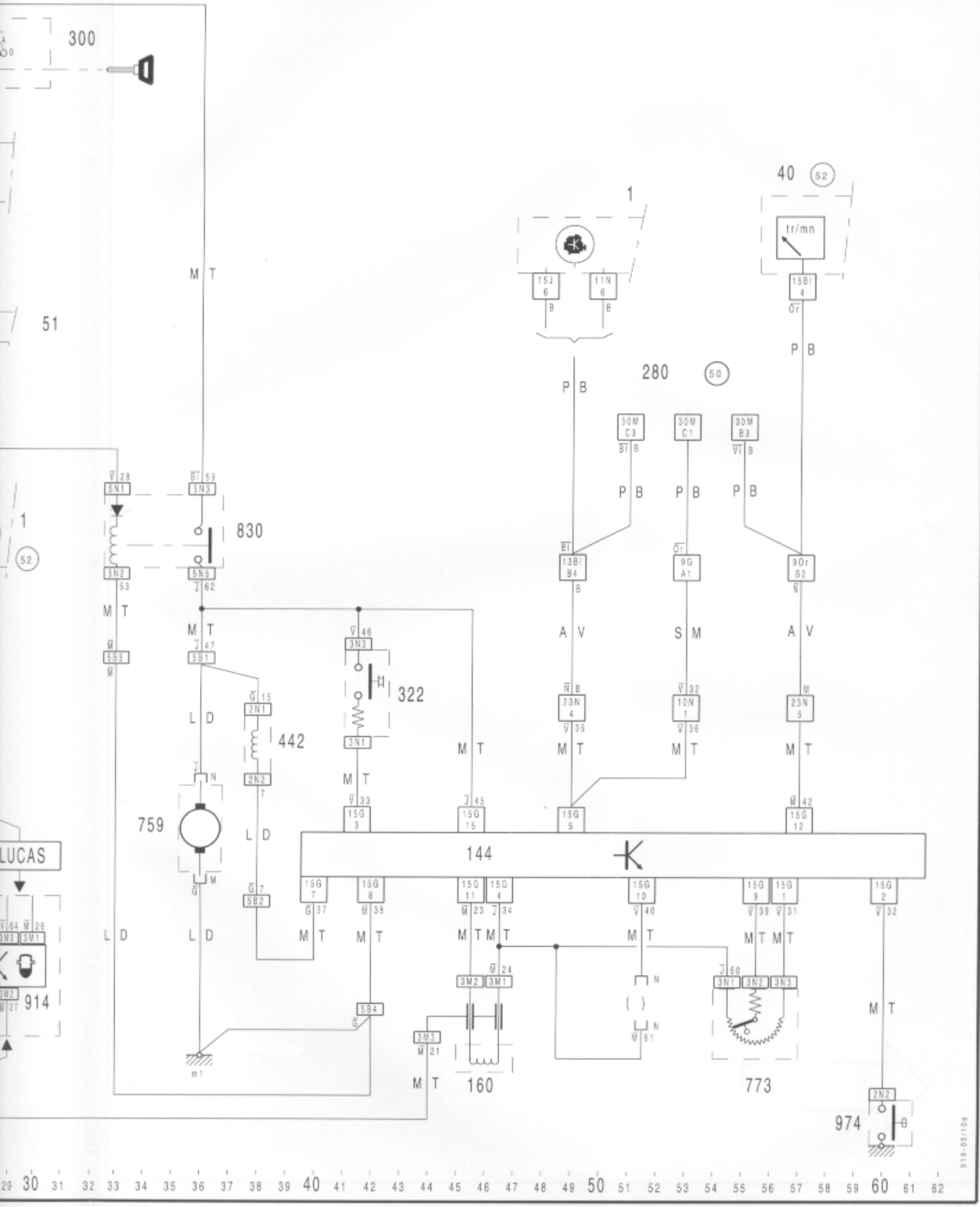
www.WorkshopManuals.co.uk



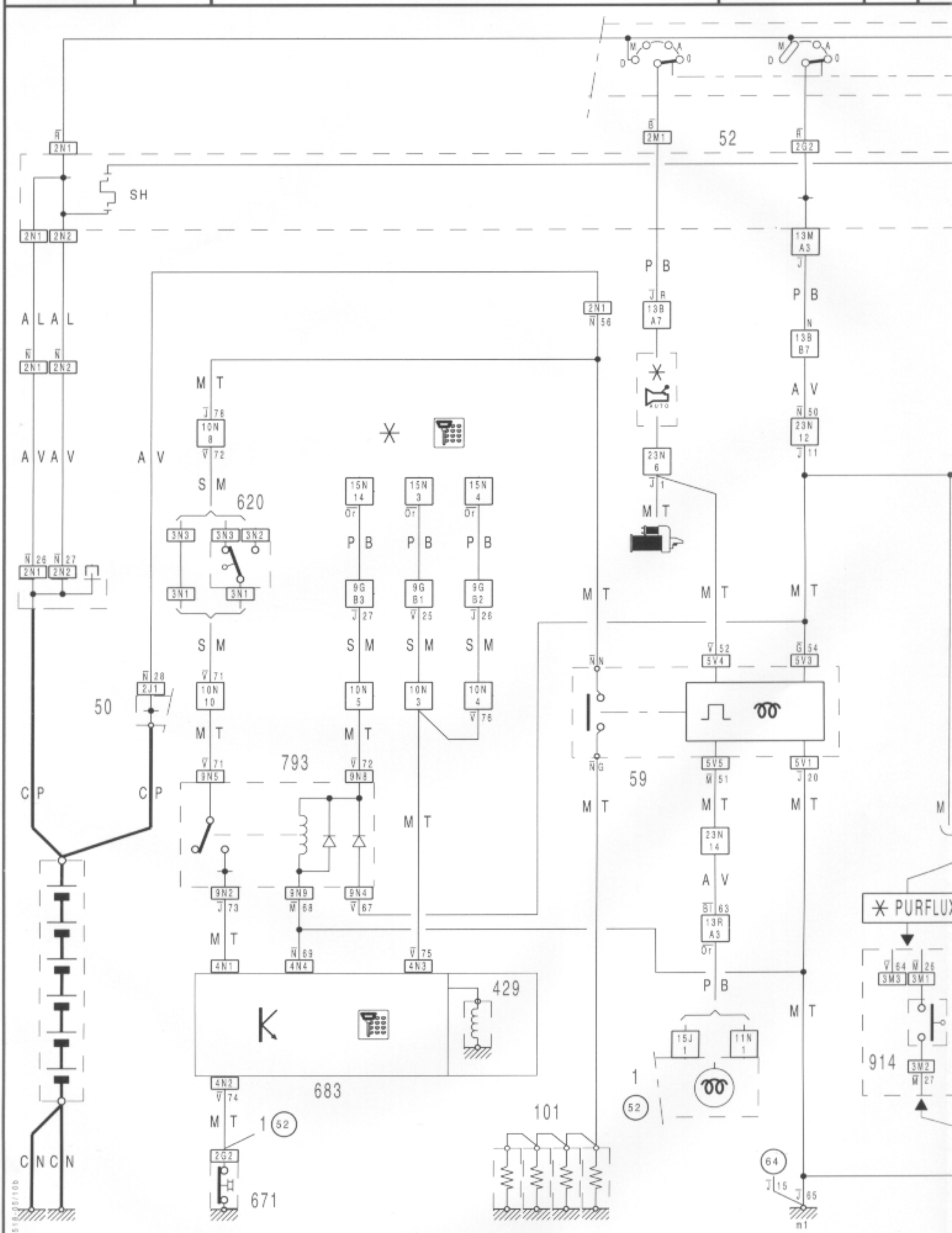
www.WorkshopManuals.co.uk



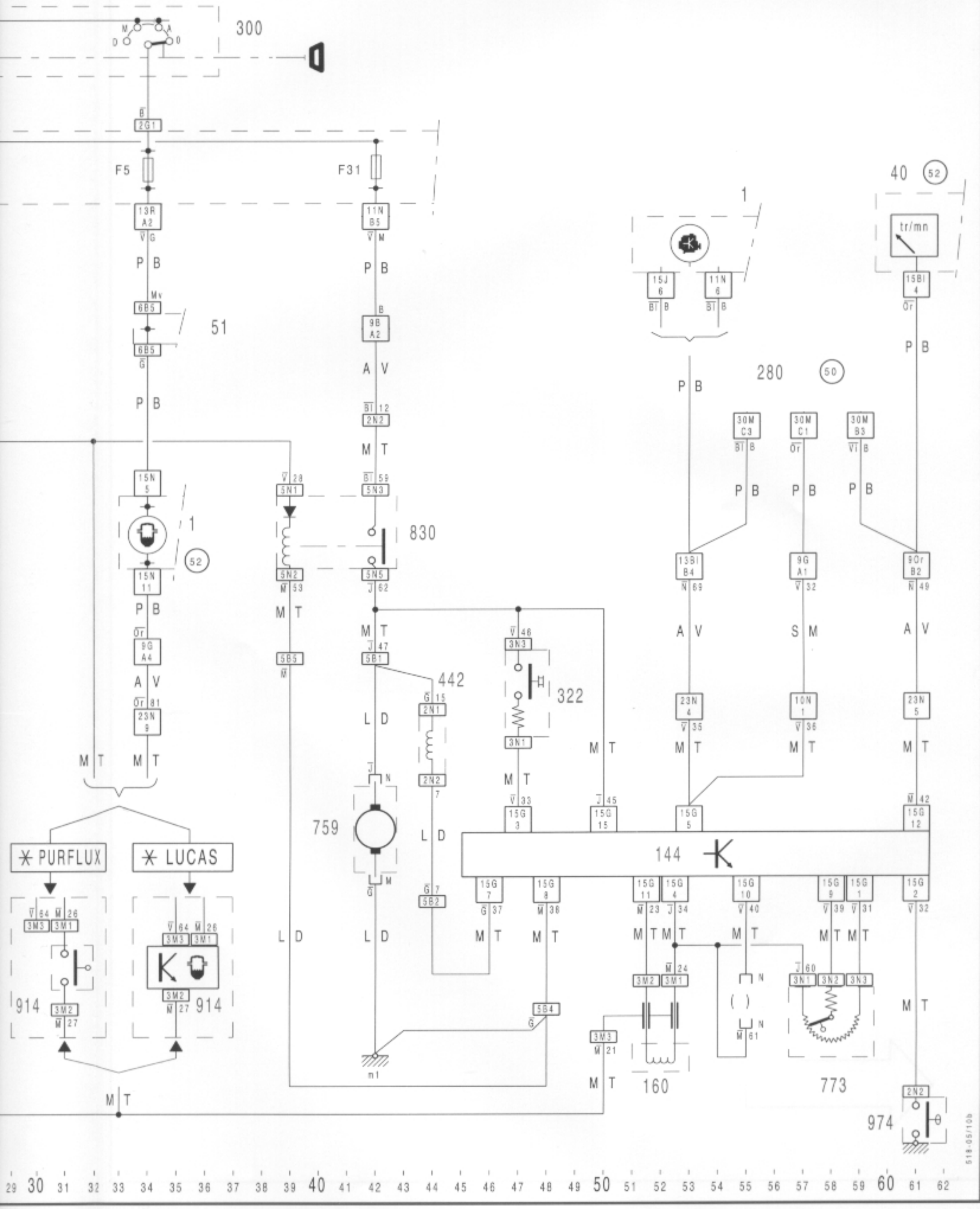
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

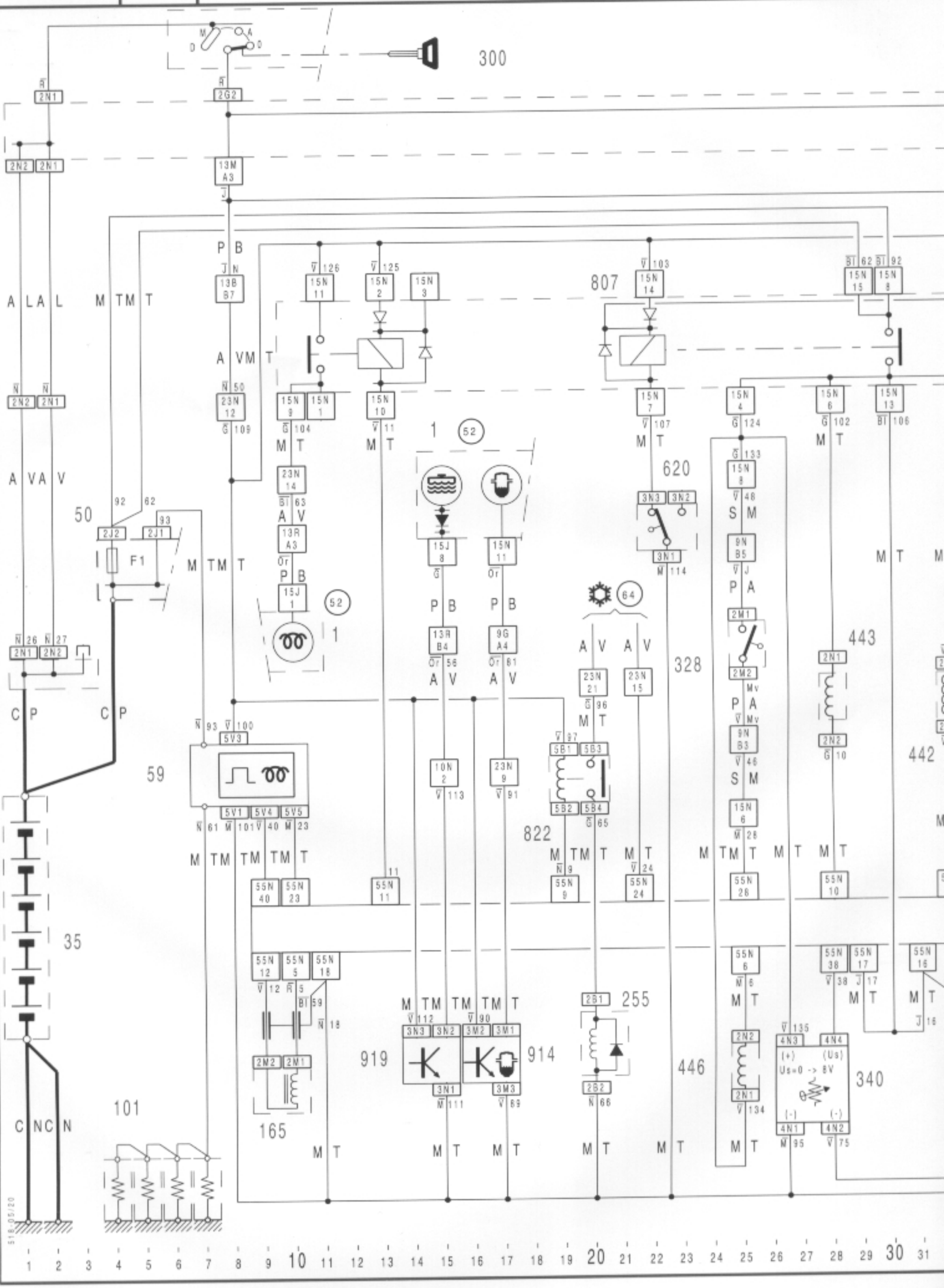


www.WorkshopManuals.co.uk

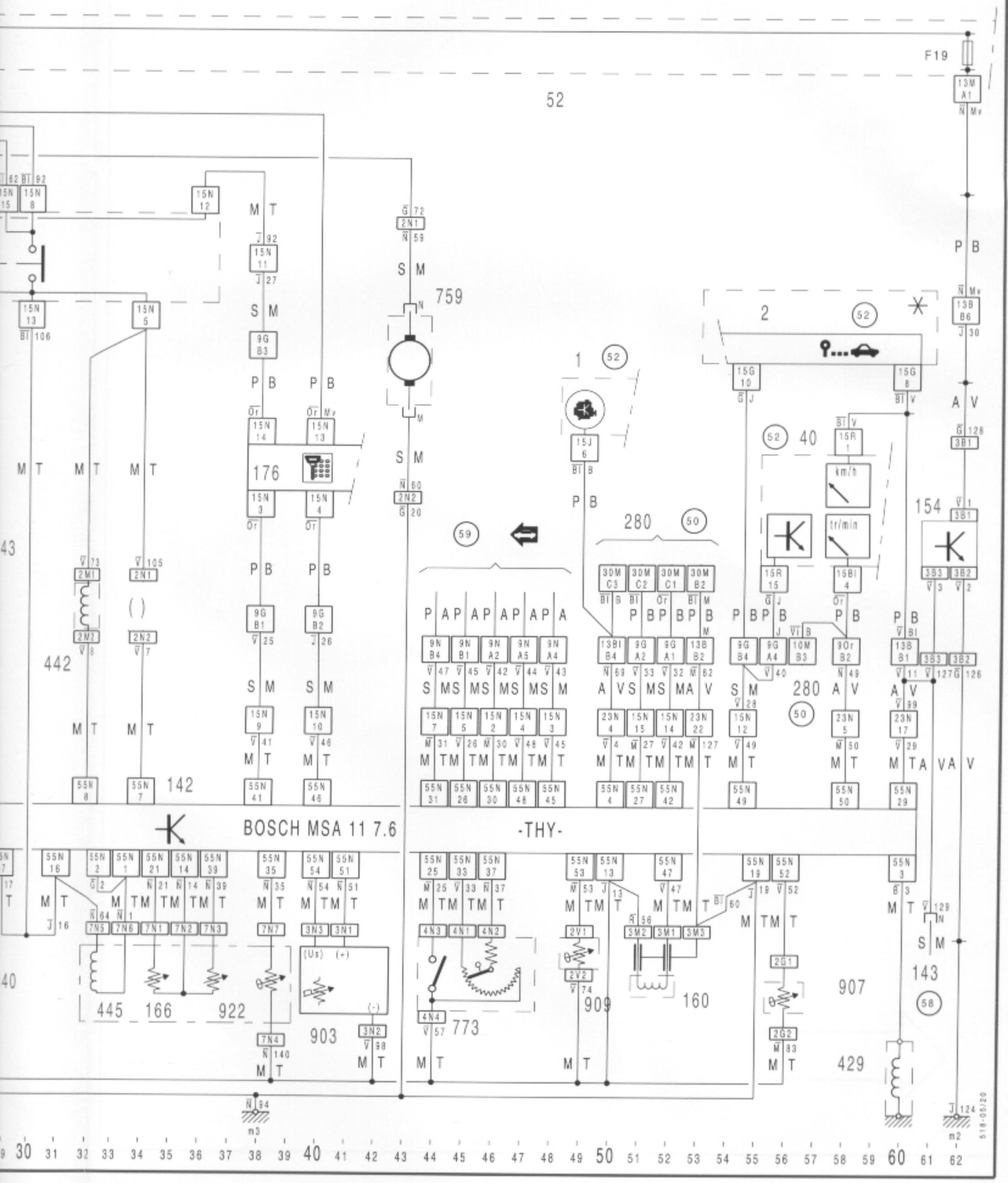


518-05/10b

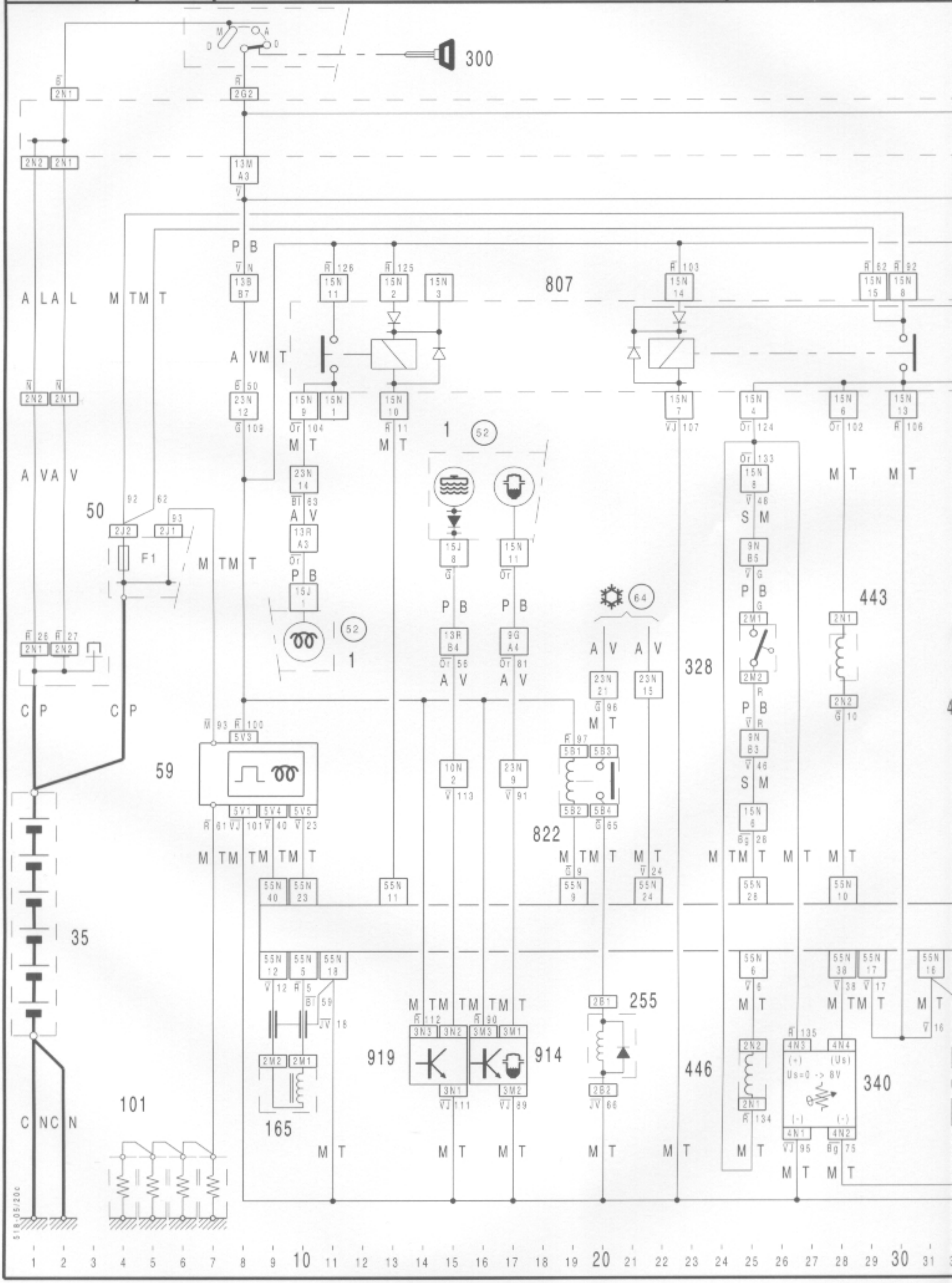
www.WorkshopManuals.co.uk



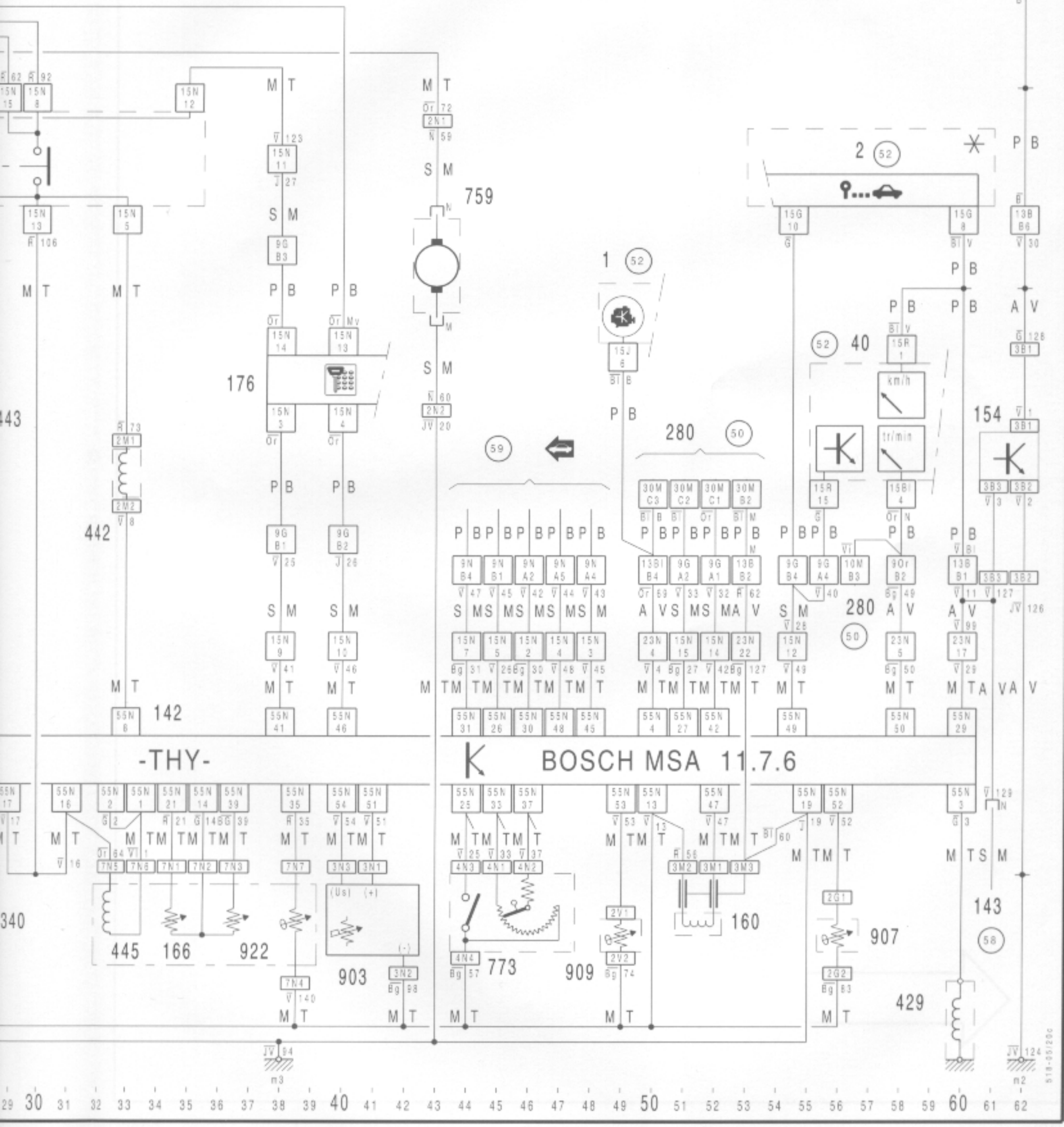
www.WorkshopManuals.co.uk



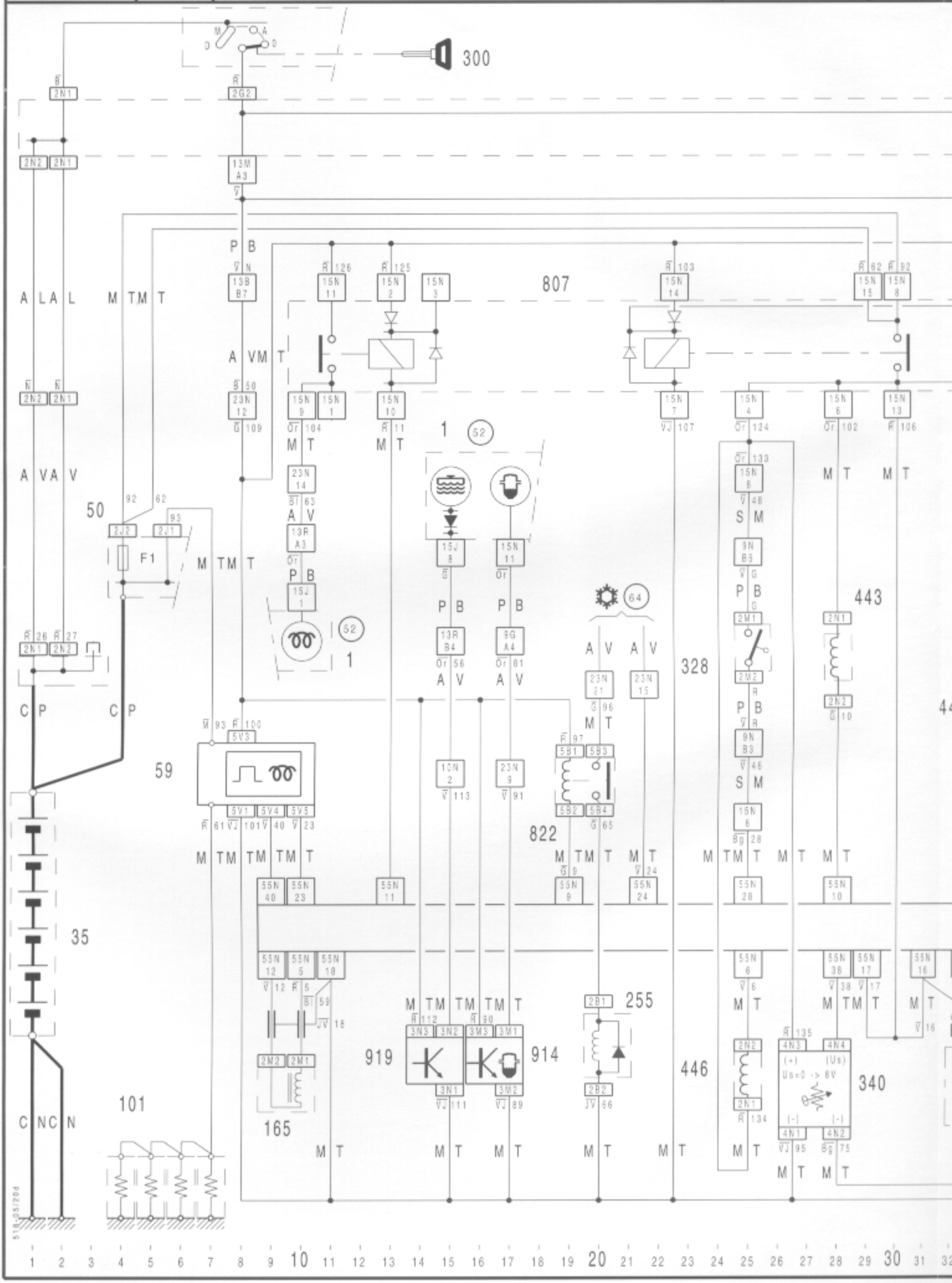
www.WorkshopManuals.co.uk



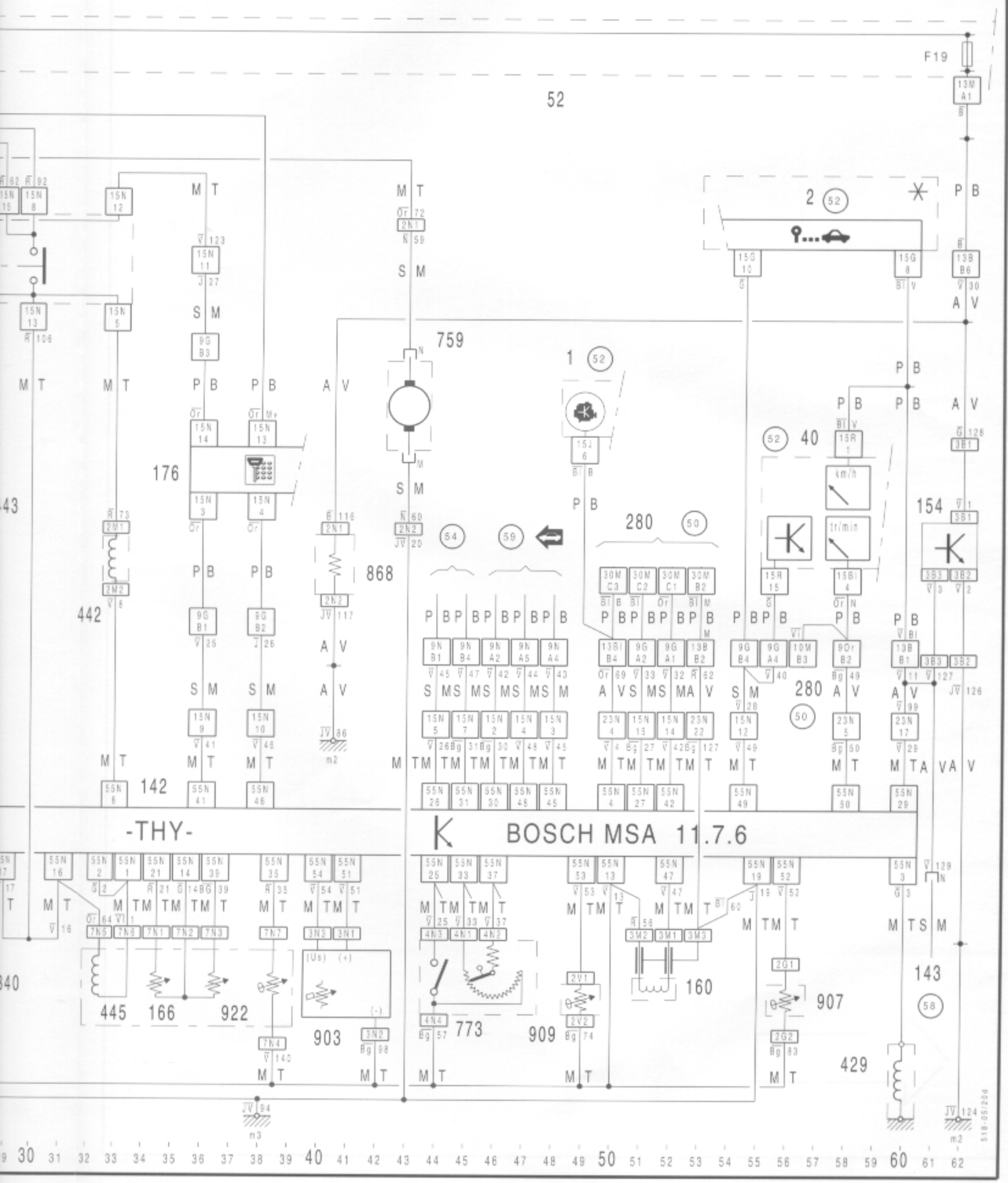
www.WorkshopManuals.co.uk



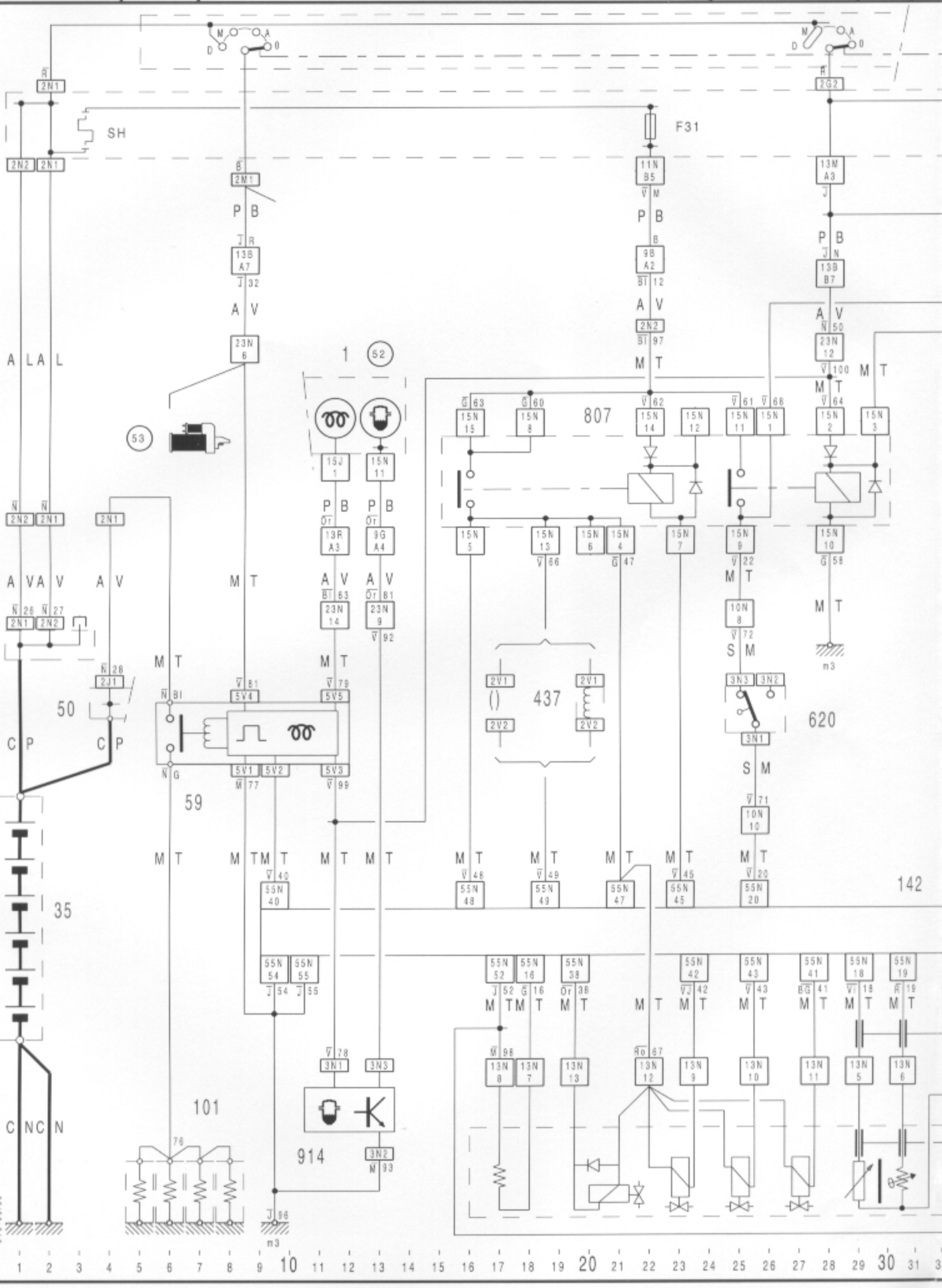
www.WorkshopManuals.co.uk



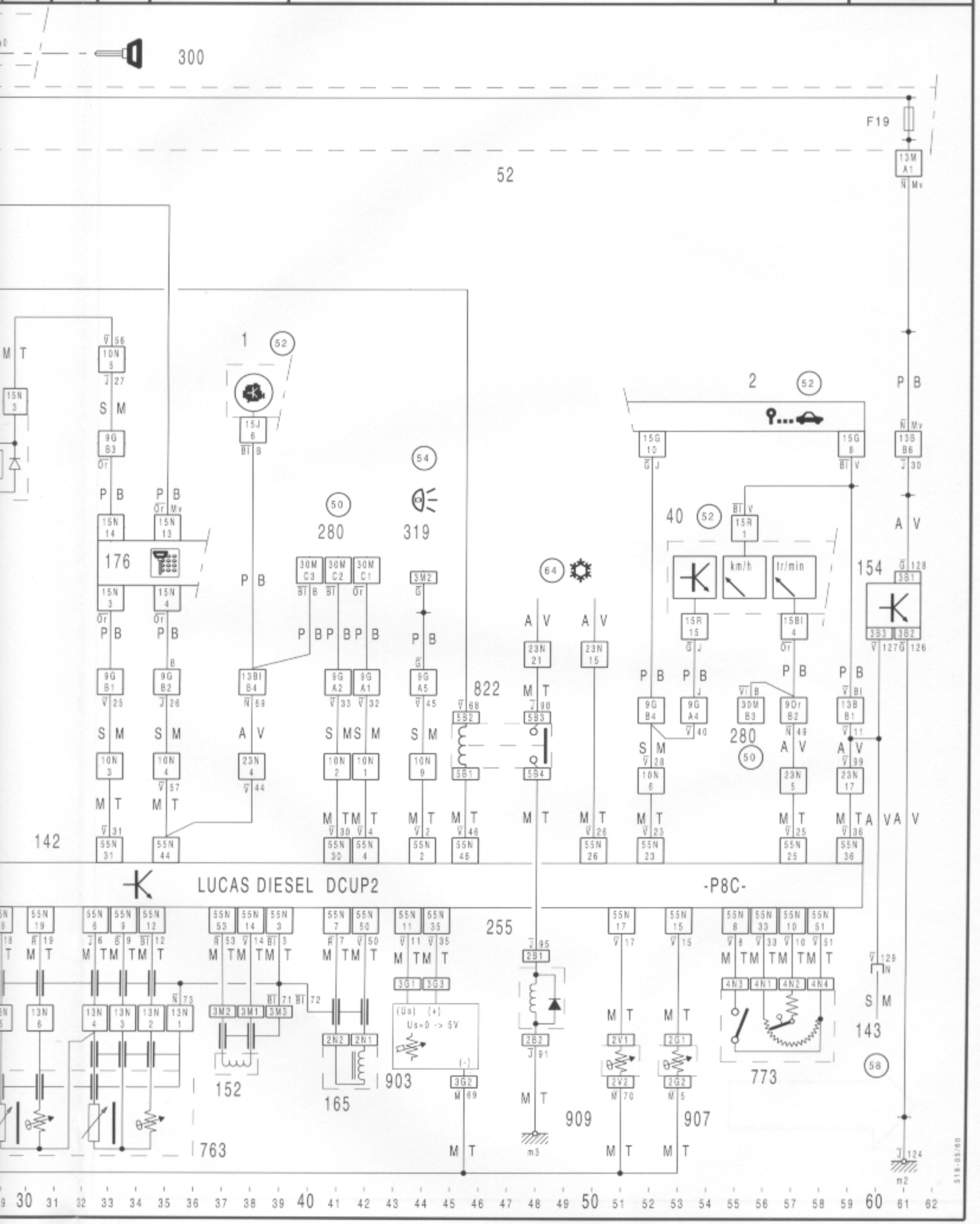
www.WorkshopManuals.co.uk



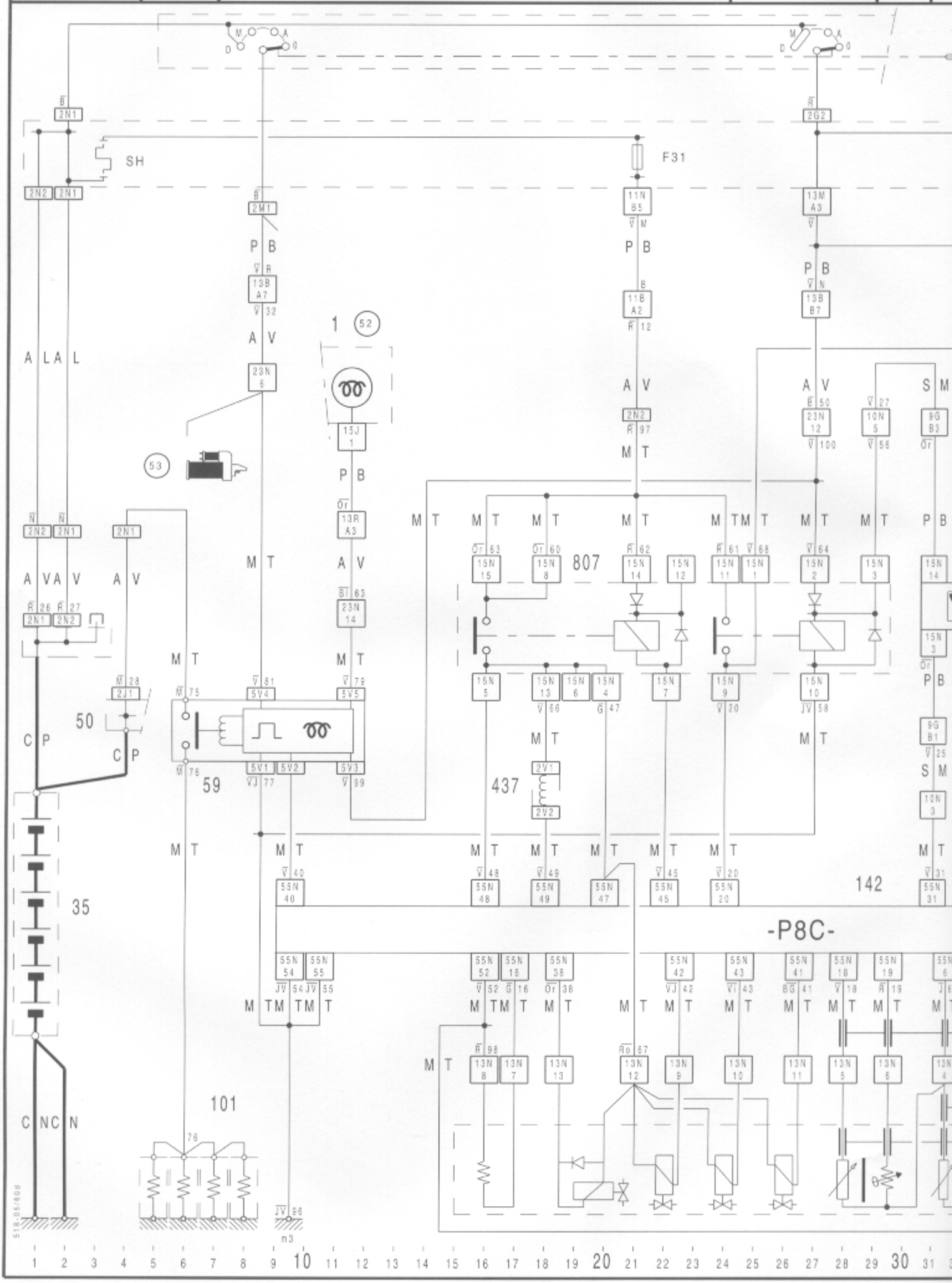
www.WorkshopManuals.co.uk



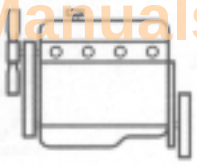
www.WorkshopManuals.co.uk

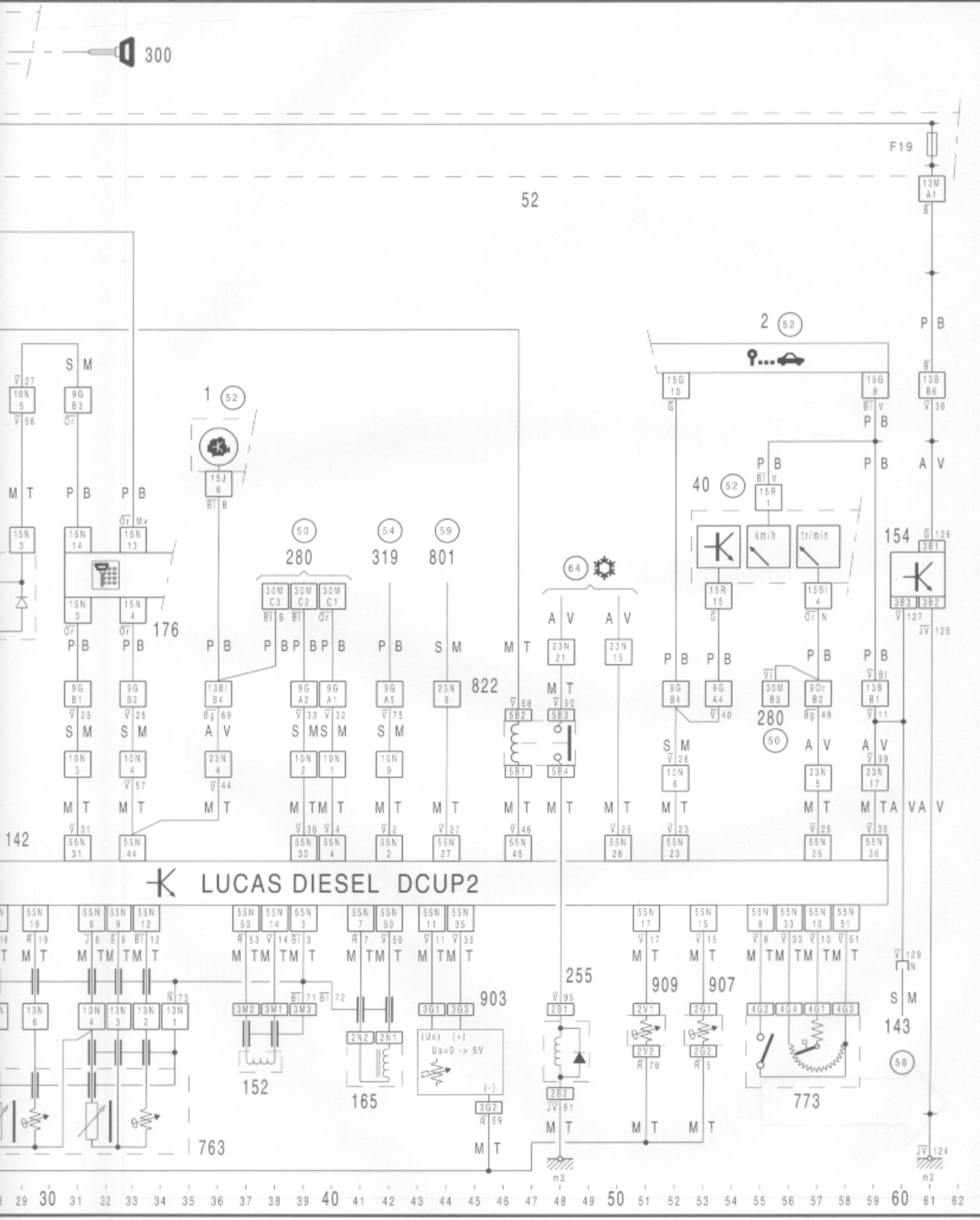


www.WorkshopManuals.co.uk

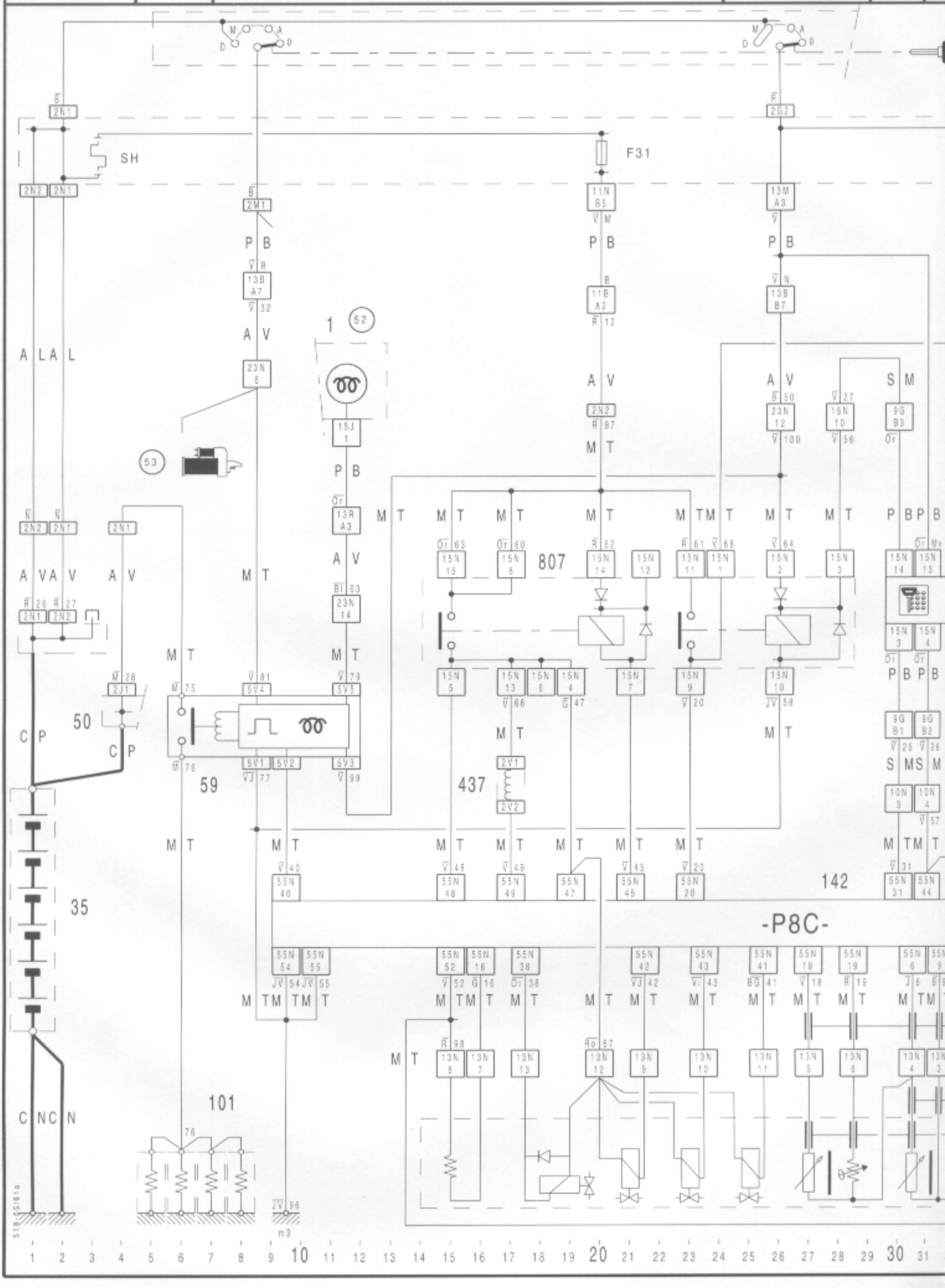


www.WorkshopManuals.co.uk





www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

LUCAS DIESEL DCUP2

300 52 F19 13M A1 B

2 (52) 15G 10 G 15G 8 Bl V P B 13B B6 V 30 A V

40 (52) P B Bl V 15R 1 km/h trimin 15R 15 G 15Bl 4 Or N 154 G 128 3B1 3B3 3B2 V 127 JV 126

280 (50) Vi 30M B3 9Or B2 Bg 49 A V 23N 5 M T V 25 55N 25

P B P B 9G B4 9G A4 V 40 S M V 28 10N 6 M T V 23 55N 23

P B V Bl 13B B1 V 11 A V V 99 23N 17 M TA VA V V 36 55N 36

1 (52) 15J 6 Bl B 13Bl B4 Bg 69 A V 23N 4 V 44 M T

50 280 30M C3 30N C2 30N C1 Bl B Bl Or P B P B P B P B 9G B1 9G B2 9G A2 9G A1 V 25 V 26 V 33 V 32 S MS M 10N 3 10N 4 10N 2 10N 1 V 57 V 30 V 4 M TM T 55N 31 55N 44 55N 30 55N 4

59 P B P B P B P B P B 9N B4 9N B1 9N A5 9N A2 9N A4 V 47 V 45 V 44 V 42 V 43 S MS MS MS MS M 15N 7 15N 5 15N 4 15N 2 15N 3 M TM TM TM TM T V 1 V 2 V 28 V 29 V 32 55N 1 55N 2 55N 28 55N 29 55N 32

59 801 S M 23N 6 M T V 27 55N 27

822 M T V 88 5B2 5B1 V 45 55N 46

64 A VA V M T 23N 21 23N 15 M T V 90 5B3 5B4 M TM T V 25 55N 26

255 V 95 2B1 2B2 JV 91 M T

909 2V1 2V2 A 70 M T

907 2G1 2G2 A 5 M T

903 3G1 3G3 (Us) (+) Us=0 -> 5V (-) 3G2 A 69 M T

152 55N 53 55N 14 55N 3 A 53 V 14 Bl 3 M TM TM T 3M2 3M1 3M3 Bl 72 Bl 71

165 55N 7 55N 50 A 7 V 50 M TM T 2N2 2N1

773 55N 8 55N 33 55N 10 55N 51 V 8 V 33 V 10 V 51 M TM TM TM T 4G2 4G4 4G1 4G3

143 (58) V 129 N S M

763 55N 6 55N 9 55N 12 J 6 B 9 Bl 12 M TM TM T R 73 13N 4 13N 3 13N 2 13N 1

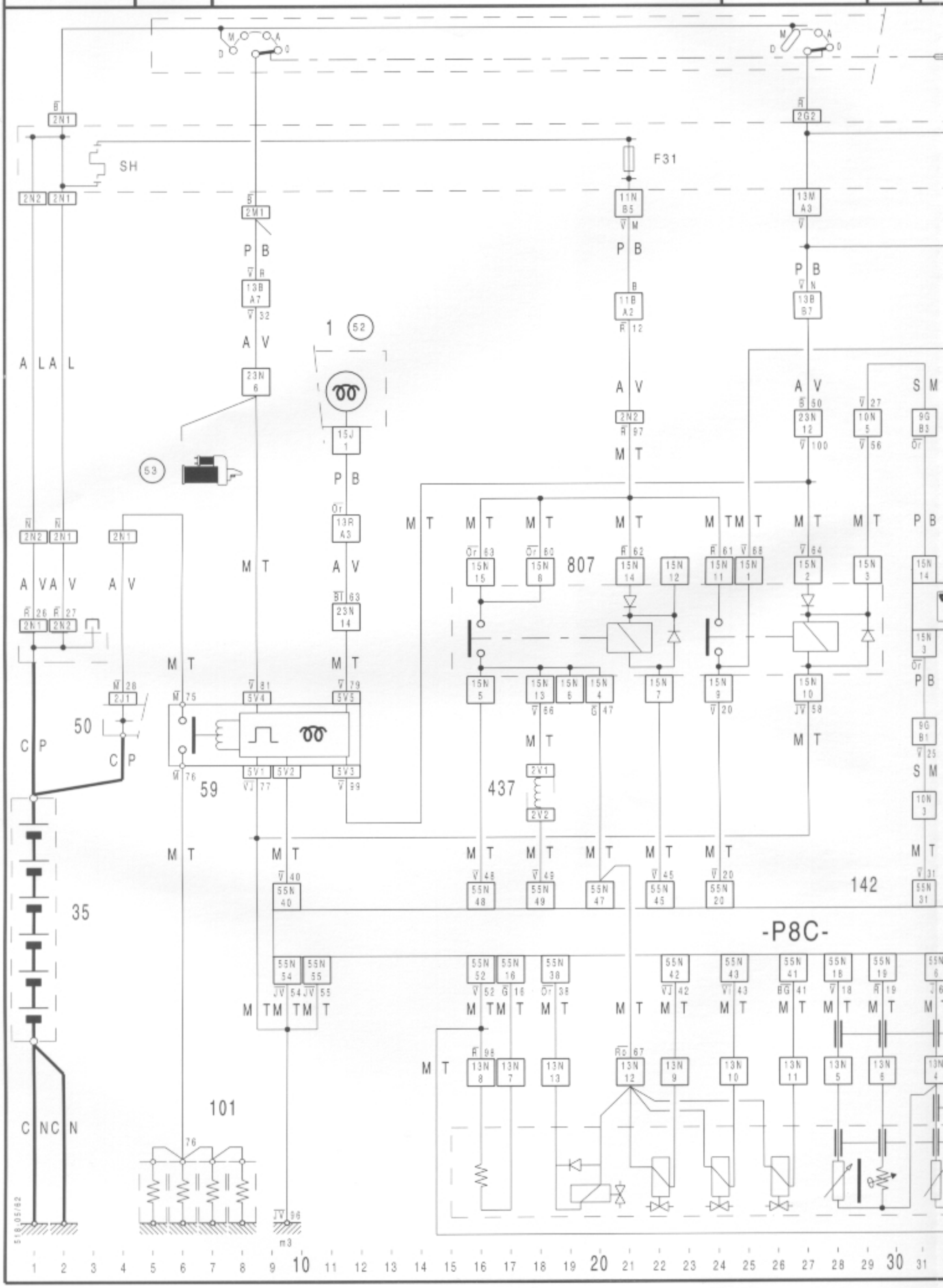
176 15N 14 15N 13 15N 3 15N 4 Or Mv Or Or P B P B

n3 n2 JV 124

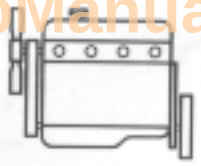
518-05/61a

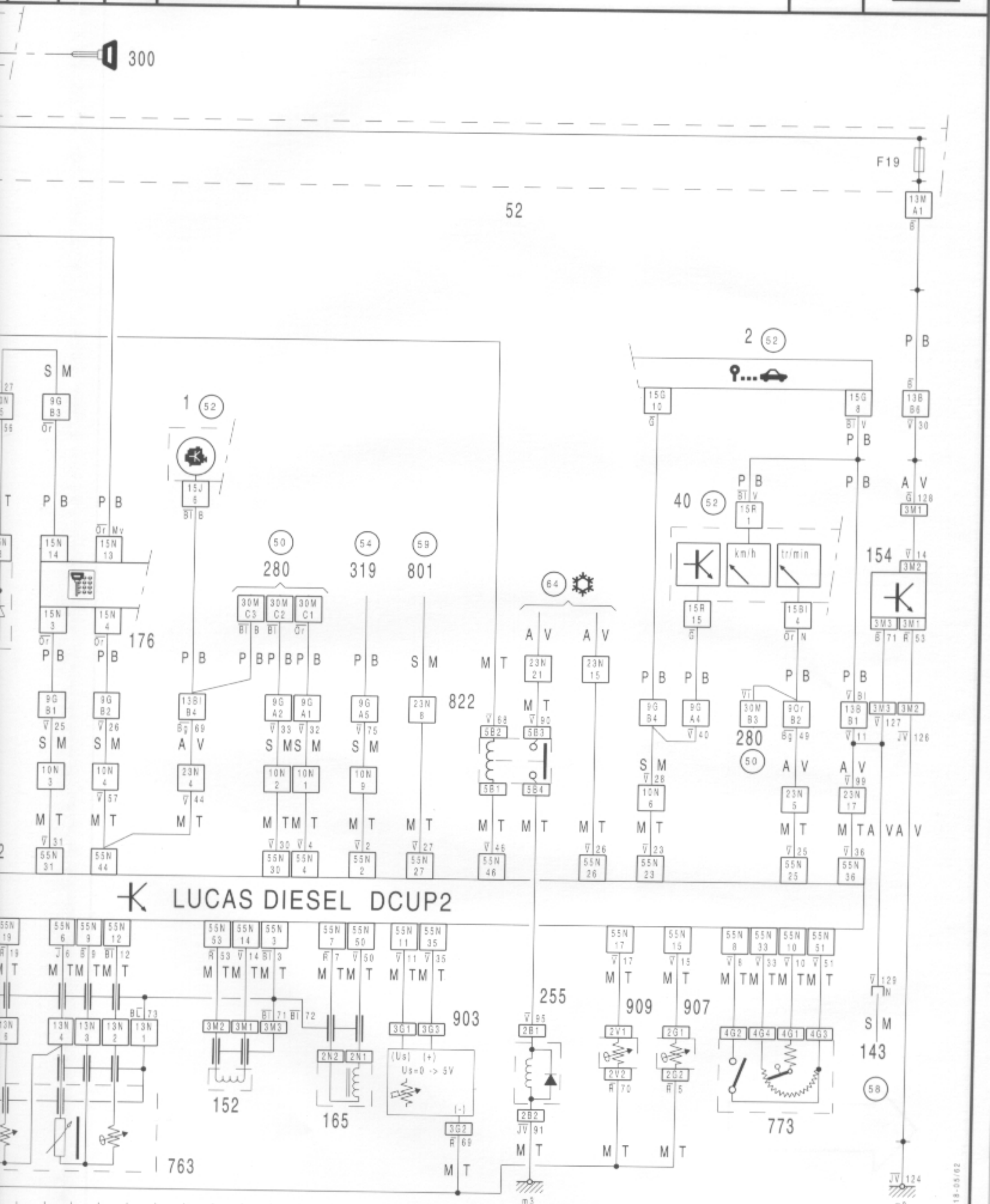
29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

www.WorkshopManuals.co.uk

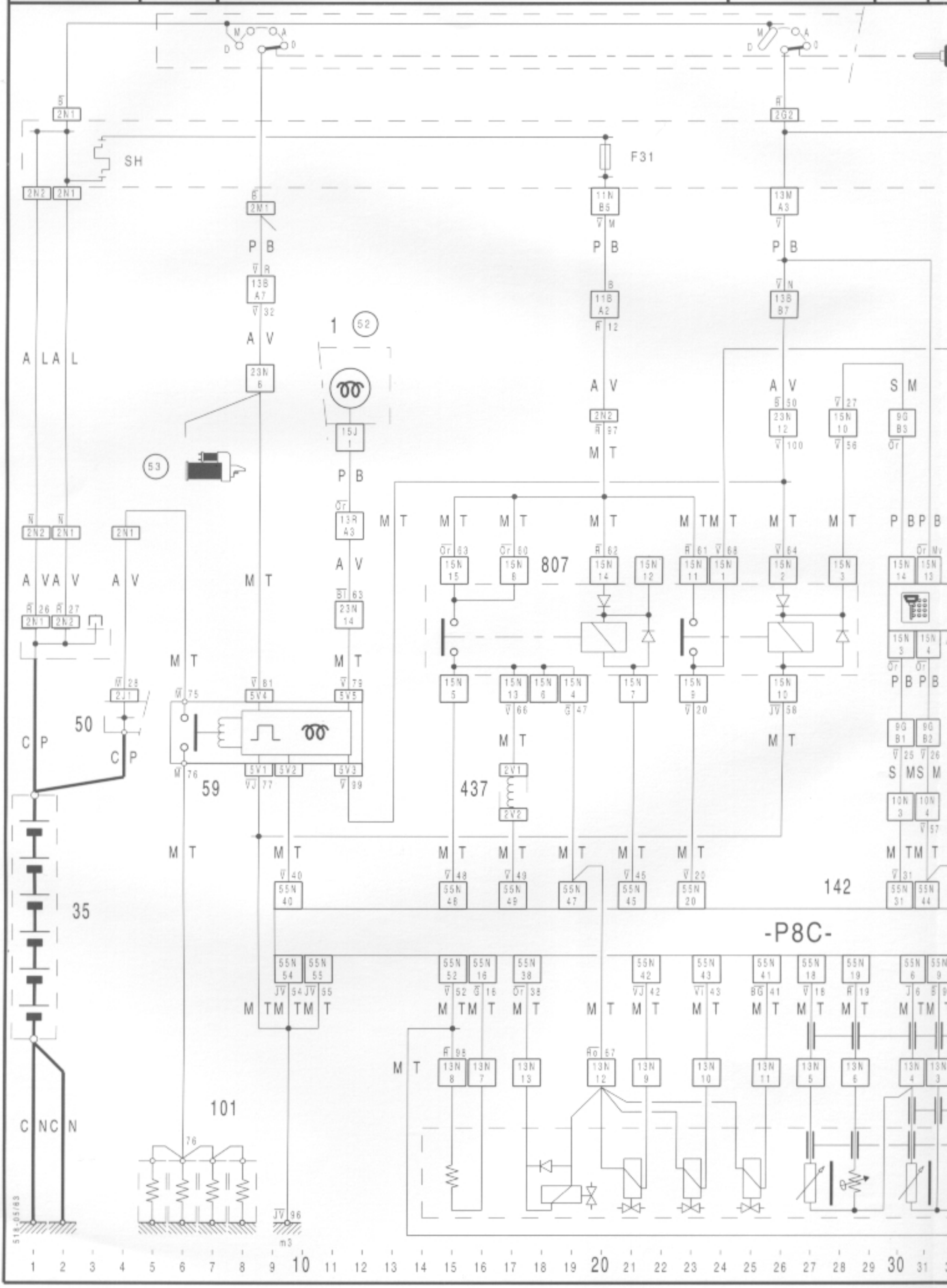


www.WorkshopManuals.co.uk

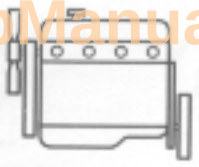




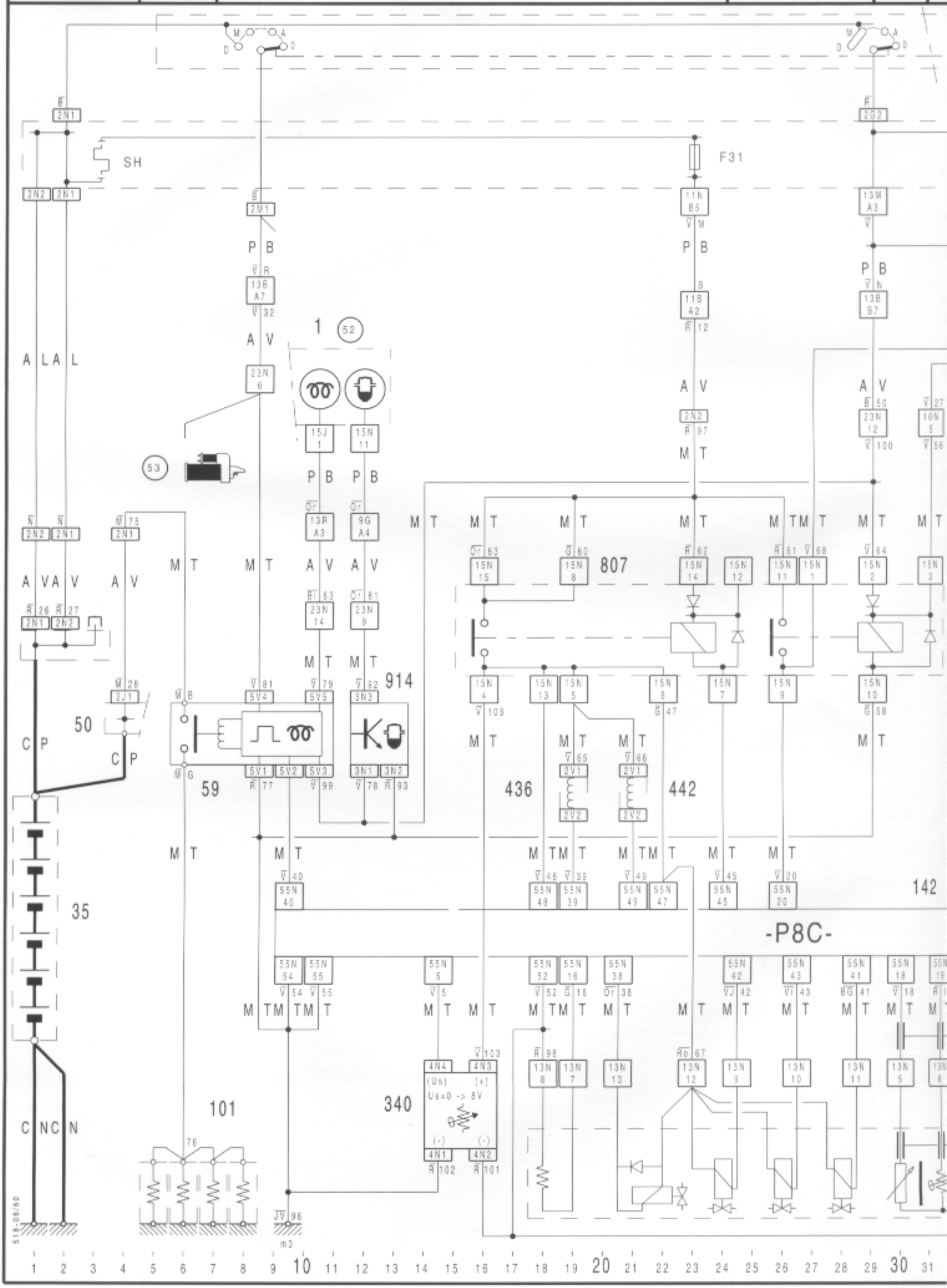
www.WorkshopManuals.co.uk



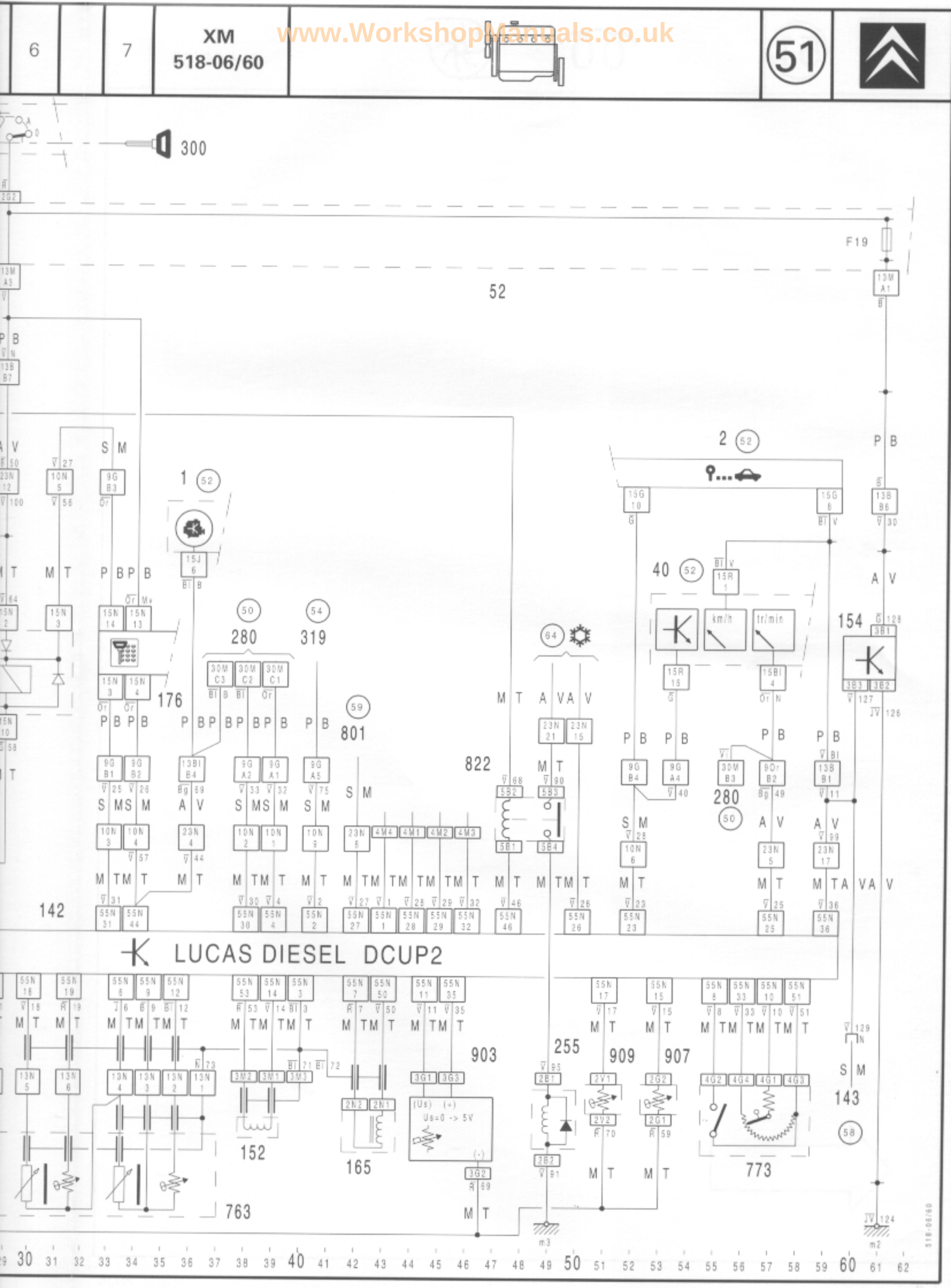
www.WorkshopManuals.co.uk



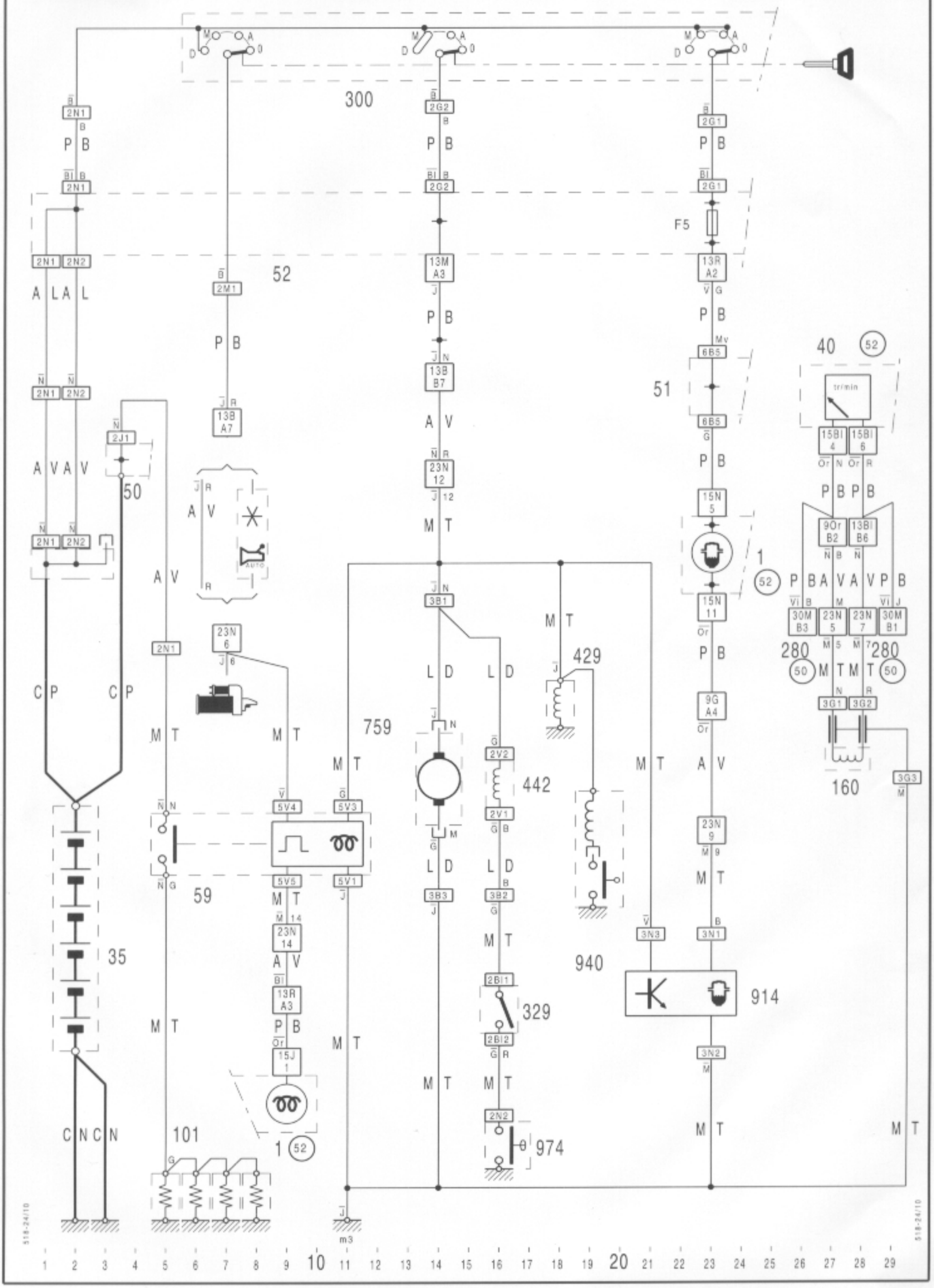
www.WorkshopManuals.co.uk



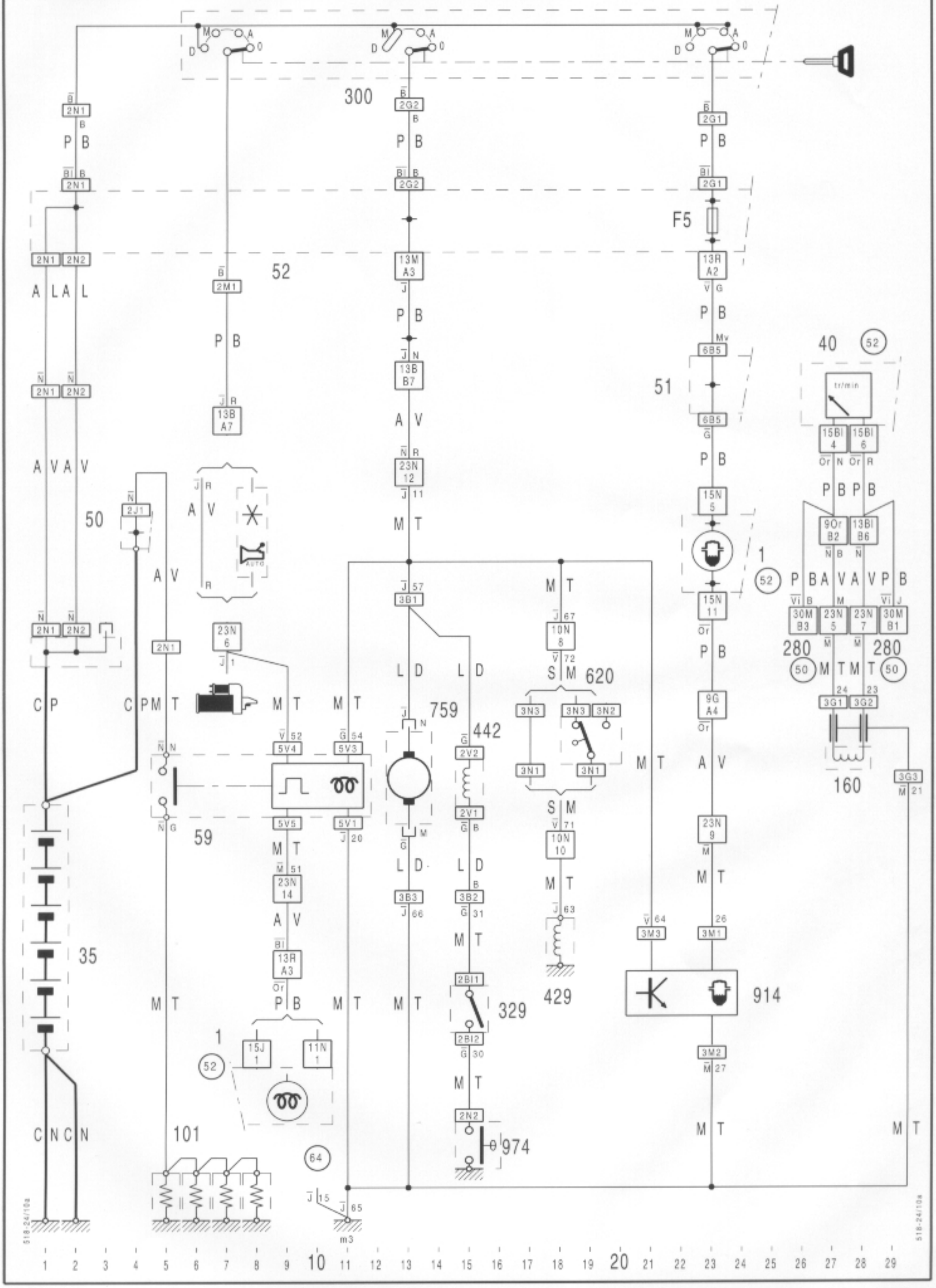
www.WorkshopManuals.co.uk



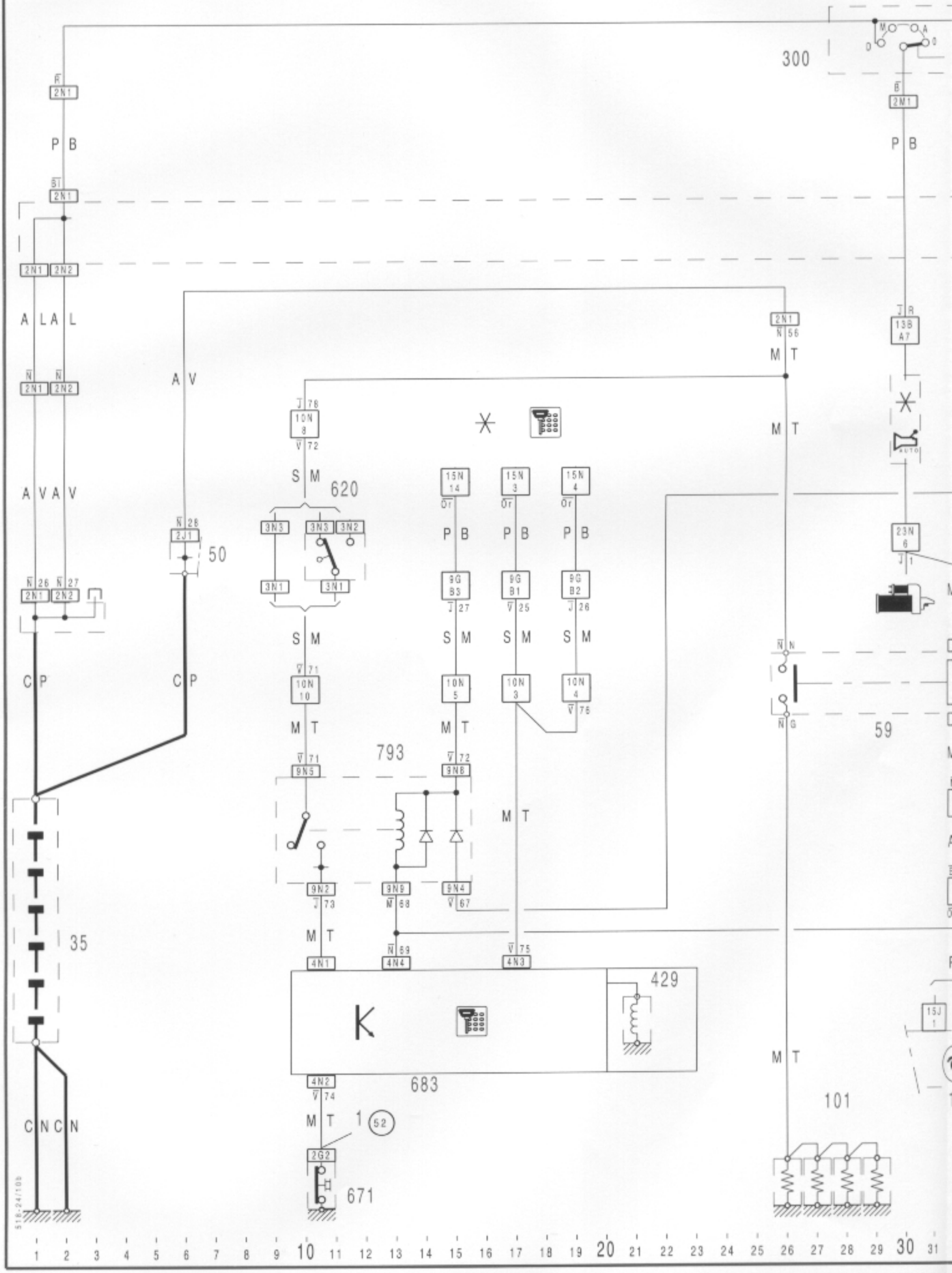
www.WorkshopManuals.co.uk



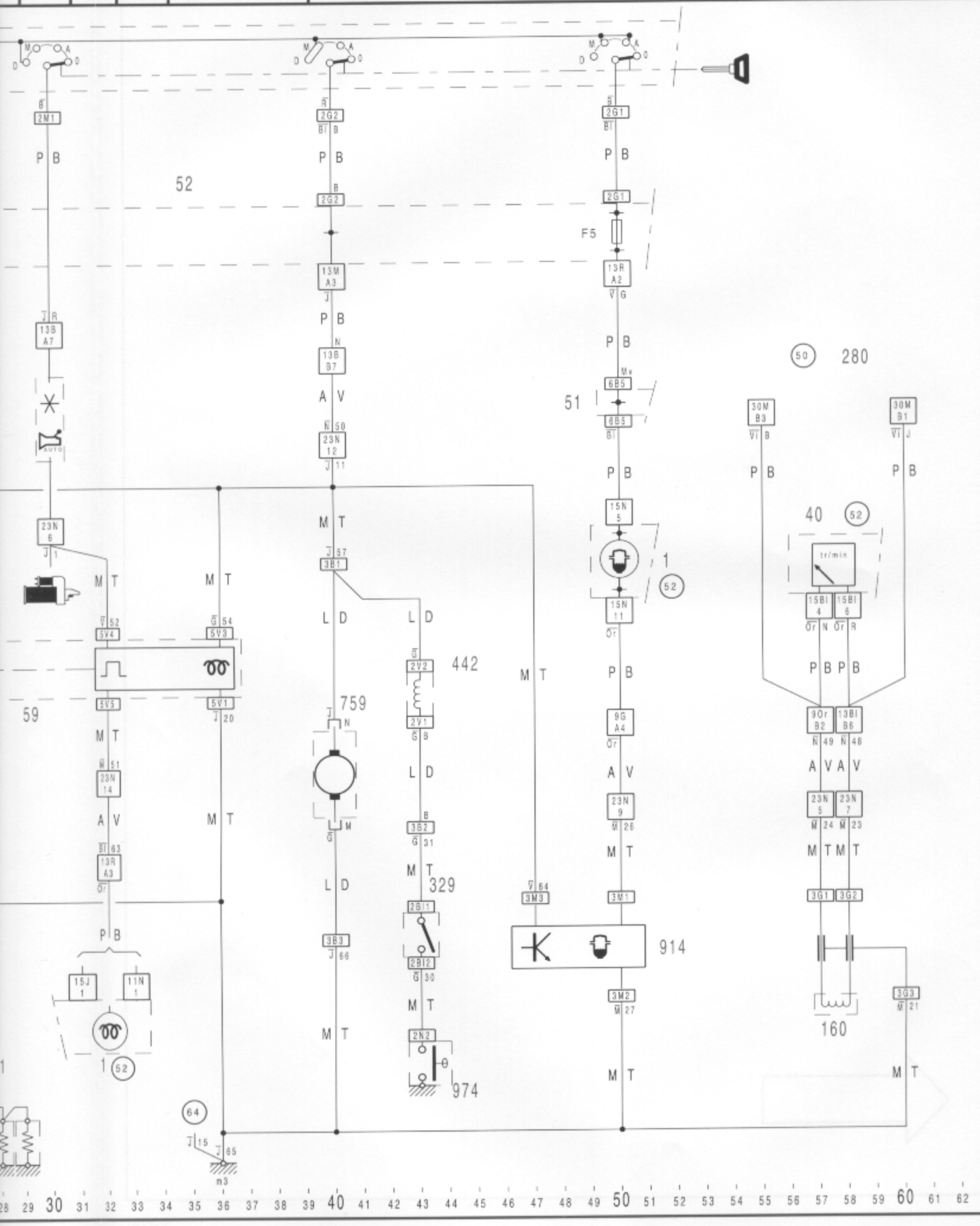
www.WorkshopManuals.co.uk


300
52
50
59
35
101
51
40
1
280
160
914
329
429
974
759
442
620
F5
M T
A V
L D
C P
C N
P B
A L
A V A V
C P C P M T
C N C N
L D L D
M T M T
M T M T
M T M T

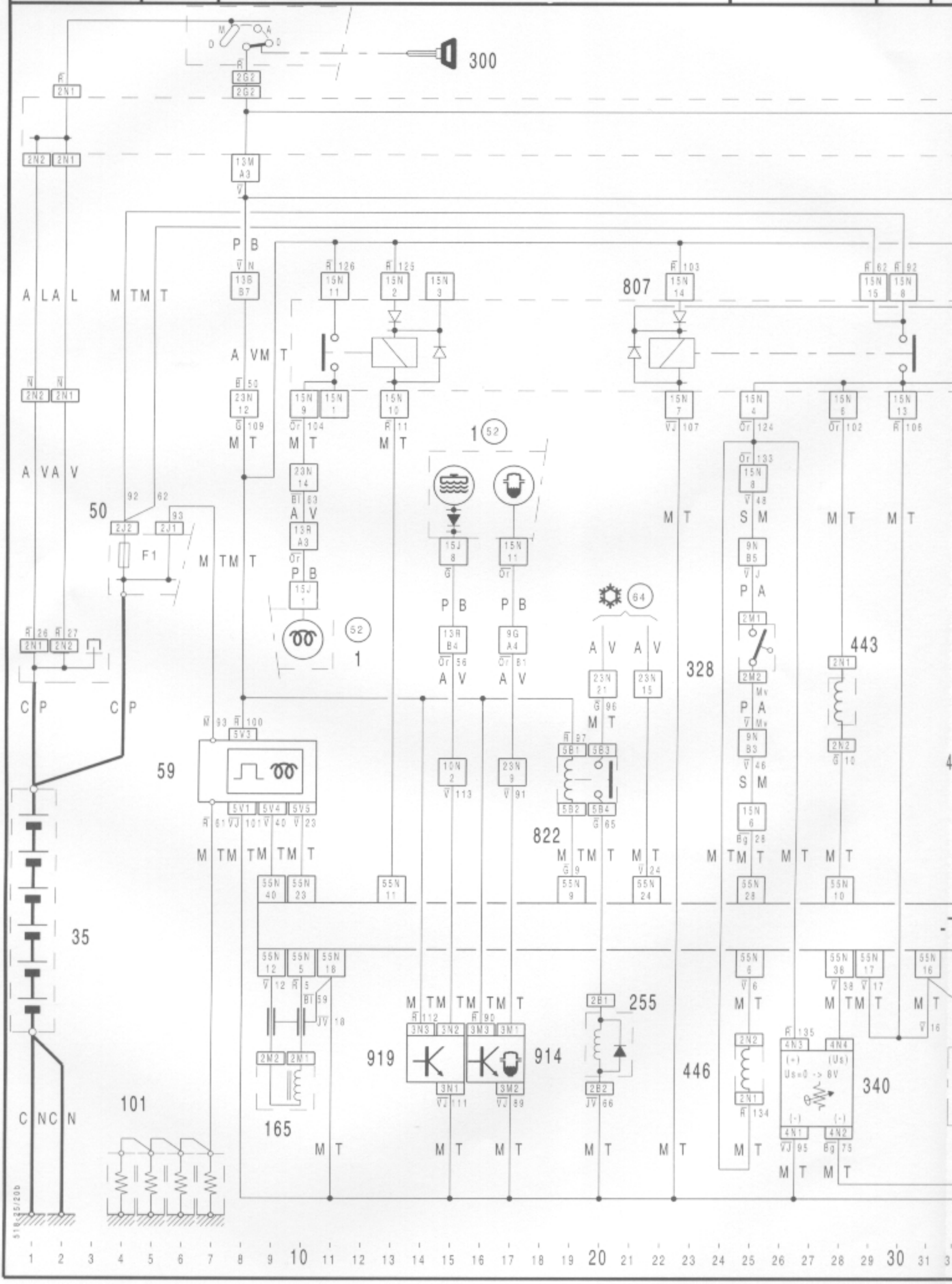
www.WorkshopManuals.co.uk



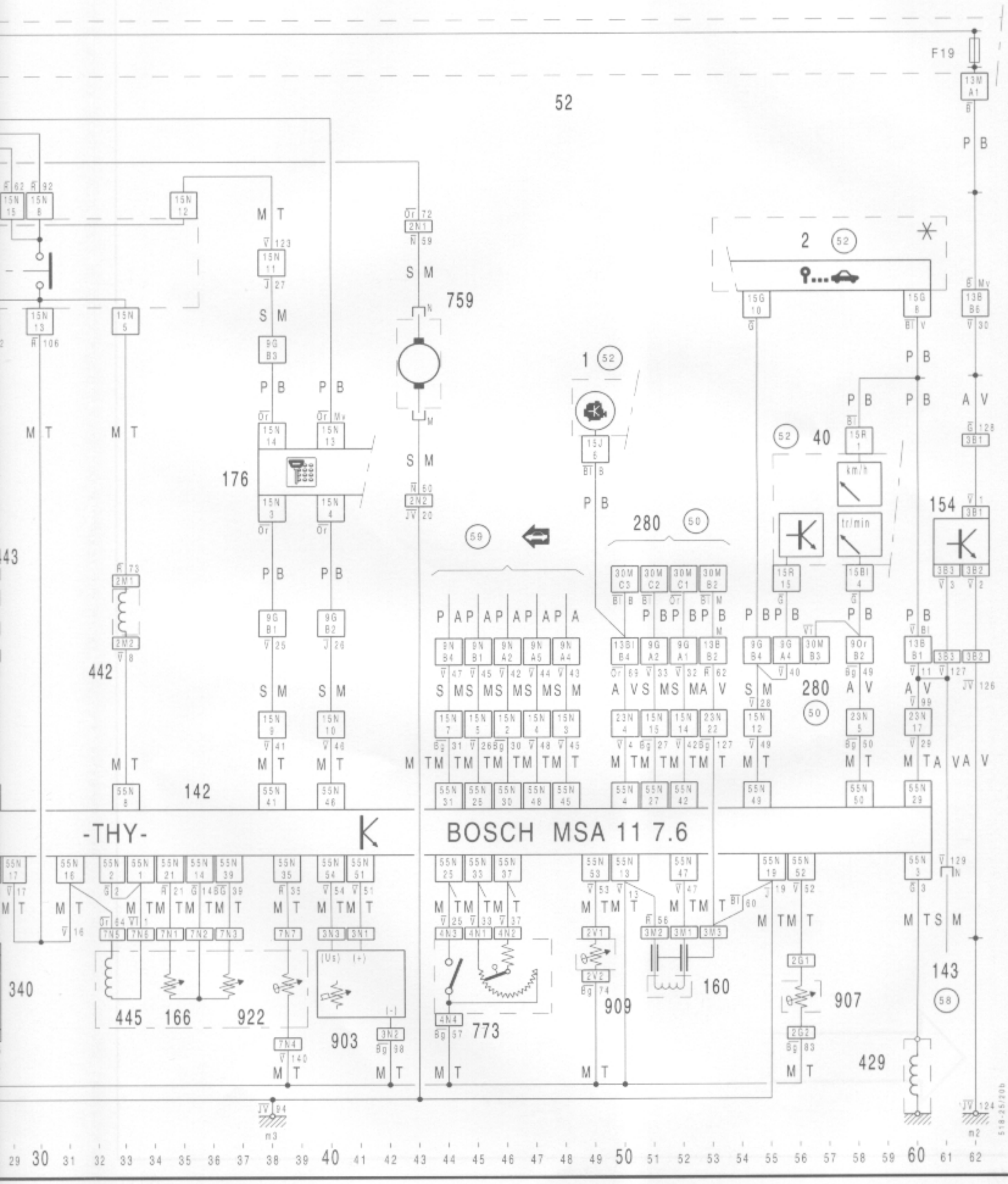
www.WorkshopManuals.co.uk



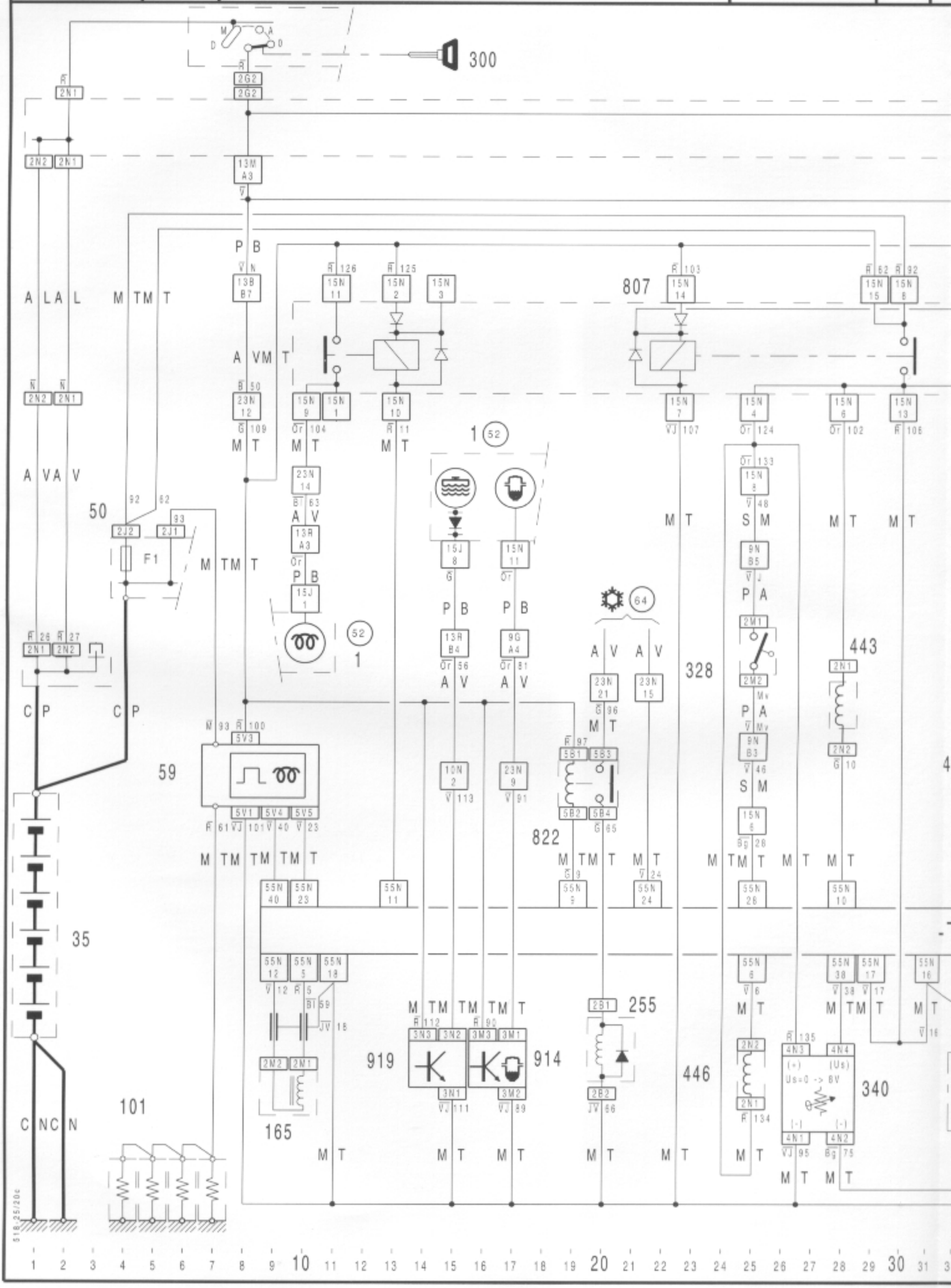
www.WorkshopManuals.co.uk



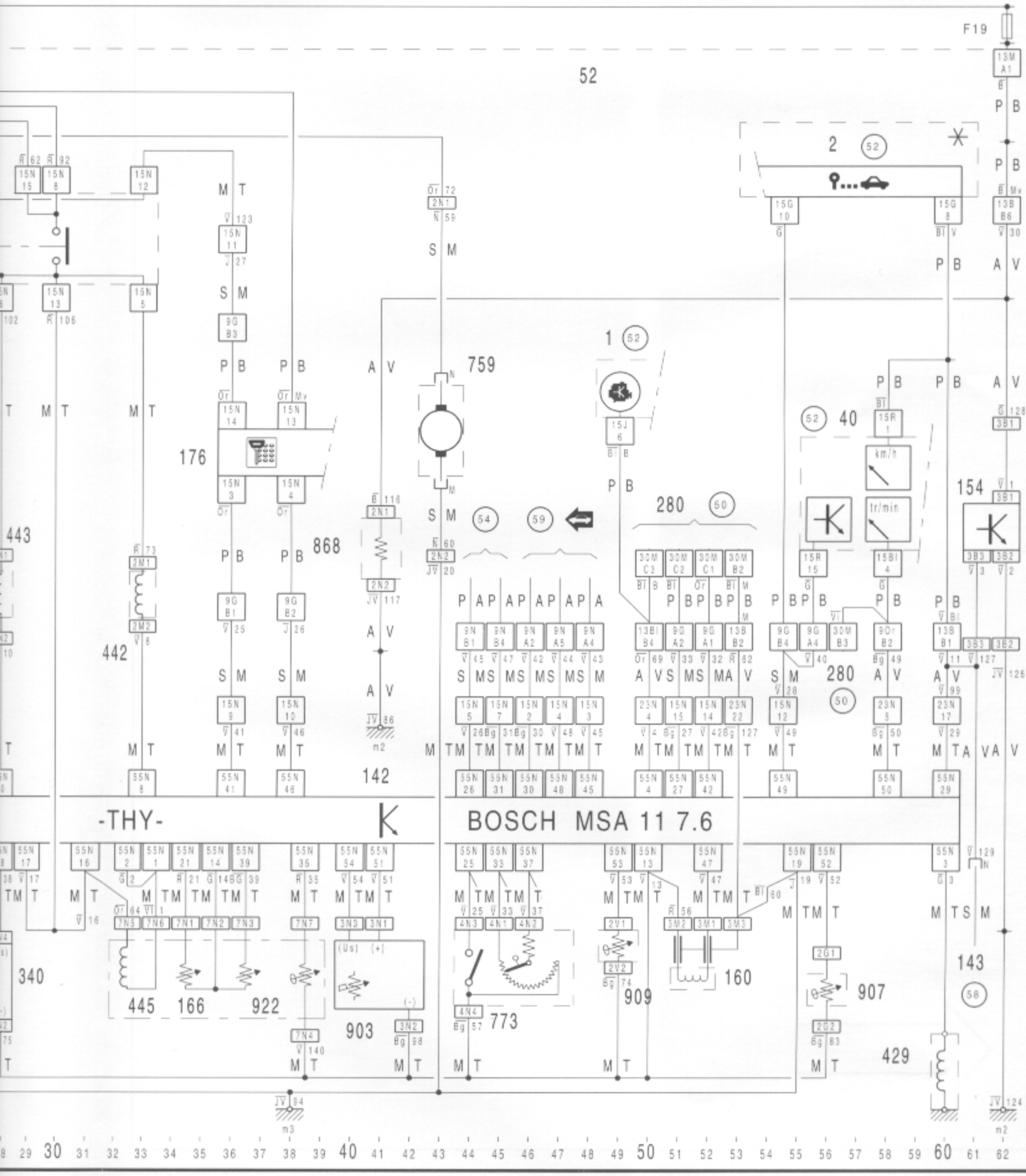
www.WorkshopManuals.co.uk



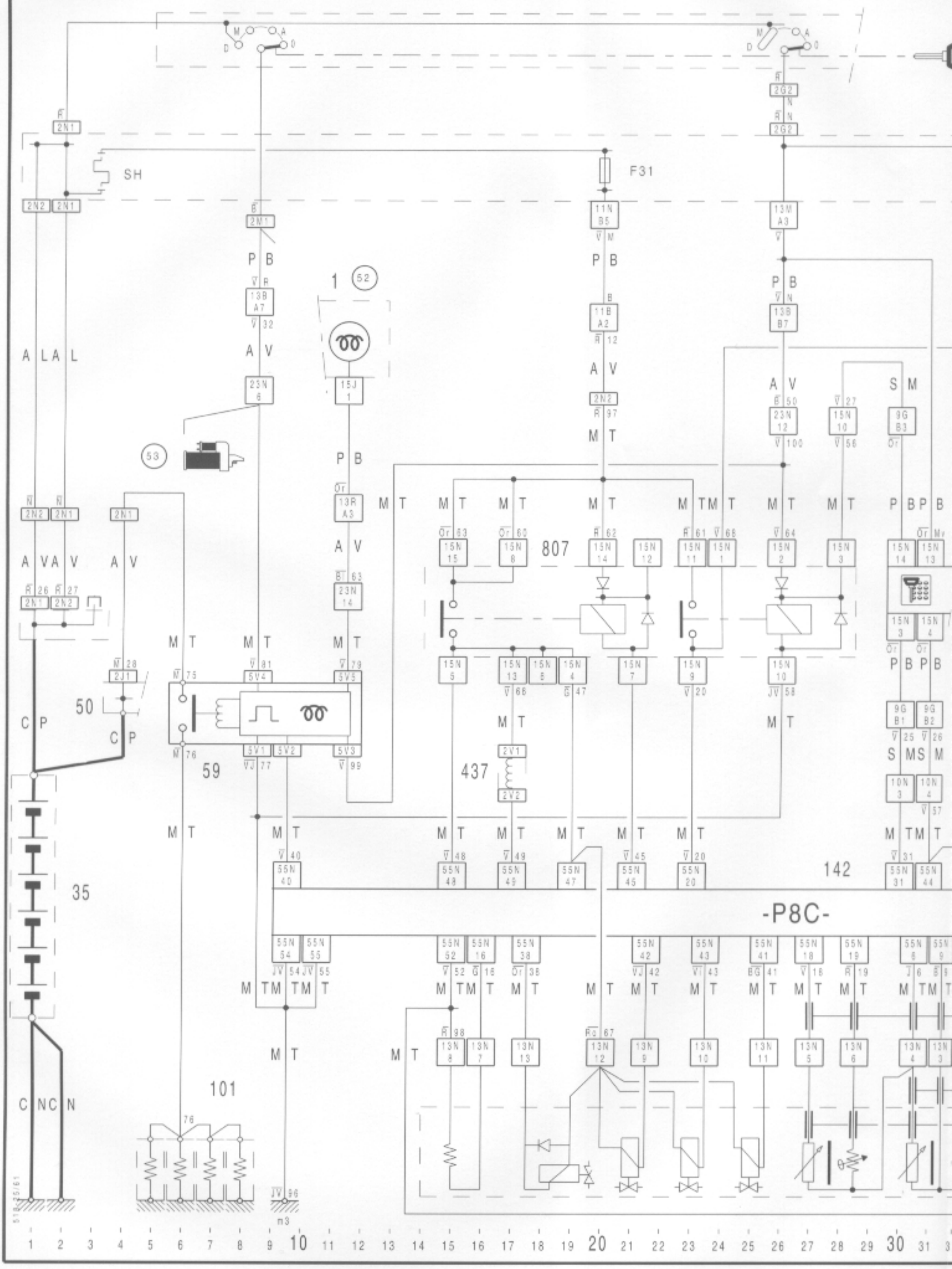
www.WorkshopManuals.co.uk



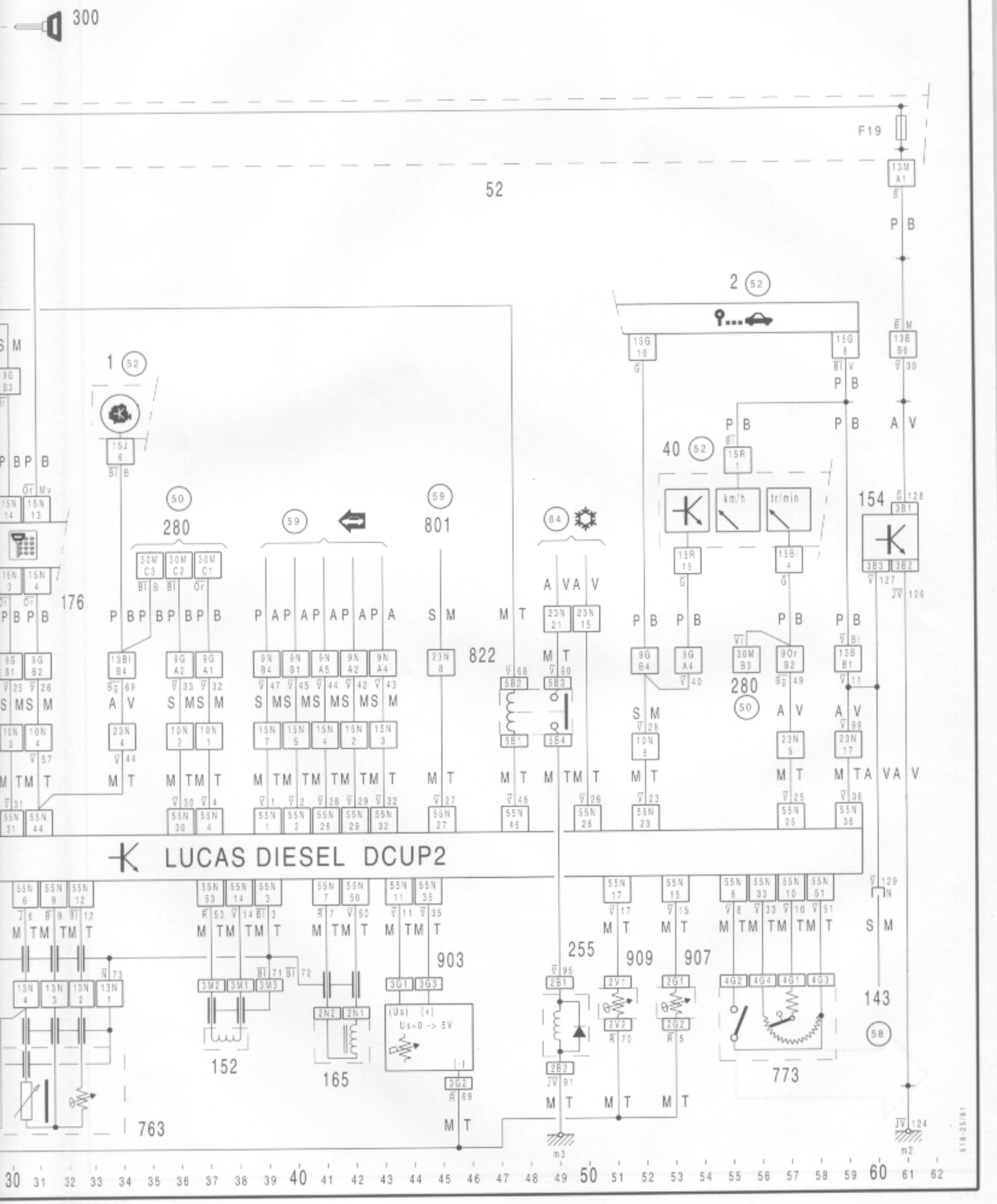
www.WorkshopManuals.co.uk



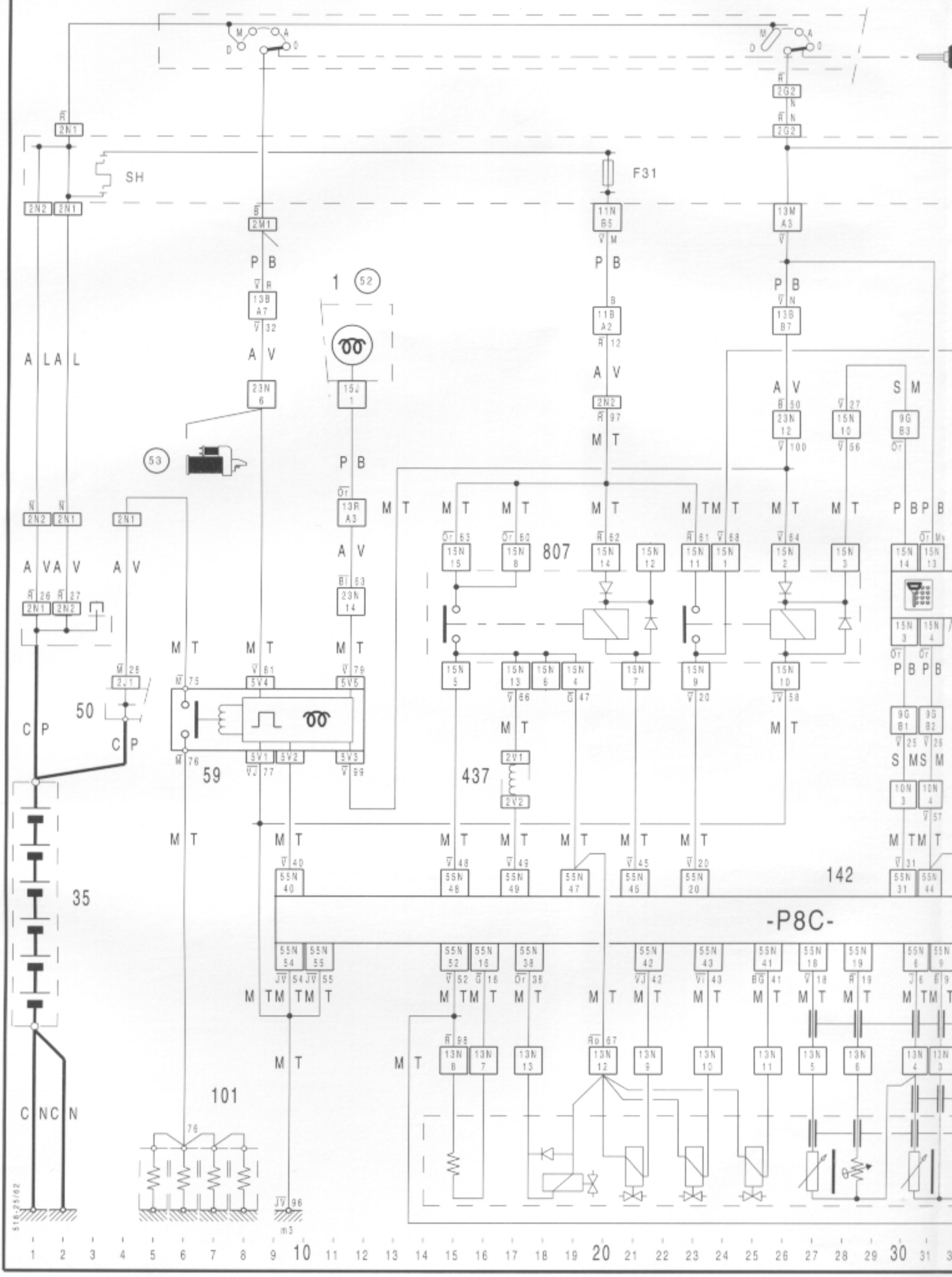
www.WorkshopManuals.co.uk



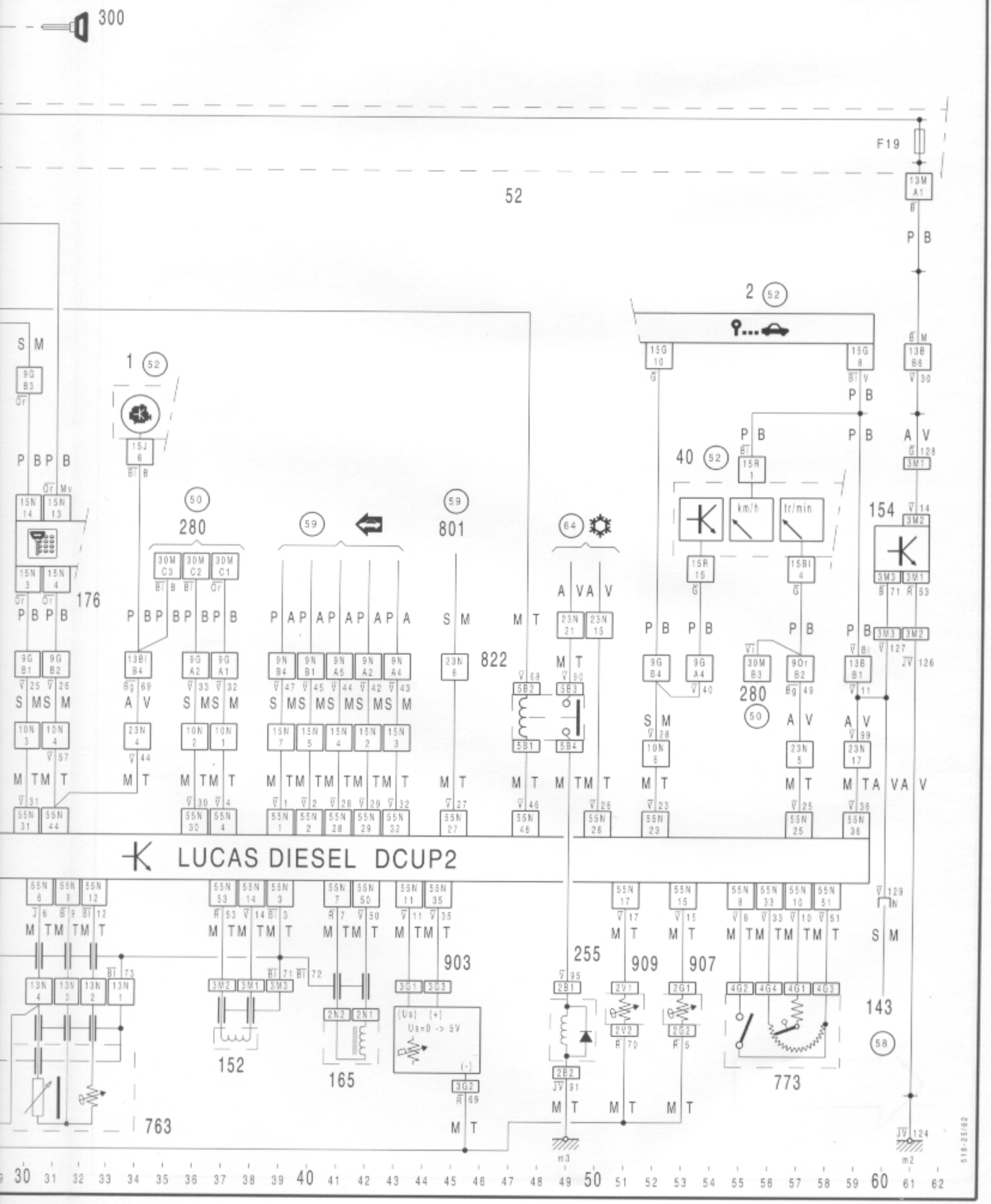
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk


300
52
F19
13M A1
B
P B
2 52
15G 10
15G 8
BT V
P B
B M
13B B6
V 30
P B
P B
A V
G 128
3M1
40 52
15R 1
km/h
tr/min
154
3M2
3M3 3M1
B 71 R 53
15R 15
15BI 4
P B P B
P B
3M3 3M2
V 127
JV 126
3M3 3M1
V BI
13B B1
V 11
280 50
30M B3
9Or B2
Bg 48
A V
A V
23N 17
M T A VA V
V 36
55N 36
S M
9G B3
Or
P B P B
15N 14
15N 13
Or Mv
15N 3
15N 4
Or Or
P B P B
176
9G B1
9G B2
V 25 V 26
S MS M
10N 3
10N 4
V 57
M TM T
V 31
55N 31
55N 44
1 52
15J 6
BT B
50
280
30M C3
30M C2
30M C1
BT B BT Or
P B P B P B P B
13BI B4
Bg 69
A V
23N 4
V 44
M T
9G A2
9G A1
V 33 V 32
S MS M
10N 2
10N 1
M TM T
V 30 V 4
55N 30
55N 4
59
P A P A P A P A P A
9N B4
9N B1
9N A5
9N A2
9N A4
V 47 V 45 V 44 V 42 V 43
S MS MS MS MS M
15N 7
15N 5
15N 4
15N 2
15N 3
M TM TM TM TM T
V 1 V 2 V 28 V 29 V 32
55N 1
55N 2
55N 28
55N 29
55N 32
59
801
S M
23N 6
M T
V 27
55N 27
822
64
M T
V 68
5B2
5B1
M T
A VA V
23N 21
23N 15
M T
V 90
5B3
5B4
M TM T
V 25
55N 26
M T
V 46
55N 46
P B P B
9G B4
9G A4
V 40
S M
V 28
10N 6
M T
V 23
55N 23
280 50
P B
9Or B2
Bg 48
A V
23N 5
M T
V 25
55N 25
P B
P B
15G 10
G
15G 8
BT V
P B
15R 15
G
15BI 4
G
P B
P B
P B

www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk

INSTRUMENT PANEL
FUNCTION

PARTS LIST
LIST OF THE ELECTRICAL DIAGRAMS

www.WorkshopManuals.co.uk

Ref.	Description	Func.
1	Warning lamps central display unit	52
2	R.H. display unit (computer, clock, exterior temperature)	52
3	L.H. display unit (electronic or silhouette)	52
35	Battery	TT
40	Instrument cluster	52
50	Supply box	TT
51	Branch box	TT
52	Junction box	TT
53	Water temperature control unit	52-64
59	Preheater control unit	51-58
61	Catalytic converter control unit	51
65	Water level control unit	52
133	Hydraulic pressure and/or fluid level audible warning	52
142	Injection E.C.U.	51
143	Suspension E.C.U.	51-58
154	Distance sensor	51-58
212	R.H. switch (windscreen wiper, computer)	56
280	Diagnostic connector	TT
294	Driver's seat belt switch	52
300	Anti-theft switch	TT
315	Handbrake switch	52
316	Coolant level switch	52
317	Hydraulic fluid level switch	52
319	Stoplamp switch	54
650	Fuel gauge	52
671	Engine oil pressure switch	52
672	Hydraulic pressure switch	52
750	L.H. front brake pads	52
751	R.H. front brake pads	52
765	Radio set	65
807	Injection relay	51-52
880	Lighting rheostat	52-65
902	Engine oil level sensor	52
904	Engine oil pressure sensor	51-52
906	Exterior air temperature sensor	52
910	Engine water temperature sensor	52-64
911	Engine water temperature sensor (dial)	52
917	Catalytic converter temperature sensor	51
918	Engine oil temperature sensor	52

www.WorkshopManuals.co.uk

INSTRUMENT CLUSTER

NUMBER	STEERING	APPLICABLE	DESCRIPTION
520-0/10	All Types	6383 → → 6749	Circuit diagram XMA42
520-0/10a	All Types	6749 → → 7329	Evolution a : Removal of side and tail lamps warning lamp Addition of airbag warning lamp XMS151
520-0/10b	All Types	7329 → → 7483	Evolution b : Addition of side airbag warning lamp XMC014
520-0/10c	All Types	7483 →	Evolution c : + after ignition airbag warning lamp instead of earth XMC025
520-0/20	All Types	6383 → → 6749	Instrument cluster XMA45
520-0/20a	All Types	6749 → → 6947	Evolution a : Removal of side and tail lamp warning lamp Fuse box modified XMS152
520-0/20b	All Types	6947 → → 7084	Evolution b : Addition of airbag warning lamp XMC001
520-0/20c	All Types	7084 → → 7329	Evolution c : Electrical harnesses PB and AV modification XMC006
520-0/20d	All Types	7329 → → 7483	Evolution d : Electrical harnesses PB, MT and JN modification XMC015
520-0/20e	All Types	7483 →	Evolution e : Instrument cluster modified XMC026
520-0/21	All Types	6383 → → 6749	Oil level and temperature indicators XMA46
520-0/21a	All Types	6749 → → 7084	Evolution a : Removal of side and tail lamps warning lamp Fuse box modified XMS153
520-0/21b	All Types	7084 → → 7329	Evolution b : Electrical harnesses JN, MT and PB modification XMC007
520-0/21c	All Types	7329 → → 7483	Evolution c : Electrical harnesses PB, MT and JN modification XMC016
520-0/21d	All Types	7483 →	Evolution d : Electrical harnesses JN and MT modified XMC027

www.WorkshopManuals.co.uk

INSTRUMENT PANEL FUNCTION

PARTS LIST
LIST OF THE ELECTRICAL DIAGRAMS

www.WorkshopManuals.co.uk

Ref.	Description	Func.
1	Warning lamps central display unit	52
2	R.H. display unit (computer, clock, outside temperature)	52
3	L.H. display unit (electronic display unit or silhouette)	52
35	Battery	TT
40	Instrument cluster	52
50	Supply box	TT
51	Connector box	TT
52	Junction box	TT
53	Water temperature control unit	52-64
59	Pre-heater control unit	51-58
61	Catalytic converter	51
65	Water level control unit	52
133	Hydraulic fluid level and/or pressure audible warning	52
142	Injection E.C.U.	51
143	Suspension E.C.U.	51-58
154	Distance sensor	51-58
212	R.H. switch (windscreen wiper, computer)	56
280	Diagnostic connector	TT
294	Driver's safety belt switch	52
300	Antitheft switch	TT
315	Handbrake switch	52
316	Coolant level switch	52
317	Hydraulic fluid level switch	52
319	Stoplamp switch	54
650	Fuel gauge	52
671	Engine oil pressure switch	52
672	Hydraulic pressure switch	52
750	L.H. front brake pads	52
751	R.H. front brake pads	52
765	Radio set	65
807	Injection relay	51-52
880	Lighting rheostat	52-65
902	Engine oil level sensor	52
904	Engine oil pressure sensor	51-52
906	Outside air temperature sensor	52
910	Engine water temperature sensor	52-64
911	Engine water temperature sensor (dial)	52
917	Catalytic converter temperature sensor	51
918	Engine oil temperature sensor	52

Ref.	Description	Func.

www.WorkshopManuals.co.uk

INSTRUMENT CLUSTER

NUMBER	STEERING	APPLICABLE	DESCRIPTION
520-0/10	All Types	6383 → → 6749	Circuit diagram XMA42
520-0/10a	All Types	6749 →	Evolution a : Deletion of side and tail lamps warning lamp Addition of airbag warning lamp XMS151
520-0/20	All Types	6383 → → 6749	Instrument cluster XMA45
520-0/20a	All Types	6749 →	Evolution a : Deletion of side and tail lamps warning lamp Fuse box modified XMS152
520-0/21	All Types	6383 → → 6749	Oil level and temperature oil XMA46
520-0/21a	All Types	6749 →	Evolution a : Deletion of side and tail lamps warning lamp Fuse box modified XMS153

CENTRAL DISPLAY

NUMBER	STEERING	APPLICABLE	DESCRIPTION
521-0/10	All Types	6383 → → 6568	**VEHICLE WITHOUT L.H. DISPLAY UNIT** Circuit diagram XMA43
521-0/10a	All Types	6568 → → 6749	Evolution a : Improved central display unit XMS122
521-0/10b	All Types	6749 →	Evolution b : Improved central display unit XMS154
521-1/11	L.H.D.	6383 → → 6568	**VEHICLE WITHOUT L.H. DISPLAY UNIT** Central display unit XMA49
521-1/11a	L.H.D.	6568 → → 6749	Evolution a : Improved central display unit XMS123
521-1/11b	L.H.D.	6749 →	Evolution b : Improved central display unit Fuse box modified XMS155
521-2/11	R.H.D.	6383 → → 6568	**VEHICLE WITHOUT L.H. DISPLAY UNIT** Central display unit XMA50
521-2/11a	R.H.D.	6568 → → 6749	Evolution a : Improved central display unit XMS124
521-2/11b	R.H.D.	6749 →	Evolution b : Improved central display unit Fuse box modified XMS156

www.WorkshopManuals.co.uk

CENTRAL DISPLAY UNIT

NUMBER	STEERING	APPLICABLE	DESCRIPTION	
521-0/10	All Types	6383 → → 6568	**VEHICLE WITHOUT L.H. DISPLAY UNIT** Circuit diagram	XMA43
521-0/10a	All Types	6568 → → 6749	Evolution a : Improved central display unit	XMS122
521-0/10b	All Types	6749 → → 7483	Evolution b : Improved central display unit	XMS154
521-1/11	L.H.D.	6383 → → 6568	**VEHICLE WITHOUT L.H. DISPLAY UNIT** Central display unit	XMA49
521-1/11a	L.H.D.	6568 → → 6749	Evolution a : Improved central display unit	XMS123
521-1/11b	L.H.D.	6749 → → 6947	Evolution b : Improved central display Fuse box modified	XMS155
521-1/11c	L.H.D.	6947 → → 7084	Evolution c : Removal of electrical harness UD	XMC002
521-1/11d	L.H.D.	7084 → → 7329	Evolution d : Electrical harnesses JN, MT, AV and PB modified	XMC008
521-1/11e	L.H.D.	7329 → → 7483	Evolution e : Electrical harnesses PB, MT and JN modified	XMC017
521-2/11	R.H.D.	6383 → → 6568	**VEHICLE WITHOUT L.H. DISPLAY UNIT** Central display unit	XMA50
521-2/11a	R.H.D.	6568 → → 6749	Evolution a : Improved central display unit	XMS124
521-2/11b	R.H.D.	6749 → → 6947	Evolution b : Improved central unit Fuse box modified	XMS156
521-2/11c	R.H.D.	6947 → → 7084	Evolution c : Removal of Electrical harness UD	XMC003
521-2/11d	R.H.D.	7084 → → 7329	Evolution d : Electrical harnesses JN, MT, AV and PB modified	XMC009
521-2/11e	R.H.D.	7329 → → 7483	Evolution e : Electrical harnesses PB, MT and JN modified	XMC018
522-0/10	All types	6383 → → 6568	**VEHICLE WITH L.H. DISPLAY UNIT** Circuit diagram	XMA44
522-0/10a	All types	6568 → → 6749	Evolution a : Central display unit modified	XMS125
522-0/10b	All types	6749 →	Evolution b : Central display unit modified Fuse box modified	XMS157

www.WorkshopManuals.co.uk

CENTRAL DISPLAY UNIT (cont.)

NUMBER	STEERING	APPLICABLE	DESCRIPTION	
522-1/11	L.H.D.	6383 → → 6568	**VEHICLE WITH L.H. DISPLAY UNIT** Central display unit	XMA47
522-1/11a	L.H.D.	6568 → → 6749	Evolution a : Improved central display unit	XMS126
522-1/11b	L.H.D.	6749 → → 6947	Evolution b : Improved central display unit Modified fuse box	XMS158
522-1/11c	L.H.D.	6947 → → 7084	Evolution c : Removal of electrical harness UD	XMC004
522-1/11d	L.H.D.	7084 → → 7329	Evolution d : Electrical harnesses JN, MT, AV and PB modified	XMC010
522-1/11e	L.H.D.	7329 → → 7483	Evolution e : Electrical harnesses PB, MT and JN modified	XMC019
522-1/11f	L.H.D.	7483 →	Evolution f : Electrical harnesses AV, JN and MT modified	XMC028
522-2/11	R.H.D.	6383 → → 6568	**VEHICLE WITH L.H. DISPLAY UNIT** Central display unit	XMA48
522-2/11a	R.H.D.	6568 → → 6749	Evolution a : Improved central display unit	XMS127
522-2/11b	R.H.D.	6749 → → 6947	Evolution b : Improved central display unit Modified fuse box	XMS159
522-2/11c	R.H.D.	6947 → → 7084	Evolution c : Removal of electrical harness UD	XMC005
522-2/11d	R.H.D.	7084 → → 7329	Evolution d : Electrical harnesses JN, MT, AV and PB modified	XMC011
522-2/11e	R.H.D.	7329 → → 7483	Evolution e : Electrical harnesses PB, MT and JN modified	XMC020
522-2/11f	R.H.D.	7483 →	Evolution f : Electrical harnesses PB, AV, JN and MT modified	XMC029

www.WorkshopManuals.co.uk

ON-BOARD COMPUTER CLOCK

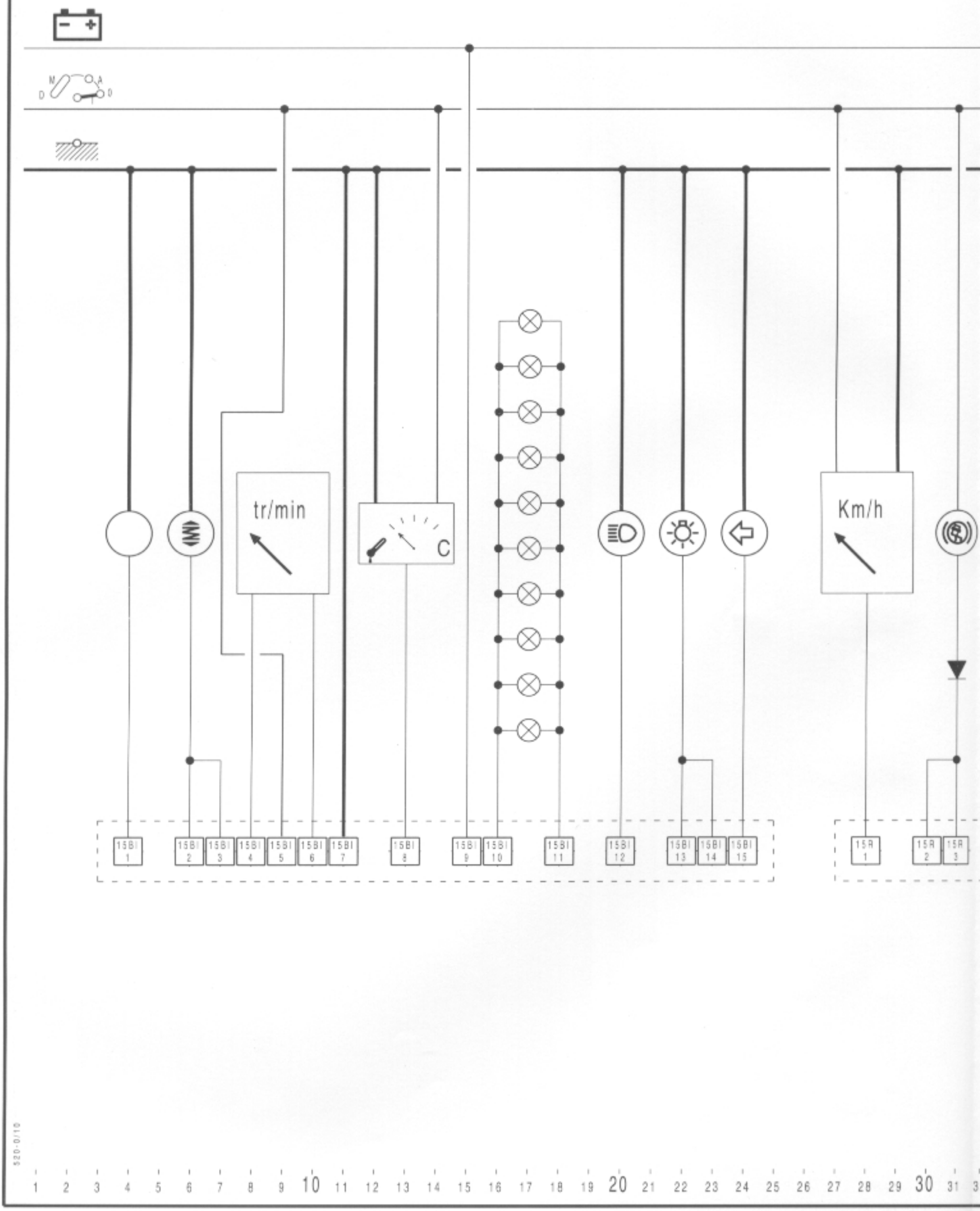
NUMBER	STEERING	APPLICABLE	DESCRIPTION	
523-1/11	L.H.D.	6383 → → 6749	**On-board computer**	XMA51
523-1/11a	L.H.D.	6749 → → 7329	Evolution a : Fuse box modified	XMS160
523-1/11b	L.H.D.	7329 → → 7483	Evolution b : Electrical harness PB modified	XMC021
523-1/11c	L.H.D.	7483 →	Evolution c : Electrical harnesses PB, AV and MT modified	XMC030
523-1/21	All Types	6383 → → 6749	**Clock**	XMS128
523-1/21a	All Types	6749 → → 7329	Evolution a : Fuse box modified	XMS162
523-1/21b	All Types	7329 → → 7483	Evolution b : Electrical harness PB modified	XMC022
523-2/11	R.H.D.	6383 → → 6749	**On-board computer**	XMA52
523-2/11a	R.H.D.	6749 → → 7084	Evolution a : Fuse box modified	XMS161
523-2/11b	R.H.D.	7084 → → 7329	Evolution b : Electrical harness AV modified	XMC012
523-2/11c	R.H.D.	7329 → → 7483	Evolution c : Electrical harness PB modified	XMC023
523-2/11d	R.H.D.	7483 →	Evolution d : Electrical harnesses PB, AV and MT modified	XMC031

www.WorkshopManuals.co.uk

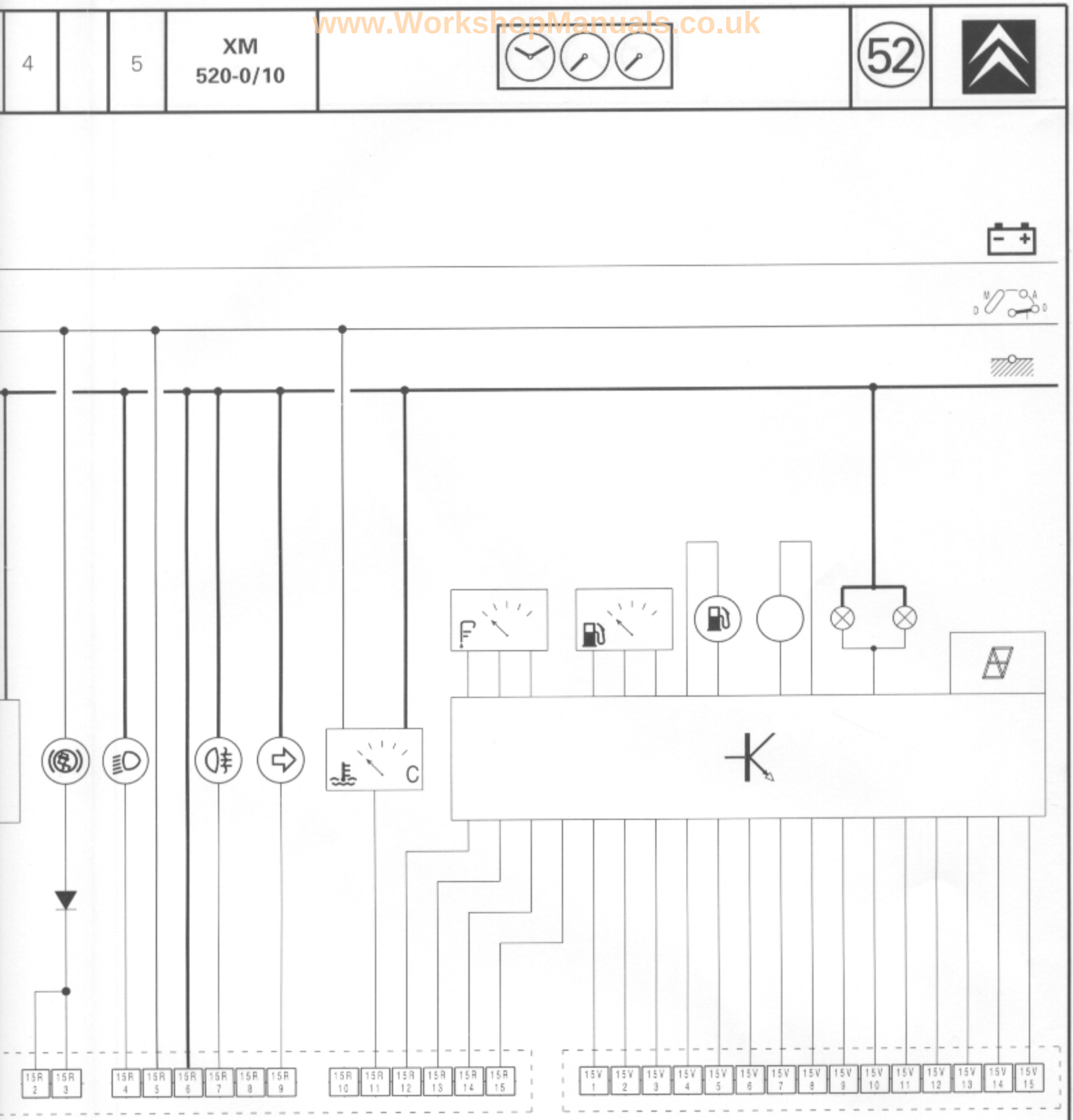
CATALYTIC CONVERTER OVERHEAT WARNING LAMP

NUMBER	STEERING	APPLICABLE	DESCRIPTION	
524-0/11	All Types	6383 → → 6749	**Catalytic converter overheat warning lamp**	XMA53
524-0/11a	All Types	6749 → → 7084	Evolution a : Fuse box modified	XMS163
524-0/11b	All Types	7084 → → 7329	Evolution b : Electrical harnesses PB and AV modified	XMC013
524-0/11c	All Types	7329 → → 7483	Evolution c : Electrical harness PB modified	XMC024
524-0/11d	All Types	7483 →	Evolution d : Level A removed	XMC032

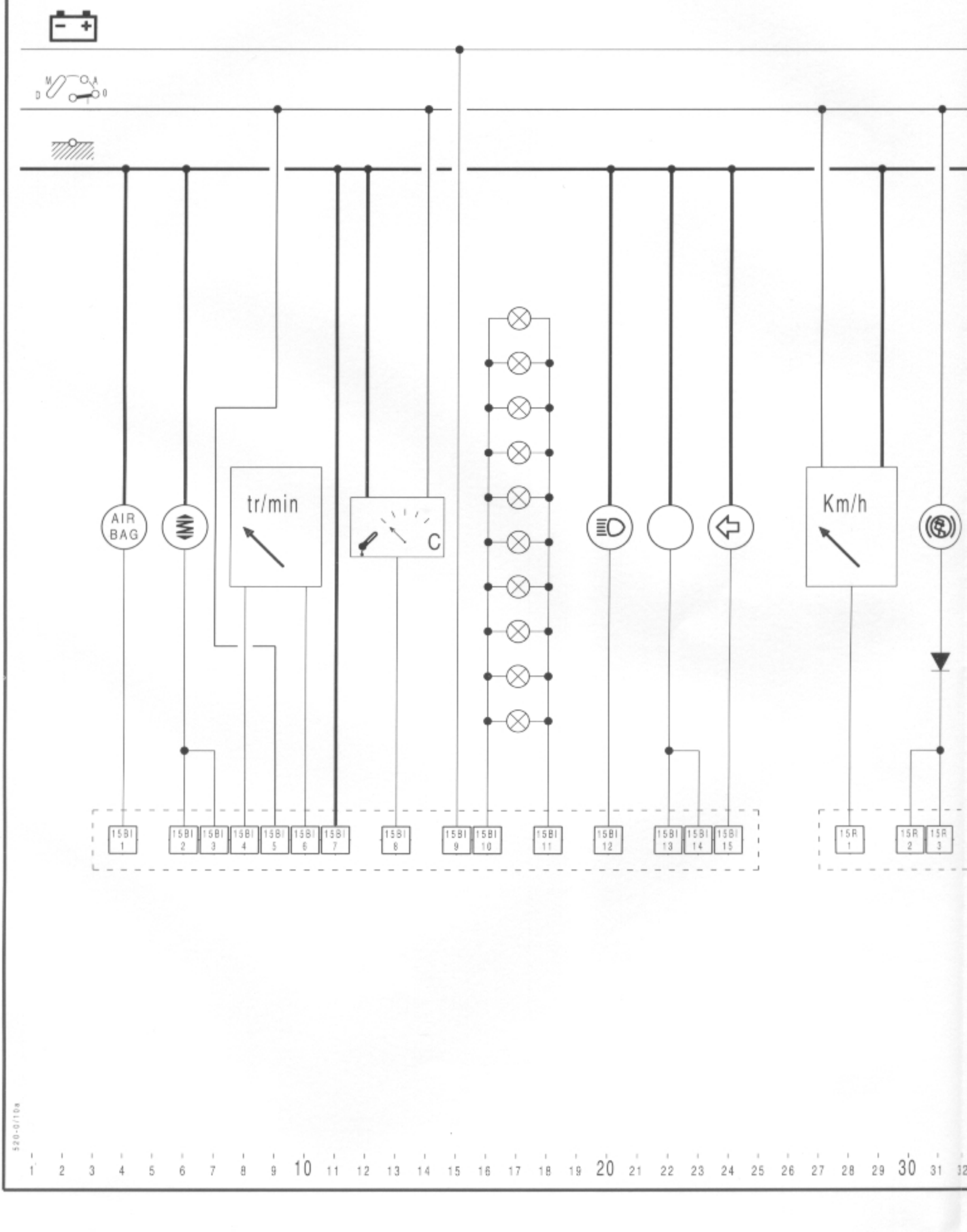
www.WorkshopManuals.co.uk



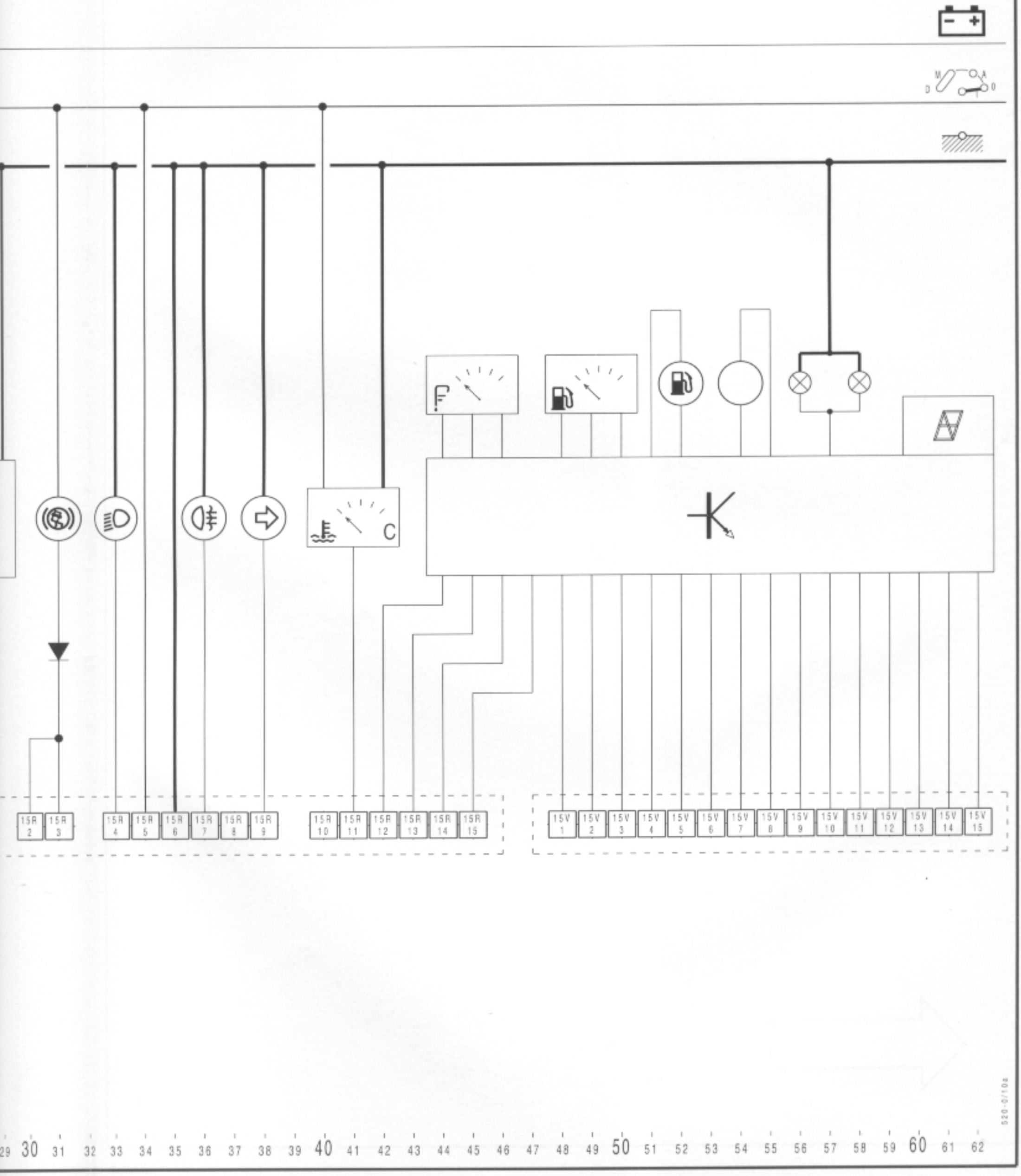
www.WorkshopManuals.co.uk



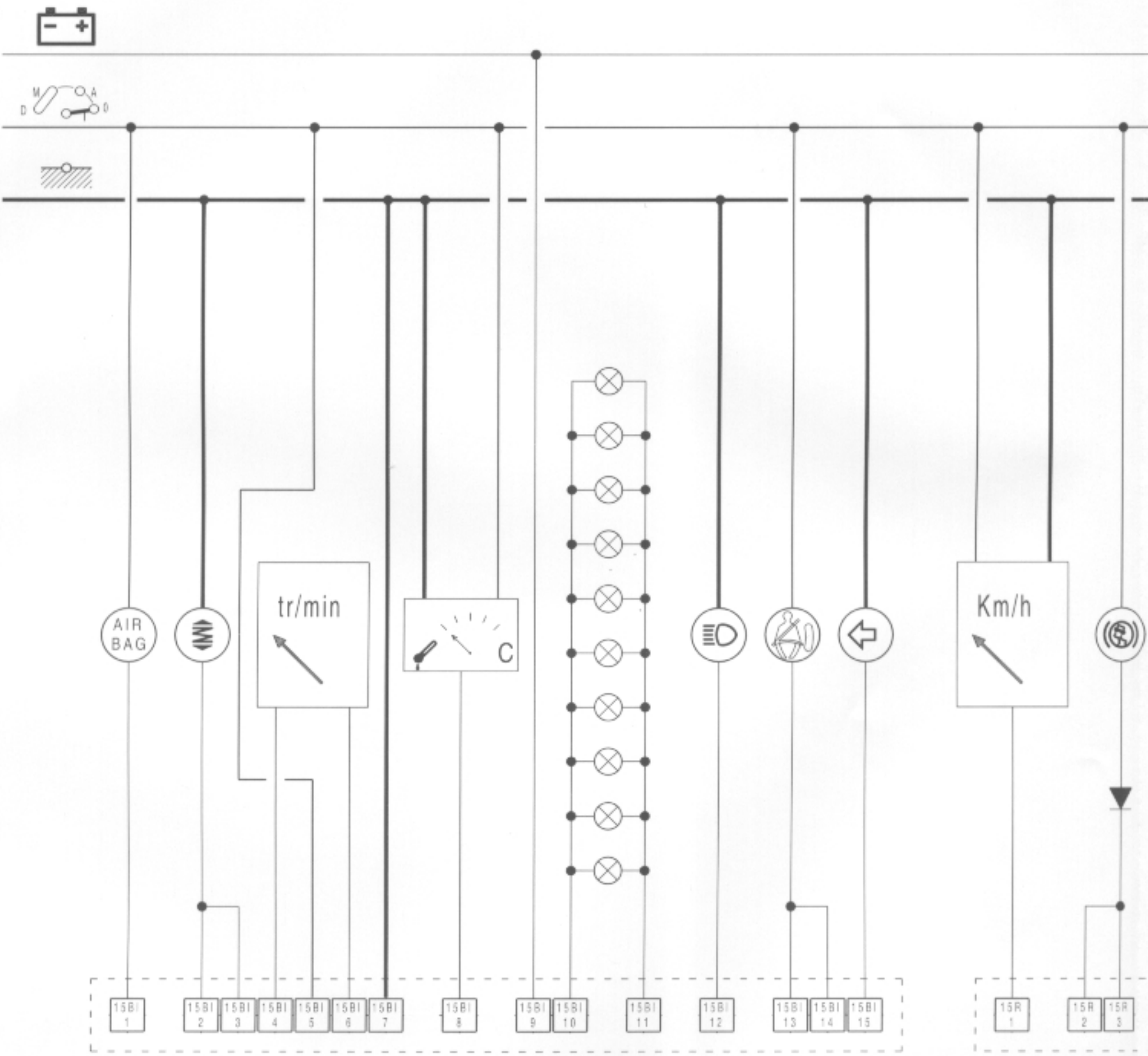
www.WorkshopManuals.co.uk



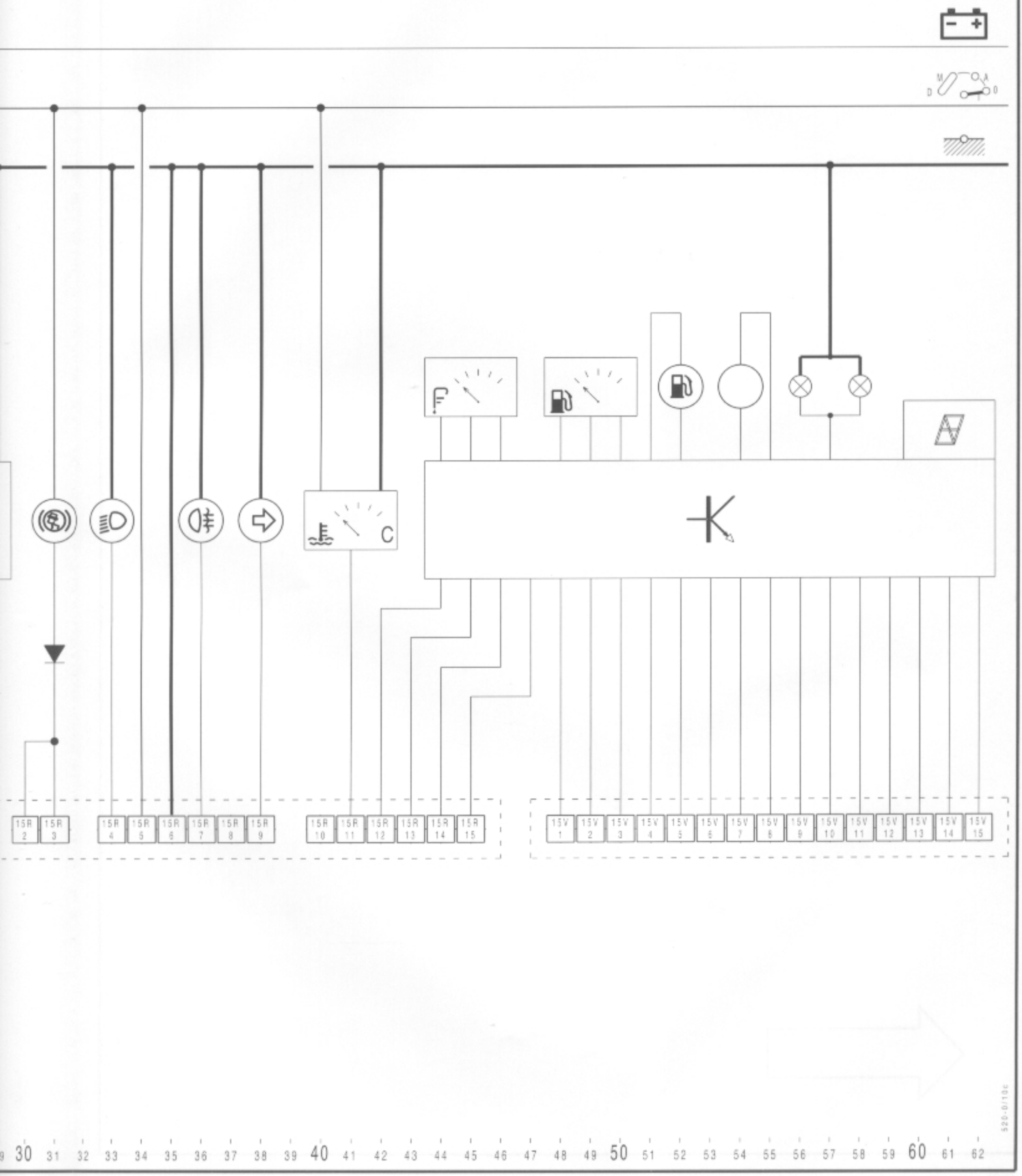
www.WorkshopManuals.co.uk



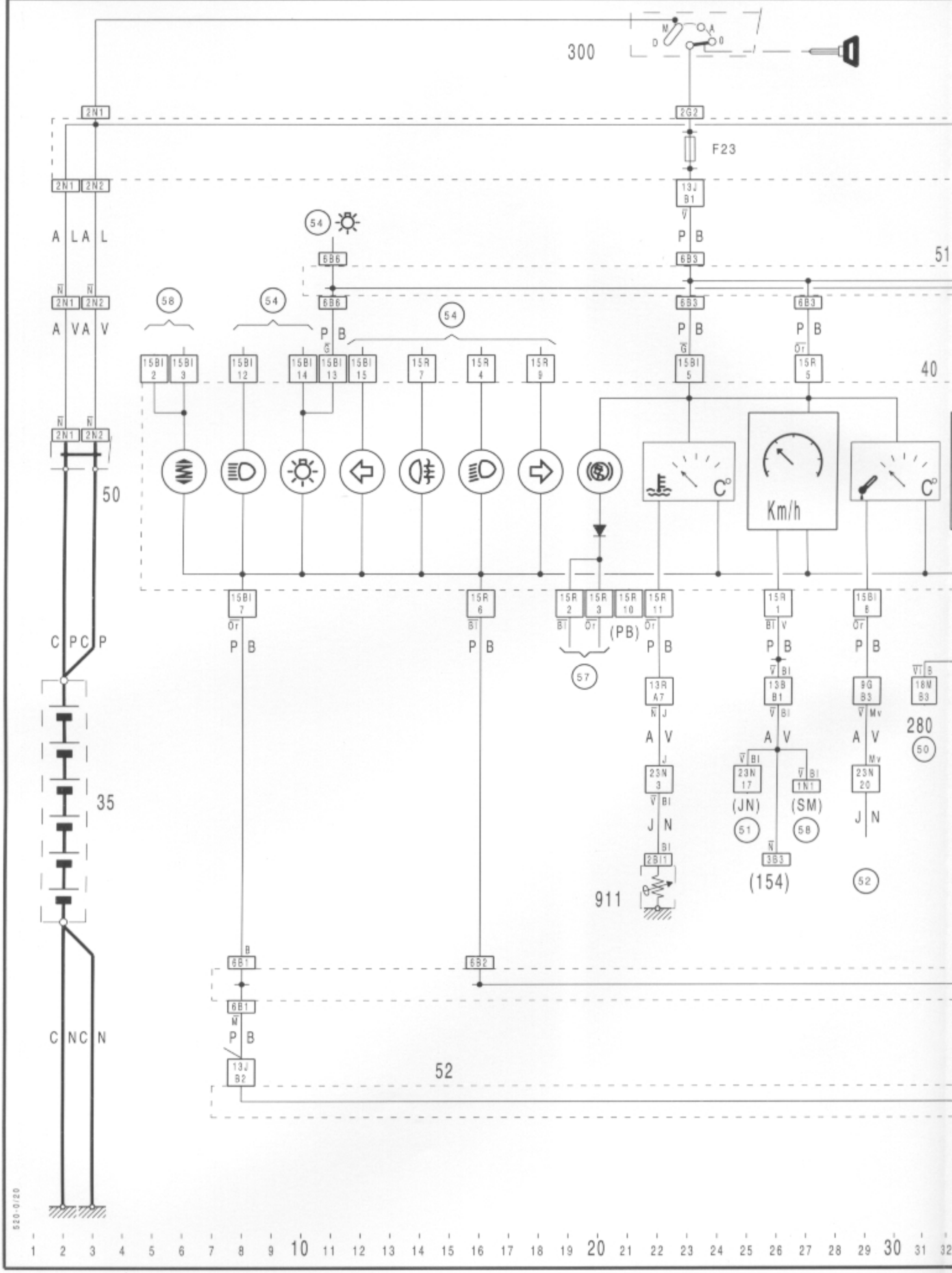
www.WorkshopManuals.co.uk



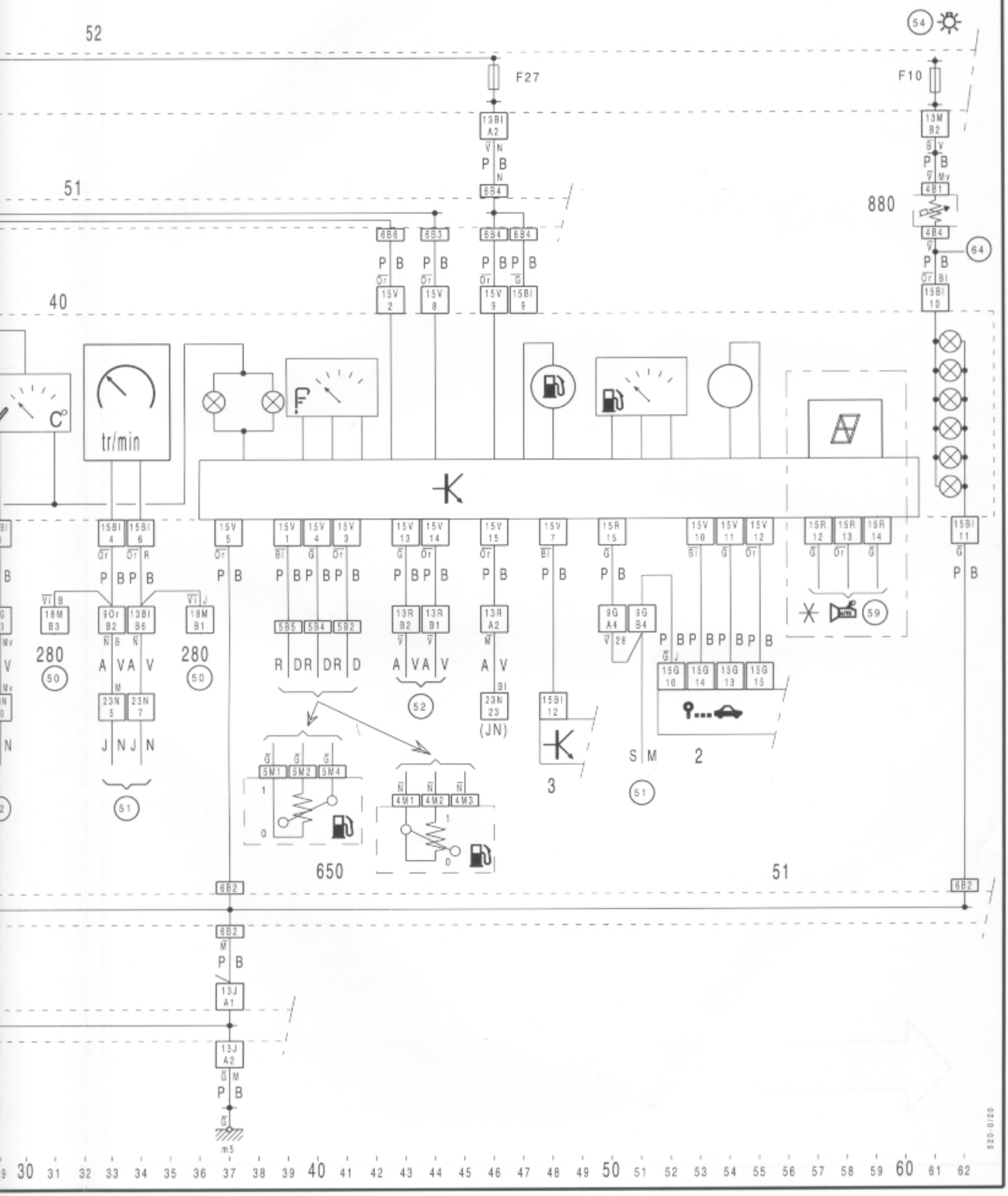
www.WorkshopManuals.co.uk



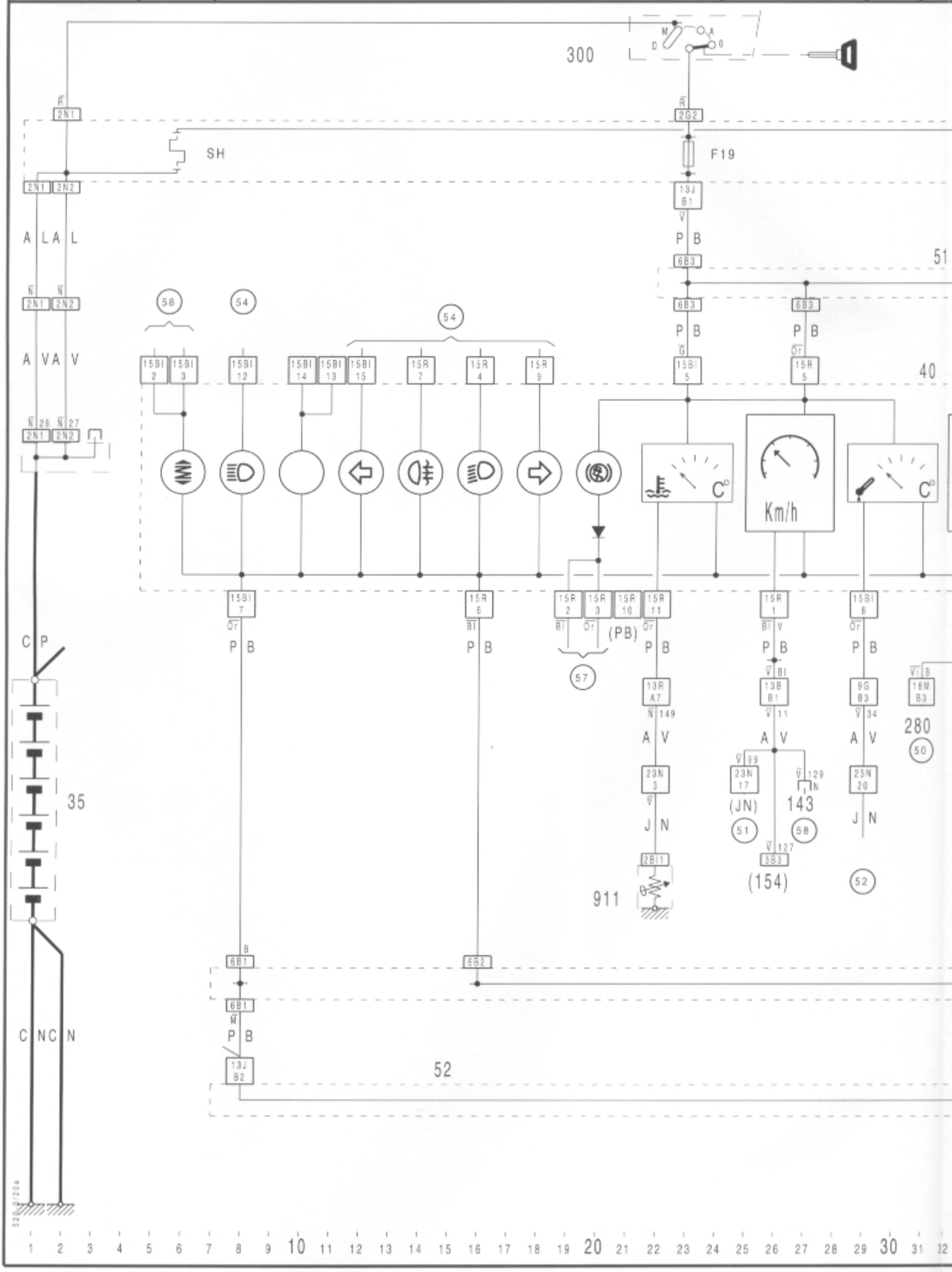
www.WorkshopManuals.co.uk



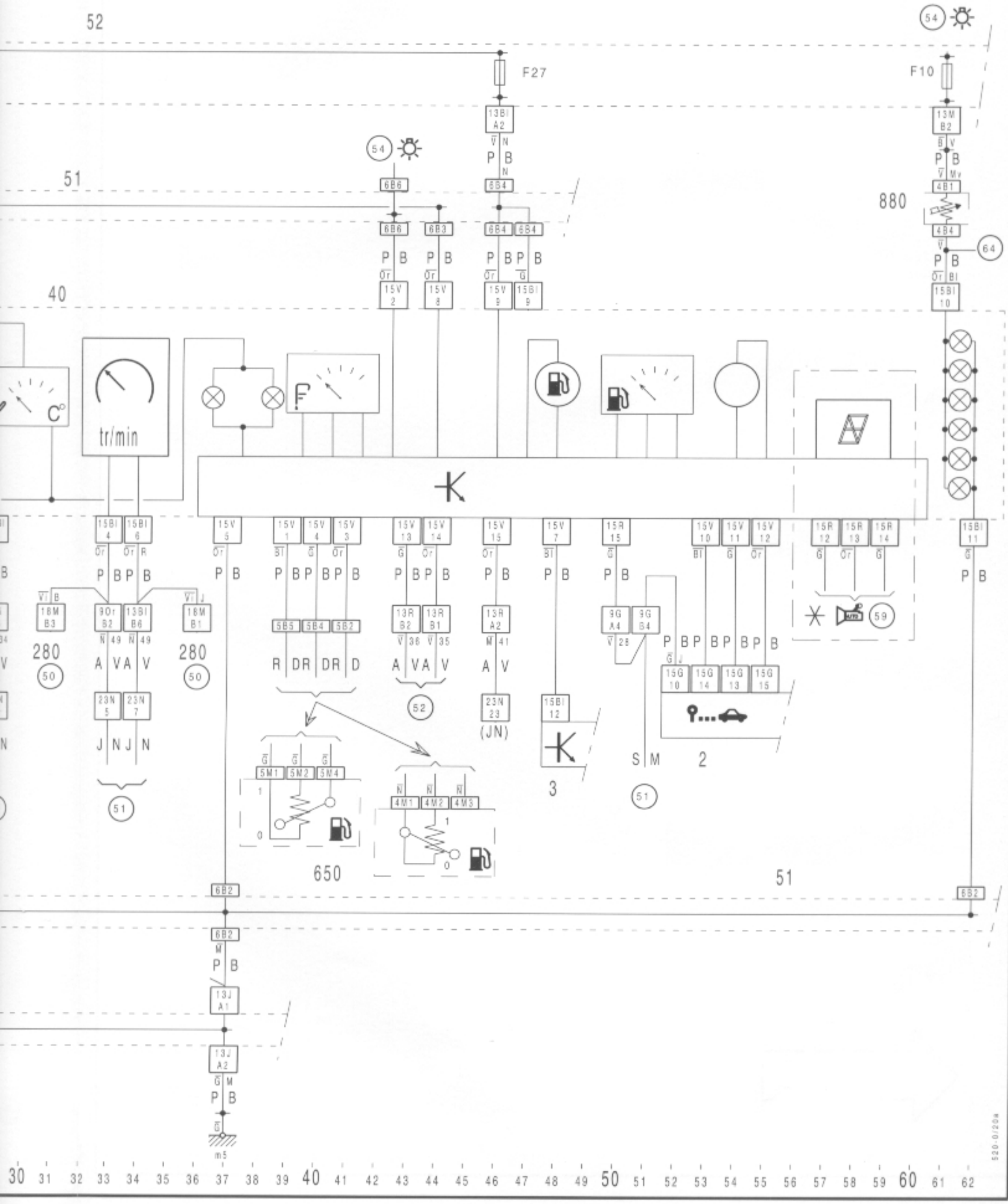
www.WorkshopManuals.co.uk



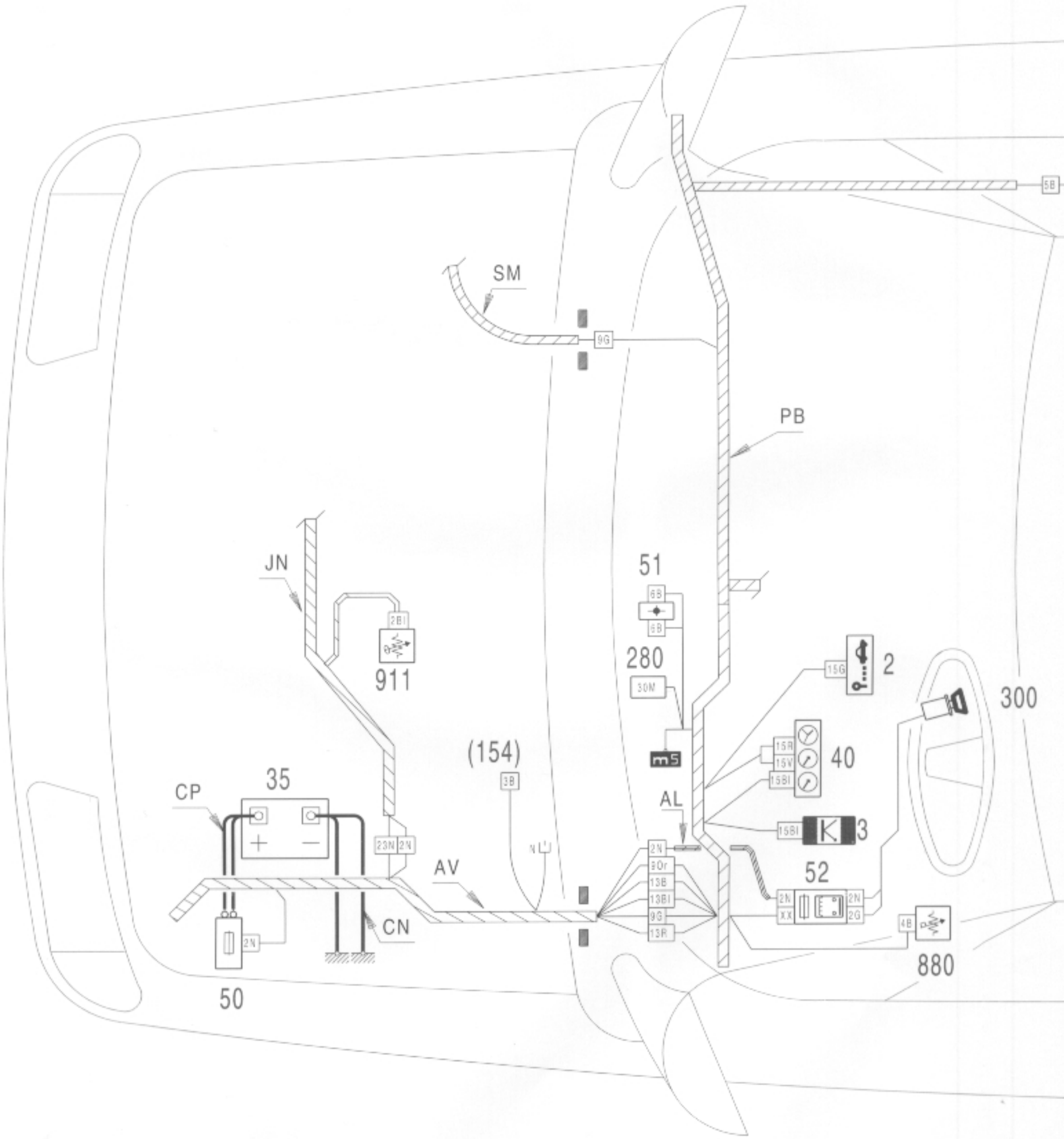
www.WorkshopManuals.co.uk



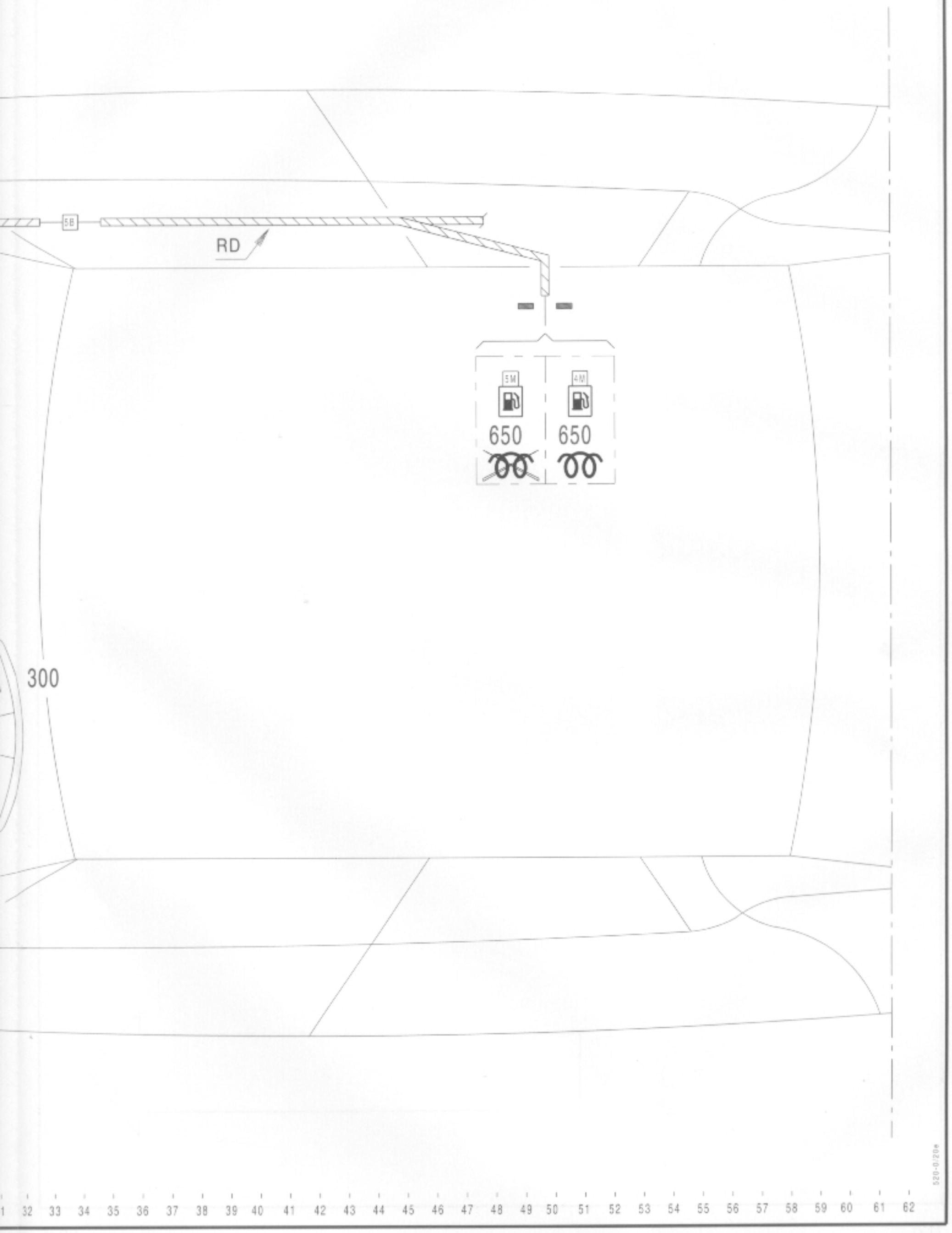
www.WorkshopManuals.co.uk



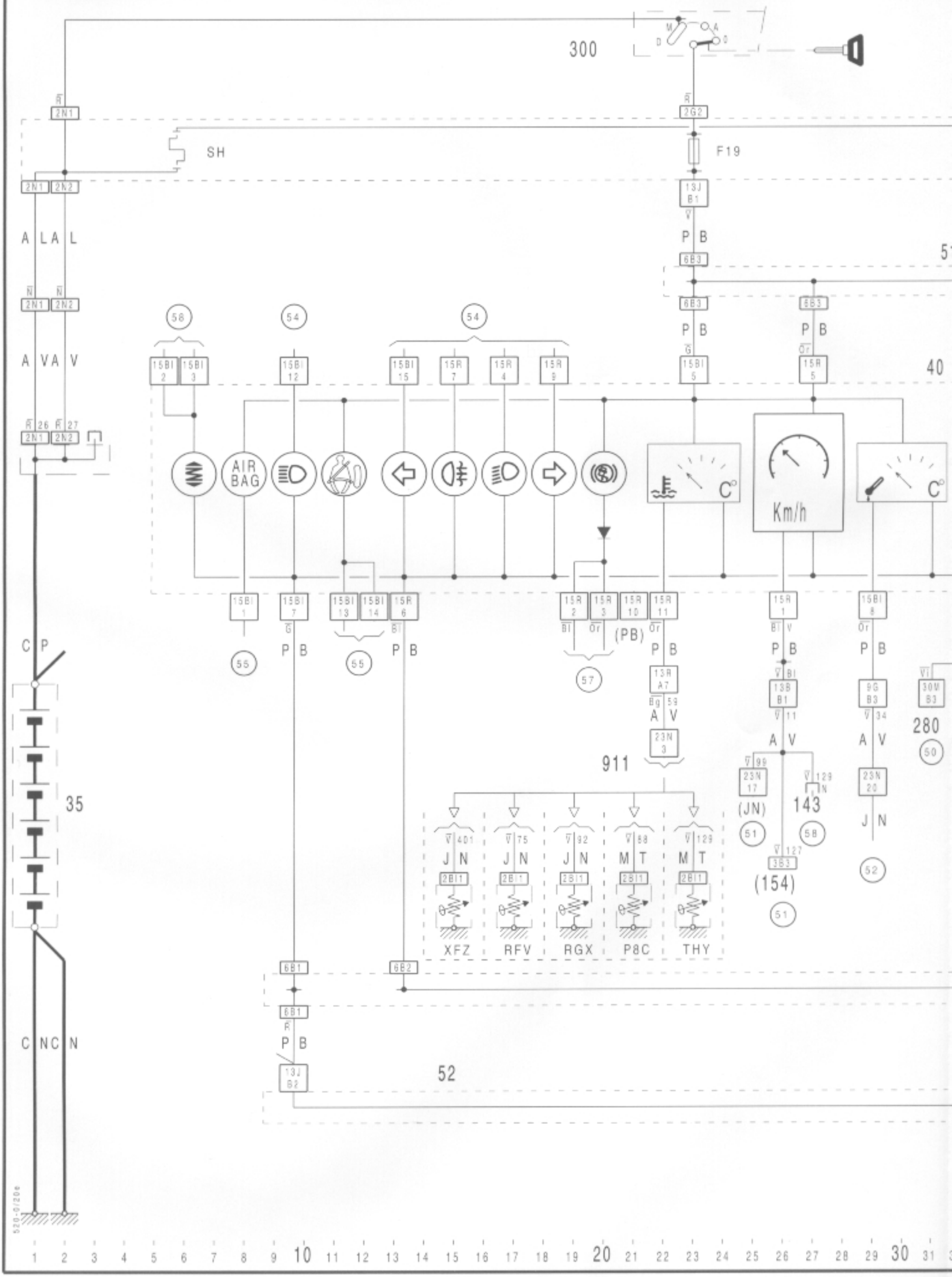
www.WorkshopManuals.co.uk



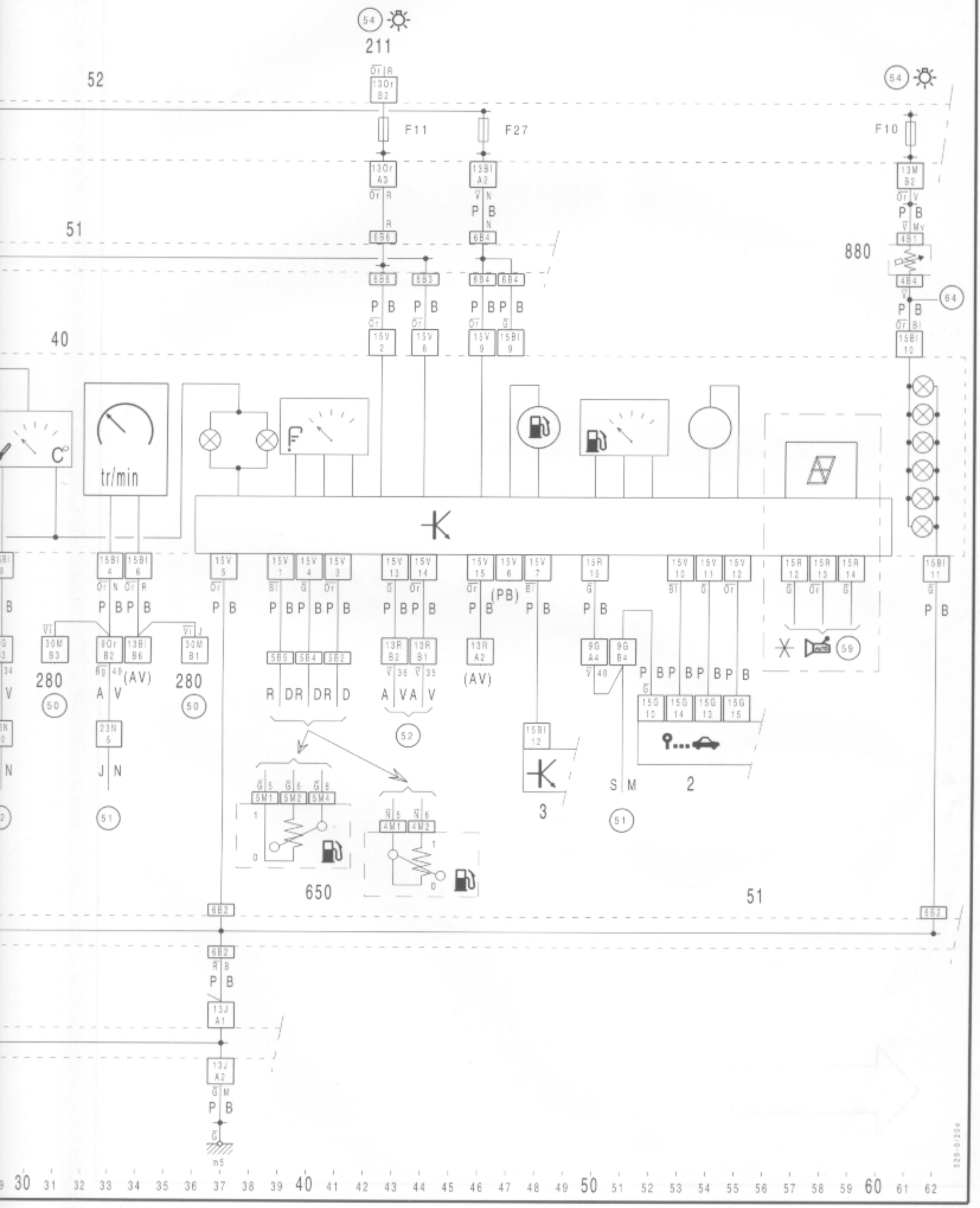
www.WorkshopManuals.co.uk



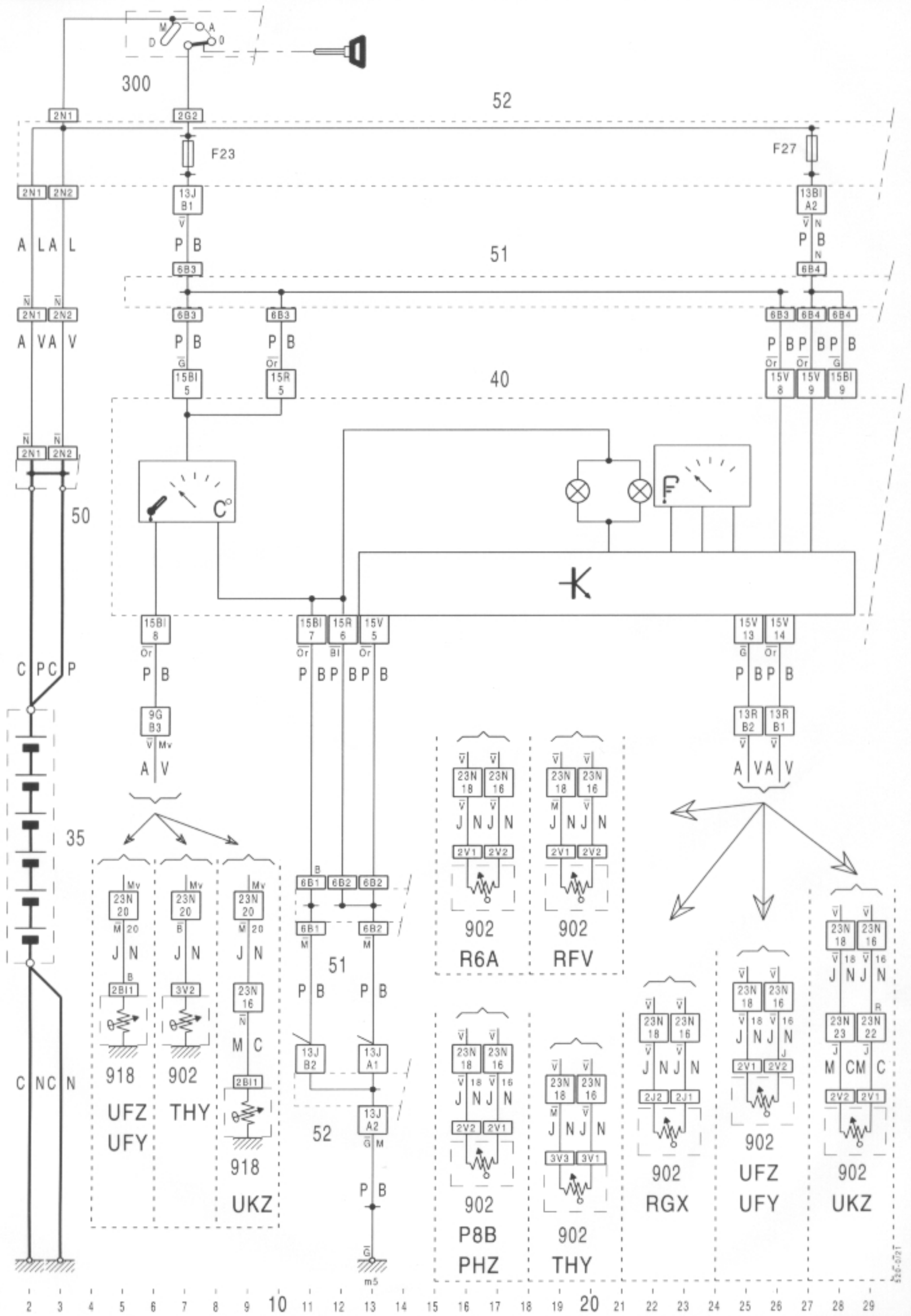
www.WorkshopManuals.co.uk



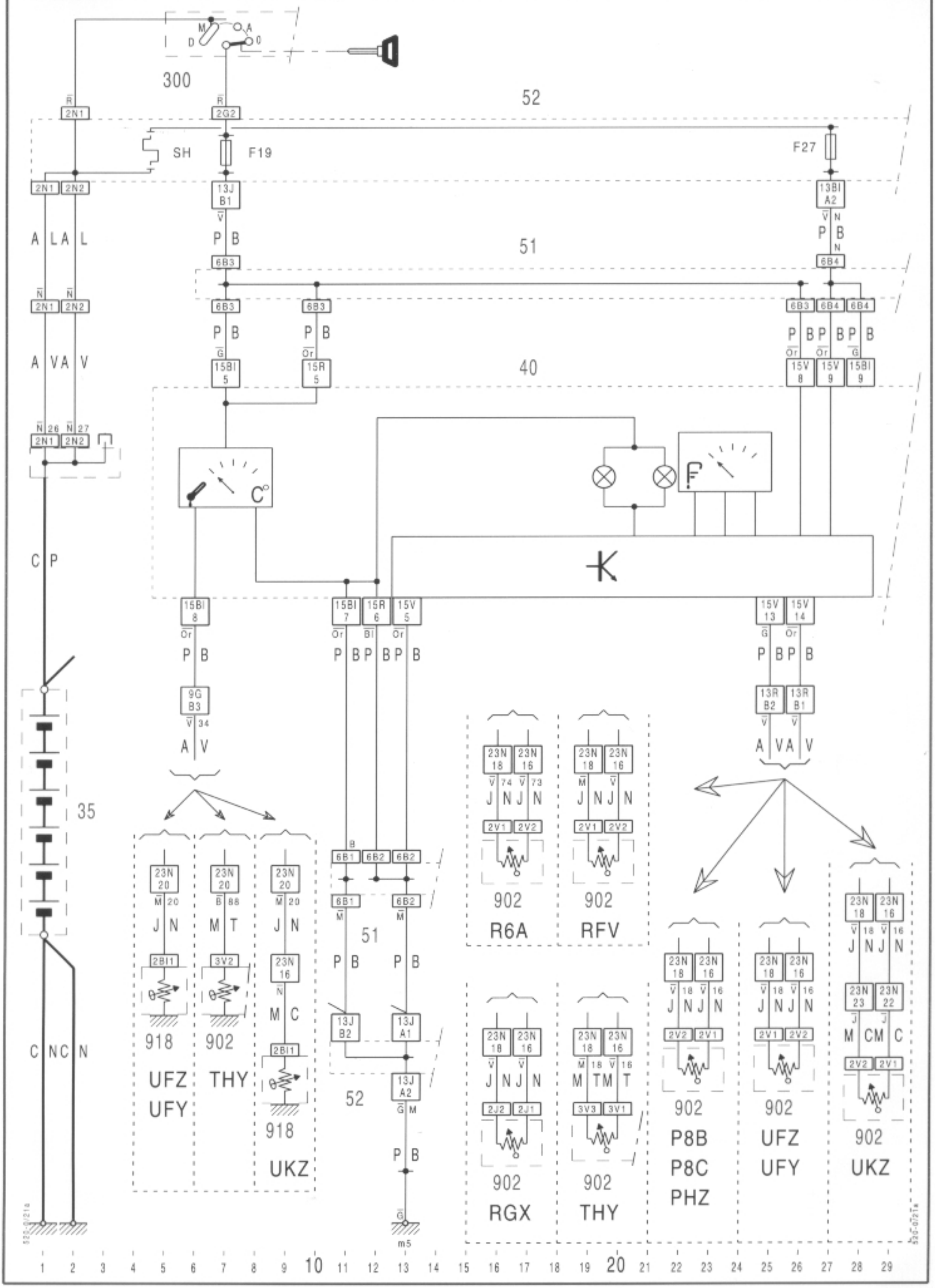
www.WorkshopManuals.co.uk



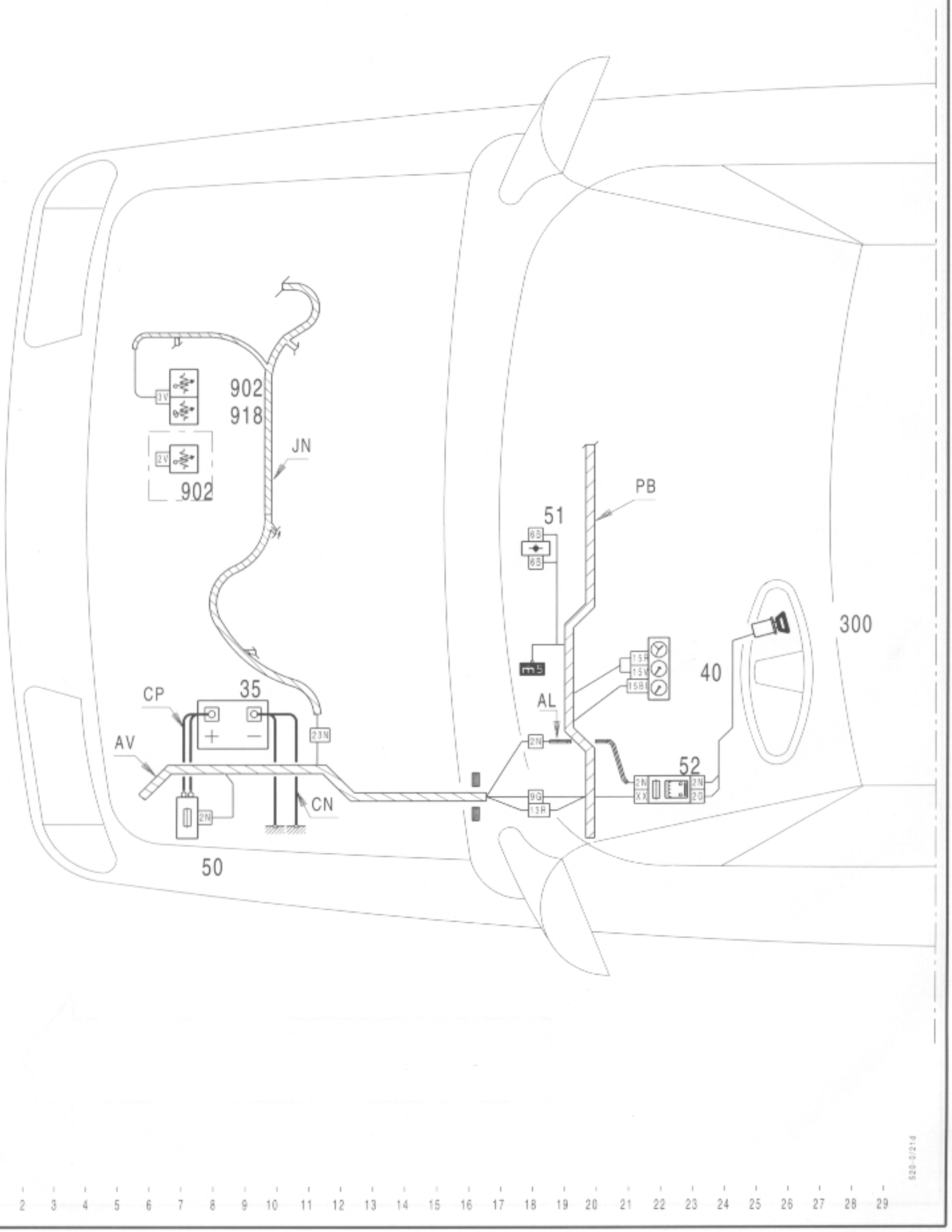
www.WorkshopManuals.co.uk



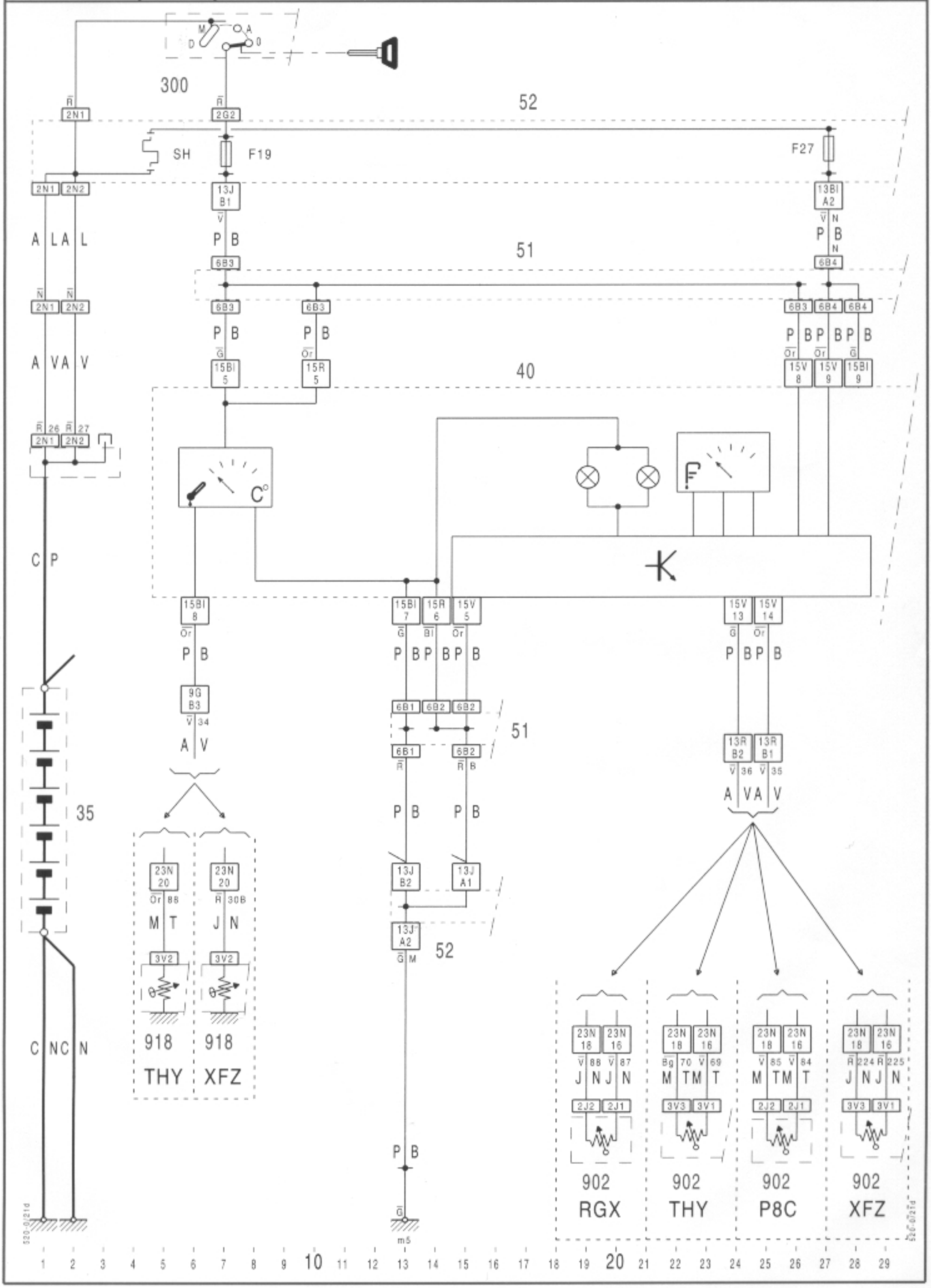
www.WorkshopManuals.co.uk



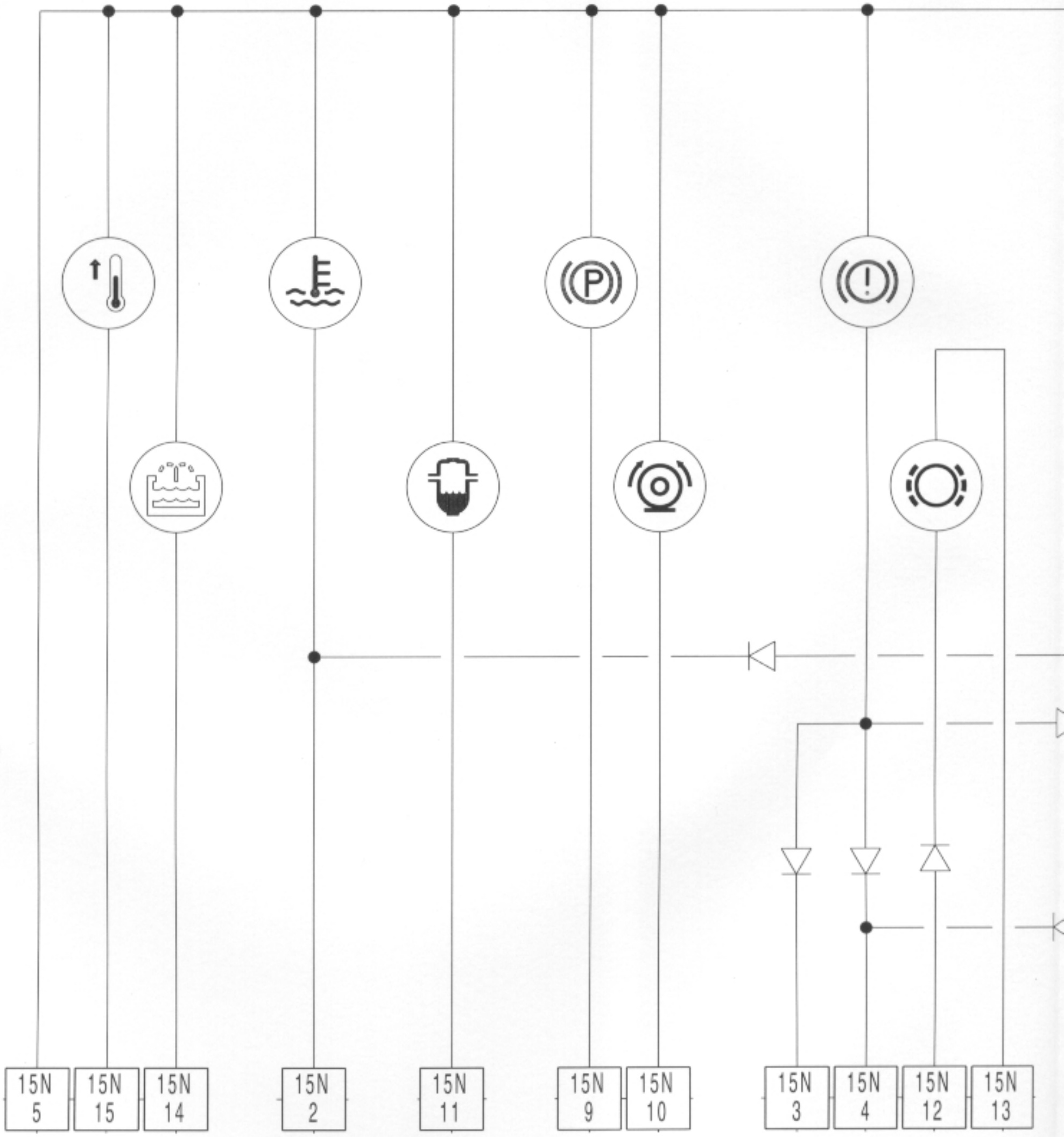
www.WorkshopManuals.co.uk



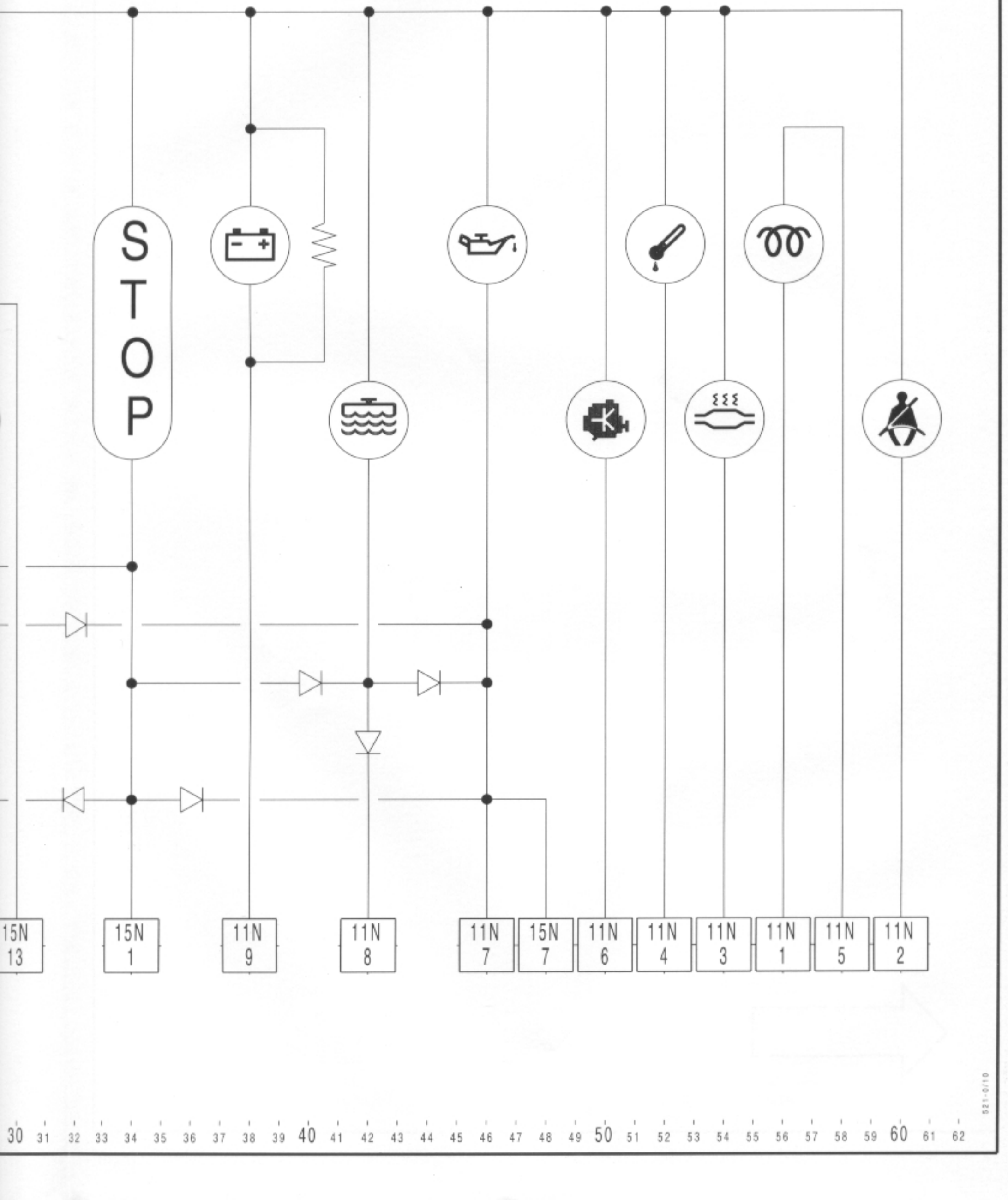
www.WorkshopManuals.co.uk



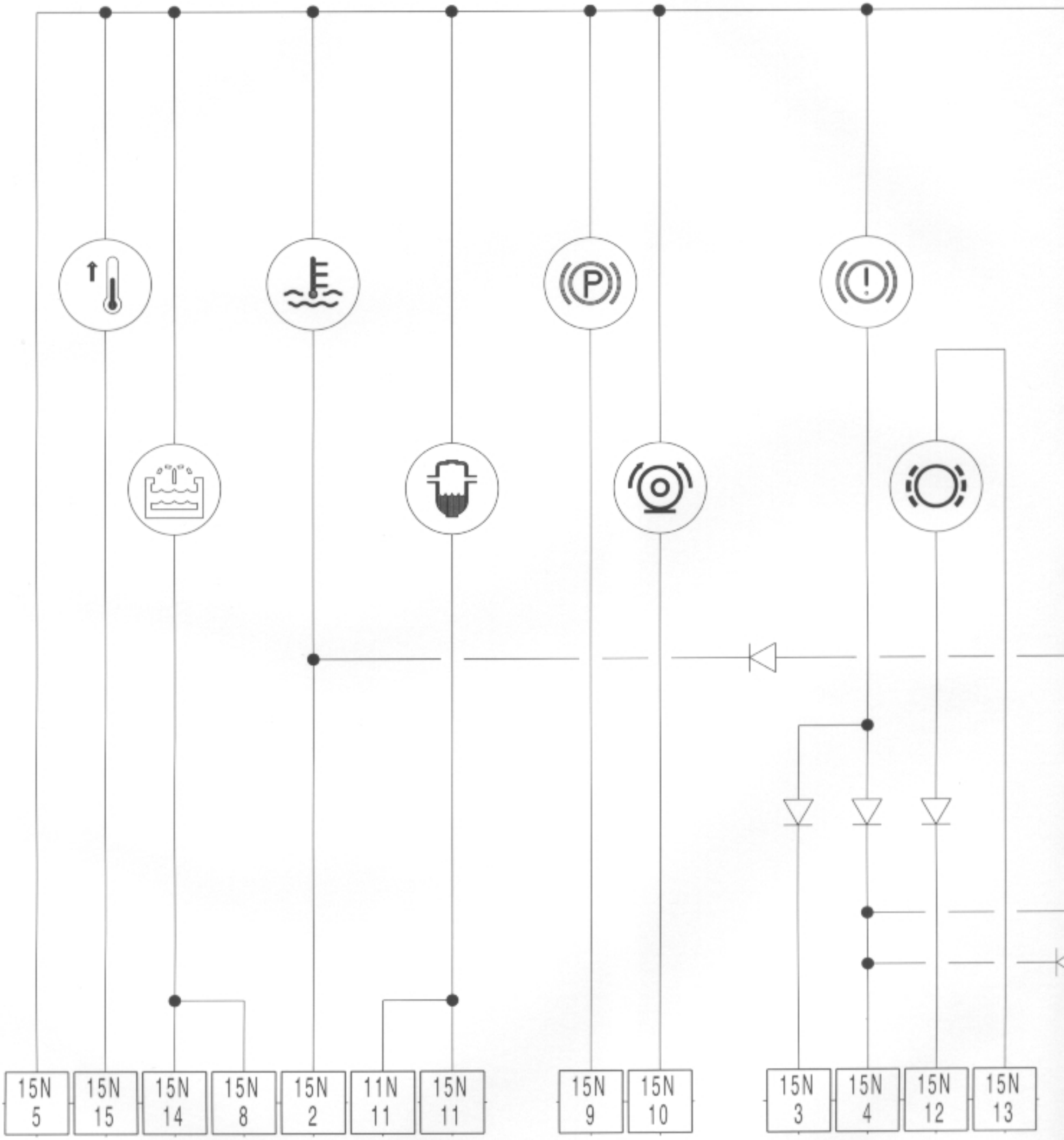
www.WorkshopManuals.co.uk



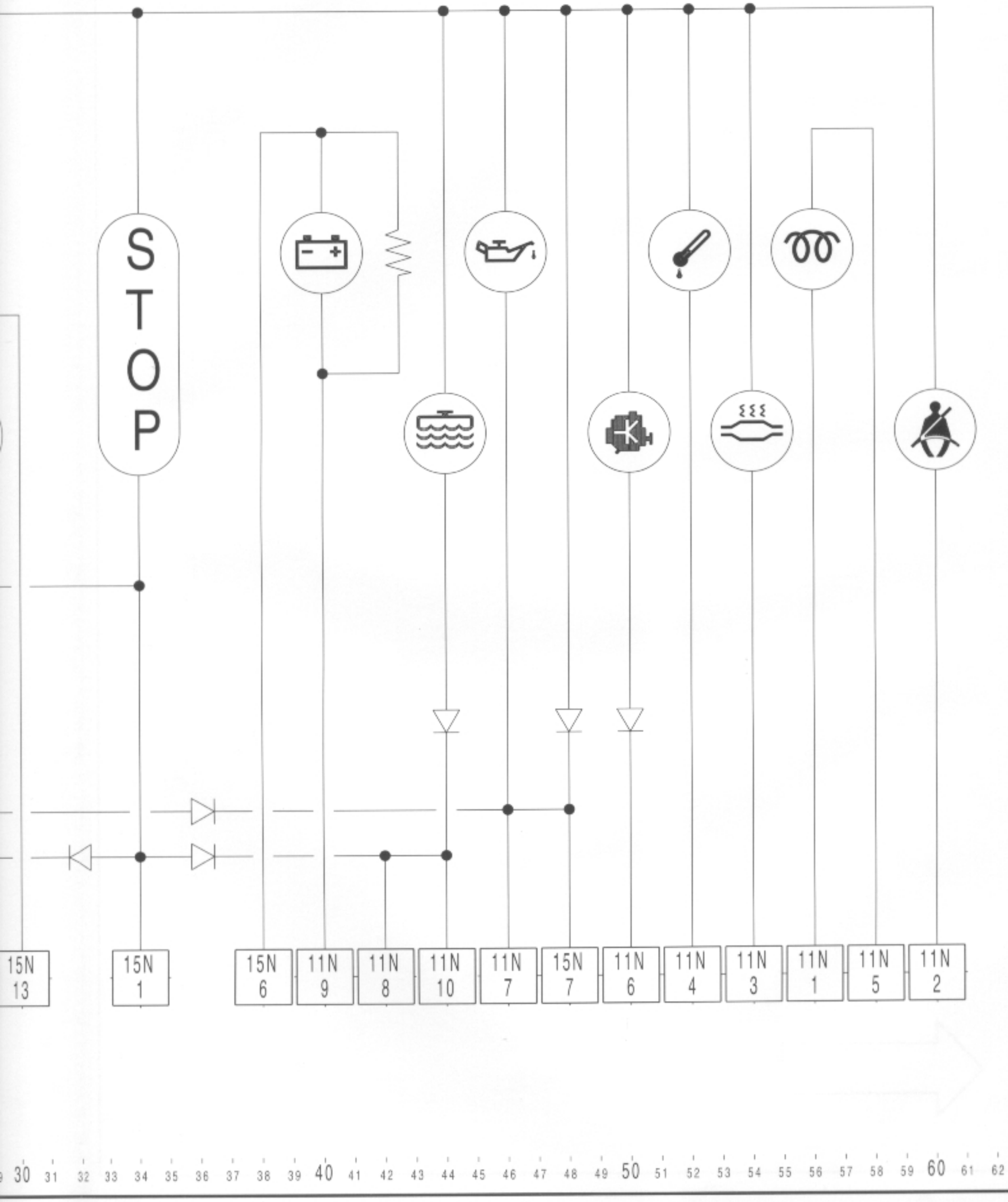
www.WorkshopManuals.co.uk



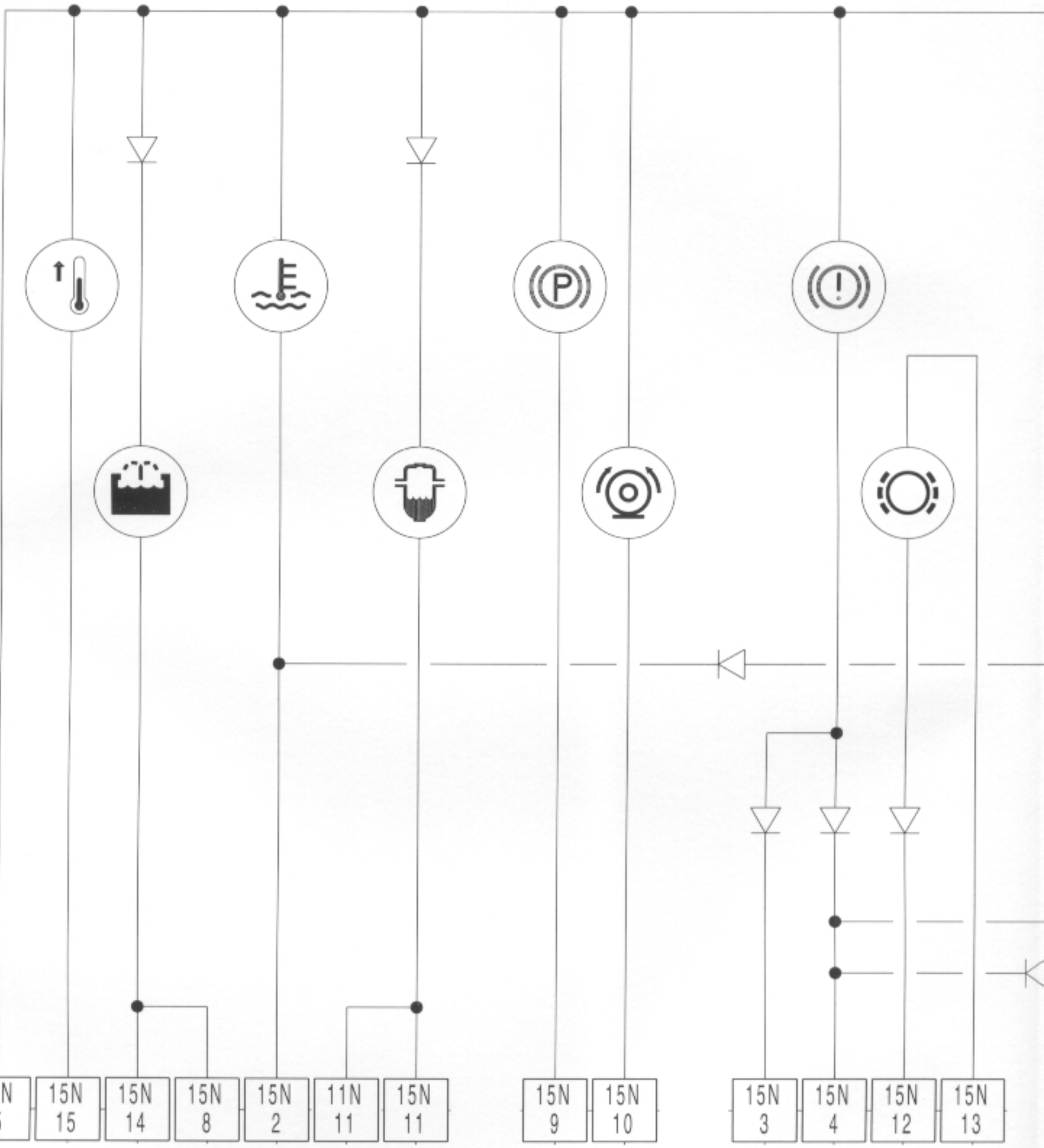
www.WorkshopManuals.co.uk



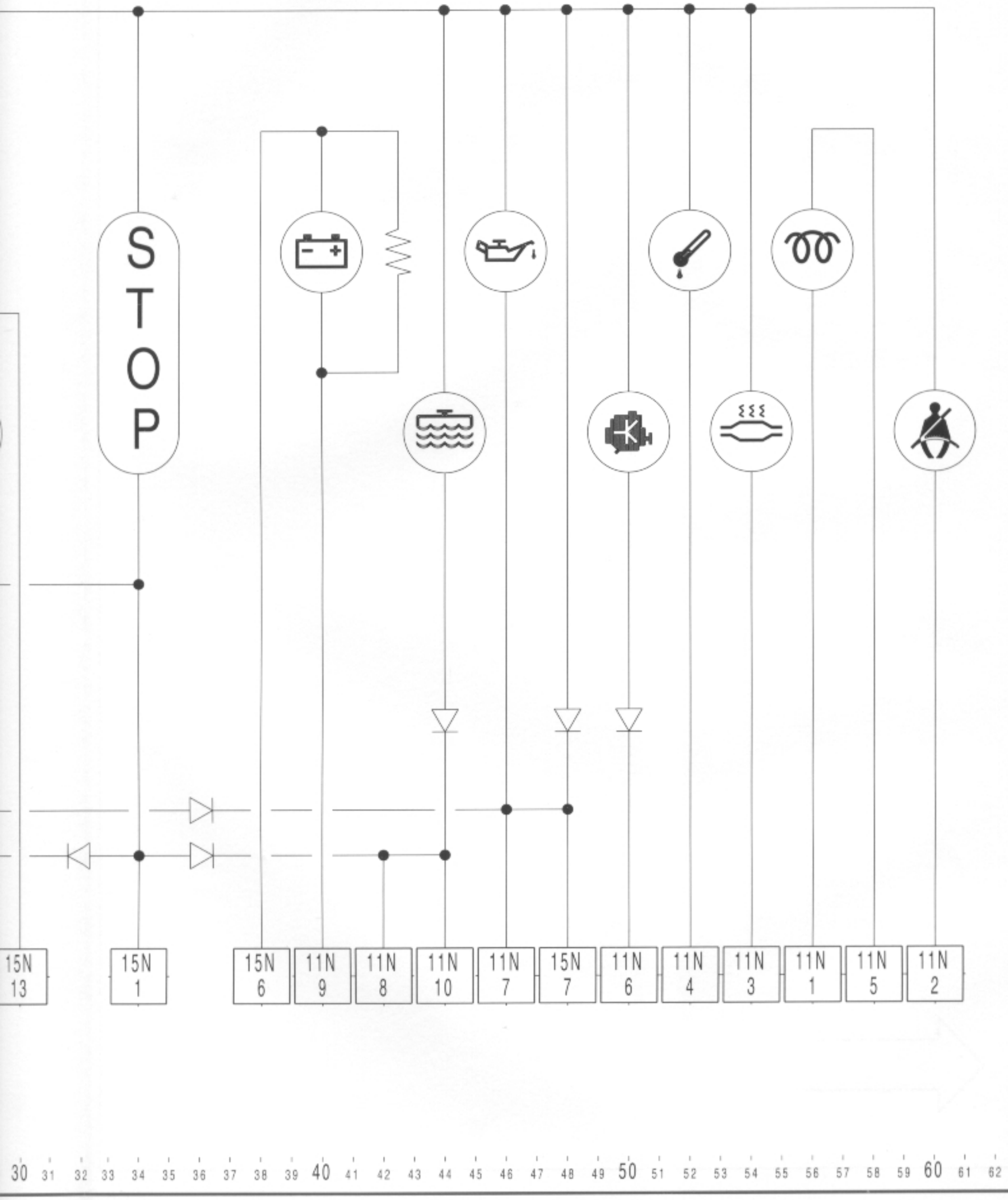
www.WorkshopManuals.co.uk



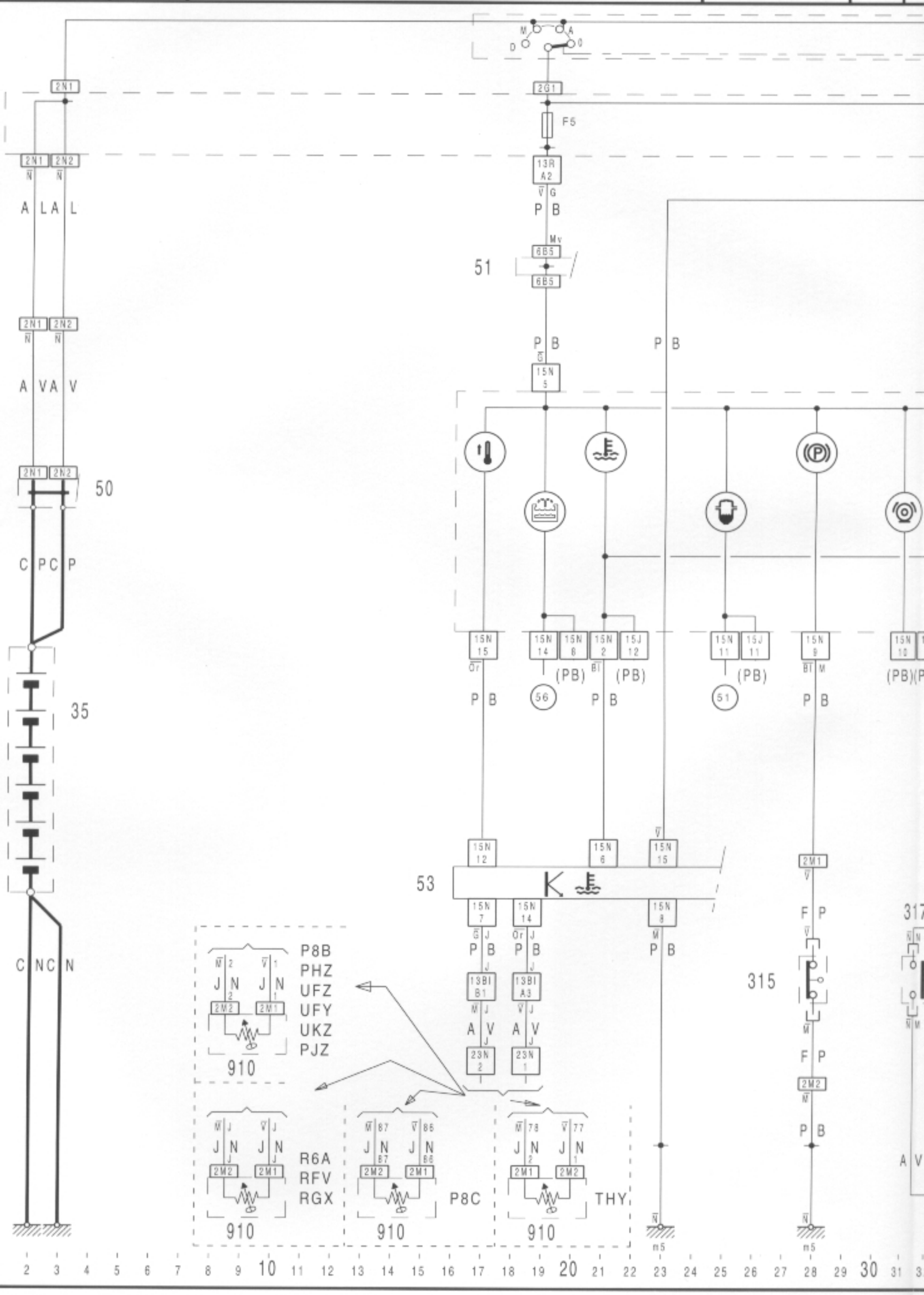
www.WorkshopManuals.co.uk



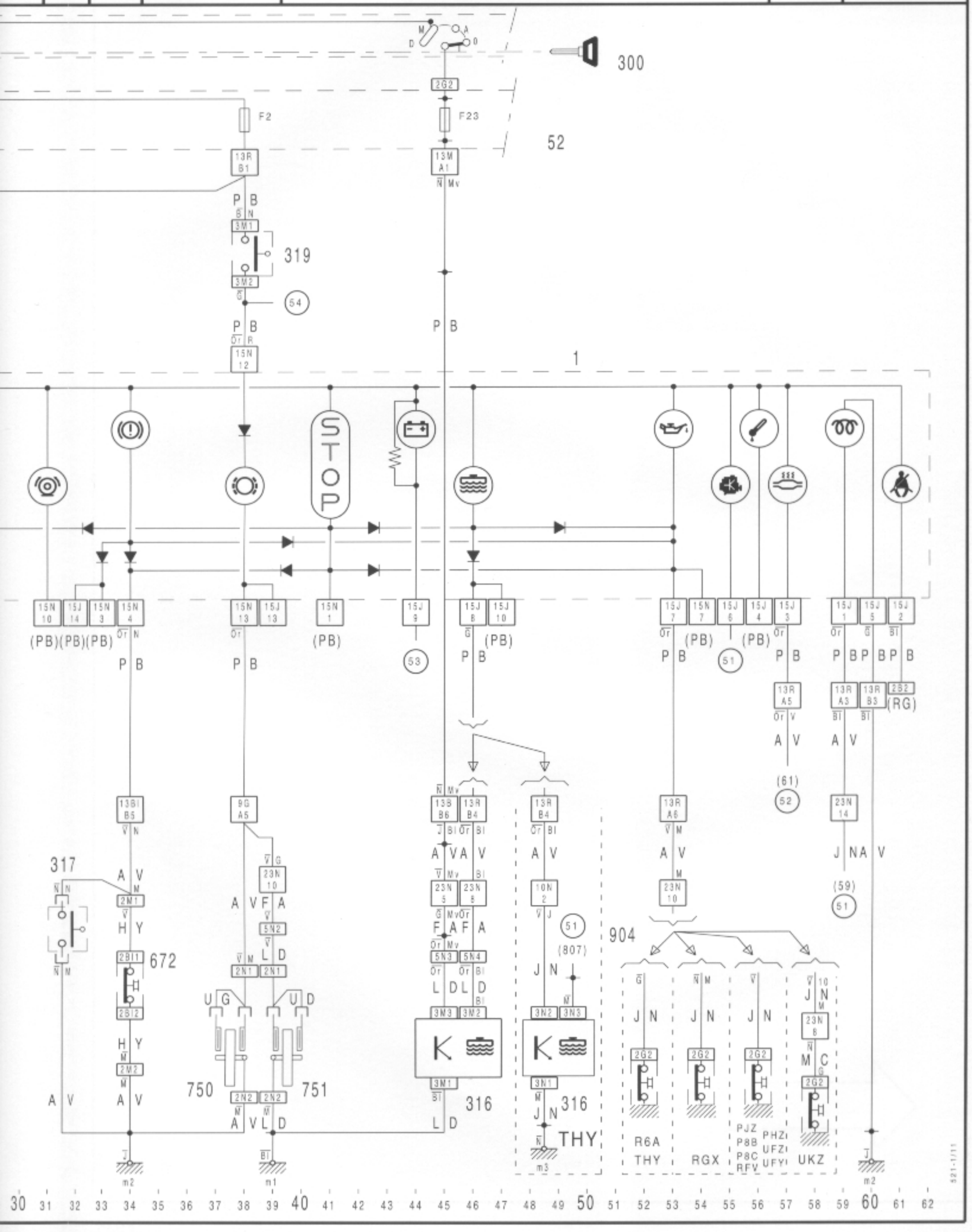
www.WorkshopManuals.co.uk



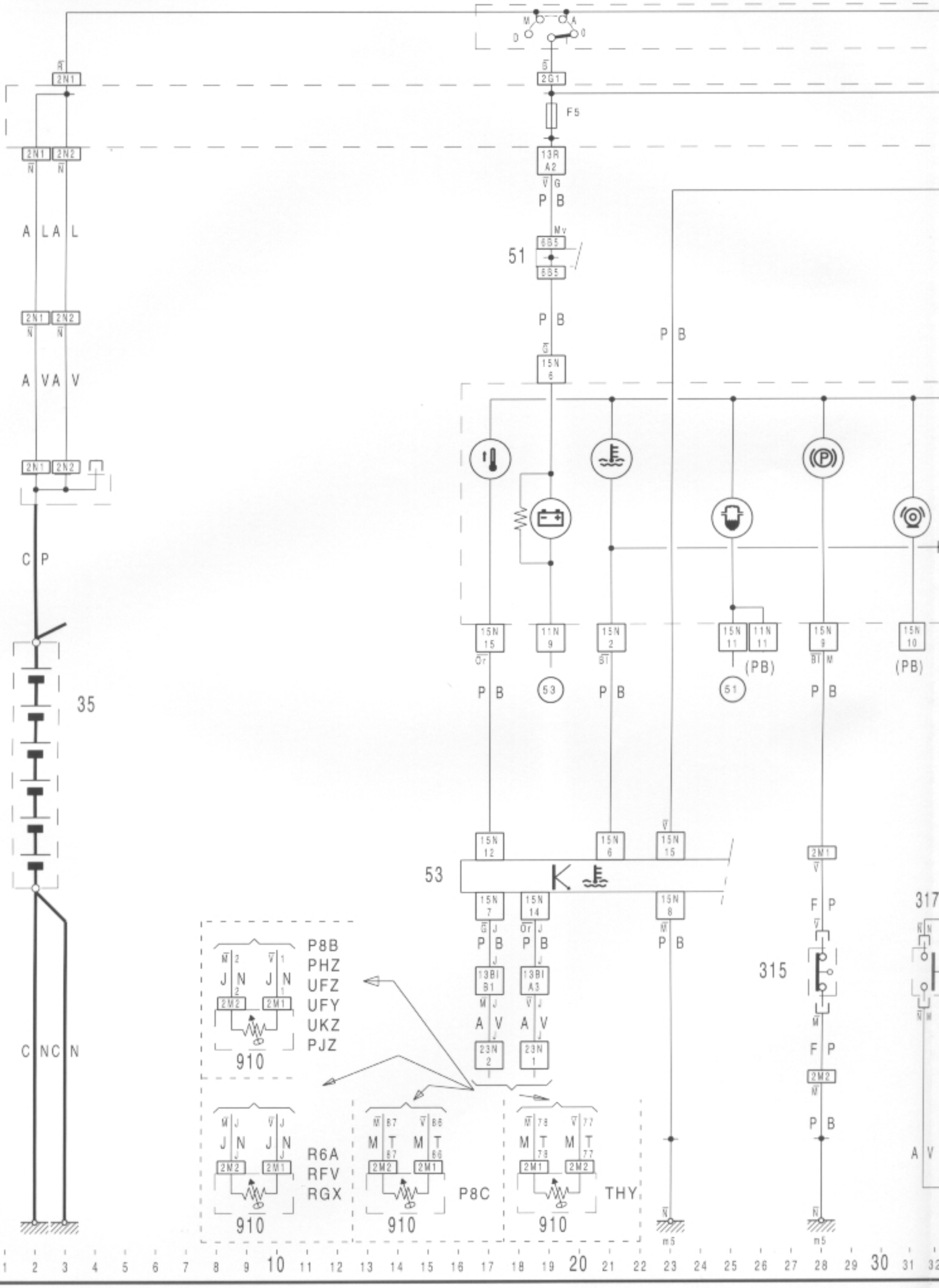
www.WorkshopManuals.co.uk



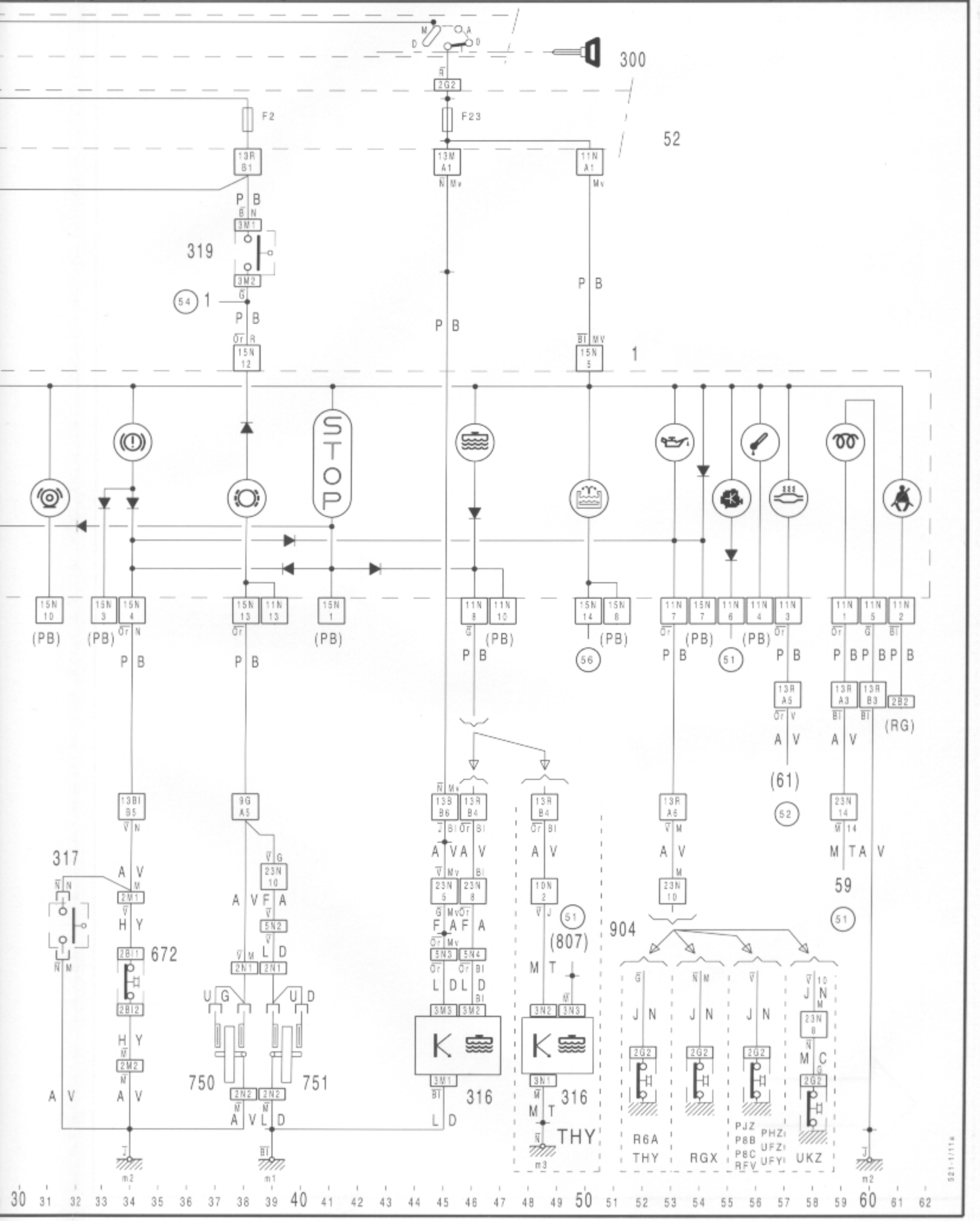
www.WorkshopManuals.co.uk



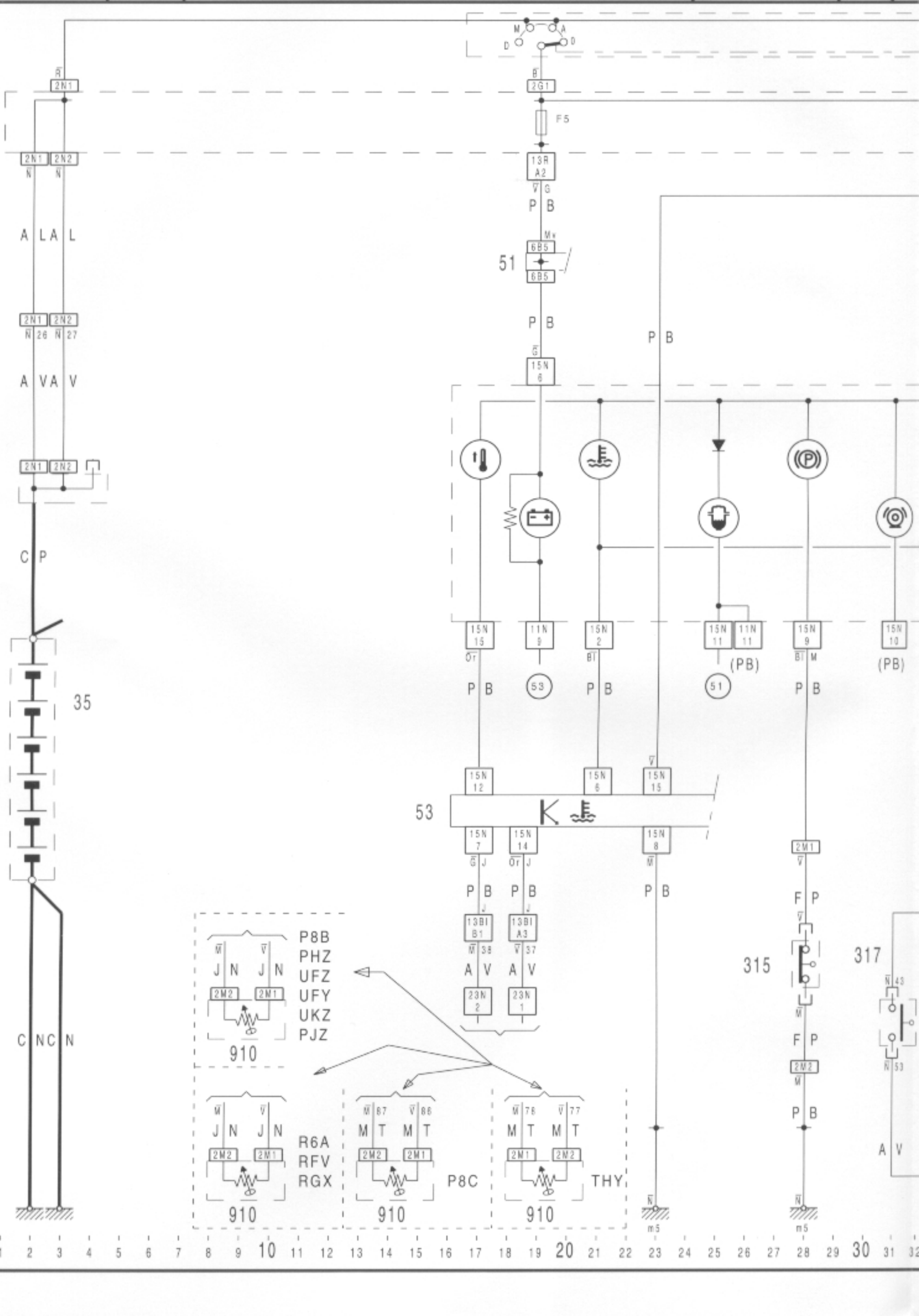
www.WorkshopManuals.co.uk



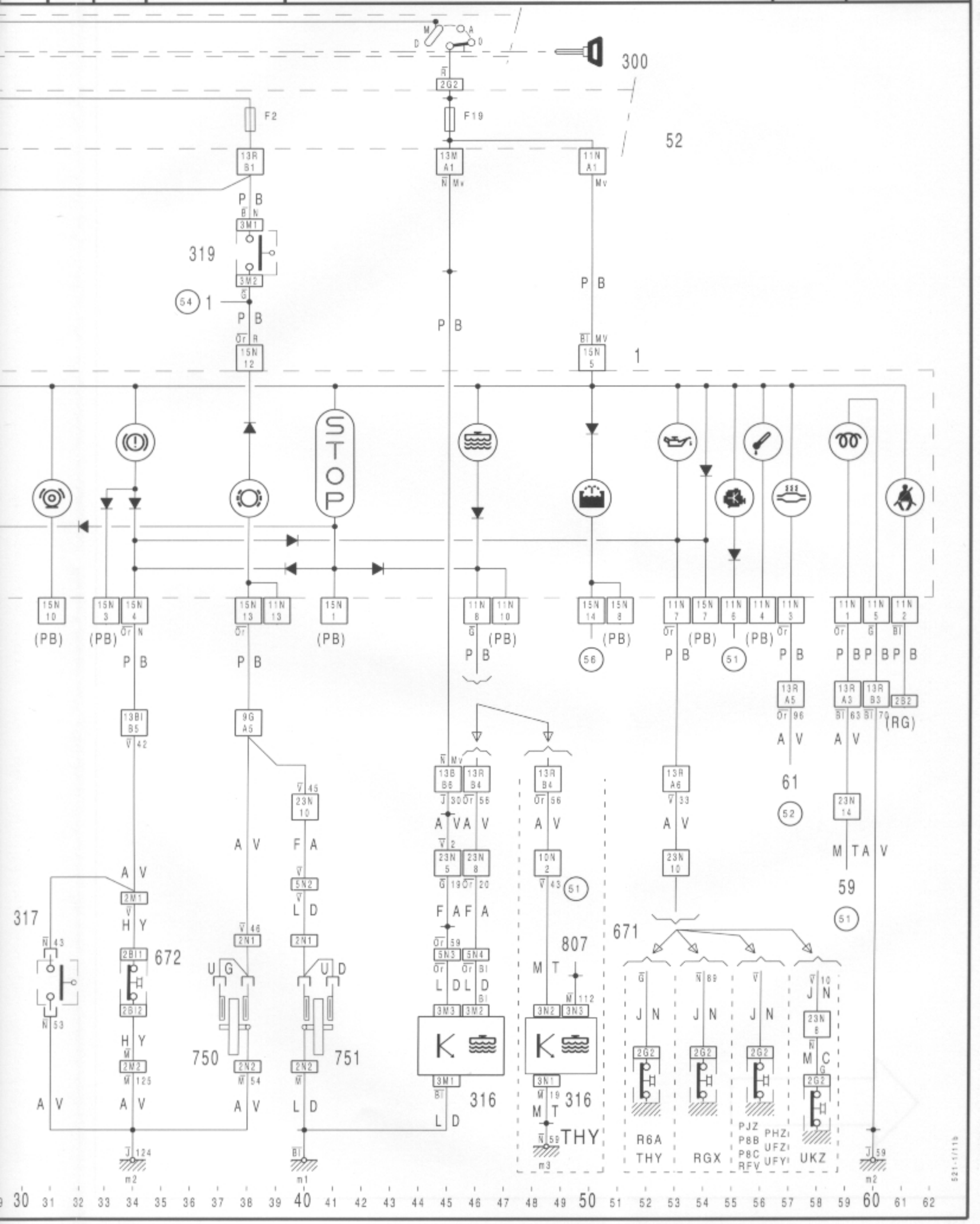
www.WorkshopManuals.co.uk



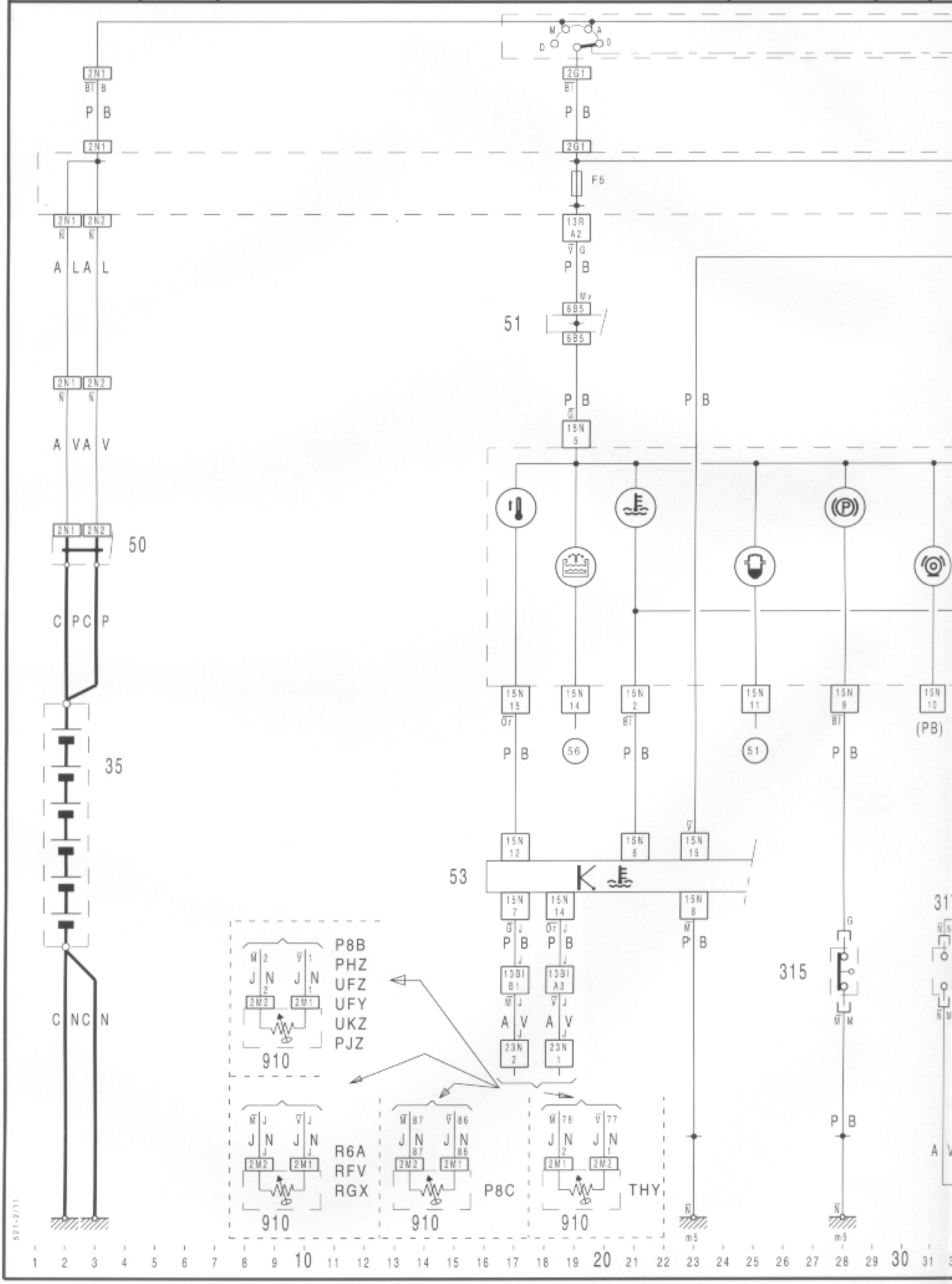
www.WorkshopManuals.co.uk



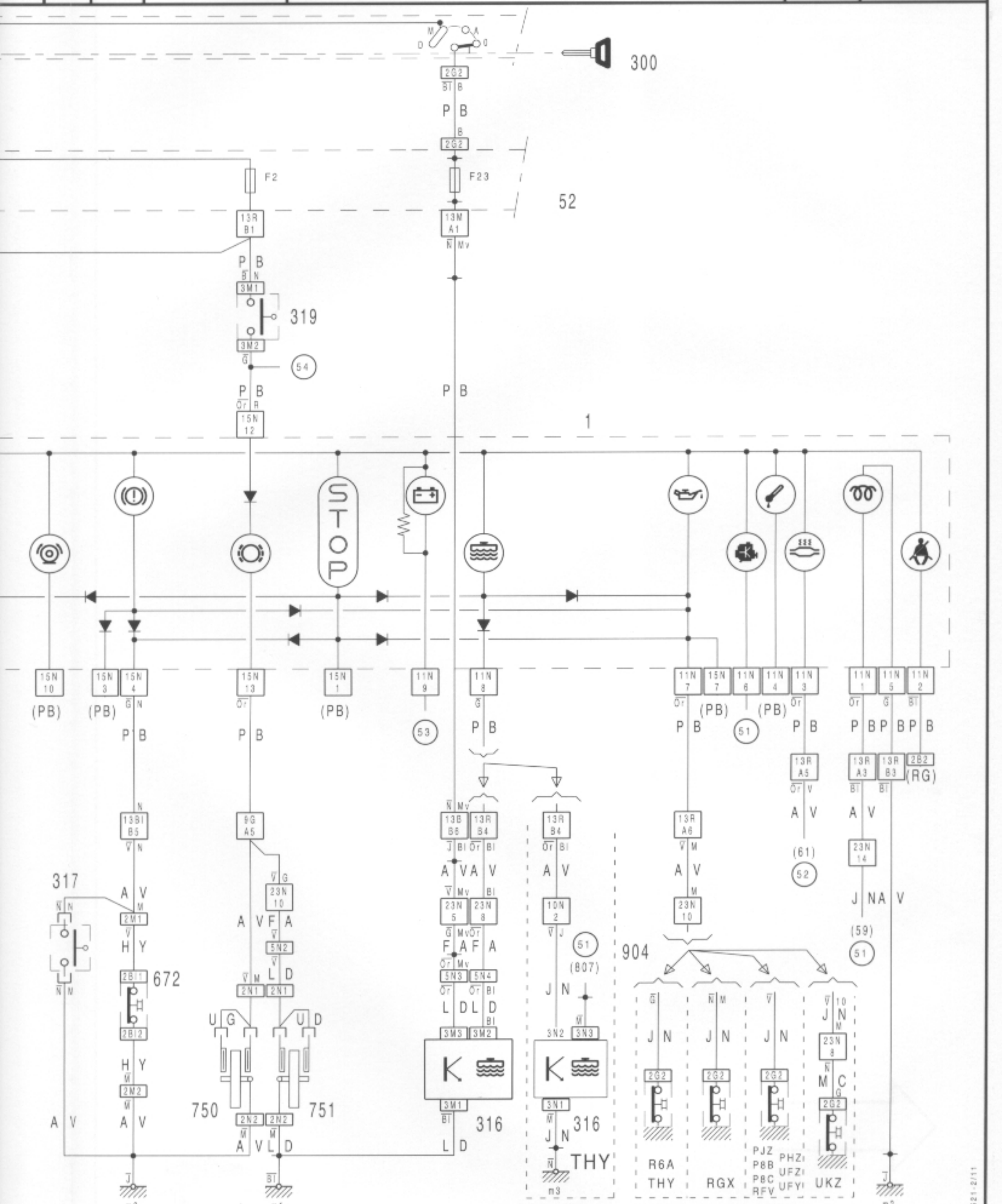
www.WorkshopManuals.co.uk



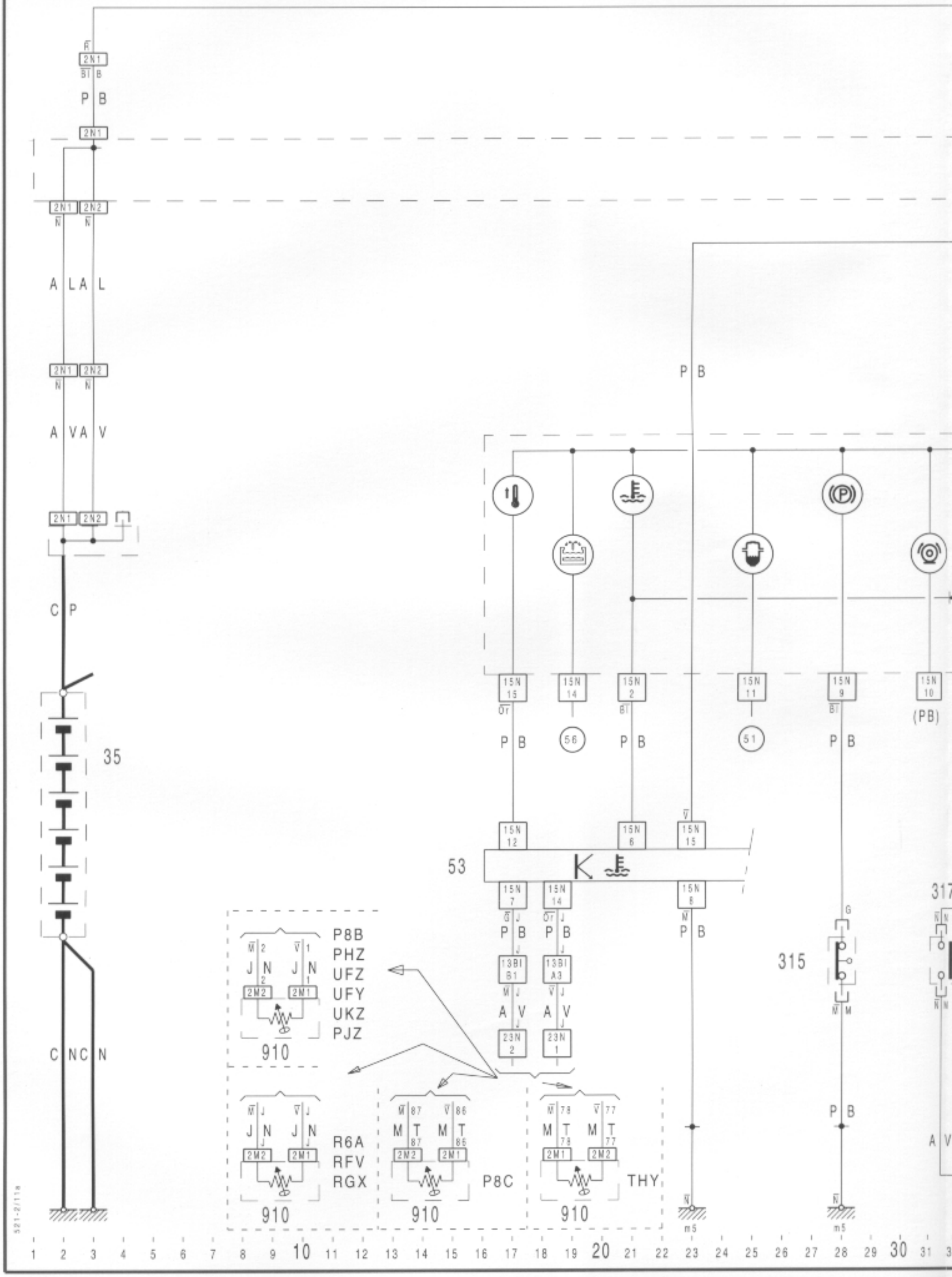
www.WorkshopManuals.co.uk



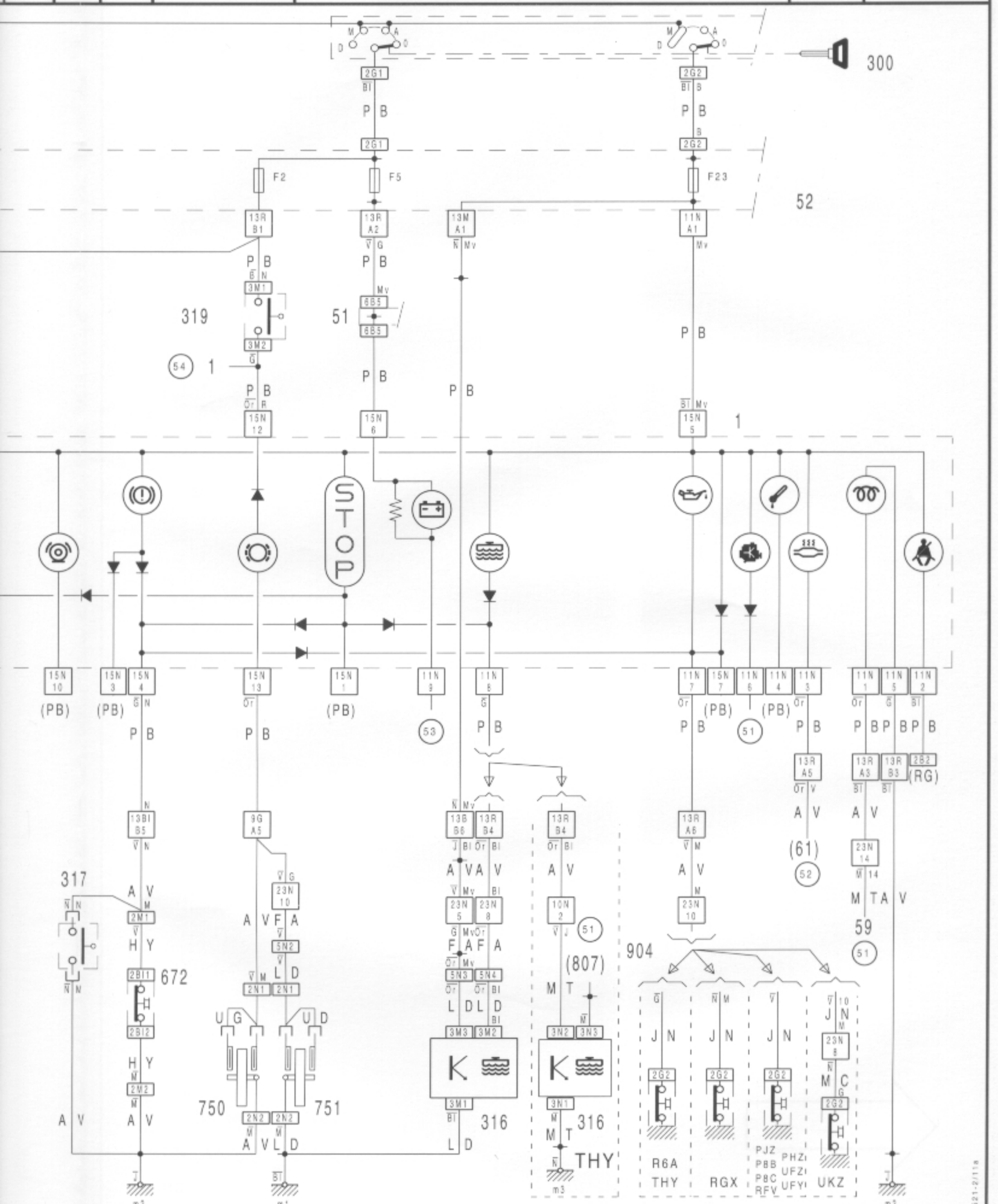
www.WorkshopManuals.co.uk



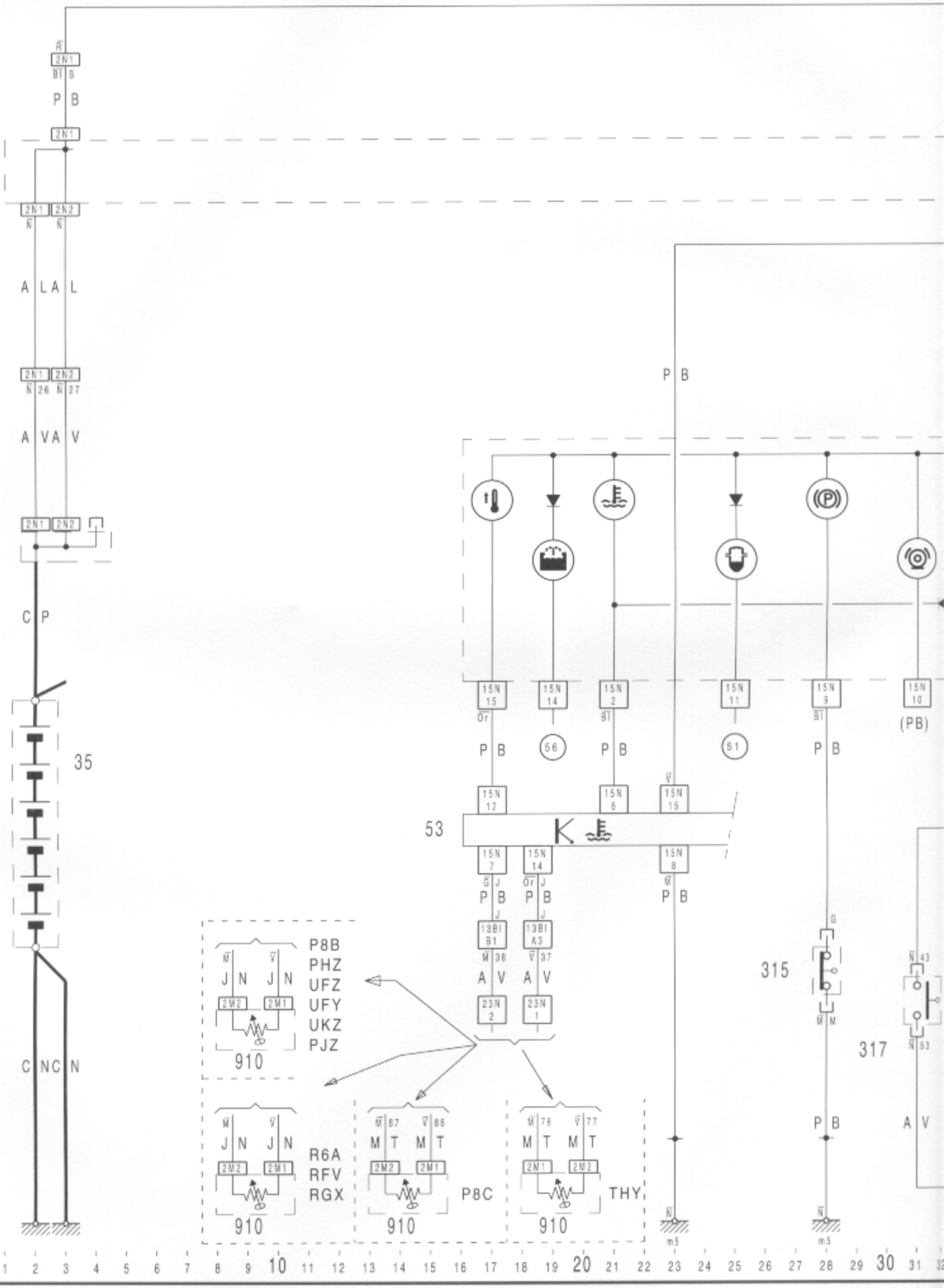
www.WorkshopManuals.co.uk



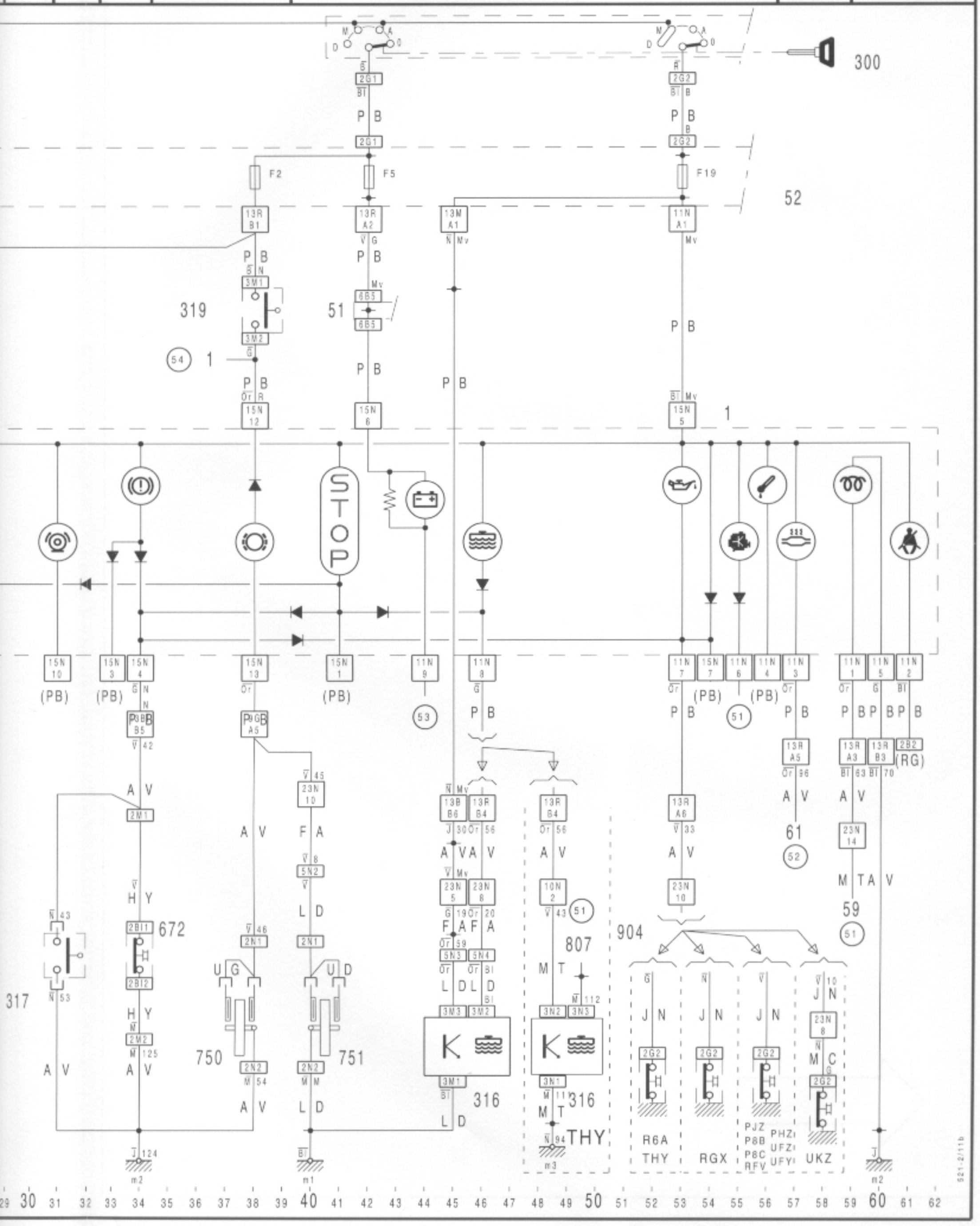
www.WorkshopManuals.co.uk



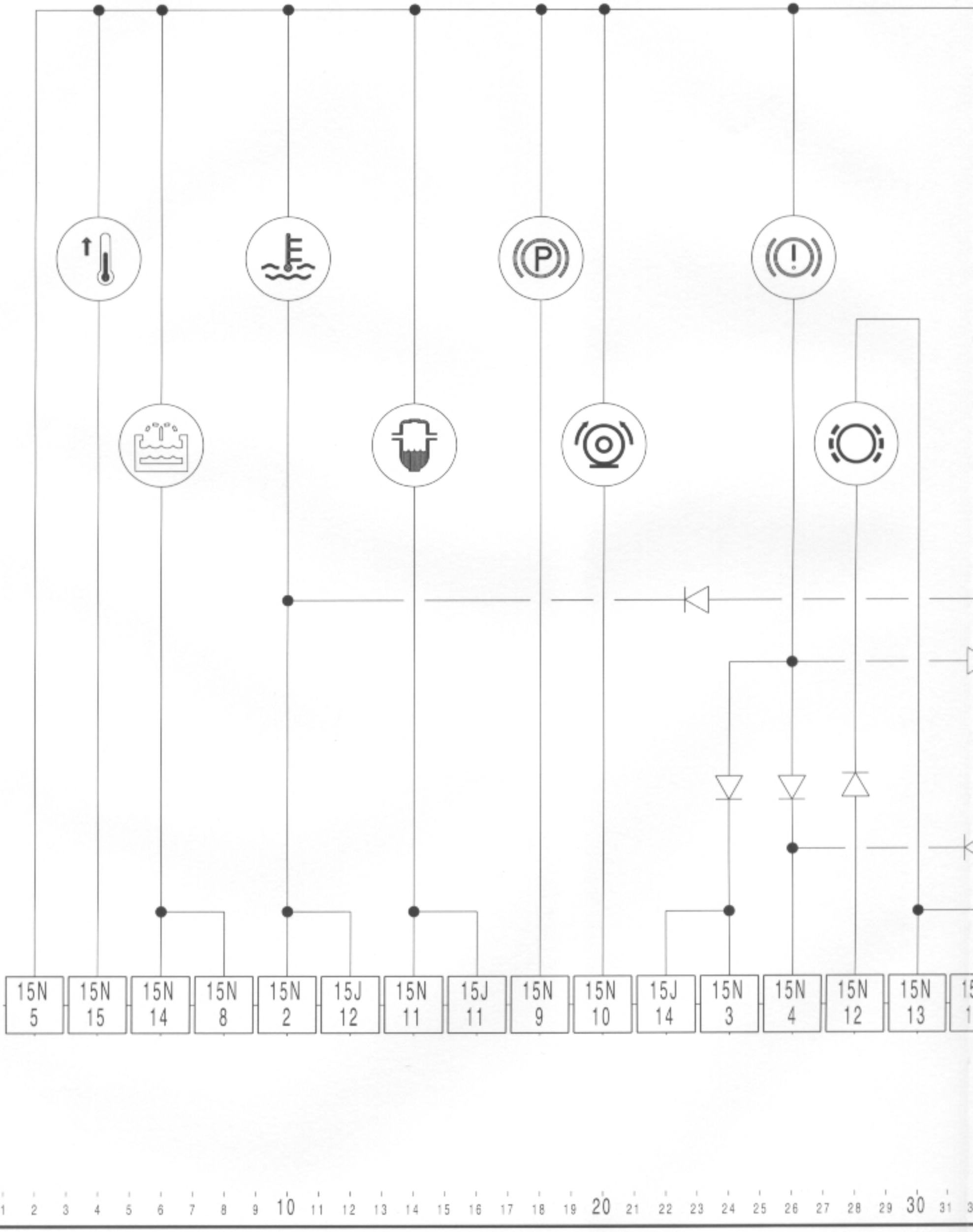
www.WorkshopManuals.co.uk



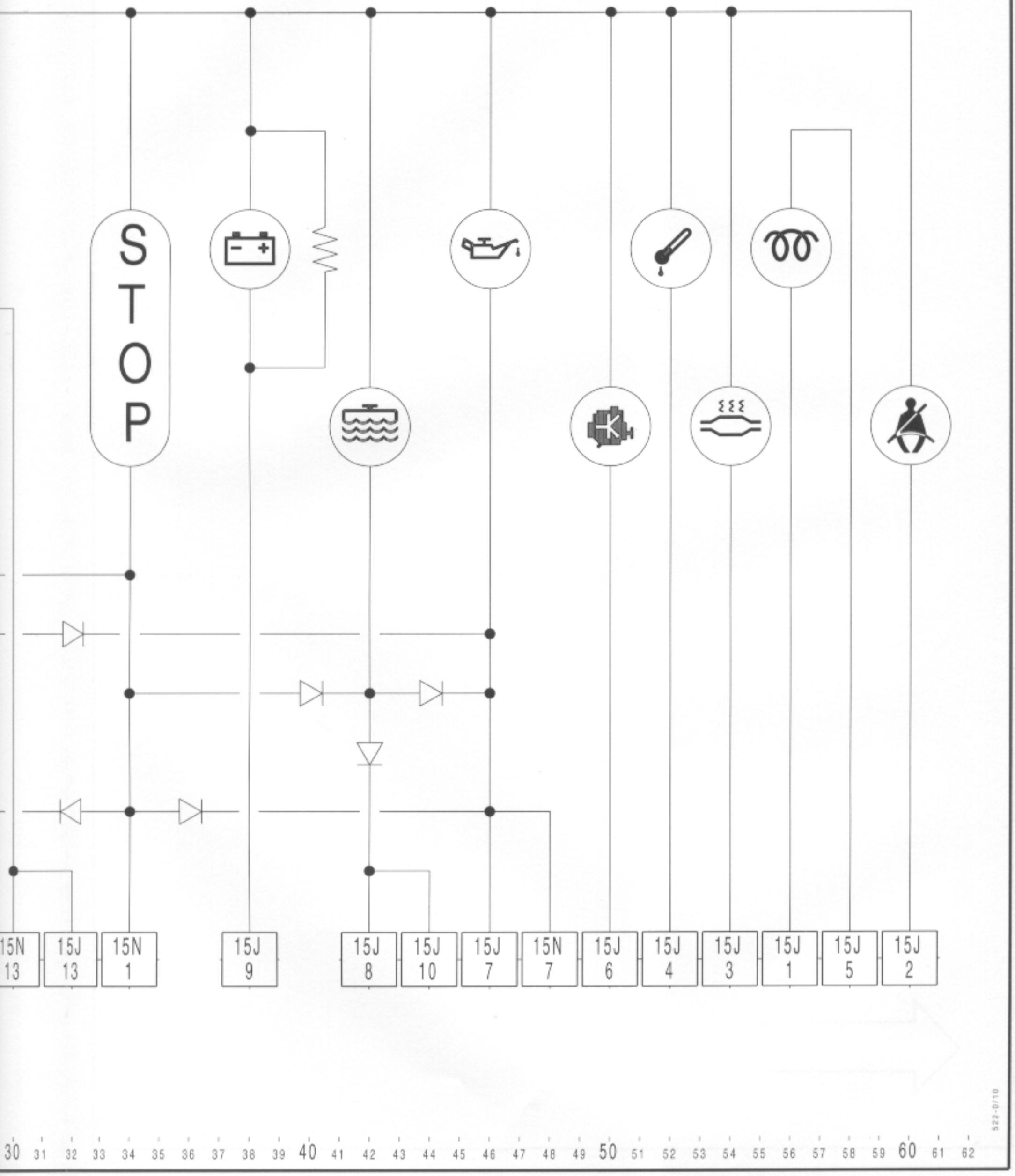
www.WorkshopManuals.co.uk



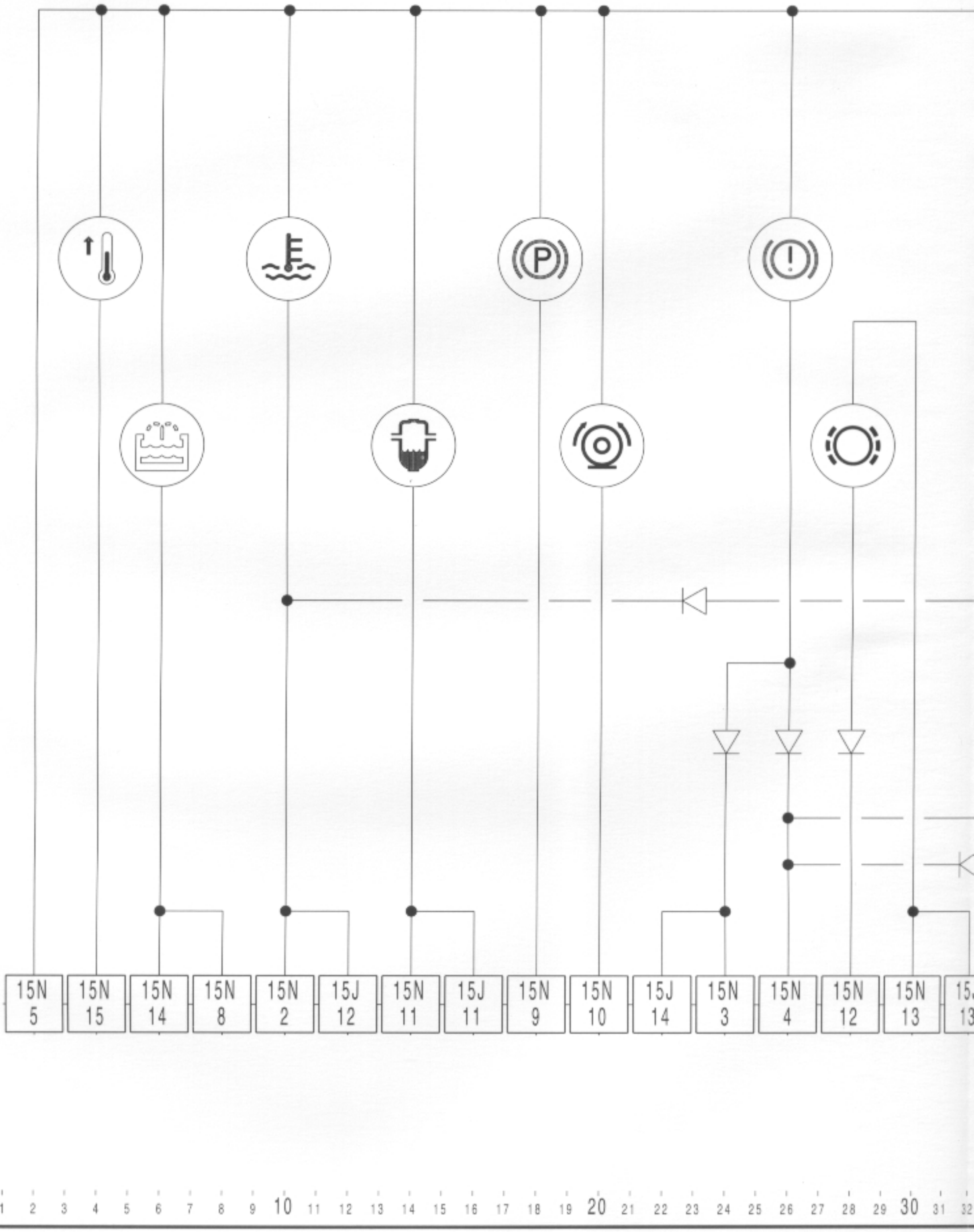
www.WorkshopManuals.co.uk



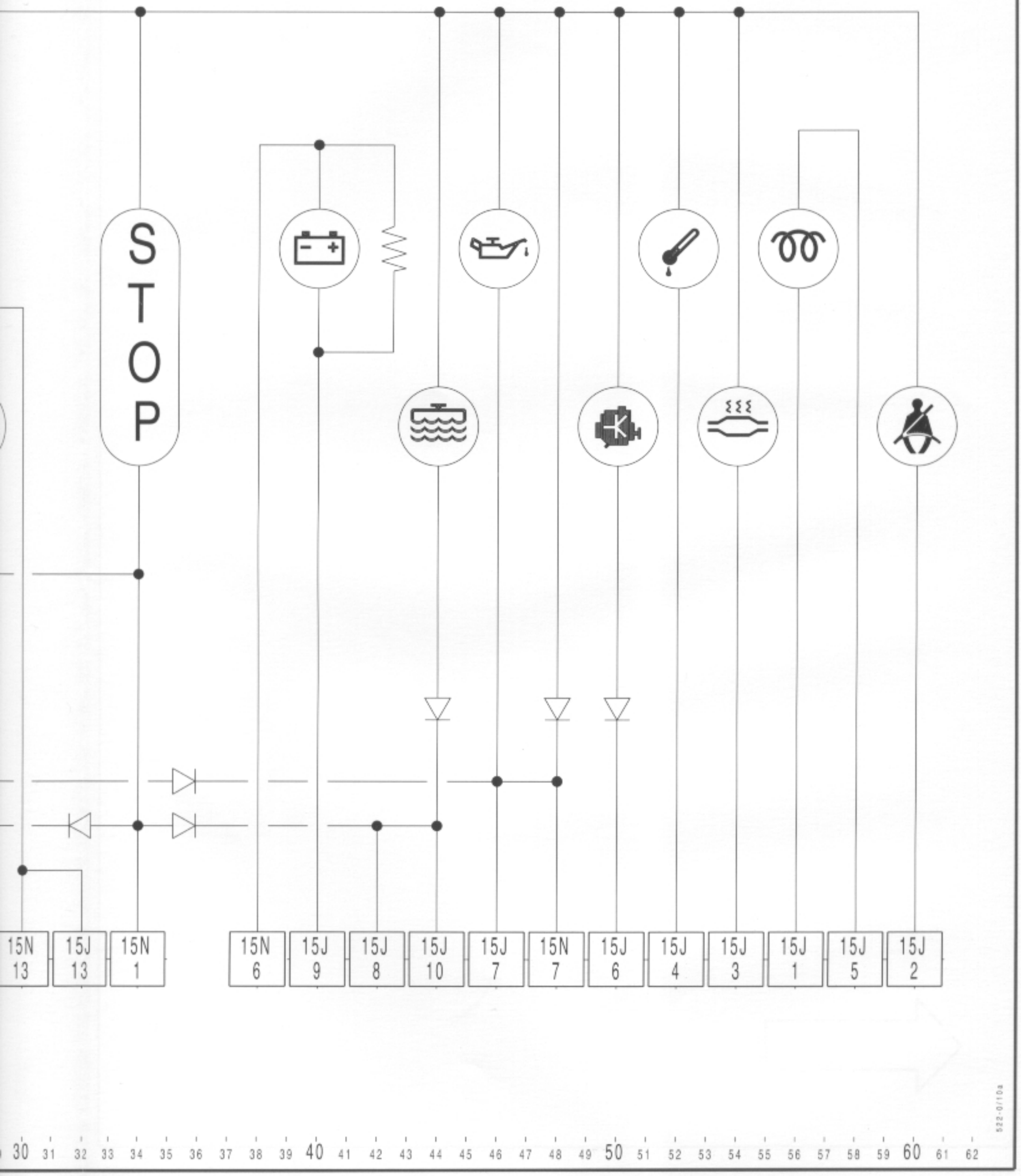
www.WorkshopManuals.co.uk



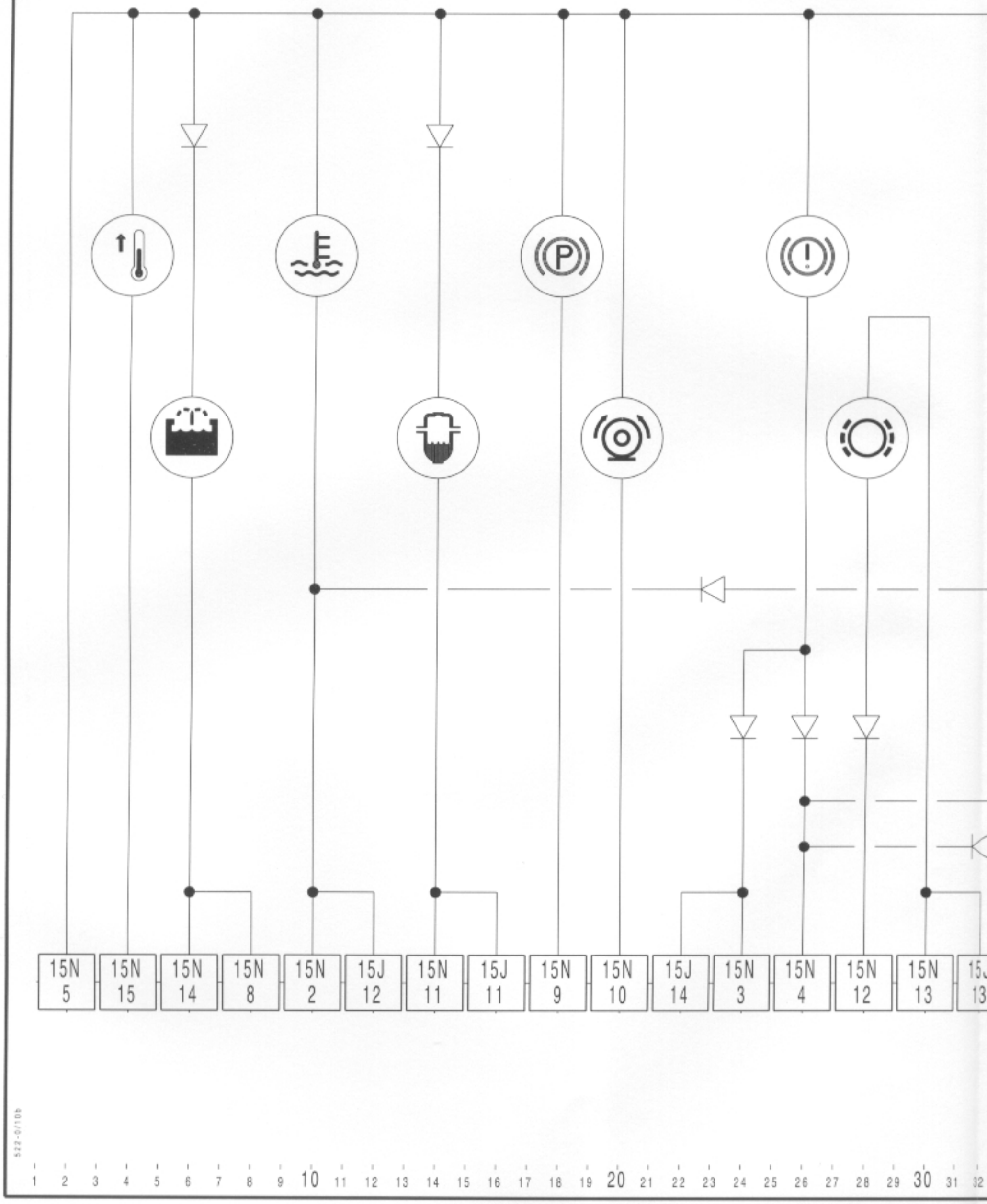
www.WorkshopManuals.co.uk



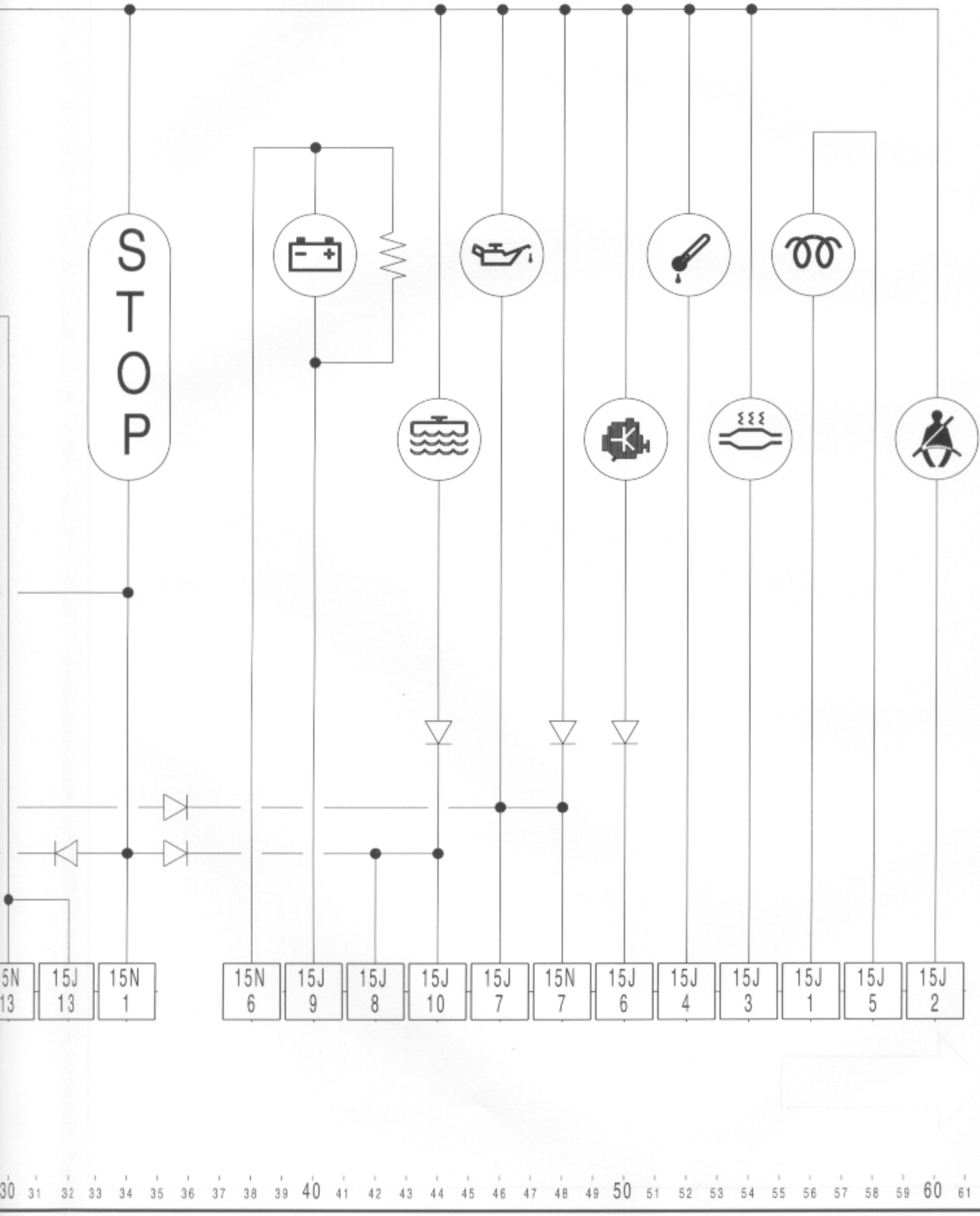
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

STOP

M D A D

2N1 2G1 F5

2N1 2N2 13R A2

A L A L

P B

51

6B5 6B5

2N1 2N2

A V A V

50

2N1 2N2

C P C P

35

C N C N

54 15BI 13

40

65 765

K

15BI 14 15V 7 15R 3 15R 2

BN2 BN3

P B P B P B P B P B

57

15BI 3 15BI 4 15BI 1 15BI 5 15BI 12 15BI 14 15BI 11

tr/min

K

15BI 2 15BI 13 15BI 8 15BI 6 15BI 7 15BI 14 15BI 1 15BI 2 15BI 3 15BI 4 15BI 5 15BI 6

58 67

P B P B P B P B P B P B

6B1 6B1

51 52

13J B2 13Or B1 13Or B2 13Or B5

F8 F11 F15

13J A2 11M B2 13Or A3 13V A5

P B

m5

P8B PHZ UFZ UFY UKZ PJZ

910

R6A RFV RGX

910

P8C

910

THY

910

P B P B P B

15N 5

15N 15 15N 14 15N 8 15N 2 15J 12

56

15BI 15 15BI 12

53

K

15N 12 15N 6 15N 15

15N 7 15N 14 15N 8

P B P B P B

13BI B1 13BI A3

A V A V

23N 2 23N 1

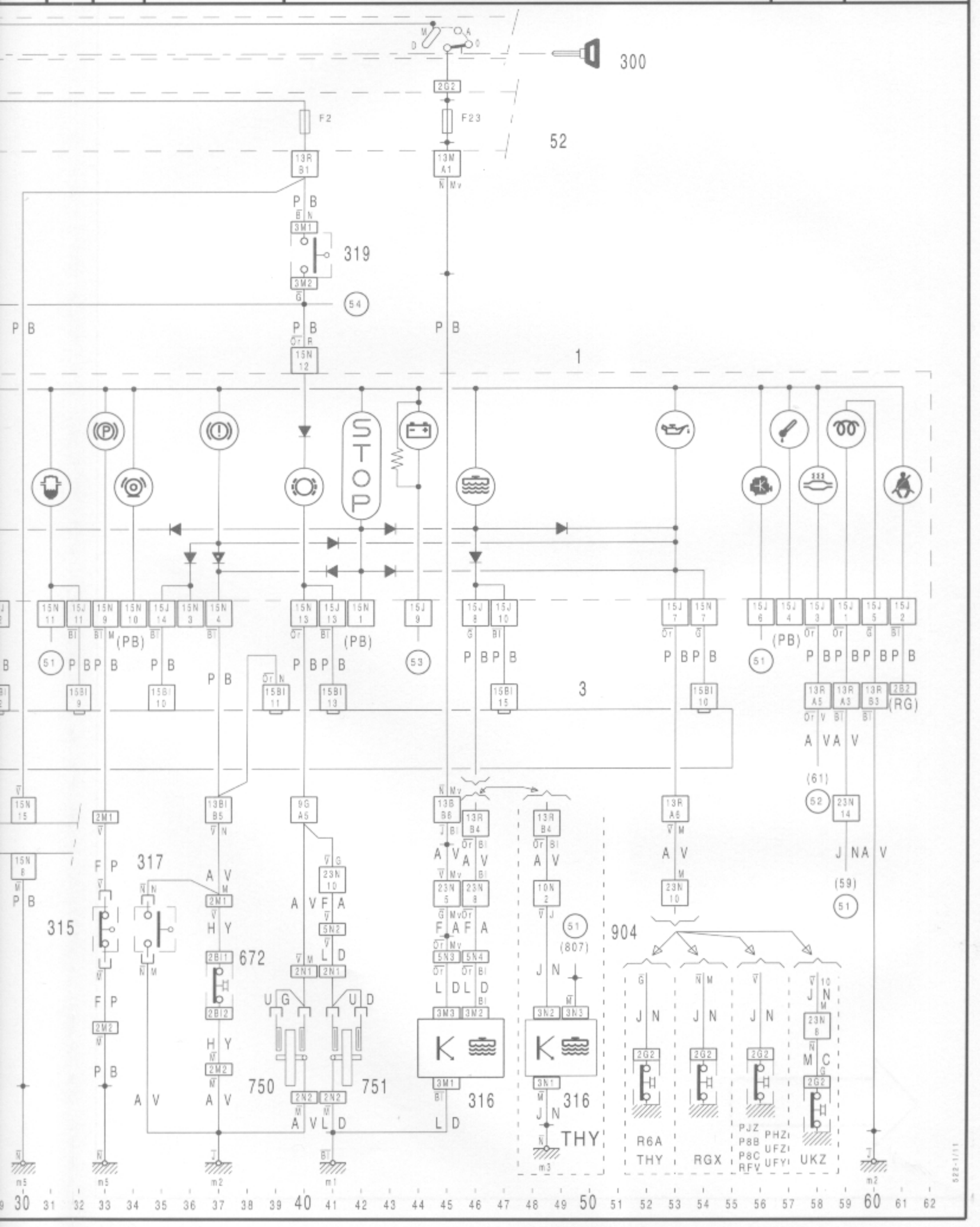
315

m5

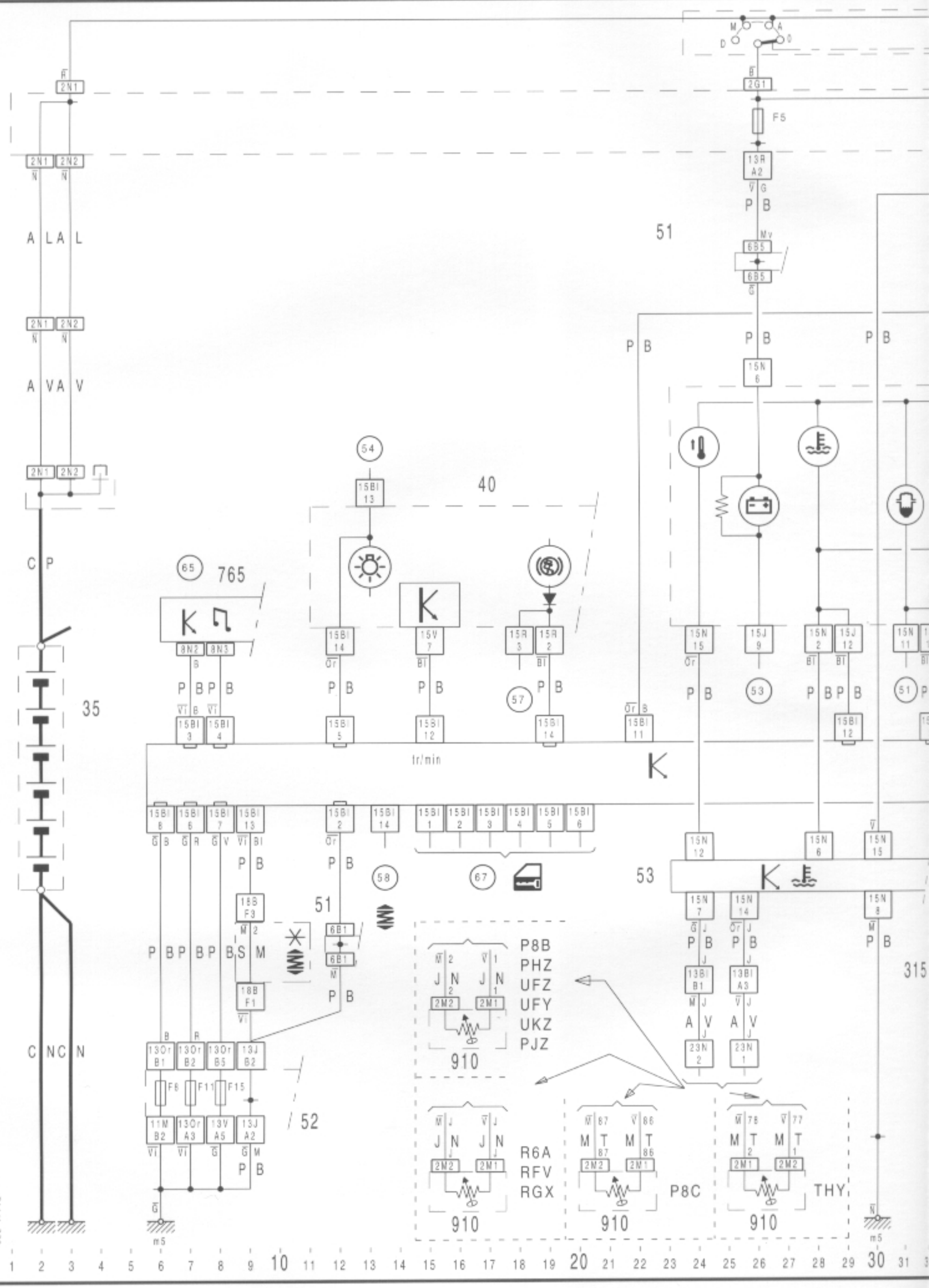
522-1/11

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

www.WorkshopManuals.co.uk

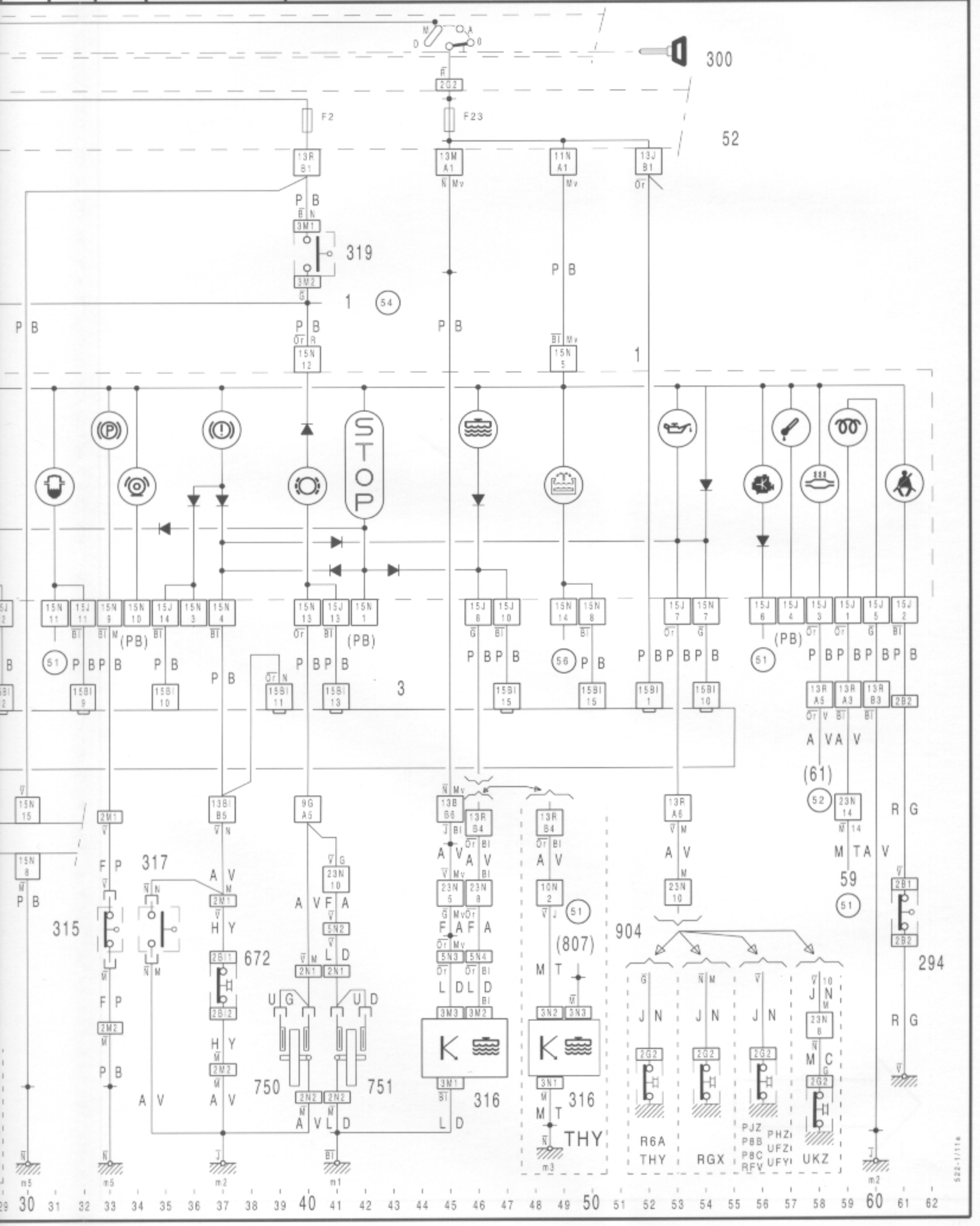


www.WorkshopManuals.co.uk



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

STOP

2N1 2N2 N 26 N 27 A L A L A V A V C P C N C N 35

54 6B6 6B6 Gr

51 2G1 F5 13R A2 V G P B Nv 6B5 6B5 G

M D A D

15N 6 P B P B P B

15N 15 Or P B 15J 9 53 15N 2 15J 12 BI BI P B P B 15N 11 15J 11 51

40 15V 7 BI P B 15R 3 15R 2 BI 57 P B

65 765 8N2 8N3 B P B P B VI B VI 15BI 3 15BI 4 15BI 5 15BI 12 15BI 14 Or B 15BI 11

trimin

15BI B G B 15BI 6 G R 15BI 7 G V 15BI 13 VI BI 15BI 2 Or 15BI 14 15BI 1 15BI 2 15BI 3 15BI 4 15BI 5 15BI 6

P B P B 58 67 53

15N 12 15N 6 15N 15 15N 7 G J P B 15N 14 Or J P B 15N 8 M P B 315

18B F3 M 2 18B F1 VI 51 6B1 6B1 M P B

P B P B P B S M

13Or B1 11M B2 11M B3 13J B2 B R F8 F4 F12 /52

13BI B1 M 38 A V 13BI A3 V 37 A V 23N 2 23N 1

11M B2 13Or A1 13Or B3 13J A2 VI VI G G M P B G m5

P8B PHZ UFZ UFY UKZ PJZ

M V J N J N 2M2 2M1 910

R6A RFV RGX

M 77 V 76 J N J N 2M2 2M1 910

P8C

M 87 V 86 M T M T 2M2 2M1 910

THY

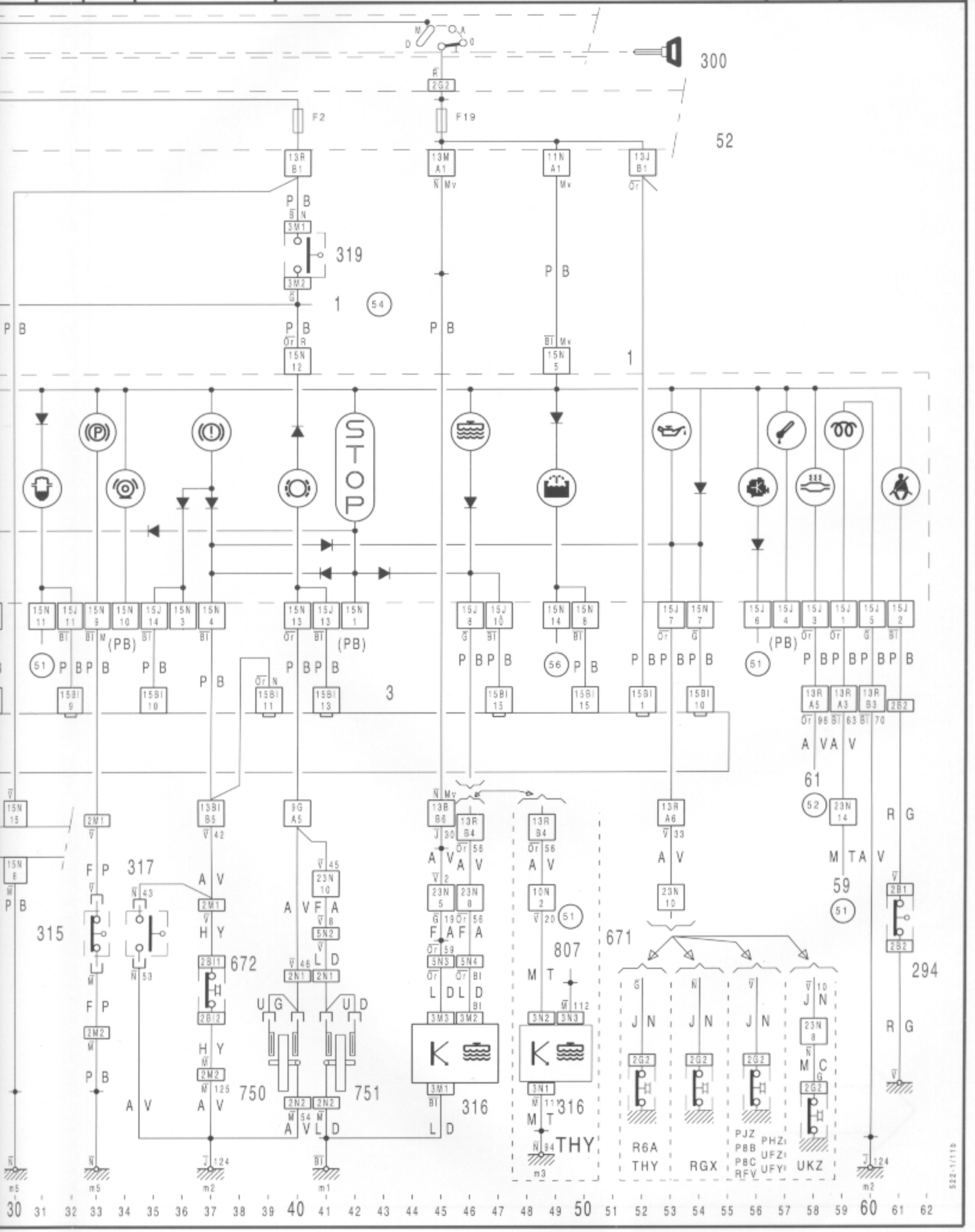
M 78 V 77 M T M T 2M1 2M2 910

N m5

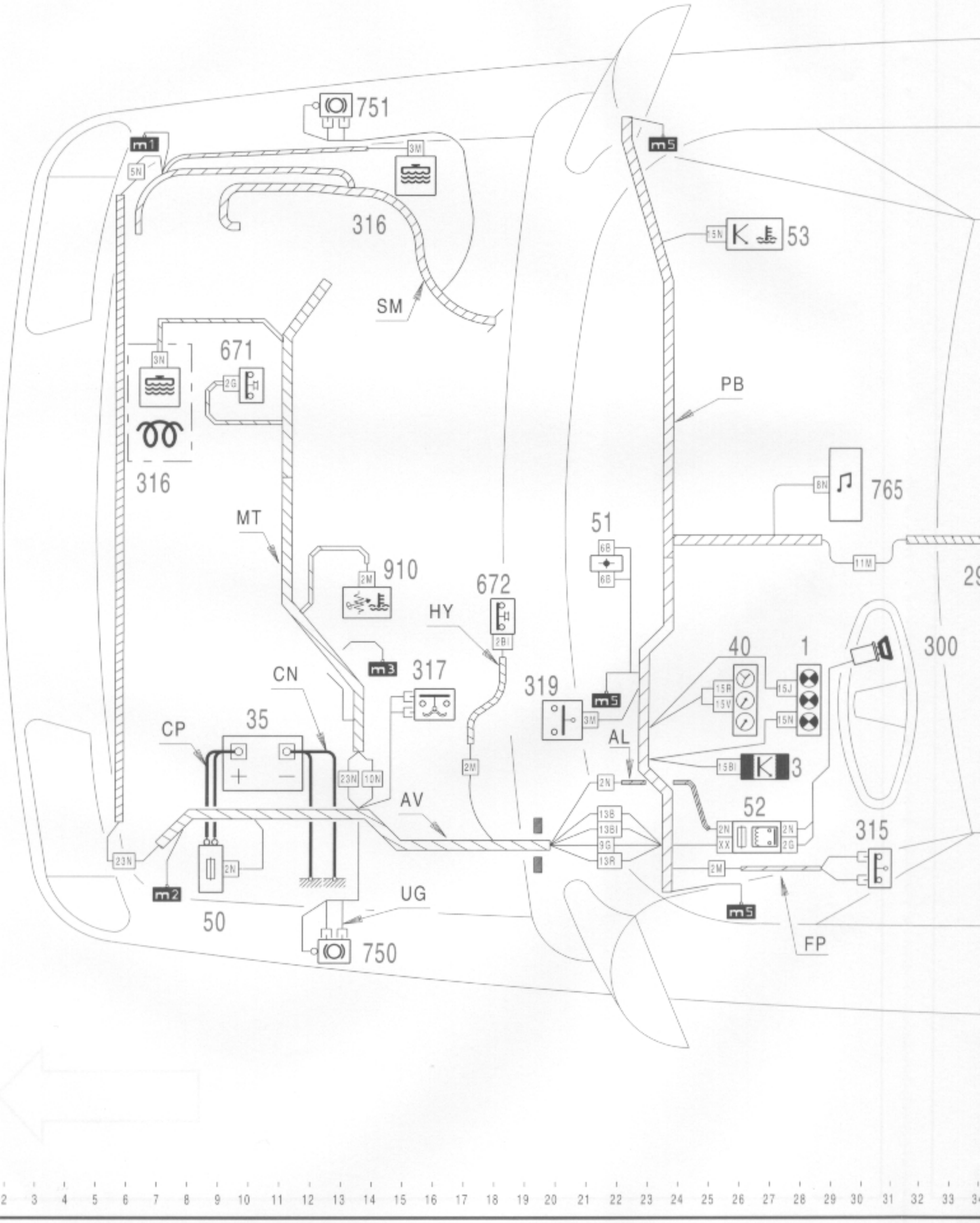
522-1/11b

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

www.WorkshopManuals.co.uk



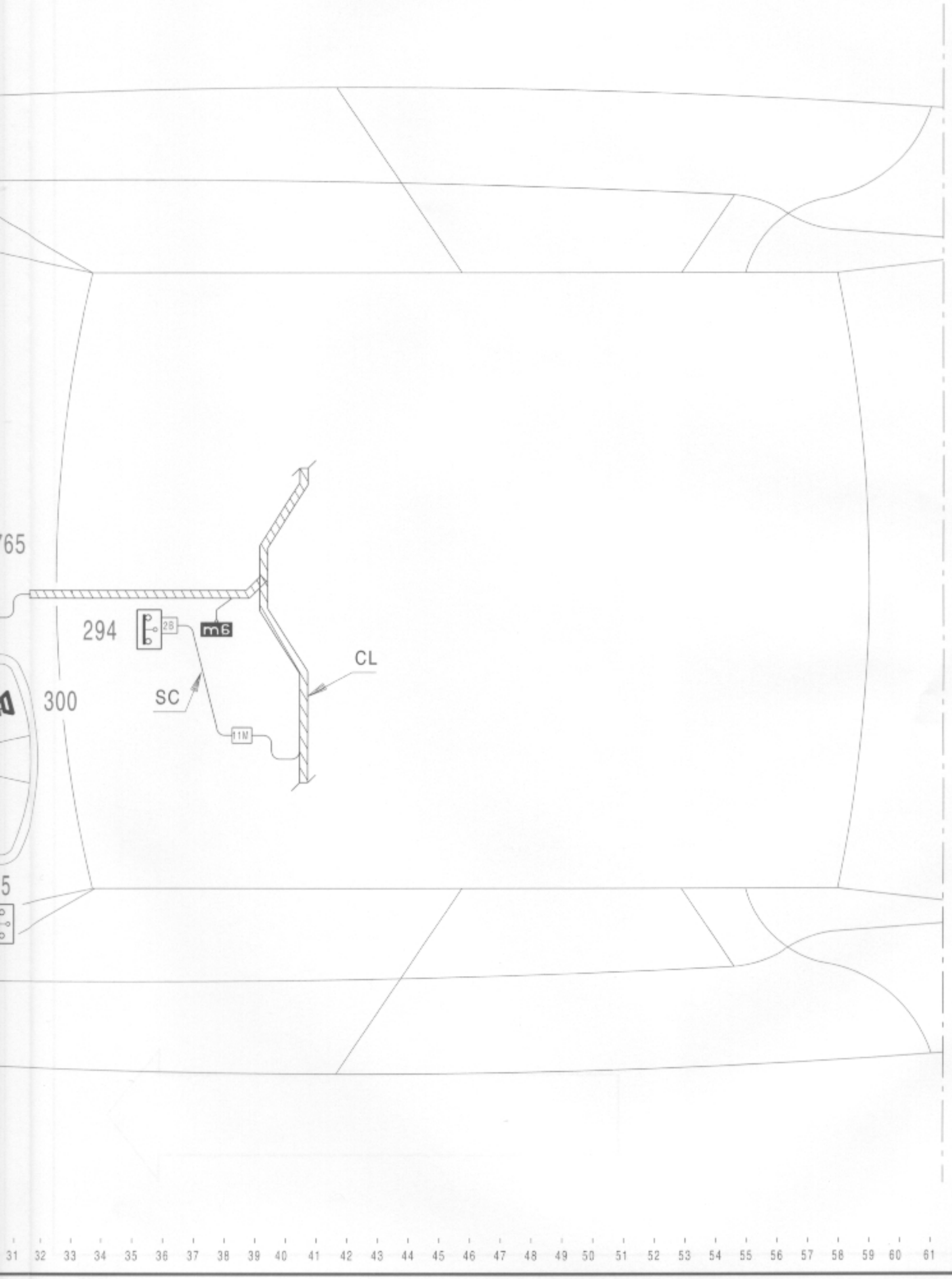
www.WorkshopManuals.co.uk



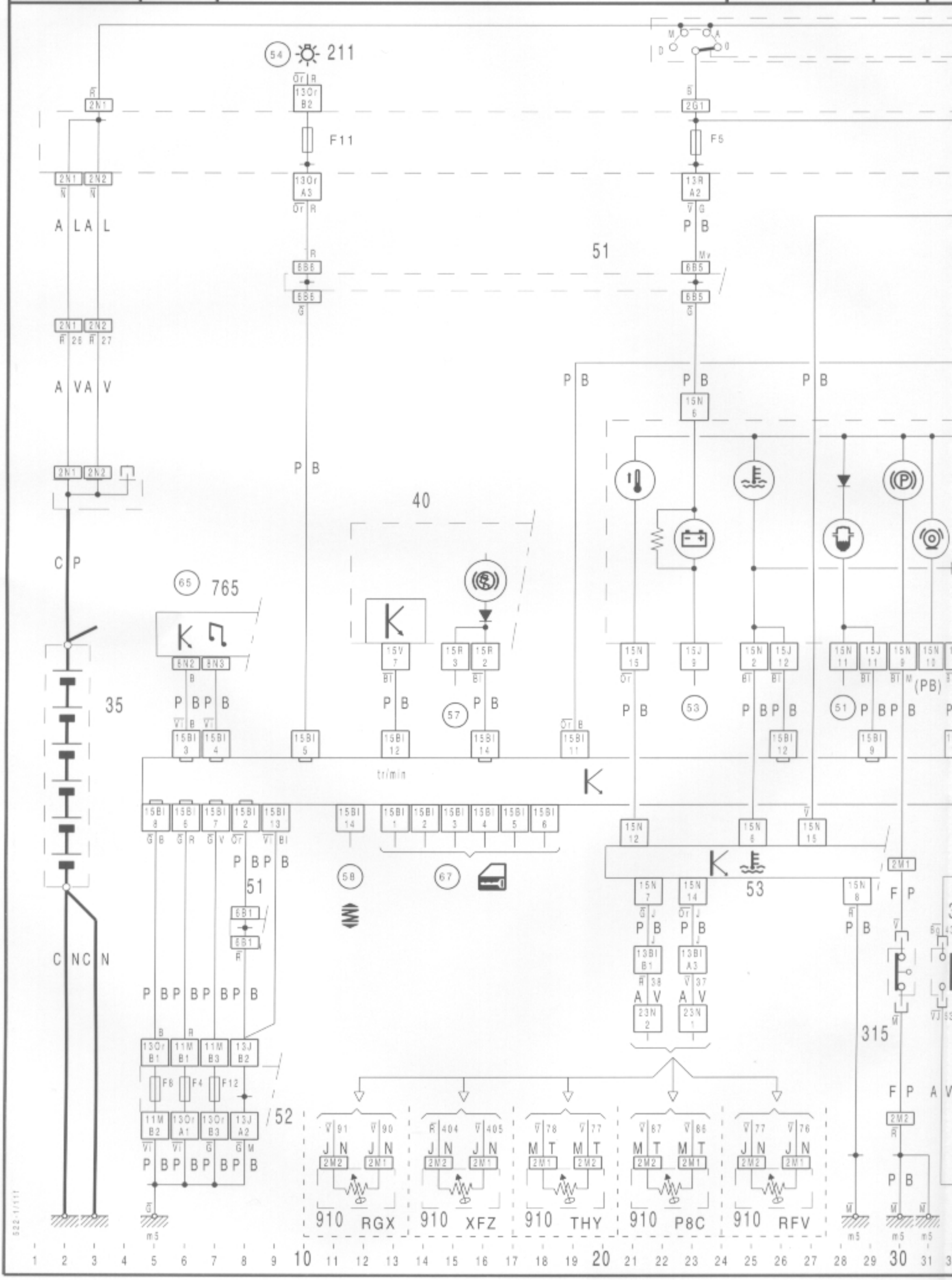
522-1/11f

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34

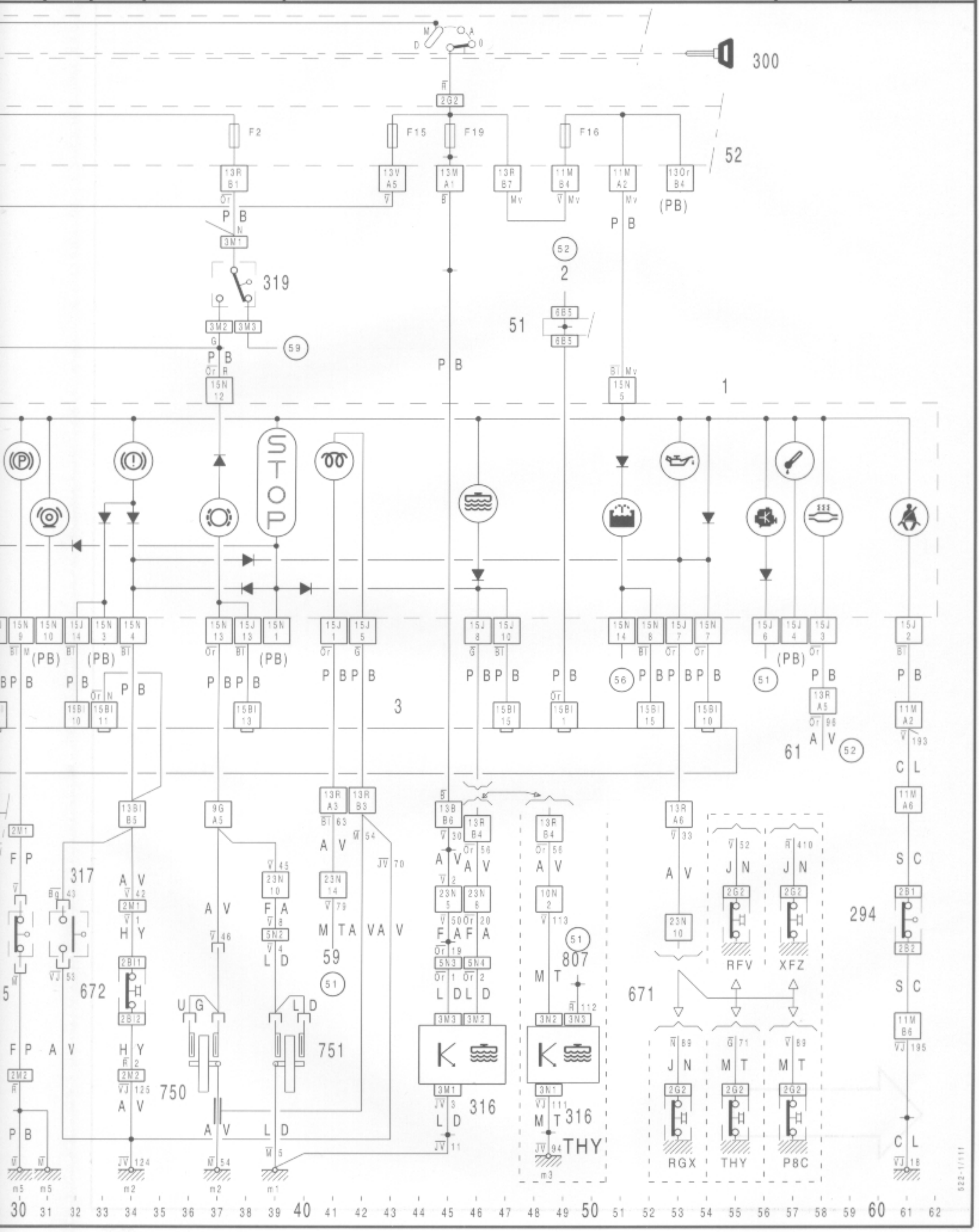
www.WorkshopManuals.co.uk



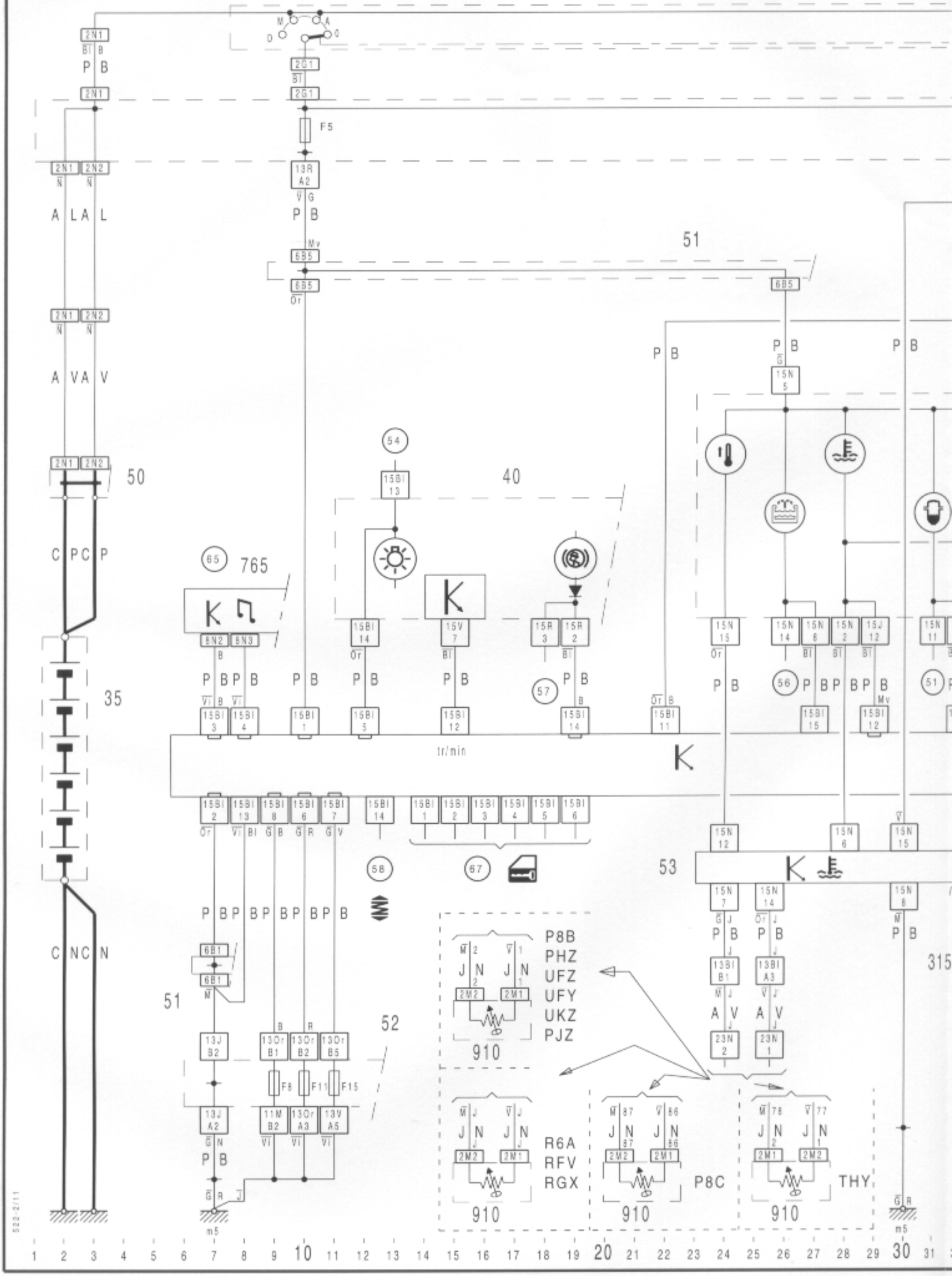
www.WorkshopManuals.co.uk



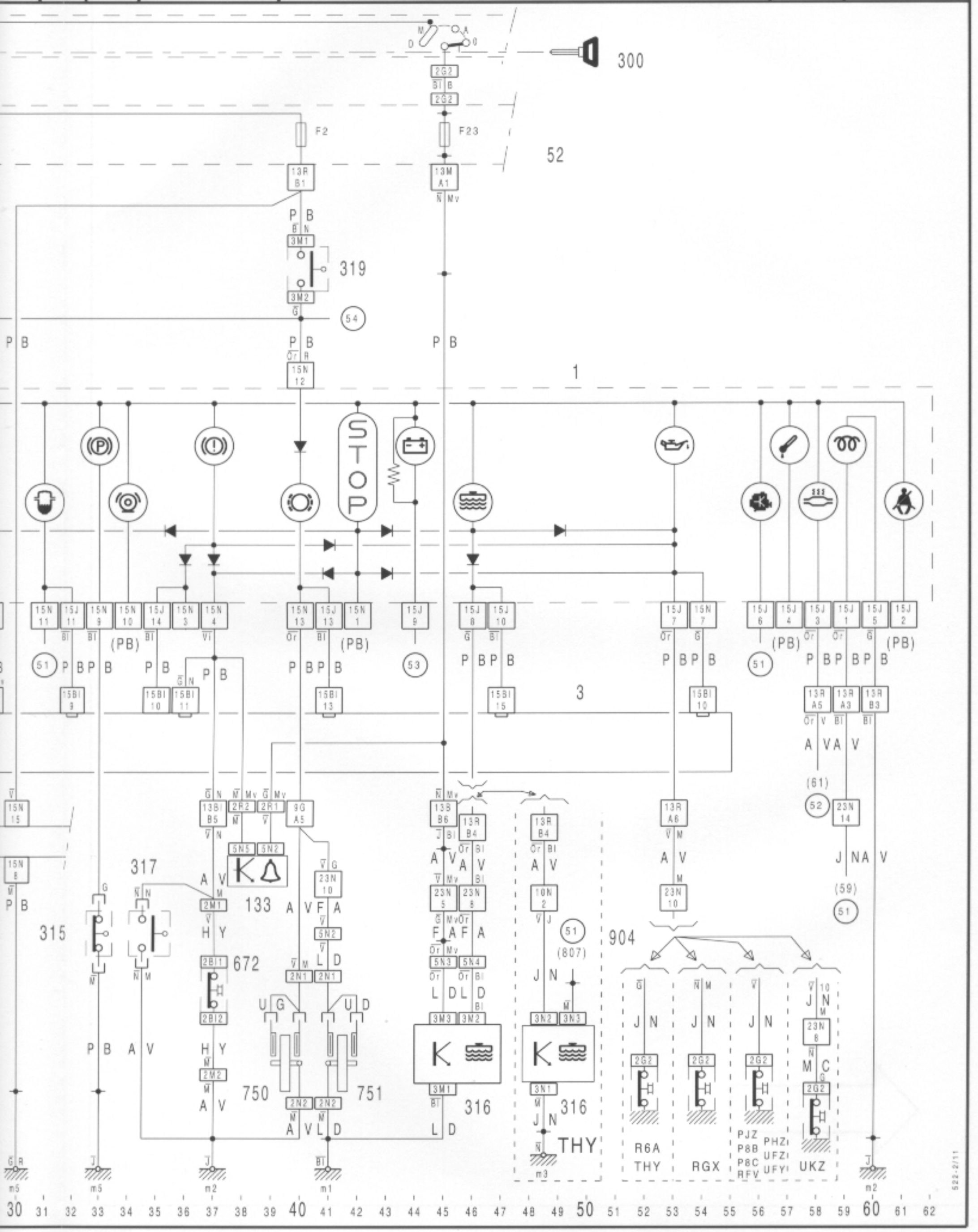
www.WorkshopManuals.co.uk



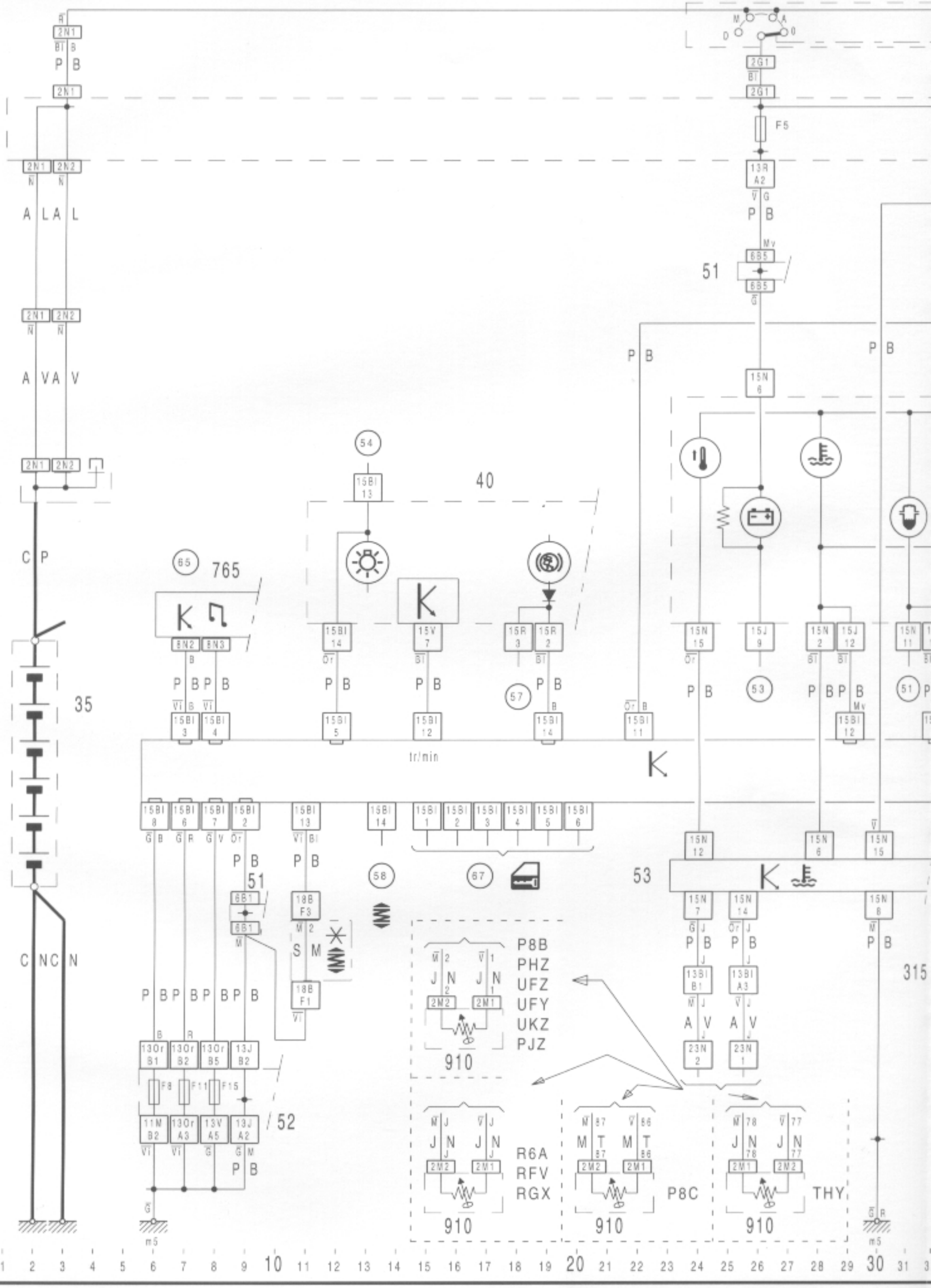
www.WorkshopManuals.co.uk



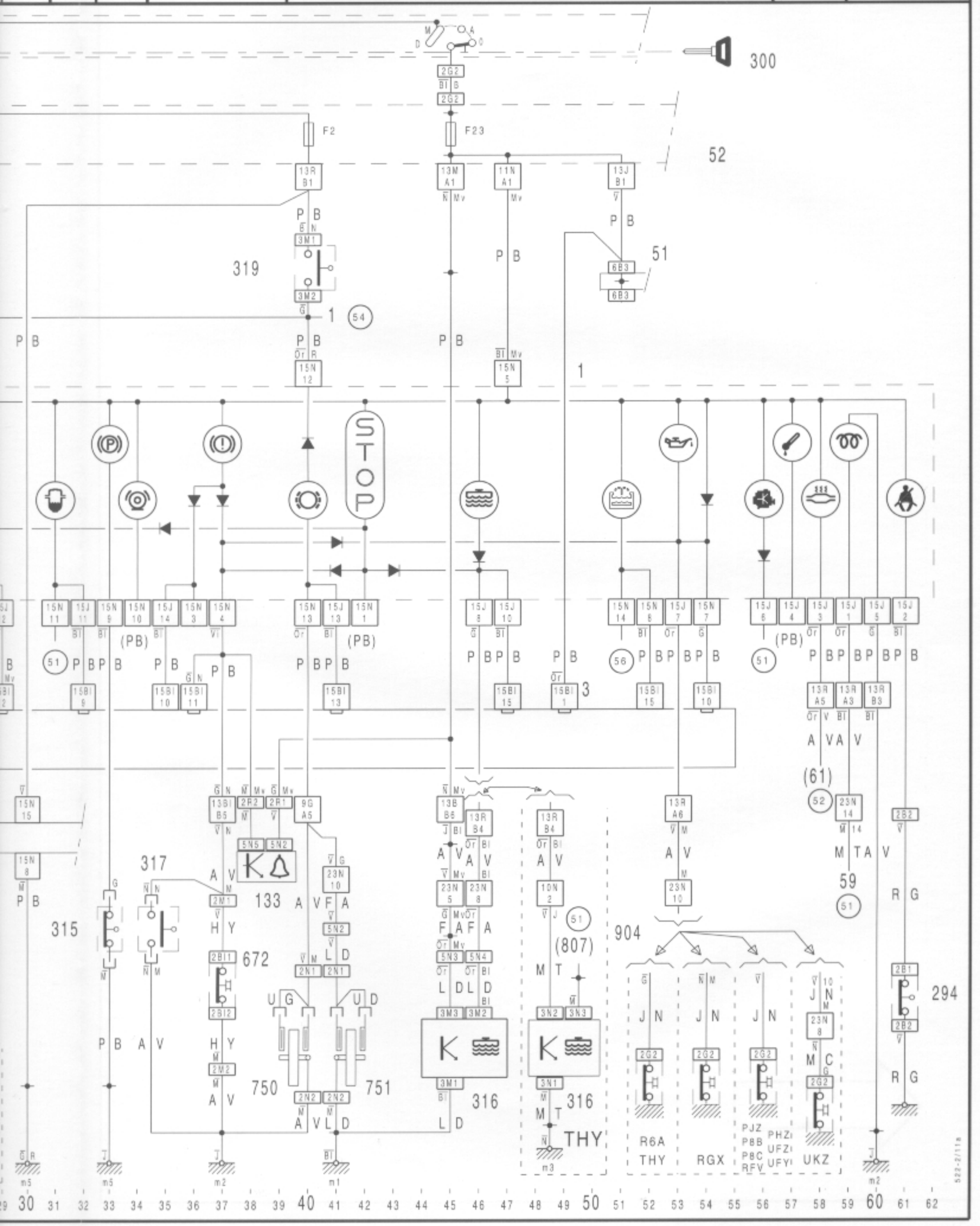
www.WorkshopManuals.co.uk



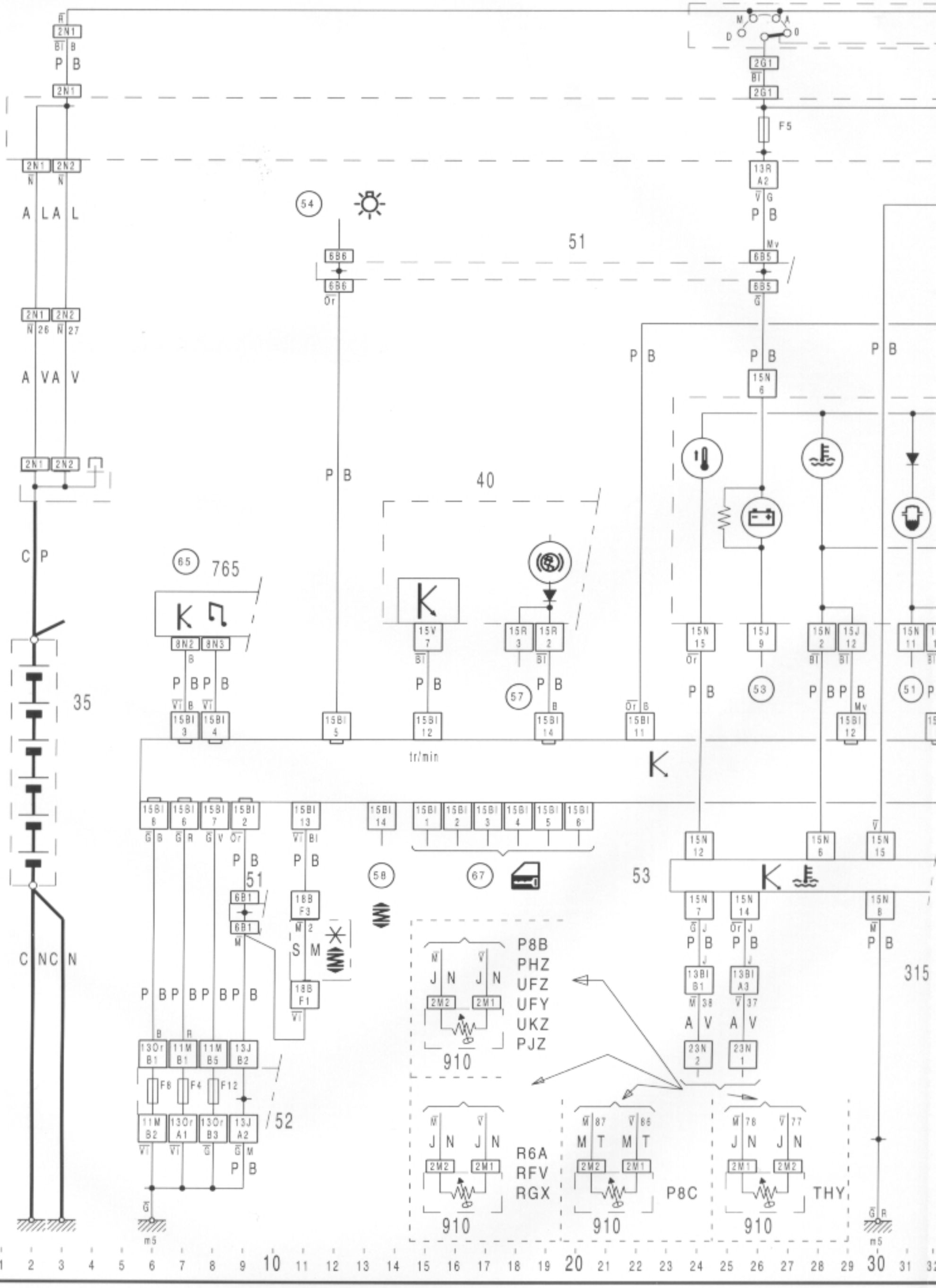
www.WorkshopManuals.co.uk



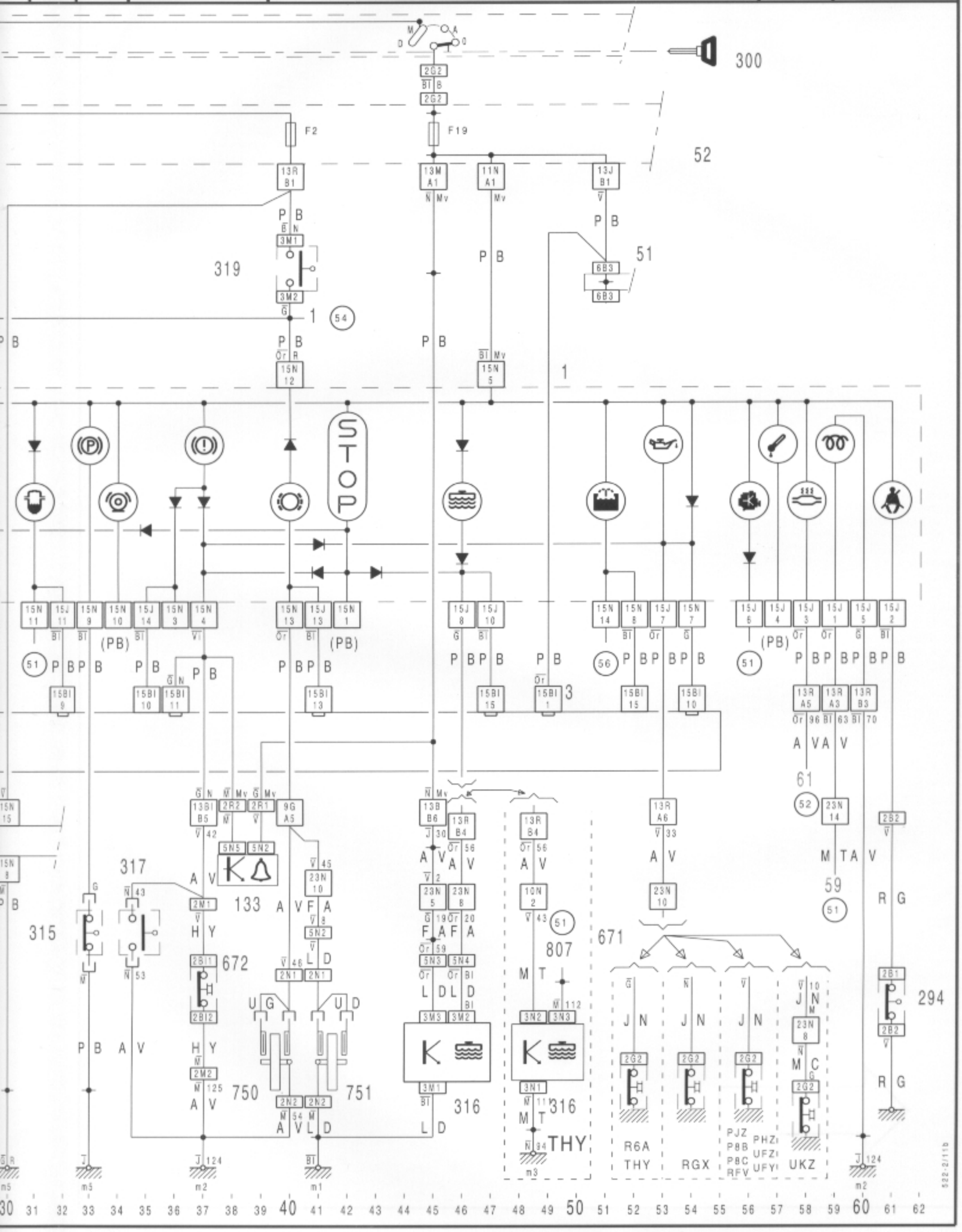
www.WorkshopManuals.co.uk



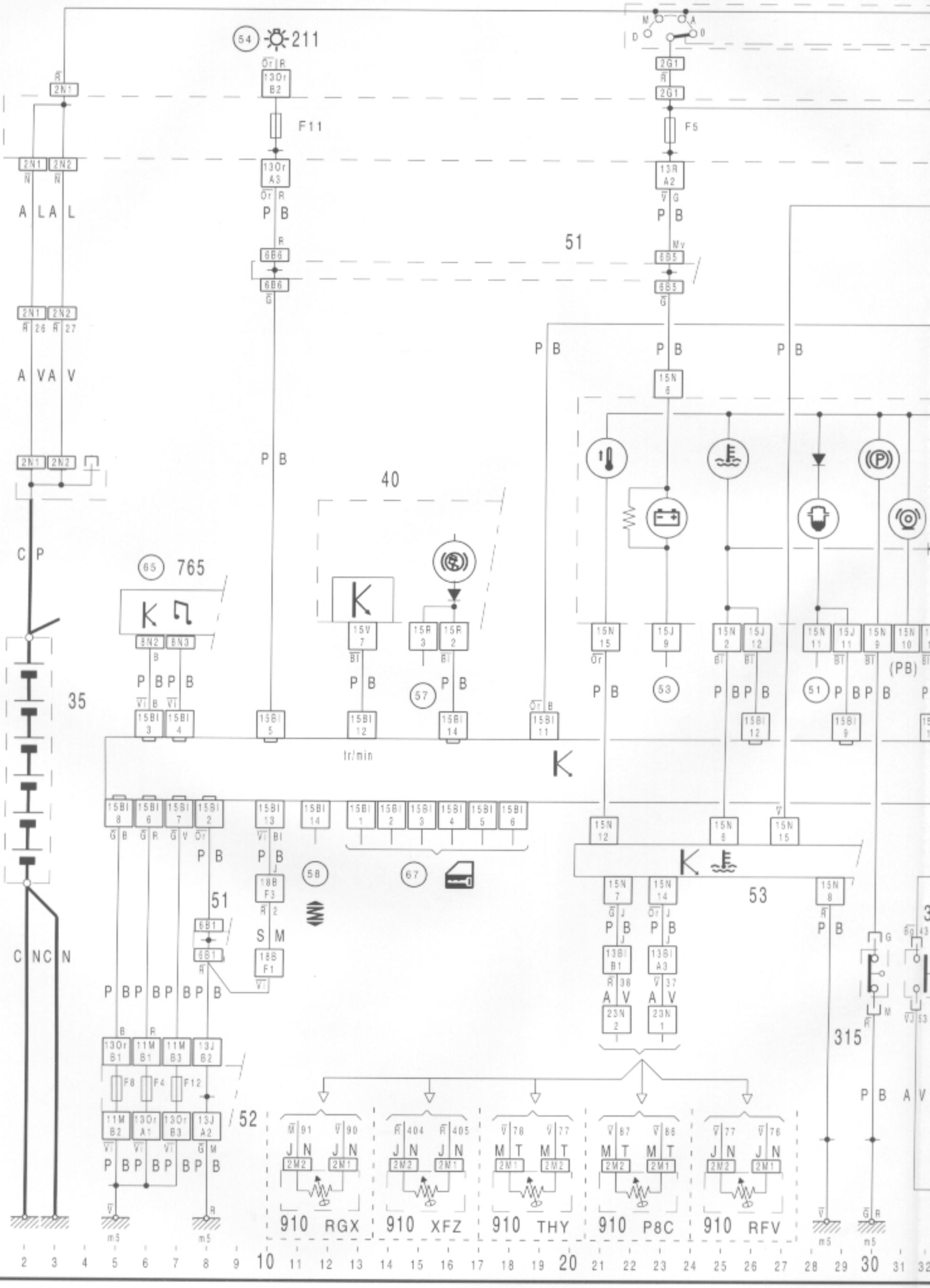
www.WorkshopManuals.co.uk



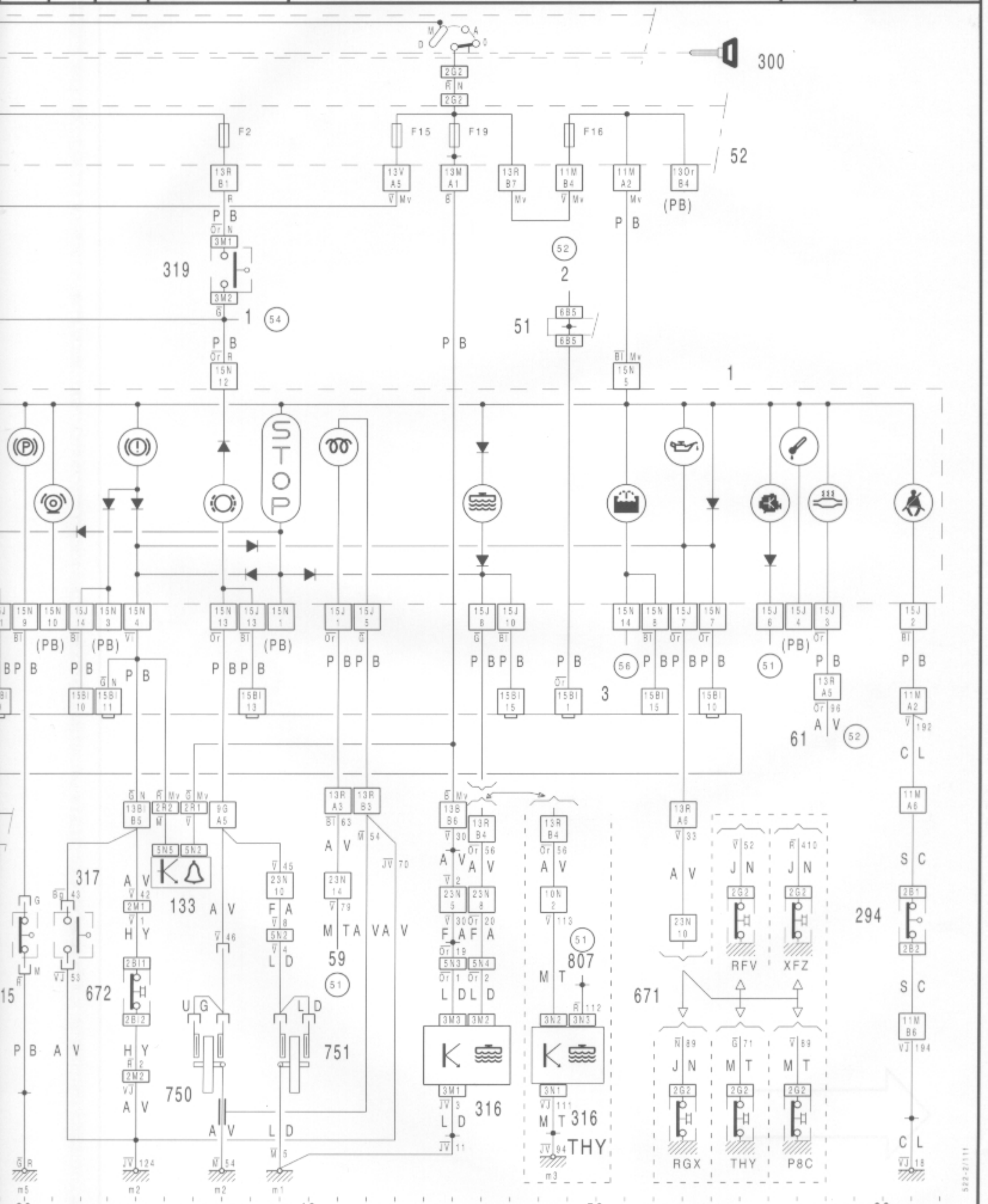
www.WorkshopManuals.co.uk



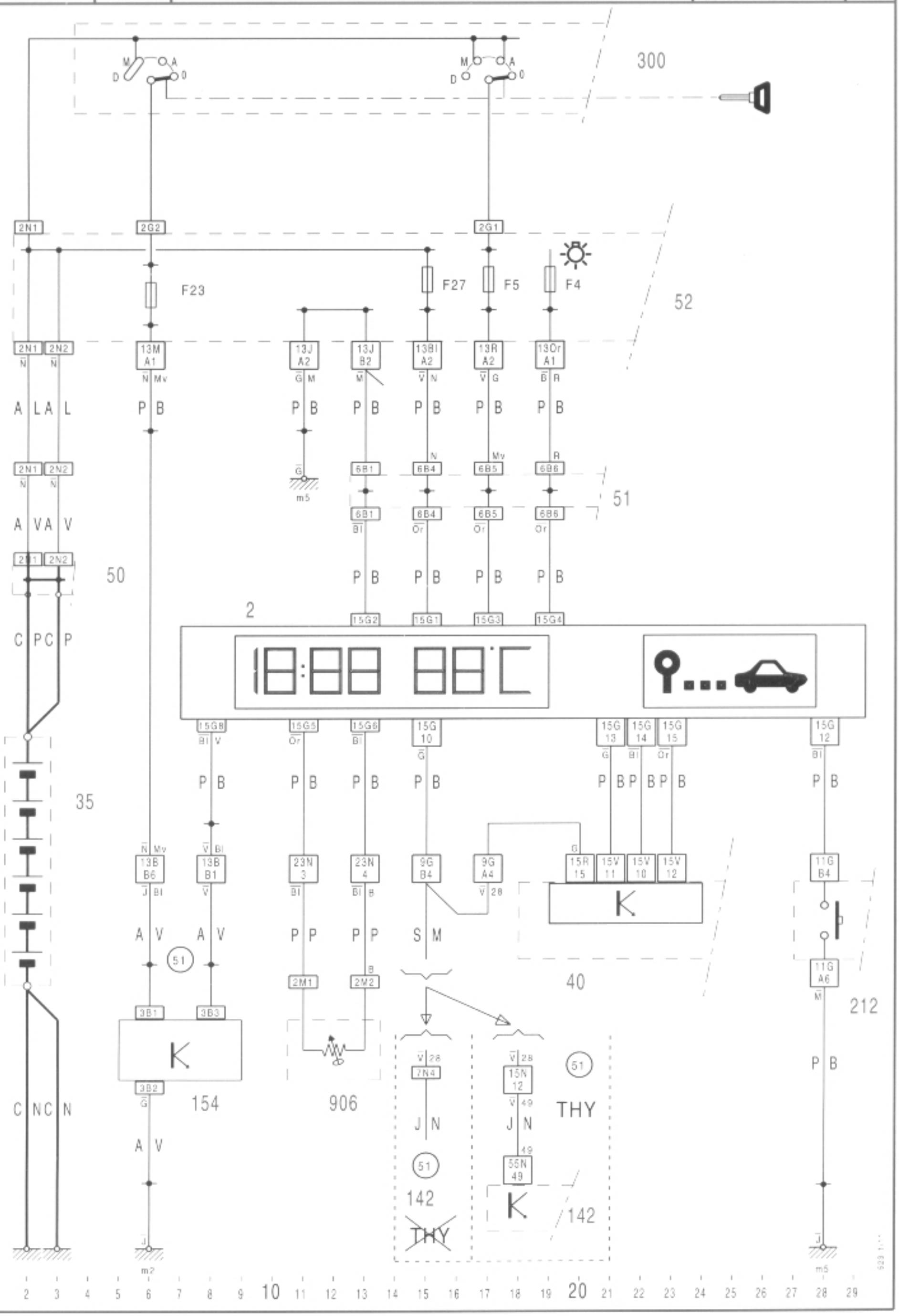
www.WorkshopManuals.co.uk



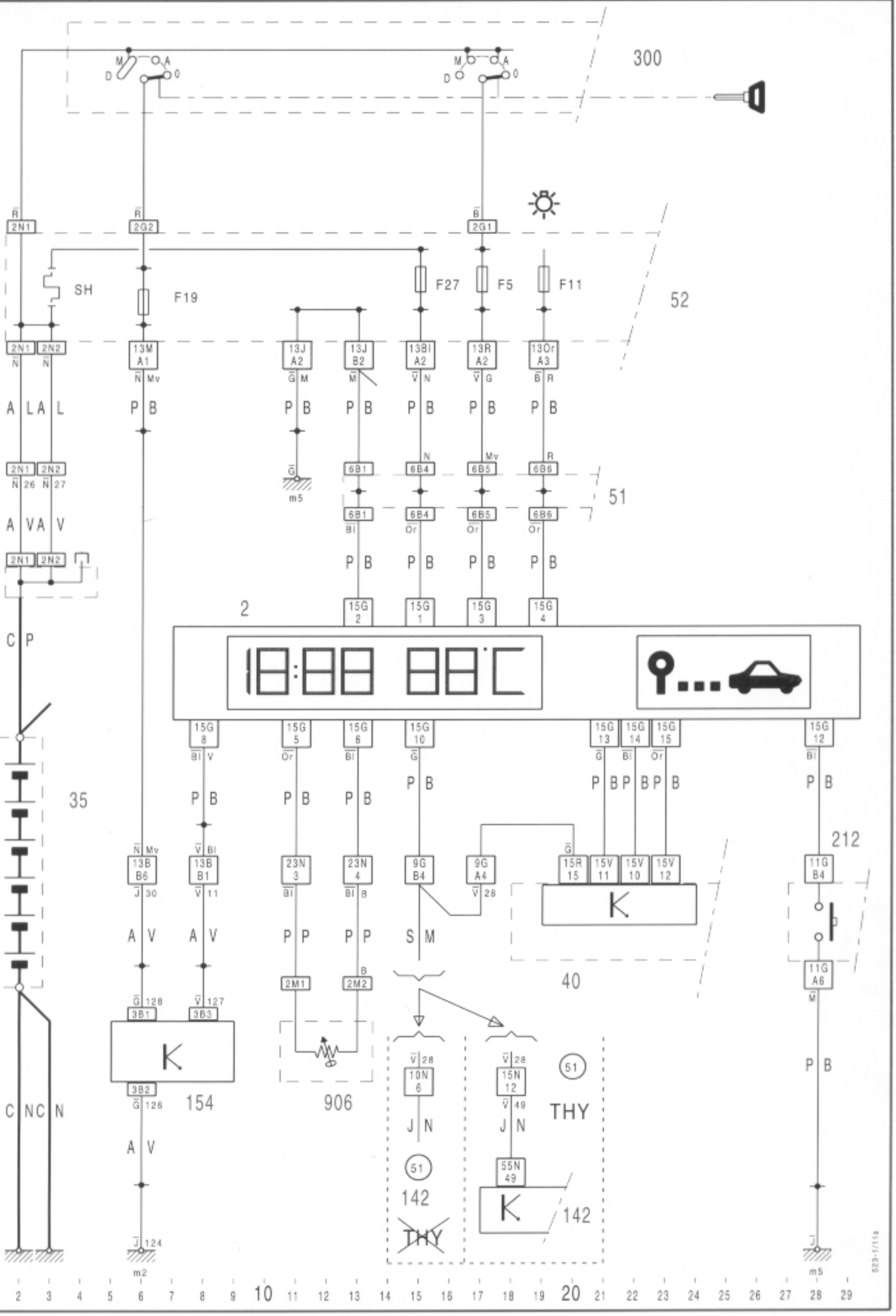
www.WorkshopManuals.co.uk



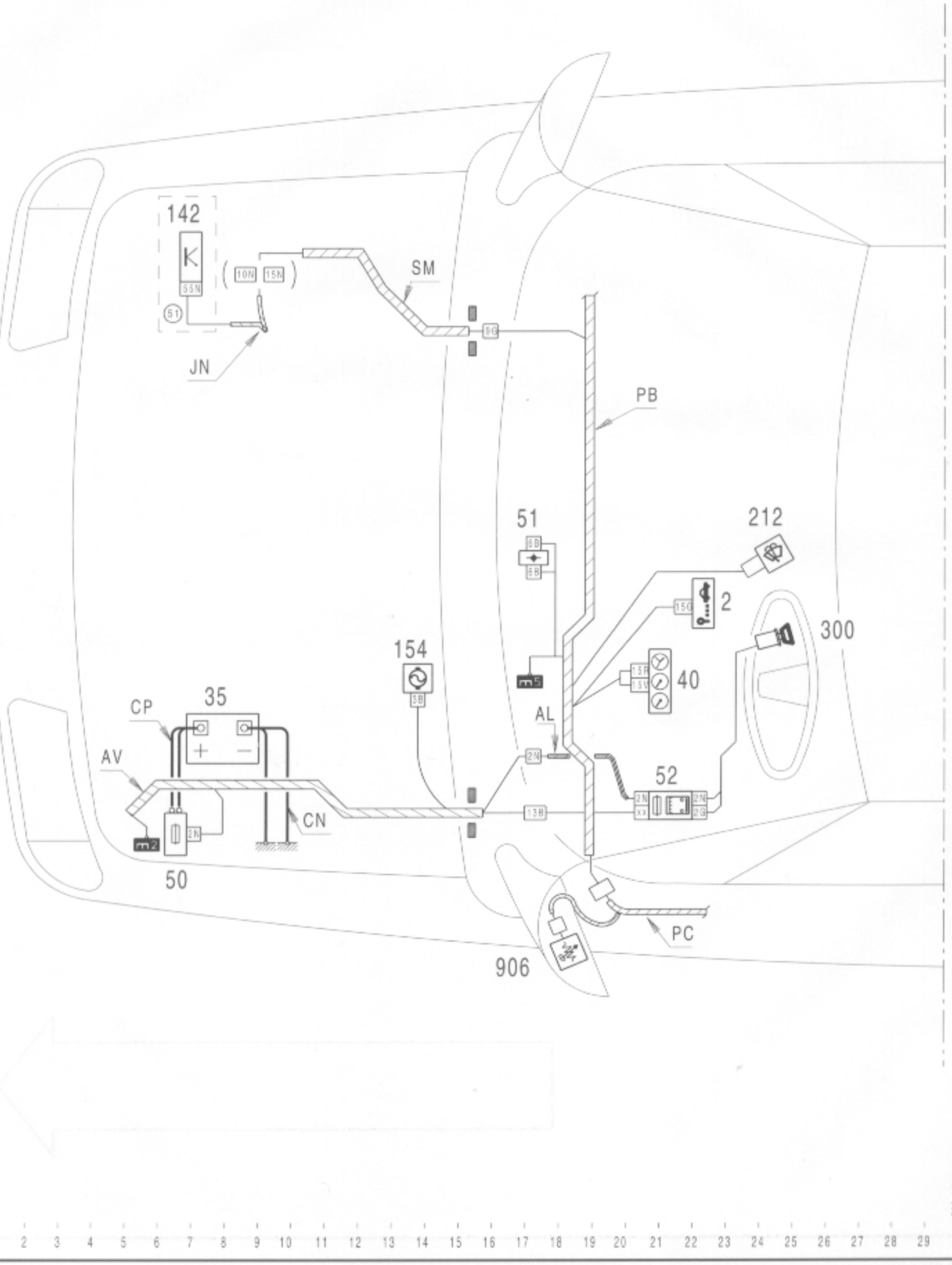
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

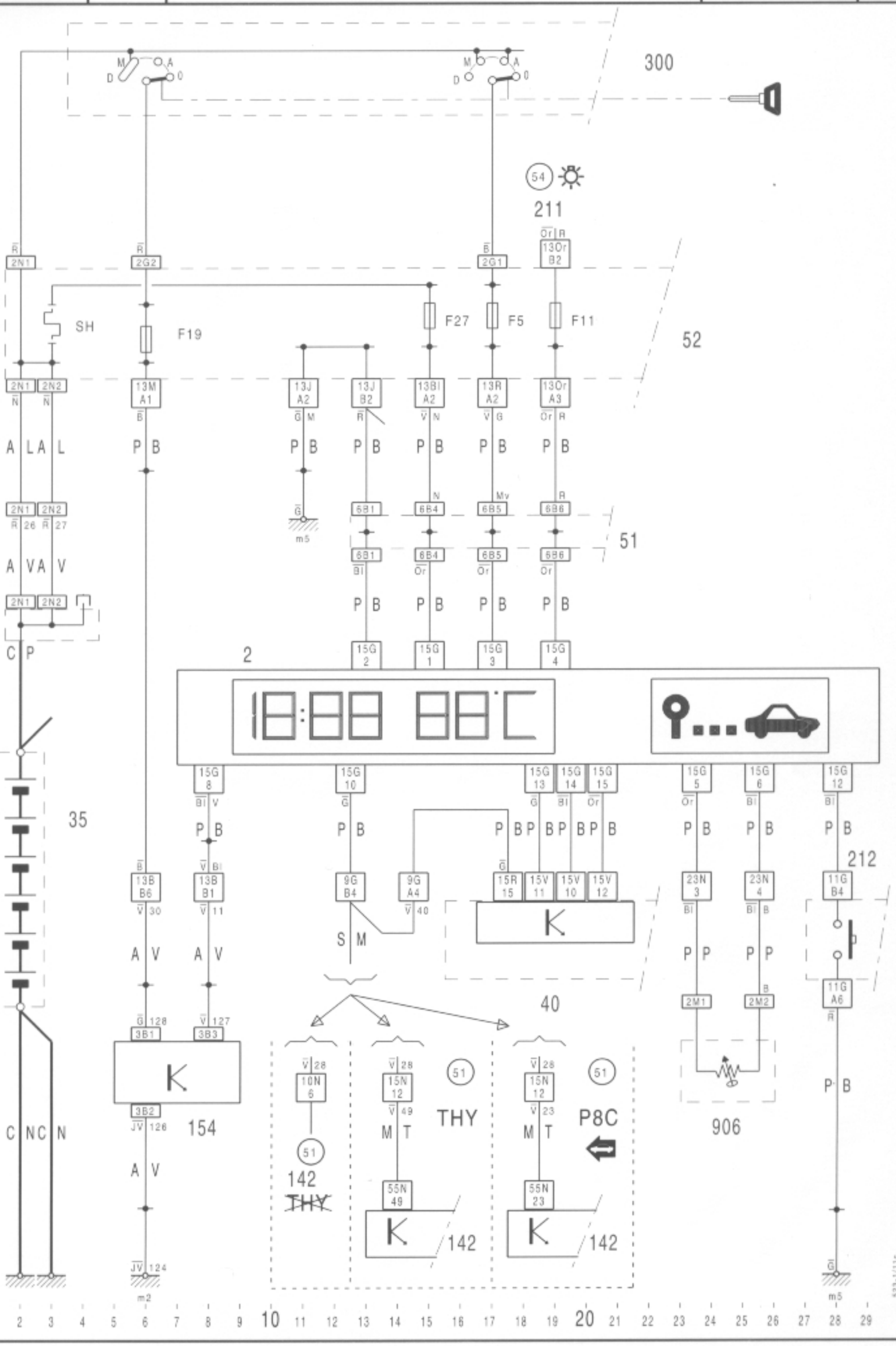


www.WorkshopManuals.co.uk

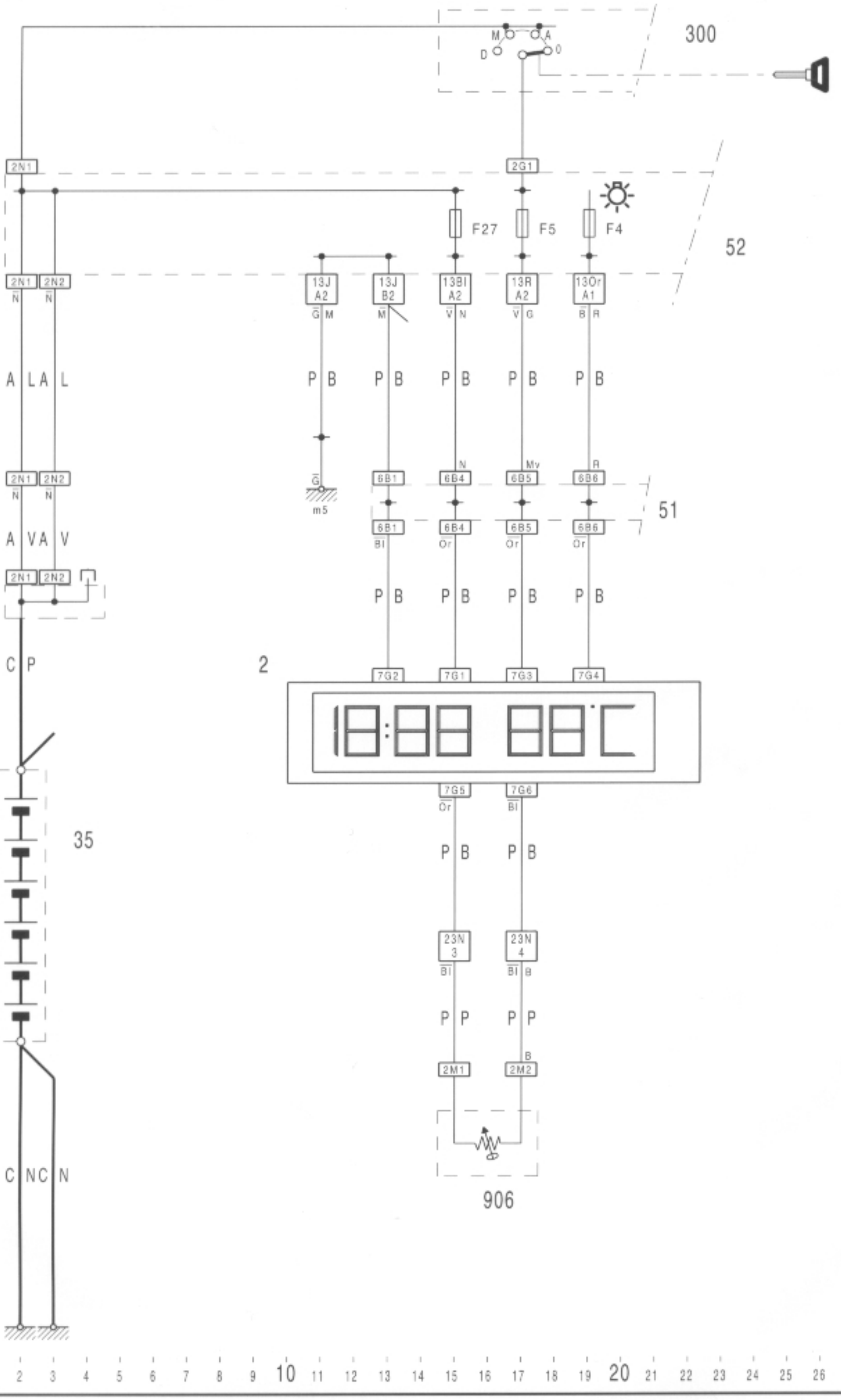


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

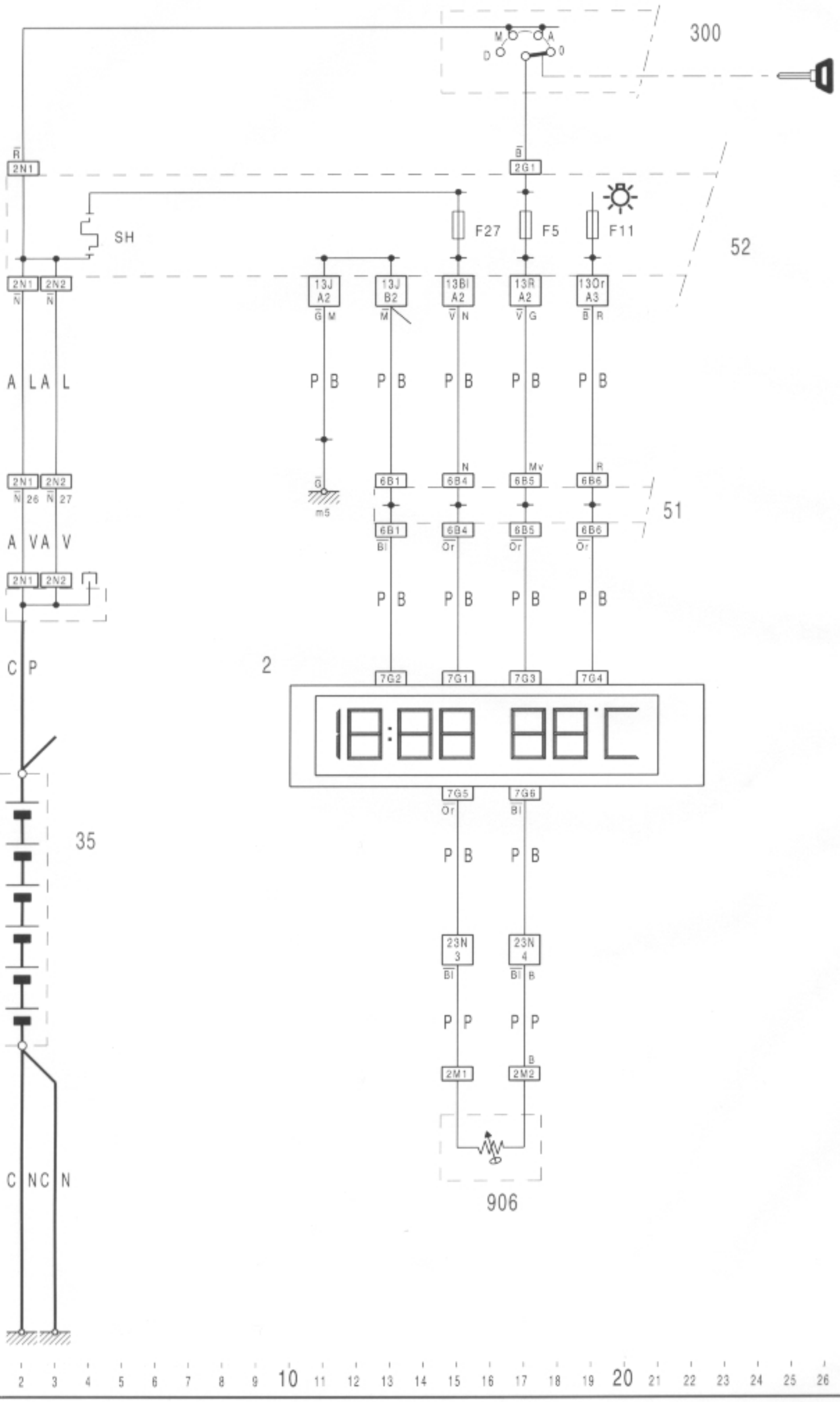
www.WorkshopManuals.co.uk



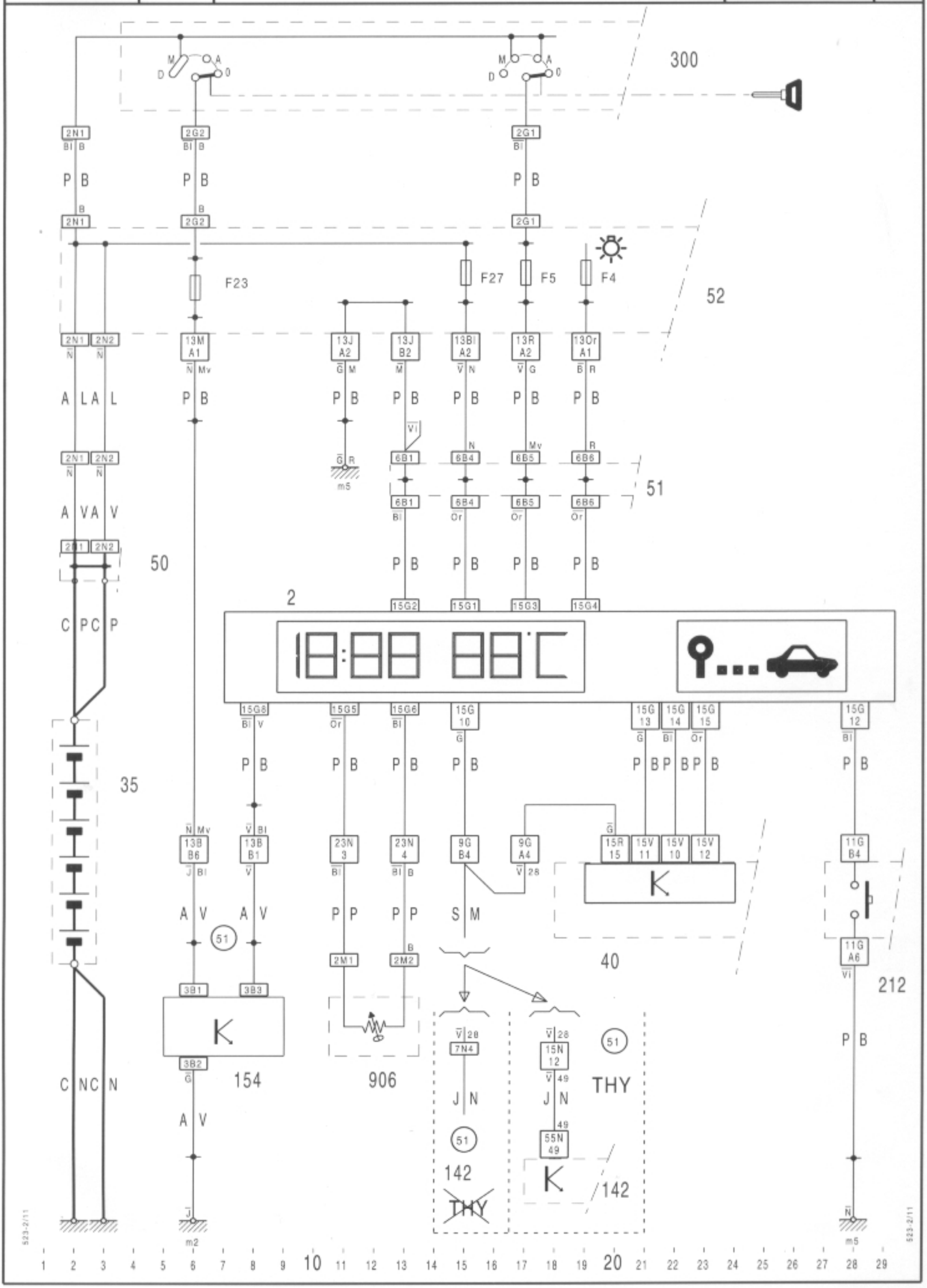
www.WorkshopManuals.co.uk



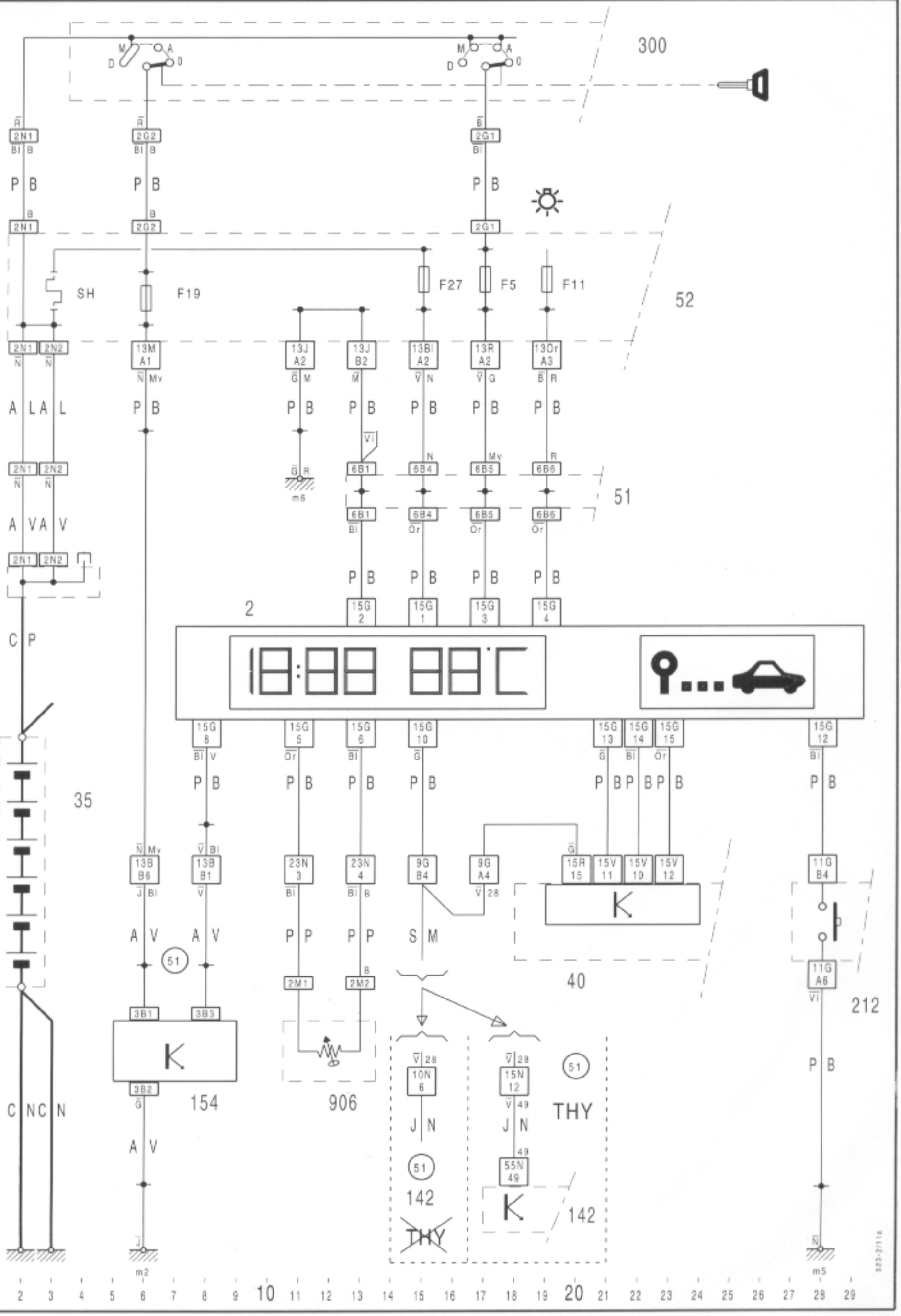
www.WorkshopManuals.co.uk



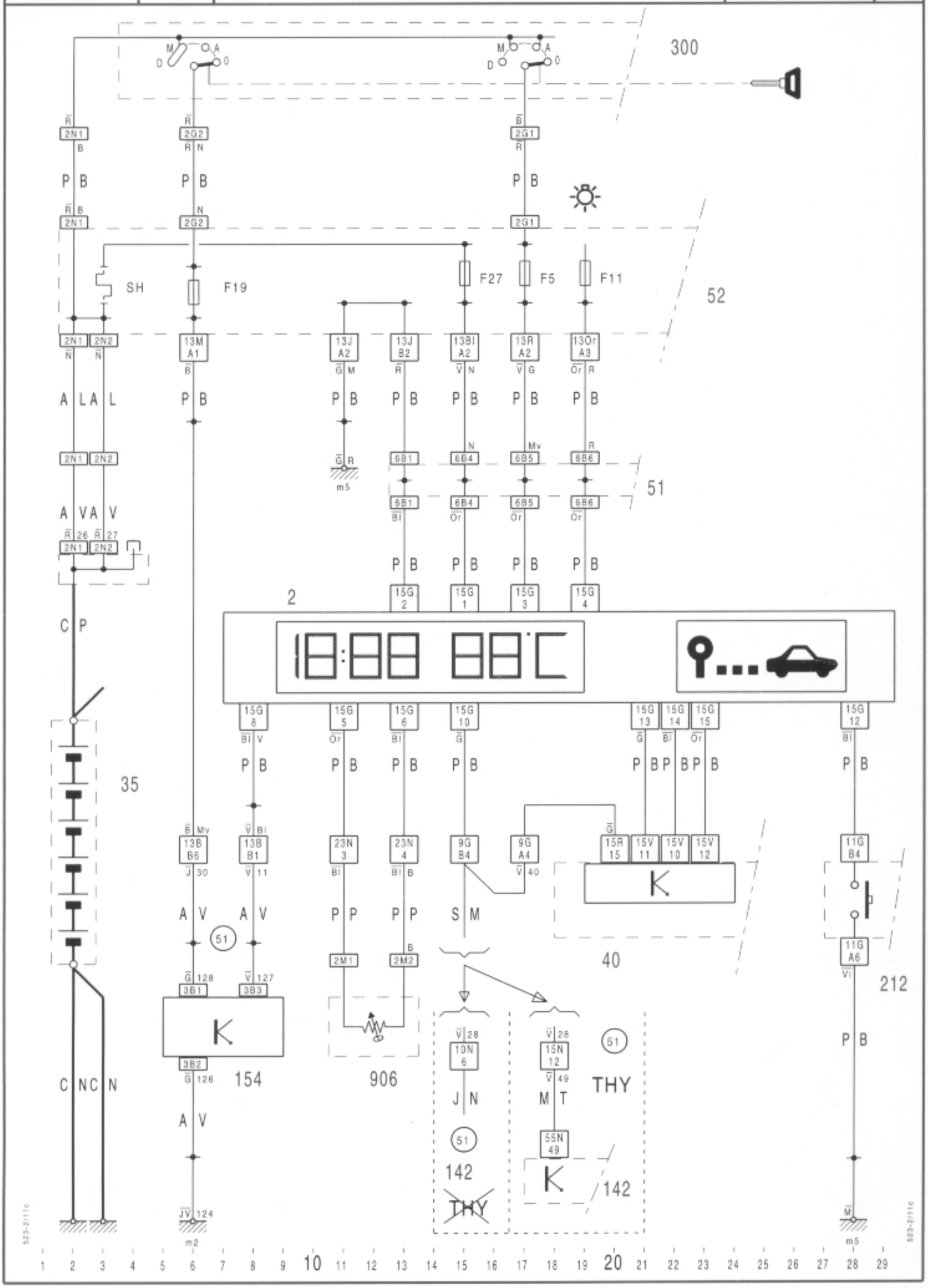
www.WorkshopManuals.co.uk



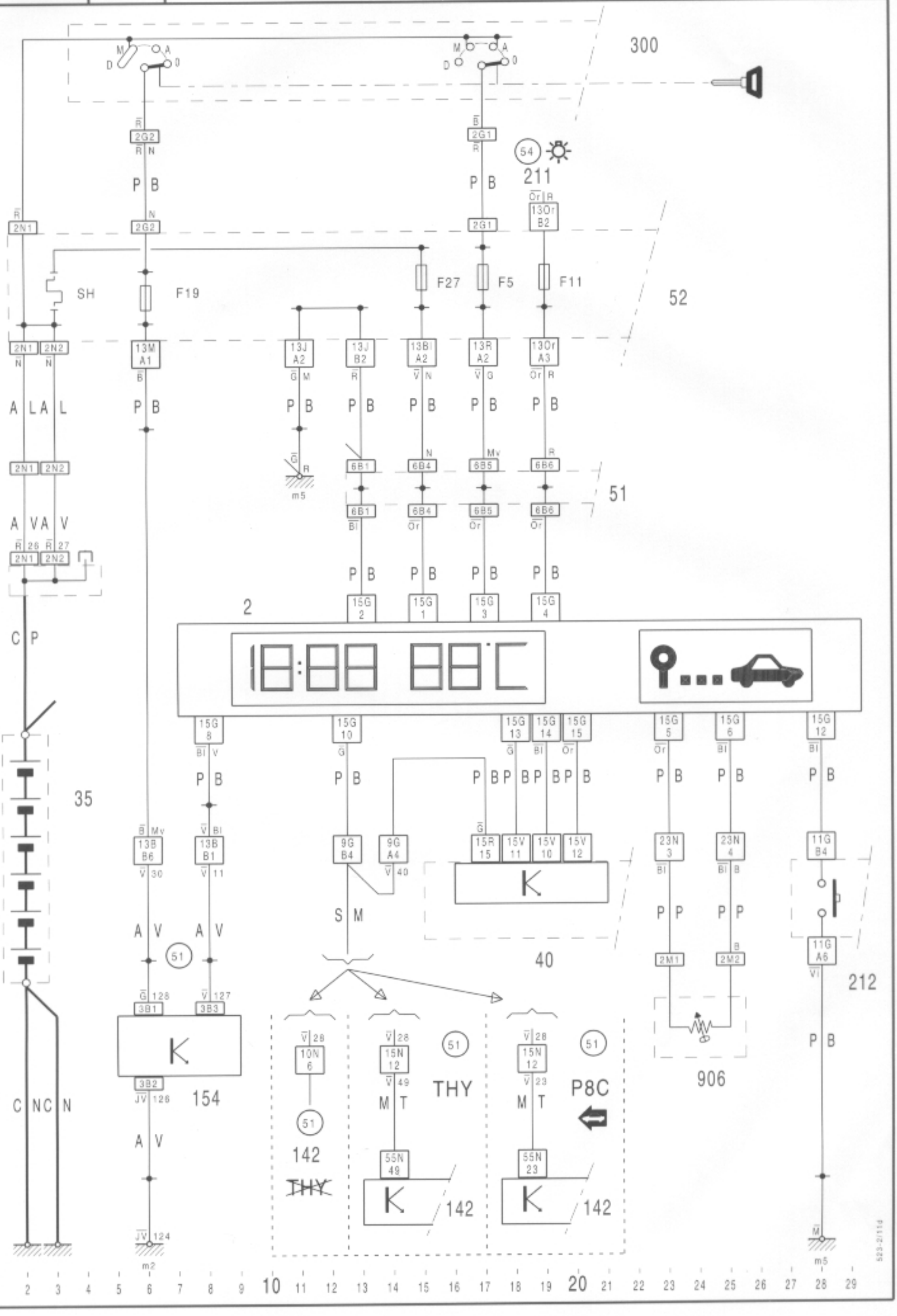
www.WorkshopManuals.co.uk



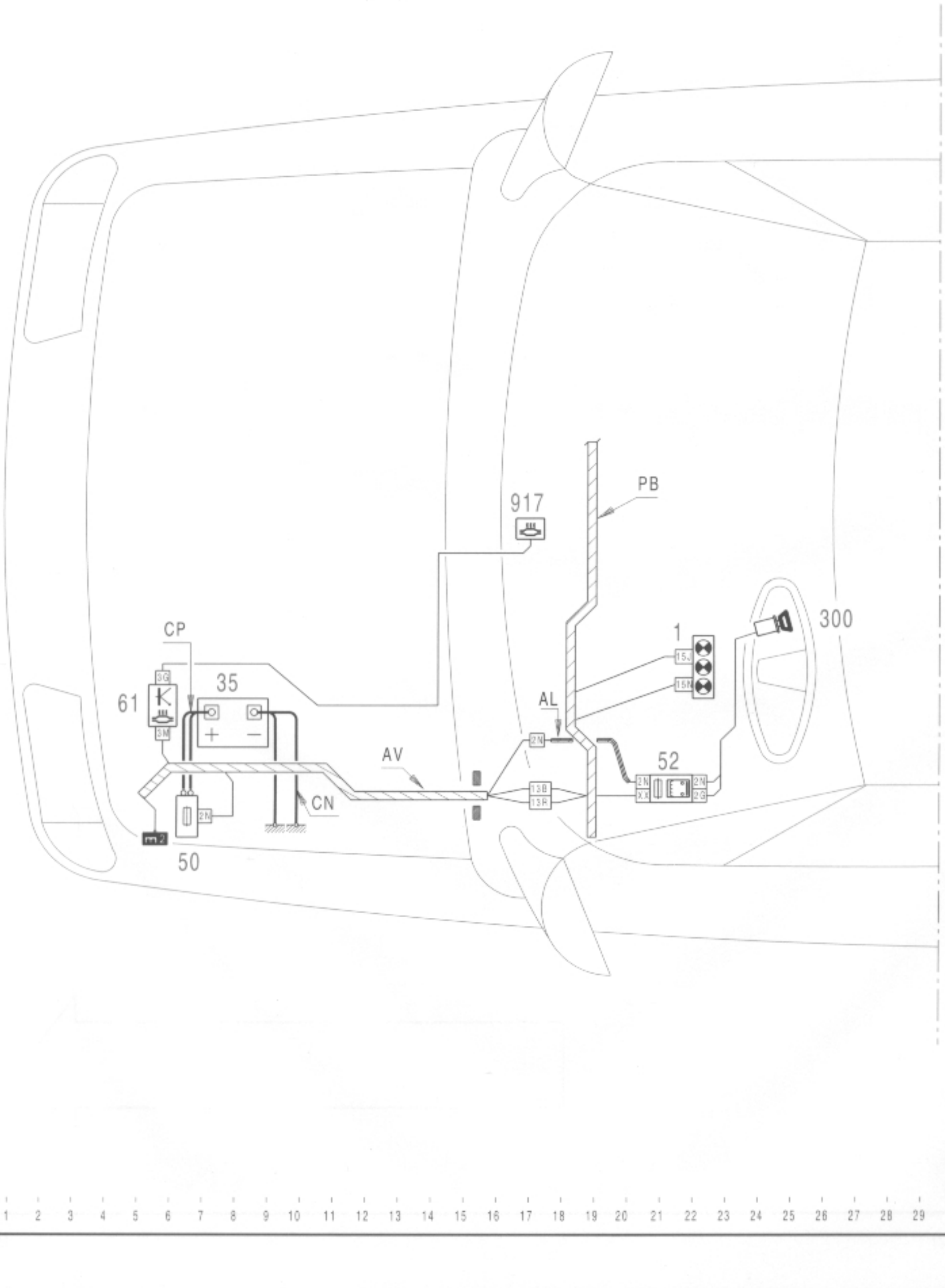
www.WorkshopManuals.co.uk



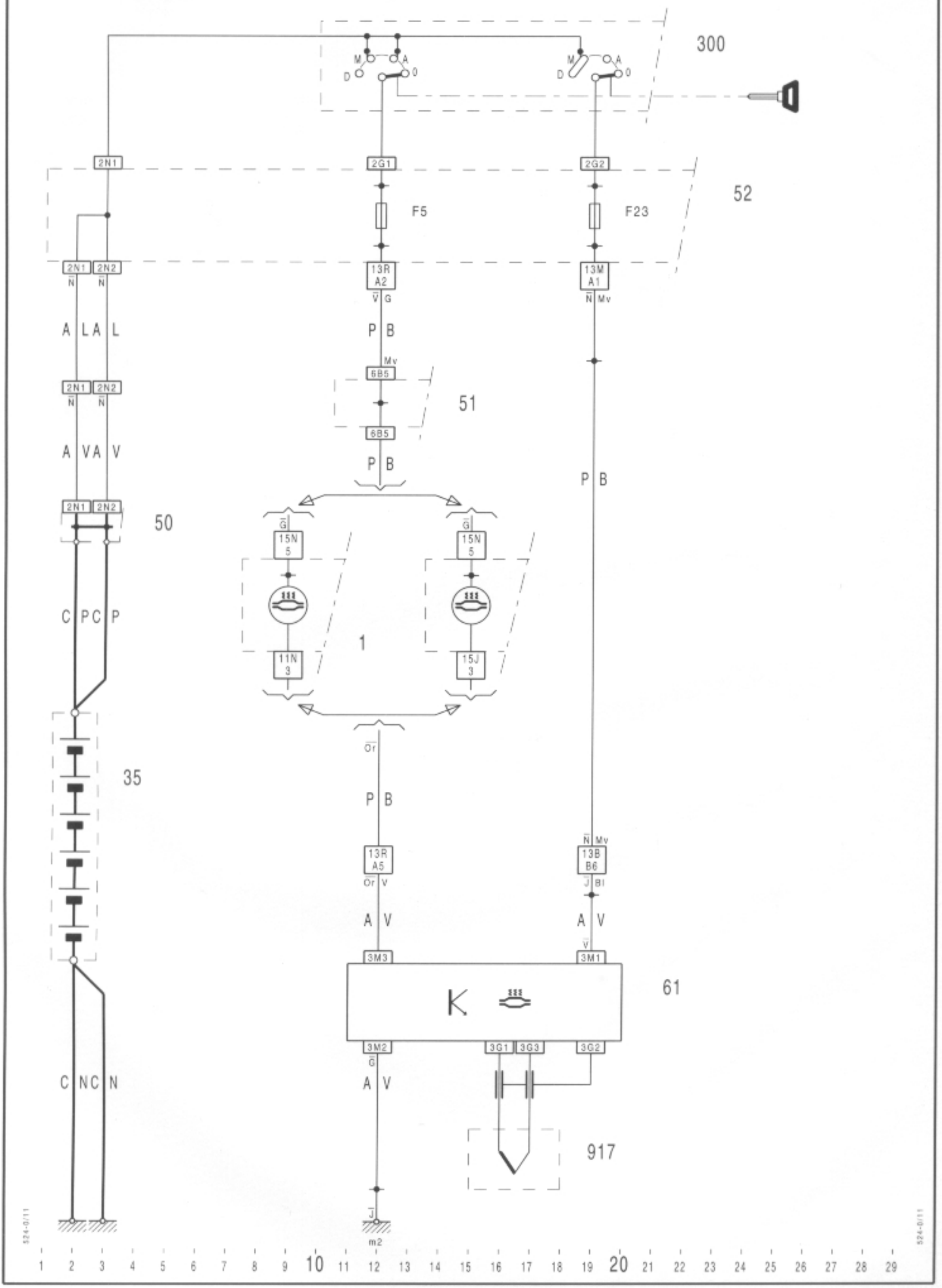
www.WorkshopManuals.co.uk



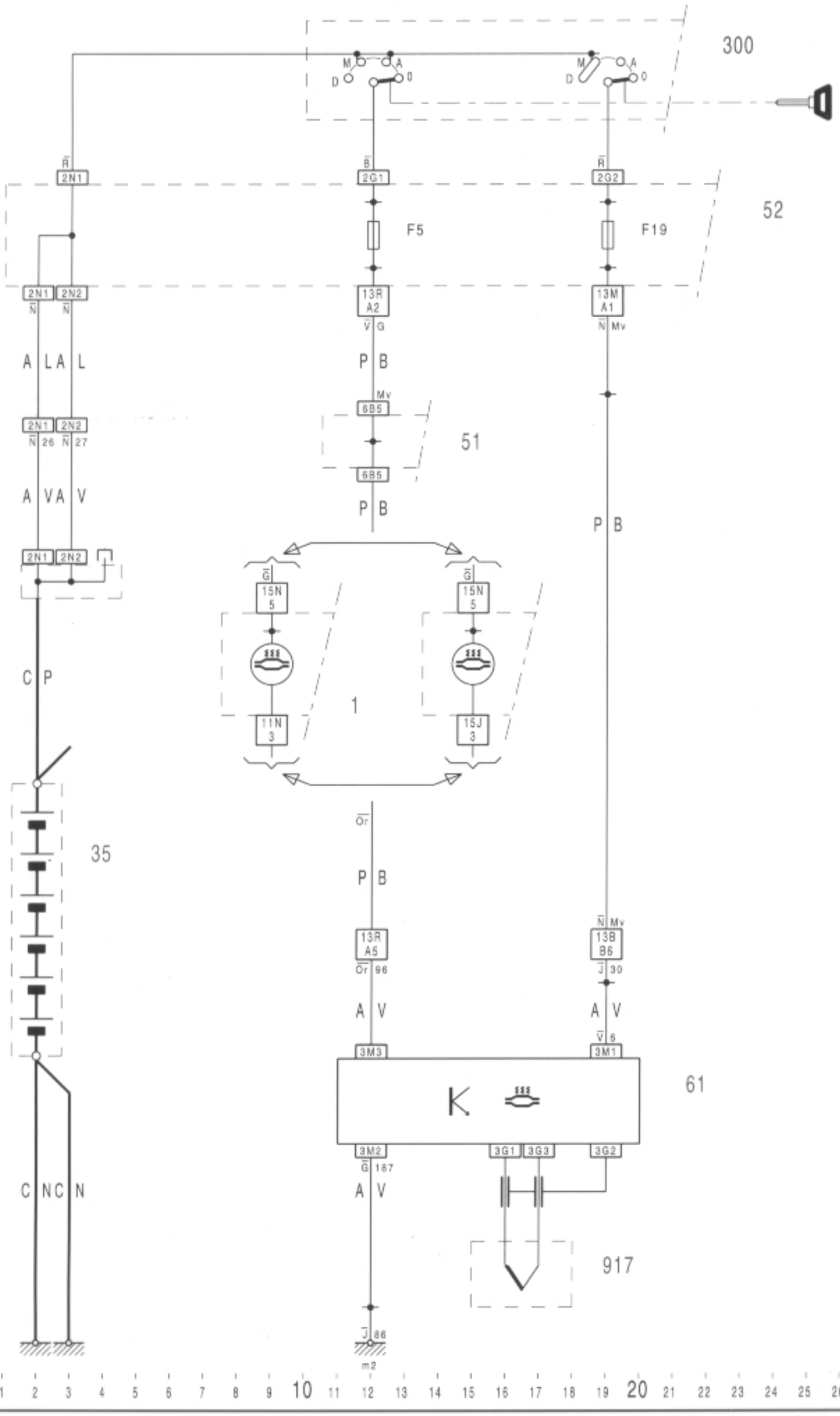
www.WorkshopManuals.co.uk



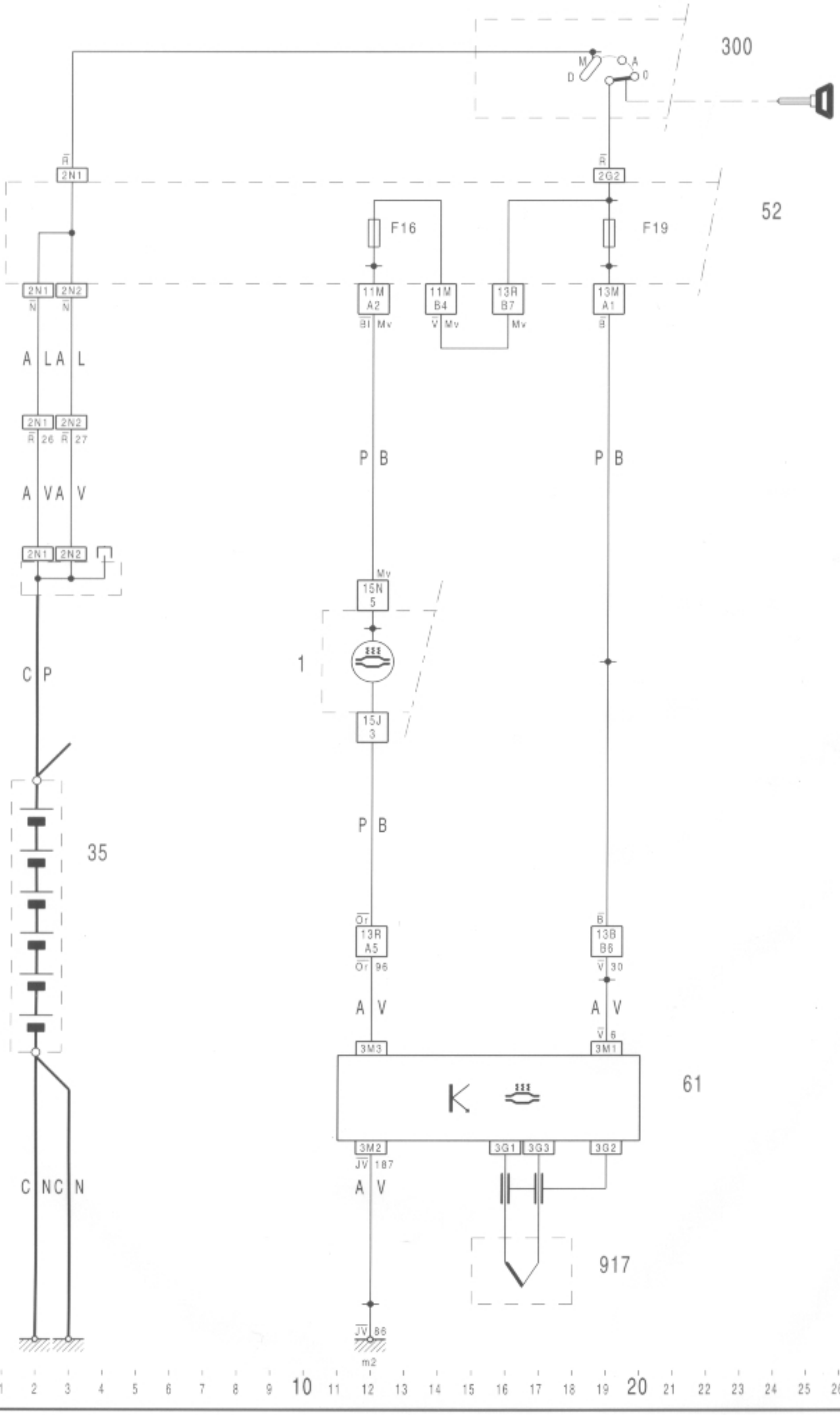
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

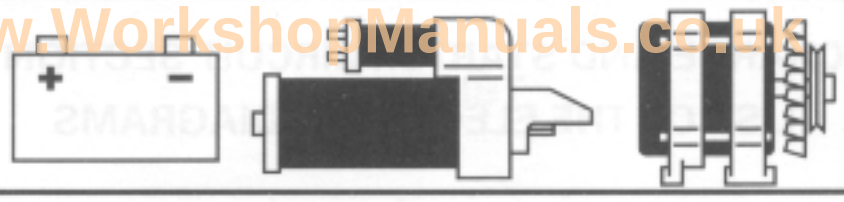


www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk



CHARGE AND STARTER CIRCUIT FUNCTION

PARTS LIST
LIST OF THE ELECTRICAL DIAGRAMS

www.WorkshopManuals.co.uk

Ref.	Description	Func.
1	Warning lamps central display unit	52
15	Alternator	53
35	Battery	TT
50	Supply box	TT
51	Branch box	TT
52	Junction box	TT
176	Coded anti-theft device keyboard	51
280	Diagnostic connector	TT
300	Anti-theft switch	TT
350	Starter motor	53
597	Heated rear screen switch	56
817	Front heated seats relay	63
820	Heated rear screen relay	56
821	Air conditioning additional relay	64
824	Heated rear seats and/or sun roof relay	63
848	Engine running information relay	TT

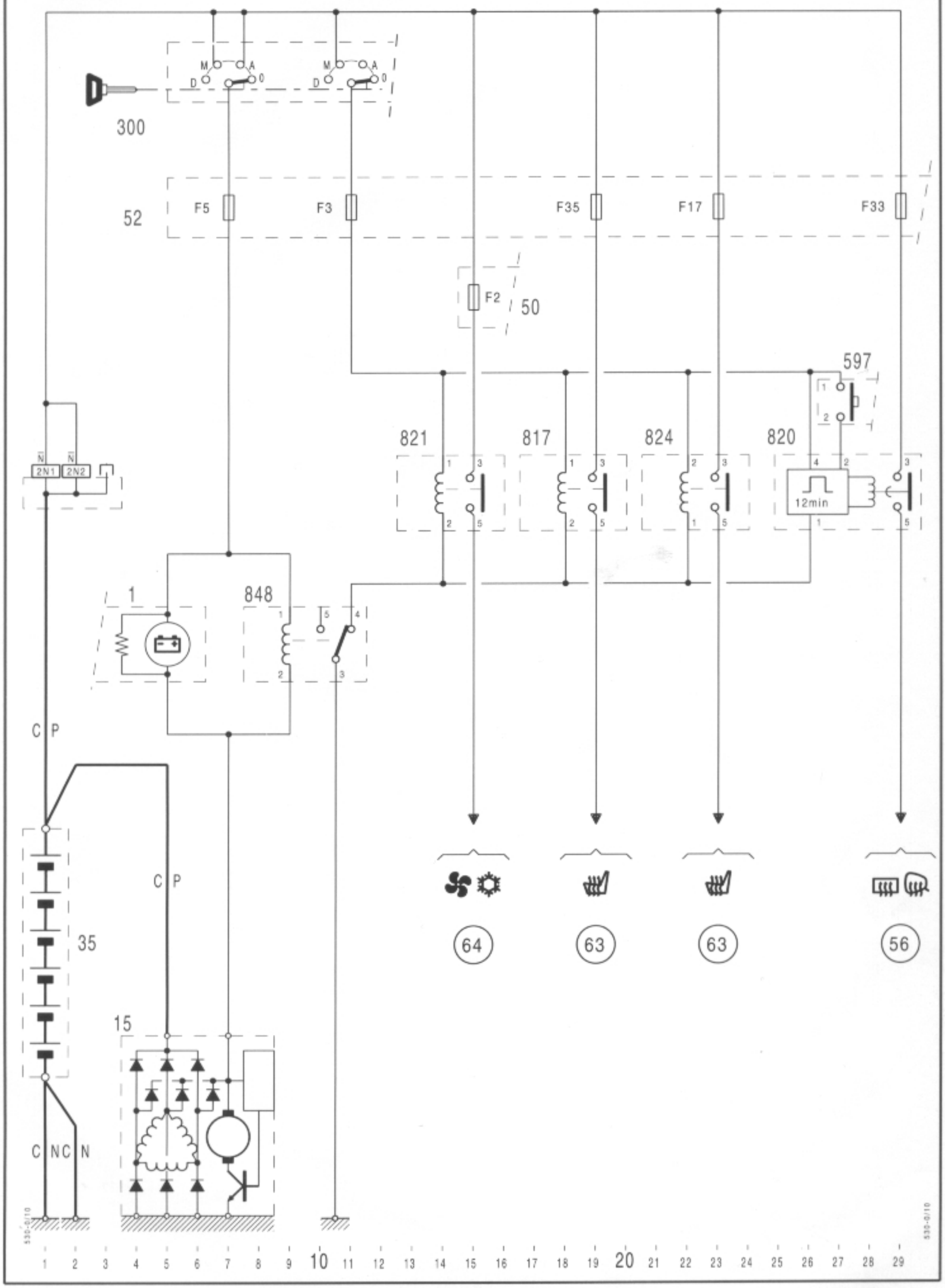
Ref.	Description	Func.

www.WorkshopManuals.co.uk

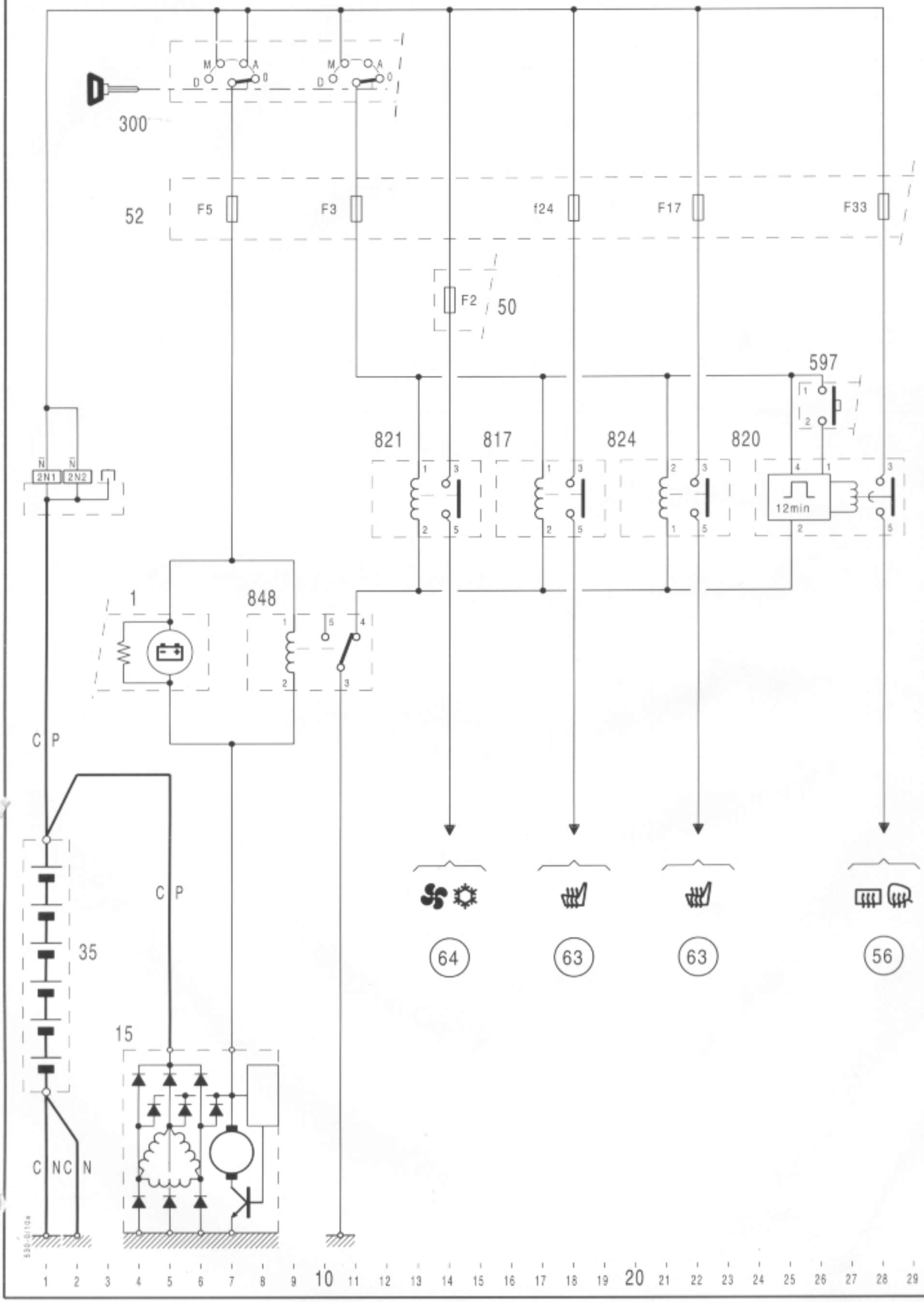
CHARGING AND STARTER CIRCUIT

NUMBER	STEERING	APPLICABLE	DESCRIPTION	
530-0/10	All Types	6383 → → 6749	Connection of relays operating with engine turning Simplified circuit diagram	XMA87
530-0/10a	All Types	6749 →	Evolution a : Modified fuse box	XMS164
530-0/20	All Types	6383 → → 6568	Charging and starter circuit	XMA86
530-0/20a	All Types	6568 → → 6749	Evolution a : Improved central display unit	XMS136
530-0/20b	All Types	6749 → → 7084	Evolution b : Modified fuse box	XMS165
530-0/20c	All Types	7084 → → 7329	Evolution c : Electrical harnesses PB, MT and JN modified	XMD001
530-0/20d	All Types	7329 → → 7483	Evolution d : Electrical harnesses PB, MT and JN modified	XMD002
530-0/20e	All Types	7483 →	Evolution e : Electrical harnesses AV, PB and JN modified	XMD003

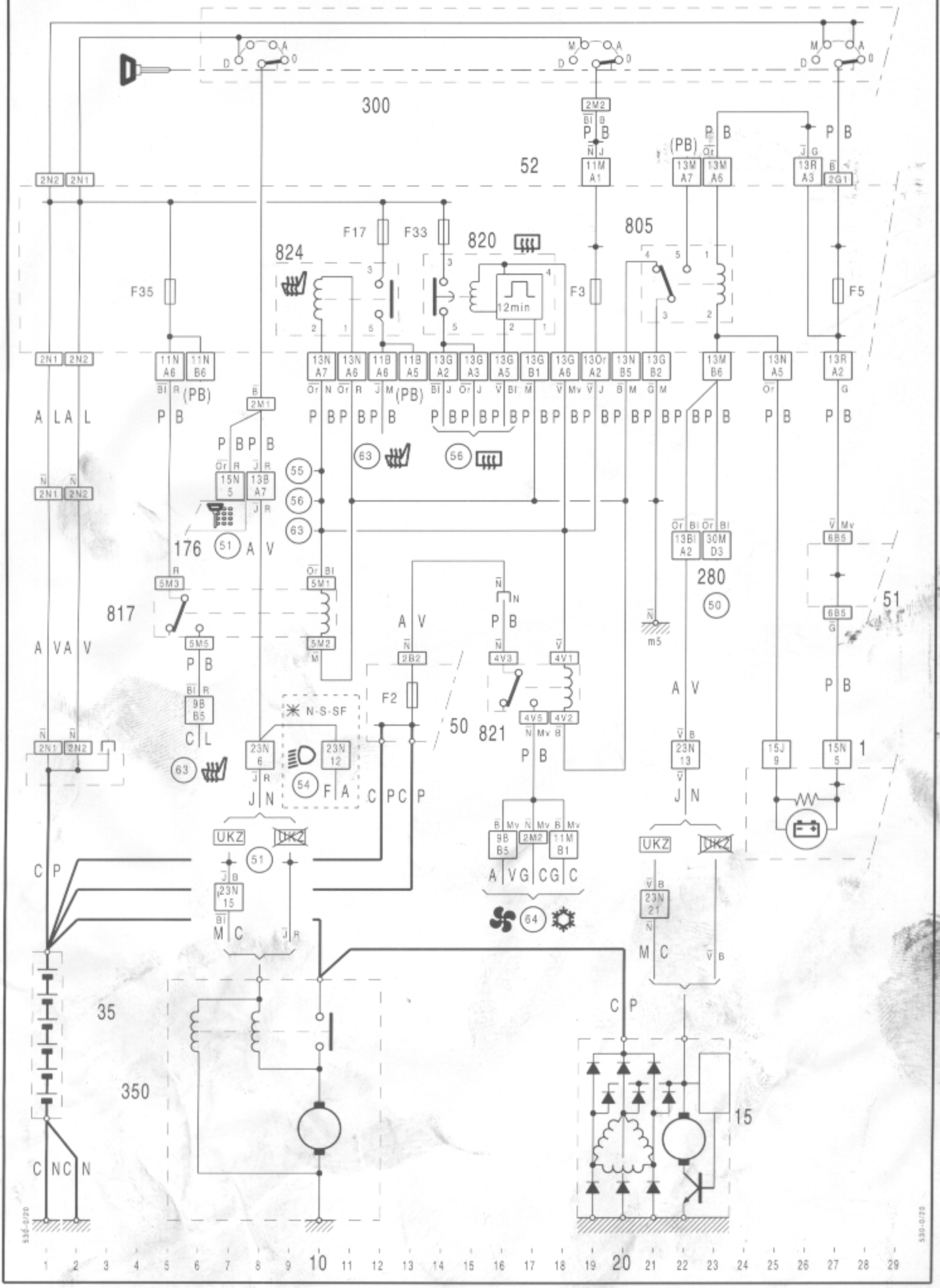
www.WorkshopManuals.co.uk



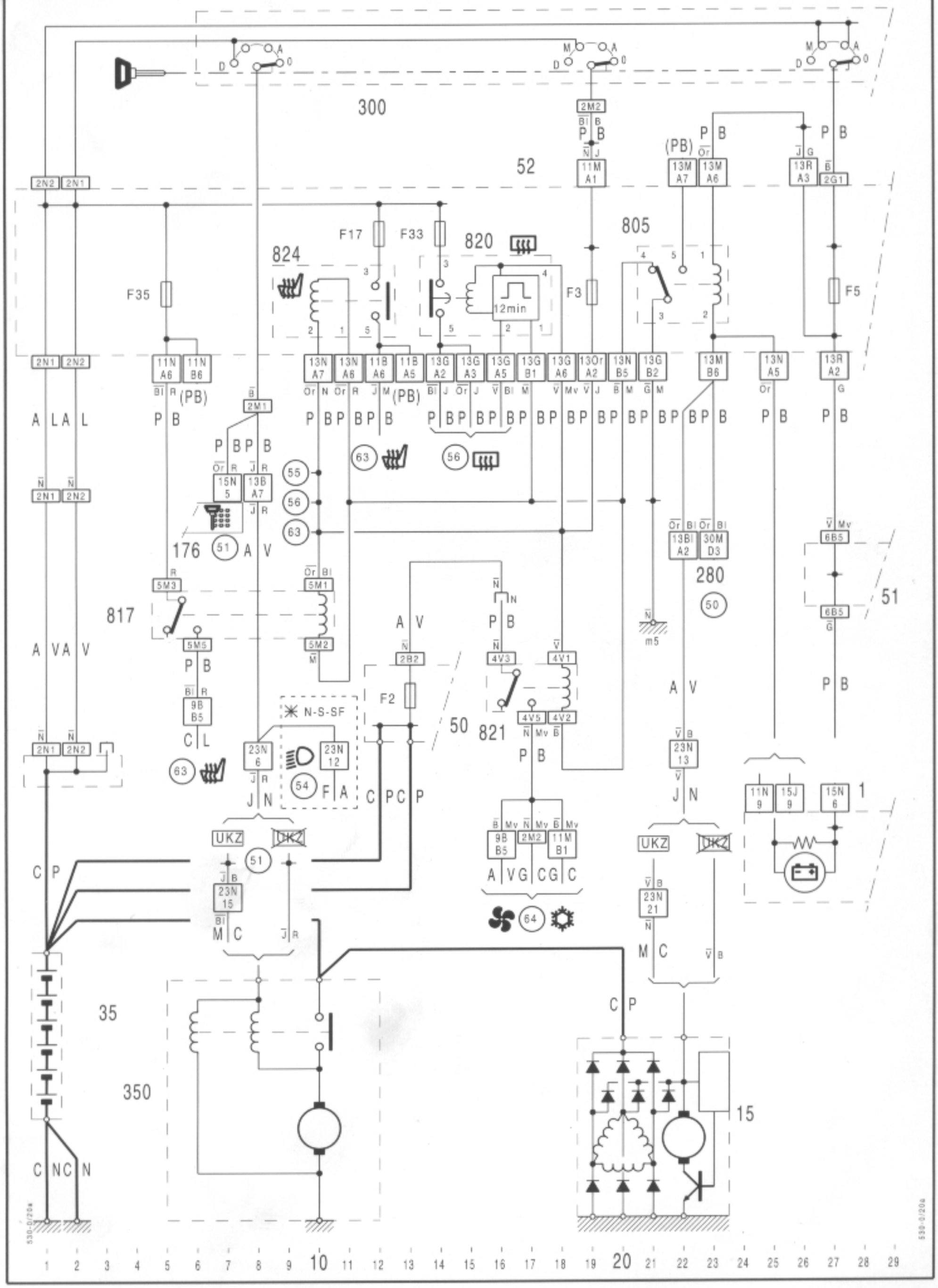
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



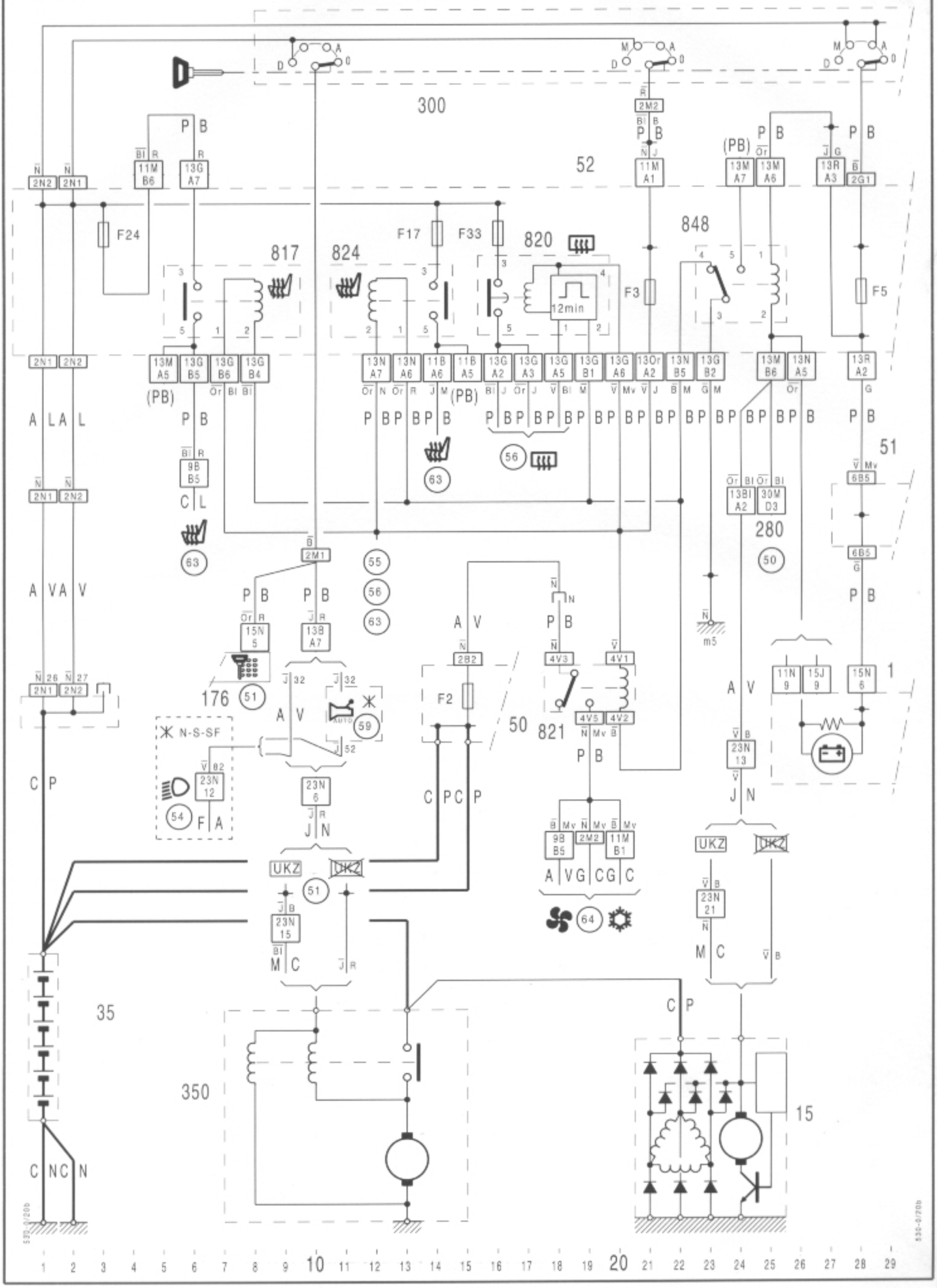
www.WorkshopManuals.co.uk



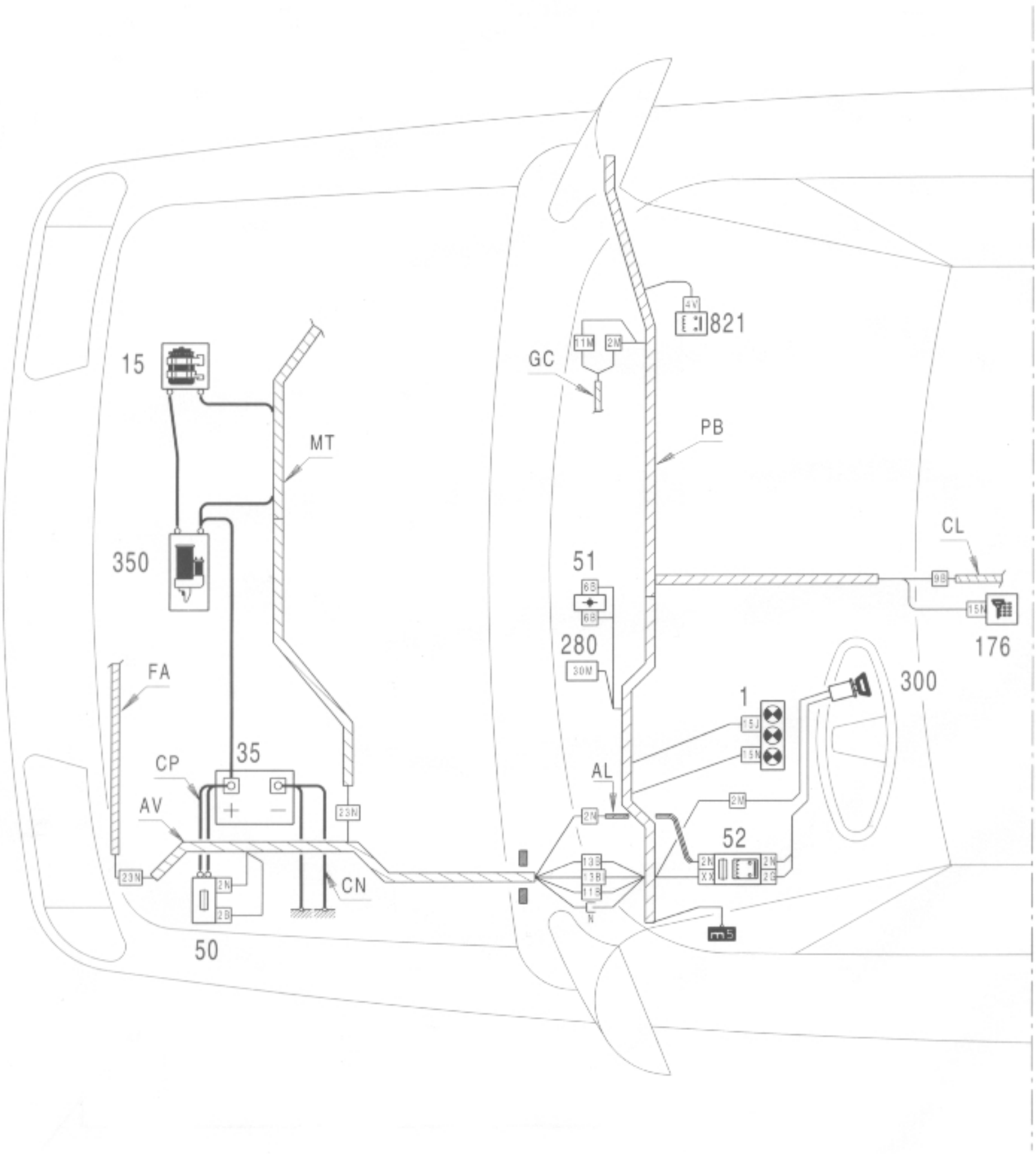
(1)

8935

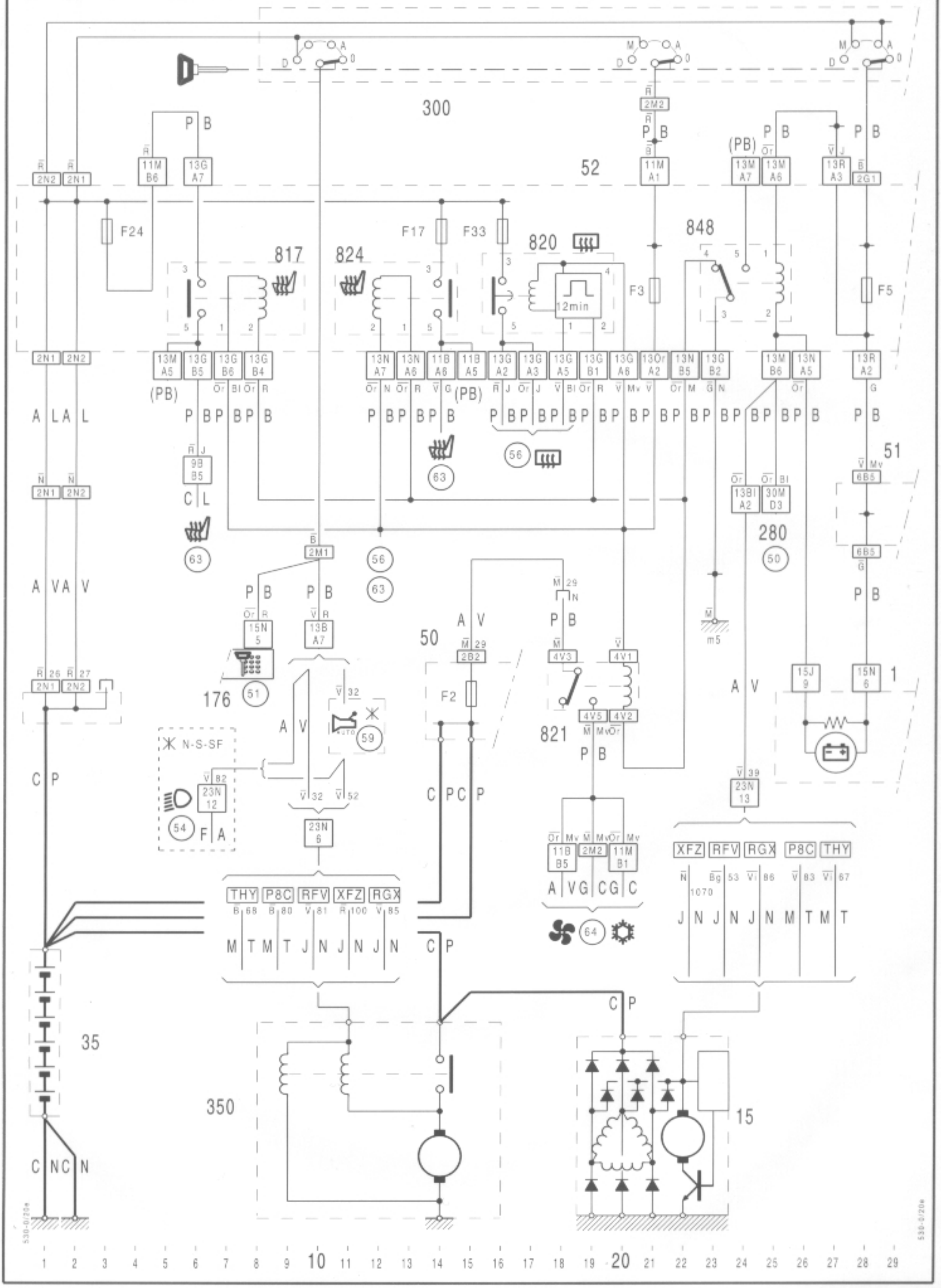
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



(12)

8935

www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk

SIGNALS AND LIGHTING FUNCTION

PARTS LIST
LIST OF THE ELECTRICAL DIAGRAMS

www.WorkshopManuals.co.uk

Ref.	Description	Func.
1	Warning lamps central display unit	52
20	L.H. horn	54
21	R.H. horn	54
35	Battery	TT
40	Instrument cluster	52
50	Supply box	TT
52	Junction box	TT
130	Lights-on audible warning	54
211	L.H. selector switch (lighting, direction indicator, horn)	54
216	Automatic gearbox selector switch (on the gearbox)	59
280	Diagnostic connector	TT
300	Anti-theft contact switch	TT
310	L.H. front door pillar contact switch	55
311	R.H. front door pillar contact switch	55
312	L.H. rear door pillar contact switch	55
313	R.H. rear door pillar contact switch	55
314	Reversing lamps contact switch	54
319	Stoplamp contact switch	54
391	Registration plate L.H. lighting	54
392	Registration plate R.H. lighting	54
480	L.H. rear lamp cluster	54
481	R.H. rear lamp cluster	54
482	L.H. front foglamp	54
483	R.H. front foglamp	54
484	L.H. rear foglamp	54
485	R.H. rear foglamp	54
486	L.H. dipped beam	54
487	R.H. dipped beam	54
488	L.H. front direction indicator	54
489	R.H. front direction indicator	54
490	L.H. rear direction indicator	54
491	R.H. rear direction indicator	54
492	L.H. side lamp	54
493	R.H. side lamp	54
494	L.H. rear stop and tail lamp	54
495	R.H. rear stop and tail lamp	54
496	L.H. tail lamp on tailgate	54
497	R.H. tail lamp on tailgate	54
498	L.H. reversing lamp	54
499	R.H. reversing lamp	54
500	L.H. direction indicator side repeater	54
501	R.H. direction indicator side repeater	54
502	L.H. main beam	54
503	R.H. main beam	54
504	L.H. stop lamp	54
505	R.H. stop lamp	54
509	L.H. rear lamp cluster (on tailgate)	54
510	R.H. rear lamp cluster (on tailgate)	54
587	Front foglamp switch	54
588	Rear foglamp switch	54
589	Hazard warning device switch	54
611	Cruise control switch	59
806	Front foglamps relay	54
825	Dipped beams relay	54
827	Dipped beams (day time) or Dim-dip relay	54
829	Side and tail lamps (day time) relay	54

www.WorkshopManuals.co.uk

MAIN AND DIPPED BEAMS

NUMBER	STEERING	APPLICABLE	DESCRIPTION
540-1/20	L.H.D.	6383 →	**All countries except N-S-SF** Main and dipped beam XMS77
540-1/21	L.H.D.	6383 → → 6749	**Applicable N-S-SF** Main and dipped beam XMS78
540-1/21a	L.H.D.	6749 →	Evolution a : Fuse box modified XMS175

SIDE AND TAIL LAMPS, REGISTRATION PLATE

NUMBER	STEERING	APPLICABLE	DESCRIPTION
541-1/20	L.H.D.	6383 → → 6749	**Saloon** Tail lamp and registration plate lighting XMS79
541-1/20a	L.H.D.	6749 →	**Saloon** Tail lamp and registration plate lighting XMS166
541-1/21	L.H.D.	6383 → → 6749	**Estate** Tail lamp and registration plate lighting XMS89
541-1/21a	L.H.D.	6749 →	**Estate** Tail lamp and registration plate lighting XMS167

STOPLAMPS

NUMBER	STEERING	APPLICABLE	DESCRIPTION
542-1/20	L.H.D.	6383 →	**All types** Stoplamp
542-1/21	L.H.D.	6383 →	**Saloon All Types** Complementary stoplamp

DIRECTION INDICATORS DANGER SIGNAL

NUMBER	STEERING	APPLICABLE	DESCRIPTION
543-1/20	L.H.D.	6383 → → 6749	**All types** Direction indicator + danger signal XMS82
543-1/20a	L.H.D.	6749 →	Evolution a : Fuse box modified XMS168

www.WorkshopManuals.co.uk

STOPLAMPS

NUMBER	STEERING	APPLICABLE	DESCRIPTION
542-1/20	L.H.D.	6383 → → 6947	**All types** Stoplamps
542-1/20a	L.H.D.	6947 → → 7084	Evolution a : Electrical harness PA modified XME001
542-1/20b	L.H.D.	7084 → → 7084	Evolution b : Electrical harness PB modified XME007
542-1/20c	L.H.D.	7329 → → 7483	Evolution c : Electrical harness PB modified XME020
542-1/20d	L.H.D.	7483 →	Evolution d : Electrical harness PB modified, and PA removed XME032
542-1/21	L.H.D.	6383 → → 7084	**Saloon All Types** Additional stoplamps
542-1/21a	L.H.D.	7084 → → 7329	Evolution a : Electrical harnesses PA and PB modified XME008
542-1/21b	L.H.D.	7329 → → 7483	Evolution b : Electrical harness PB modified XME021
542-1/21c	L.H.D.	7448 →	Evolution c : Electrical harness PB modified, and PA removed XME033
542-1/22	L.H.D.	7448 →	**Estate All Types** Additional stoplamps XME034
542-1/23	L.H.D.	7084 →	**Saloon DK5 (THY)** Stoplamps XME038
542-2/20	R.H.D.	7483 →	**All Types** Stoplamps XME035
542-2/21	R.H.D.	7448 →	**Saloon All Types** Additional stoplamps XME036
542-2/22	R.H.D.	7448 →	**Estate All Types** Additional stoplamps XME037

www.WorkshopManuals.co.uk

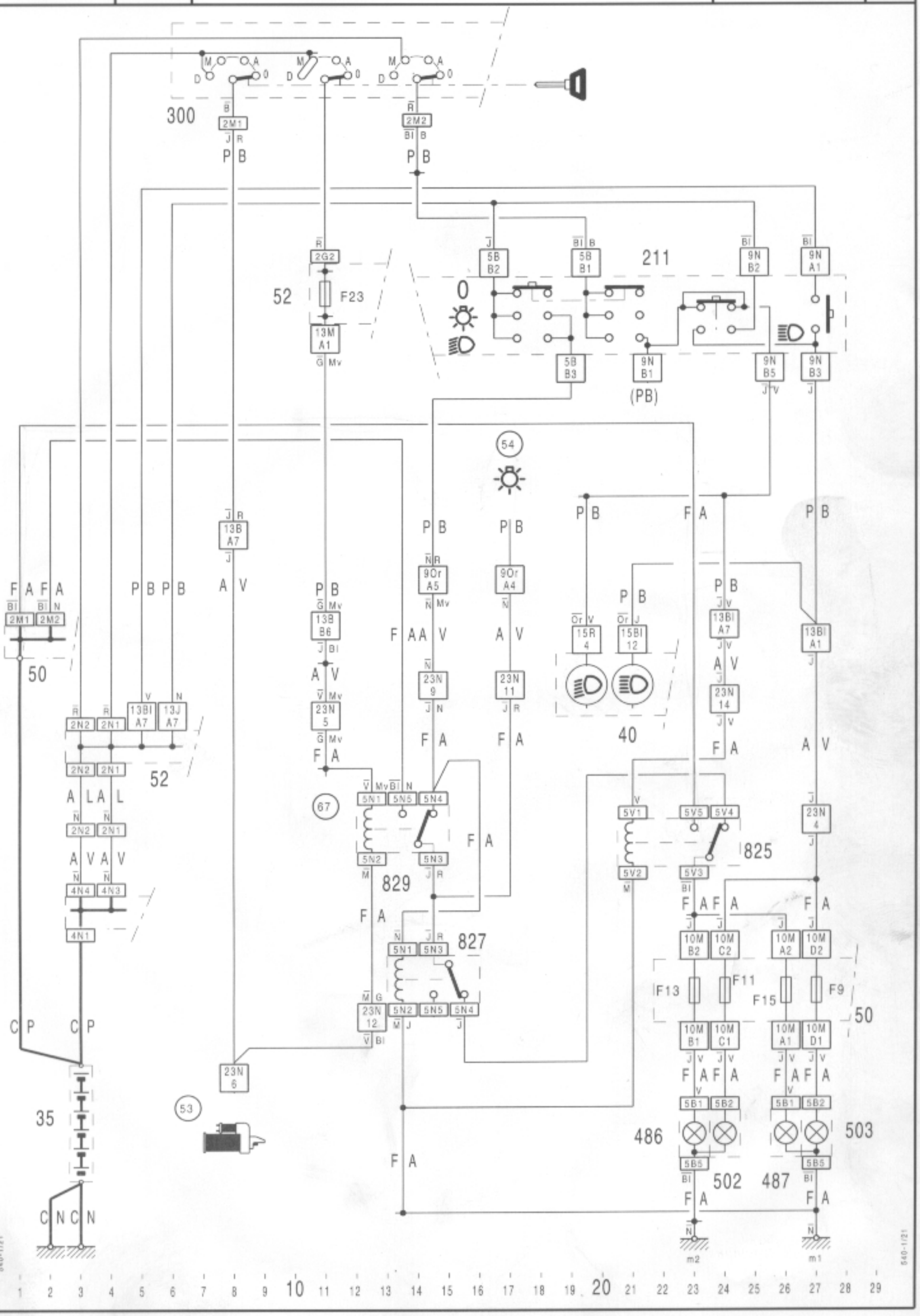
DIRECTION INDICATORS HAZARD WARNING

NUMBER	STEERING	APPLICABLE	DESCRIPTION	
543-1/20	L.H.D.	6383 → → 6749	**All types** Direction indicator + hazard warning	XMS82
543-1/20a	L.H.D.	6749 → → 6947	Evolution a : Fuse box modified	XMS168
543-1/20b	L.H.D.	6947 → → 7084	Evolution b : Electrical harnesses SM and LD modified	XME002
543-1/20c	L.H.D.	7084 → → 7329	Evolution c : Electrical harnesses PB, AV and FA modified	XME009
543-1/20d	L.H.D.	7329 → → 7483	Evolution d : Electrical harness PB modified	XME022
543-1/20e	L.H.D.	7483 →	Evolution e : Electrical harness PB modified, and PA removed	XME038
543-2/20	R.H.D.	7483 →	**All types** Direction indicator + hazard warning	XME039

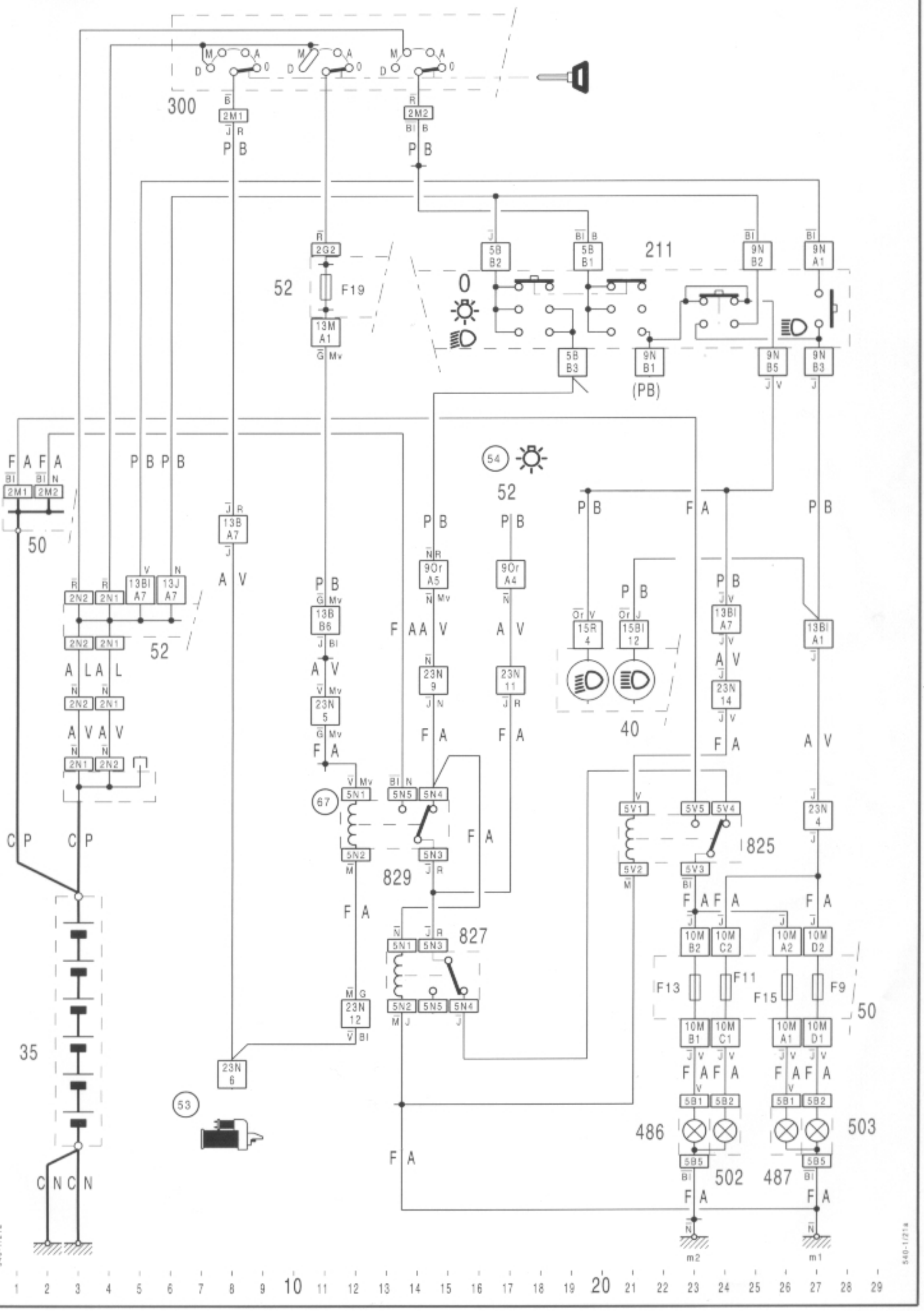
REVERSING LAMPS

NUMBER	STEERING	APPLICABLE	DESCRIPTION	
544-1/20	L.H.D.	6383 → → 6749	**All types** Reversing lamp	XMS83
544-1/20a	L.H.D.	6749 → → 7084	Evolution a : Fuse box modified	XMS169
544-1/20b	L.H.D.	7084 → → 7329	Evolution b : Electrical harnesses PB and AV modified	XME010
544-1/20c	L.H.D.	7329 → → 7483	Evolution c : Electrical harnesses PB and VD modified	XME023
544-1/20d	L.H.D.	7483 →	Evolution d : Electrical harness BV XFZ modified	XME040

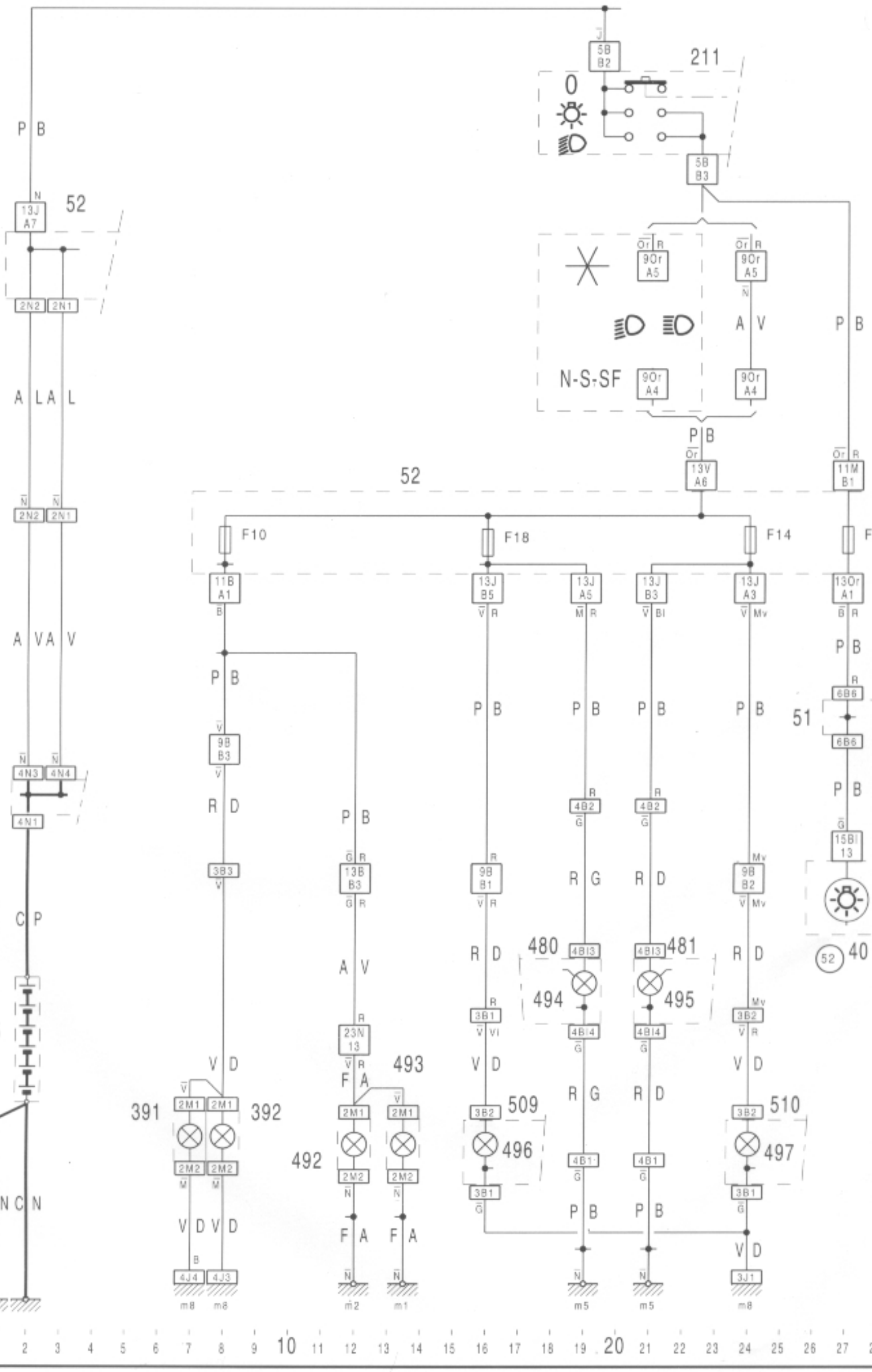
www.WorkshopManuals.co.uk



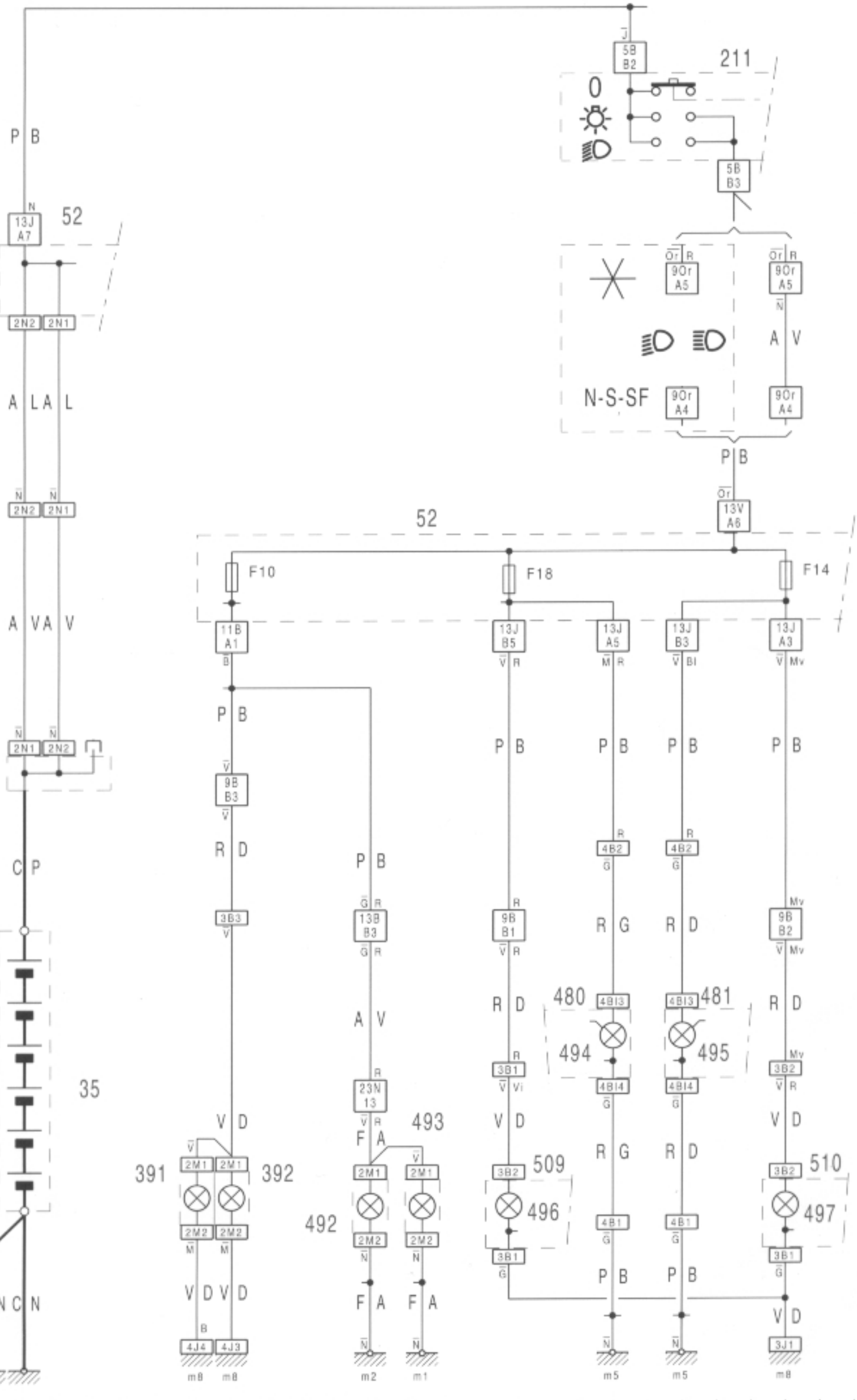
www.WorkshopManuals.co.uk



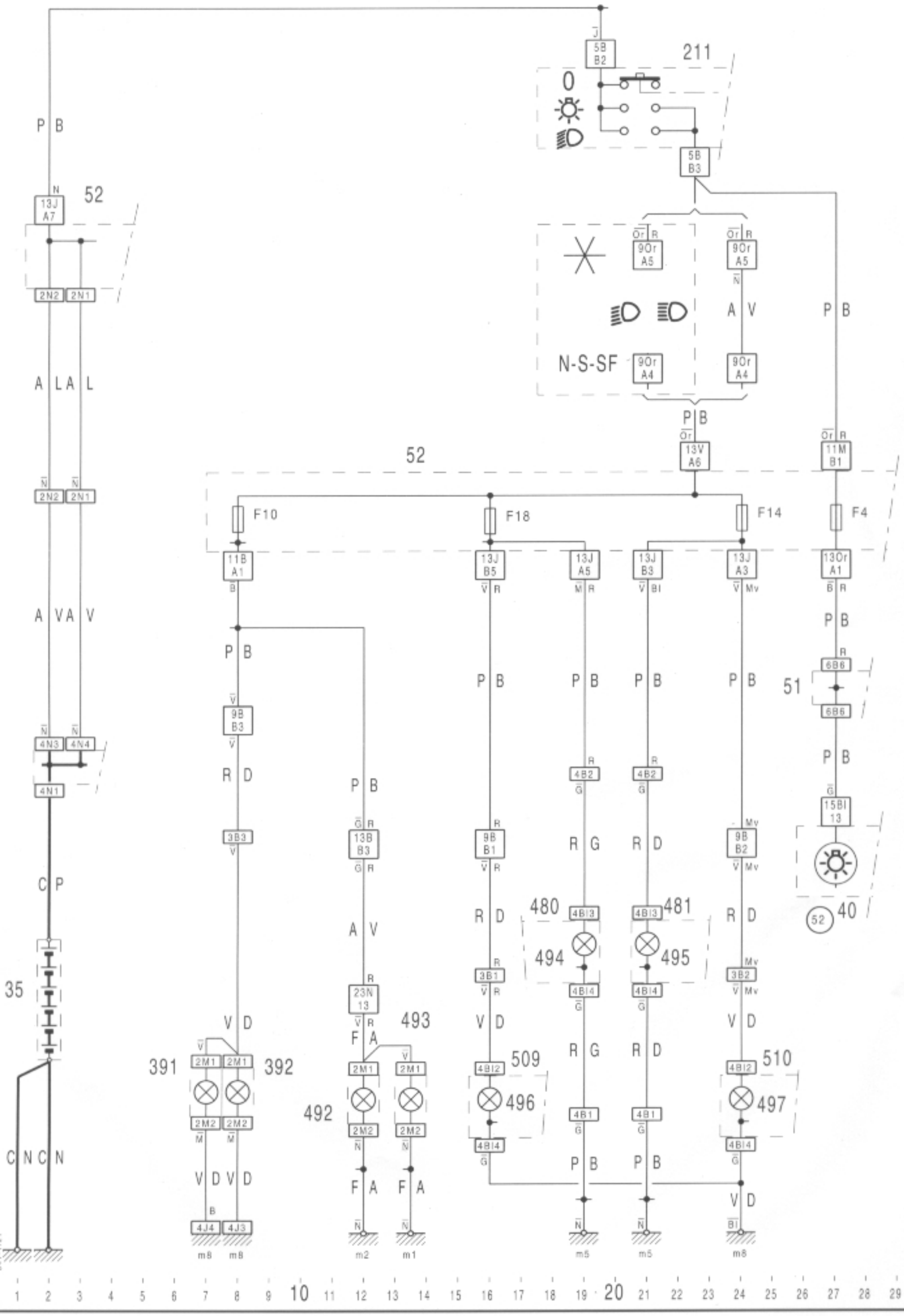
www.WorkshopManuals.co.uk



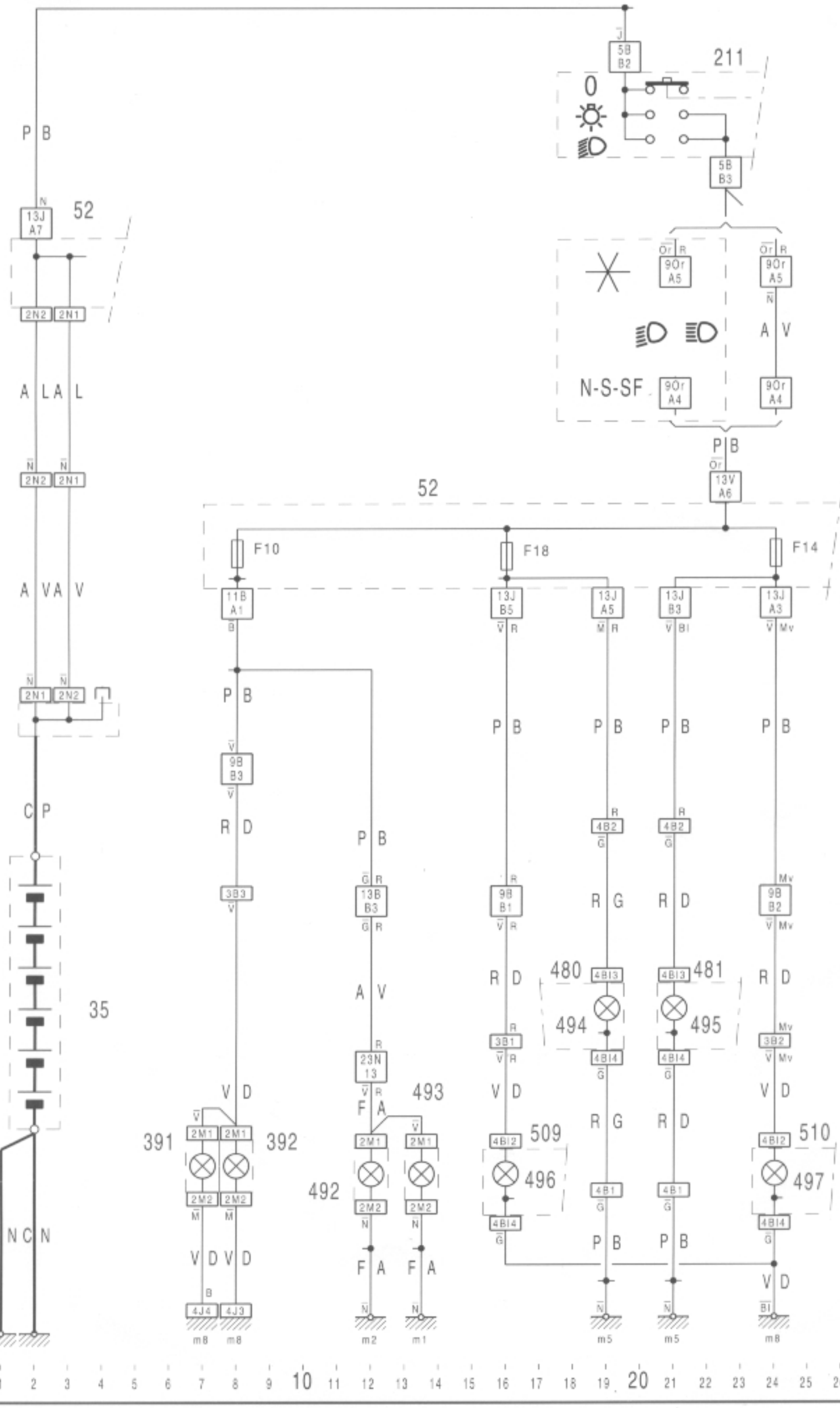
www.WorkshopManuals.co.uk



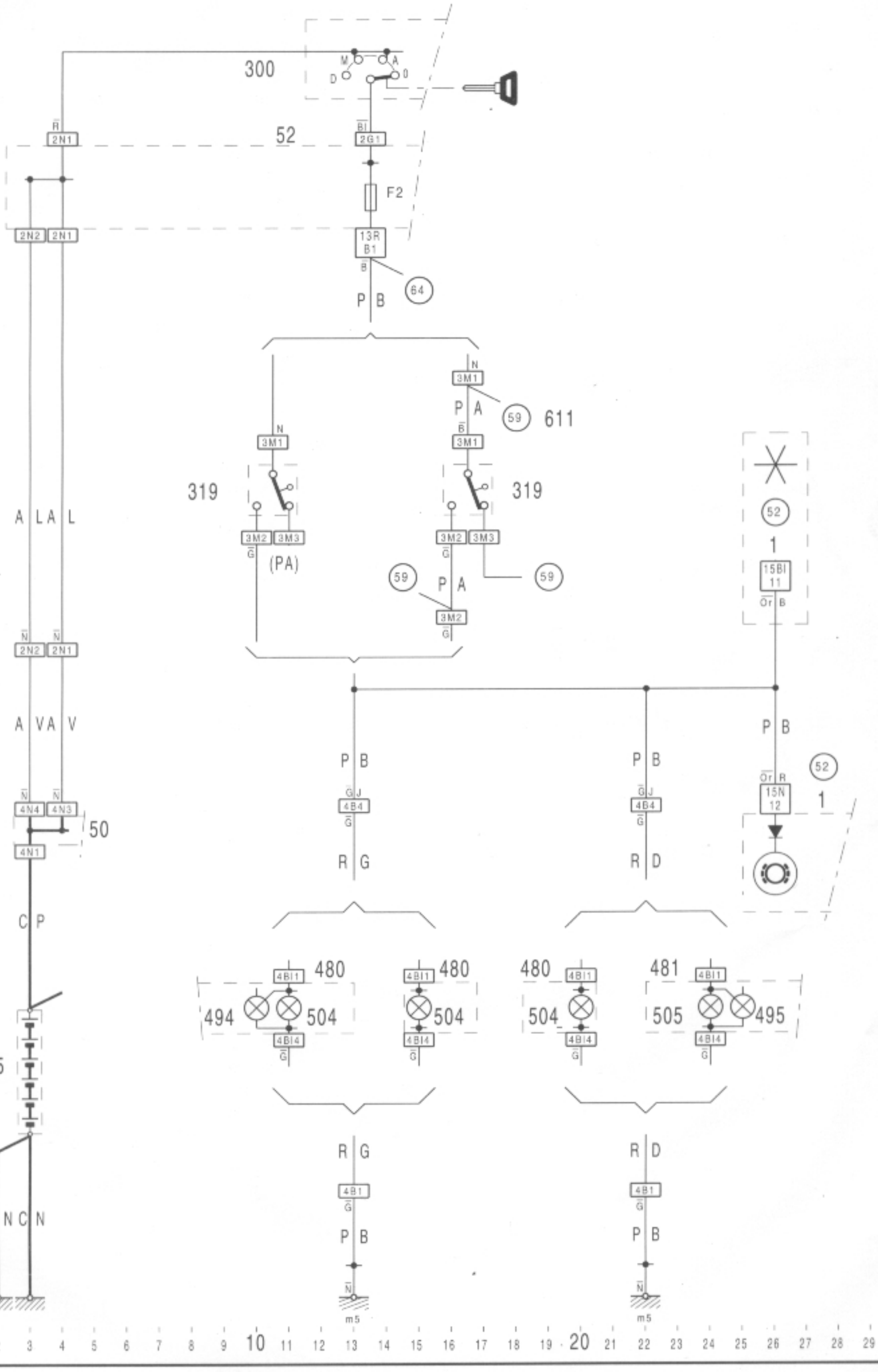
www.WorkshopManuals.co.uk



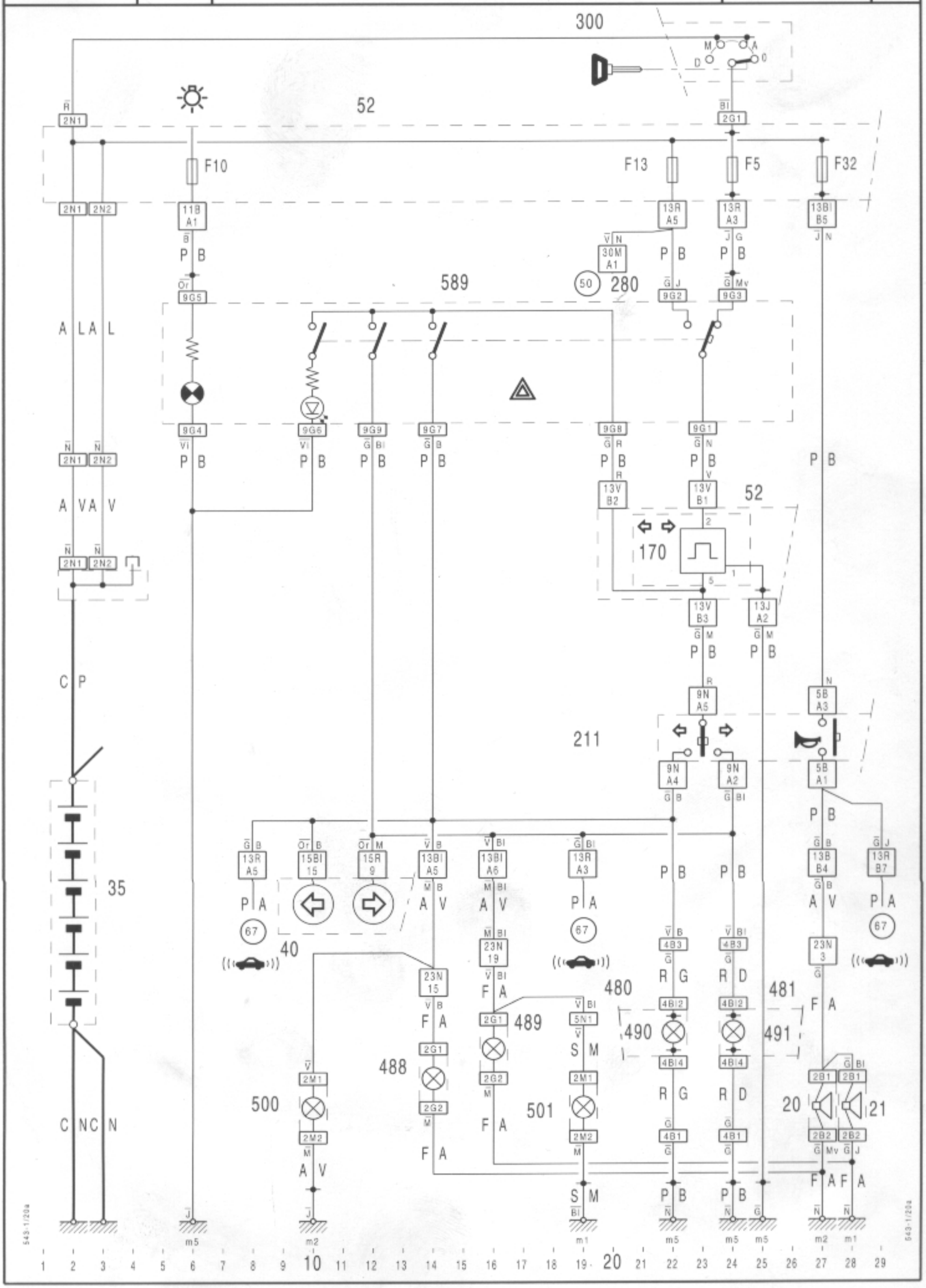
www.WorkshopManuals.co.uk



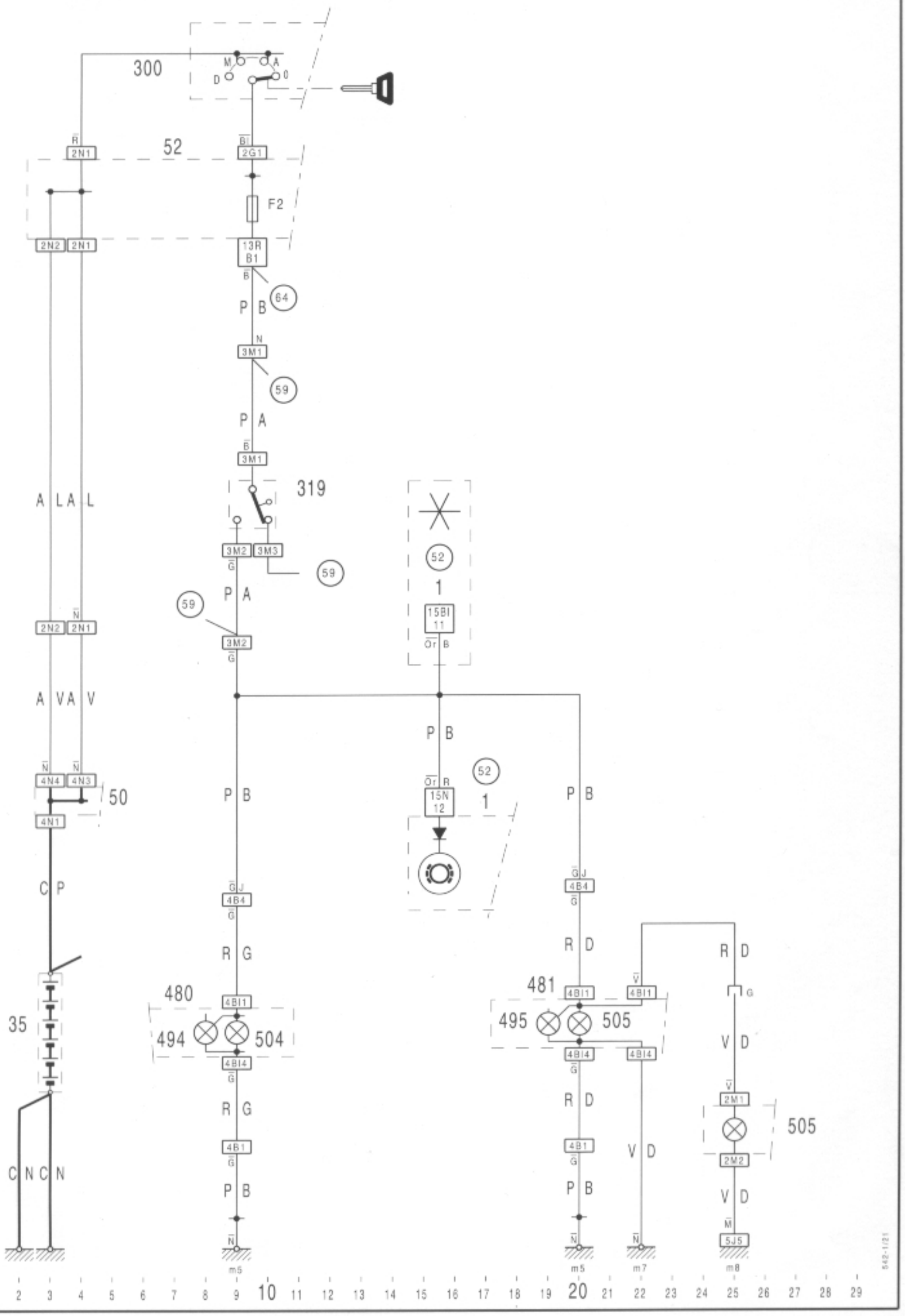
www.WorkshopManuals.co.uk



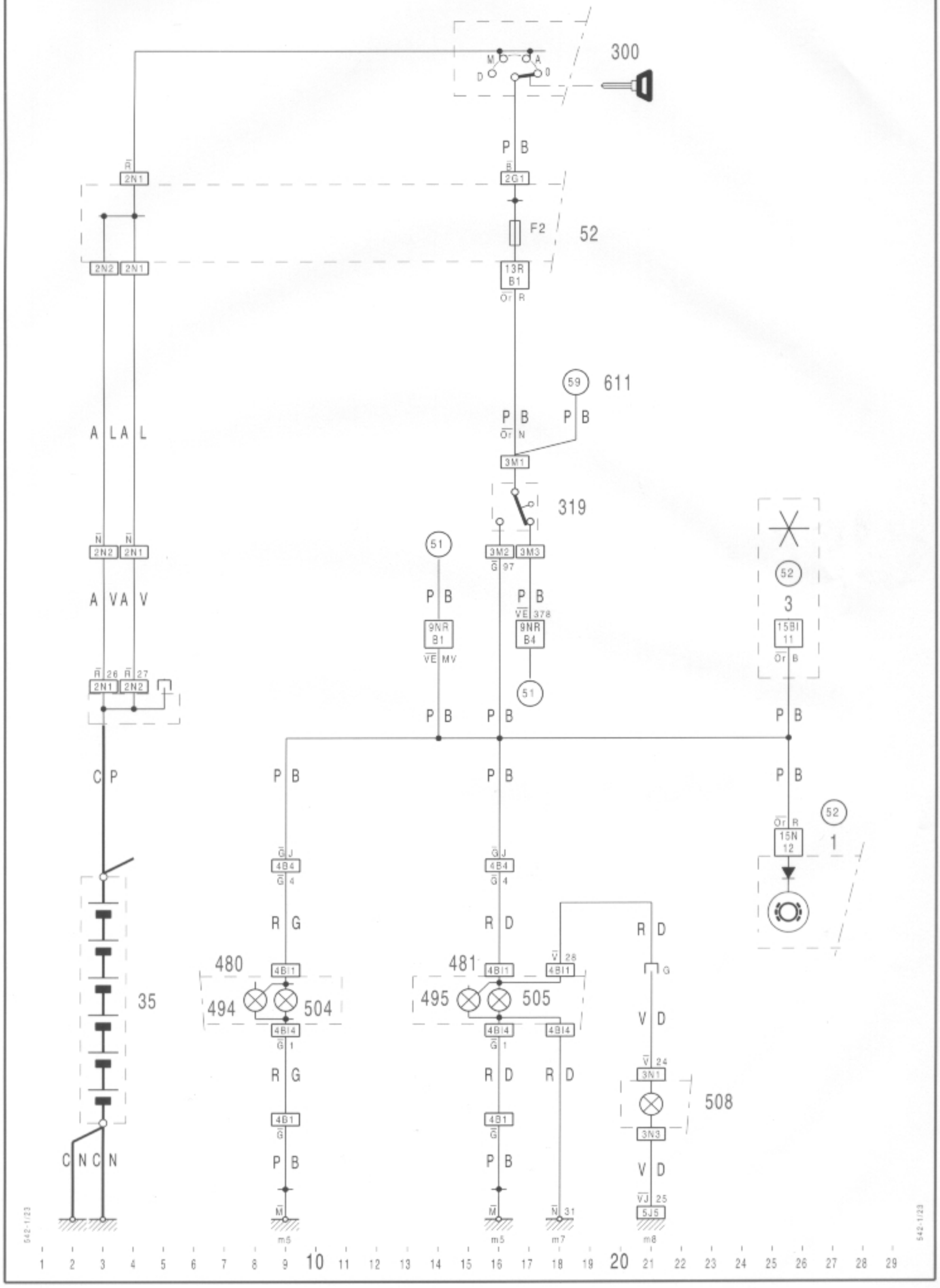
www.WorkshopManuals.co.uk



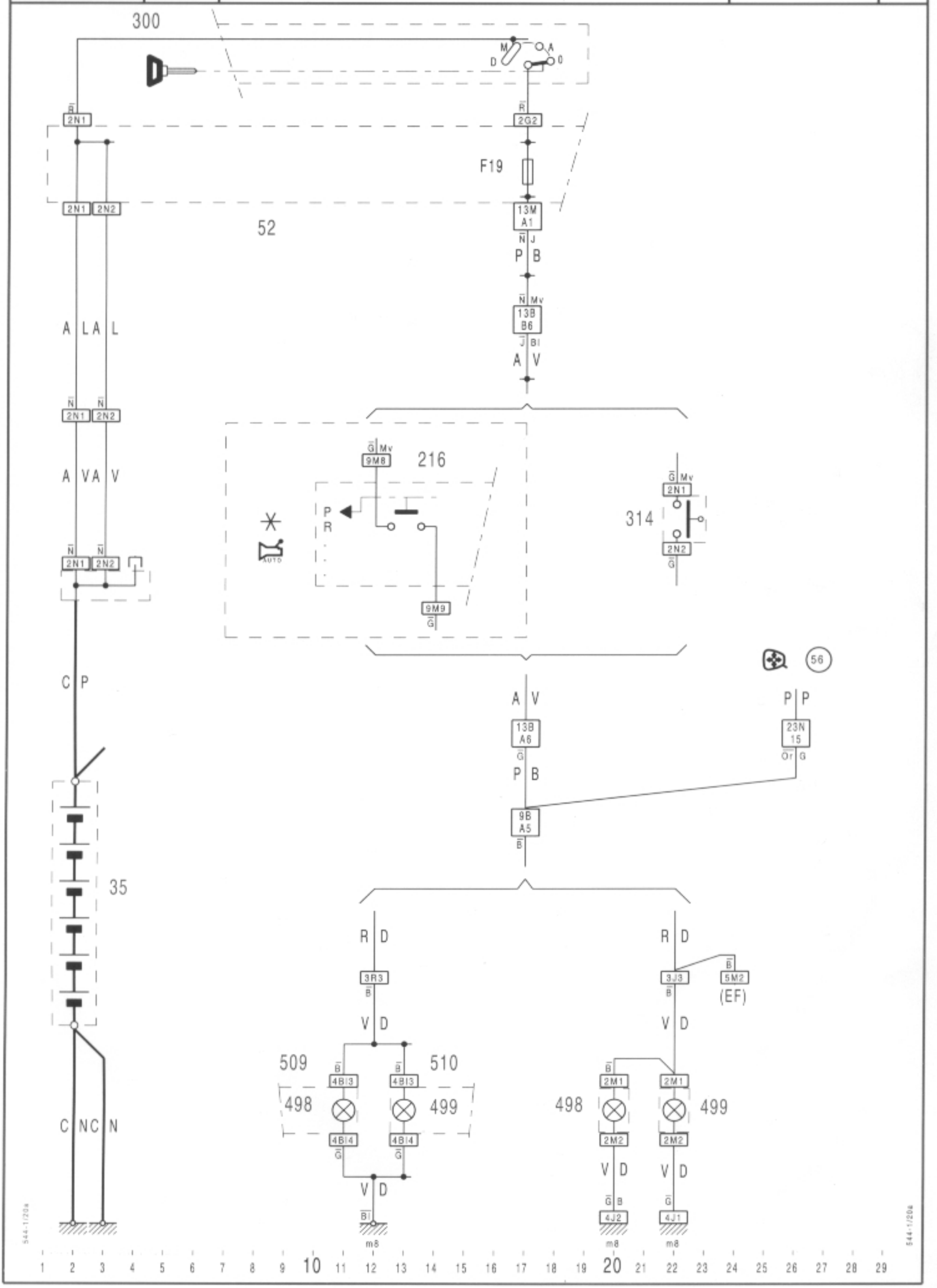
www.WorkshopManuals.co.uk



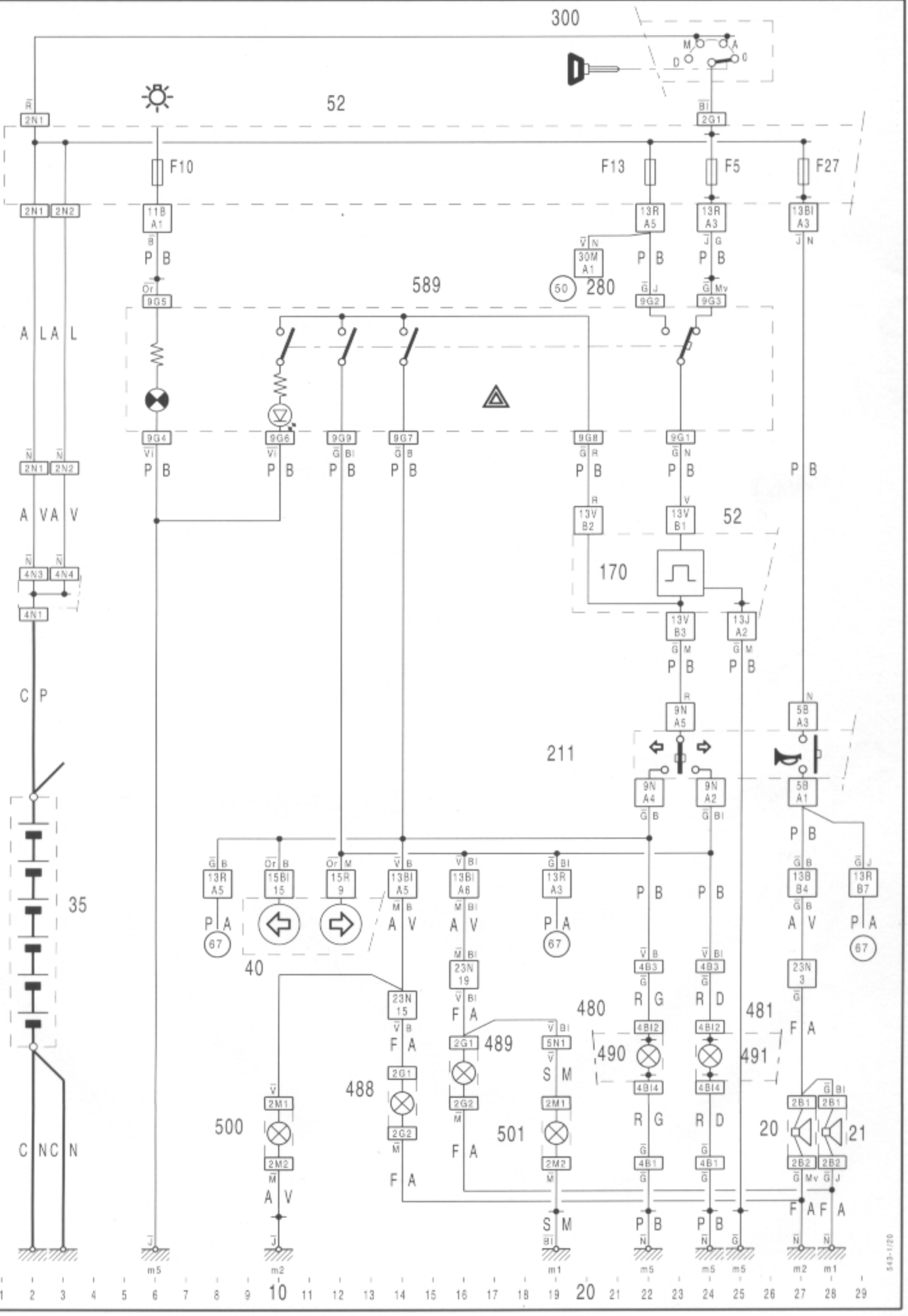
www.WorkshopManuals.co.uk



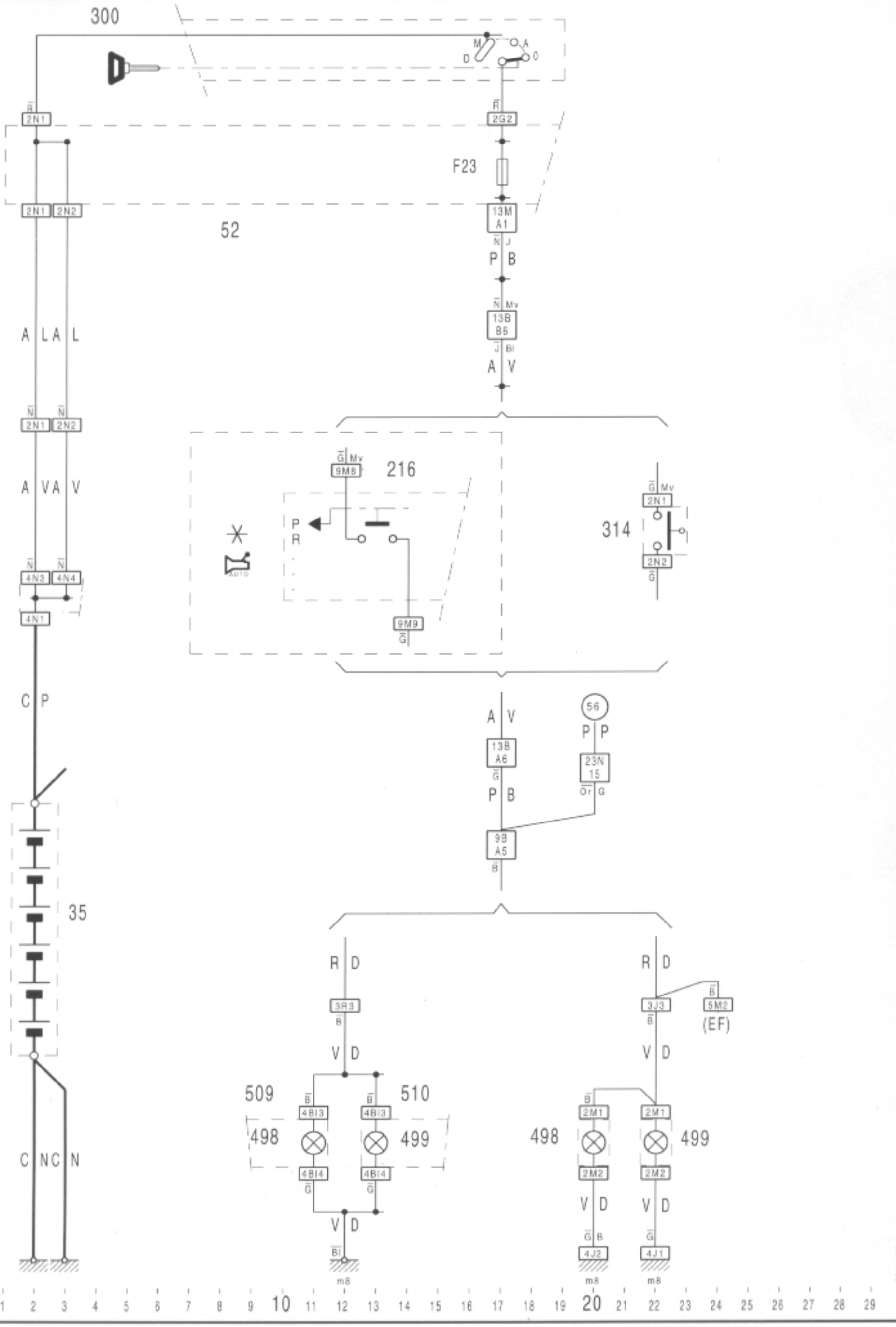
www.WorkshopManuals.co.uk



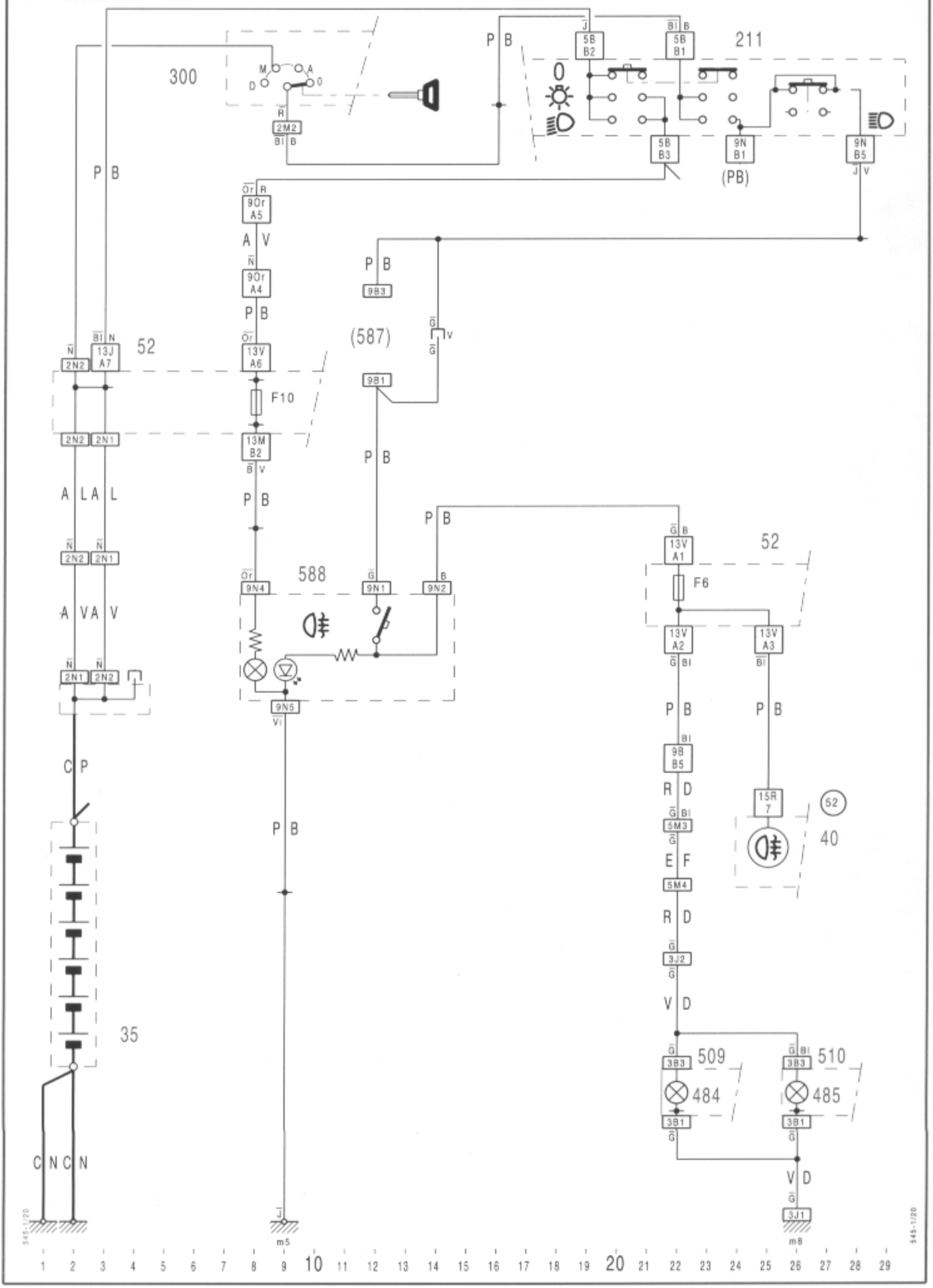
www.WorkshopManuals.co.uk



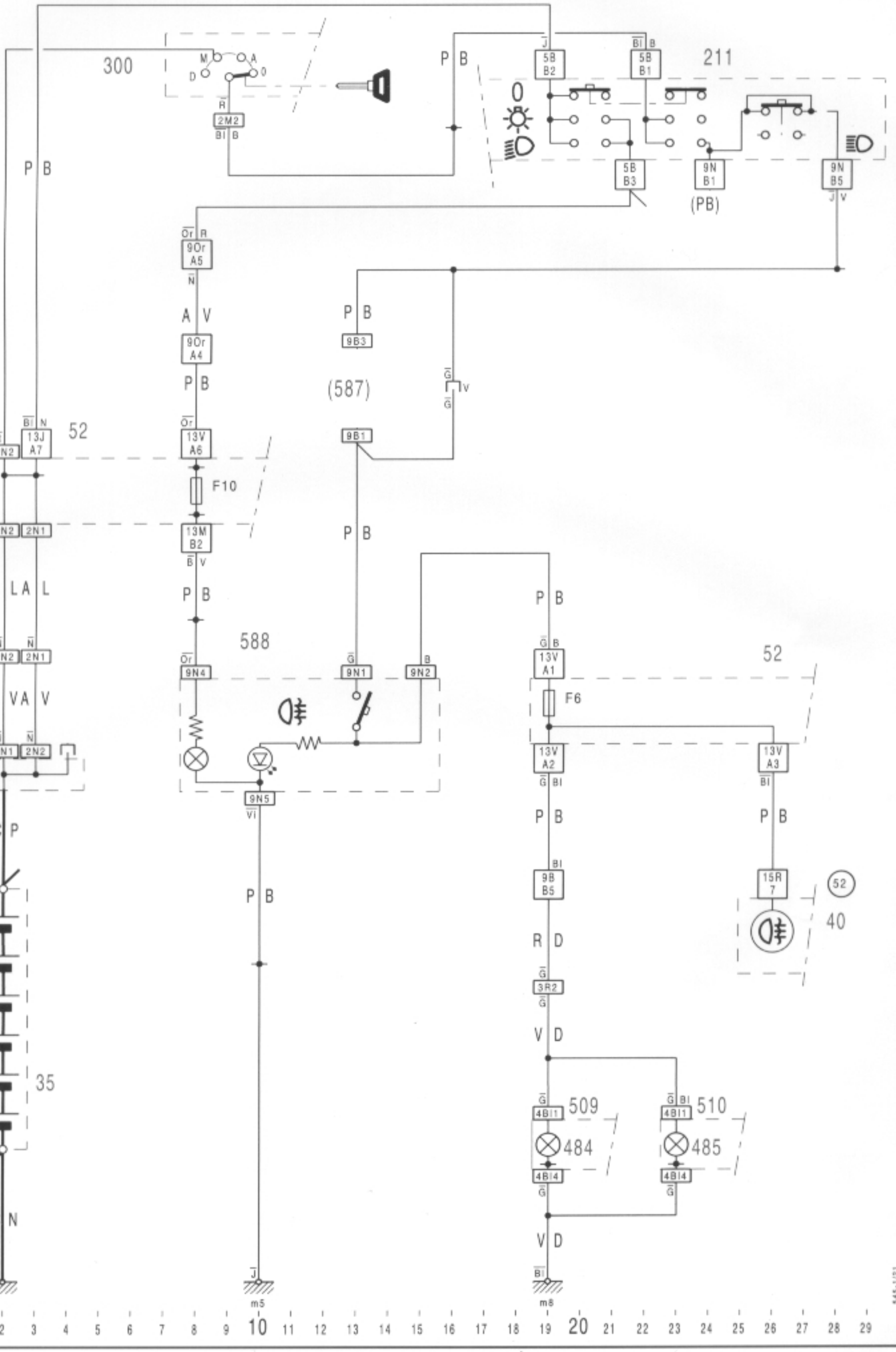
www.WorkshopManuals.co.uk



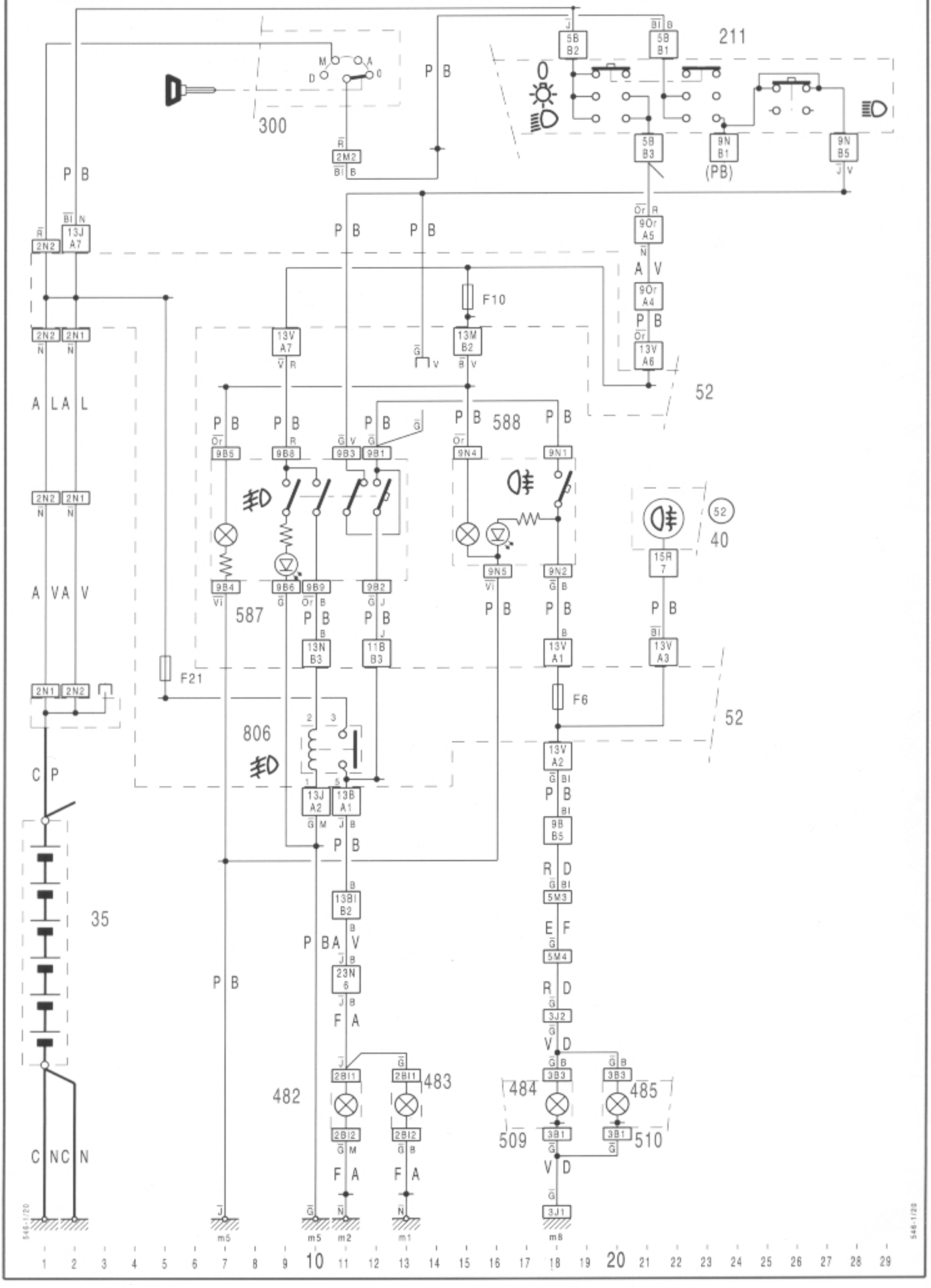
www.WorkshopManuals.co.uk



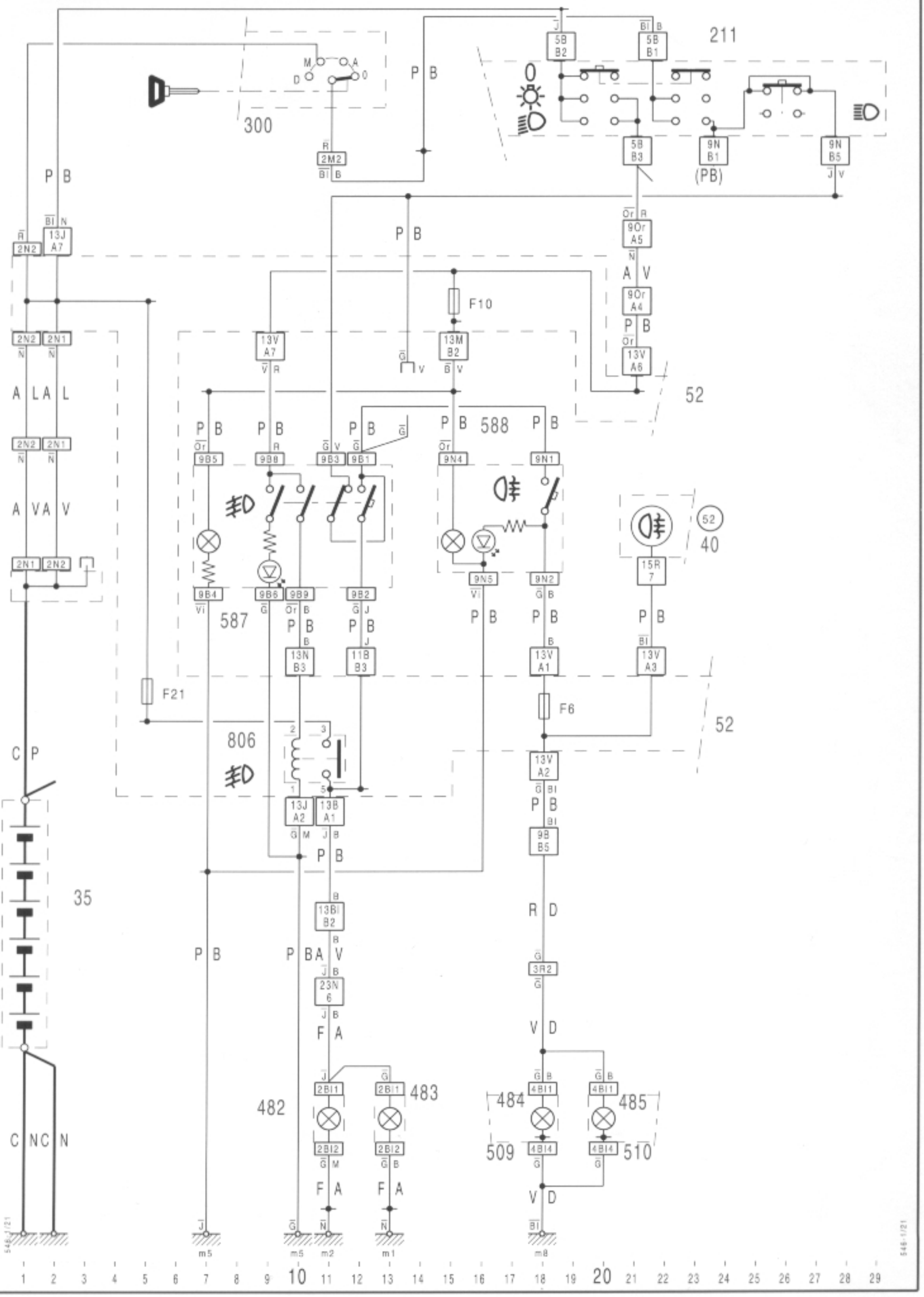
www.WorkshopManuals.co.uk



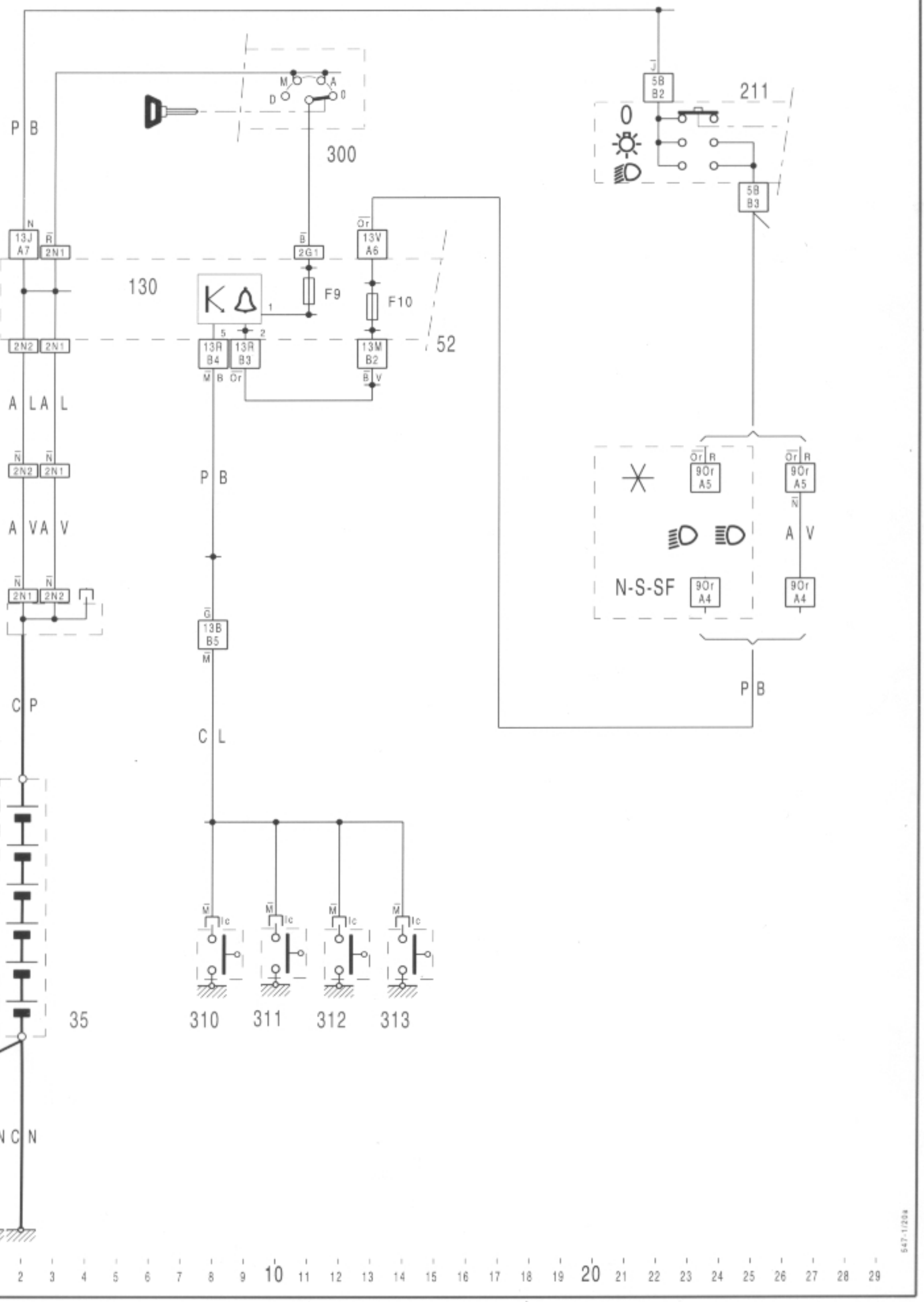
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk

INTERIOR
LIGHTING AND FITTINGS
FUNCTION

PARTS LIST
LIST OF THE ELECTRICAL DIAGRAMS

www.WorkshopManuals.co.uk

Ref.	Description	Func.
5	Front cigar-lighter	55
6	Rear cigar lighter	55
35	Battery	TT
52	Junction box	TT
55	Door locking control unit	67
70	Pyrotechnic seat belts control unit	55
143	Suspension E.C.U.	58
145	Airbag E.C.U.	55
280	Diagnostic connector	TT
300	Antitheft switch	TT
301	Glove box lighting contact	55
302	Boot lighting contact	55
310	L.H. front door pillar contact	55
311	R.H. front door pillar contact	55
312	L.H. rear door pillar contact	55
313	R.H. rear door pillar contact	55
320	Revolving contact	65
380	L.H. front security lamp	55
381	R.H. front security lamp	55
382	L.H. rear security lamp	55
383	R.H. rear security lamp	55
384	Glove box lighting	55
385	Front ashtray lighting	55
386	Rear ashtray lighting	55
387	Ashtray lid control lighting	55
388	Radio flap control lighting	55
389	Boot lighting	55
390	Sun visor mirror lighting	55
396	Anti-theft lighting	55
478	Driver's pyrotechnic seat belt reel	55
479	Passenger's pyrotechnic seat belt reel	55
583	Rear function locking switch	55-67
598	Interior lamp switch	55
682	Eurobag steering wheel module	55
740	L.H. rear interior lamp	55
741	R.H. rear interior lamp	55
742	Front centre interior lamp	55-65
817	Front heated seats relay	63
837	Lighting delay timer relay	55
848	Engine running information relay	53
884	Driver's airbag	55
961	Lighting timer	55
992	Airbag warning lamp	55

Ref.	Description	Func.

N
5
55
55
5
55
55
5
55
55
55
5
55
55
5
55
55

www.WorkshopManuals.co.uk

INTERIOR LIGHTING

NUMBER	STEERING	APPLICABLE	DESCRIPTION
550-1/20	L.H.D.	6383 → → 6568	**SALOON, WITHOUT L.H. DISPLAY** Interior lighting XMS90
550-1/20a	L.H.D.	6568 → → 6811	Evolution a : Sun visor incorporated, timed anti-theft lighting XMS133
550-1/20b	L.H.D.	6811 →	Evolution b : Fuse box modified Lower door panel security lamp modified XMN71
550-1/30	L.H.D.	6383 → → 6568	**SALOON, WITH L.H. DISPLAY** Interior lighting - No sun roof XMS143
550-1/30a	L.H.D.	6568 → → 6811	Evolution a : Sun visor incorporated, timed anti-theft lighting XMS131
550-1/30b	L.H.D.	6811 →	Evolution b : Fuse box modified Lower door panel security lamp modified XMN72
550-1/31	L.H.D.	6383 → → 6568	**SALOON, WITH L.H. DISPLAY** Interior lighting - Sun roof XMS139
550-1/31a	L.H.D.	6568 → → 6811	Evolution a : Sun visor incorporated, timed anti-theft lighting XMS138
550-1/31b	L.H.D.	6811 →	Evolution b : Fuse box modified Lower door panel security lamp modified XMN74
550-1/40	L.H.D.	6383 → → 6568	**ESTATE, WITHOUT L.H. DISPLAY** Interior lighting XMS92
550-1/40a	L.H.D.	6568 → → 6749	Evolution a : Sun visor incorporated, timed anti-theft lighting XMS134
550-1/40b	L.H.D.	6749 →	Evolution b : Fuse box modified Lower door panel security lamp modified XMN75
550-1/50	L.H.D.	6383 → → 6568	**SALOON, WITH L.H. DISPLAY** Interior lighting - No sun roof XMS142
550-1/50a	L.H.D.	6568 → → 6811	Evolution a : Sun visor incorporated, timed anti-theft lighting XMS132
550-1/50b	L.H.D.	6811 →	Evolution b : Fuse box modified Lower door panel security lamp modified XMN76
550-1/51	L.H.D.	6383 → → 6568	**SALOON, WITH L.H. DISPLAY** Interior lighting - Sun roof XMS141
550-1/51a	L.H.D.	6568 → → 6811	Evolution a : Sun visor incorporated, timed anti-theft lighting XMS140
550-1/51b	L.H.D.	6811 →	Evolution b : Fuse box modified Lower door panel security lamp modified XMN77

www.WorkshopManuals.co.uk

INTERIOR LIGHTING

NUMBER	STEERING	APPLICABLE	DESCRIPTION
550-1/40	L.H.D.	6383 → → 6568	**ESTATE WITHOUT L.H. DISPLAY** Interior lighting XMS92
550-1/40a	L.H.D.	6568 → → 6749	Evolution a : Sun visor incorporated, timed anti-theft lighting XMS134
550-1/40b	L.H.D.	6749 → → 7329	Evolution b : Fuse box modified Lower door panel security lamp modified XMN75
550-1/40c	L.H.D.	7329 → → 7483	Evolution c : Electrical harnesses PB and CL modified XMF011
550-1/50	L.H.D.	6383 → → 6568	**ESTATE WITH L.H. DISPLAY** Interior lighting - No sun roof XMS142
550-1/50a	L.H.D.	6568 → → 6811	Evolution a : Sun visor incorporated, timed anti-theft lighting XMS132
550-1/50b	L.H.D.	6811 → → 7084	Evolution b : Fuse box modified Lower door panel security lamp modified XMN76
550-1/50c	L.H.D.	7084 → → 7329	Evolution c : Electrical harnesses PB and CL modified XMF004
550-1/50d	L.H.D.	7329 → → 7483	Evolution d : Electrical harnesses PB and CL modified XMF012
550-1/50e	L.H.D.	7483 → → 7847	Evolution e : New interior lamp switch XMF021
550-1/50f	L.H.D.	7847 →	Evolution f : New 10 minute timer XMF027
550-1/51	L.H.D.	6383 → → 6568	**ESTATE WITH L.H. DISPLAY** Interior lighting - with sun roof XMS141
550-1/51a	L.H.D.	6568 → → 6811	Evolution a : Sun visor incorporated, timed anti-theft lighting XMS140
550-1/51b	L.H.D.	6811 → → 7084	Evolution b : Fuse box modified Lower door panel security lamp modified XMN77
550-1/51c	L.H.D.	7084 → → 7329	Evolution c : Electrical harnesses PB and CL modified XMF005
550-1/51d	L.H.D.	7329 → → 7483	Evolution d : Electrical harnesses PB and CL modified XMF013
550-1/51e	L.H.D.	7483 → → 7847	Evolution e : New interior lamp switch XMF022
550-1/51f	L.H.D.	7847 →	Evolution f : New 10 minute timer XMF028

www.WorkshopManuals.co.uk

INTERIOR LIGHTING (cont.)

NUMBER	STEERING	APPLICABLE	DESCRIPTION
550-2/30	R.H.D.	7483 → → 7847	**SALOON WITH L.H. DISPLAY** Interior lighting - No sun roof XMF023
550-2/30a	R.H.D.	7847 →	Evolution f : New 10 minute timer XMF029

CIGAR LIGHTER

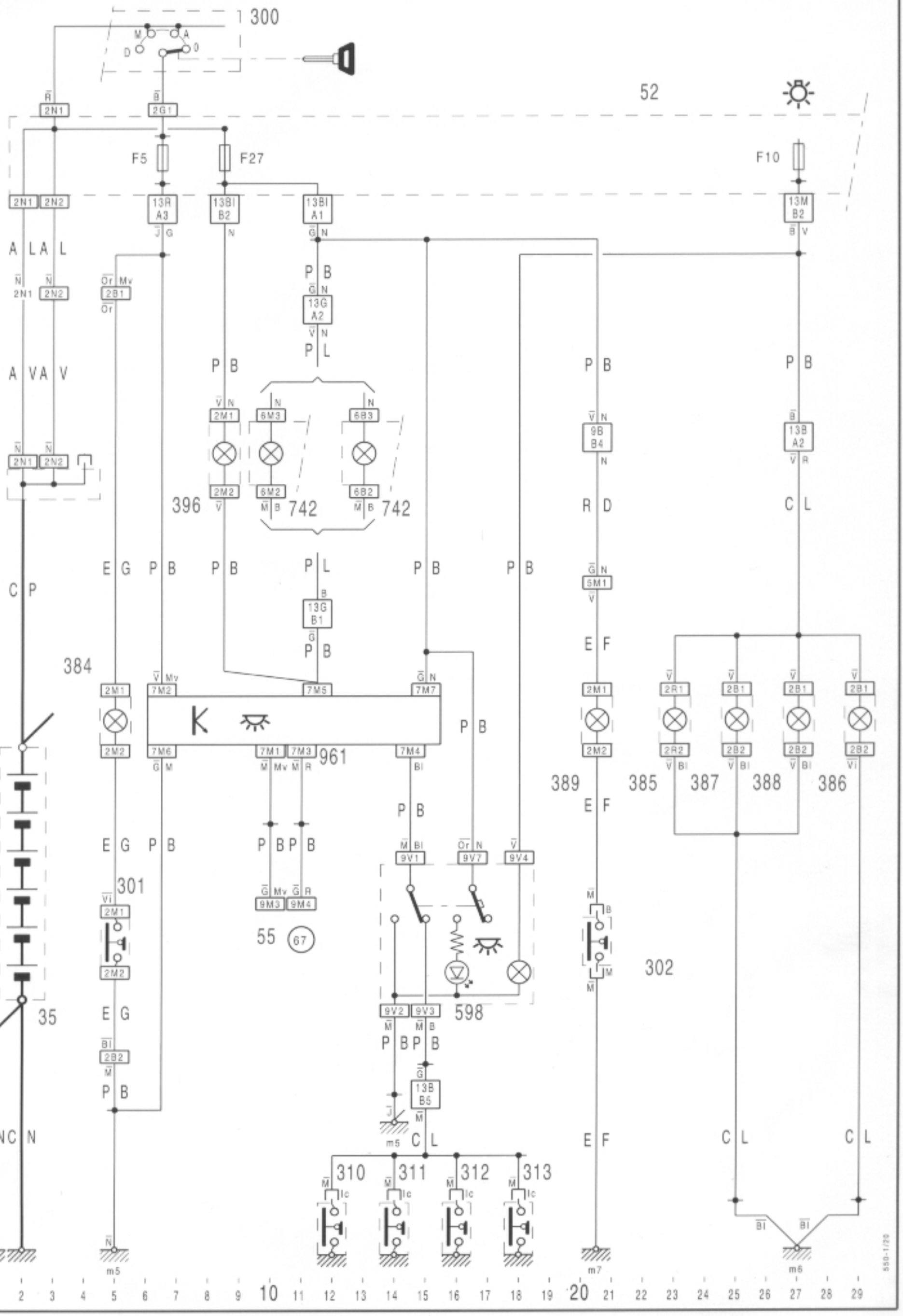
NUMBER	STEERING	APPLICABLE	DESCRIPTION
551-1/20	L.H.D.	6383 → → 7329	**VEHICLE WITHOUT L.H. DISPLAY** Cigar lighter XMS94
551-1/20a	L.H.D.	7329 → → 7483	Evolution a : Electrical harnesses PB and CL modified XMF014
551-1/30	L.H.D.	6383 → → 7084	**VEHICLE WITH L.H. DISPLAY** Cigar lighter XMS95
551-1/30a	L.H.D.	7084 → → 7329	Evolution a : Electrical harnesses PB and CL modified XMF006
551-1/30b	L.H.D.	7329 →	Evolution b : Electrical harnesses PB and CL modified XMF015
551-2/31	R.H.D.	6383 → → 6749	**SALOON, AUSTRALIA ONLY** Cigar lighter XMS96
551-2/31a	R.H.D.	6749 → → 7847	Evolution a : Fuse box modified XMN70
551-2/31b	R.H.D.	7847 →	Evolution b : Electrical harnesses PB and CL modified XMF030

www.WorkshopManuals.co.uk

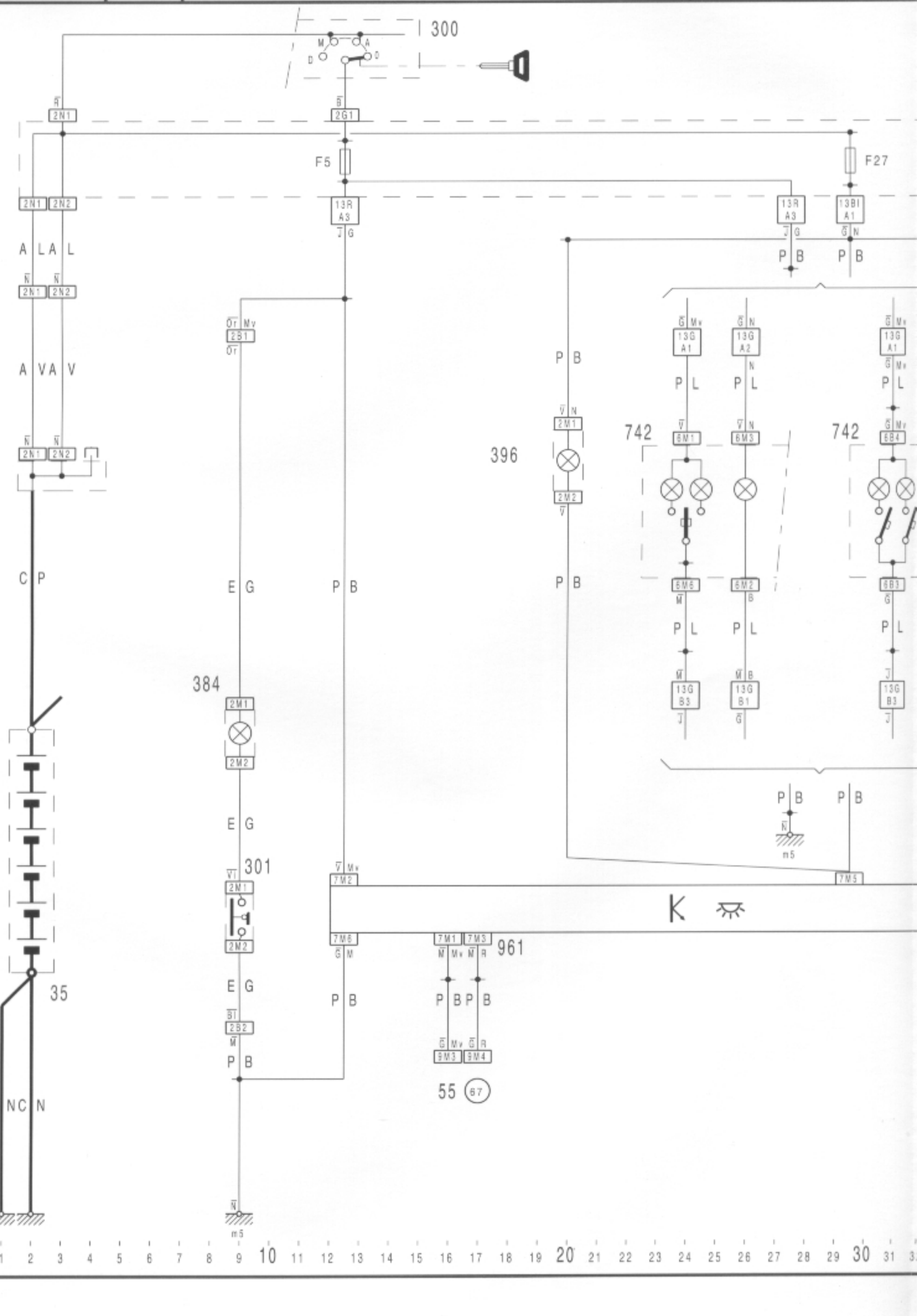
AIRBAG AND PYROTECHNIC SEAT BELTS

NUMBER	STEERING	APPLICABLE	DESCRIPTION
552-1/20	L.H.D.	6383 →	**All Types** Airbag and pyrotechnic seat belts
552-1/21	L.H.D.	6947 → → 7084	**All Types** Driver and passenger airbag and pyrotechnic seat belts XMF001
552-1/21a	L.H.D.	7084 → → 7329	Evolution a : Electrical harness PB modified XMF007
552-1/21b	L.H.D.	7329 → → 7483	Evolution b : Electrical harnesses PB and CL modified XMF016
552-1/21c	L.H.D.	7483 → → 7847	Evolution c : Instrument clusters modified XMF024
552-1/21d	L.H.D.	7847 →	Evolution d : Electrical harness PB modified XMF031
552-1/30	L.H.D.	7329 → → 7483	**All Types** Side airbag XMF017
552-1/30a	L.H.D.	7483 → → 7847	Evolution a : Instrument clusters modified XMF025
552-1/30b	L.H.D.	7847 →	Evolution b : Electrical harnesses SP and CL modified XMF032
552-2/30	R.H.D.	7329 → → 7483	**Saloon, Australia only** Side airbag XMF018
552-2/30a	R.H.D.	7483 →	Evolution a : Instrument clusters modified XMF026

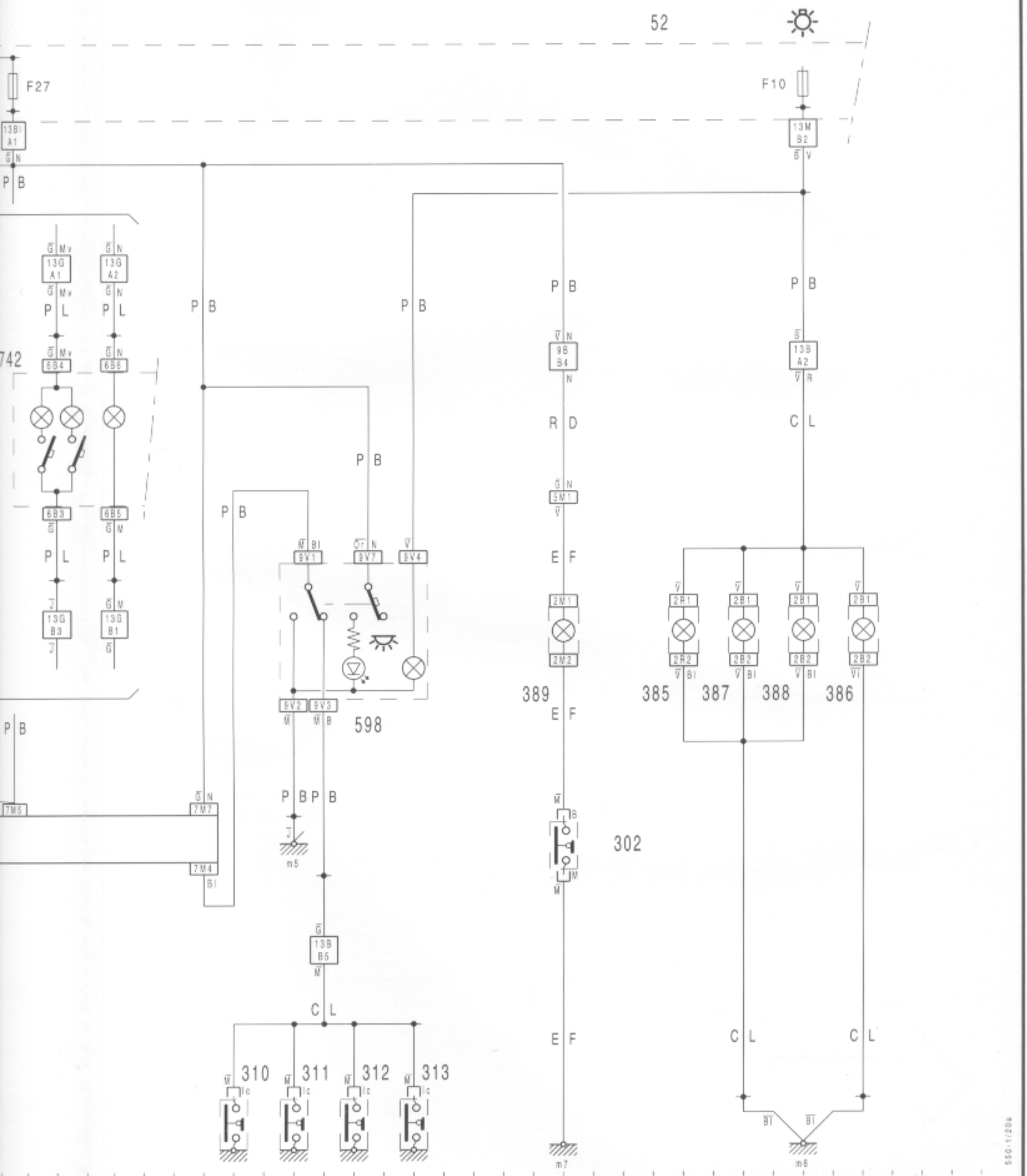
www.WorkshopManuals.co.uk



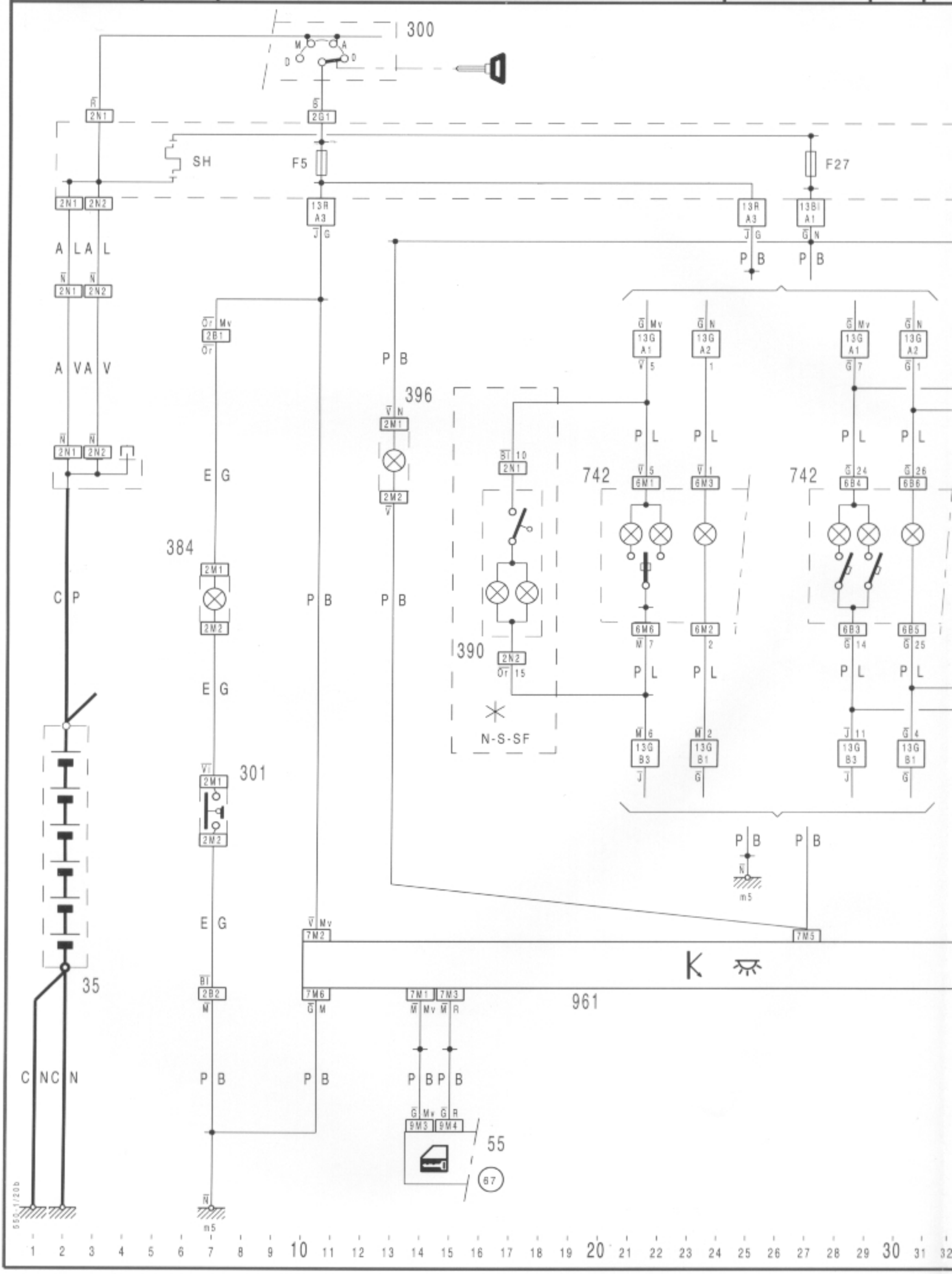
www.WorkshopManuals.co.uk



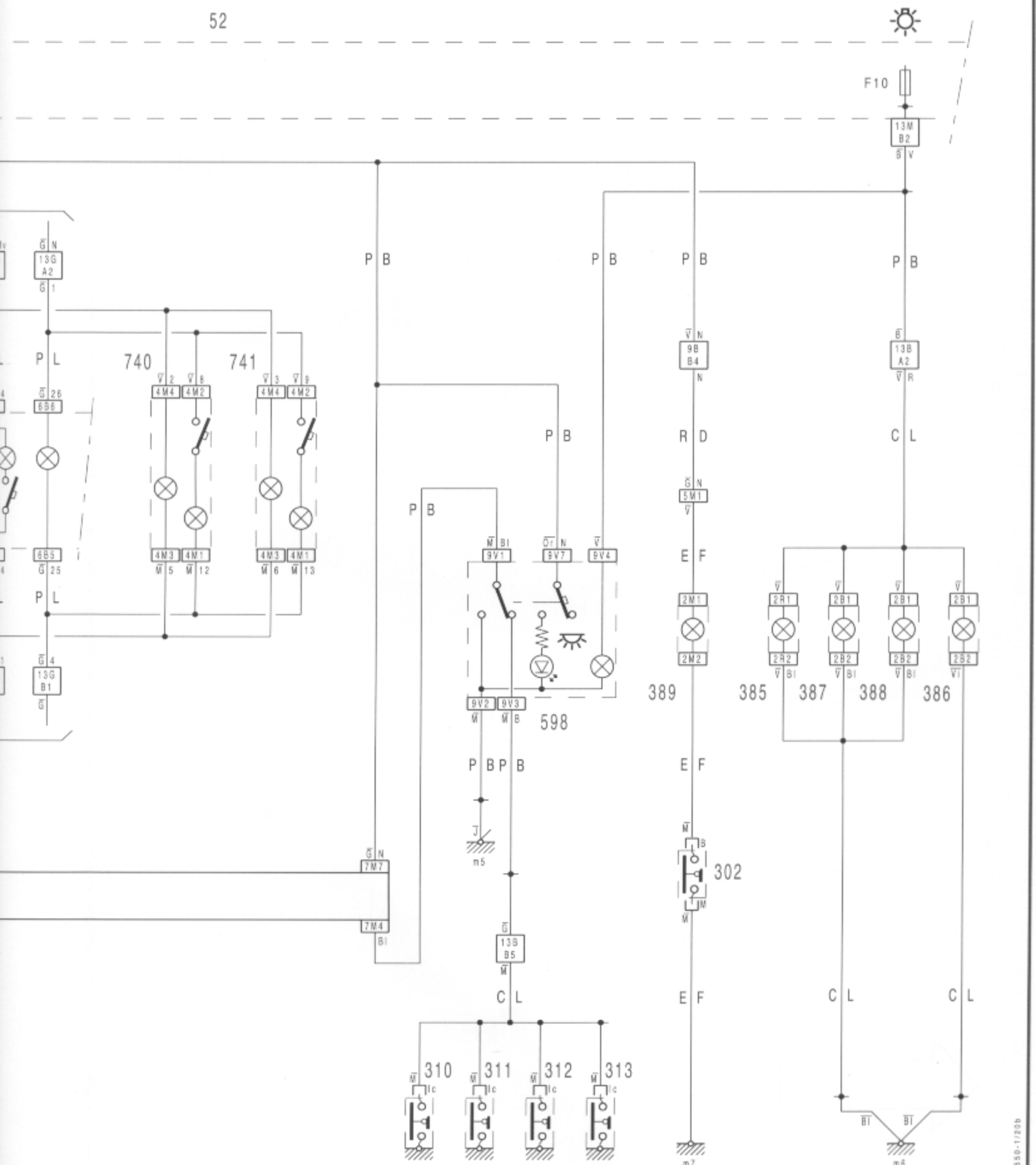
www.WorkshopManuals.co.uk



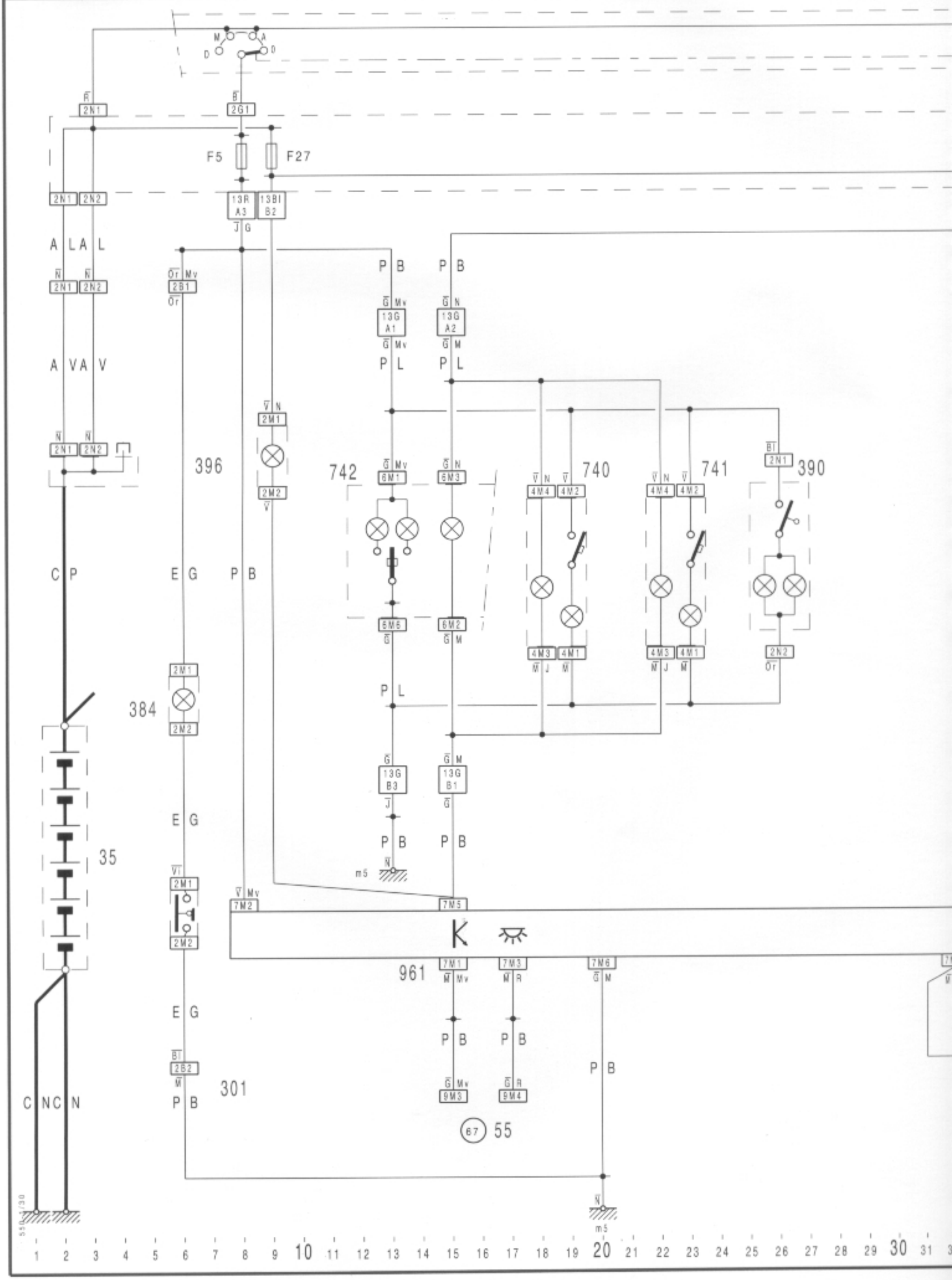
www.WorkshopManuals.co.uk



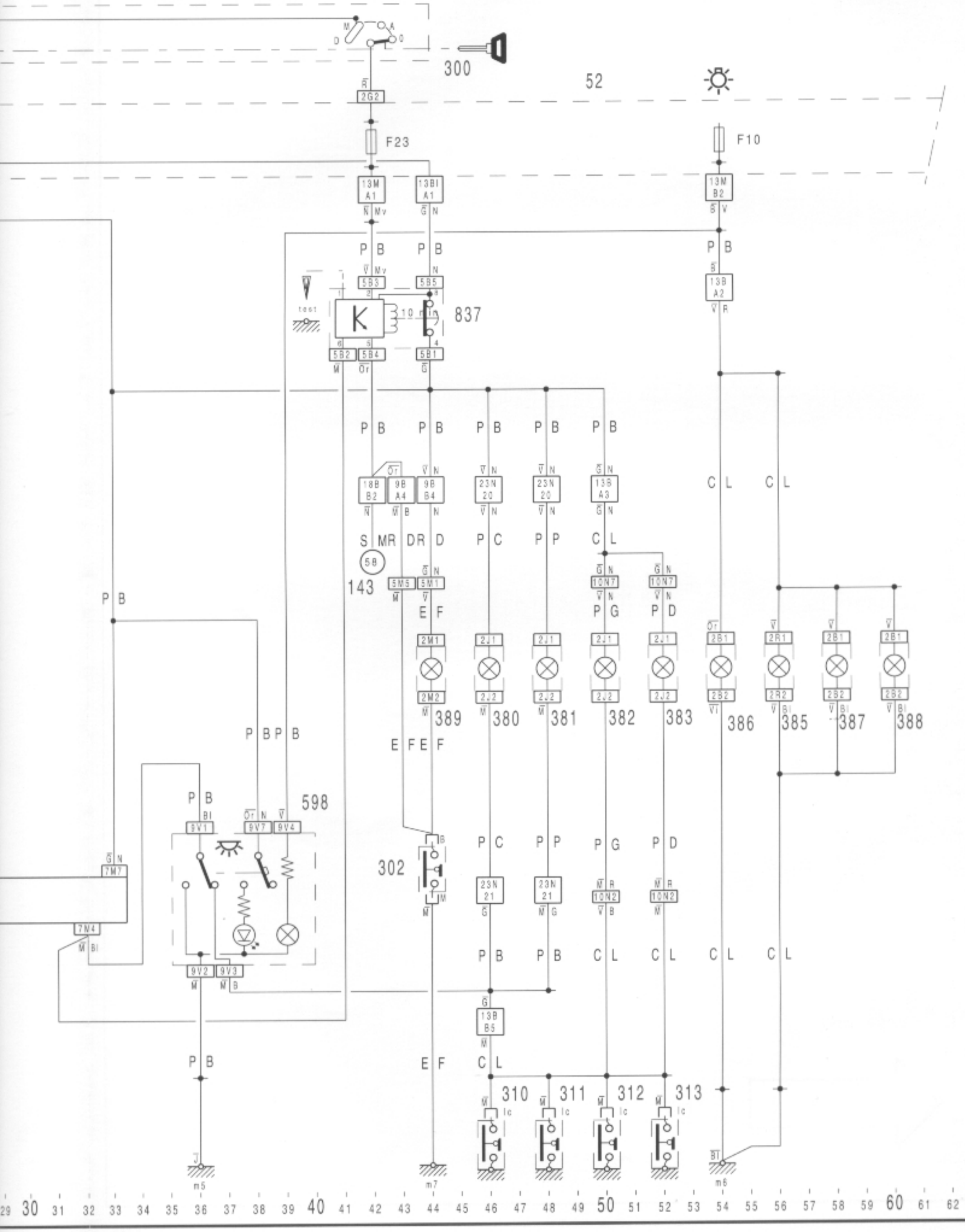
www.WorkshopManuals.co.uk



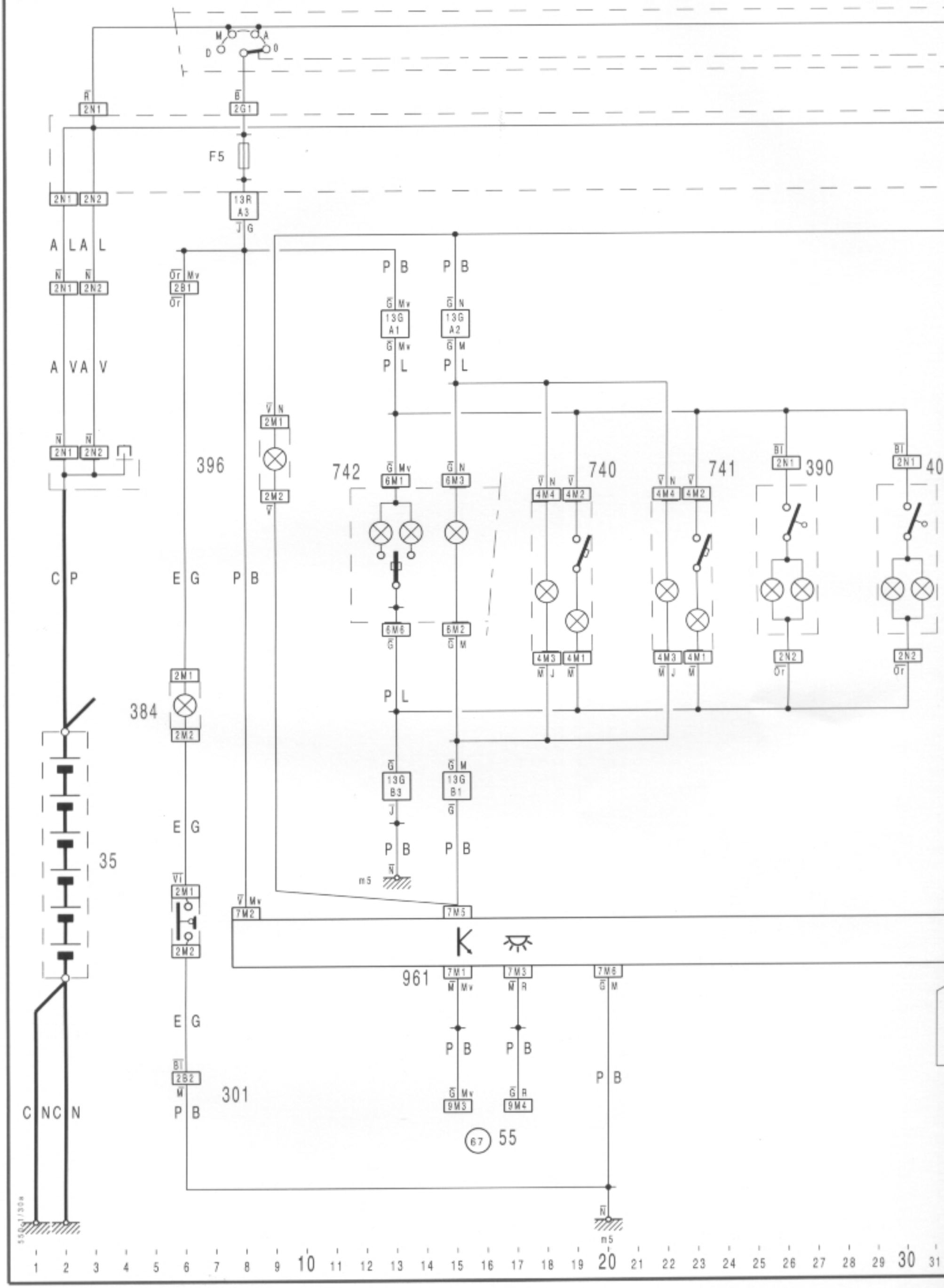
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



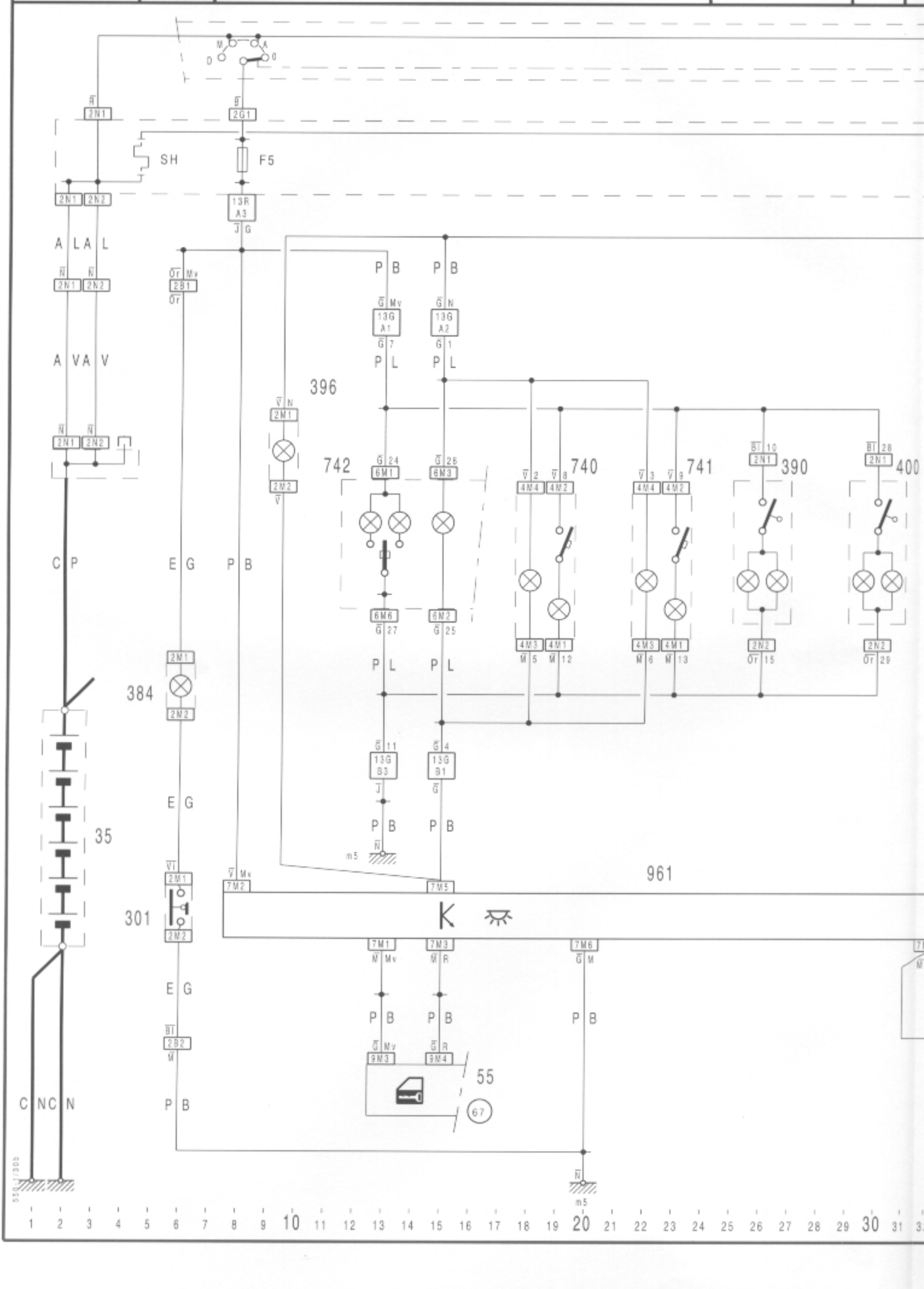
www.WorkshopManuals.co.uk

300 52 F23 F27 F10 837 400 598 302 143 389 380 381 382 383 386 385 387 388 310 311 312 313

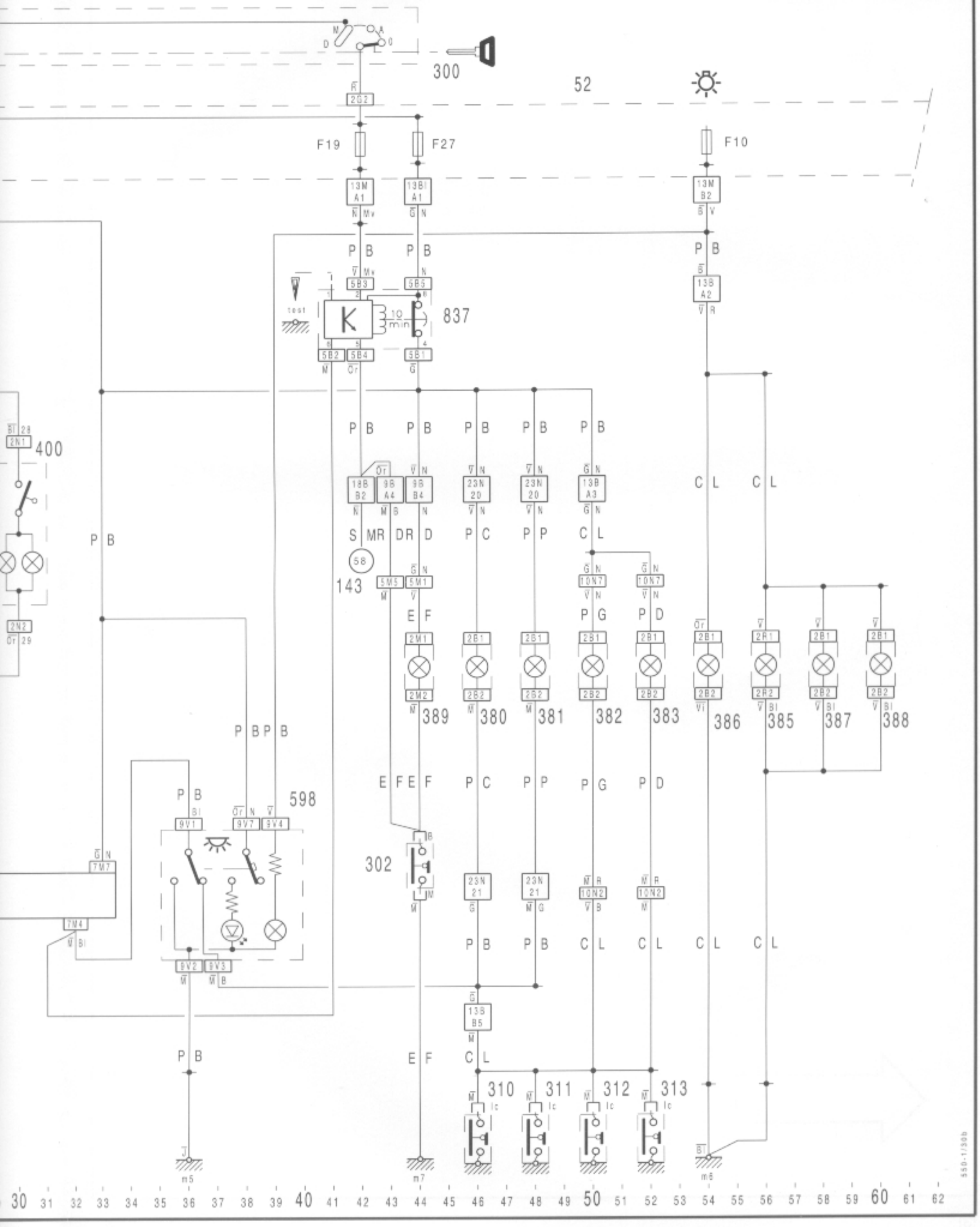
550-1/30a

30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

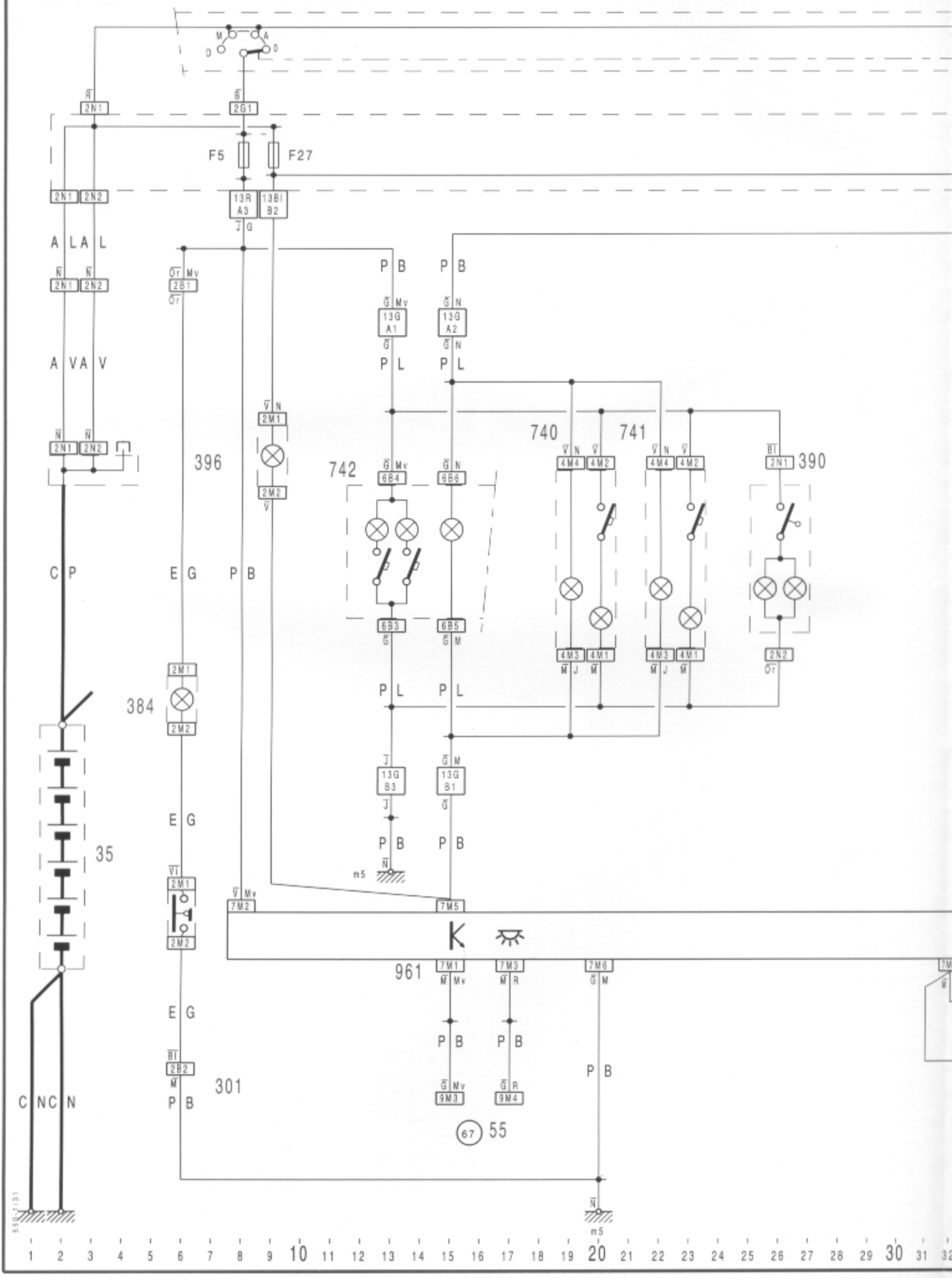
www.WorkshopManuals.co.uk



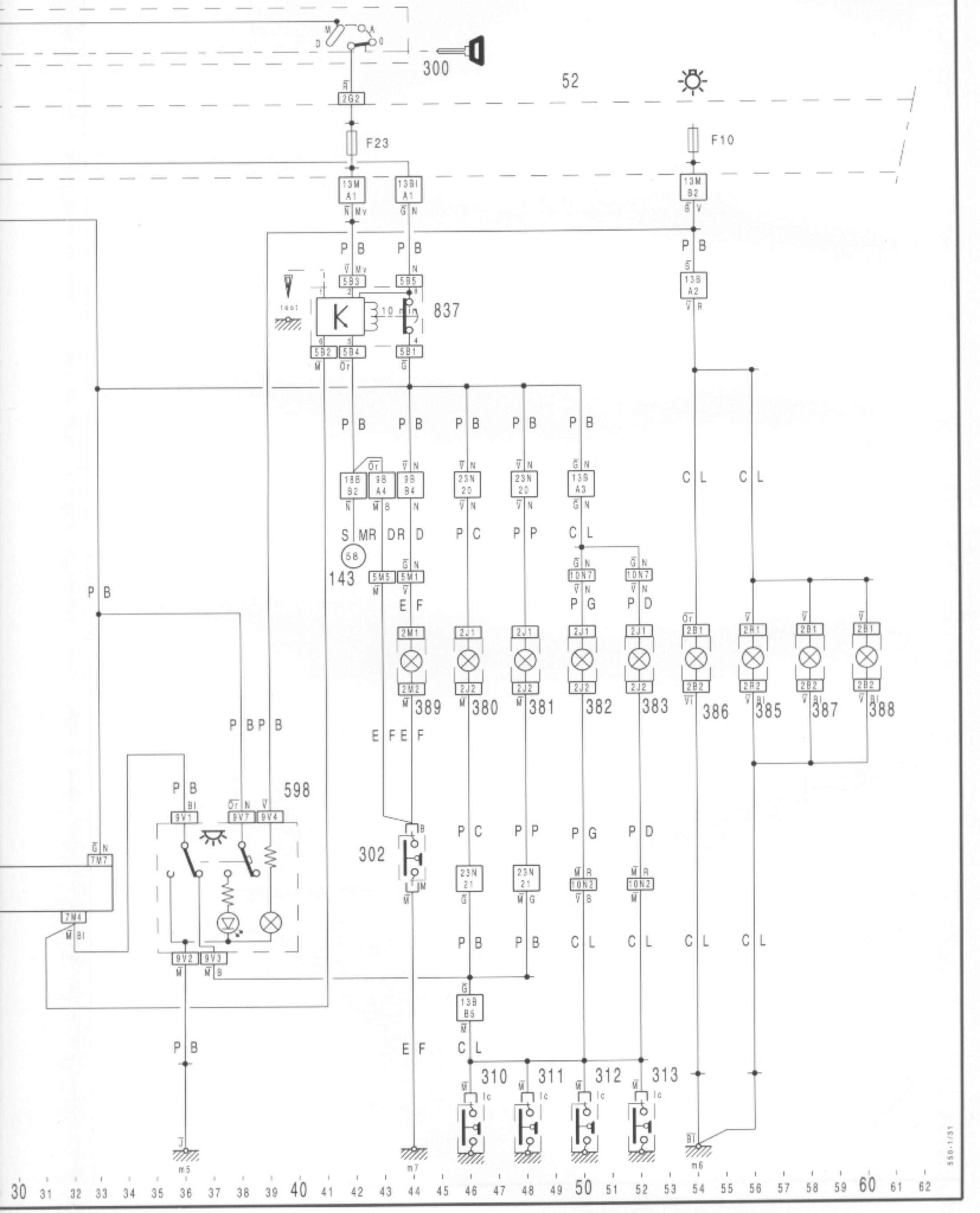
www.WorkshopManuals.co.uk



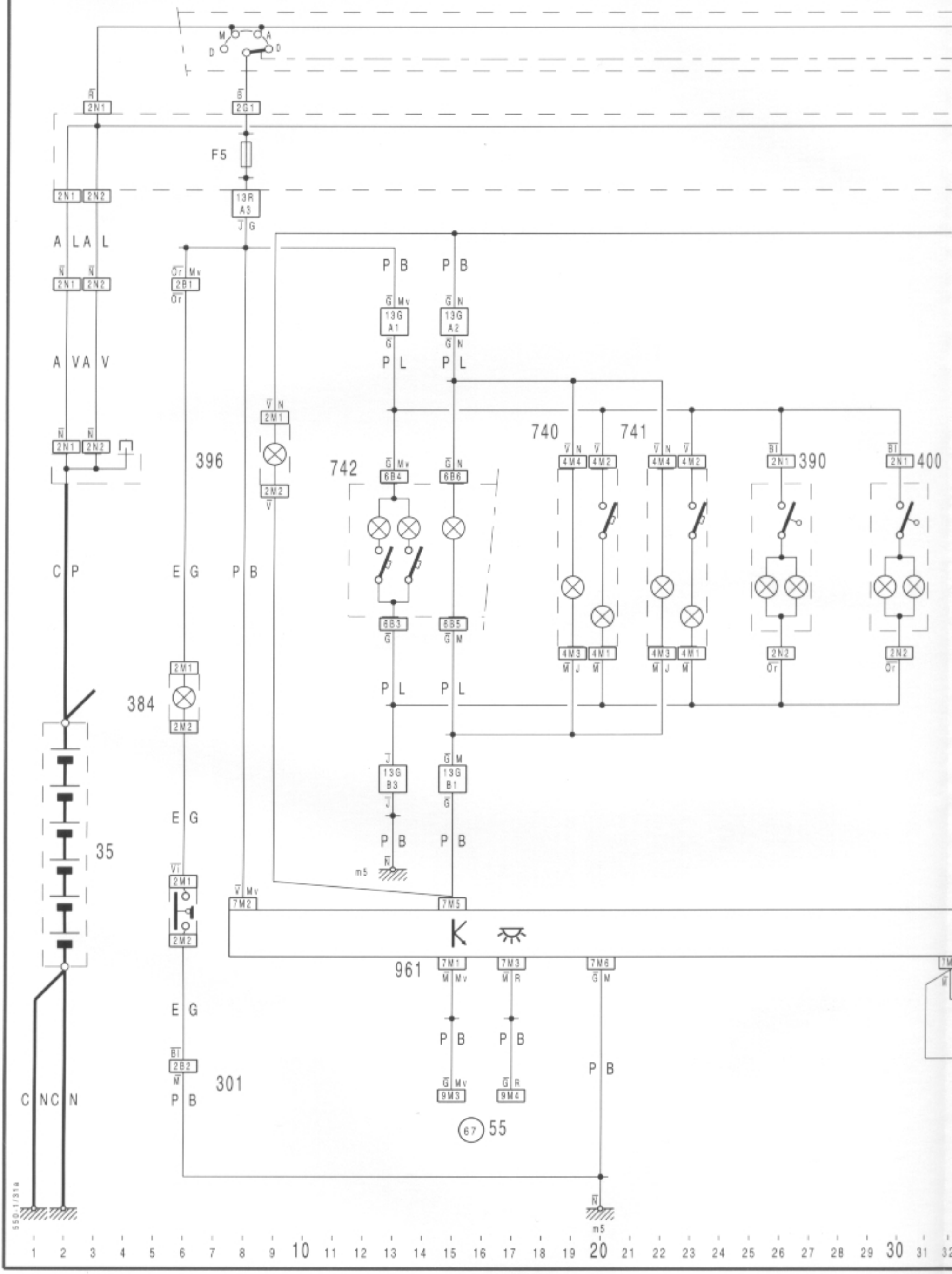
www.WorkshopManuals.co.uk



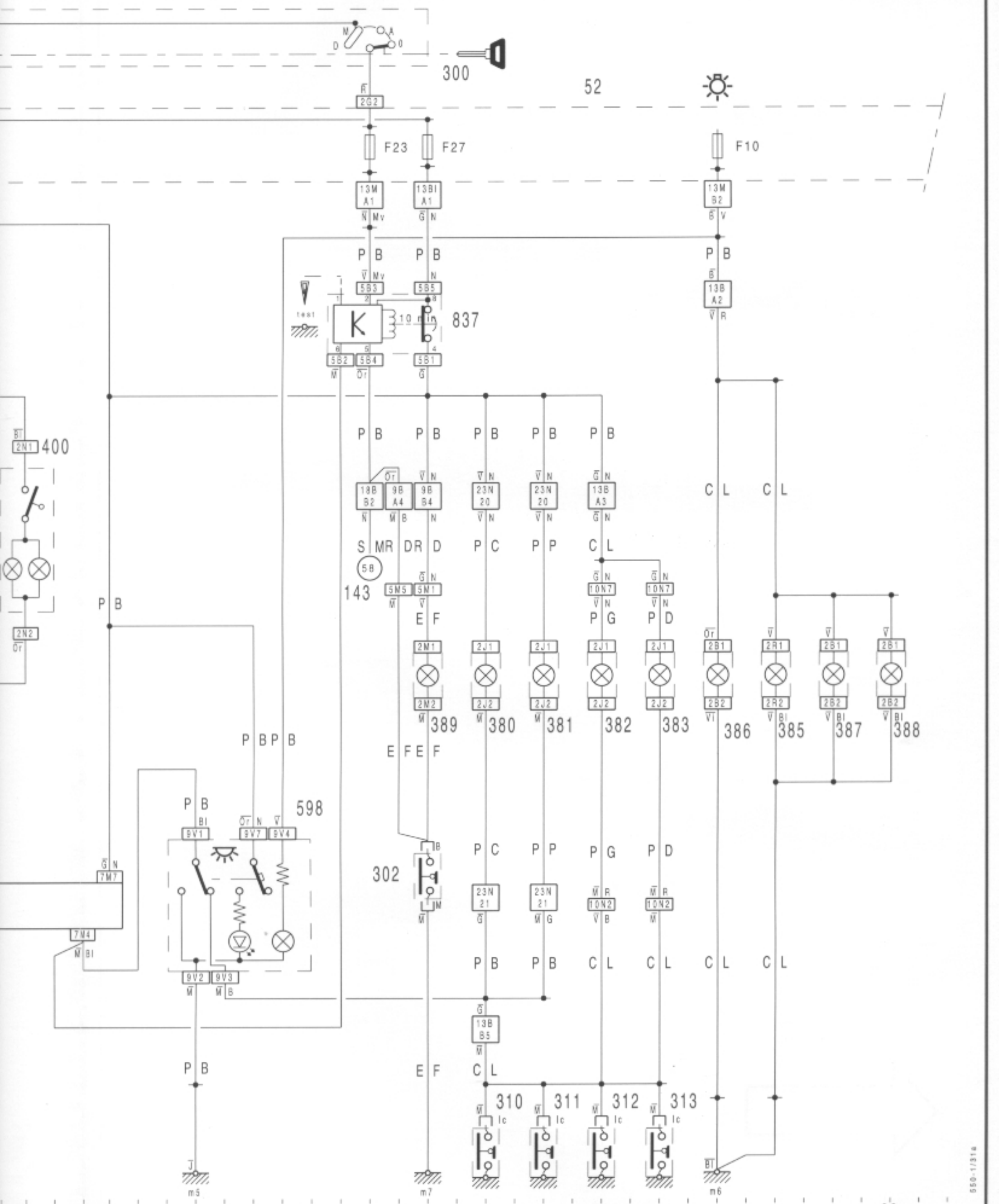
www.WorkshopManuals.co.uk



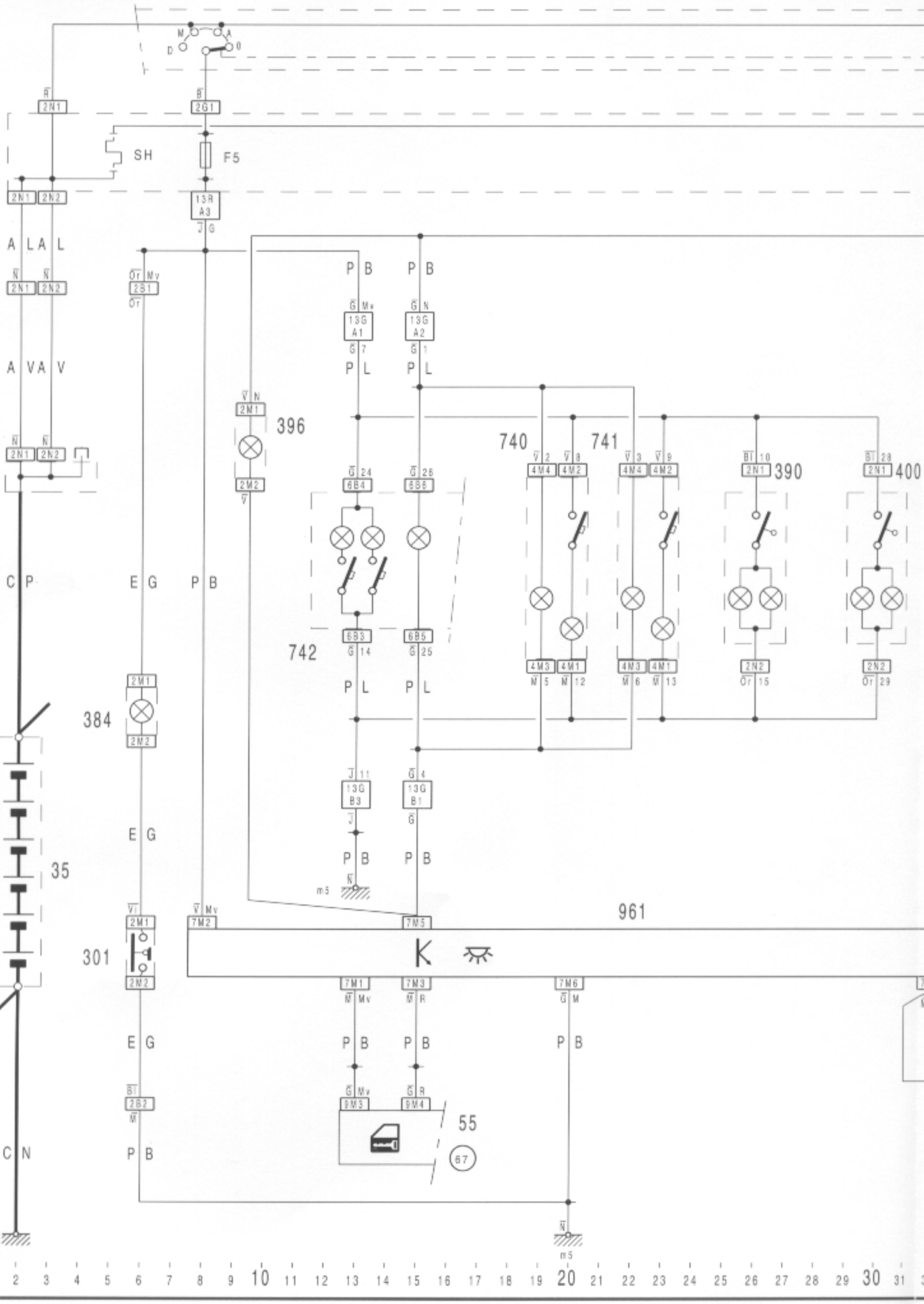
www.WorkshopManuals.co.uk



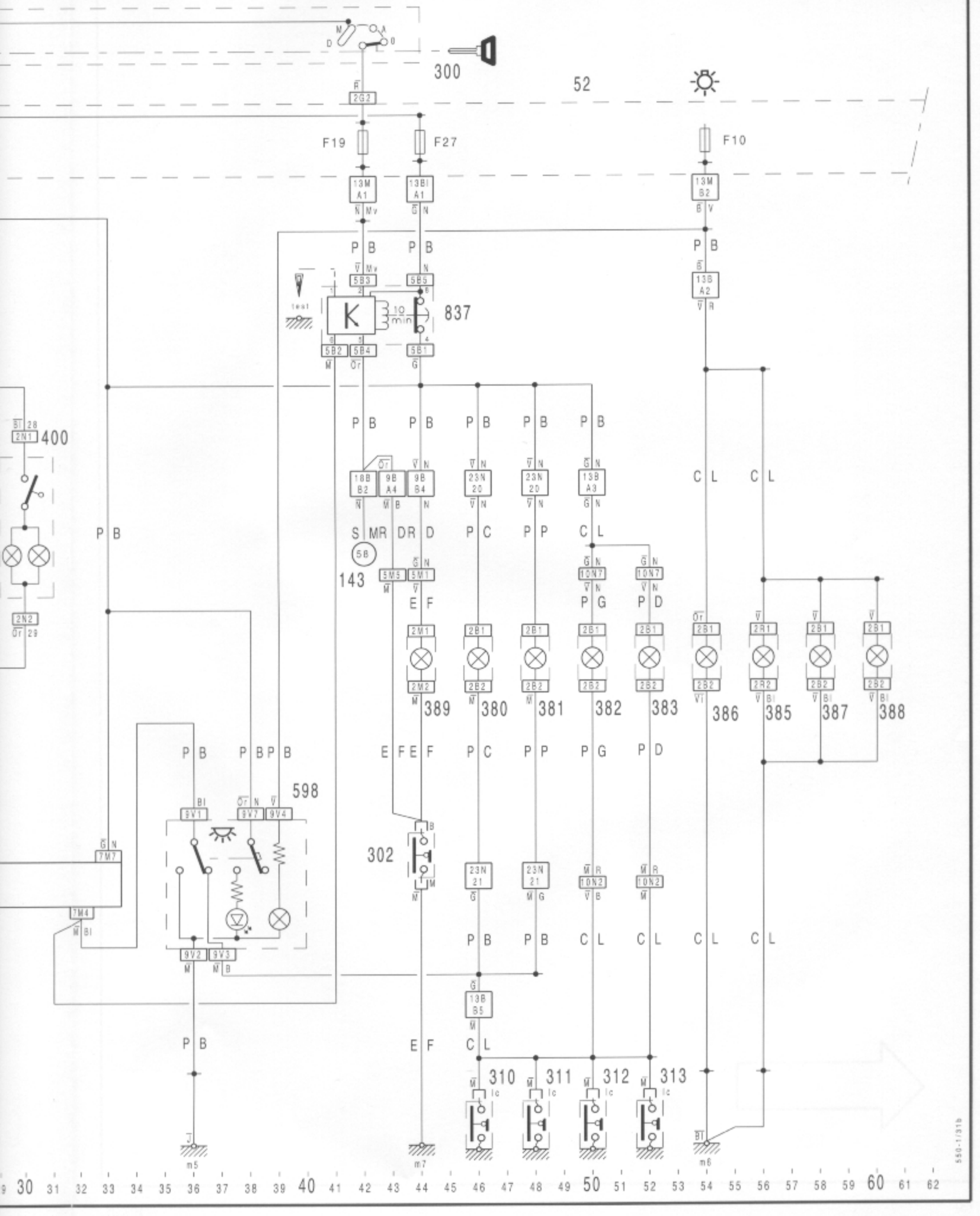
www.WorkshopManuals.co.uk



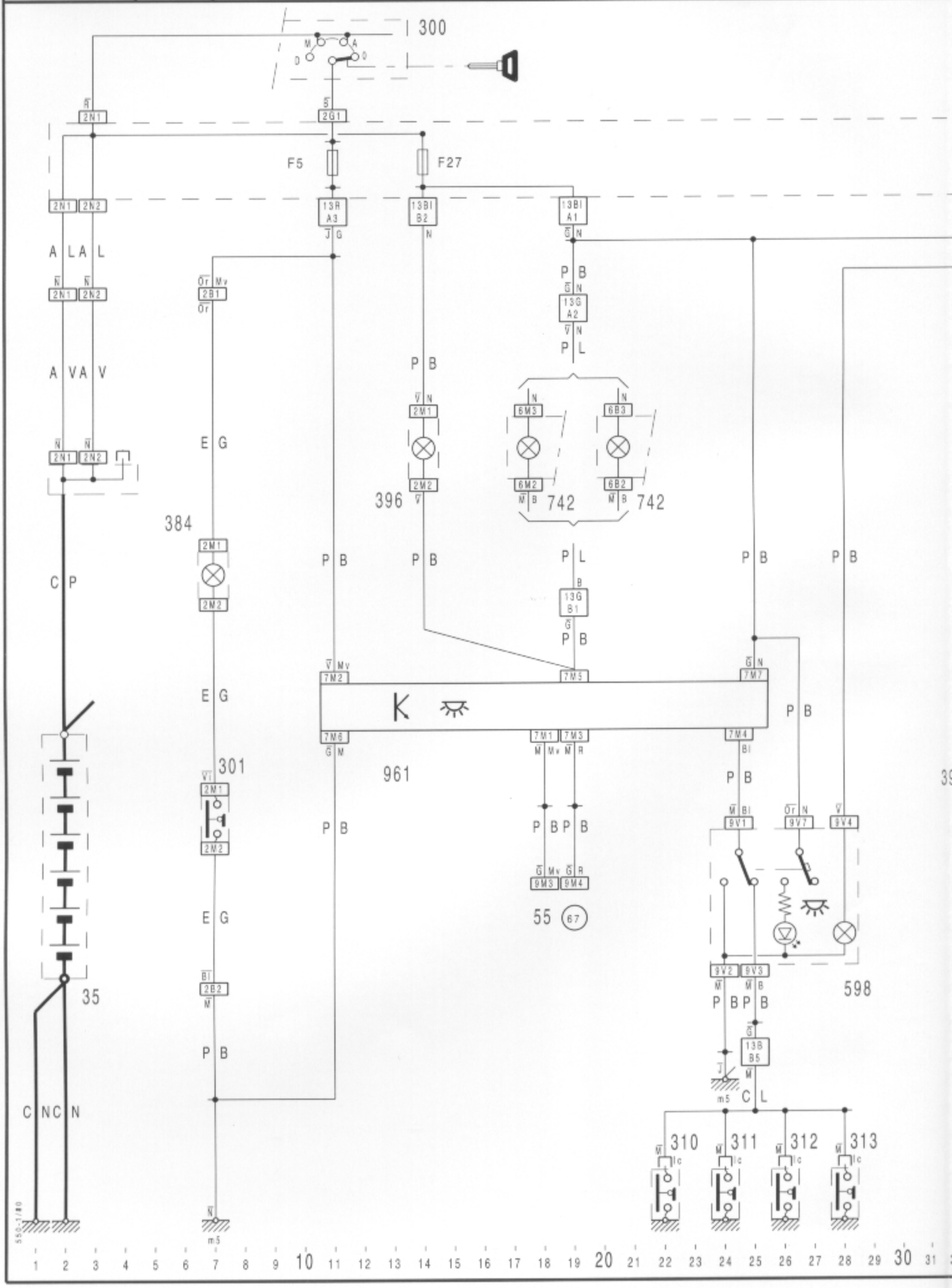
www.WorkshopManuals.co.uk



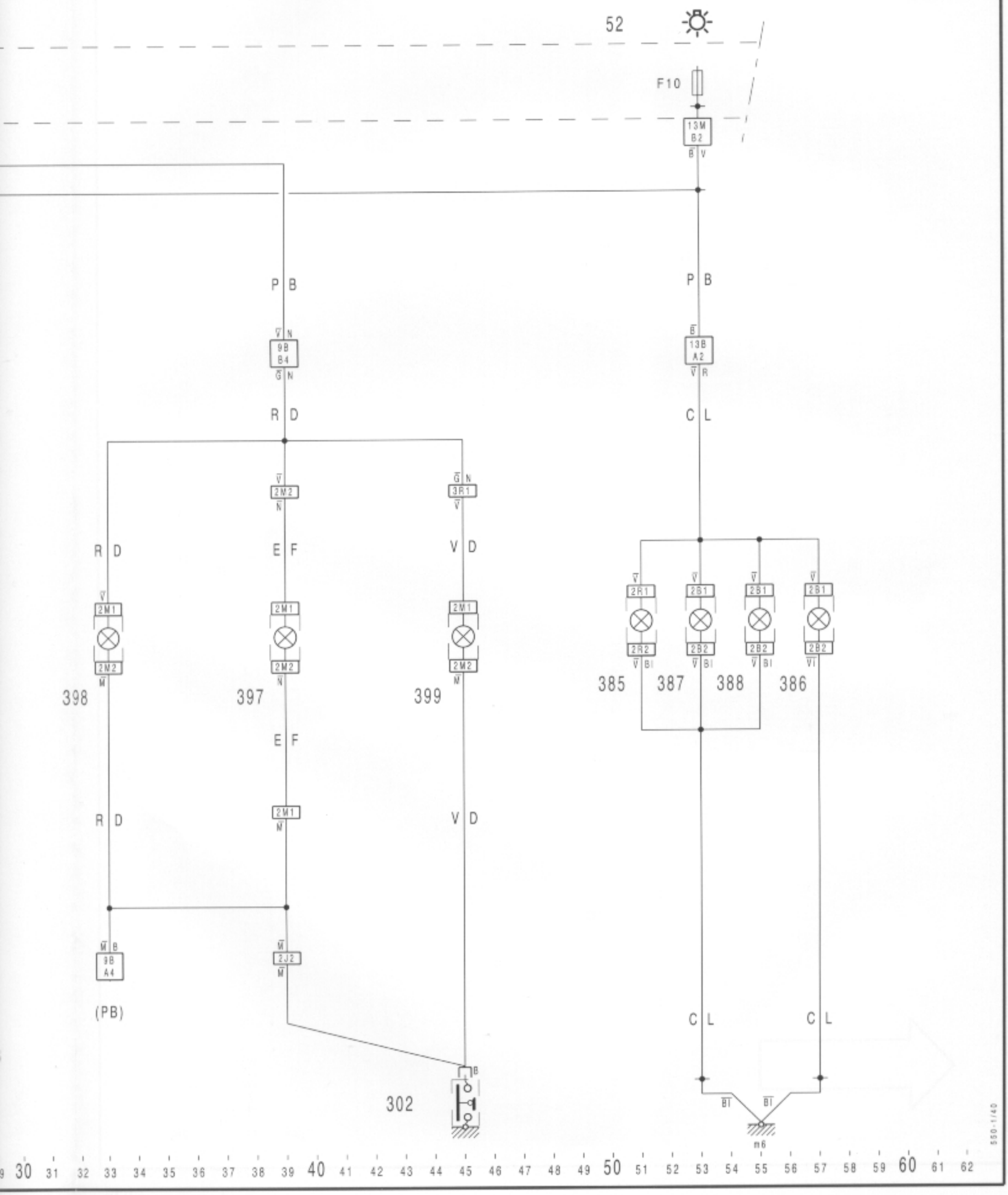
www.WorkshopManuals.co.uk



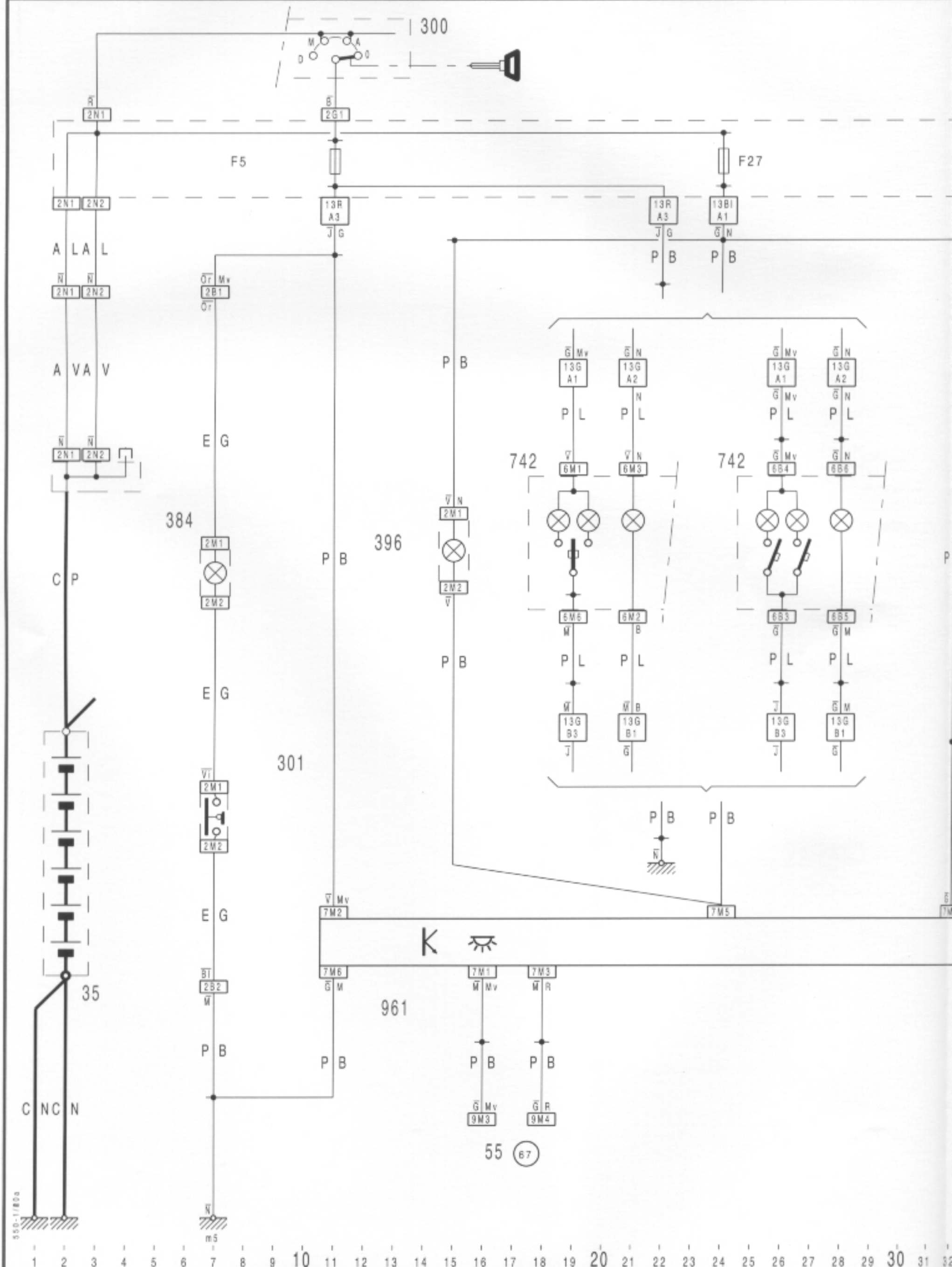
www.WorkshopManuals.co.uk



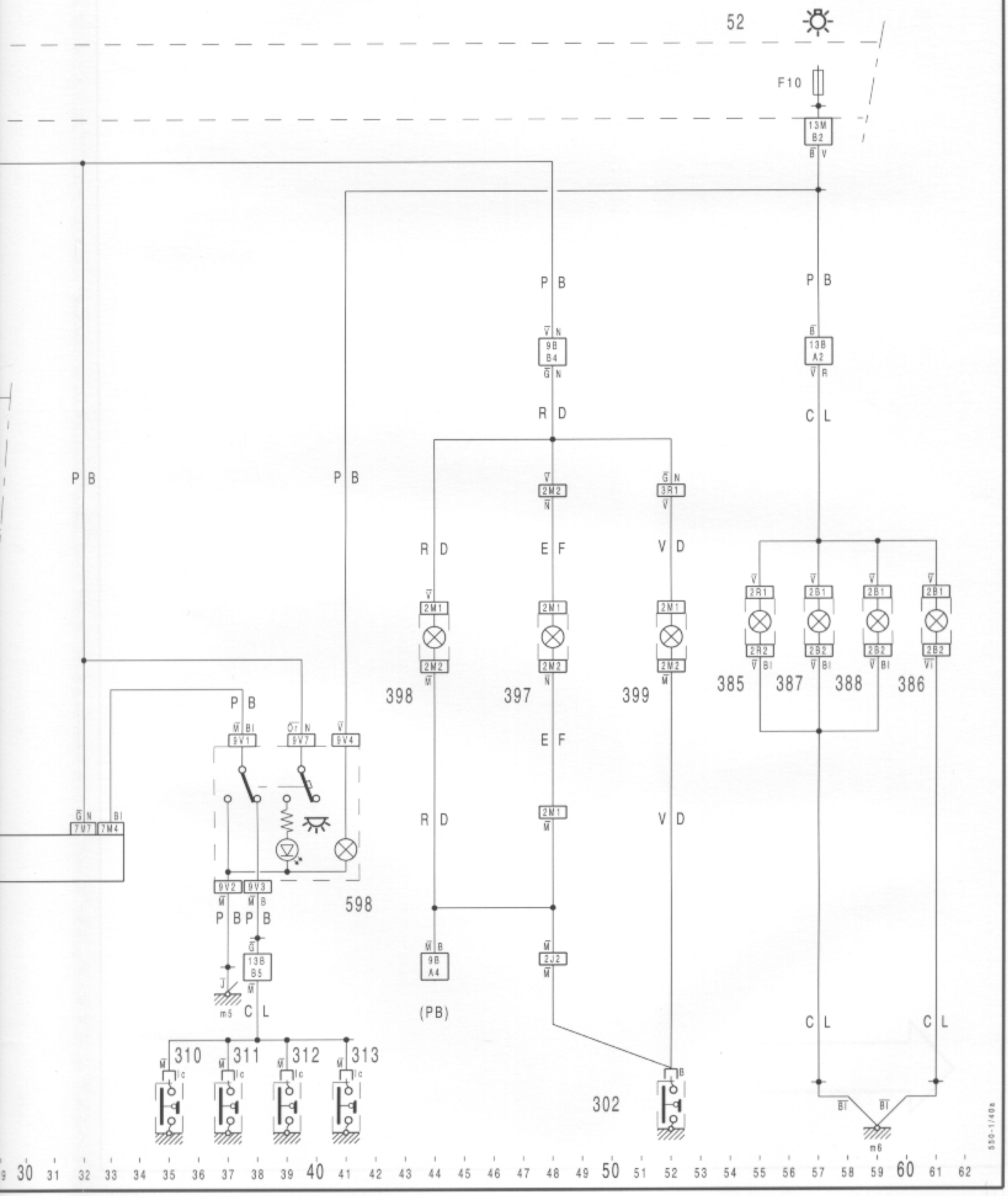
www.WorkshopManuals.co.uk



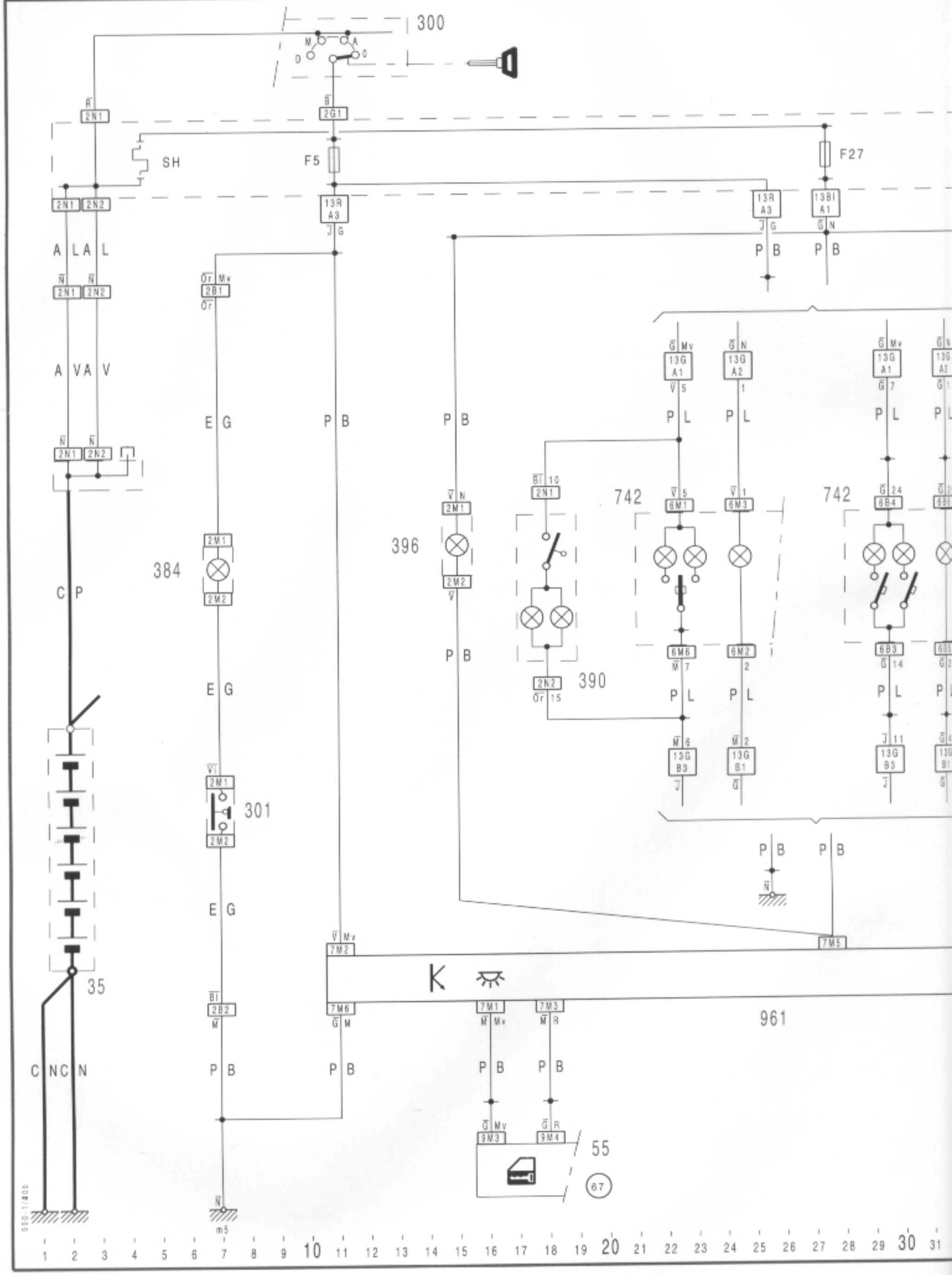
www.WorkshopManuals.co.uk



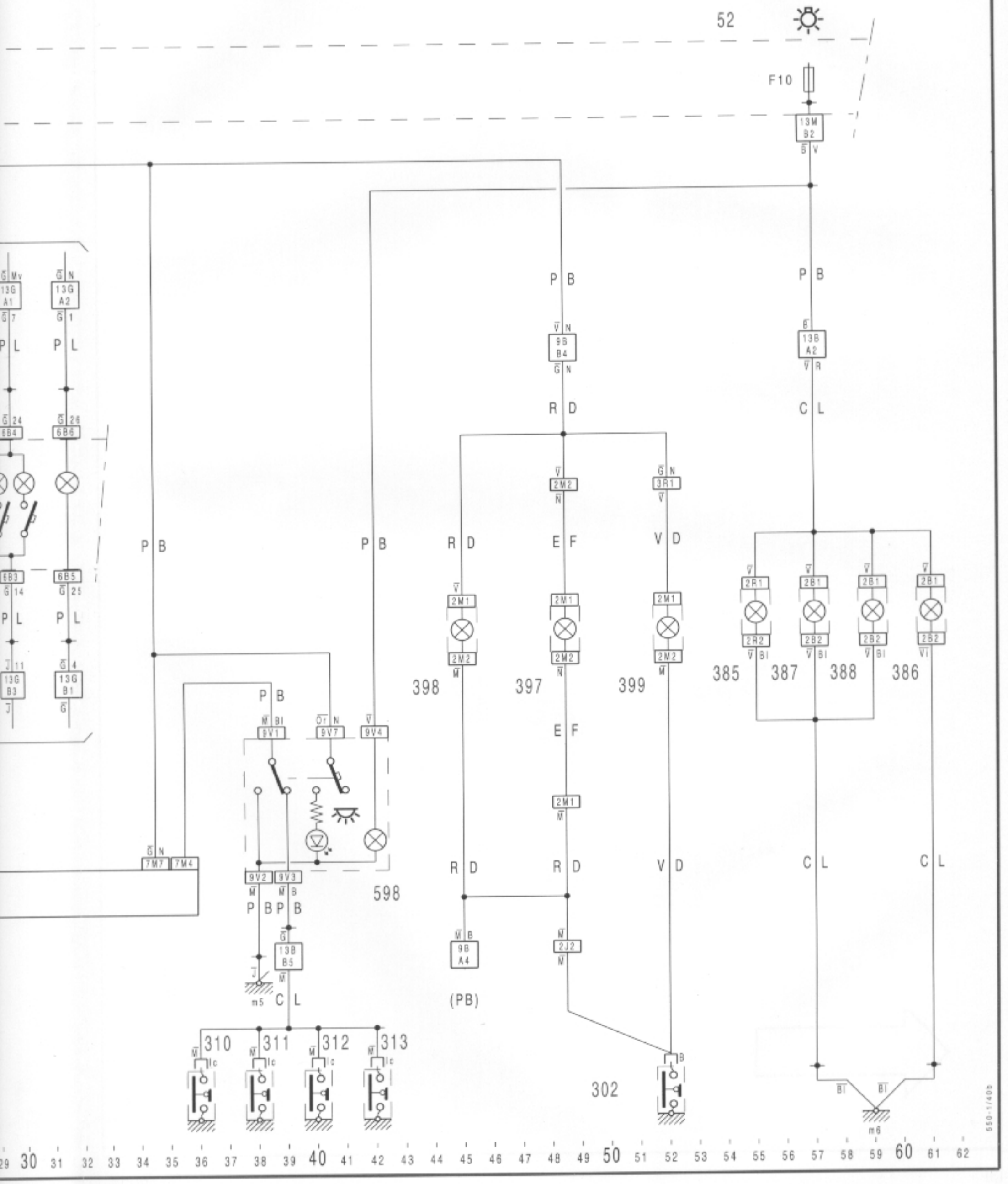
www.WorkshopManuals.co.uk



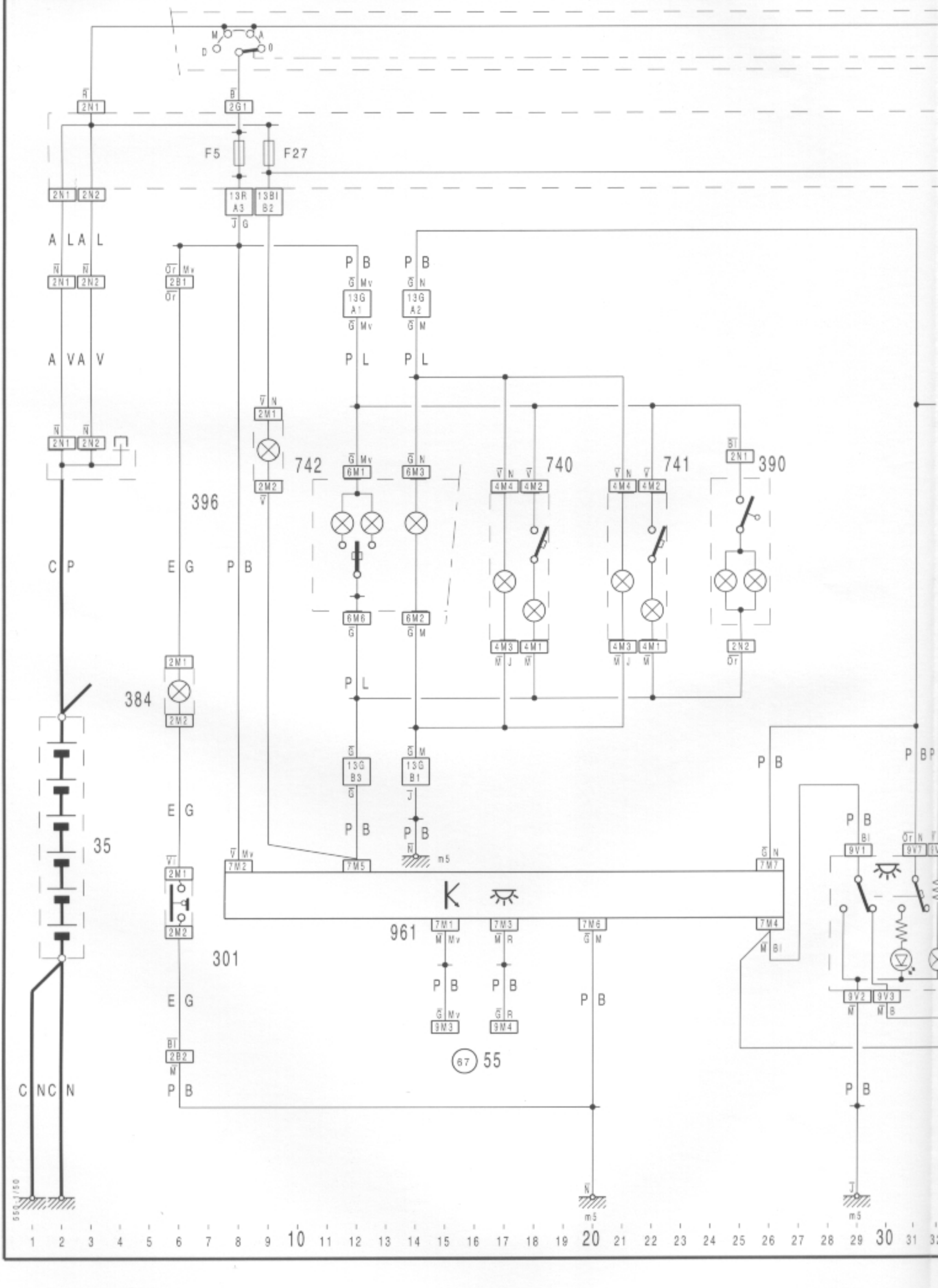
www.WorkshopManuals.co.uk



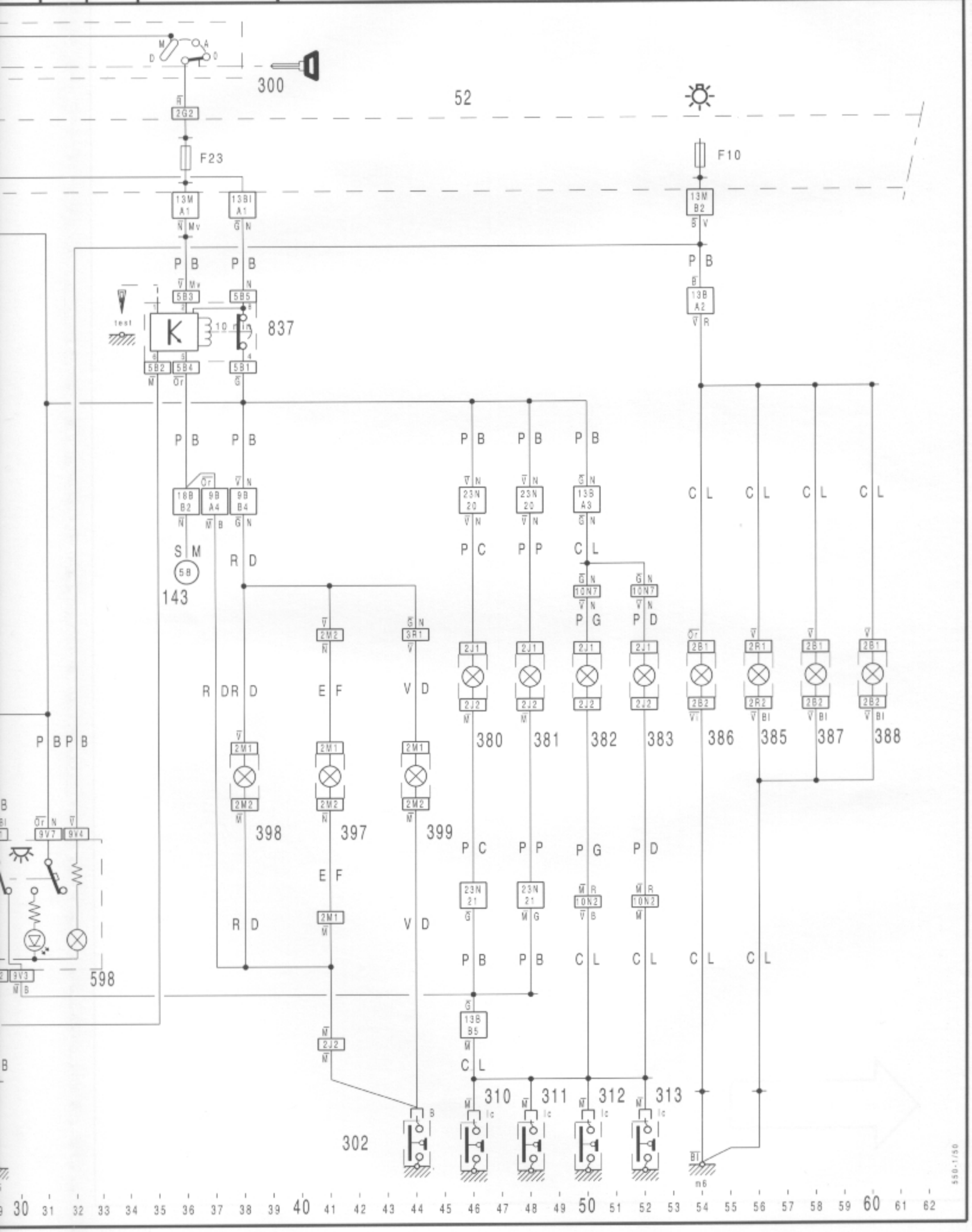
www.WorkshopManuals.co.uk



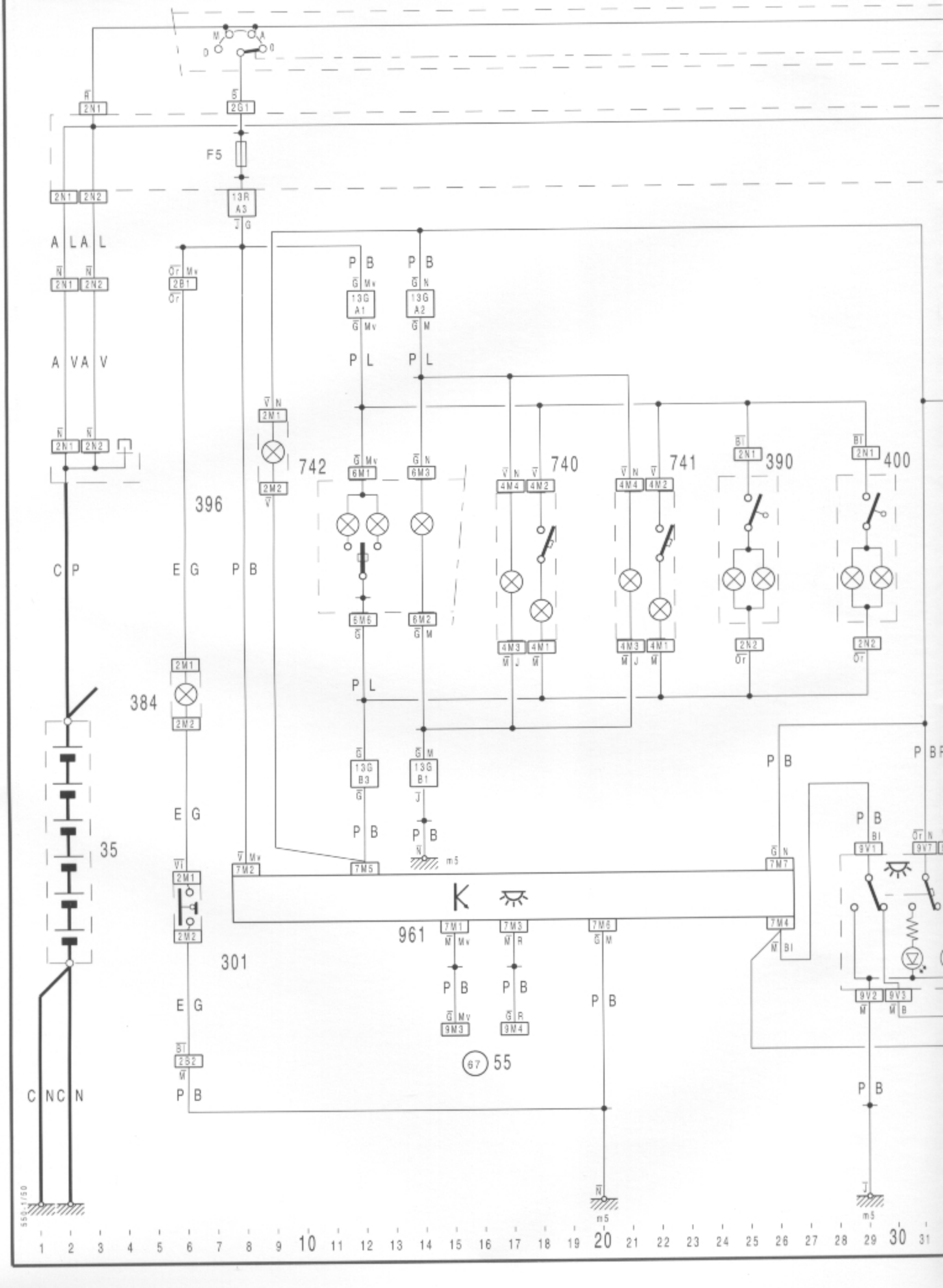
www.WorkshopManuals.co.uk



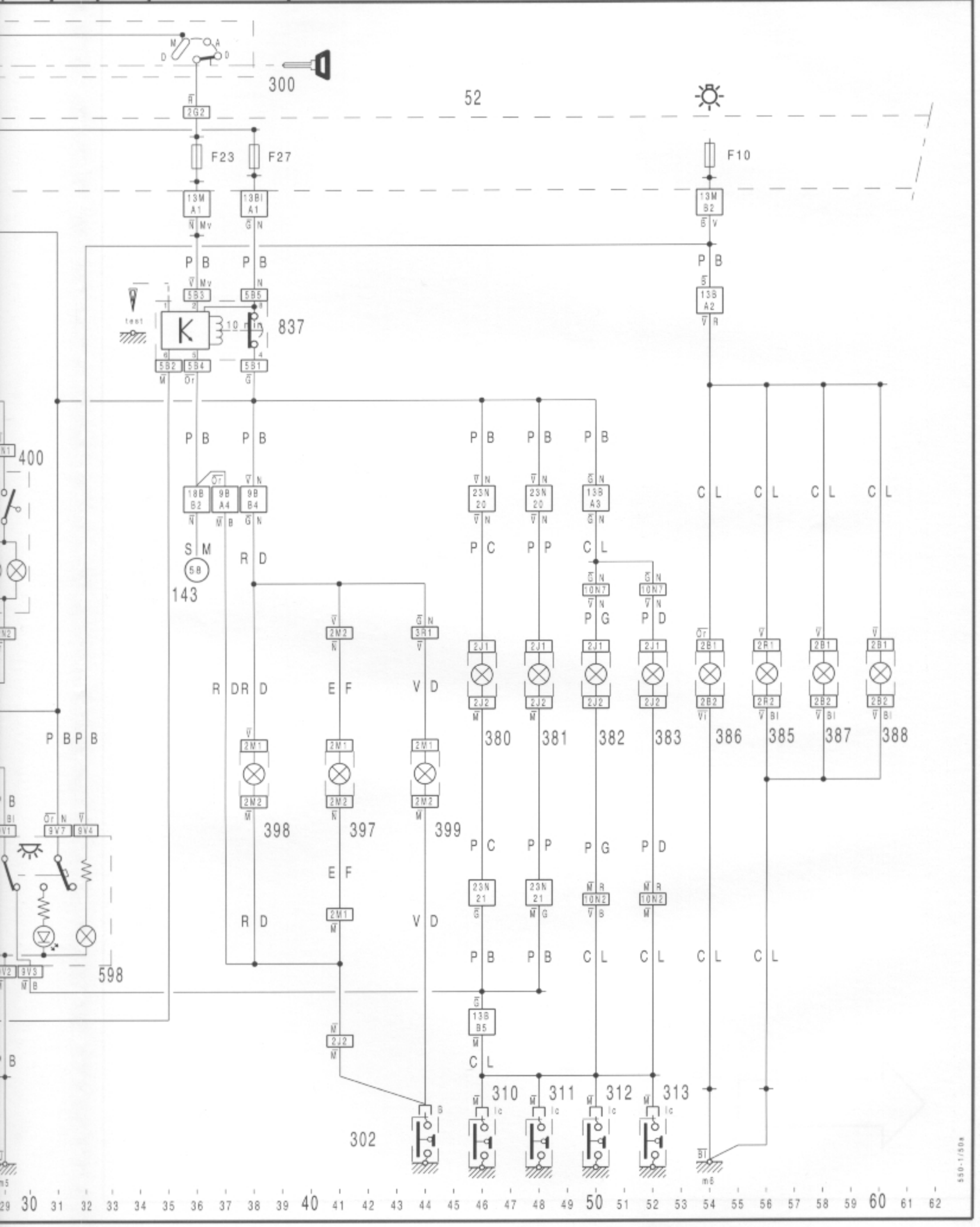
www.WorkshopManuals.co.uk



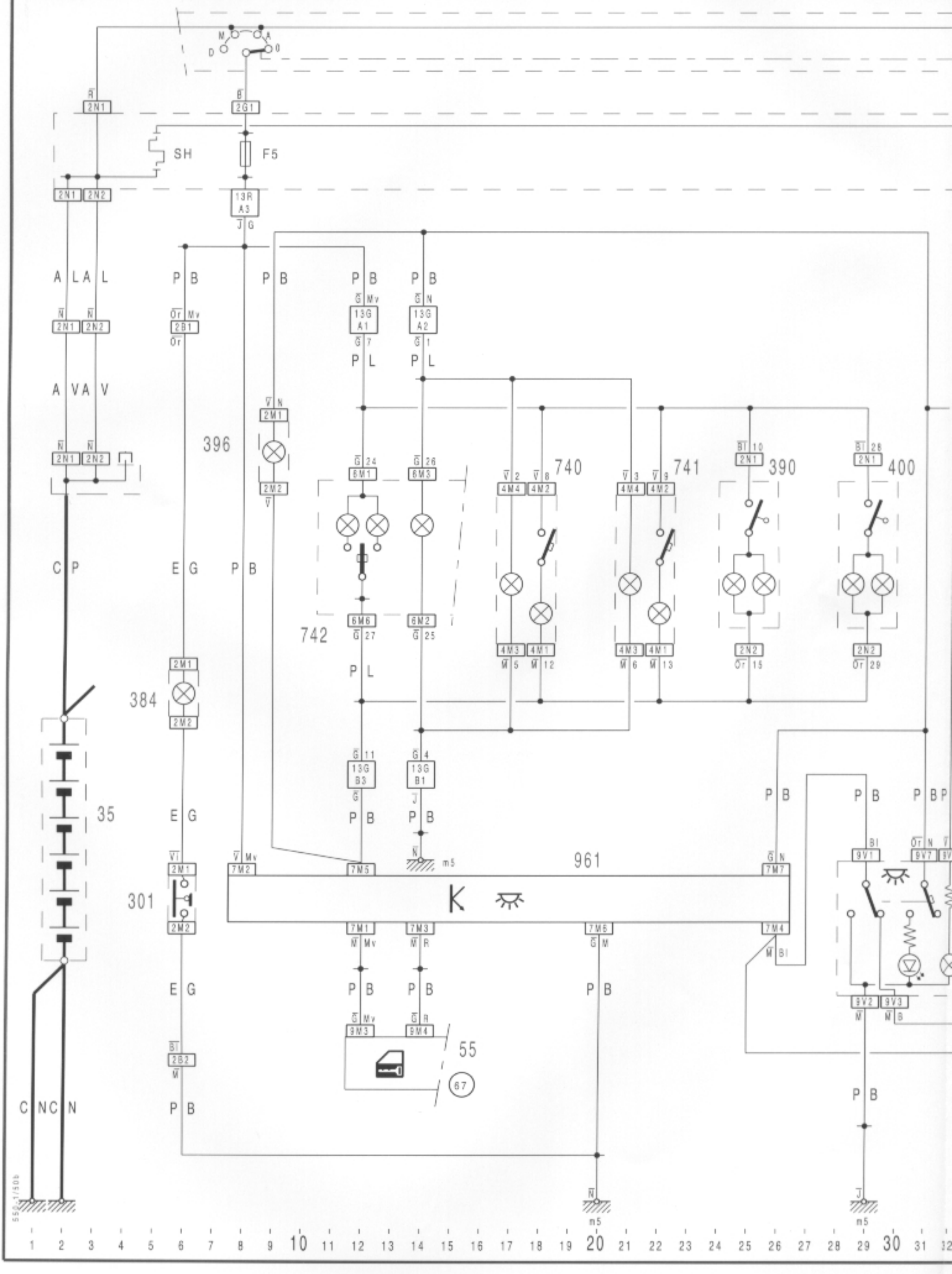
www.WorkshopManuals.co.uk



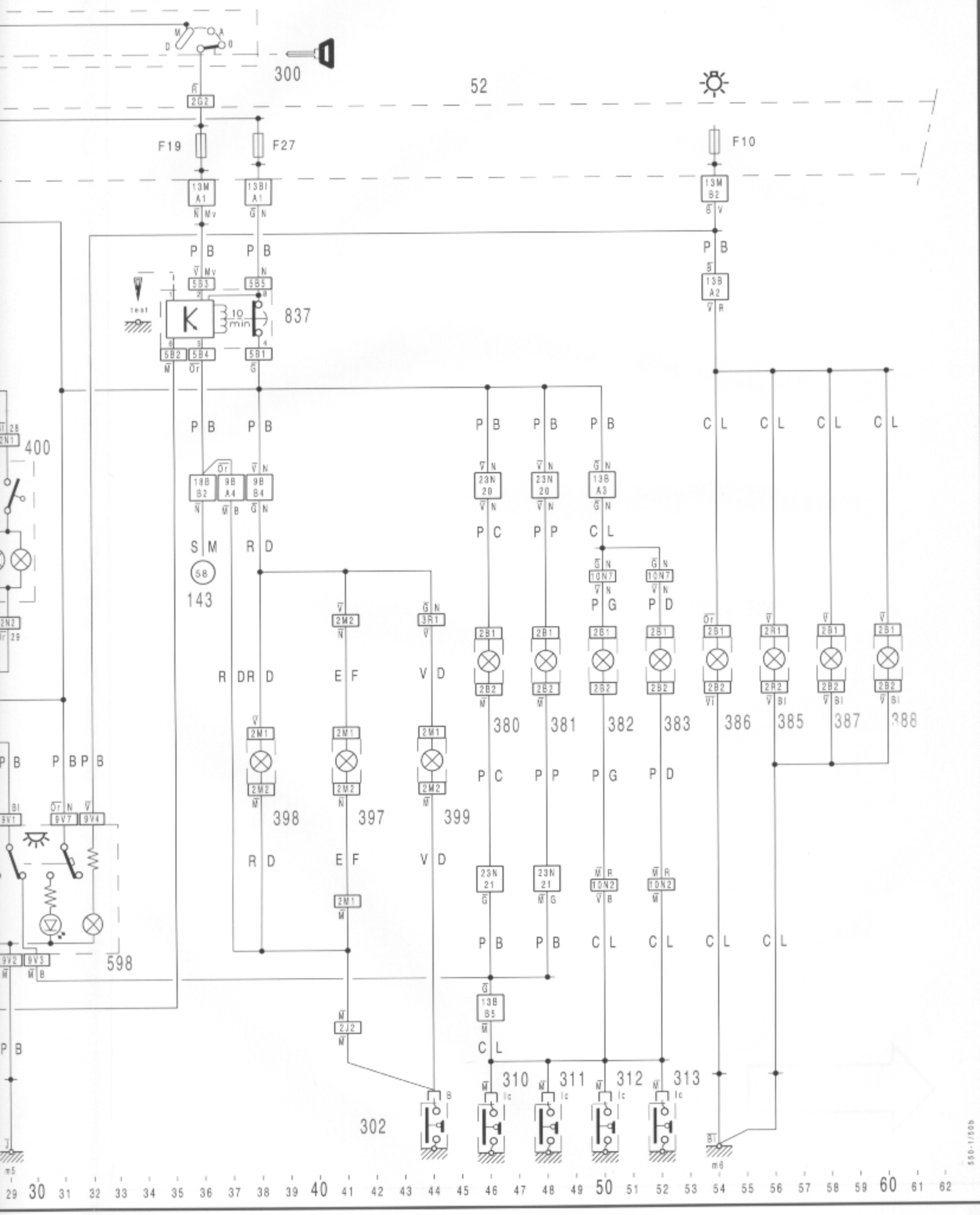
www.WorkshopManuals.co.uk



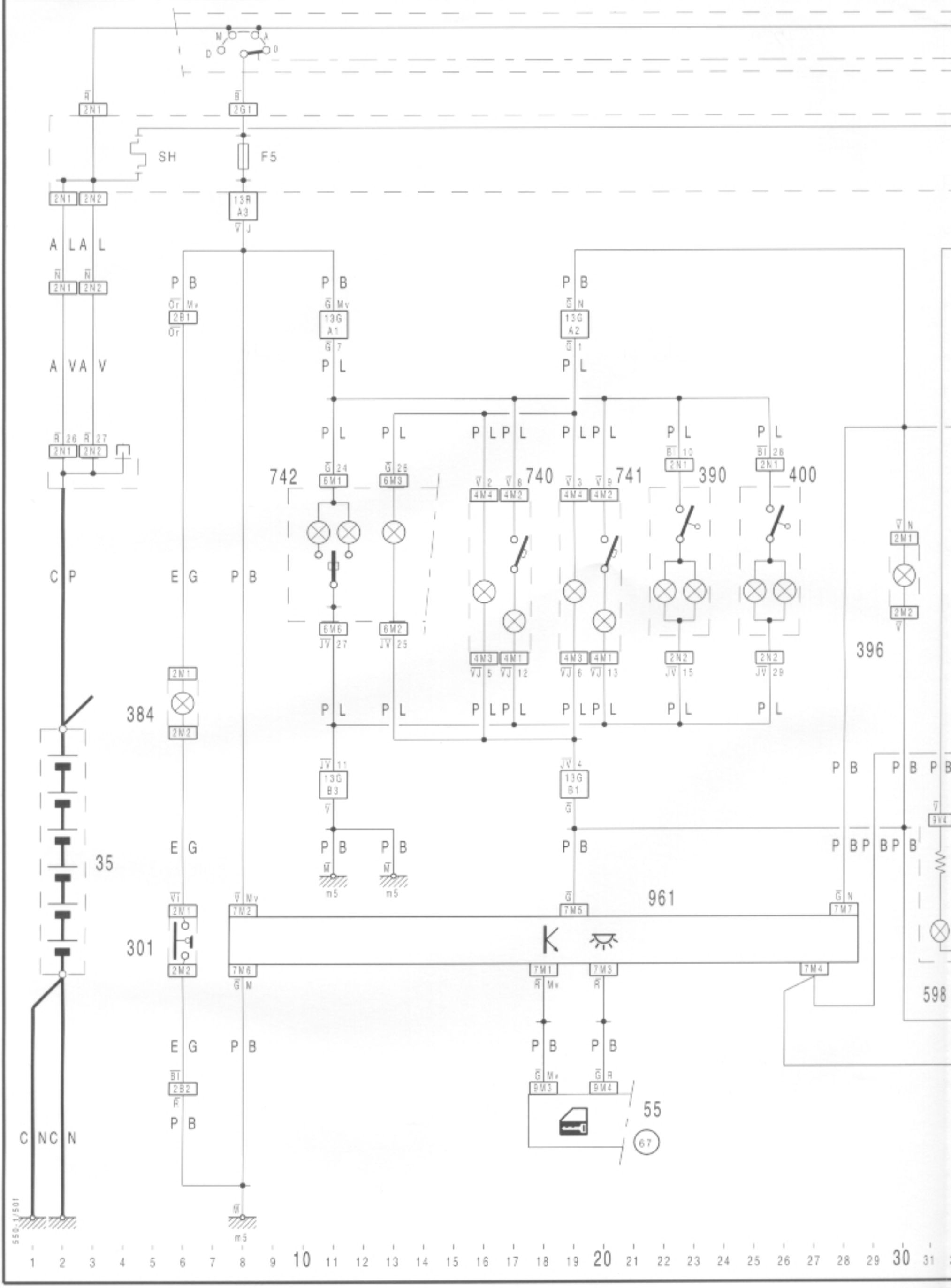
www.WorkshopManuals.co.uk



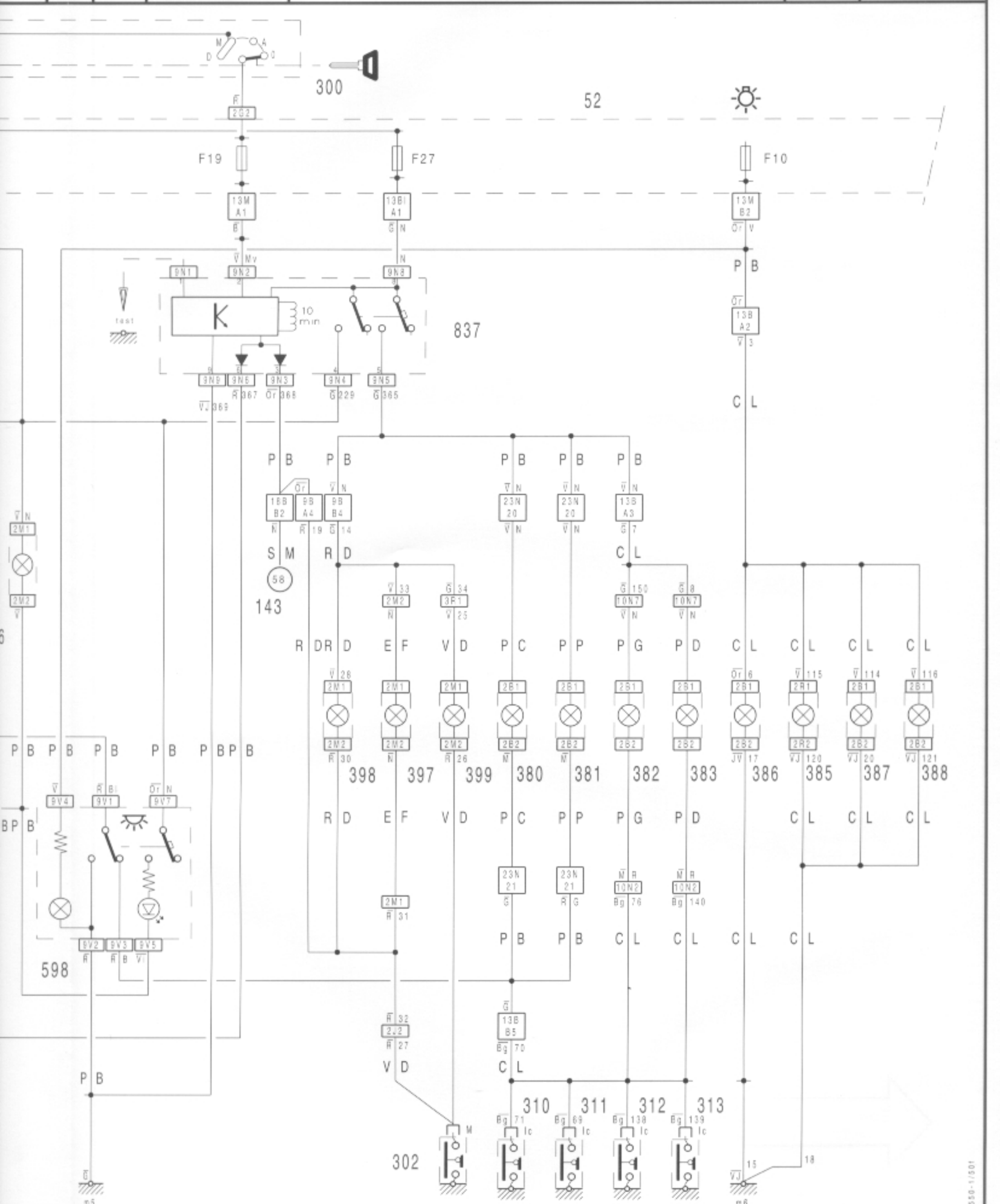
www.WorkshopManuals.co.uk



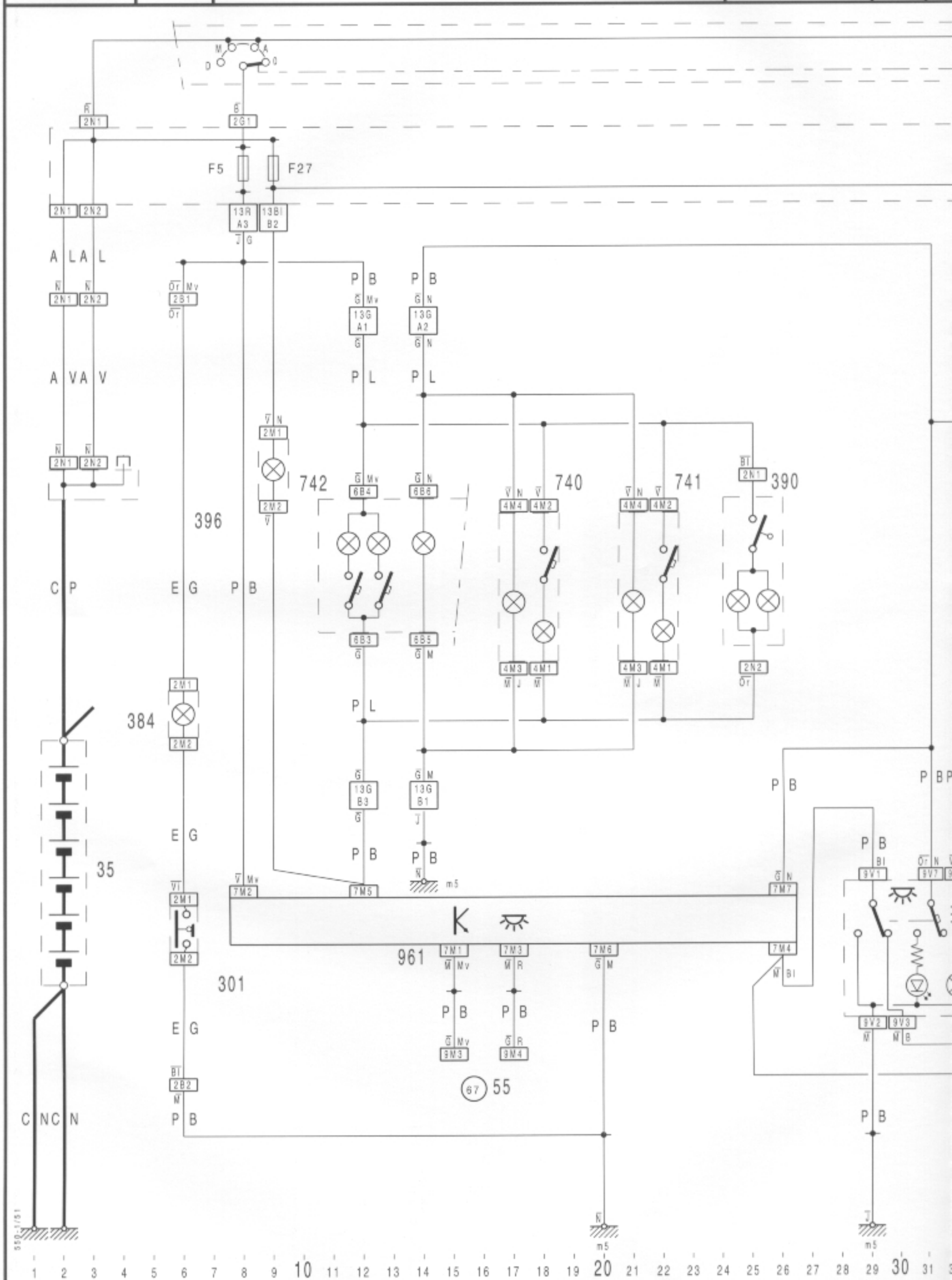
www.WorkshopManuals.co.uk



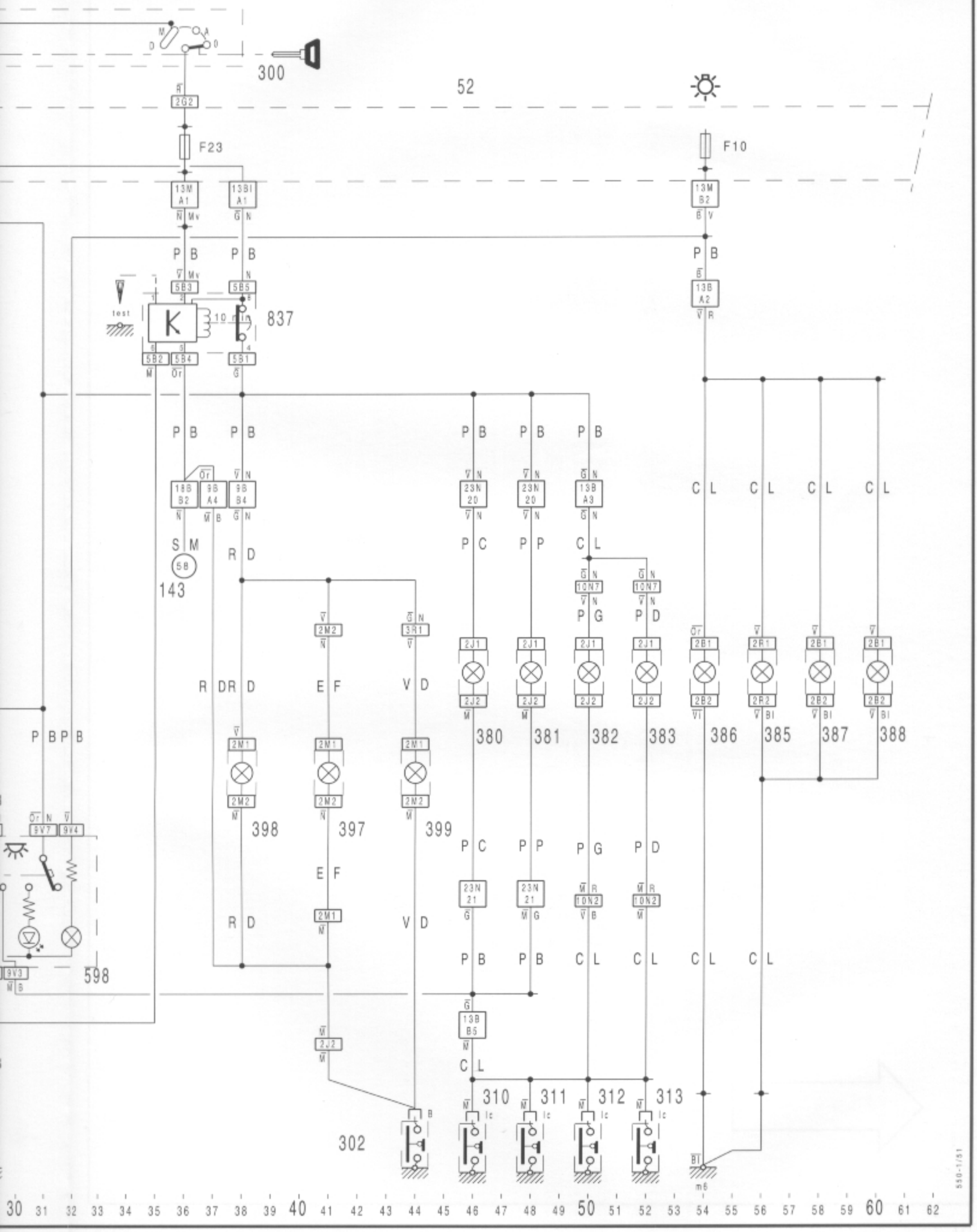
www.WorkshopManuals.co.uk



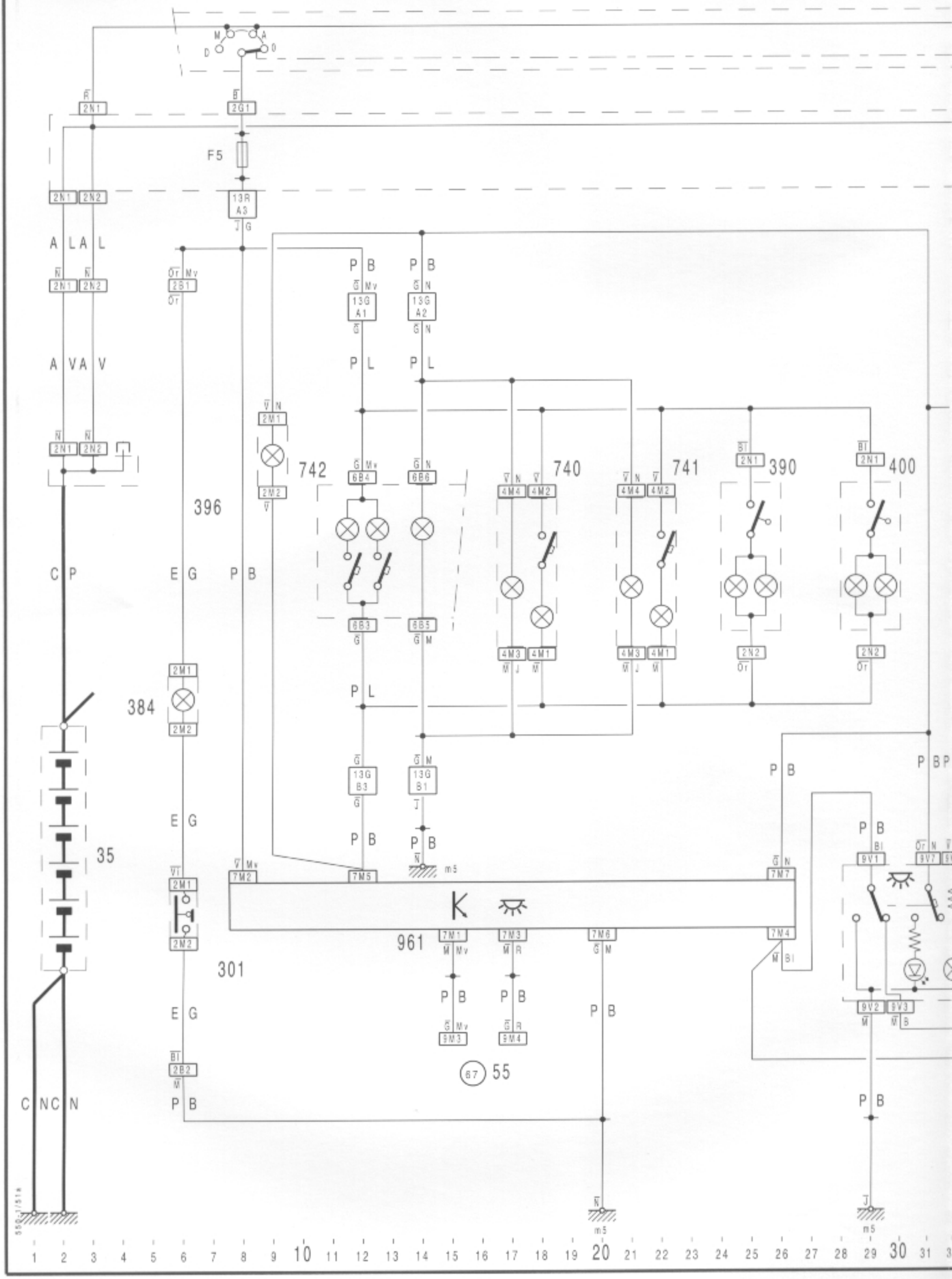
www.WorkshopManuals.co.uk



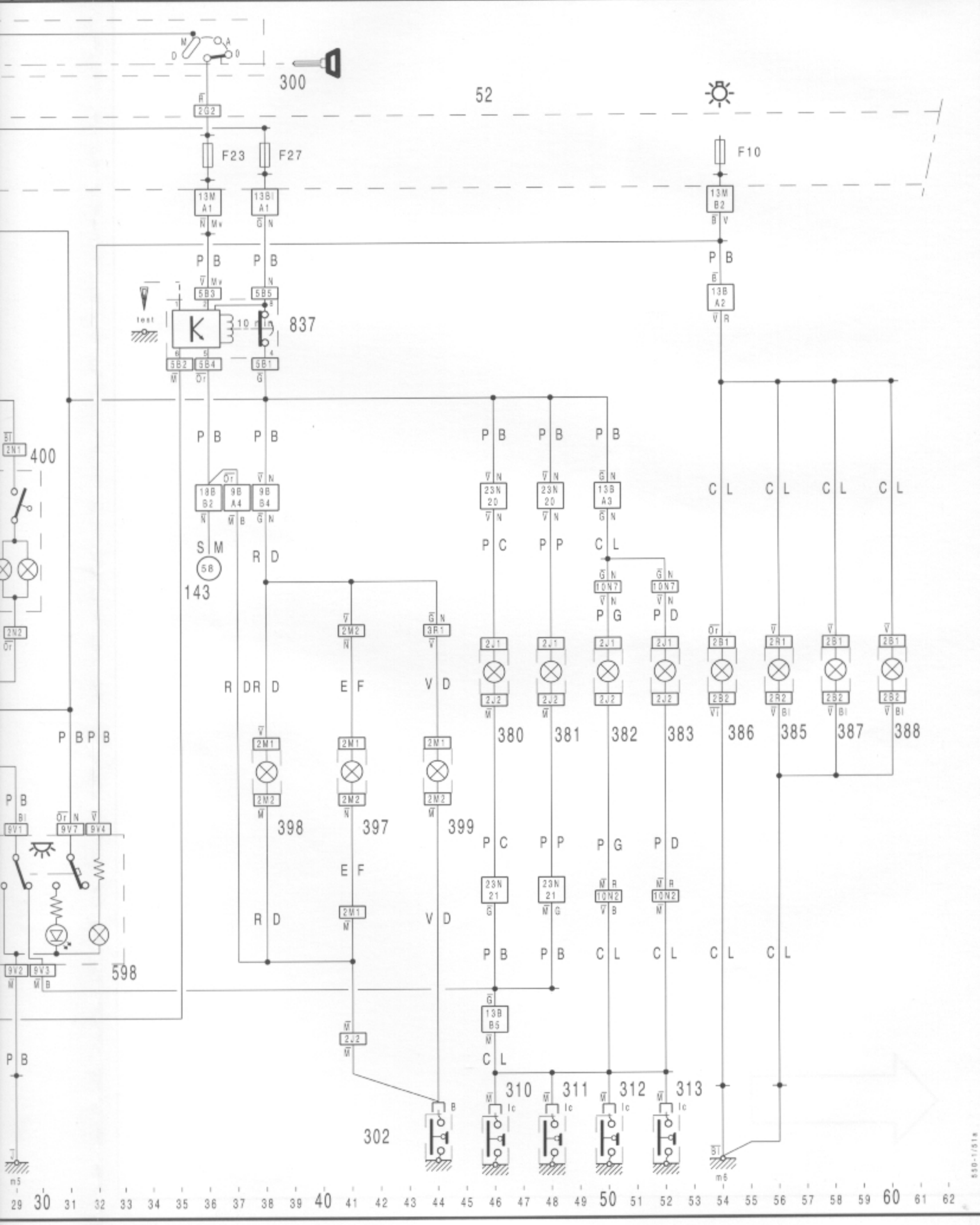
www.WorkshopManuals.co.uk



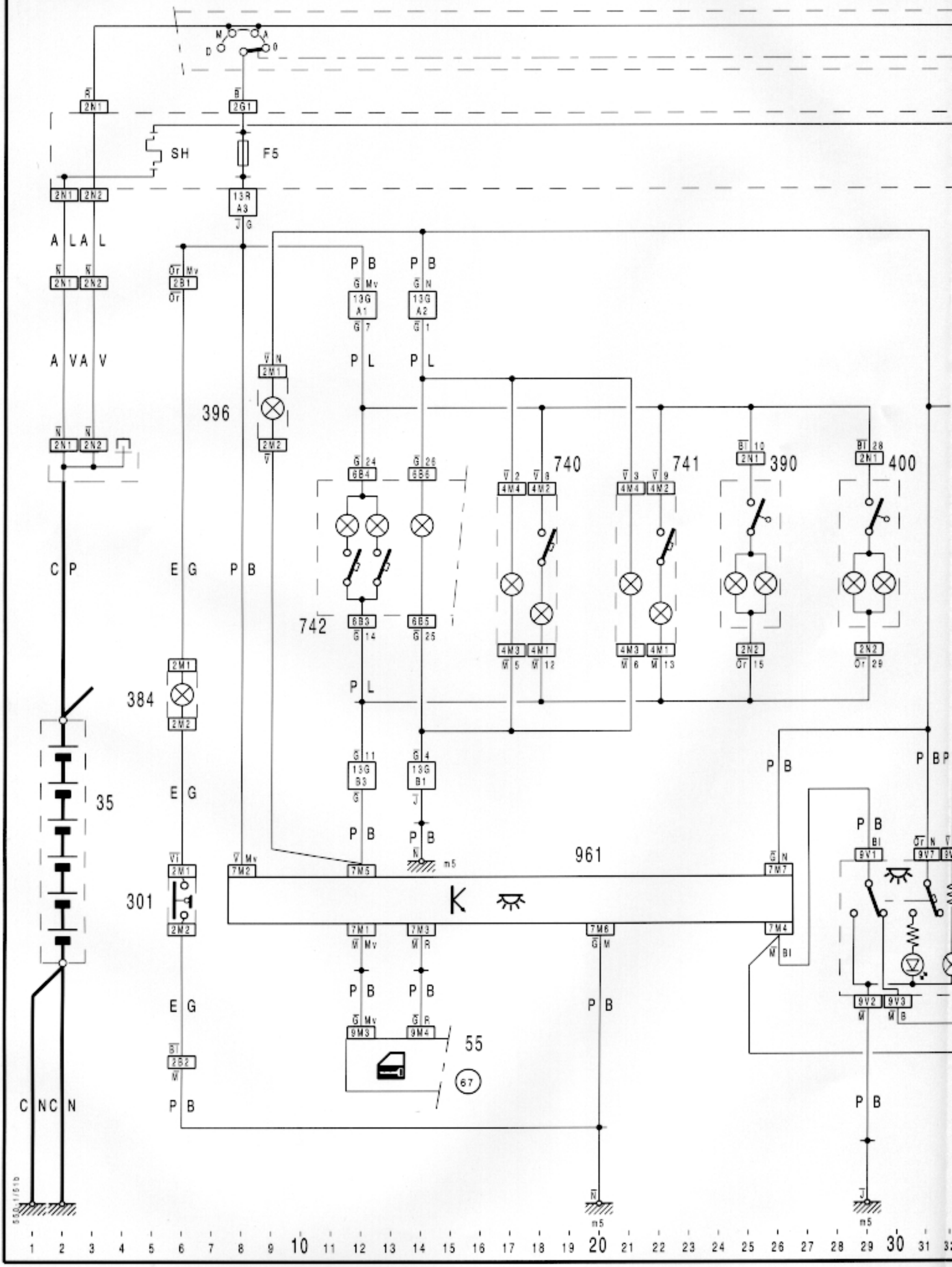
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



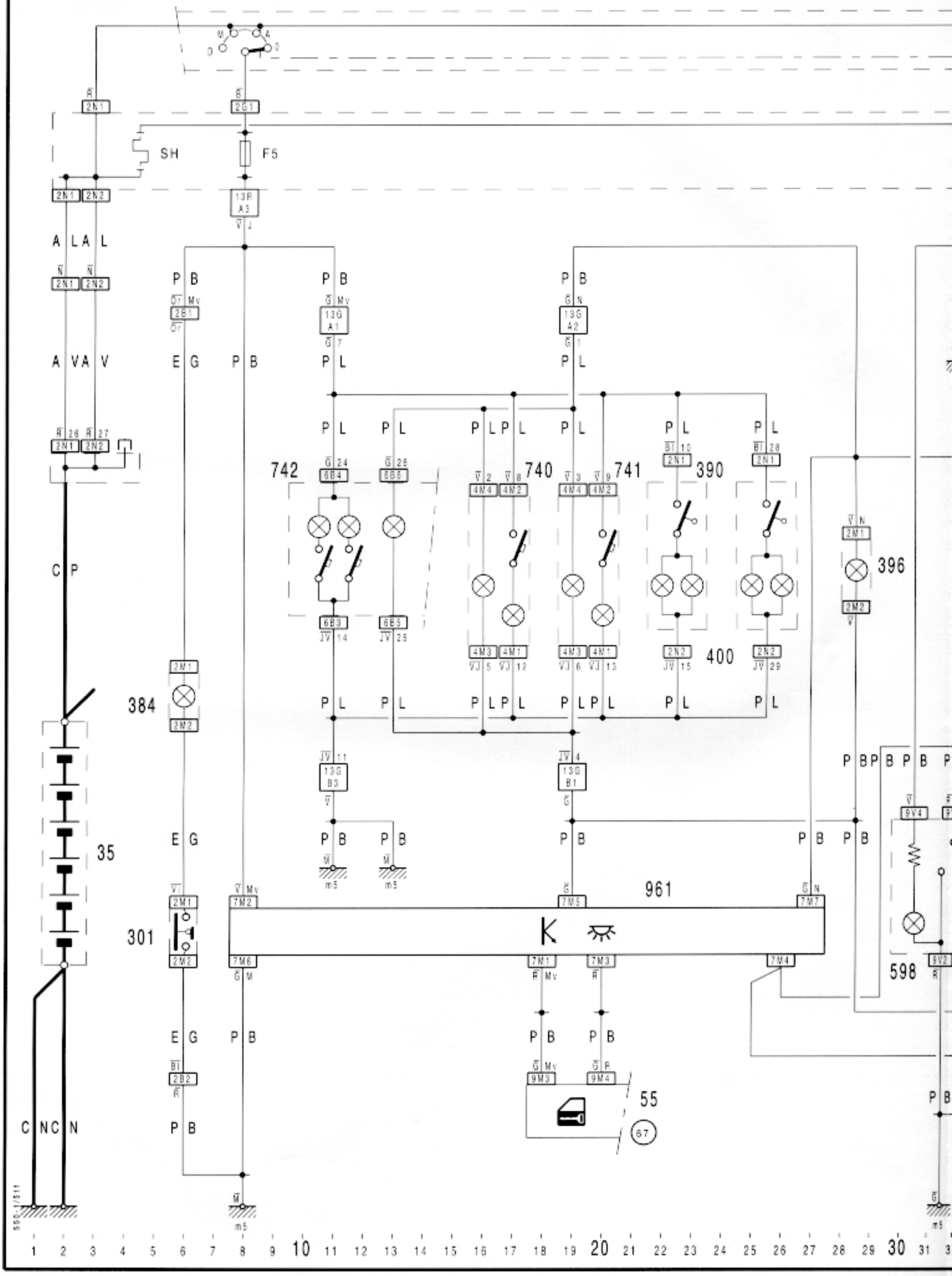
www.WorkshopManuals.co.uk



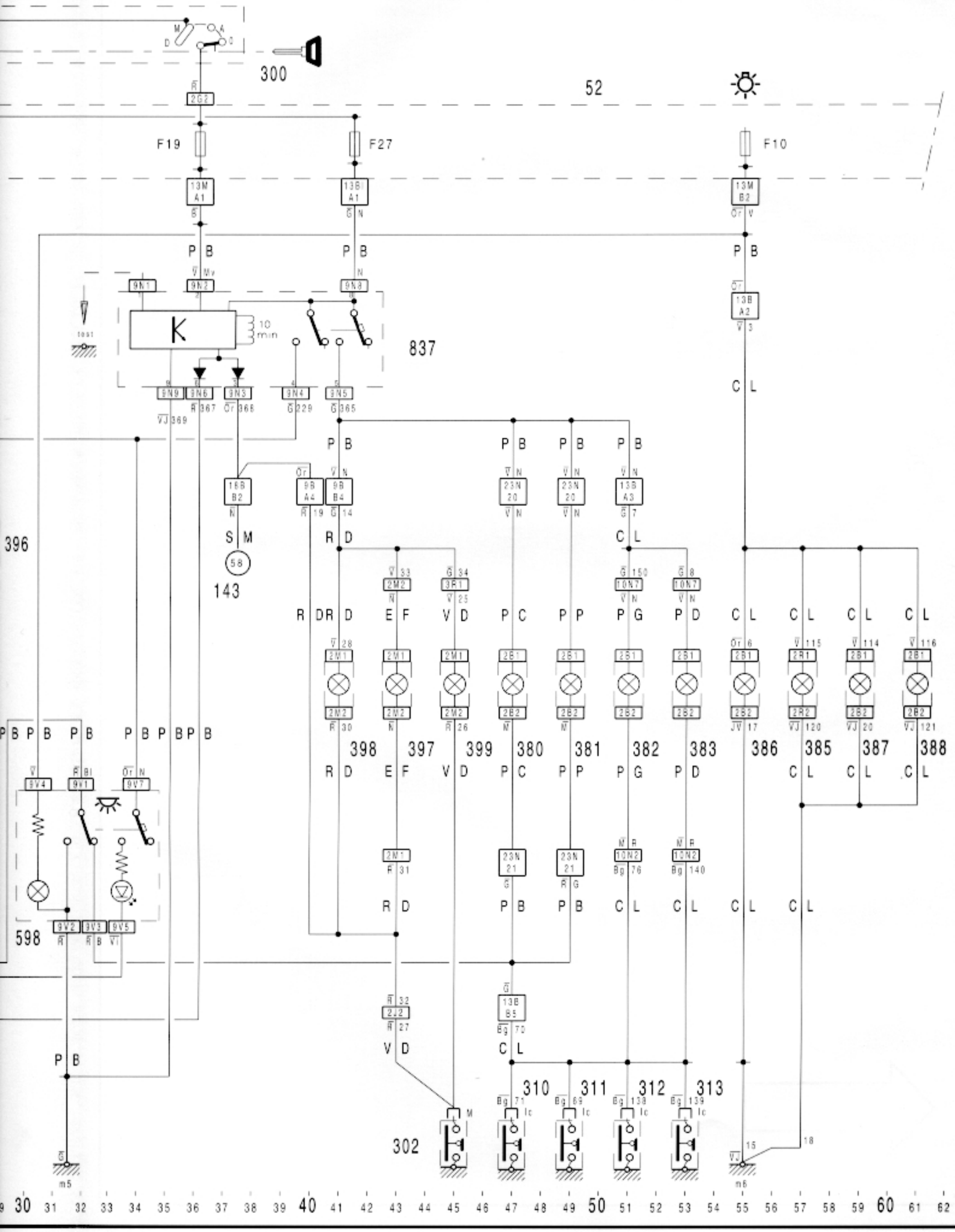
www.WorkshopManuals.co.uk

300 52 F10 F19 F27 837 400 143 398 397 399 380 381 382 383 386 385 387 388 598 302 310 311 312 313

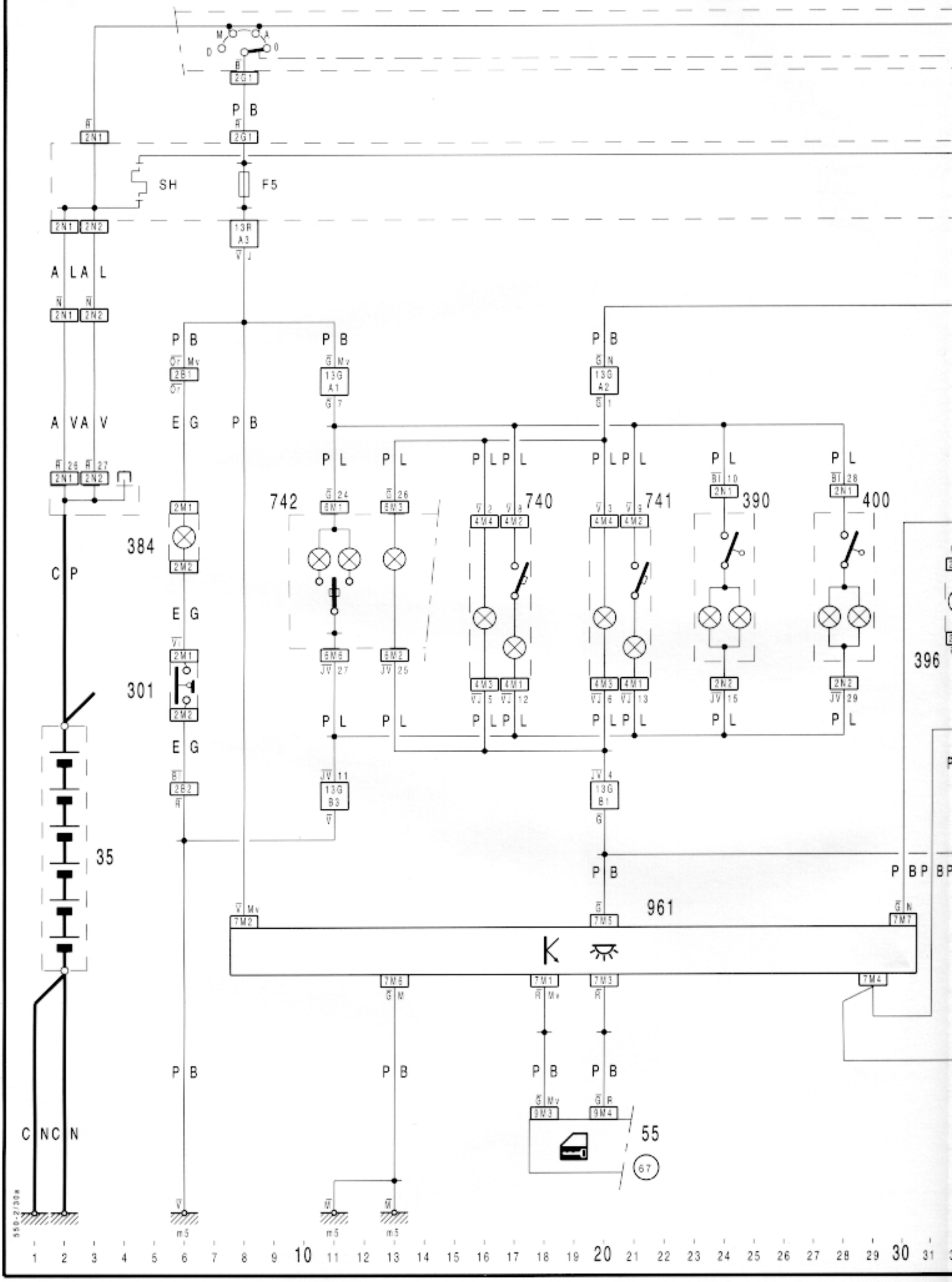
www.WorkshopManuals.co.uk



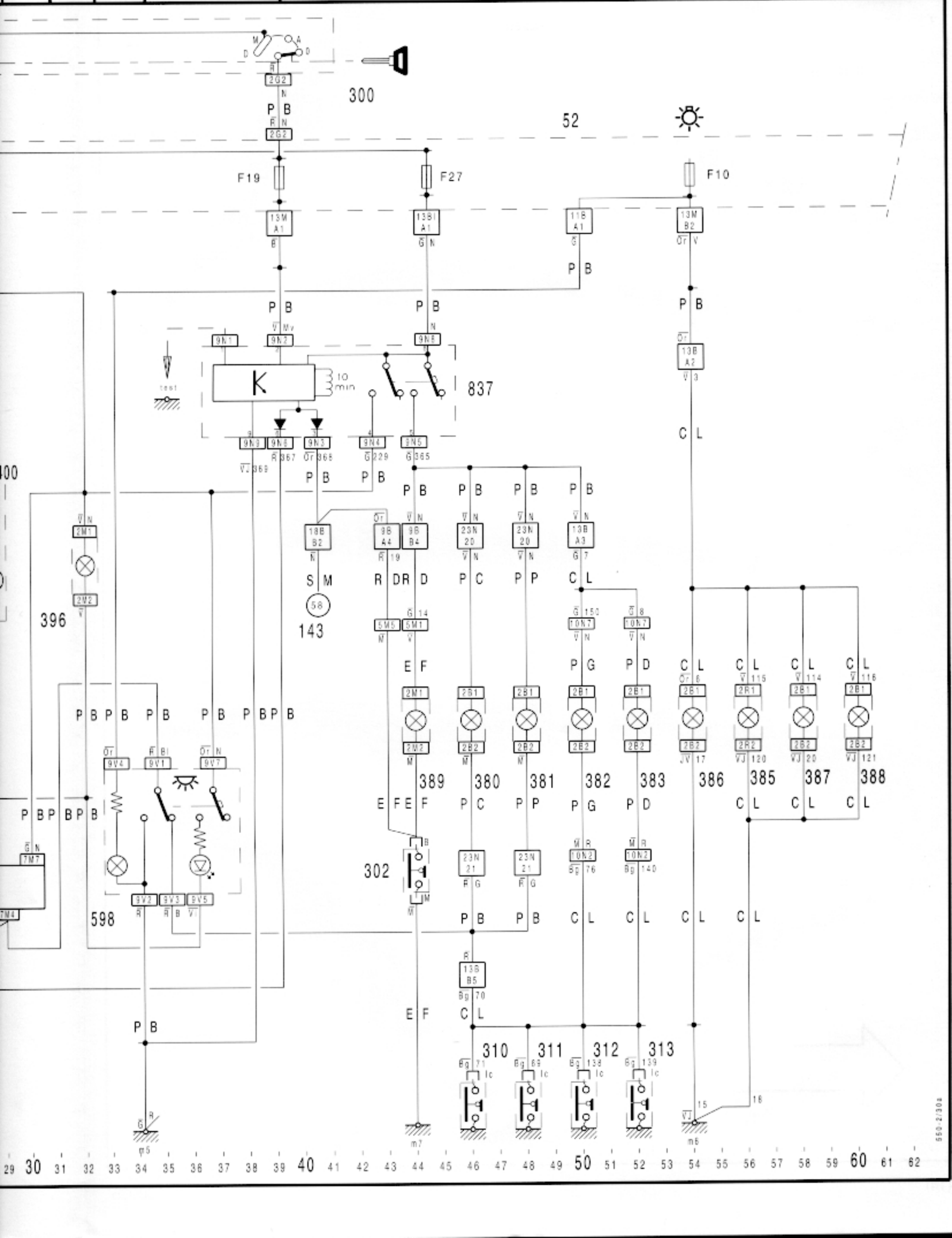
www.WorkshopManuals.co.uk



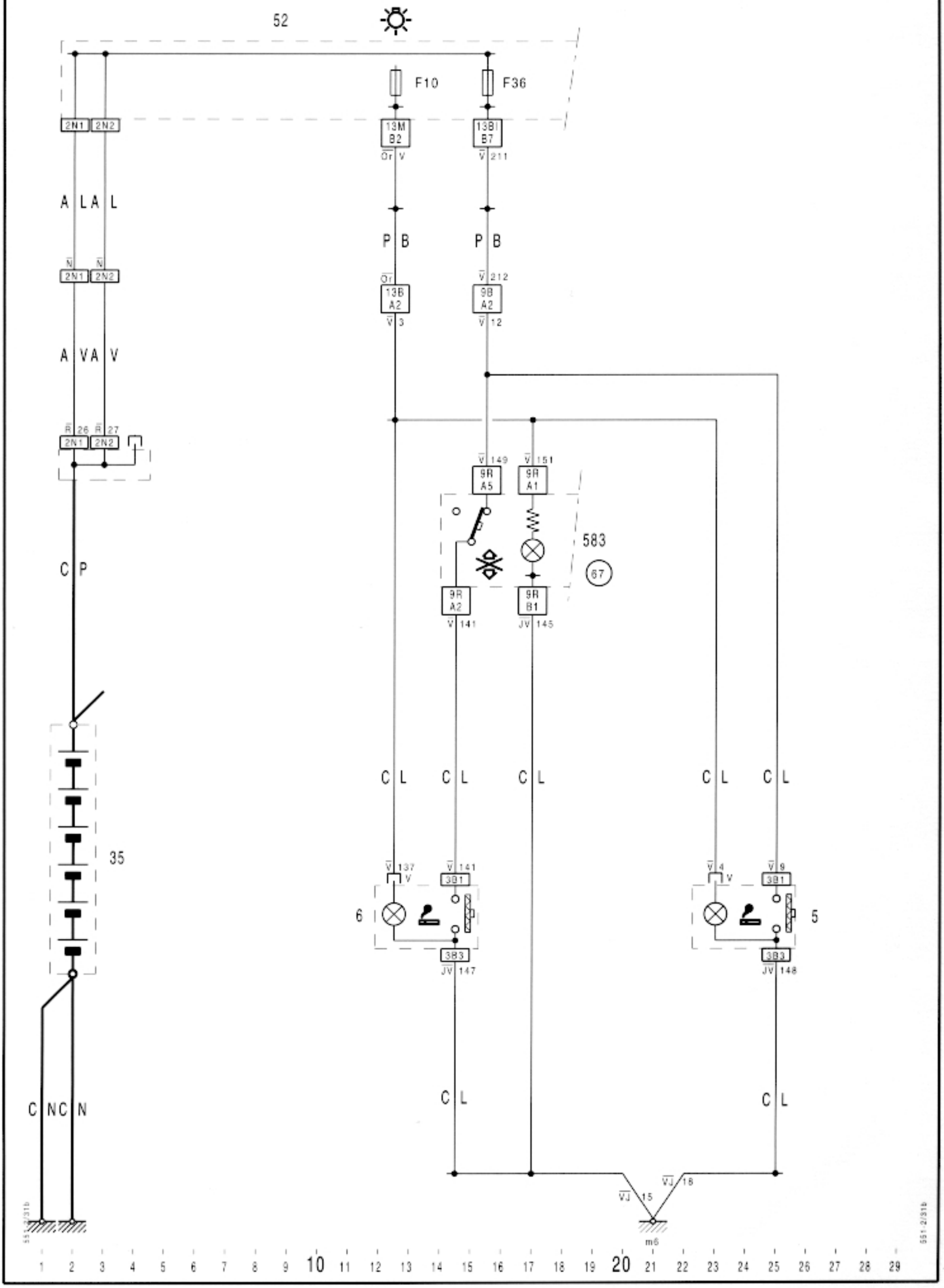
www.WorkshopManuals.co.uk



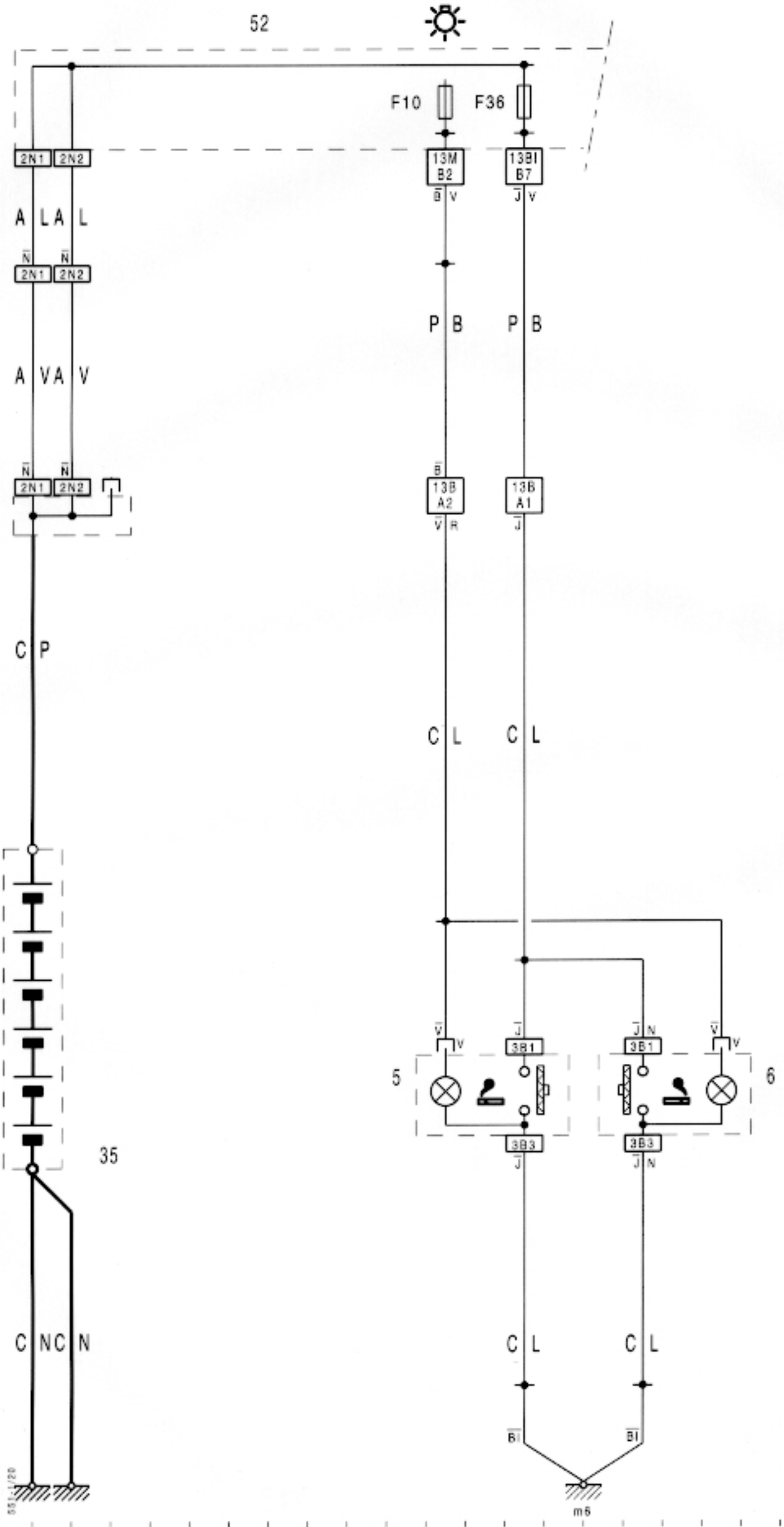
www.WorkshopManuals.co.uk



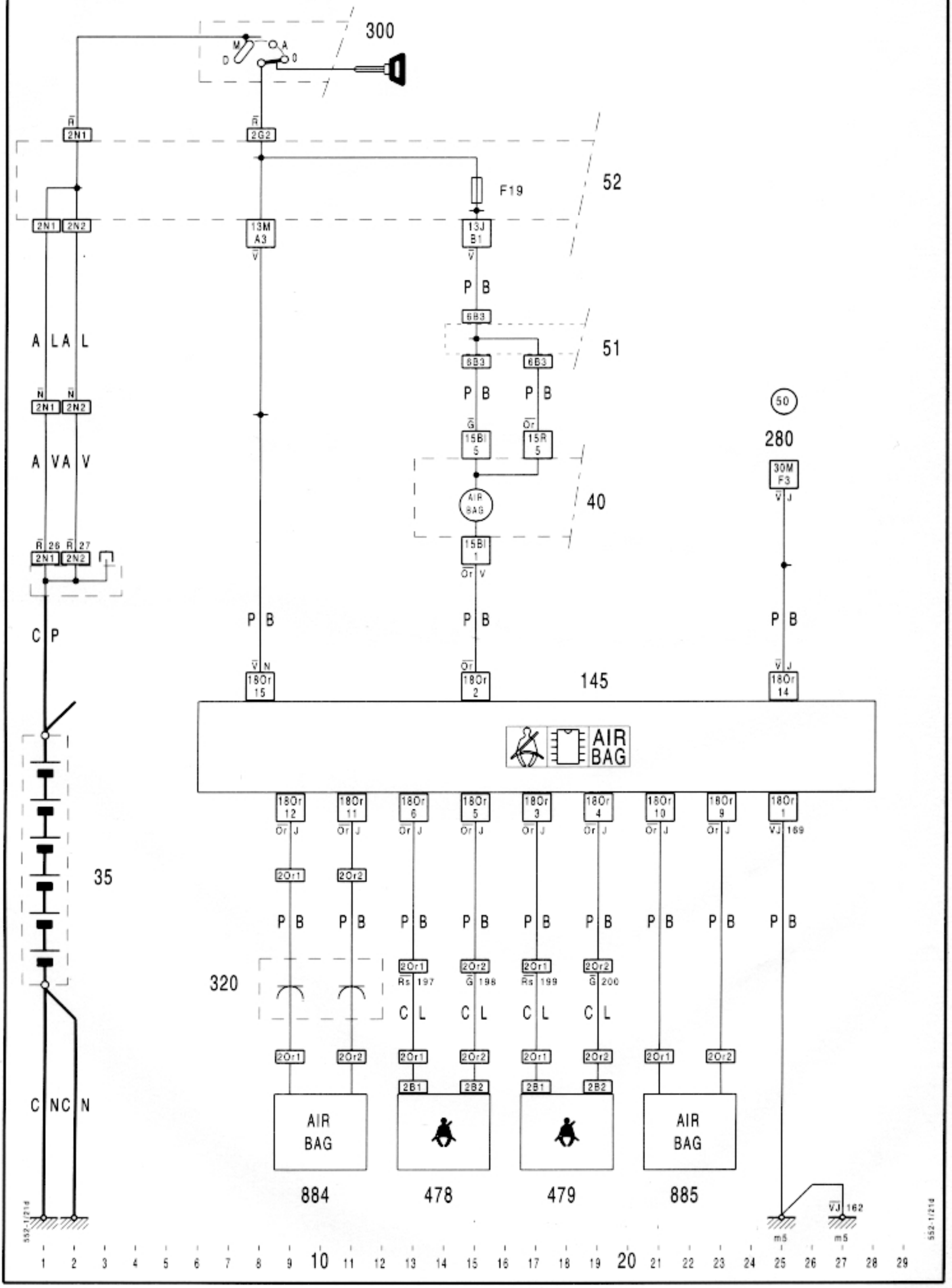
www.WorkshopManuals.co.uk



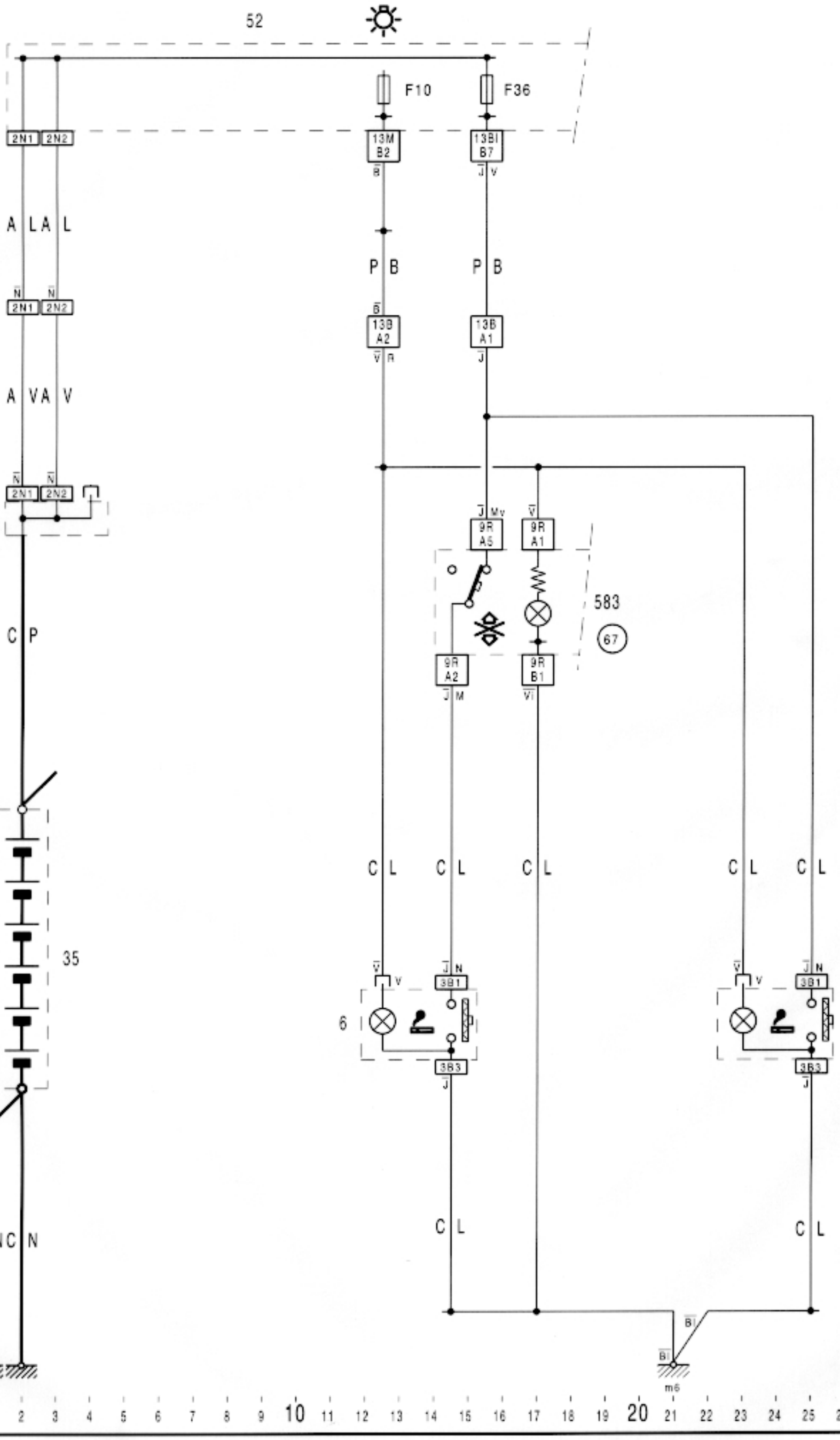
www.WorkshopManuals.co.uk



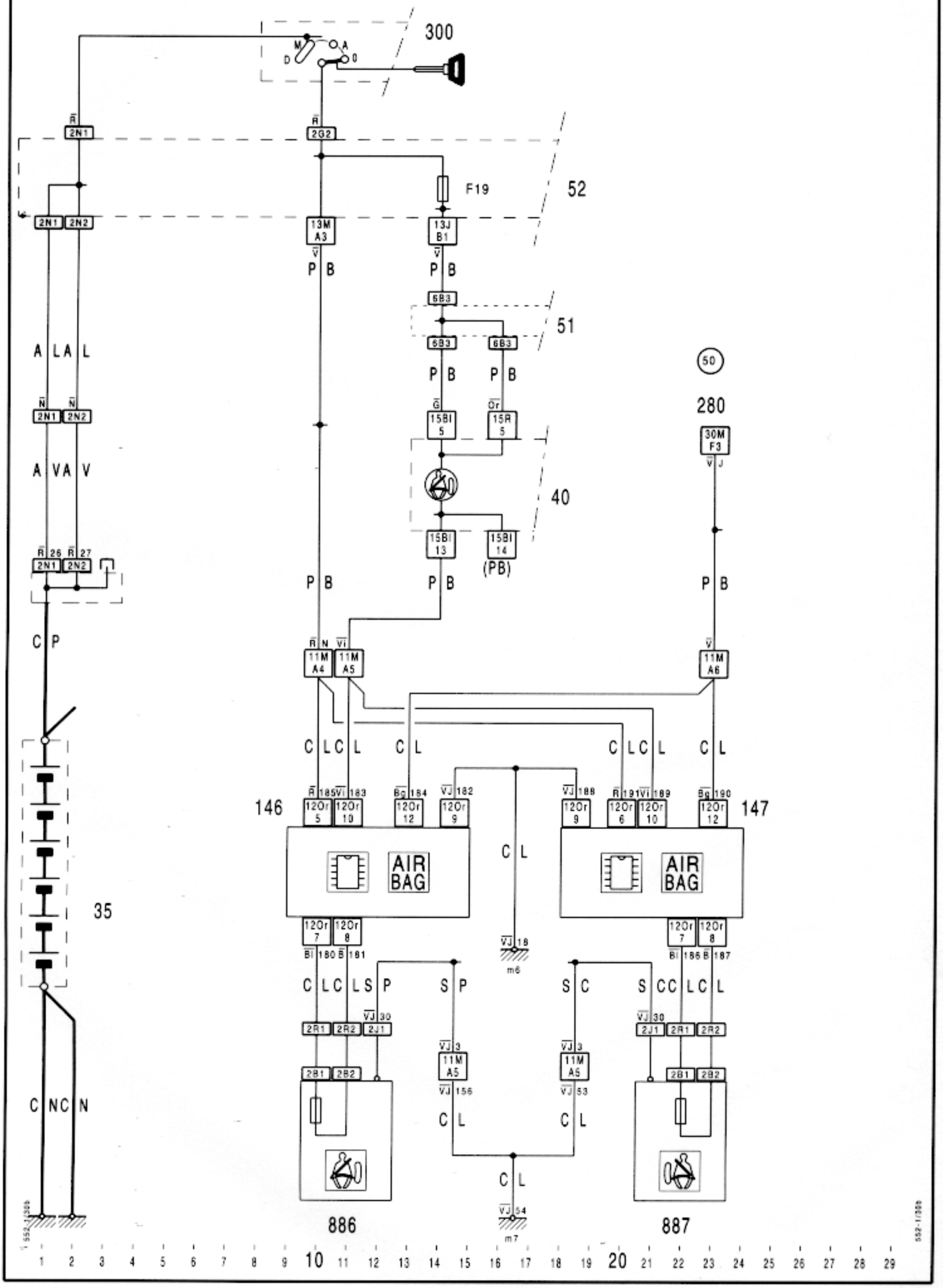
www.WorkshopManuals.co.uk



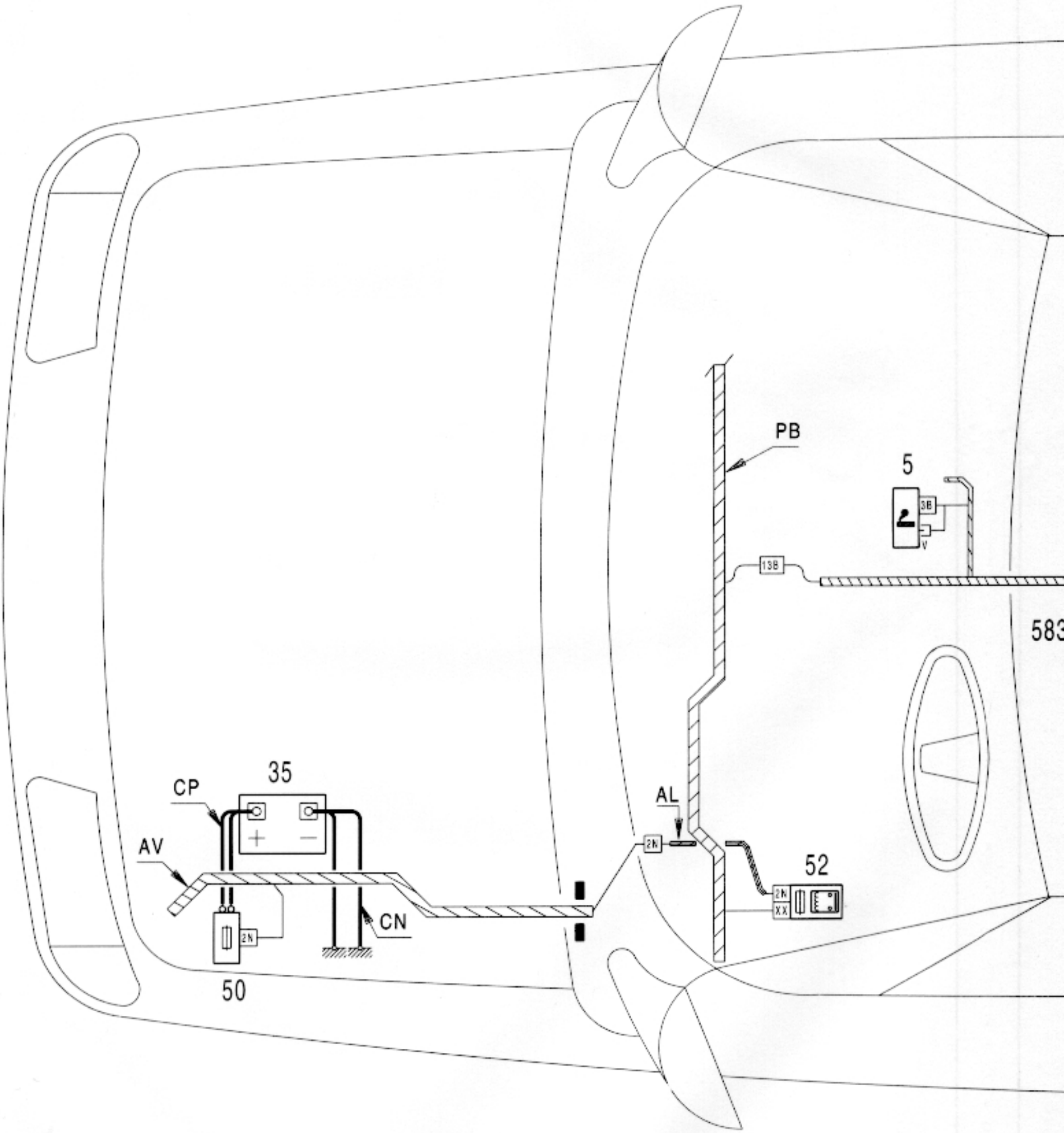
www.WorkshopManuals.co.uk



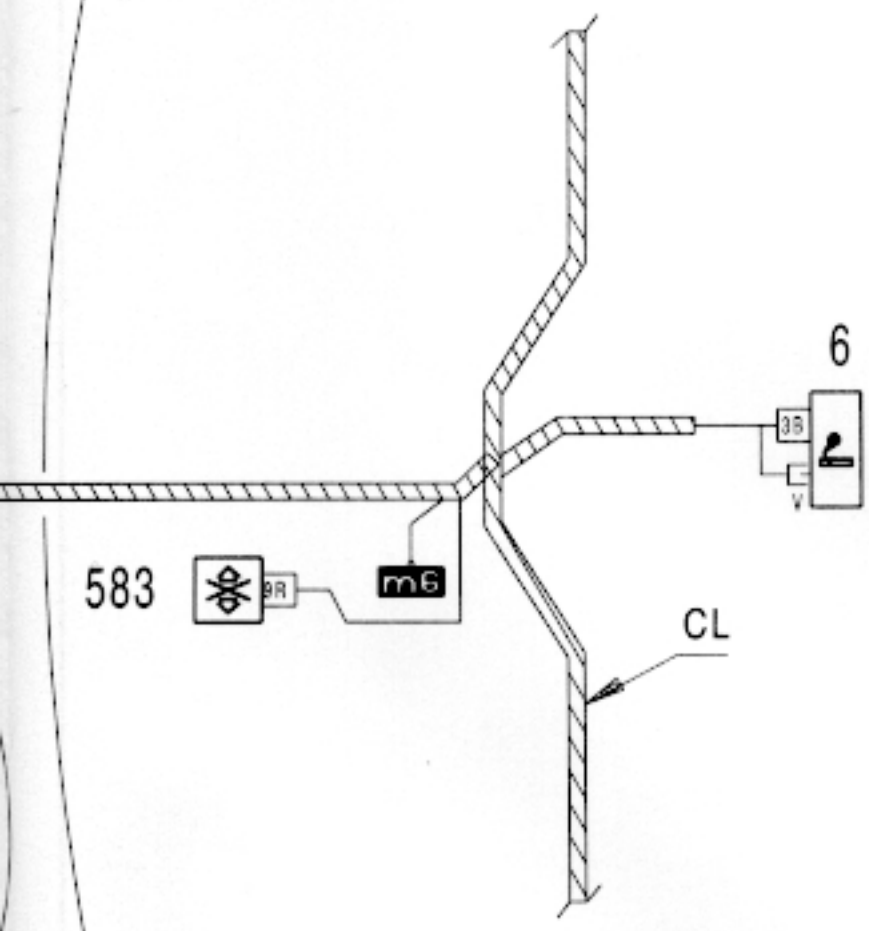
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



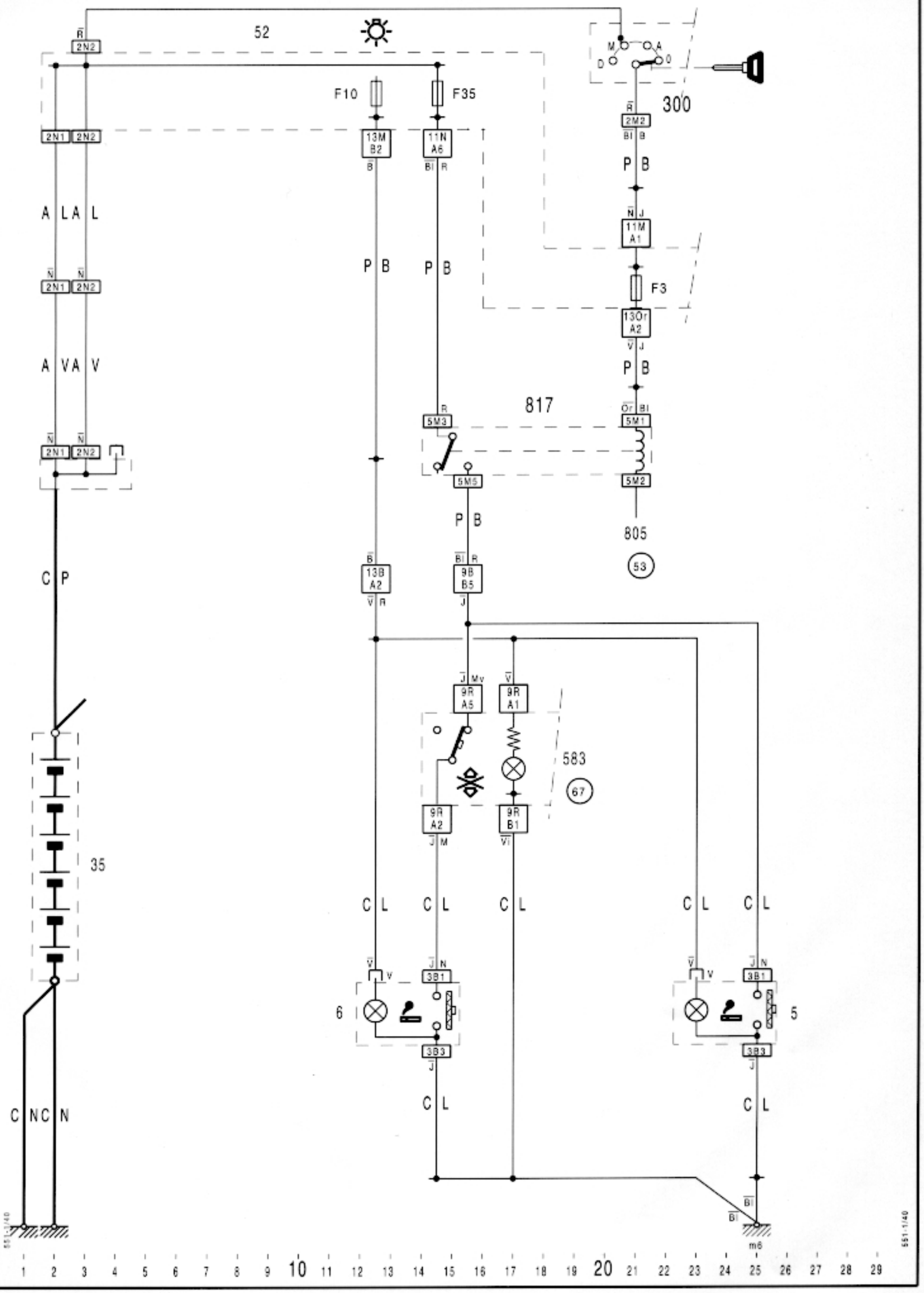
www.WorkshopManuals.co.uk



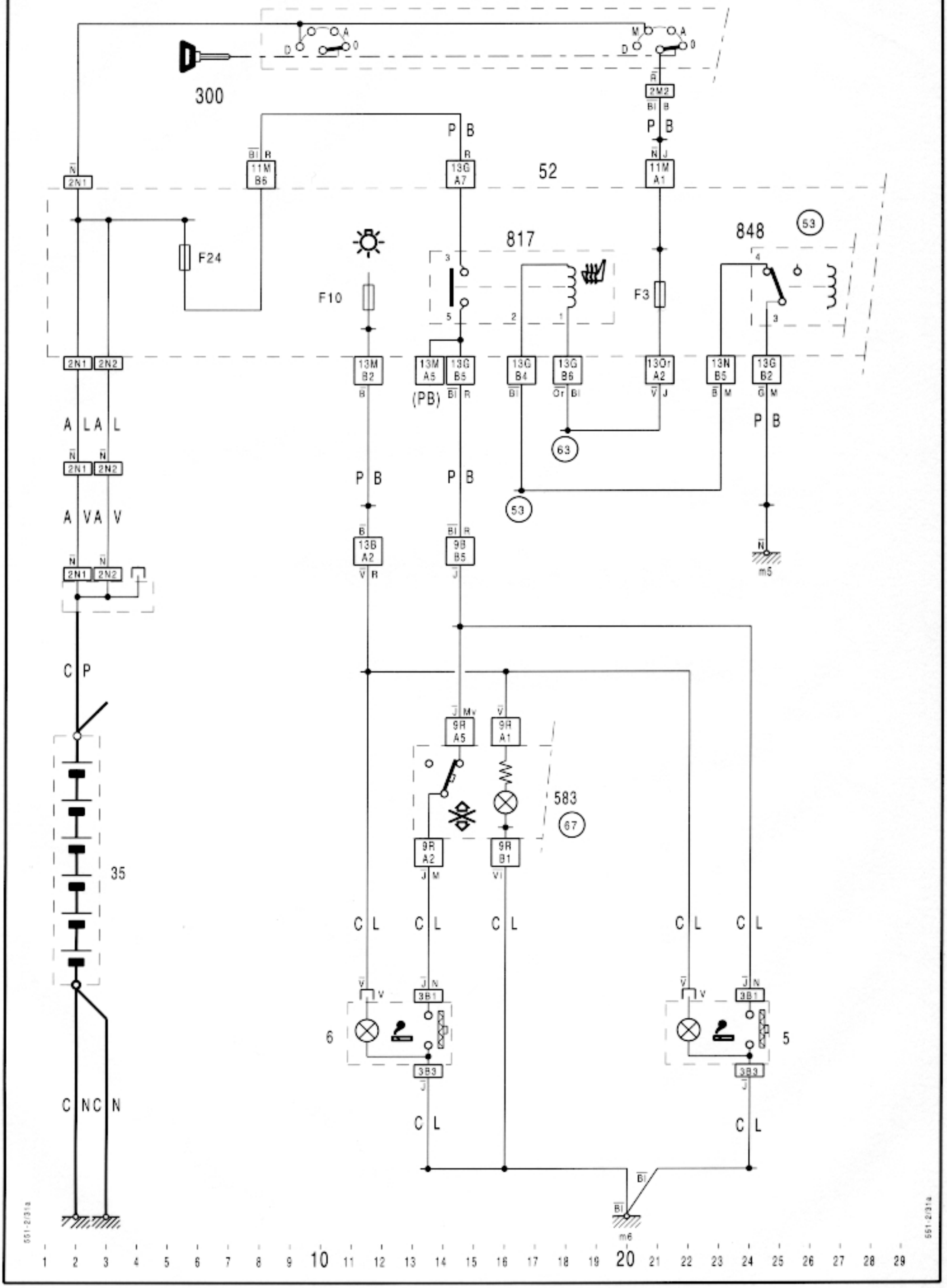
32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

551-1/30b

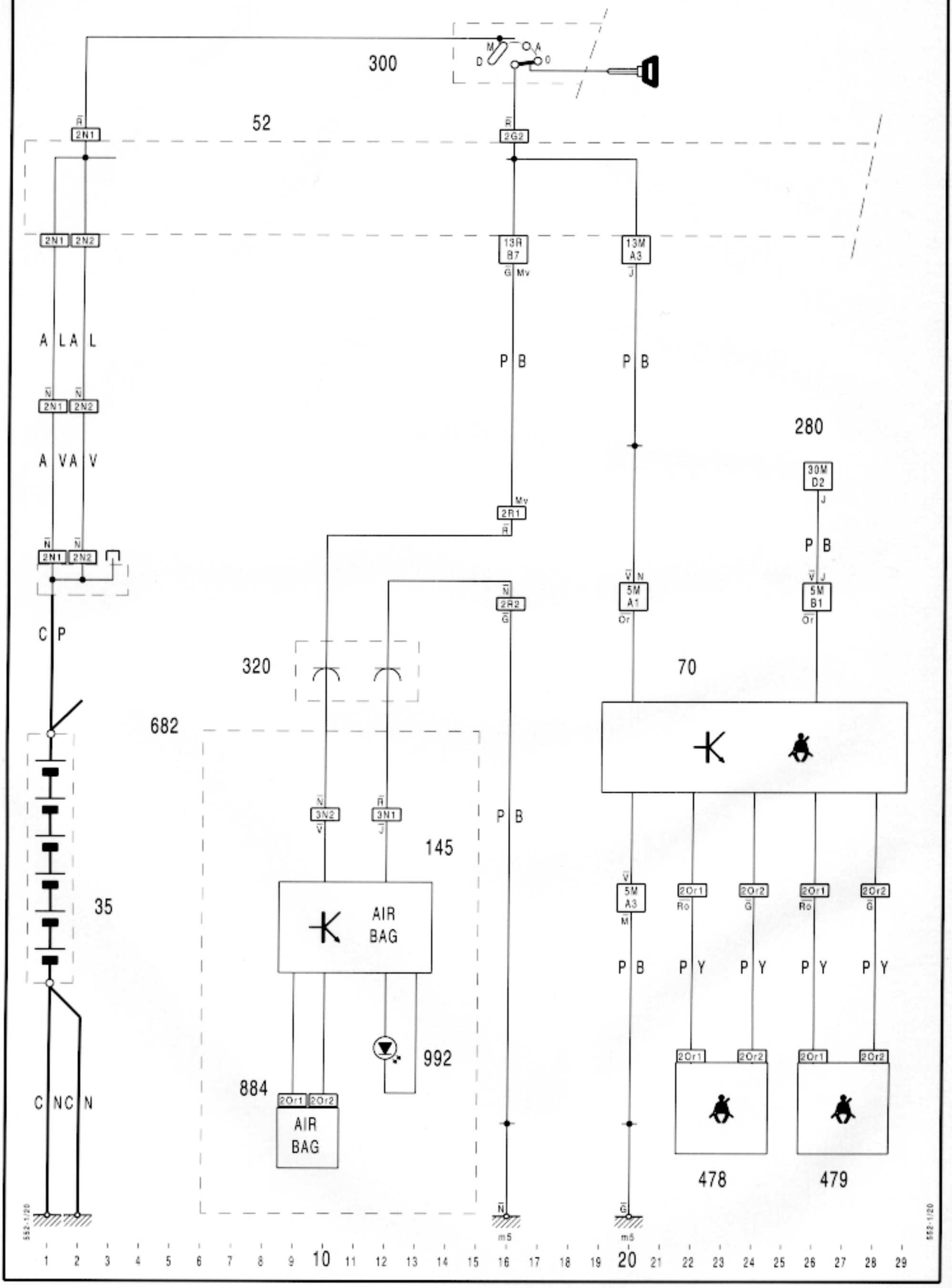
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk

VISIBILITY FUNCTION

PARTS LIST
LIST OF THE ELECTRICAL DIAGRAMS

www.WorkshopManuals.co.uk

Ref.	Description	Func.
1	Warning lamps central display unit	52
3	L.H. display unit (electronic display unit or silhouette)	52
15	Alternator	53
35	Battery	TT
52	Junction box	TT
68	Electric rear view mirror control unit	56
212	R.H. selector switch (windscreen wiper, computer)	56
215	Rear view mirrors selector switch	56
216	Automatic gearbox selector switch (on the gearbox)	59
280	Diagnostic connector	TT
300	Antitheft switch	TT
541	Heated L.H.windscreen washer jet	56
542	Heated R.H.windscreen washer jet	56
586	Rear screen wiper switch	56
592	Passenger's electric window switch (on the passenger's door)	67
597	Heated rear screen switch	56
613	Rear screen wiper switch	56
694	Windscreen wiper motor	56
695	Rear screen wiper motor	56
756	Headlamp washer pump	56
757	Windscreen washer pump	56
758	Rear screen washer pump	56
808	Headlamp washer relay	56
809	Electric front window relay	67
820	Heated rear screen relay	56
848	Engine turning information relay	TT
875	L.H. rear view mirror	56
876	R.H. rear view mirror	56
901	Screen washer water level sensor	52-56
962	Windscreen wiper timer	56
963	Rear scren wiper timer	56
990	Heated rear screen	56

Ref.	Description	Func.

www.WorkshopManuals.co.uk

WINDSCREEN WIPER

NUMBER	STEERING	APPLICABLE	DESCRIPTION
560-0/10	All Types	6383 →	Windscreen wiper/washer XMA89

REAR SCREEN WIPER

NUMBER	STEERING	APPLICABLE	DESCRIPTION
561-0/10	All Types	6383 →	Rear screen wiper/washer XMA90

HEADLAMP WASHER

NUMBER	STEERING	APPLICABLE	DESCRIPTION
562-0/10	All Types	6383 →	Headlamp wiper/washer XMA91

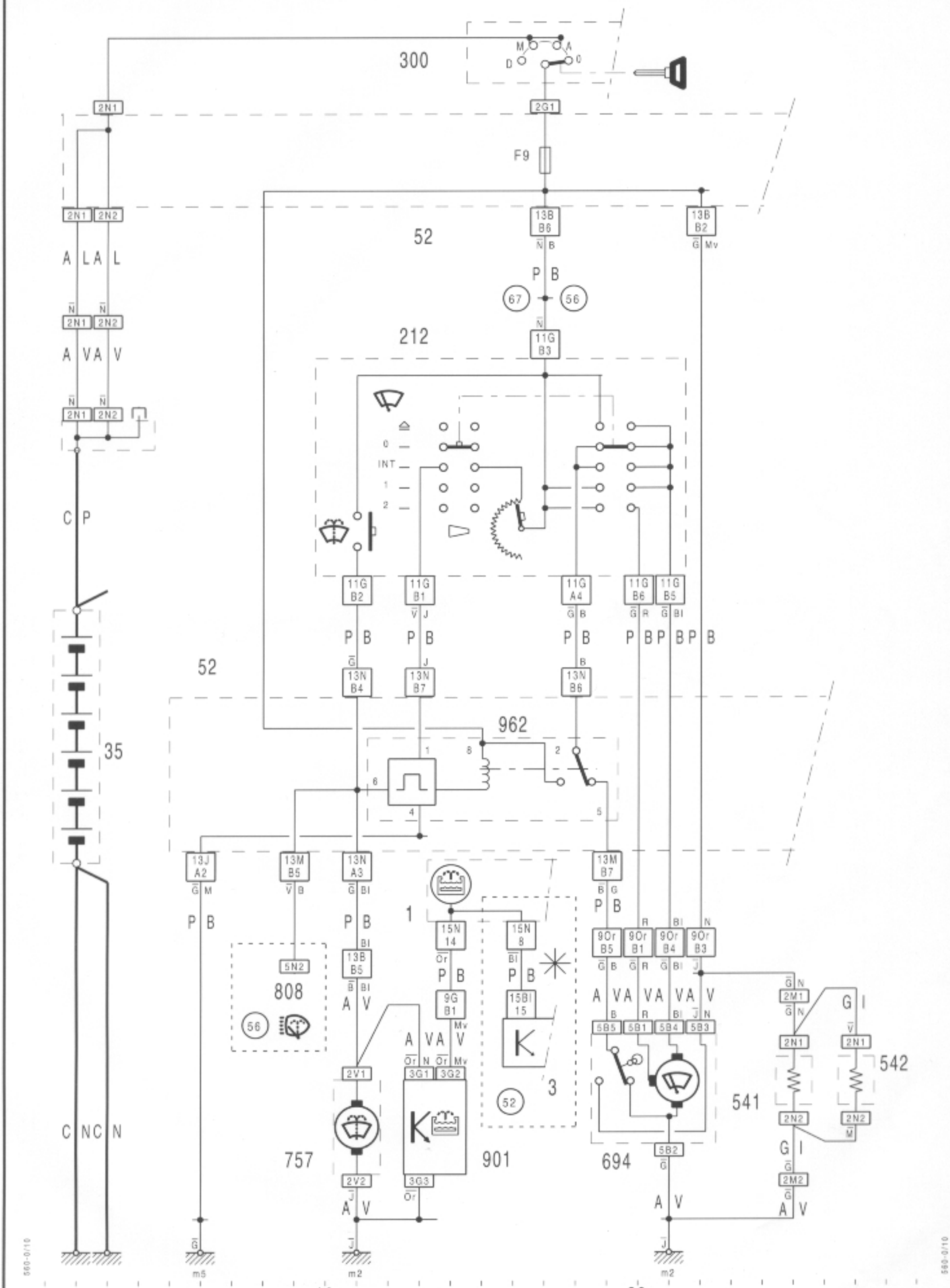
HEATED REAR SCREEN AND REAR VIEW MIRROR

NUMBER	STEERING	APPLICABLE	DESCRIPTION
564-0/10	All Types	6383 →	Heated rear screen and rear view mirors XMA92

REAR VIEW MIRRORS ADJUSTMENT

NUMBER	STEERING	APPLICABLE	DESCRIPTION
565-0/10	All Types	6383 →	Electrically-operated rear view mirrors XMA93
565-0/30	All Types	6383 → → 6749	Electrically-operated rear view mirrors + setting XMA94
565-0/30a	All Types	6749 →	Evolution a : Fuse box XMS194

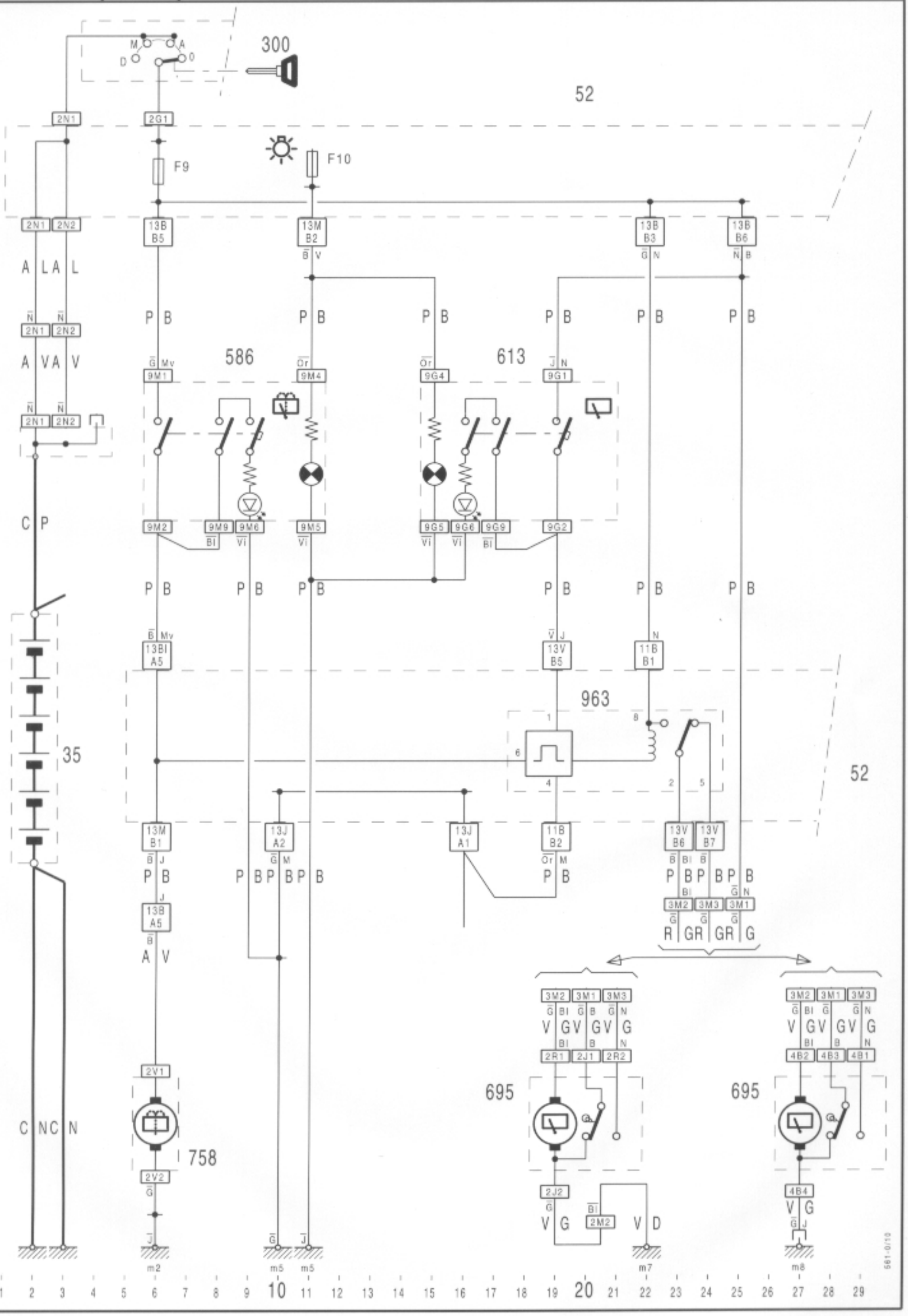
www.WorkshopManuals.co.uk



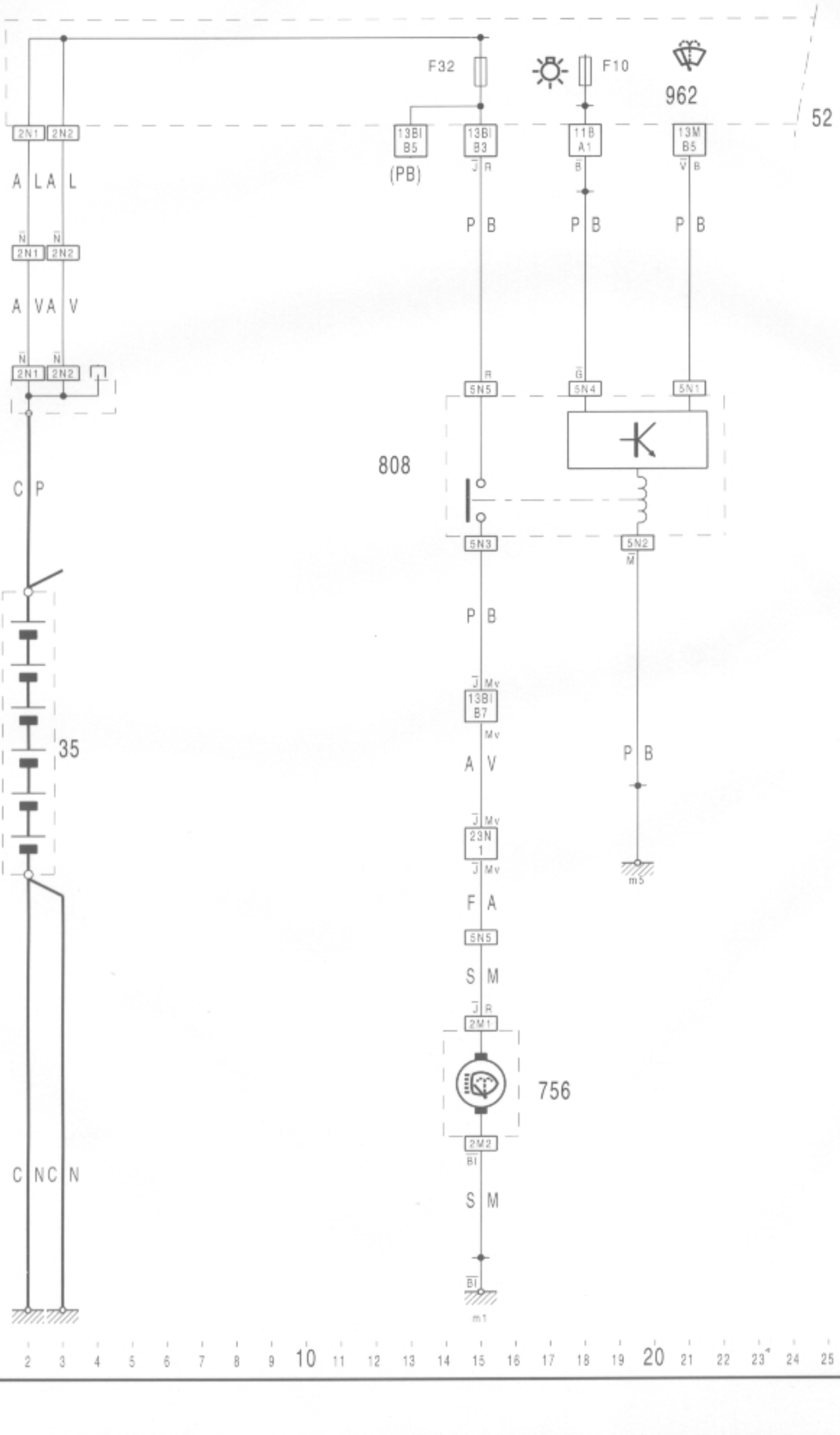
(1)

C 8935

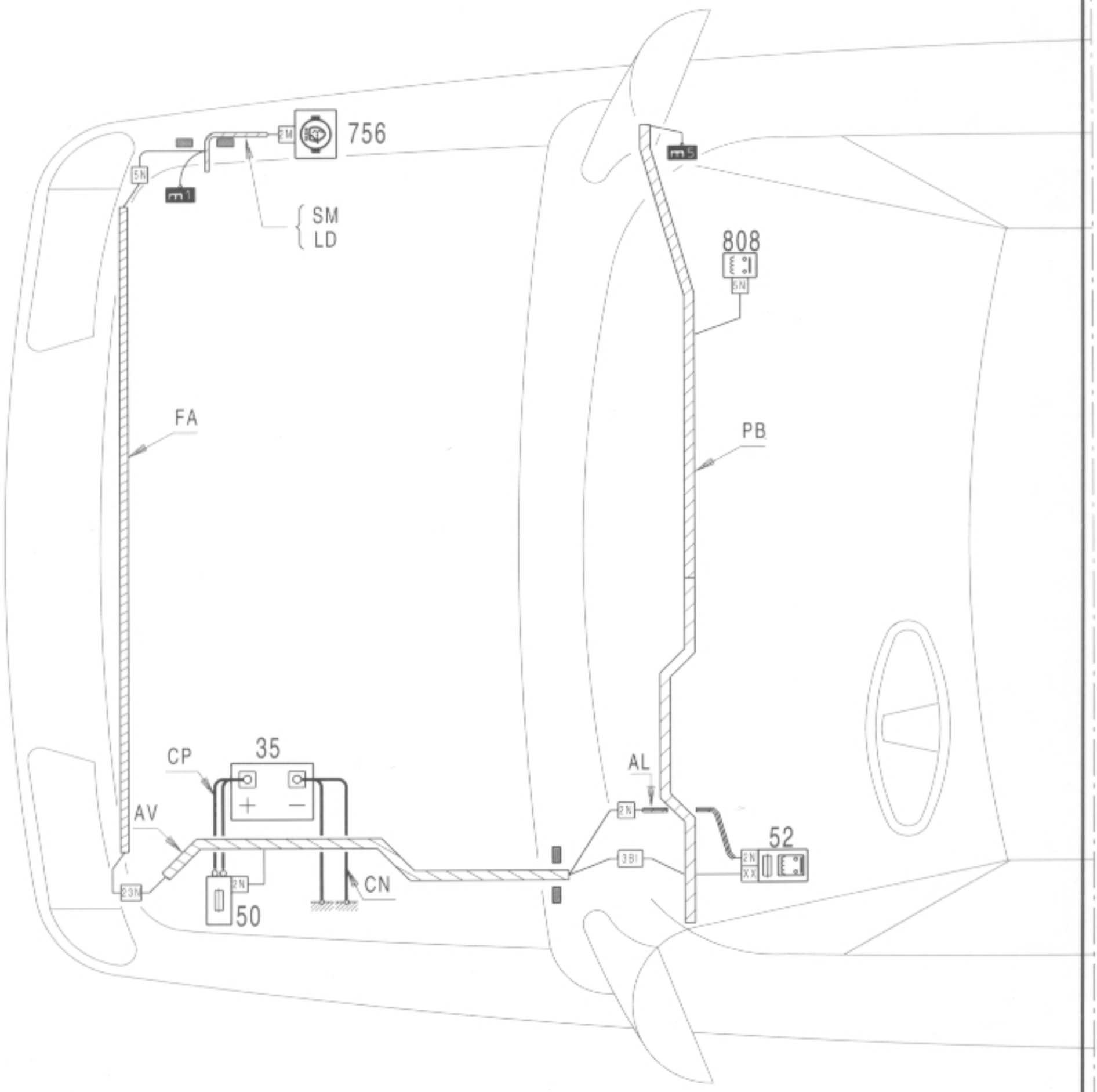
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

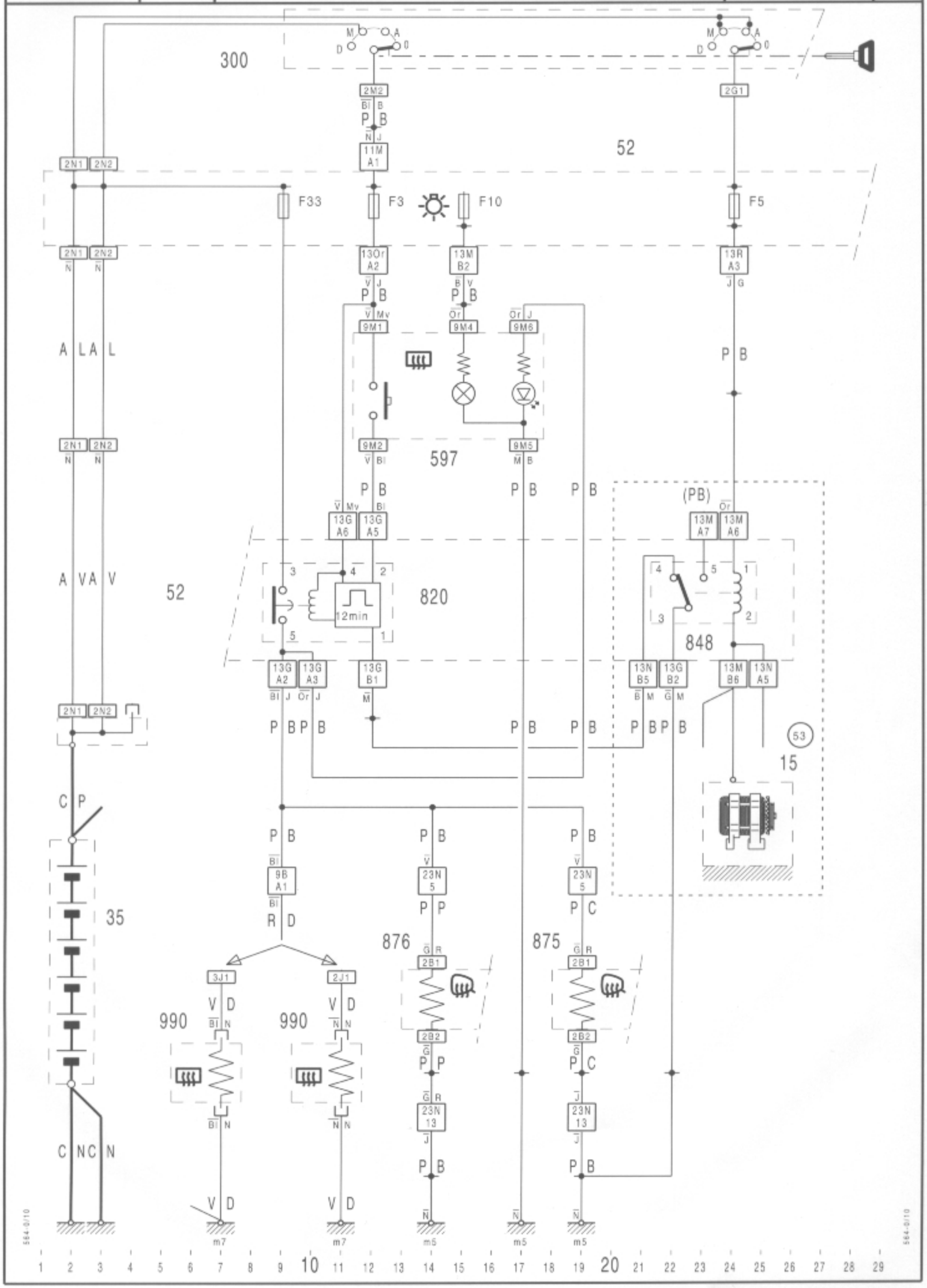


562-0/10c

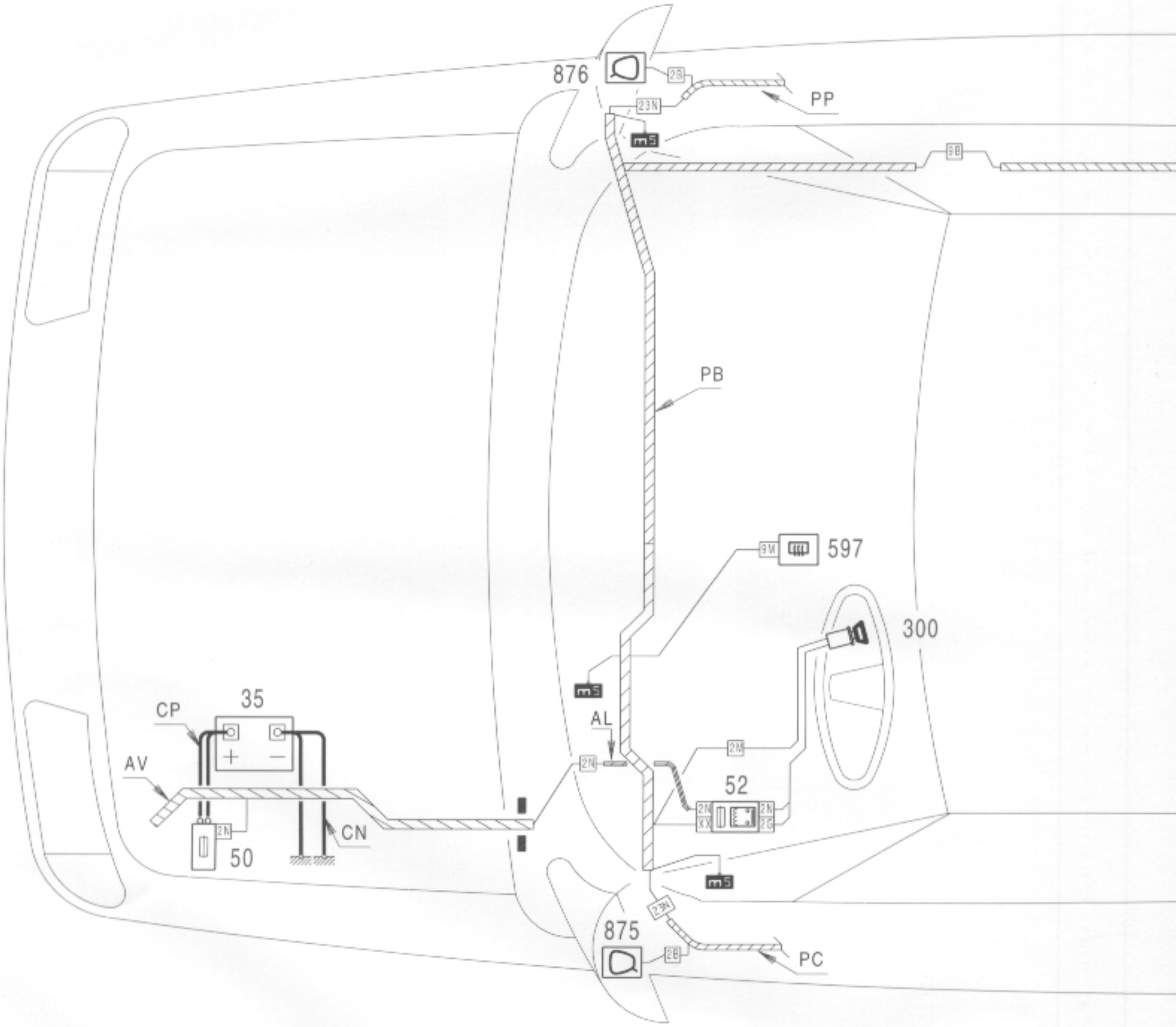
562-0/10c

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

www.WorkshopManuals.co.uk



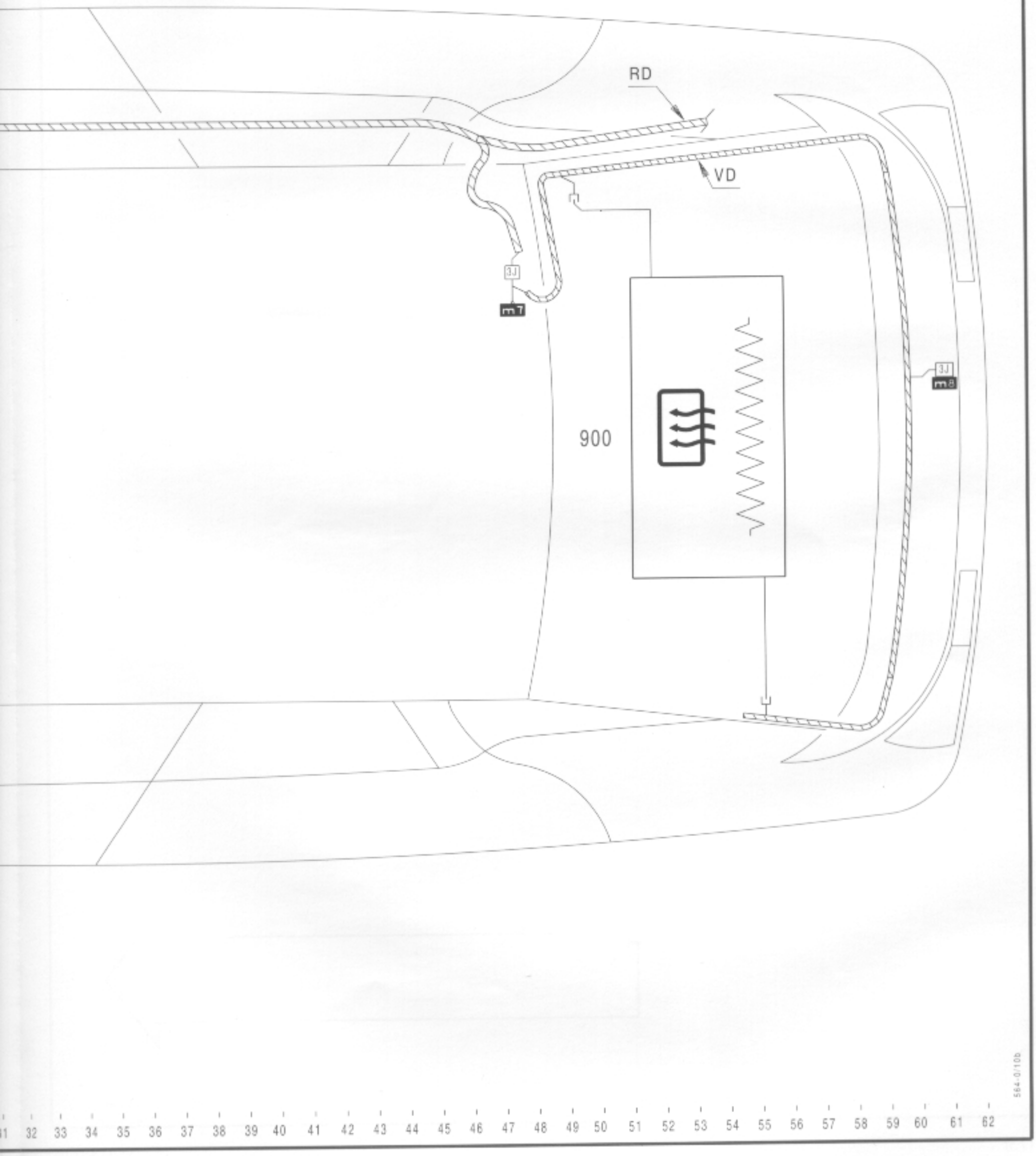
www.WorkshopManuals.co.uk



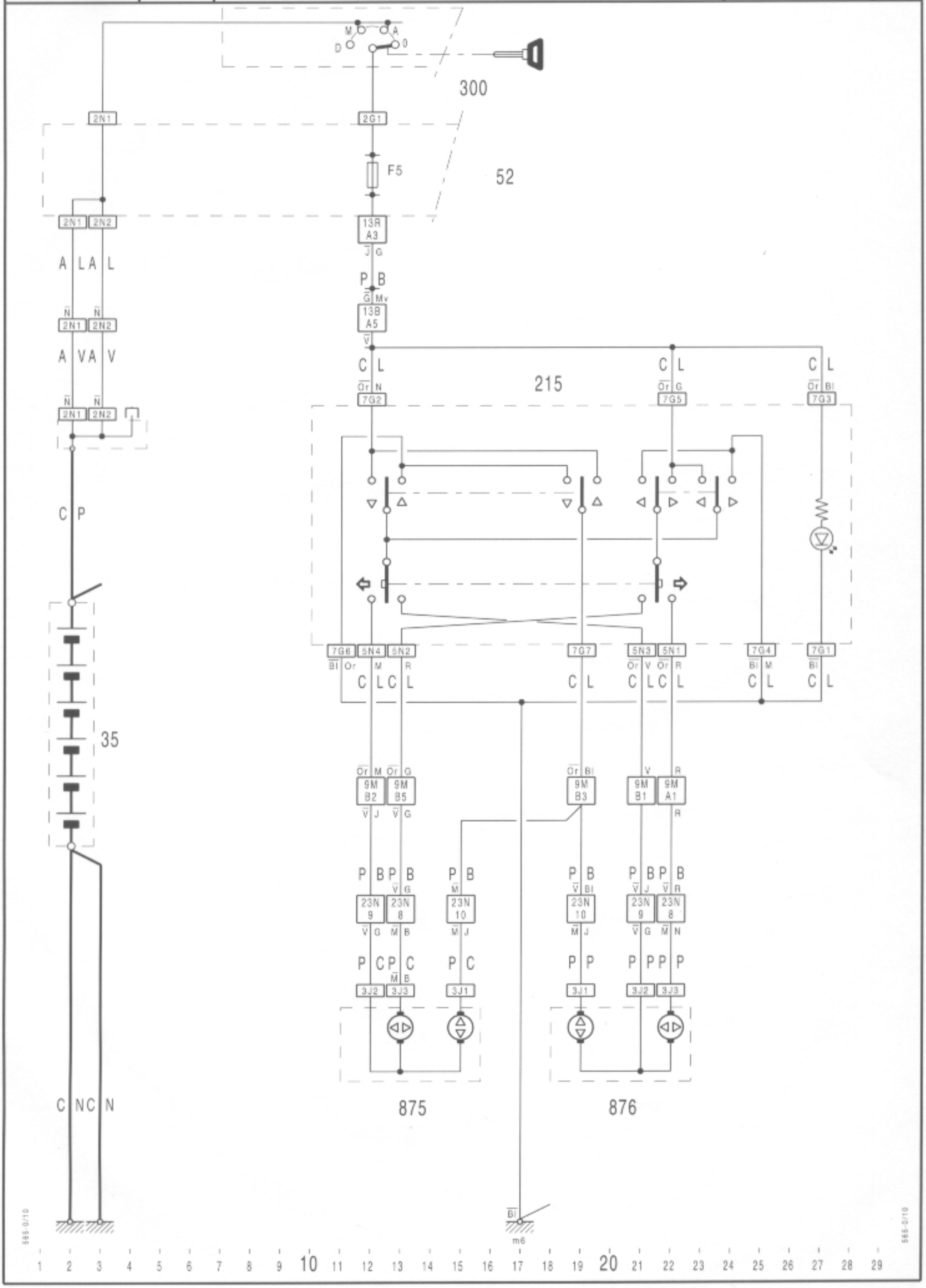
564-0/10b

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34

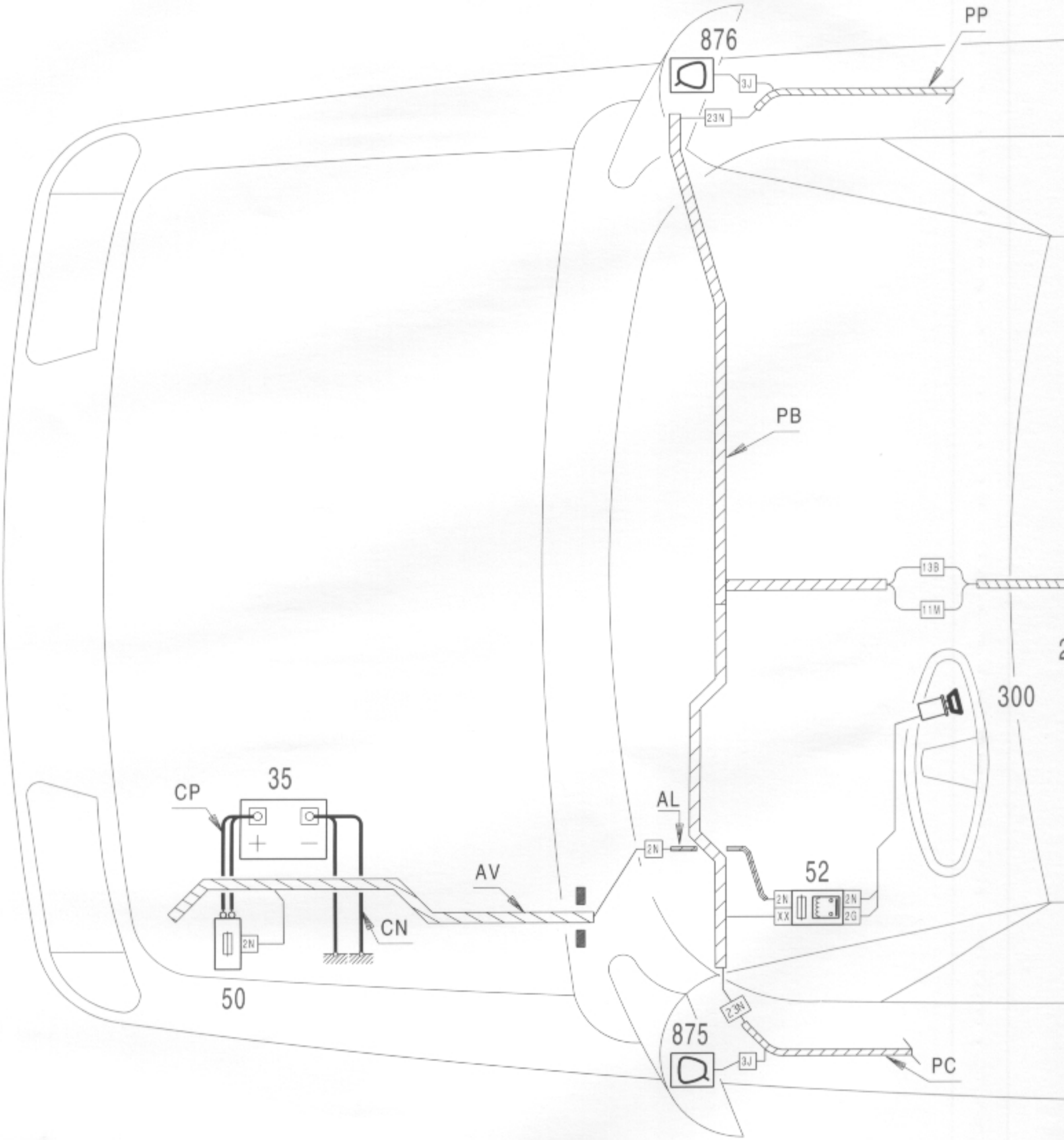
www.WorkshopManuals.co.uk



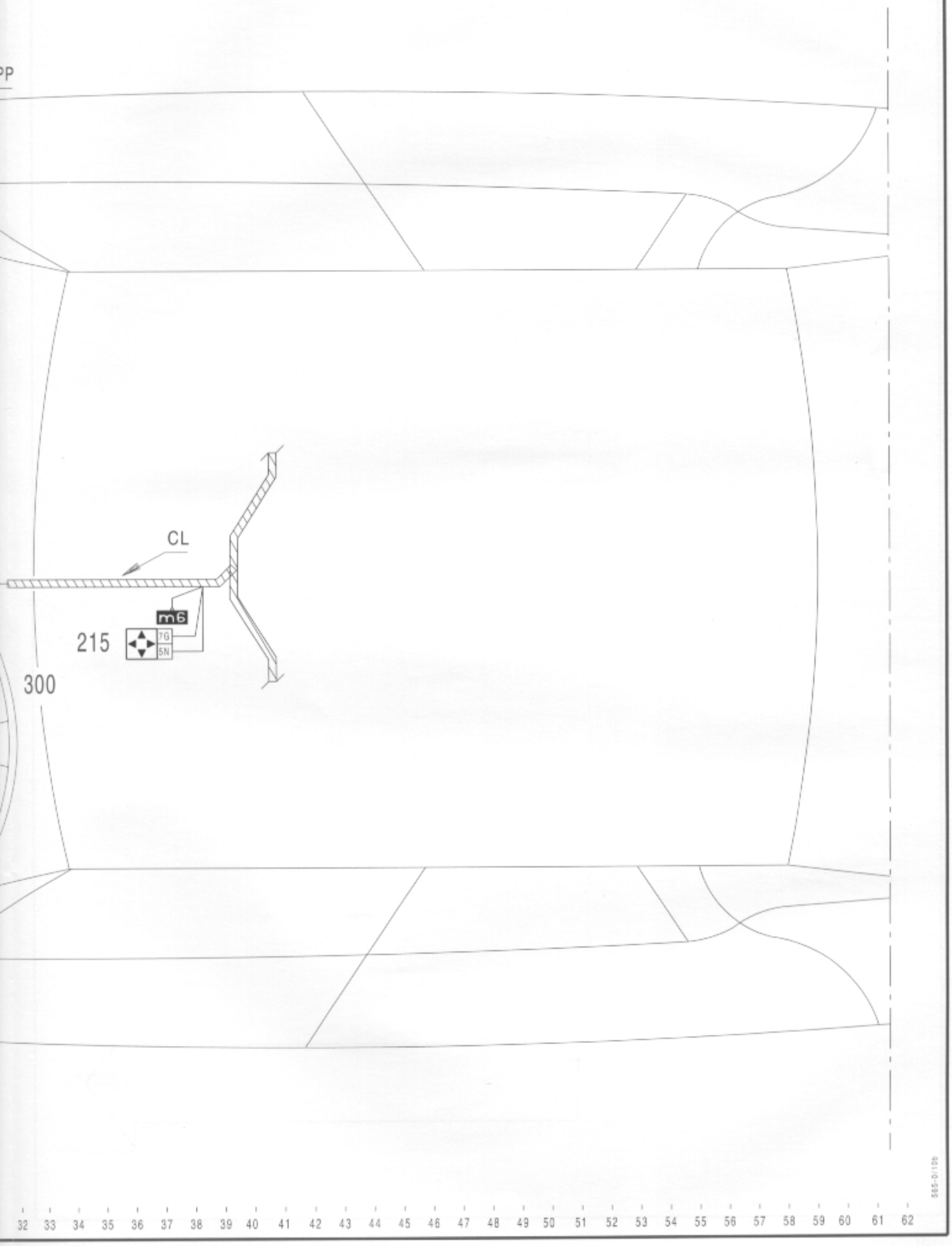
www.WorkshopManuals.co.uk



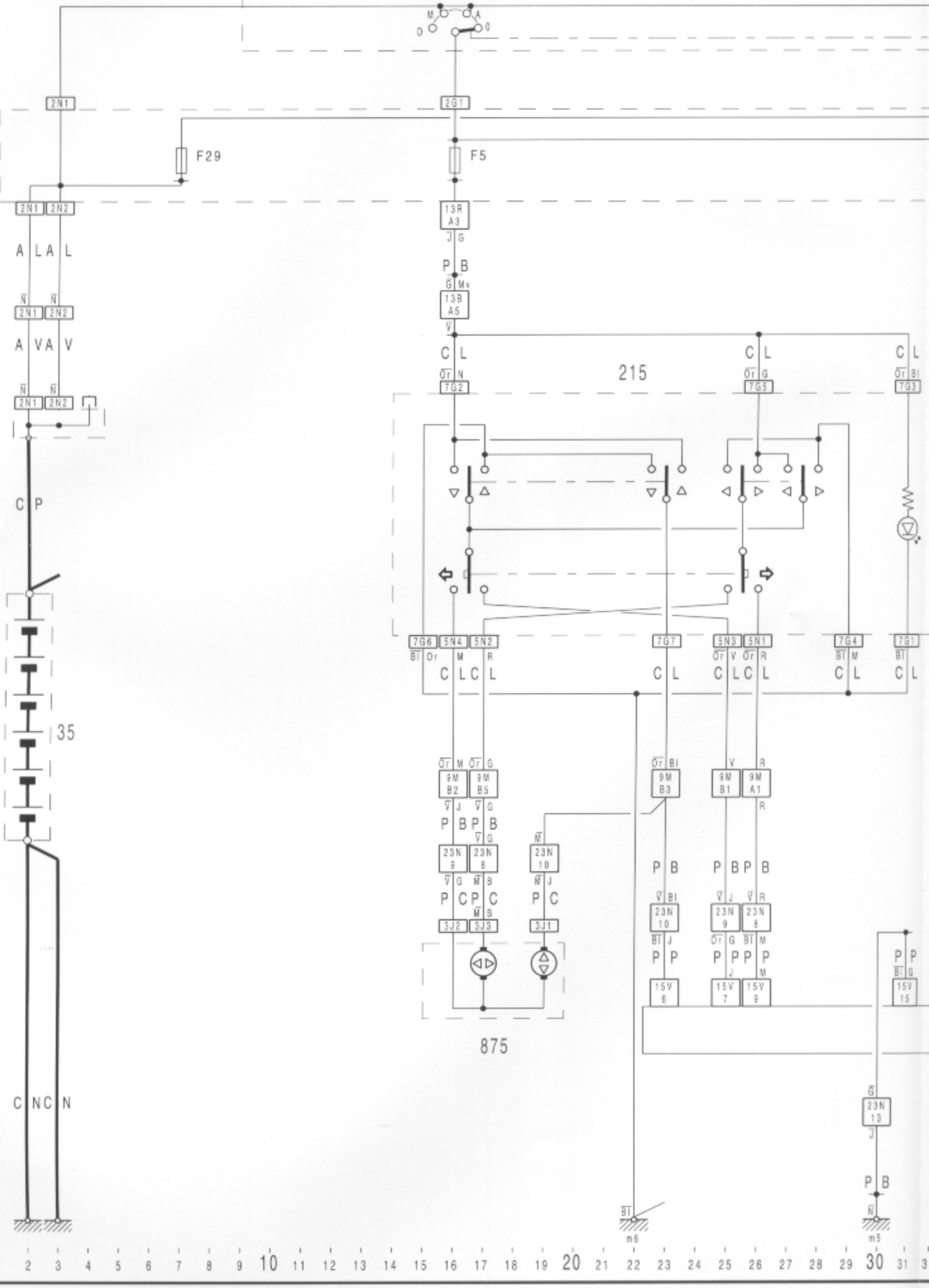
www.WorkshopManuals.co.uk



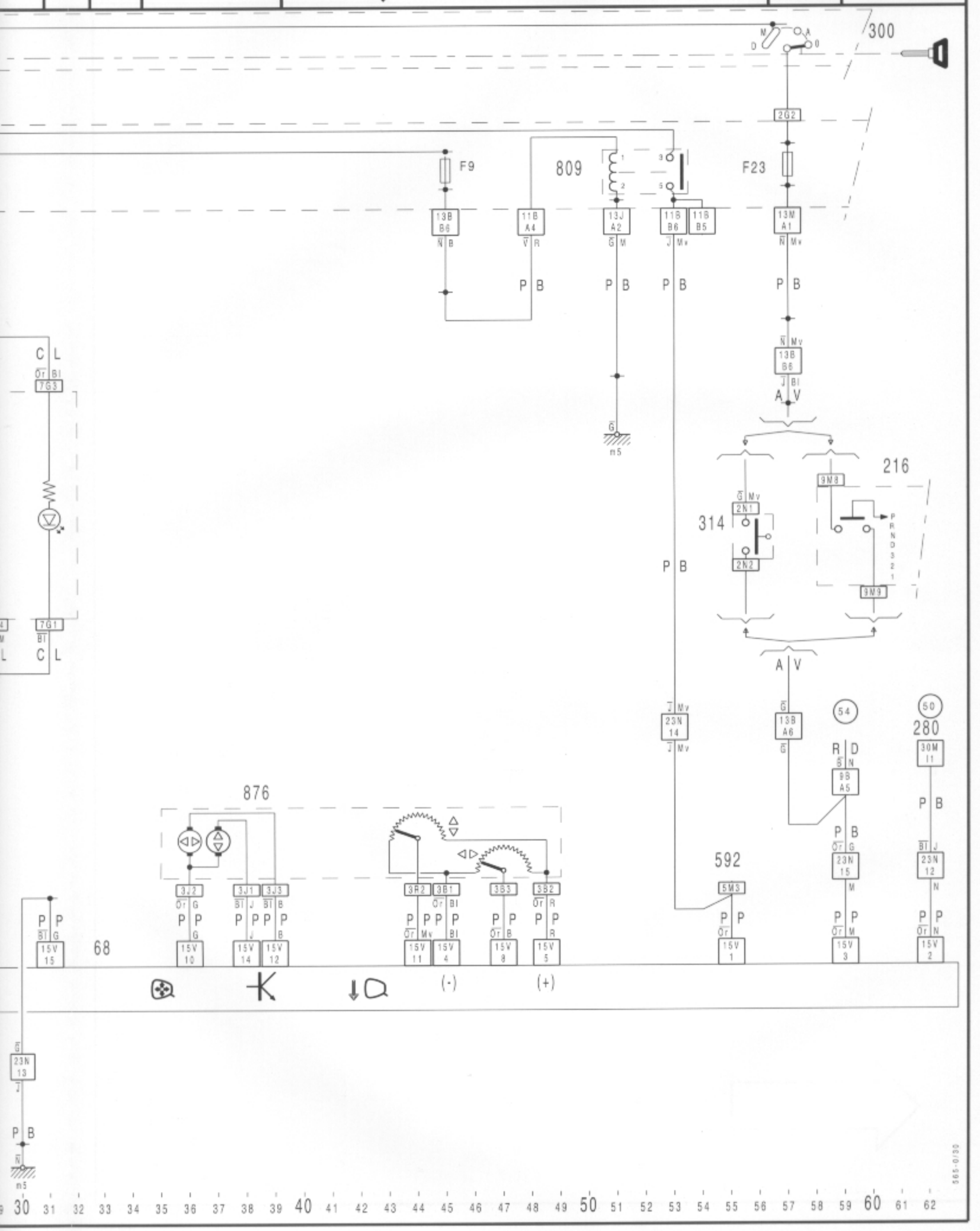
www.WorkshopManuals.co.uk



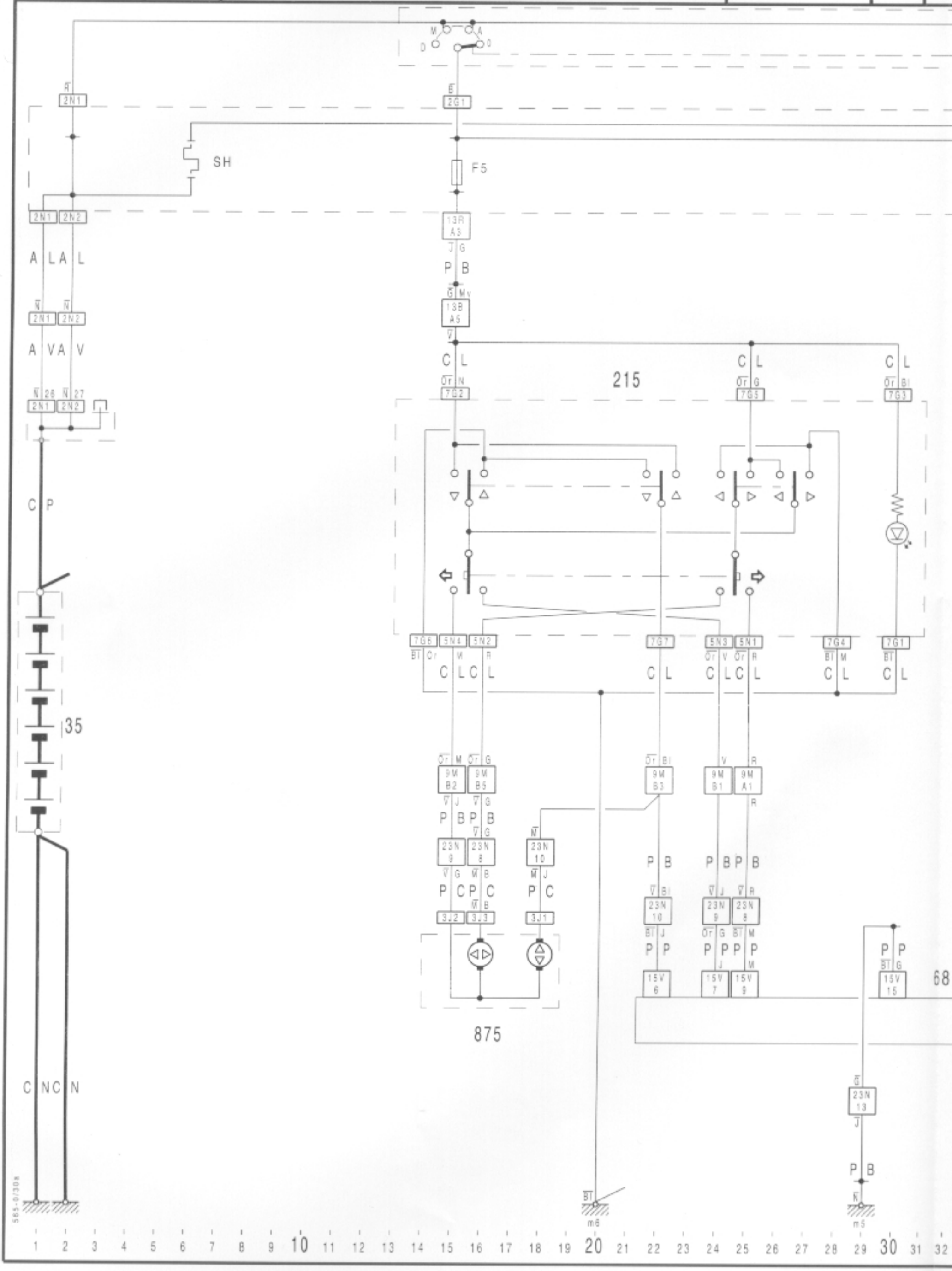
www.WorkshopManuals.co.uk



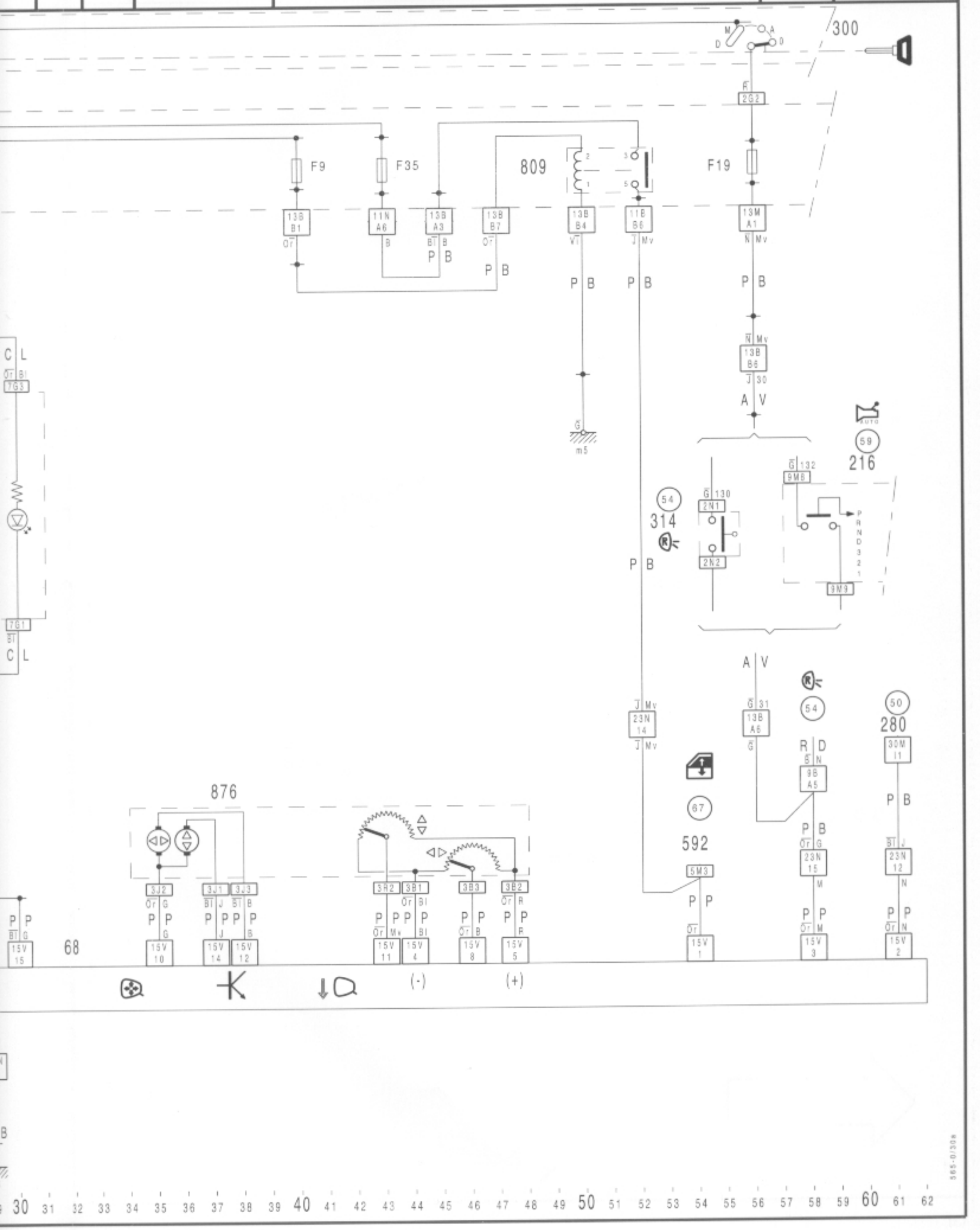
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk

BRAKING FUNCTION

PARTS LIST
LIST OF THE ELECTRICAL DIAGRAMS

www.WorkshopManuals.co.uk

Ref.	Description	Func.
3	L.H. display unit (electronic display unit or silhouette)	52
35	Battery	TT
40	Instrument cluster	52
41	ABS hydraulic valve block	57
50	Supply box	TT
51	Connector box	TT
52	Junction box	TT
140	ABS E.C.U.	57
155	L.H. front road wheel sensor	57
156	R.H. front road wheel sensor	57
157	L.H. rear road wheel sensor	57
158	R.H. rear road wheel sensor	57
280	Diagnostic socket	TT
300	Anti-theft switch	TT
319	Stoplamp switch	54-57
844	ABS main relay	57

Ref.	Description	Func.

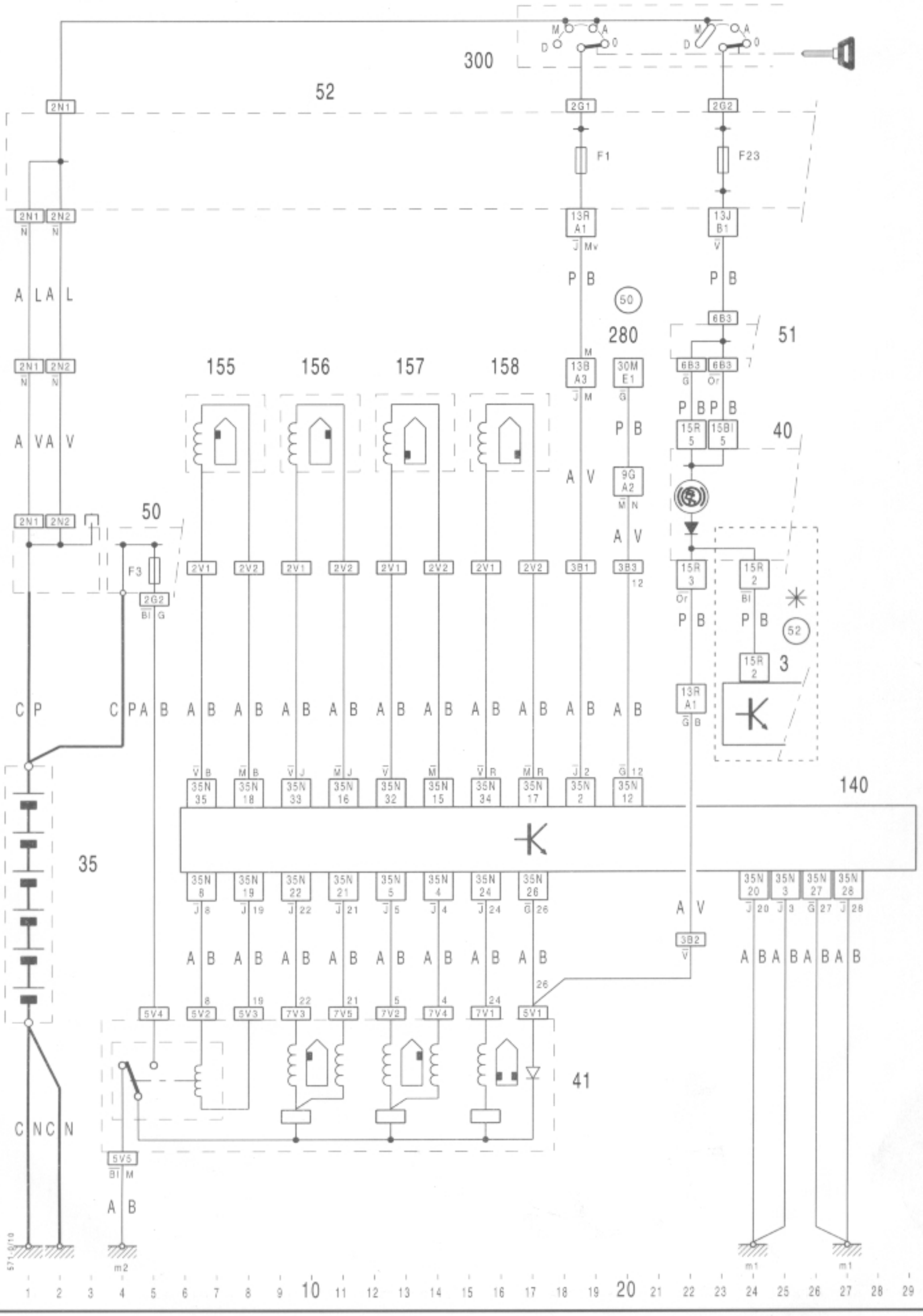
N
5
57
5

www.WorkshopManuals.co.uk

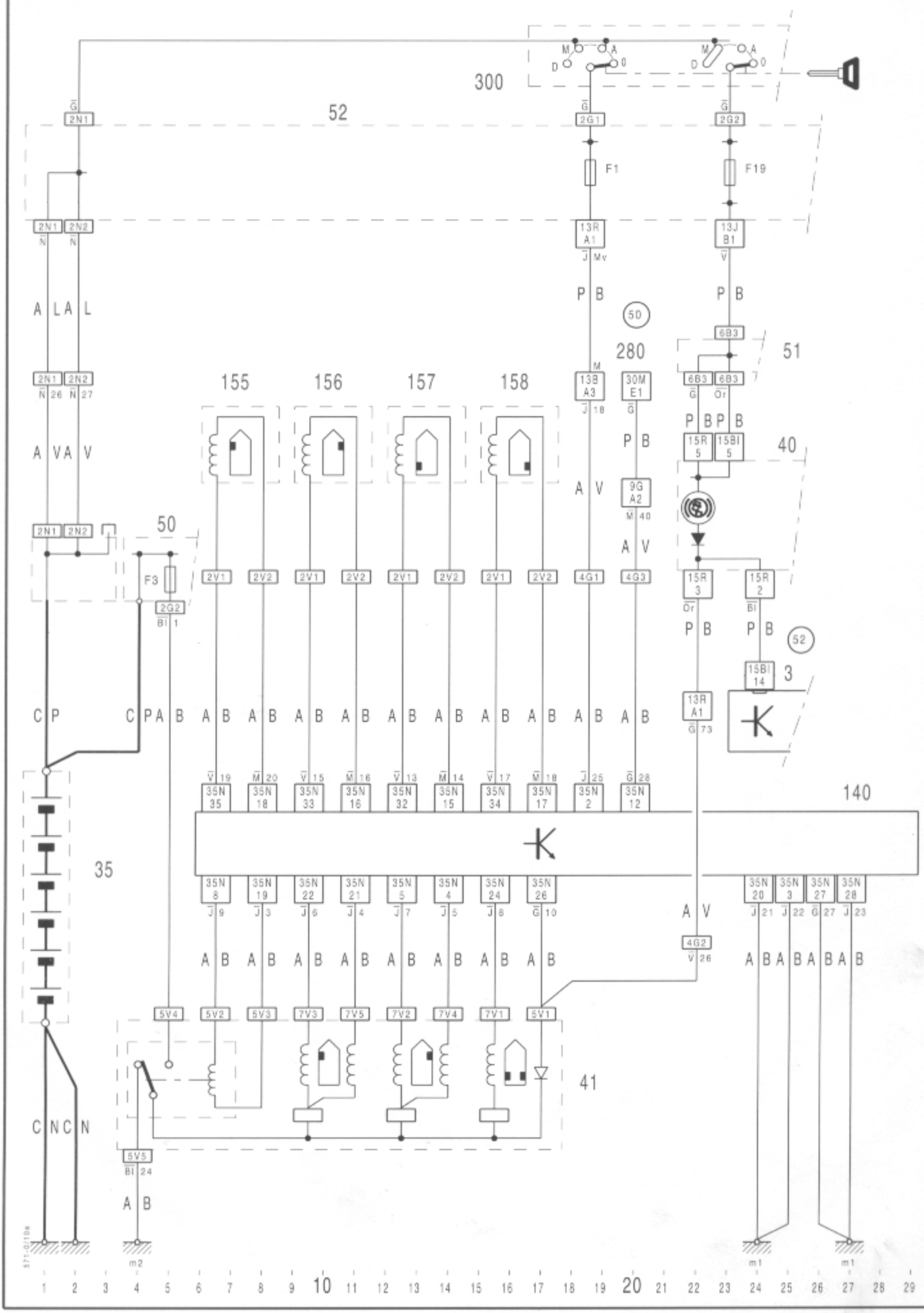
BRAKES

NUMBER	STEERING	APPLICABLE	DESCRIPTION
571-0/10	All Types	6383 → → 6749	BENDIX ABR XMA88
571-0/10a	All Types	6749 →	Evolution a : Fuse box modified XMS215
571-0/20	All Types	6749 →	TEVES ABS XMS190 + XMS190-i

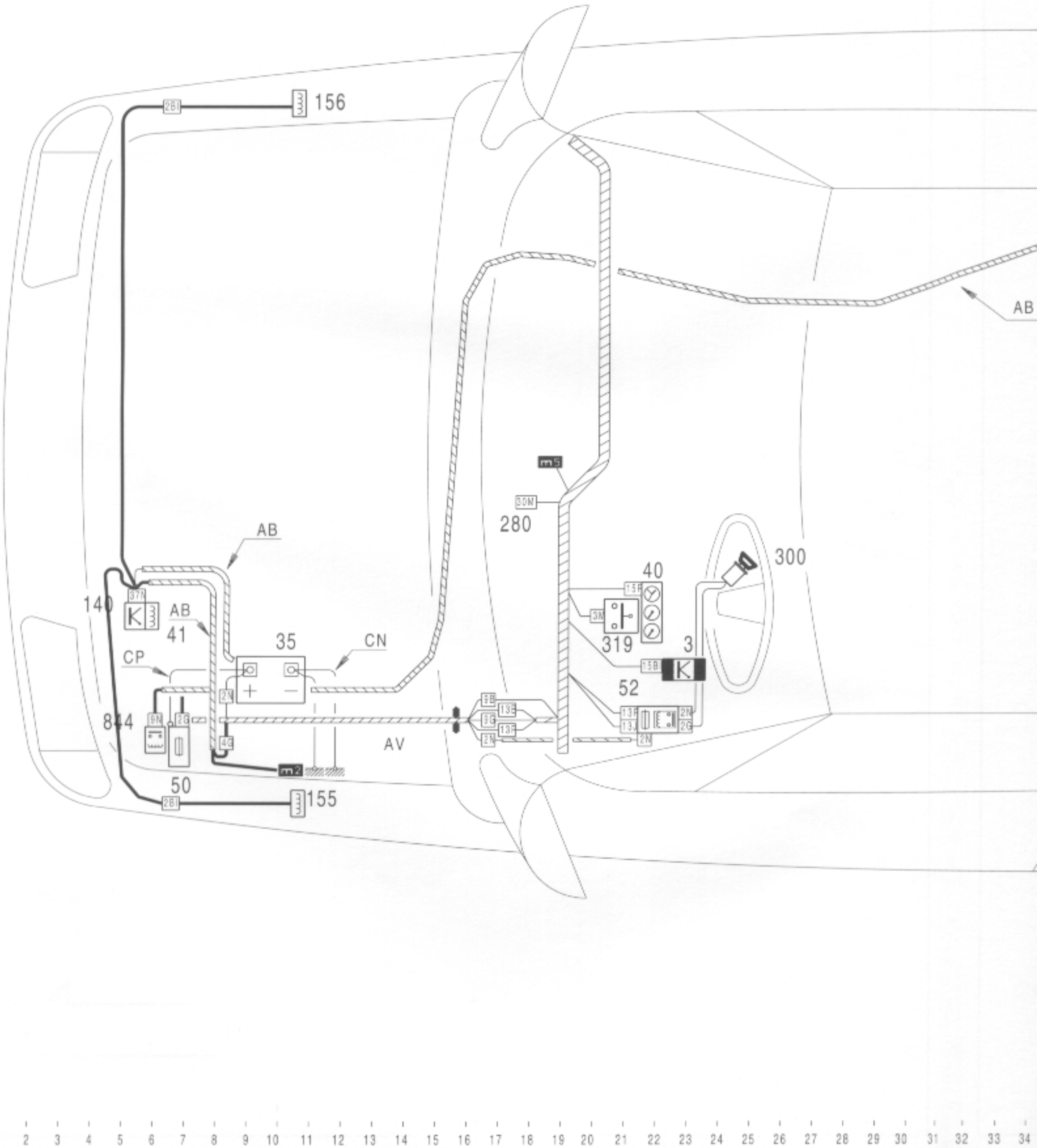
www.WorkshopManuals.co.uk



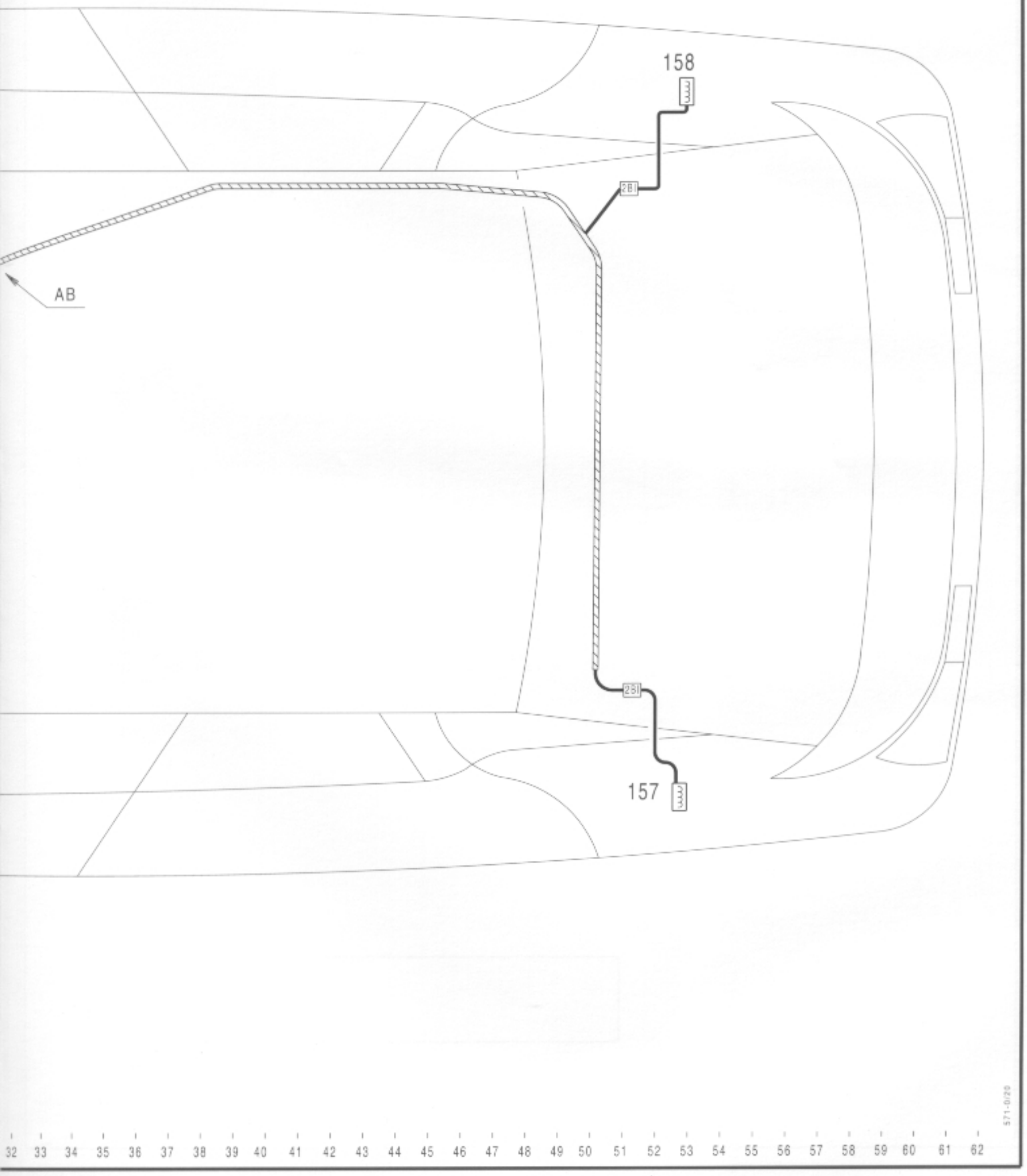
www.WorkshopManuals.co.uk



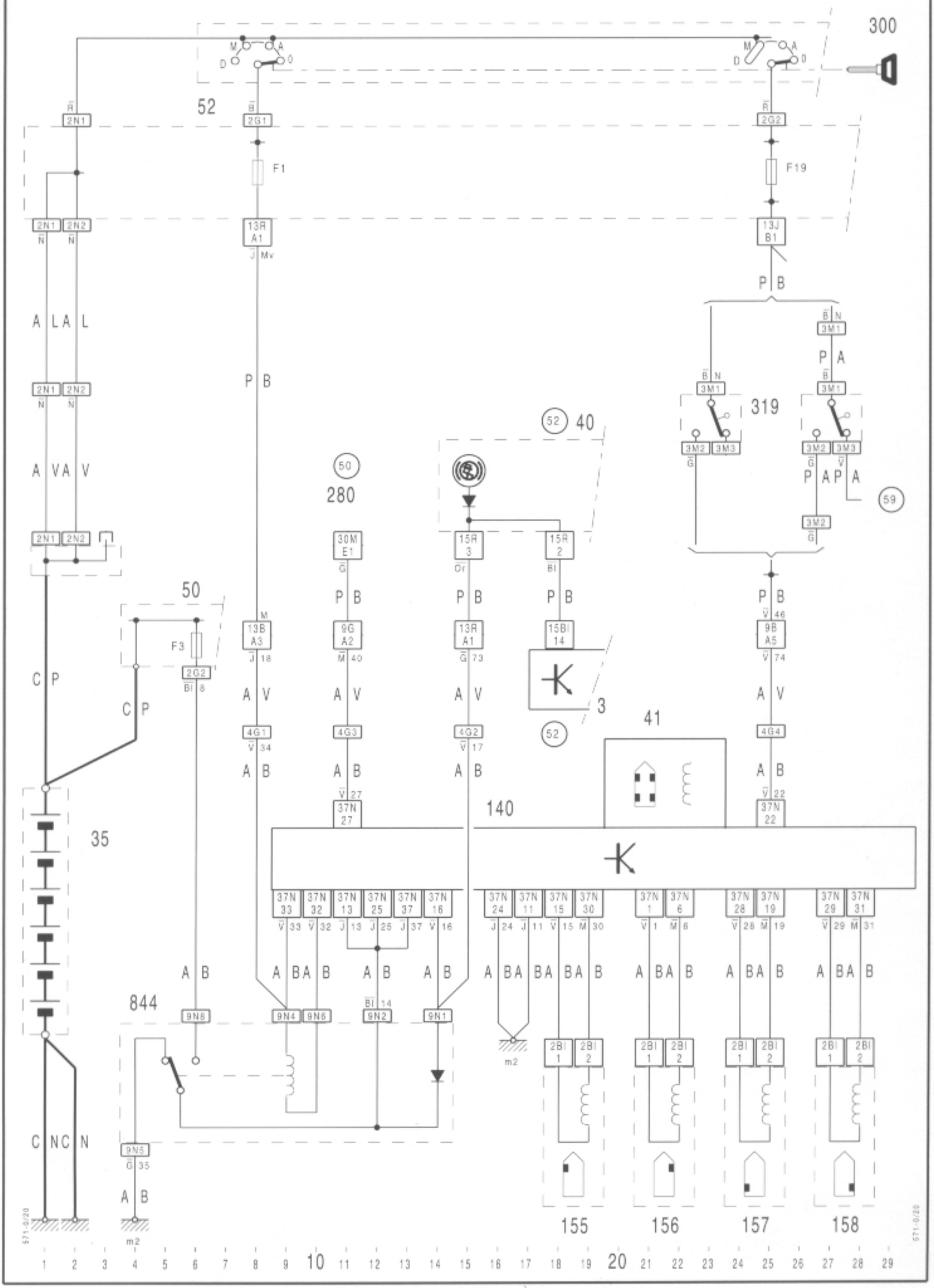
www.WorkshopManuals.co.uk



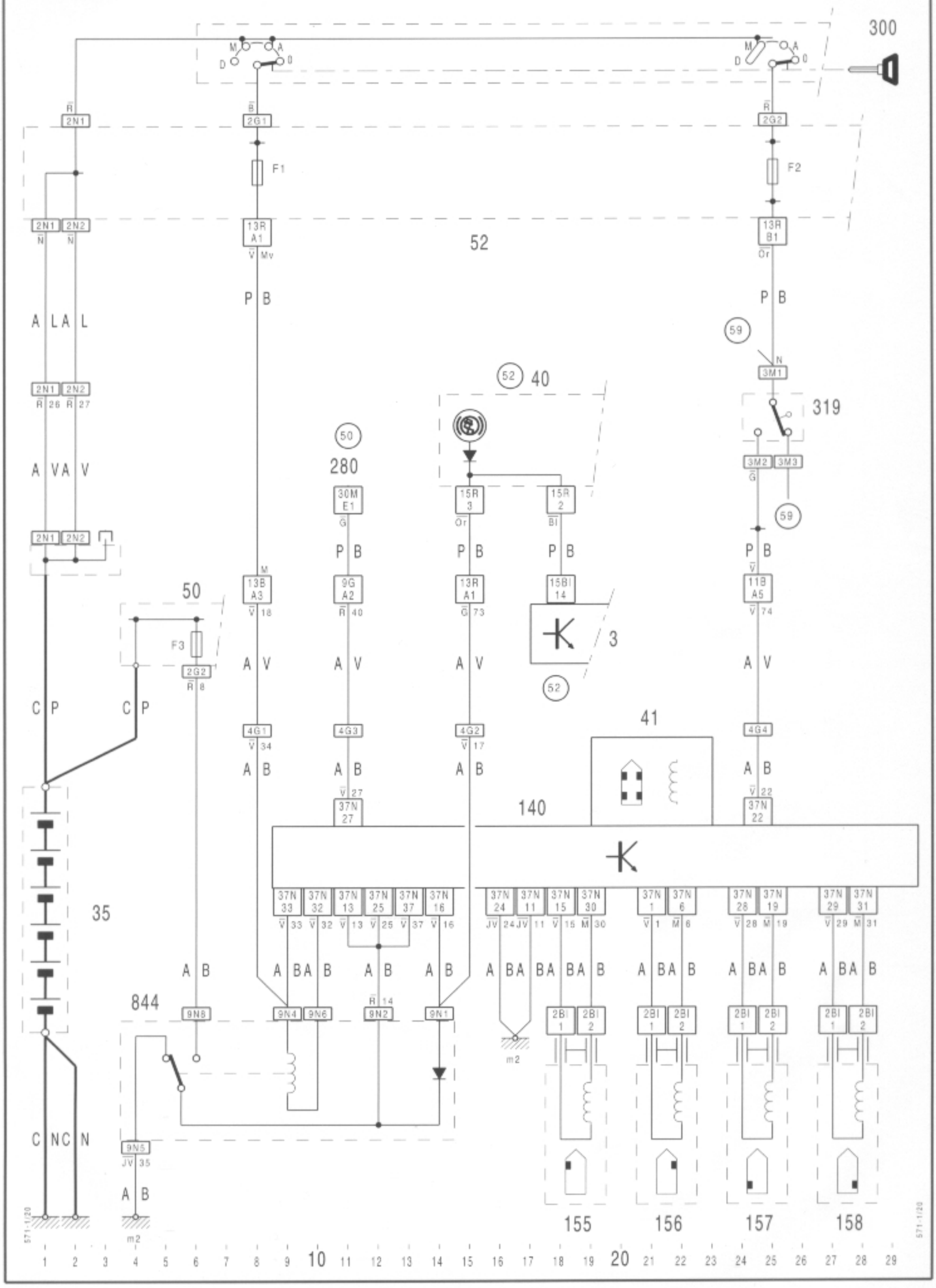
www.WorkshopManuals.co.uk



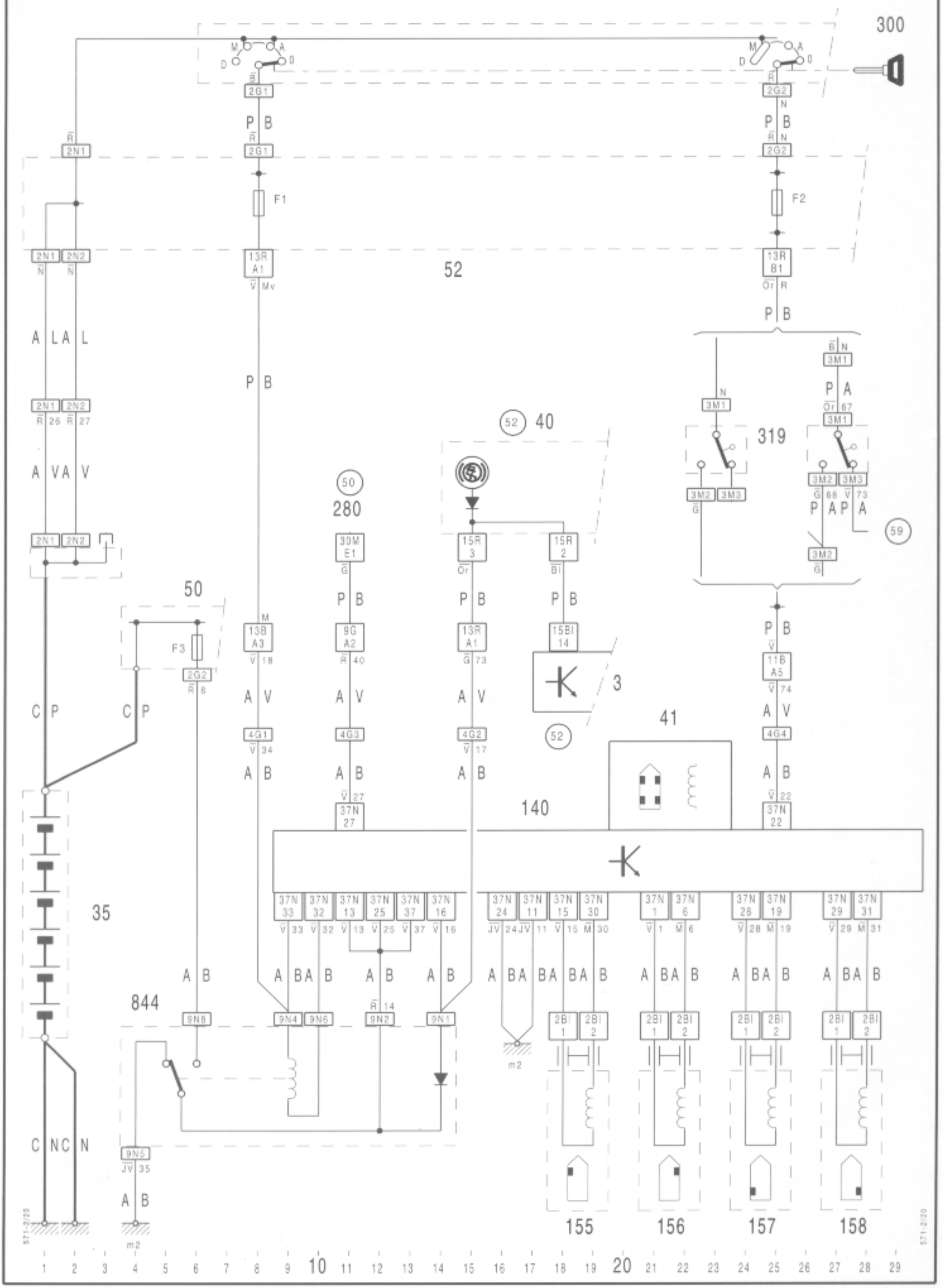
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk

SUSPENSION FUNCTION

PARTS LIST
LIST OF THE ELECTRICAL DIAGRAMS

www.WorkshopManuals.co.uk

Ref.	Description	Func.
3	L.H. display unit (electronic or silhouette)	52
35	Battery	TT
40	Instrument cluster	52
51	Branch box	TT
52	Junction box	TT
60	Cruise control control unit	59
143	Suspension ECU	58
153	Body movement sensor	58
154	Distance sensor	51-58
159	Steering wheel sensor	58
280	Diagnostic connector	TT
300	Anti-theft switch	TT
302	Boot lighting contact	55
310	L.H. front door pillar contact	55
311	R.H. front door pillar contact	55
312	L.H. rear door pillar contact	55
313	R.H. rear door pillar contact	55
427	Rear suspension electrovalve	51
433	Suspension electrovalve (single or front)	58
606	Suspension switch	58
670	Brake pressure switch (suspension)	58
771	Accelerator pedal potentiometer	58

Ref.	Description	Func.

N
5
58
58
58
58
58
58
58
58
58
58
58
58
58
58

www.WorkshopManuals.co.uk

SUSPENSION

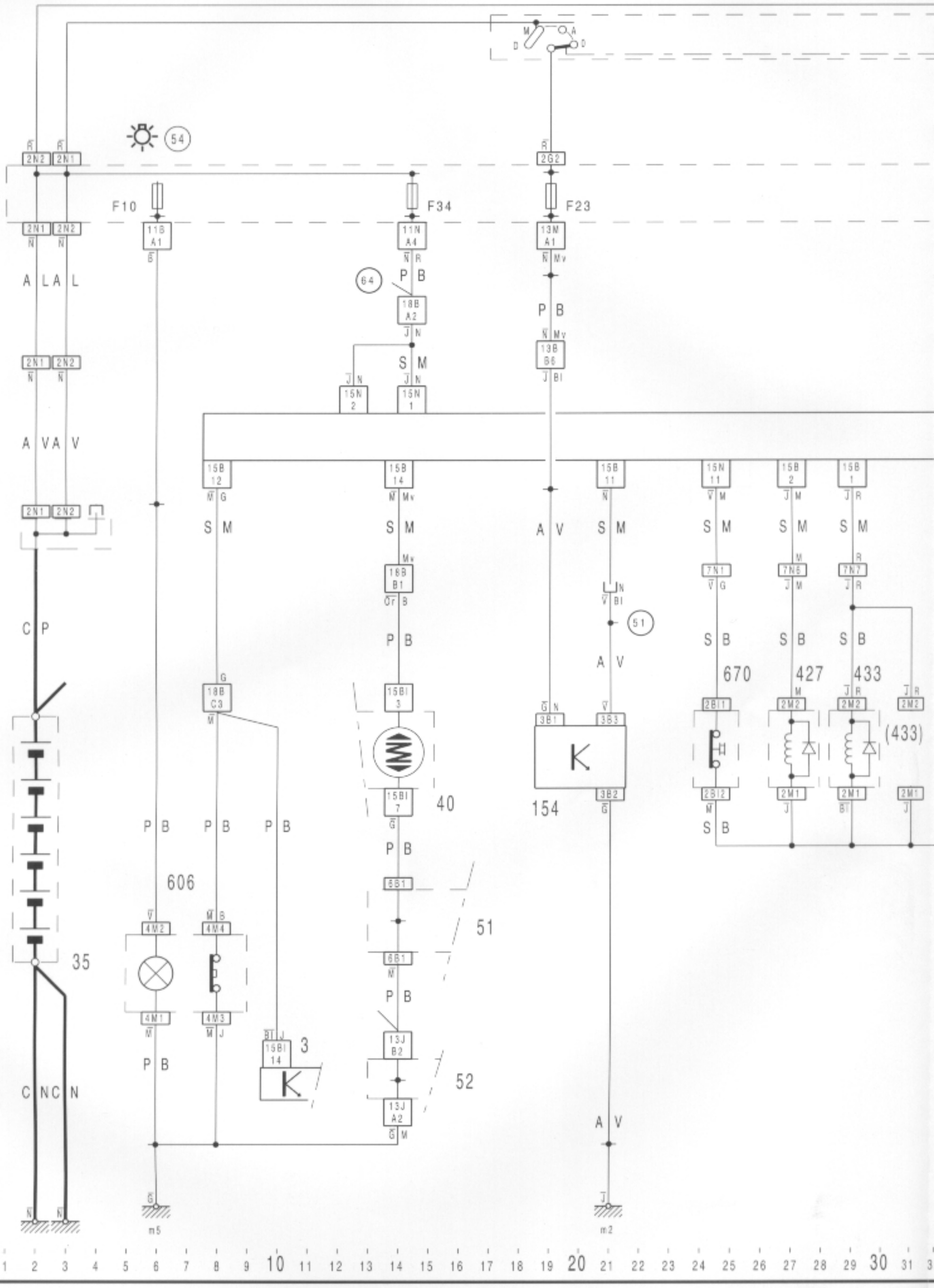
NUMBER	STEERING	APPLICABLE	DESCRIPTION	
580-1/20	L.H.D.	6383 → → 6749	Hydractive suspension	XMS73
580-1/20a	L.H.D.	6749 → → 6947	Evolution a : Fuse box modified	XMS195
580-1/20b	L.H.D.	6947 → → 7084	Evolution b : Electrical harness SM modified	XMI001
580-1/20c	L.H.D.	7084 → → 7329	Evolution c : Electrical harnesses AV and CL modified	XMI005
580-1/20d	L.H.D.	7329 → → 7483	Evolution d : Electrical harnesses PB and CL modified	XMI009
580-1/20e	L.H.D.	7483 → → 7847	Evolution e : Electrical harnesses PB, RD and VD modified	XMI013
580-1/20f	L.H.D.	7847 →	Evolution f : Electrical harness SB modified	XMI017
580-1/21	L.H.D.	6383 → → 6749	Hydractive suspension + cruise control	XMS75
580-1/21a	L.H.D.	6749 → → 6947	Evolution a : Fuse box modified	XMS196
580-1/21b	L.H.D.	6947 → → 7084	Evolution b : Electrical harness SM modified	XMI002
580-1/21c	L.H.D.	7084 → → 7329	Evolution c : Electrical harnesses AV and CL modified	XMI006
580-1/21d	L.H.D.	7329 → → 7483	Evolution d : Electrical harnesses PB and CL modified	XMI010
580-1/21e	L.H.D.	7483 → → 7847	Evolution e : Electrical harnesses PB, RD and VD modified	XMI014
580-1/21f	L.H.D.	7847 →	Evolution f : Electrical harness SB modified	XMI018
580-2/20	R.H.D.	6383 → → 6568	Hydractive suspension	XMS74
580-2/20a	R.H.D.	6568 → → 6749	Evolution a : Modification to electrical harness PB	XMS129
580-2/20b	R.H.D.	6749 → → 6947	Evolution b : Fuse box modified	XMS197
580-2/20c	R.H.D.	6947 → → 7084	Evolution c : Electrical harness SM modified	XMI003

www.WorkshopManuals.co.uk

SUSPENSION (cont.)

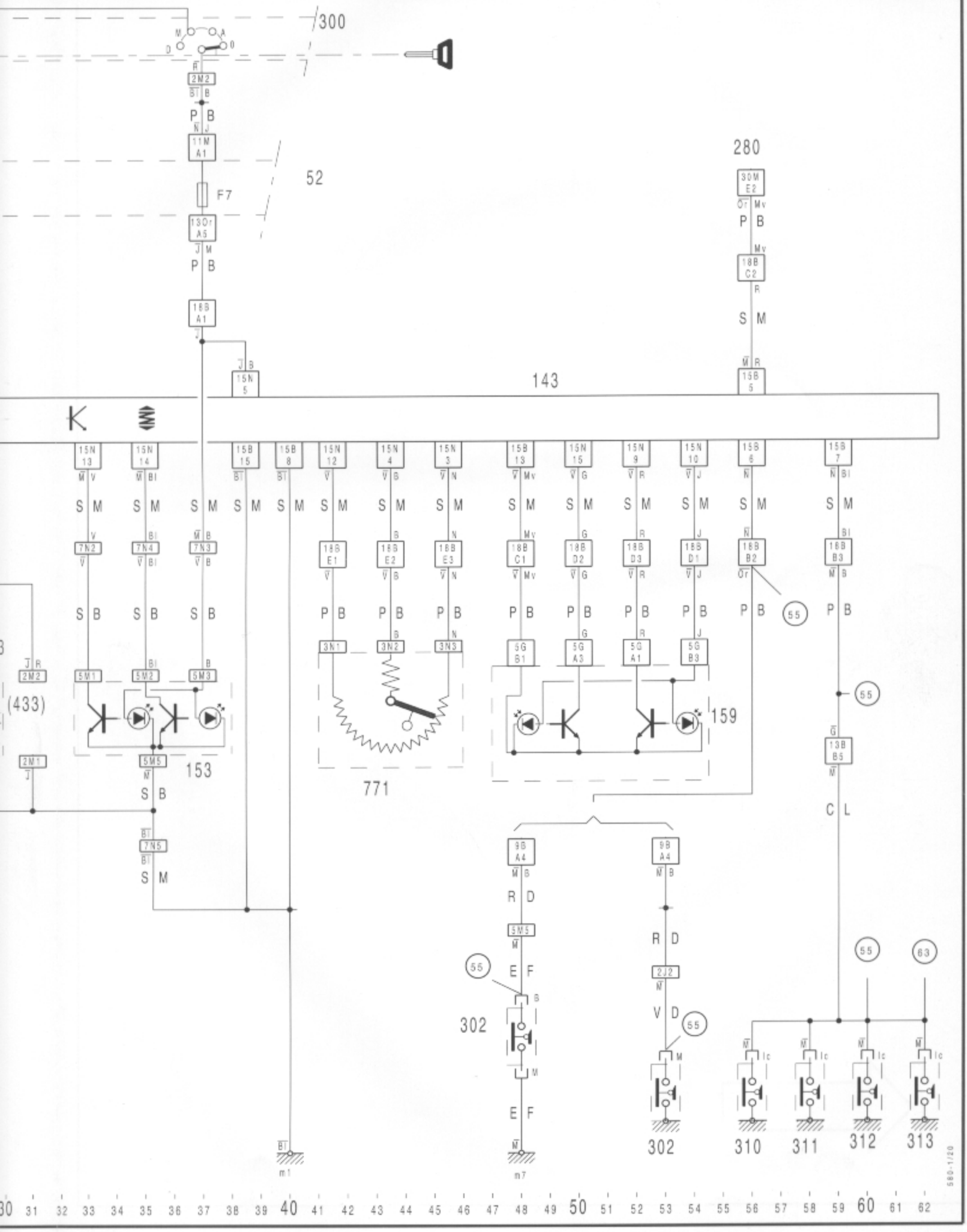
NUMBER	STEERING	APPLICABLE	DESCRIPTION	
580-2/20d	R.H.D.	7084 → → 7329	Evolution d : Electrical harnesses PB, AV and CL modified	XMI007
580-2/20e	R.H.D.	7329 → → 7483	Evolution e : Electrical harnesses PB and CL modified	XMI011
580-2/20f	R.H.D.	7483 fi → 7847	Evolution f : Electrical harnesses PB, RD and VD modified	XMI015
580-2/20g	R.H.D.	7847 →	Evolution g : Electrical harness SB modified	XMI019
580-2/21	R.H.D.	6383 → → 6568	Hydractive suspension + cruise control	XMS76
580-2/21a	R.H.D.	6568 → → 6749	Evolution a : Electrical harness PB modified	XMS130
580-2/21b	R.H.D.	6749 → → 6947	Evolution b : Fuse box modified	XMS198
580-2/21c	R.H.D.	6947 → → 7084	Evolution c : Electrical harness SM modified	XMI004
580-2/21d	R.H.D.	7084 → → 7329	Evolution d : Electrical harnesses PB, AV and CL modified	XMI008
580-2/21e	R.H.D.	7329 → → 7483	Evolution e : Electrical harnesses PB and CL modified	XMI012
580-2/21f	R.H.D.	7483 → → 7847	Evolution f : Electrical harnesses PB, RD and VD modified	XMI016
580-2/21g	R.H.D.	7847 →	Evolution g : Electrical harness SB modified	XMI020

www.WorkshopManuals.co.uk

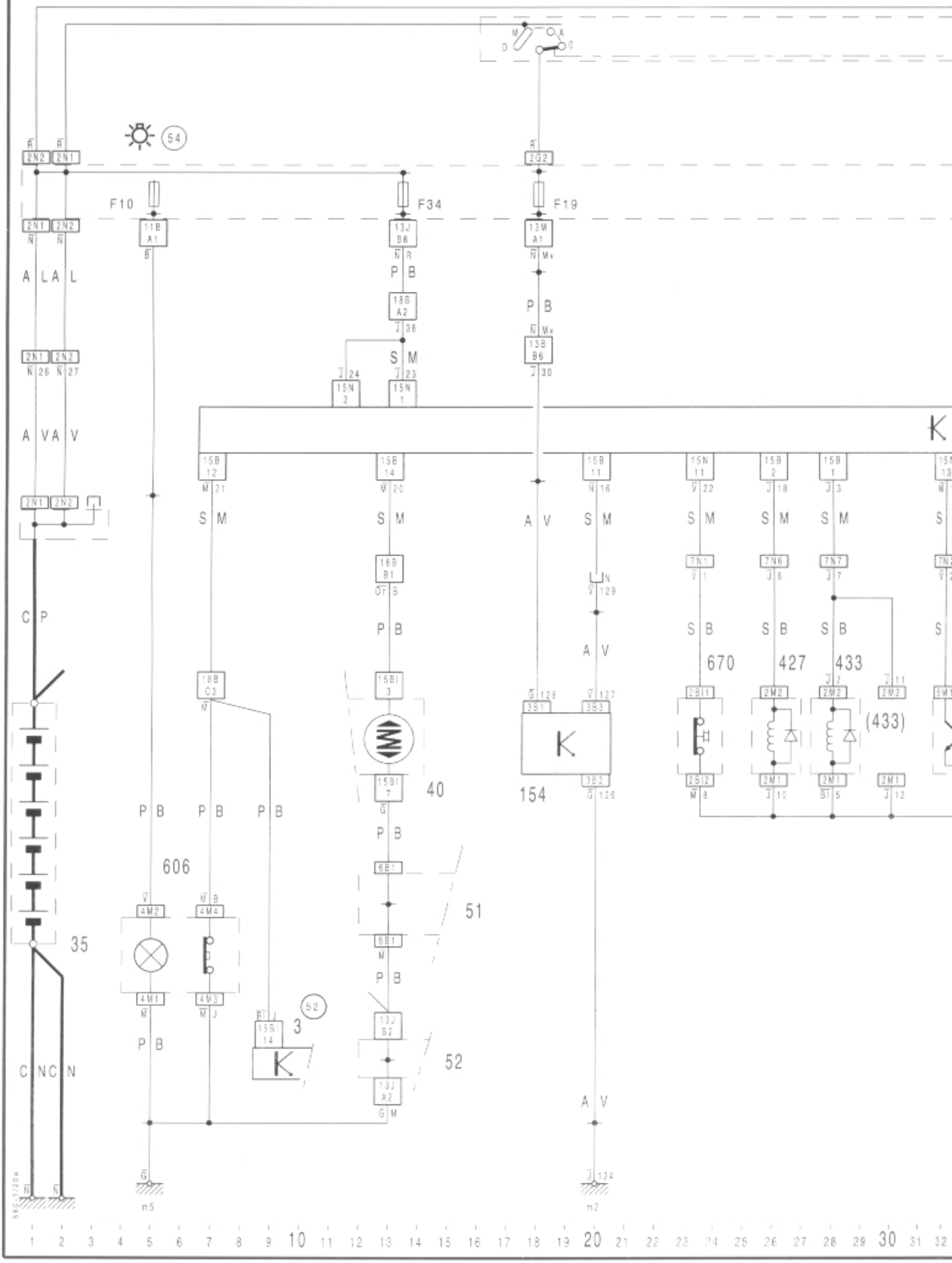


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 3

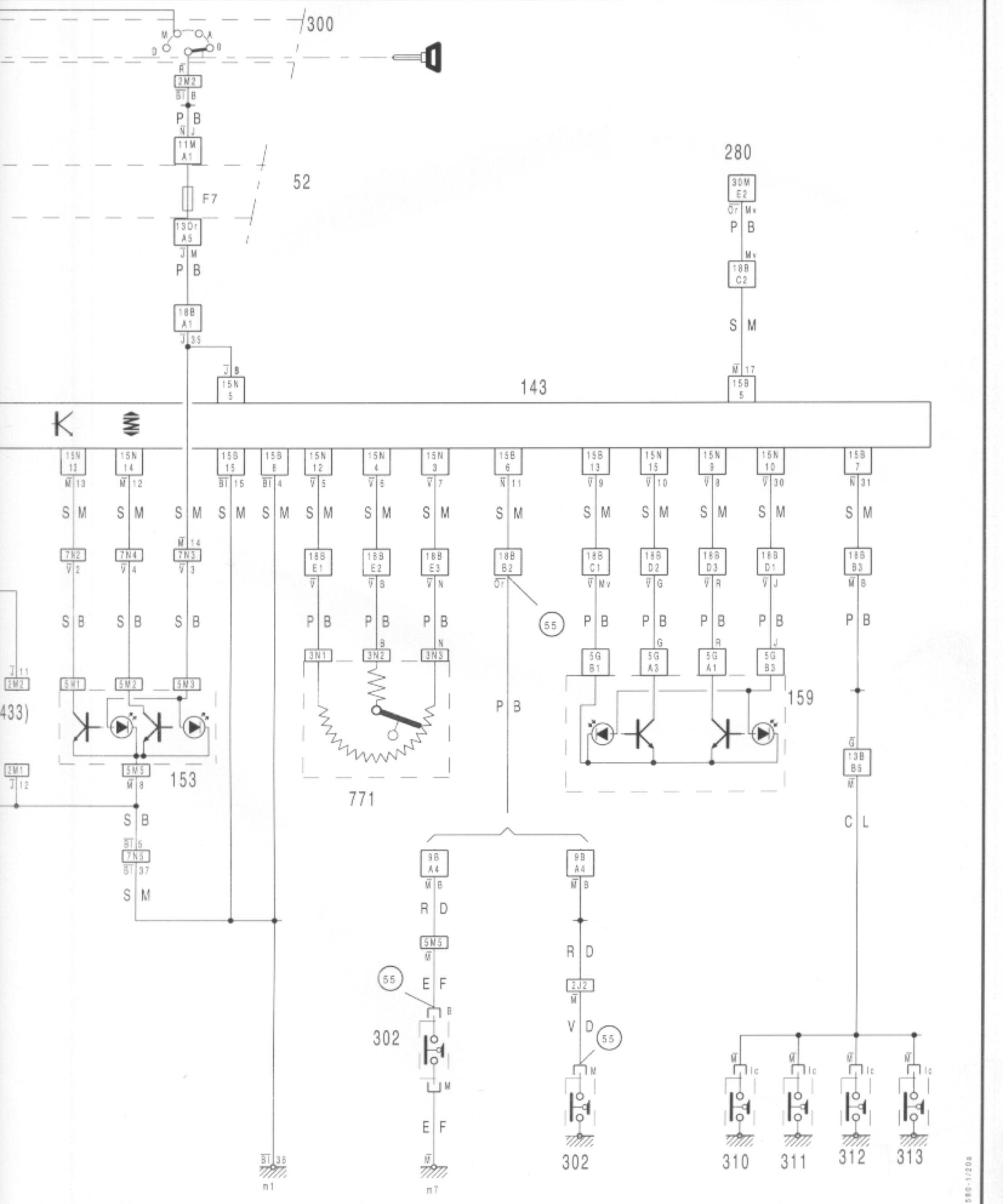
www.WorkshopManuals.co.uk



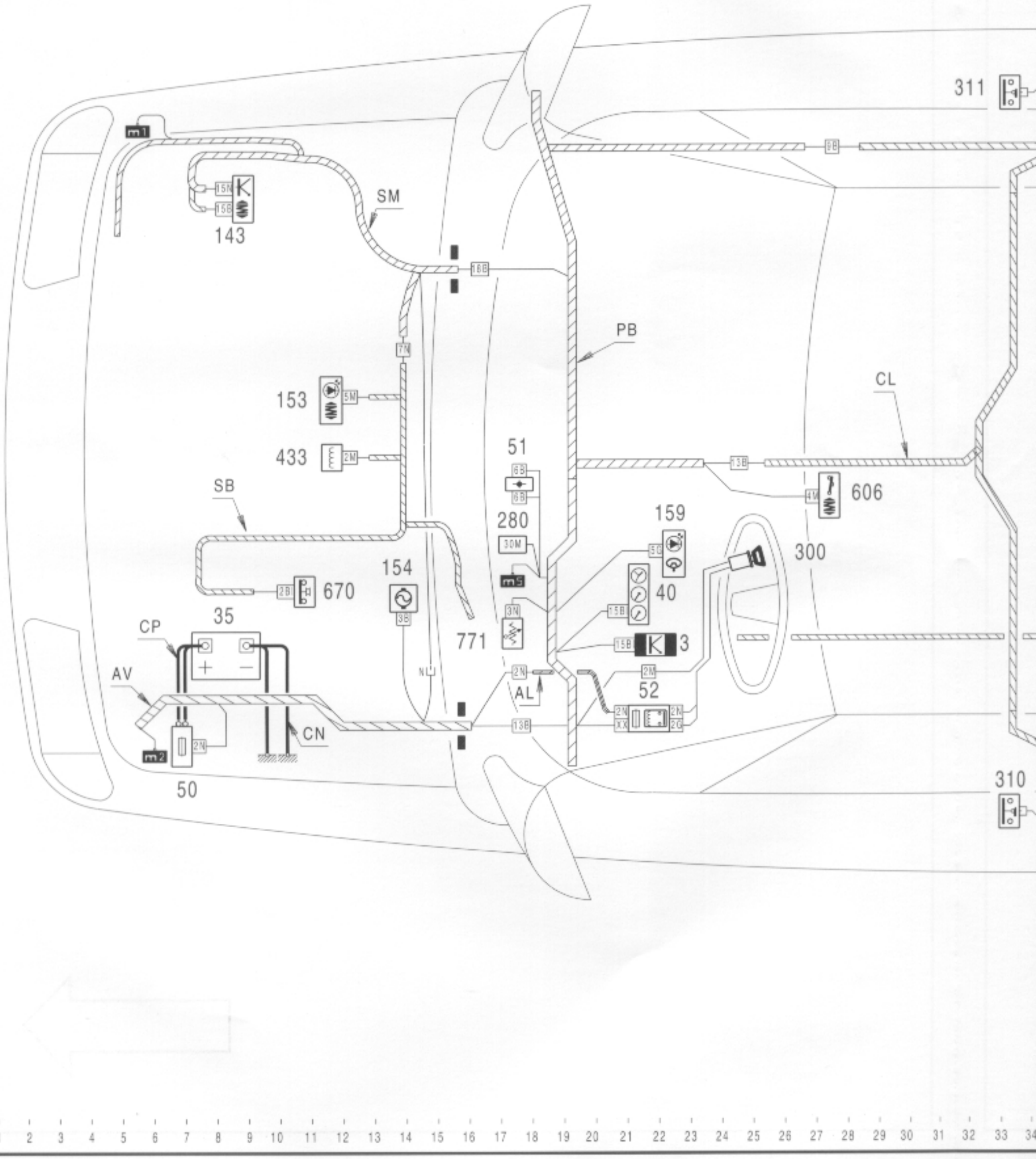
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



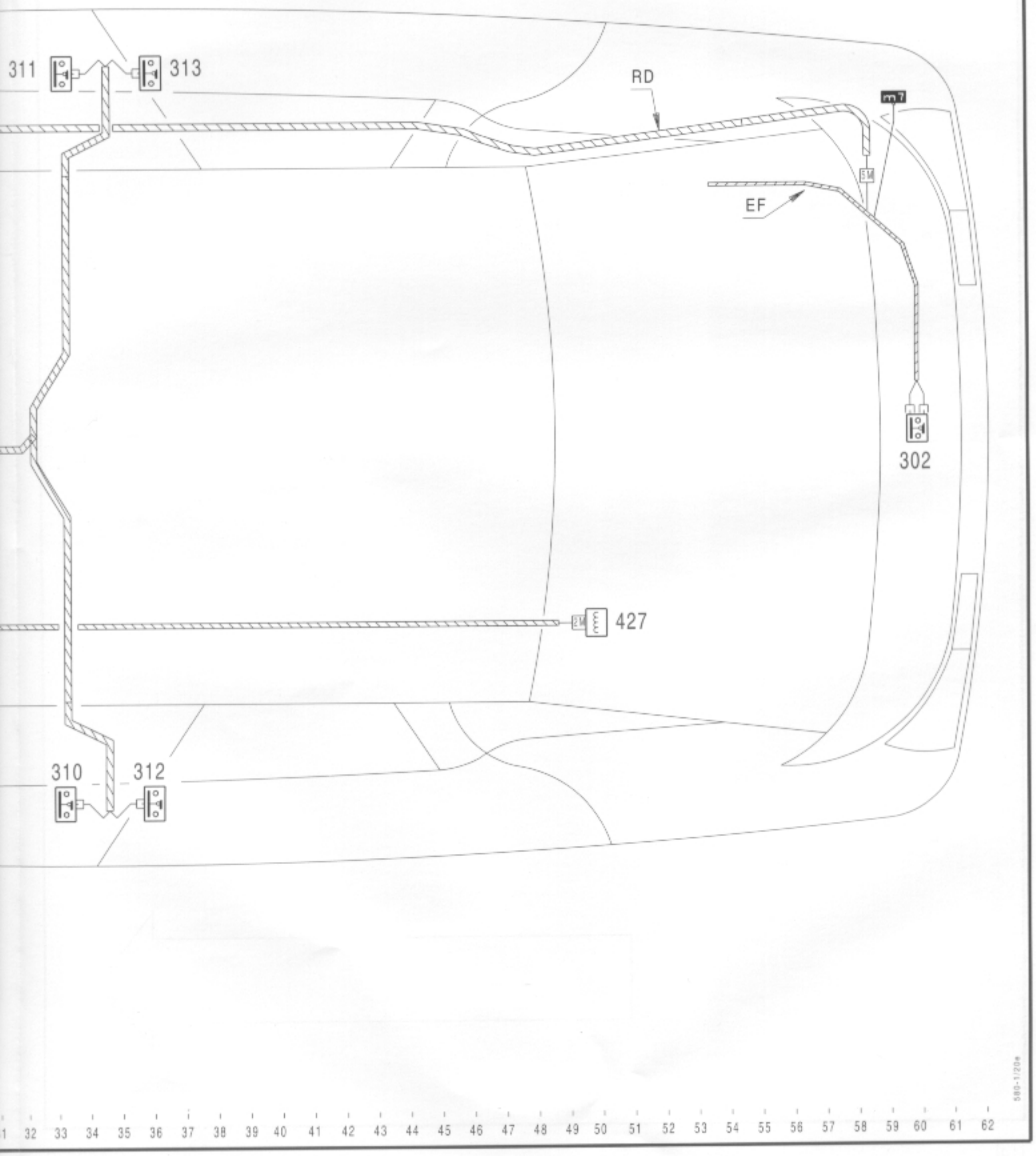
www.WorkshopManuals.co.uk



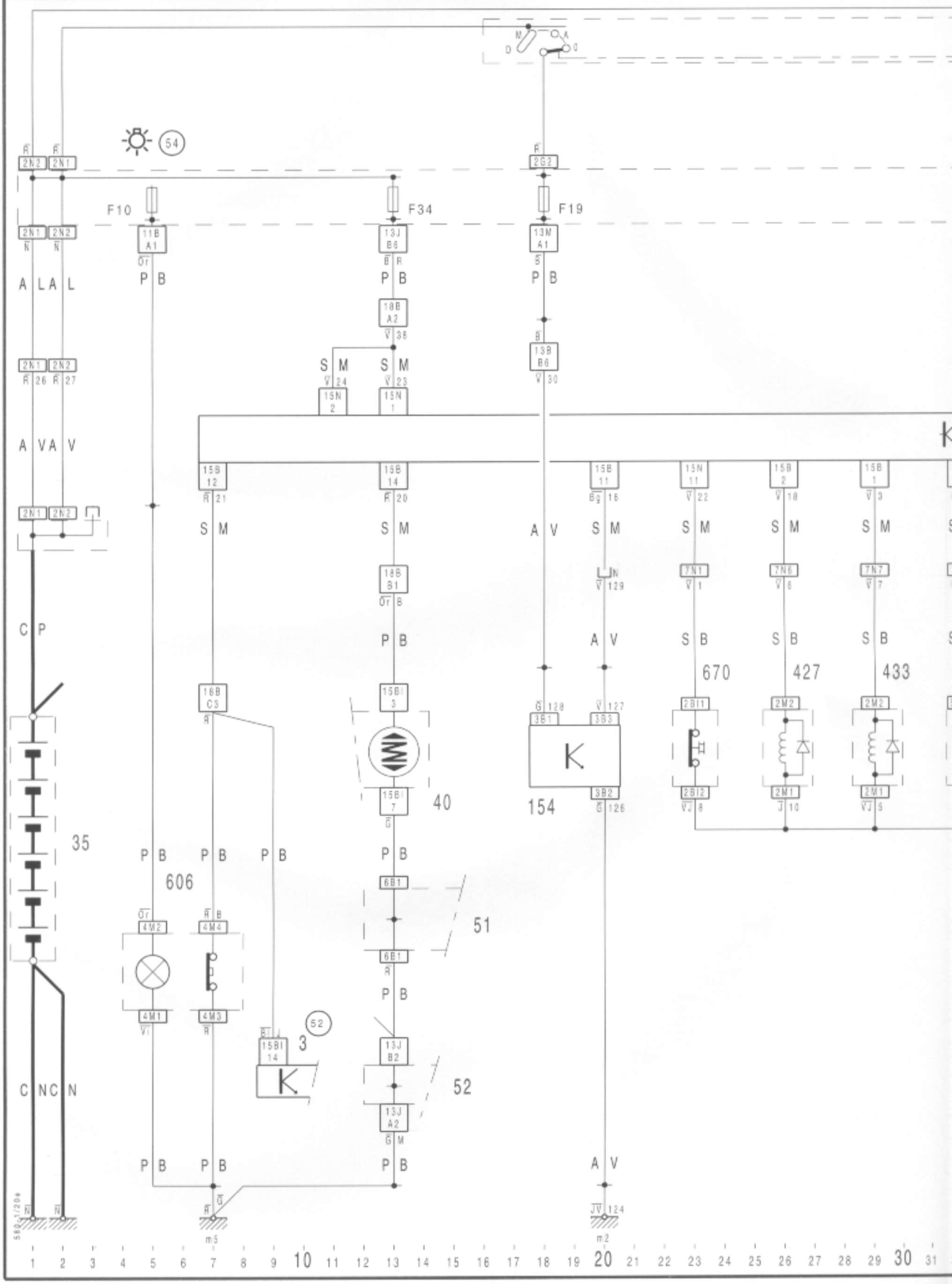
580-1/20e

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34

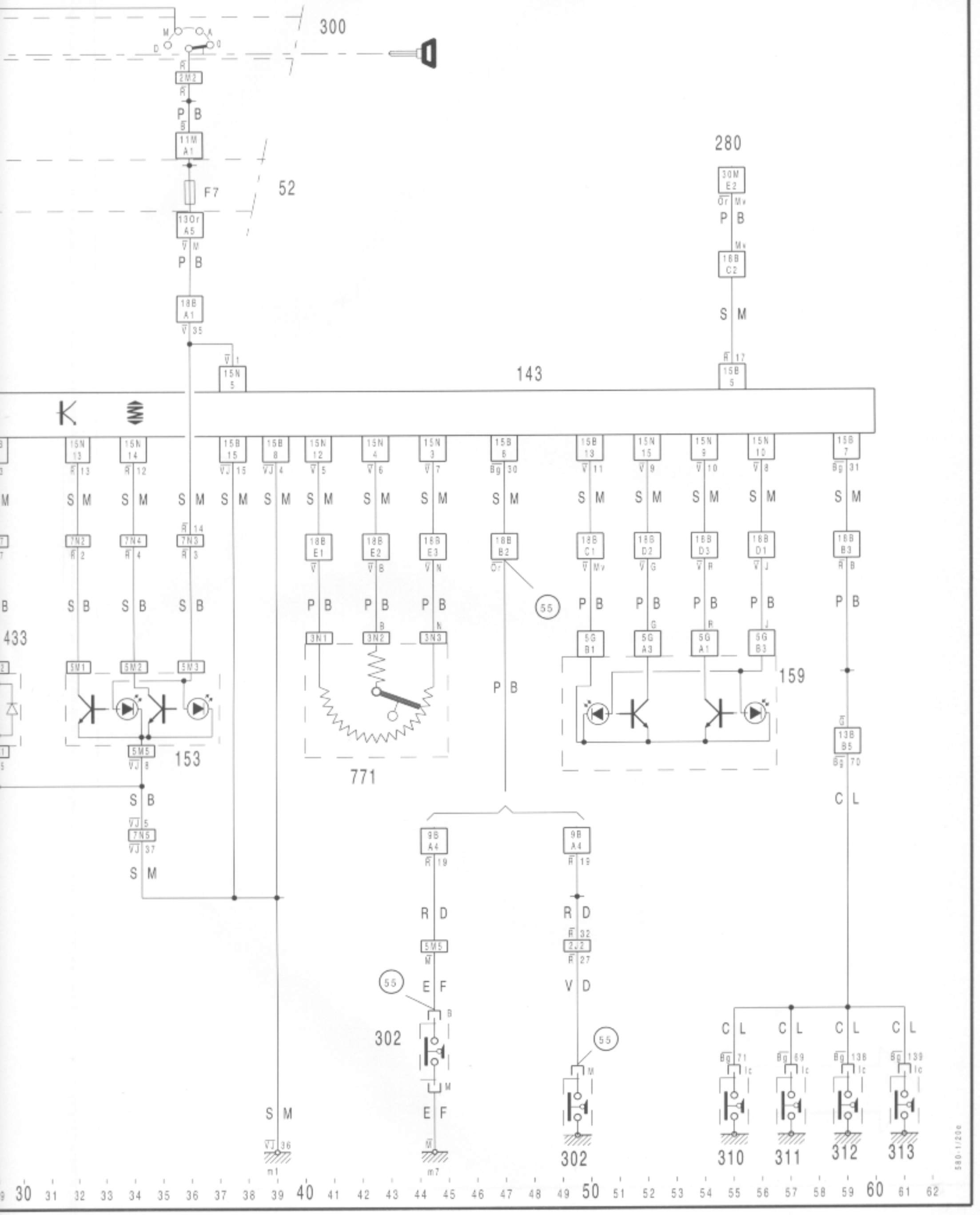
www.WorkshopManuals.co.uk



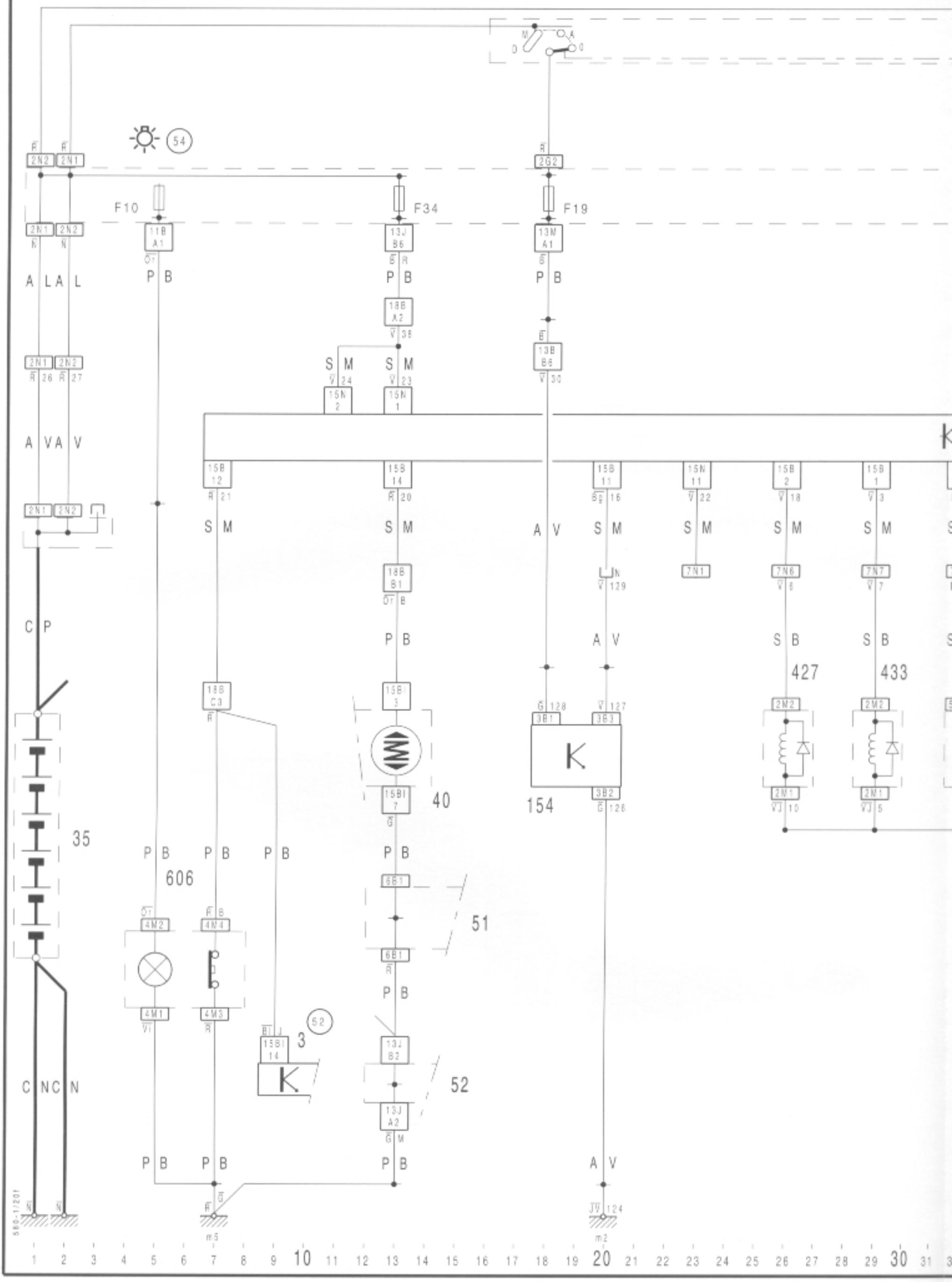
www.WorkshopManuals.co.uk



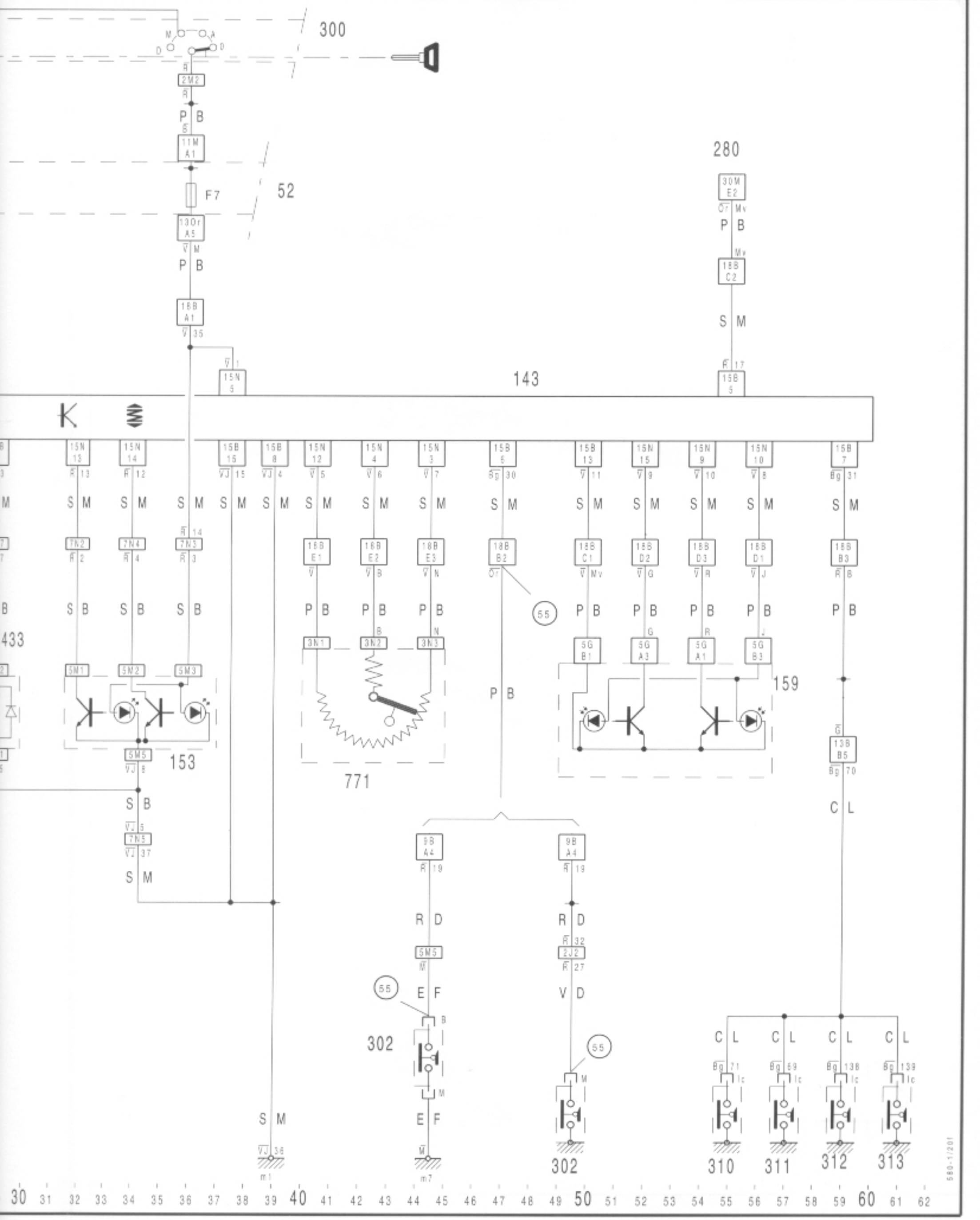
www.WorkshopManuals.co.uk



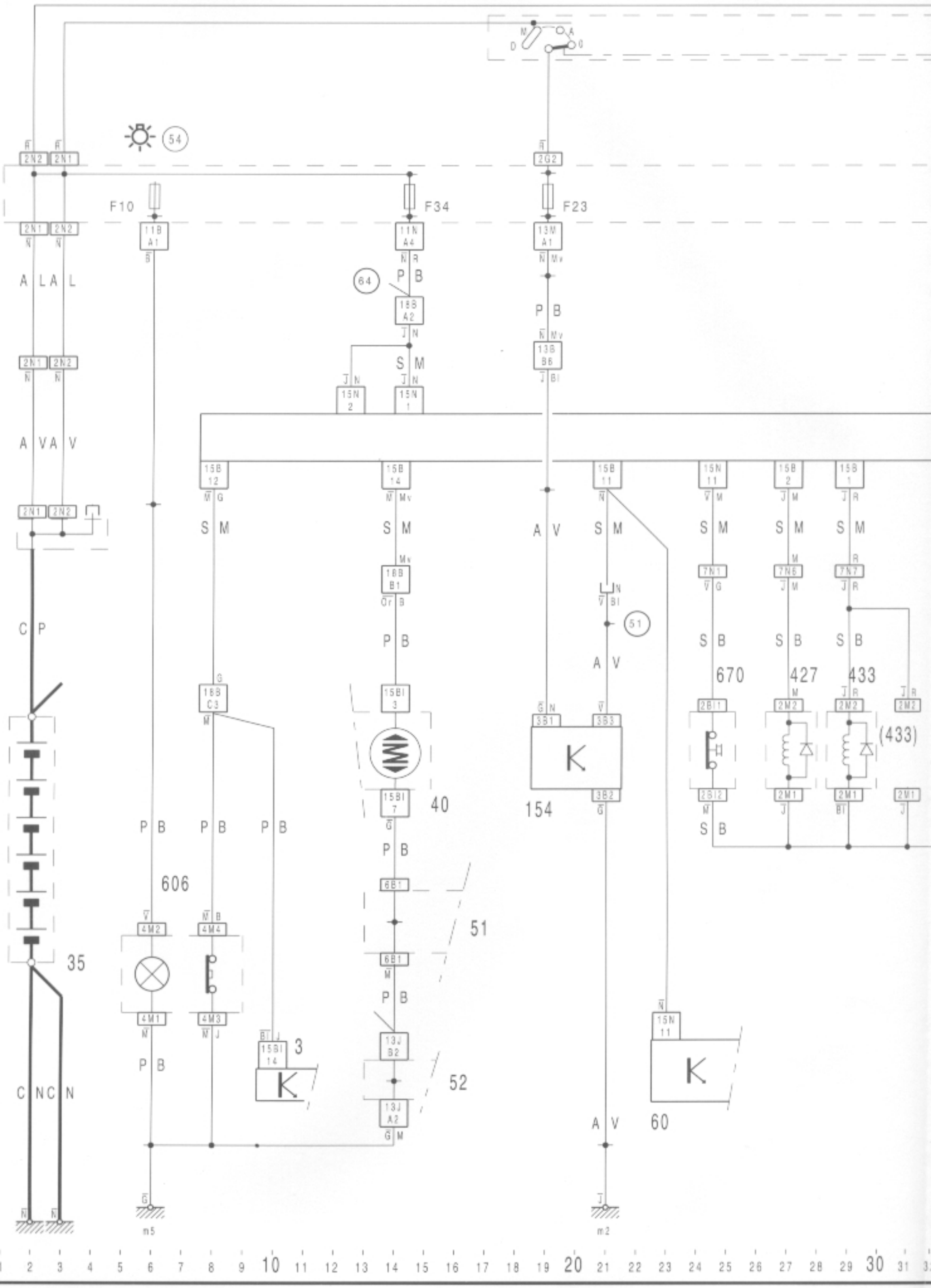
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

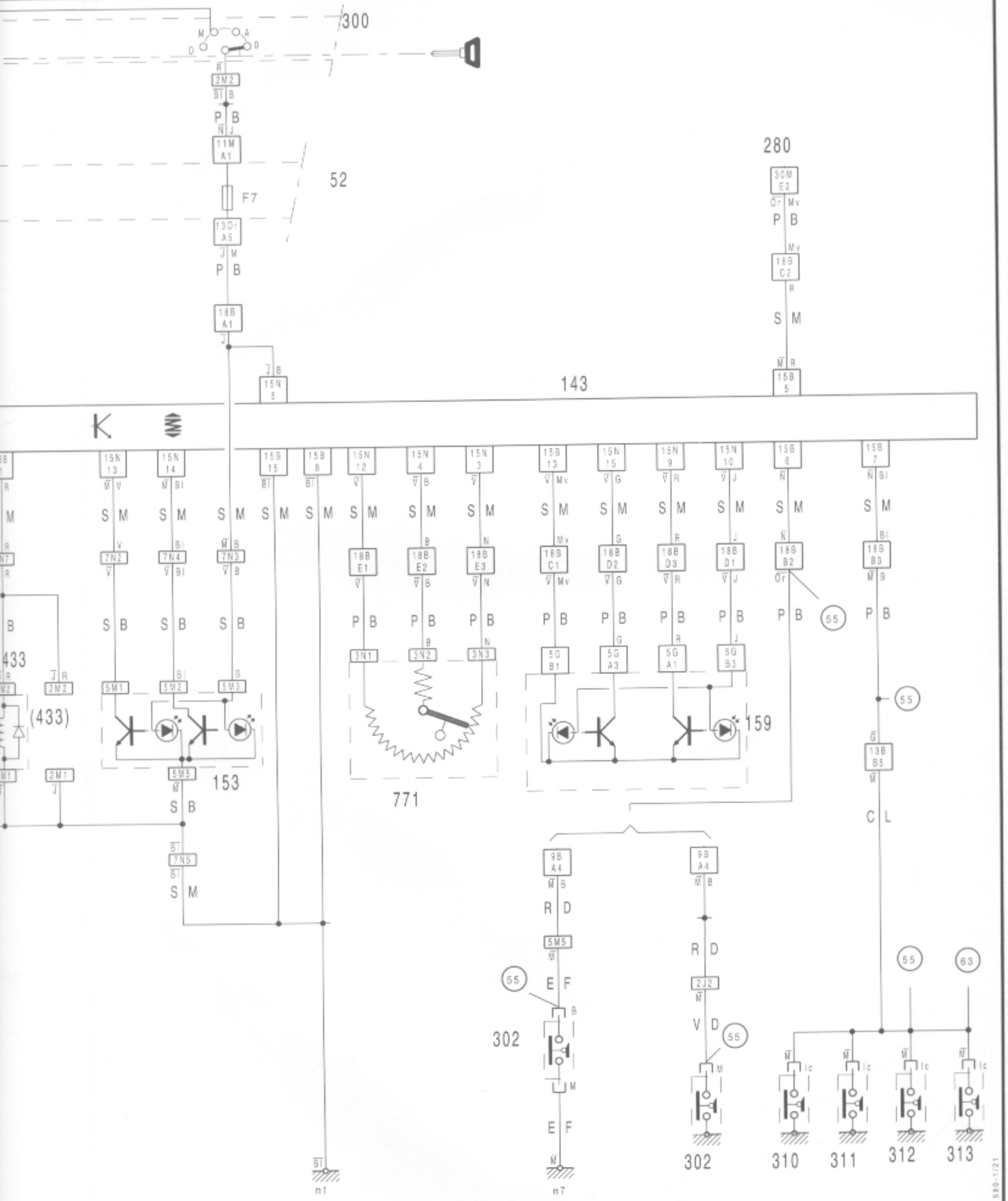


www.WorkshopManuals.co.uk

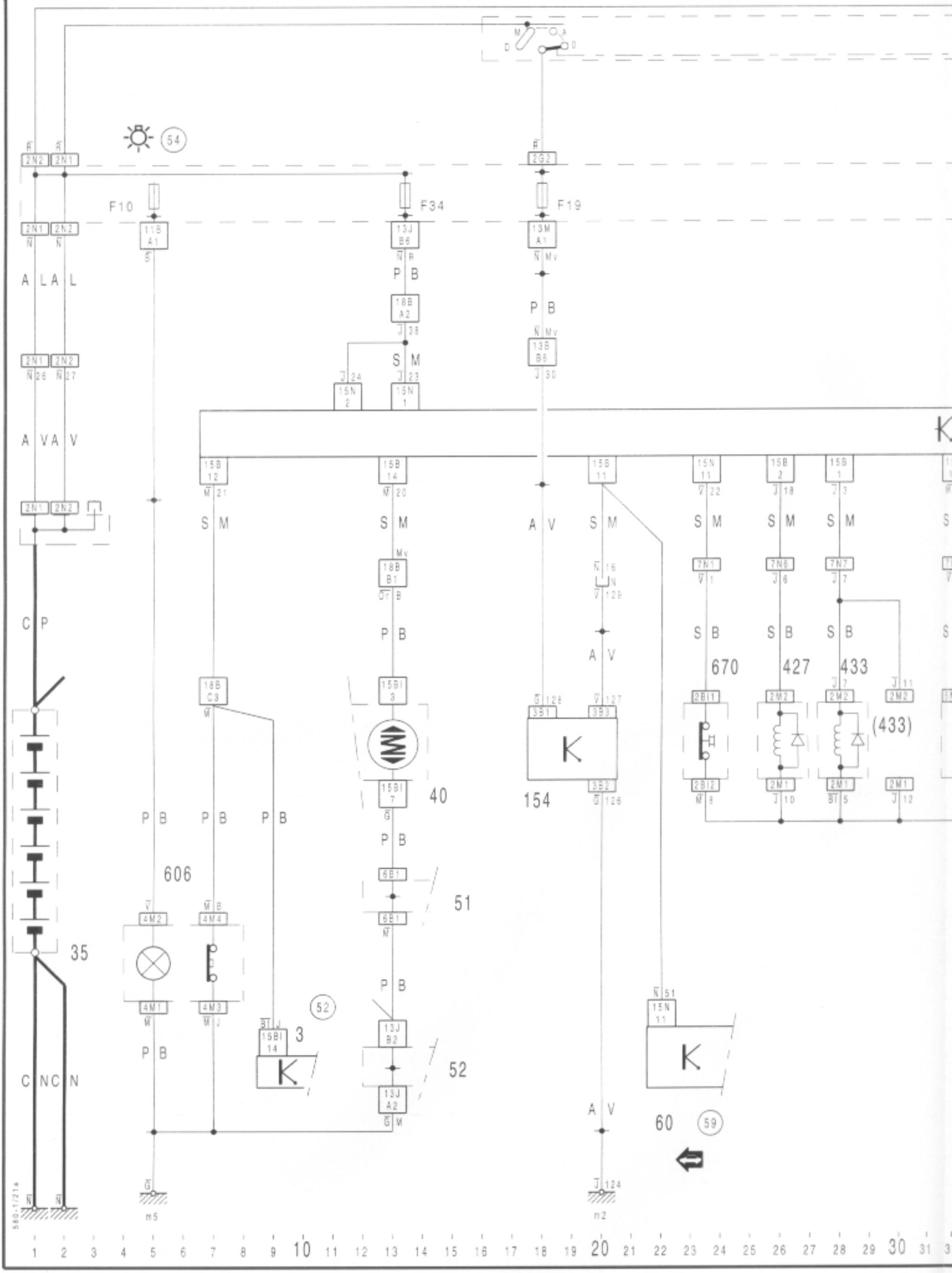


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

300

52

280

143

153

771

159

(433)

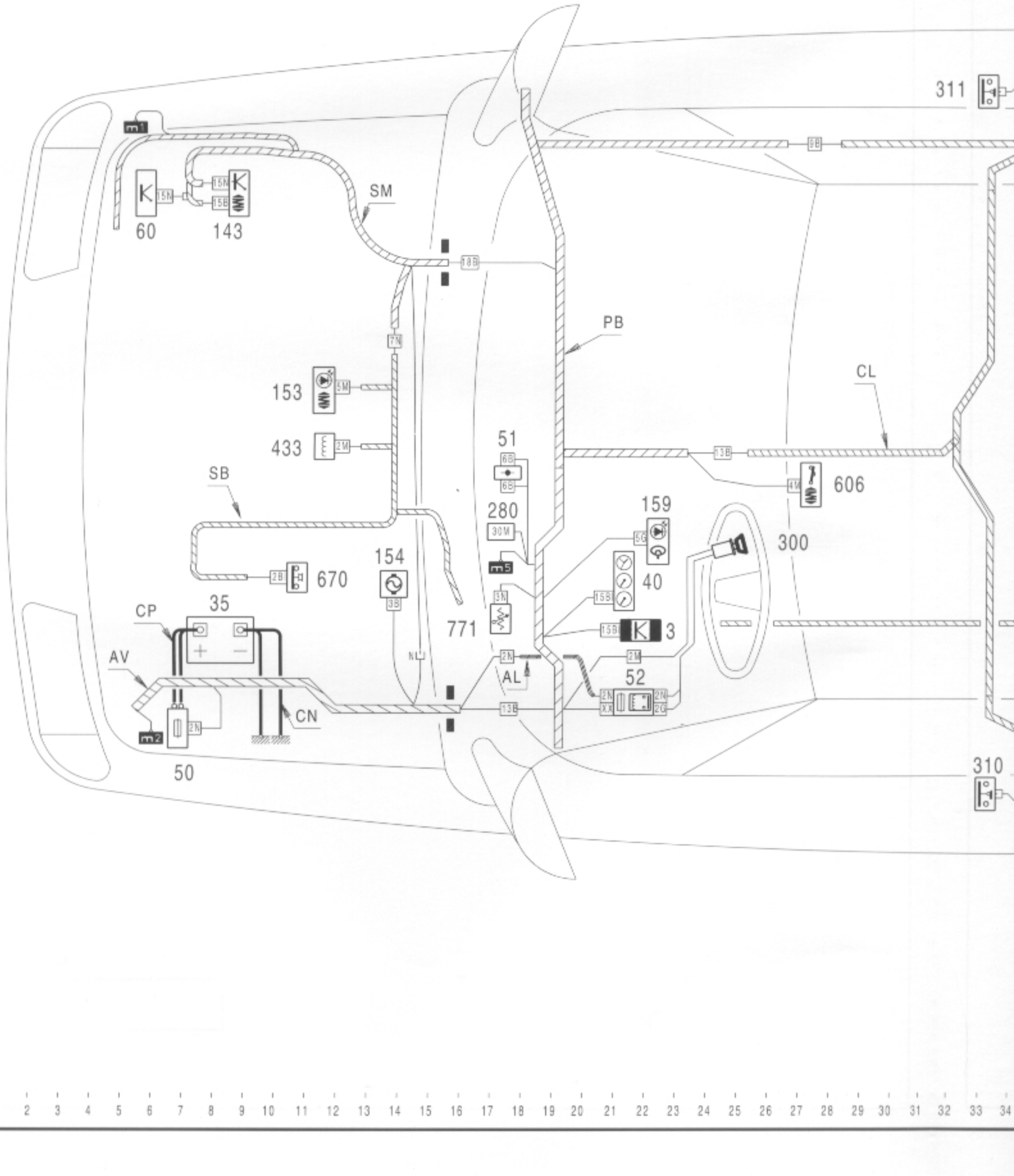
302

310 311 312 313

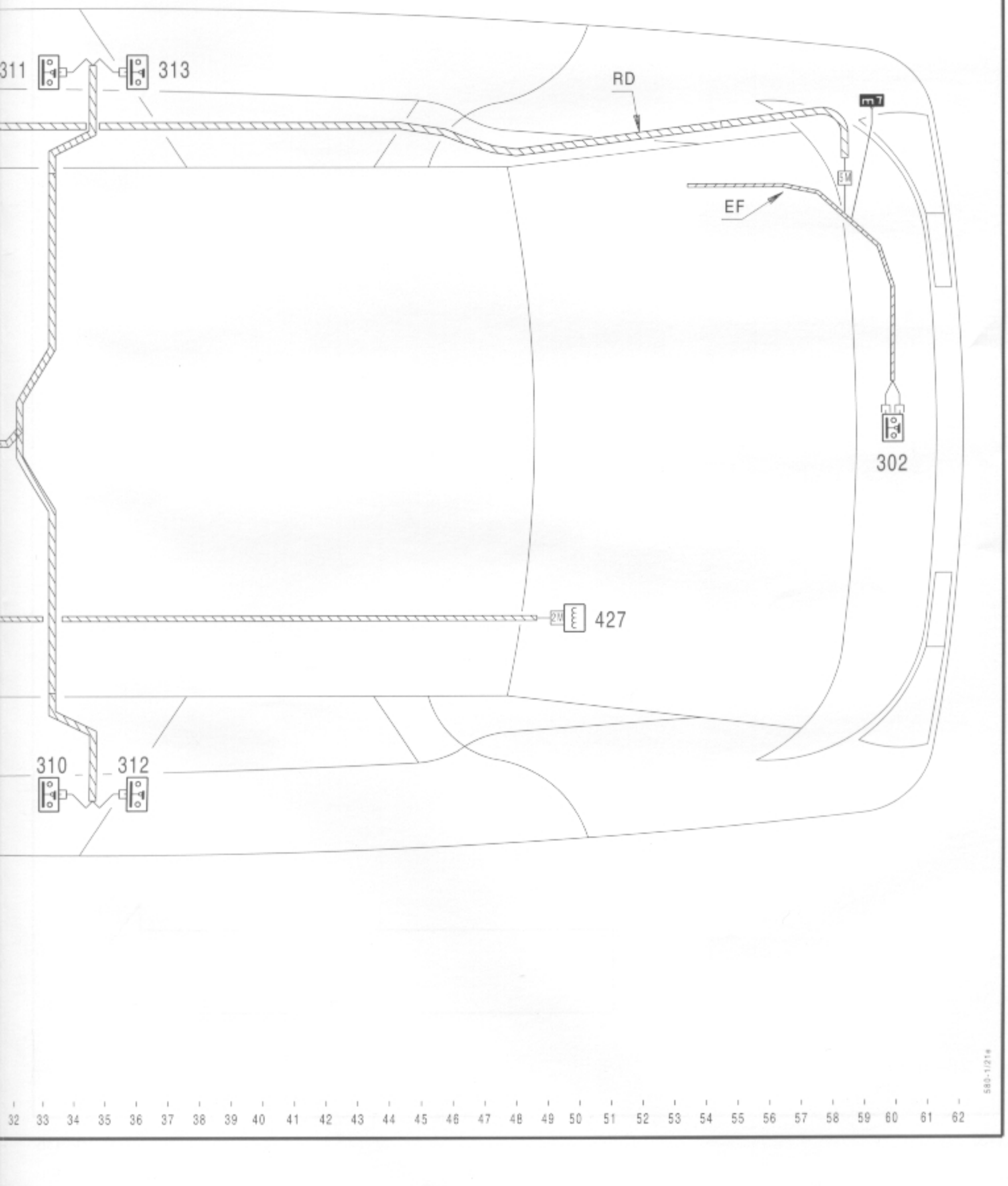
m1 m7

580-1/21a

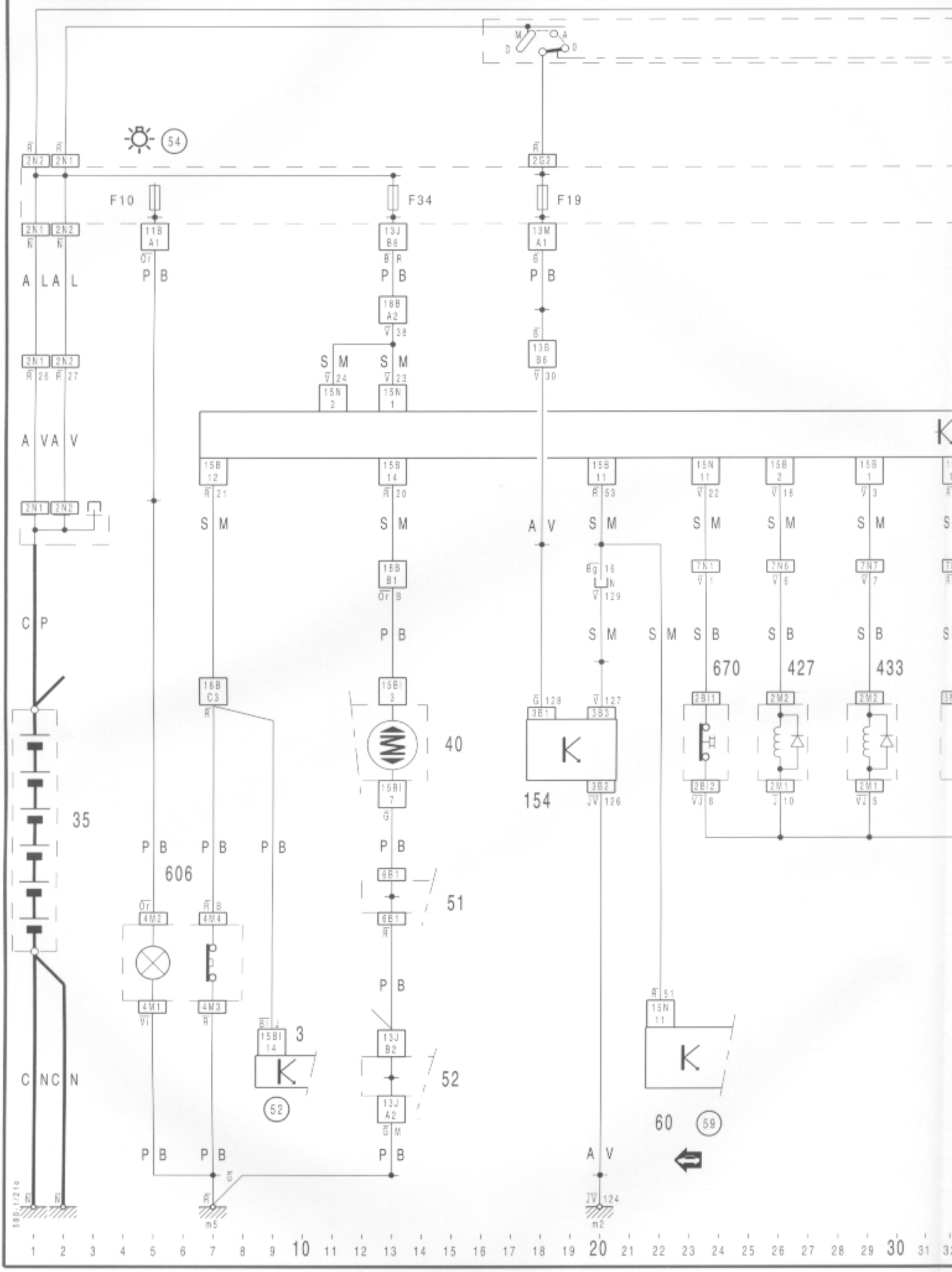
www.WorkshopManuals.co.uk



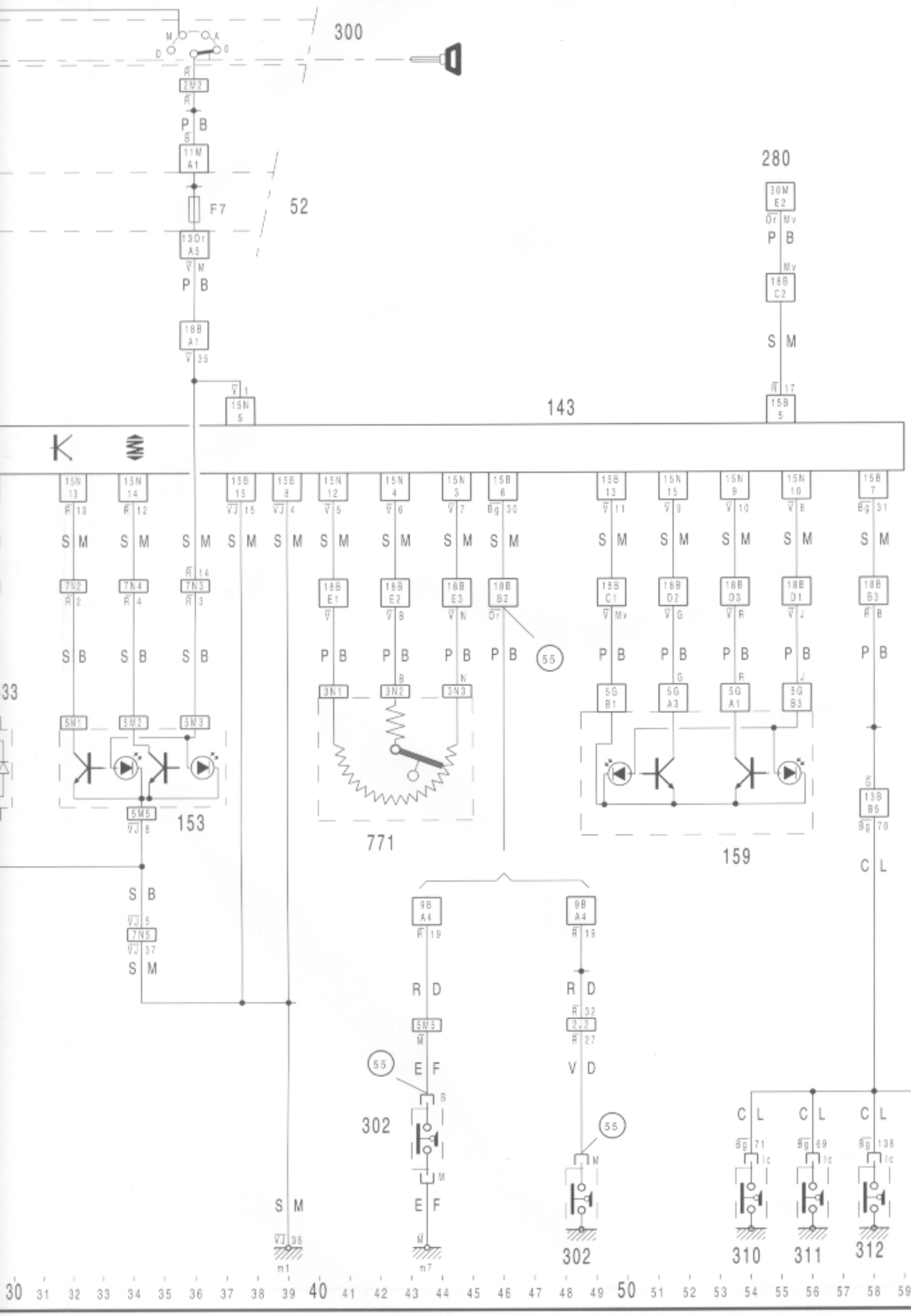
www.WorkshopManuals.co.uk



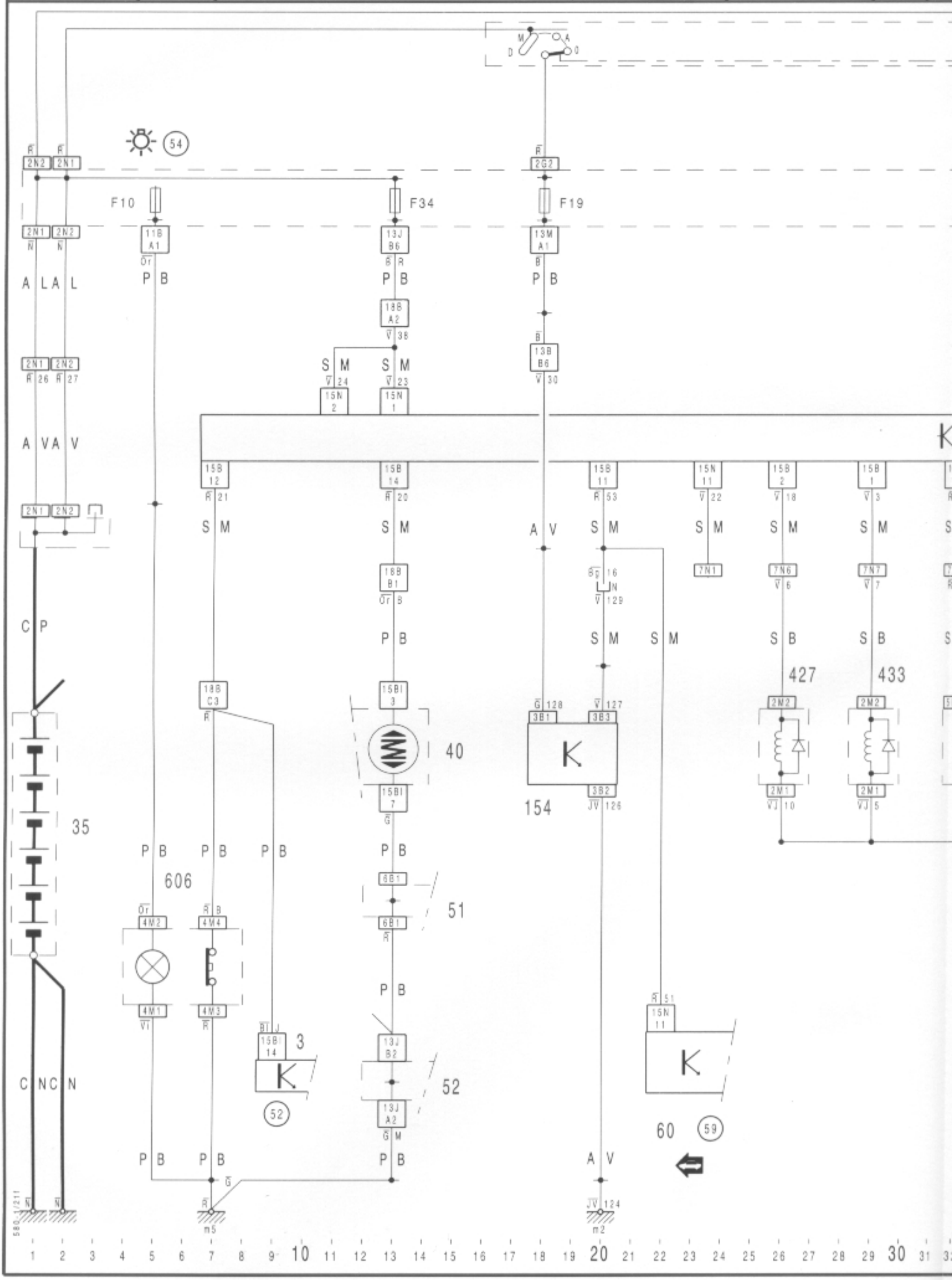
www.WorkshopManuals.co.uk



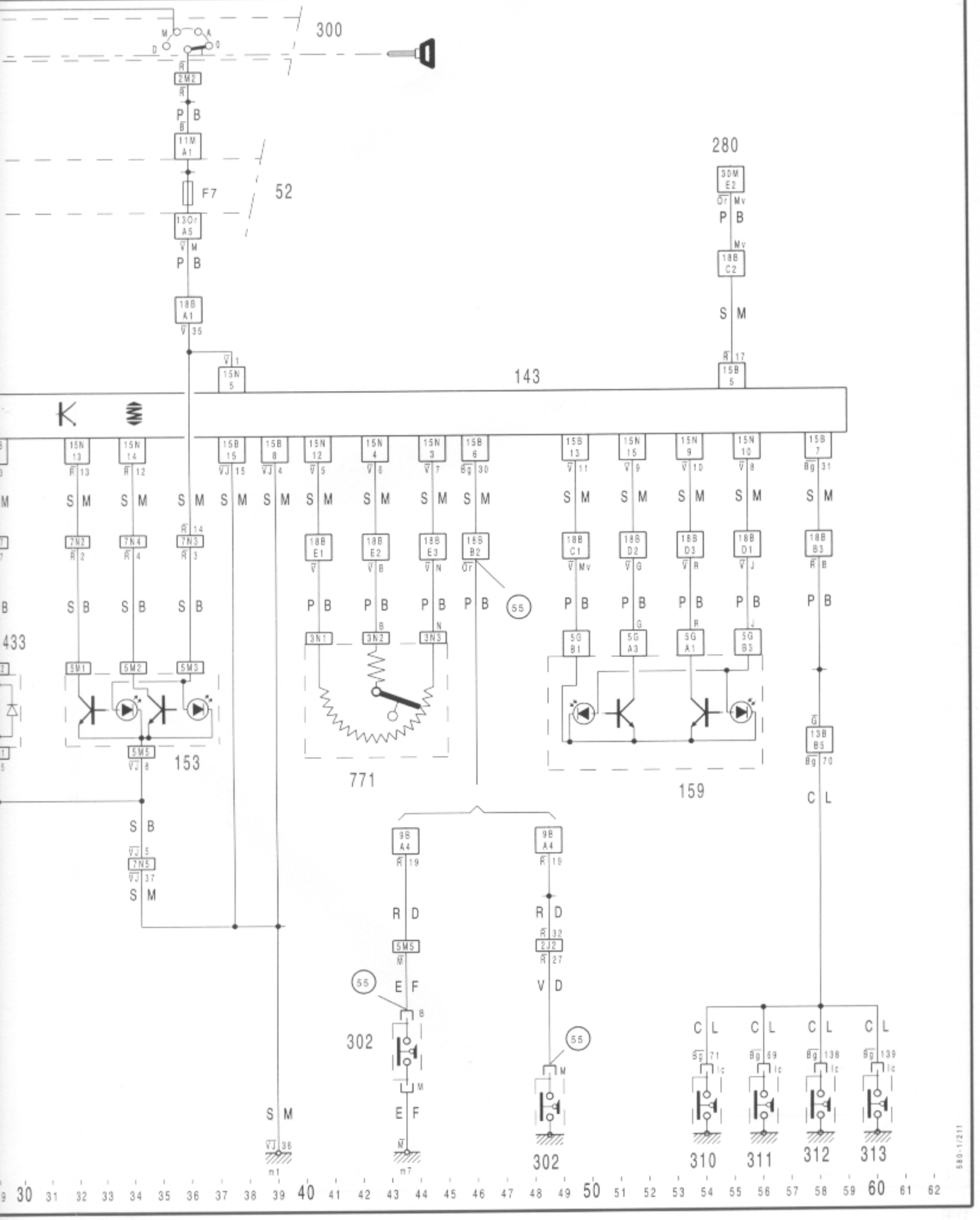
www.WorkshopManuals.co.uk



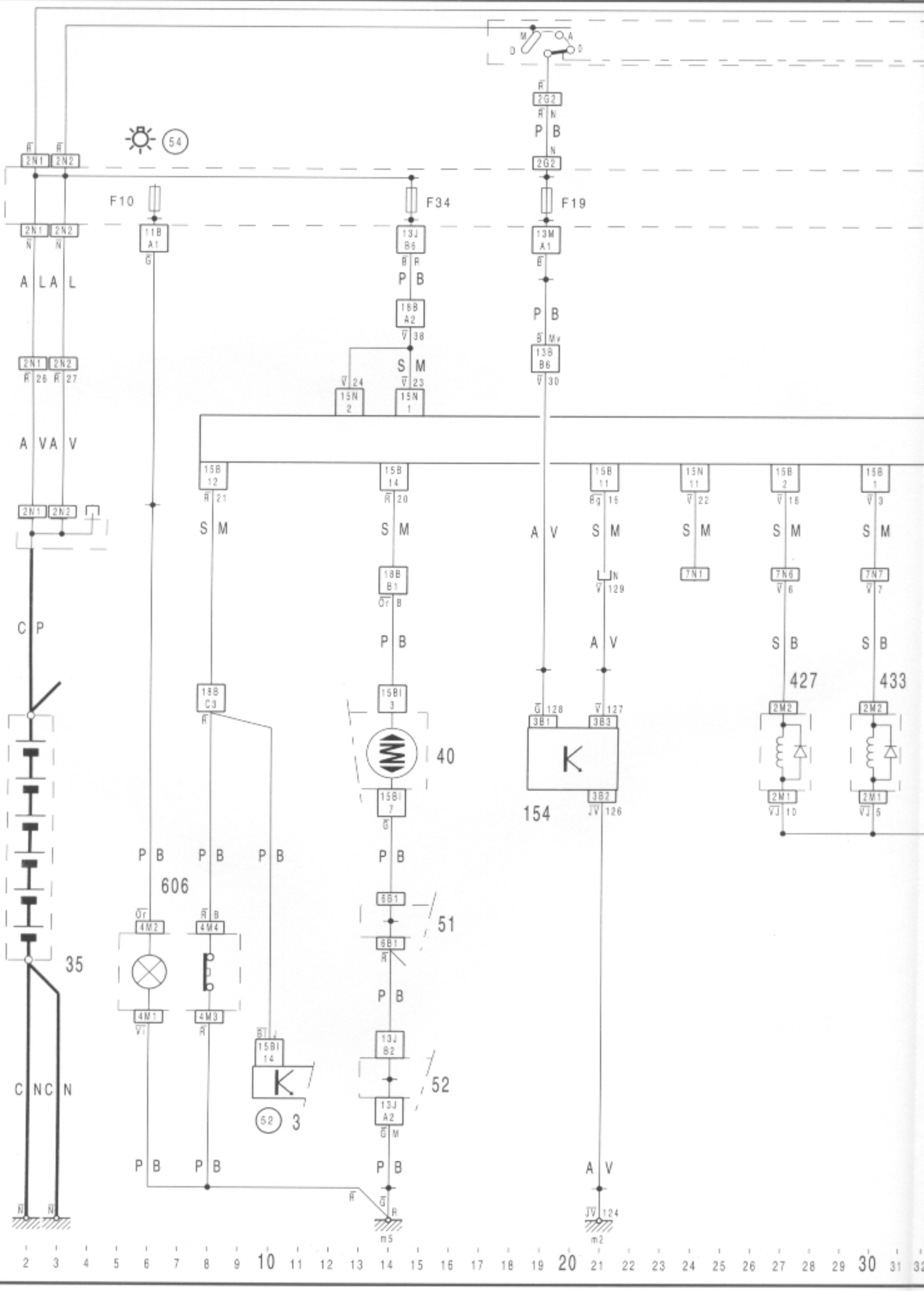
www.WorkshopManuals.co.uk



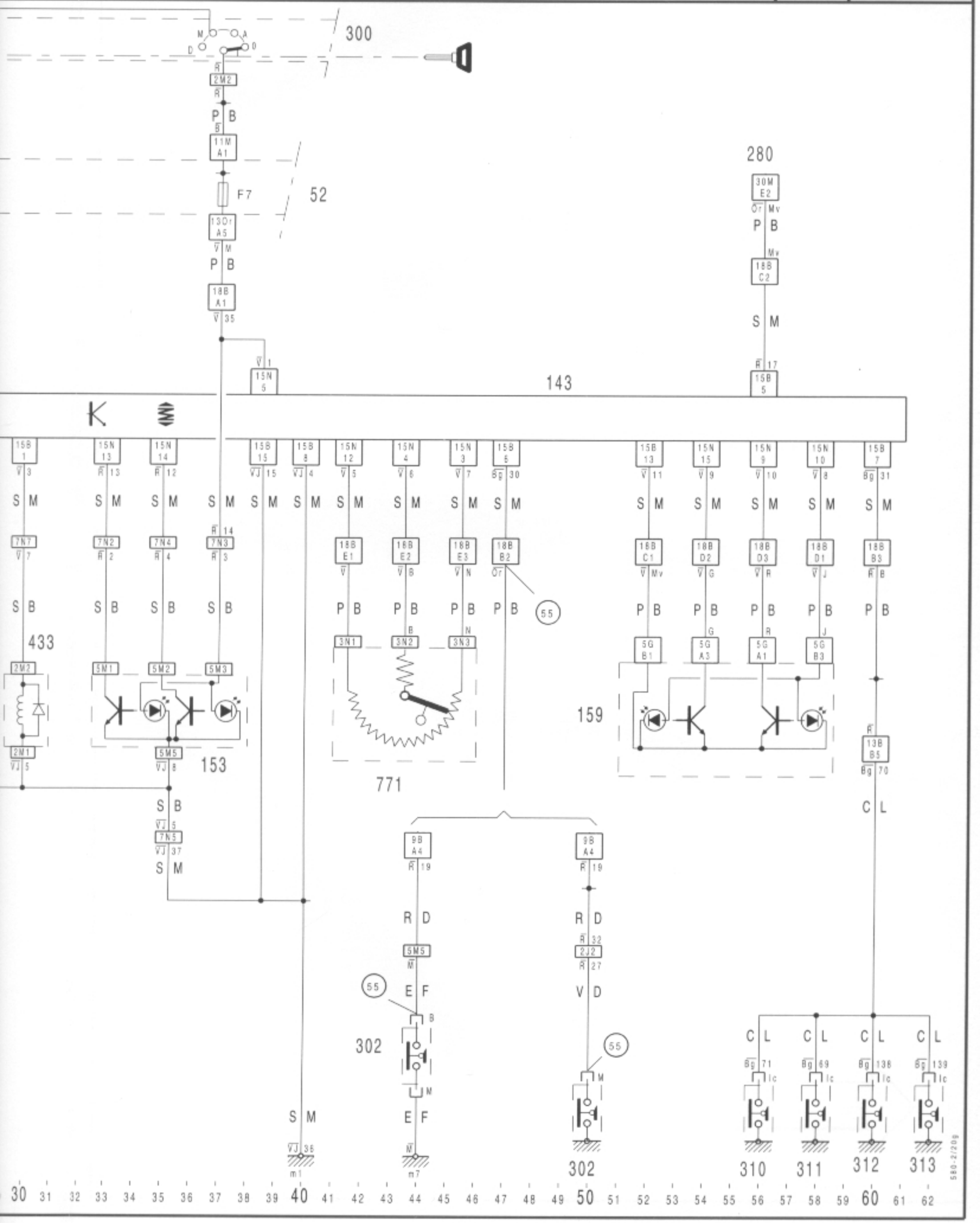
www.WorkshopManuals.co.uk



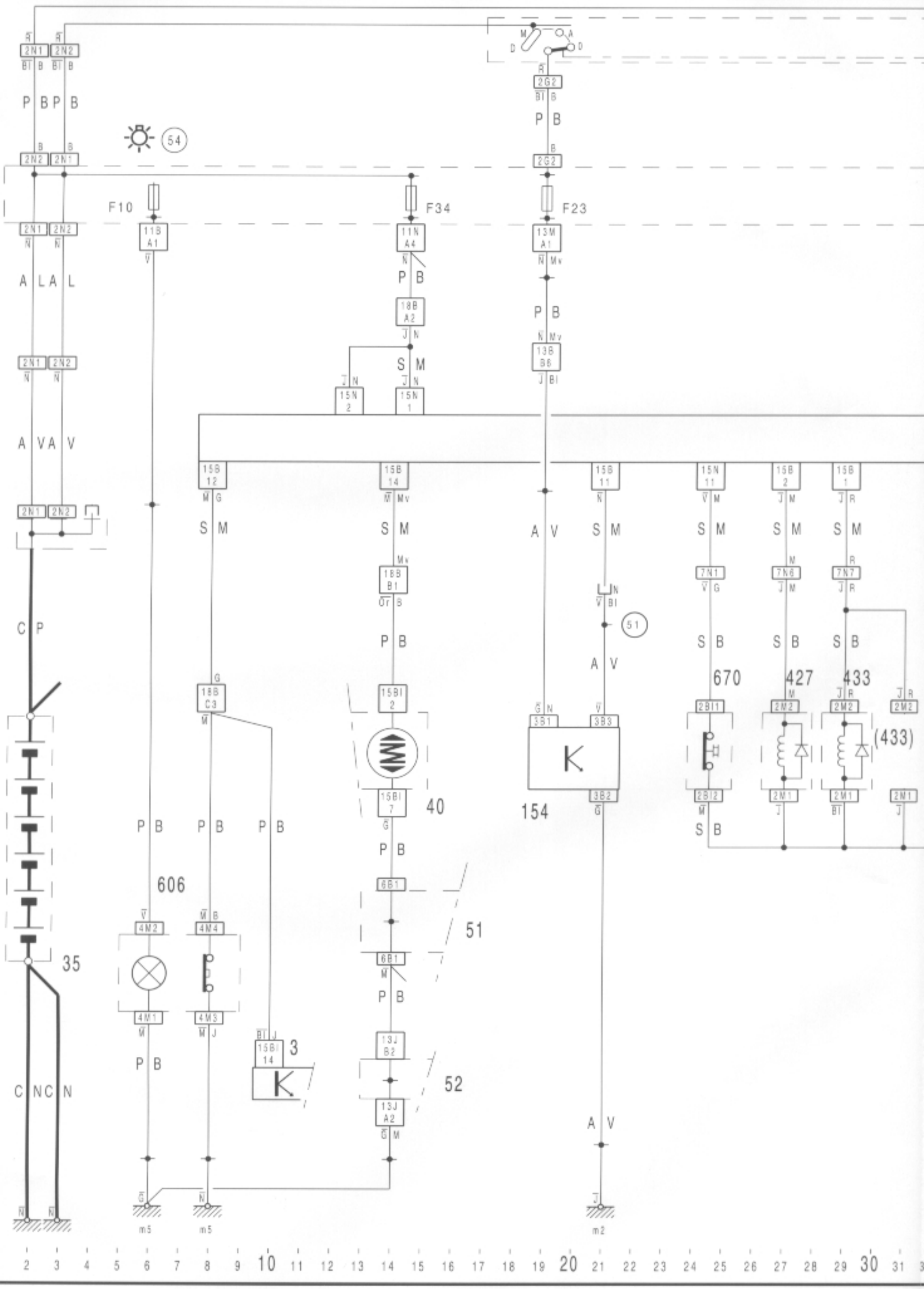
www.WorkshopManuals.co.uk



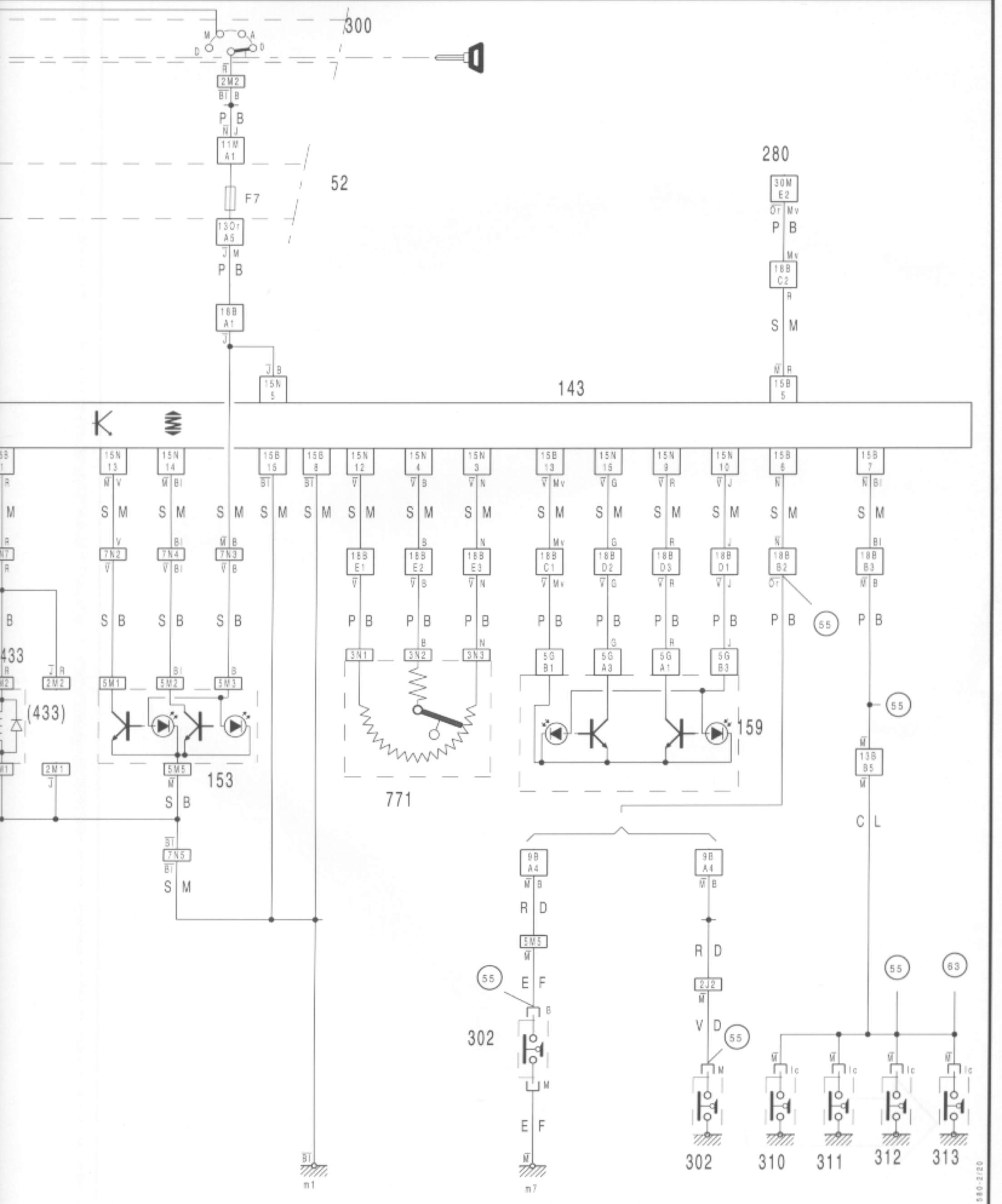
www.WorkshopManuals.co.uk



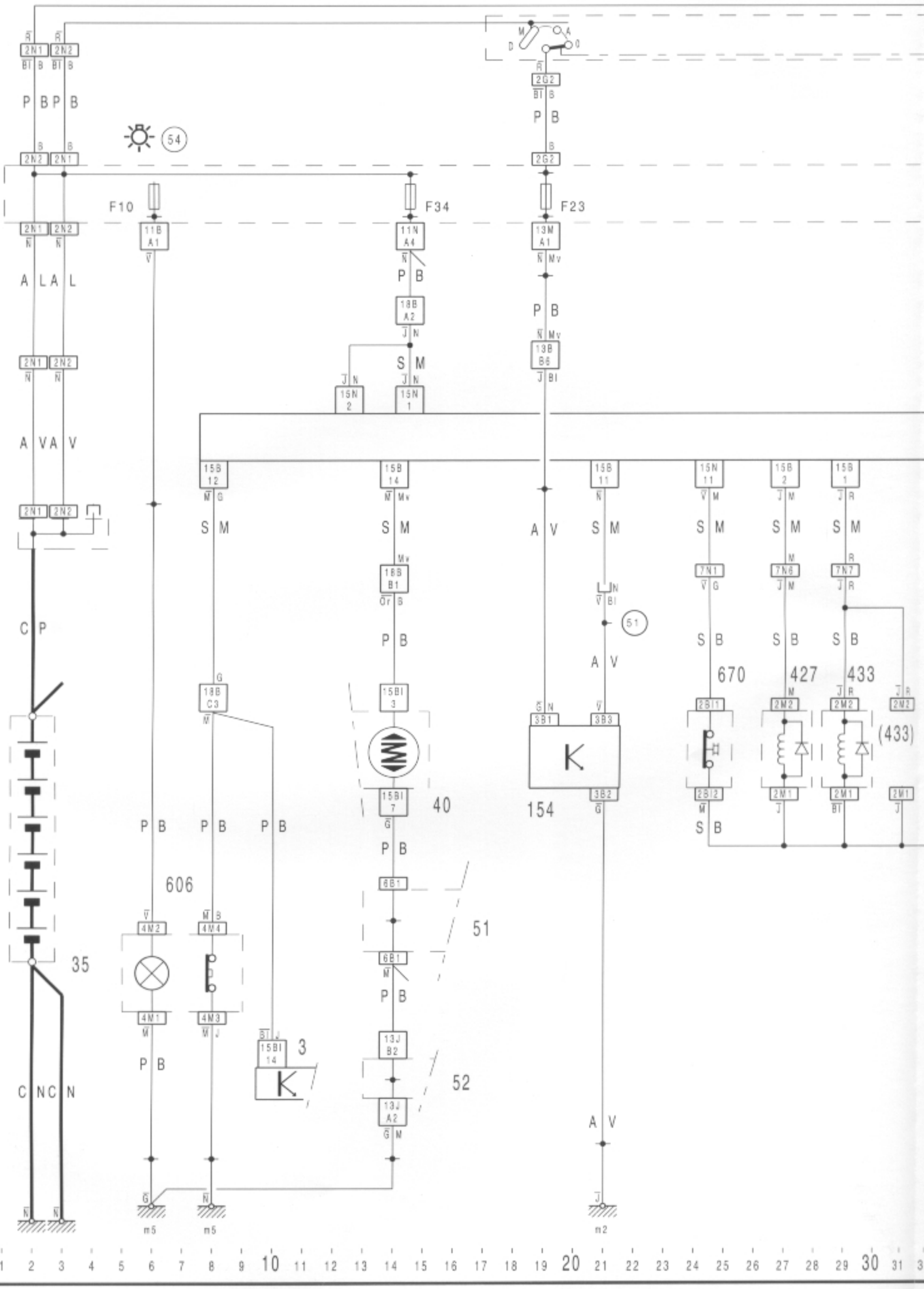
www.WorkshopManuals.co.uk



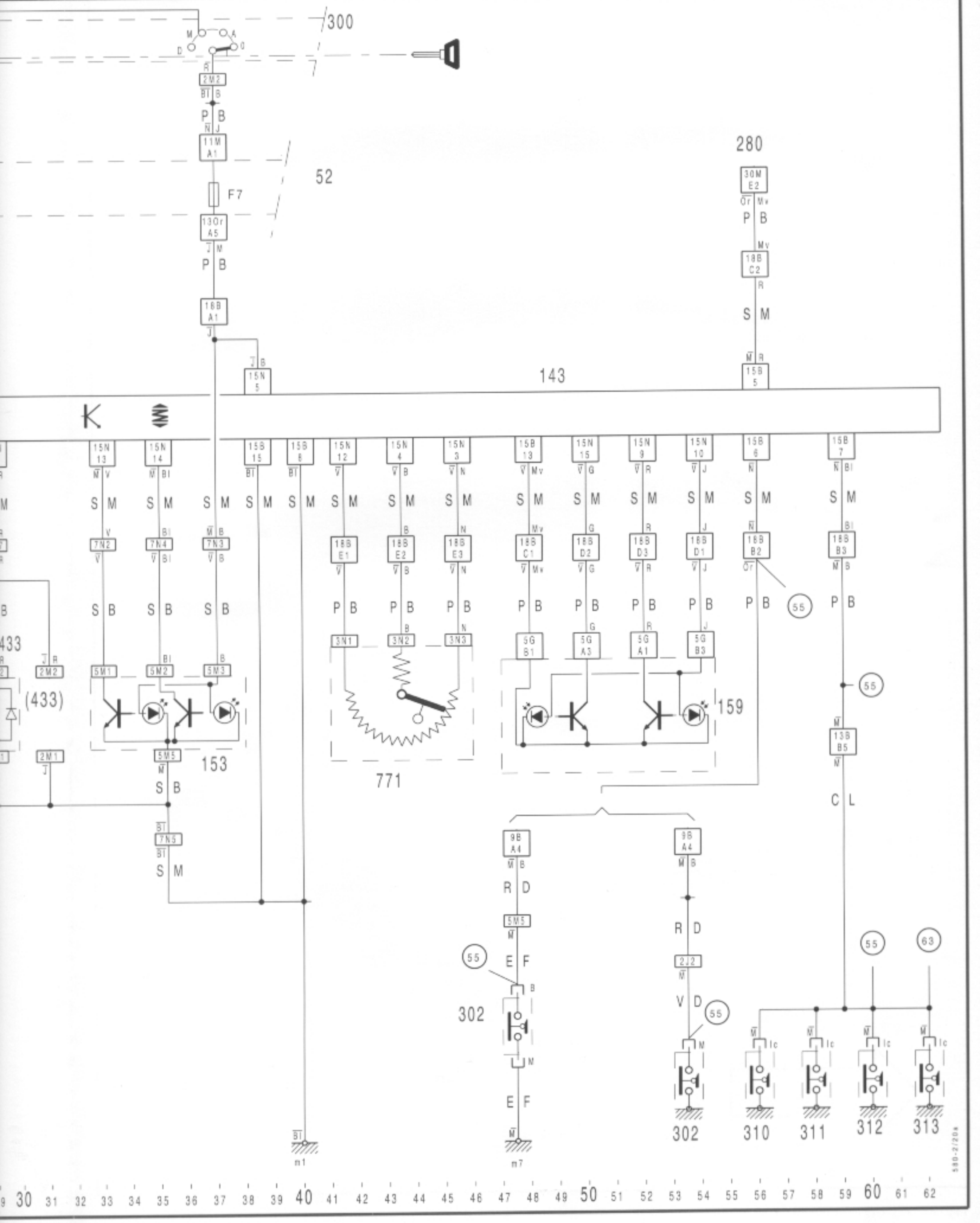
www.WorkshopManuals.co.uk



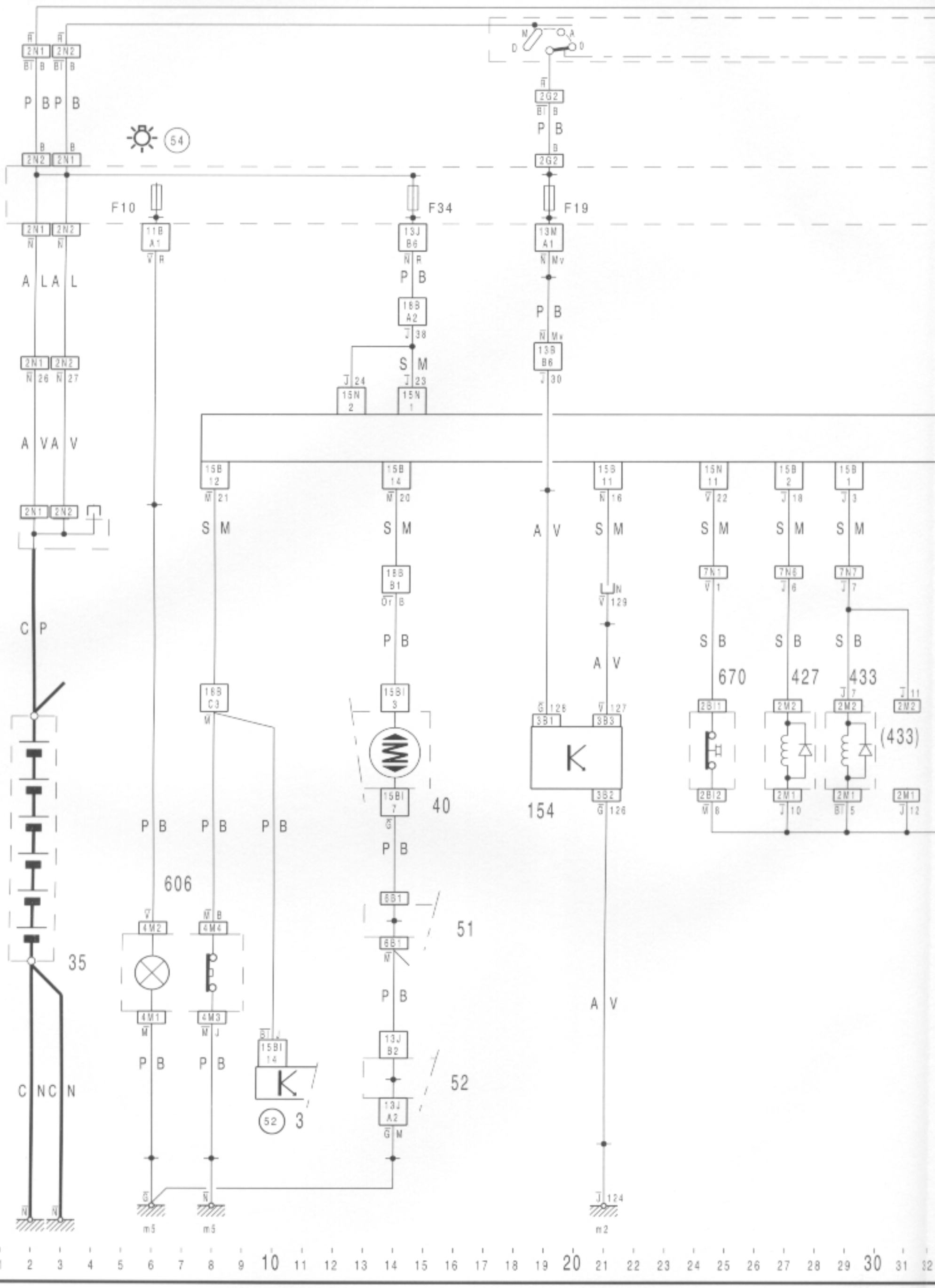
www.WorkshopManuals.co.uk



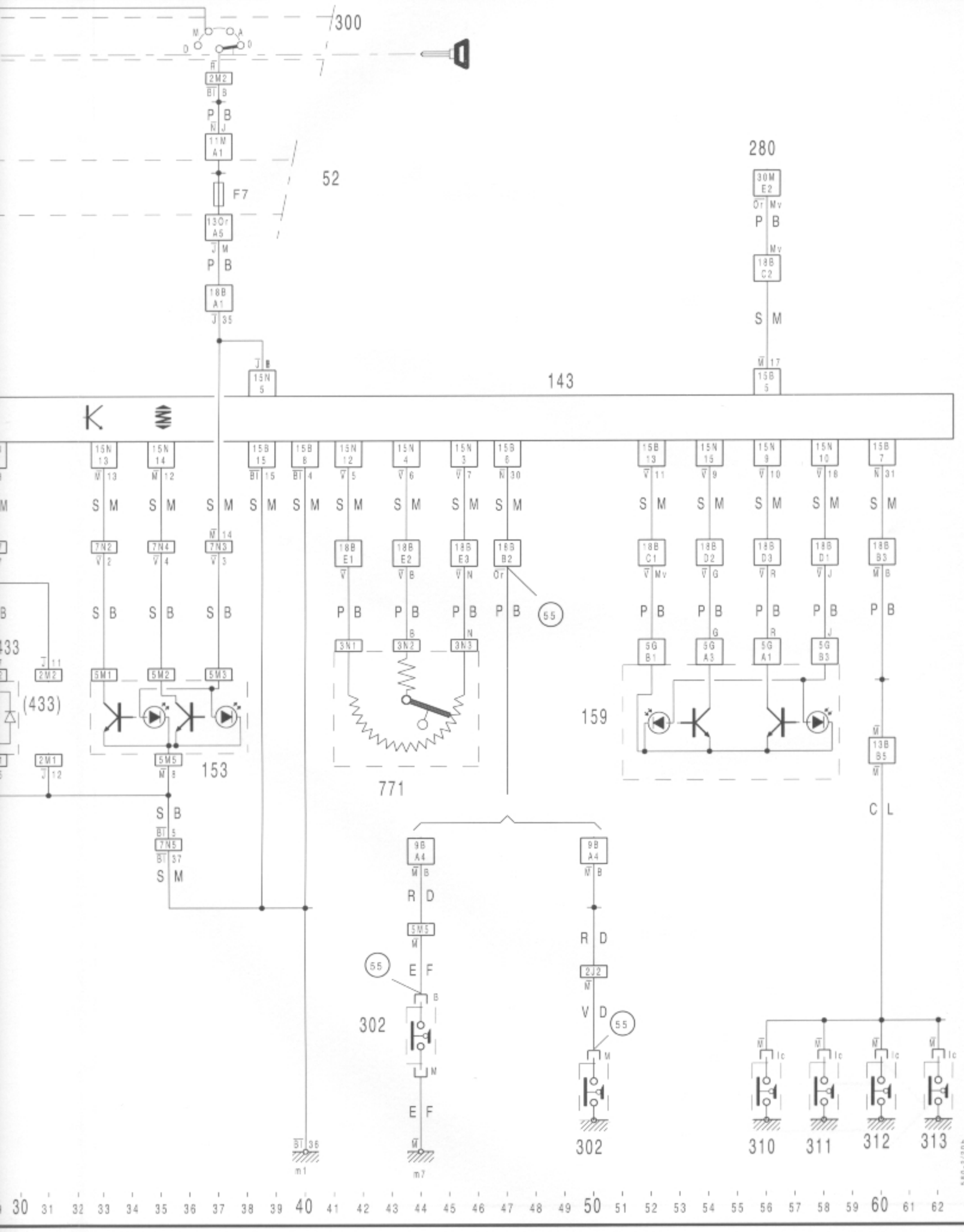
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

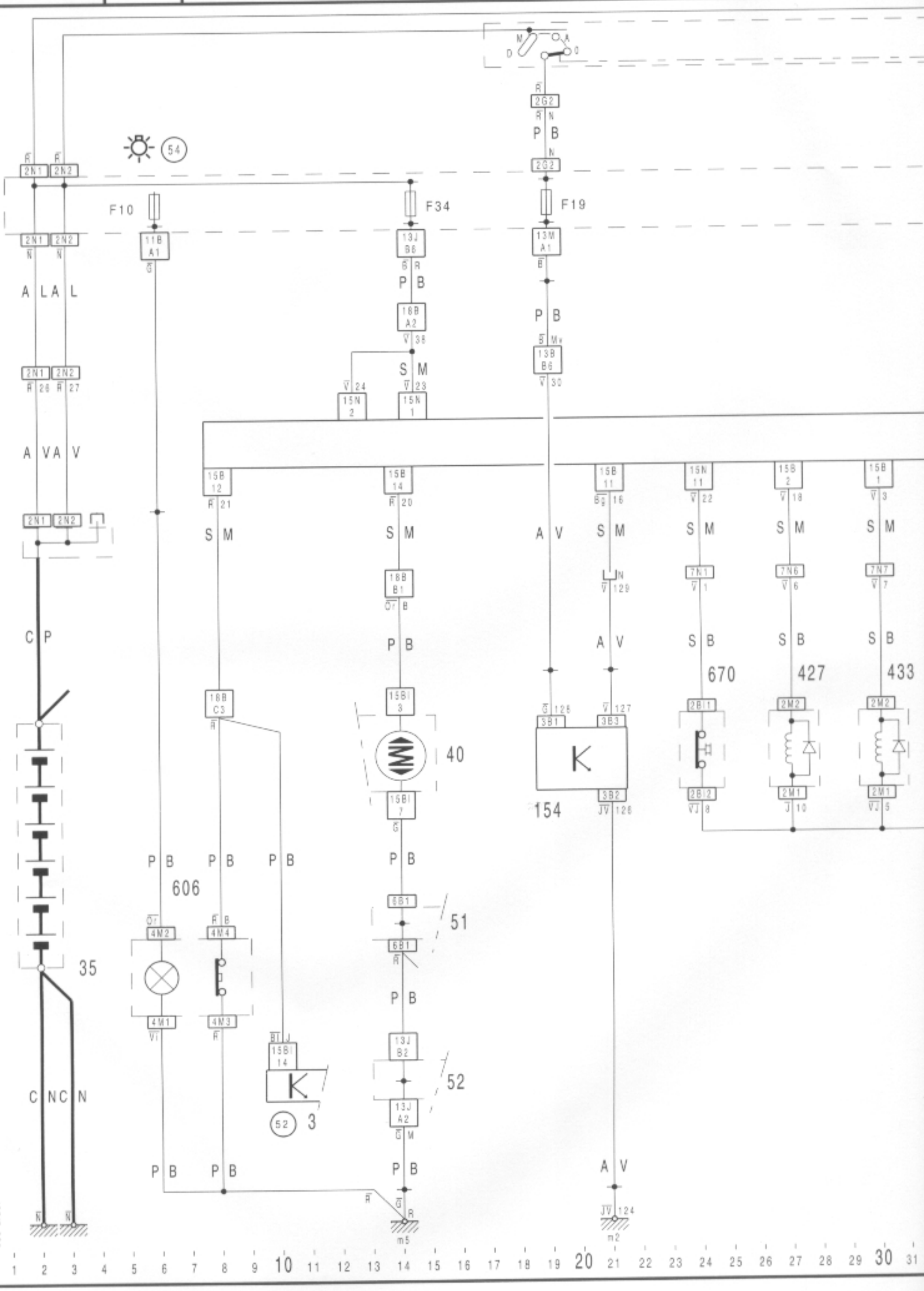


www.WorkshopManuals.co.uk

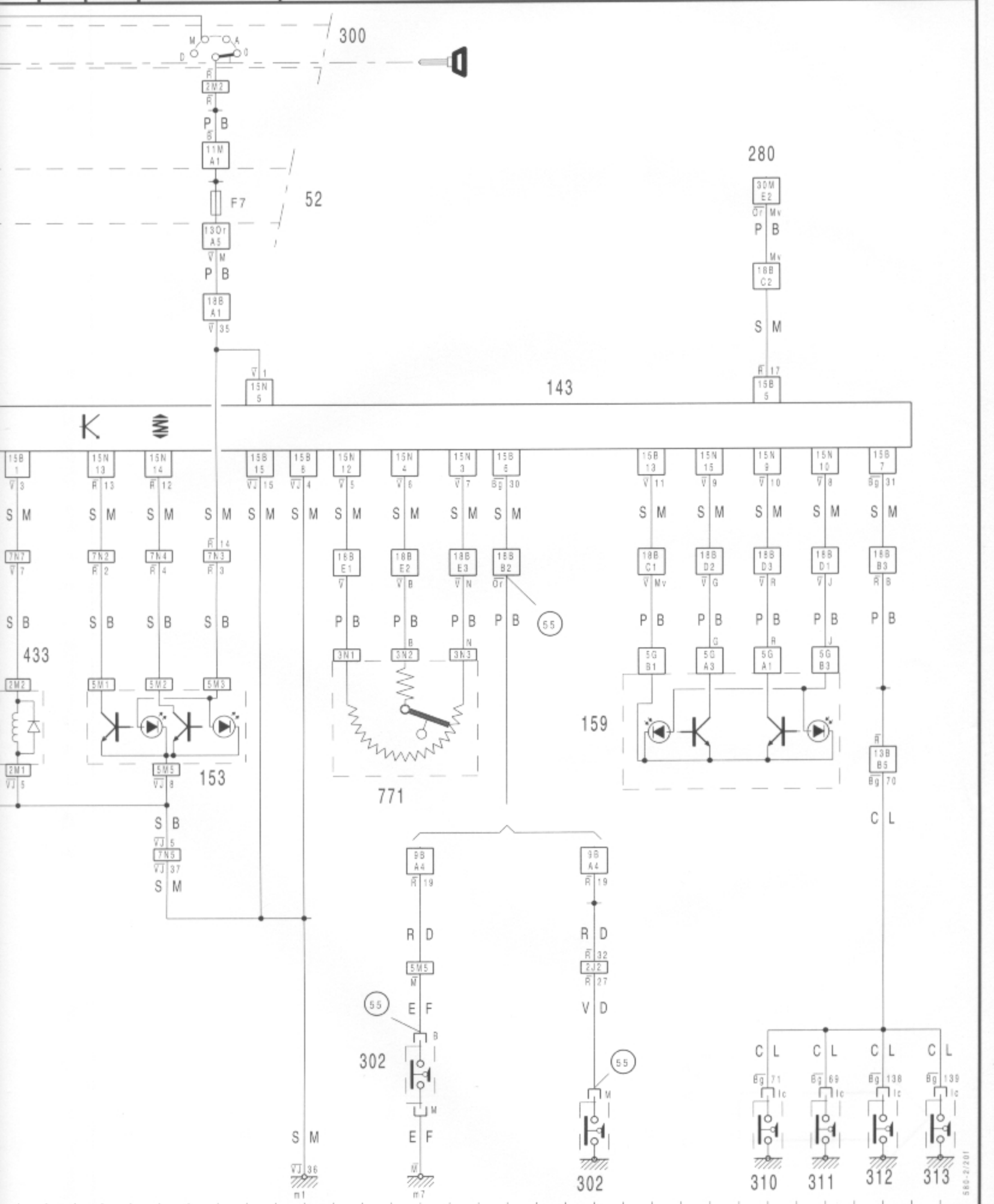


30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

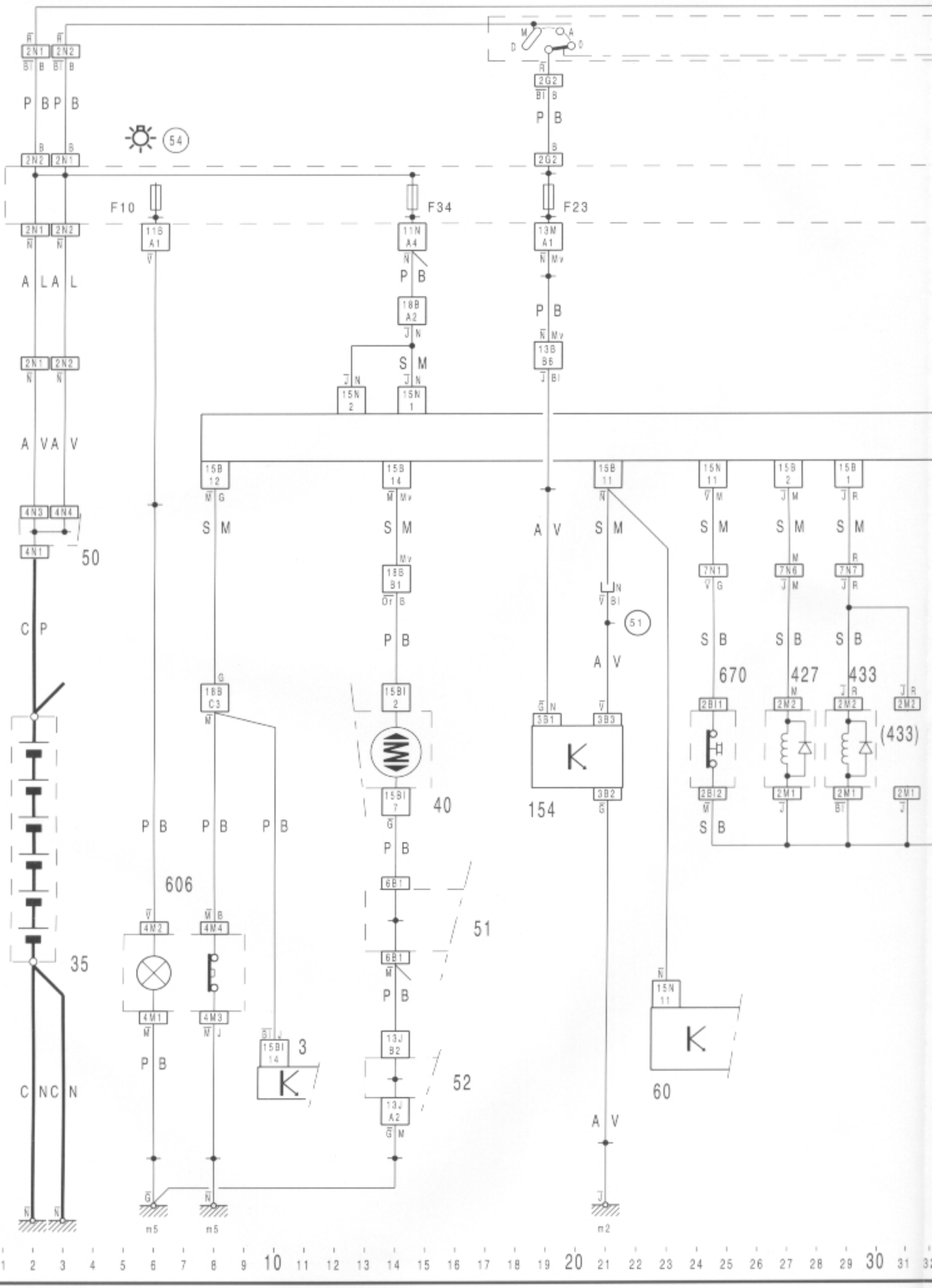
www.WorkshopManuals.co.uk



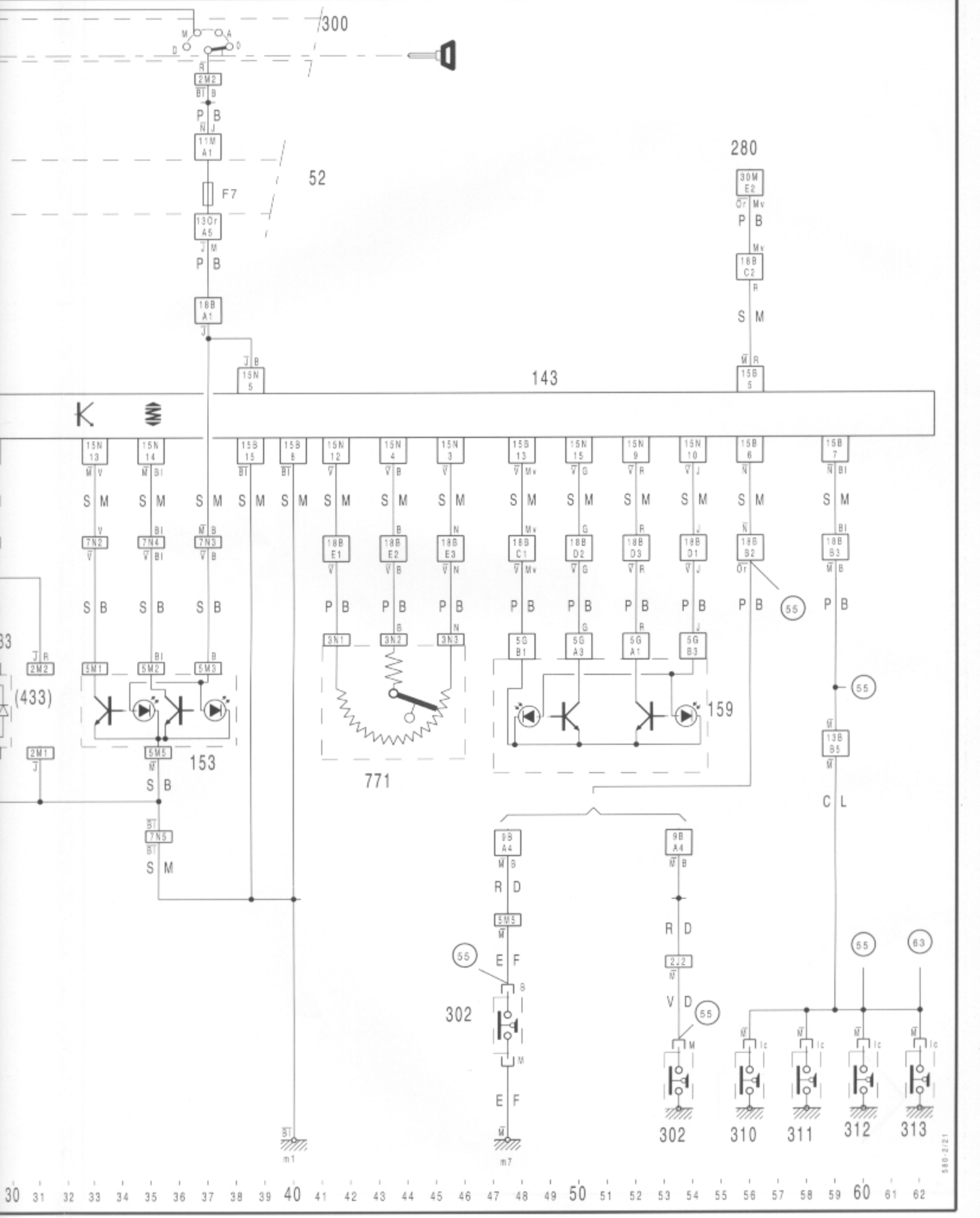
www.WorkshopManuals.co.uk



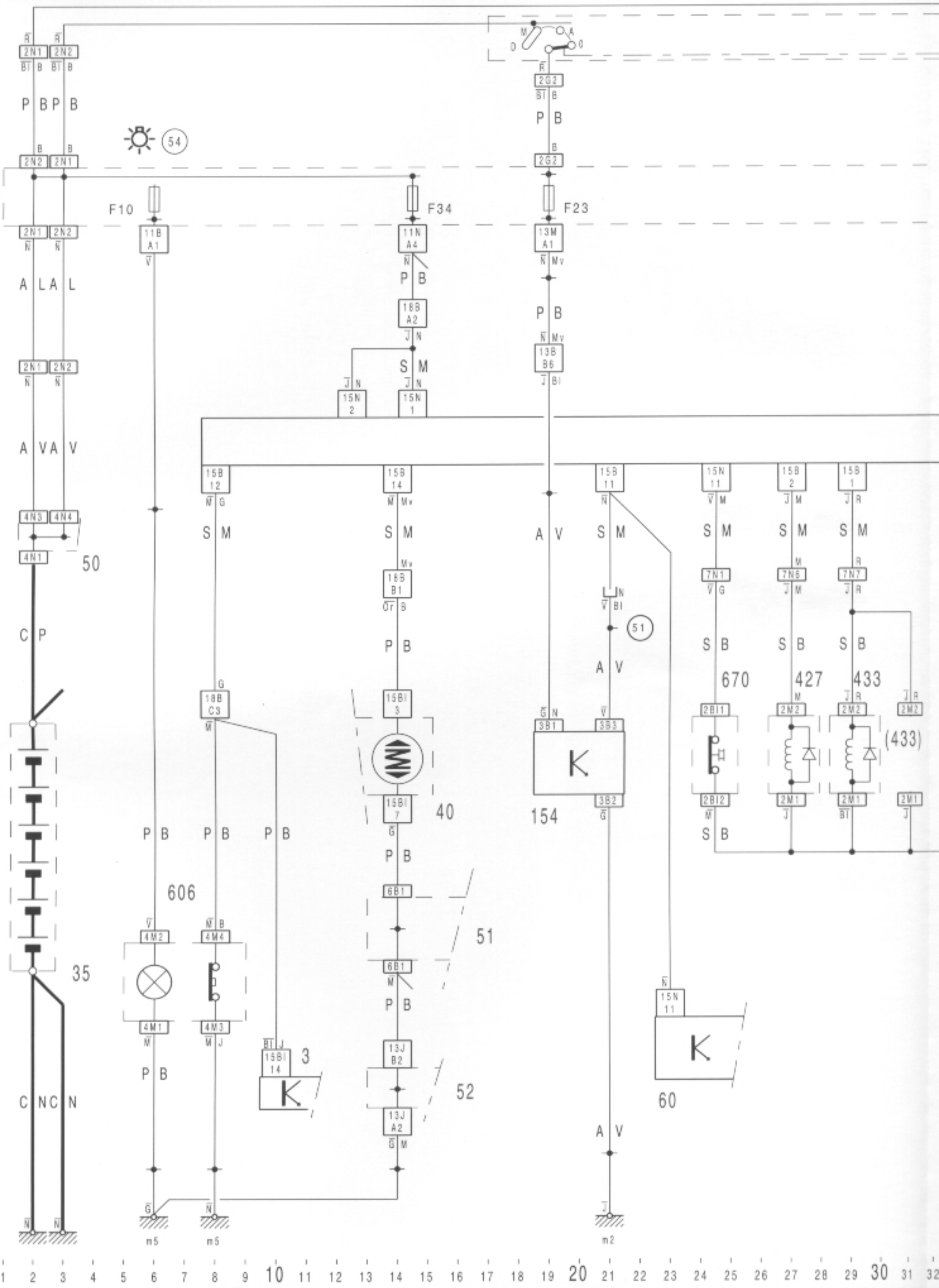
www.WorkshopManuals.co.uk



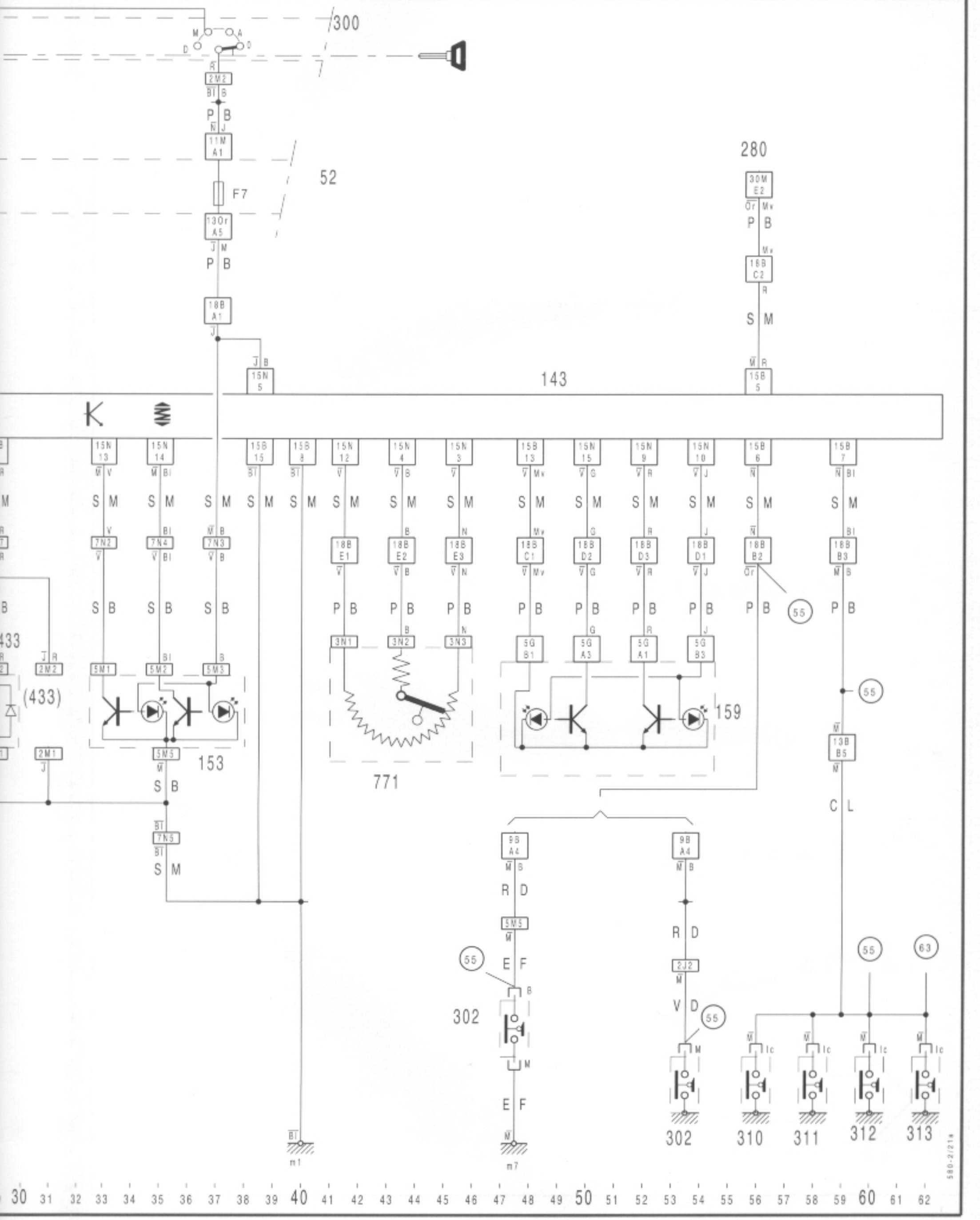
www.WorkshopManuals.co.uk



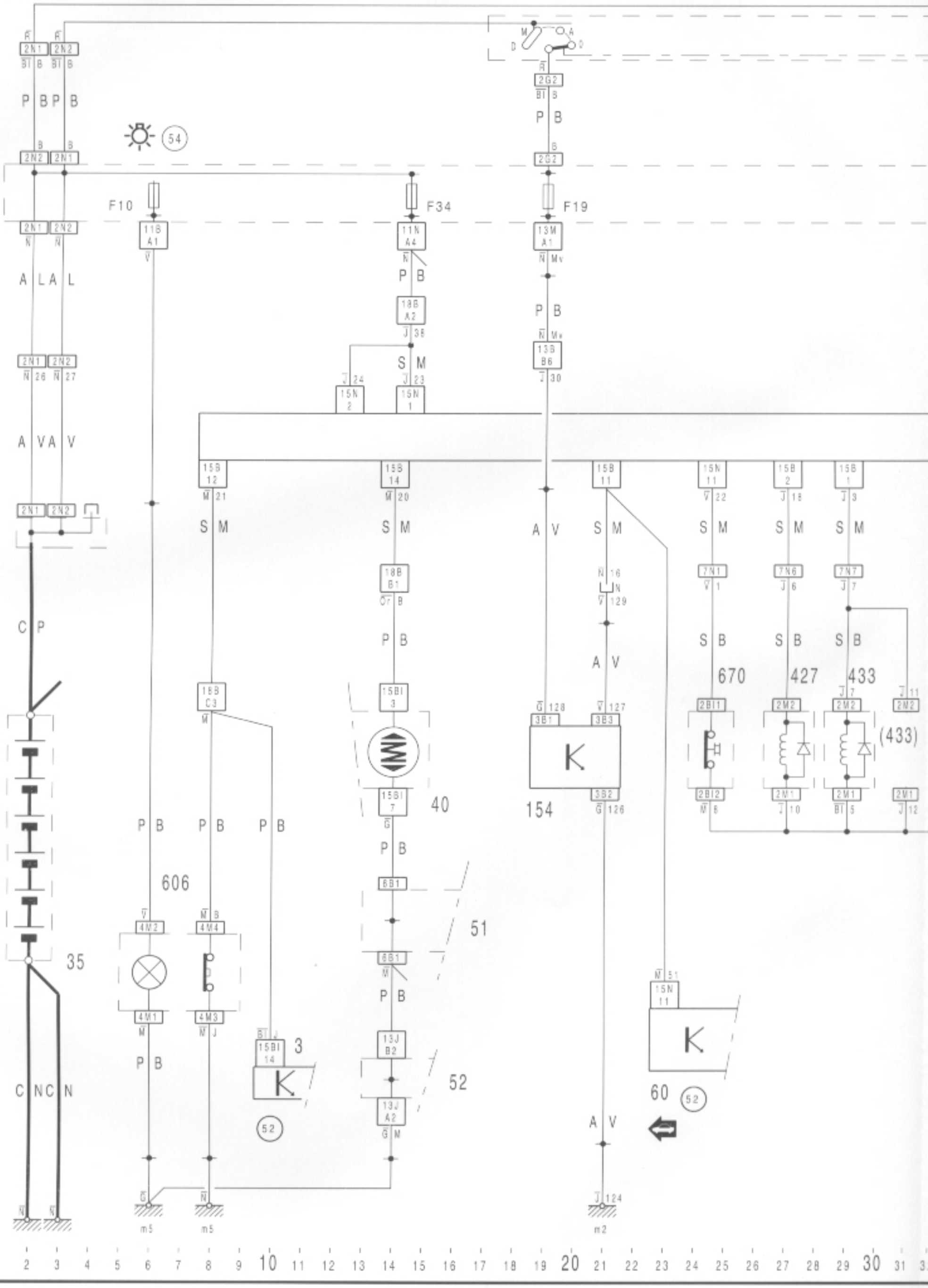
www.WorkshopManuals.co.uk



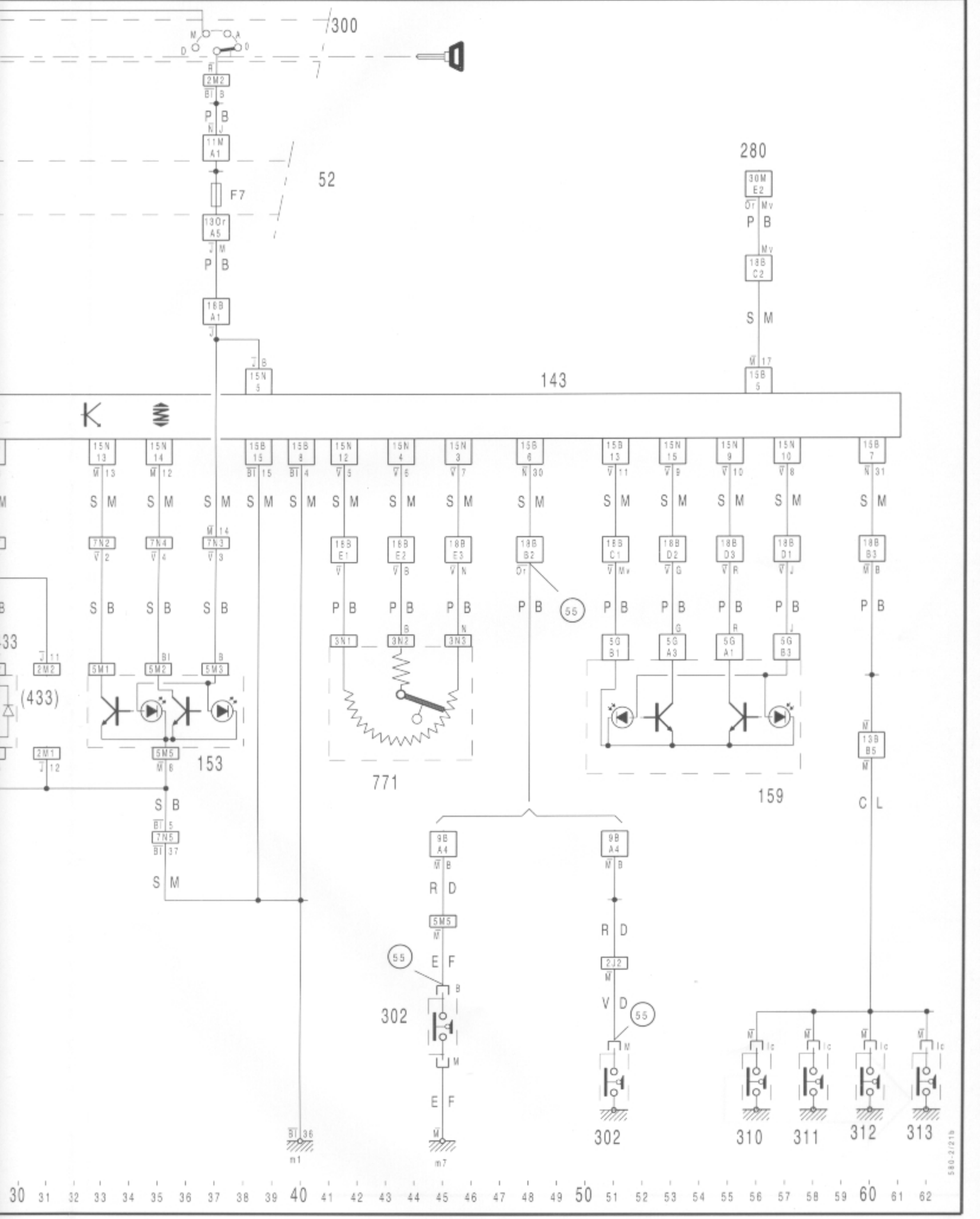
www.WorkshopManuals.co.uk



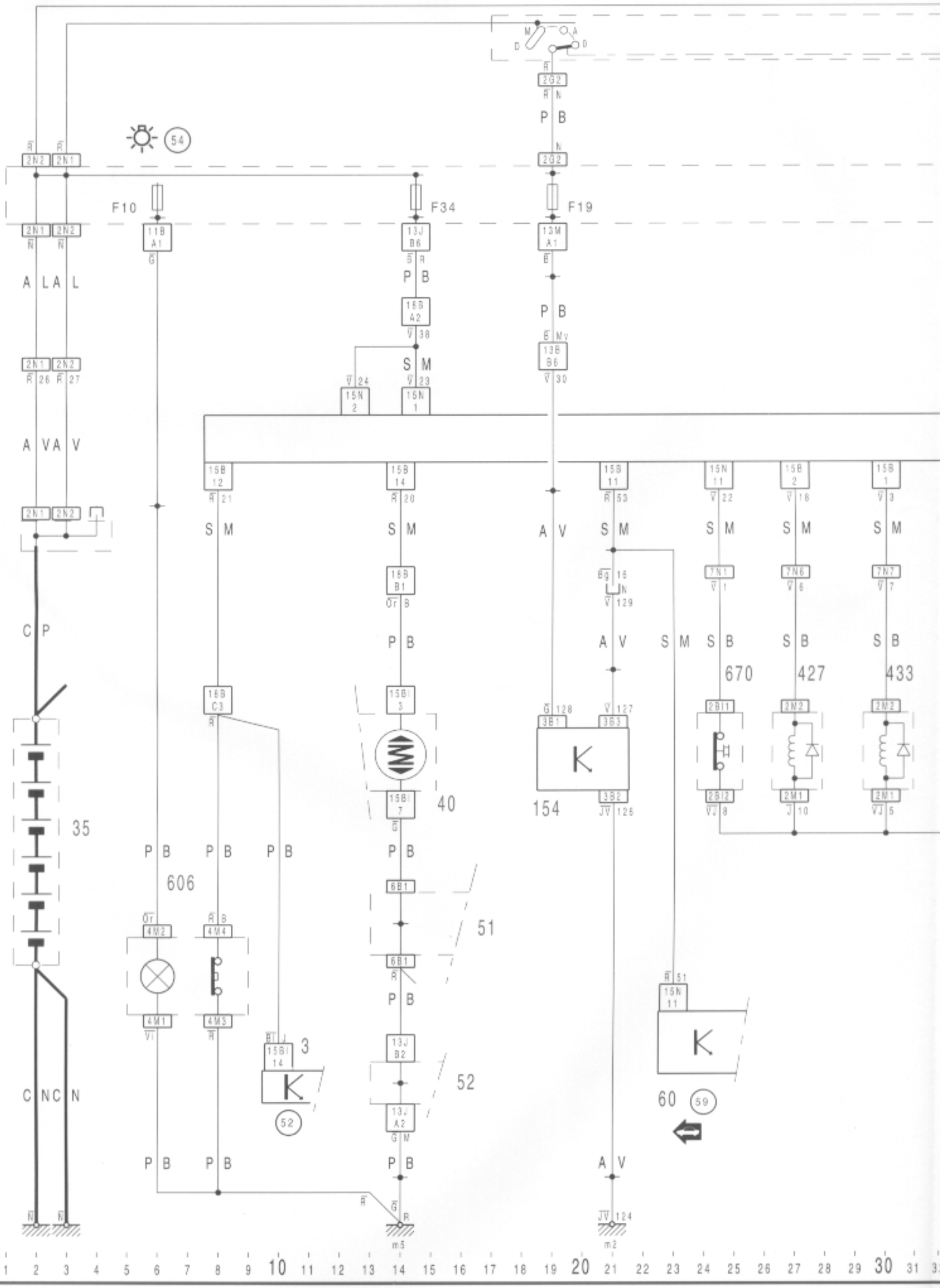
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

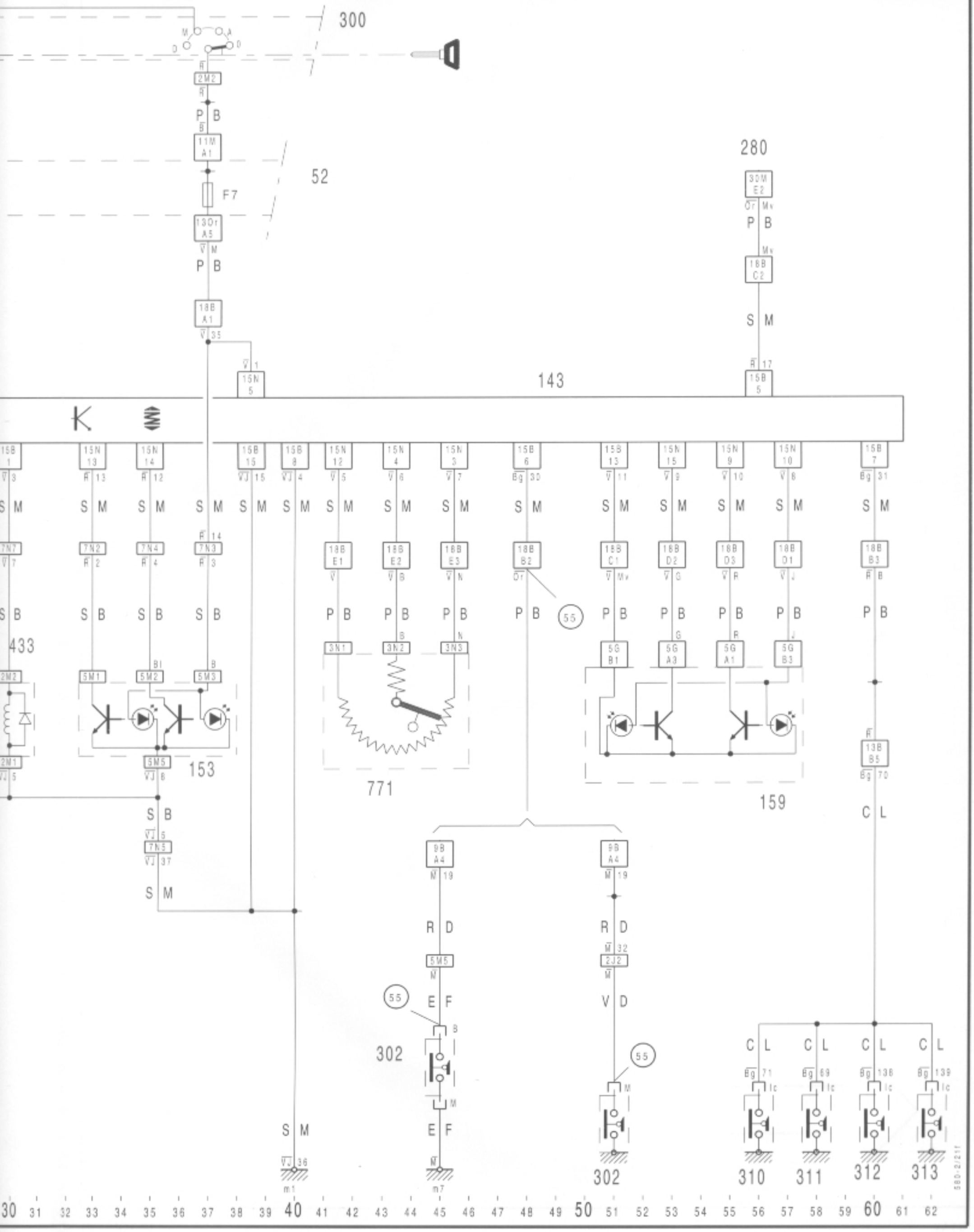


www.WorkshopManuals.co.uk

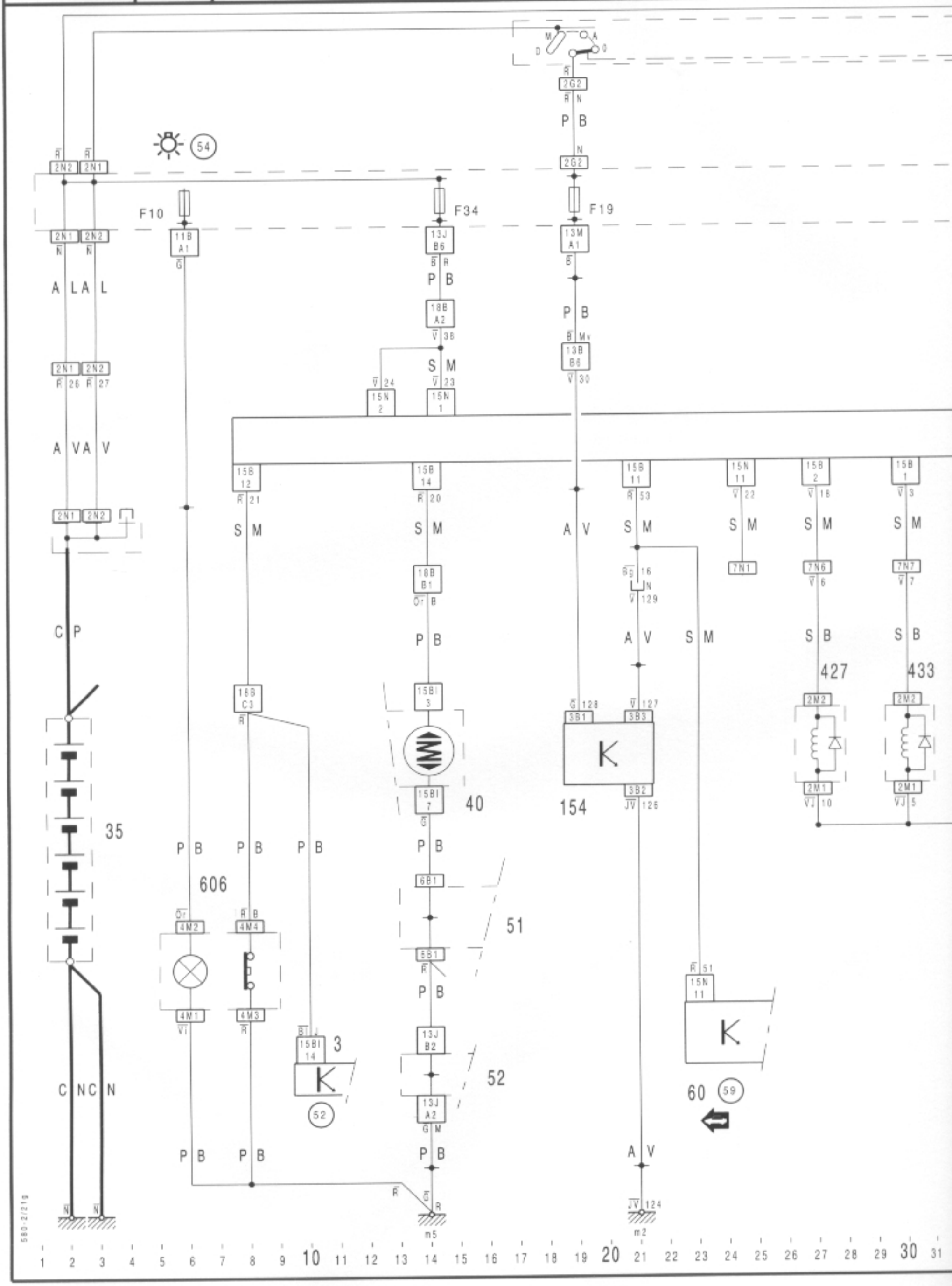


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

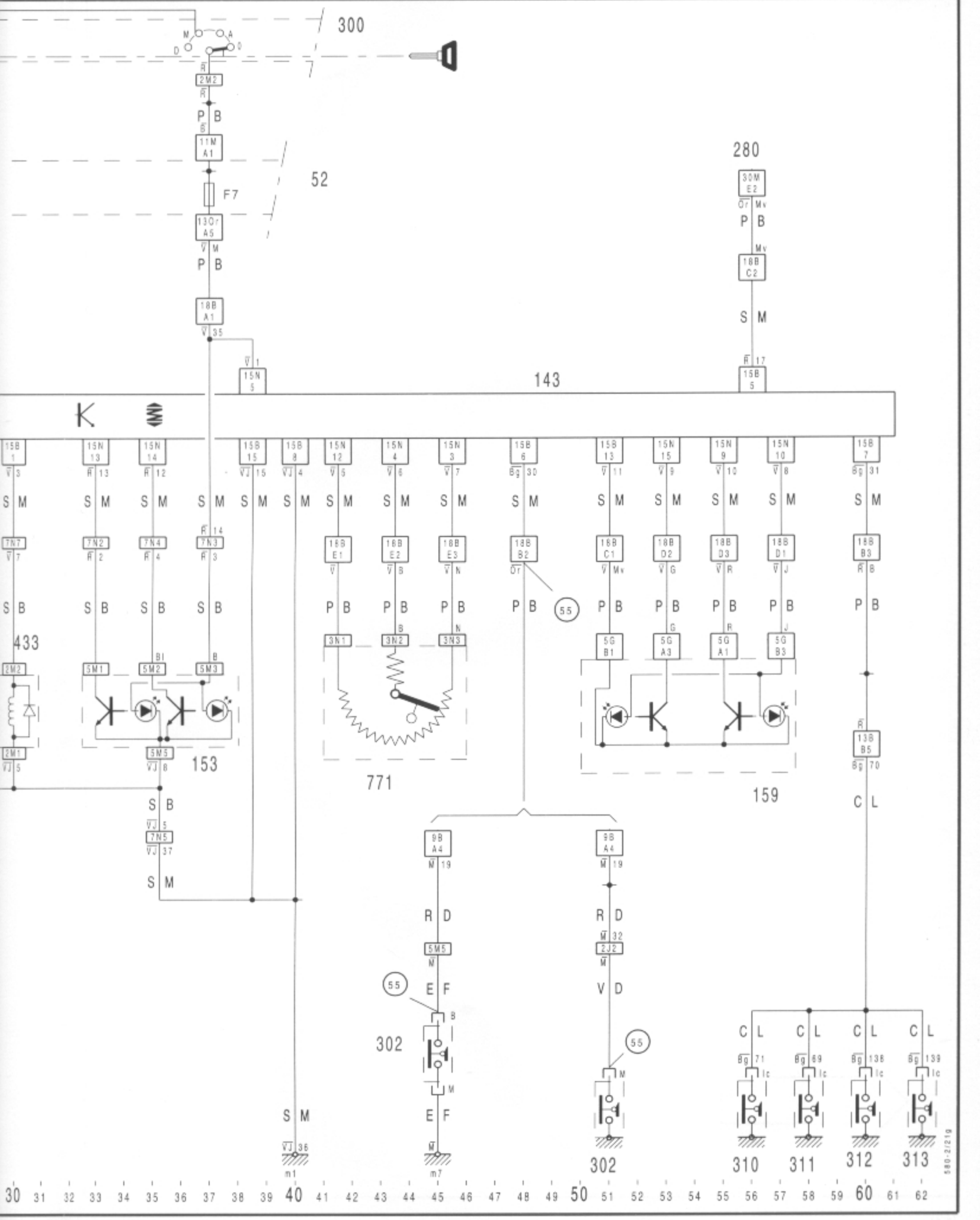
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk

GEARBOX FUNCTION

PARTS LIST
LIST OF THE ELECTRICAL DIAGRAMS

www.WorkshopManuals.co.uk

Ref.	Description	Func.
35	Battery	TT
40	Instrument cluster	52
51	Connector box	TT
52	Junction box	TT
60	Cruise control control unit	59
131	Excess speed audible warning	59
142	Injection E.C.U.	51
143	Suspension E.C.U.	58
154	Distance sensor	51-58
176	Coded anti-theft keyboard	51
214	Cruise control selector switch	59
216	Automatic gearbox selector switch (on the gearbox)	59
300	Anti-theft contact switch	TT
319	Stoplamp contact	54
328	Clutch contact	-
438	Cruise control electrovalve	59
498	L.H. reversing lamp	54
611	Cruise control switch	59
615	Alarm switch (volumetric protection)	67
760	Cruise control vacuum pump	59
801	Automatic gearbox relay	59
831	Cruise control relay	59

Ref.	Description	Func.

www.WorkshopManuals.co.uk

AUTOMATIC GEARBOX

NUMBER	STEERING	APPLICABLE	DESCRIPTION
590-1/20	L.H.D.	6383 → → 6749	**ALL TYPES** Automatic gearbox XMS98
590-1/20a	L.H.D.	6749 →	Evolution a : Fuse box modified XMS191

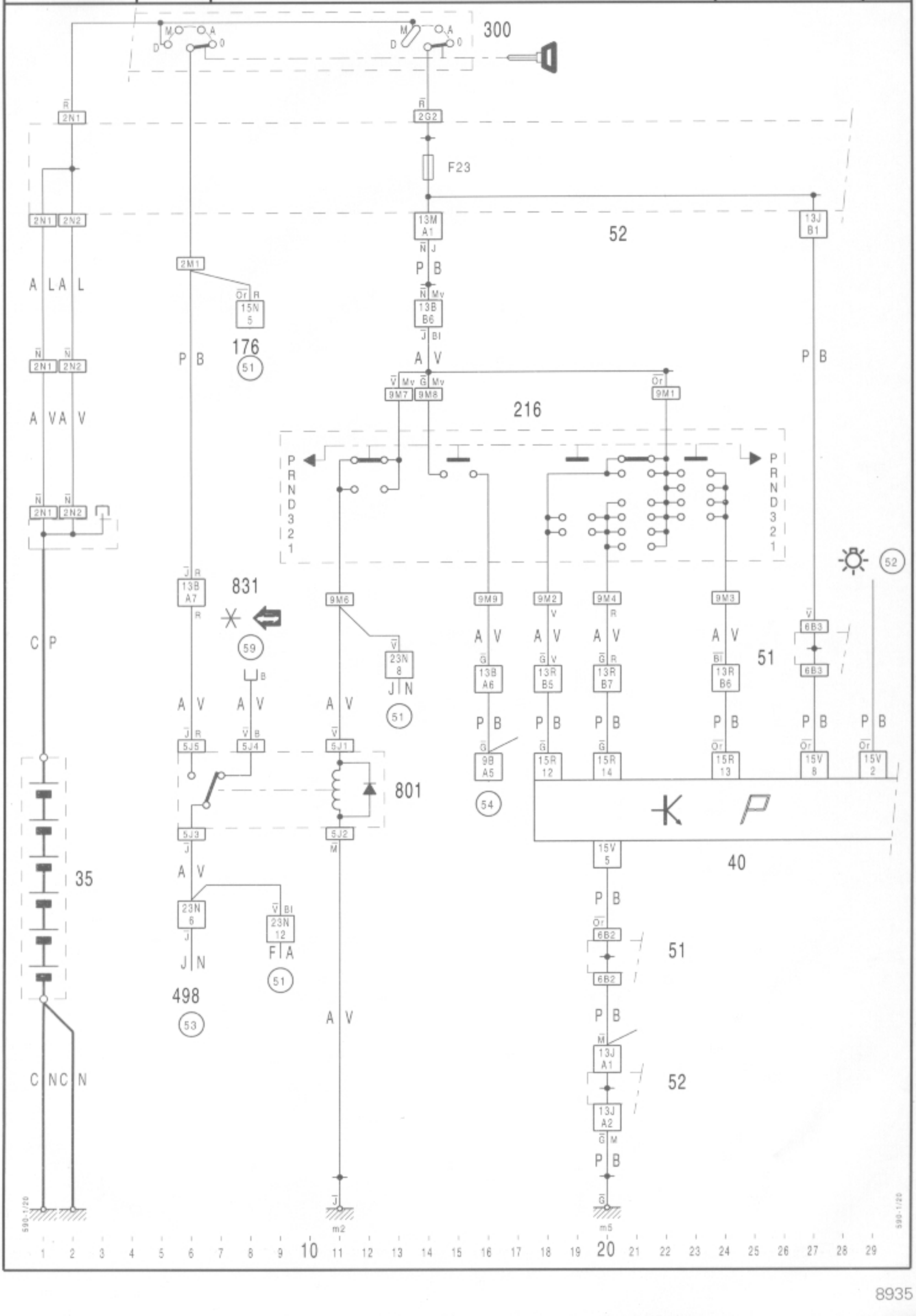
CRUISE CONTROL

NUMBER	STEERING	APPLICABLE	DESCRIPTION
591-1/20	L.H.D.	6383 → → 6749	**ALL TYPES EXCEPT THY (DK5ATE)** Cruise control XMS99
591-1/20a	L.H.D.	6749 →	Evolution a : Fuse box modified XMS192
591-1/30	L.H.D.	6383 → → 6749	**THY (DK5ATE)** Cruise control XMS100
591-1/30a	L.H.D.	6749 →	Evolution a : Fuse box modified XMS193

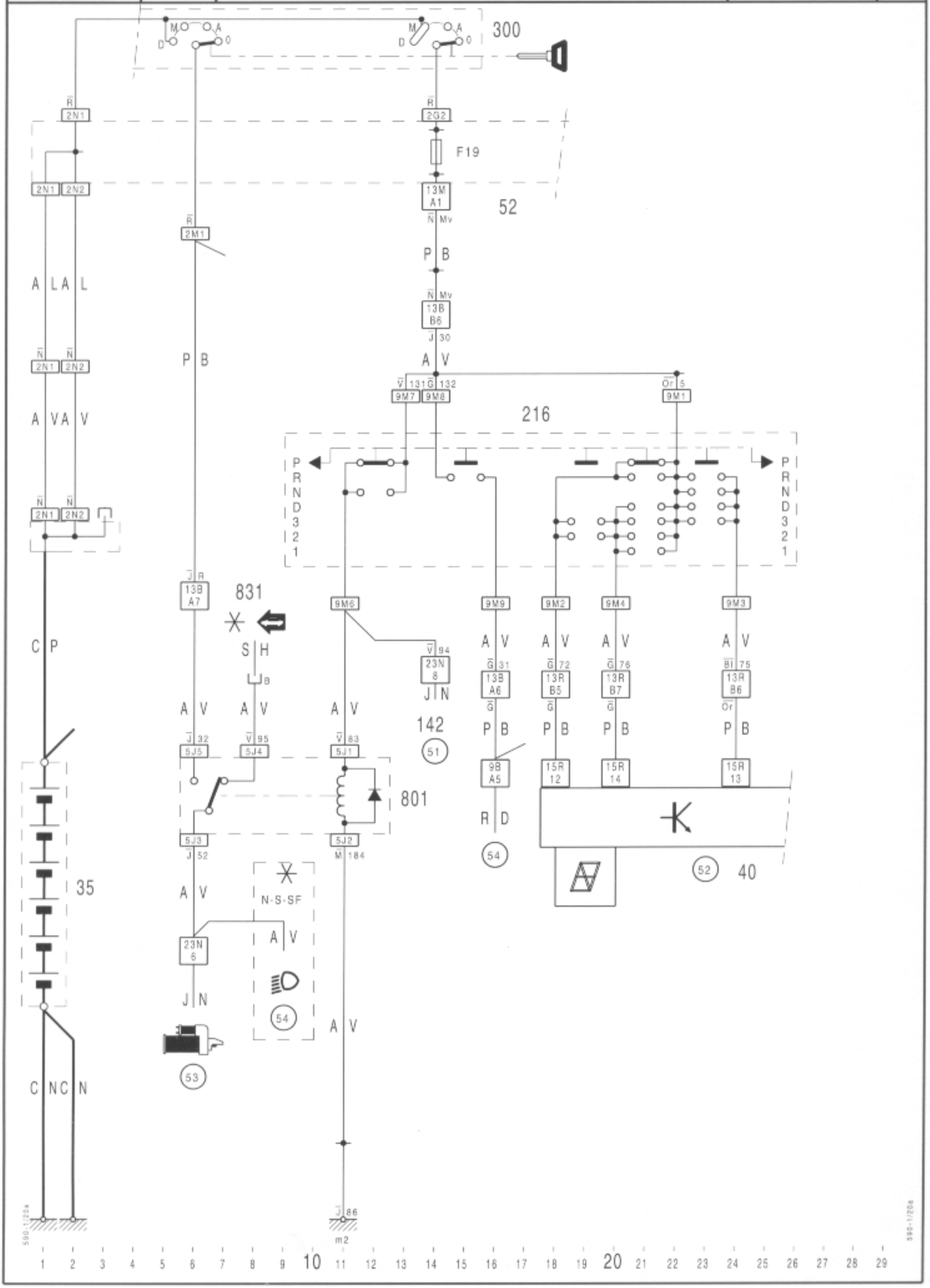
EXCESS SPEED AUDIBLE WARNING

NUMBER	STEERING	APPLICABLE	DESCRIPTION
592-1/20	L.H.D.	6749 →	All types XMS150

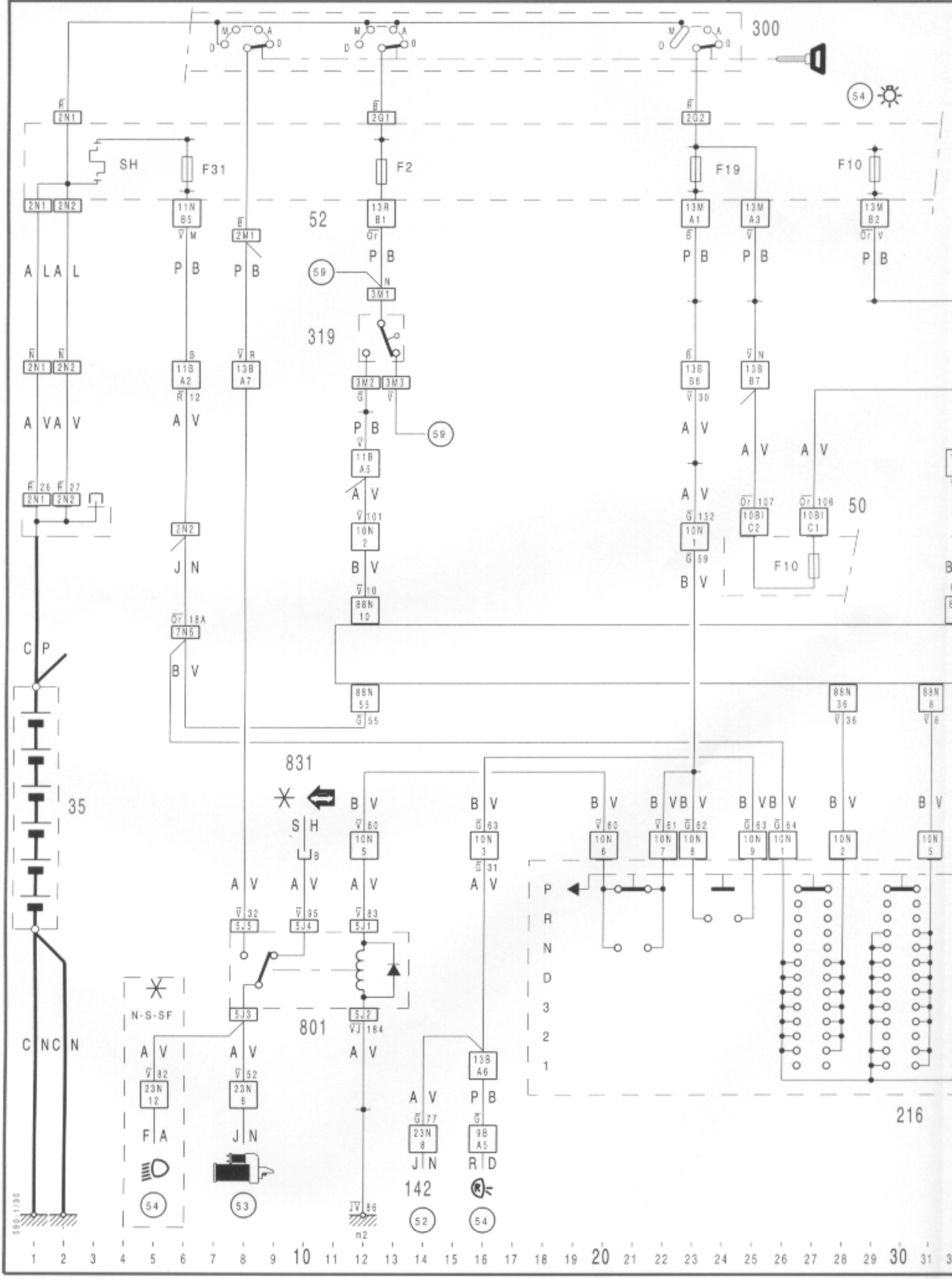
www.WorkshopManuals.co.uk



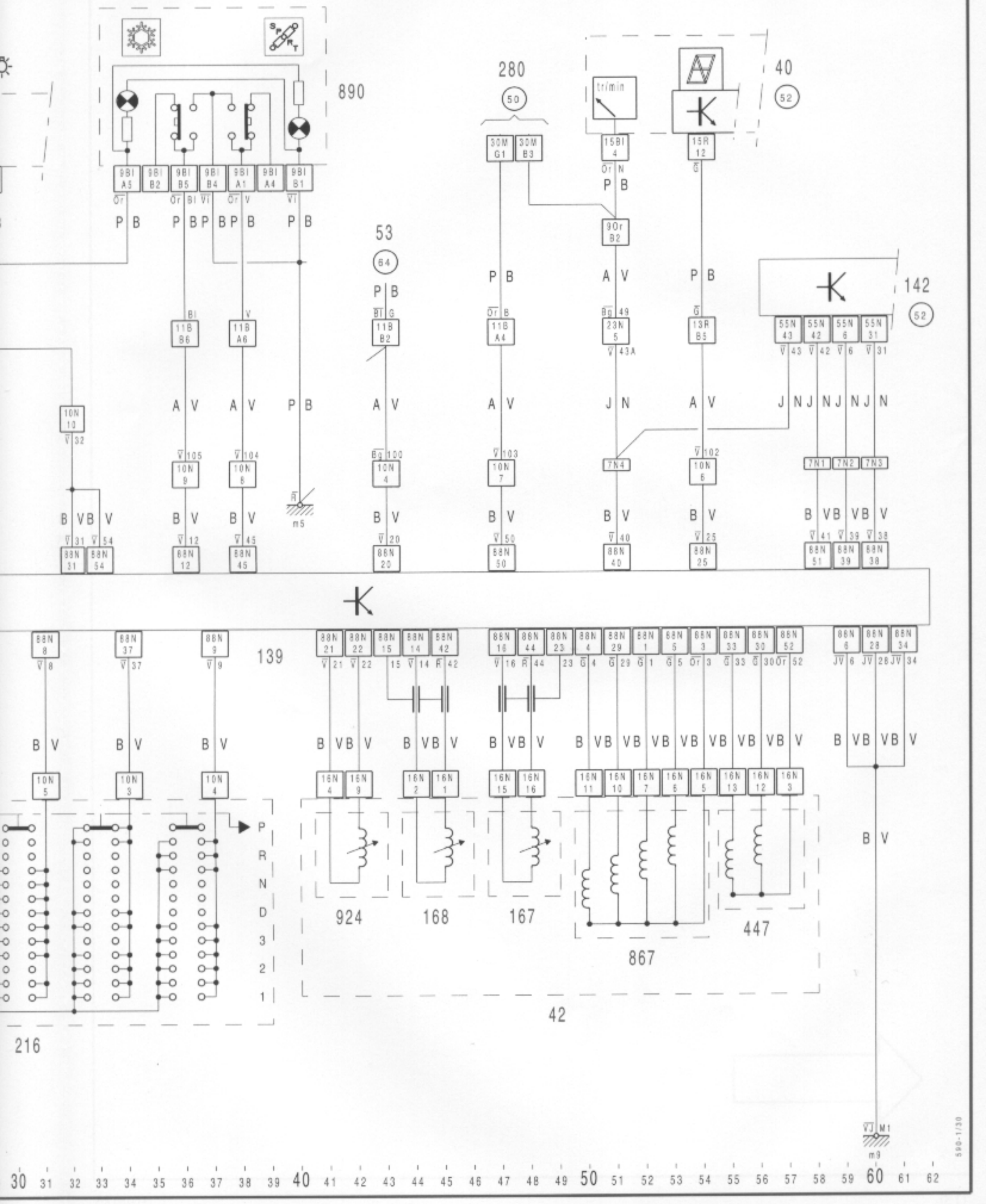
www.WorkshopManuals.co.uk



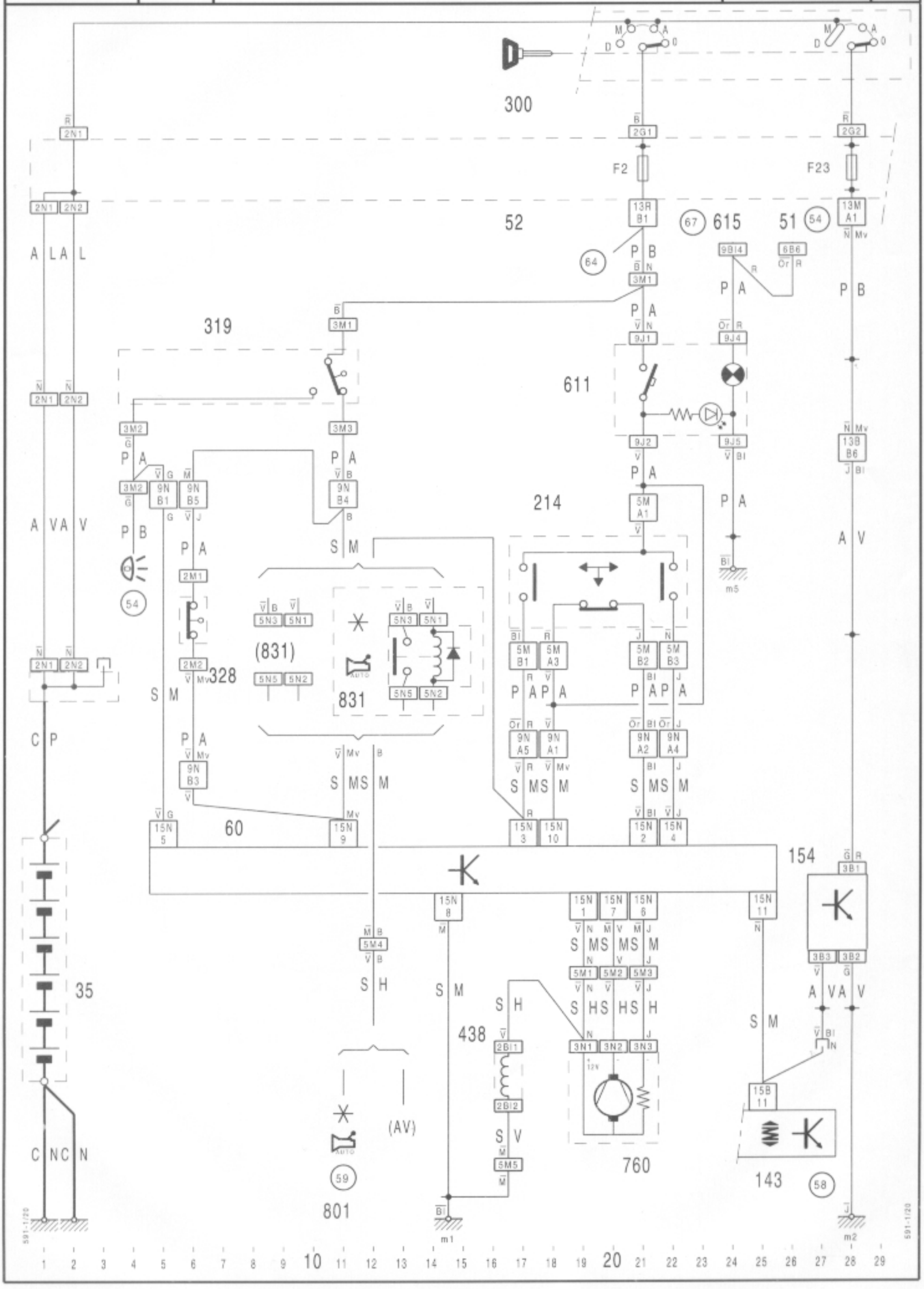
www.WorkshopManuals.co.uk



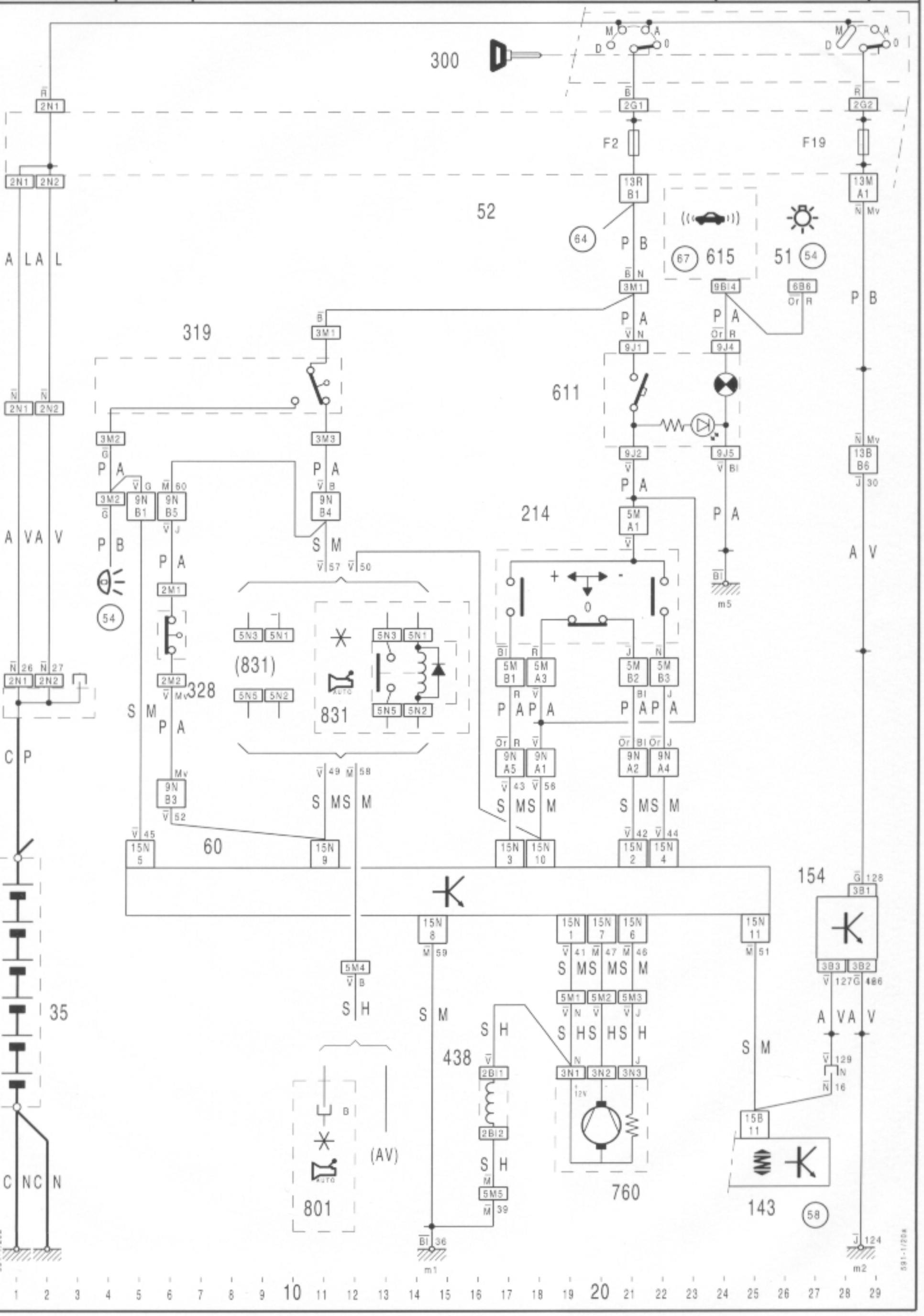
www.WorkshopManuals.co.uk



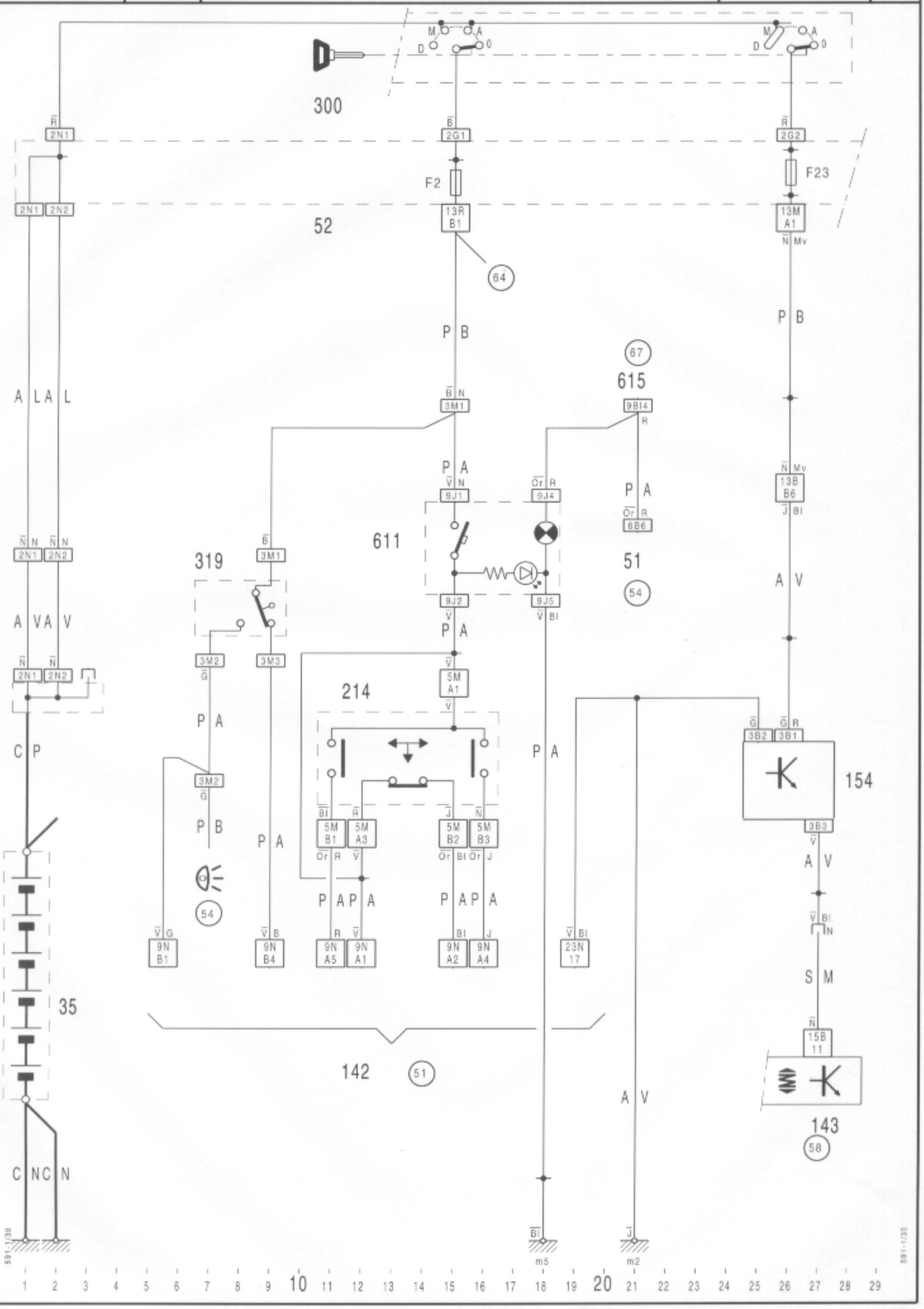
www.WorkshopManuals.co.uk



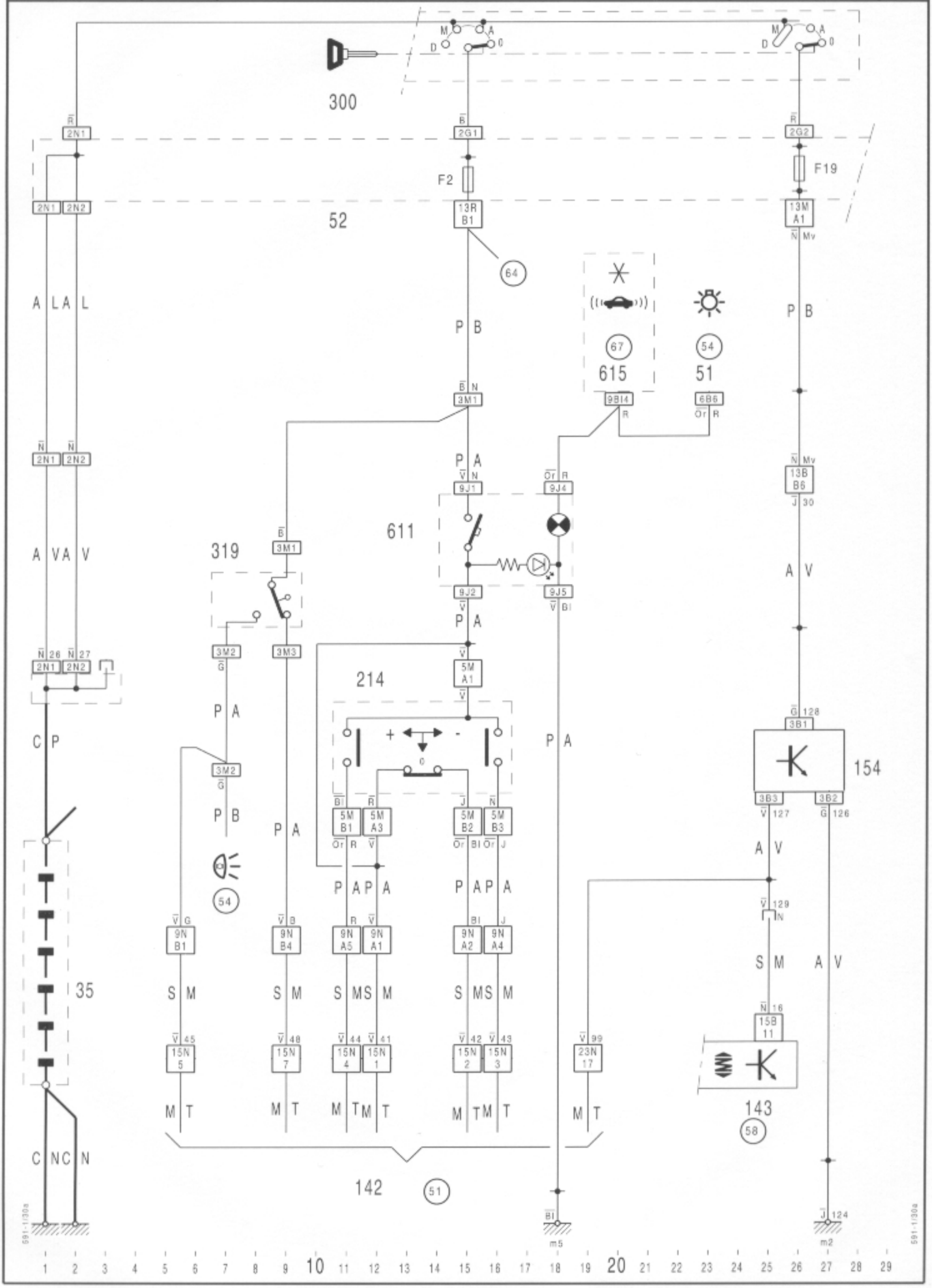
www.WorkshopManuals.co.uk



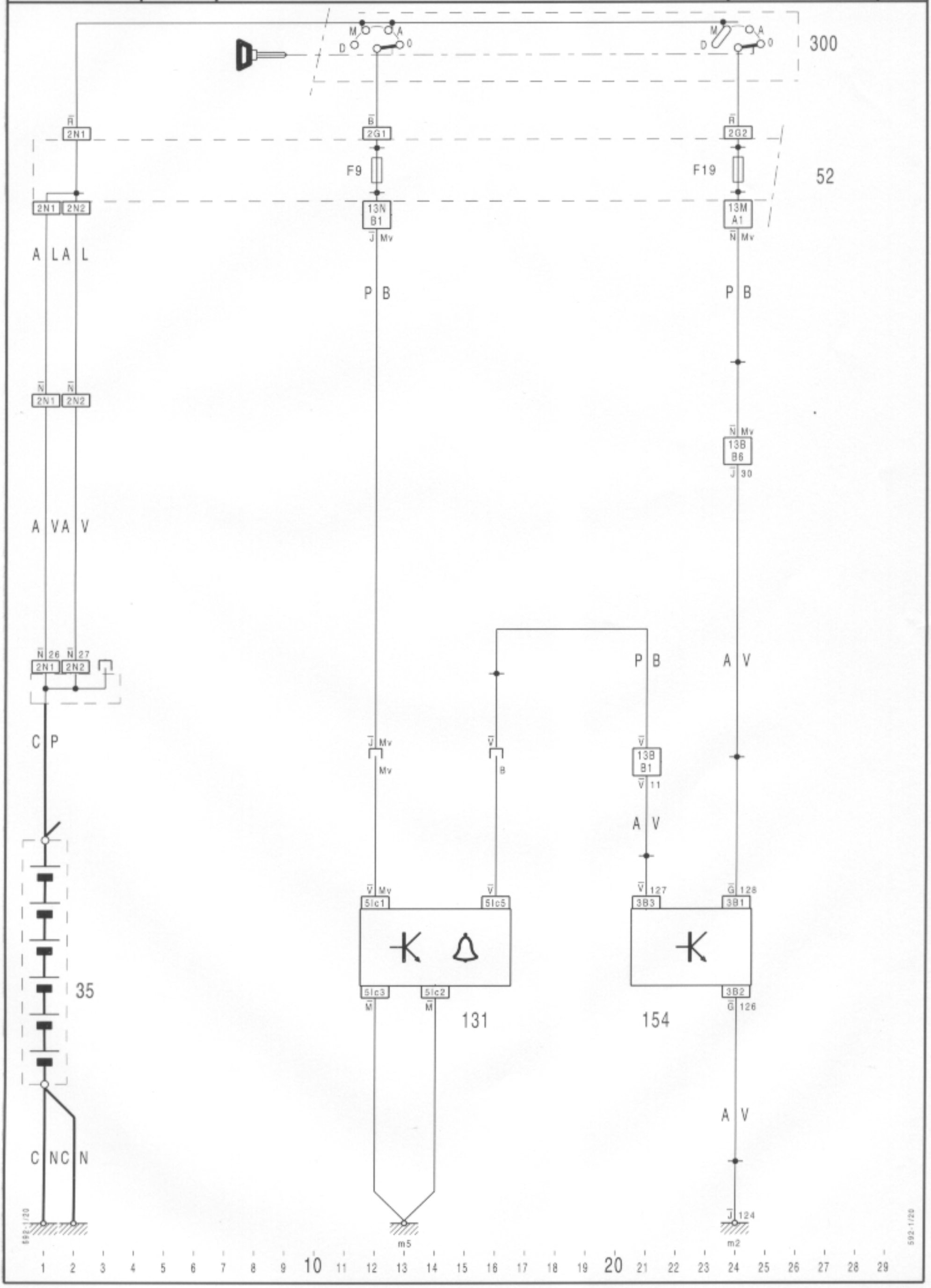
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk

SEAT FUNCTION

PARTS LIST
LIST OF THE ELECTRICAL DIAGRAMS

www.WorkshopManuals.co.uk

Ref.	Description	Func.
15	Alternator	53
35	Battery	TT
52	Junction box	TT
71	L.H. front heated seat temperature regulation control unit	63
72	R.H. front heated seat temperature regulation control unit	63
73	L.H. rear heated seat temperature regulation control unit	63
74	R.H. rear heated seat temperature regulation control unit	63
280	Diagnostic connector	TT
300	Anti-theft contact switch	TT
310	L.H. front door pillar contact	55
311	R.H. front door pillar contact	55
312	L.H. rear door pillar contact	55
313	R.H. rear door pillar contact	55
580	Driver's seat slide switch	63
581	Passenger's seat slide switch	63
584	Driver's backrest switch	63
585	Passenger's backrest switch	63
600	Driver's seat height adjustment switch	63
601	Driver's heated seat switch	63
602	Passenger's heated seat switch	63
603	L.H. rear heated seat switch	63
604	R.H. rear heated seat switch	63
605	Central armrest switch	63
690	Driver's seat slide motor	63
691	Passenger's seat slide motor	63
692	Driver's seat backrest motor	63
693	Passenger's seat backrest motor	63
701	Driver's seat height adjustment motor	63
709	Central armrest motor	63
810	Electric rear window relay	67
811	Driver's seat adjusting relay	63
812	Passenger's seat adjusting relay	63
817	Front heated seats relay	63
824	Rear heated seats and/or sunroof relay	63
837	Lighting timer relay	55
841	Electric window re-energizing relay	67
848	Engine turning information relay	TT
850	L.H. rear seat base resistance	63
851	R.H. rear seat base resistance	63
852	L.H. rear seat backrest resistance	63
853	R.H. rear seat backrest resistance	63
854	L.H. front seat resistance	63
855	R.H. front seat resistance	63

www.WorkshopManuals.co.uk

SEAT ADJUSTMENTS

NUMBER	STEERING	APPLICABLE	DESCRIPTION
630-1/20	L.H.D.	6383 → → 7084	**ALL COUNTRIES EXCEPT N-S-SF** Electrically-operated seats XMS101
630-1/20a	L.H.D.	7084 → → 7329	Evolution a : Electrical harnesses CL and PB modified XMK001
630-1/20b	L.H.D.	7329 →	Evolution b : Electrical harnesses PB, CL, SC and SP modified XMK005
630-1/21	L.H.D.	7084 → → 7329	**APPLICABLE N-S-SF** Electrically-operated seats XMK002
630-1/21a	L.H.D.	7329 →	Evolution a : Electrical harnesses PB, CL, SC and SP modified XMK006

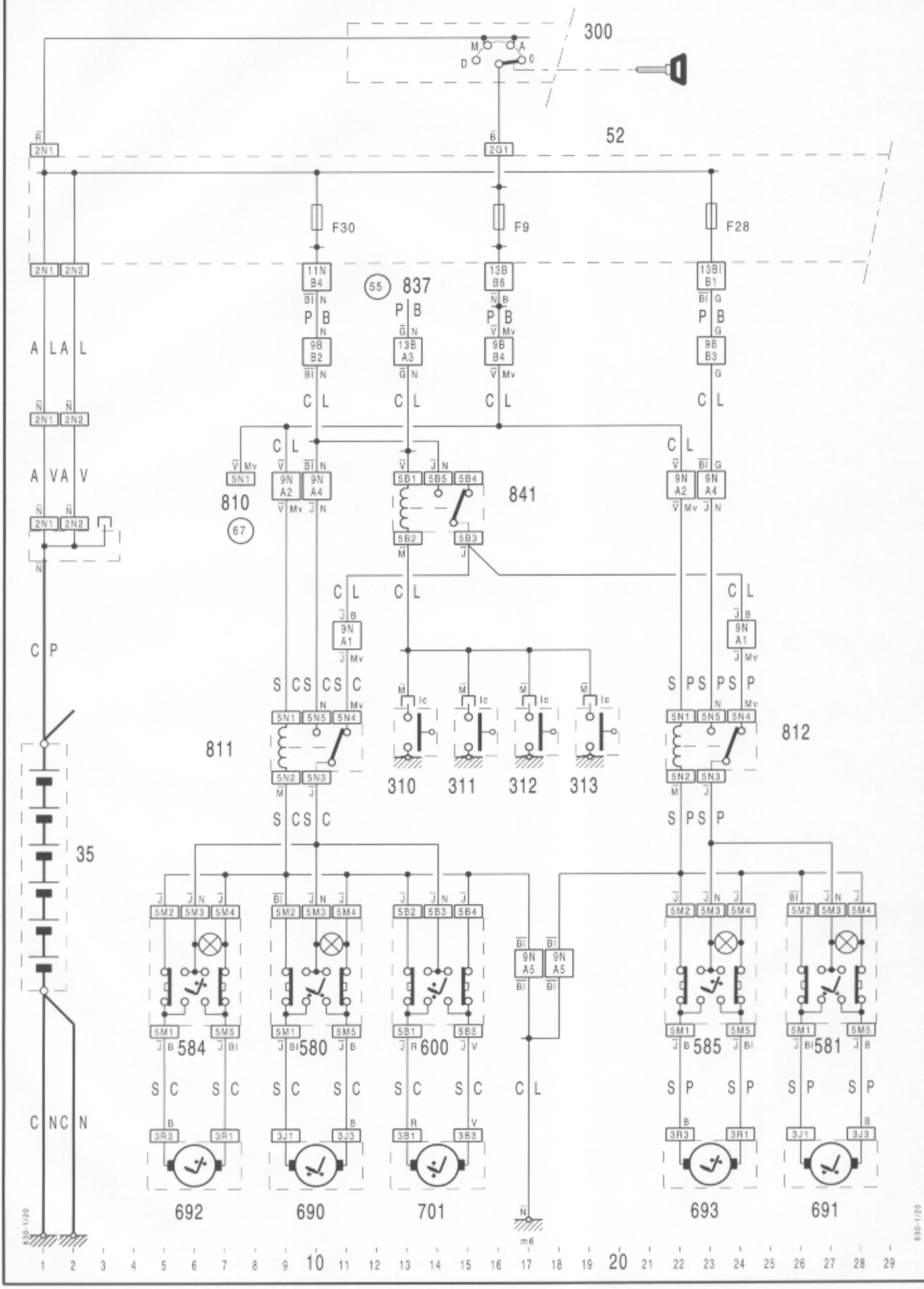
HEATED SEATS

NUMBER	STEERING	APPLICABLE	DESCRIPTION
631-1/20	L.H.D.	6383 → → 6749	**ALL TYPES** Heated seats XMS102
631-1/20a	L.H.D.	6749 → → 7084	Evolution a : Fuse box modified XMS213
631-1/20b	L.H.D.	7084 → → 7329	Evolution b : Electrical harnesses CL and PB modified XMK003
631-1/20c	L.H.D.	7329 →	Evolution c : Electrical harnesses PB, CL, SC and SP modified XMK007

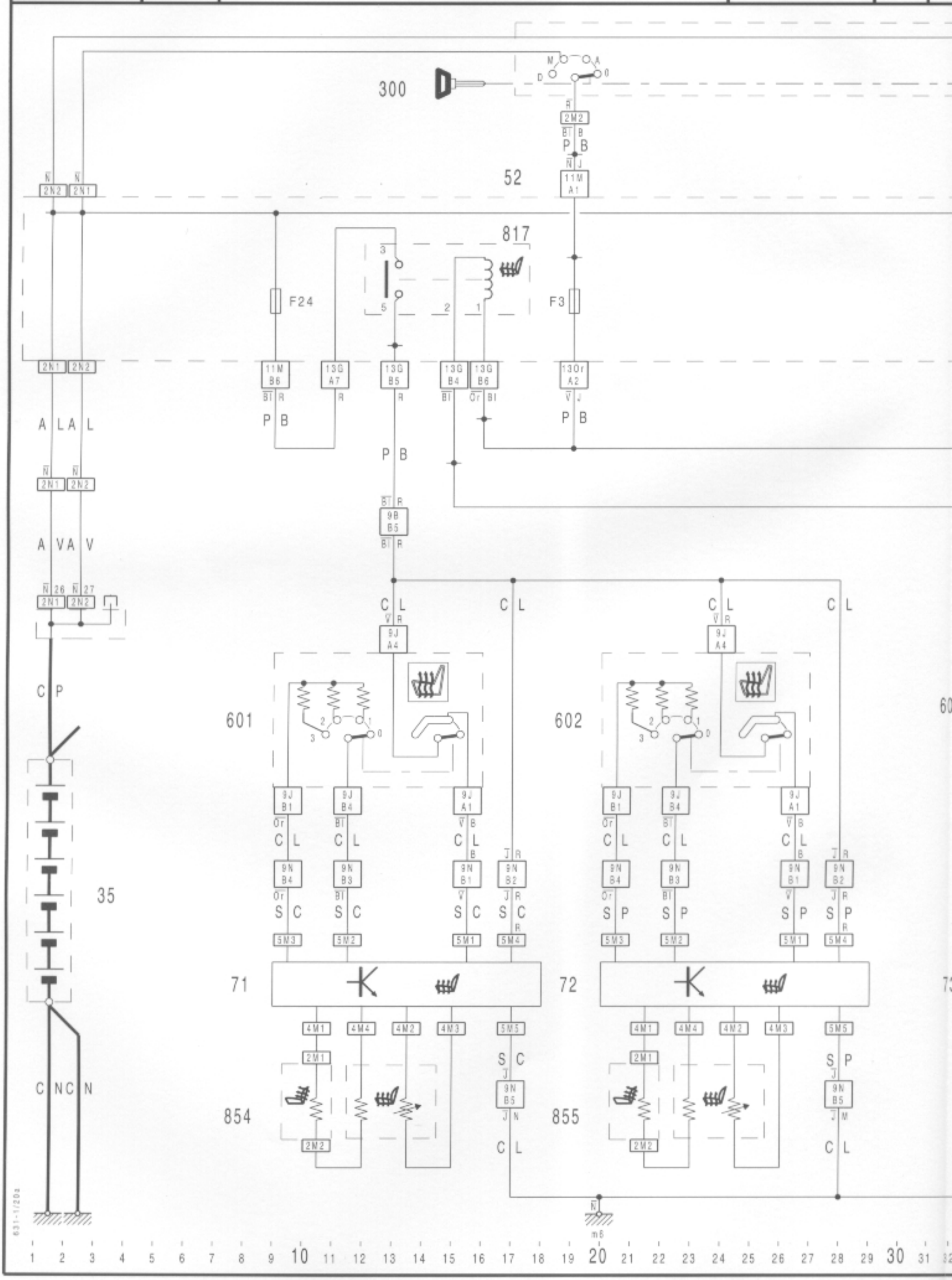
CENTRAL ARMREST

NUMBER	STEERING	APPLICABLE	DESCRIPTION
632-1/20	L.H.D.	6383 → → 6749	**ALL TYPES** Electrically-operated central armrest XMS103
632-1/20a	L.H.D.	6749 → → 7084	Evolution a : Fuse box modified XMS214
632-1/20b	L.H.D.	7084 → → 7329	Evolution b : Electrical harnesses CL and PB modified XMK004
632-1/20c	L.H.D.	7329 → → 7847	Evolution c : Electrical harnesses CL and PB modified XMK008
632-1/20d	L.H.D.	7847 →	Evolution d : Electrical harness CL modified XMK009

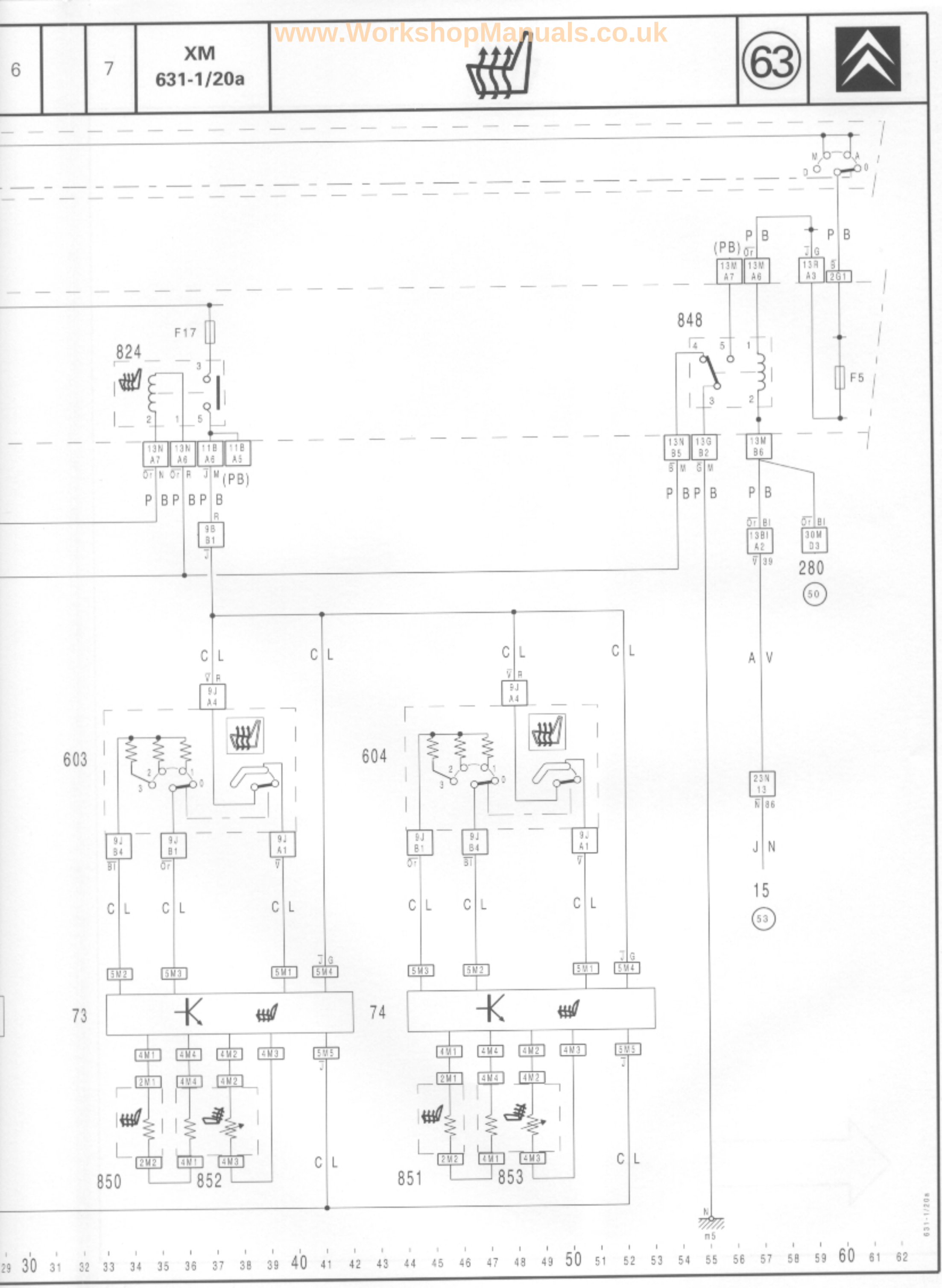
www.WorkshopManuals.co.uk



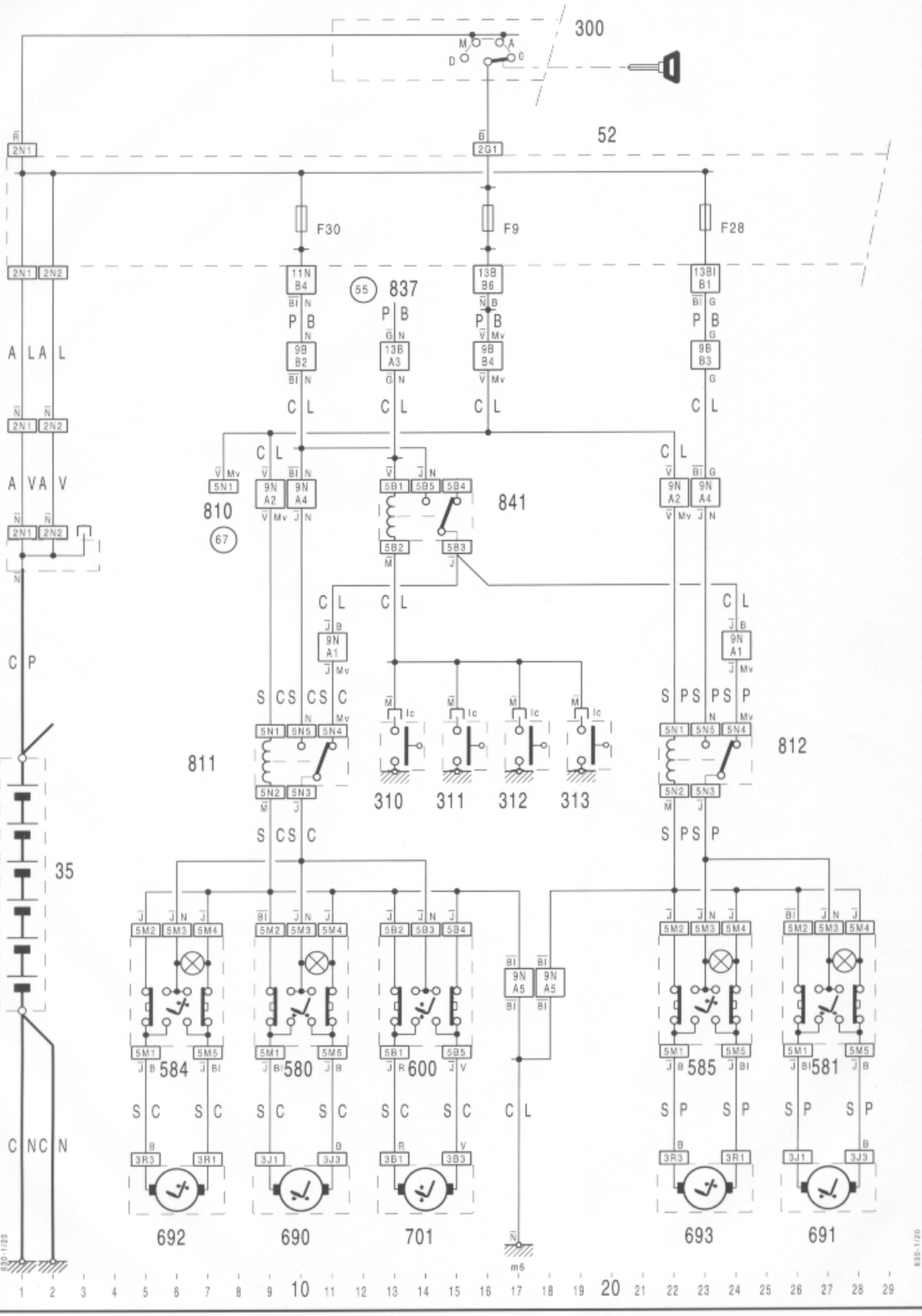
www.WorkshopManuals.co.uk



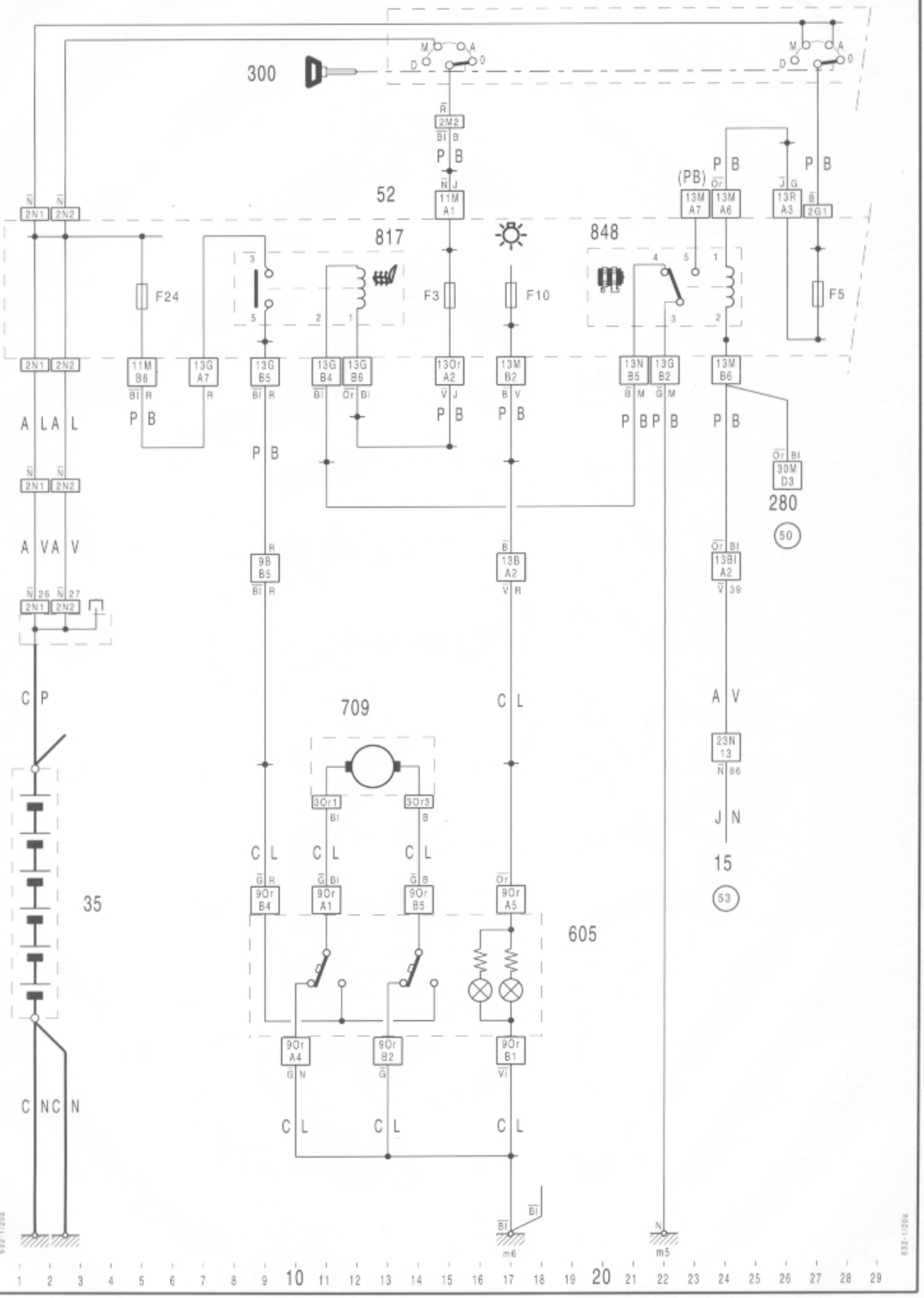
www.WorkshopManuals.co.uk



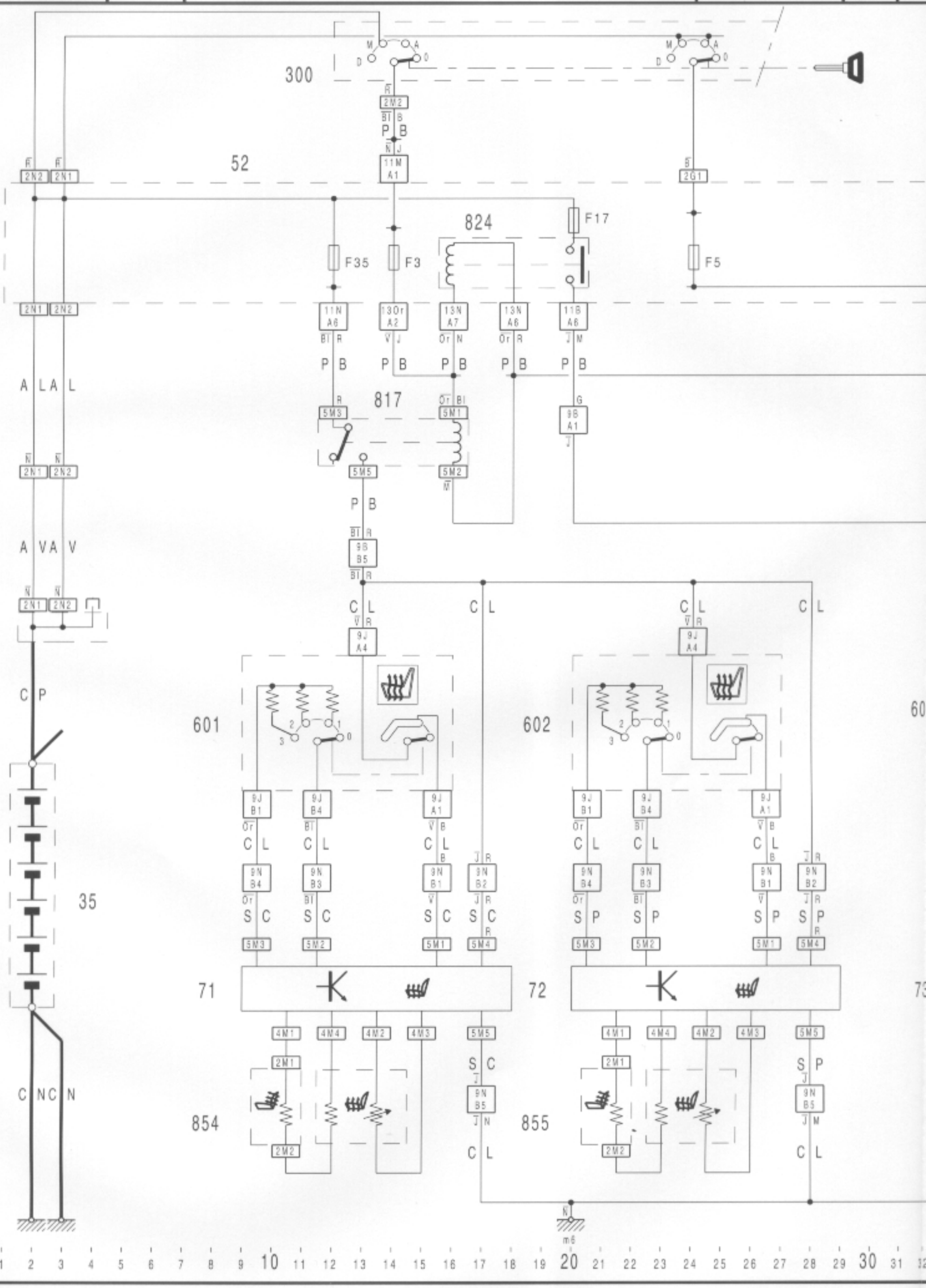
www.WorkshopManuals.co.uk



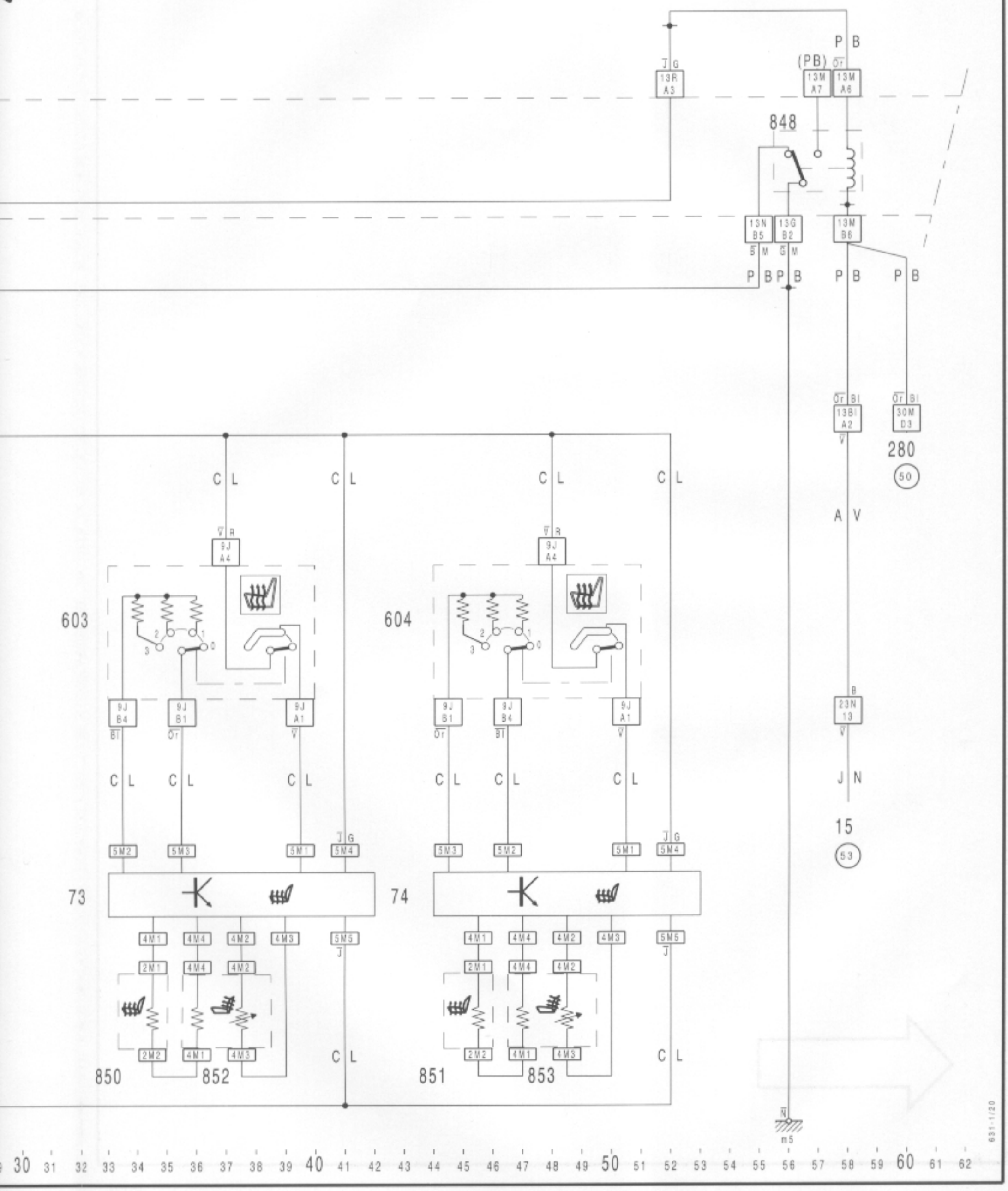
www.WorkshopManuals.co.uk



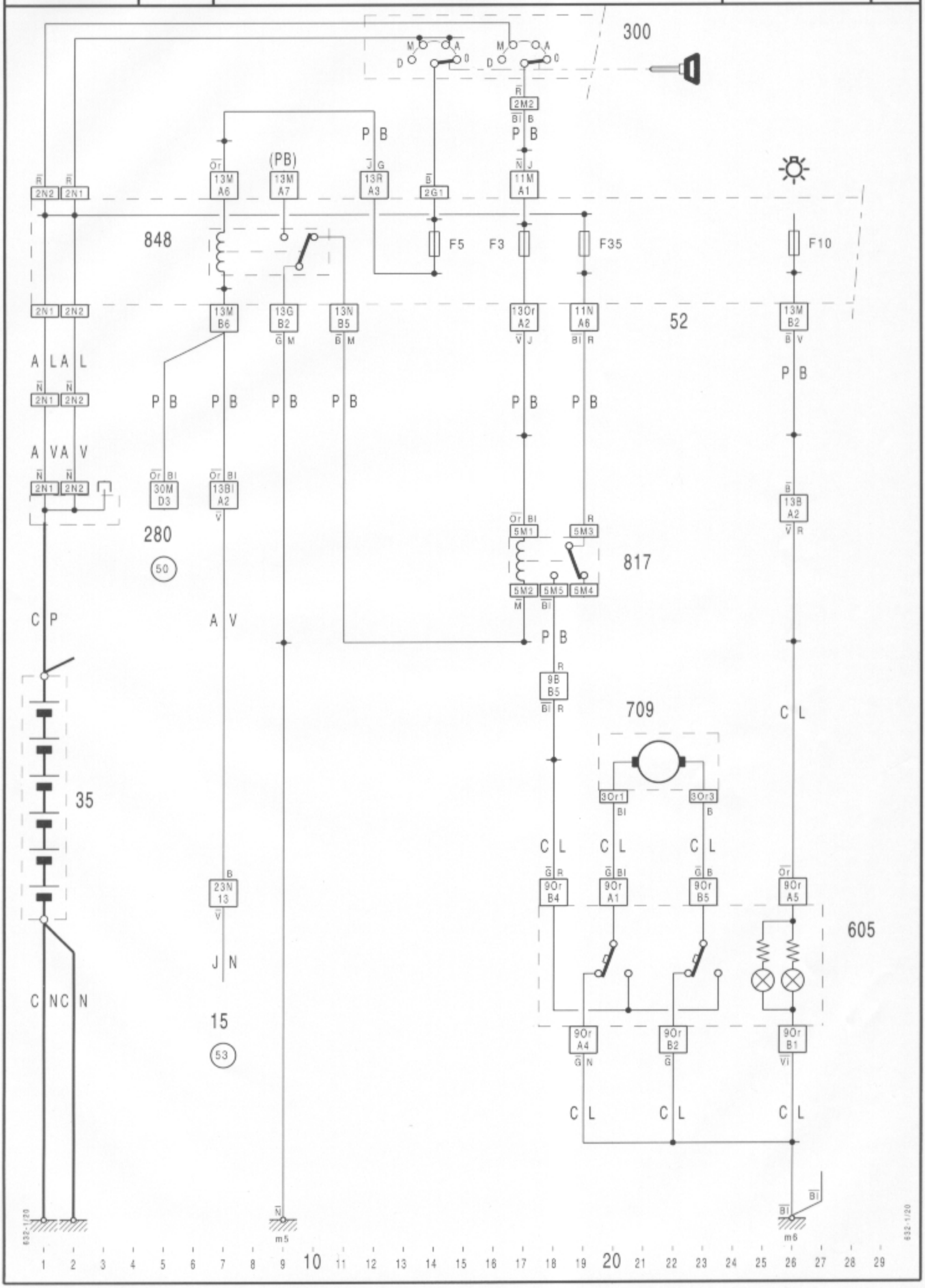
www.WorkshopManuals.co.uk



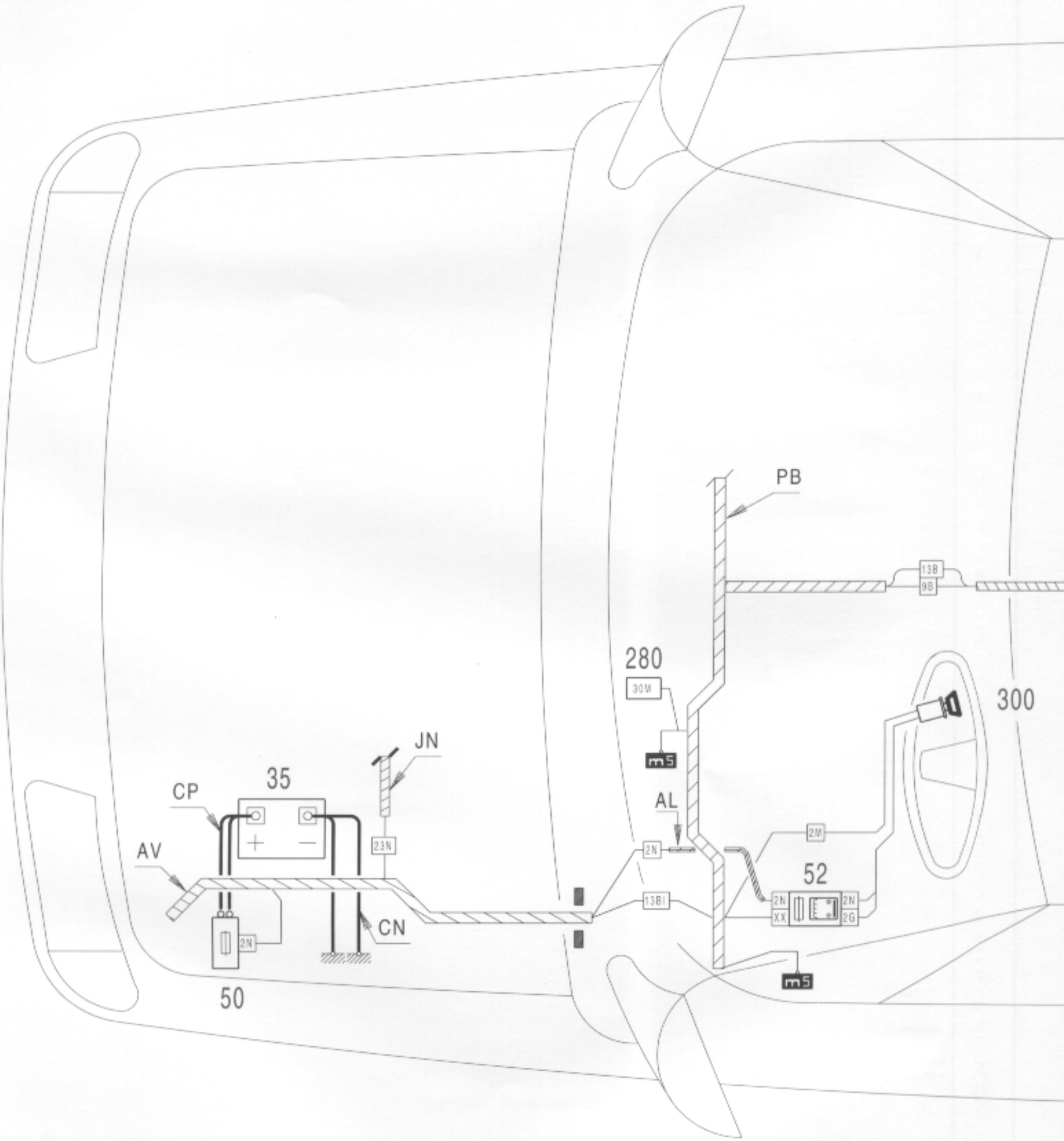
www.WorkshopManuals.co.uk



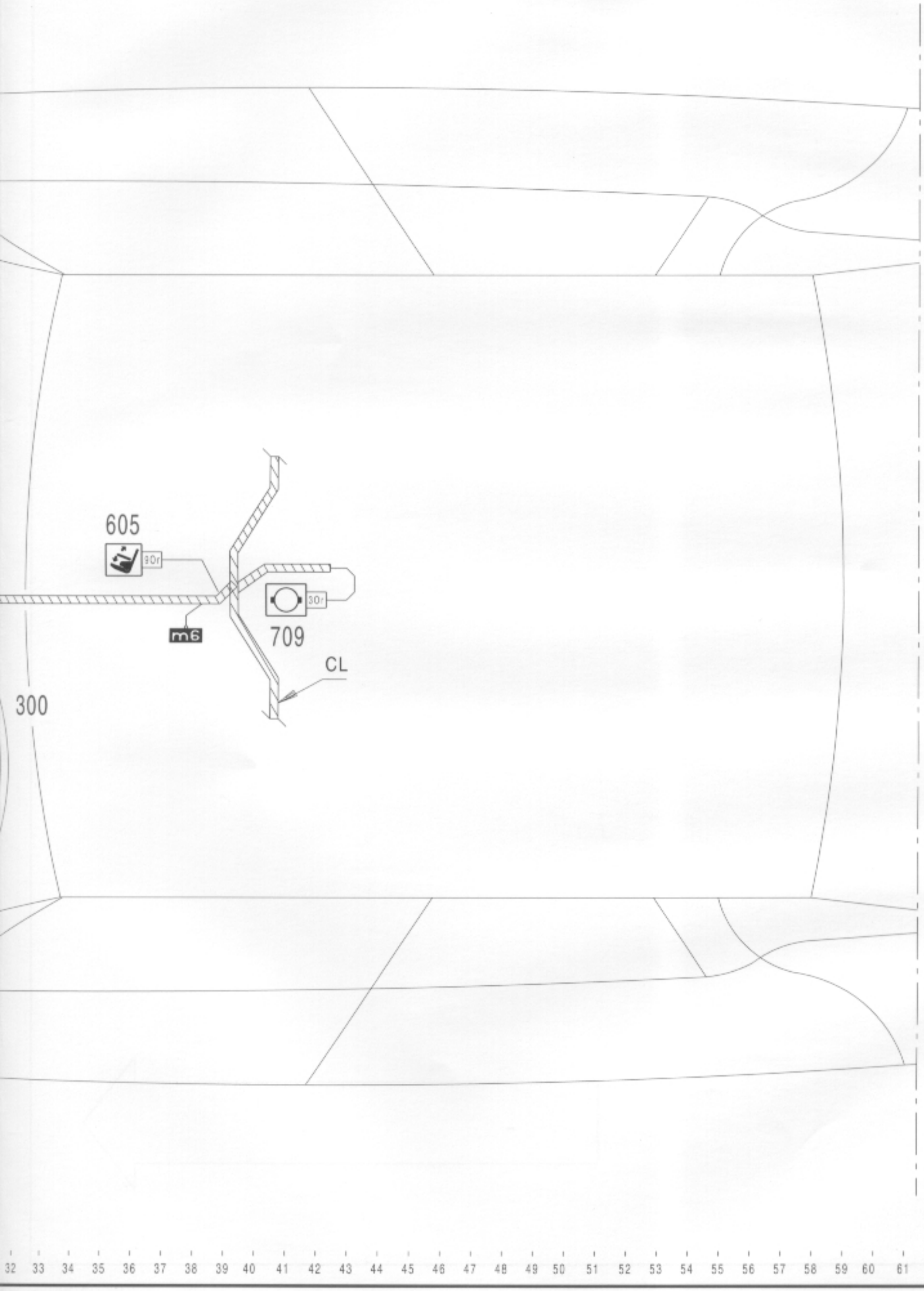
www.WorkshopManuals.co.uk



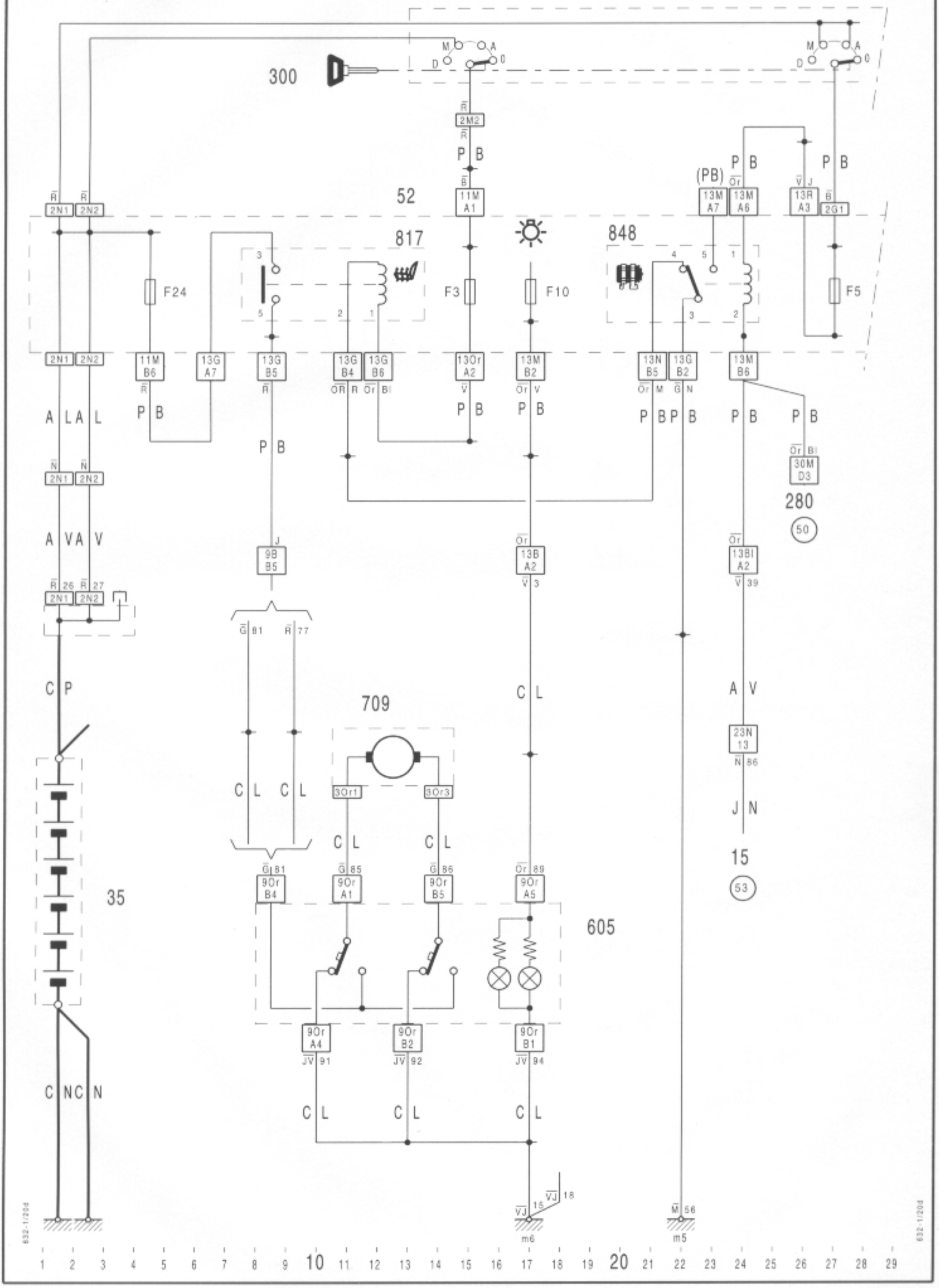
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk

AIR CONDITIONING FUNCTION

PARTS LIST
LIST OF THE ELECTRICAL DIAGRAMS

www.WorkshopManuals.co.uk

Ref.	Description	Func.
1	Warning lamps central display unit	52
15	Alternator	53
35	Battery	TT
48	Max.-fuse box (single or No.1)	51-64
49	Max.-fuse box No.2	51-64
50	Supply box	TT
52	Junction box	TT
53	Water temperature control unit	52-64
141	Air conditioning E.C.U.	64
182	Heater control	64
183	Air blower control	64
184	Air conditioning control	64
255	Refrigeration compressor	64
280	Diagnostic connector	TT
300	Anti-theft contact switch	TT
394	Heater control lighting	64
582	Air conditioning switch	64
681	Blower control module	64
700	Air mixing motor	64
710	Air distribution motor	64
711	Air recycling motor (single or L.H.)	64
720	Electric cooling fan (single or L.H.)	64
721	R.H. electric cooling fan	64
742	Front centre interior lamp	55
775	Pressostat	64
790	Air blower (single or L.H.)	64
813	Cooling fan relay (slow and fast speed)	64
814	Cooling fan relay (fast speed)	64
815	Cooling fan relay (speed inverter)	64
821	Air conditioning complementary relay	
822	Refrigeration compressor cut-off relay by injection	51-64
848	Engine turning information relay	TT
864	Electric cooling fan resistor	64
880	Lighting rheostat	52-65
908	Air conditioning duct temperature sensor	64
910	Engine water temperature sensor	64
912	Evaporator temperature sensor	64
913	Interior temperature sensor	64
916	Air conditioning water temperature sensor	64
920	Oil temperature contact sensor (on the automatic gearbox)	51

Ref.	Description	Func.

N
6
64
6
64
64
N
64
64
64
64
64
64
64
64

www.WorkshopManuals.co.uk

ENGINE COOLING

NUMBER	STEERING	APPLICABLE	DESCRIPTION
640-0/10	All Types	6383 → → 6749	**Engine cooling** 1 electric cooling fan XMA76
640-0/10a	All Types	6749 →	Evolution a : Fuse box mdified XMN78
640-0/50	All Types	6383 → → 6749	**Engine cooling** 1 electric cooling fans XMA77
640-0/50a	All Types	6749 →	Evolution a : Fuse box mdified XMN79

HEATING - VENTILATION

NUMBER	STEERING	APPLICABLE	DESCRIPTION
641-1/10	L.H.D.	6383 →	Heating - ventilation XMA78
641-2/10	R.H.D.	6383 →	Heating - ventilation XMA82

AUTOMATIC HEATING CONTROL

NUMBER	STEERING	APPLICABLE	DESCRIPTION
642-1/10	L.H.D.	6383 → → 6472	**Automatic heating control** XMA79
642-1/10a	L.H.D.	6472 → → 6563	Evolution a : Vehicle interior temperature sensor (913) connection modified XMA95
642-1/10b	L.H.D.	6563 → → 6749	Evolution b : Vehicle interior temperature sensor (913) connection modified XMS144
642-1/10c	L.H.D.	6749 →	Evolution c : Fuse box modified Vehicle interior temperature sensor (913) connection modified XMN80
642-2/10	R.H.D.	6383 → → 6472	**Automatic heating control** XMA83
642-2/10a	R.H.D.	6472 → → 6563	Evolution a : Vehicle interior temperature sensor (913) connection modified XMA96
642-2/10b	R.H.D.	6563 → → 6749	Evolution b : Vehicle interior temperature sensor (913) connection modified XMS145
642-2/10c	R.H.D.	6749 →	Evolution c : Fuse box modified Vehicle interior temperature sensor (913) connection modified XMN81

www.WorkshopManuals.co.uk

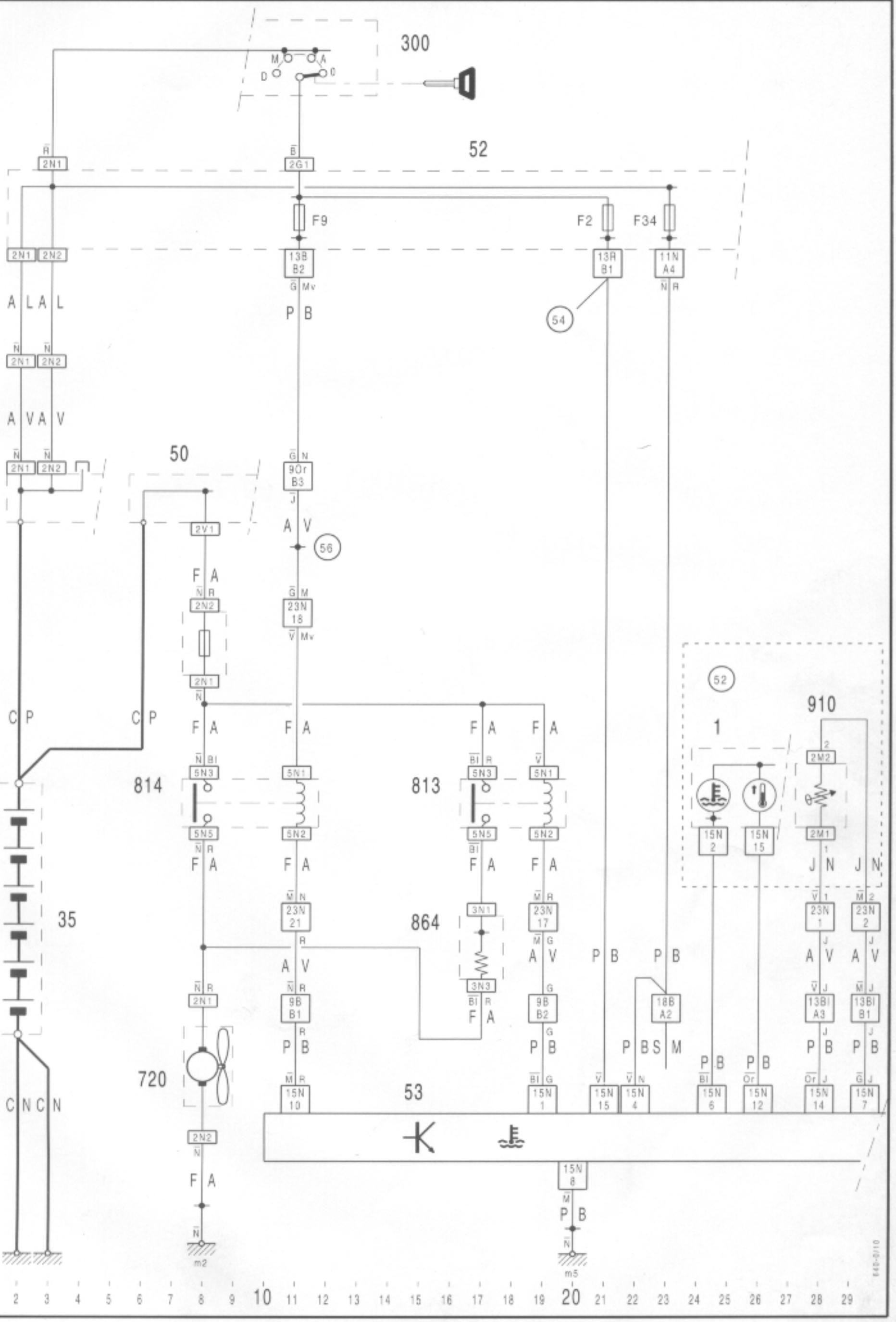
SEMI-AUTOMATIC REFRIGERATION

NUMBER	STEERING	APPLICABLE	DESCRIPTION
643-1/10	L.H.D.	6383 → → 6472	**Semi-automatic refrigeration** XMA80
643-1/10a	L.H.D.	6472 → → 6563	Evolution a : Vehicle interior temperature sensor (913) connection modified XMA97
643-1/10b	L.H.D.	6563 → → 6749	Evolution b : Vehicle interior temperature sensor (913) connection modified XMS146
643-1/10c	L.H.D.	6749 →	Evolution c : Fuse box modified Vehicle interior temperature sensor (913) connection modified XMN82
643-2/10	R.H.D.	6383 → → 6472	**Semi-automatic refrigeration** XMA84
643-2/10a	R.H.D.	6472 → → 6563	Evolution a : Vehicle interior temperature sensor (913) connection modified XMA98
643-2/10b	R.H.D.	6563 → → 6749	Evolution b : Vehicle interior temperature sensor (913) connection modified XMS147
643-2/10c	R.H.D.	6749 →	Evolution c : Fuse box modified Vehicle interior temperature sensor (913) connection modified XMN83

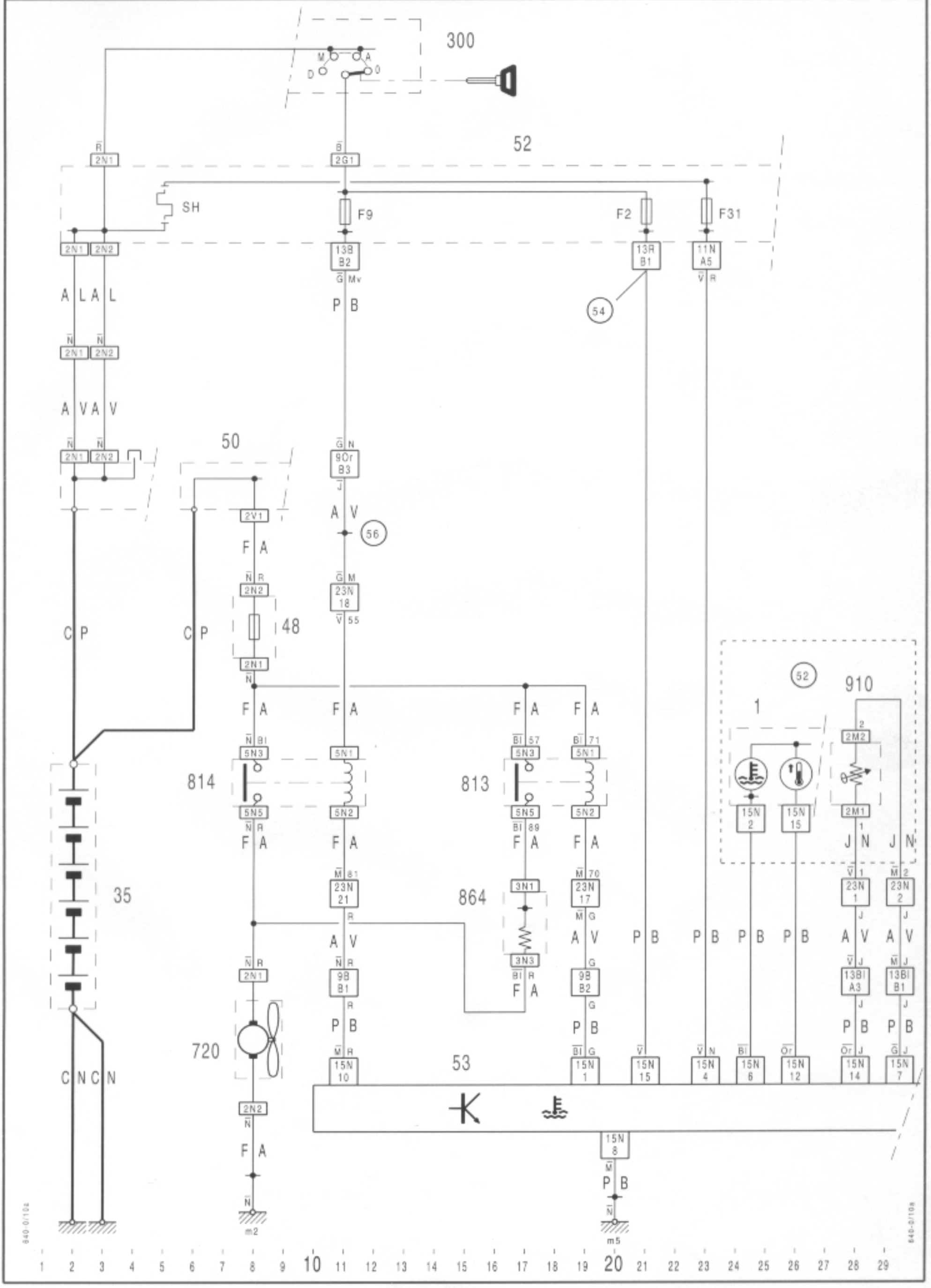
FULLY AUTOMATIC REFRIGERATION

NUMBER	STEERING	APPLICABLE	DESCRIPTION
644-1/10	L.H.D.	6383 → → 6472	**Fully automatic refrigeration** XMA81
644-1/10a	L.H.D.	6472 → → 6563	Evolution a : Vehicle interior temperature sensor (913) connection modified XMA99
644-1/10b	L.H.D.	6563 → → 6749	Evolution b : Vehicle interior temperature sensor (913) connection modified XMS148
644-1/10c	L.H.D.	6749 →	Evolution c : Fuse box modified Vehicle interior temperature sensor (913) connection modified XMN84
644-2/10	R.H.D.	6383 → → 6472	**Fully automatic refrigeration** XMA85
644-2/10a	R.H.D.	6472 → → 6563	Evolution a : Vehicle interior temperature sensor (913) connection modified XMA100
644-2/10b	R.H.D.	6563 → → 6749	Evolution b : Vehicle interior temperature sensor (913) connection modified XMS149
644-2/10c	R.H.D.	6749 →	Evolution c : Fuse box modified Vehicle interior temperature sensor (913) connection modified XMN85

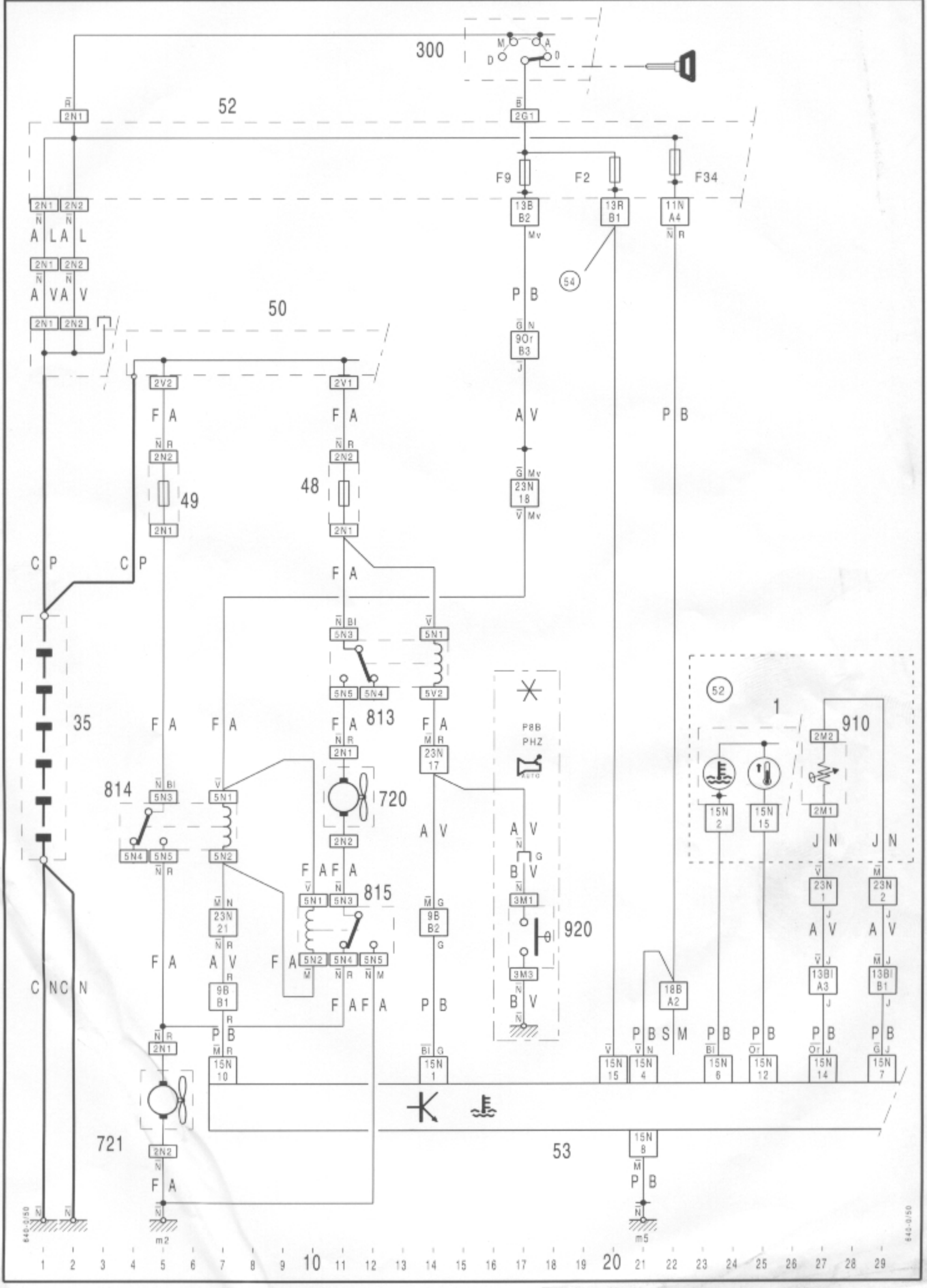
www.WorkshopManuals.co.uk



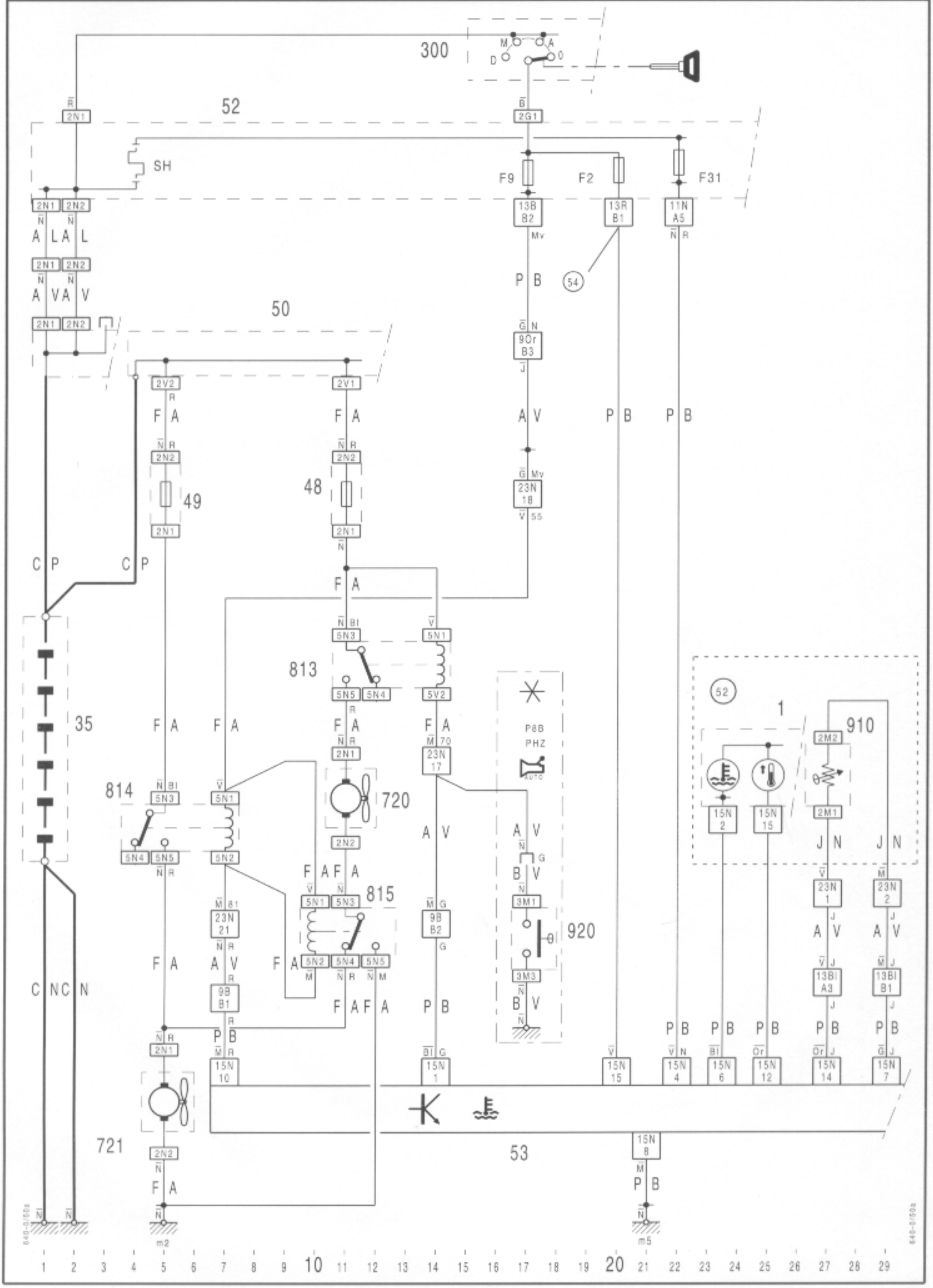
www.WorkshopManuals.co.uk



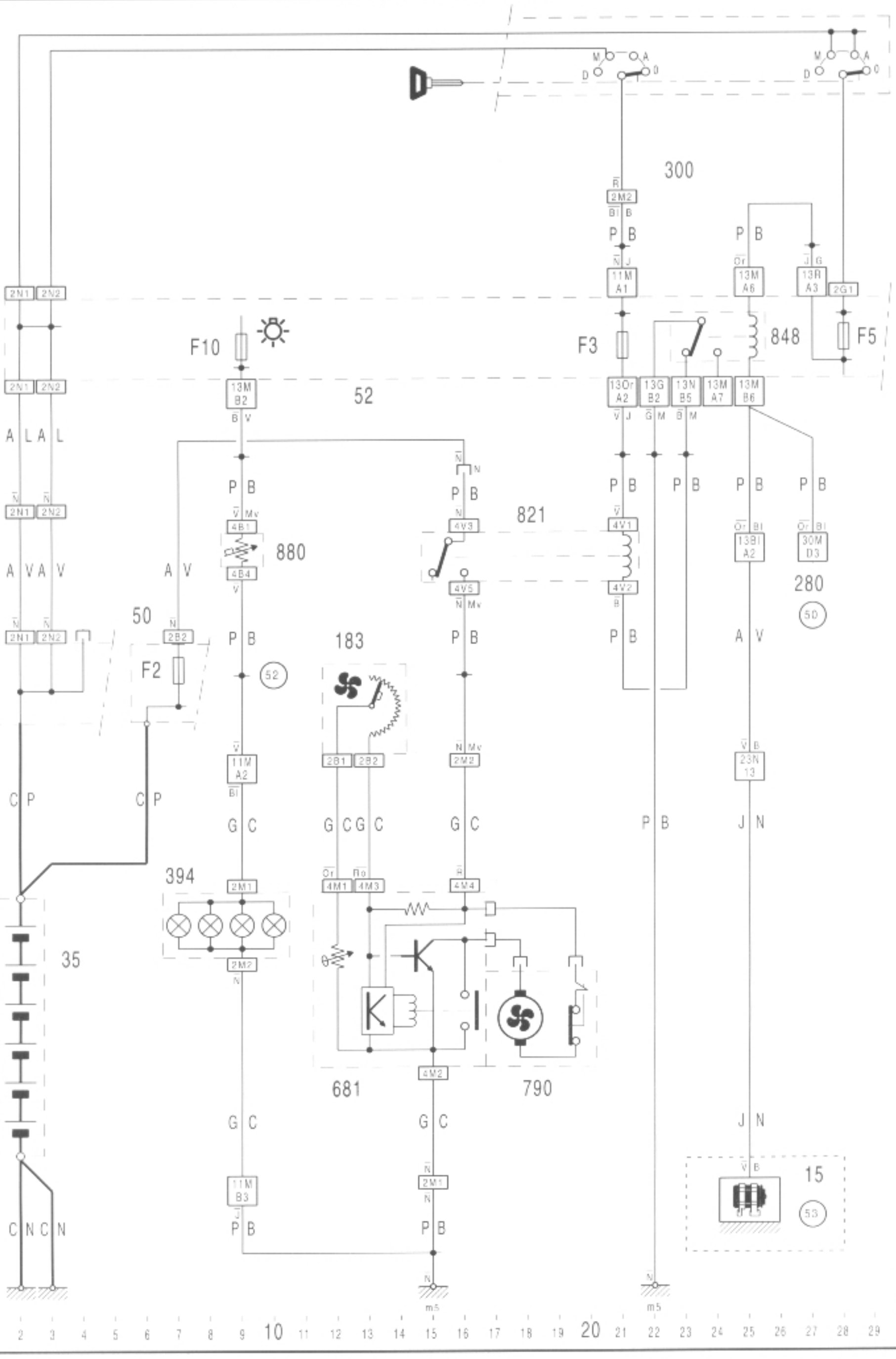
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

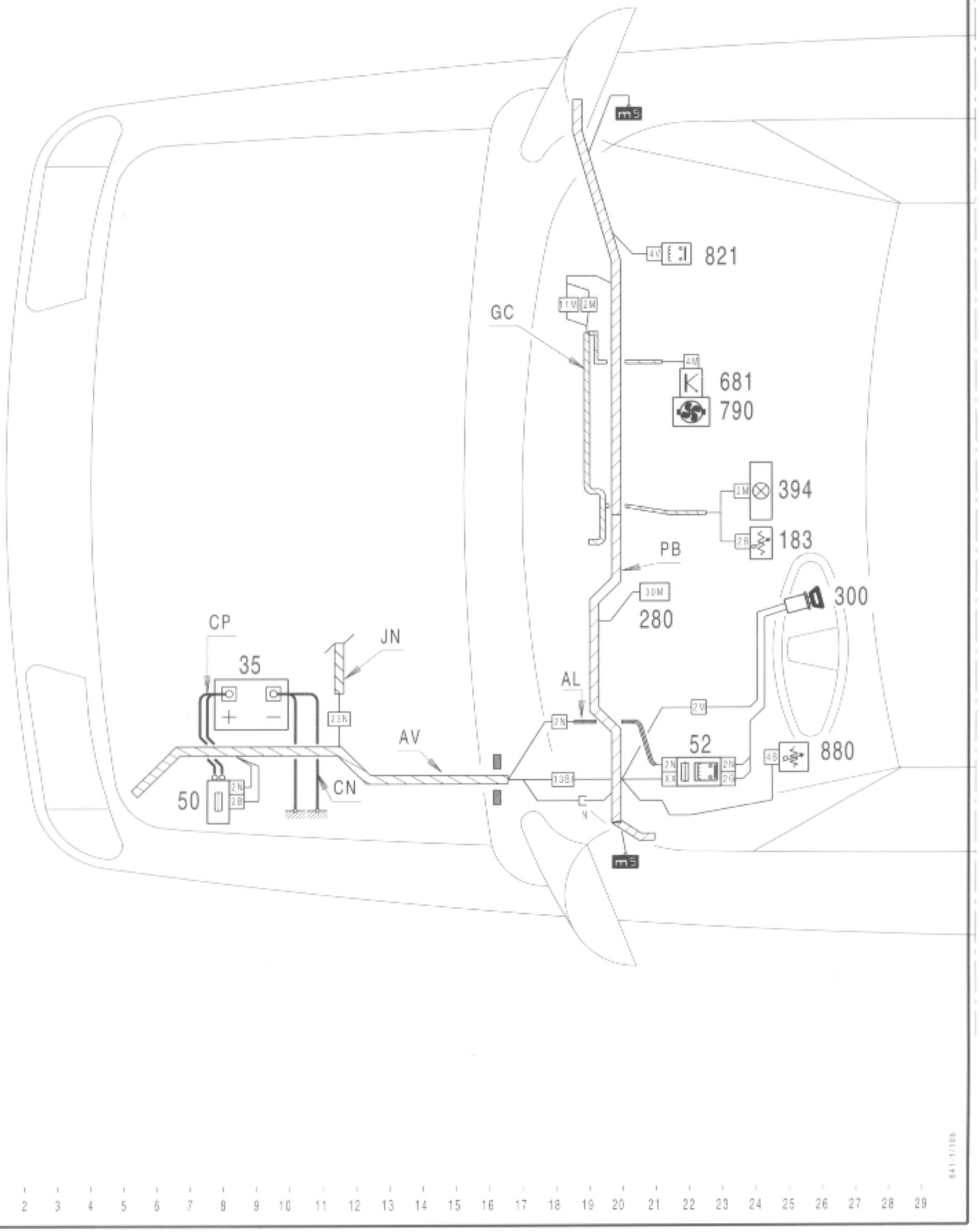


www.WorkshopManuals.co.uk

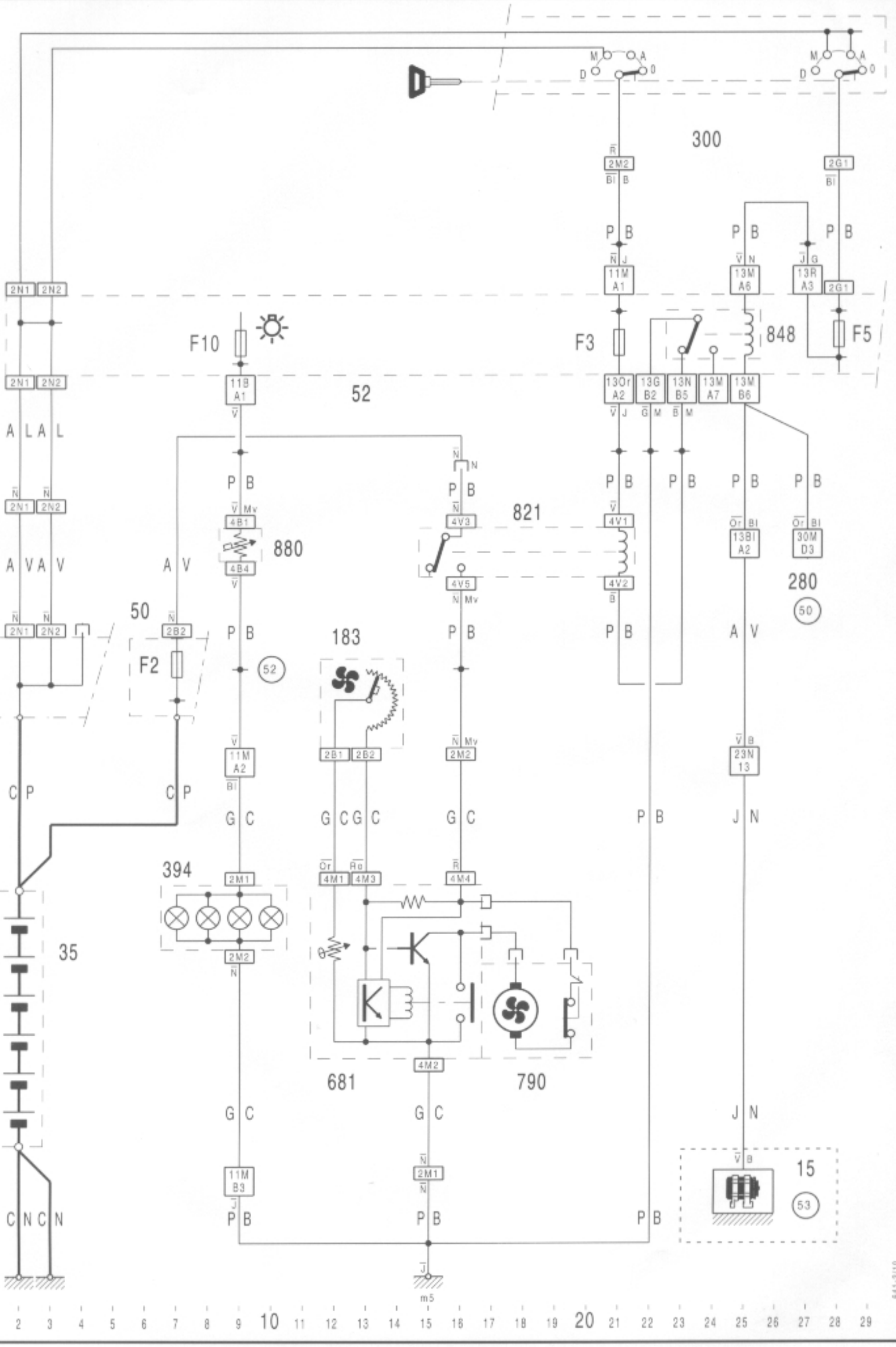


8935

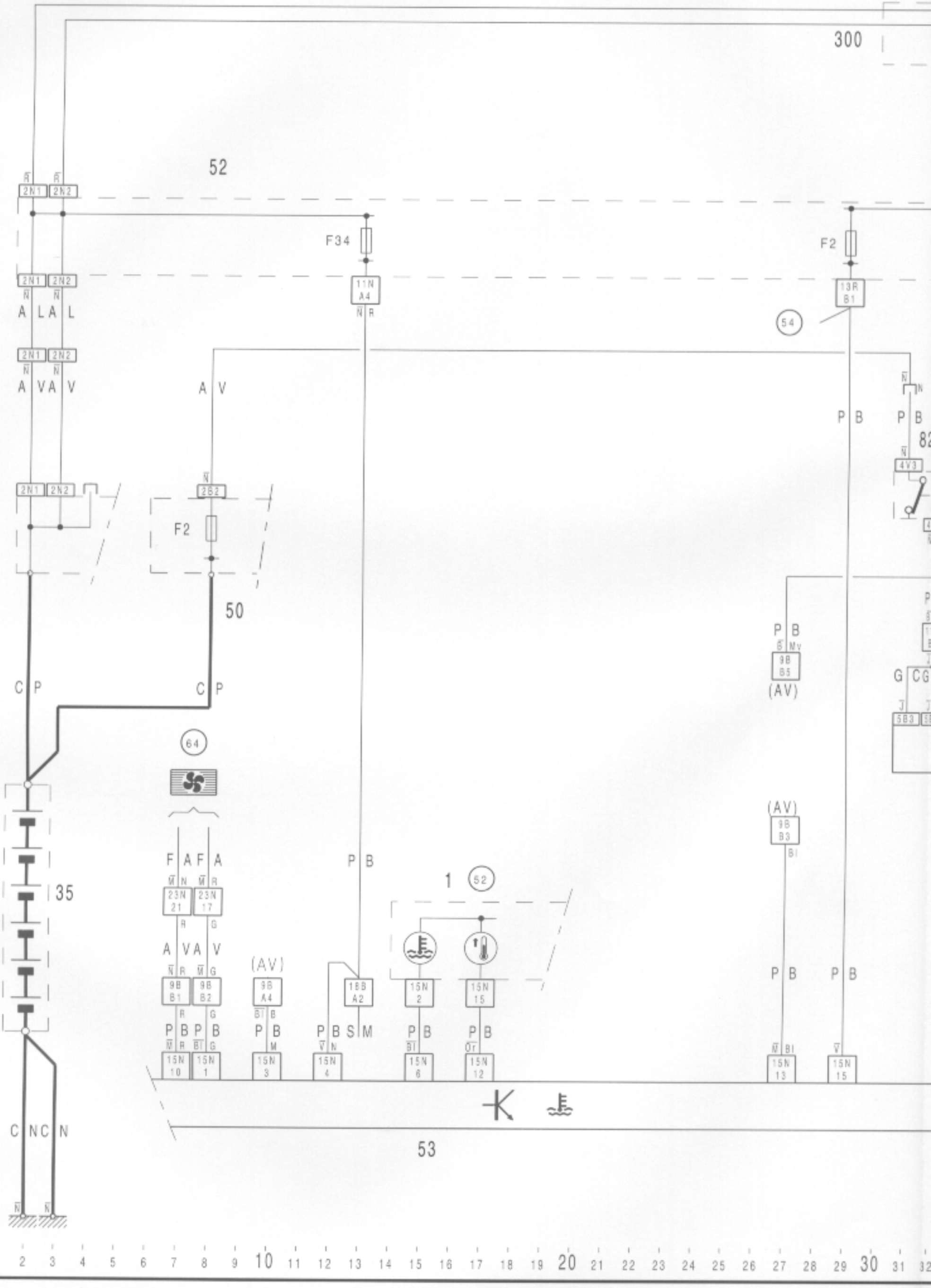
www.WorkshopManuals.co.uk



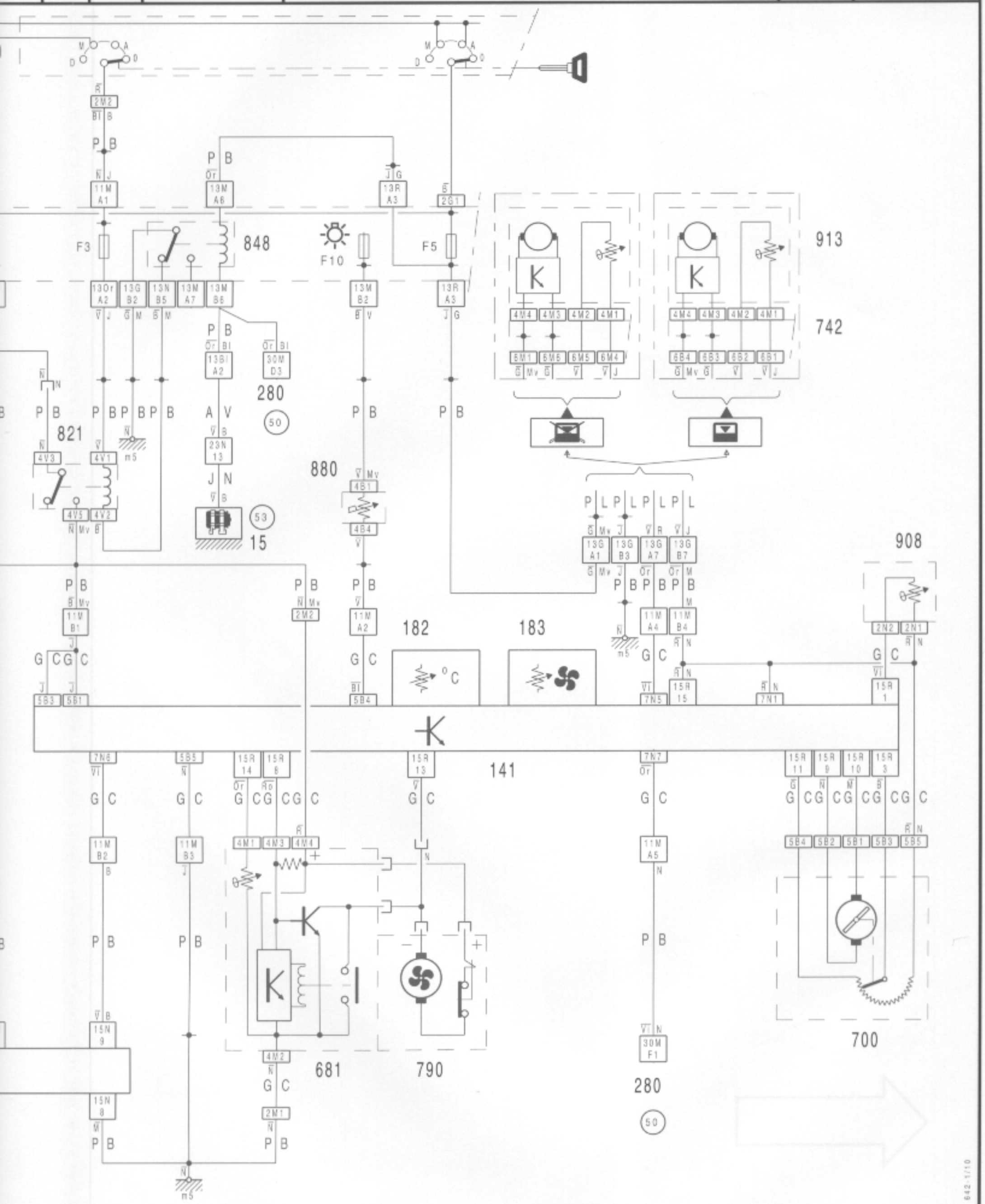
www.WorkshopManuals.co.uk



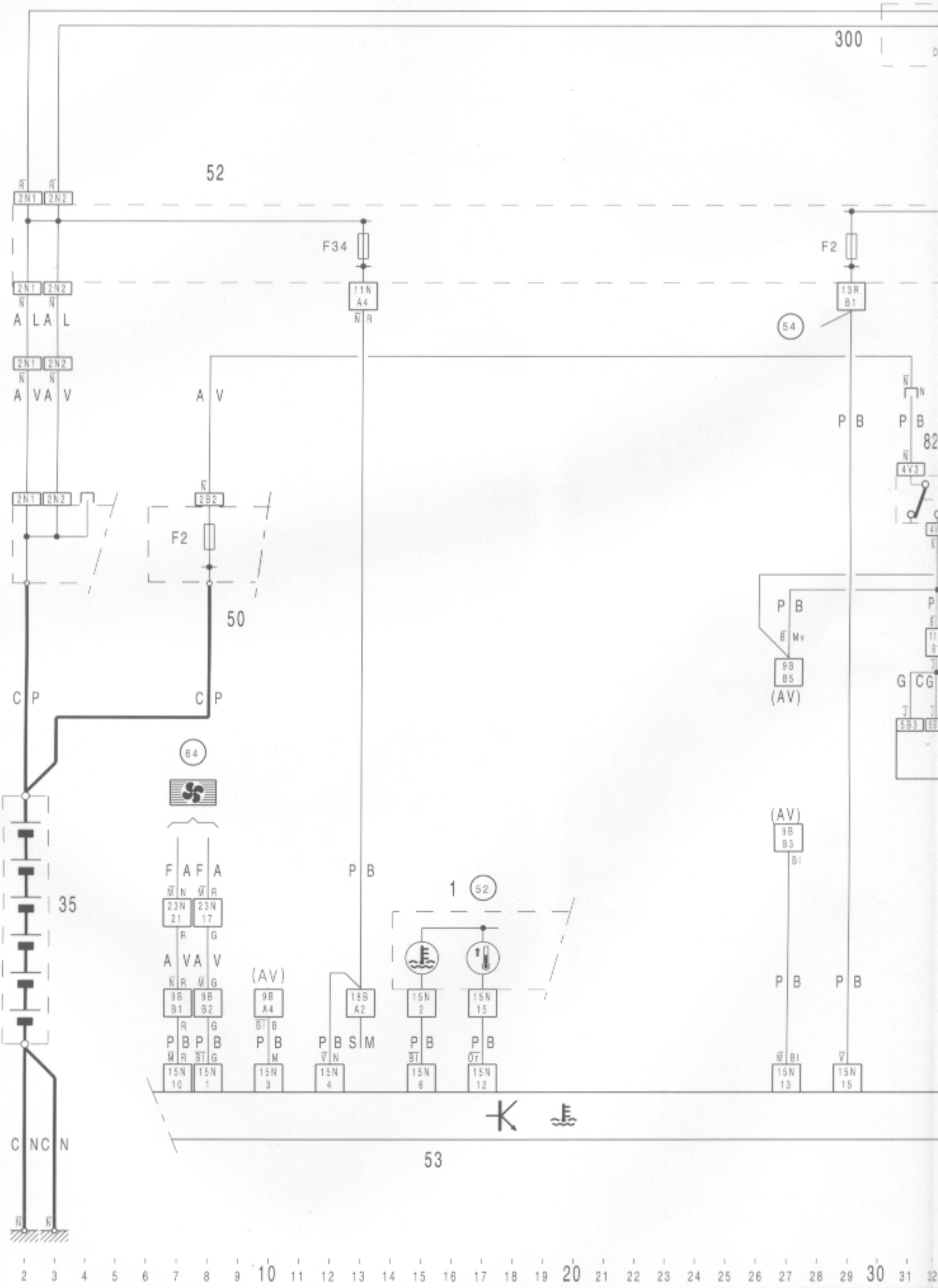
www.WorkshopManuals.co.uk



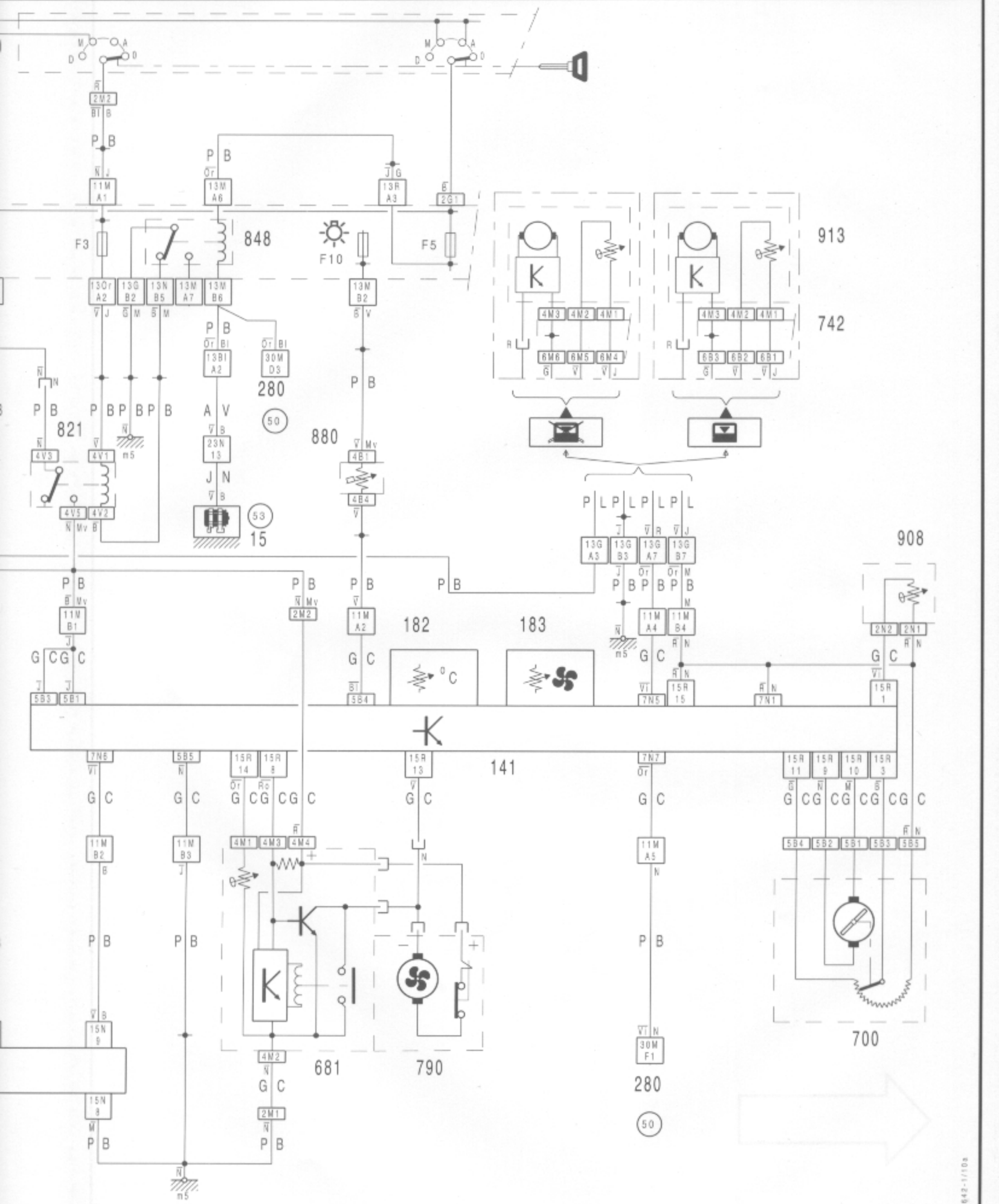
www.WorkshopManuals.co.uk



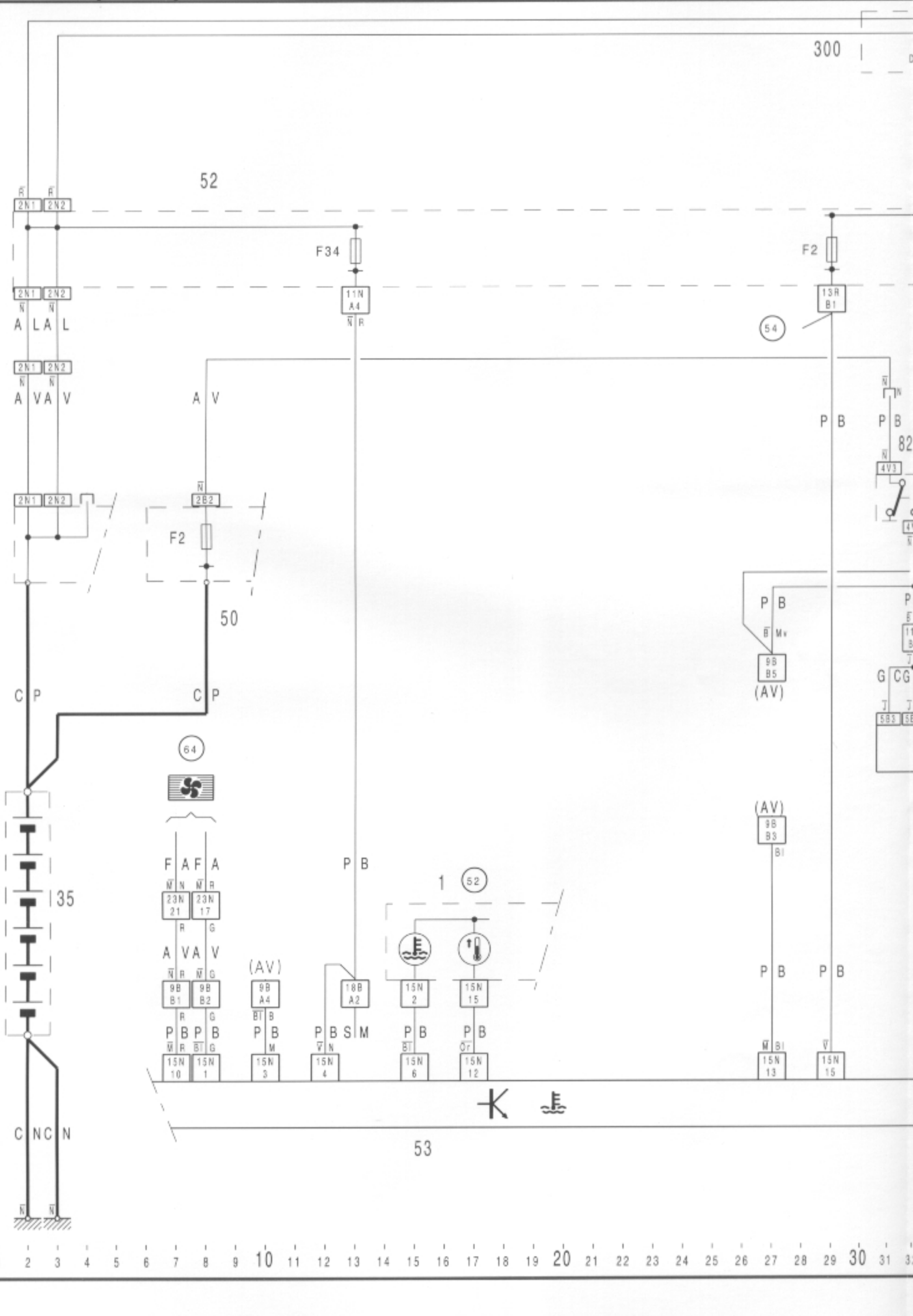
www.WorkshopManuals.co.uk



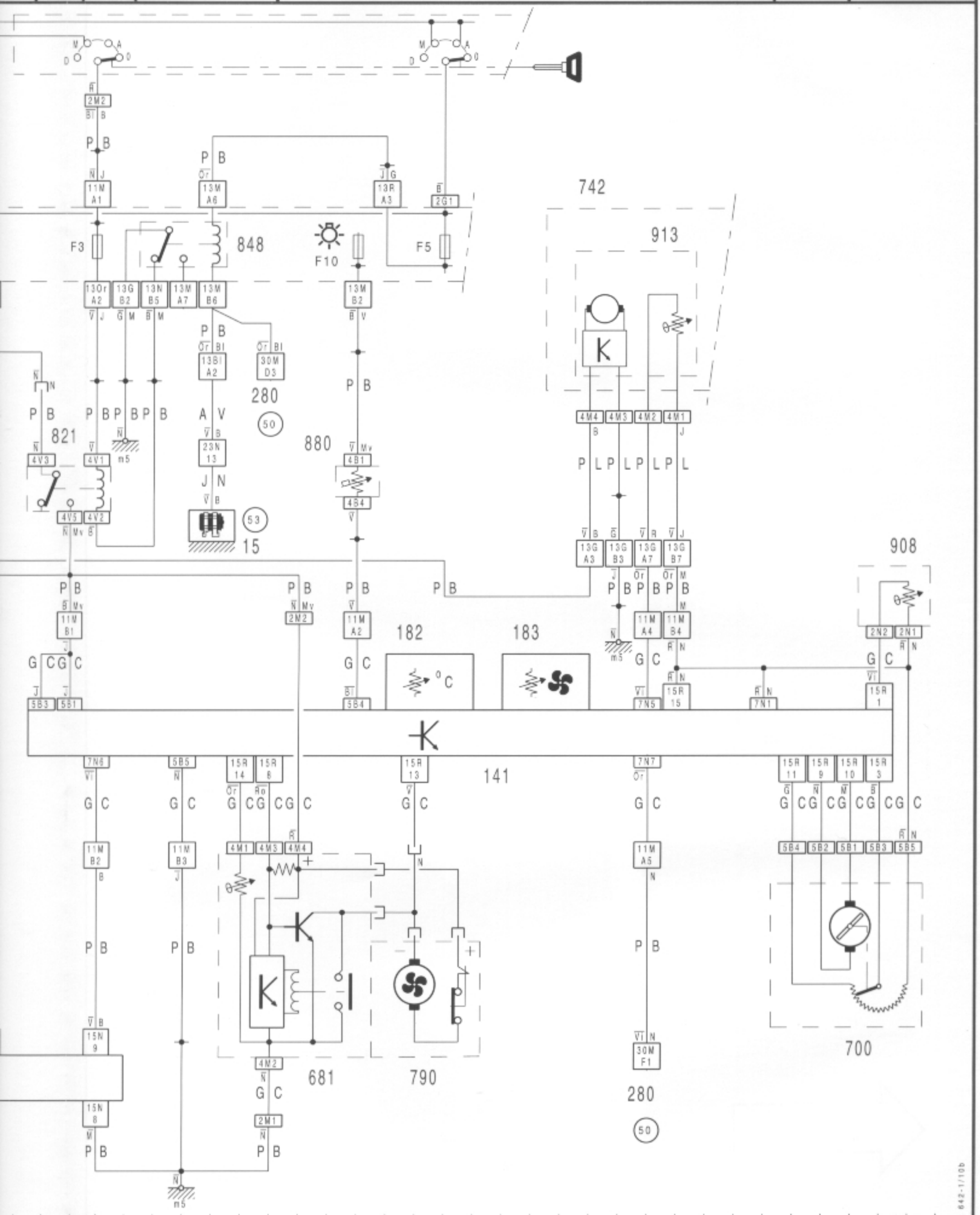
www.WorkshopManuals.co.uk



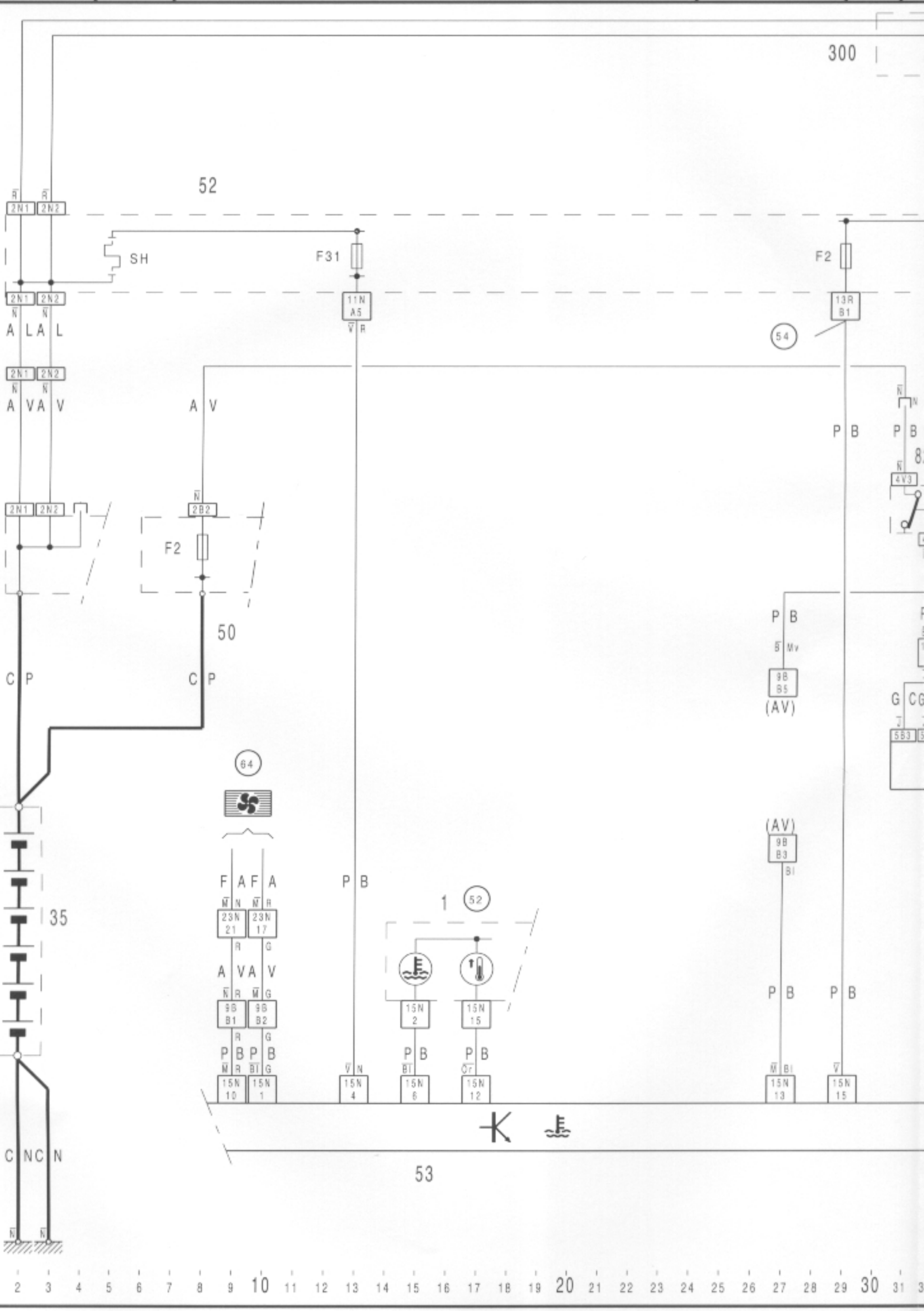
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

742

913

908

848

821

280

880

182

183

141

681

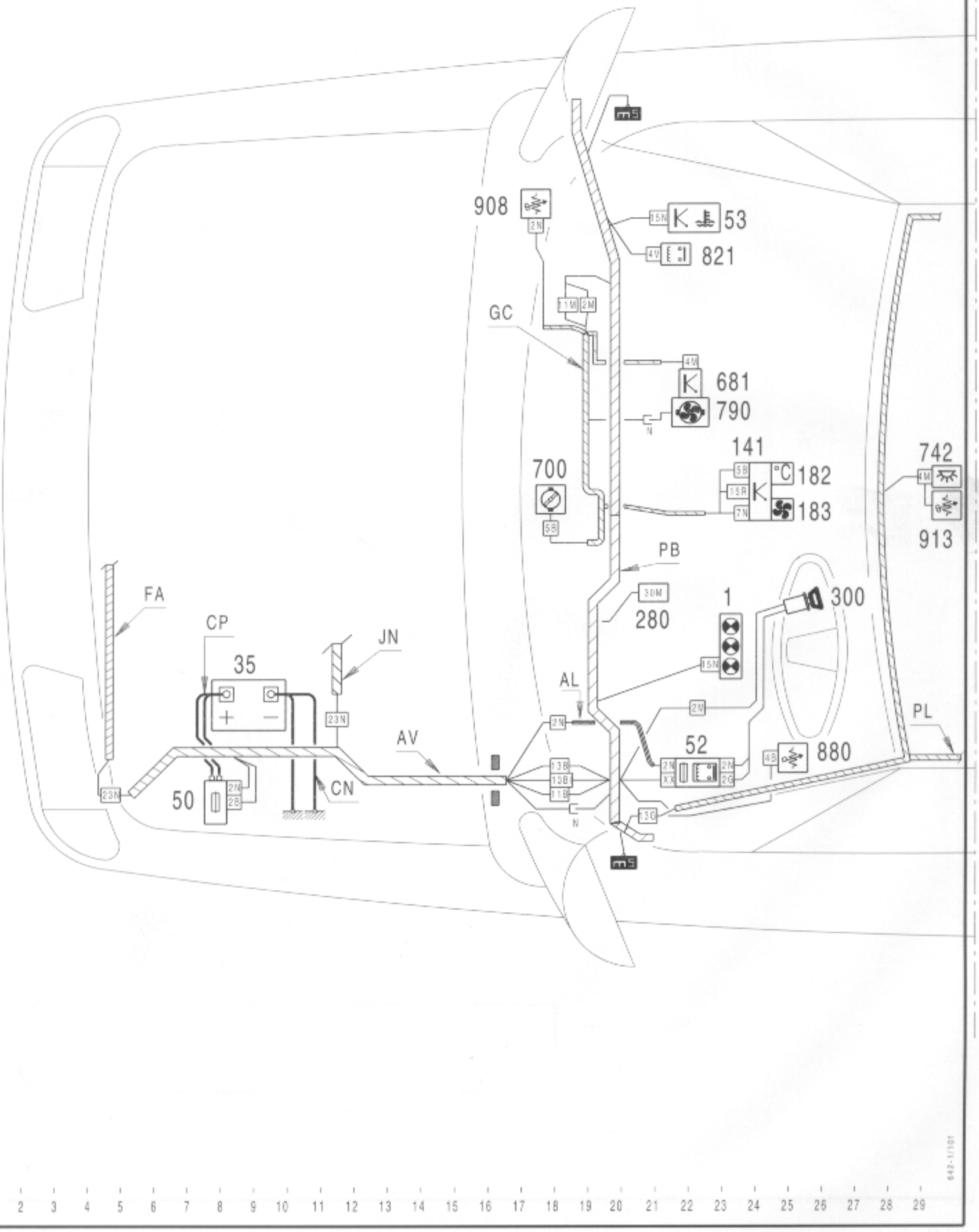
790

700

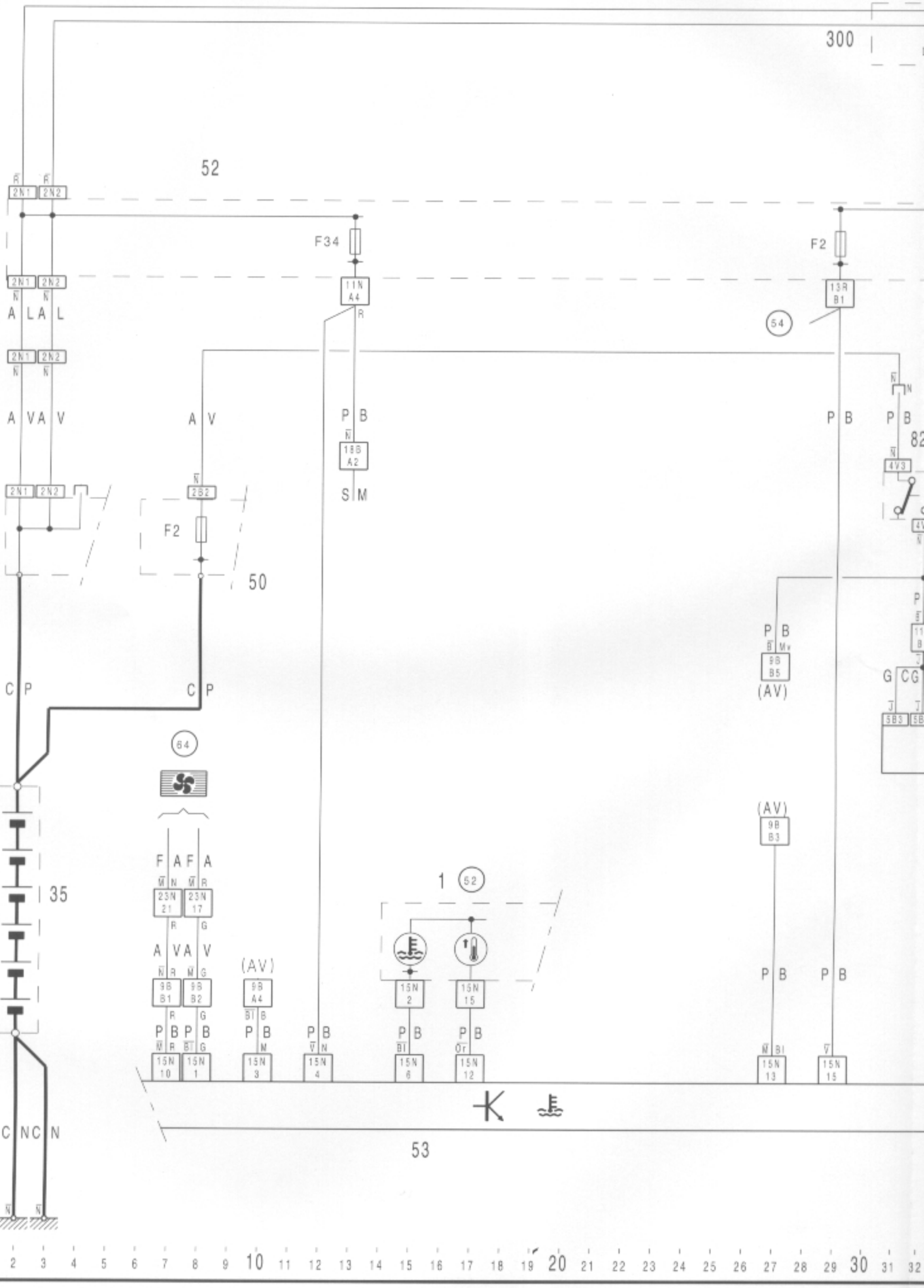
15

642-1/10c

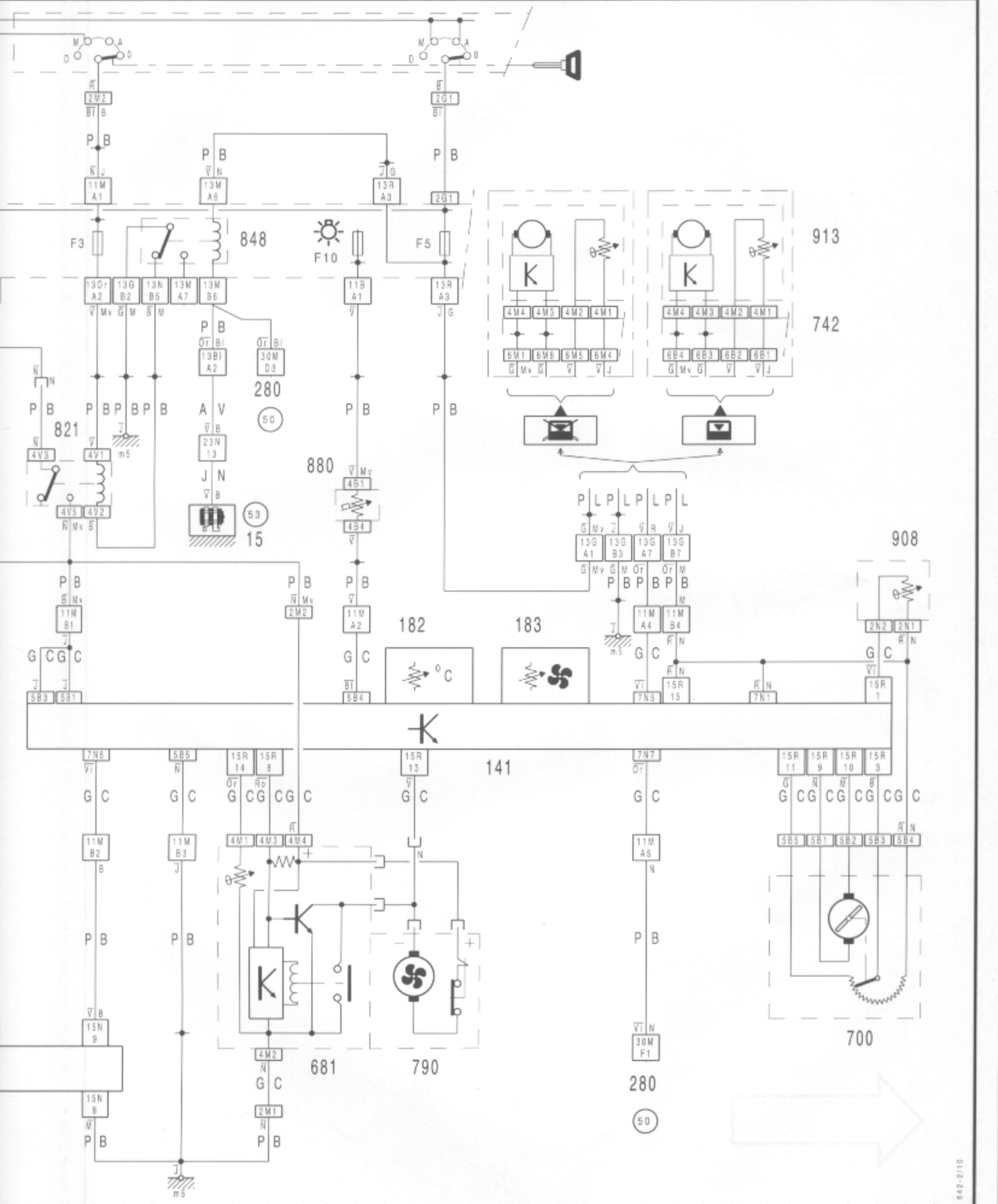
www.WorkshopManuals.co.uk



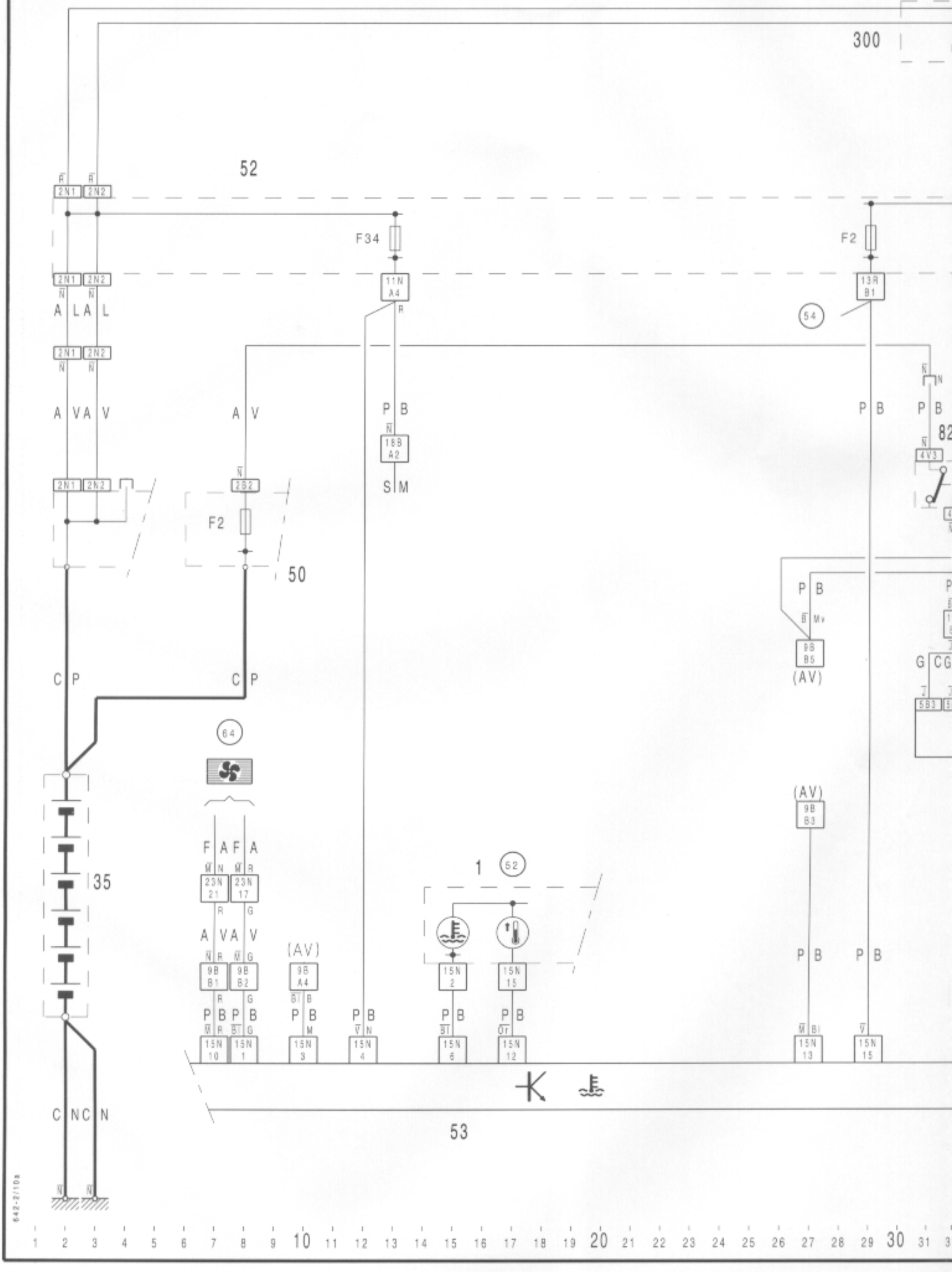
www.WorkshopManuals.co.uk



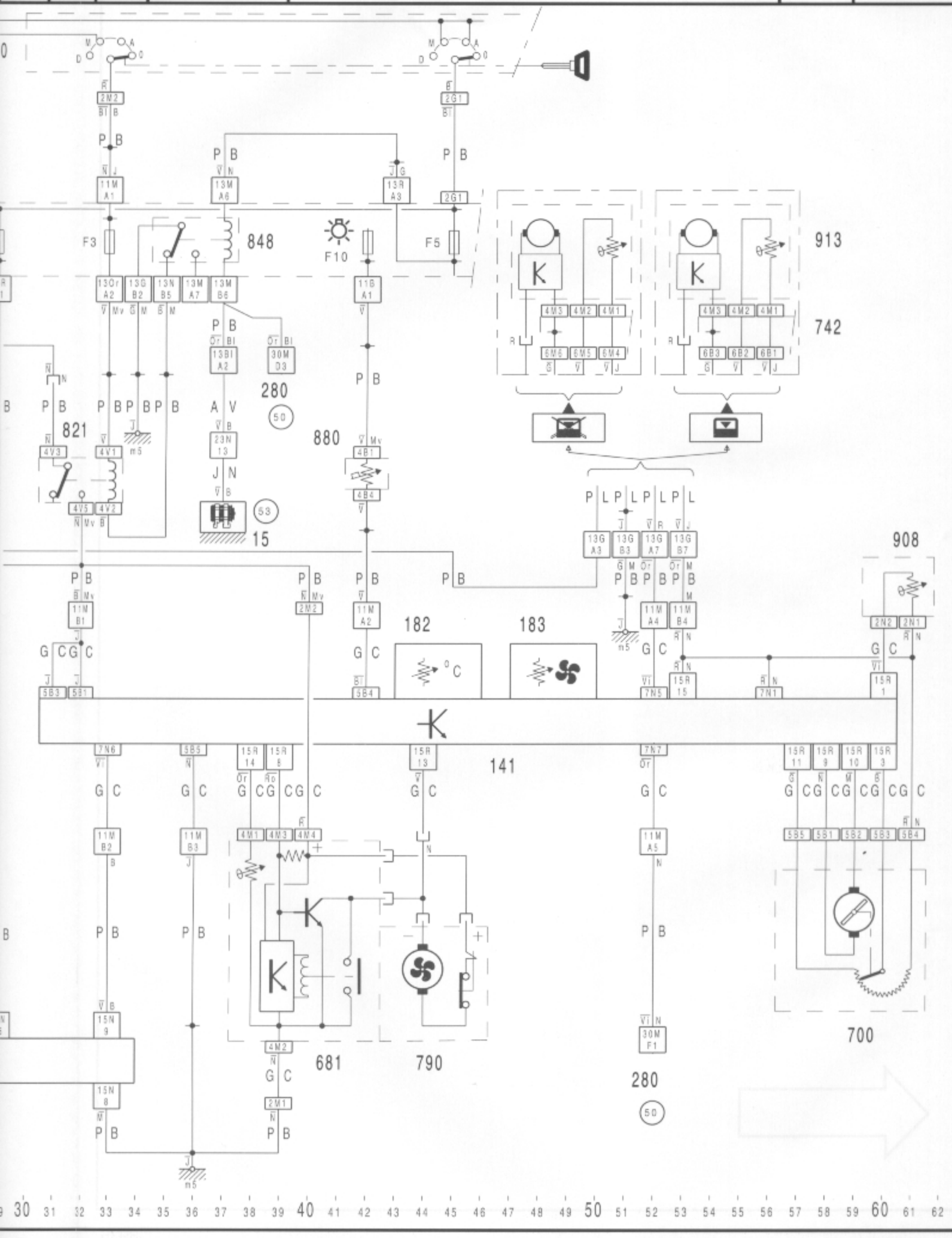
www.WorkshopManuals.co.uk



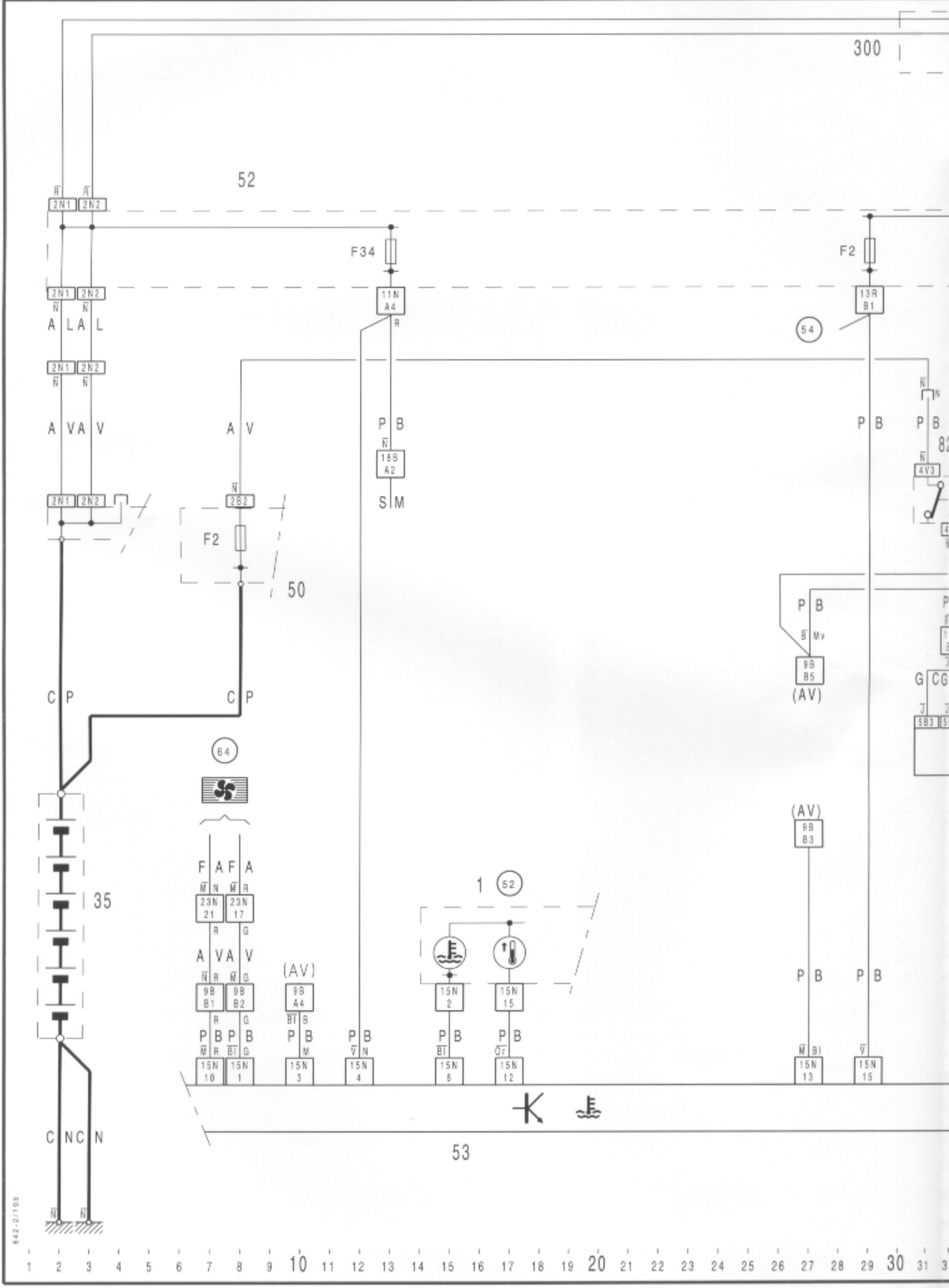
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

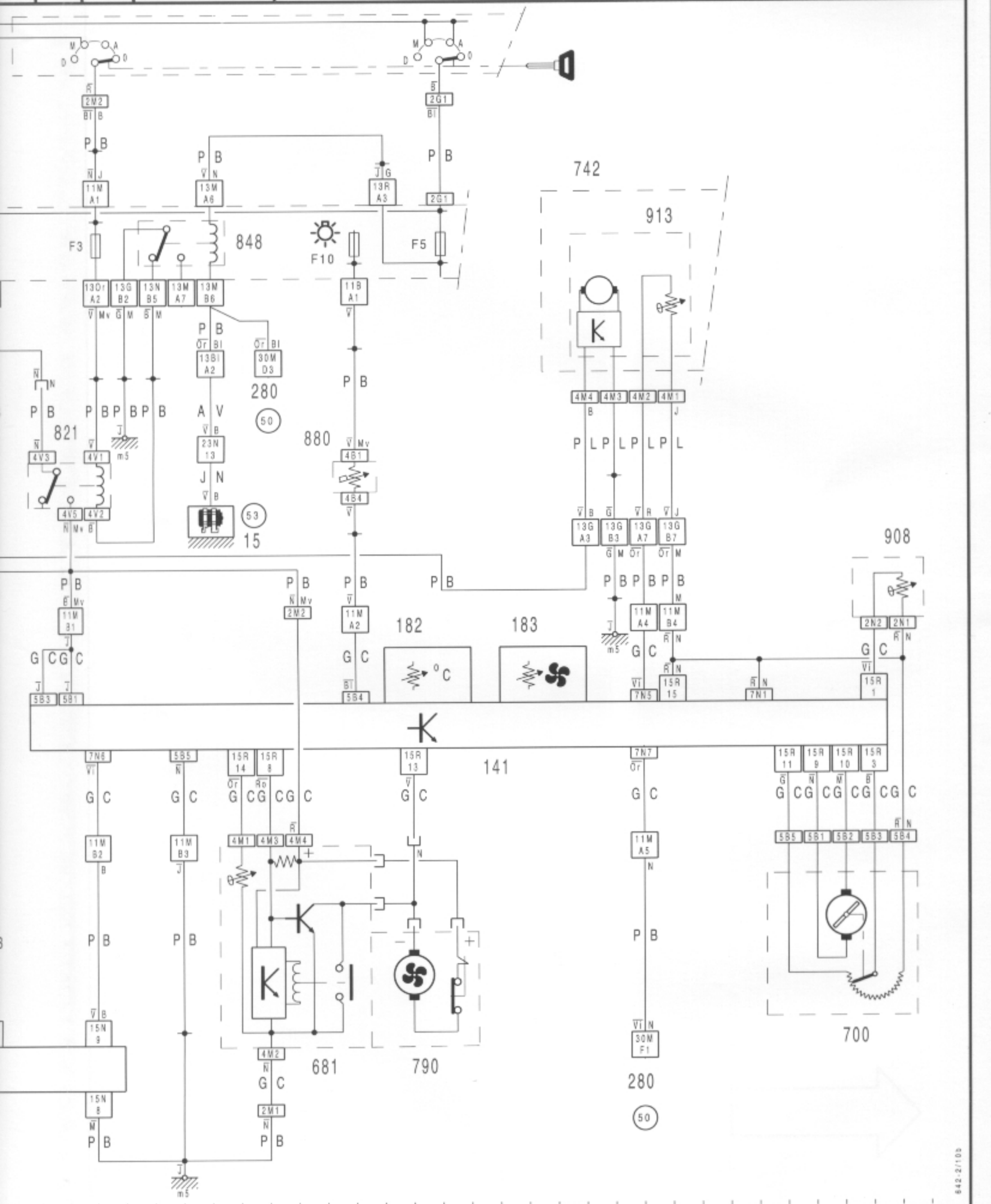


www.WorkshopManuals.co.uk

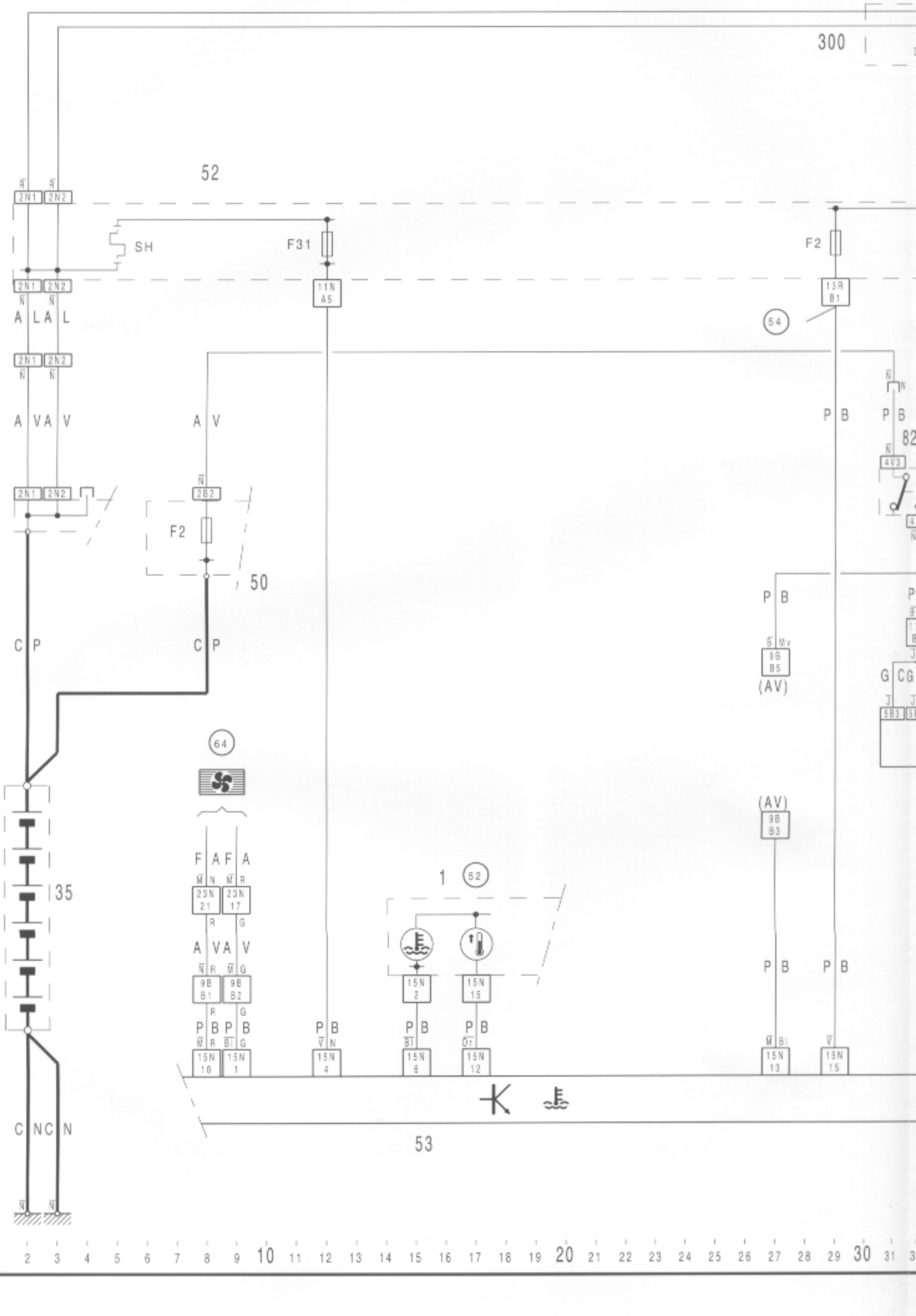


642-2/10b

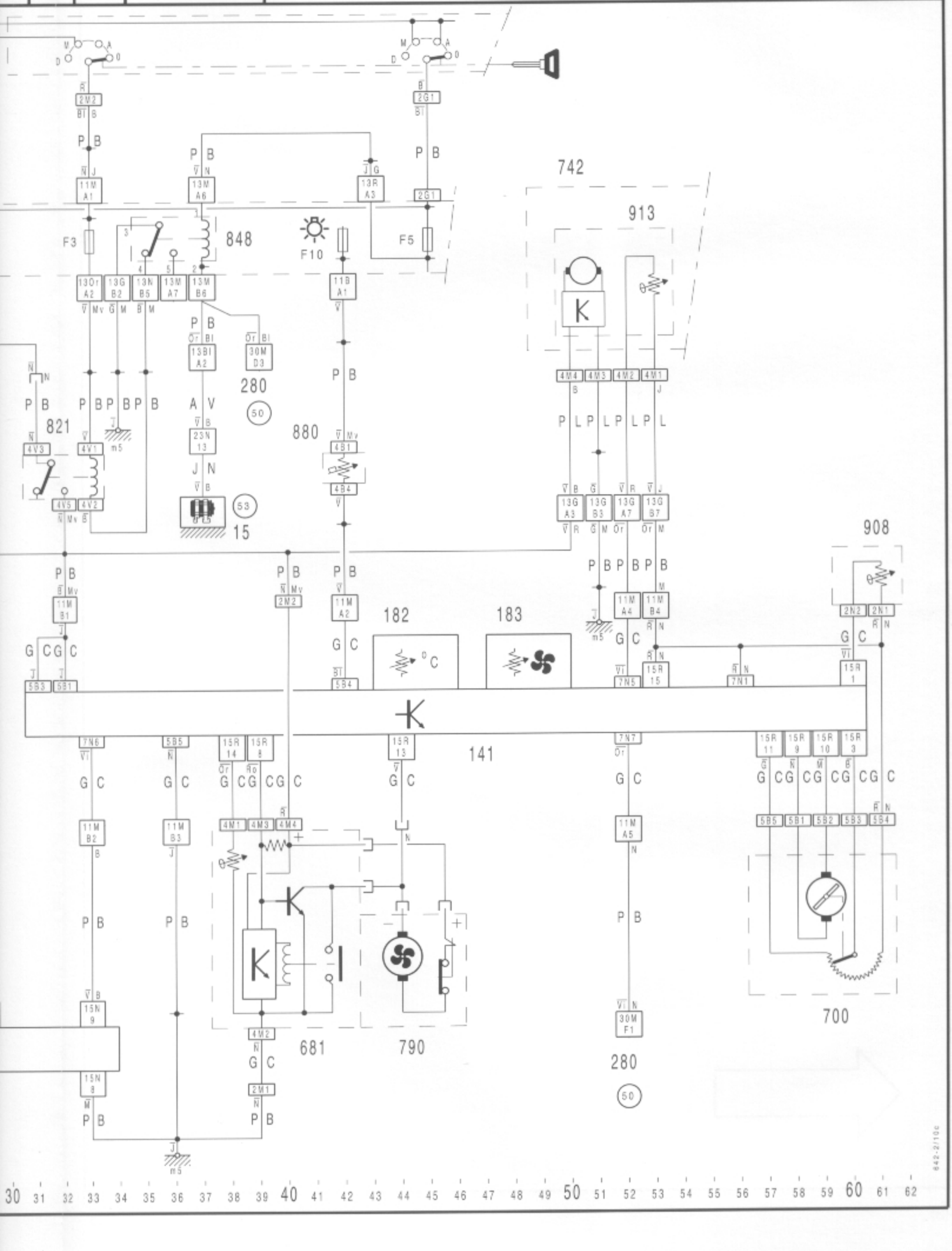
www.WorkshopManuals.co.uk



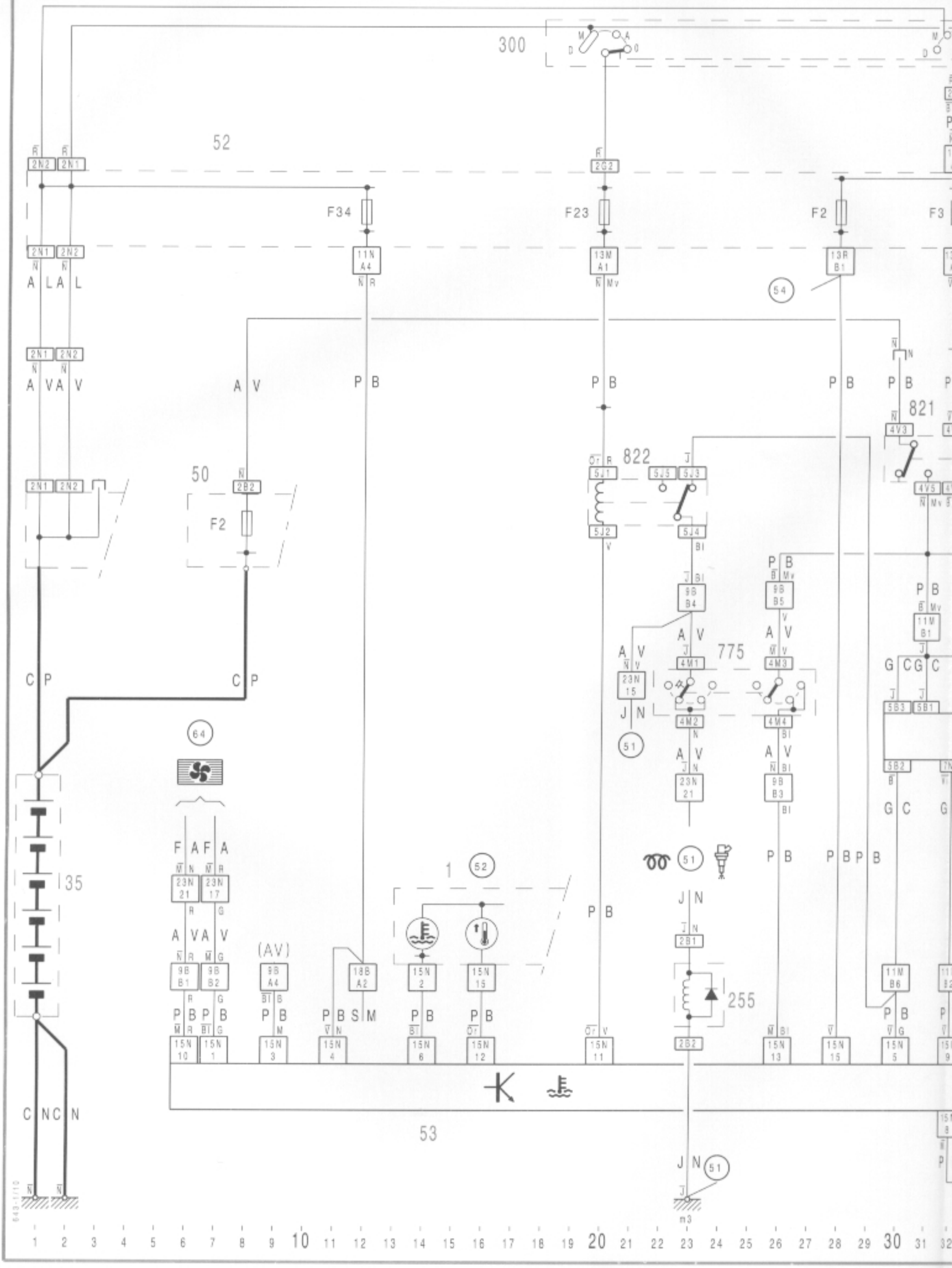
www.WorkshopManuals.co.uk



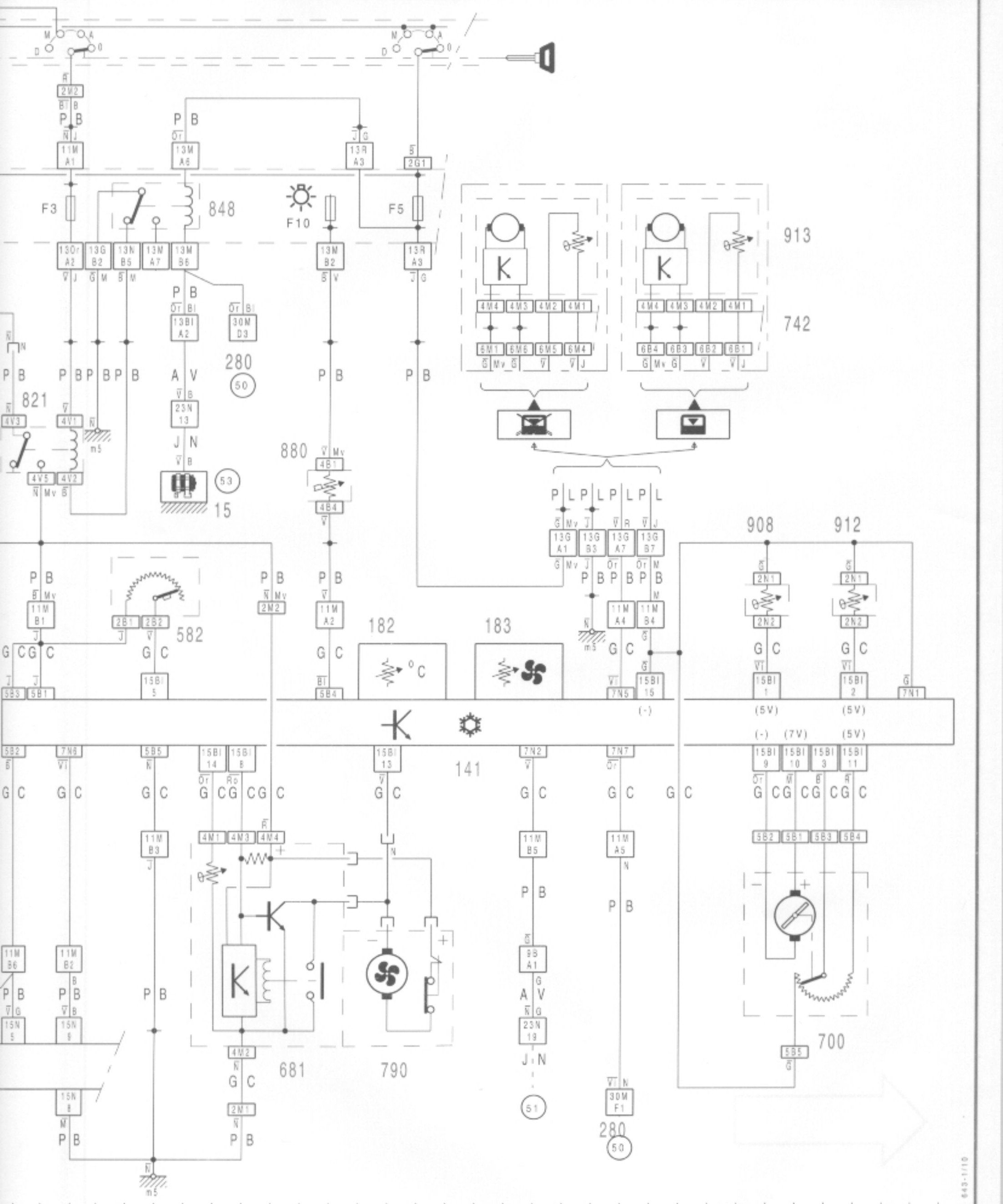
www.WorkshopManuals.co.uk



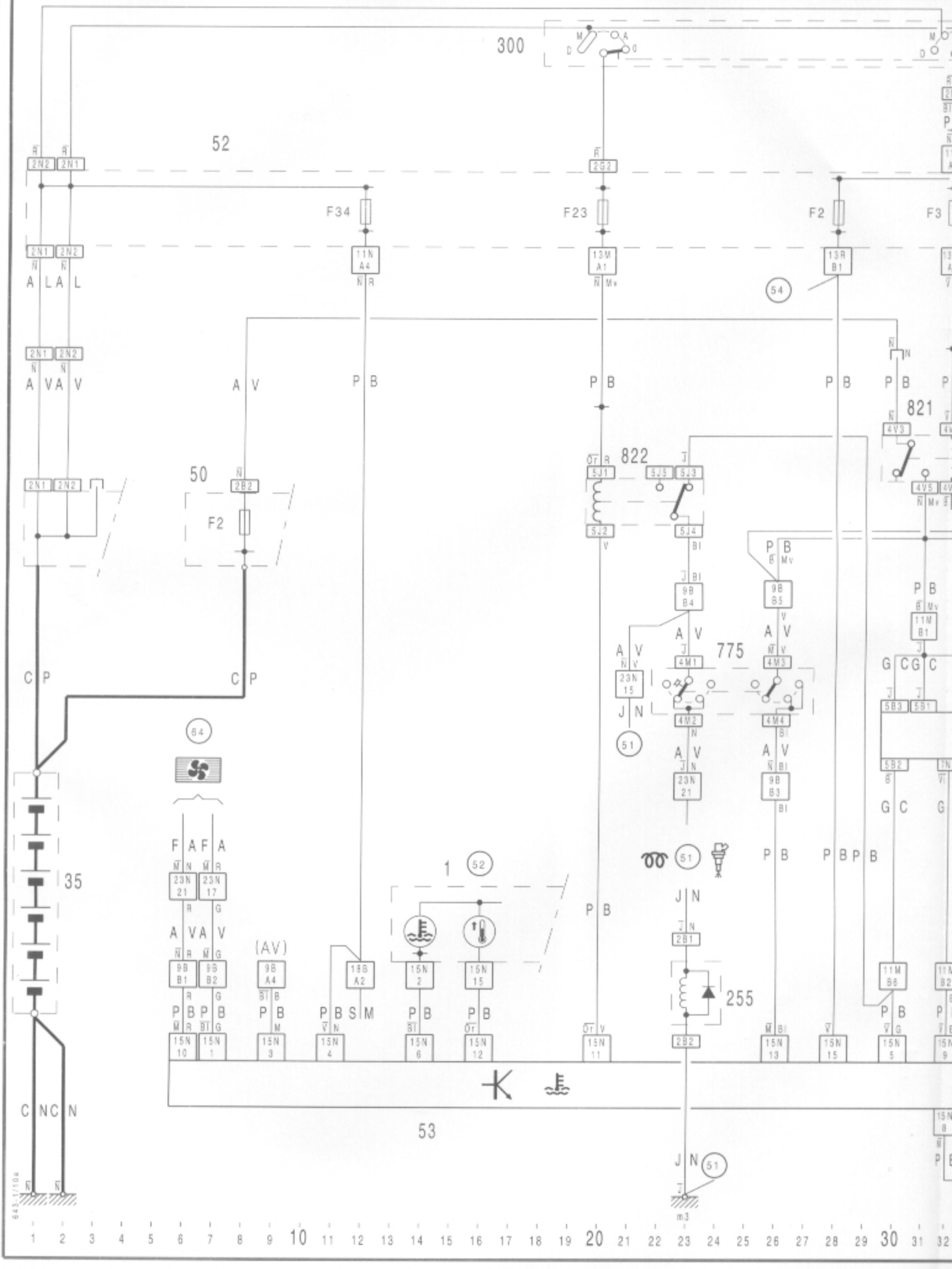
www.WorkshopManuals.co.uk



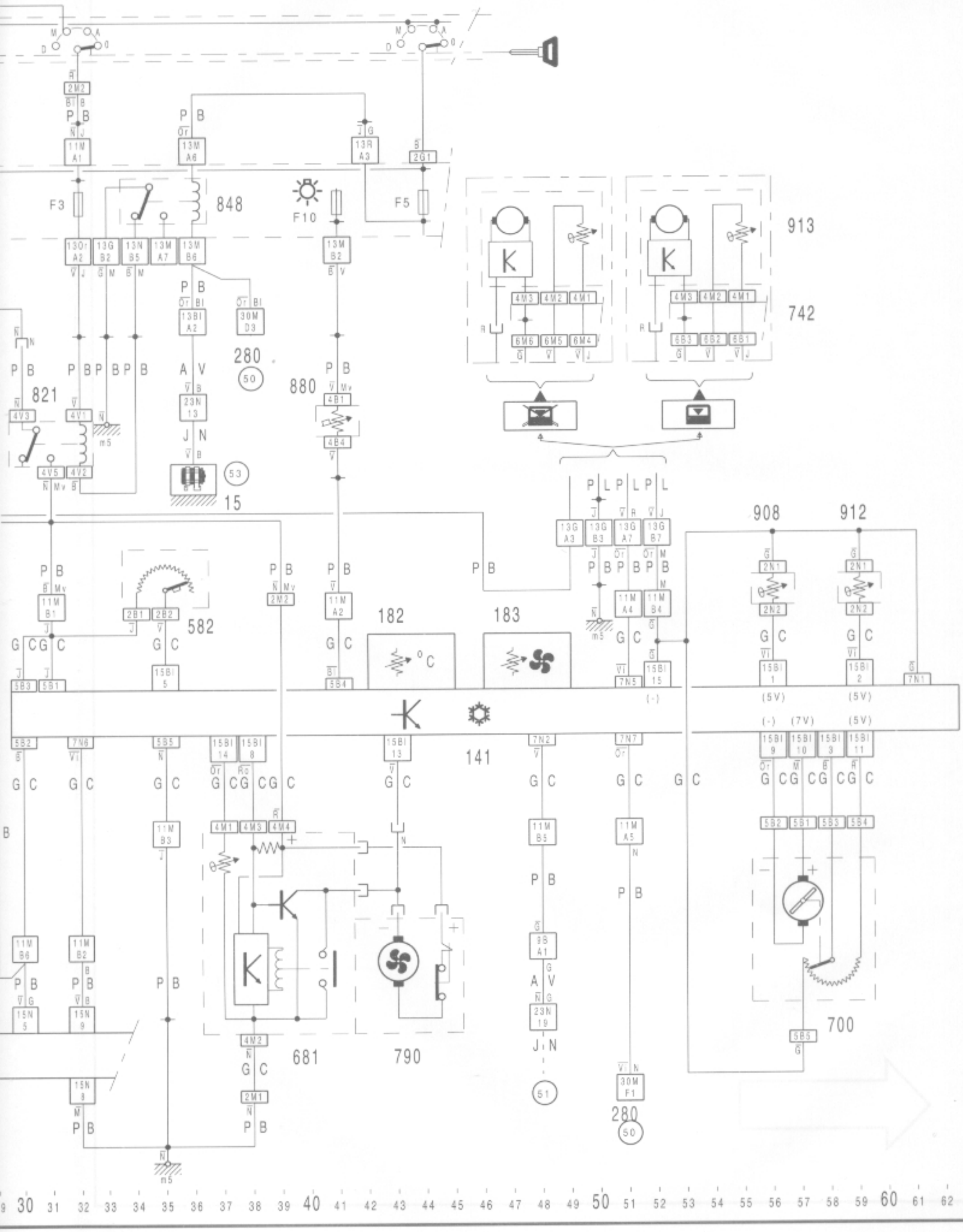
www.WorkshopManuals.co.uk



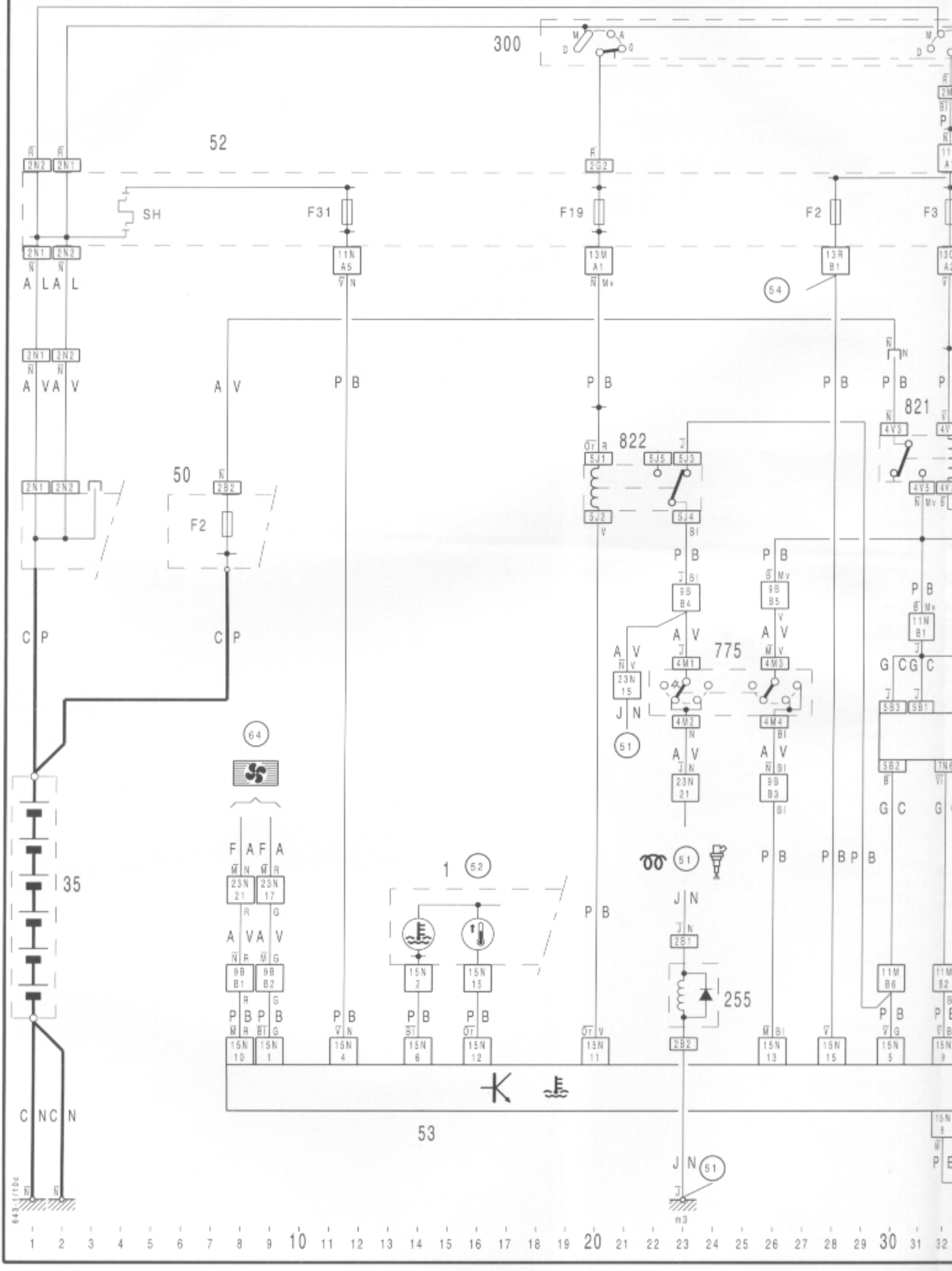
www.WorkshopManuals.co.uk



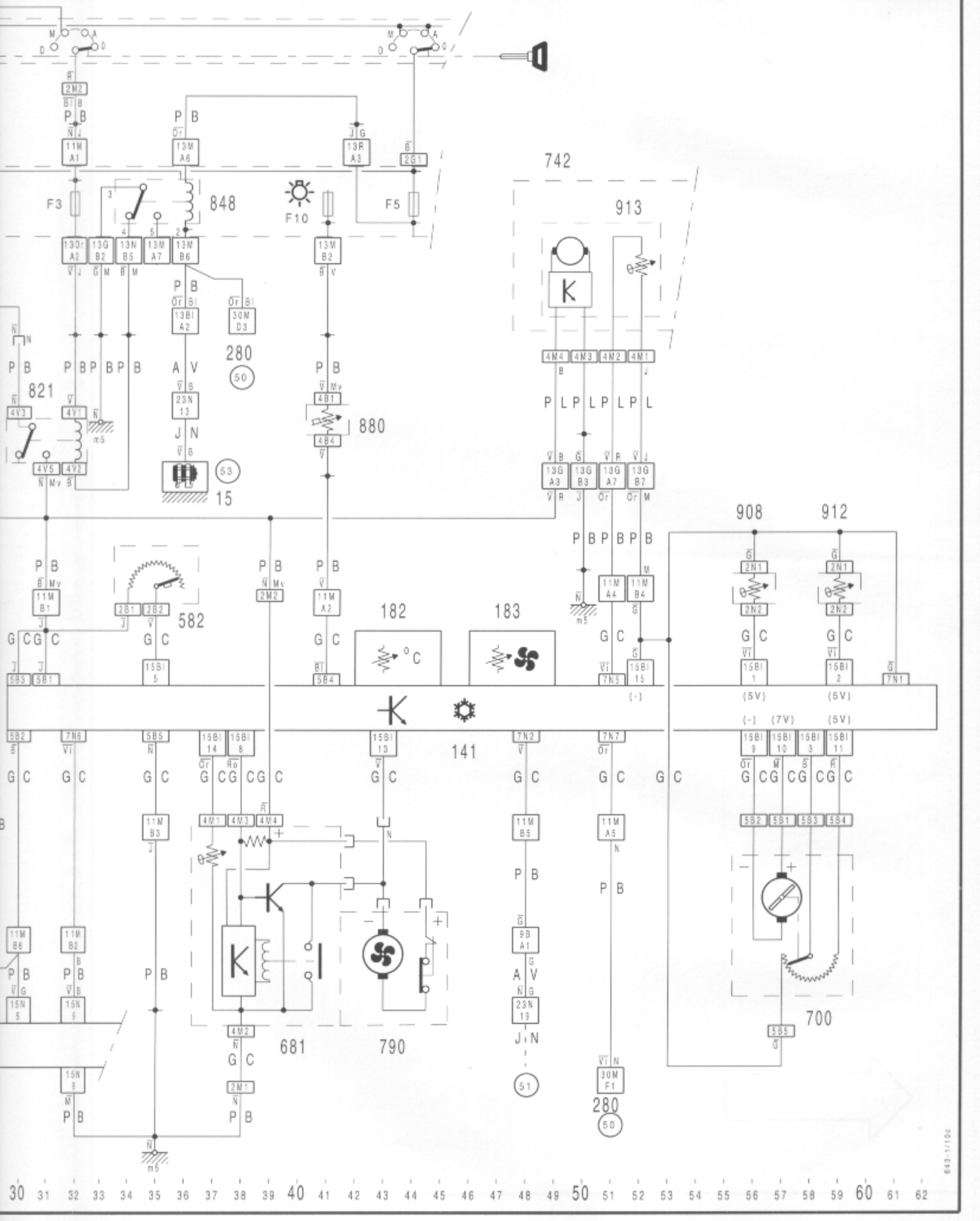
www.WorkshopManuals.co.uk



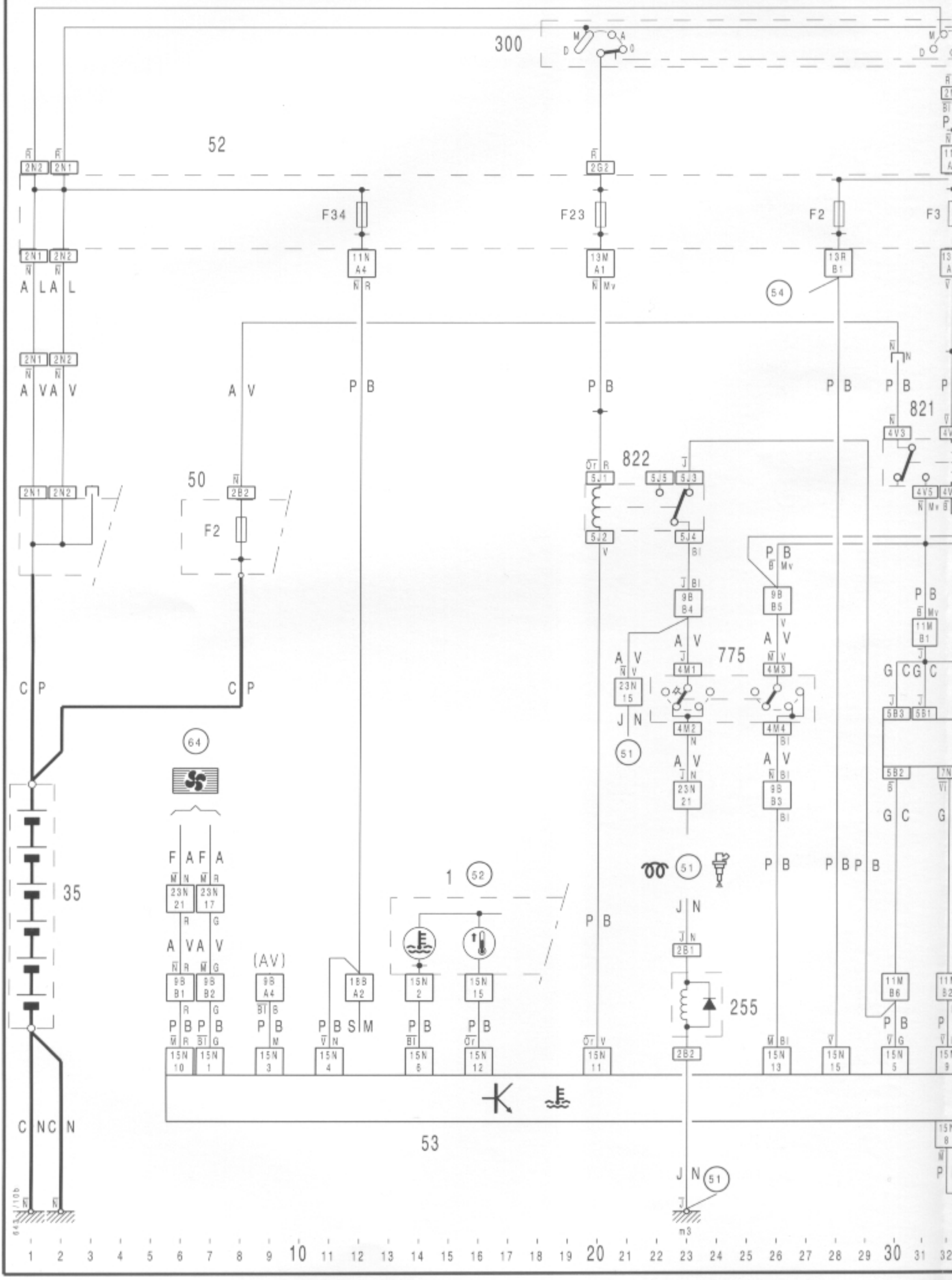
www.WorkshopManuals.co.uk



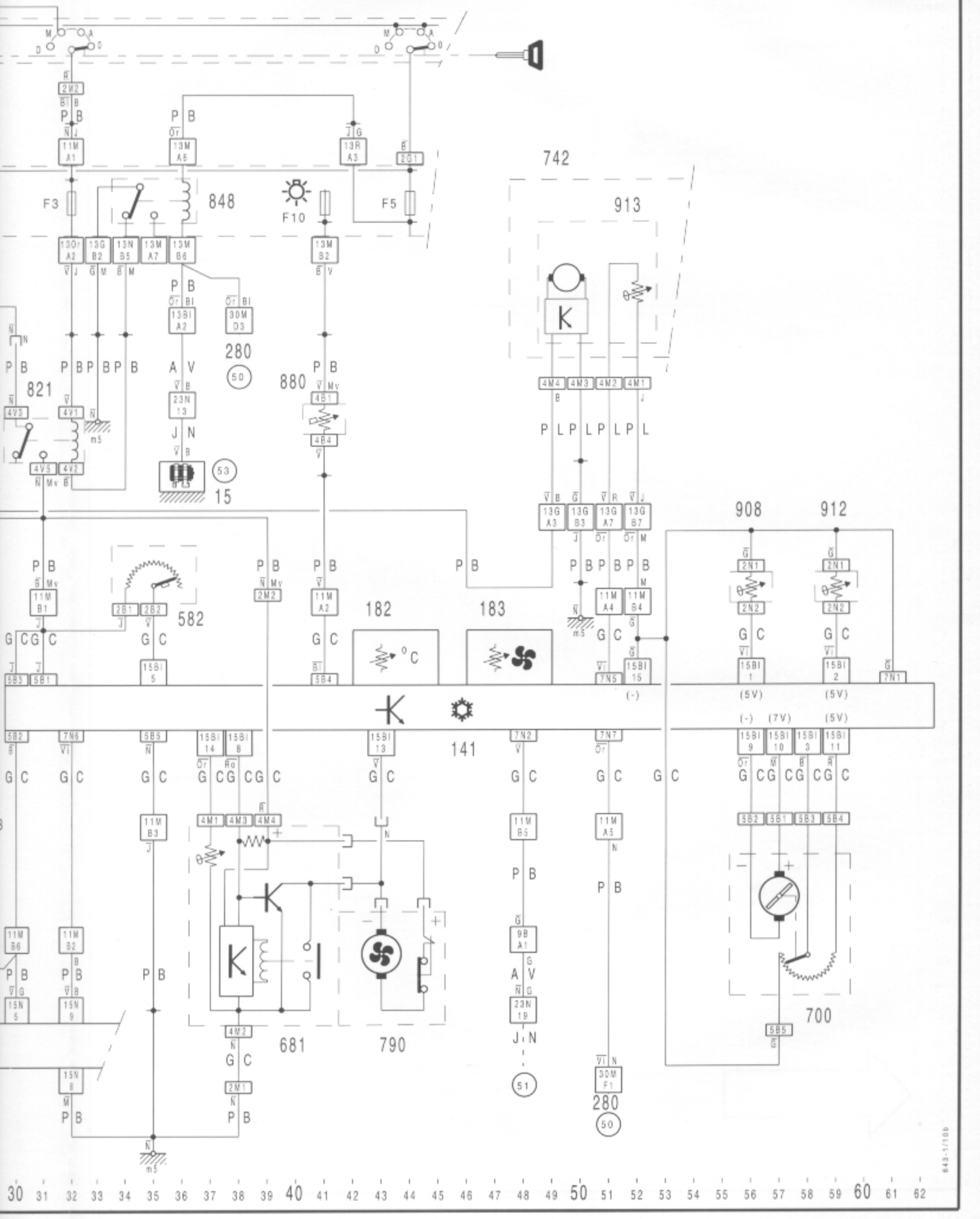
www.WorkshopManuals.co.uk



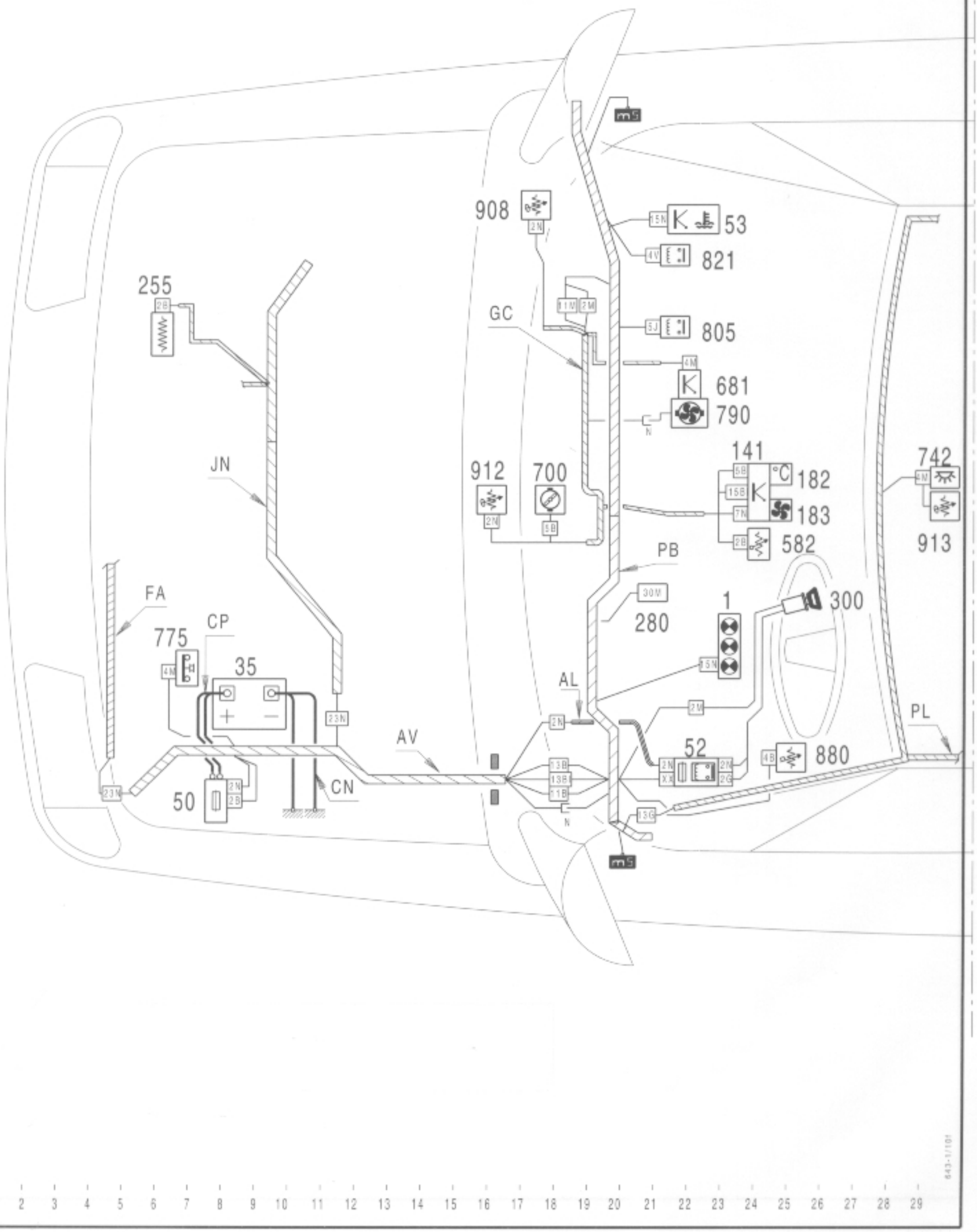
www.WorkshopManuals.co.uk



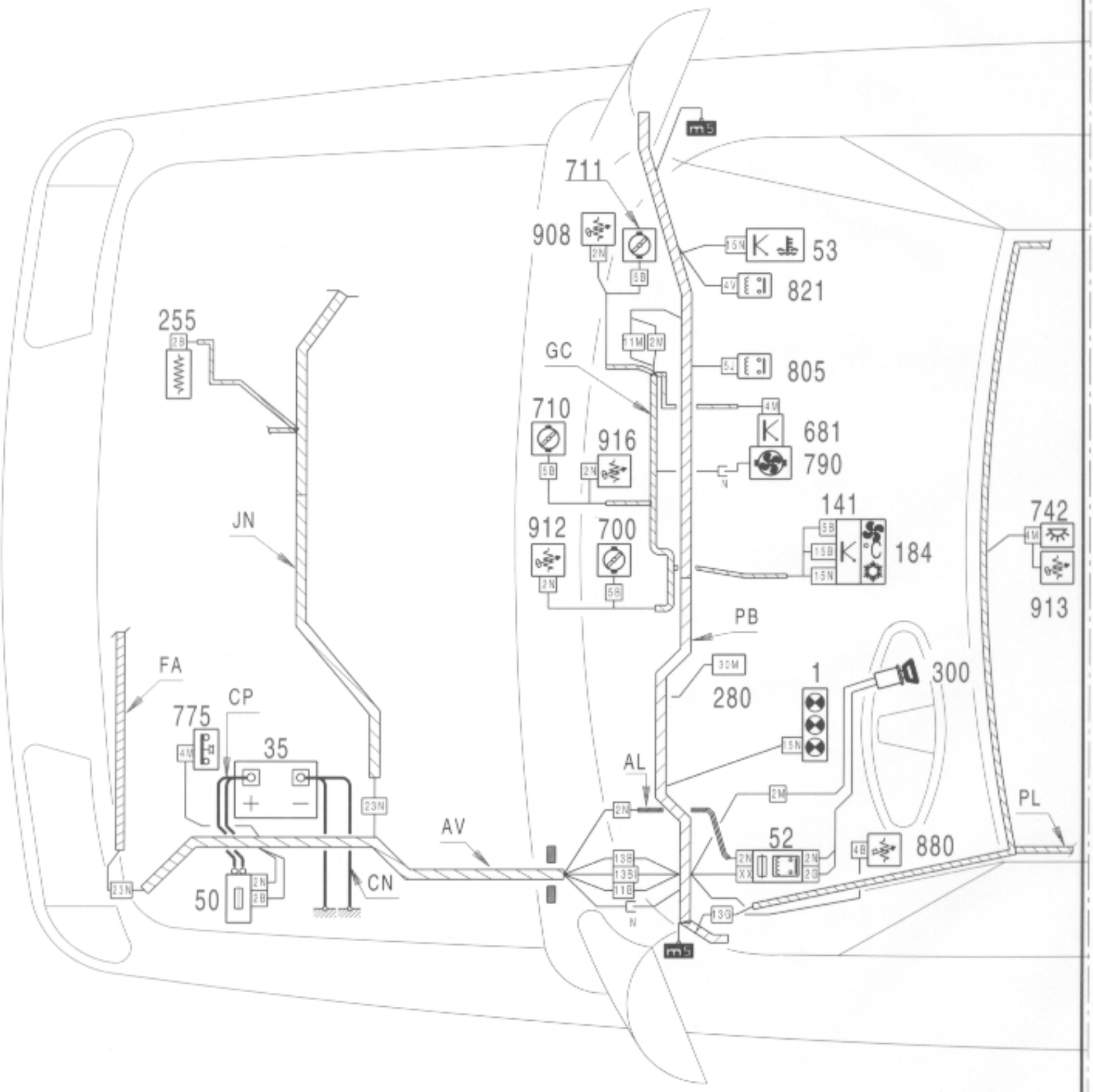
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

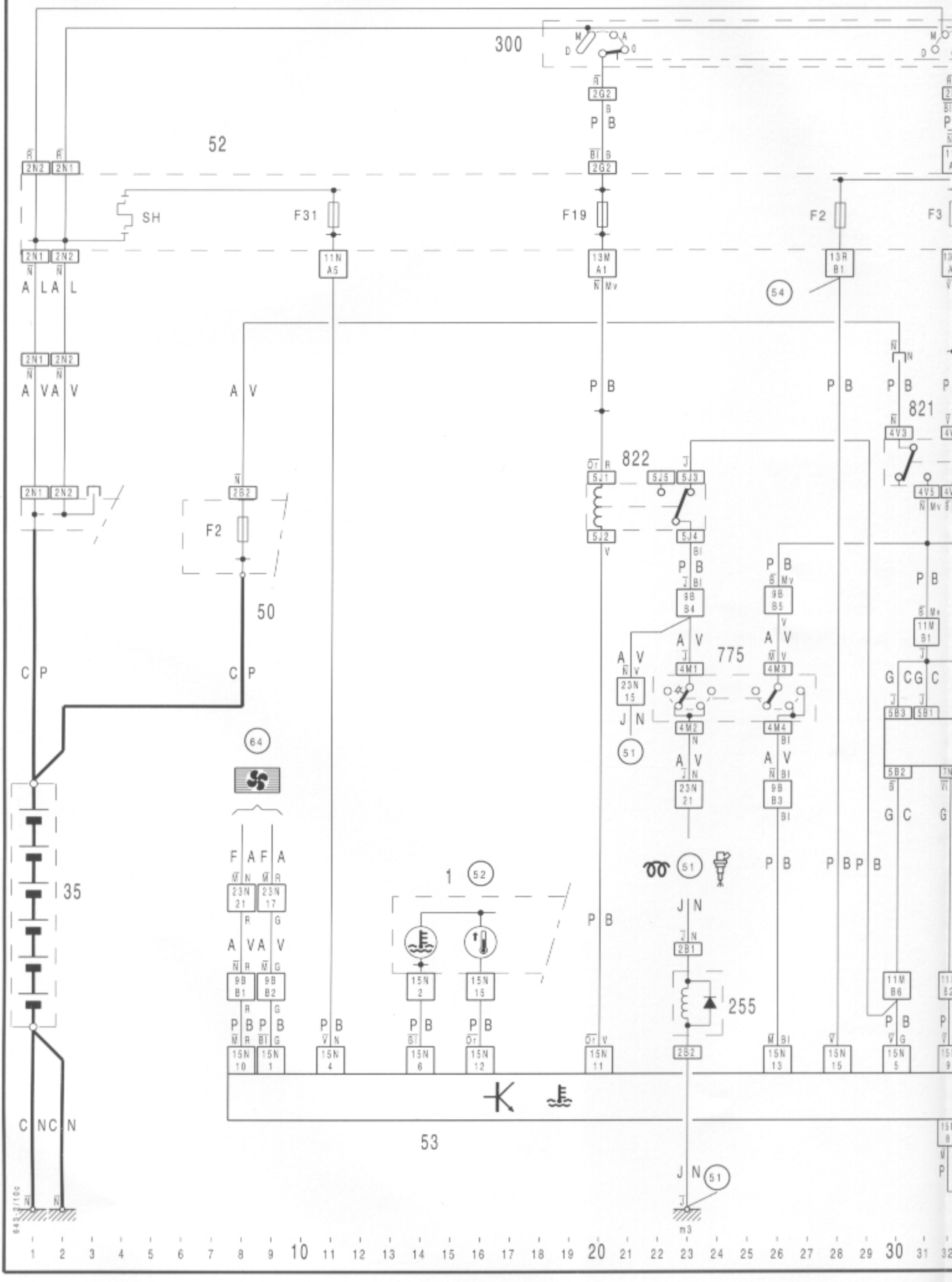


644-1/10f

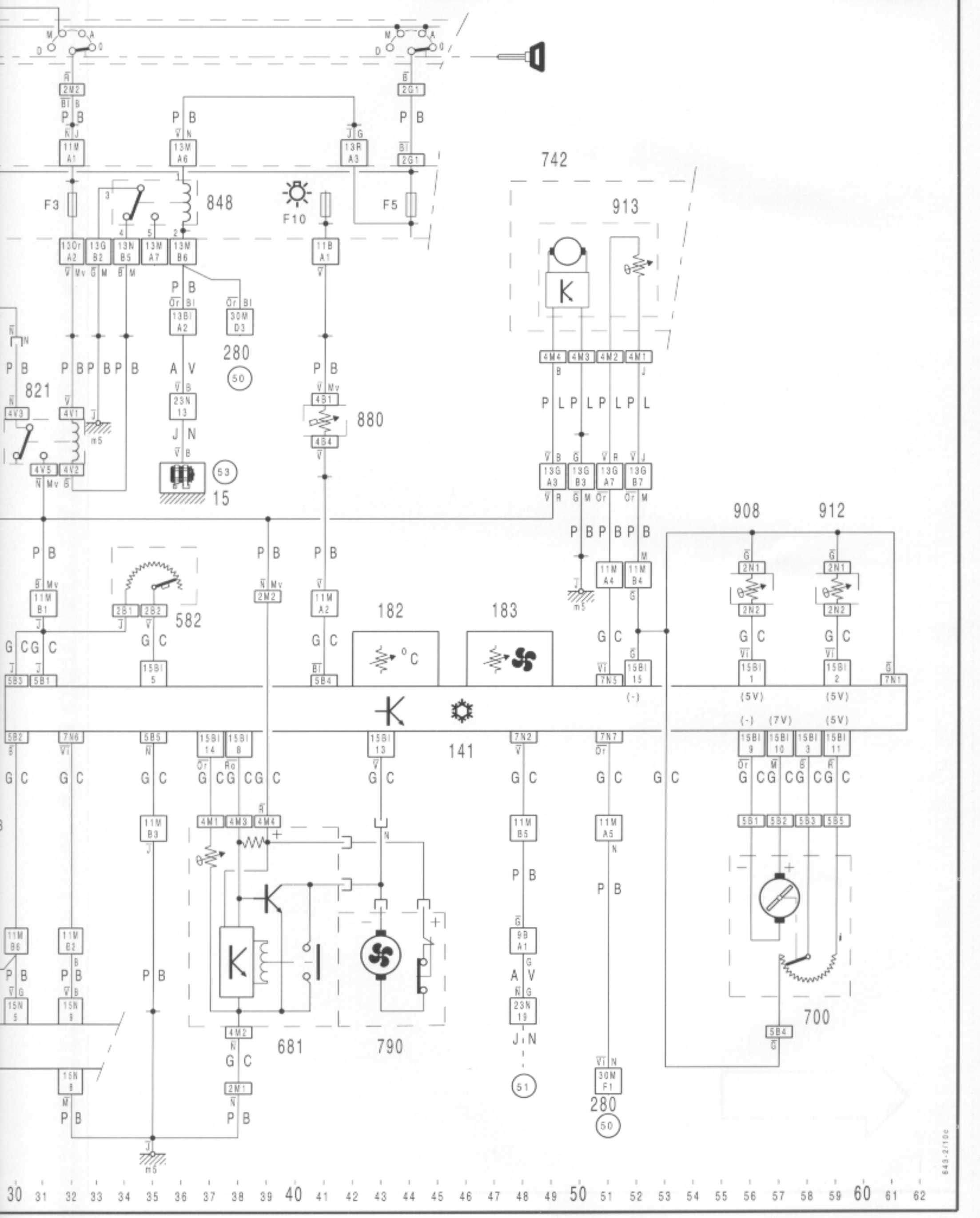
644-1/10f

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

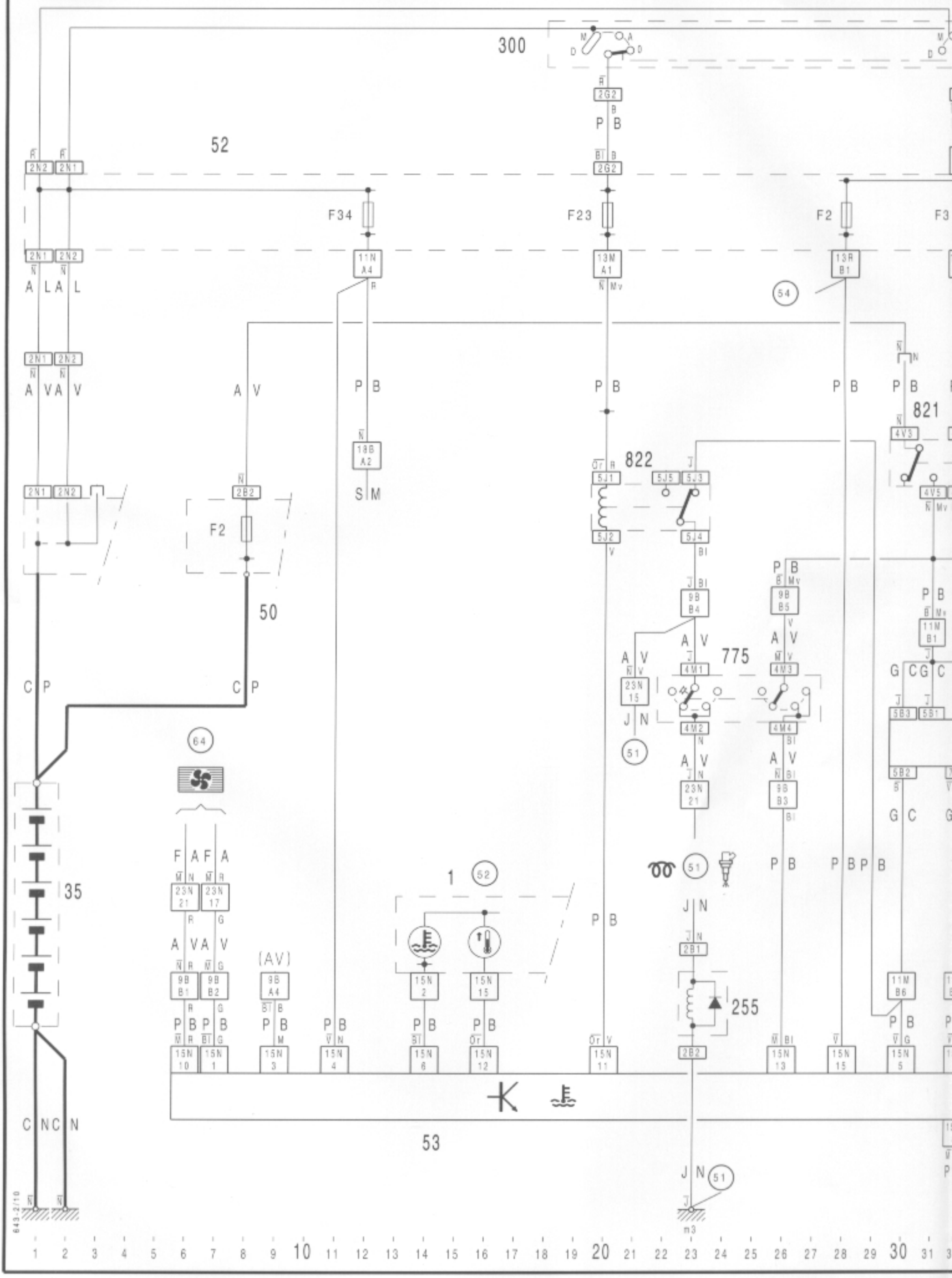
www.WorkshopManuals.co.uk



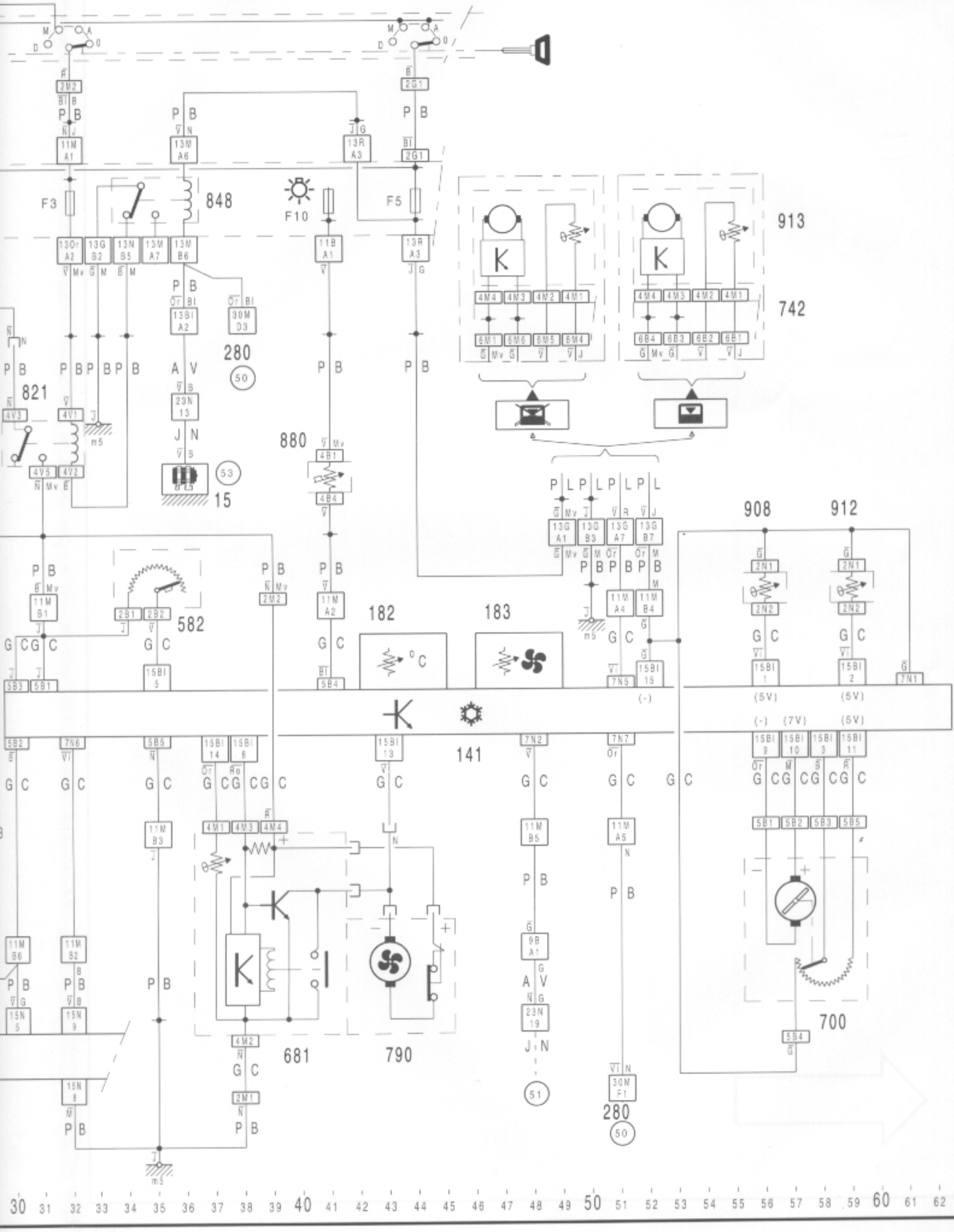
www.WorkshopManuals.co.uk



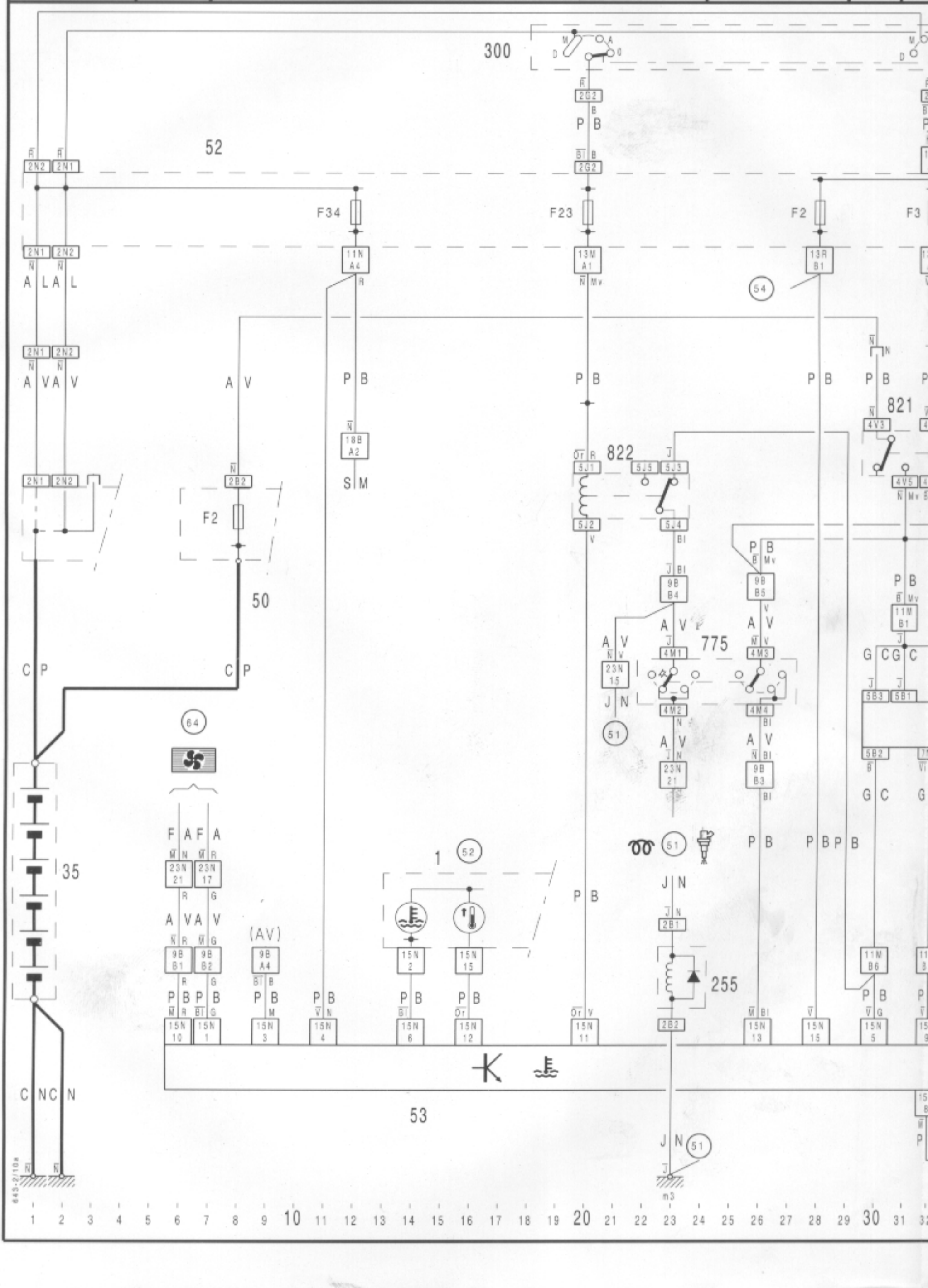
www.WorkshopManuals.co.uk



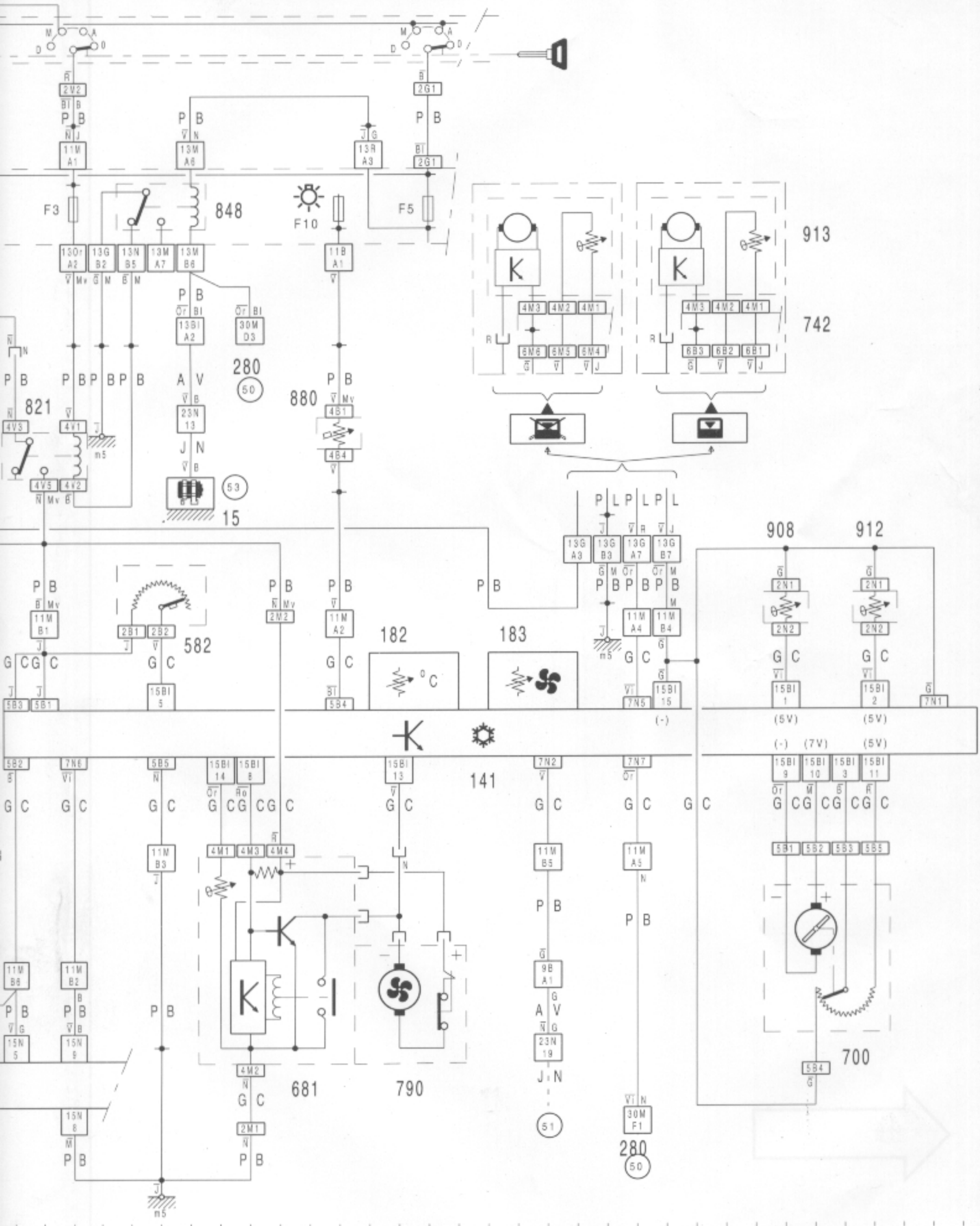
www.WorkshopManuals.co.uk



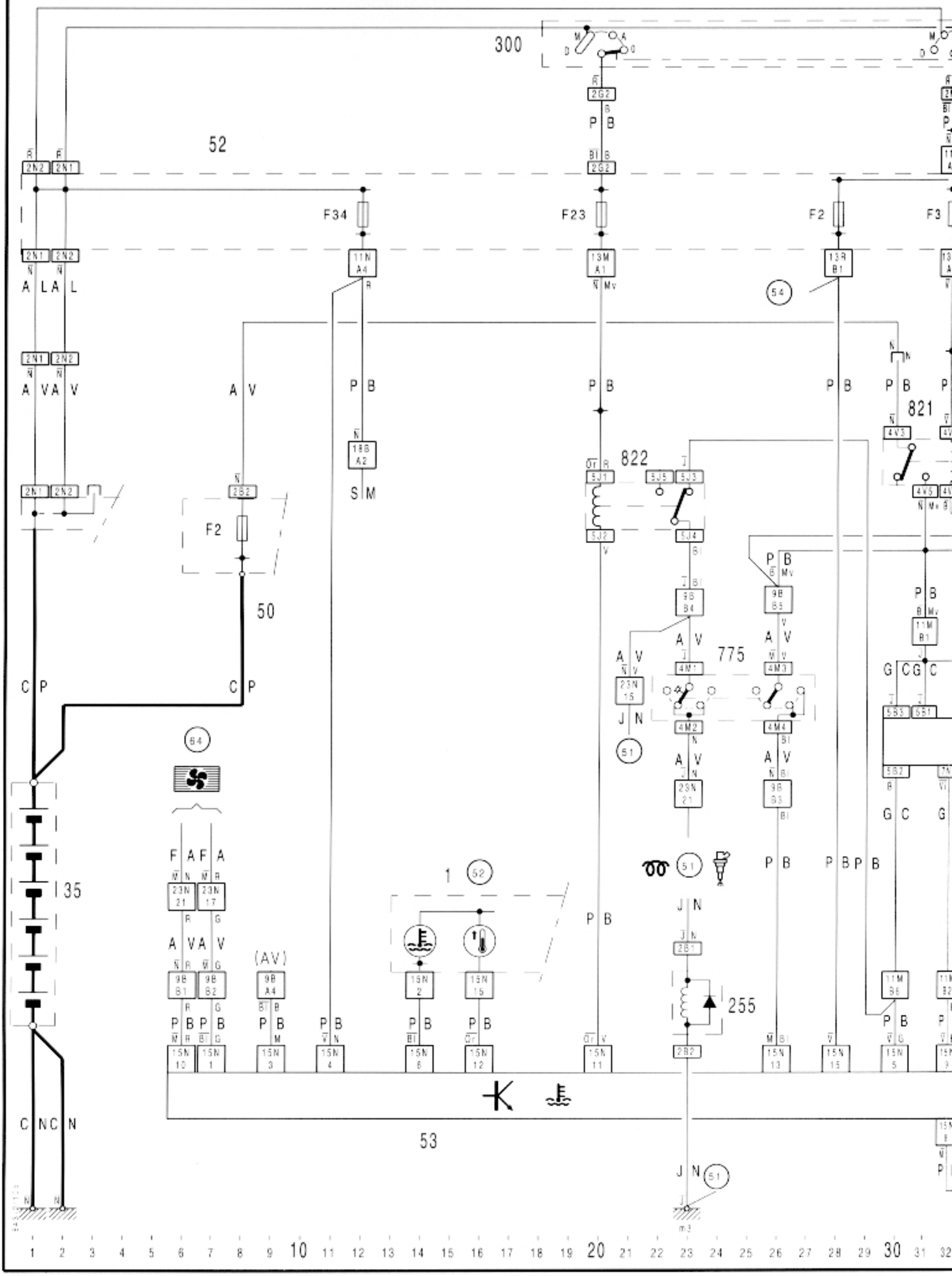
www.WorkshopManuals.co.uk



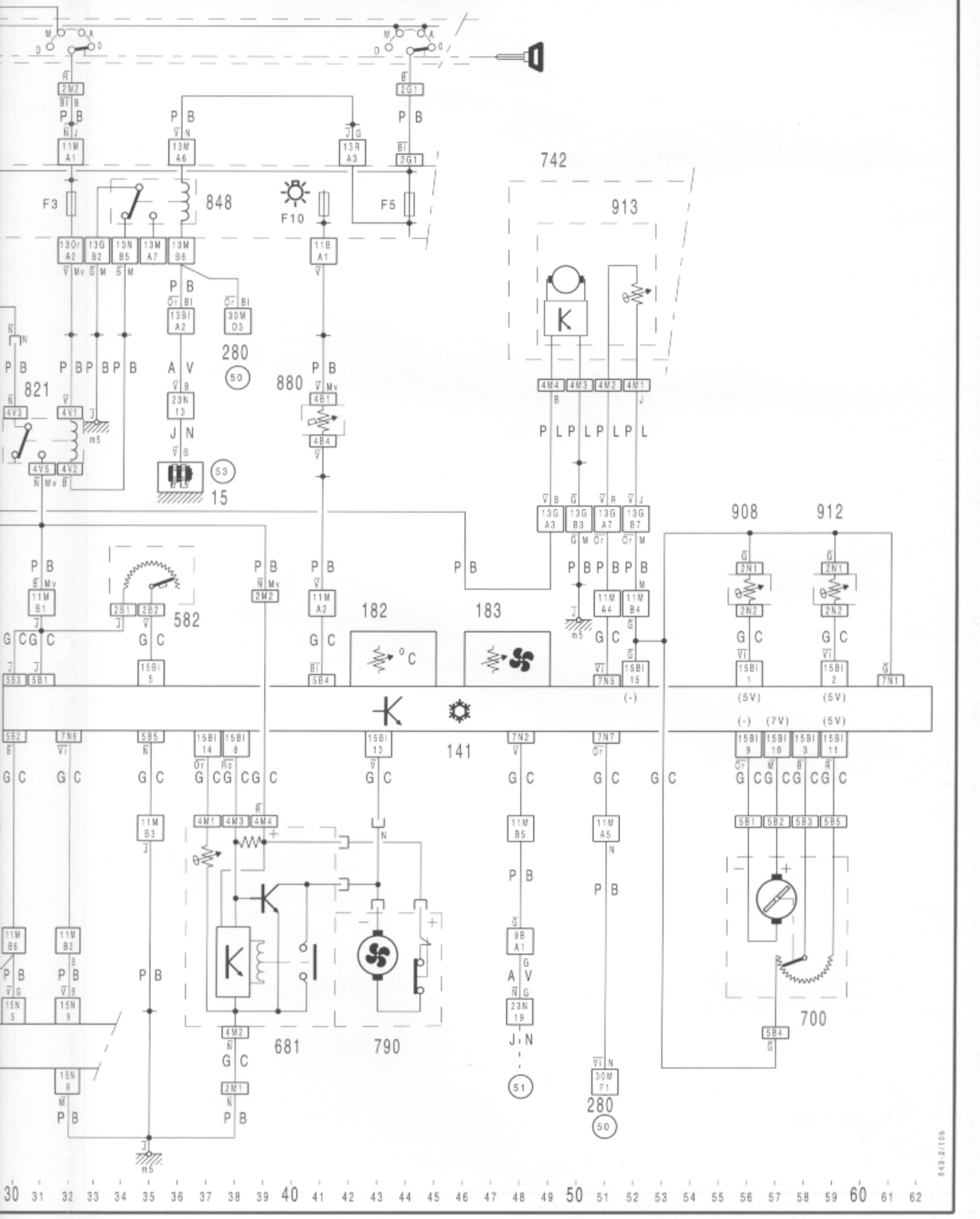
www.WorkshopManuals.co.uk



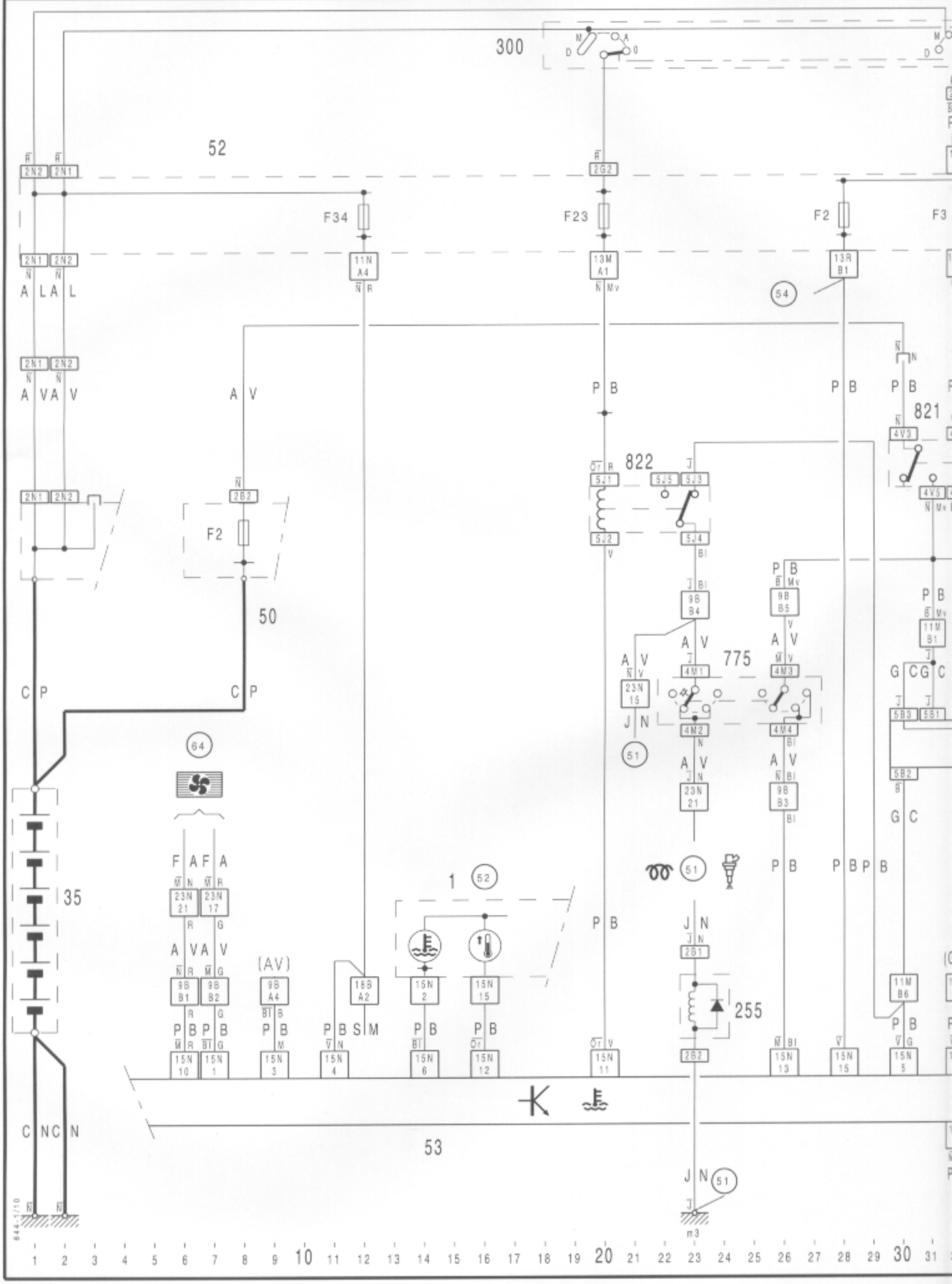
www.WorkshopManuals.co.uk



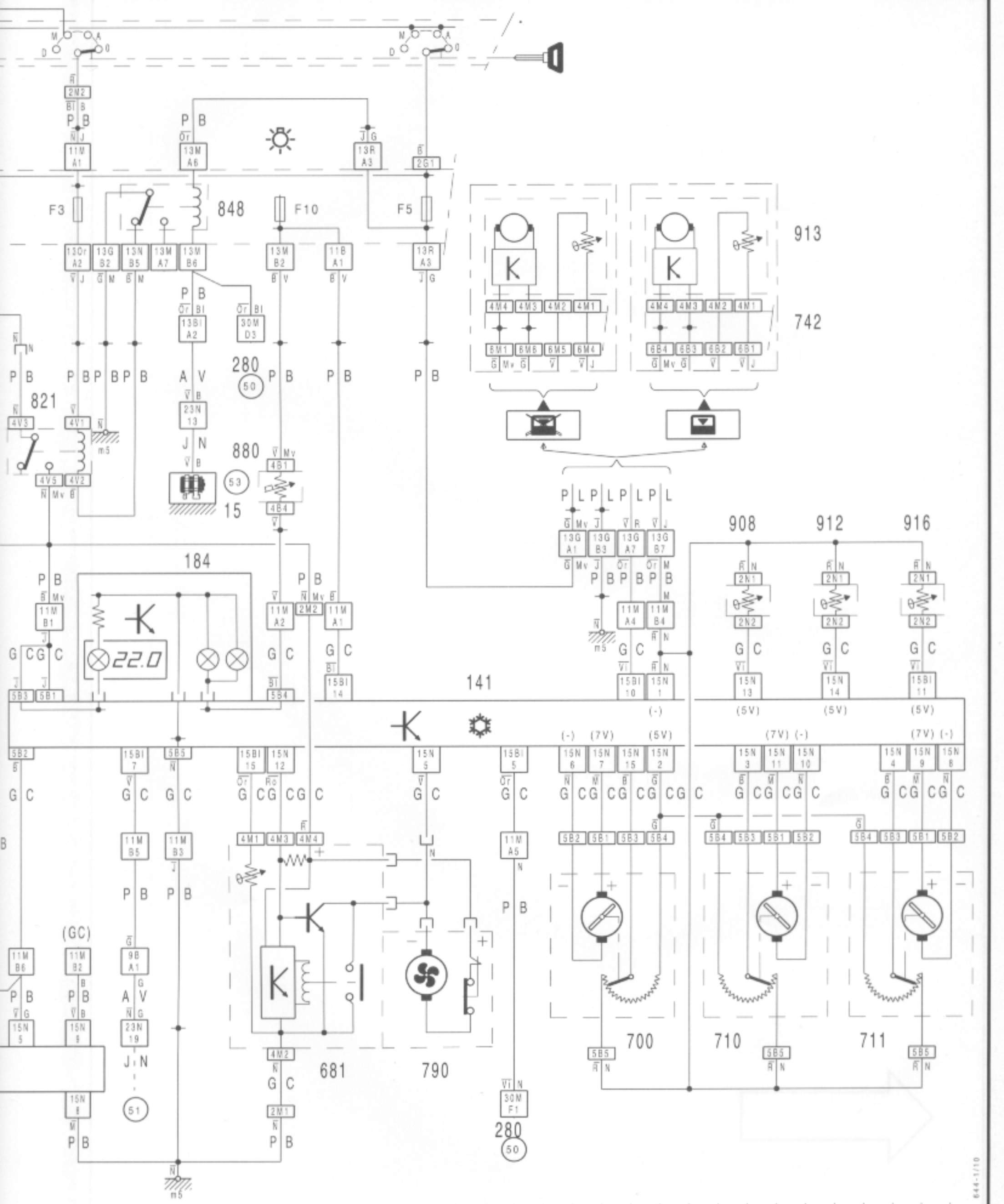
www.WorkshopManuals.co.uk



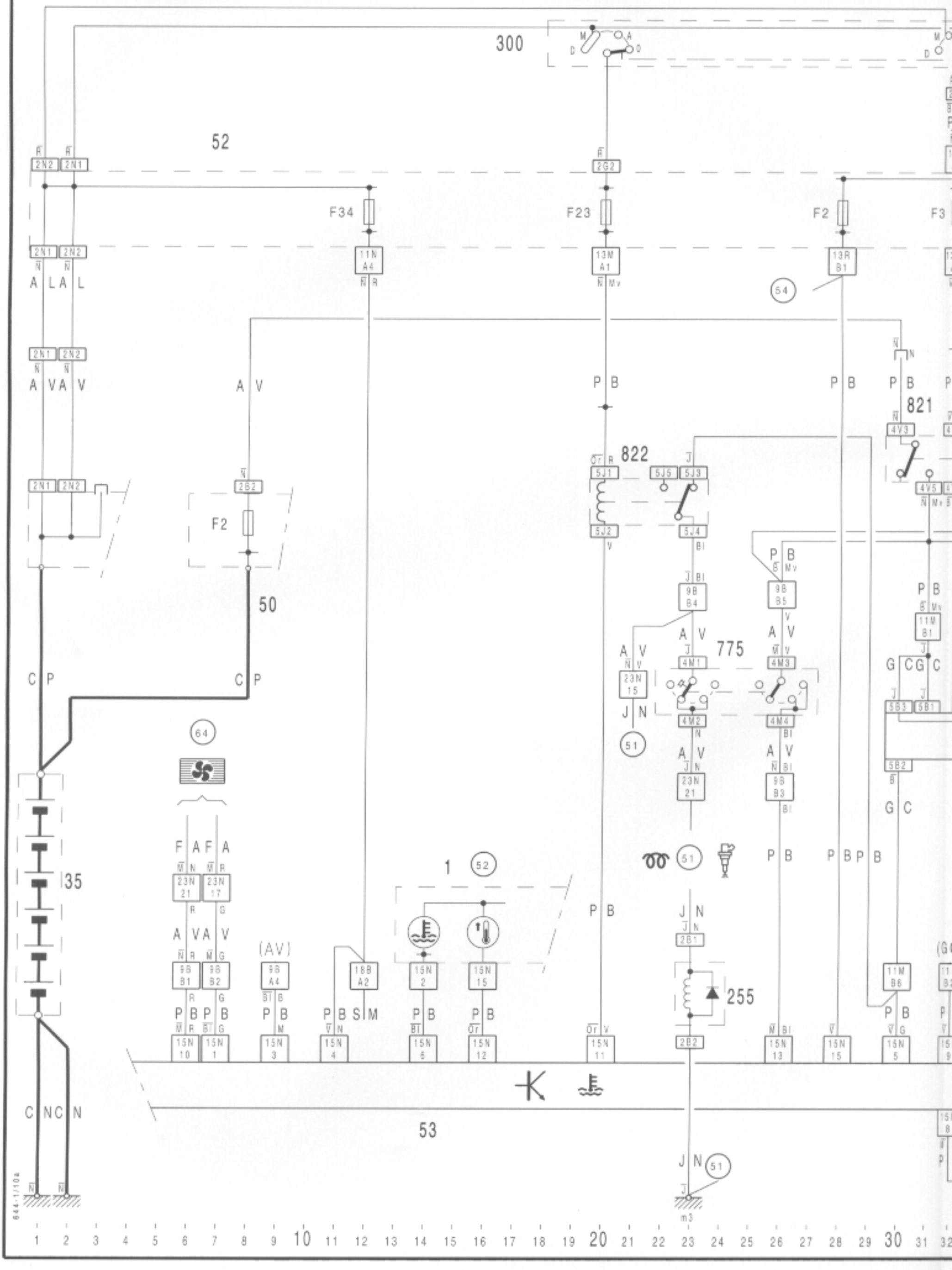
www.WorkshopManuals.co.uk



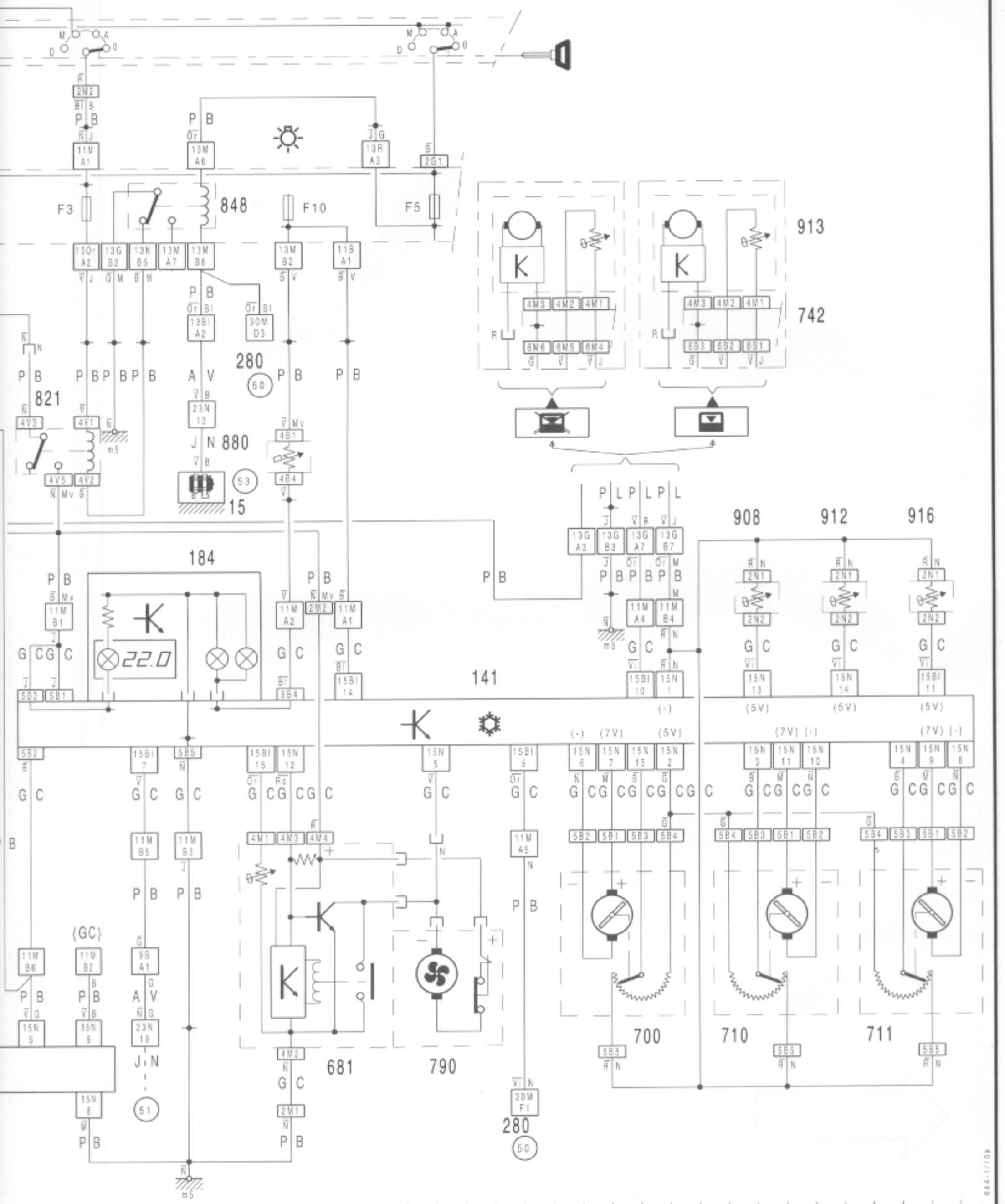
www.WorkshopManuals.co.uk



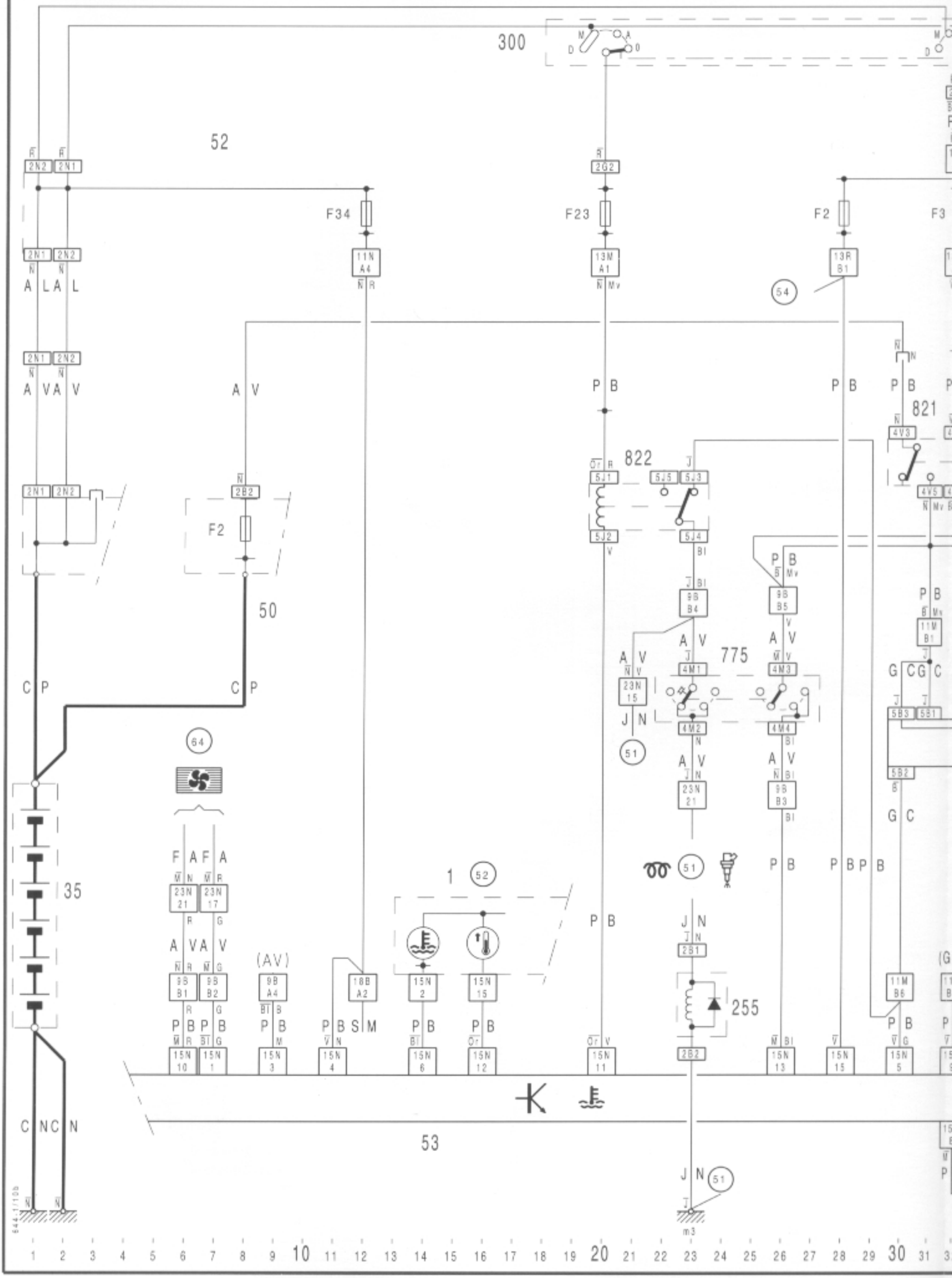
www.WorkshopManuals.co.uk



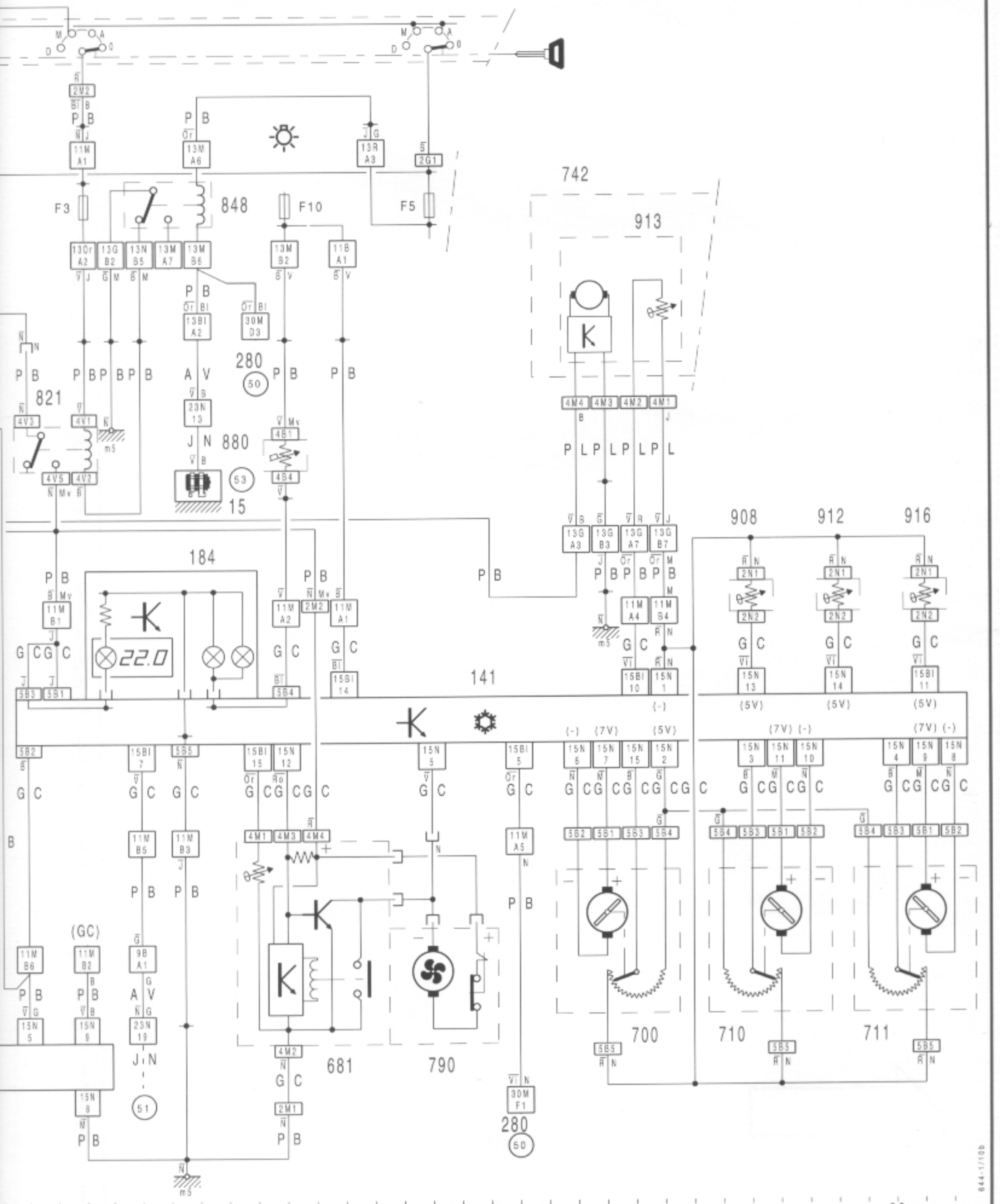
www.WorkshopManuals.co.uk



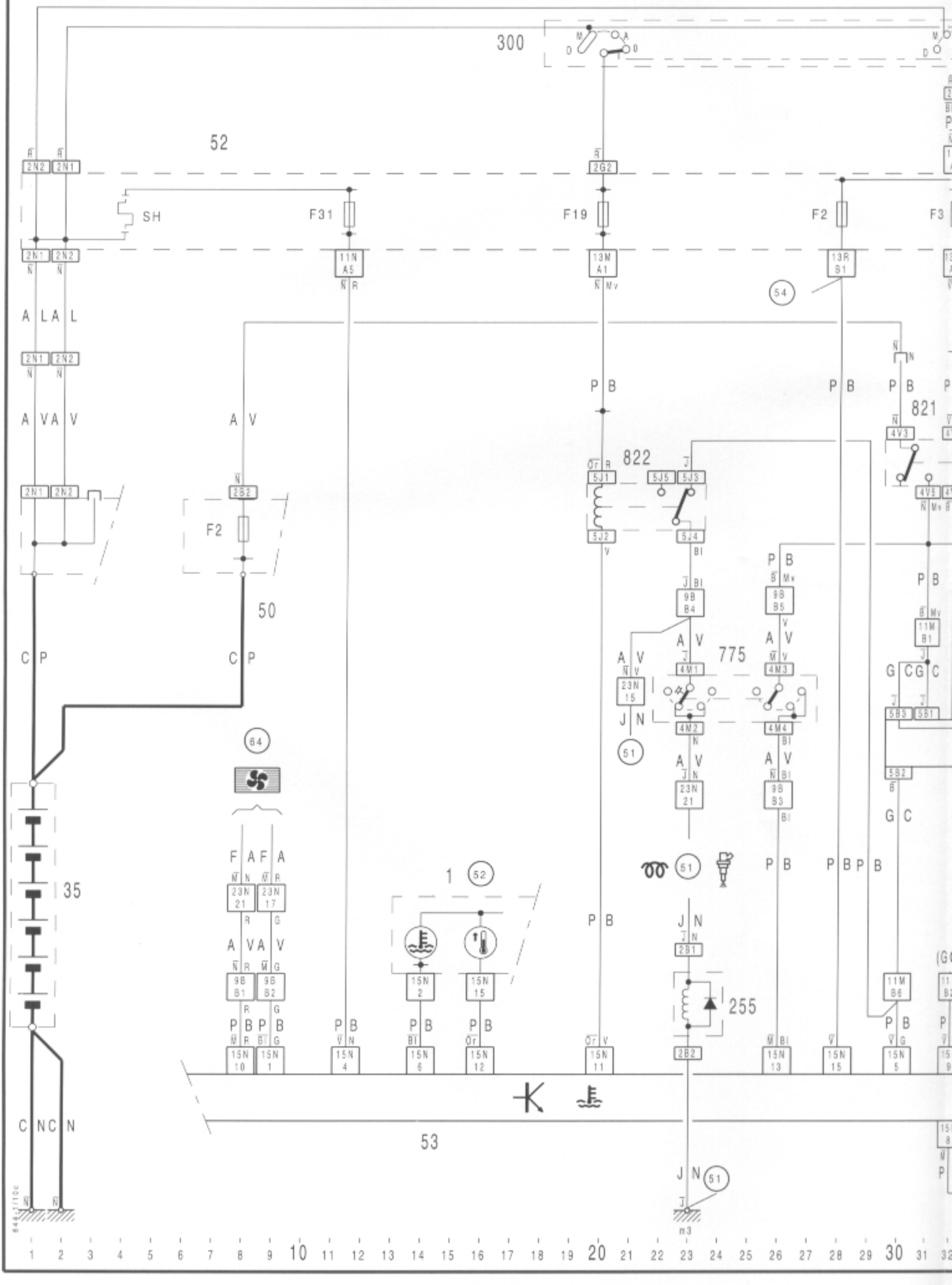
www.WorkshopManuals.co.uk



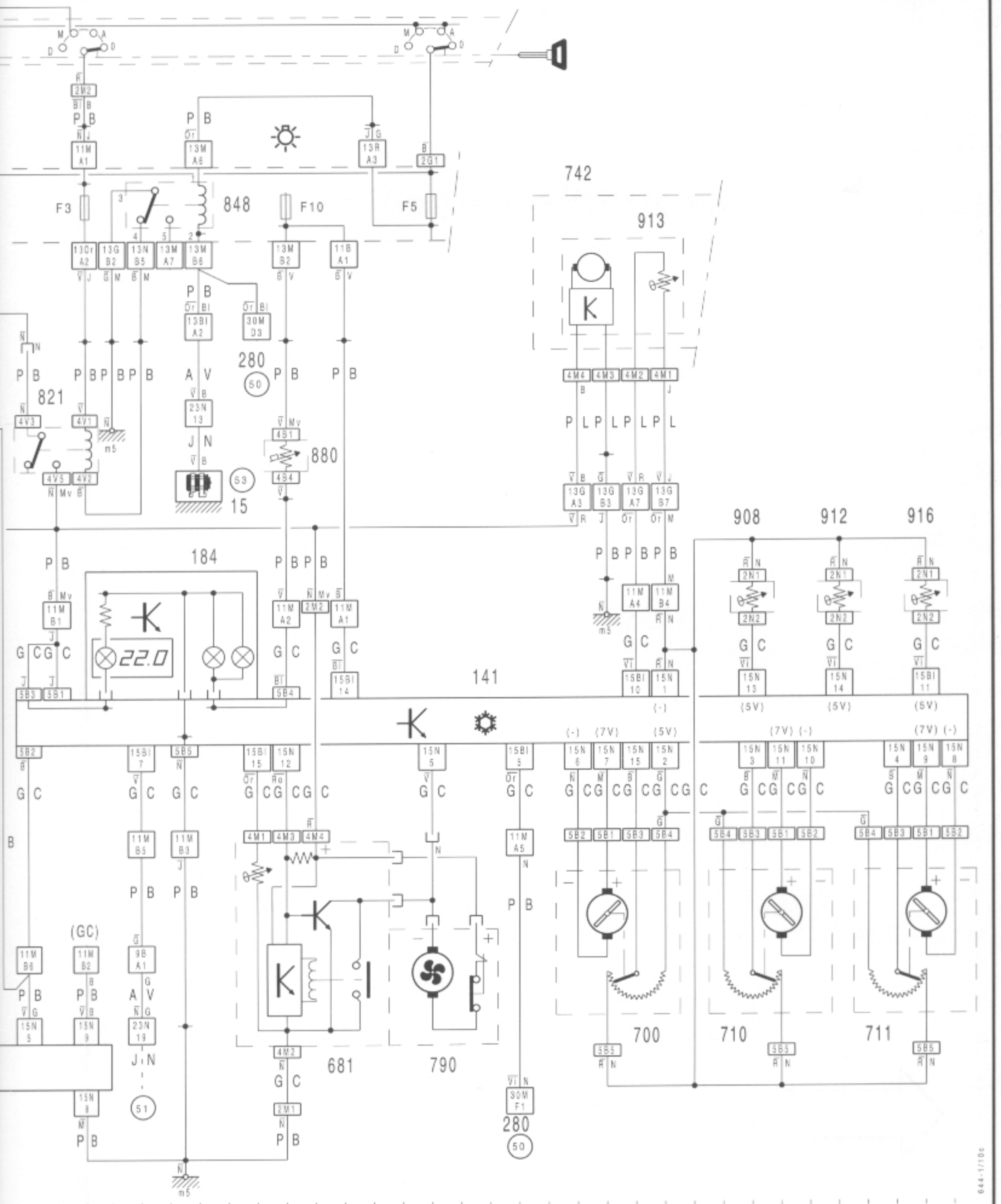
www.WorkshopManuals.co.uk



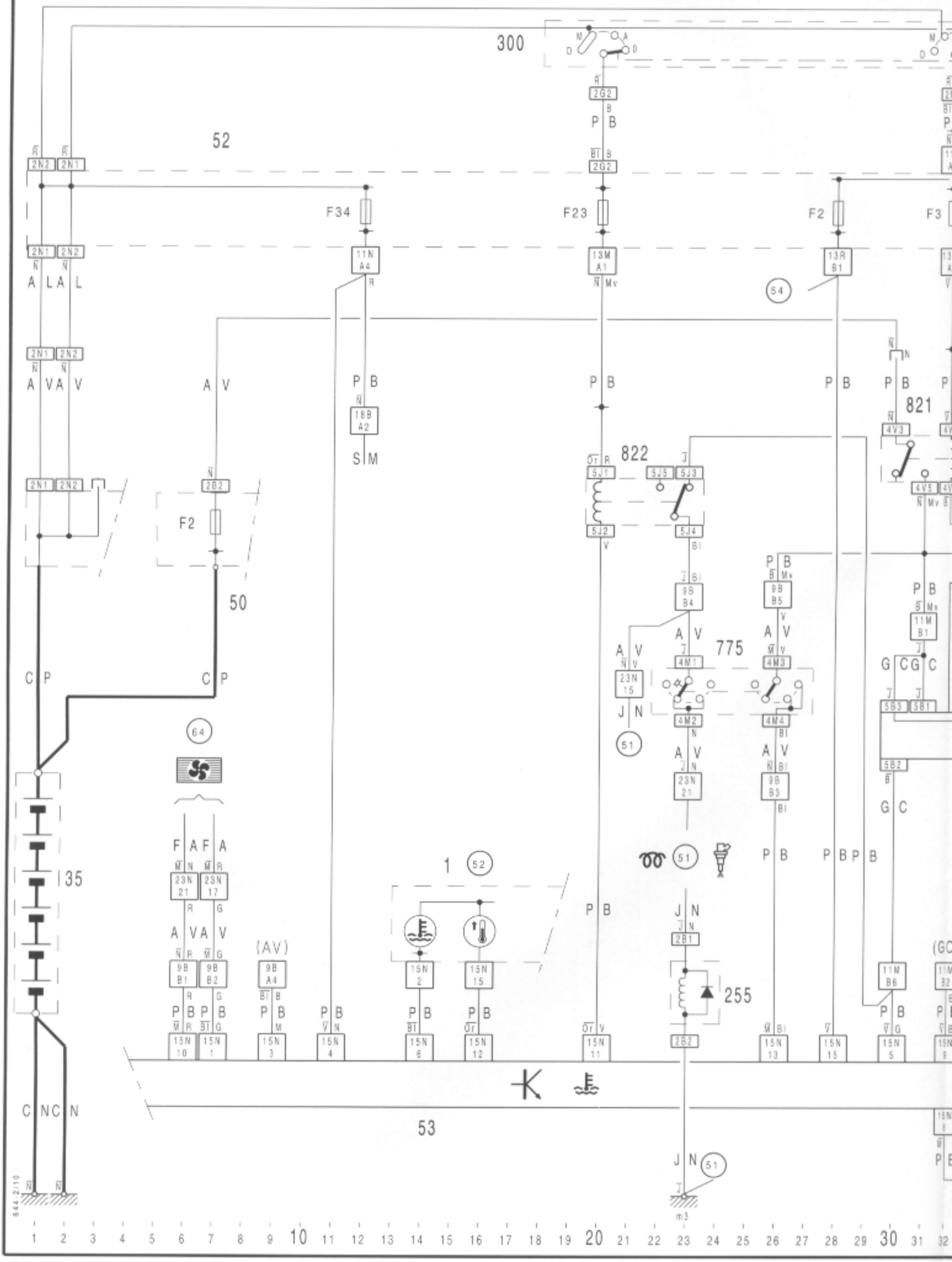
www.WorkshopManuals.co.uk



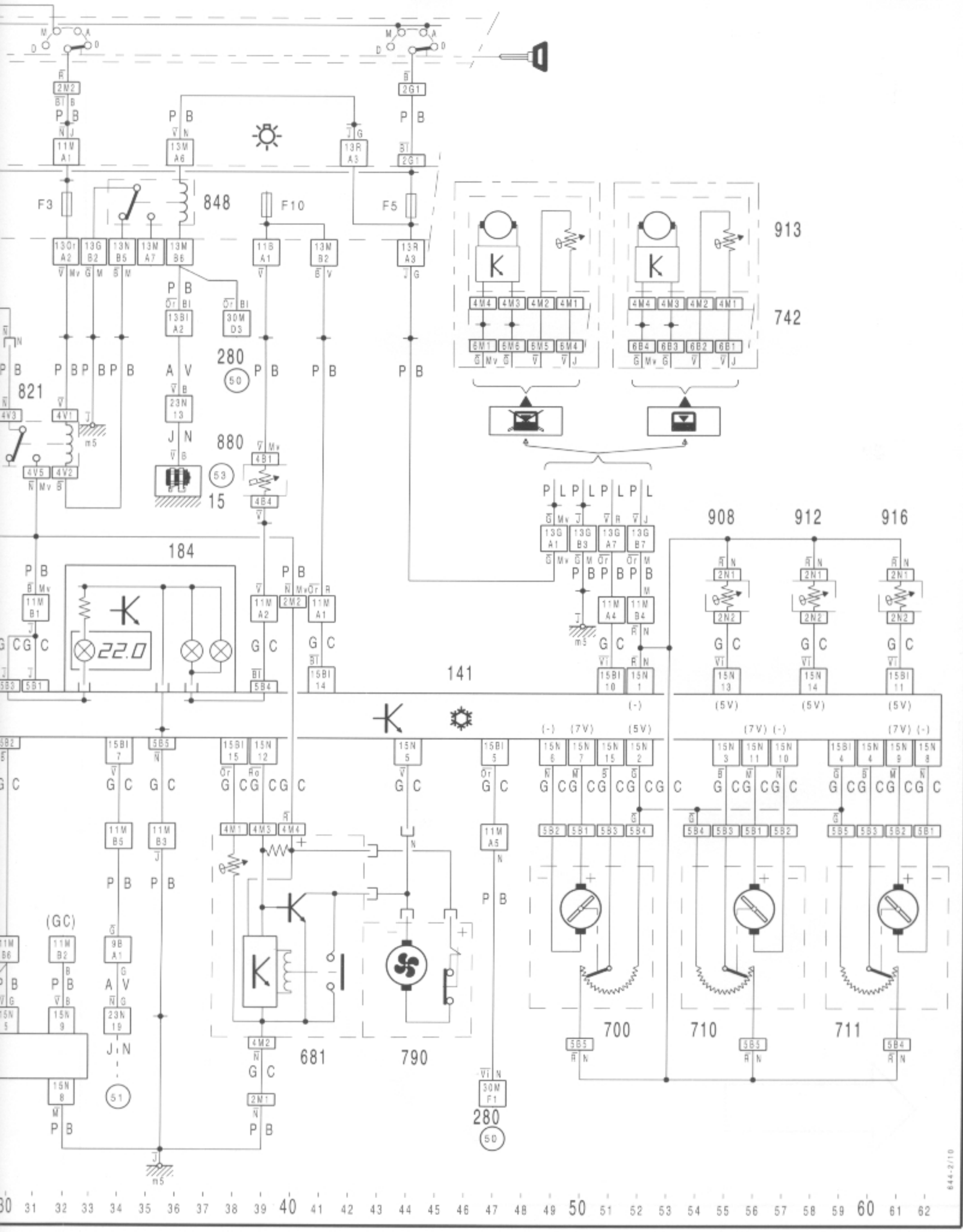
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

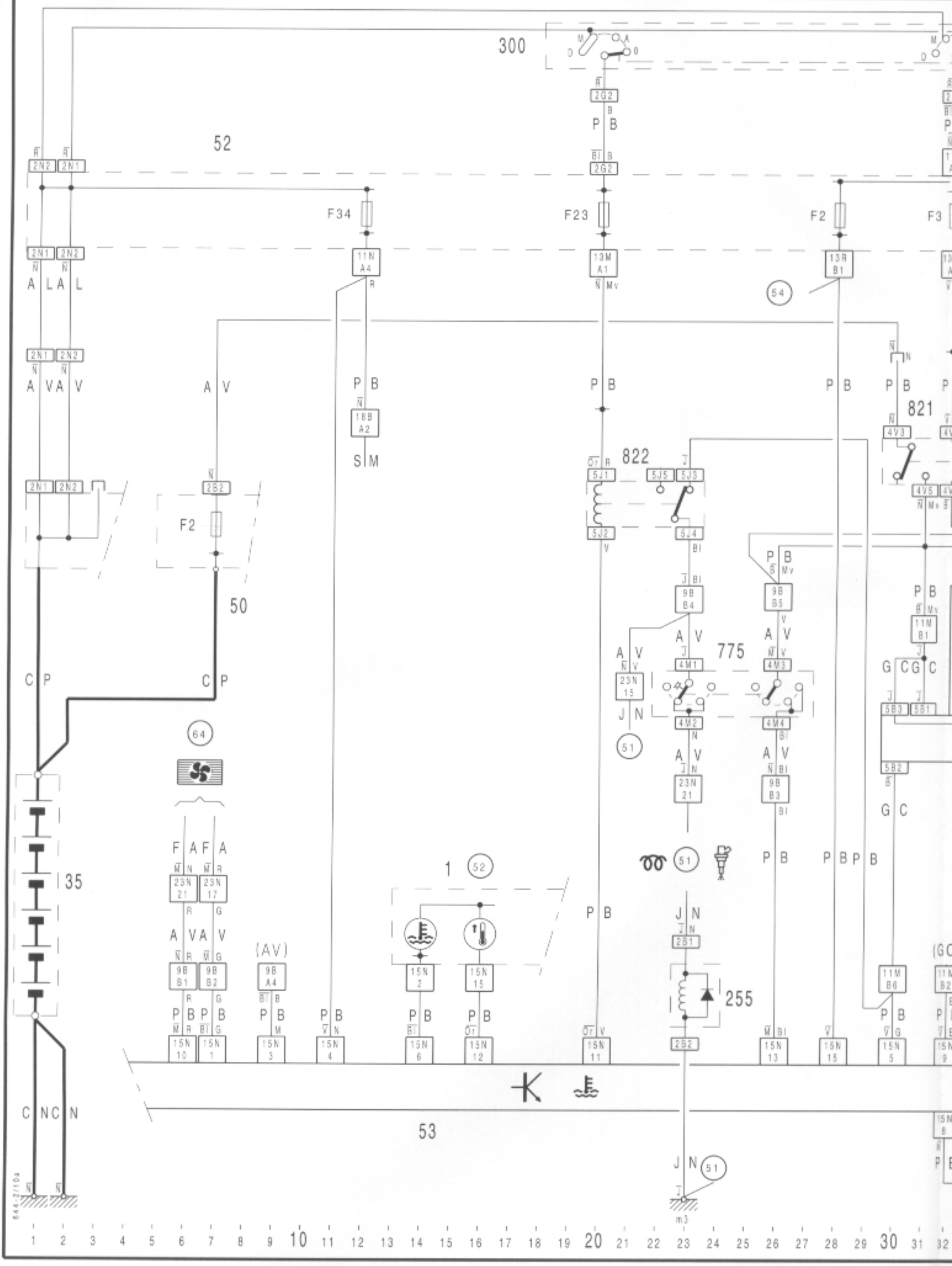


www.WorkshopManuals.co.uk

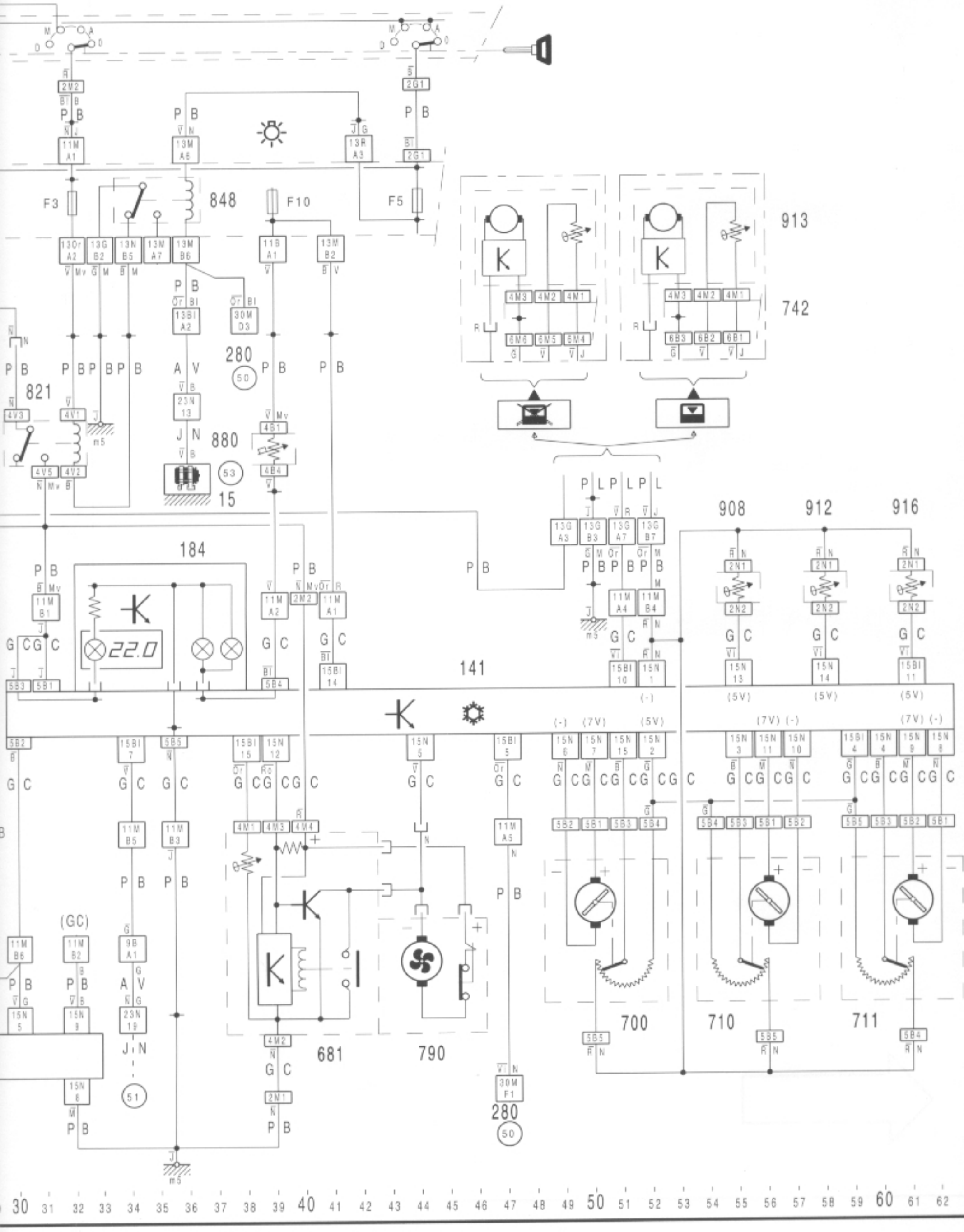


644-2/10

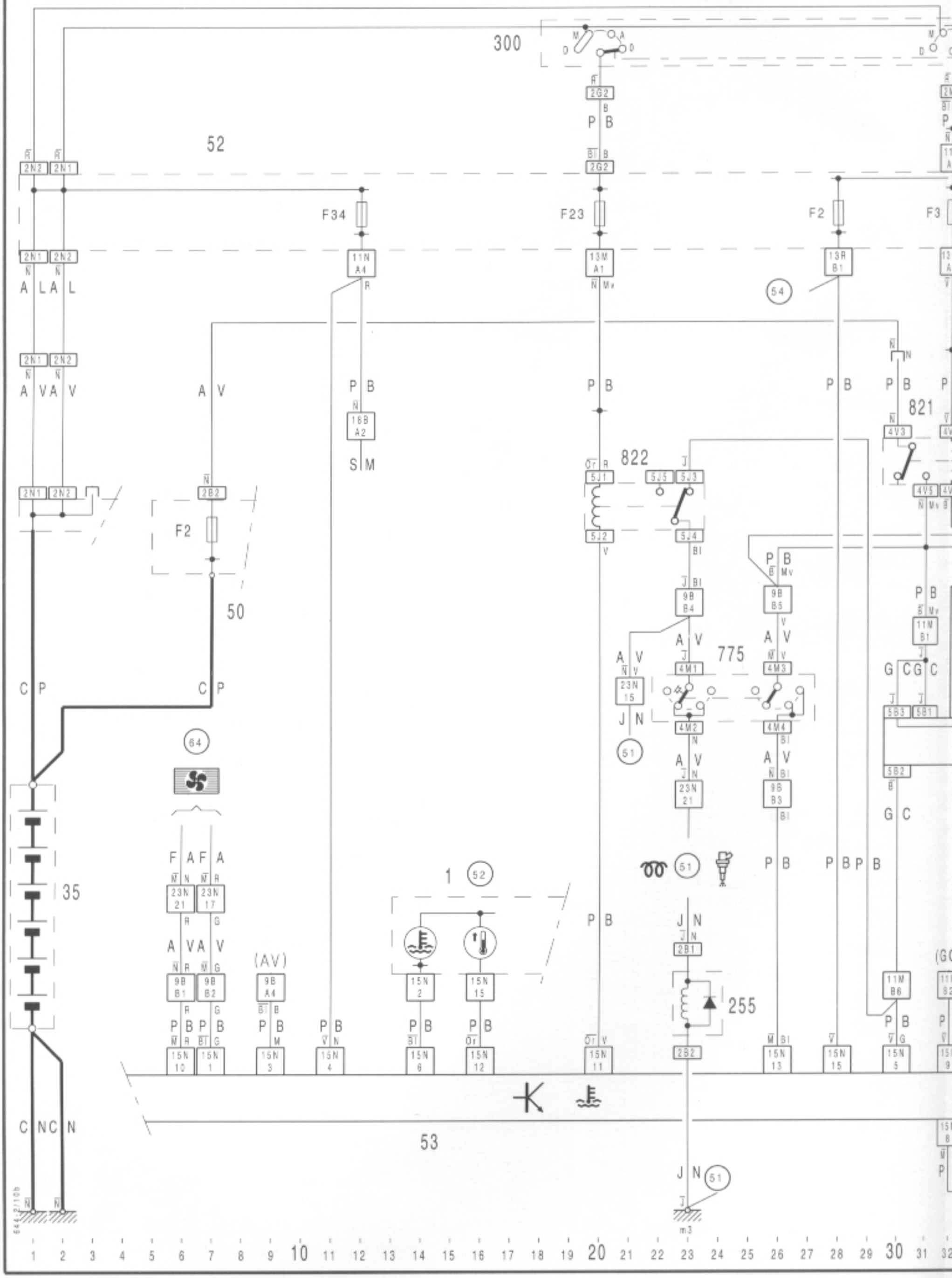
www.WorkshopManuals.co.uk



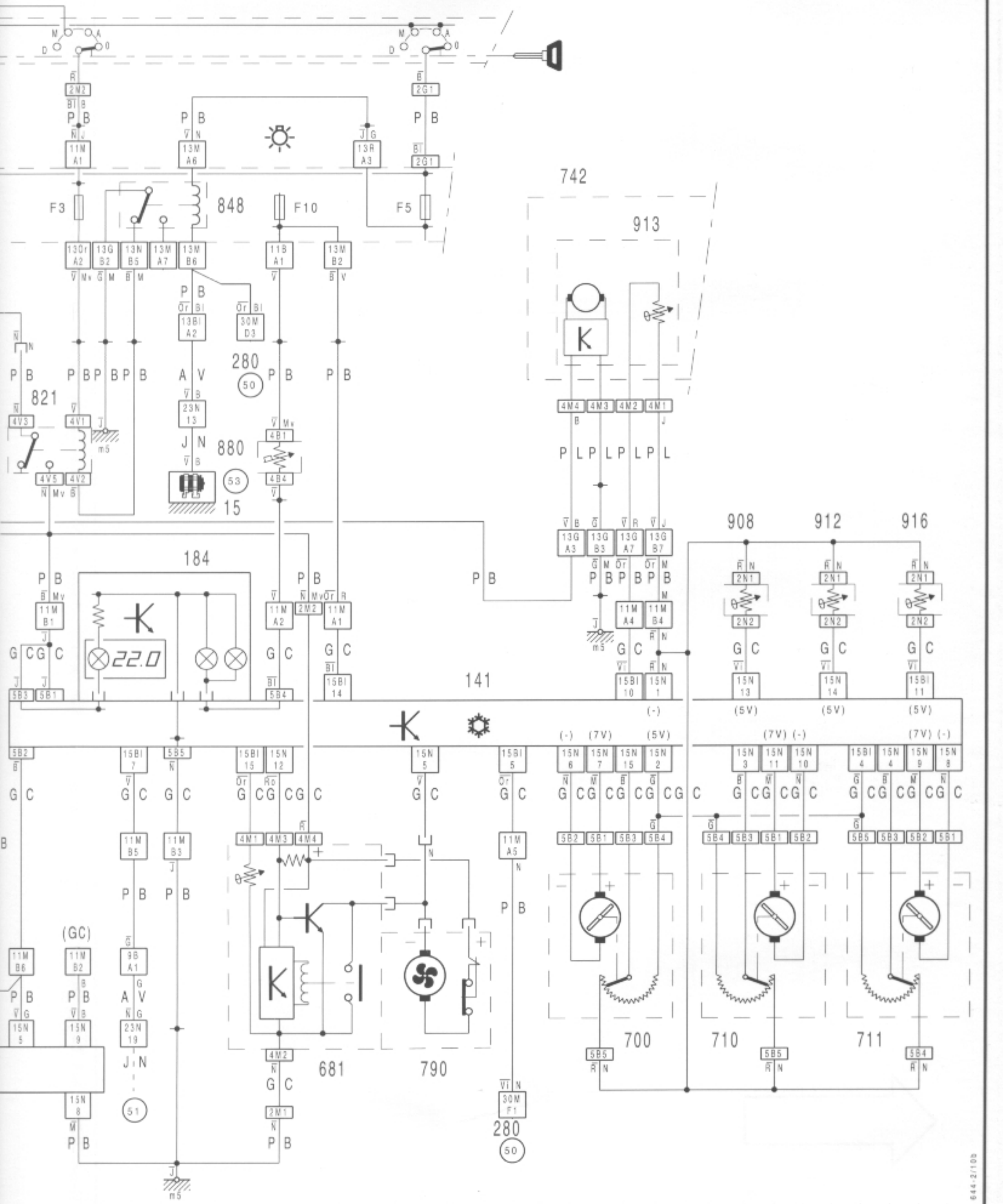
www.WorkshopManuals.co.uk



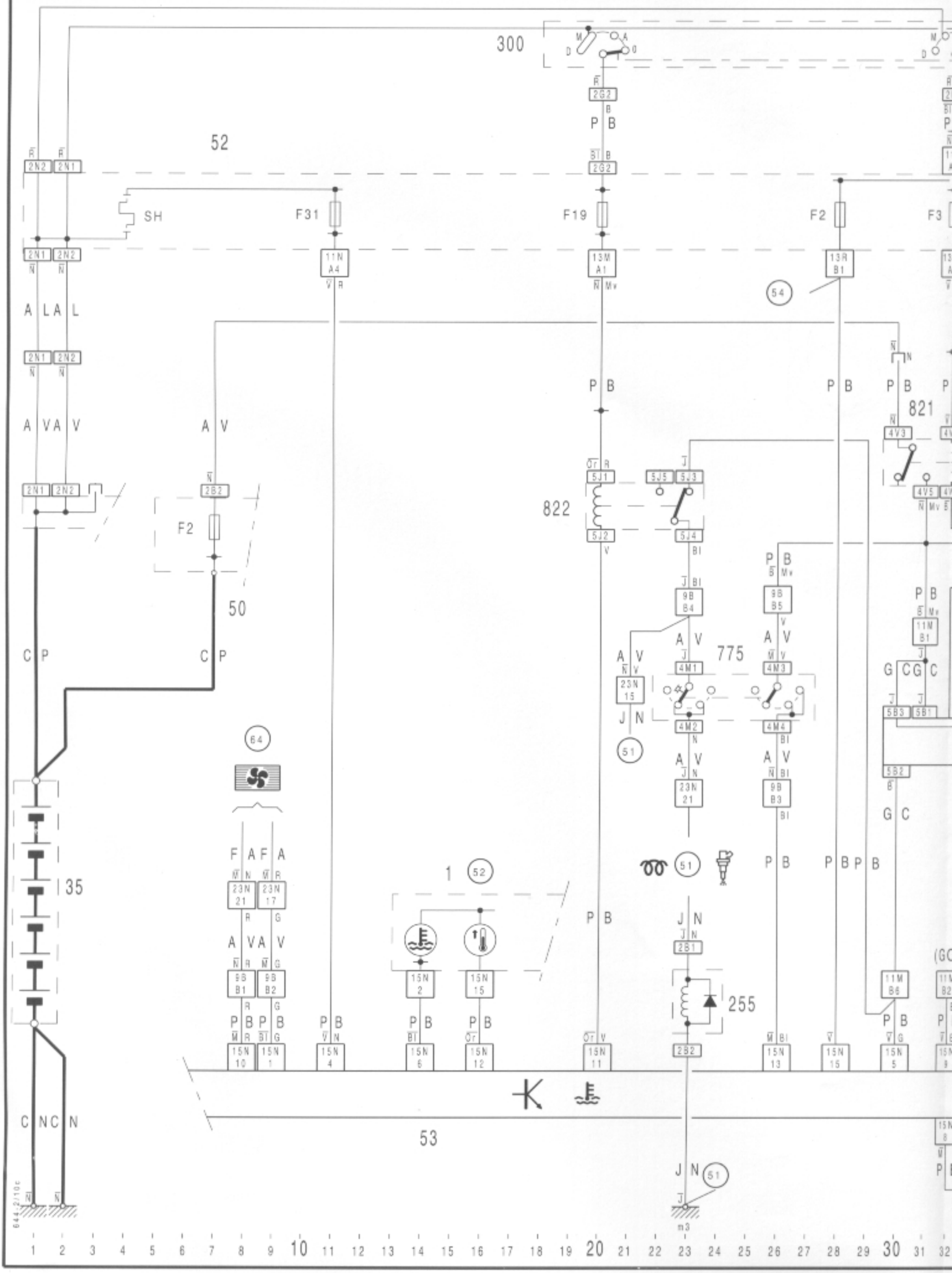
www.WorkshopManuals.co.uk



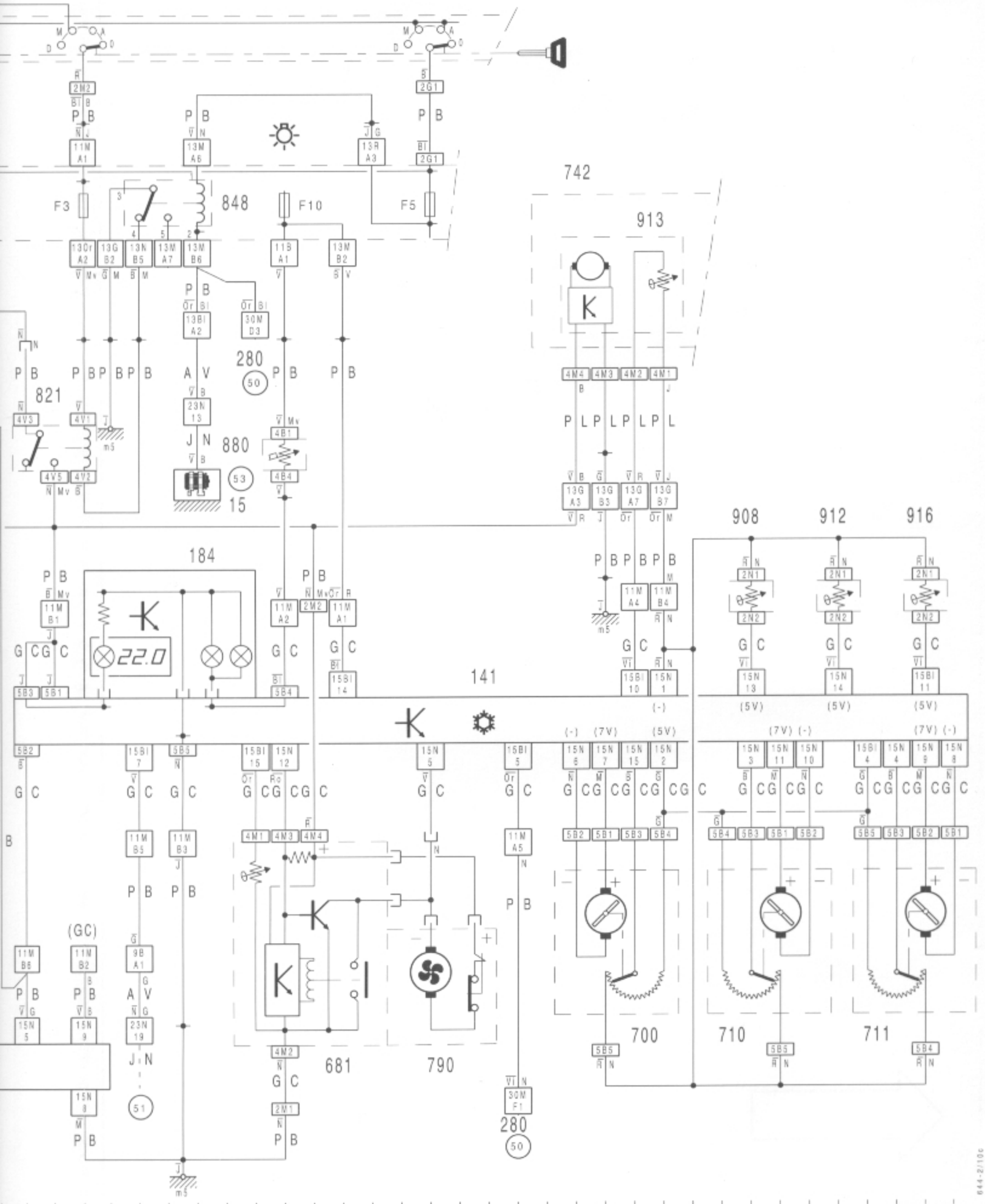
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk

RADIO FUNCTION

PARTS LIST
LIST OF THE ELECTRICAL DIAGRAMS

www.WorkshopManuals.co.uk

Ref.	Description	Func.
3	L.H. display unit (electronic display unit or silhouette)	52
35	Battery	TT
52	Junction box	TT
132	Radio-telephone audible warning	65
173	Compact-dics loader	65
178	Radio-telephone assembly	65
181	Radio control	65
300	Anti-theft contact switch	TT
470	Radio-telephone transmitter	65
550	L.H. front loudspeaker	65
551	R.H. front loudspeaker	65
552	L.H. front tweeter loudspeaker	65
553	R.H. front tweeter loudspeaker	65
554	L.H. rear loudspeaker	65
555	R.H. rear loudspeaker	65
765	Radio set	65

Ref.	Description	Func.

NU
65
65

NU
65

www.WorkshopManuals.co.uk

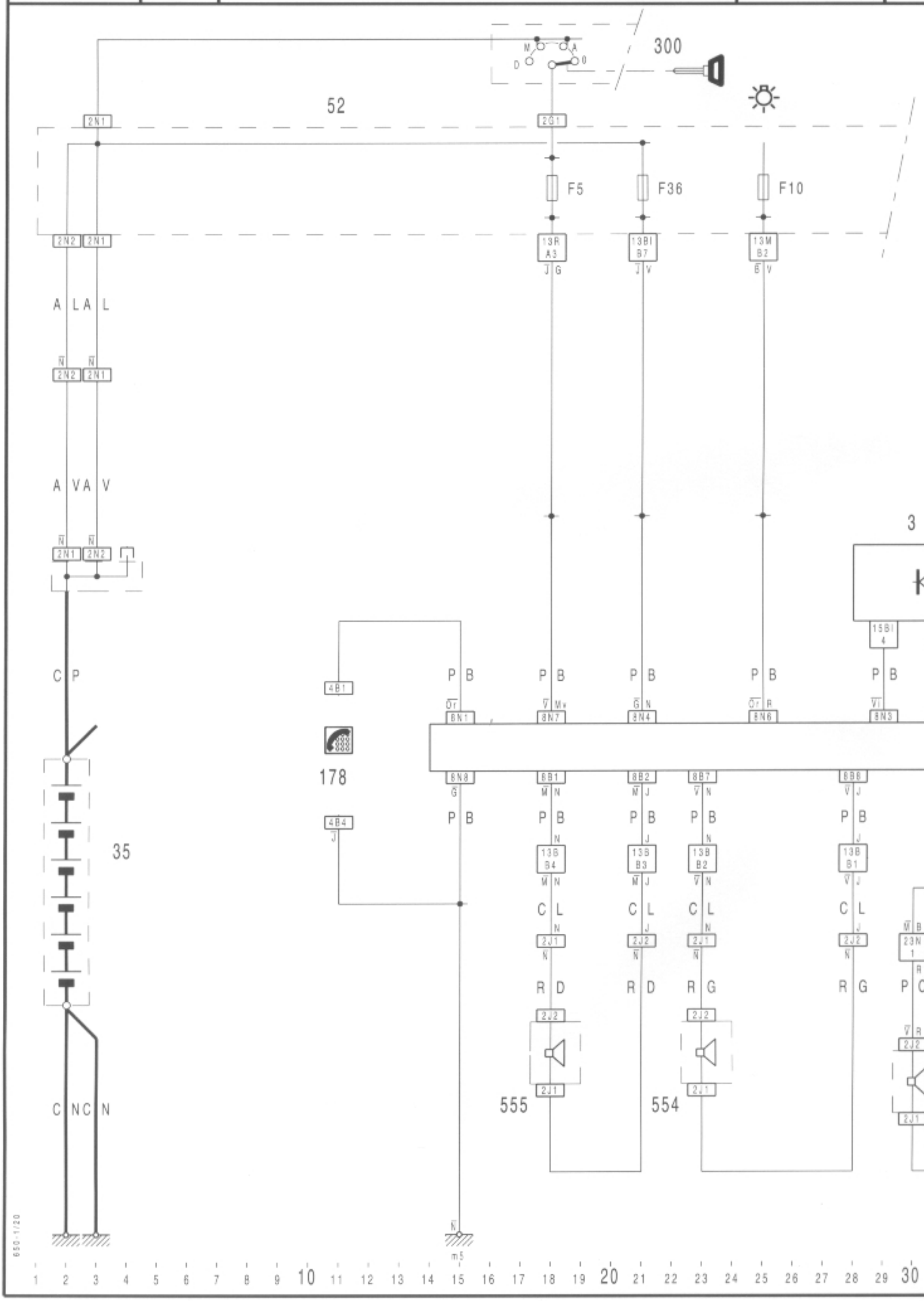
RADIO

NUMBER	STEERING	APPLICABLE	DESCRIPTION
650-1/20	L.H.D.	6383 → → 6749	**ALL TYPES** Radio equipment with or without controls on the steering wheel and with or without CD loader XMS104
650-1/20a	L.H.D.	6749 →	Evolution a : Fuse box modified XMN86

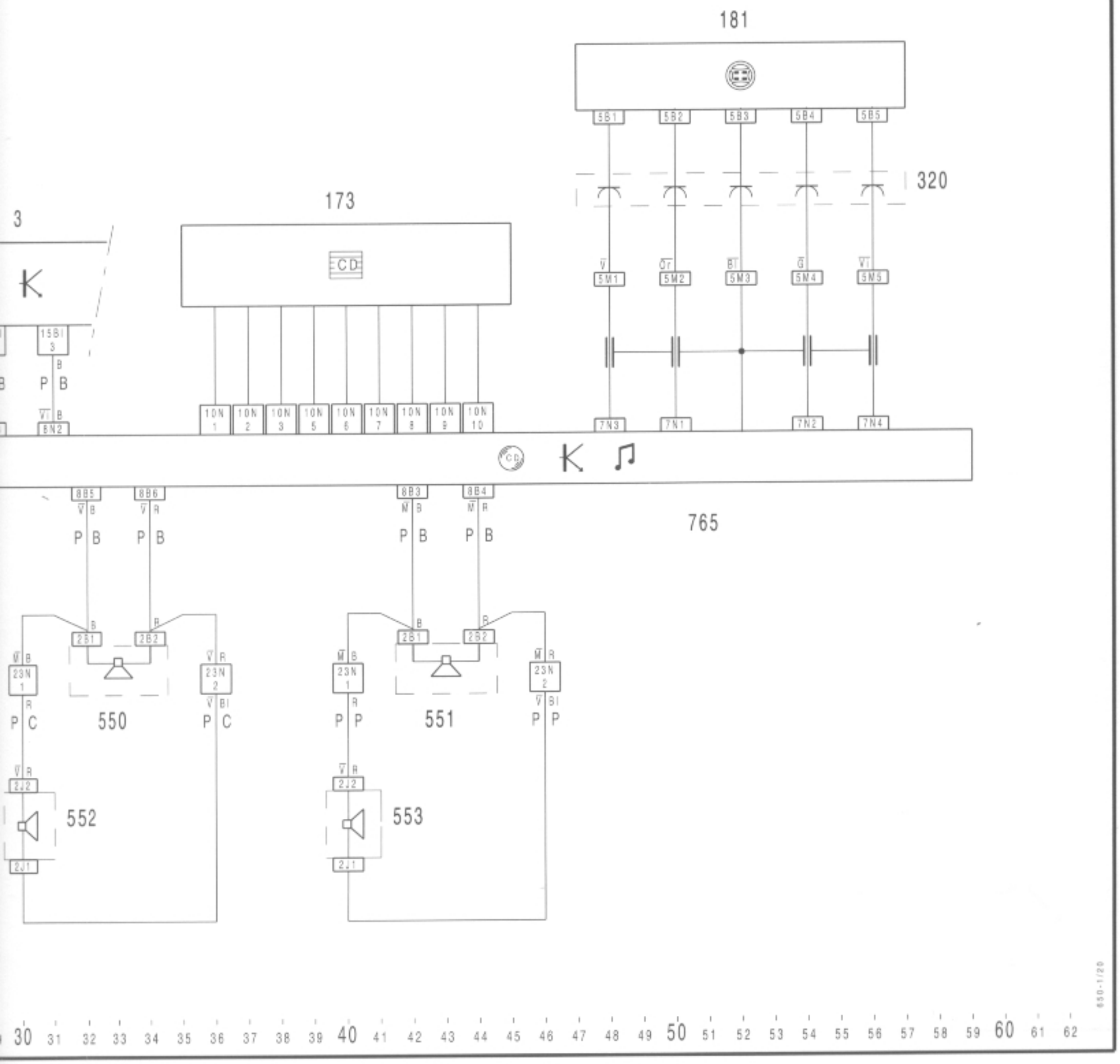
TELEPHONE

NUMBER	STEERING	APPLICABLE	DESCRIPTION
651-1/20	L.H.D.	6383 →	**OPTION ALL TYPES** Radio-telephone pre-equipment XMS105

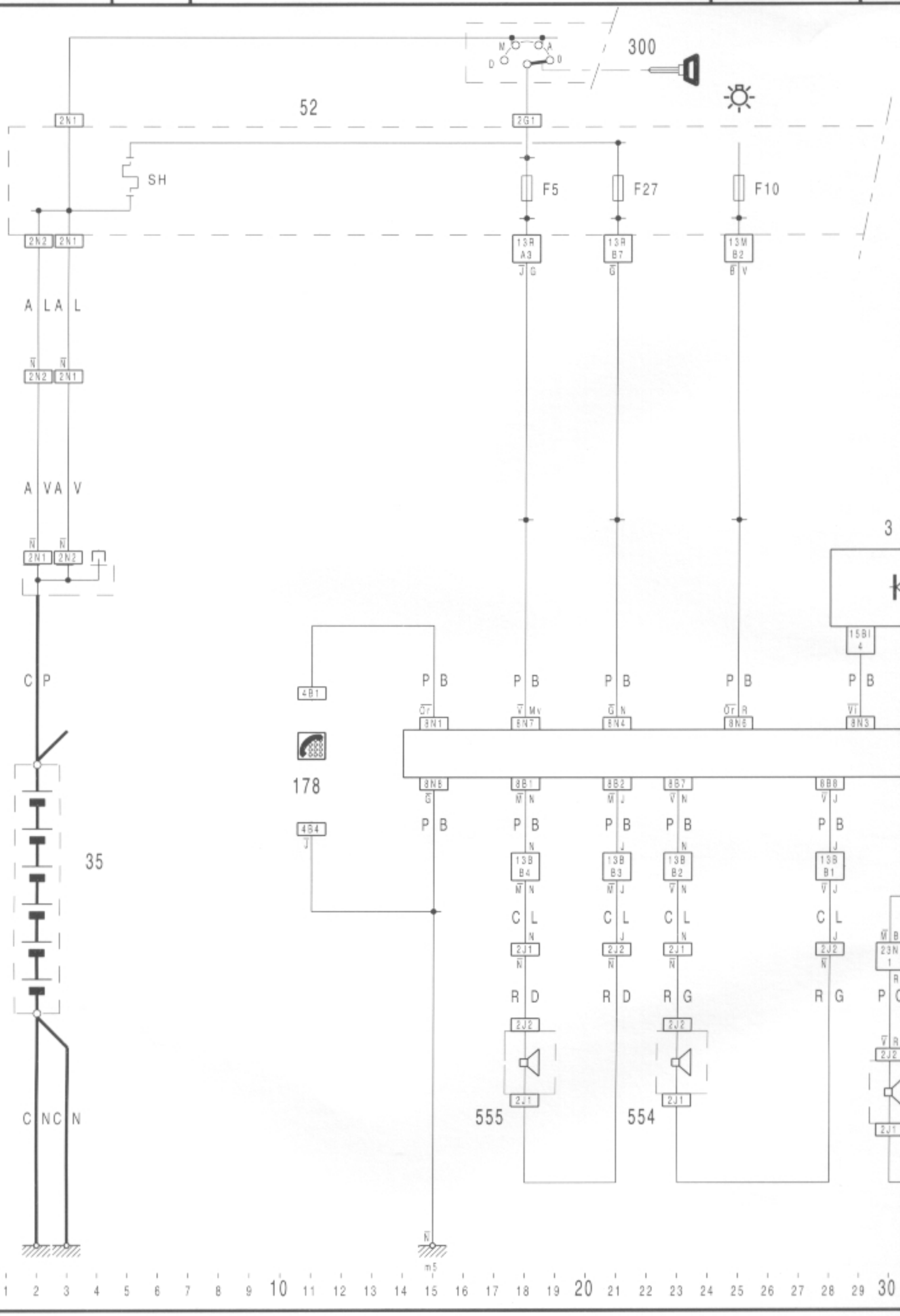
www.WorkshopManuals.co.uk



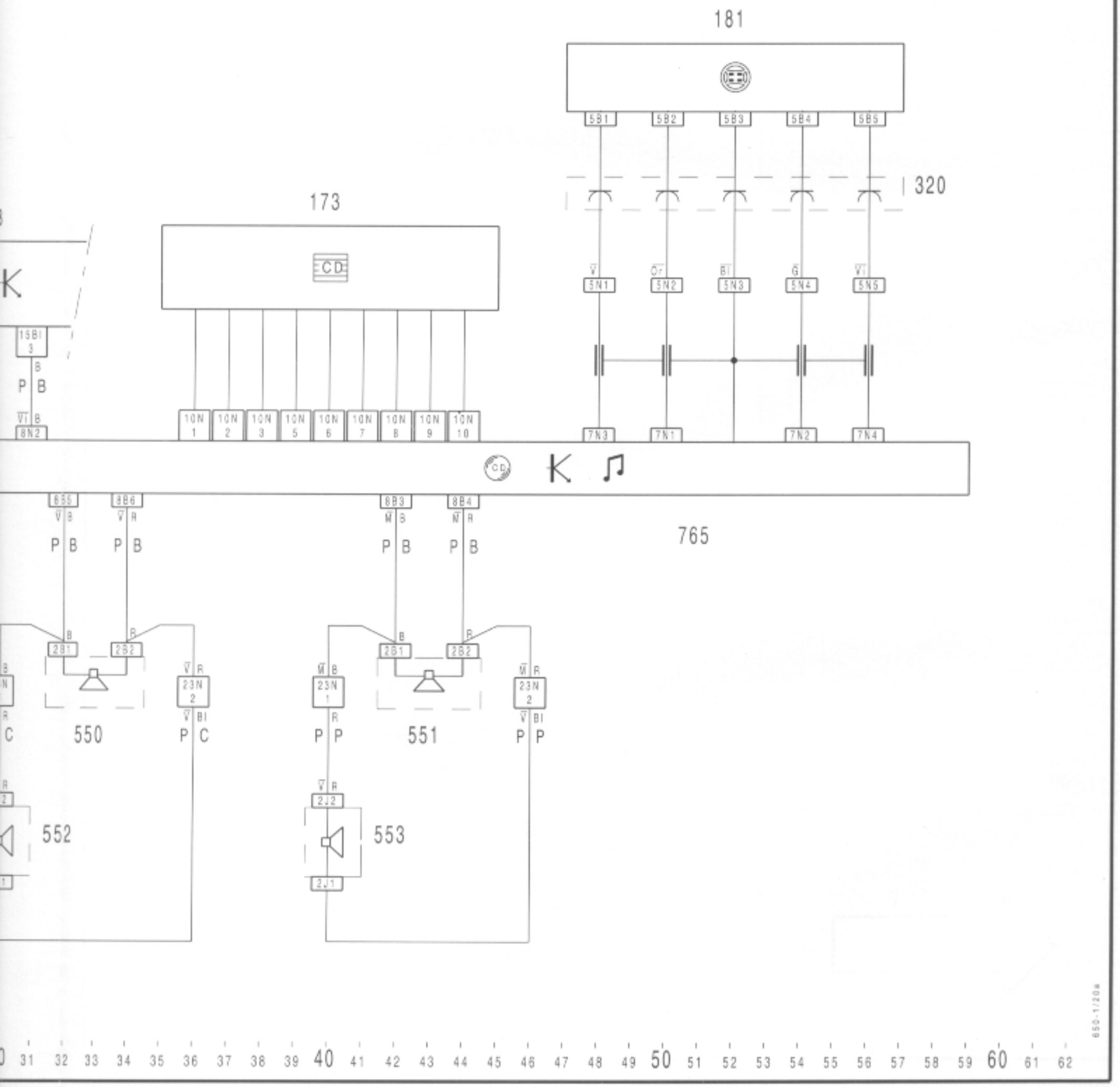
www.WorkshopManuals.co.uk



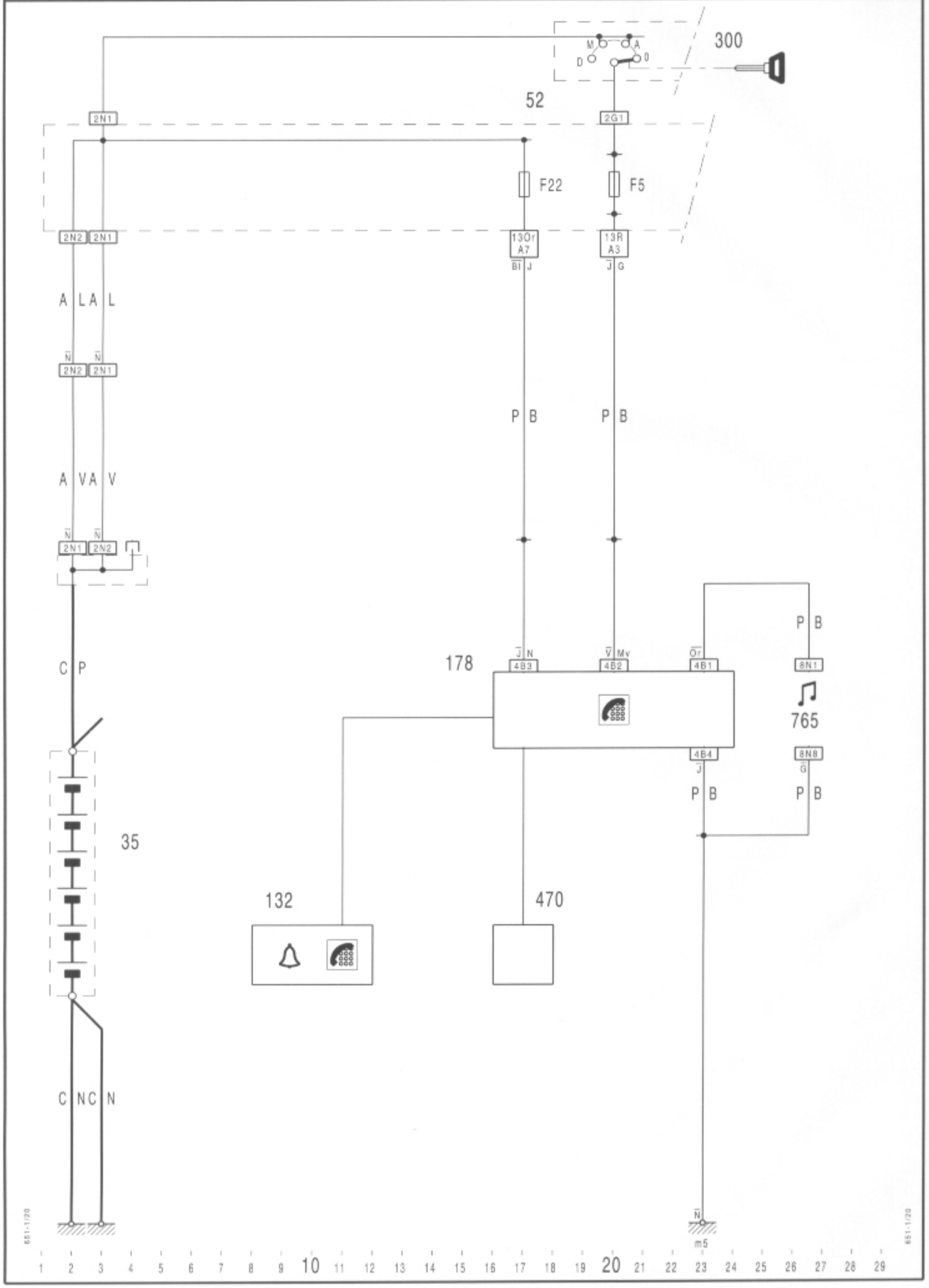
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk

DOORS, BOOT AND BONNET FUNCTION

PARTS LIST
LIST OF THE ELECTRICAL DIAGRAMS

www.WorkshopManuals.co.uk

Ref.	Description	Func.
3	L.H. display unit (electronic display unit or silhouette)	52
35	Battery	TT
51	Connector box	TT
52	Junction box	TT
55	Door locking control unit	67
58	Door locking receiver control unit	67
67	Burglar alarm control unit	67
68	Electric rear view mirror control unit	56
163	L.H. volumetric sensor	67
164	R.H. volumetric sensor	67
176	Coded anti-theft keyboard	51
280	Diagnostic connector	TT
295	L.H. front door deadlocking contact switch	67
296	R.H. front door deadlocking contact switch	67
297	L.H. rear door deadlocking contact switch	67
298	R.H. rear door deadlocking contact switch	67
300	Anti-theft contact switch	TT*
303	Bonnet L.H. closing contact (warning lamp)	67
304	Bonnet R.H. closing contact (warning lamp)	67
305	Driver's door closing contact (warning lamp)	67
306	Passenger's door closing contact (warning lamp)	67
307	L.H. rear door closing contact (warning lamp)	67
308	R.H. rear door closing contact (warning lamp)	67
309	Boot lid closing contact (warning lamp)	67
310	L.H. front door pillar contact	55
311	R.H. front door pillar contact	55
312	L.H. rear door pillar contact	55
313	R.H. rear door pillar contact	55
321	Boot lid locking contact	67
474	L.H. front door lock assembly	67
475	R.H. front door lock assembly	67
476	L.H. rear door lock assembly	67
477	R.H. rear door lock assembly	67
488	L.H. front direction indicator	54
489	R.H. front direction indicator	54
490	L.H. rear direction indicator	54
491	R.H. rear direction indicator	54
500	L.H. direction indicator repeater	54
501	R.H. direction indicator repeater	54
583	Rear function locking switch	55-67
590	Driver's electric window switch	67
591	Passenger's electric window switch (on the driver's door)	67
592	Passenger's electric window switch (on the passenger's door)	67
593	L.H. electric rear window switch on door	67
594	L.H. electric rear window switch on console	67
595	R.H. electric rear window switch on door	67
596	R.H. electric rear window switch on console	67
598	Interior lamp switch	55
615	Alarm switch (volumetric protection)	67
696	L.H. electric front window motor	67
697	R.H. electric front window motor	67
698	L.H. electric rear window motor	67
699	R.H. electric rear window motor	67
703	Driver's door locking motor	67
704	Passenger's door locking motor	67
705	L.H. rear door locking motor	67
706	R.H. rear door locking motor	67
707	Fuel filler flap locking motor	67
708	Boot lid locking motor	67
724	Electric window anti-pinch reduction motor	67
730	L.H. front door deadlocking motor	67
731	R.H. front door deadlocking motor	67
732	L.H. rear door deadlocking motor	67
733	R.H. rear door deadlocking motor	67
809	Electric front window relay	67
810	Electric rear window relay	67
888	Siren	67
961	Lighting timer unit	55
991	Anti-theft - burglar alarm	67

www.WorkshopManuals.co.uk

REMINDER

The electrical function is represented, on all the diagrams, with :
- the vehicle at a standstill,
- the ignition key on position "0",
- the doors, boot lid, fuel filler flap, etc. closed but not locked,
- the windows wound up and the sunroof closed,
- and no manual or mechanical or any other action in progress.

ELECTRIC WINDOW CONTROL

NUMBER	STEERING	APPLICABLE	DESCRIPTION
671-1/10	L.H.D.	6383 → → 6749	**ALL TYPES** Electric FRONT windows XMA54
671-1/10a	L.H.D.	6749 →	Evolution a: Fuse box modified XMS200
671-1/20	L.H.D.	6383 → → 6749	**ALL TYPES** One-touch and anti-pinch electric FRONT windows XMA55
671-1/20a	L.H.D.	6749 →	Evolution a: Fuse box modified XMS201
671-1/50	L.H.D.	6383 → → 6749	**ALL TYPES** Electric REAR windows XMA56
671-1/50a	L.H.D.	6749 →	Evolution a: Fuse box modified XMS204
671-1/55	L.H.D.	6383 → → 6749	**VAREBILER ESTATE (NORWAY)** Electric REAR windows XMA72
671-1/55a	L.H.D.	6749 →	Evolution a: Fuse box modified XMS205
671-2/10	R.H.D.	6383 → → 6749	**ALL TYPES** Electric FRONT windows XMA69
671-2/10a	R.H.D.	6749 →	Evolution a: Fuse box modified XMS202
671-2/20	R.H.D.	6383 → → 6749	**ALL TYPES** One-touch and anti-pinch electric FRONT windows XMA70
671-2/20a	R.H.D.	6749 →	Evolution a: Fuse box modified XMS203
671-2/50	R.H.D.	6383 → → 6749	**ALL TYPES** Electric REAR windows XMA71
671-2/50a	R.H.D.	6749 →	Evolution a: Fuse box modified XMS206

www.WorkshopManuals.co.uk

DOOR CLOSURE CONTROL

NUMBER	STEERING	APPLICABLE	DESCRIPTION
672-1/10	L.H.D.	6383 →	**VEHICLE WITHOUT REMOTE CONTROL** Central locking system XMA57
672-1/20	L.H.D.	6383 →	**VEHICLE WITHOUT L.H. DISPLAY UNIT** Central locking system with remote controle XMA59
672-1/30	L.H.D.	6383 →	**VEHICLE WITH L.H. DISPLAY UNIT AND WITHOUT ELECTRIC REAR WINDOWS** Central locking system with remote control XMA61
672-1/40	L.H.D.	6383 →	**VEHICLE WITH L.H. DISPLAY UNIT AND ELECTRIC REAR WINDOWS** Central locking system with remote control XMA63
672-1/50	L.H.D.	6383 → → 6749	**VEHICLE WITHOUT ELECTRIC REAR WINDOWS** Deadlocking (with HF transmitter/receiver)) XMA65
672-1/50a	L.H.D.	6749 →	Evolution a : Fuse box modified XMS207
672-1/60	L.H.D.	6383 → → 6749	**VEHICLE WITH ELECTRIC REAR WINDOWS** Deadlocking (with HF transmitter/receiver) XMA66
672-1/60a	L.H.D.	6749 →	Evolution a : Fuse box modified XMS208
672-2/10	R.H.D.	6383 →	**VEHICLE WITHOUT REMOTE CONTROL** Central locking system XMA58
672-2/20	R.H.D.	6383 →	**VEHICLE WITHOUT L.H. DISPLAY UNIT** Central locking system with remote control XMA60
672-2/30	R.H.D.	6383 →	**VEHICLE WITH L.H. DISPLAY UNIT AND WITHOUT ELECTRIC REAR WINDOWS** Central locking system with remote control XMA62
672-2/40	R.H.D.	6383 →	**VEHICLE WITH L.H. DISPLAY UNIT AND ELECTRIC REAR WINDOWS** Central locking system with remote control XMA64
672-2/50	R.H.D.	6383 → → 6749	**VEHICLE WITHOUT ELECTRIC REAR WINDOWS** Deadlocking (with HF transmitter/receiver) XMA67
672-2/50a	R.H.D.	6749 →	Evolution a : Fuse box modified XMA209
672-2/60	R.H.D.	6383 → → 6749	**VEHICLE WITH ELECTRIC REAR WINDOWS** Deadlocking (with HF transmitter/receiver) XMA68
672-2/60a	R.H.D.	6749 →	Evolution a : Fuse box modified XMA210

www.WorkshopManuals.co.uk

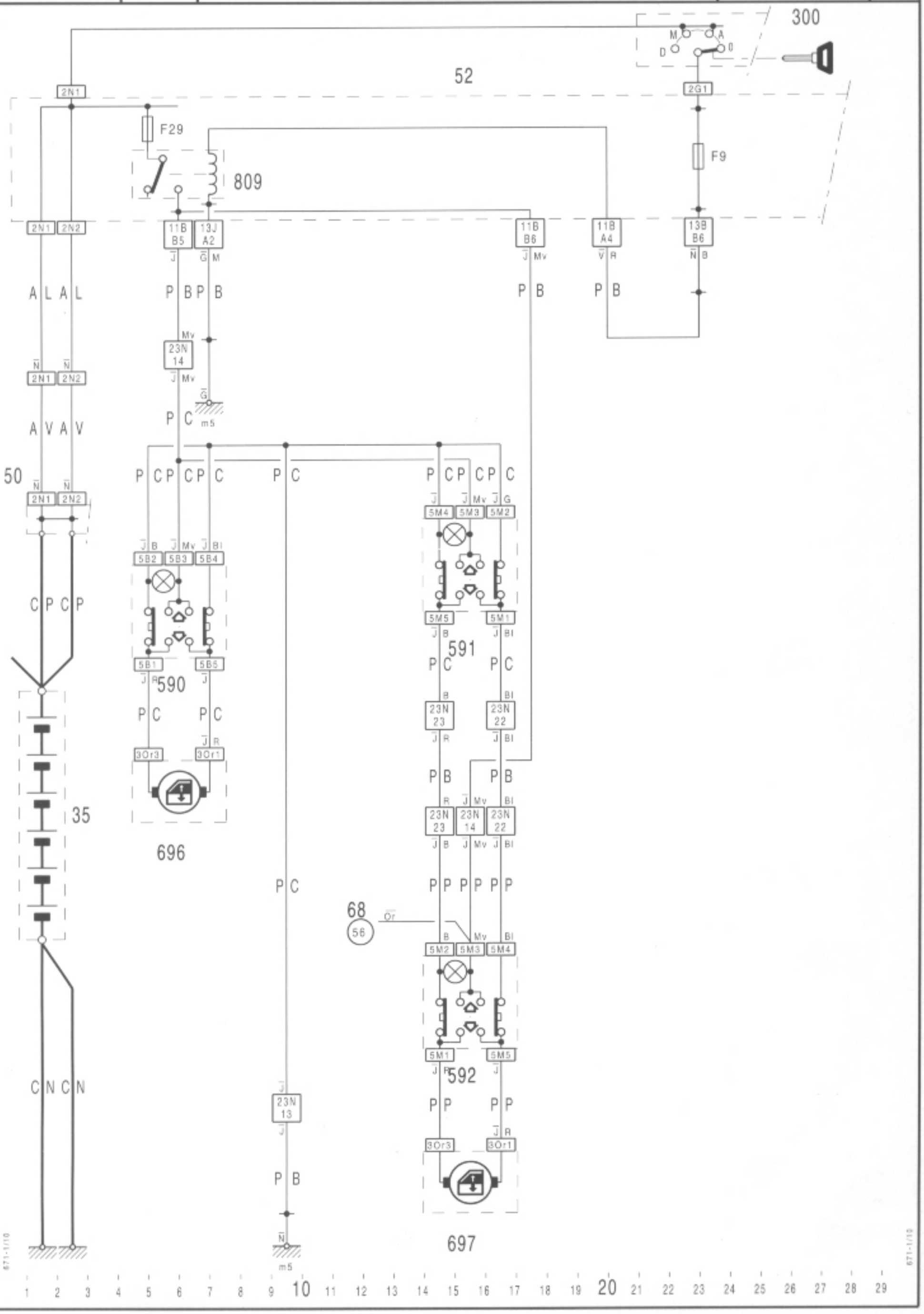
SUN ROOF CONTROL

NUMBER	STEERING	APPLICABLE	DESCRIPTION
673-0/20	All Types	6383 →	**ALL TYPES** Sun roof XMA75

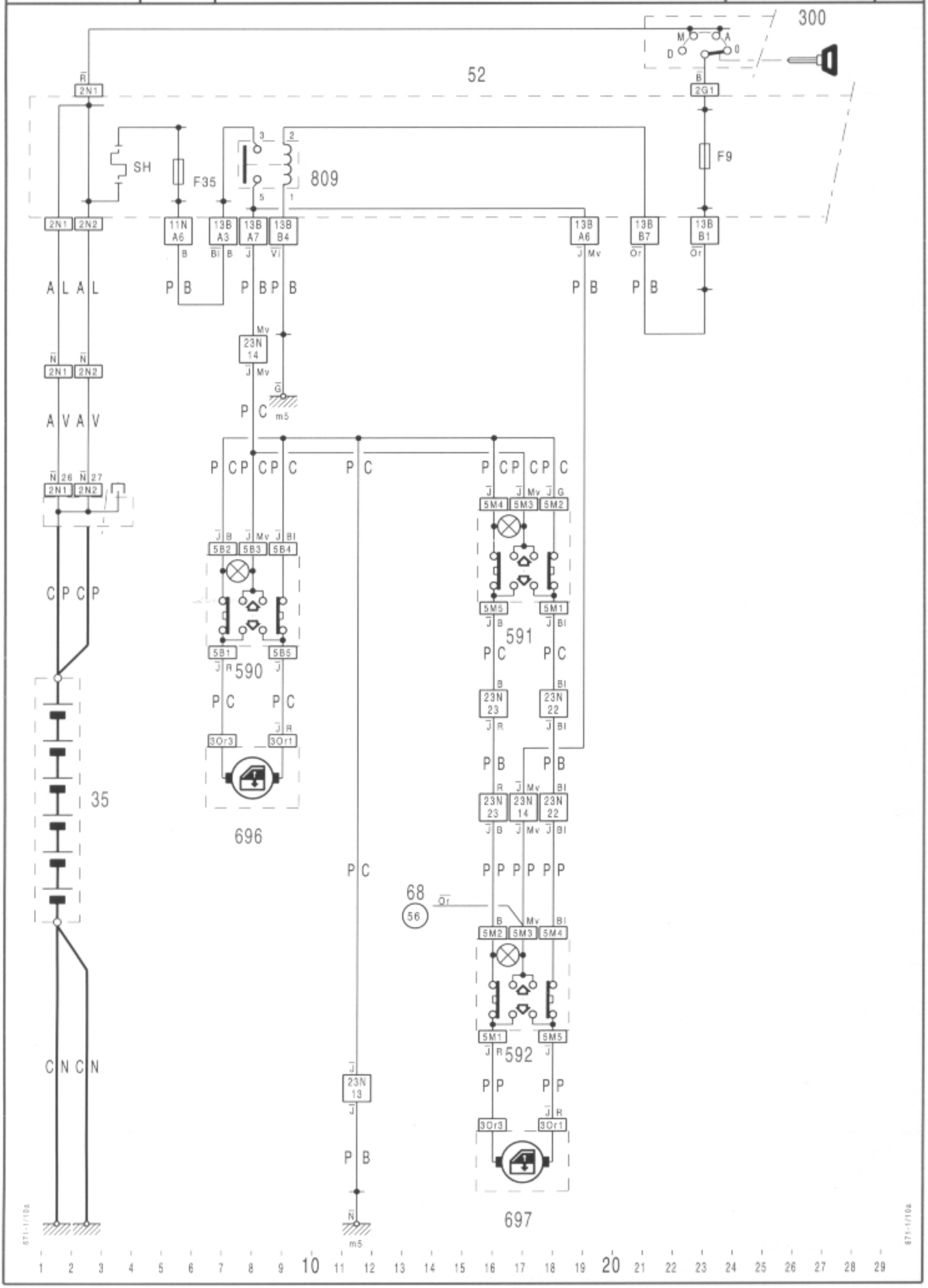
ALARM

NUMBER	STEERING	APPLICABLE	DESCRIPTION
675-1/10	L.H.D.	6383 → → 6749	**ALL TYPES** Alarm XMA73
675-1/10a	L.H.D.	6749 →	Evolution a : Fuse box modified XMS212
675-2/10	R.H.D.	6383 → → 6749	**ALL TYPES** Alarm XMA74
675-2/10a	R.H.D.	6749 →	Evolution a : Fuse box modified XMS211

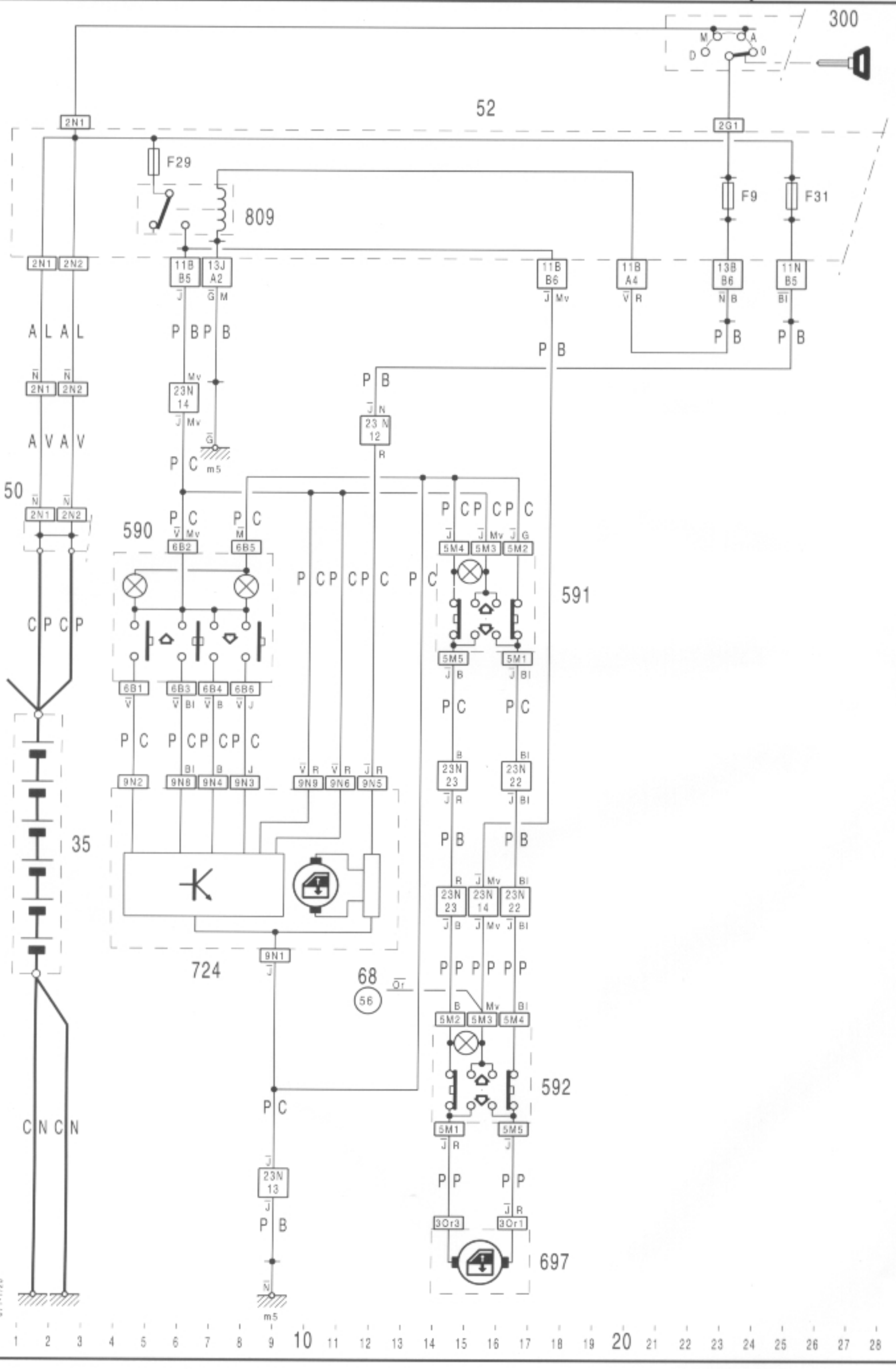
www.WorkshopManuals.co.uk



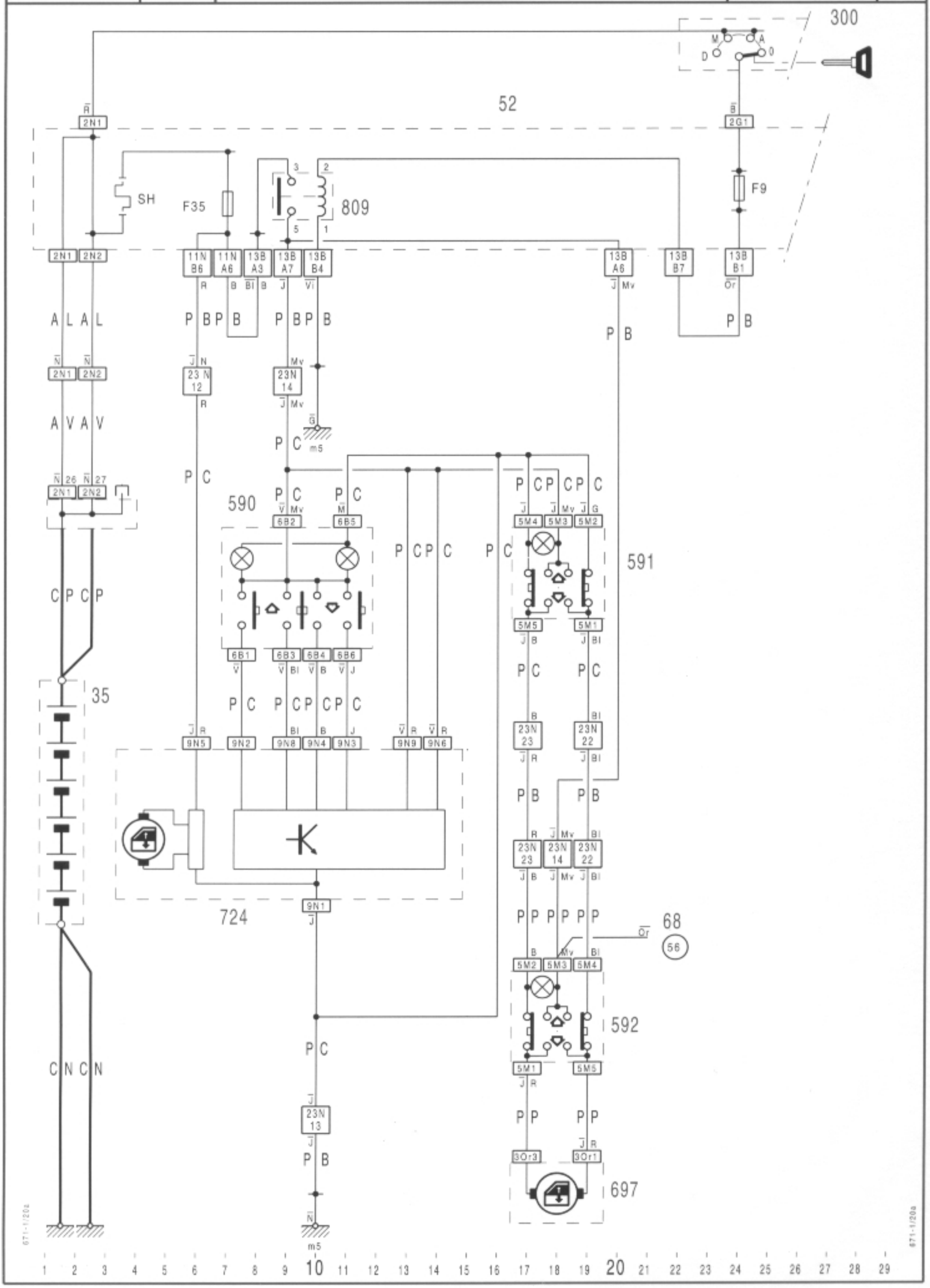
www.WorkshopManuals.co.uk



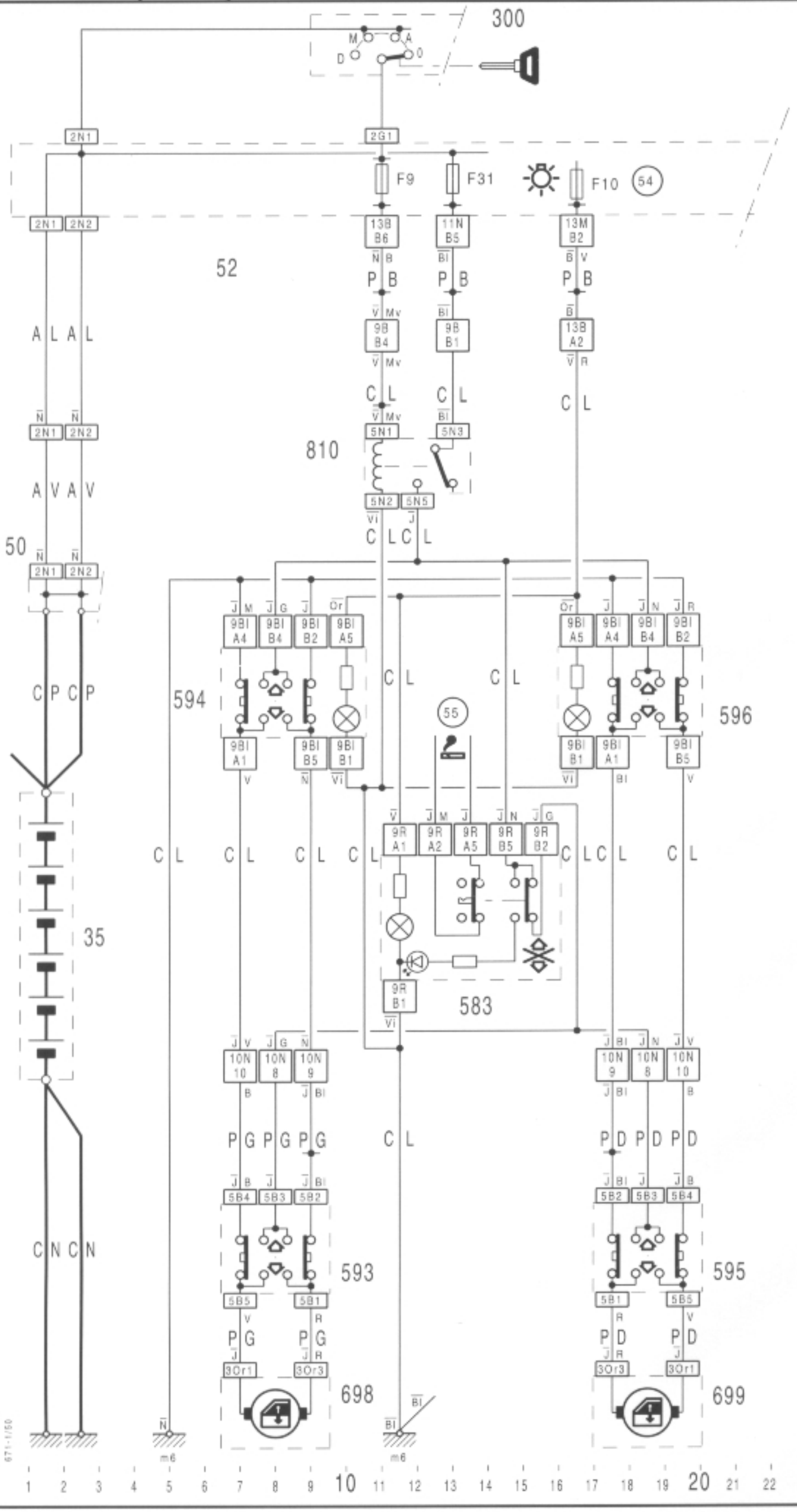
www.WorkshopManuals.co.uk



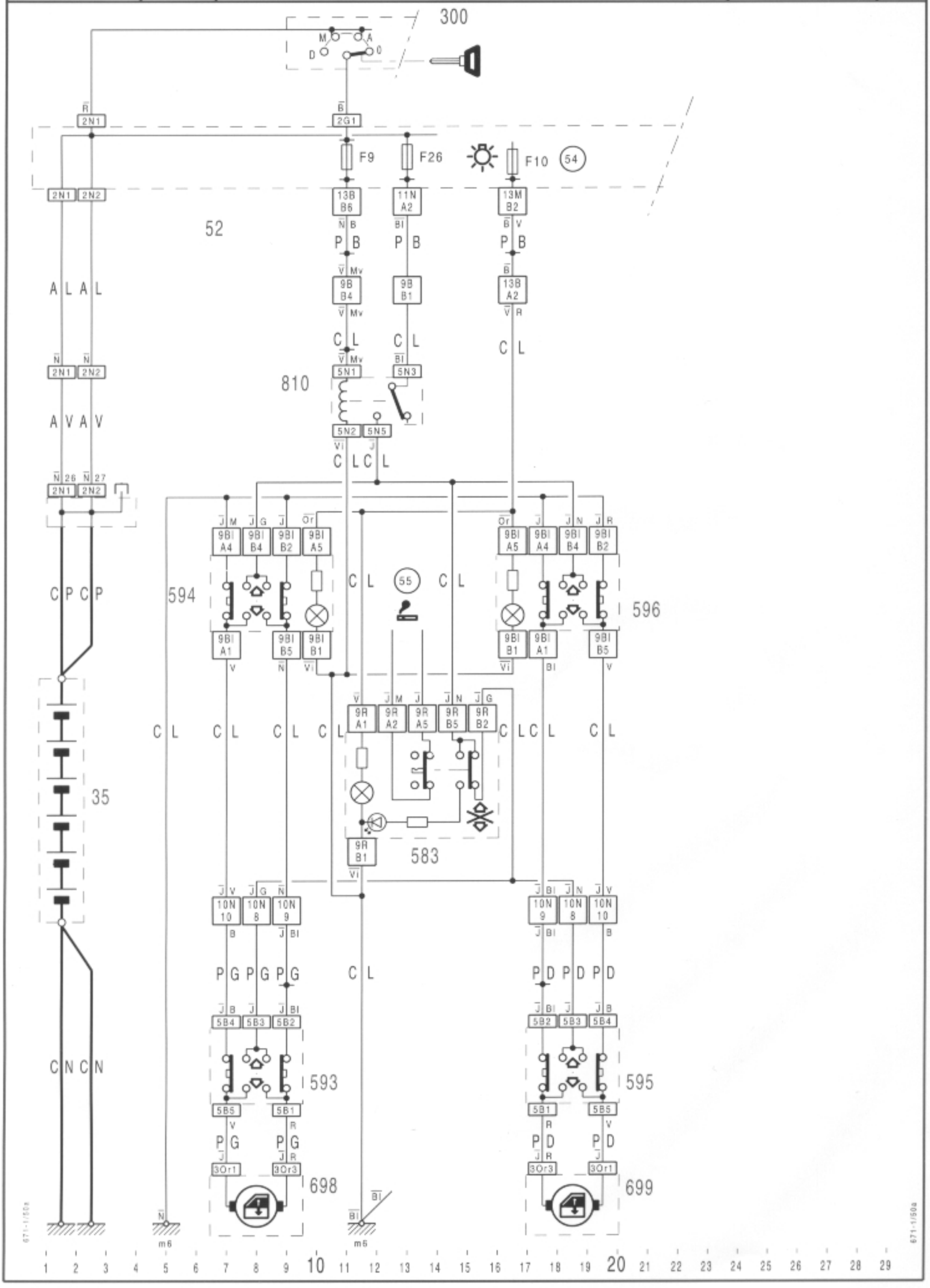
www.WorkshopManuals.co.uk



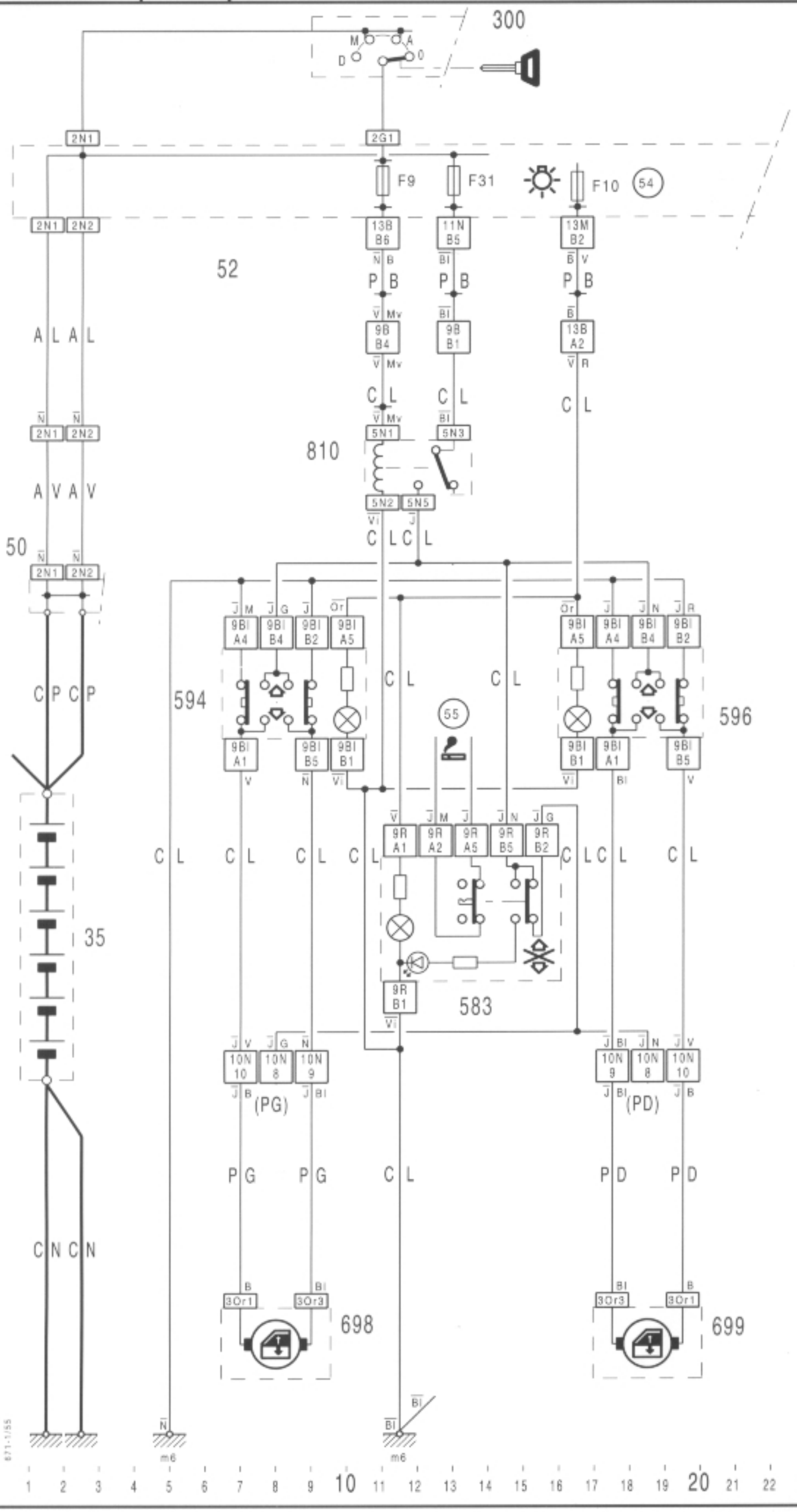
www.WorkshopManuals.co.uk



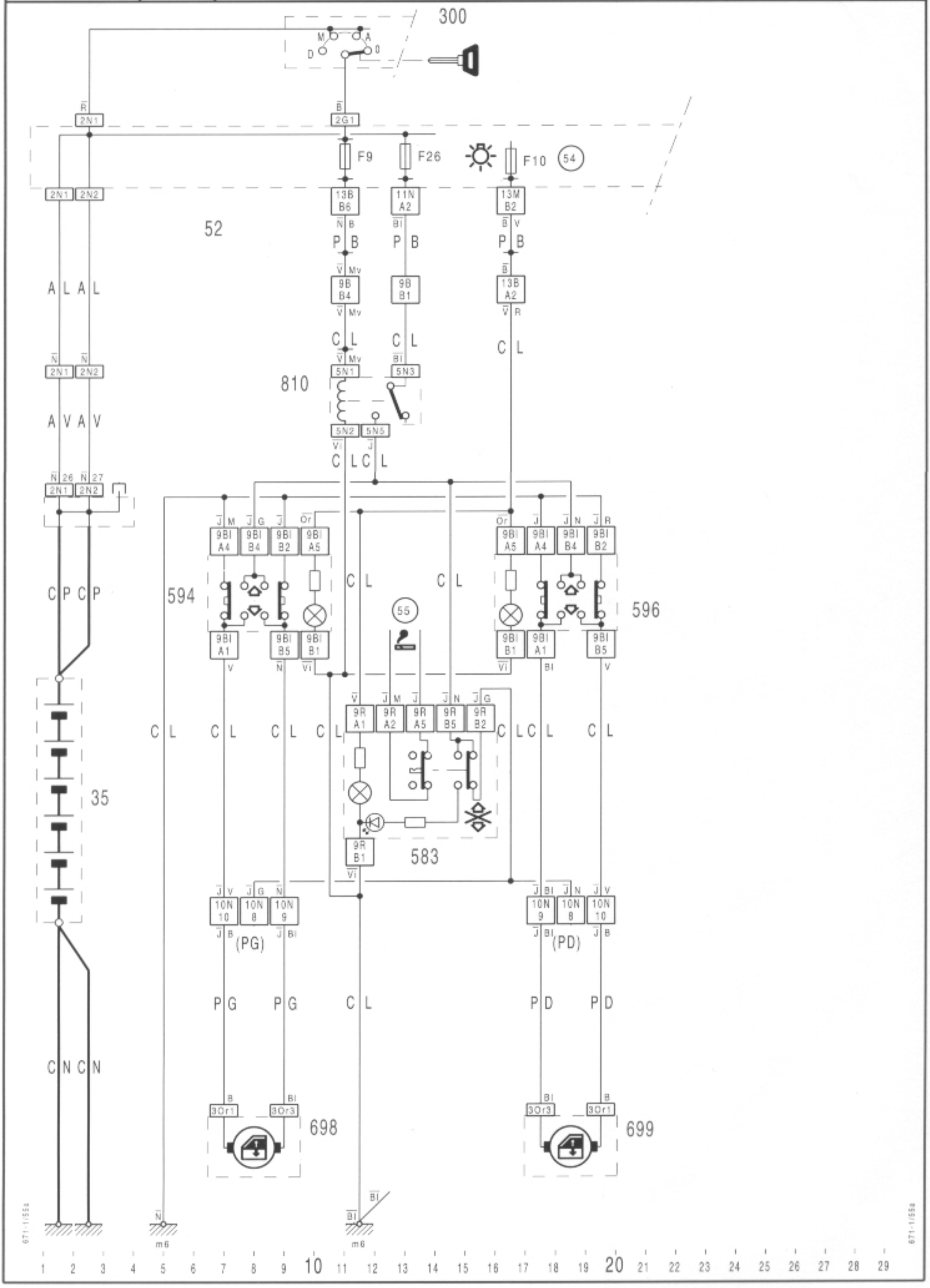
www.WorkshopManuals.co.uk



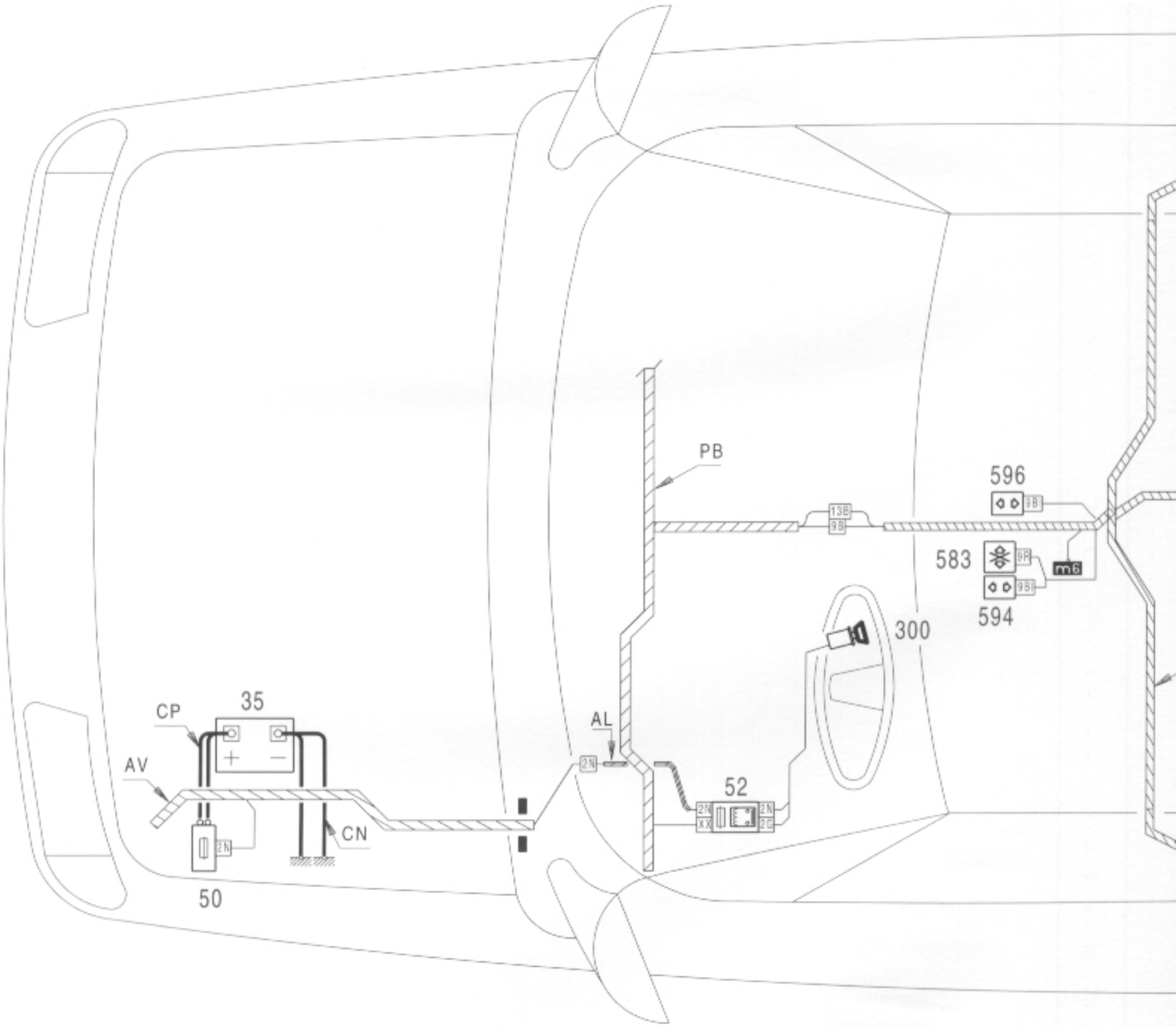
www.WorkshopManuals.co.uk



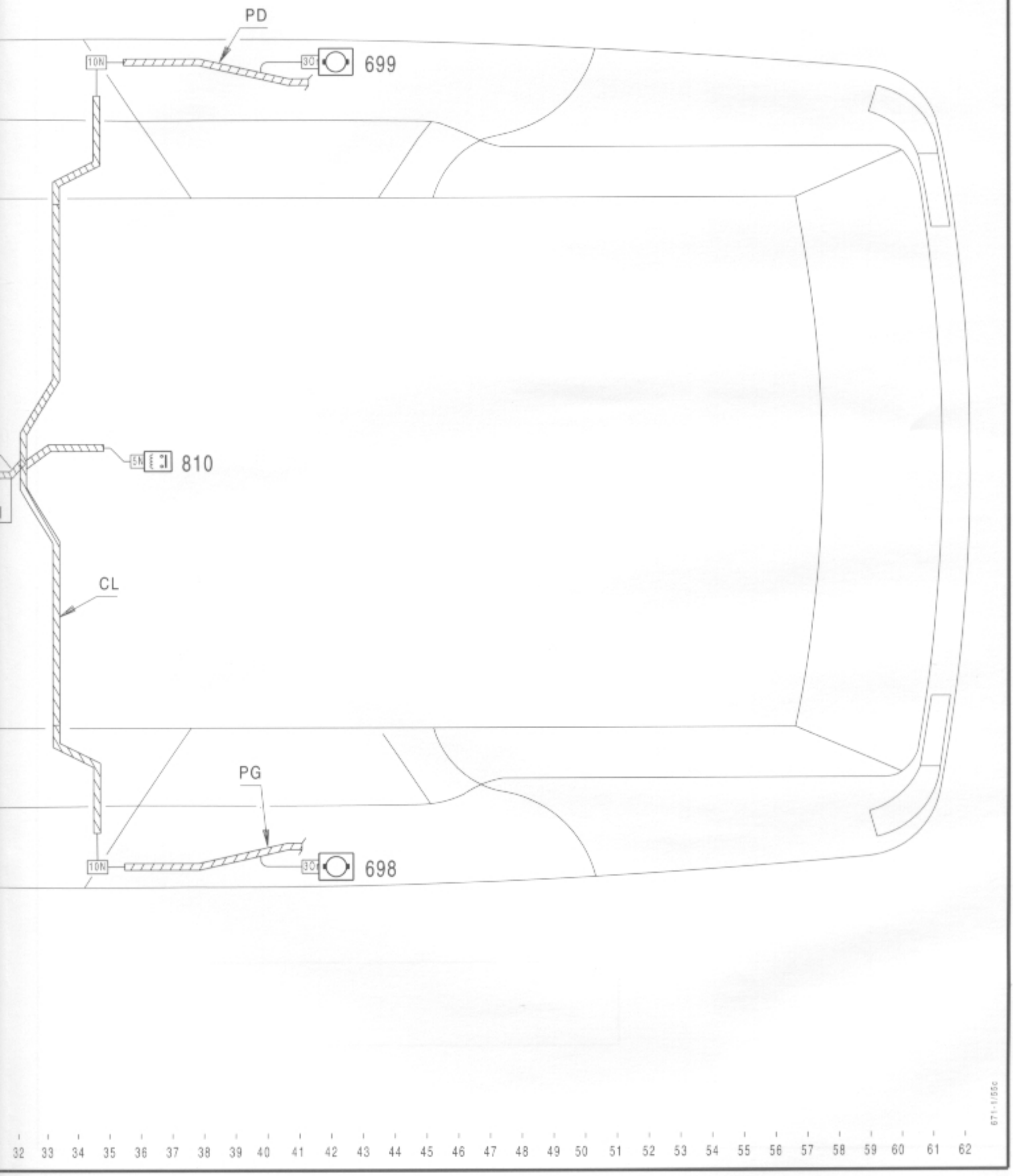
www.WorkshopManuals.co.uk



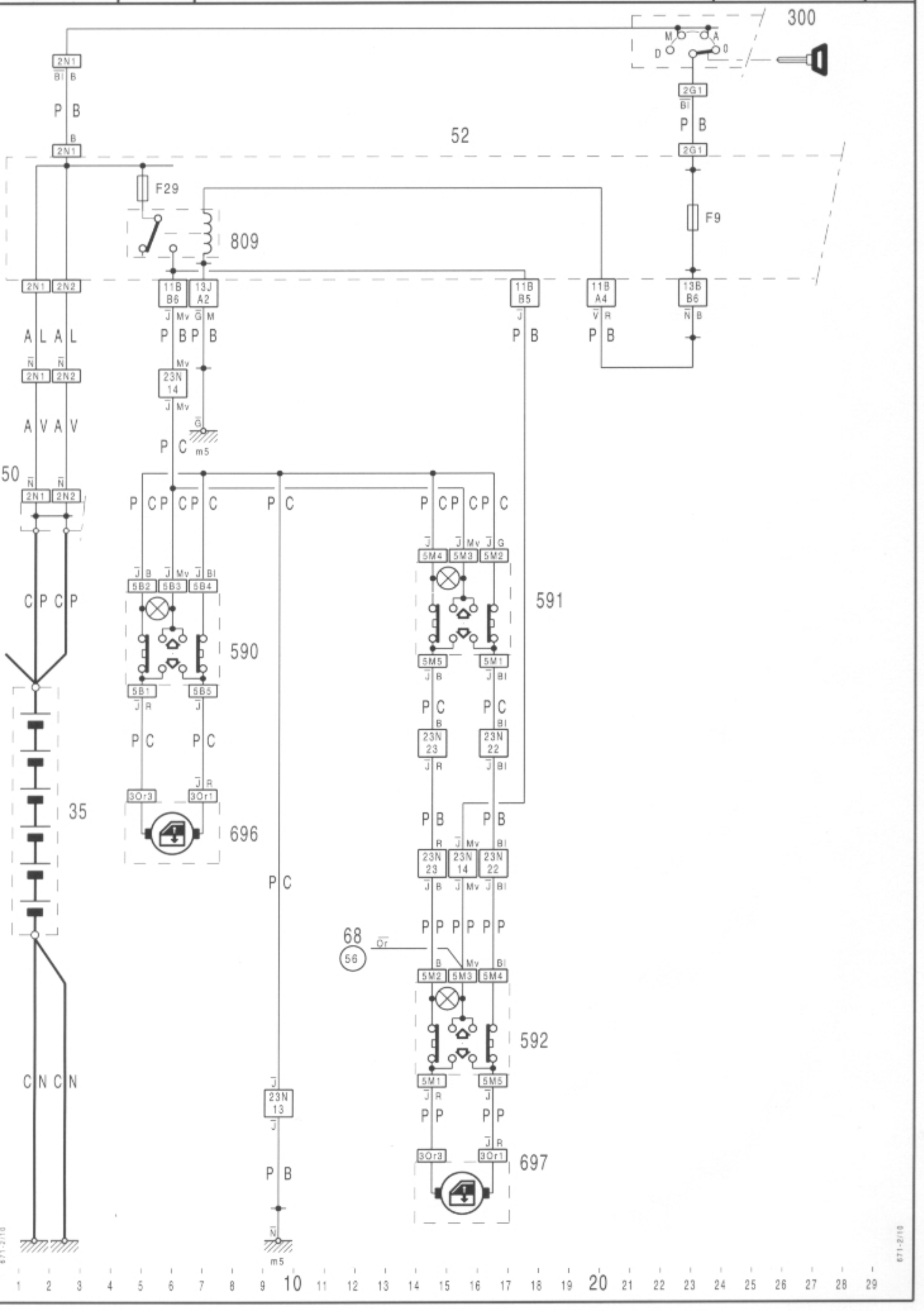
www.WorkshopManuals.co.uk



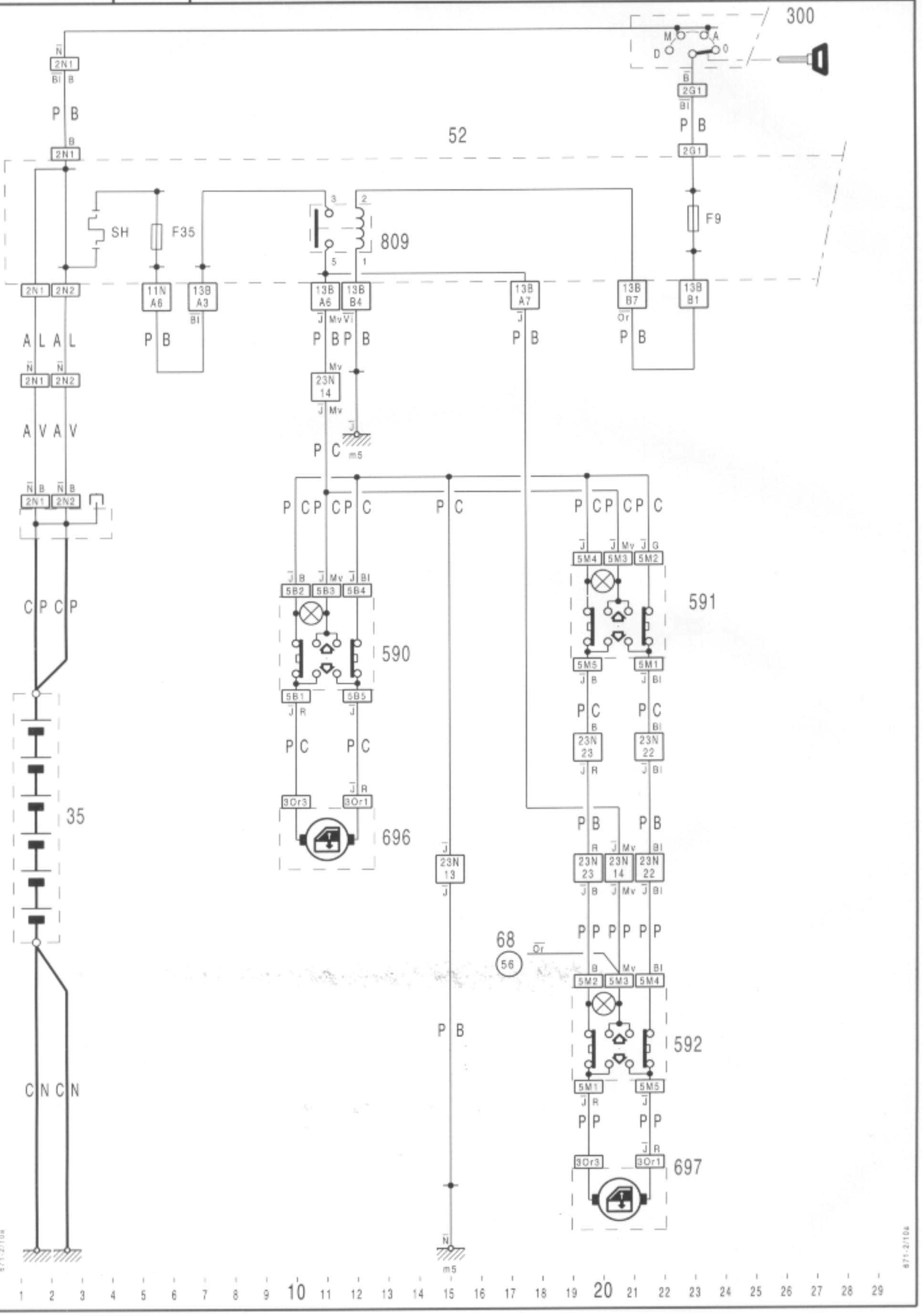
www.WorkshopManuals.co.uk



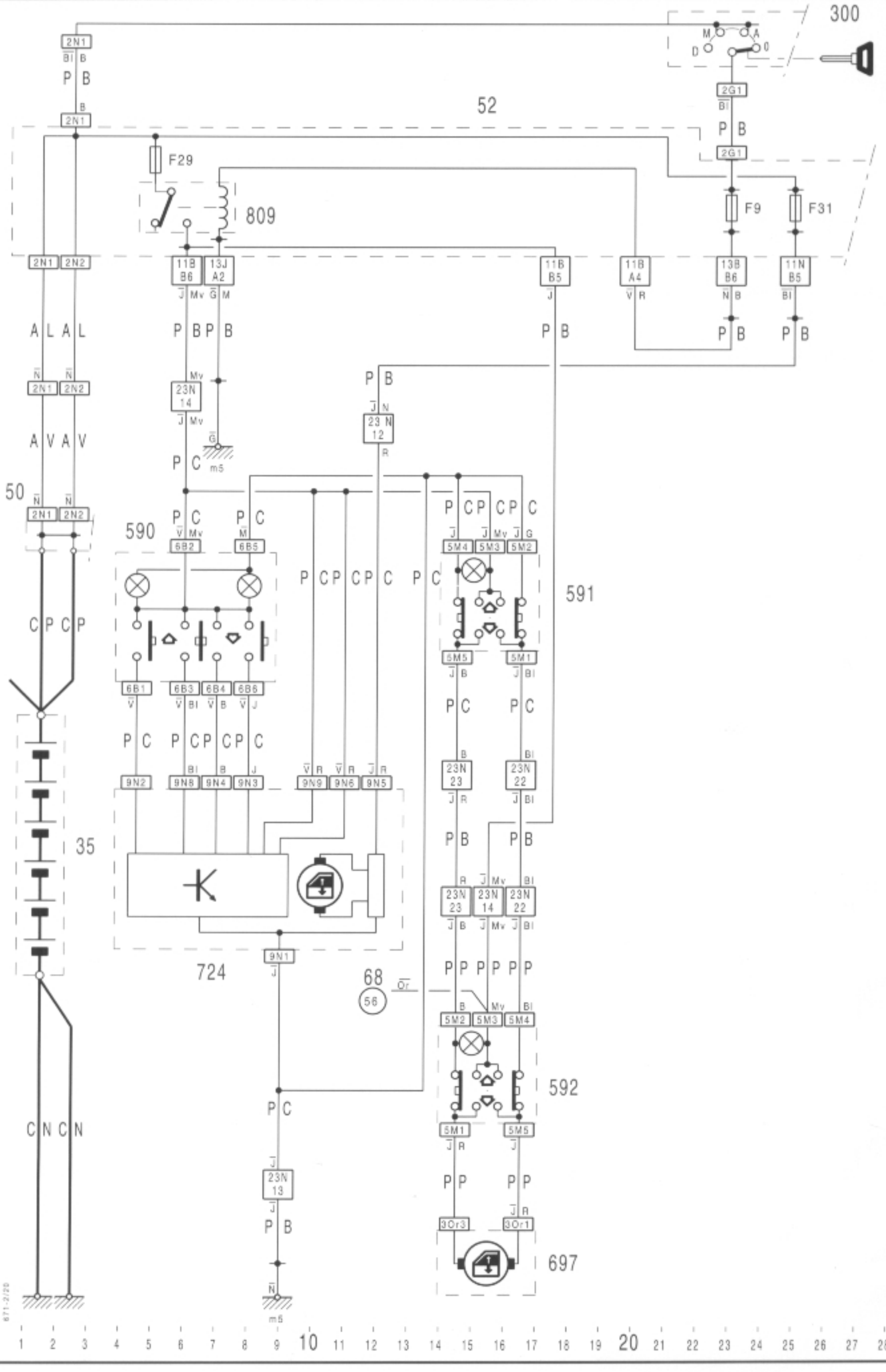
www.WorkshopManuals.co.uk



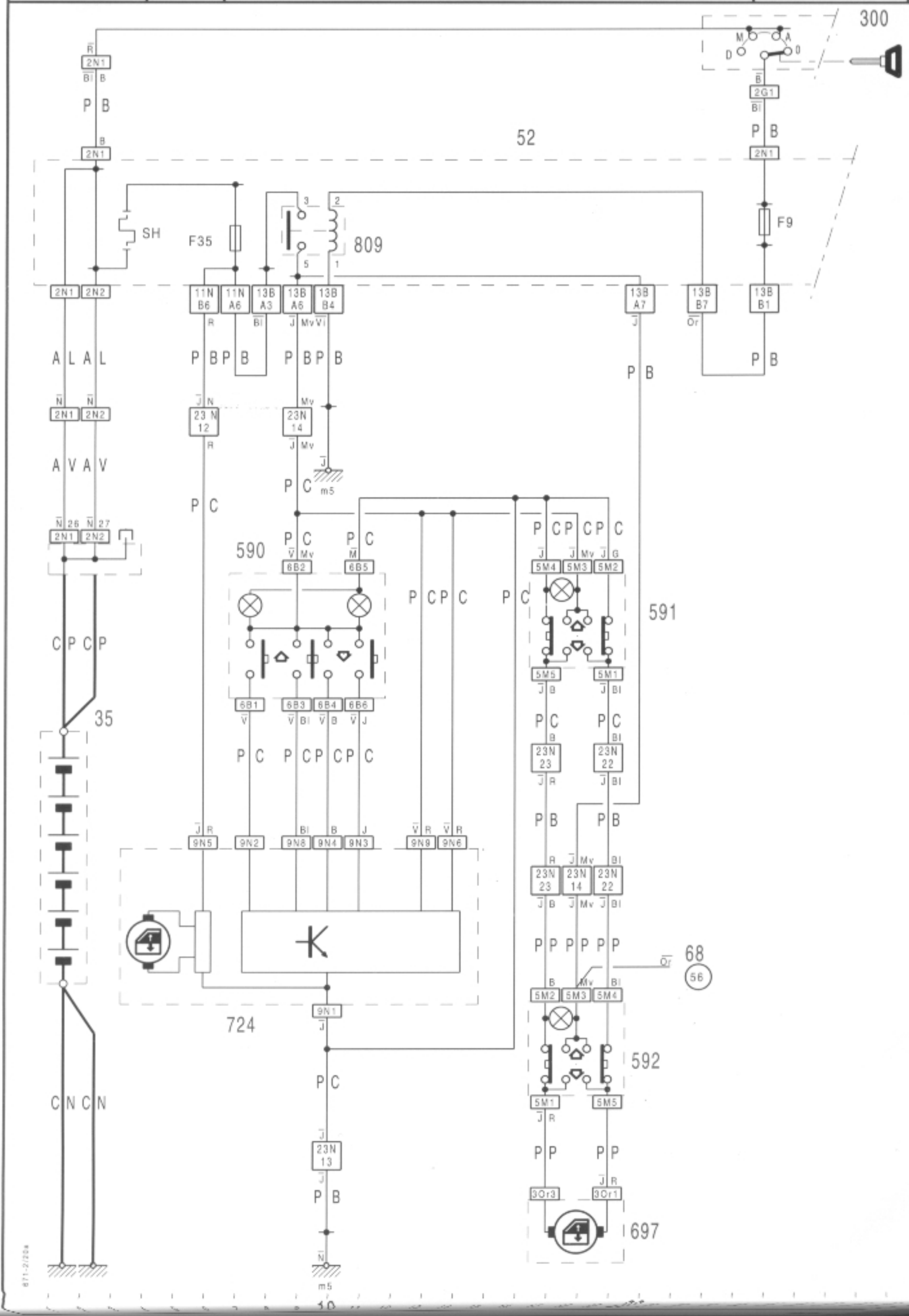
www.WorkshopManuals.co.uk



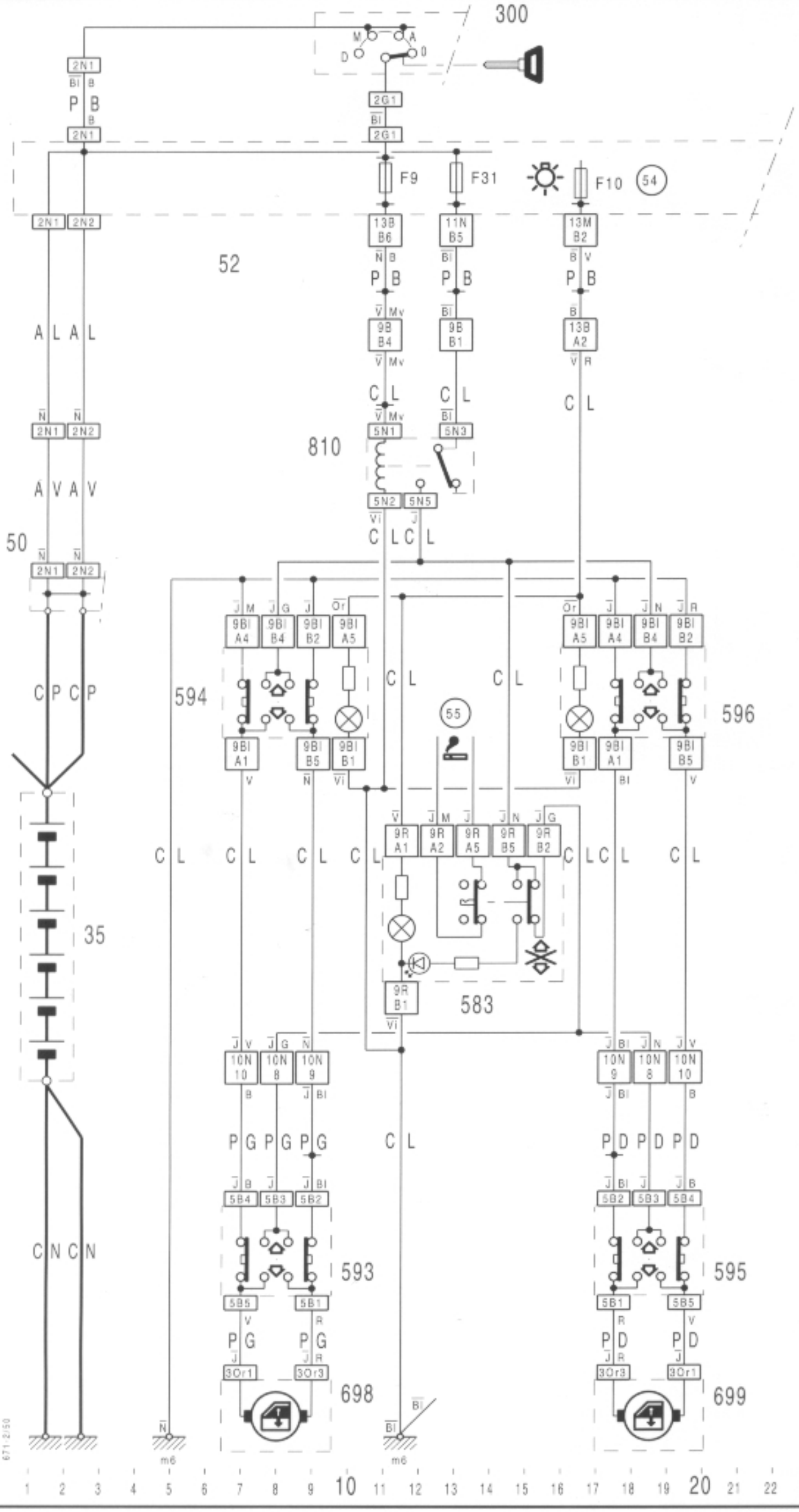
www.WorkshopManuals.co.uk



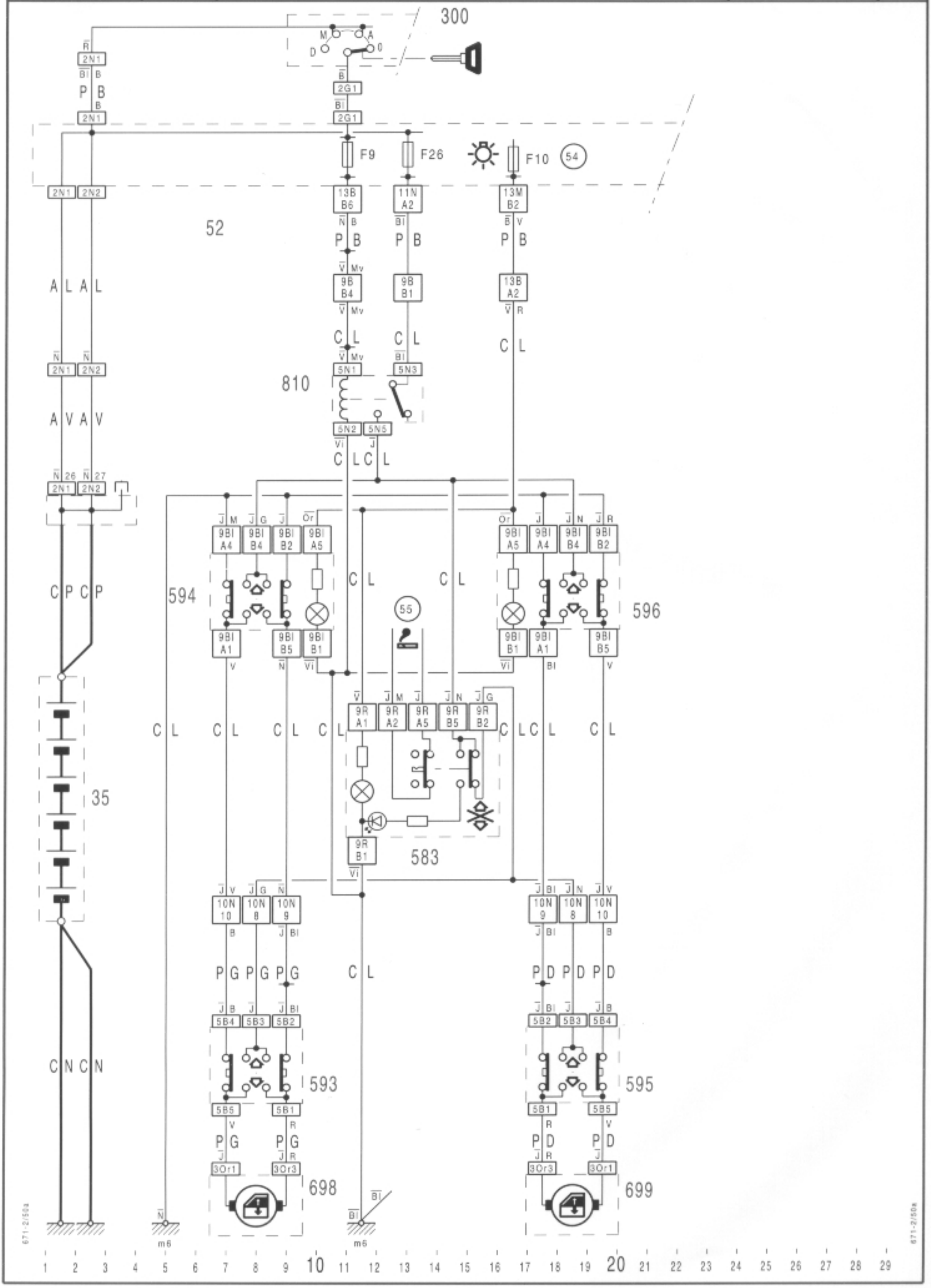
www.WorkshopManuals.co.uk



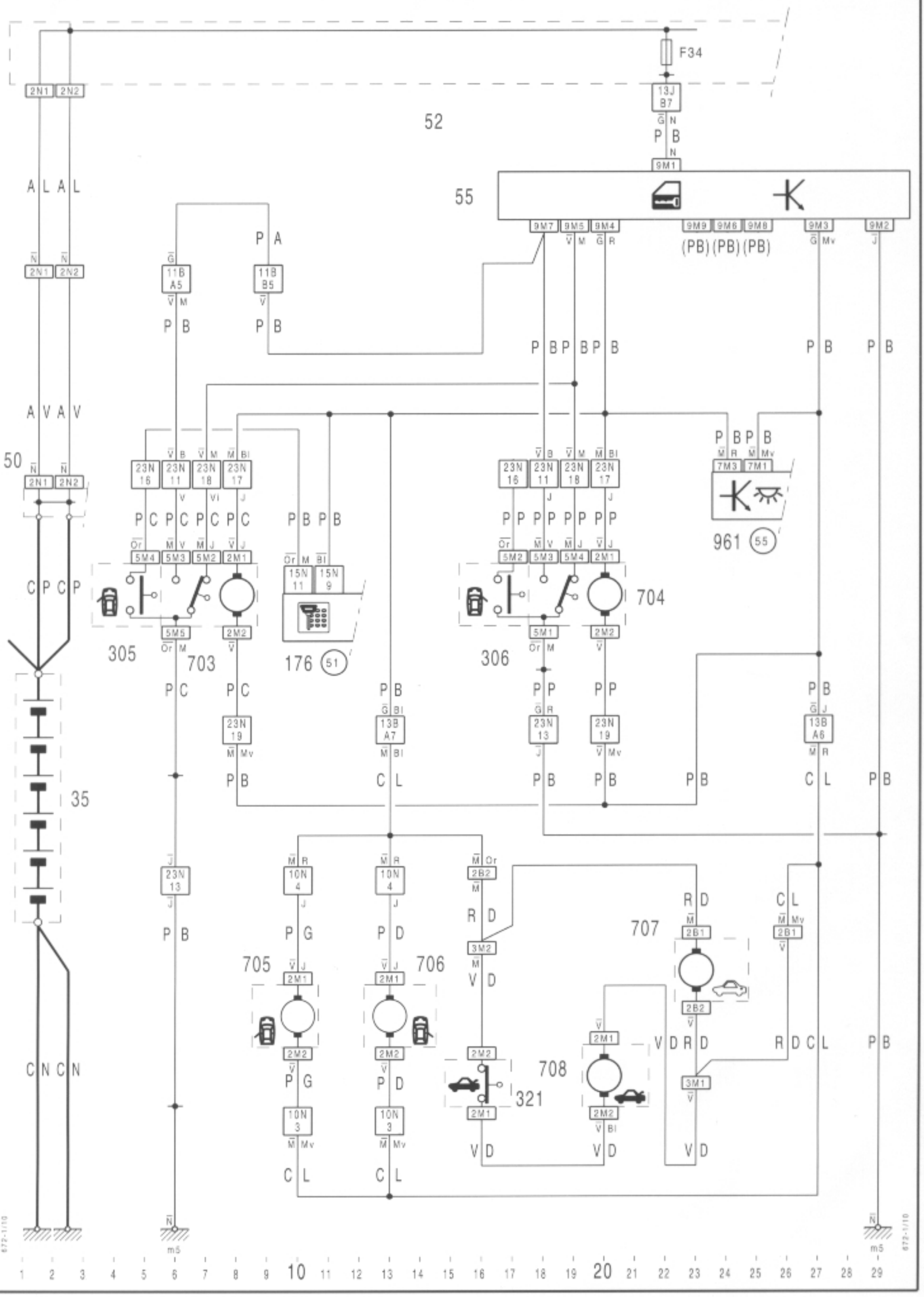
www.WorkshopManuals.co.uk



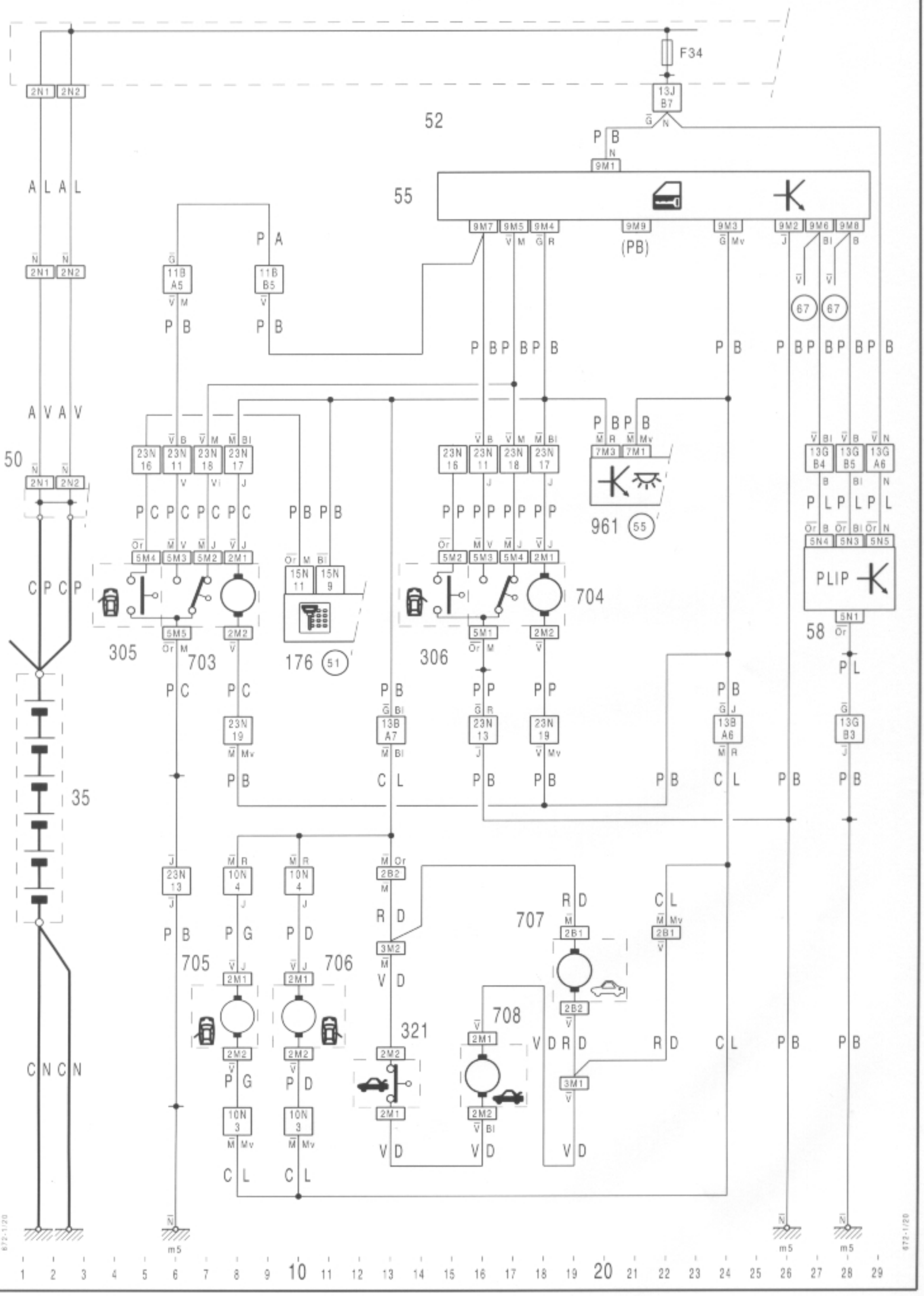
www.WorkshopManuals.co.uk



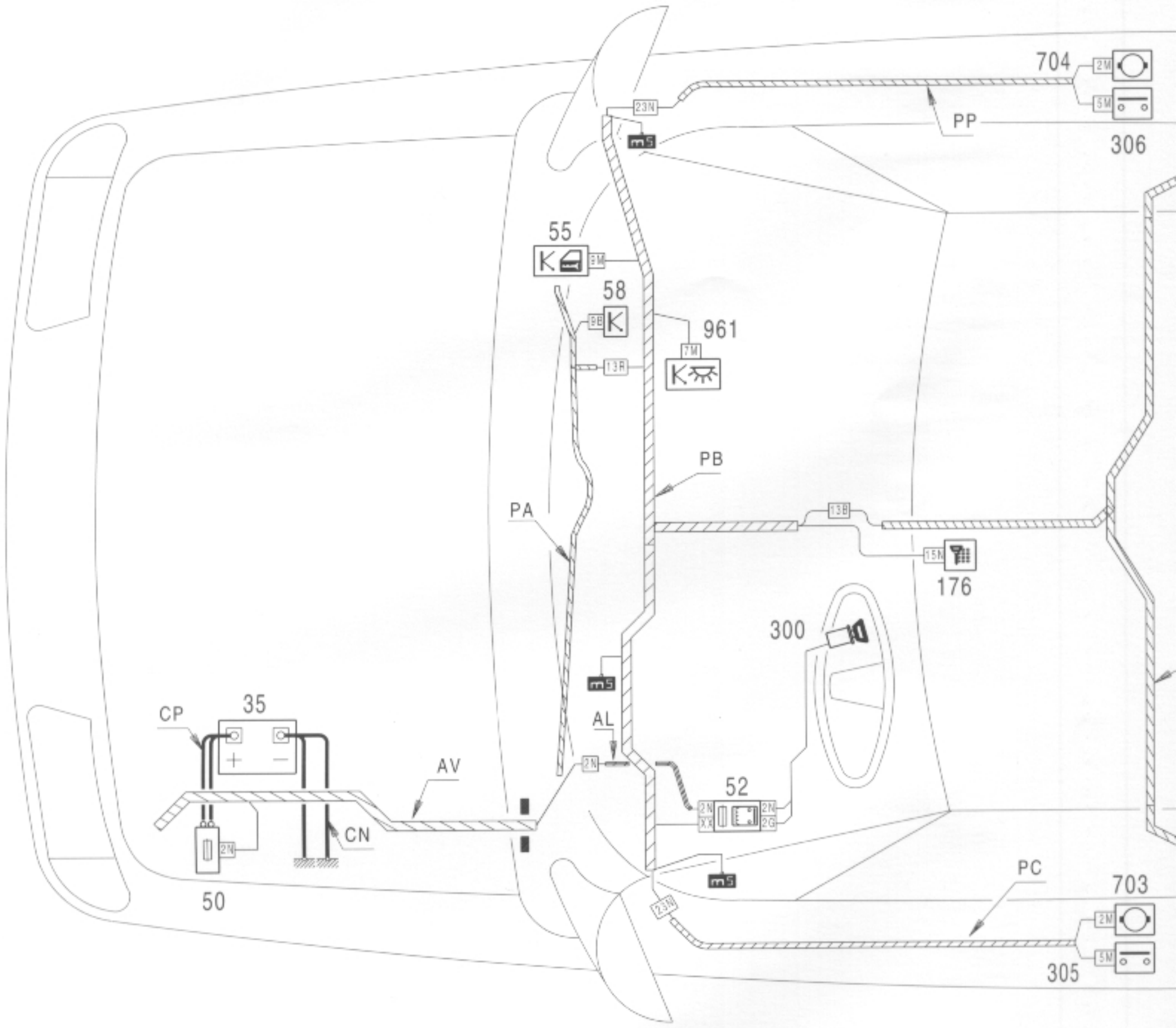
www.WorkshopManuals.co.uk



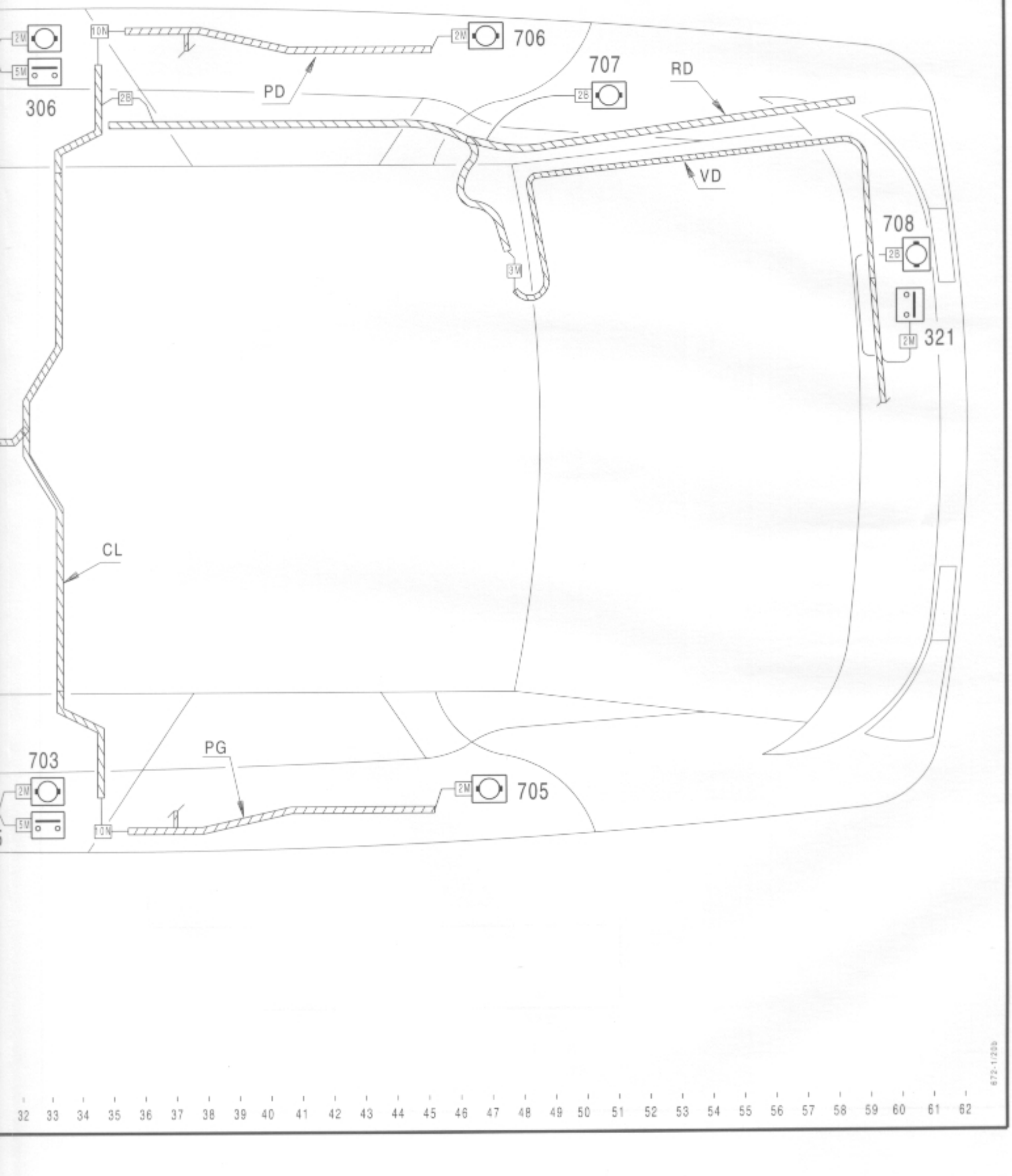
www.WorkshopManuals.co.uk



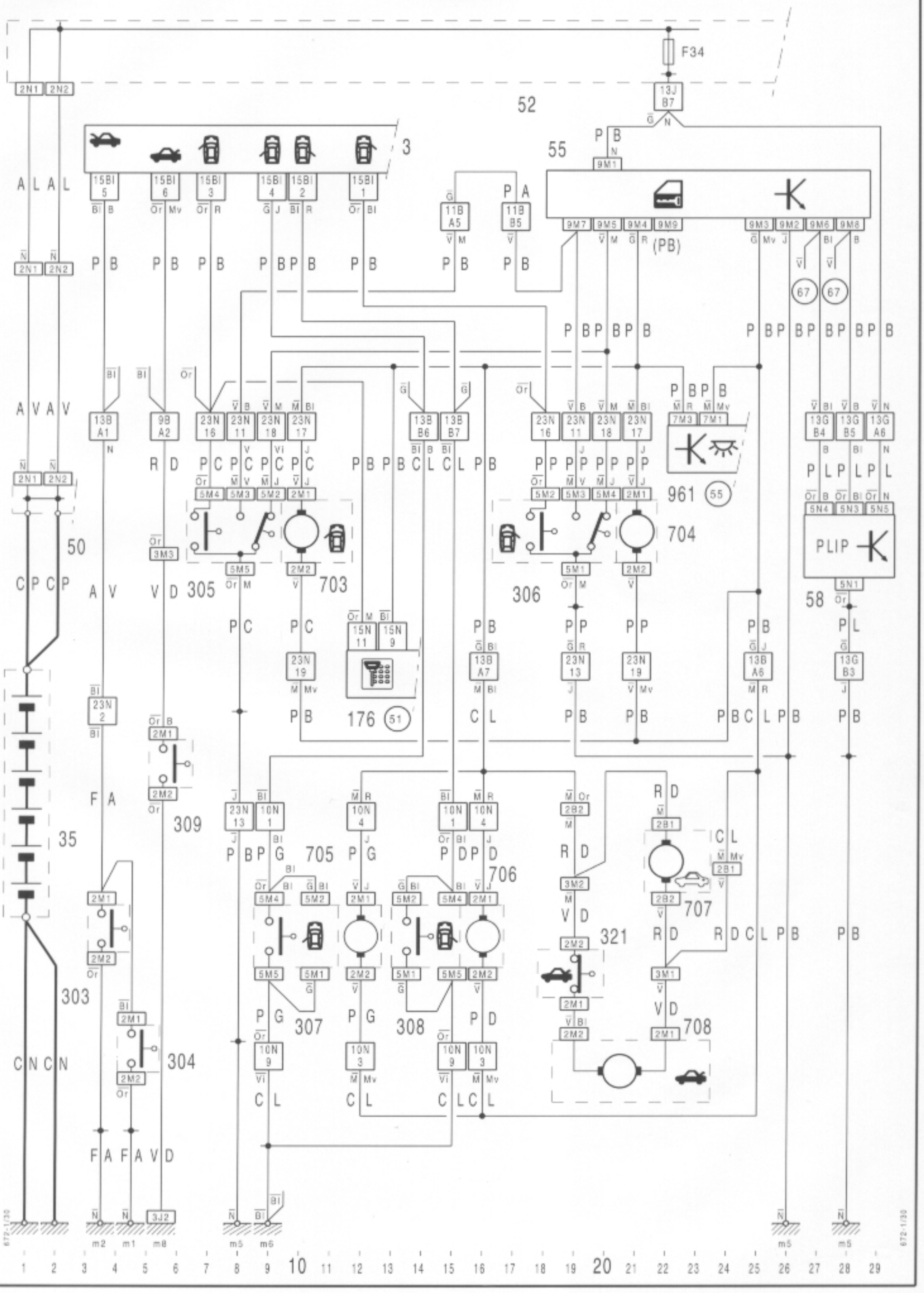
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

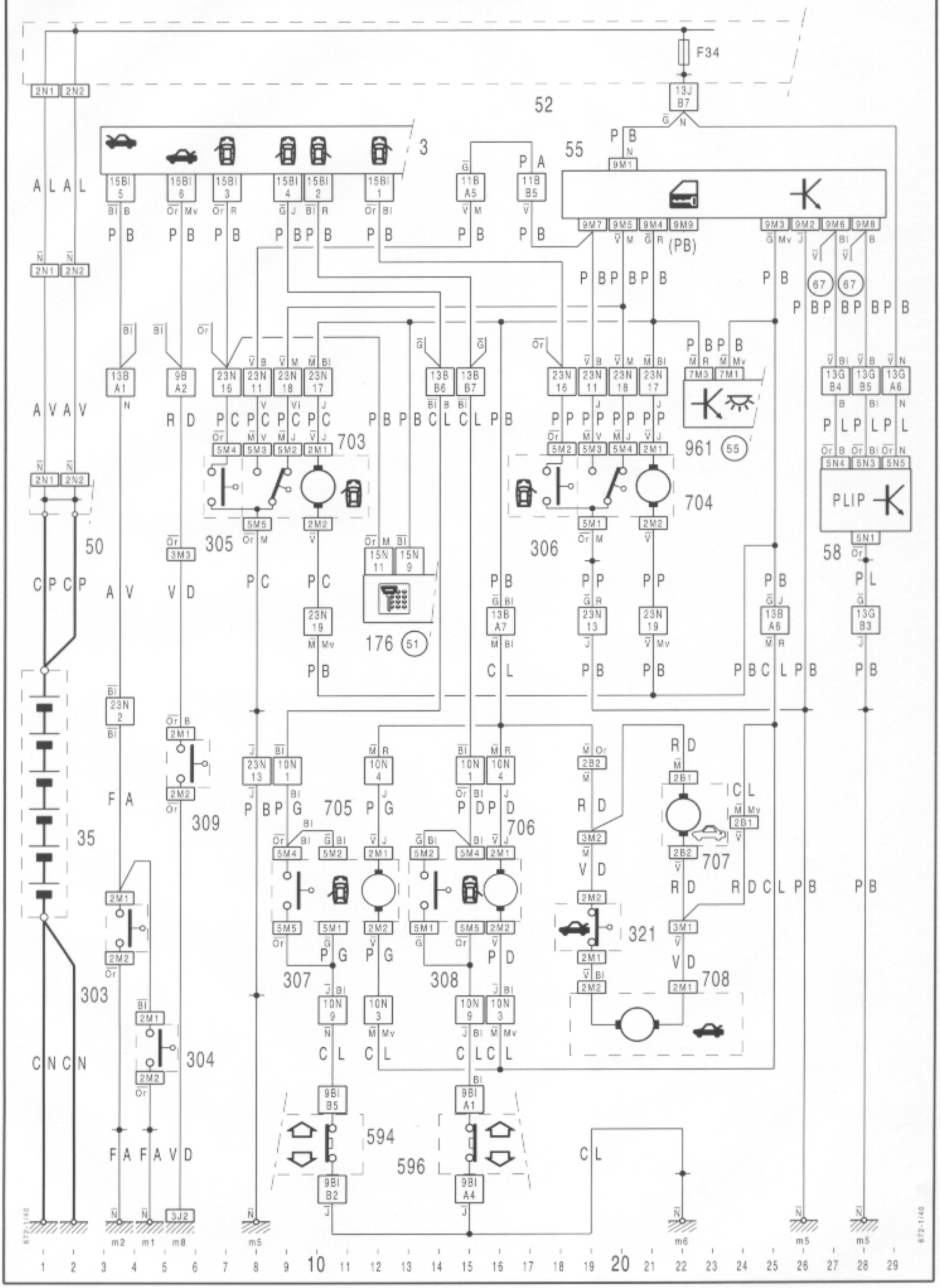


www.WorkshopManuals.co.uk



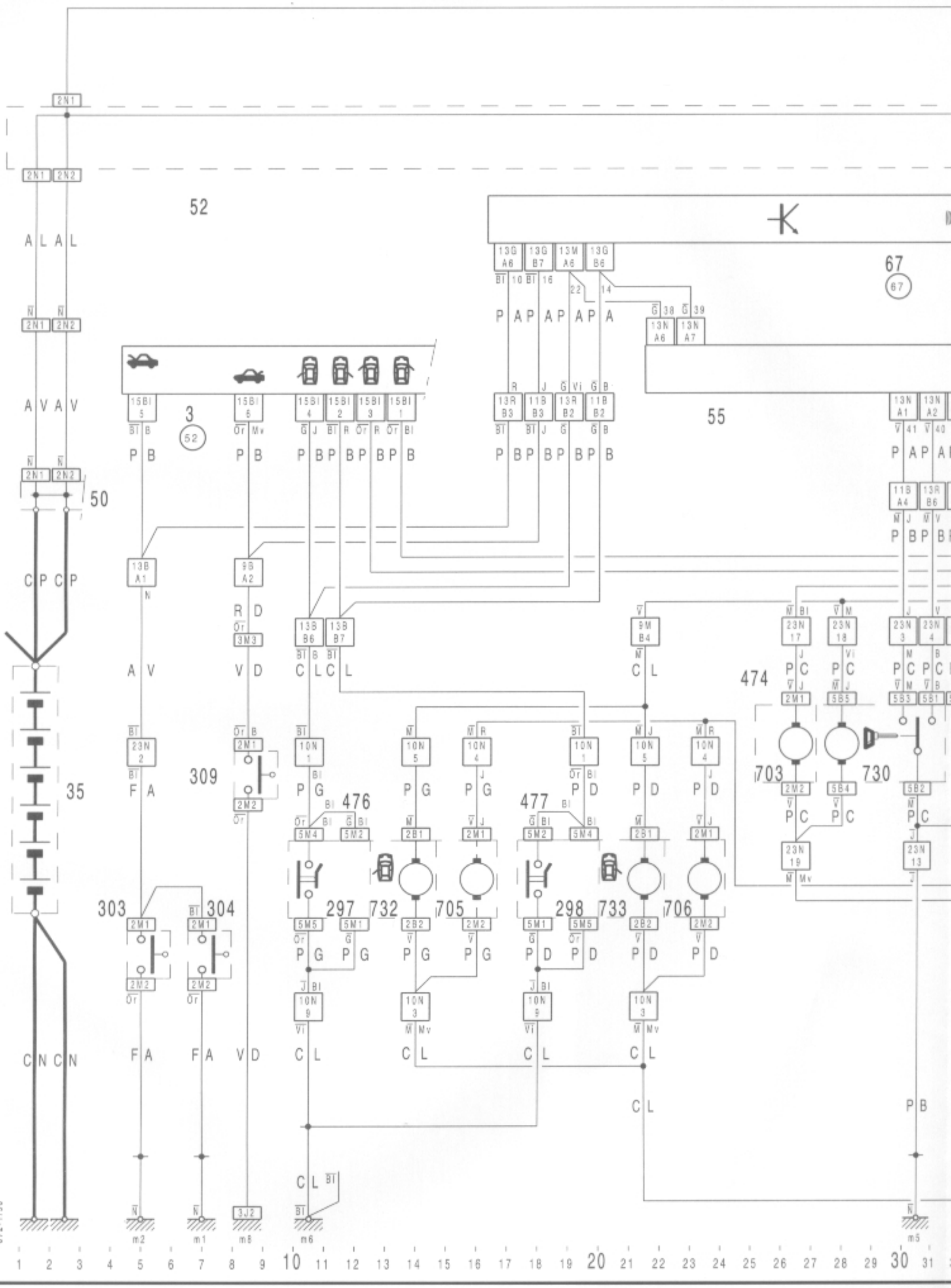
8935

www.WorkshopManuals.co.uk



8935

www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

300

F22

F5

295

704

731

296

475

176

280

58

598

321

707

708

310

311

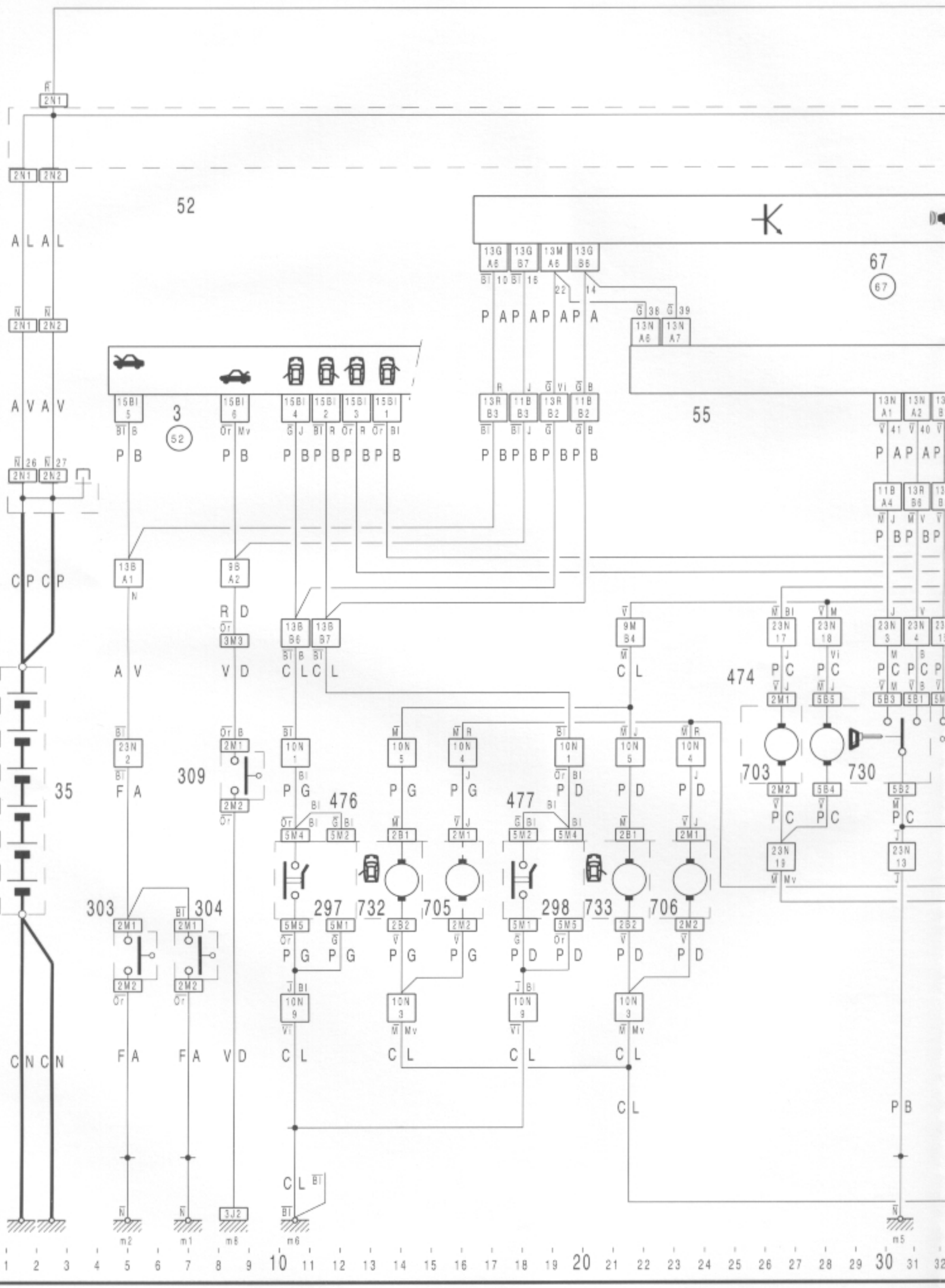
312

313

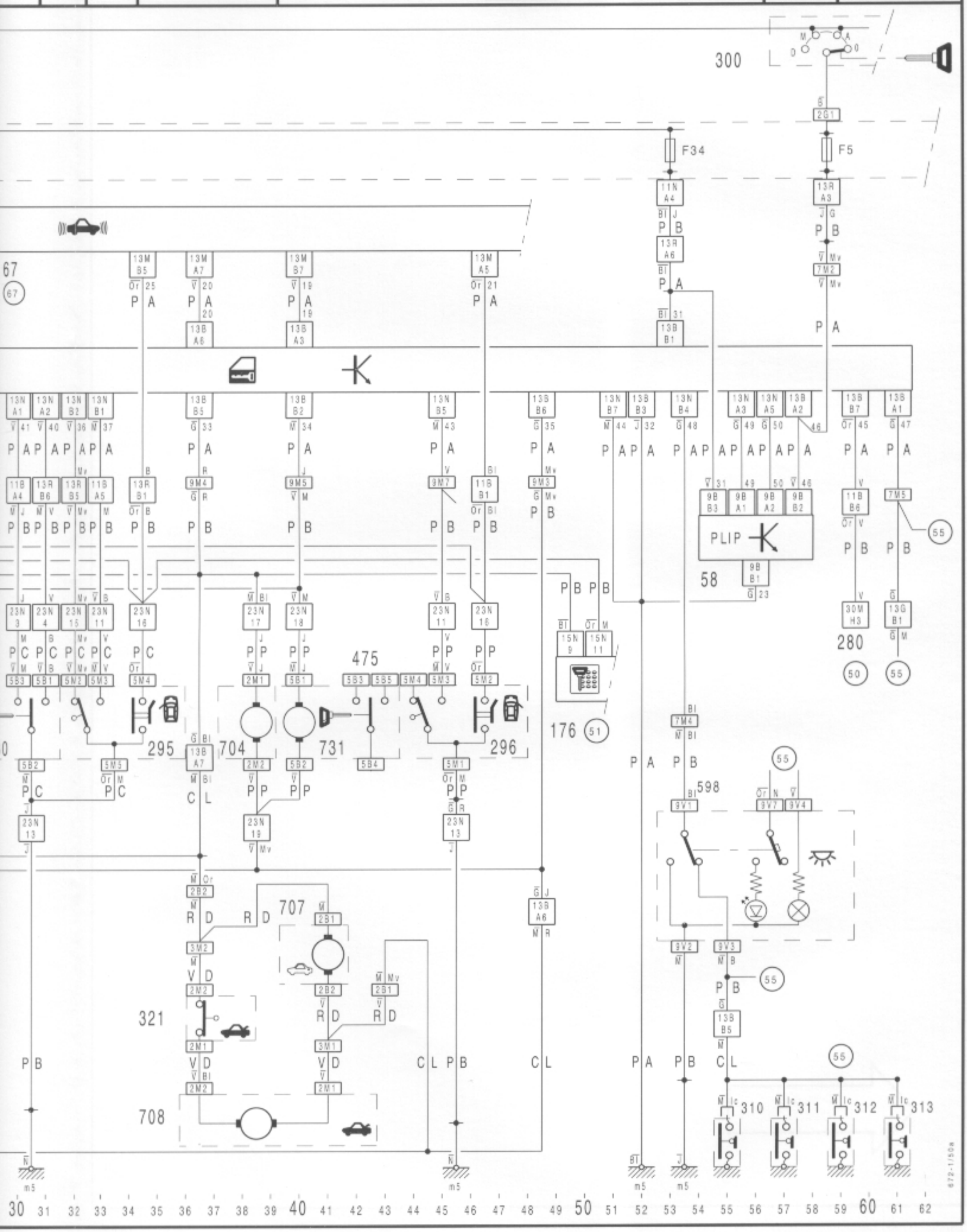
PLIP

672-1/50

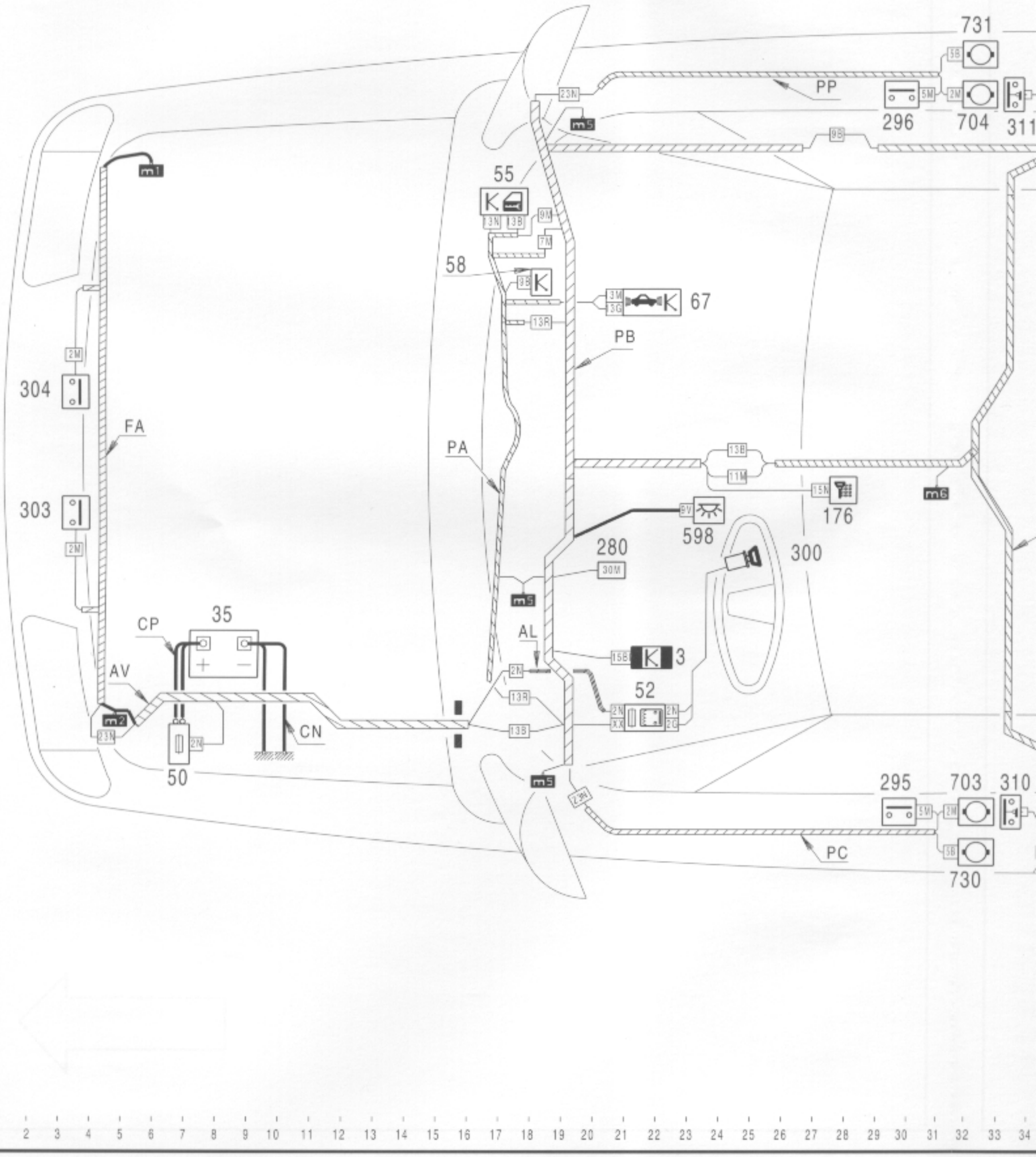
www.WorkshopManuals.co.uk



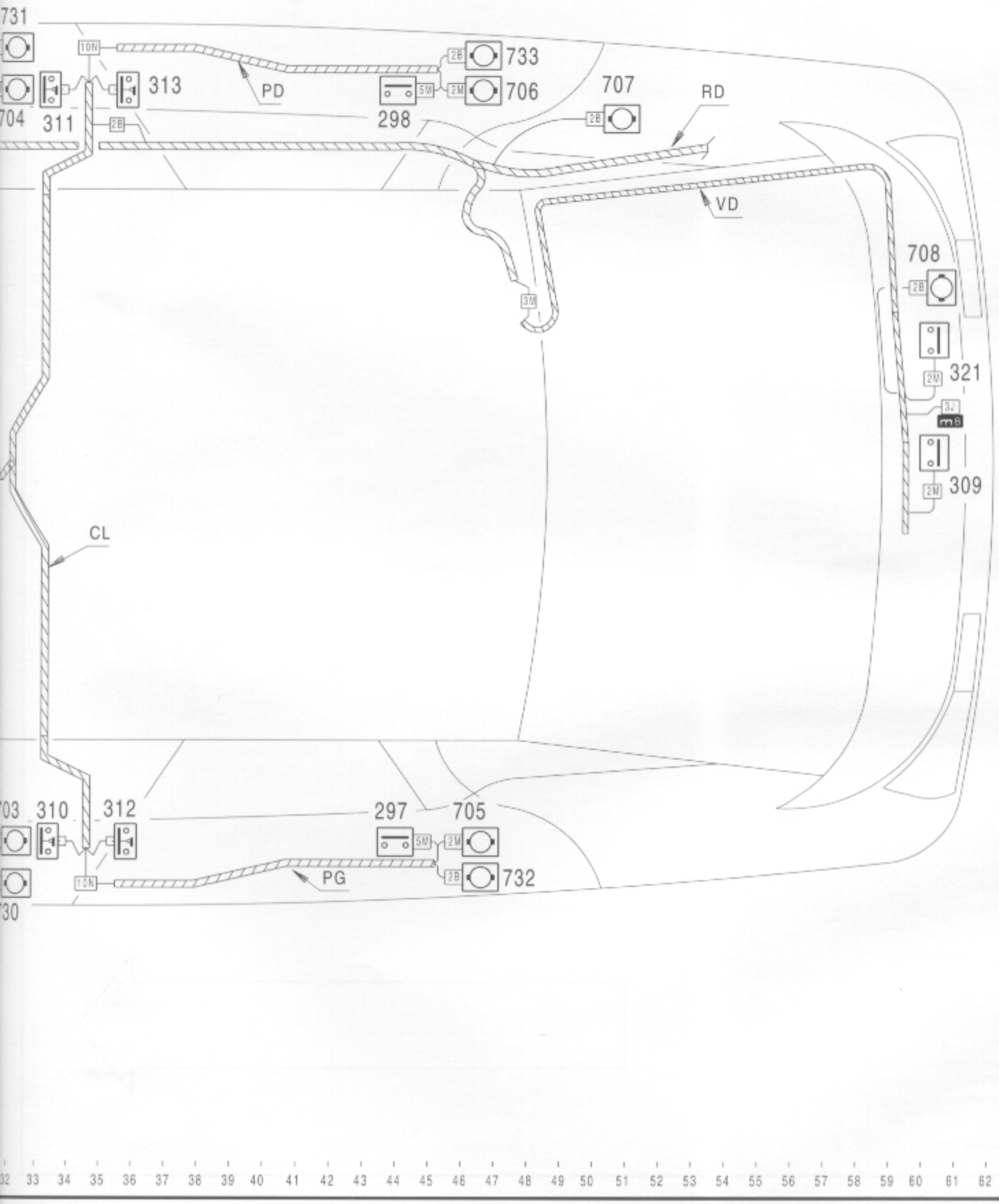
www.WorkshopManuals.co.uk



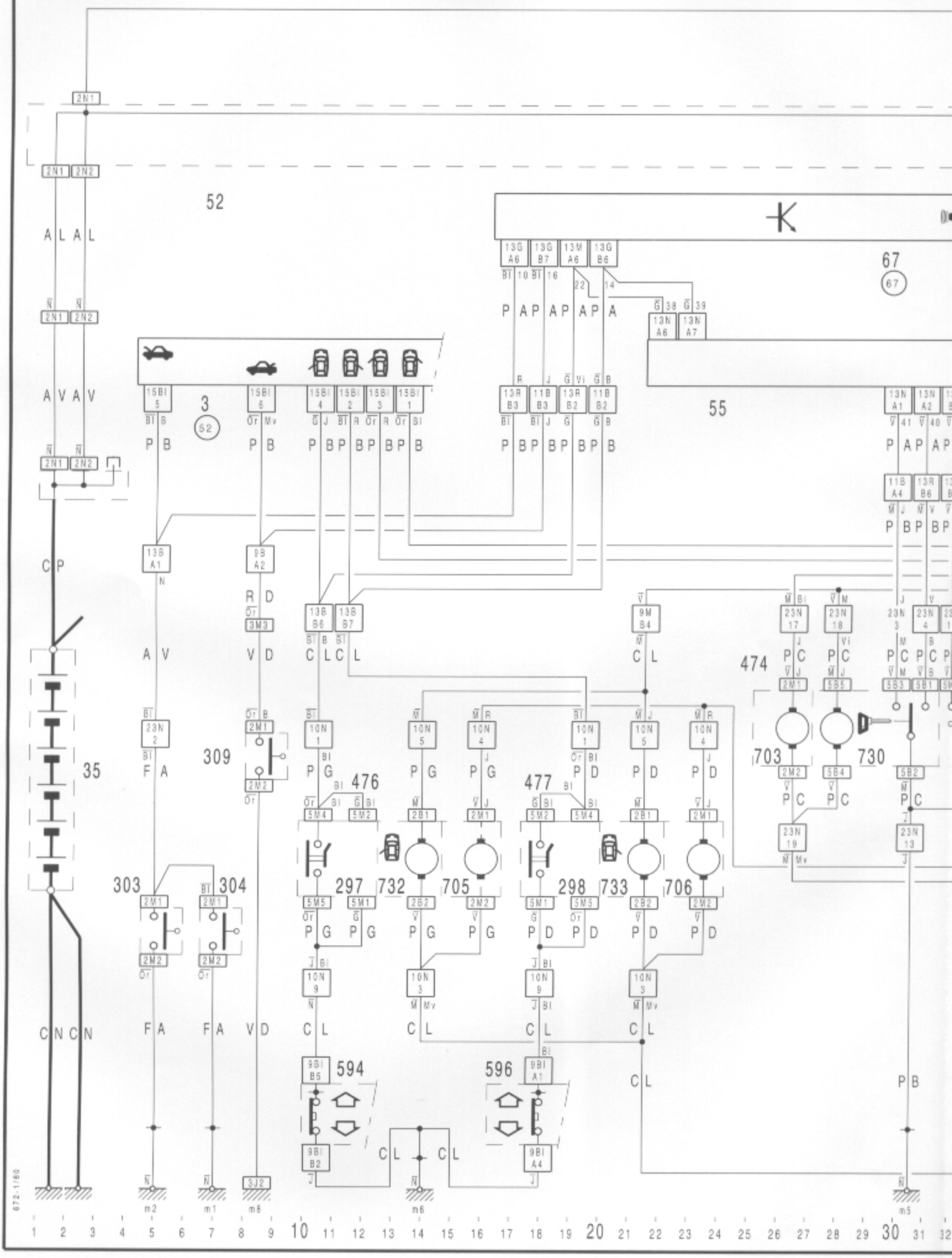
www.WorkshopManuals.co.uk



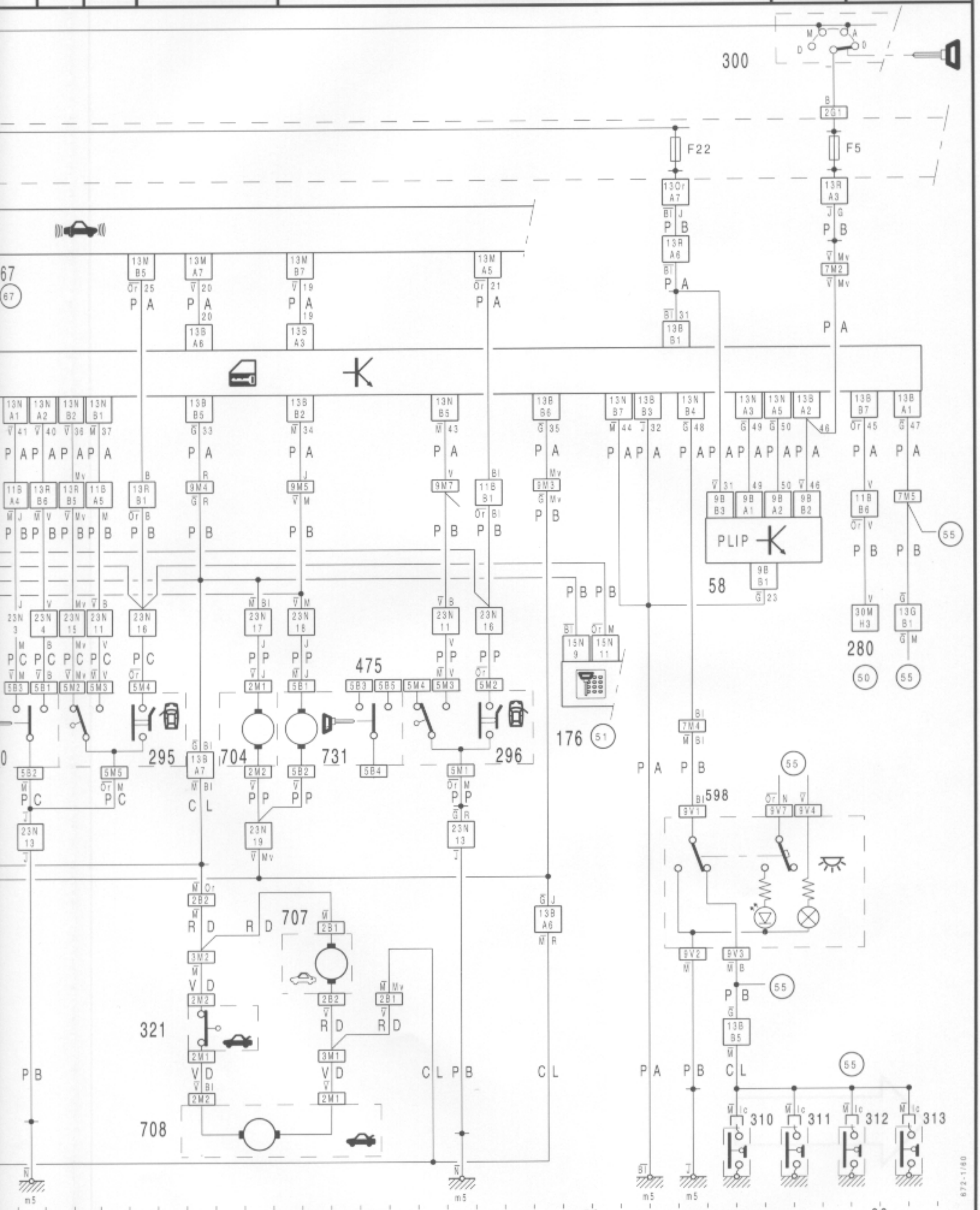
www.WorkshopManuals.co.uk



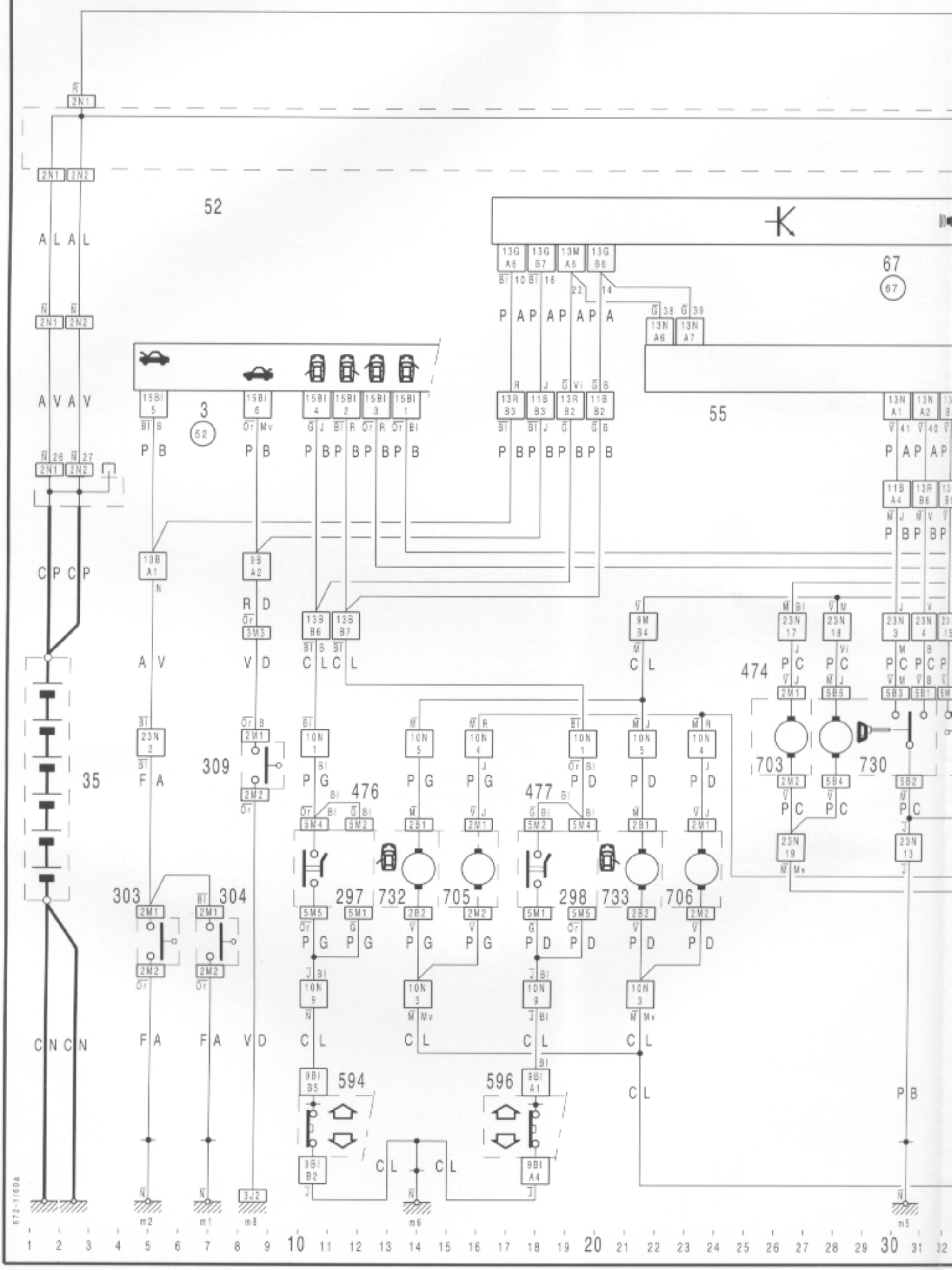
www.WorkshopManuals.co.uk



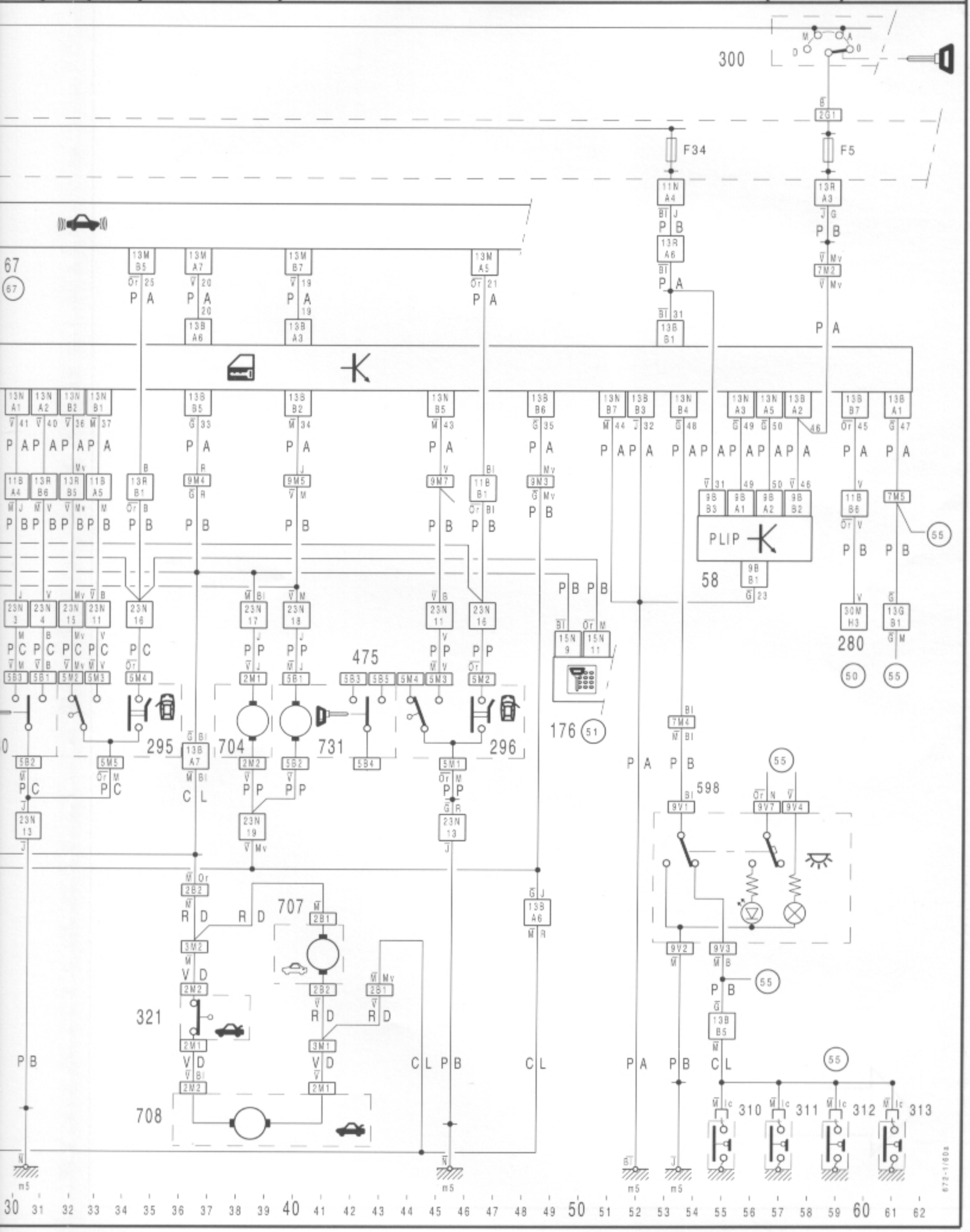
www.WorkshopManuals.co.uk



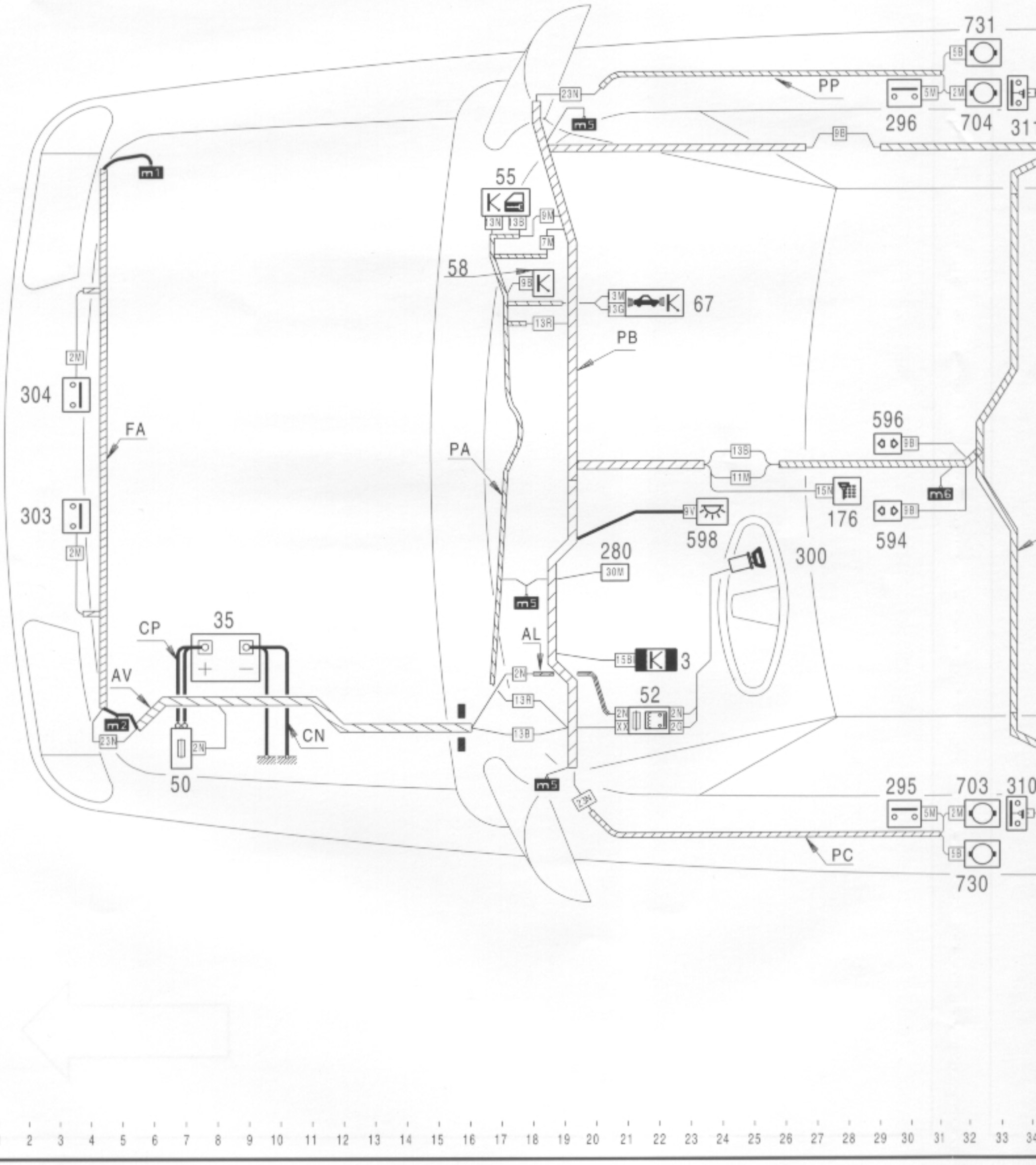
www.WorkshopManuals.co.uk



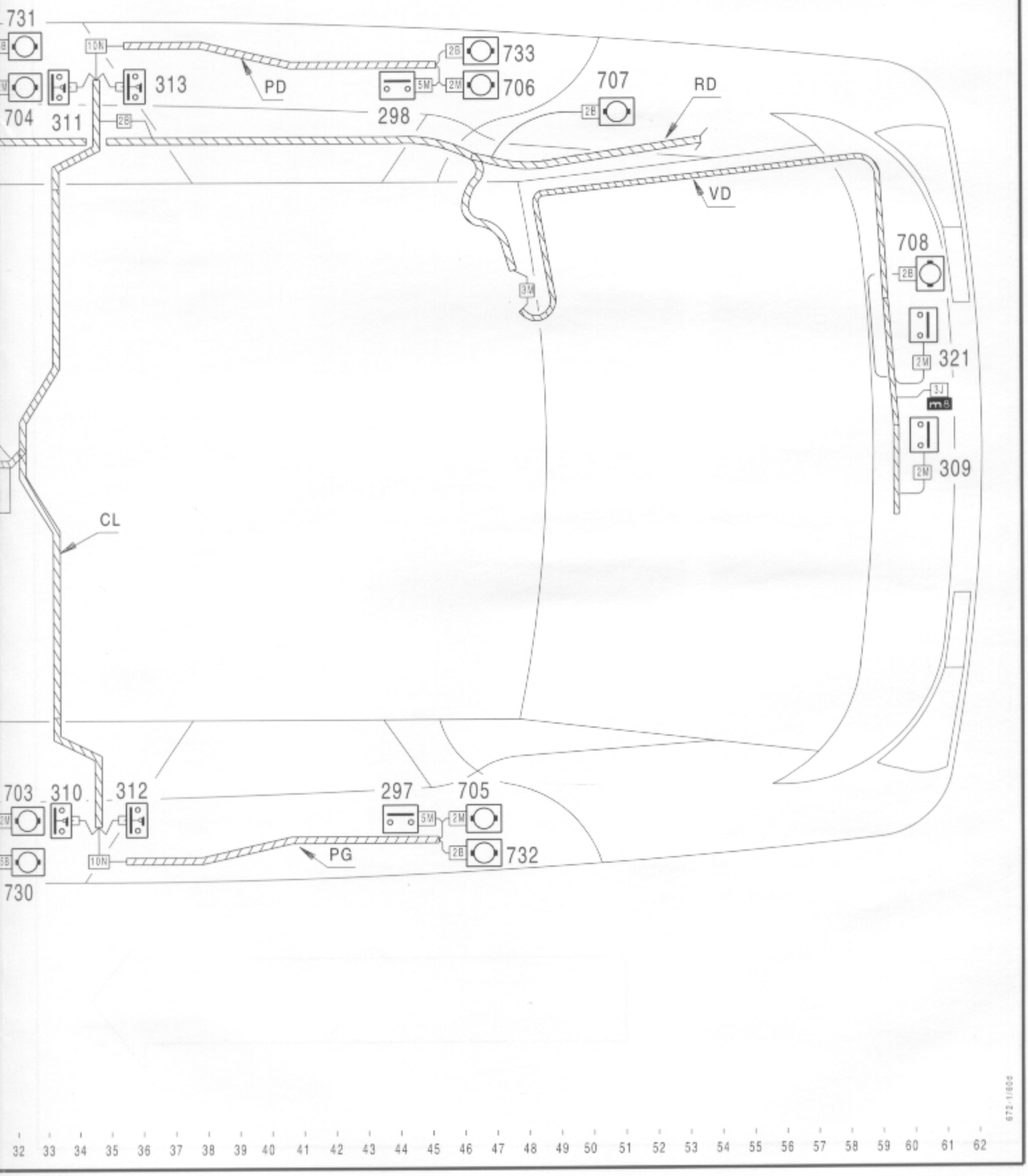
www.WorkshopManuals.co.uk



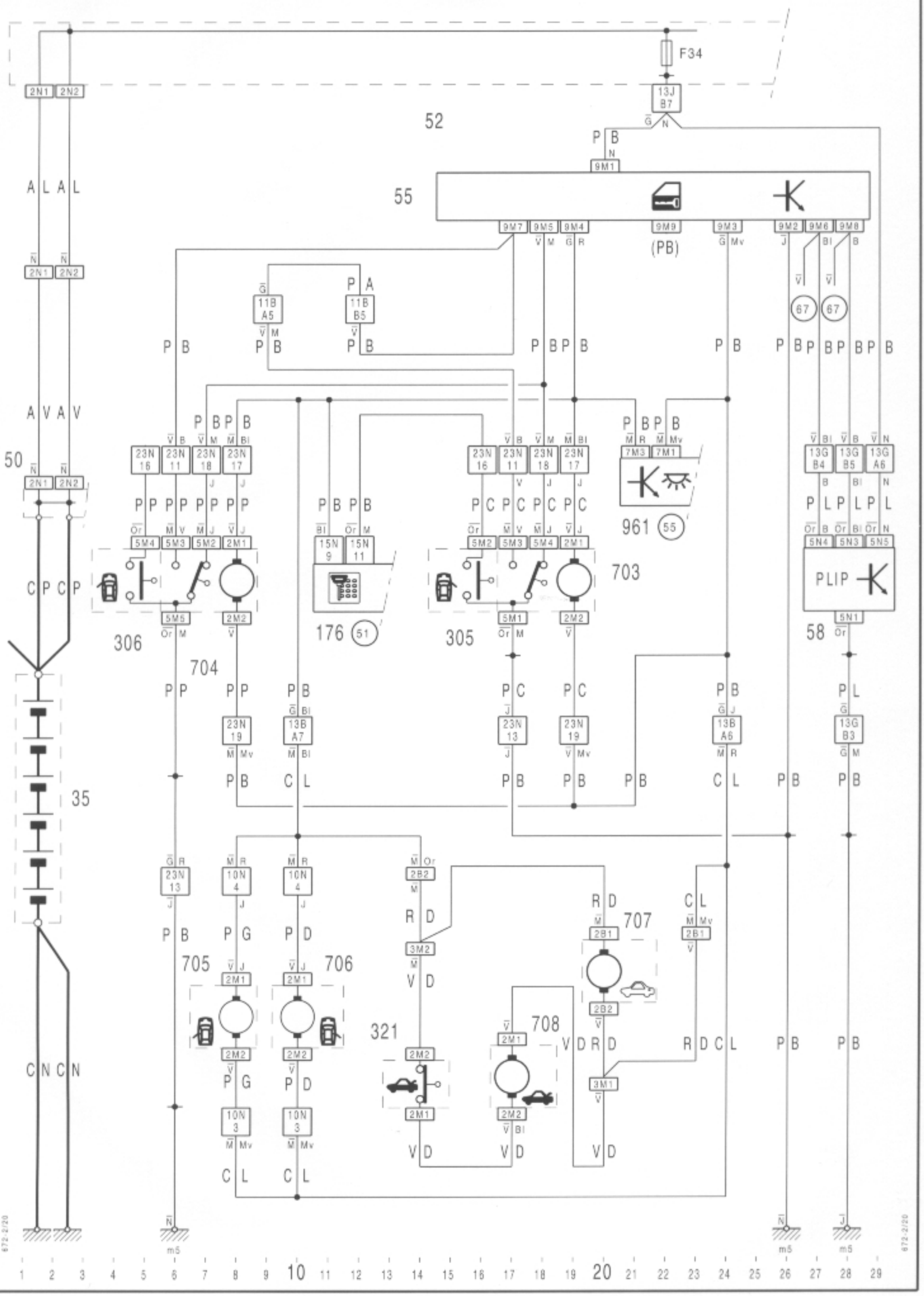
www.WorkshopManuals.co.uk



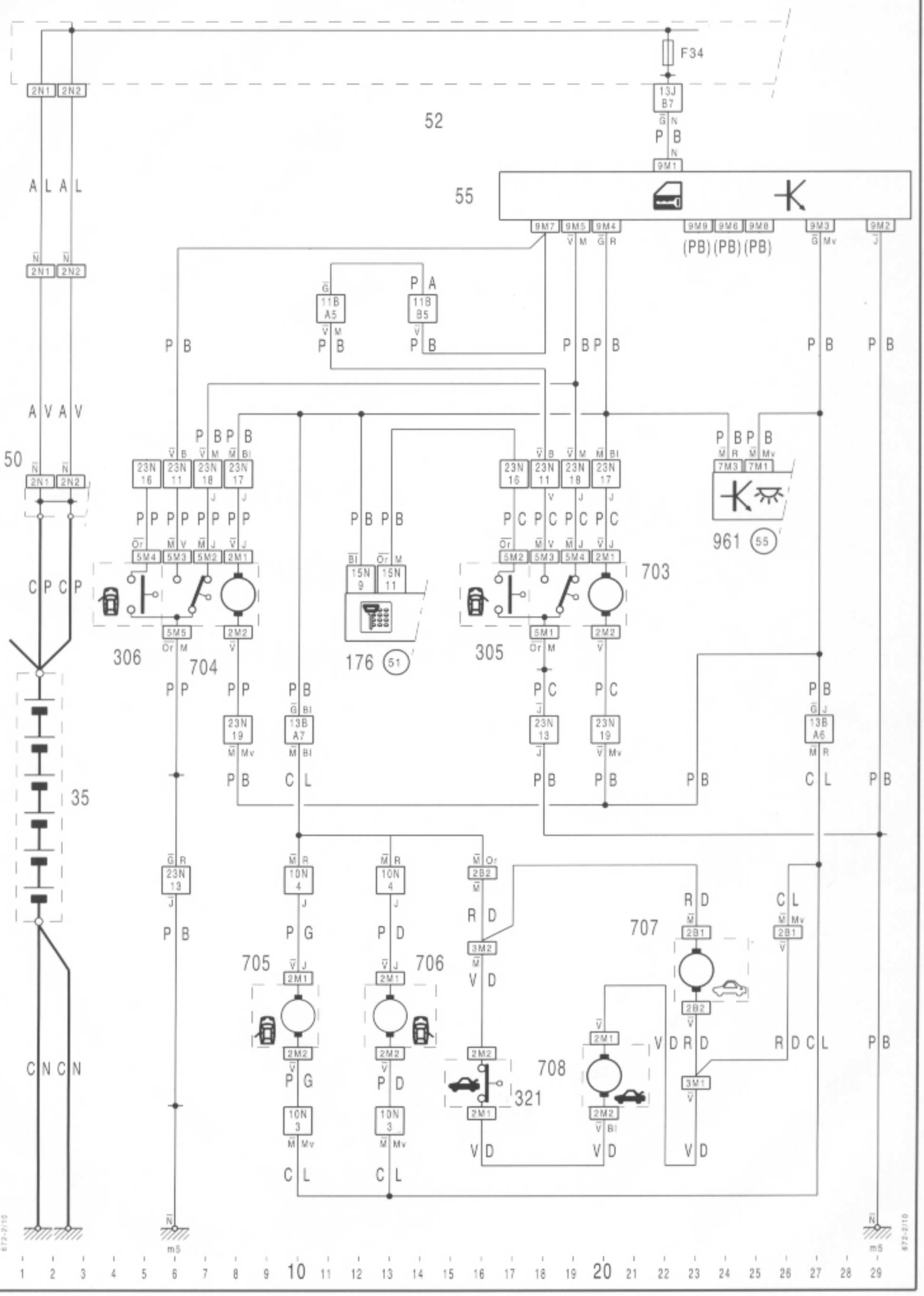
www.WorkshopManuals.co.uk



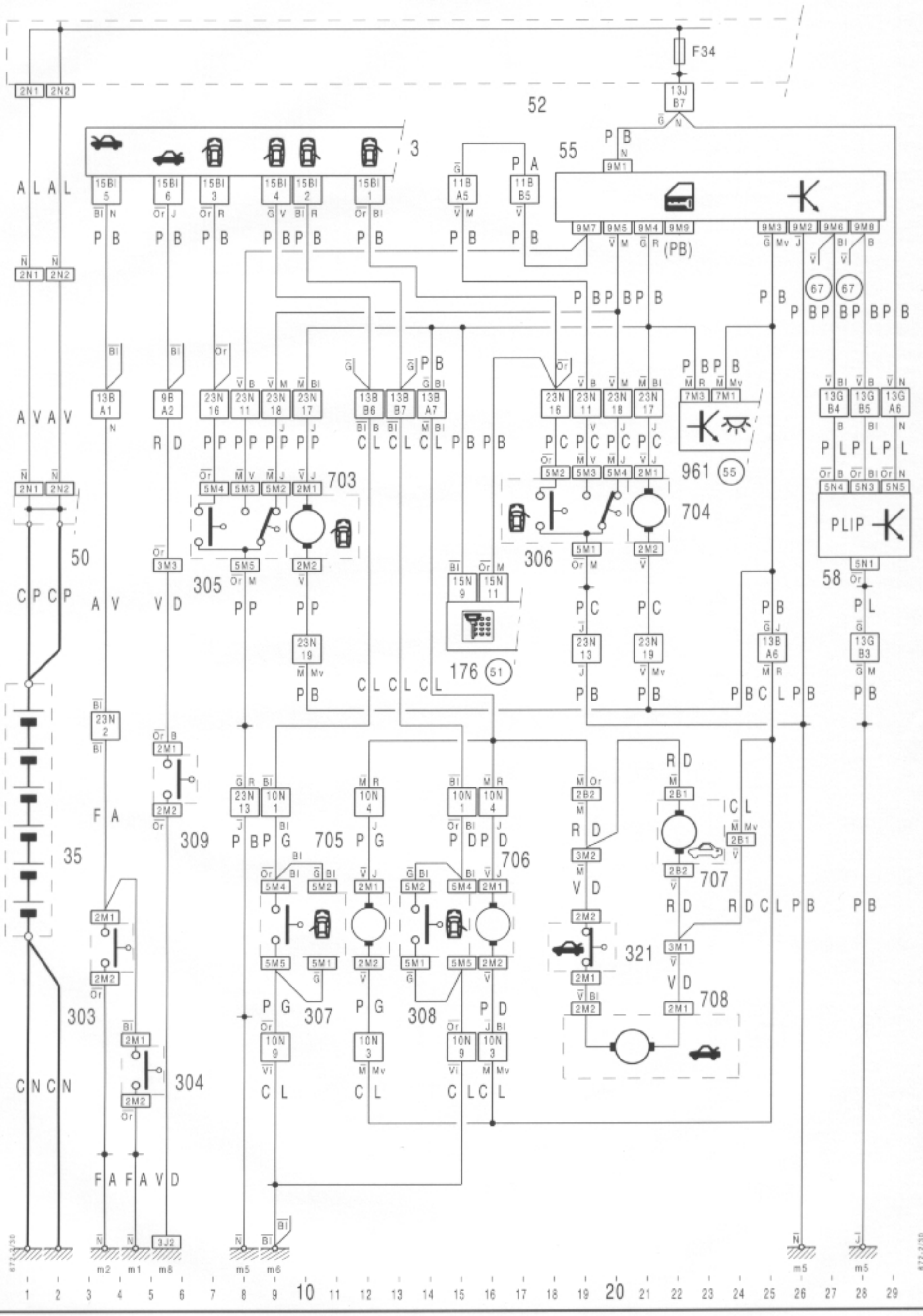
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

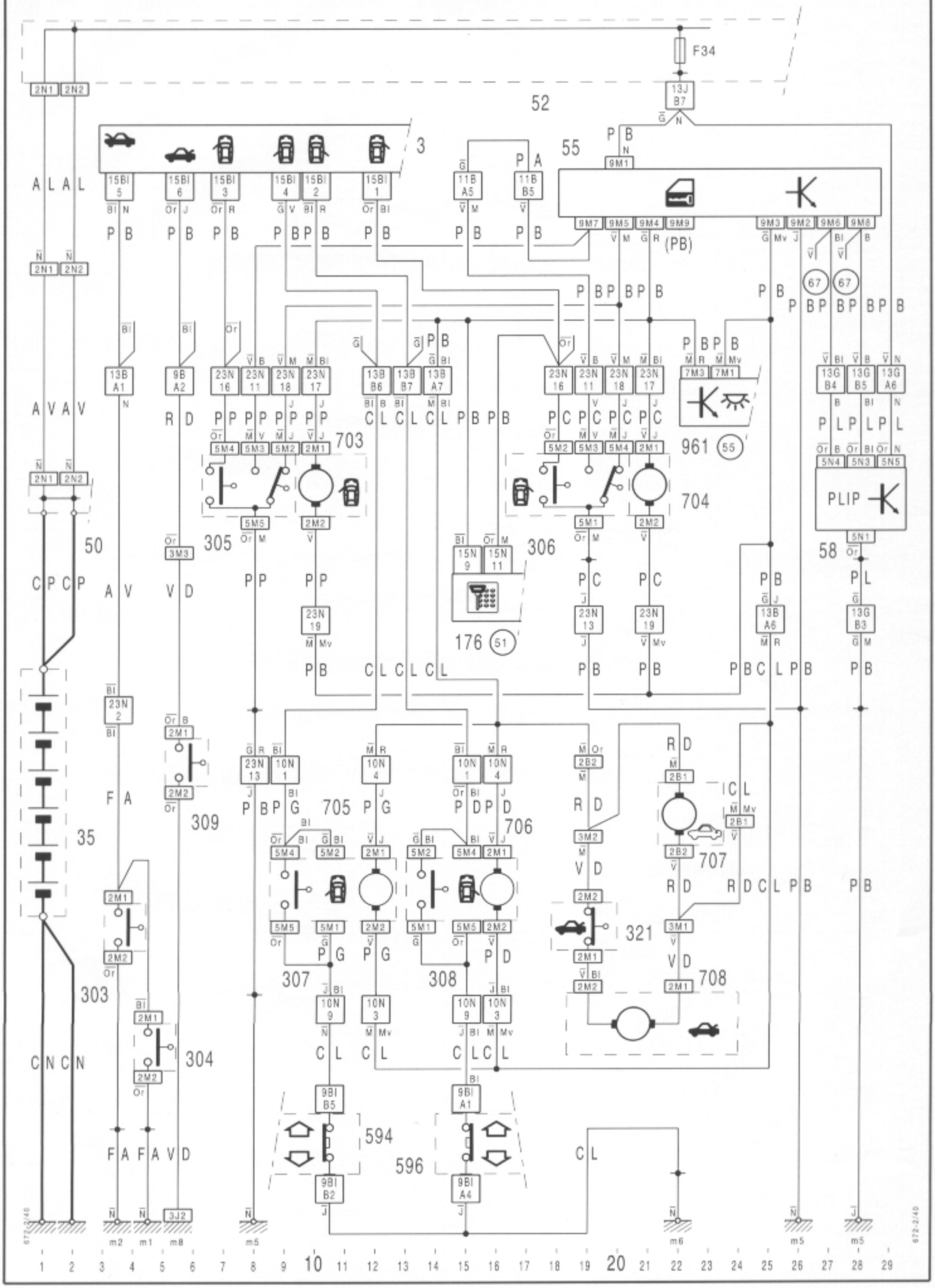


www.WorkshopManuals.co.uk

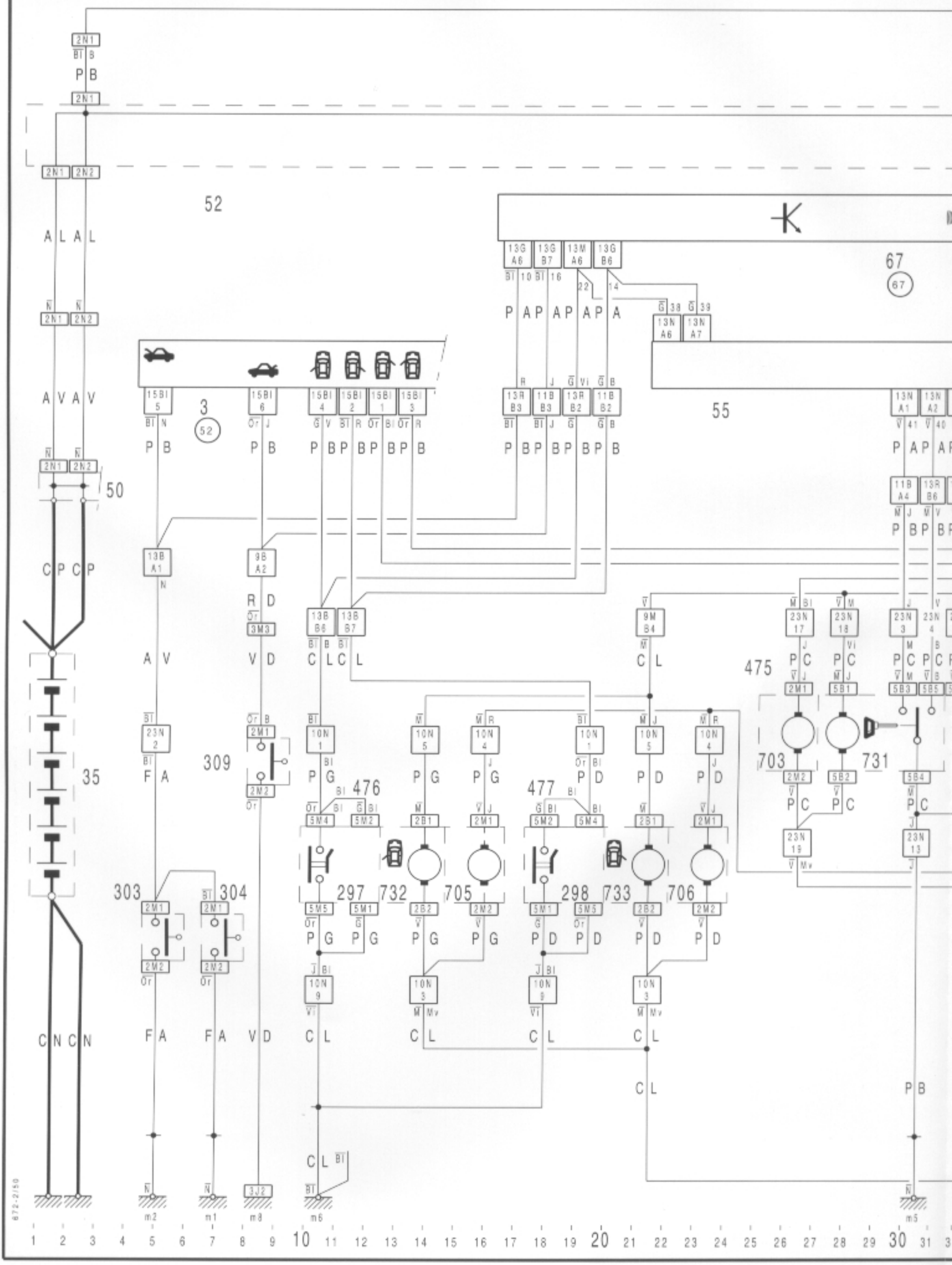


8935

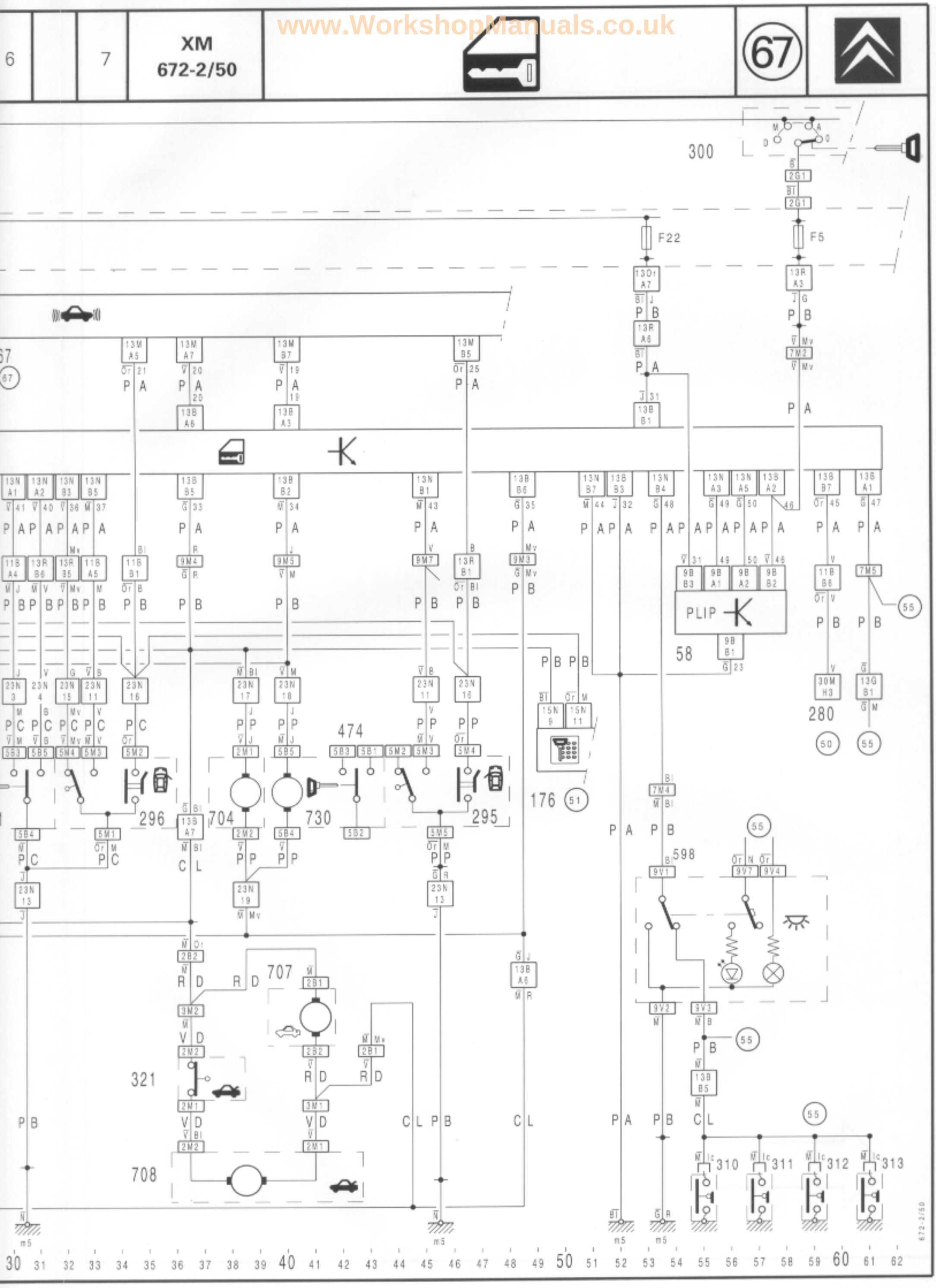
www.WorkshopManuals.co.uk



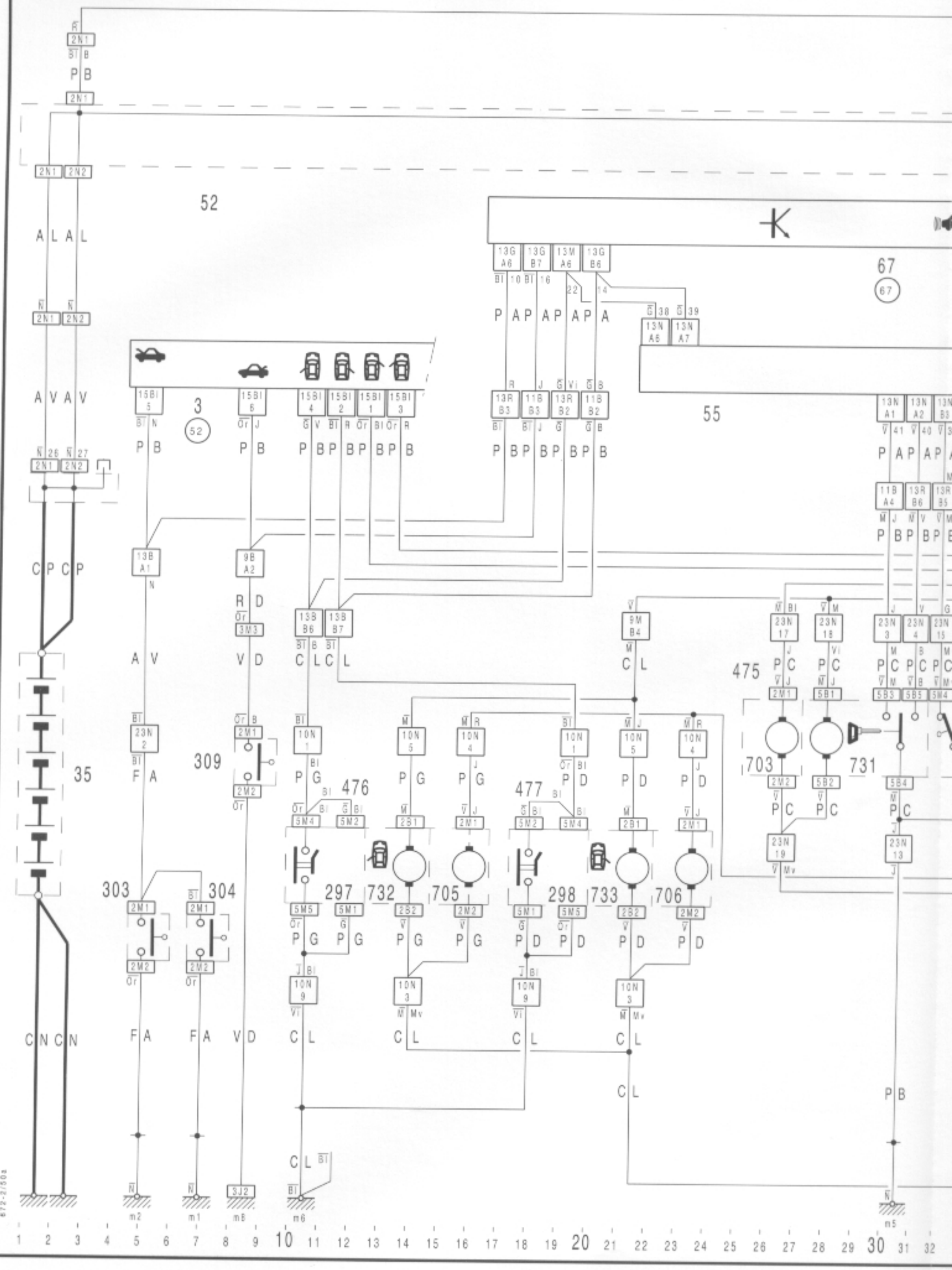
www.WorkshopManuals.co.uk



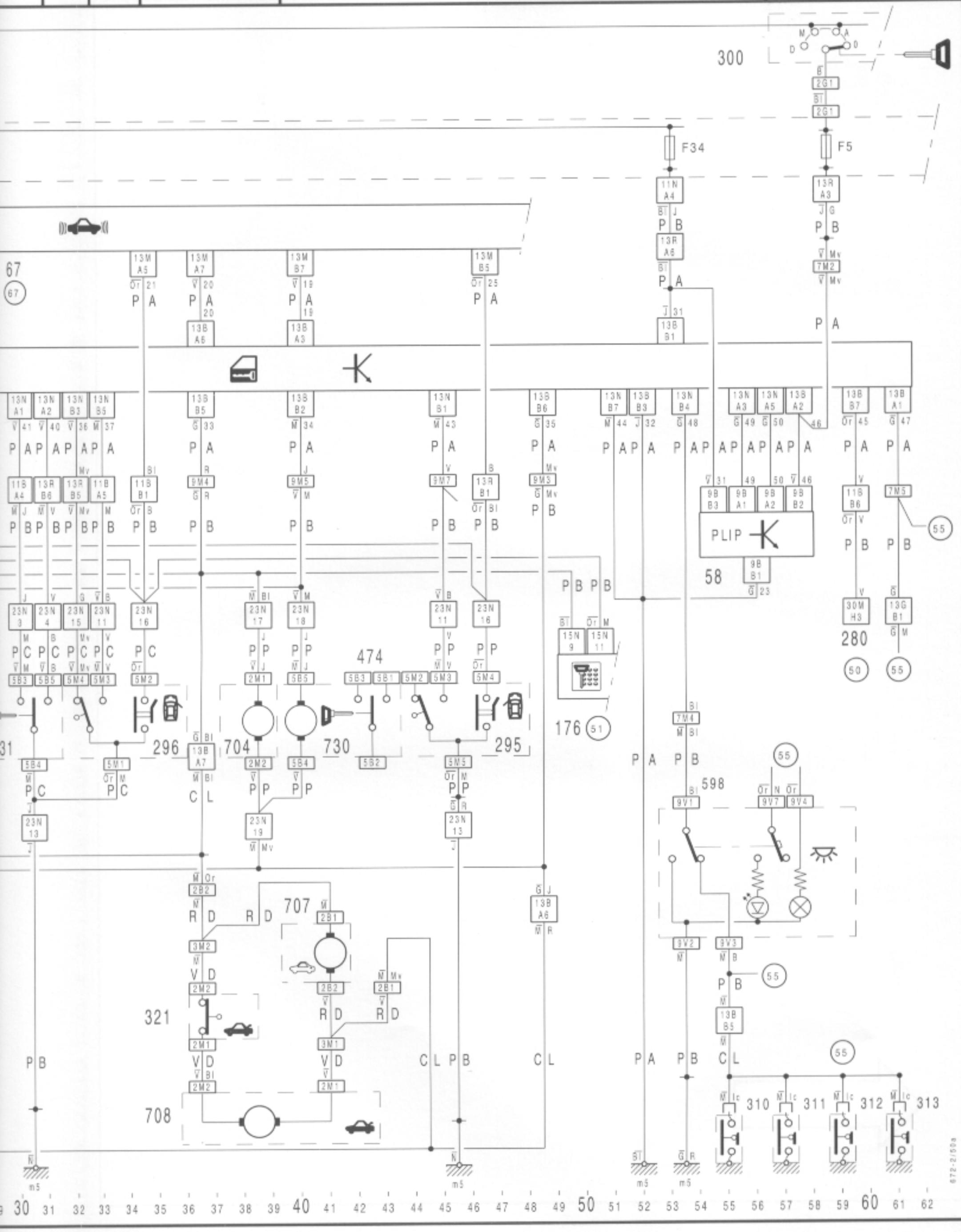
www.WorkshopManuals.co.uk



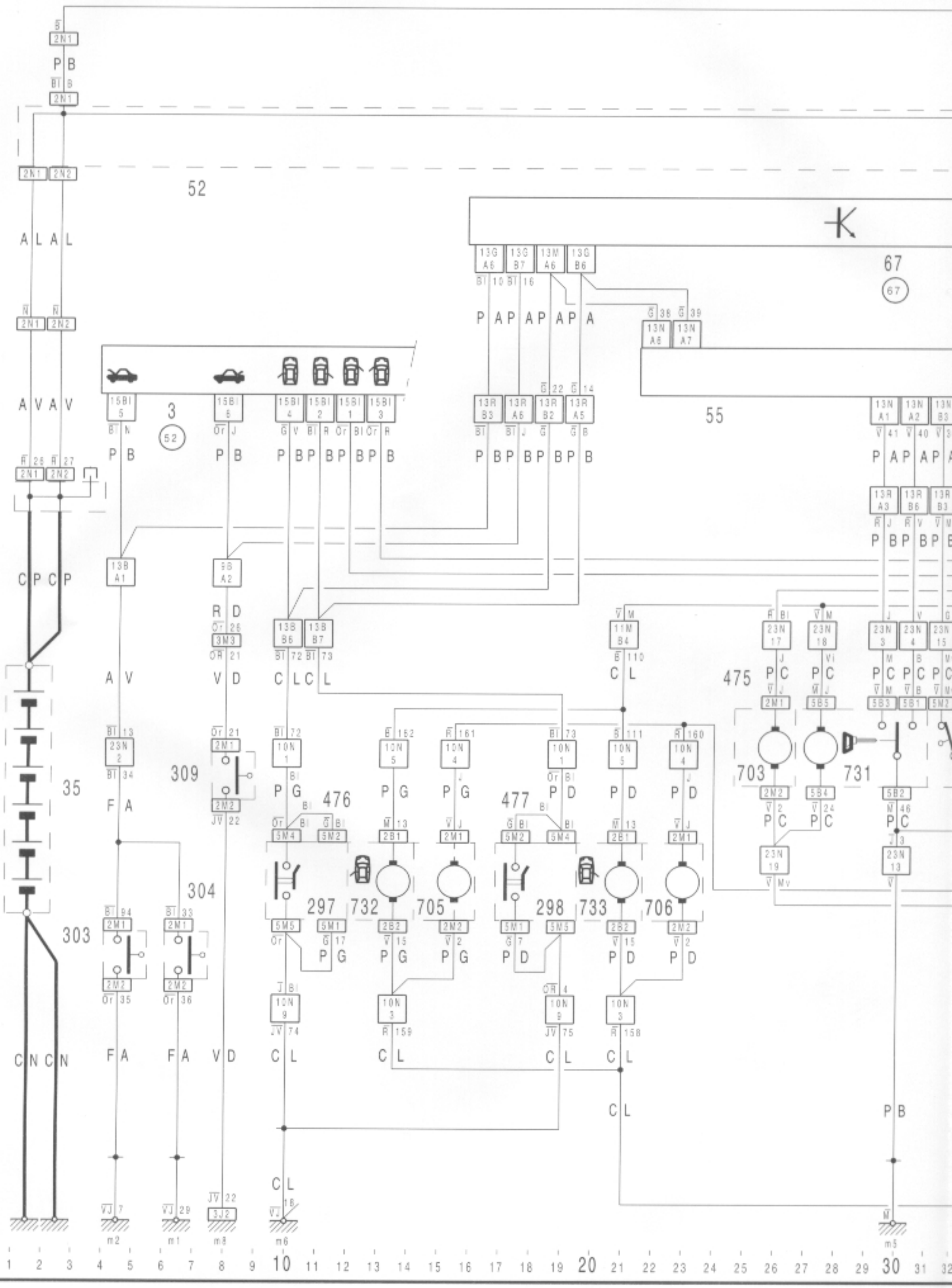
www.WorkshopManuals.co.uk



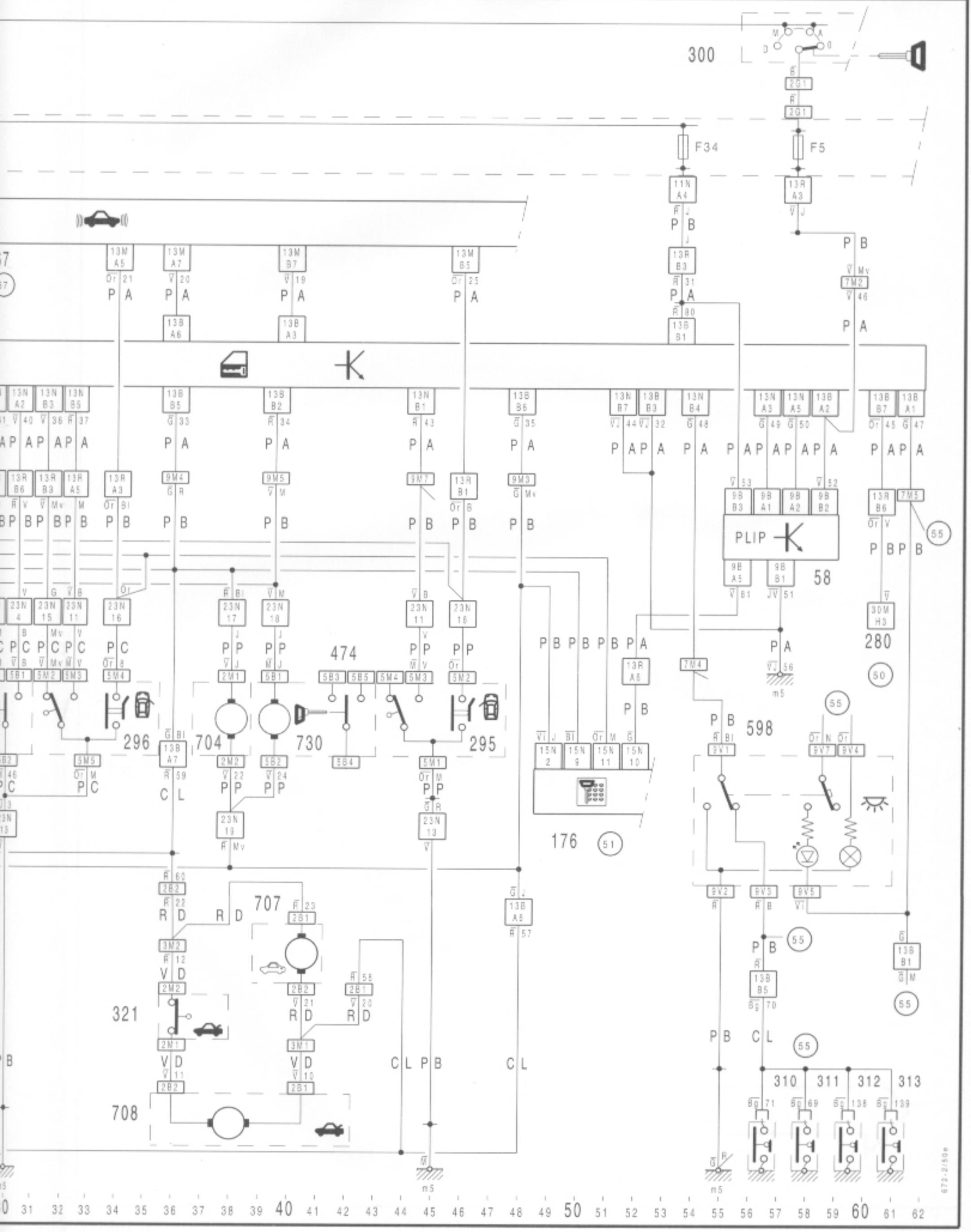
www.WorkshopManuals.co.uk



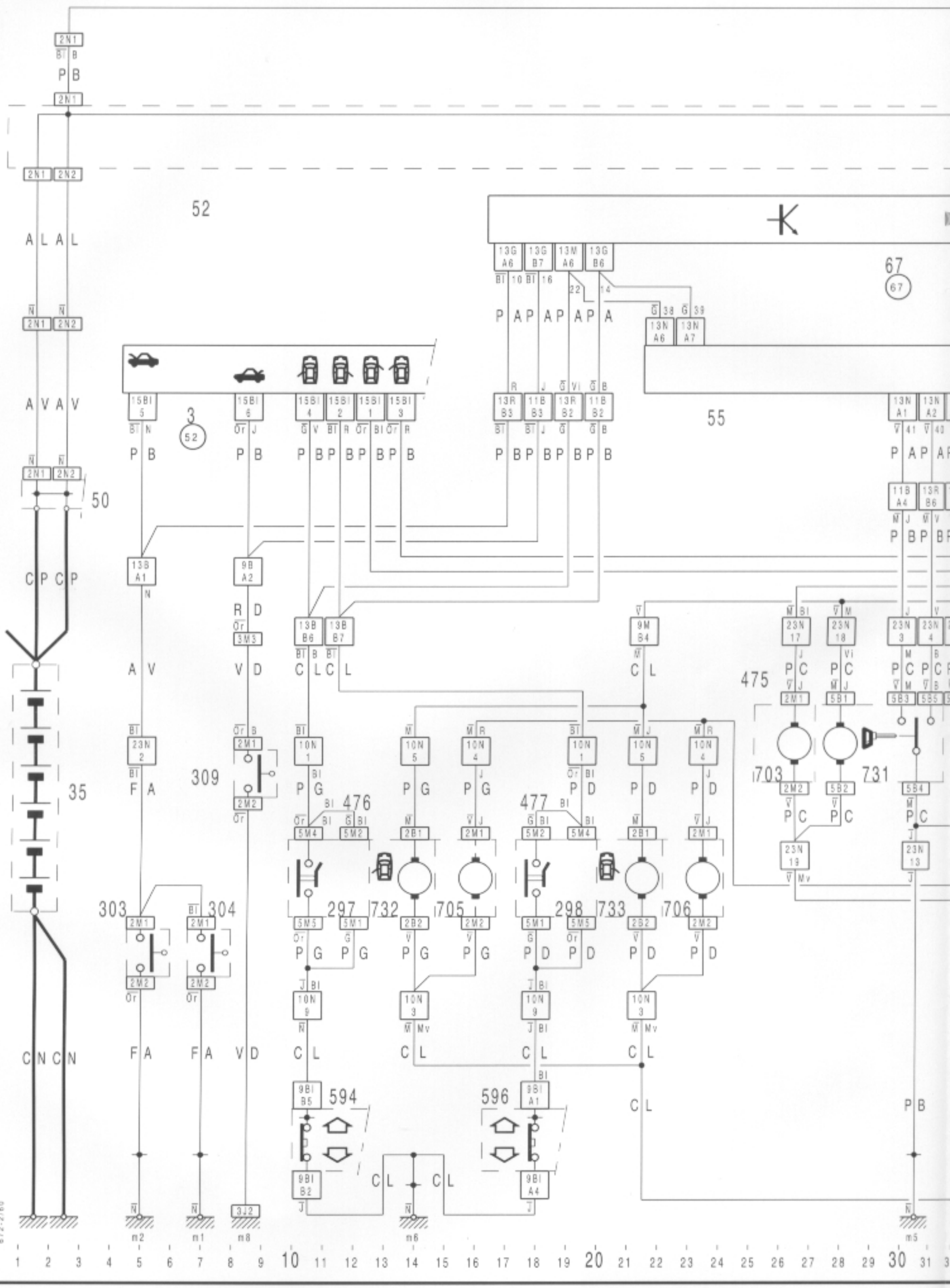
www.WorkshopManuals.co.uk



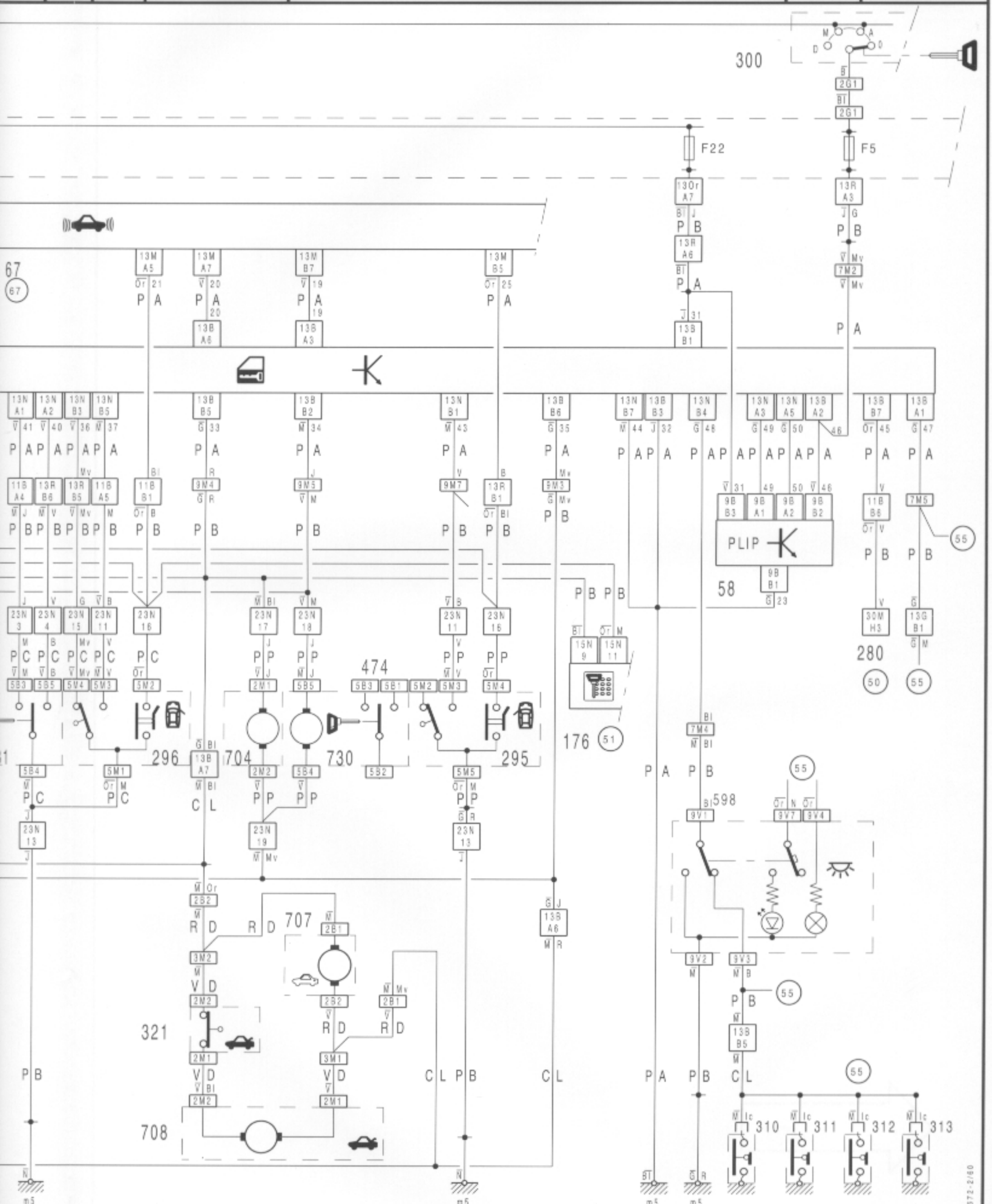
www.WorkshopManuals.co.uk



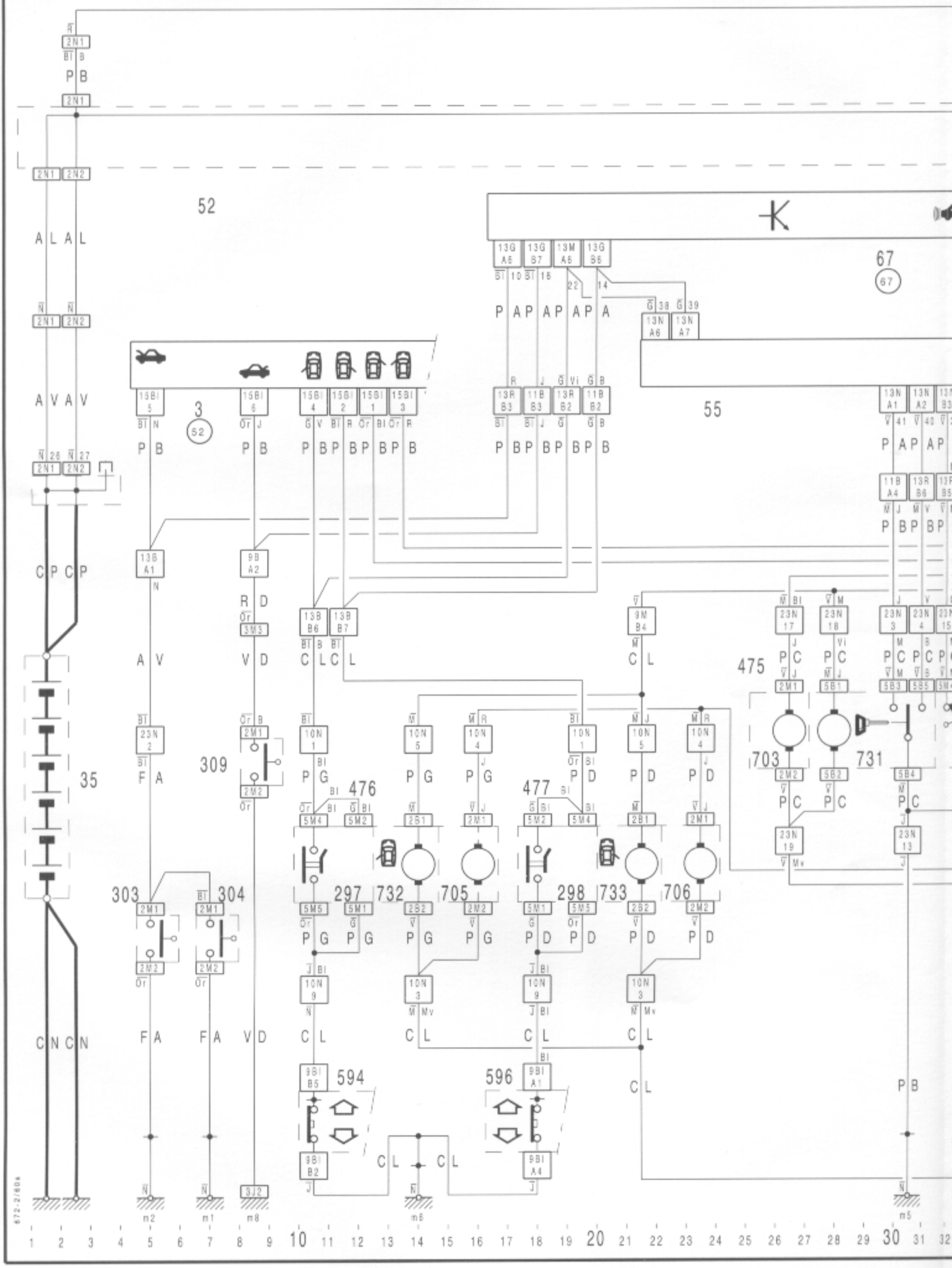
www.WorkshopManuals.co.uk



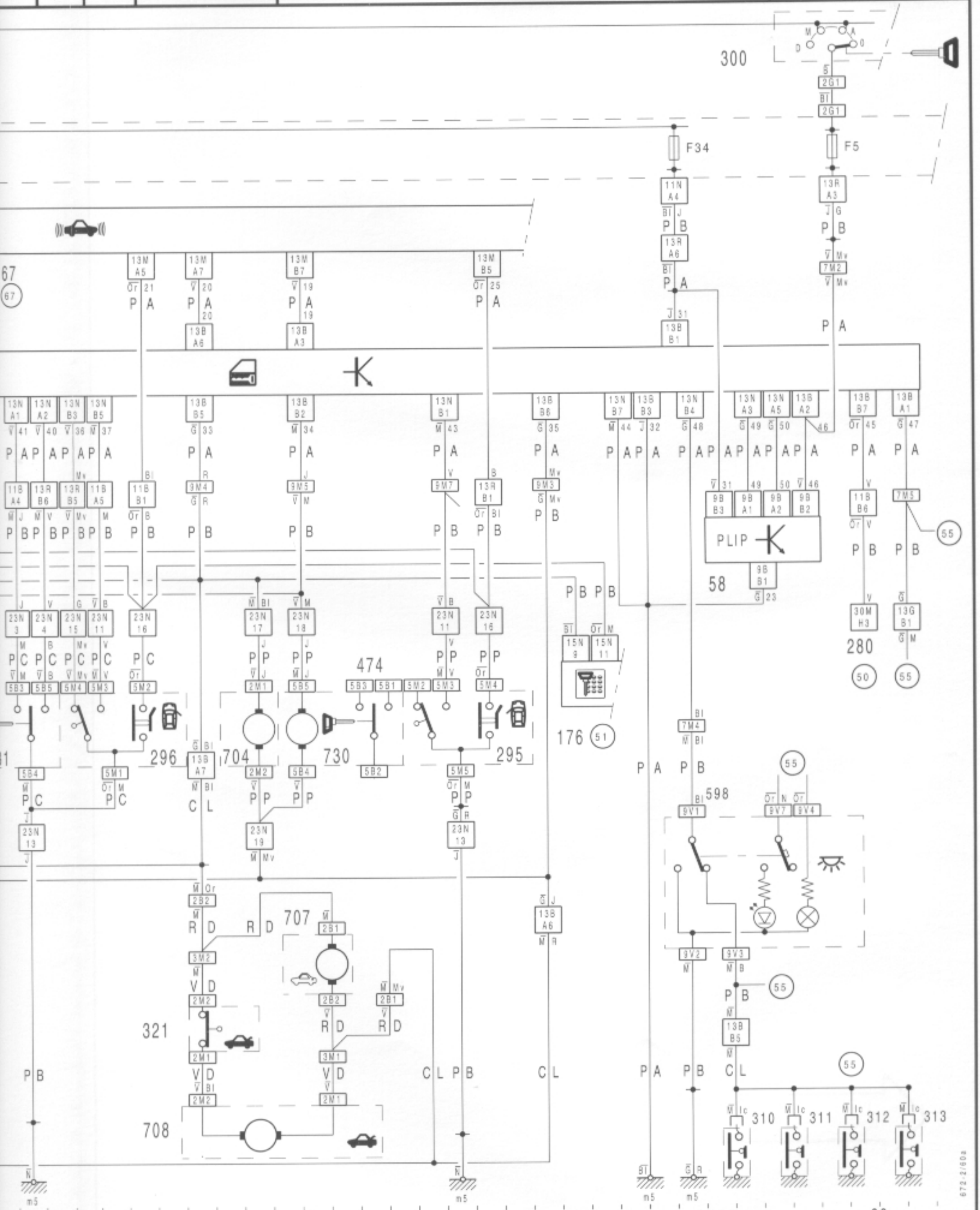
www.WorkshopManuals.co.uk



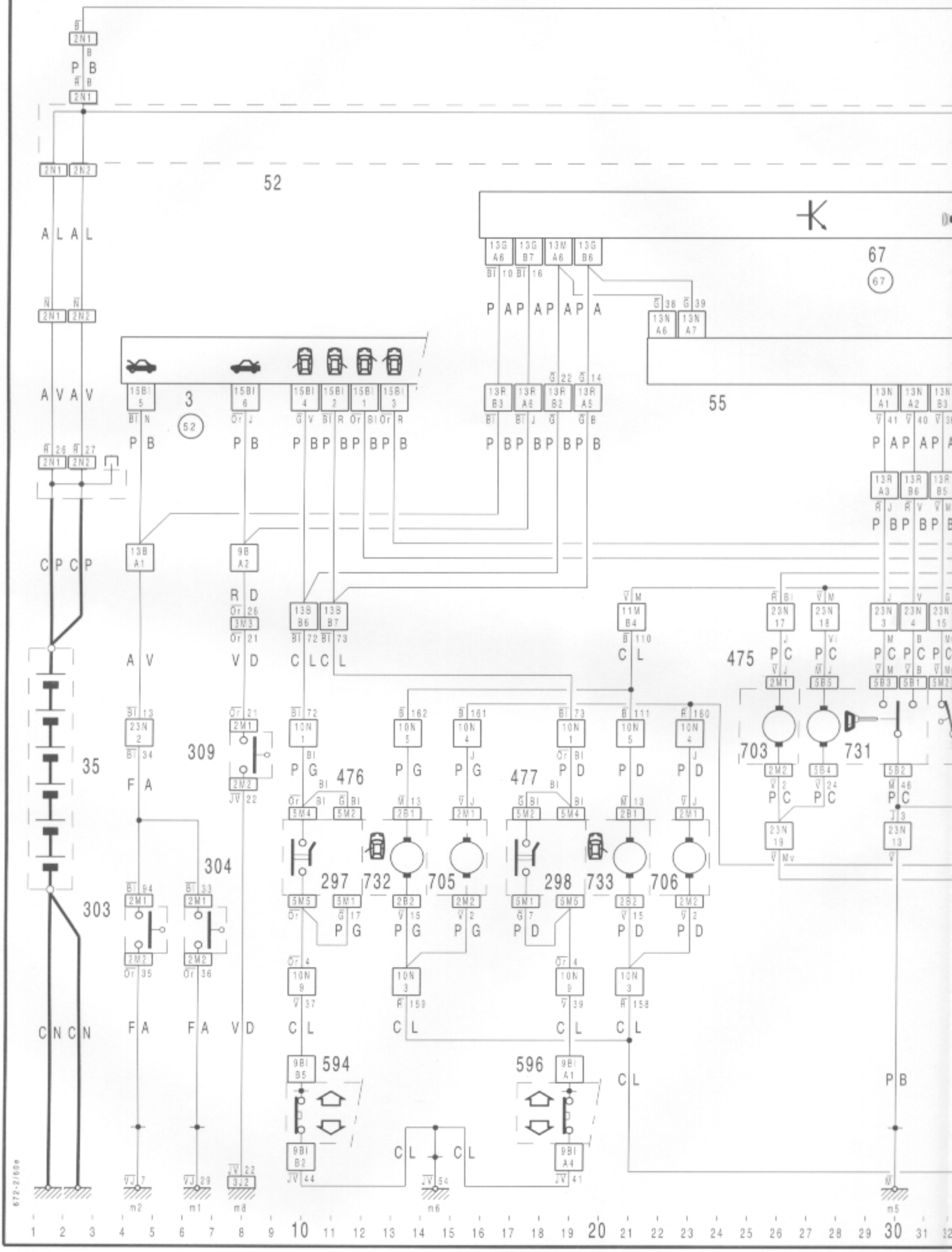
www.WorkshopManuals.co.uk



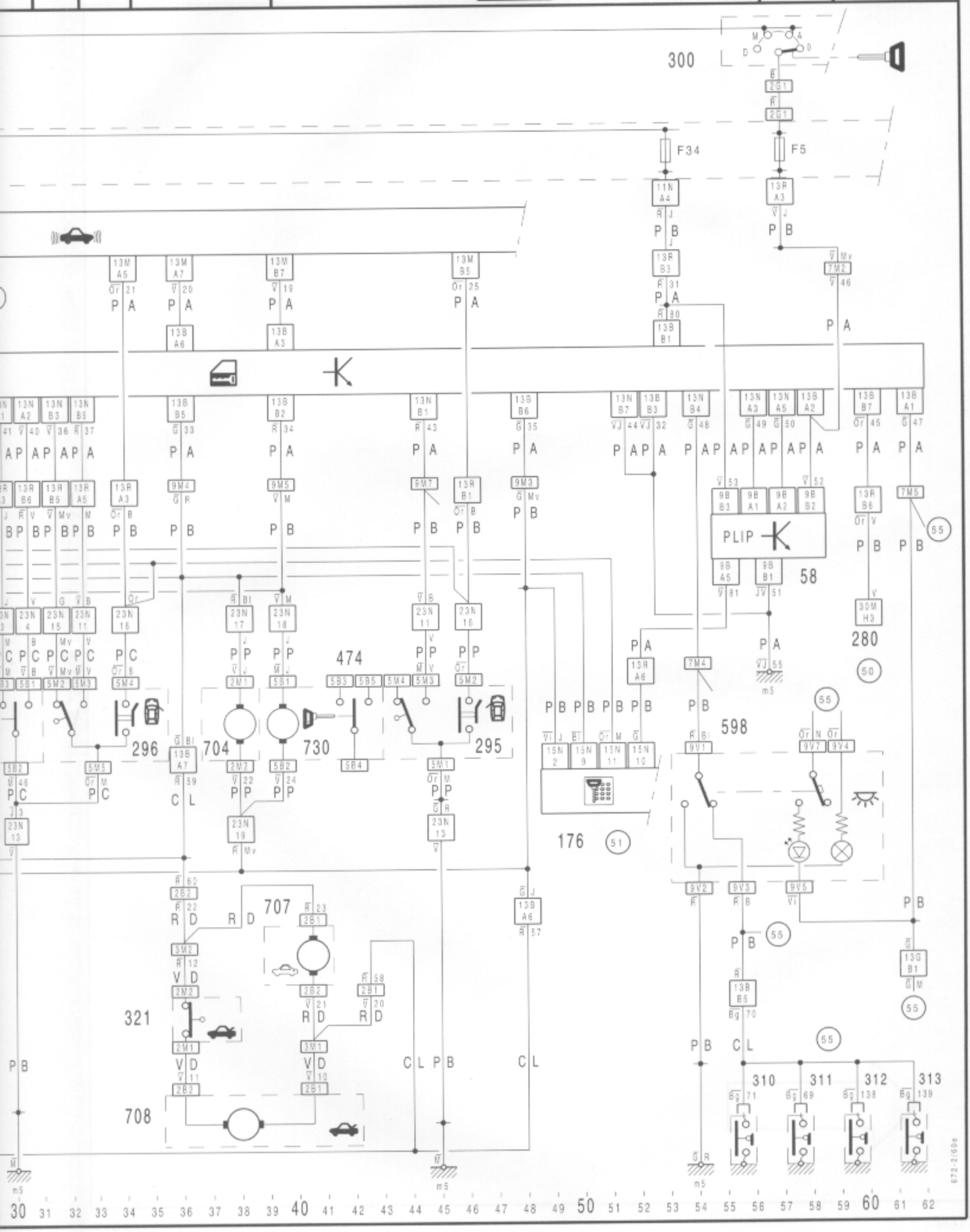
www.WorkshopManuals.co.uk



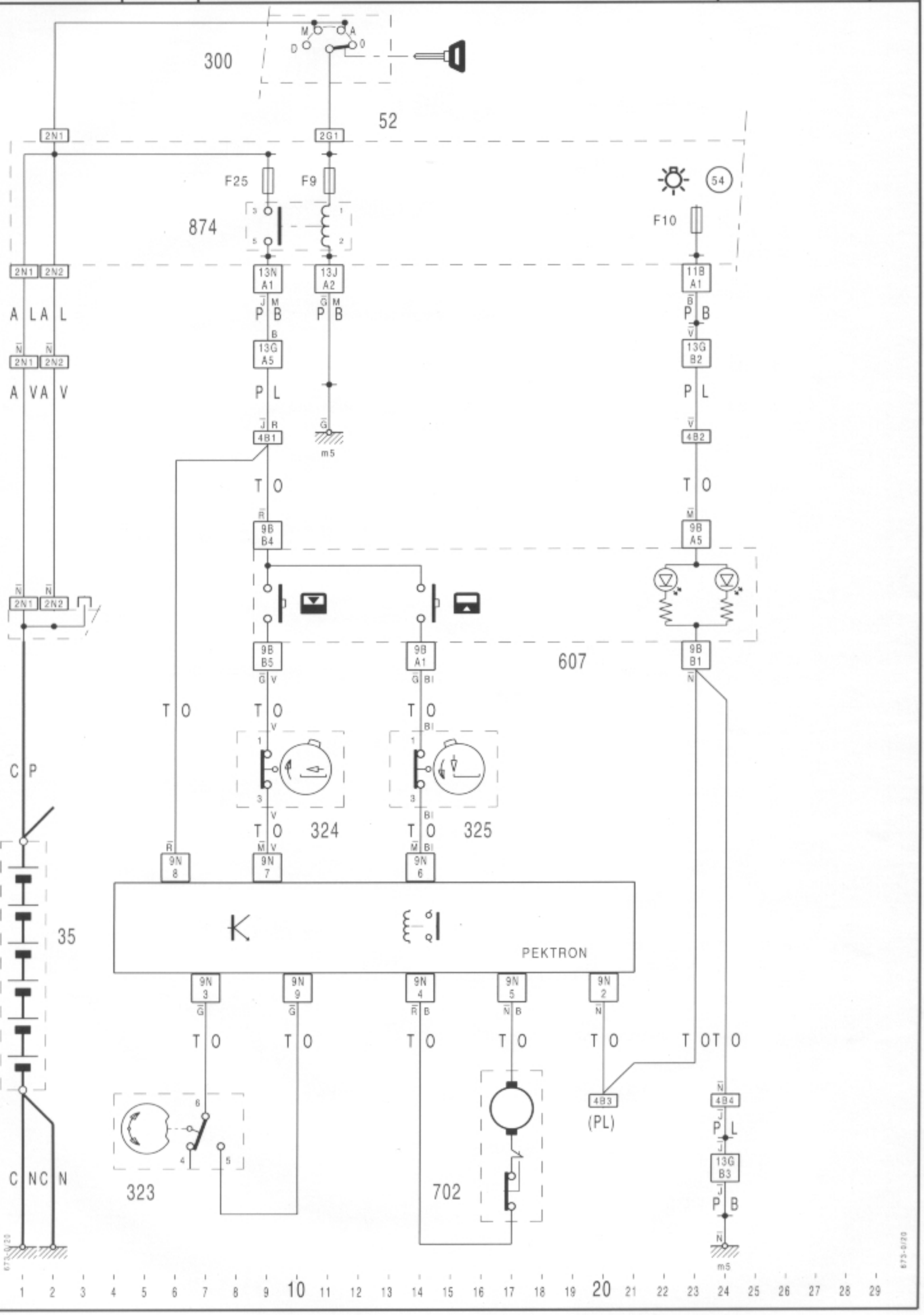
www.WorkshopManuals.co.uk



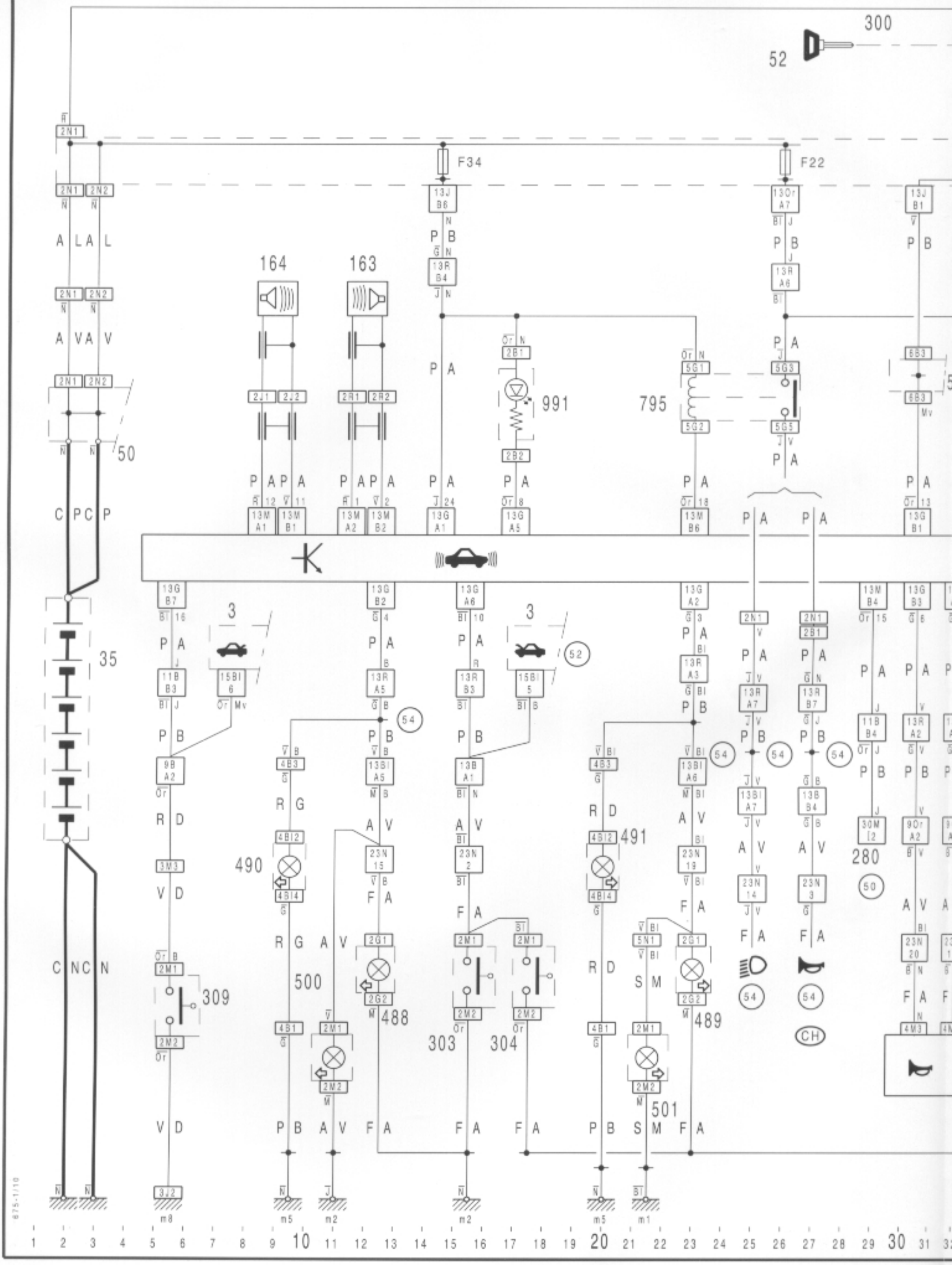
www.WorkshopManuals.co.uk



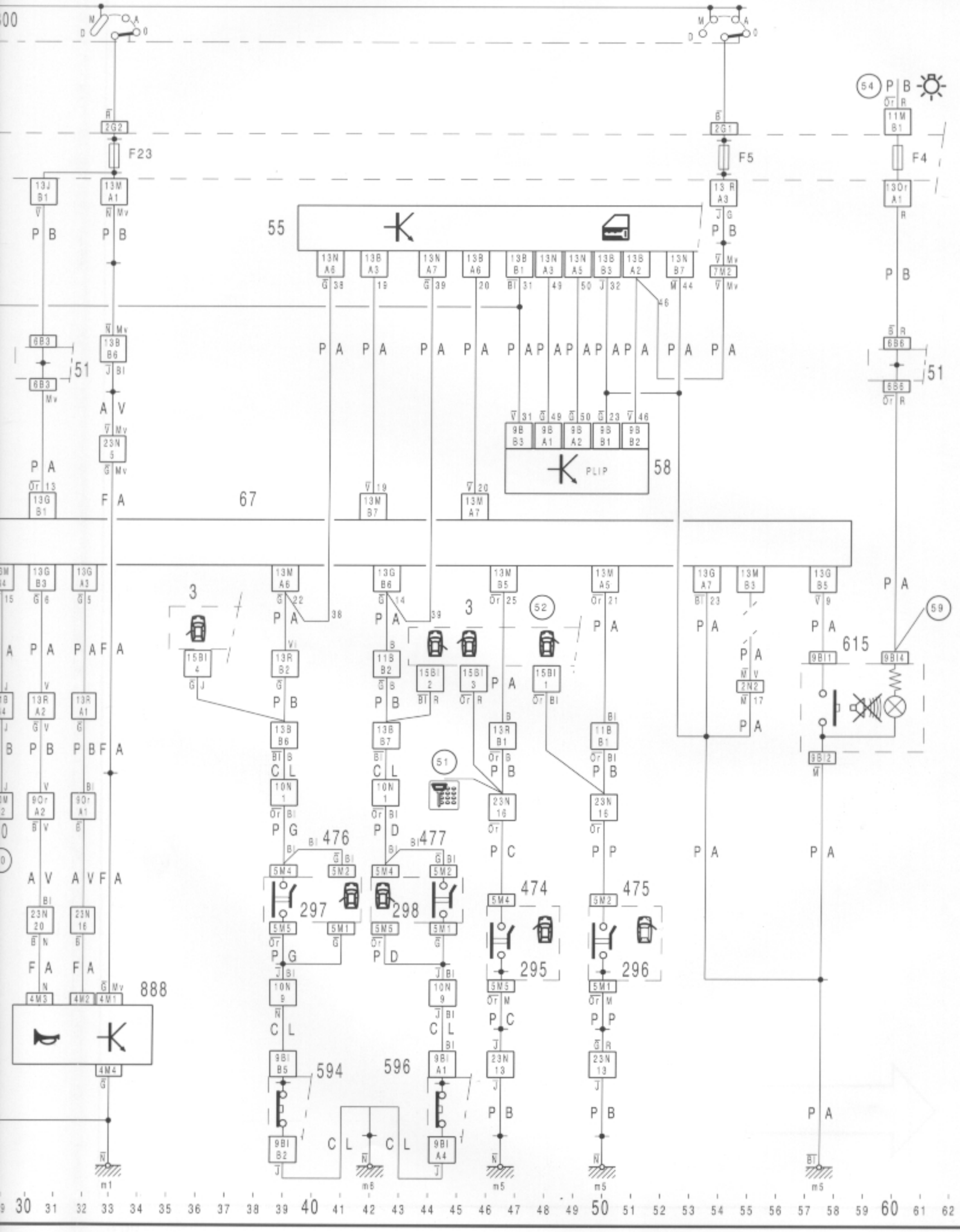
www.WorkshopManuals.co.uk



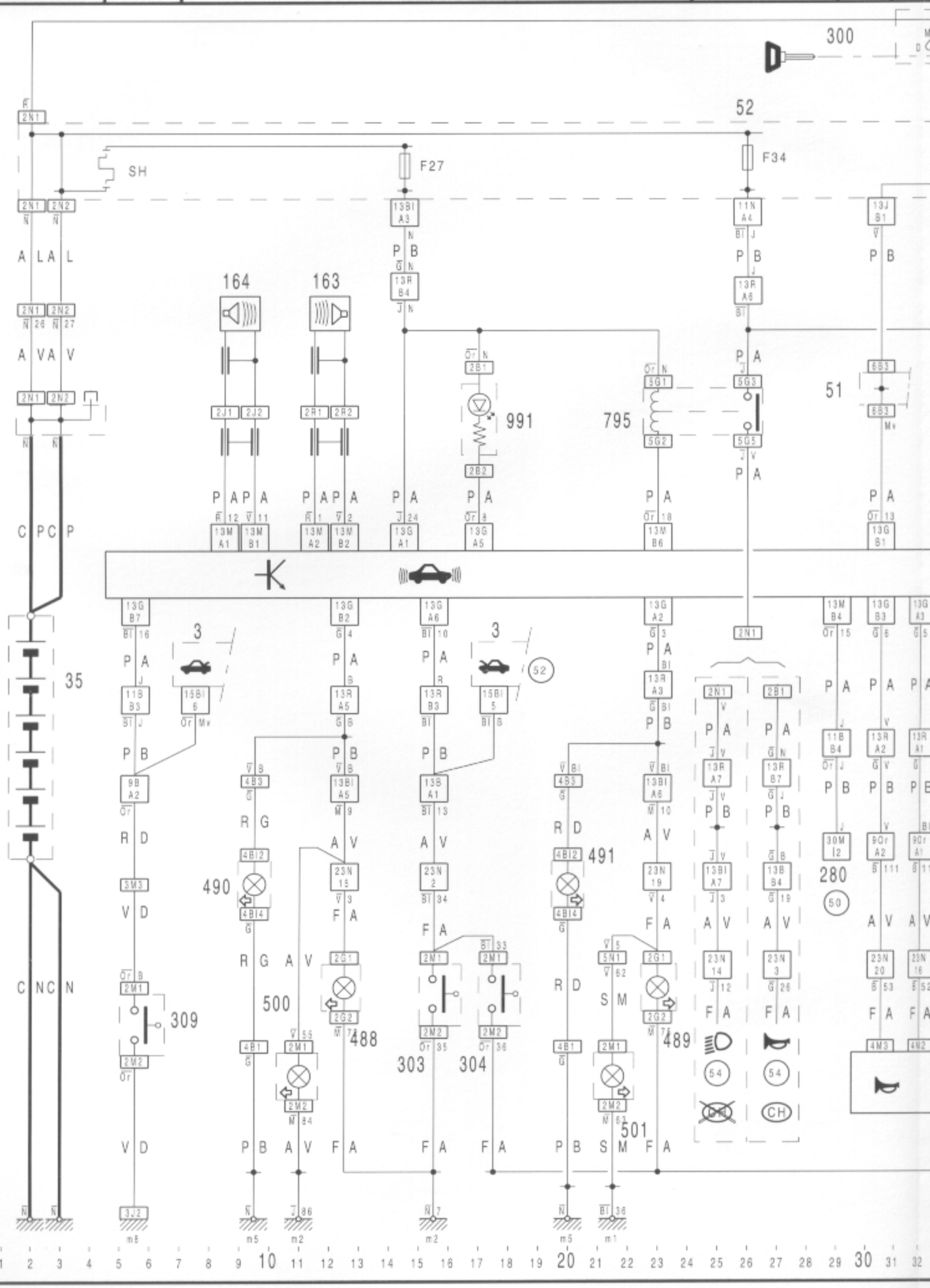
www.WorkshopManuals.co.uk



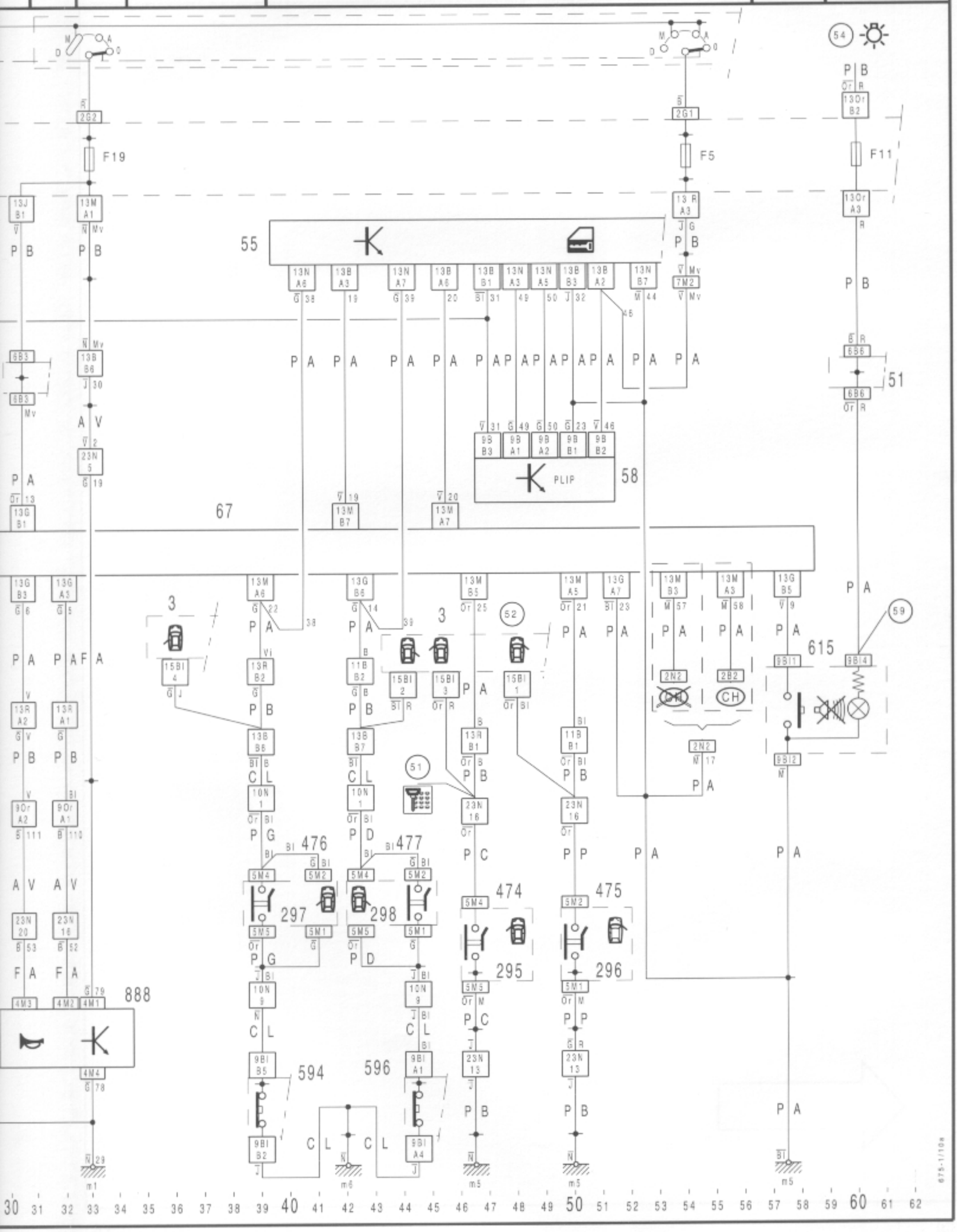
www.WorkshopManuals.co.uk



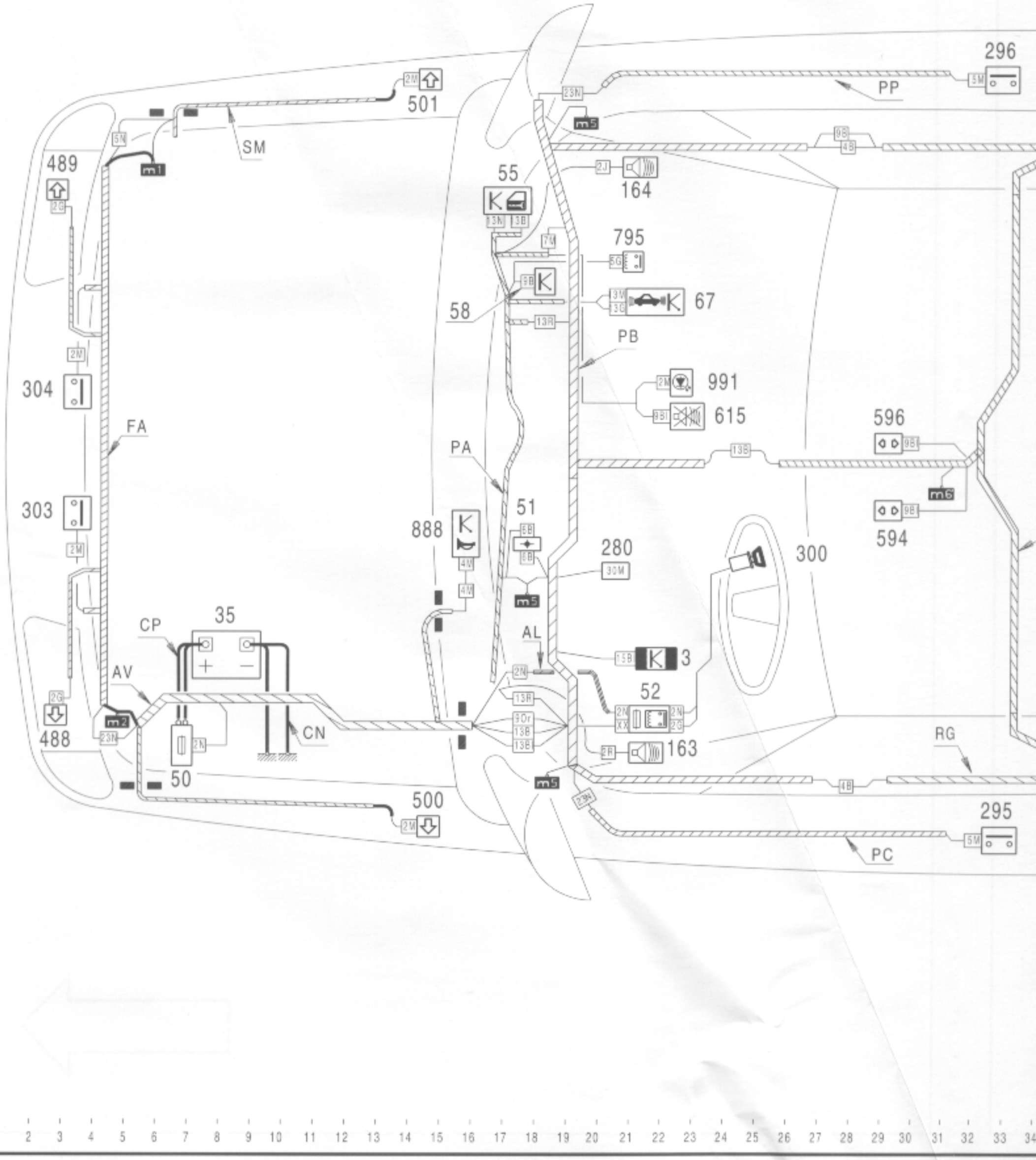
www.WorkshopManuals.co.uk



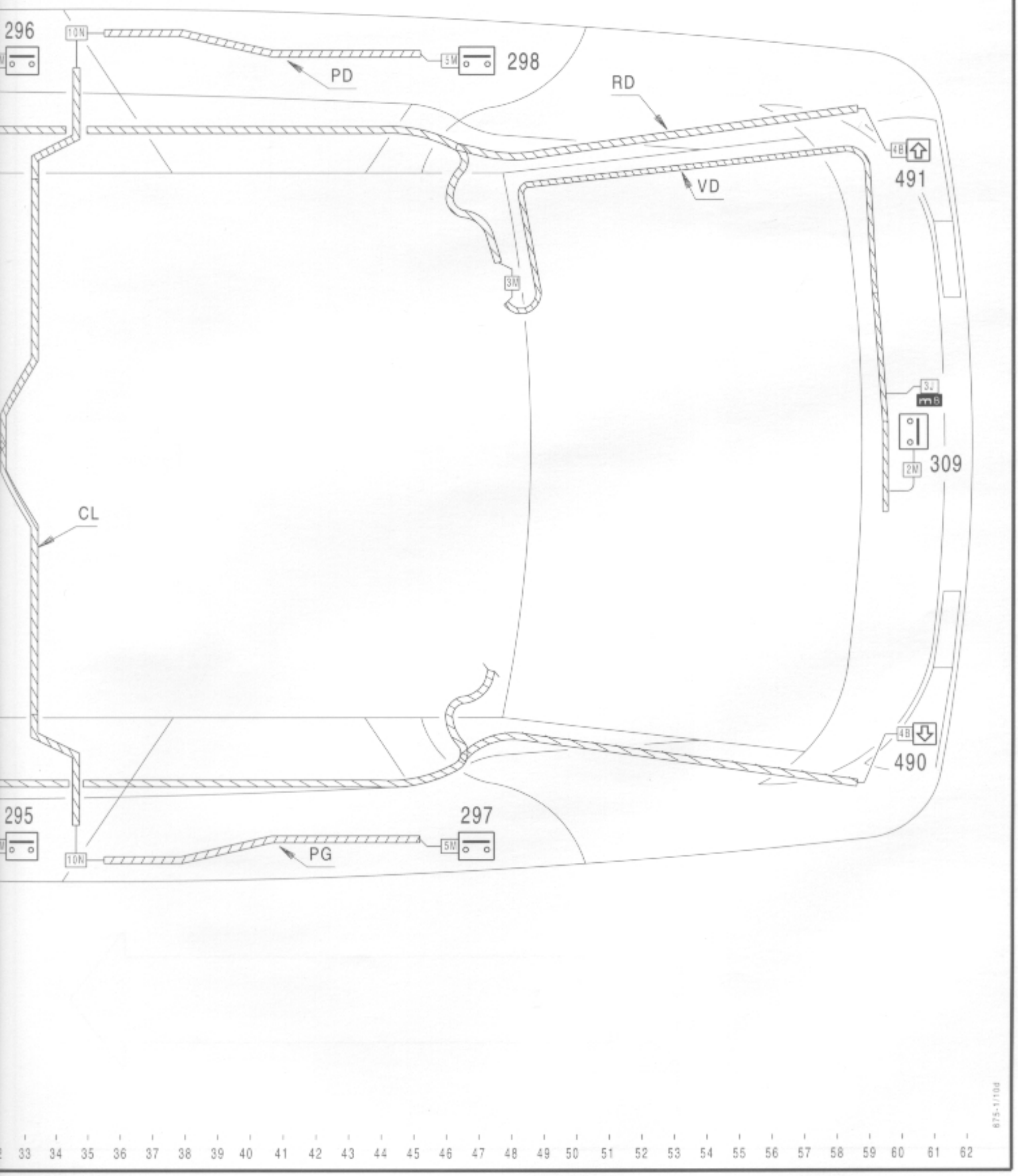
www.WorkshopManuals.co.uk



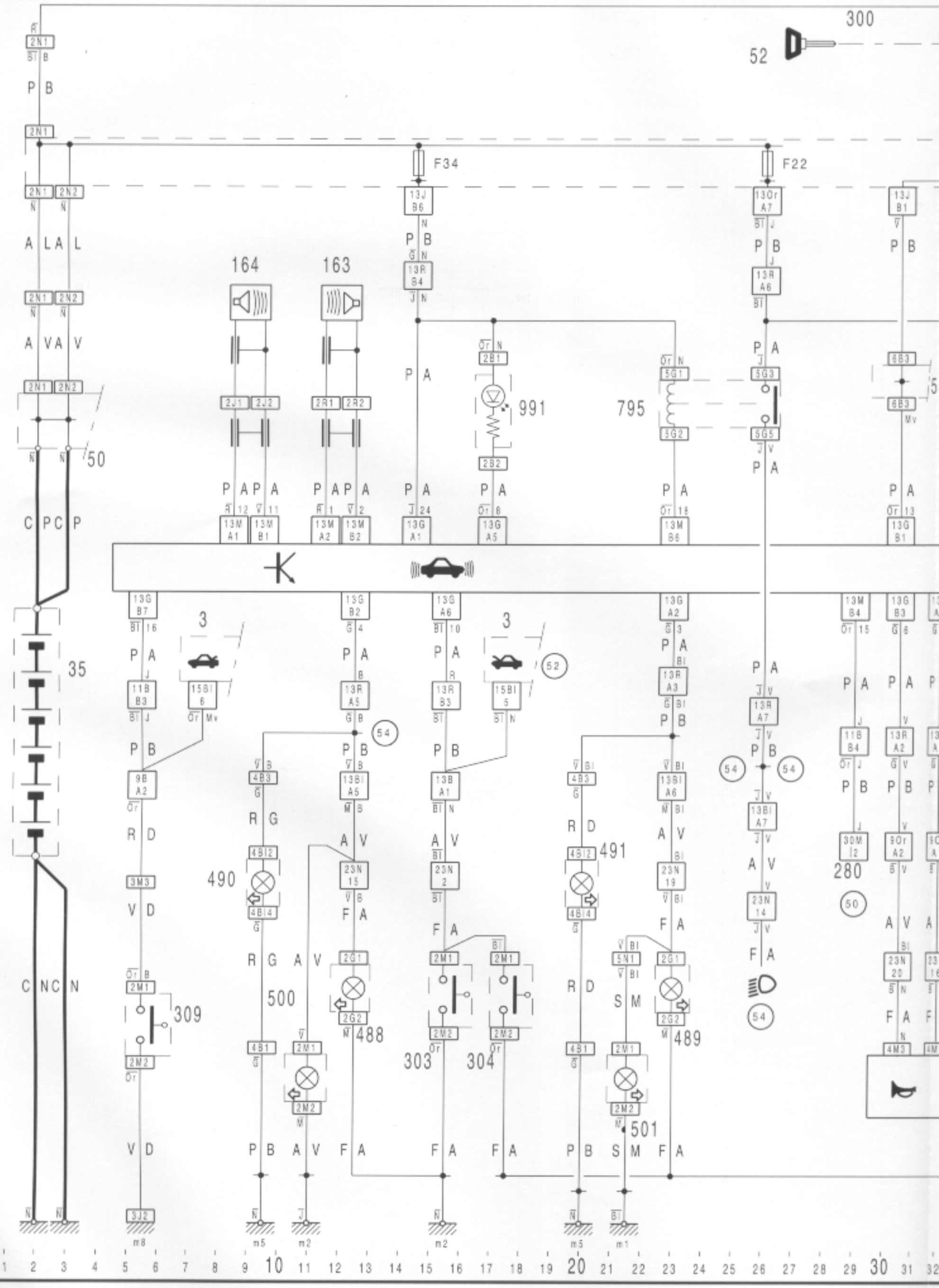
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



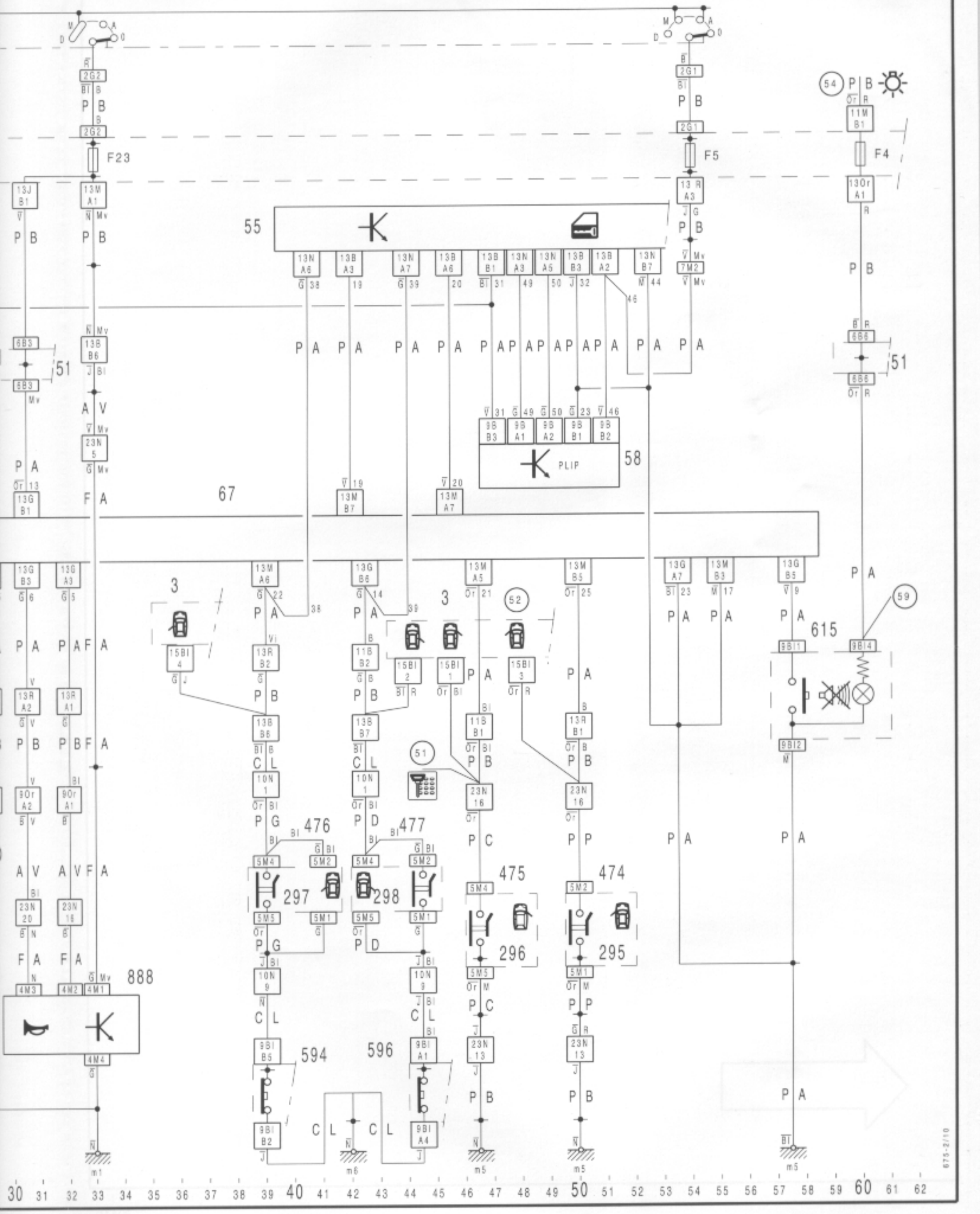
www.WorkshopManuals.co.uk



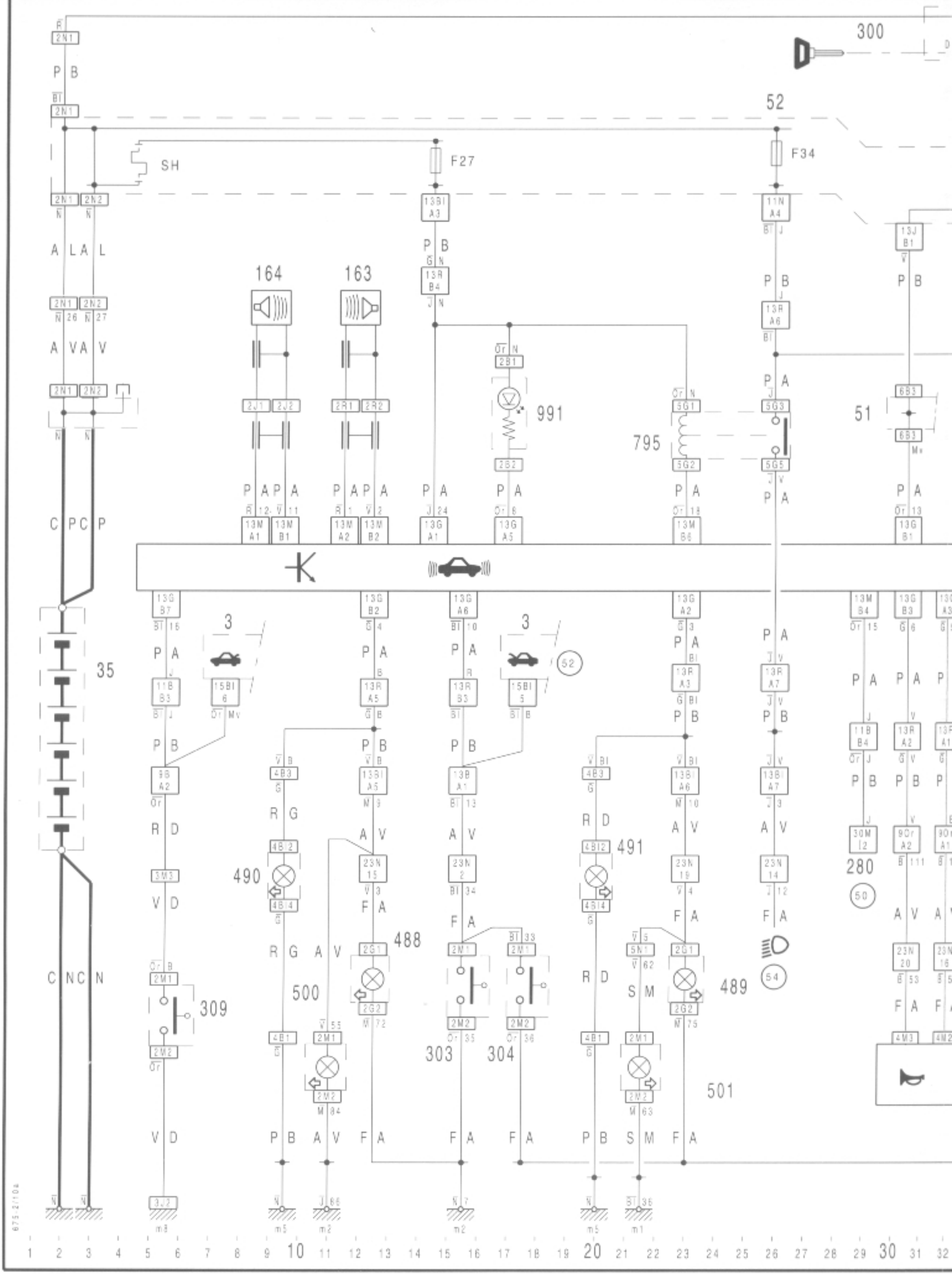
675-2/10

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

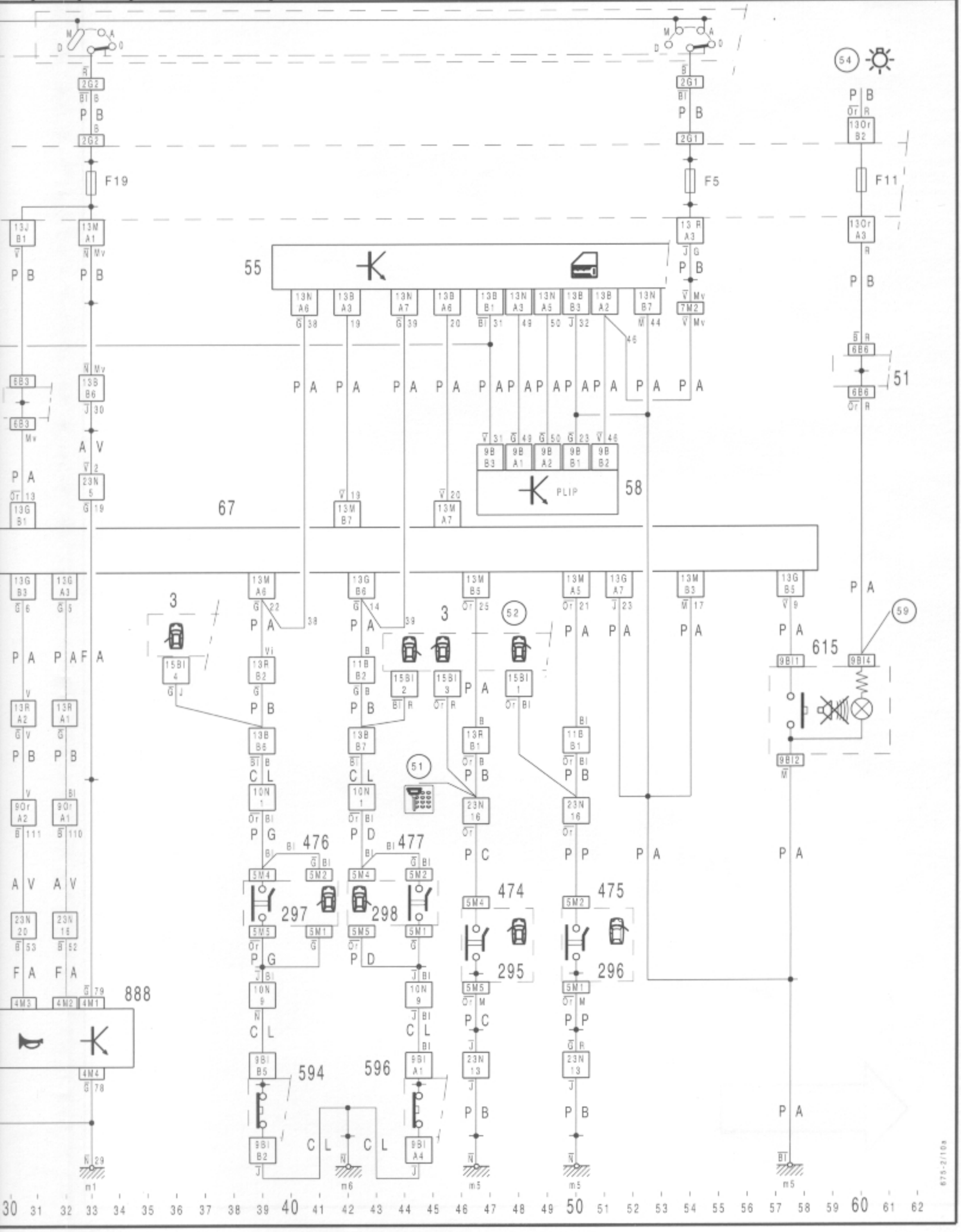
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

www.WorkshopManuals.co.uk

SUMMARY

www.WorkshopManuals.co.uk

OPERATION NUMBER	DESCRIPTION
XM 901-000/1	Summary
XM 901-000/2	List of the electrical diagrams
XM 901-000/3	Parts list
XM 901-000/4	List of the wiring harnesses
XM 901-000/5	Colour coding
XM 901-000/6	Allocation of the fuses located under the bonnet (BB10)
XM 901-000/7	Allocation of the fuses in the passenger's compartment (PSF0)
XM 901-000/8	Positioning of multiplex control units
XM 901-000/9	Positioning of inter-connections
XM 901-000/10	Positioning of earth connections
XM 901-000/11	List of splices
XM 901-000/12	Multiplex diagnostic socket wiring
XM 901-000/13	Vehicle "awakened" diagram

www.WorkshopManuals.co.uk

LIST OF THE ELECTRICAL DIAGRAMS

www.WorkshopManuals.co.uk

OPERATION NUMBER	DESCRIPTION
XM 901-51/0	DIESEL engine XUD 11 ATE
XM 901-51/1	Coded anti-theft device
XM 901-51/2	Engine cooling
XM 901-52/0	Fuel gauge
XM 901-52/1	Engine water temperature and level
XM 901-52/2	Engine oil temperature and pressure
XM 901-52/3	Clock and outside temperature
XM 901-52/4	Warning lamp for brake pad wear and hydraulic pressure switch
XM 901-53/0	Starter - Charging system
XM 901-54/0	Exterior signals and lighting
XM 901-54/1	Caravan lighting supply
XM 901-55/0	Interior lighting : Map reading lamps - Sun visor mirrors - Lamps for door thresholds, boot, glove compartment and anti-theft/ignition switch
XM 901-55/1	Interior lighting : Cigar lighter - Ashtrays - Radio flap and ashtray lid
XM 901-55/2	Airbag and pyrotechnic seat belts
XM 901-56/0	Front and rear wiping and washing

www.WorkshopManuals.co.uk

OPERATION NUMBER	DESCRIPTION
XM 901-56/1	Electric and heated rear view mirrors
XM 901-57/0	ABS
XM 901-58/0	Hydractive suspension
XM 901-63/0	Electric seats adjustment
XM 901-63/1	Electric armrest
XM 901-64/0	Fully automatic air conditioning
XM 901-65/0	Car radio
XM 901-65/1	Radio-telephone
XM 901-67/0	Central locking
XM 901-67/1	Burglar alarm
XM 901-67/2	Electric front window
XM 901-67/3	Electric rear window
XM 901-67/4	Sun roof

www.WorkshopManuals.co.uk

PARTS LIST

www.WorkshopManuals.co.uk

Ref.	Description
BB00	Battery
BB10	Supply box
B004	Equipotential post + battery
BMF1	Max. fuse box
BMF2	Max. fuse box
CA00	Anti-theft/ignition switch
C001	Diagnostic connector
CT00	Revolving contact
PSF0	Connector and fuse board
V6560	AIRBAG warning lamp
1010	Starter motor
1020	Alternator
1086	Burglar alarm starter cut-off relay
1150	Pre-heater control unit
1160	Pre-heater plugs
1203	Inertia sensor
1208	Diesel injection pump (advance corrector, fuel cut-off solenoid)
1244	EGR proportional electrovalve
1251	EGR vacuum pump
1400	TDC sensor
1500	Electric cooling fan relay
1510	Electric cooling fan
1620	Vehicle speed sensor
0002	Lighting and signalling switch
2000	Rear foglamp switch
2100	Stop lamp switch
2200	Reversing lamp switch
2210	L.H. reversing lamp
2215	R.H. reversing lamp
2300	Hazard warning device switch
2320	L.H. front direction indicator
2325	R.H. front direction indicator
2340	L.H. side repeater
2345	R.H. side repeater
2520	Horn
2610	L.H. headlamp
2615	R.H. headlamp
2620	L.H. side lamp
2625	R.H. side lamp
2630	L.H. rear lamp on bodyshell
2631	R.H. rear lamps on boot door
2632	L.H. rear lamps on boot door
2633	R.H. number plate lighting
2635	R.H. rear lamp on bodyshell
2636	L.H. number plate lighting
2660	Front foglamps switch
2670	L.H. foglamp
2675	R.H. foglamp
3006	Interior lamps switch
3022	L.H. rear interior lamp
3023	R.H. rear interior lamp
3030	Central interior lamp
3040	L.H. front door bottom lighting
3042	L.H. rear door bottom lighting
3045	R.H. front door bottom lighting
3047	R.H. rear door bottom lighting
3050	Lighting rheostat
3053	Cigar lighter lamp
3054	Ashtray lighting
3057	Ashtray lid control lighting
3058	Car radio flap control lighting
3060	Driver's sun visor mirror lighting
3061	Passenger's sun visor mirror lighting
3075	Anti-theft/ignition switch lighting
3100	Boot lamp switch
3105	Boot (or tailgate) lamp
3110	Glove box lighting switch
3115	Glove box lighting
0004	Instrument cluster
4020	Engine coolant thermal switch
4030	Engine coolant thermal switch (indicator)
4050	Water-in-fuel sensor
4110	Engine oil pressure switch
4120	Oil level sensor
4315	Fuel gauge (transmitter)
4400	Handbrake switch
4410	Brake fluid level switch
4430	L.H. front brake pad
4431	R.H. front brake pad
4704	Bonnet closed switch (bonnet open detection)
4705	Boot lock switch (boot open detection)
4900	Malfunction detector warning display
5015	Windscreen wiper motor
5100	Windscreen washer pump
5105	Heated screen washer jet
5110	Screen washer fluid level switch
5202	Rear screen wiper switch
5203	Rear screen washer switch
5215	Rear screen wiper motor
5300	Rear screen washer pump
6000	L.H. door L.H. electric window switch
6005	R.H. door R.H. electric window switch
6015	L.H. door R.H. electric window switch
6030	One-touch electric window control unit
6045	R.H. electric front window motor
6100	L.H. electric rear window rear switch
6105	R.H. electric rear window rear switch
6110	L.H. electric rear window front switch
6115	R.H. electric rear window front switch
6120	Electric rear window locking switch
6130	L.H. electric rear window motor
6135	R.H. electric rear window motor
6200	L.H. front door locking switch
6205	R.H. front door locking switch
6210	L.H. rear door locking switch
6215	R.H. rear door locking switch
6216	Boot lid locking switch
6230	Central door locking infra red receiver (PLIP)
6240	L.H. front door locking motor

Ref.	Description
6245	R.H. front door locking motor
6250	L.H. rear door locking motor
6255	R.H. rear door locking motor
6260	Boot door locking motor
6265	Fuel filler flap locking motor
6300	Driver's seat pull/push switch
6305	Passenger's seat pull/push switch
6310	Driver's seat height adjustment switch
6320	Driver's seat pull/push motor
6325	Passenger's seat pull/push motor
6330	Driver's seat height adjustment motor
6340	Driver's seat backrest switch
6345	Passenger's seat backrest switch
6346	Central armrest switch
6347	Central armrest motor
6350	Driver's seat backrest angle motor
6355	Passenger's seat backrest angle motor
6360	Driver's seat adjustment relay
6365	Passenger's seat adjustment relay
6406	Rear view mirror selector switch
6410	Rear view mirror, driver's side
6415	Rear view mirror, passenger's side
6542	Pyrotechnic seat belt E.C.U.
6545	Driver's pyrotechnic seat belt pre-tensioner
6546	Passenger's pyrotechnic seat belt pre-tensioner
6560	AIRBAG E.C.U.
6565	Driver's airbag module
6632	Hydraulic circuit fluid pressure switch
6800	Sun roof switch
6801	Sun roof sliding end of travel switch
6802	Sun roof tilting end of travel switch
6806	Sun roof closed position switch
6807	Sun roof relay
6810	Sun roof motor
7000	L.H. front wheel ABS sensor
7005	R.H. front wheel ABS sensor
7010	L.H. rear wheel ABS sensor
7015	R.H. rear wheel ABS sensor
7020	ABS E.C.U.
7026	Braking electrovalve unit
7222	Outside air thermal sensor
7700	Steering angle sensor
7705	Body height sensor
7706	Brake pressure switch
7707	Accelerator pedal sensor
7710	Suspension switch
7715	Suspension E.C.U.
7716	Suspension electrovalve (alone or front)
7717	Rear suspension electrovalve
8006	Evaporator thermal sensor
8007	Pressostat
8020	Air conditioning compressor
8030	Interior air thermal sensor
8031	Coolant thermal sensor
8032	Outside air thermal sensor
8035	Interior temperature electronic thermostat
8045	Blower control module
8048	Blower relay
8050	Blower motor
8065	Mixer flap reduction motor
8070	Air inlet flap reduction motor
8071	Air distribution flap reduction motor
8080	Air conditioning E.C.U.
8100	Front cigar lighter
8105	Rear cigar lighter
8110	Heated rear screen switch
8120	Heated rear screen
8125	Driver's heated rear view mirror
8130	Passenger's heated rear view mirror
8200	Coded anti-theft device keyboard
8410	Car radio
8413	Radio control
8415	Compact disc loader
8420	L.H. front loudspeaker
8425	R.H. front loudspeaker
8430	L.H. rear loudspeaker
8435	R.H. rear loudspeaker
8440	L.H. front tweeter loudspeaker
8445	R.H. front tweeter loudspeaker
8475	Radio-telephone
8480	Radio-telephone transmitter/receiver
8602	Burglar alarm volumetric control unit
8603	Burglar alarm switch
8604	Volumetric sensor
8605	Burglar alarm siren
8606	Burglar alarm LED
9000	Central electronic control unit (OSP)
9005	L.H. front lamp cluster control unit
9010	Cooling fans control unit
9015	R.H. front lamp cluster control unit
9020	Wiping/washing control unit
9025	Sensor data receiver control unit
9030	L.H. door and rear view mirror control unit
9035	Instrument cluster control unit
9040	Display unit control unit
9045	Vehicle interior control unit
9050	R.H. door and rear view mirror control unit
9055	Lighting and signals, changing-over control unit
9060	Wiping changing over control unit
9065	Console control unit
9070	Trailer control unit
9075	L.H. rear lamp cluster control unit
9080	Tailgate control unit
9085	R.H. rear lamp cluster control unit

www.WorkshopManuals.co.uk

LIST OF THE ELECTRICAL HARNESSES

www.WorkshopManuals.co.uk

REF.	HARNESSES LIST
AB	ABS
AV	FRONT
CL	CONSOLE
CN	NEGATIVE CABLE
CP	POSITIVE CABLE
EF	BOOT LIGHTING
EG	GLOVE BOX LIGHTING
FP	PARKING BRAKE
GC	HEATING SYSTEM
GI	JET
HY	HYDRAULIC SYSTEM
MT	ENGINE
OD	R.H. OPTICAL UNIT
OG	L.H. OPTICAL UNIT
OS	DASHBOARD OSP
PB	DASHBOARD
PC	DRIVER'S DOOR
PD	R.H. REAR DOOR
PG	L.H. REAR DOOR
PL	VEHICLE INTERIOR LAMP
PP	PASSENGER'S DOOR
RA	RADIO
RD	R.H. REAR
RG	L.H. REAR
RQ	TRAILER
SB	SUSPENSION, FRONT SUBFRAME
SC	DRIVER'S SEAT
SM	SUSPENSION, ENGINE SECTION
SP	PASSENGER'S SEAT
TO	SUN ROOF
UD	R.H. BRAKE PAD WEAR
UG	L.H. BRAKE PAD WEAR
VG	L.H. SIDE TAILGATE

www.WorkshopManuals.co.uk

COLOUR CODING

www.WorkshopManuals.co.uk

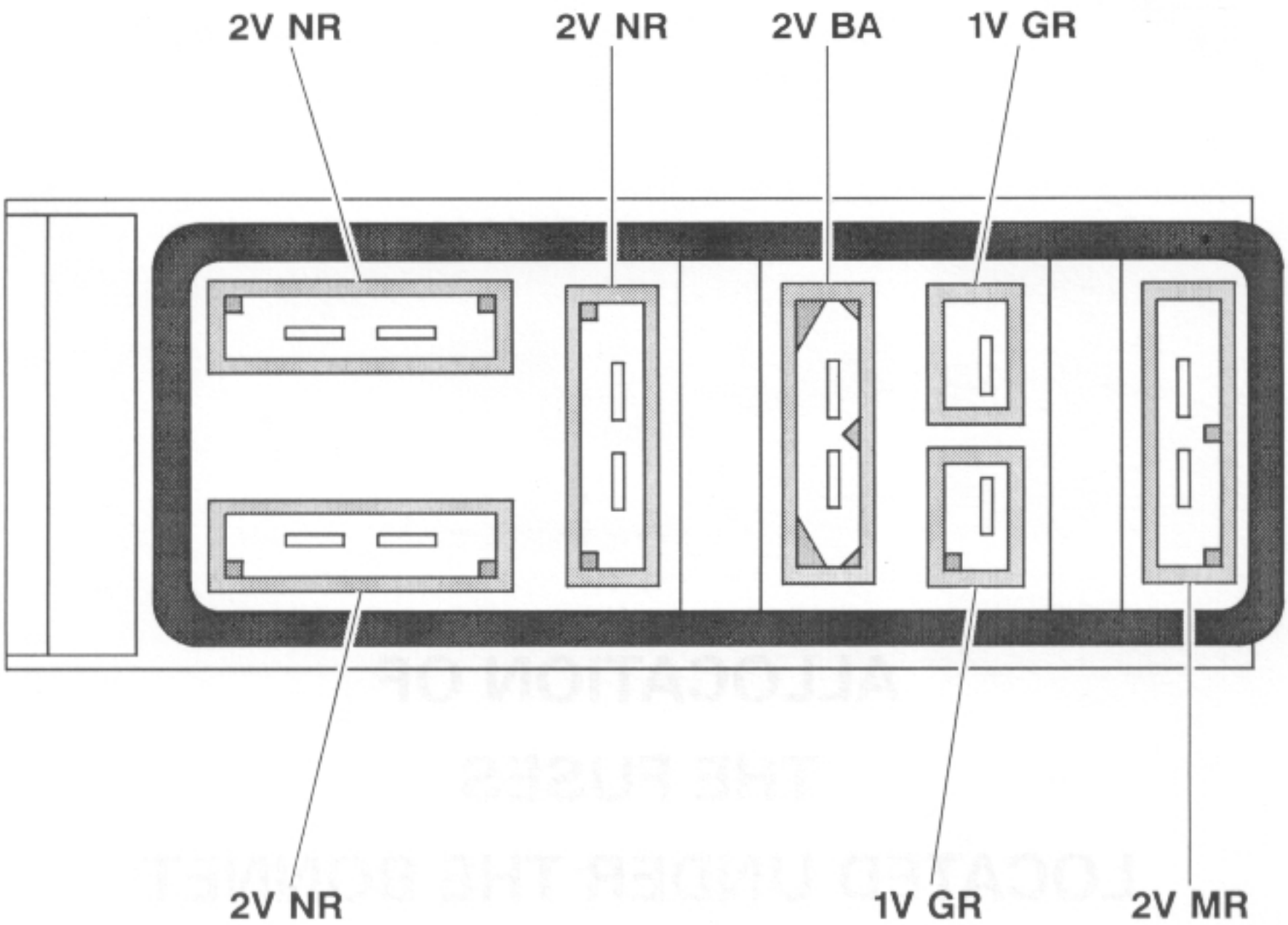
COLOUR CODING

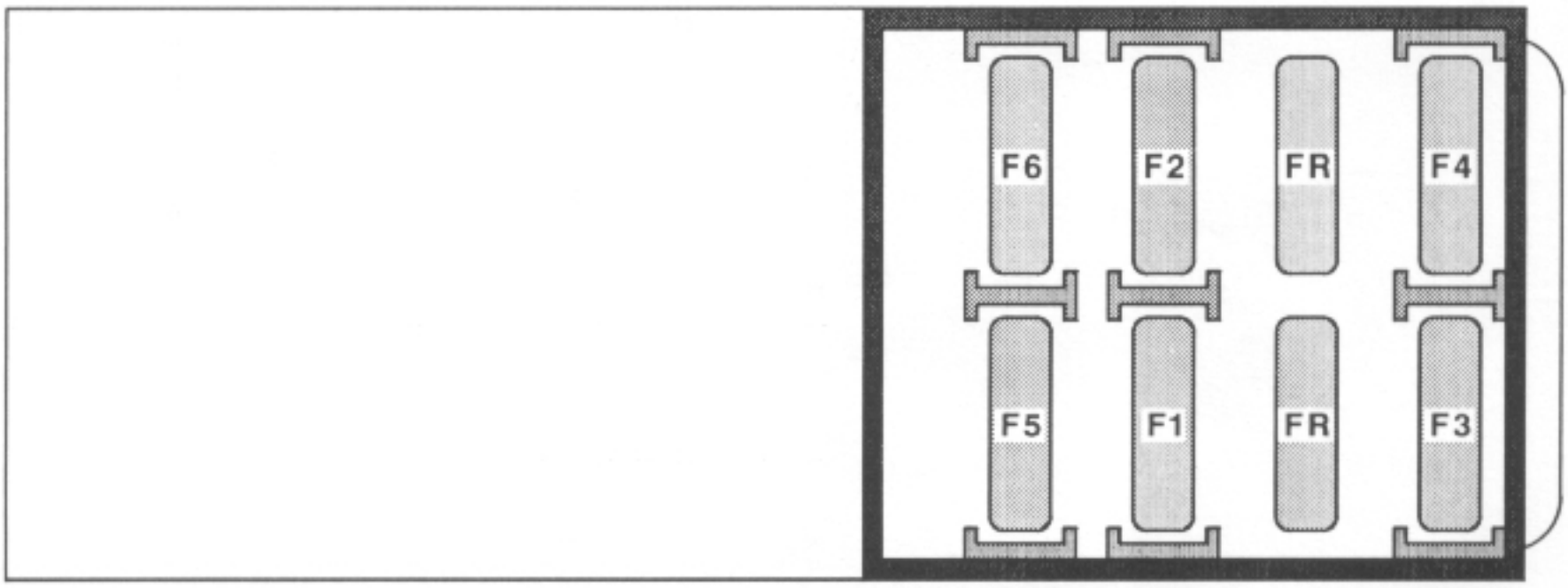
BA	WHITE
BE	BLUE
BG	BEIGE
GR	GREY
JN	YELLOW
MR	BROWN
MV	MAUVE
NR	BLACK
OR	ORANGE
RG	RED
RS	PINK
VE	GREEN
VI	VIOLET

www.WorkshopManuals.co.uk

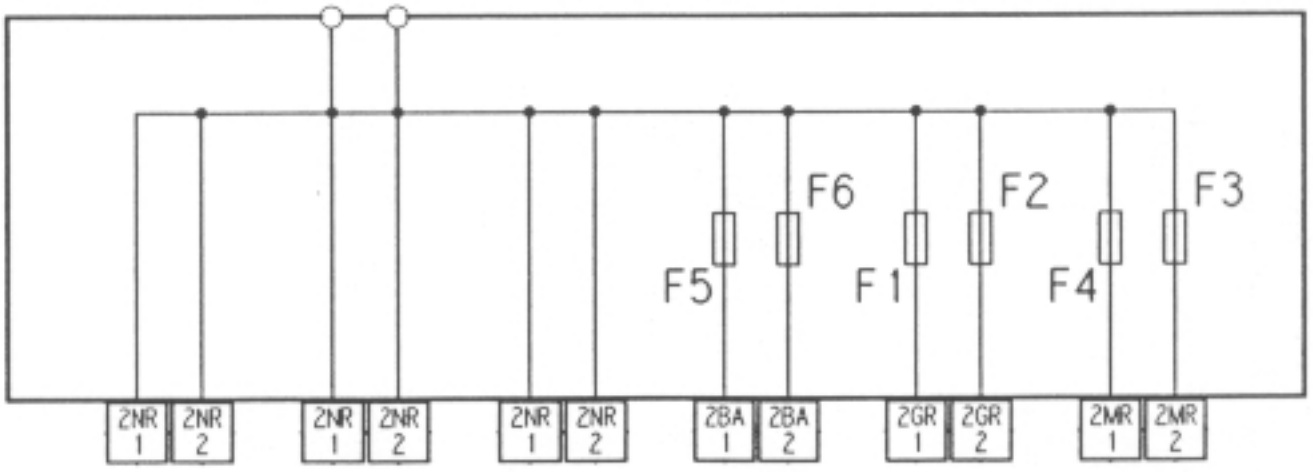
ALLOCATION OF THE FUSES LOCATED UNDER THE BONNET (BB10)

www.WorkshopManuals.co.uk





www.WorkshopManuals.co.uk



FUSES		PROTECTED CIRCUITS
F1	30 A GREEN	+ Engine running protected Blower motor
F2	20 A YELLOW	+ After ignition switched off protected Hydractive suspension E.C.U. Alarm siren Heater unit Water-in-fuel sensor
F3	30 A GREEN	Not used
F4	30 A GREEN	ABS
F5	SHUNT	
F6	30 A GREEN	Radio-telephone Caravan plug

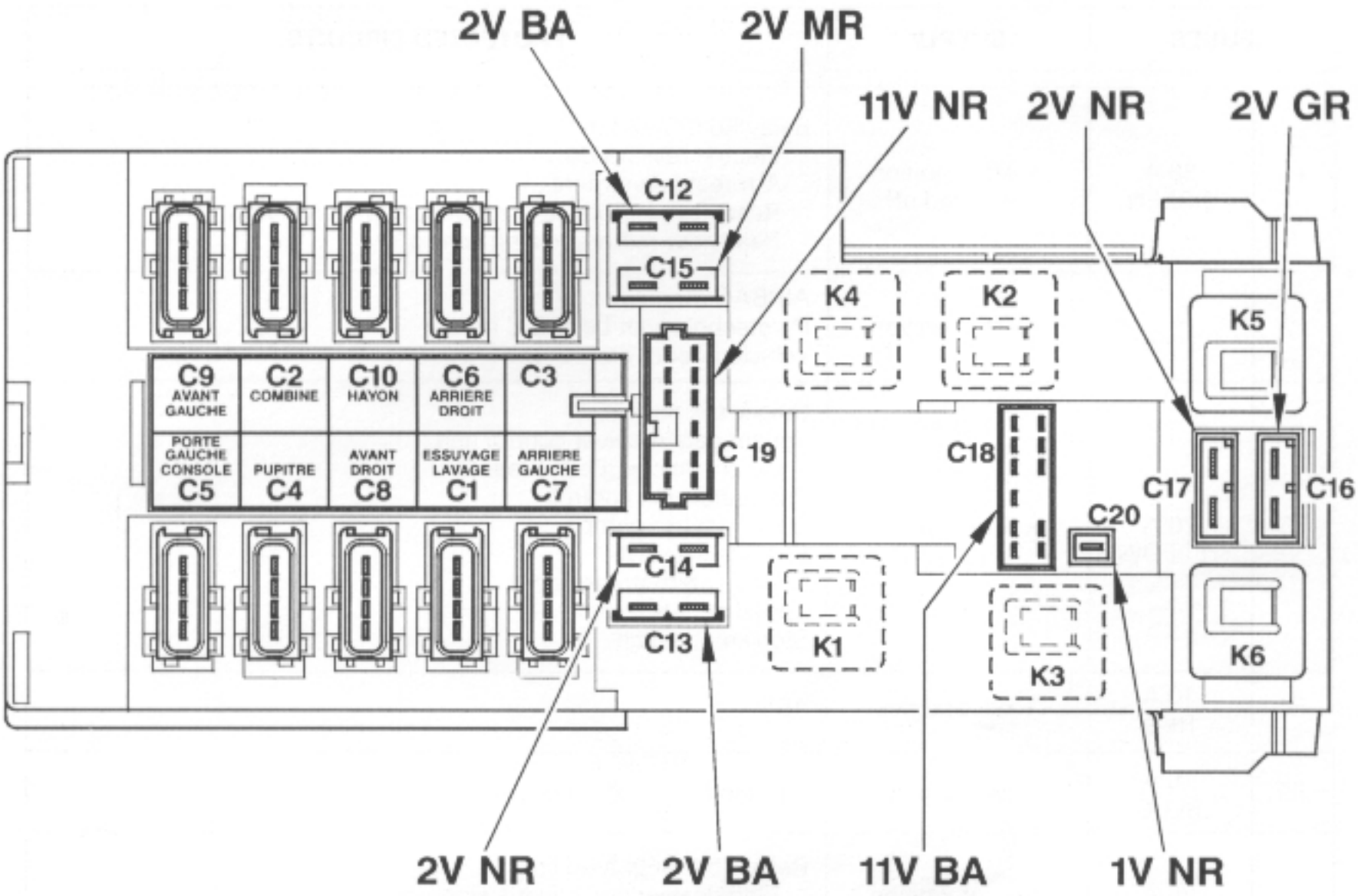
www.WorkshopManuals.co.uk

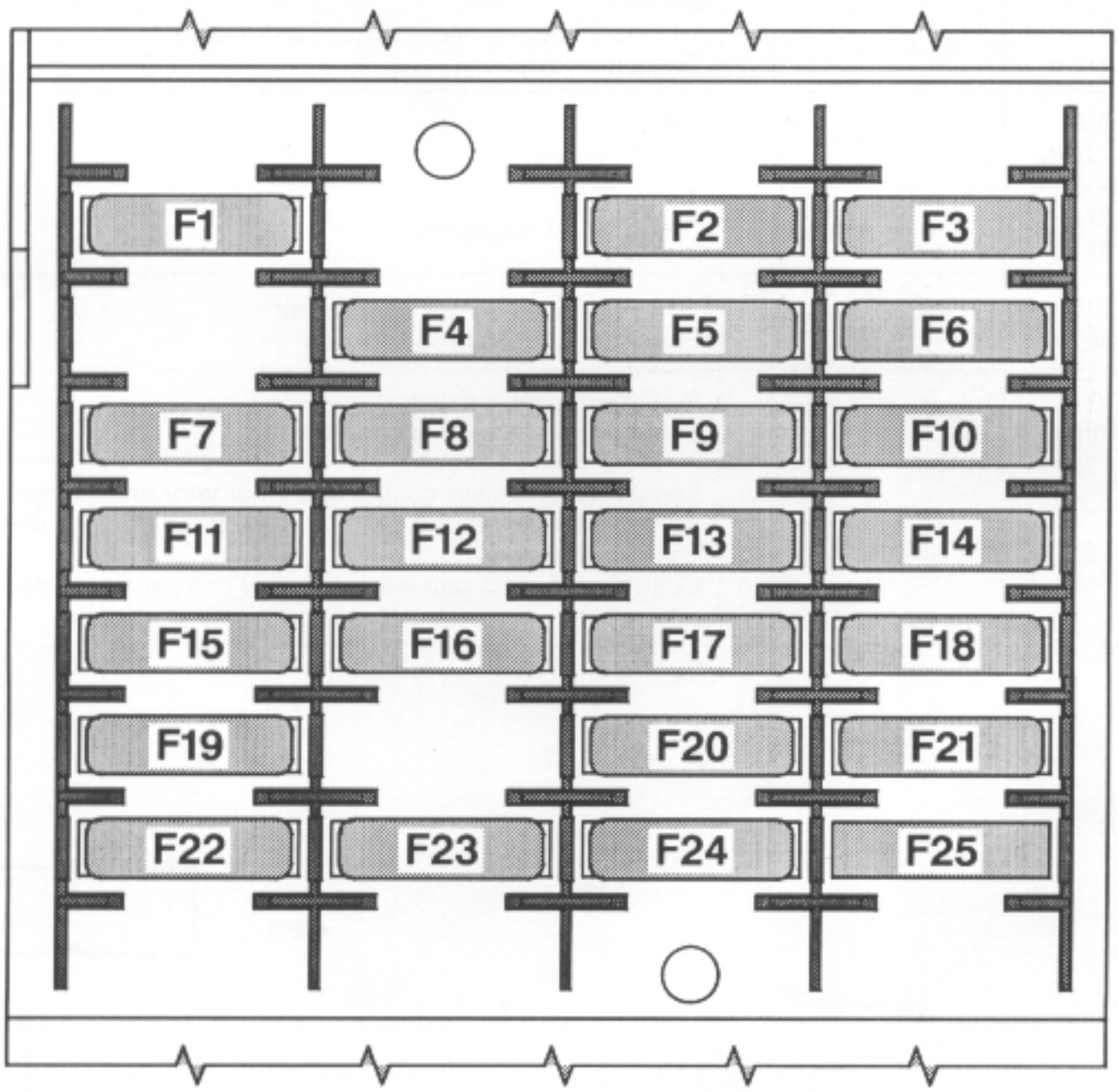
ALLOCATION OF THE FUSES LOCATED IN THE PASSENGER'S COMPARTMENT (PSF0)

www.WorkshopManuals.co.uk

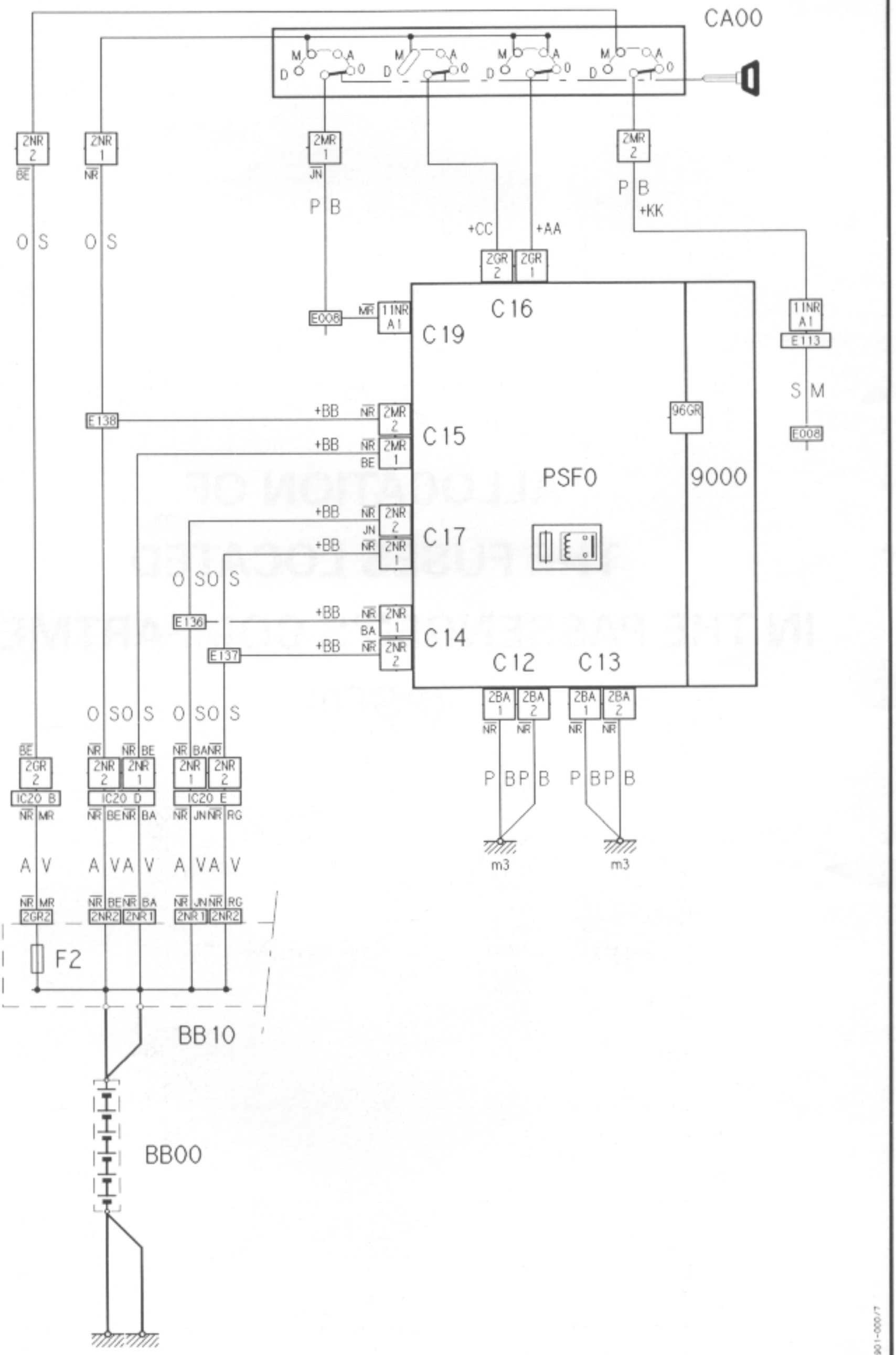
FUSES		SUPPLY	PROTECTED CIRCUITS
F1	30 A GREEN	+ After ignition switched off	Relay K6 (PSF0) feed line : Electric rear window Armrest adjustment Rear view mirrors selector switch warning lamp Rear view mirrors folding control
F2	5 A BROWN	+ After ignition	AIRBAG module Pyrotechnic seat belts E.C.U. Vehicle interior control unit
F3	20 A YELLOW	+ After ignition	Diagnostic socket Sensor data receiver control unit : Air conditioning compressor Pre-heater unit control EGR vacuum pump EGR electrovalve Coded anti-theft keyboard Speed sensor Stoplamp switch
F4	10 A RED	+ Accessories	ABS
F5	15 A BLUE	+ Permanent	L.H. electric front window
F6	20 A YELLOW	+ After ignition switched off	Relay K5 (PSF0) feed line : Electric window, driver's side Electric window, passenger's side Sun roof
F7	25 A WHITE	+ Central E.C.U.	L.H. door and rear view mirror control unit Console control unit
F8	5 A BROWN	+ Accessories	Radio Radio-telephone
F9	30 A GREEN	+ Permanent	Driver's seat adjustment
F10	30 A GREEN	+ Central E.C.U.	L.H. front lamp cluster control unit Electric cooling fans control unit
F11	10 A RED	+ Central E.C.U.	Display unit control unit Selector switch/lighting control unit
F12	10 A RED	+ Accessories	Sensor data receiver control unit (alternator energizing) Control of R.H. electric front window relay and L.H. electric front window operation Control of electric rear window relay and centre armrest adjustment

www.WorkshopManuals.co.uk





www.WorkshopManuals.co.uk

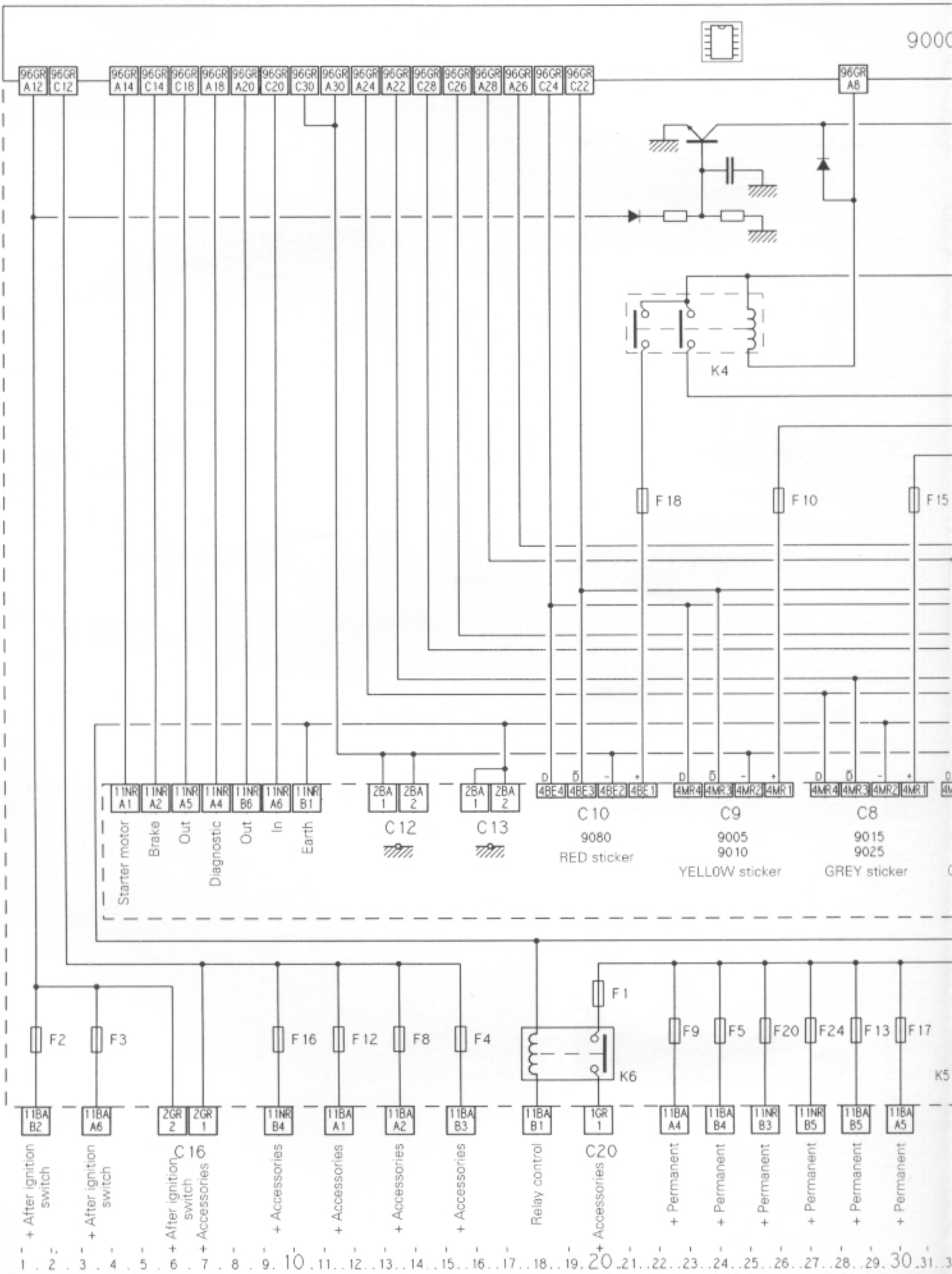


www.WorkshopManuals.co.uk

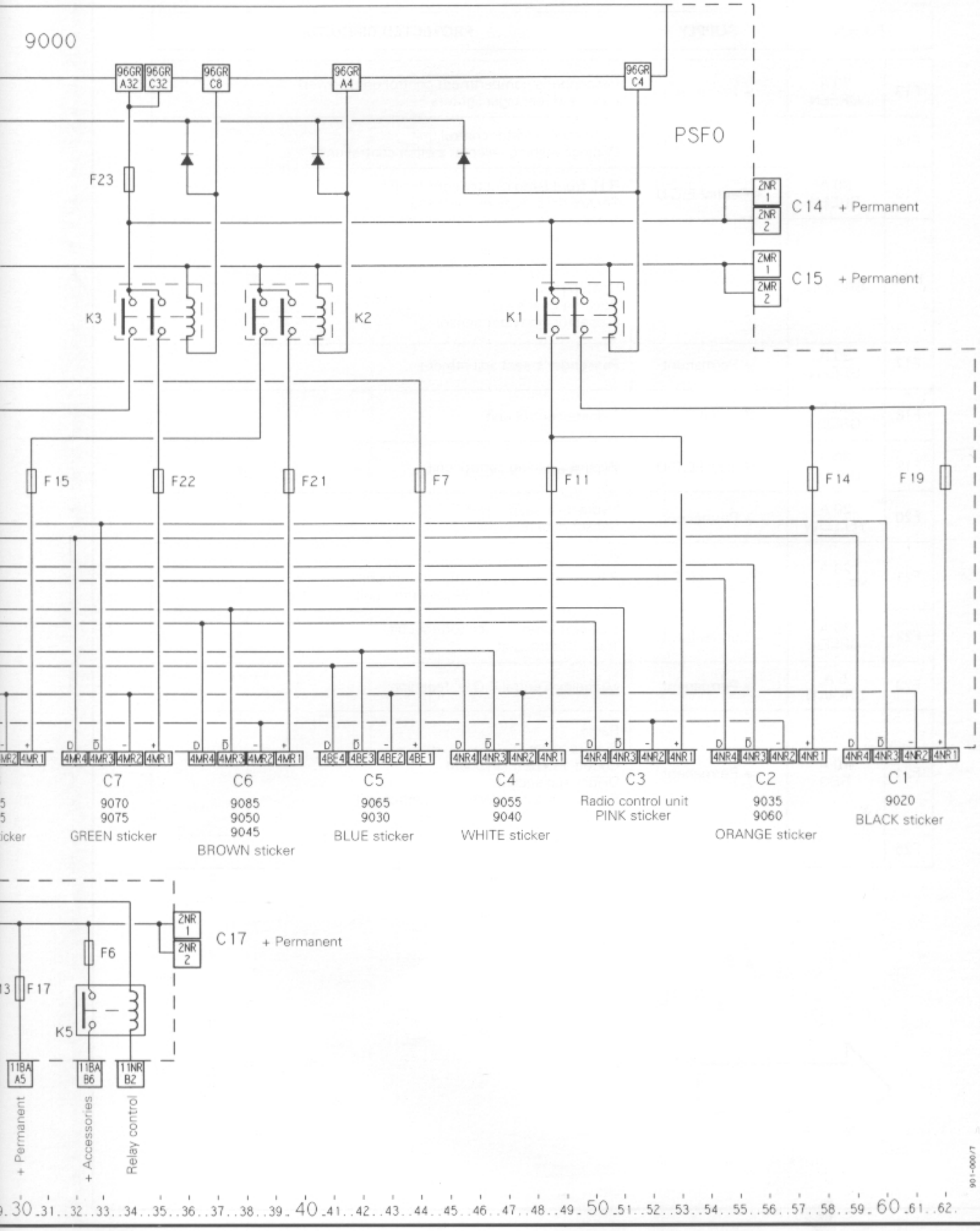
FUSES		SUPPLY	PROTECTED CIRCUITS
F13	30 A GREEN	+ Permanent	Passenger's compartment control unit (power) Front and rear cigar lighters
F14	10 A RED	+ Central E.C.U.	Instrument cluster control unit Wiping/washing selector switch control unit
F15	30 A GREEN	+ Central E.C.U.	R.H. front lamp cluster control unit Sensor data receiver control unit
F 16	5 A BROWN	+ Accessories	Map reading lamps Sun visor mirrors lighting Glove box lighting Heated jets Reverse gear switch Diesel fuel-in-water sensor
F17	30 A GREEN	+ Permanent	Passenger's seat adjustment
F18	30 A GREEN	+ Central E.C.U.	Tailgate control unit
F19	30 A GREEN	+ Central E.C.U.	Wiping/washing control unit
F20	20 A YELLOW	+ Permanent	Hydractive suspension E.C.U. Sensor data receiver control unit
F21	20 A YELLOW	+ Central E.C.U.	R.H. rear lamp cluster control unit R.H. door/rear view mirror control unit Passenger's compartment control unit
F22	30 A GREEN	+ Central E.C.U.	L.H. rear lamp cluster control unit Trailer control unit
F23	5 A BROWN	+ Permanent	Multiplex Central E.C.U. feed line
F24	10 A RED	+ Permanent	Radio PLIP receiver Coded antitheft keyboard Diagnostic socket Passenger's compartment control unit : Siren, LED, ultra-sound sensors
F25			Radio Bus



www.WorkshopManuals.co.uk



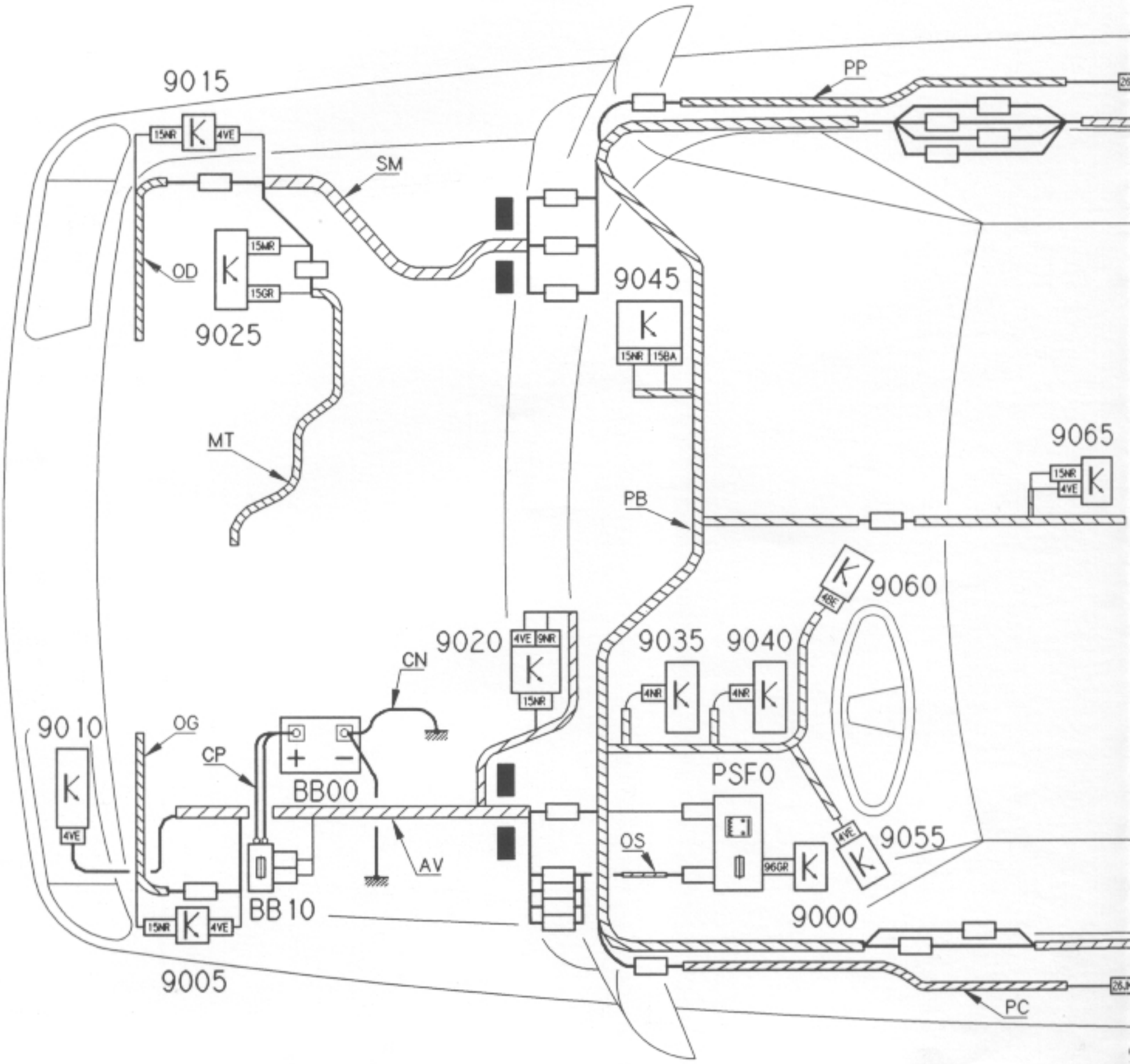
www.WorkshopManuals.co.uk



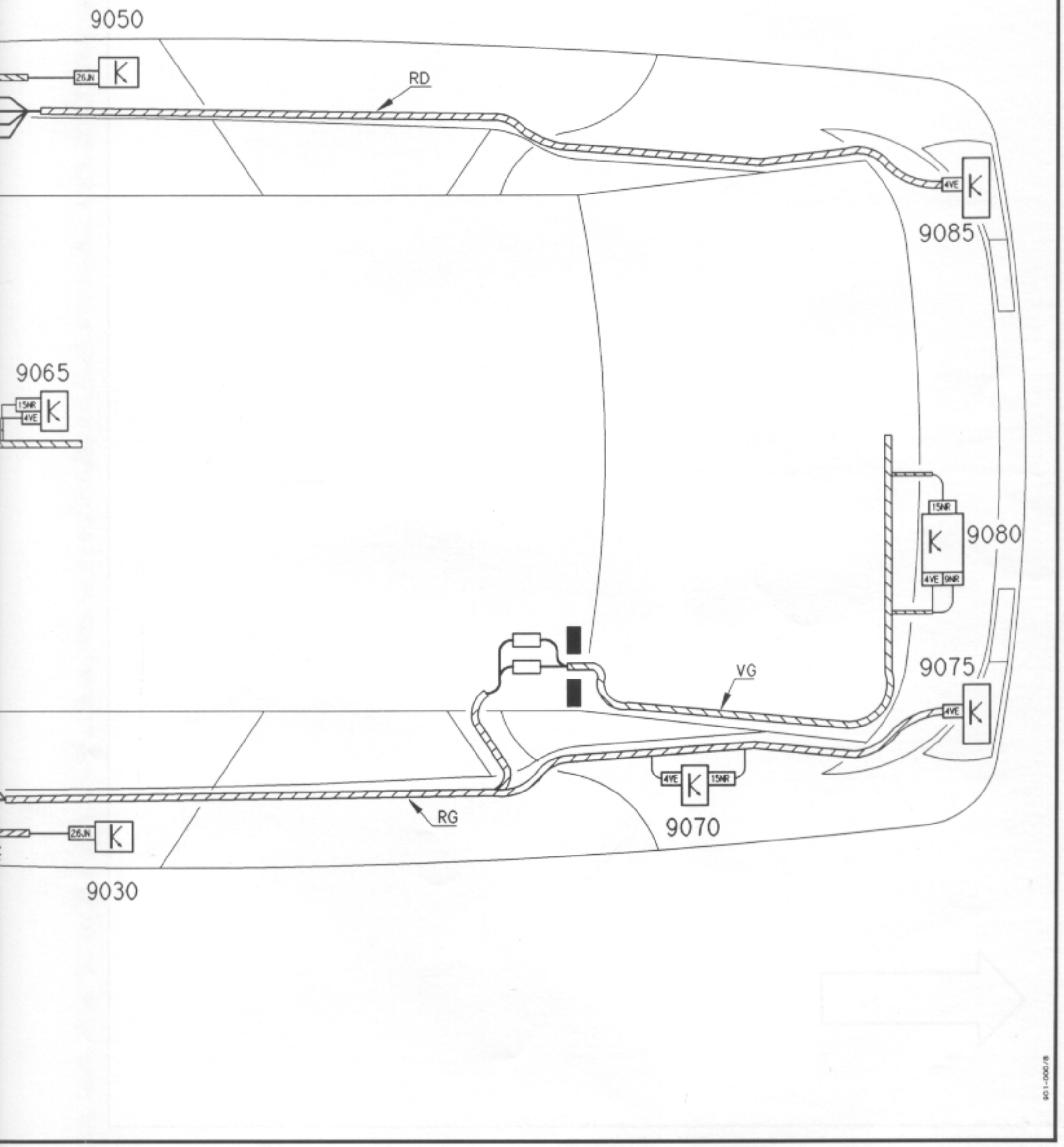
www.WorkshopManuals.co.uk

LOCATION OF THE MULTIPLEX UNITS

www.WorkshopManuals.co.uk



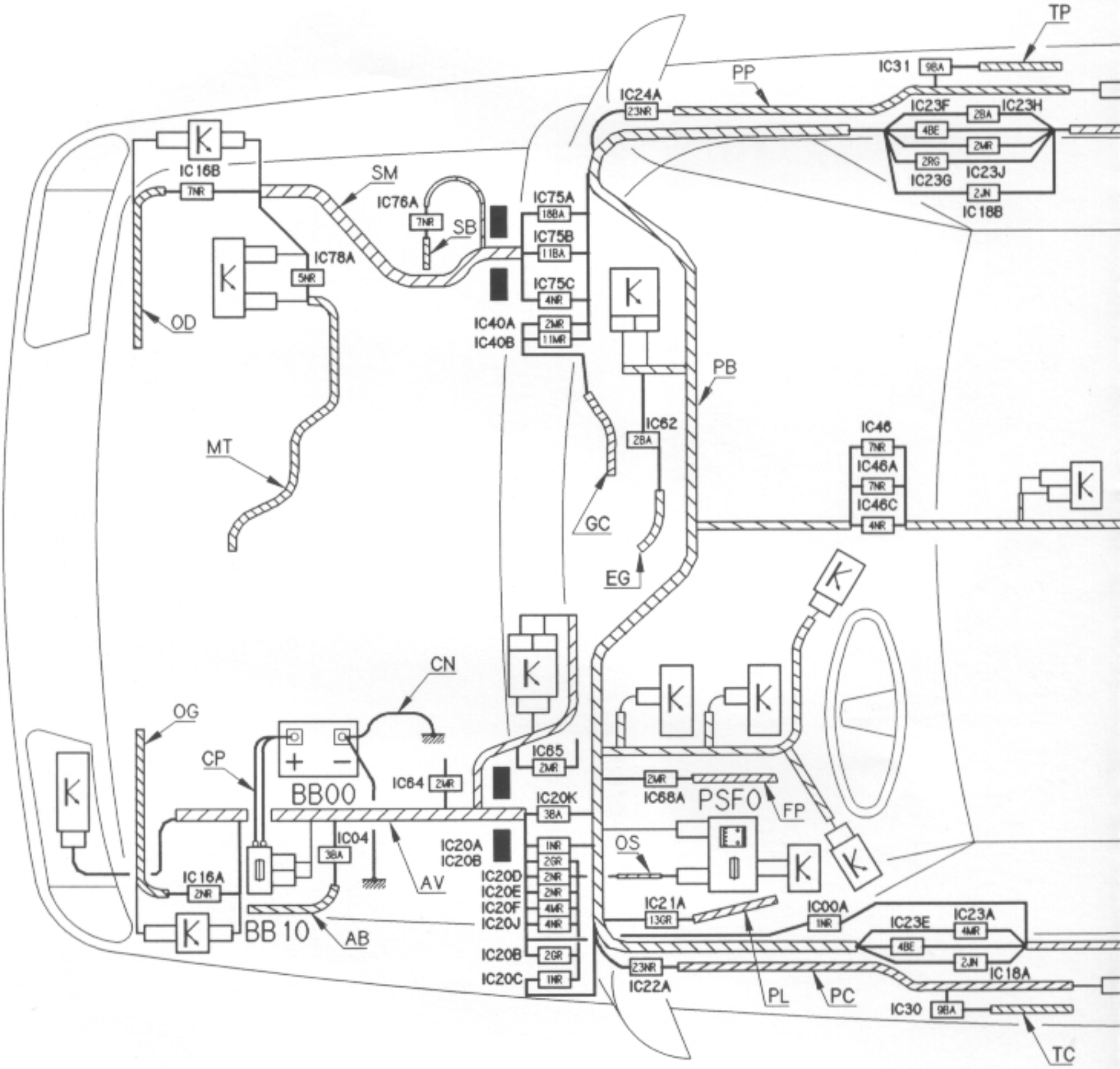
www.WorkshopManuals.co.uk



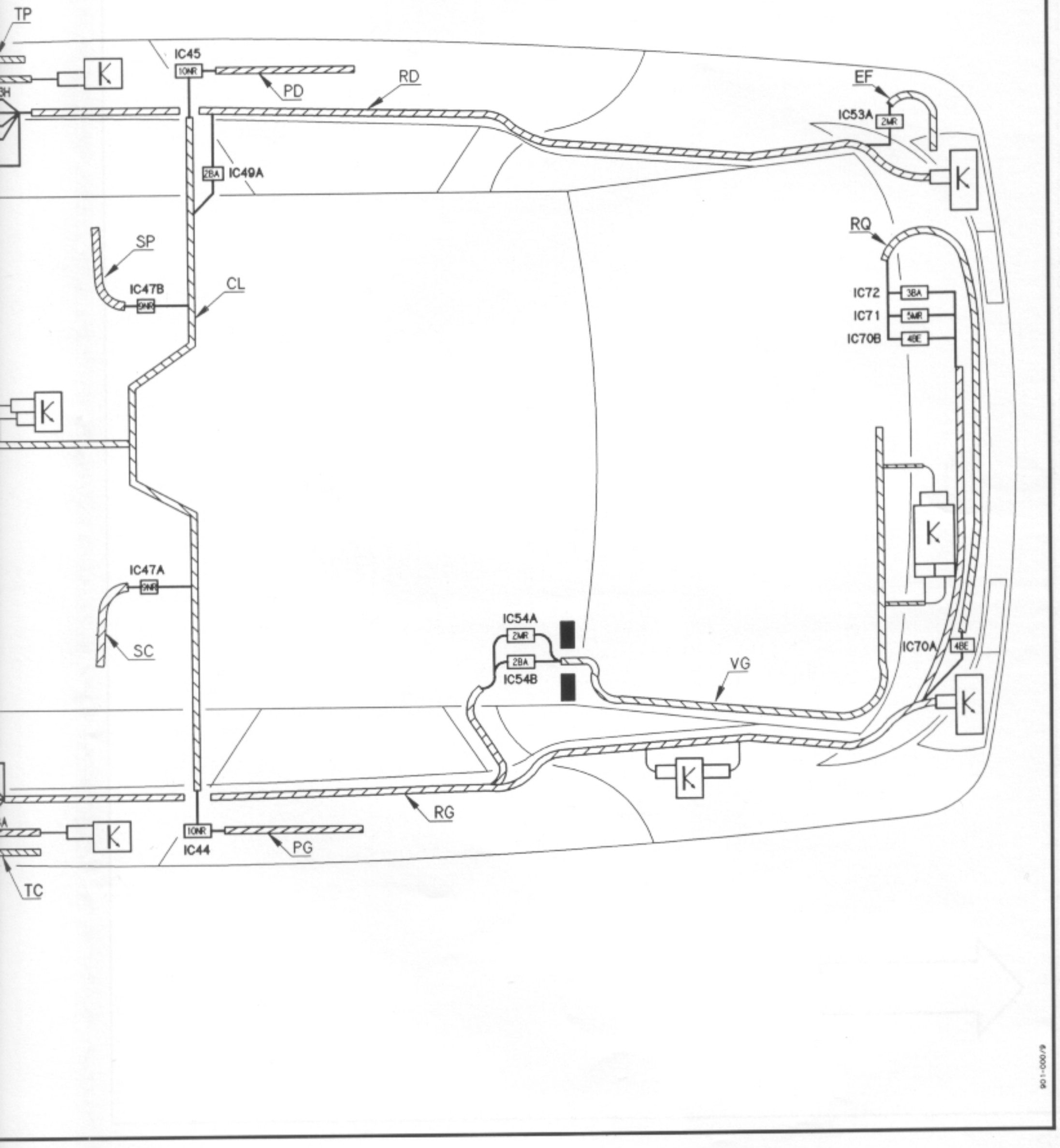
www.WorkshopManuals.co.uk

POSITIONING OF THE INTER CONNECTIONS

www.WorkshopManuals.co.uk



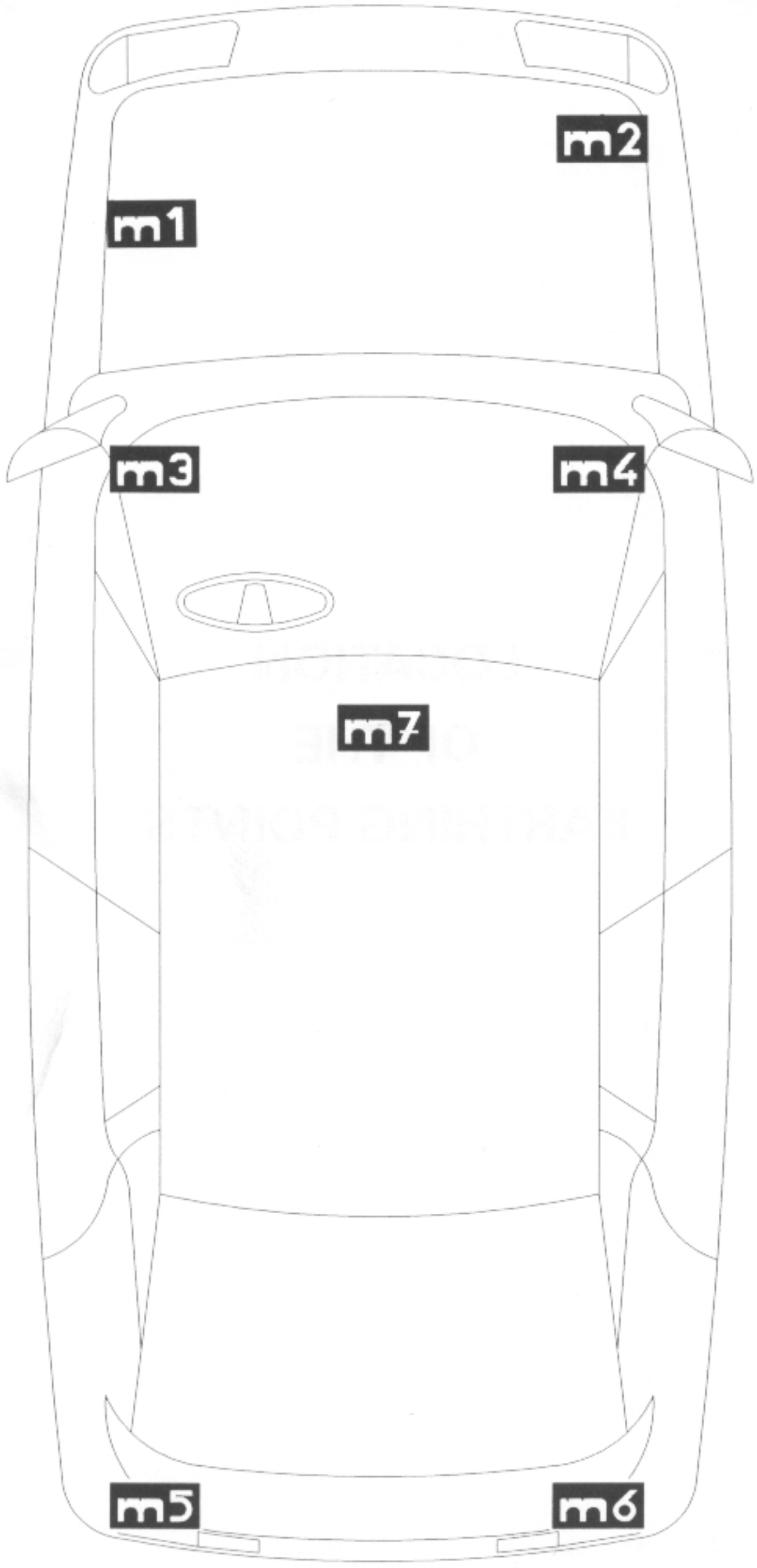
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

LOCATION OF THE EARTHING POINTS

www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

SPLICES
LIST

www.WorkshopManuals.co.uk

WIRING HARNESSES SPLICES PB

E001	Passenger's compartment control unit	9045	E001
	E001		Sun roof switch 6800
	E001		Suspension switch 7710
	E001		Heating and ventilation unit 8060
	E001		E143 (CL)
	E001		Car radio 8410
	E001		Lighting rheostat 3050
E002	Connector and fuse board	PSF0	E002
	E002		Burglar alarm LED 8606
	E002		Car radio 8410
	E002		Vehicle interior control unit 9045
	E002		Coded antitheft keyboard 8200
	E002		Central door locking infra red receiver (PLIP) 6230
E003	Connector and fuse board	PSF0	E003
	Connector and fuse board	PSF0	E003
	Connector and fuse board	PSF0	E003
	E003		Sensor information control unit 9025
E004	Connector and fuse board	PSF0	E004
	E004		Sun roof unit
	E004		R.H. door R.H. electric window switch 6005
	E004		E172 (PC)
E006	Connector and fuse board	PSF0	E006
	E006		Diagnostic socket C001
	E006		E114
	E006		Coded antitheft keyboard 8200
	E006		Vehicle interior control unit 9045
	E006		Stop lamps switch 2100
E008	Antitheft switch	CA00	E008
	Connector and fuse board	PSF0	E008
	E008		Coded anti-theft keyboard 8200
	E008		Vehicle interior control unit 9045
E009	Earth	m4	E009
	E009		Car radio 8410
	E009		Glove box lighting switch 3110
	E009		Burglar alarm volumetric control unit 8602
	E009		E107 (PL)
	E009		Suspension switch 7710
	E009		Suspension switch 7710
	E009		Parking brake switch 4400
	E009		E109 (PL)
	E009		Vehicle interior control unit 9045
	E009		Antitheft switch lighting 3075
	E009		Blower relay 8048
	E009		E171 (PC)

www.WorkshopManuals.co.uk

E010	Connector and fuse board	PSF0	E010	
	E010		Revolving contact	CT00
	E010		Pyrotechnic seat belt E.C.U.	6542
	E010		Vehicle interior control unit	9045
E013	Connector and fuse board	PSF0	Display unit control unit	9040
	E013		Lighting and signalling change over control unit	9055
E014	Connector and fuse board	PSF0	Instrument cluster control unit	9035
	E014		Wiping change over control unit	9060
E015	Connector and fuse board	PSF0	Console control unit	9065
	E015		L.H. door and rear view mirror control unit	9030
E016	Connector and fuse board	PSF0	R.H. rear lamp cluster control unit	9085
	Vehicle interior control unit	9045	R.H. door and rear view mirror control unit	9050
E017	Lighting rheostat	3050	E017	
	E017		Air conditioning E.C.U.	8080
	E017		Instrument cluster control unit	9035
E018	Earth (m4)		E018	
	E018		Revolving contact	CT00
	E018		Pyrotechnic seat belt E.C.U.	6542
	E018		Air conditioning E.C.U.	8080
	E018		Blower control module	8045
	E018		Radio-telephone	8475
	E018		Vehicle interior control unit	9045
	E018		Diagnostic socket	C001
E019	Vehicle interior control unit	9045	E019	
	E019		R.H. front door locking motor	6245
	E019		L.H. front door locking motor	6240
	E019		E142 (CL)	
E020	Vehicle interior control unit	9045	E020	
	E020		E146 (CL)	
	E020		R.H. front door locking motor	6245
	E020		L.H. front door locking motor	6240
E021	Connector and fuse board	PSF0	E021	
	E021		Water-in-fuel sensor	4050
	E021		Glove box lighting	3115
	E021		E108 (PL)	
E022	Connector and fuse board	PSF0	E022	
	E022		Vehicle interior control unit	9045
	E022		E141 (CL)	

WIRING HARNESSES AV SPLICES

E056	Wiping/washing control unit	9020	E056	
	E056		Pressostat	8007
	E056		Pressostat	8007
	E056		Water-in fuel sensor	4050
	E056		Hydraulic circuit fluid pressure switch	6632
	E056		Brake fluid level contact switch	4410
	E056		L.H. front brake pad	4430

www.WorkshopManuals.co.uk

E057	Supply box		BB10	E057	
	E057			E132	
	E057			Radio-telephone	8475
E059	Connector and fuse board		PSF0	L.H. front lamp cluster control unit	9005
	E059			Electric cooling fan unit control unit	9010

WIRING HARNESSES MT SPLICES

E086	E114 (SM)		E086	
	E086		Pre-heater control unit	1150
	E086		Vehicle speed sensor	1620
E087	Sensor data receiver control unit	9025	E087	
	E087		Vehicle speed sensor	1620
	E087		Reversing lamp contact switch	2200

WIRING HARNESSES OG SPLICES

E096	Earth m1		E096	
	E096		Electric cooling fan	1510B
	E096		Electric cooling fan unit control unit	9010
E097	L.H. front lamp cluster control unit	9005	E097	
	E097		L.H. front direction indicator	2320
	E097		L.H. side repeater	2340
	E097		L.H. side lamp	2620

WIRING HARNESSES OD SPLICES

E101	R.H. front lamp cluster control unit	9015	E101	
	E101		R.H. front direction indicator	2325
	E101		R.H. side repeater	2345
	E101		R.H. side lamp	2625

WIRING HARNESSES PL SPLICES

E106	Vehicle interior control unit	9045	E106	
	E106		L.H. rear roof lamp	3022
	E106		R.H. rear roof lamp	3023
	E106		Central roof lamp	3030
E107	E009 (PB) earth		E107	
	E107		L.H. rear roof lamp	3022
	E107		R.H. rear roof lamp	3023
	E107		Central roof lamp	3030

www.WorkshopManuals.co.uk

E108	E021 (PB)	E108	
	E108	L.H. rear roof lamp	3022
	E108	R.H. rear roof lamp	3023
	E108	Central roof lamp	3030
	E108	Sun visor mirror lighting	3060
	E108	Passenger's sun visor mirror lighting	3061
E109	E009 (PB) earth	E109	
	E109	L.H. rear roof lamp	3022
	E109	R.H. rear roof lamp	3023
	E109	Central roof lamp	3030
	E109	Sun visor mirror lighting	3060
	E109	Door locking infrared receiver (PLIP)	6230
	E109	Passenger's sun visor mirror lighting	3061

WIRING HARNESSES SM SPLICES

E111	Earth	m2	E111	
	E111		Suspension E.C.U.	7715
	E111		Alarm siren	8605
	E111		E161 (SB)	
	E111		EGR vacuum pump	1251
	E111		Suspension E.C.U.	7715
E112	Connector and fuse board	PSF0	E112	
	E112		Suspension E.C.U.	7715
	E112		Suspension E.C.U.	7715
	E112		Sensor data receiver control unit	9025
E113	Antitheft switch	CA00	E113	
	E113		Body height sensor	7705
	E113		Water-in-fuel sensor	4050
	E113		Alarm siren	8605
	E113		Suspension E.C.U.	7715
E114	E006 (PB)		E114	
	E114		E086 (MT)	
	E114		EGR proportional electrovalve	1244
	E114		Inertia sensor	1203
	E114		EGR vacuum pump	1251
E116	Sensor data receiver control unit	9025	E116	
	E116		Instrument cluster control unit	9035
	E116		Suspension E.C.U.	7715
	E116		Vehicle speed sensor	1620

WIRING HARNESSES VG SPLICES

E121	Tailgate control unit	9080	E121	
	E121		R.H. reversing lamp	2215
	E121		R.H. rear lamp cluster on tailgate	2631
	E121		R.H. number plate lighting	2633
	E121		L.H. number plate lighting	2636

www.WorkshopManuals.co.uk

E145	Earth m7		E145
	E145		Front cigar lighter 8100
	E145		Rear cigar lighter 8105
	E145		R.H. electric rear window front switch 6115
	E145		Electric rear window locking switch 6120
	E145		L.H. electric rear window front switch 6110
	E145		Driver's seat
	E145		Passenger's seat
	E145		Ashtray lighting 3054
E146	E020 (PB)		E146
	E146		Fuel filler flap locking motor 6265
	E146		L.H. rear door locking motor 6250
	E146		R.H. rear door locking motor 6255
E147	Connector and fuse board	PSF0	E147
	E147		Central armrest switch 6346
	E147		R.H. electric rear window front switch 6115
	E147		L.H. electric rear window front switch 6110
	E147		Electric rear window locking switch 6120
	E147		Rear view mirrors selector switch 6406
	E147		Rear view mirrors selector switch 6406
E148	Console control unit	9065	E148
	E148		L.H. rear door bottom lighting 3042
	E148		R.H. rear door bottom lighting 3047
	E148		Rear view mirrors selector switch 6406
	E148		Rear view mirrors selector switch 6406
E150	Electric rear window locking switch	6120	E150
	E150		L.H. electric rear window rear switch 6100
	E150		R.H. electric rear window rear switch 6105
E152	Earth m7		E152
	E152		Central armrest switch 6346
	E152		Central armrest switch 6346
	E152		Central armrest switch 6346
	E152		Ashtray lighting 3054
	E152		Ashtray lid lighting 3057
	E152		Radio flap lighting 3058
	E152		L.H. electric rear window front switch 6110
	E152		R.H. electric rear window front switch 6115
	E152		Console control unit 9065
	E152		L.H. electric rear window front switch 6110
	E152		R.H. electric rear window front switch 6115

WIRING HARNESSES SB SPLICES

E161	E111 (SM)	E161
	E161	Front suspension electrovalve 7716
	E161	Brake pressure switch 7706
	E161	Rear suspension electrovalve 7717
	E161	Body height sensor 7705

www.WorkshopManuals.co.uk

WIRING HARNESSES PC SPLICES

E171	E171		E009 (PB)
	L.H. door L.H. electric window switch	6000	E171
	One touch electric window control unit	6030	E171
	L.H. door R.H. electric window switch	6015	E171
	L.H. door R.H. electric window switch	6015	E171
E172	E004		E172
	E172		One touch electric window control unit 6030
	E172		One touch electric window control unit 6030
	E172		L.H. door L.H. electric window switch 6000
	E172		L.H. door R.H. electric window switch 6015
E173	Connector and fuse board	PSF0	E173
	E173		L.H. rear view mirror and door control unit 9030
	E173		L.H. front door locking switch 6200
	E173		L.H. front door bottom lighting 3040
	E173		Heated rear view mirror, driver's side 8125

WIRING HARNESSES PP SPLICES

E176	Connector and fuse board	PSF0	E176
	E176		R.H. rear view mirror and door control unit 9050
	E176		Heated rear view mirror, passenger's side 8130
	E176		R.H. front door locking switch 6205
	E176		R.H. front door bottom lighting 3045

WIRING HARNESSES PG SPLICES

E180	L.H. electric rear window front switch	6110	E180
	E180		L.H. rear door locking switch 6210
	E180		L.H. electric rear window rear switch 6100
	E180		L.H. electric rear window front switch 6110

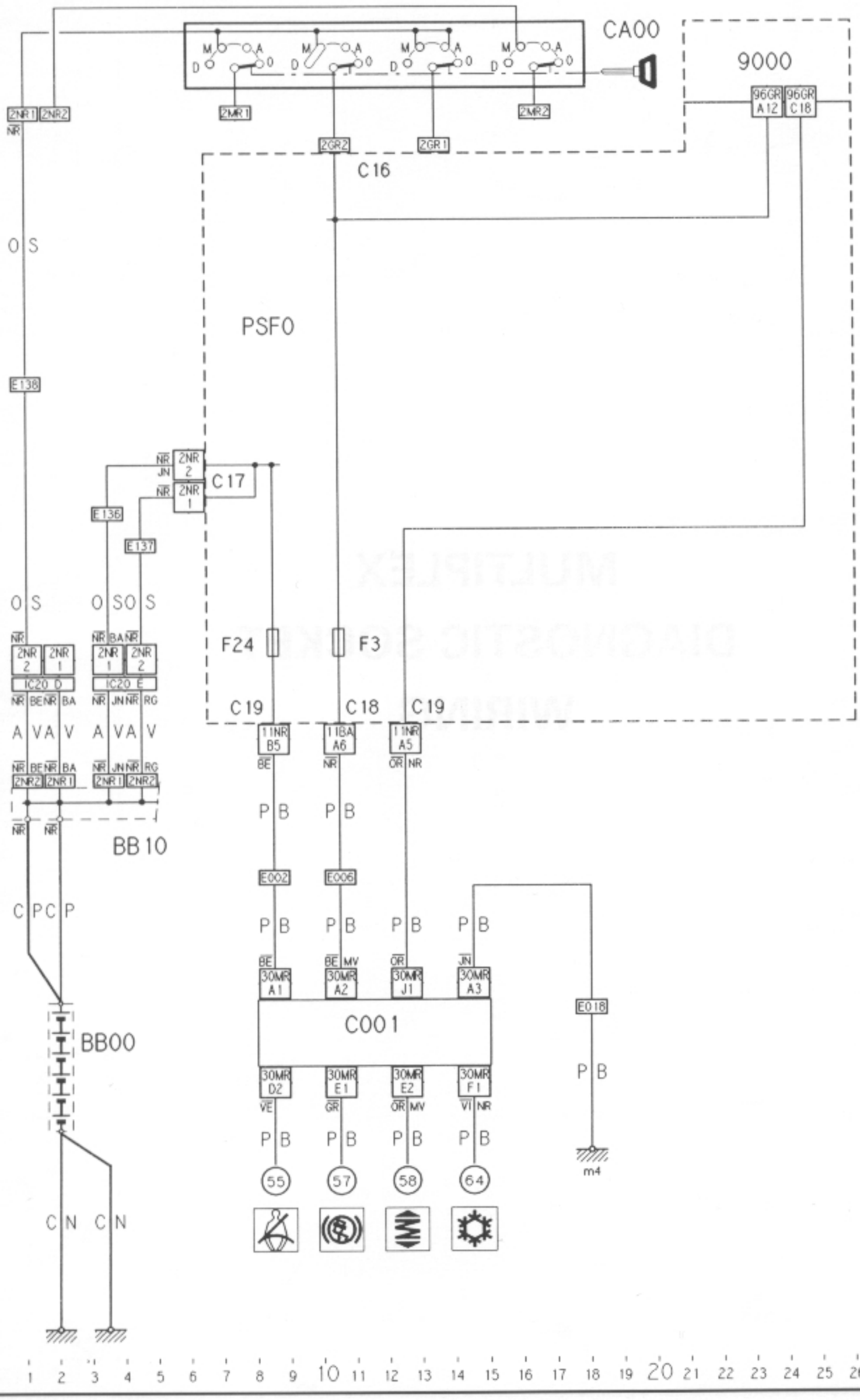
WIRING HARNESSES PD SPLICES

E185	R.H. electric rear window front switch	6115	E185
	E185		R.H. rear door locking switch 6215
	E185		R.H. electric rear window rear switch 6105
	E185		R.H. electric rear window front switch 6115

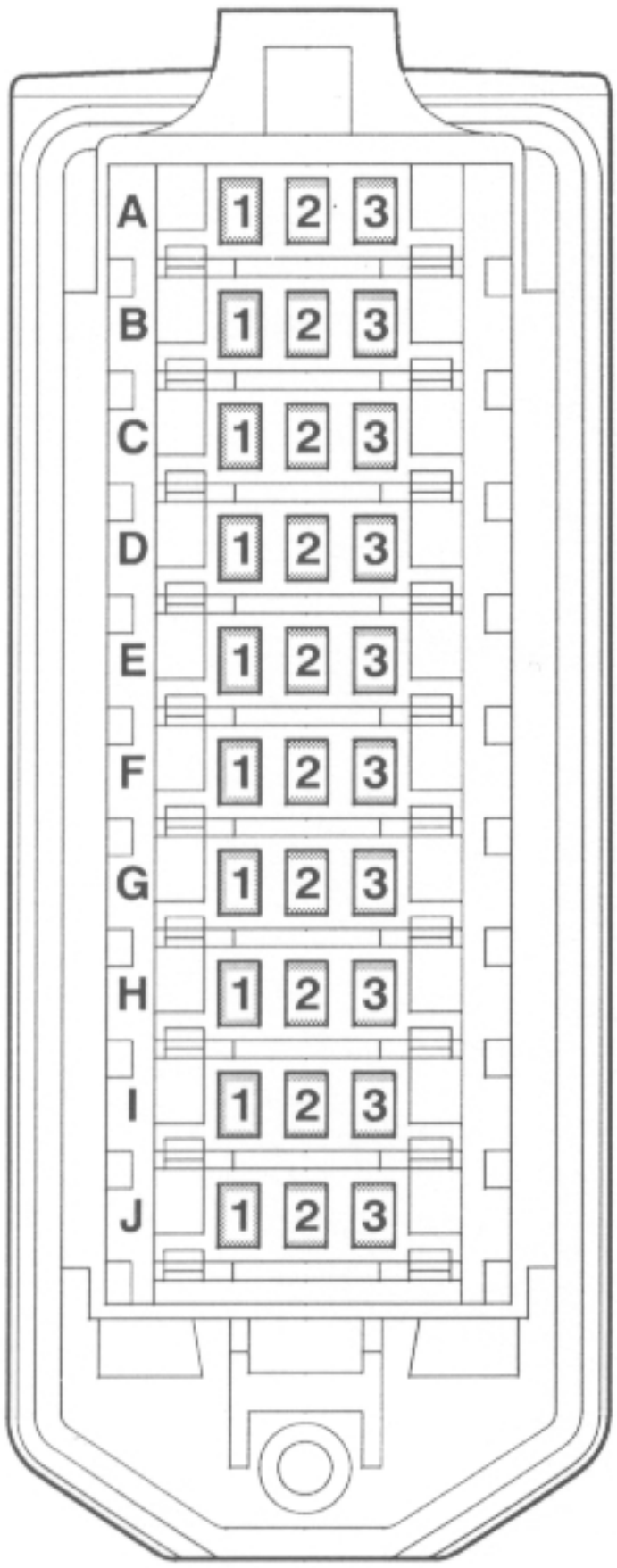
www.WorkshopManuals.co.uk

MULTIPLEX
DIAGNOSTIC SOCKET
WIRING

www.WorkshopManuals.co.uk



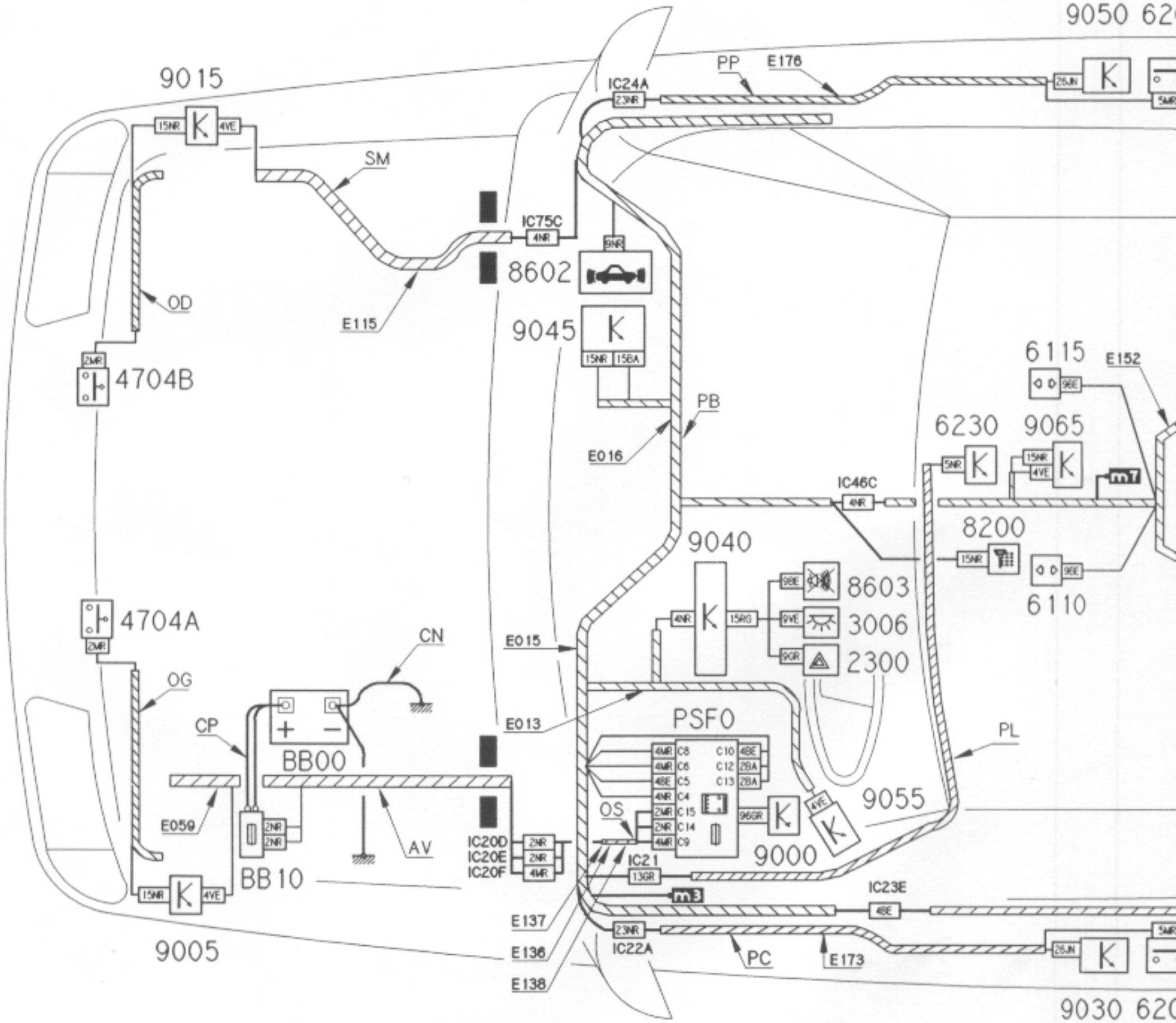
www.WorkshopManuals.co.uk



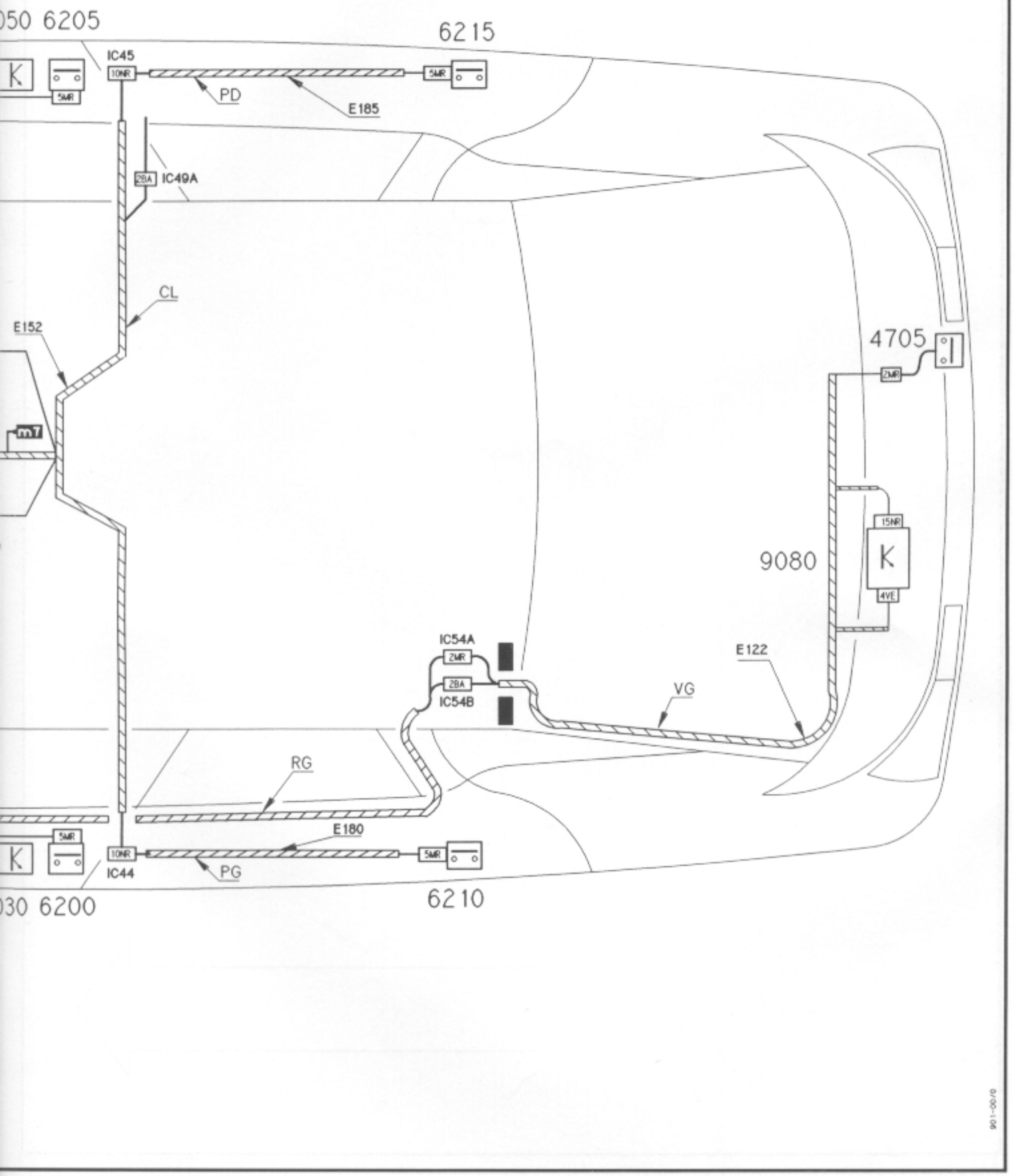
DIAGNOSTIC SOCKET

A1	+ Permanent	} Test equipment supply
A2	+ After ignition switch	
A3	Earth	
D2	Pyrotechnic seat belt	
E1	Road wheel anti-blocage system	
E2	Variable suspension	
F1	Air conditioning	
J1	Central E.C.U. checking	

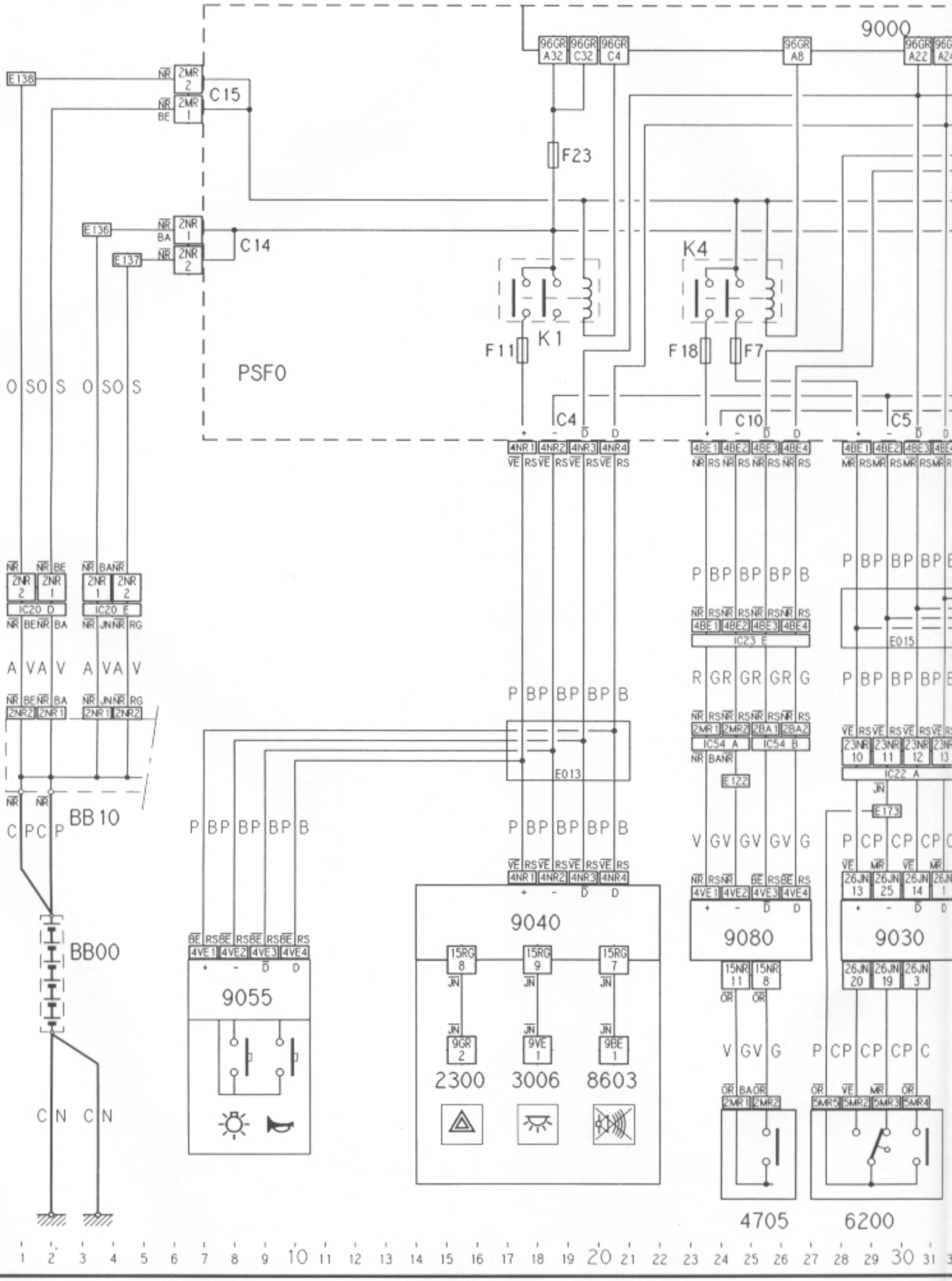
www.WorkshopManuals.co.uk



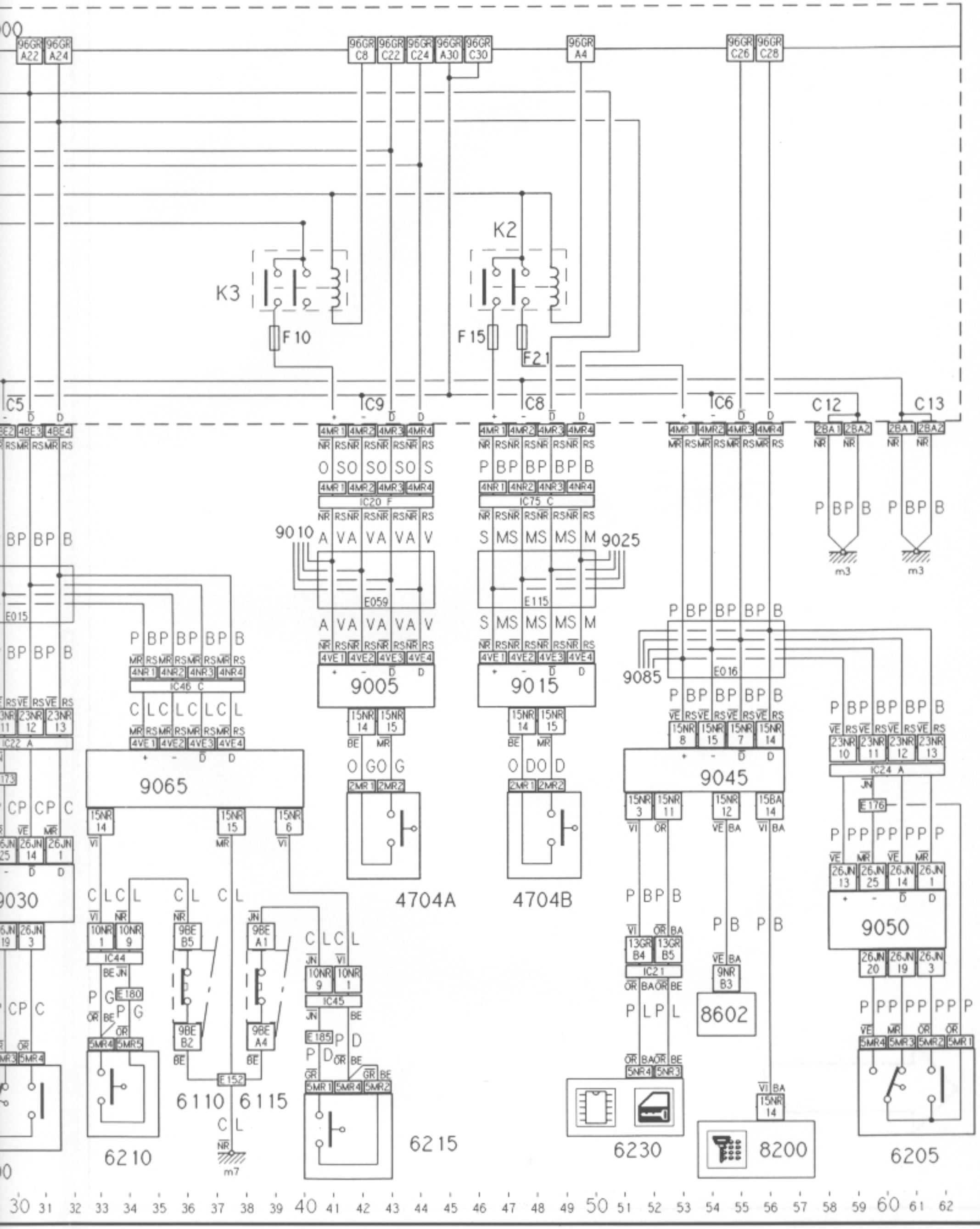
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

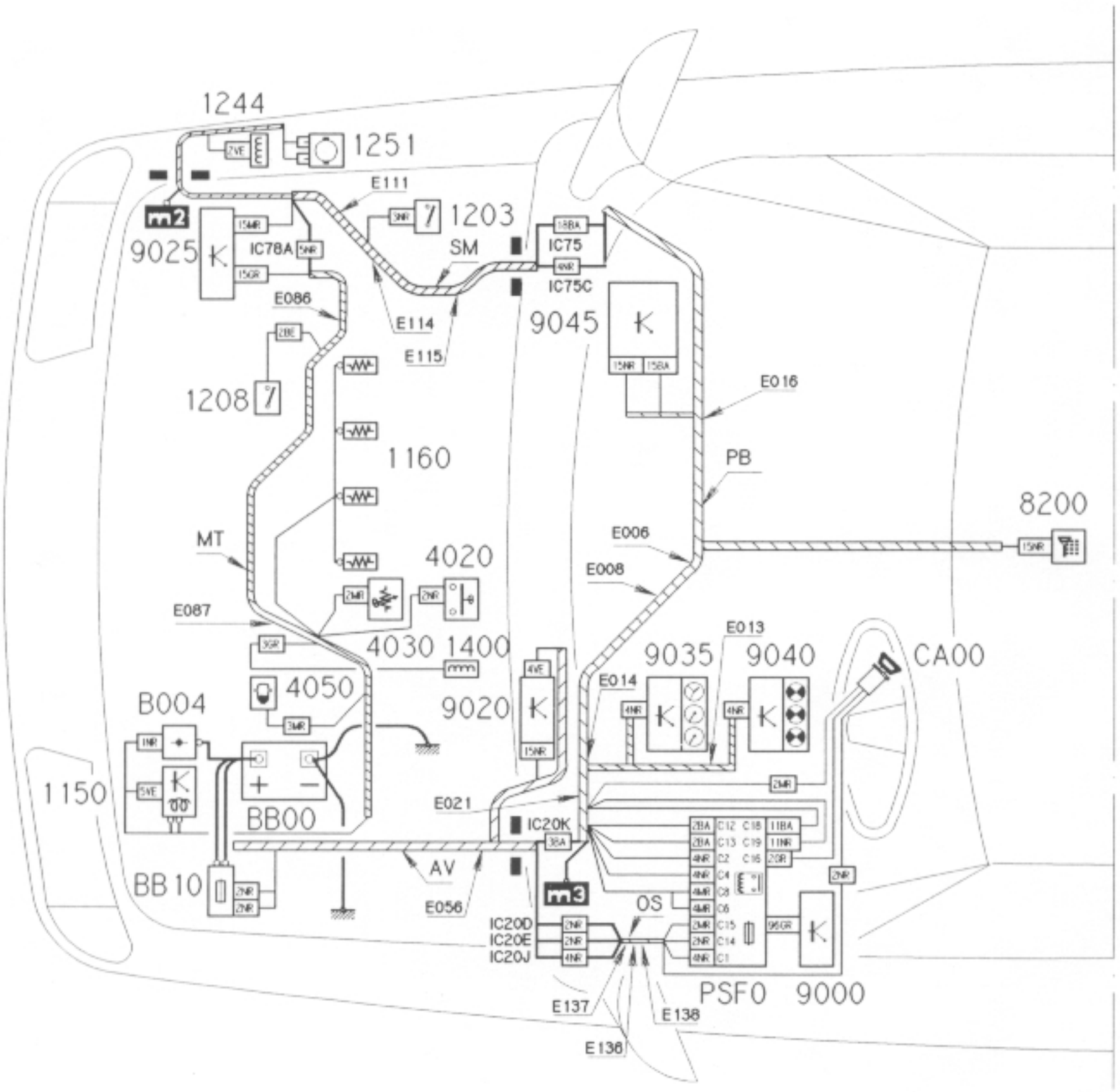


www.WorkshopManuals.co.uk

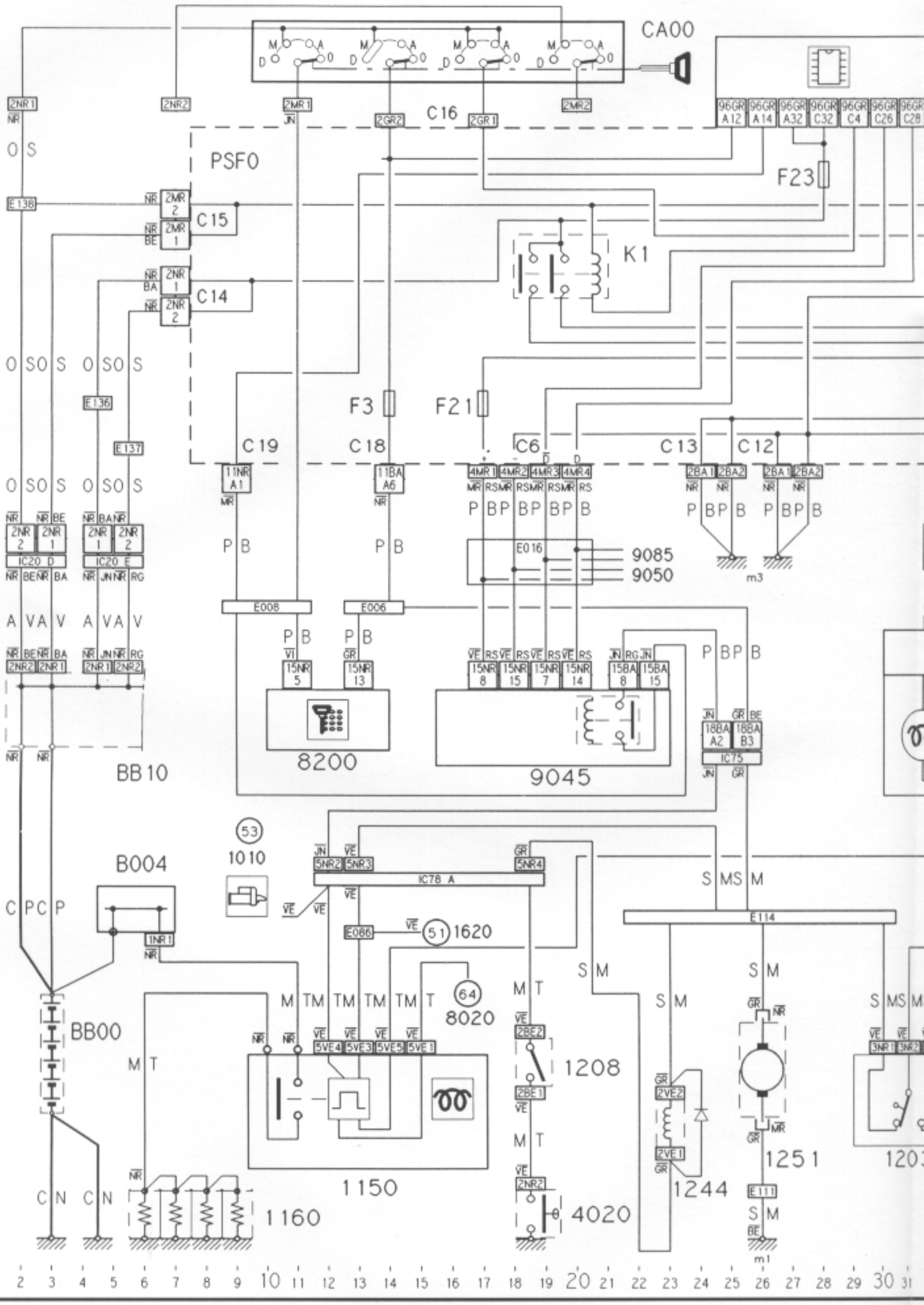


30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

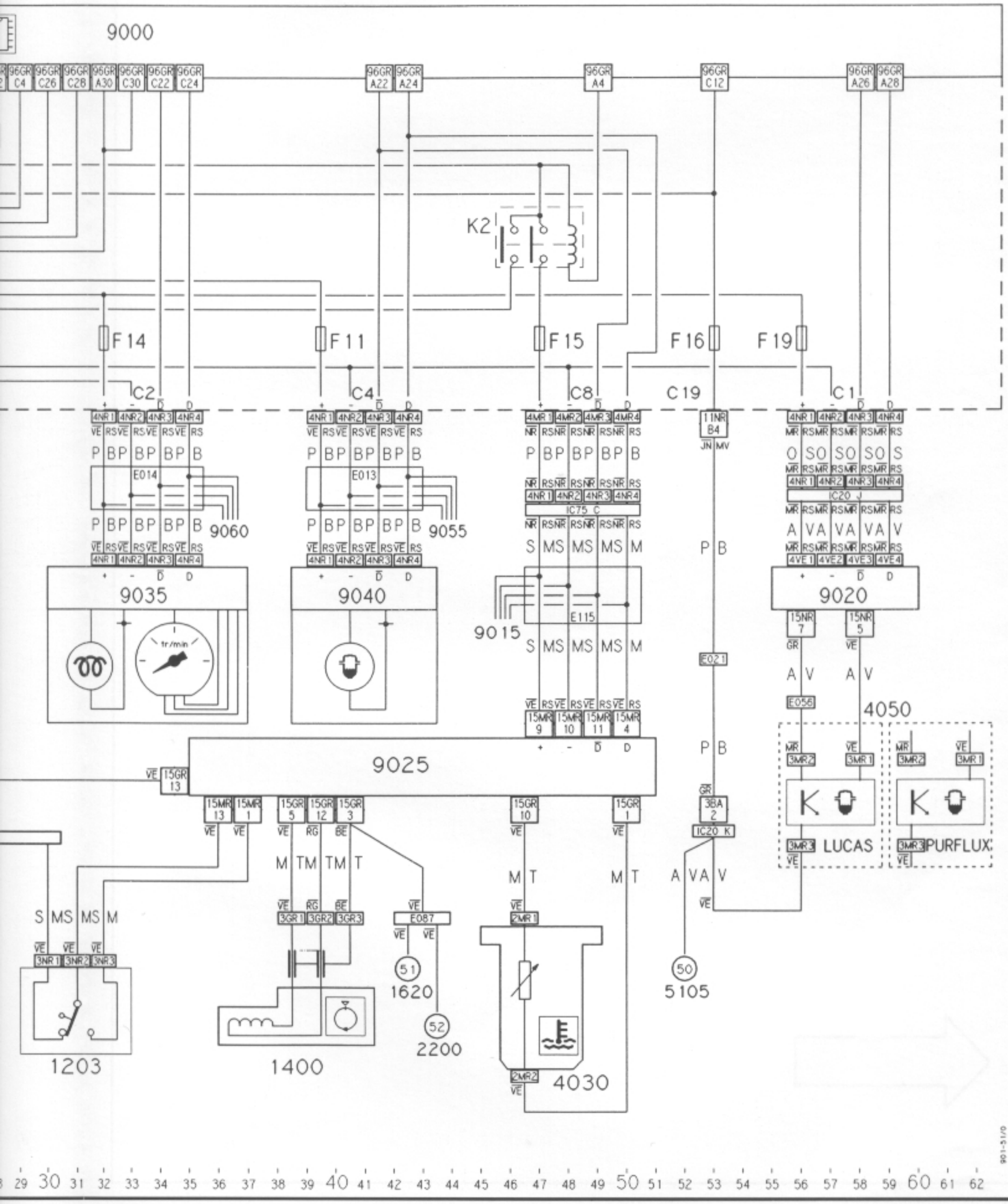
www.WorkshopManuals.co.uk



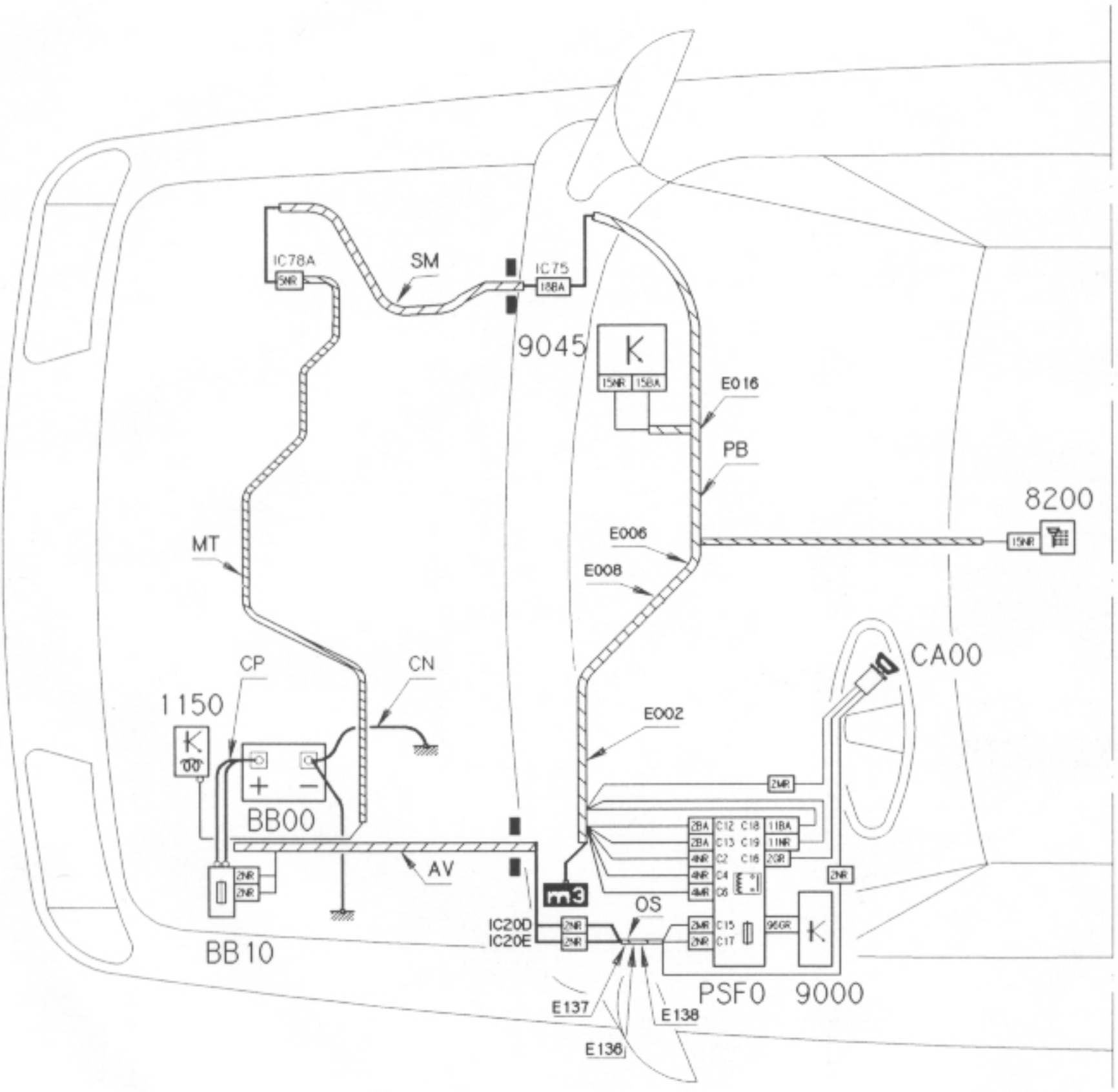
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

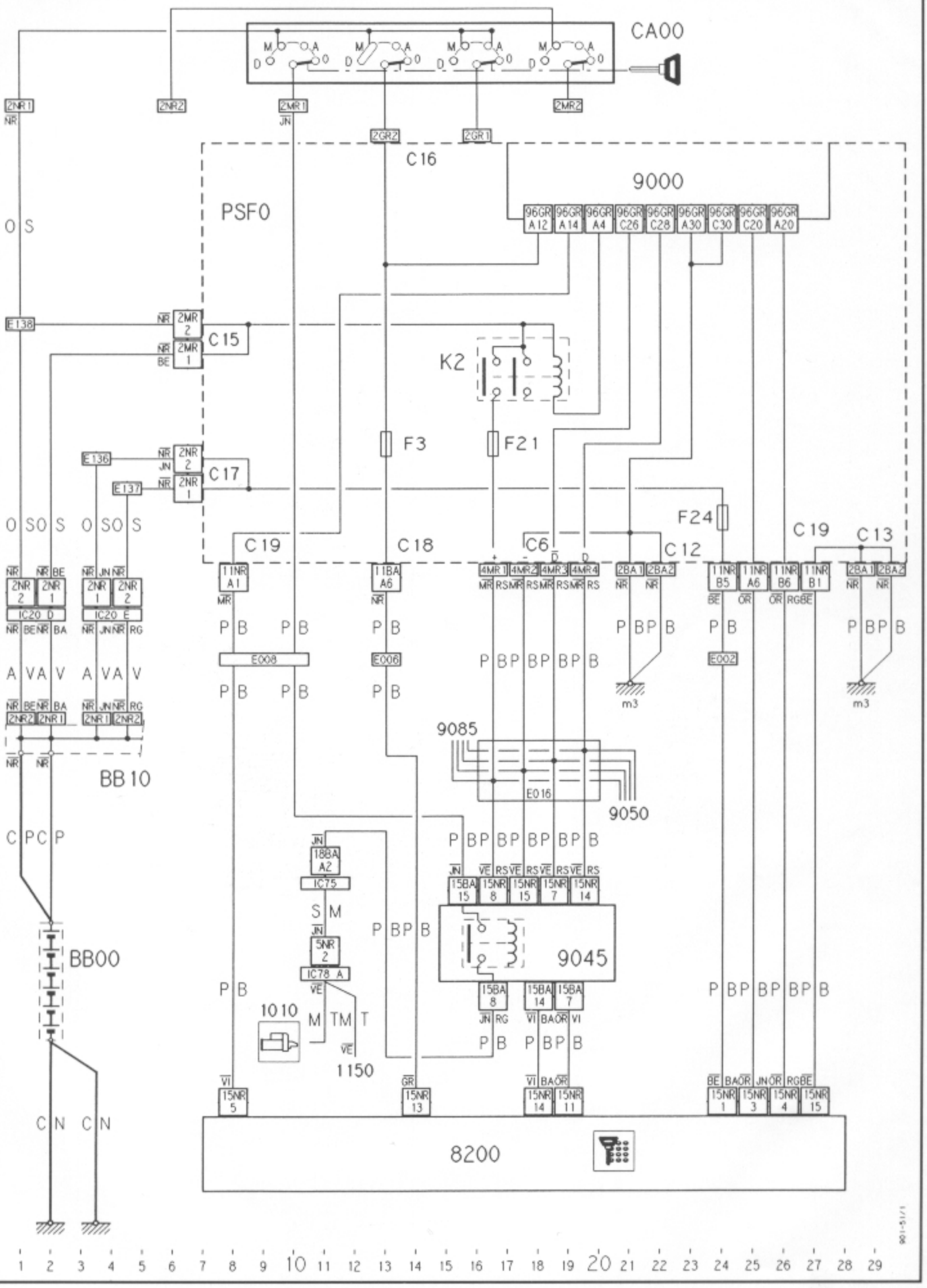


www.WorkshopManuals.co.uk

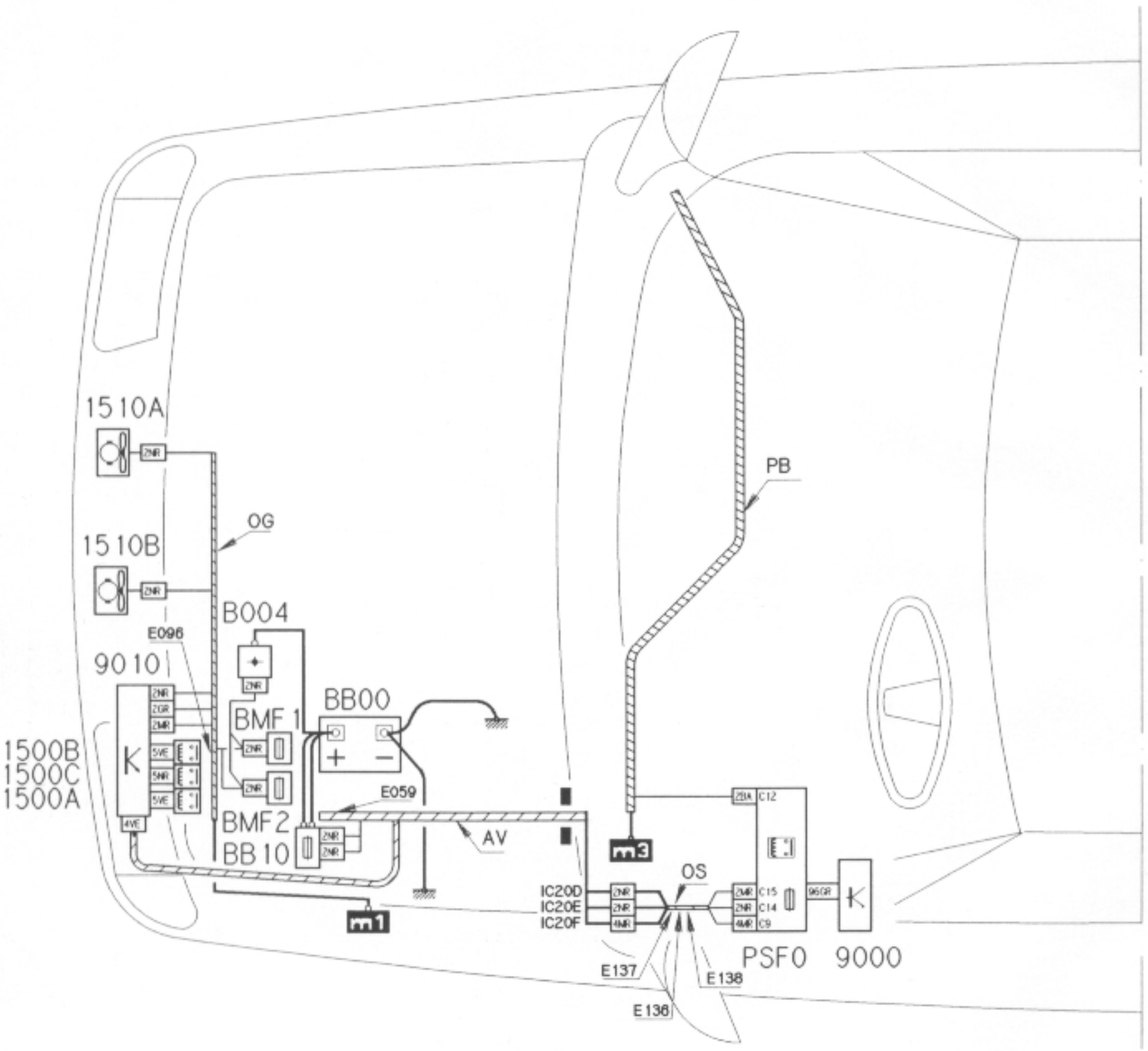


901-51/1

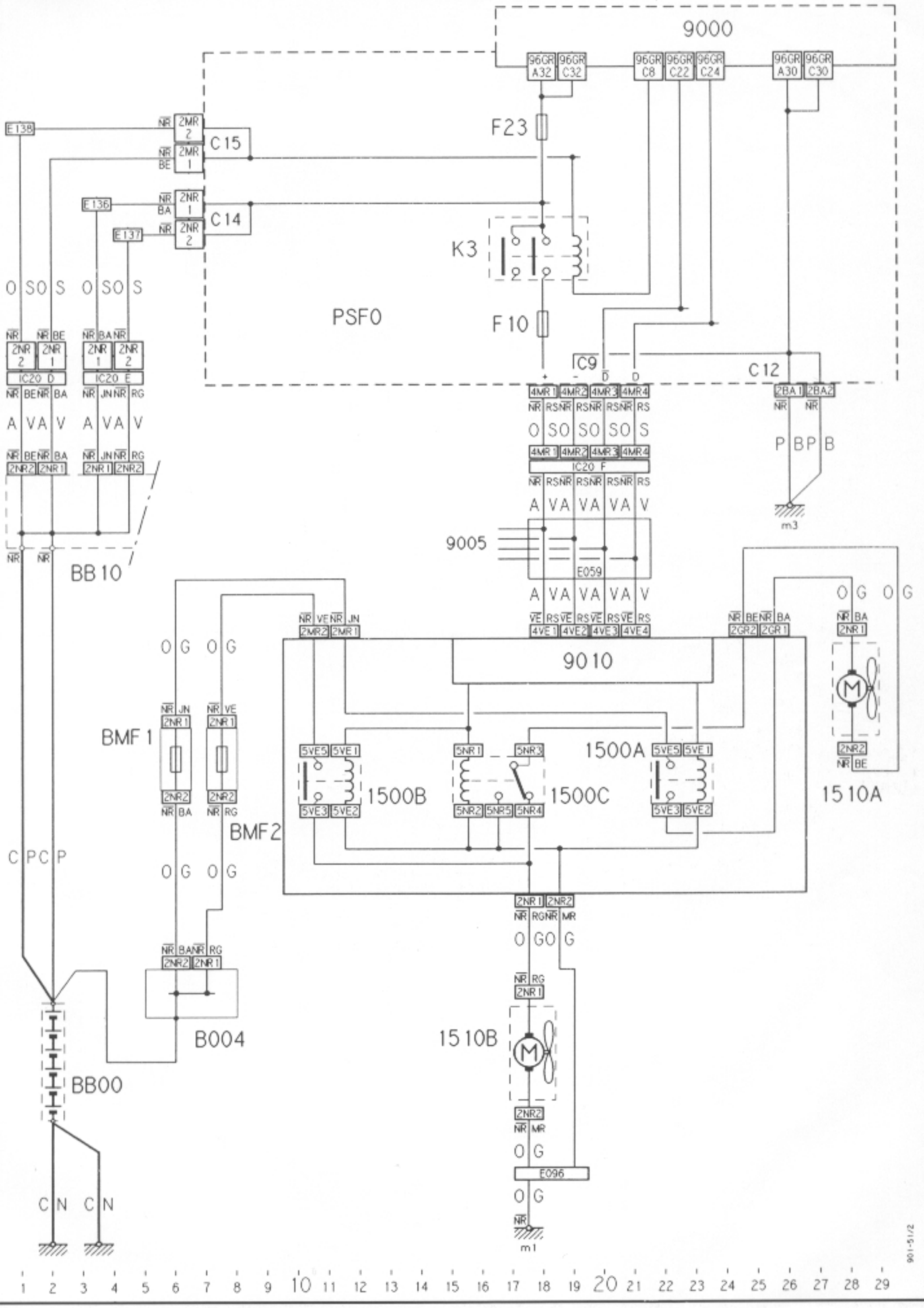
www.WorkshopManuals.co.uk



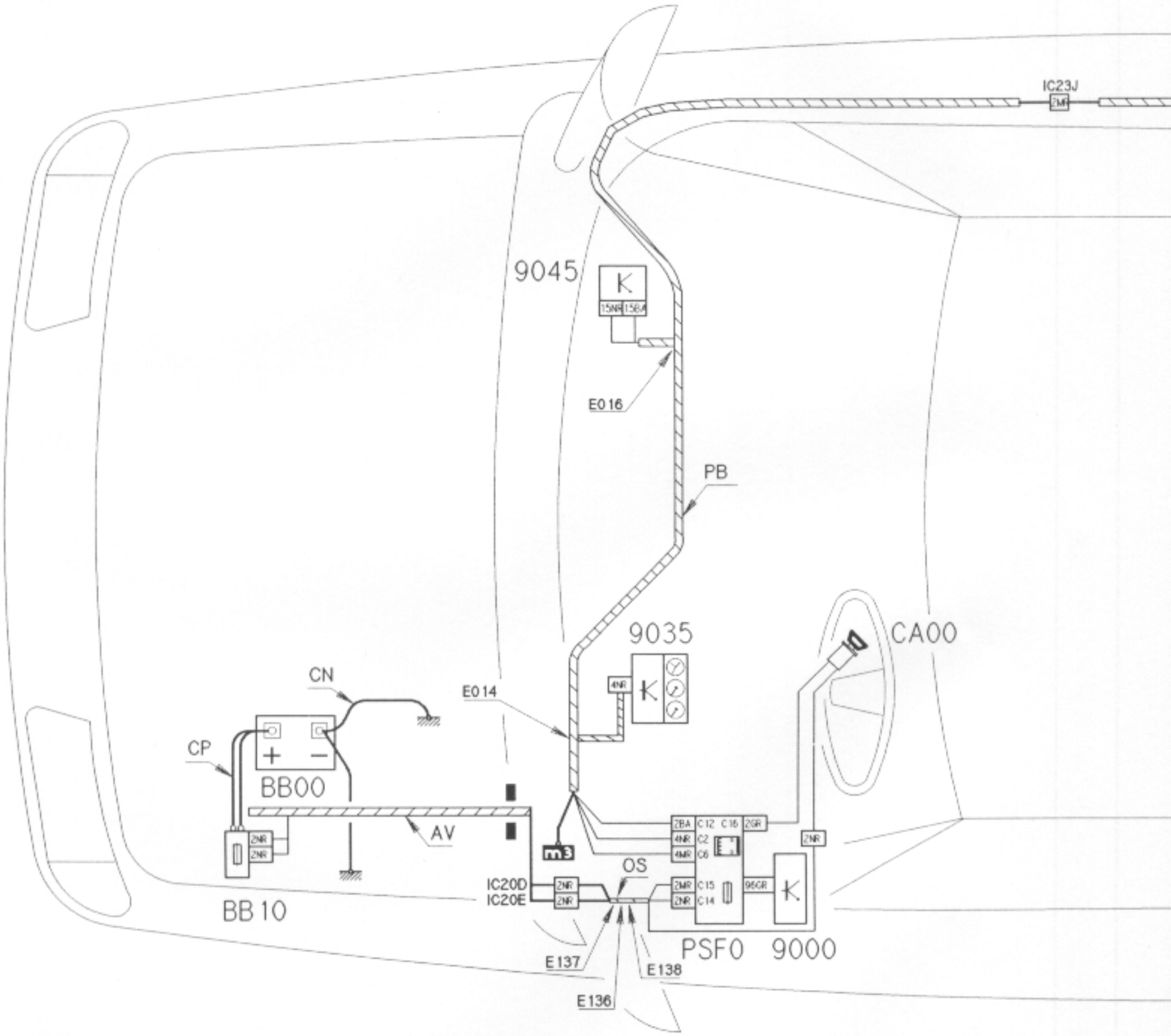
www.WorkshopManuals.co.uk



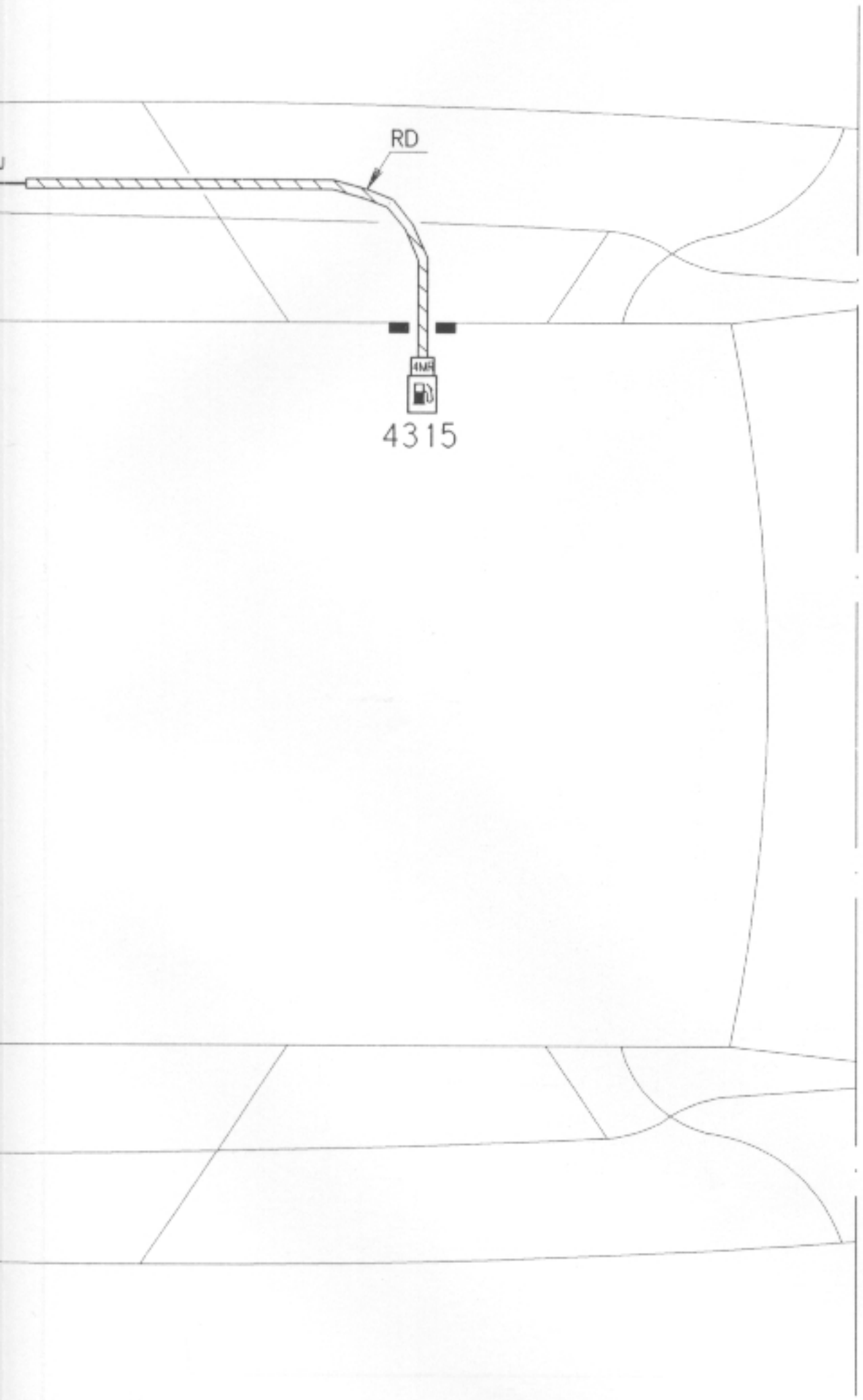
www.WorkshopManuals.co.uk



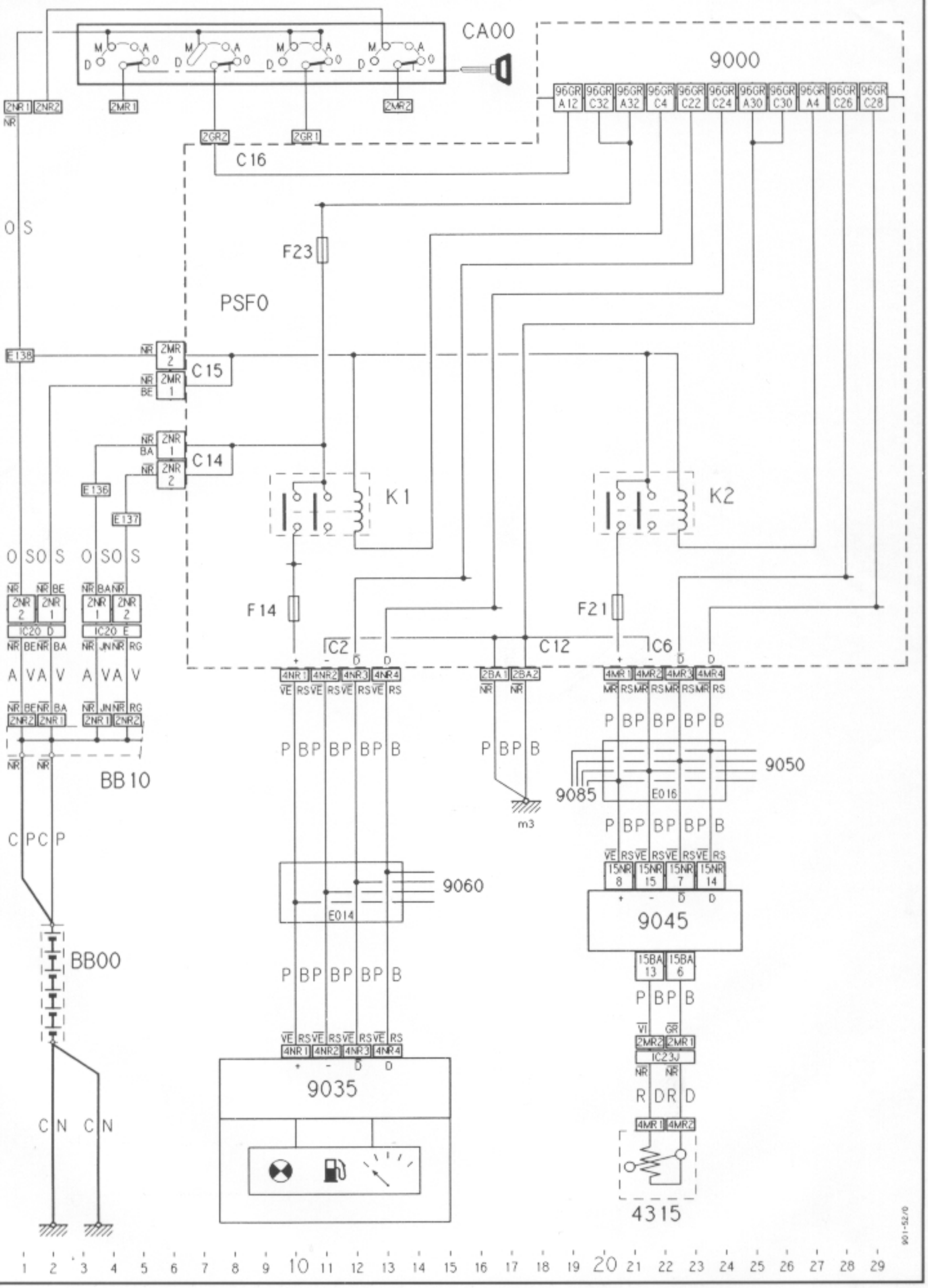
www.WorkshopManuals.co.uk



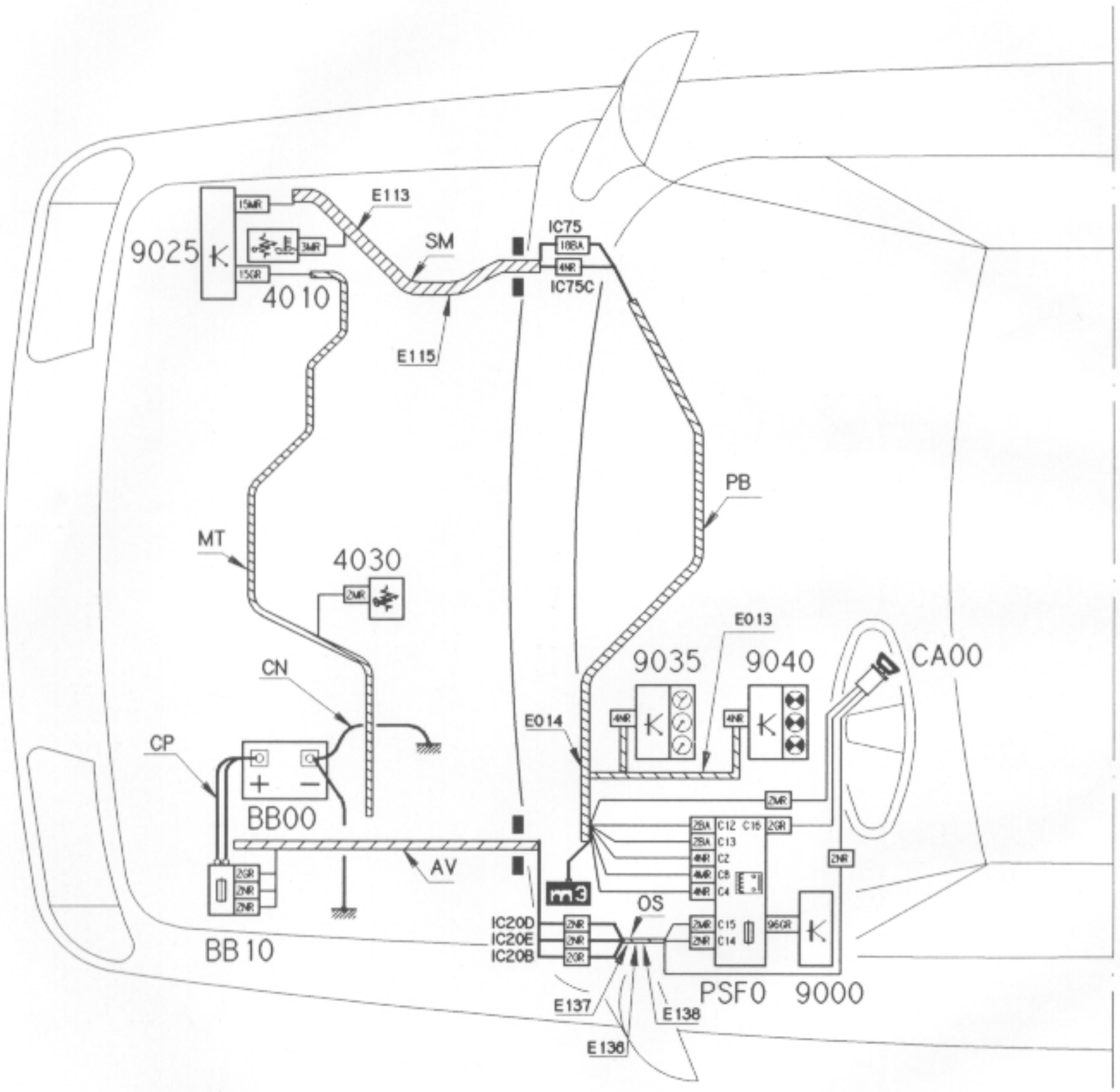
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

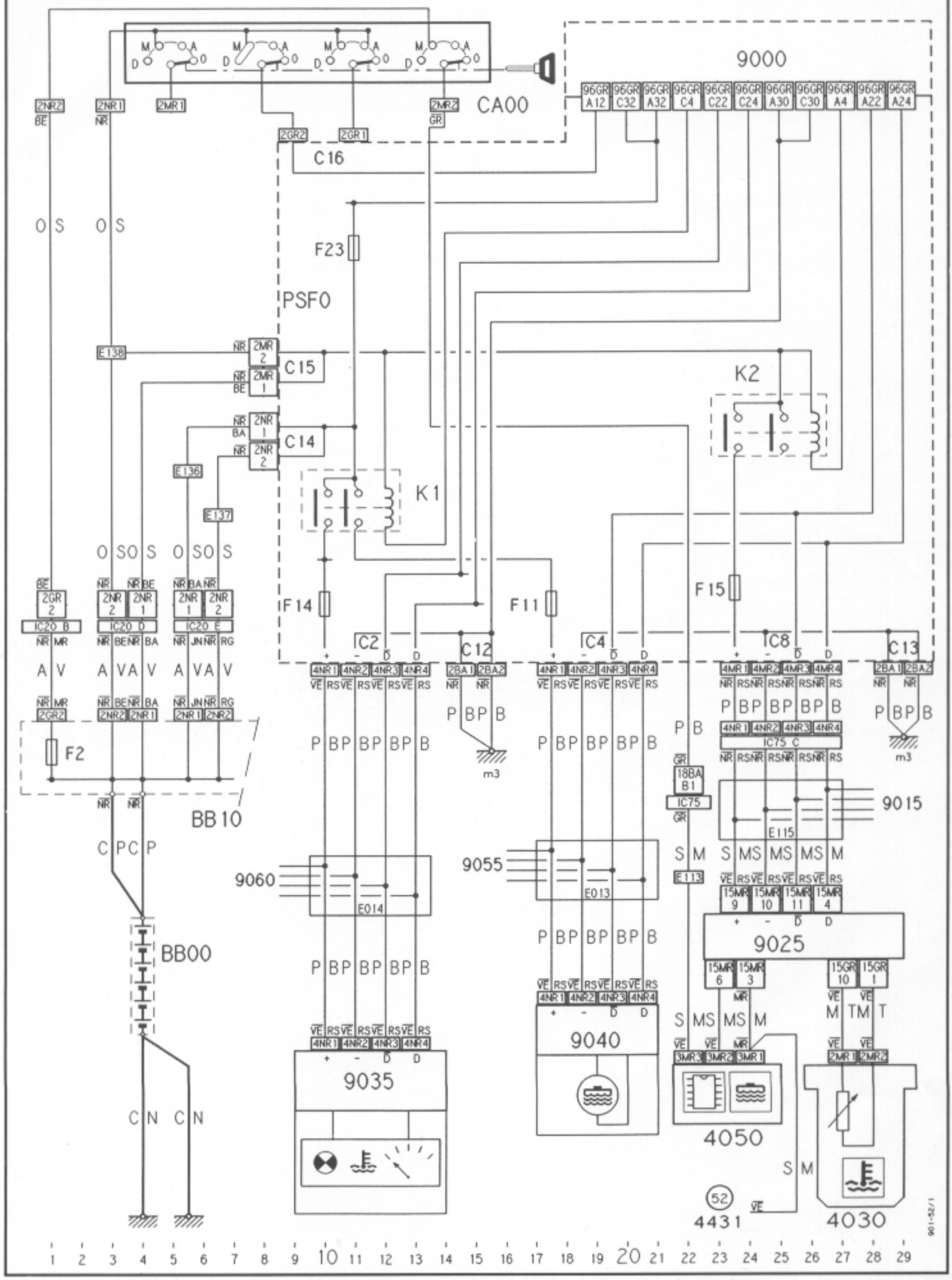


www.WorkshopManuals.co.uk

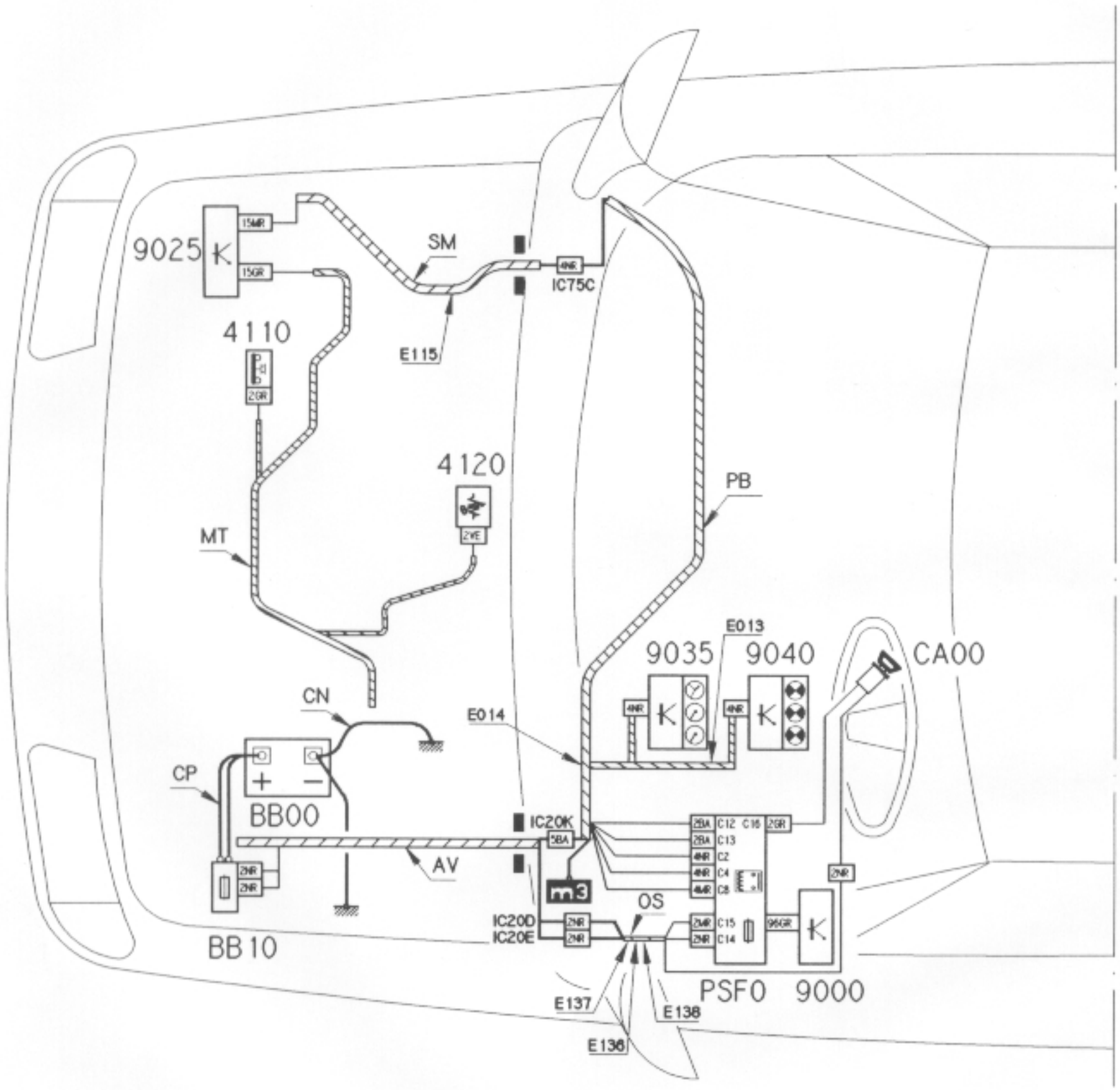


901-52/1

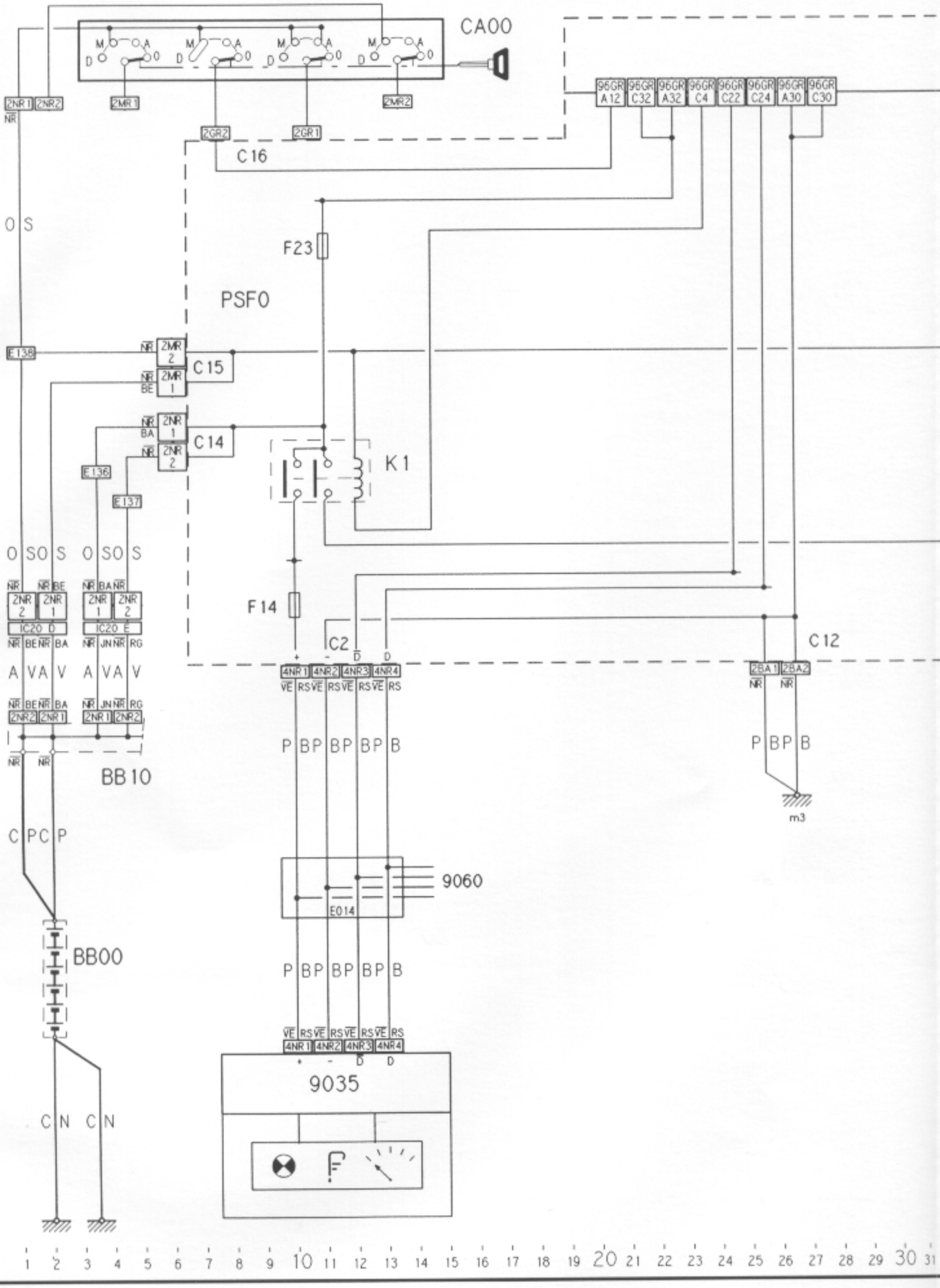
www.WorkshopManuals.co.uk



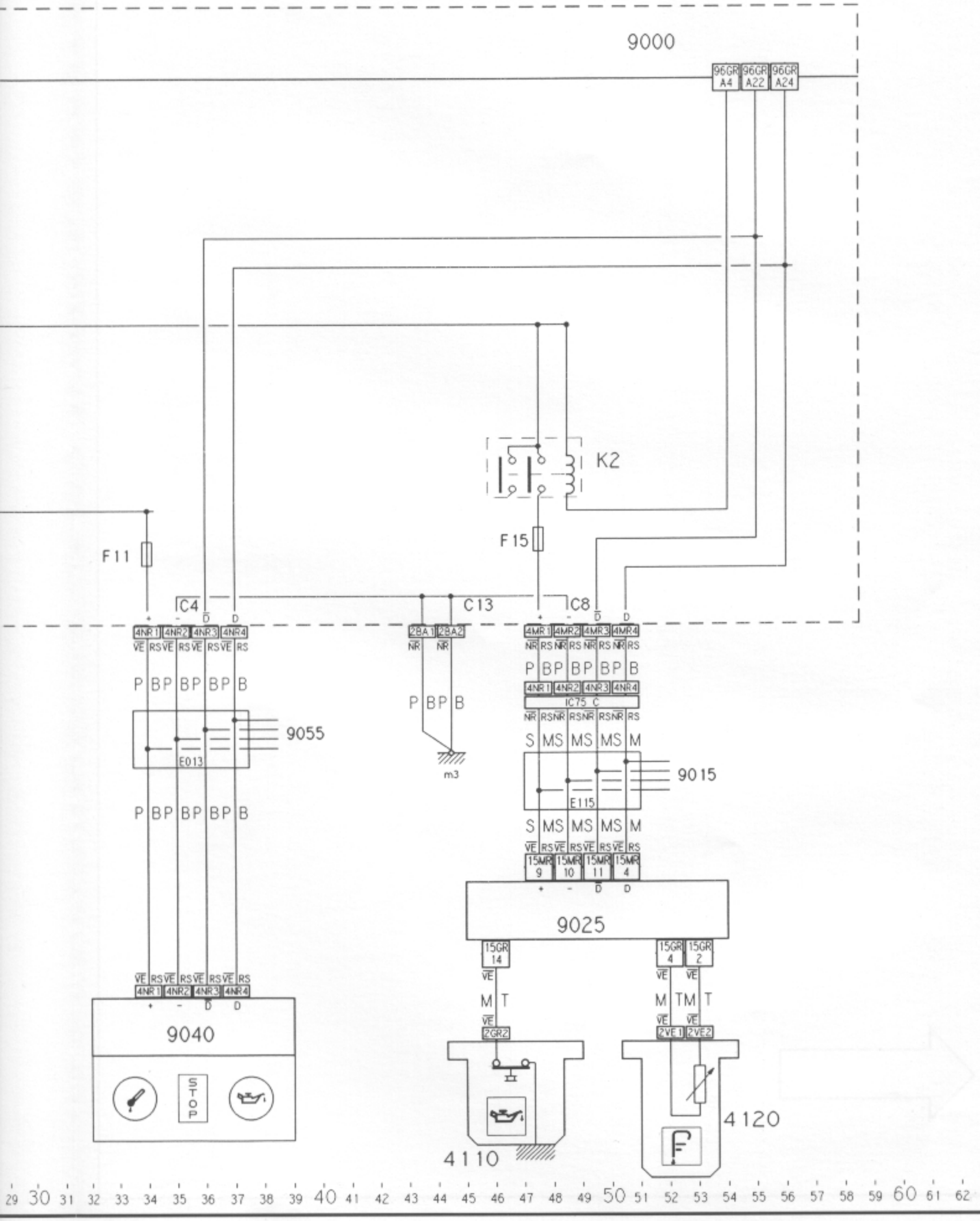
www.WorkshopManuals.co.uk



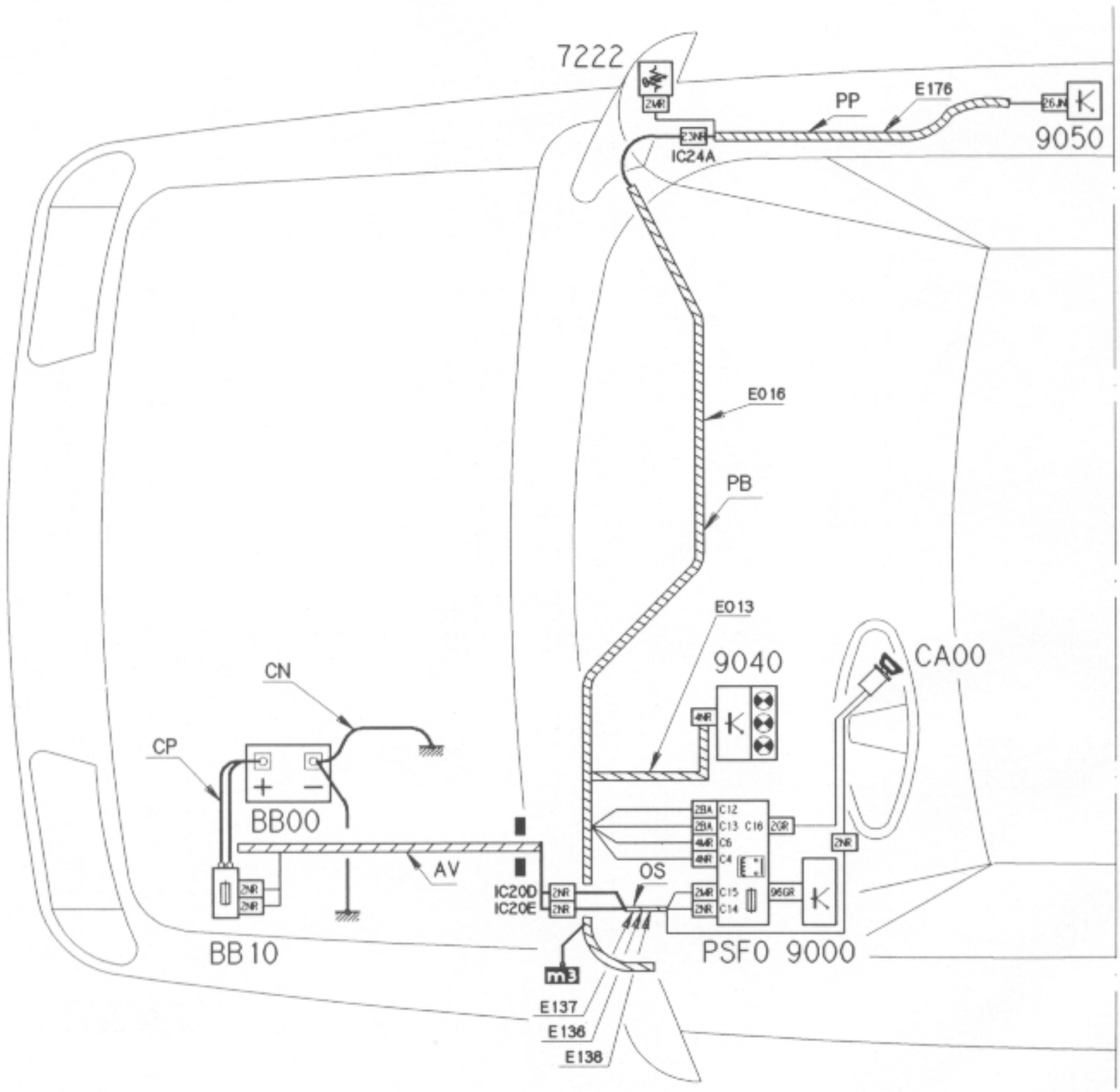
www.WorkshopManuals.co.uk



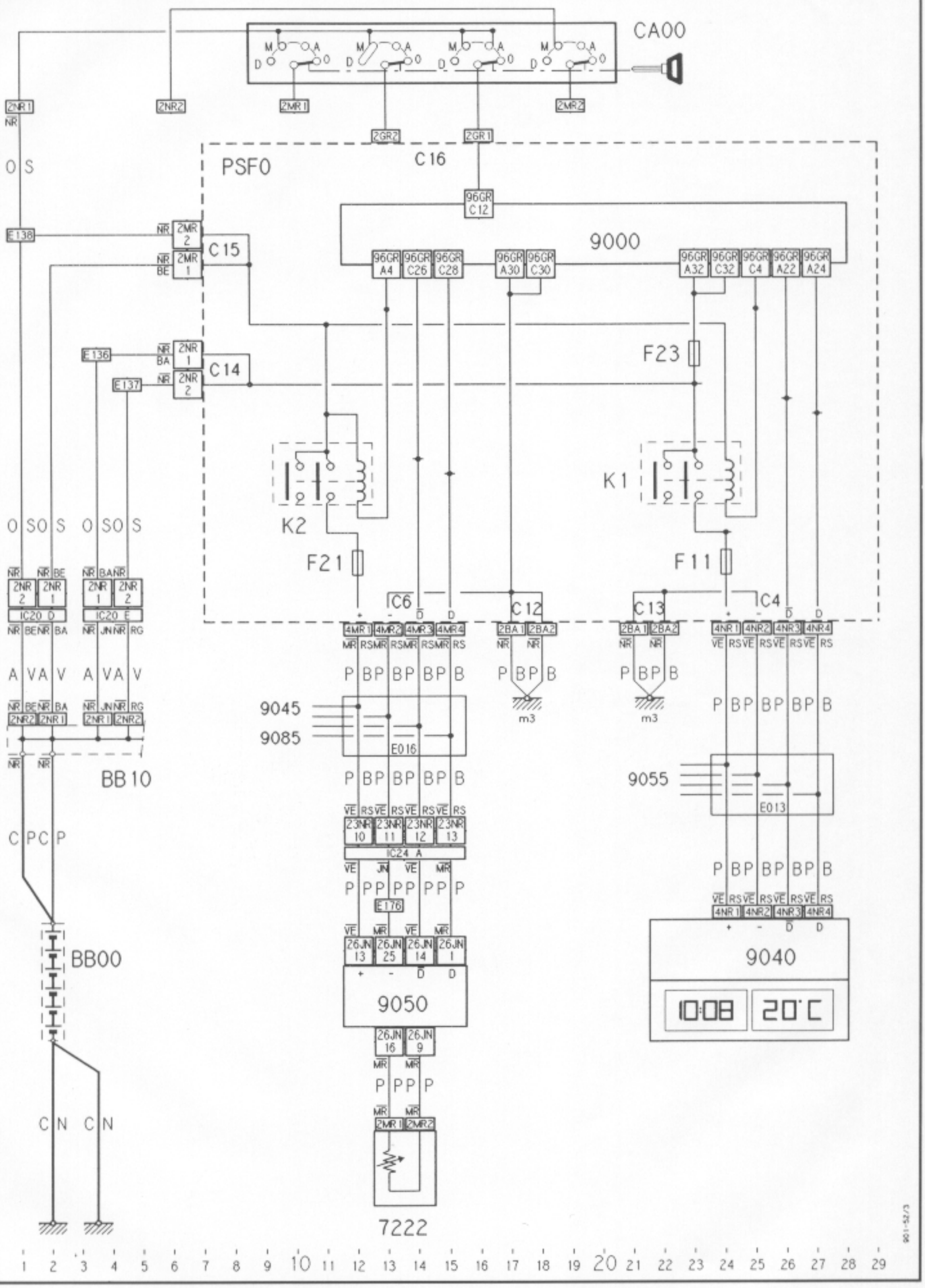
www.WorkshopManuals.co.uk



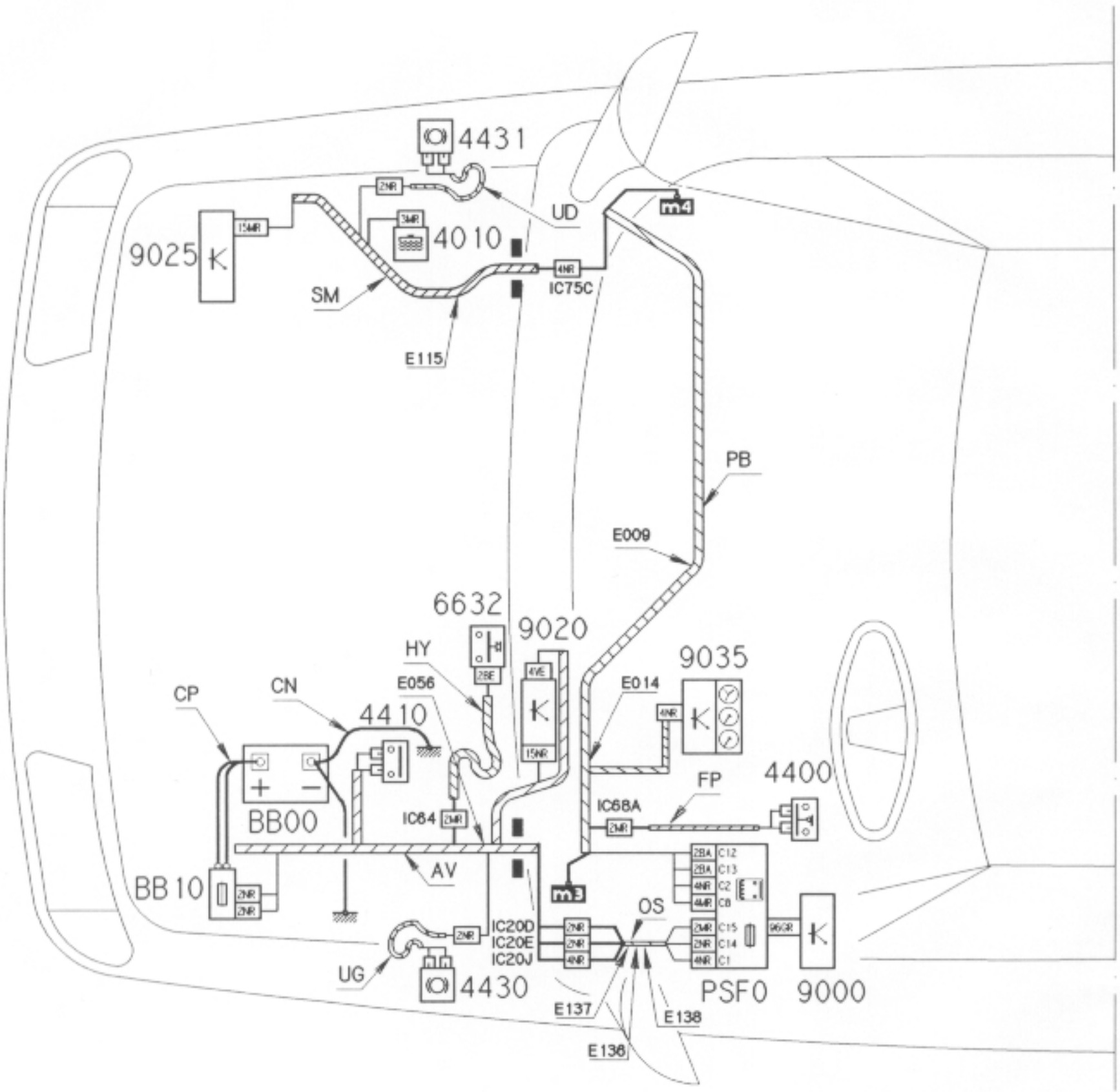
www.WorkshopManuals.co.uk



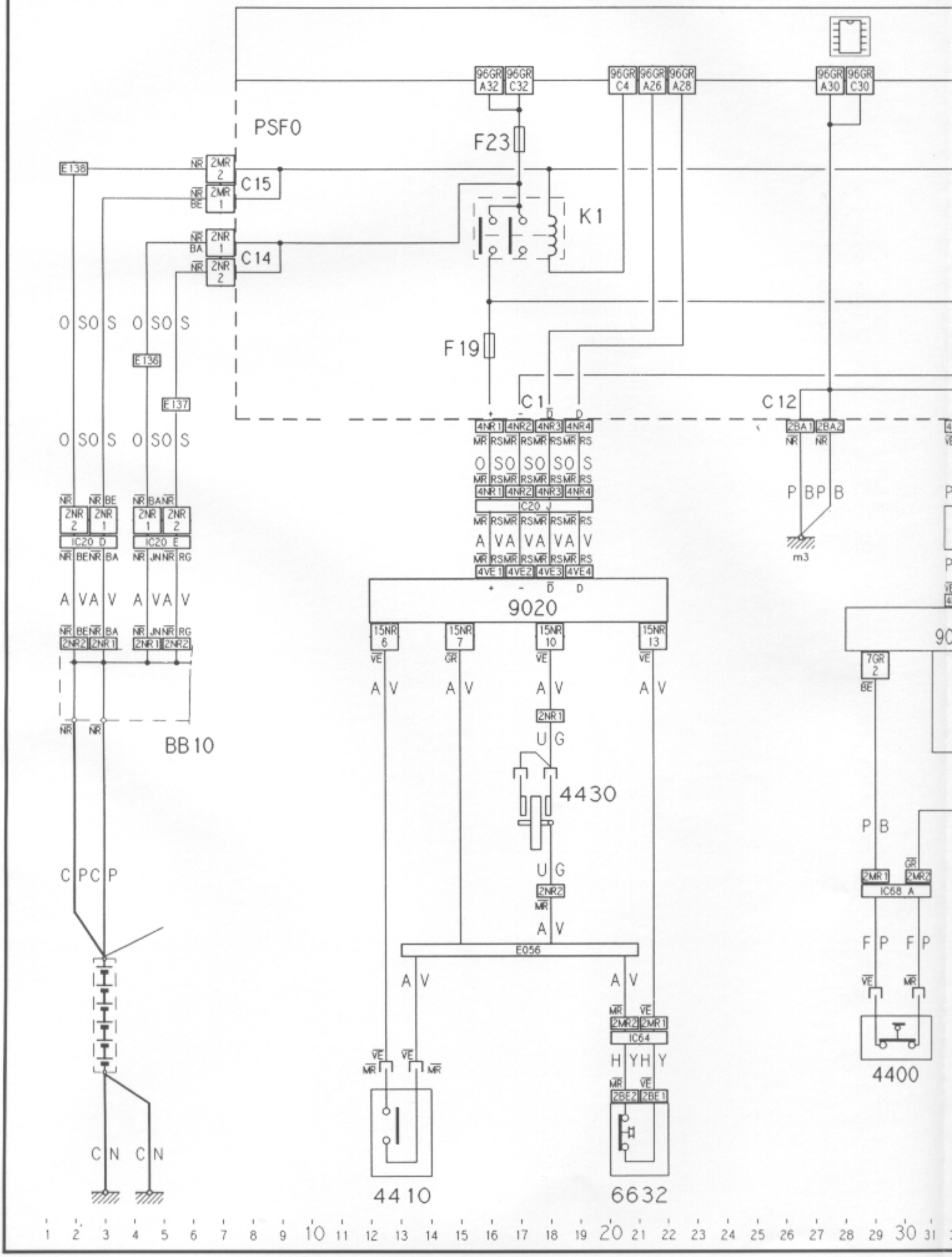
www.WorkshopManuals.co.uk



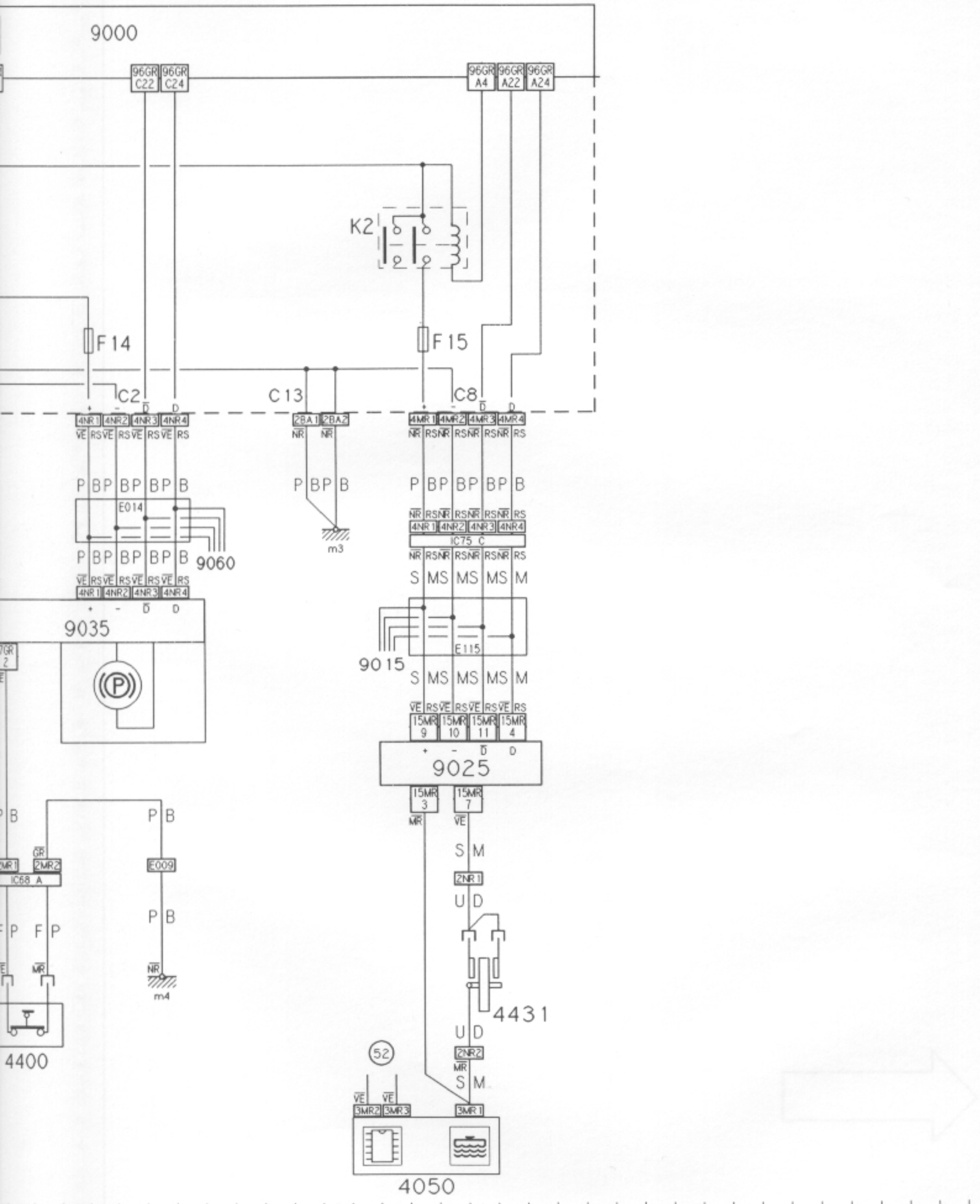
www.WorkshopManuals.co.uk



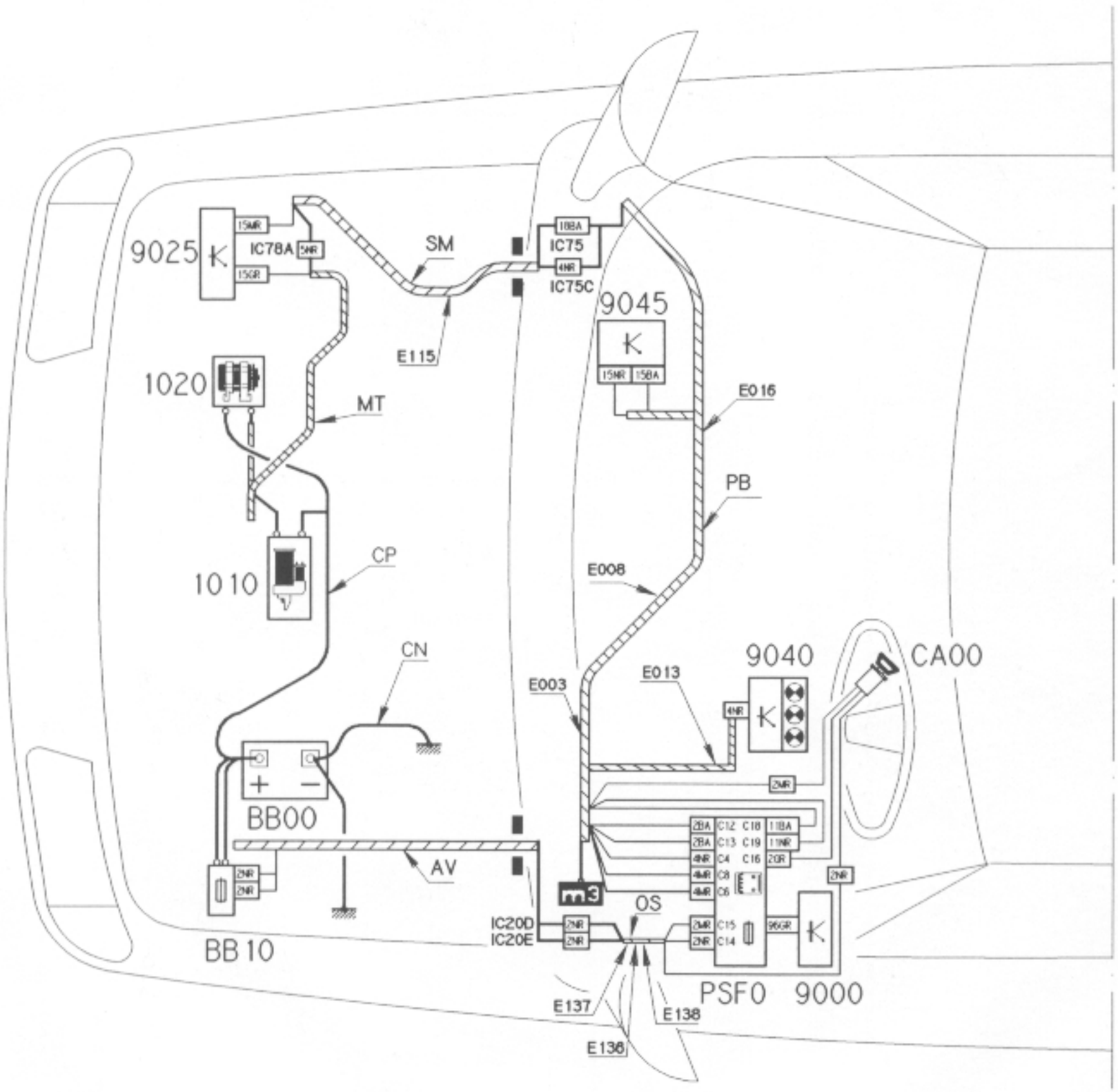
www.WorkshopManuals.co.uk



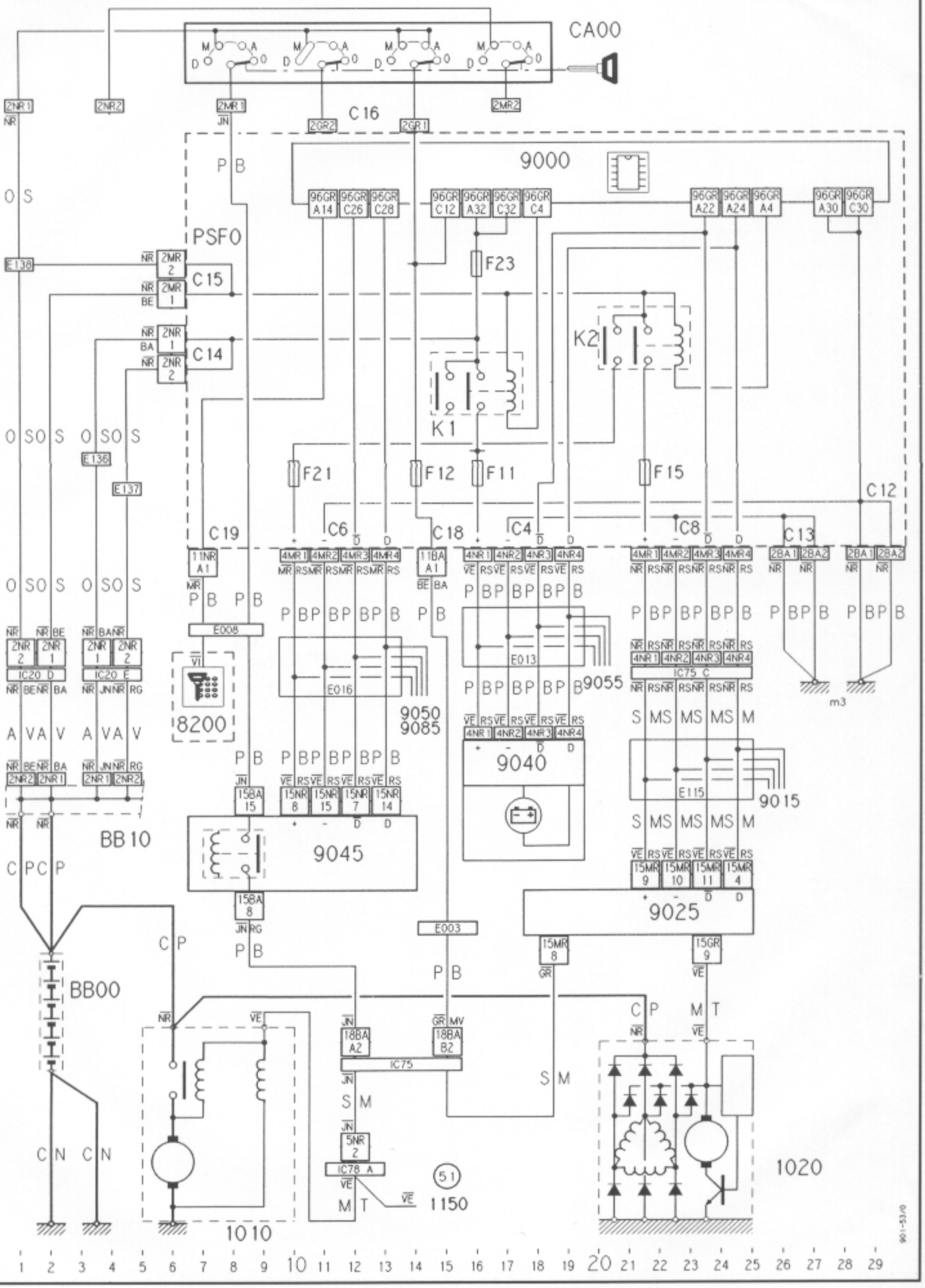
www.WorkshopManuals.co.uk



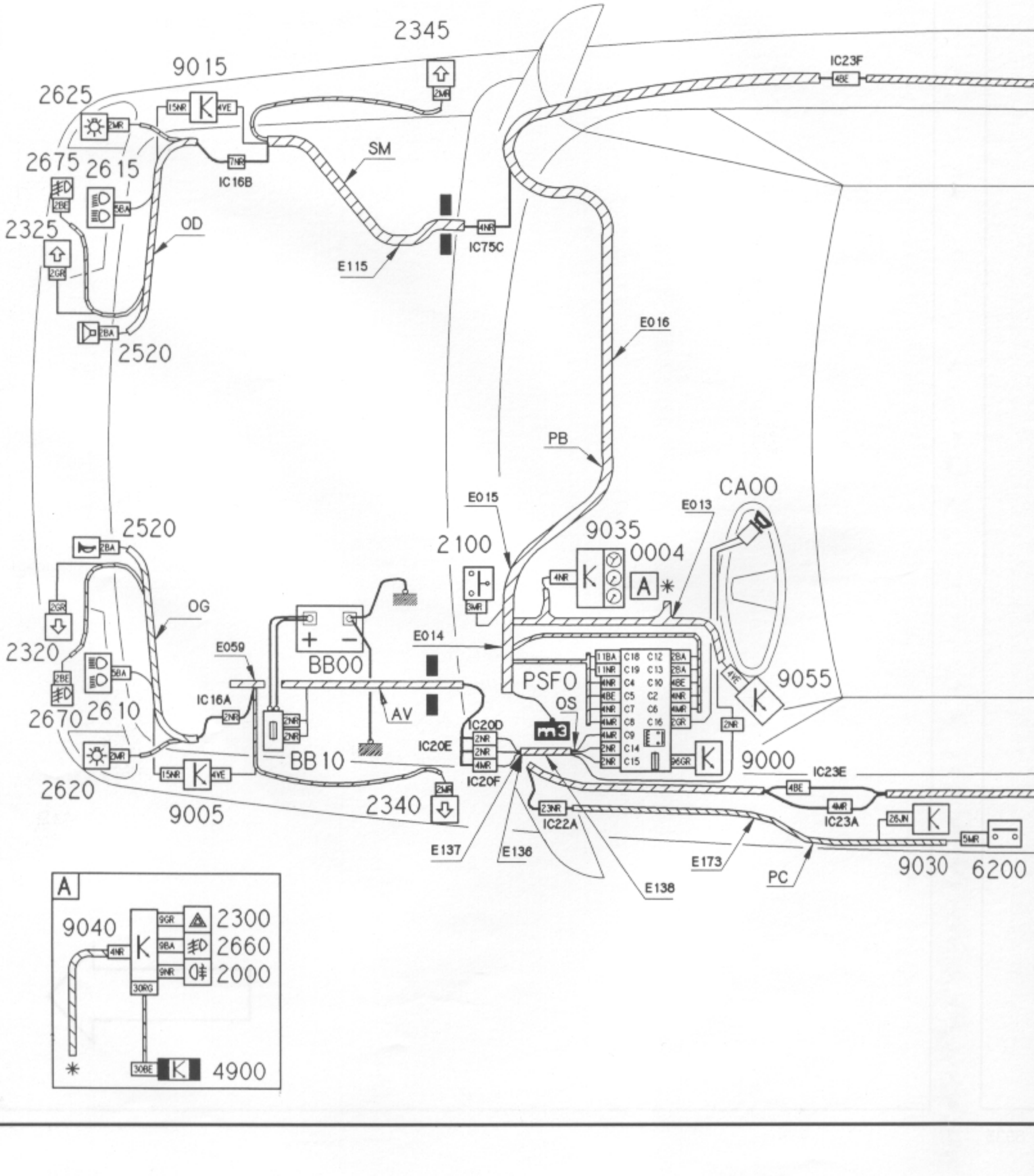
www.WorkshopManuals.co.uk



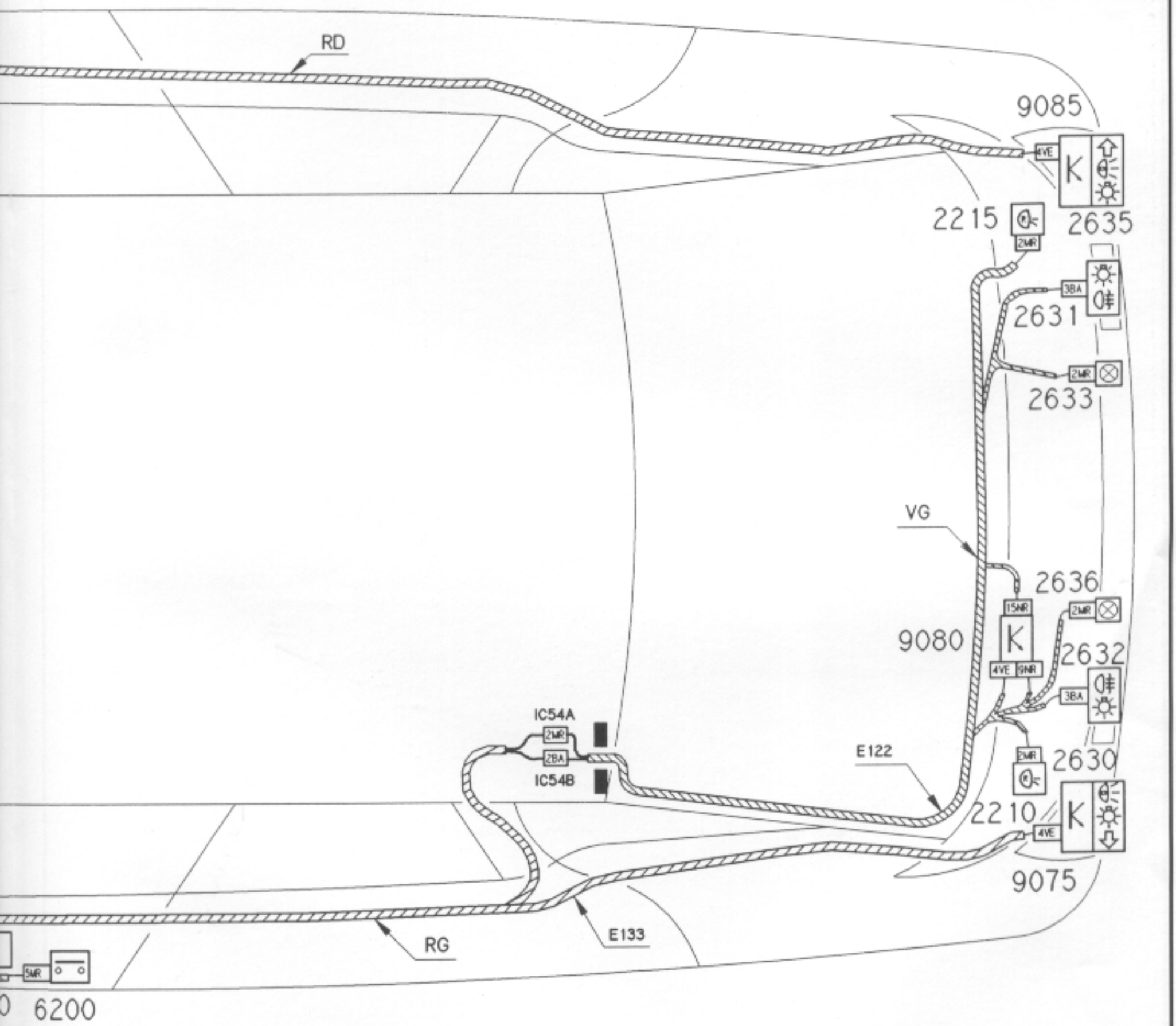
www.WorkshopManuals.co.uk



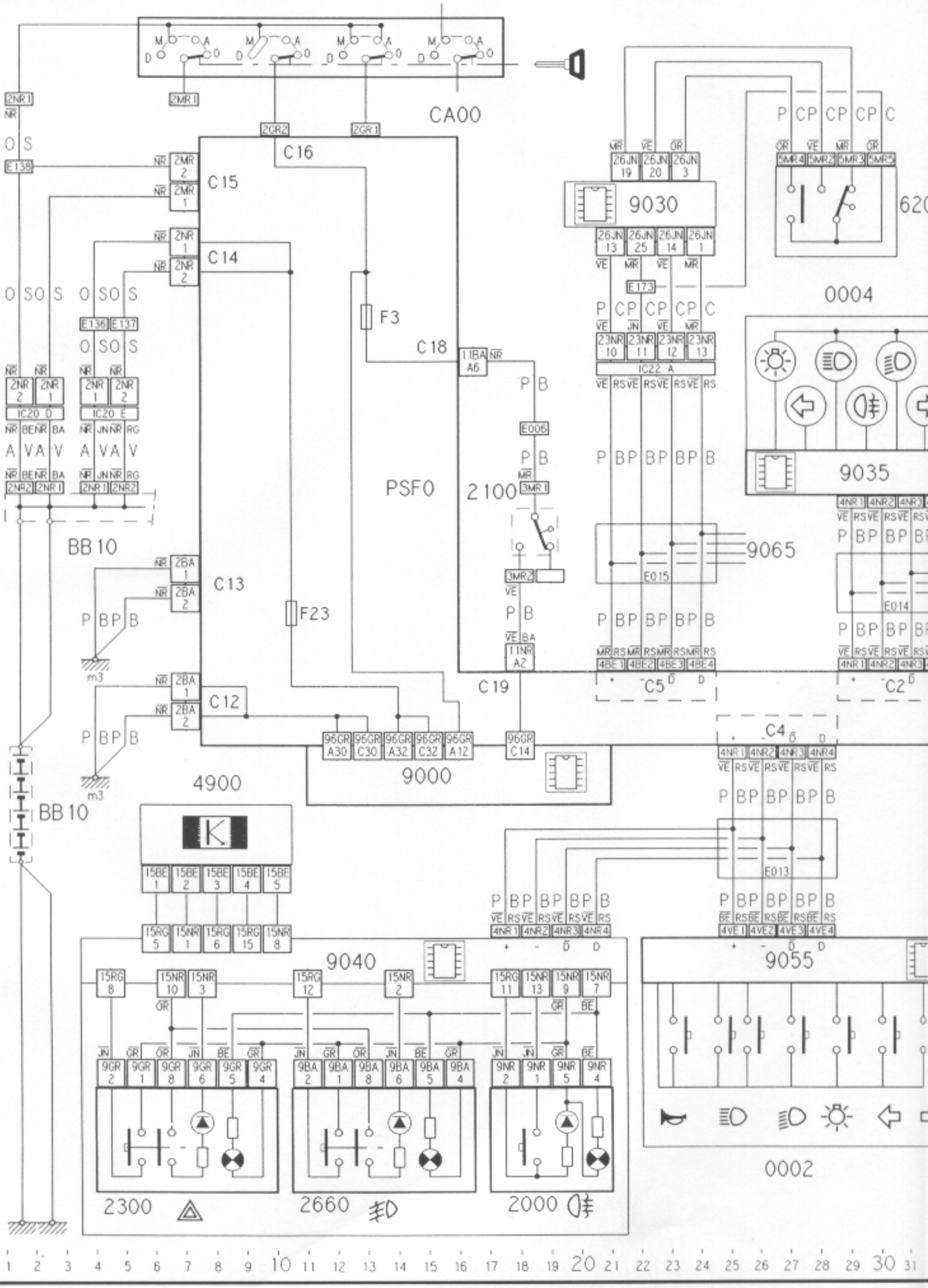
www.WorkshopManuals.co.uk



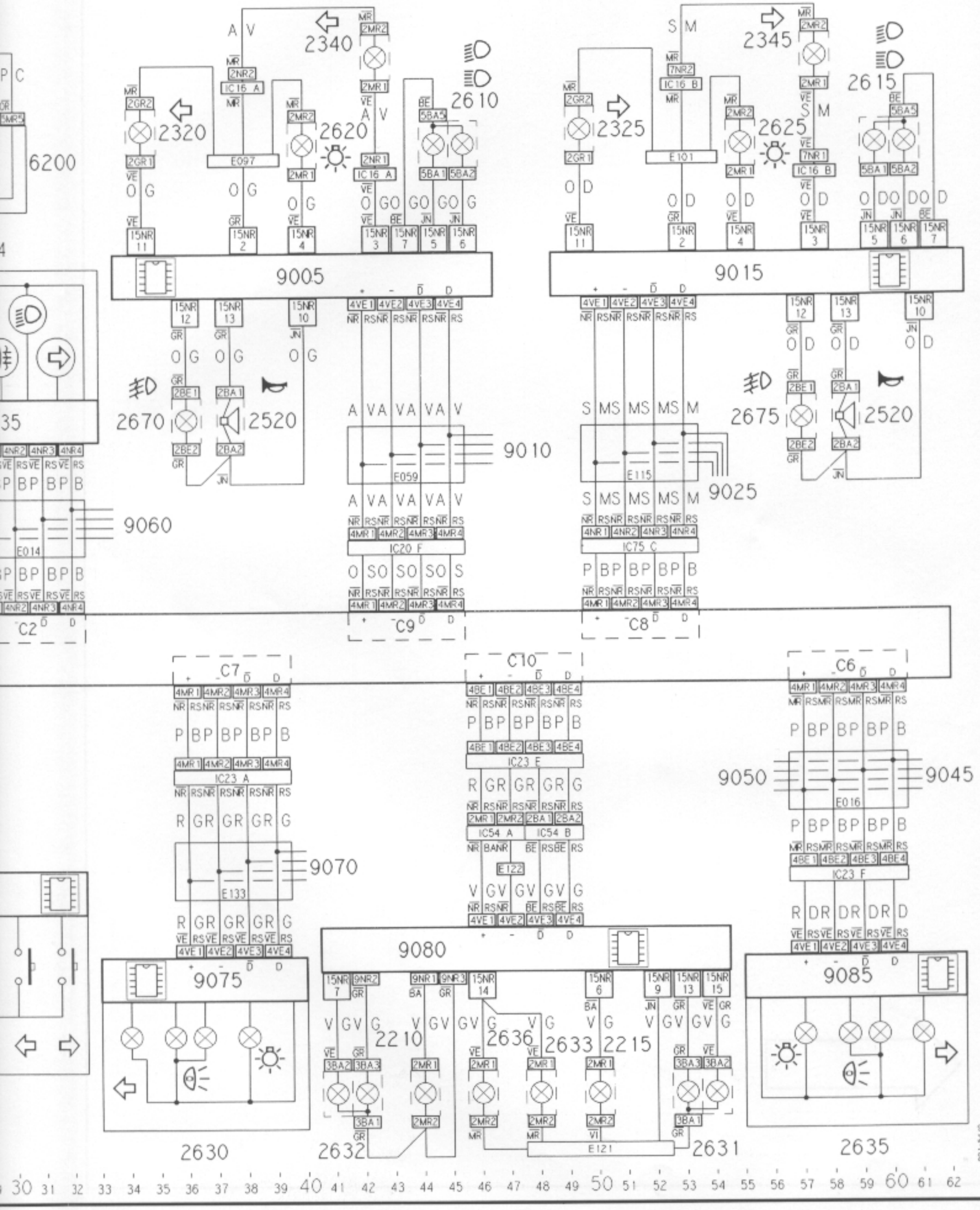
www.WorkshopManuals.co.uk



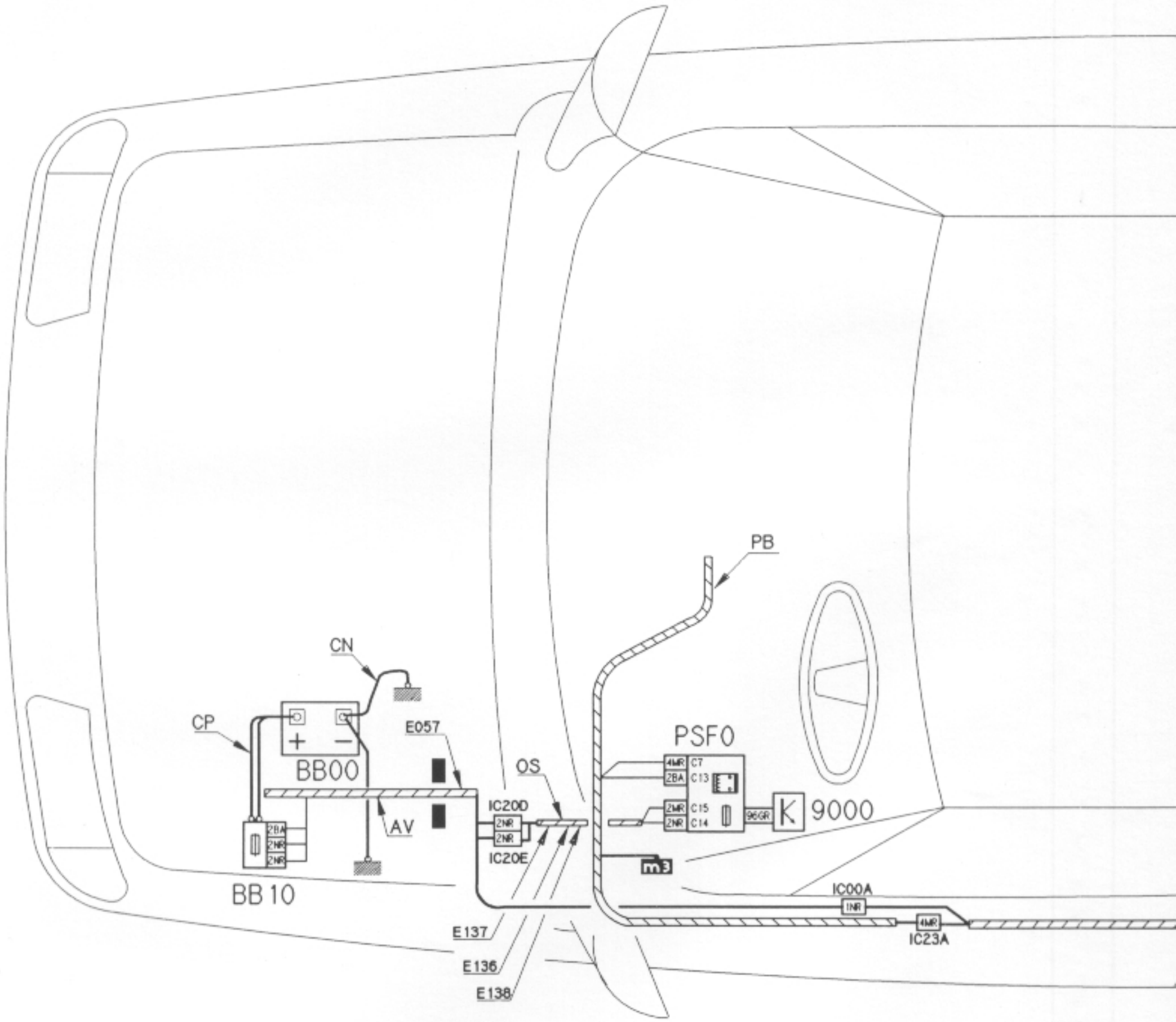
www.WorkshopManuals.co.uk



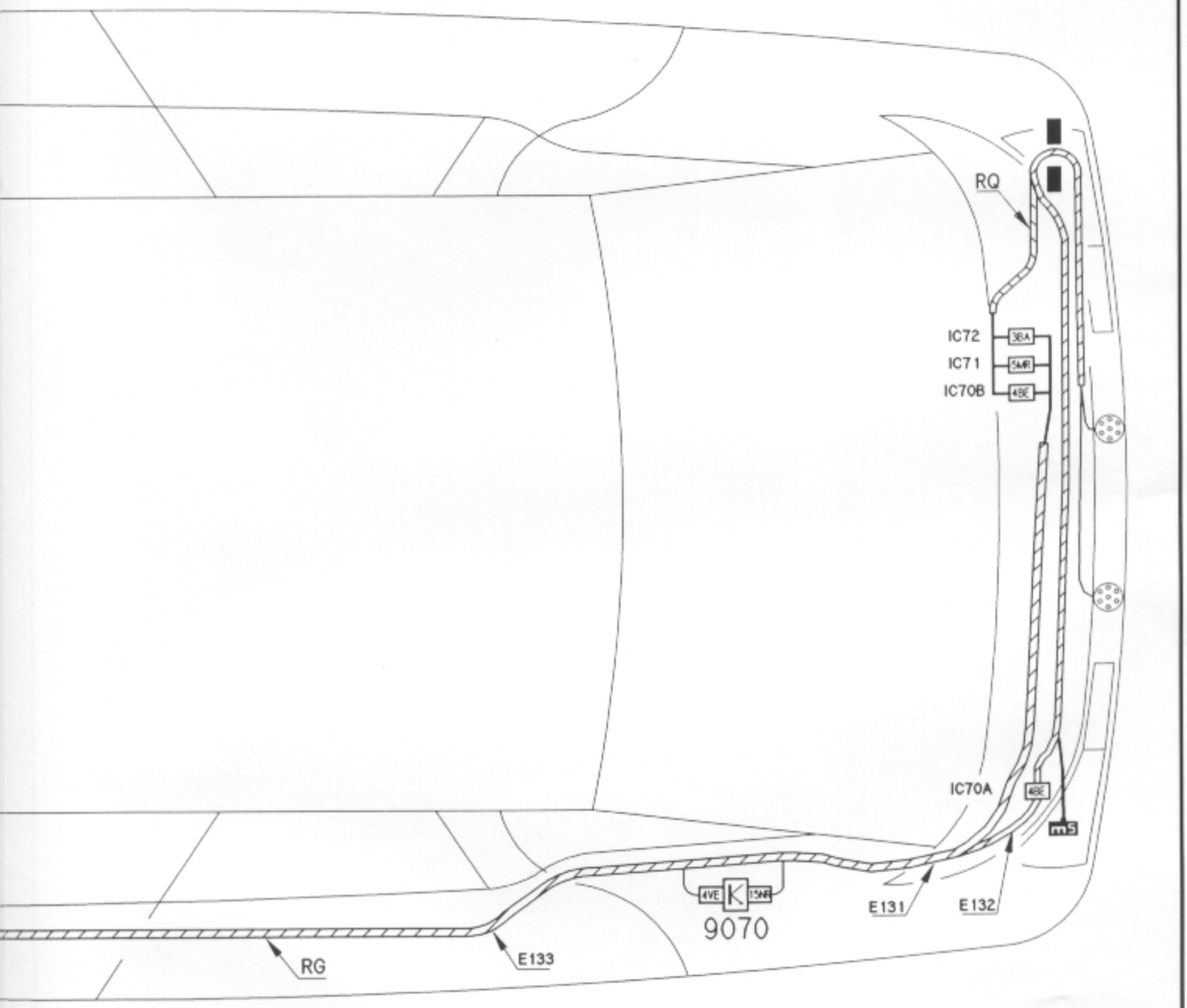
www.WorkshopManuals.co.uk



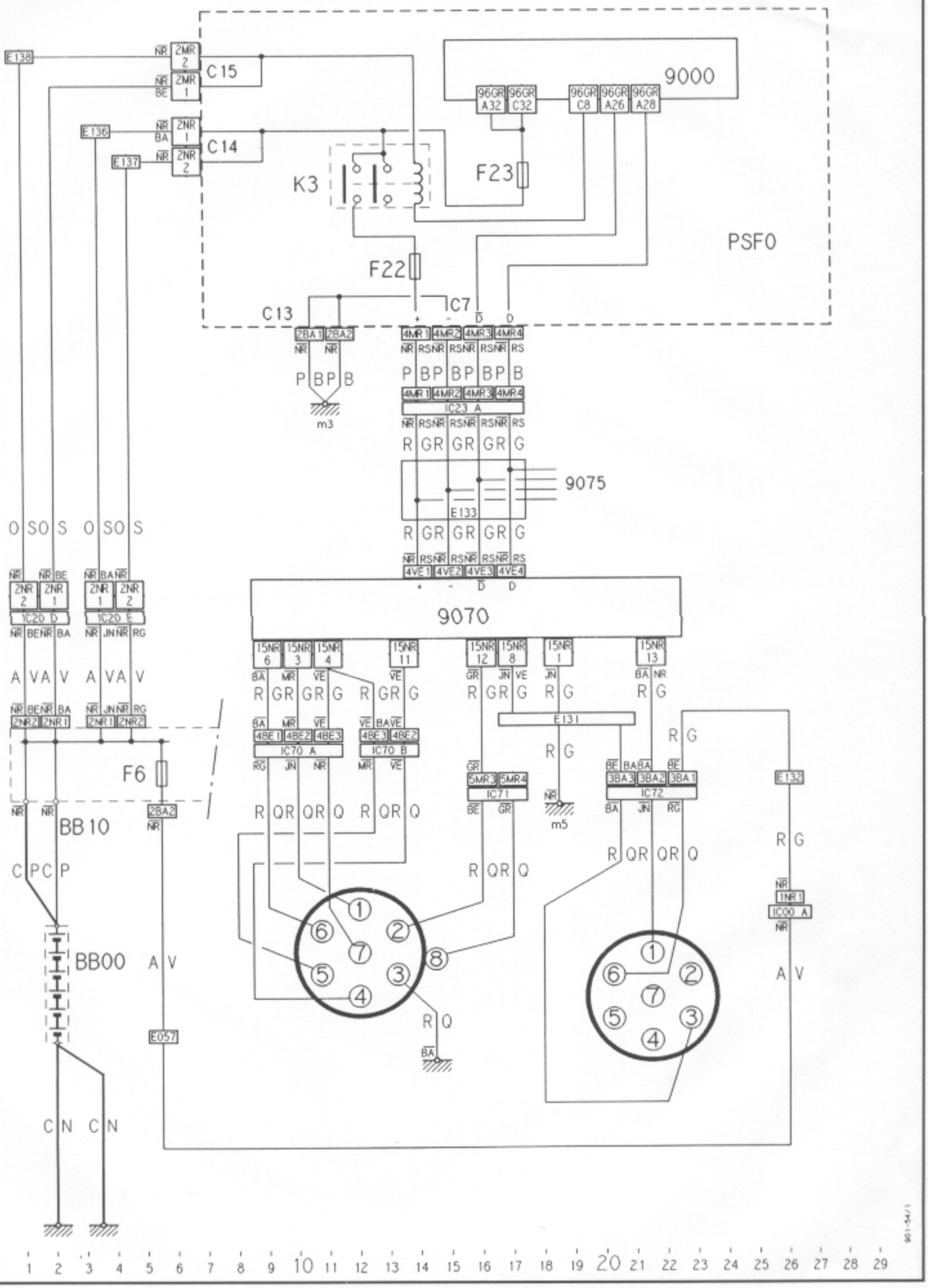
www.WorkshopManuals.co.uk



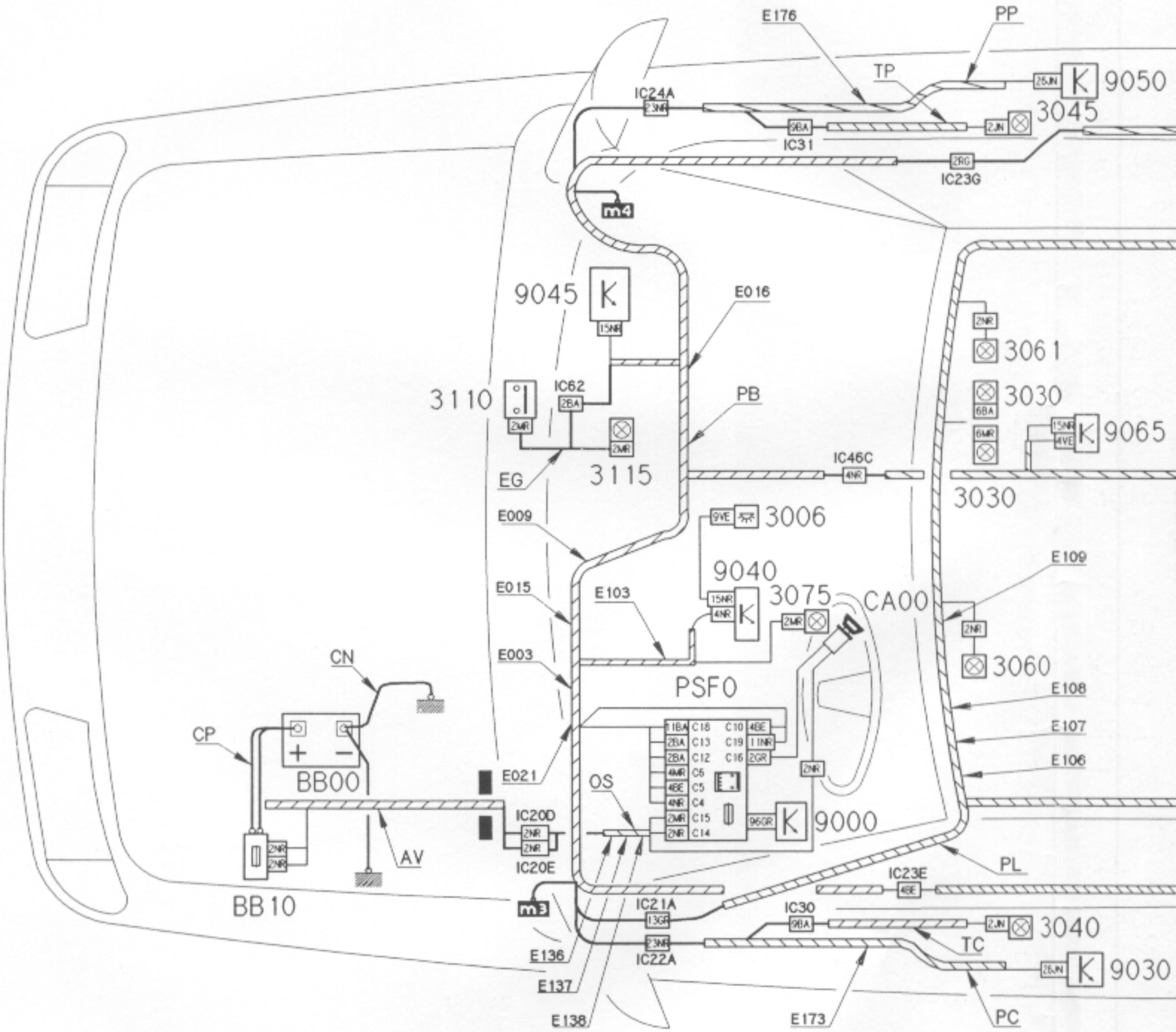
www.WorkshopManuals.co.uk



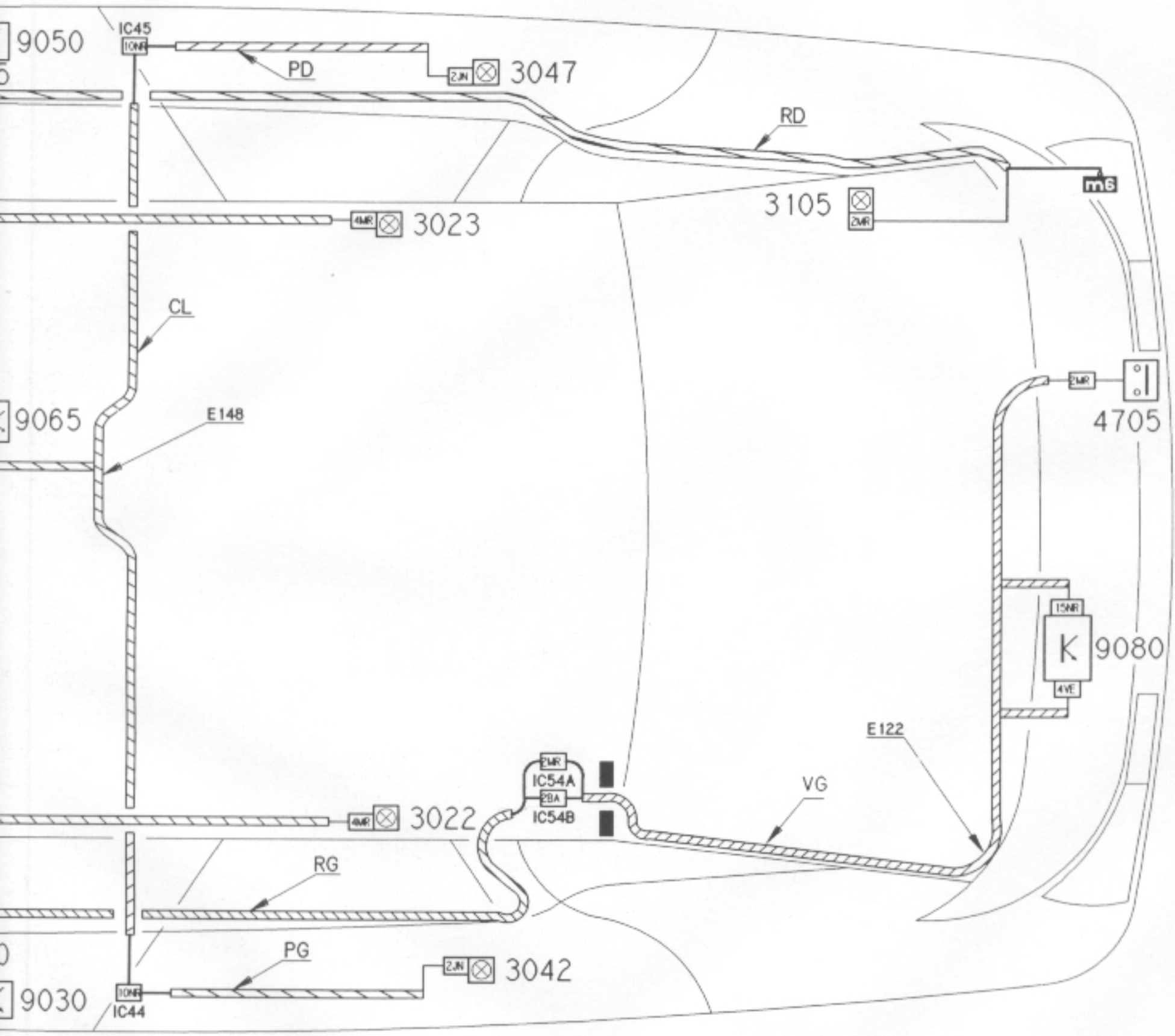
www.WorkshopManuals.co.uk



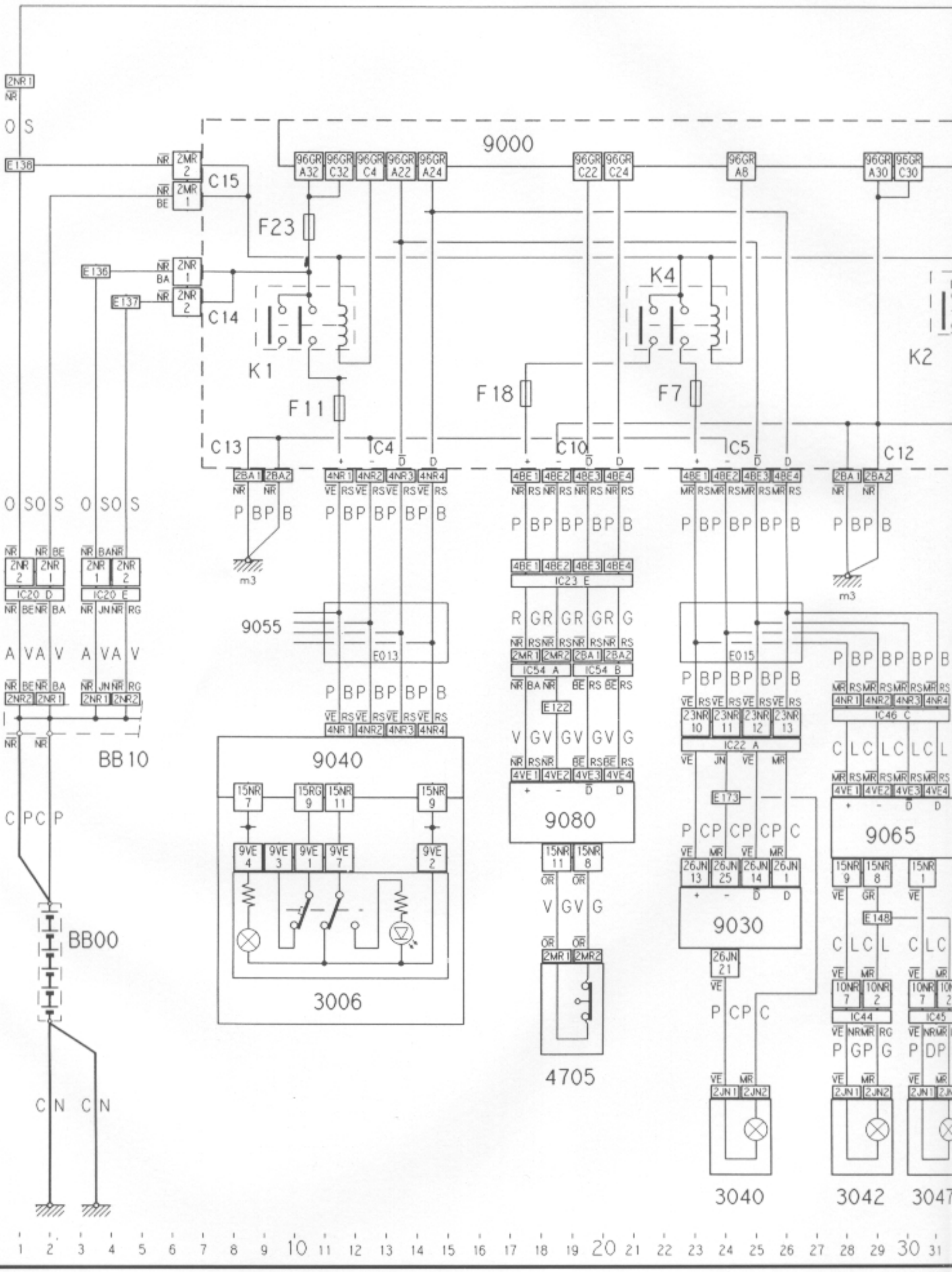
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

CA00

2NR2 2MR1 2GR2 2GR1 2MR2

96GR C30 96GR A4 96GR C26 96GR C28 96GR C12

F16

PSF0

K2

F21

C19

11NR B4

C12 C6

E021

4MR1 4MR2 4MR3 4MR4

E009

9085

E016

15NR 8 15NR 15 15NR 7 15NR 14

9045

15NR 2

m4

2BA2 2BA1

IC62

3110 3115

23NR 10 23NR 11 23NR 12 23NR 13

IC24 A

15NR 9

E176

E108

E109

E107

E106

2RG1

IC23 G

13GR A2 13GR B1 13GR B3 13GR A1

IC21 A

3075

26JN 15 26JN 25 26JN 14 26JN 1

9050

26JN 21

15NR 1

IC45

10NR 7 10NR 2

2JN1 2JN2

3047 3045

2MR1 2MR2

3105

m6

4MR2 4MR1 4MR3 4MR4

3022 3023

2NR2 2NR1

3060 3061

6MR3 6MR2 6MR1 6MR6

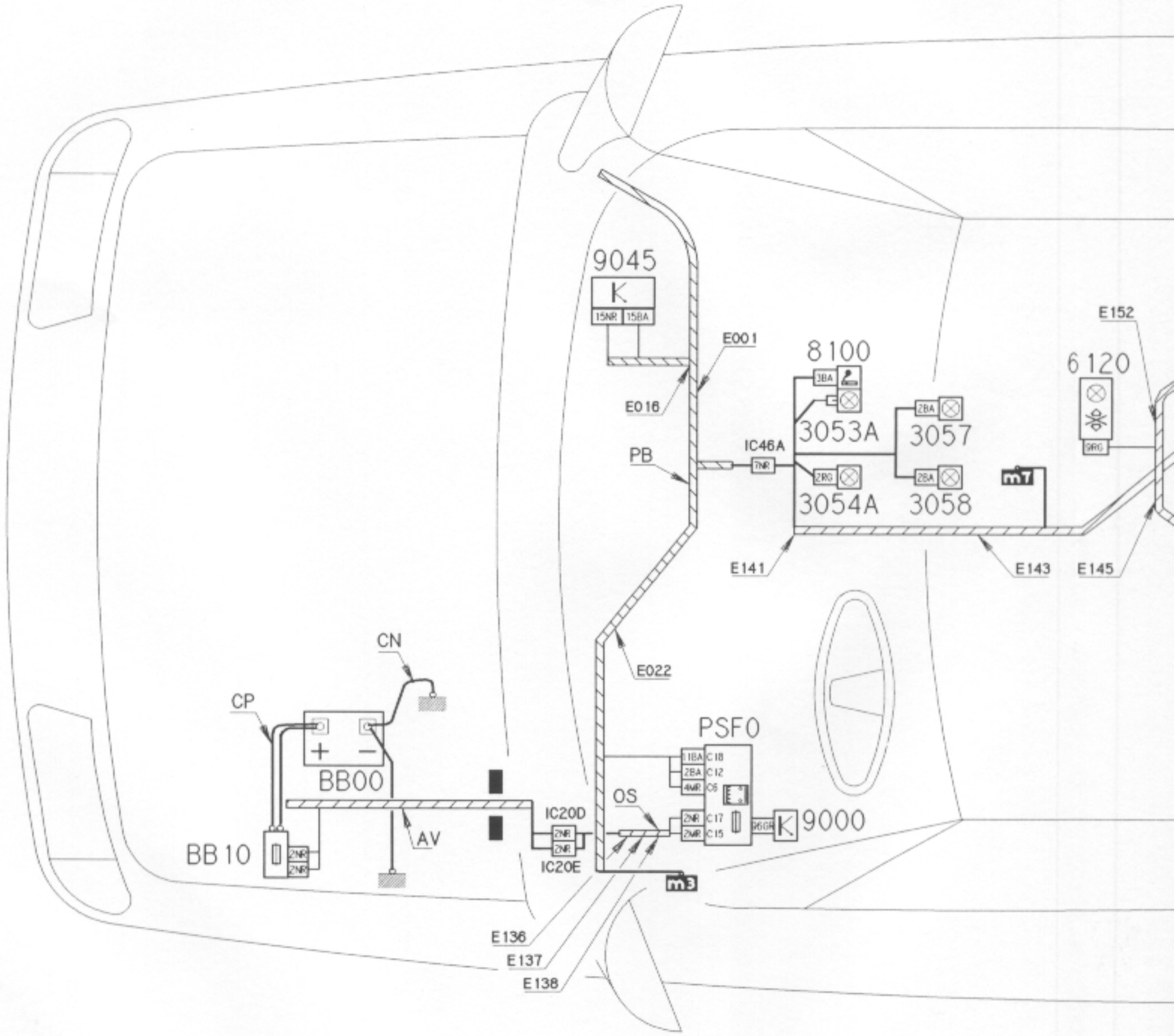
6BA6 6BA5 6BA4 6BA3

3030

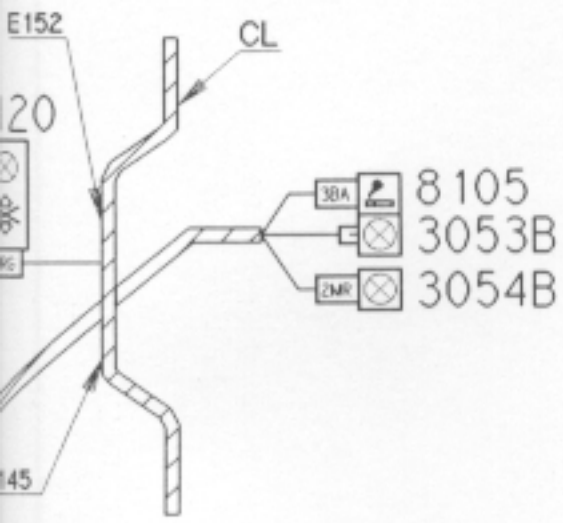
90-55/0

30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

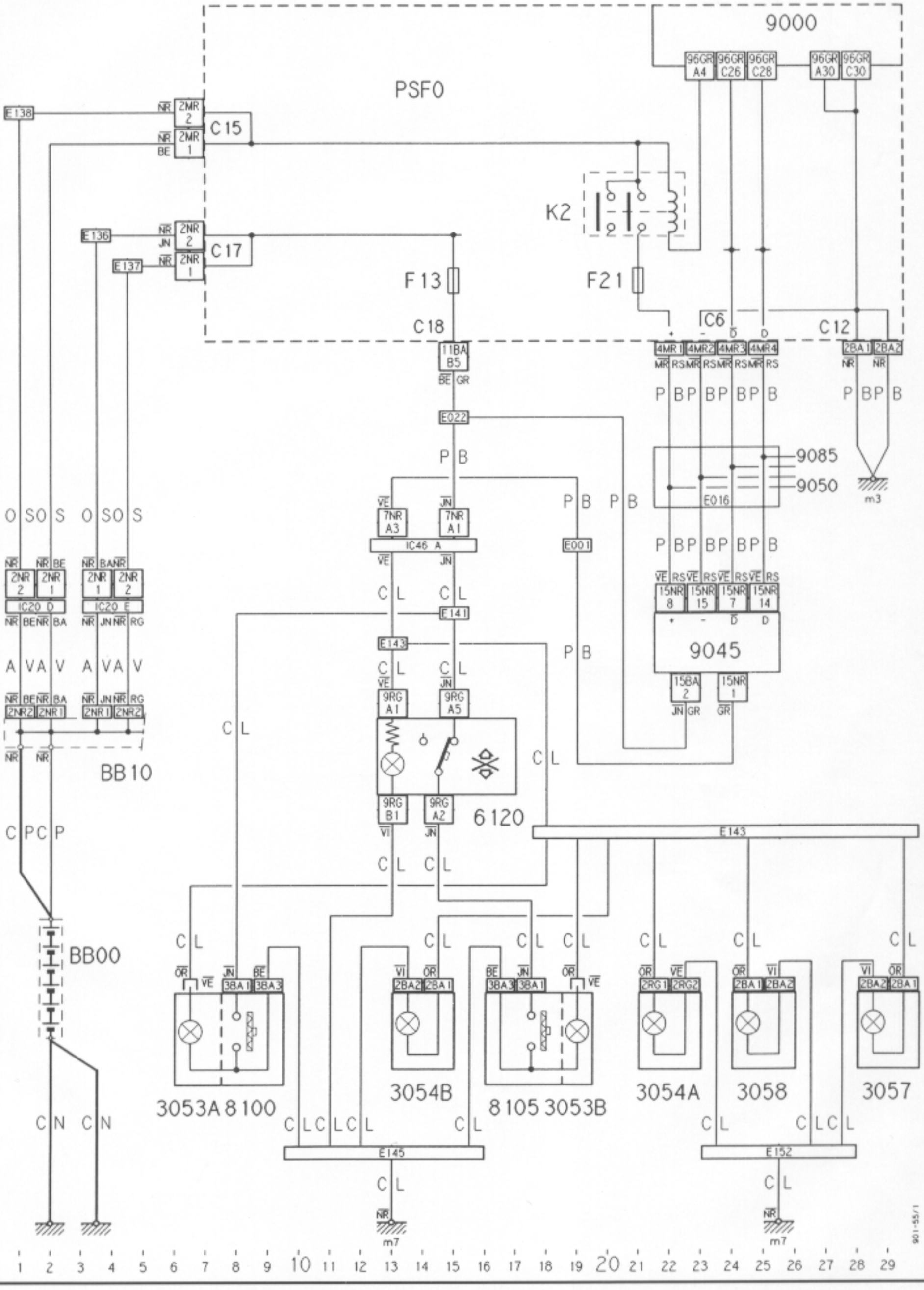
www.WorkshopManuals.co.uk



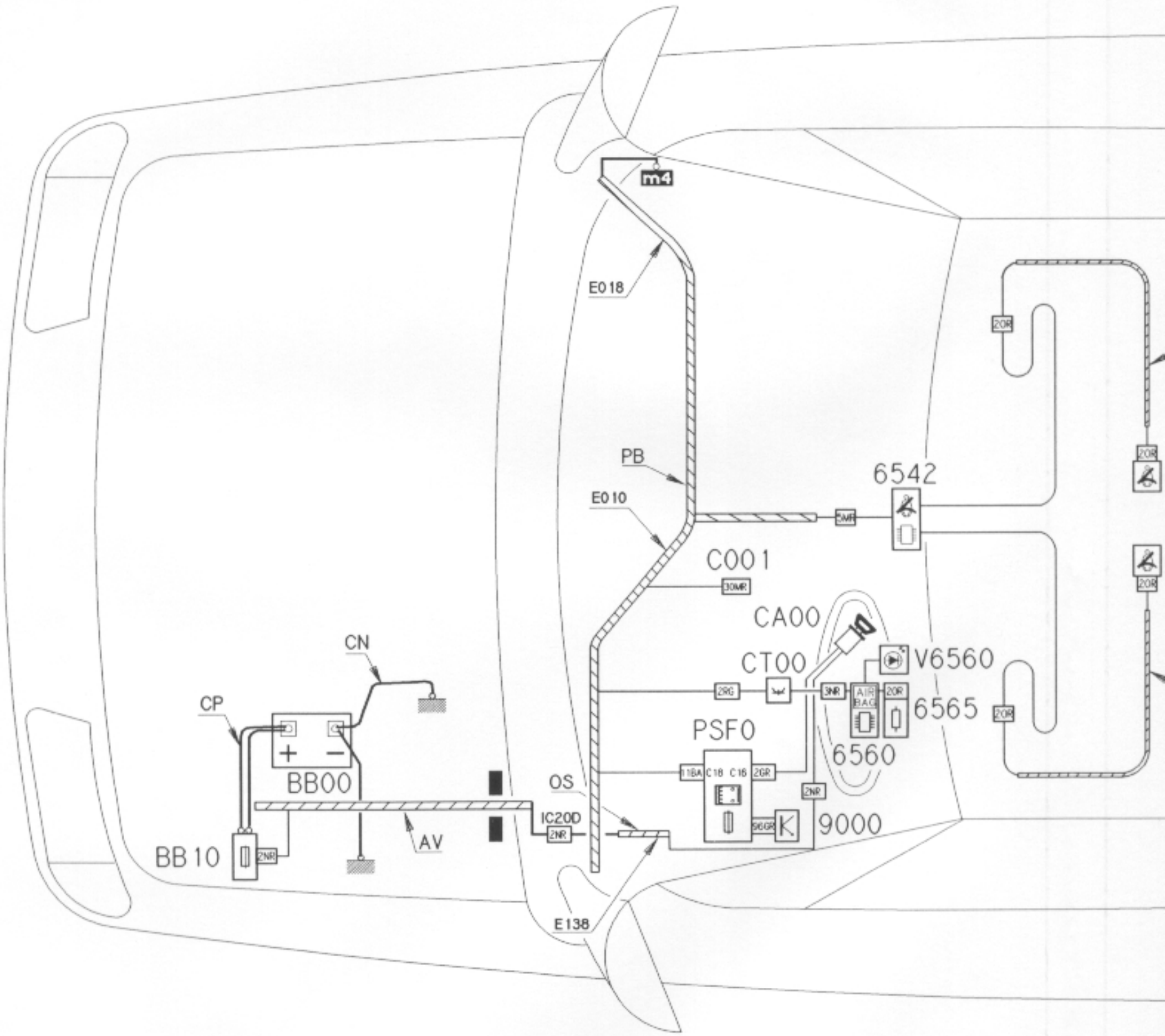
www.WorkshopManuals.co.uk



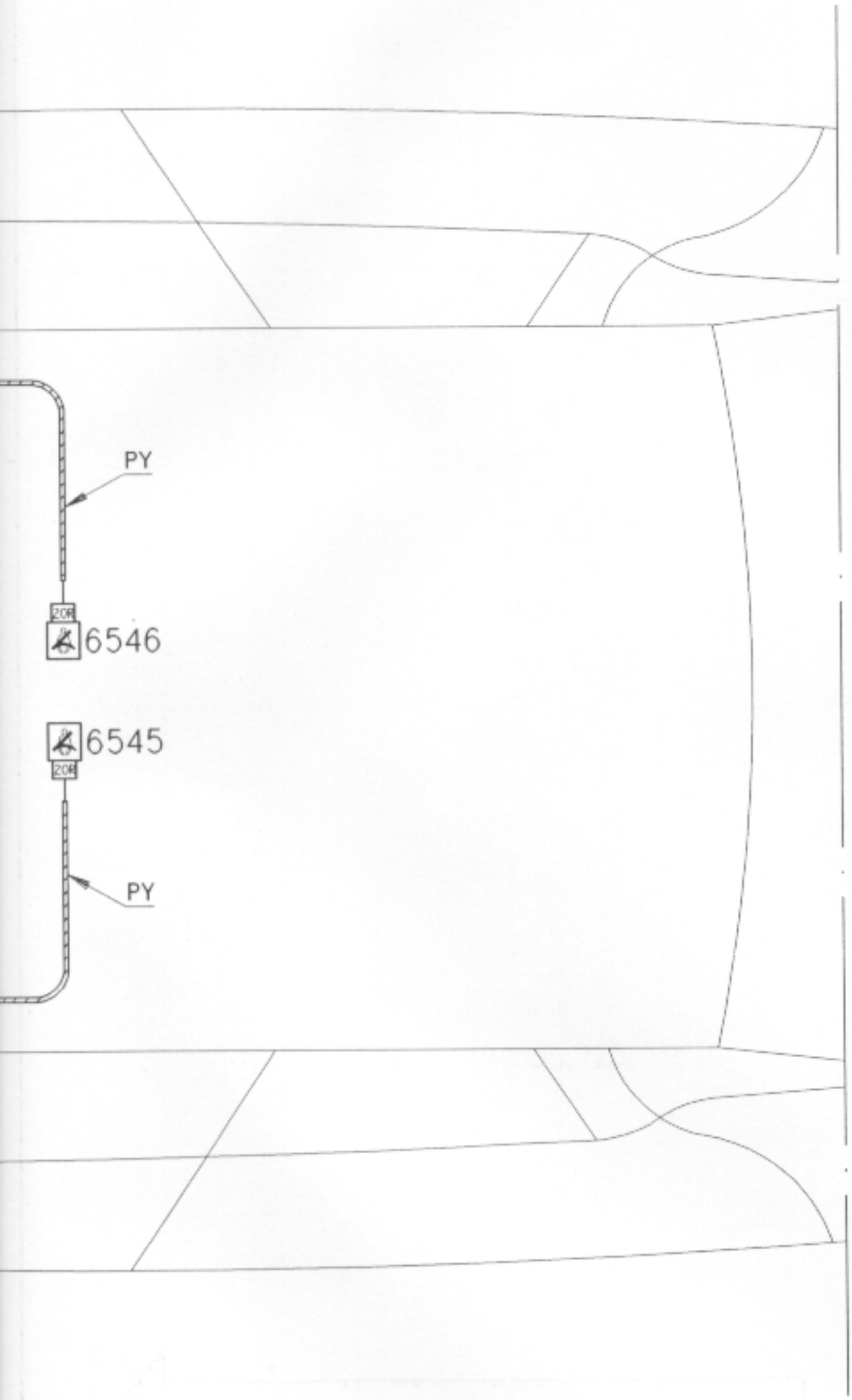
www.WorkshopManuals.co.uk



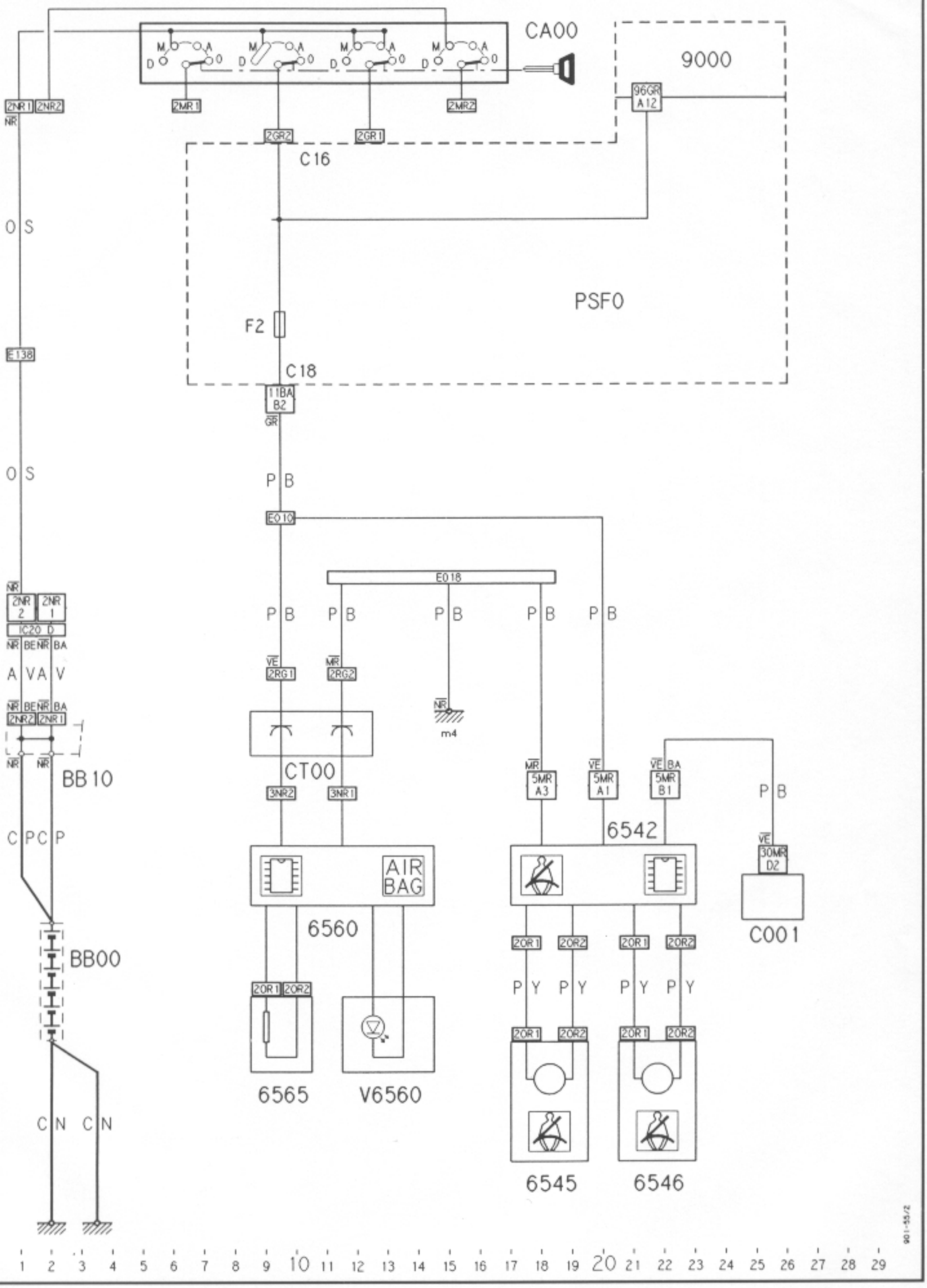
www.WorkshopManuals.co.uk



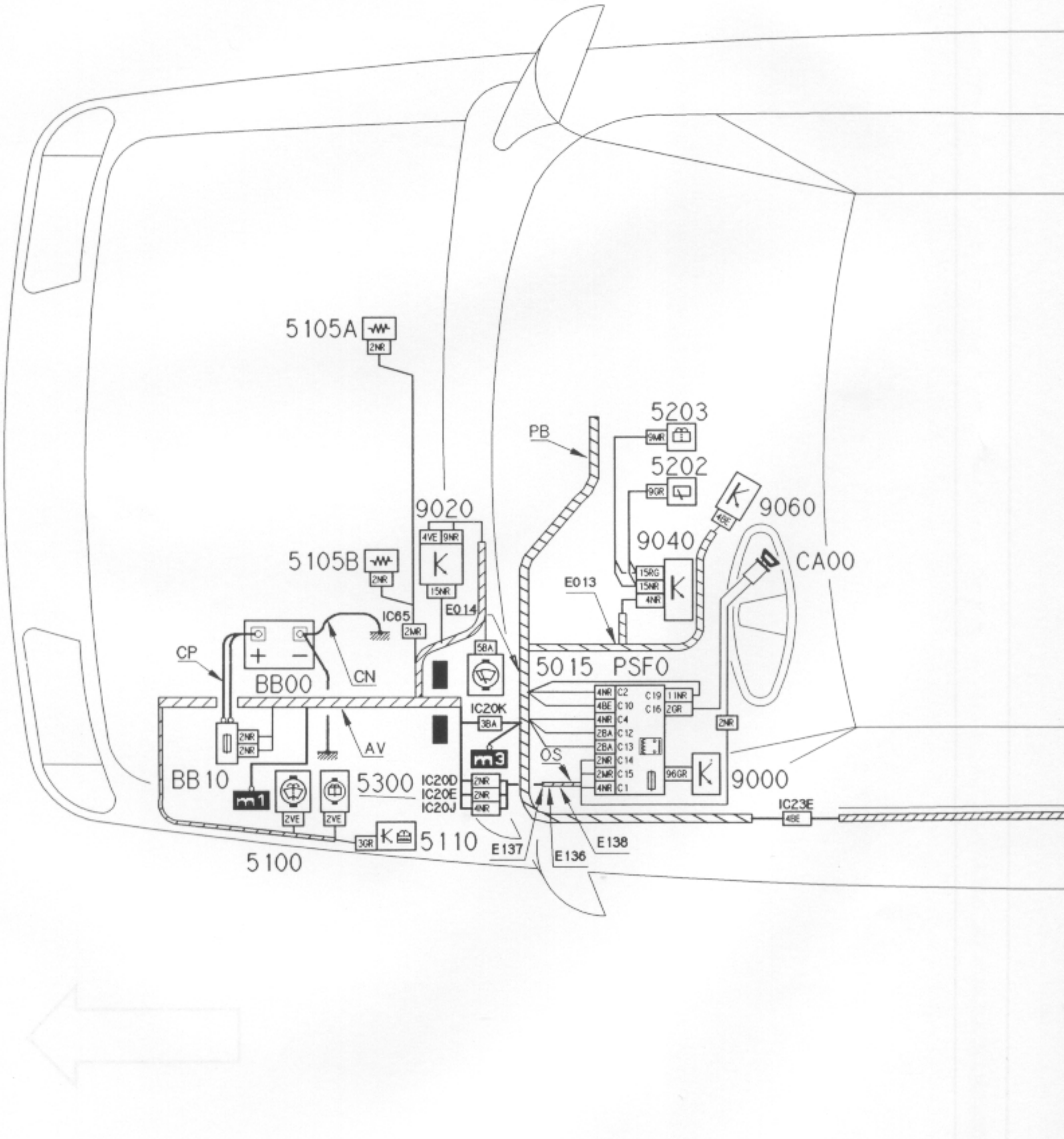
www.WorkshopManuals.co.uk



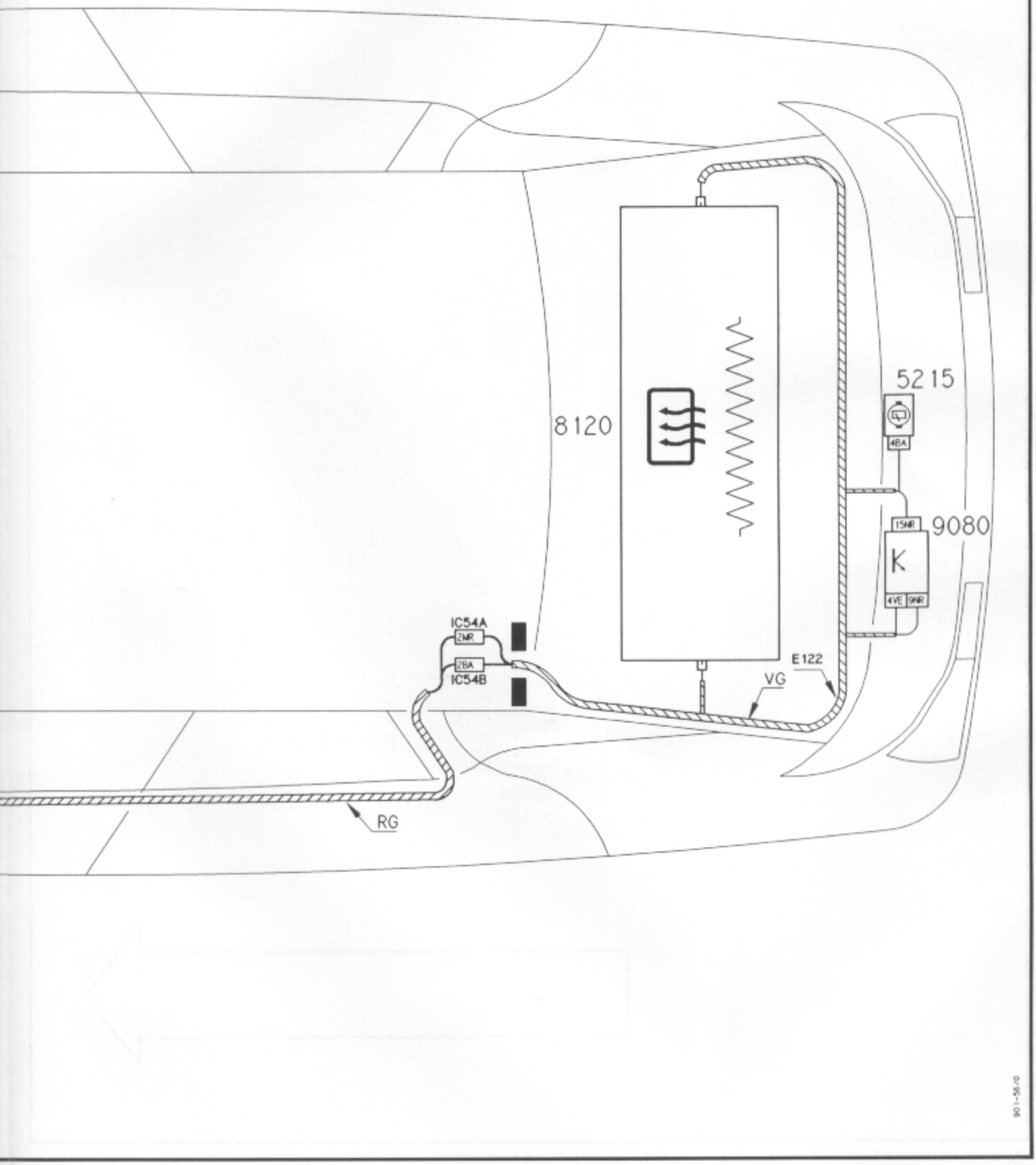
www.WorkshopManuals.co.uk



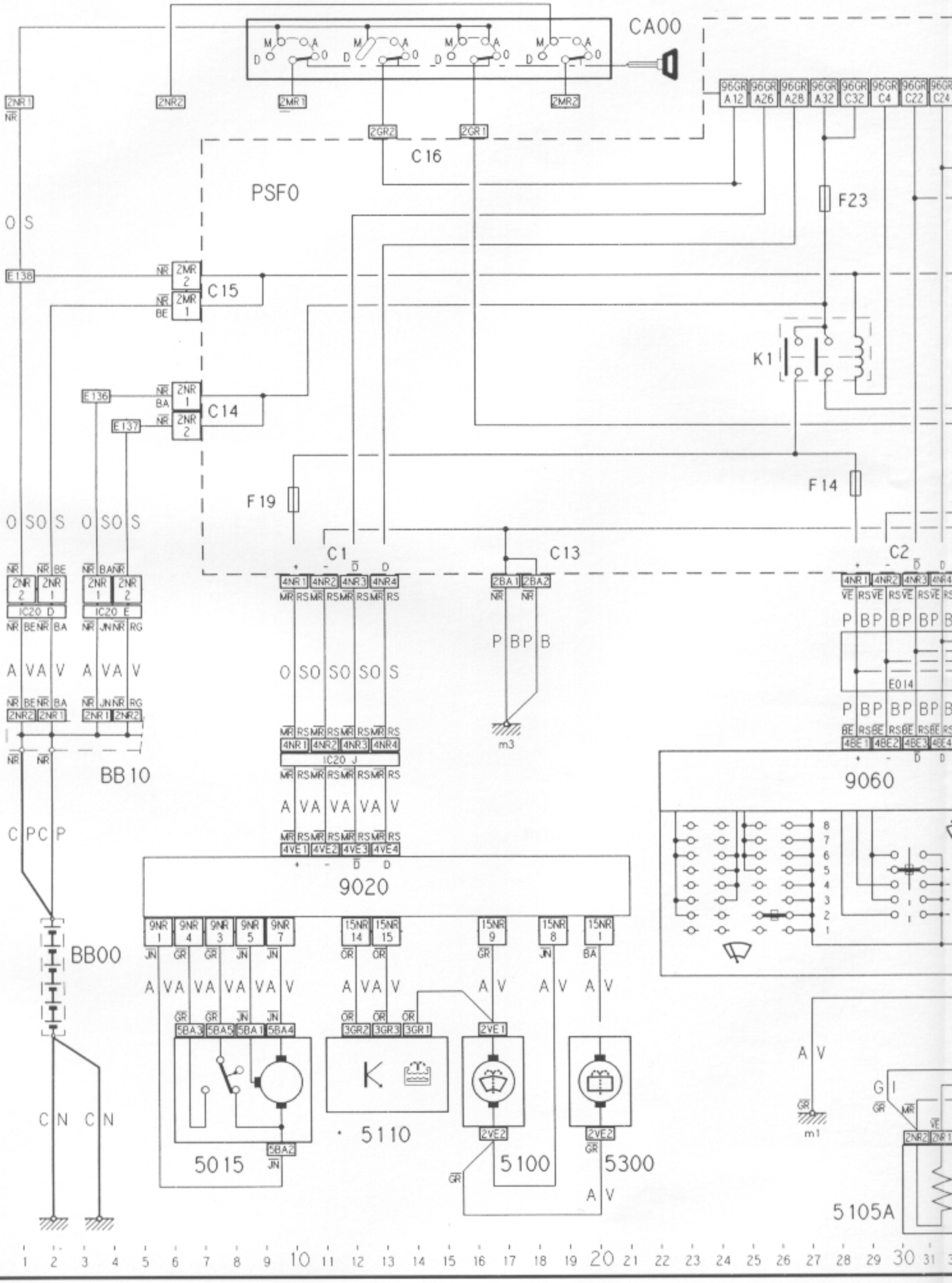
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

9000

96GR C4 | 96GR C22 | 96GR C24 | 96GR C12 | 96GR A22 | 96GR A24 | 96GR A8 | 96GR A30 | 96GR C30

F16 | F11 | F18

K4

C2 | C19 | C4 | C10 | C12

4NR2 4NR3 4NR4 — VE RS VE RS VE RS — P BP BP B — E014 — 9035 — 4BE2 4BE3 4BE4 — 60

11NR B4 — JN MV — E021 — P B

4NR1 4NR2 4NR3 4NR4 — P BP BP BP B — E013 — 9055 — 9040

4BE1 4BE2 4BE3 4BE4 — NR RS NR RS NR RS NR RS — P BP BP BP B — IC23 E — R GR GR GR G — 2MR1 2MR2 2BA1 2BA2 — IC54 A — IC54 B — NR BA NR BE RS BE RS — V GV GV GV G — E122 — 4VE1 4VE2 4VE3 4VE4 — 9080

2BA1 2BA2 — NR NR — P BP B — m3

GR 3BA2 — IC20 K — ± 0 INT 1 2 — A VA V

15NR 7 | 15NR 9 | 15NR 10 | 15RG 14 | 15NR 6 | 15RG 13 | 15NR 5

9GR 4 | 9GR 8 | 9GR 1 | 9GR 5 | 9GR 6 | 9GR 2 — 5202

9MR 4 | 9MR 8 | 9MR 1 | 9MR 5 | 9MR 6 | 9MR 2 — 5203

15NR 10 | 15NR 3 | 15NR 2 | 15NR 1 | 9NR 5 — V GV G V G V GV G V G — 4BA1 4BA3 4BA2 4BA4 — 5215 — 8120

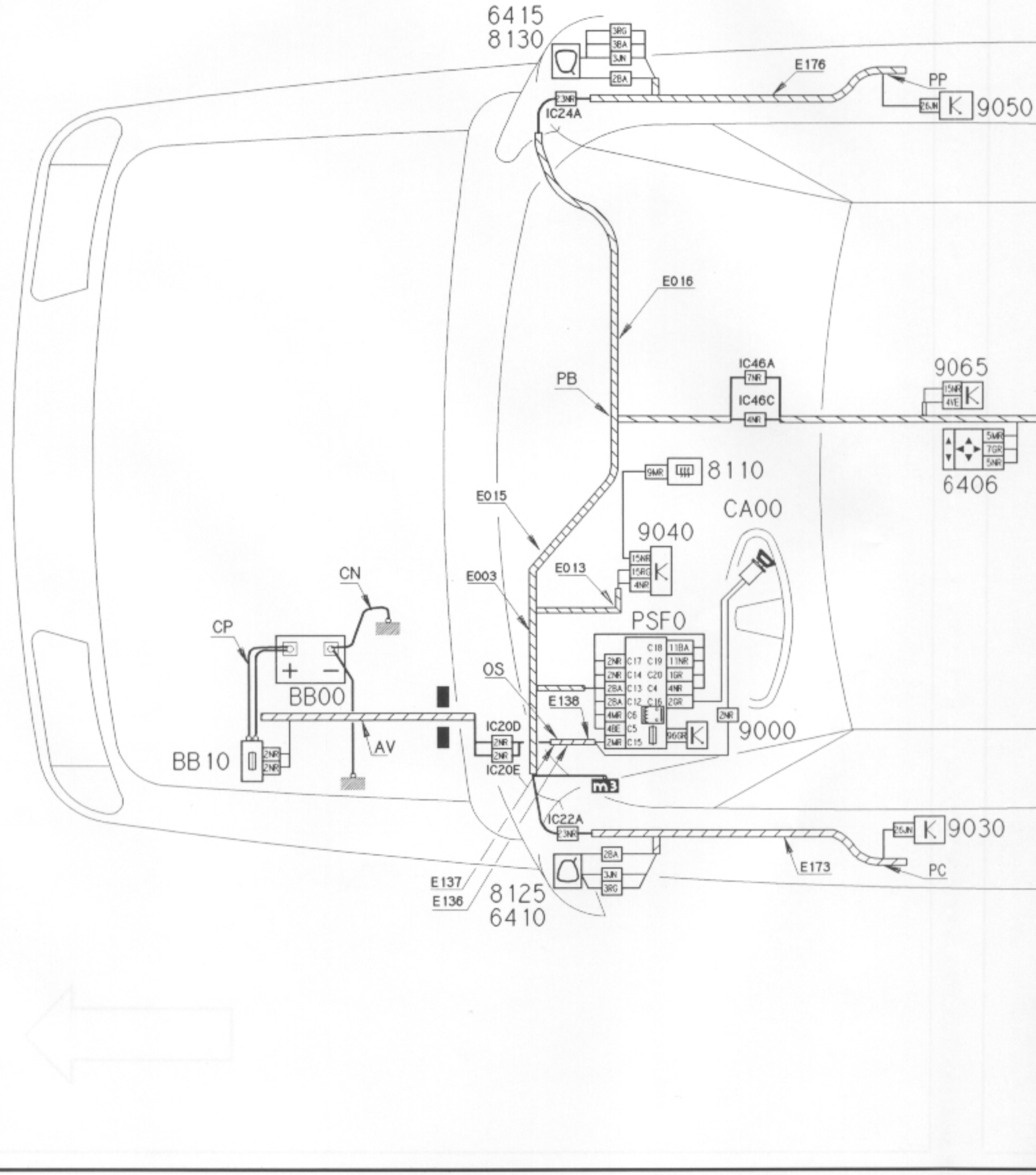
GR VE — 2MR2 2MR1 — IC65 — GR GR NR — G I G I

GR MR VE MR VE — 2NR2 2NR1 2NR2 2NR1 — 4050 — 5105B

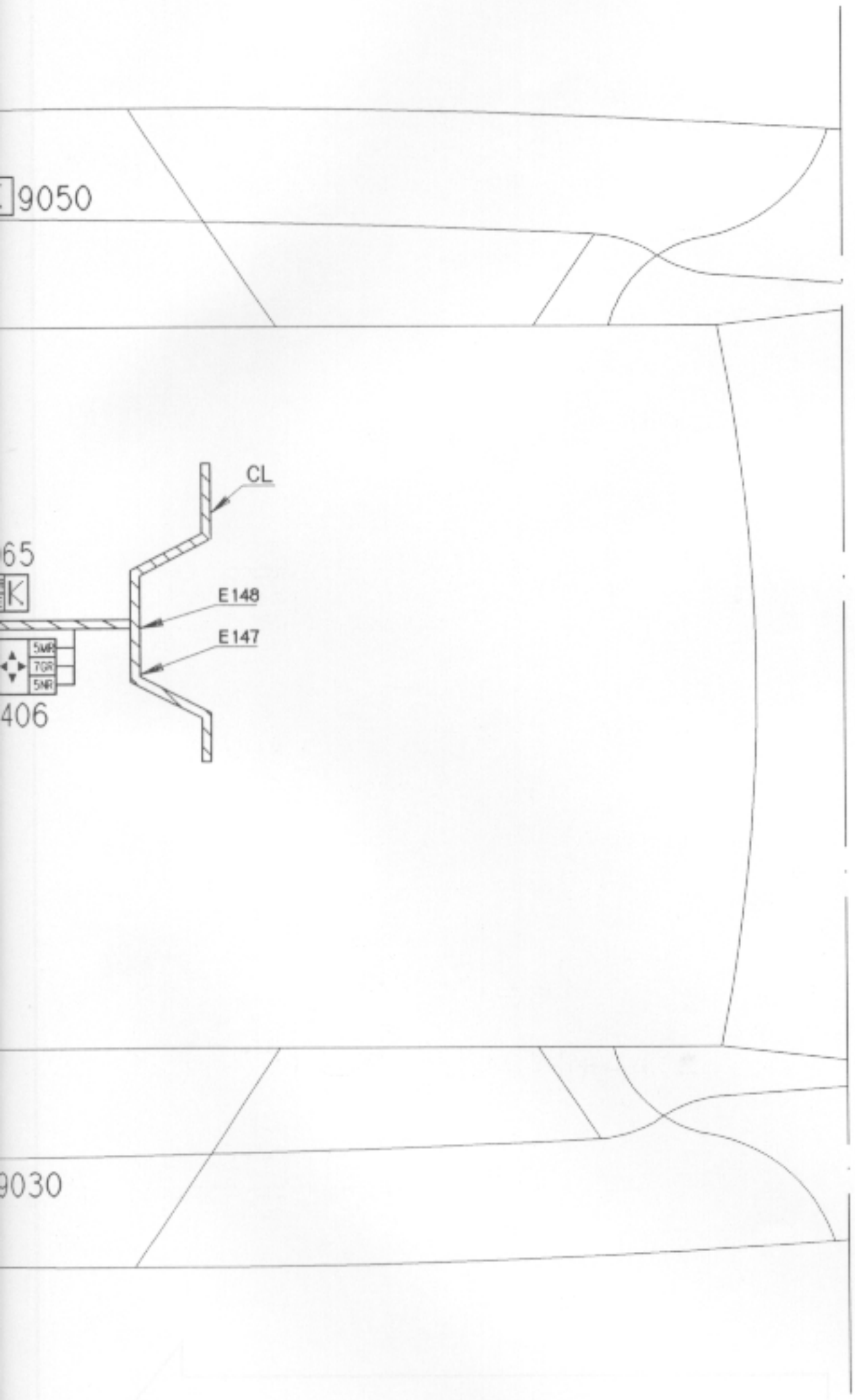
29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

901-56/0

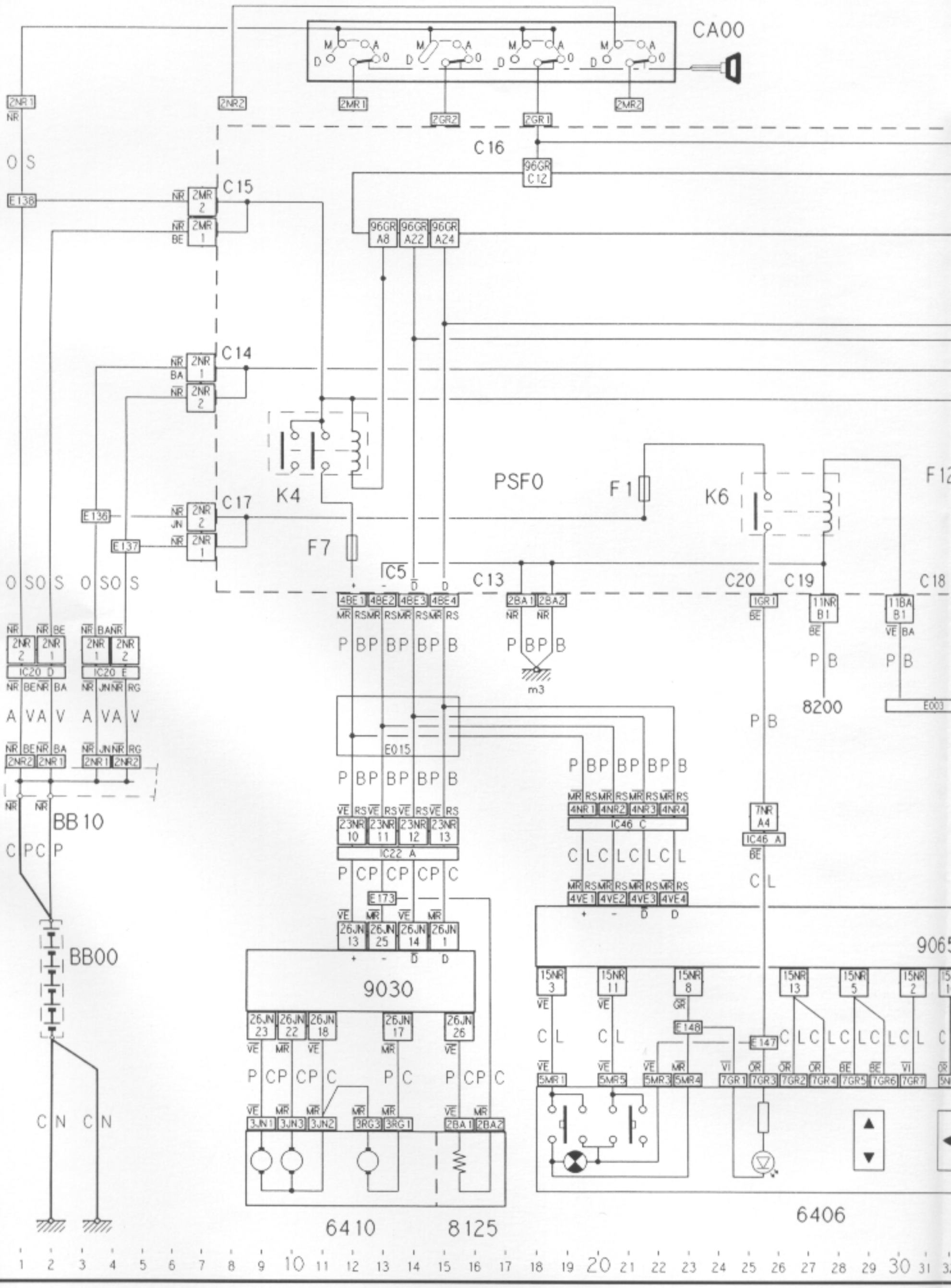
www.WorkshopManuals.co.uk



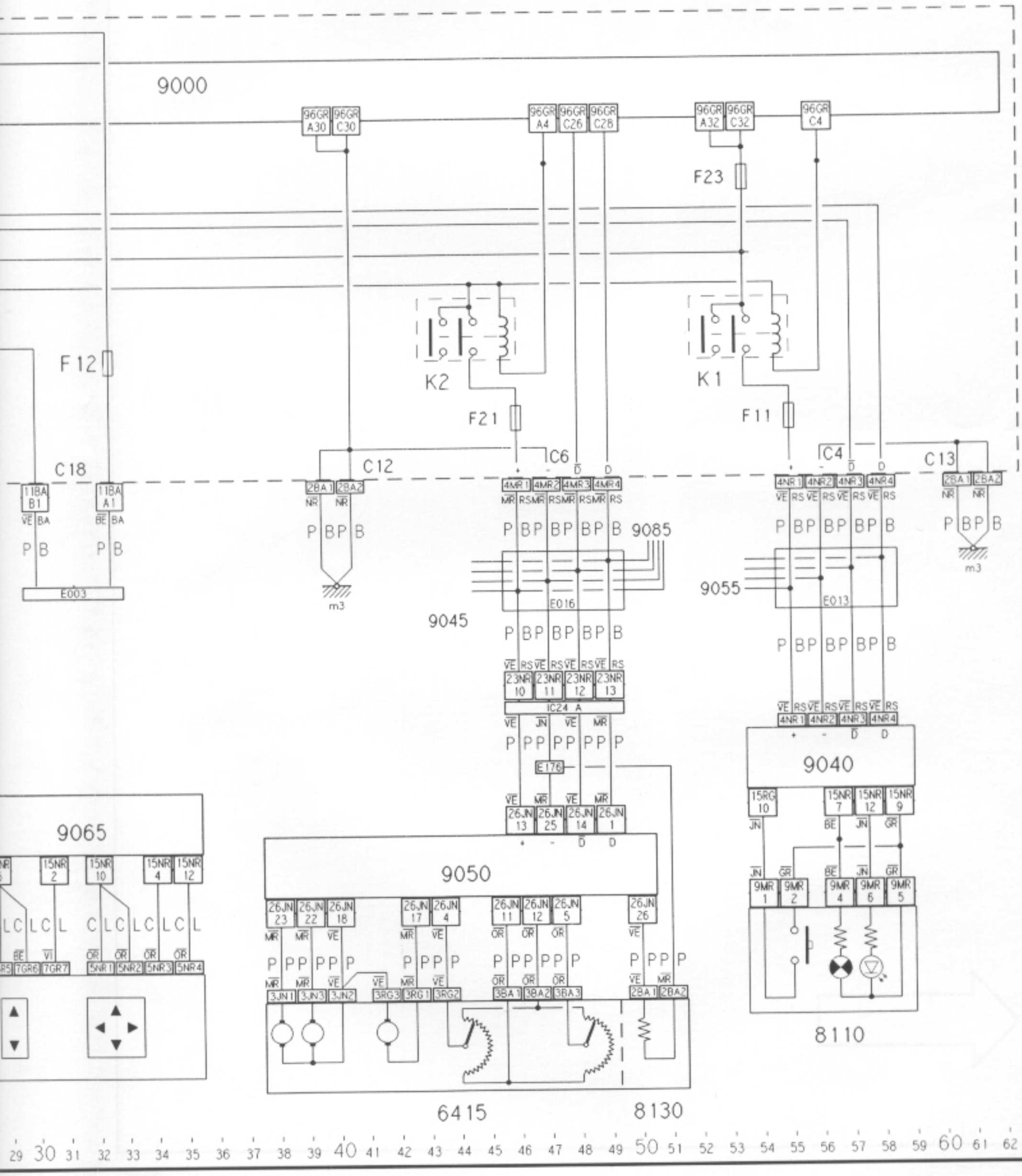
www.WorkshopManuals.co.uk



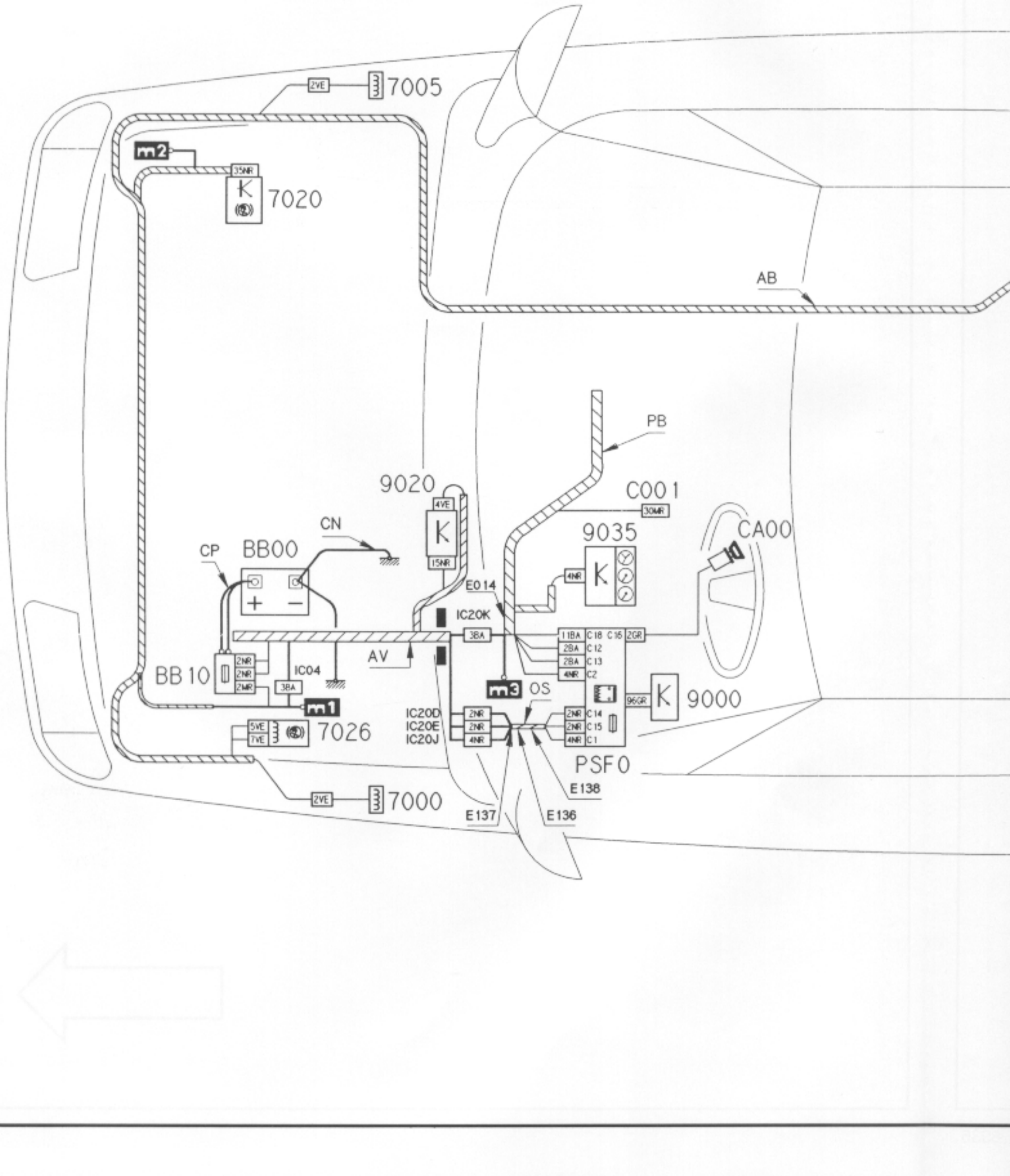
www.WorkshopManuals.co.uk



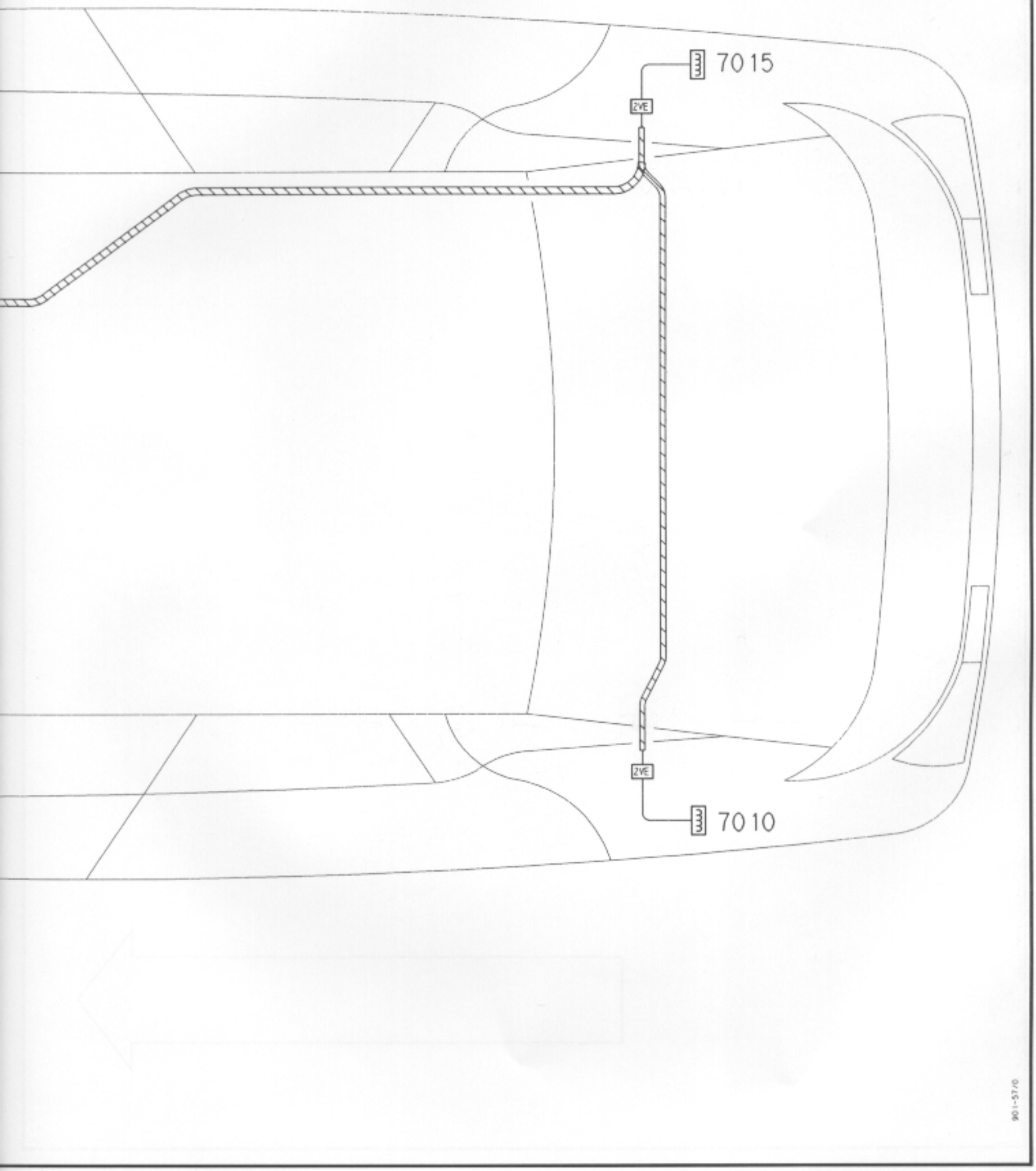
www.WorkshopManuals.co.uk



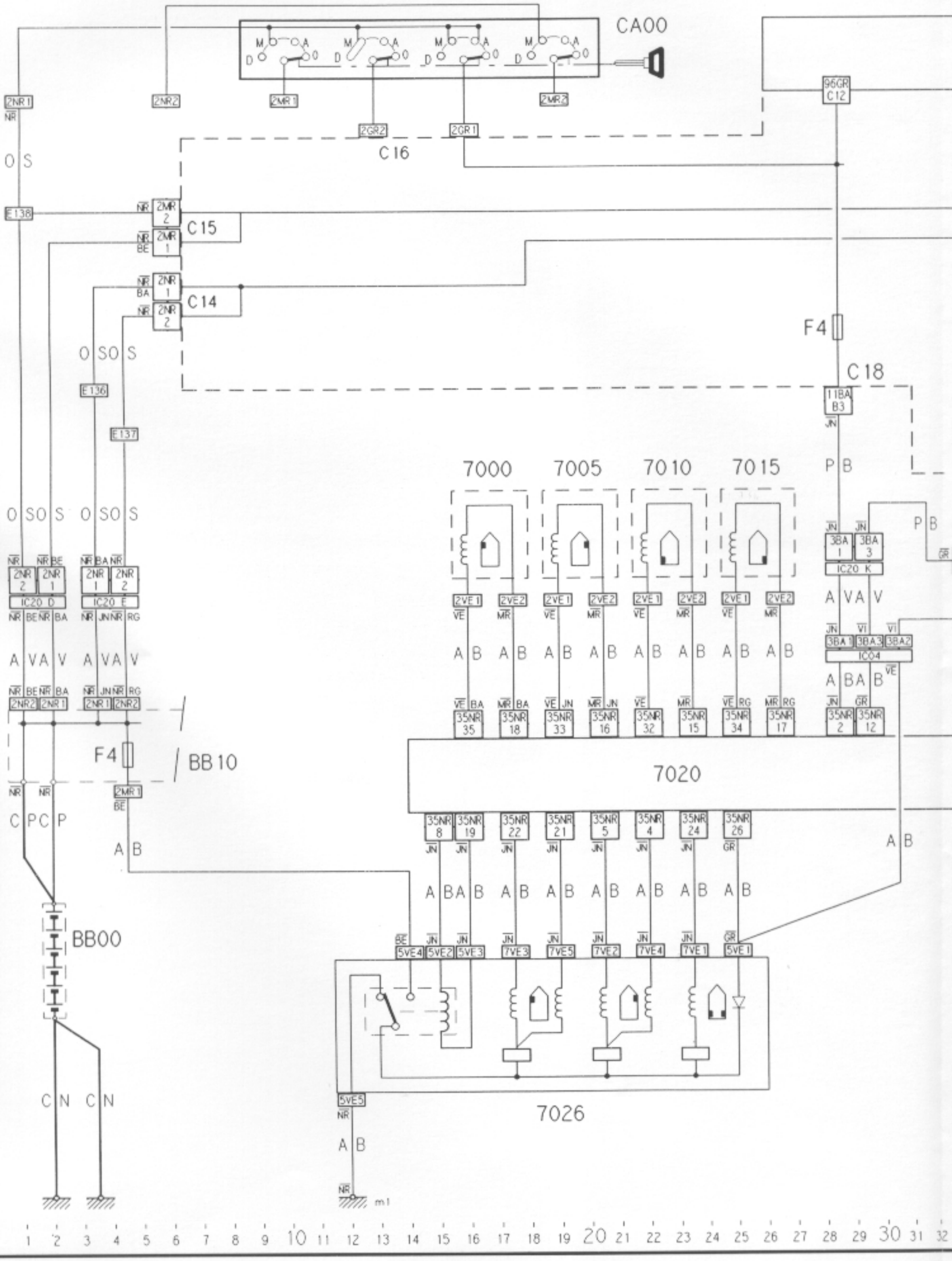
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

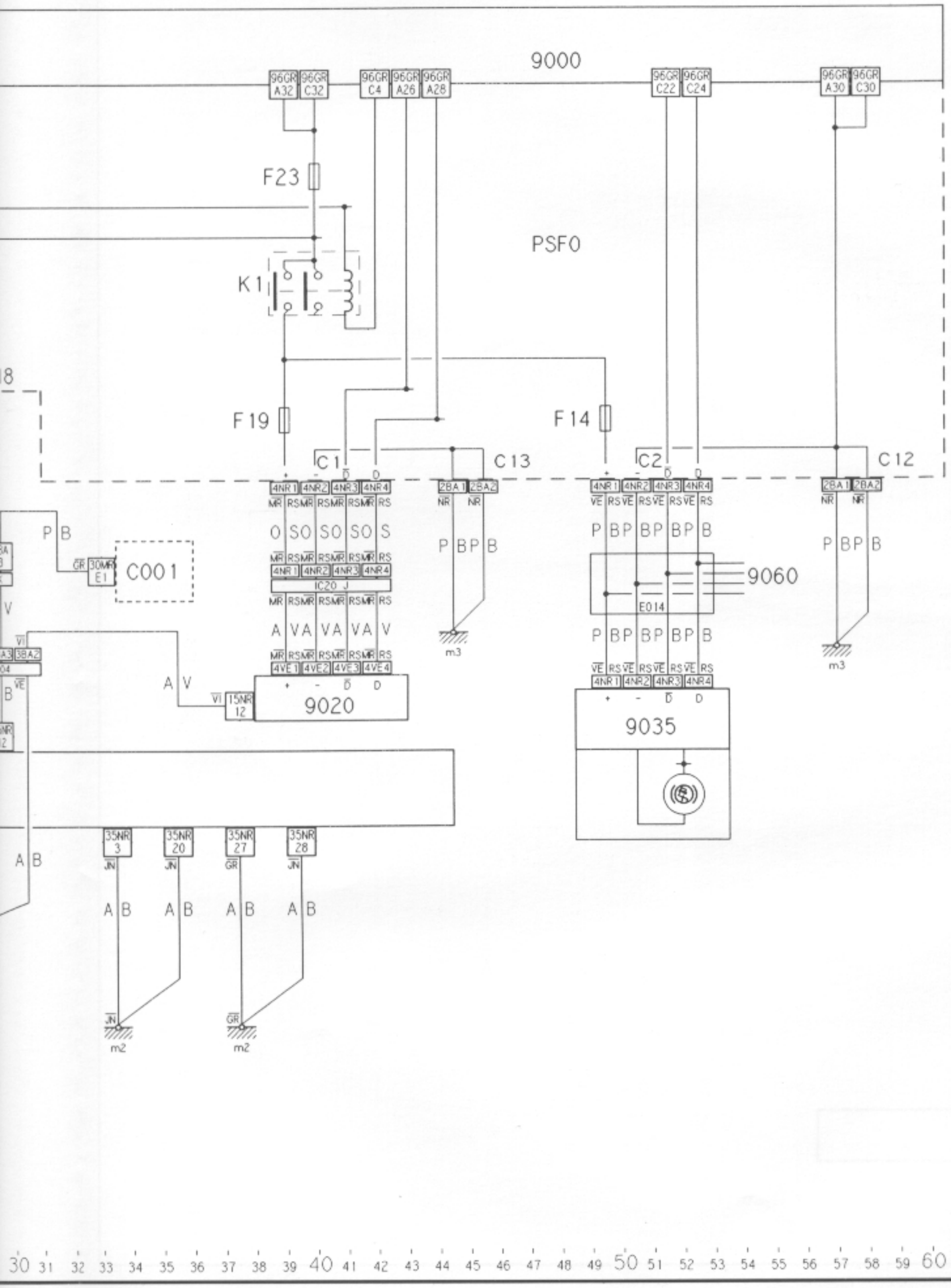


www.WorkshopManuals.co.uk



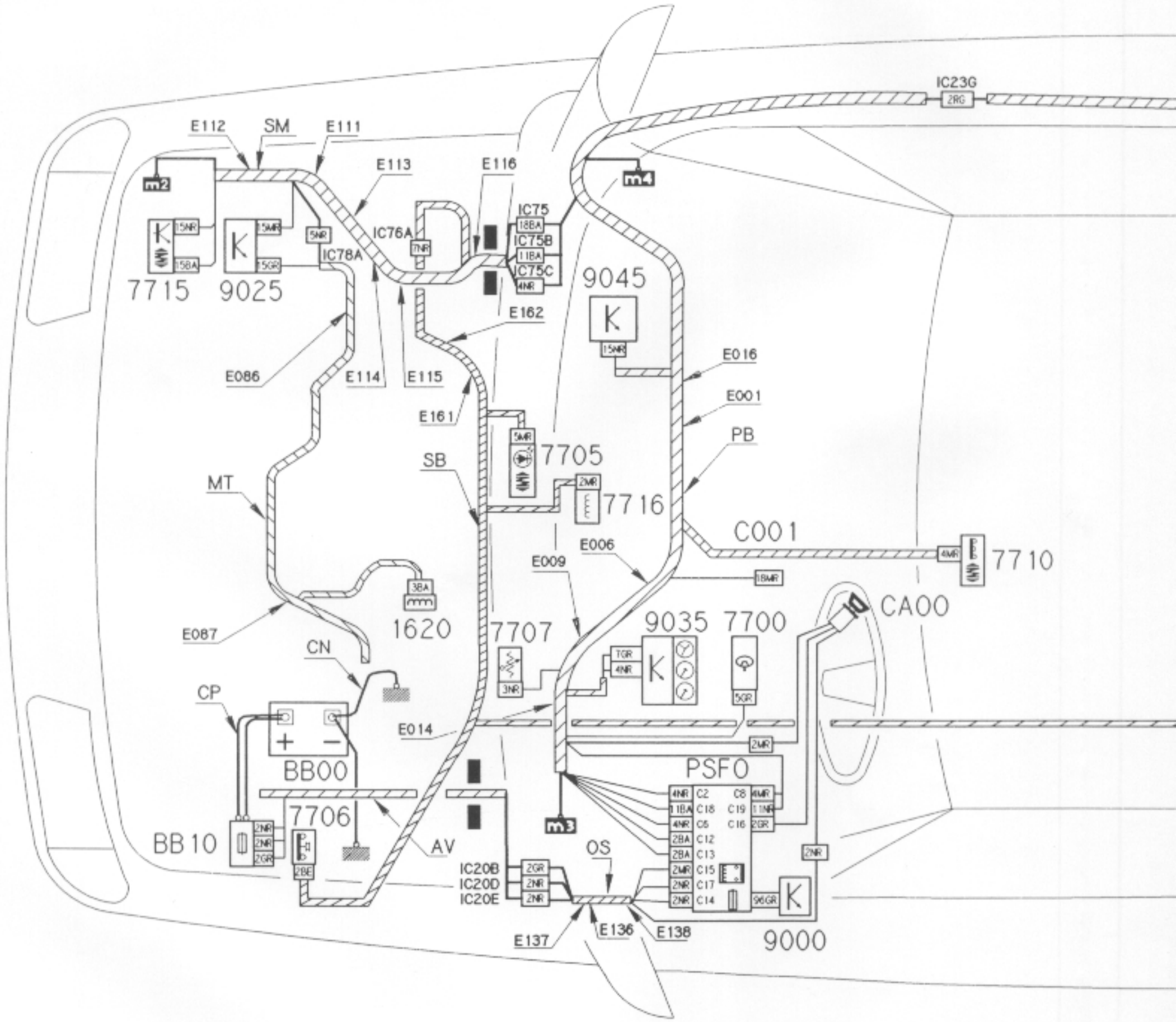
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

www.WorkshopManuals.co.uk

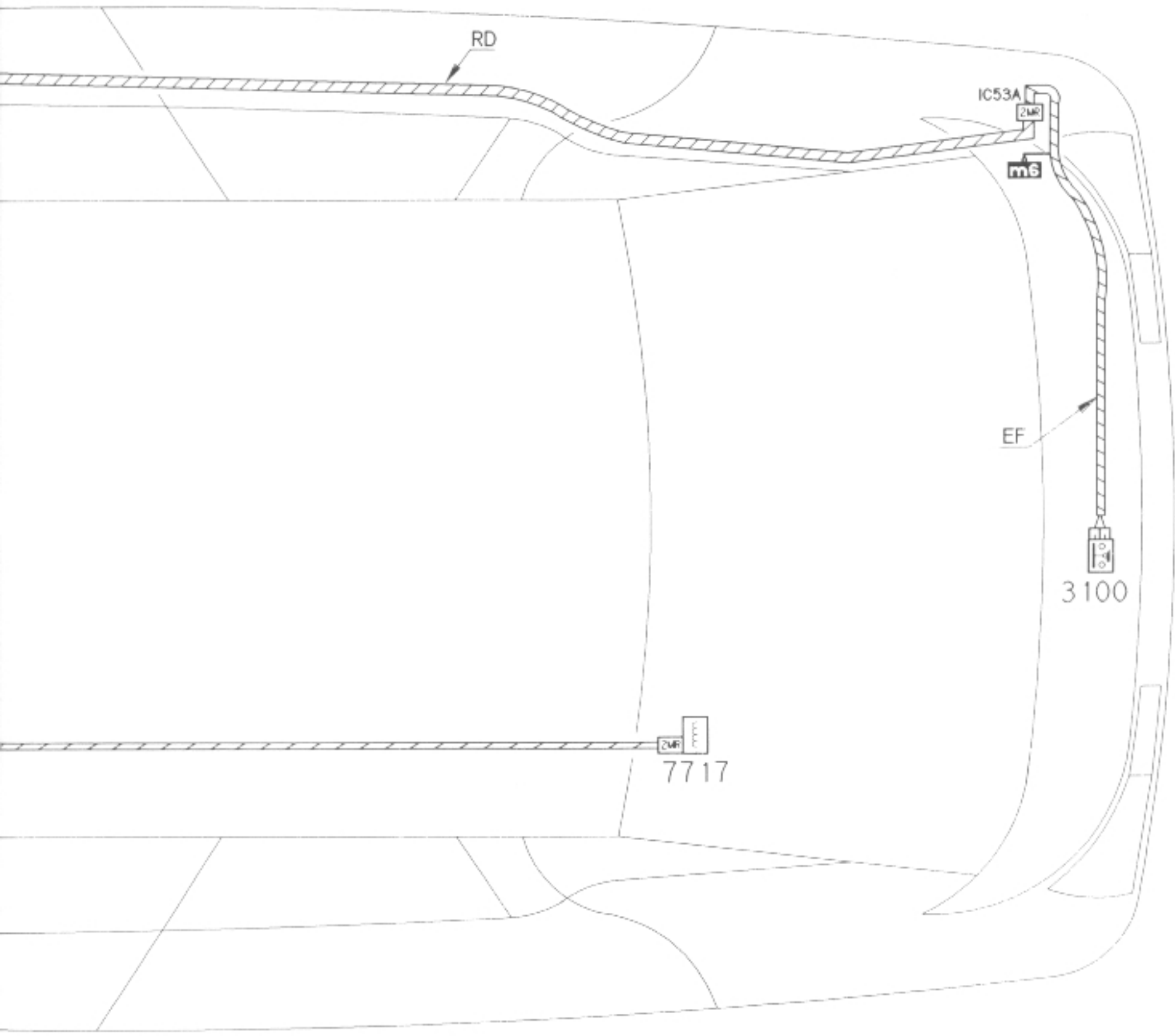


901-57/0

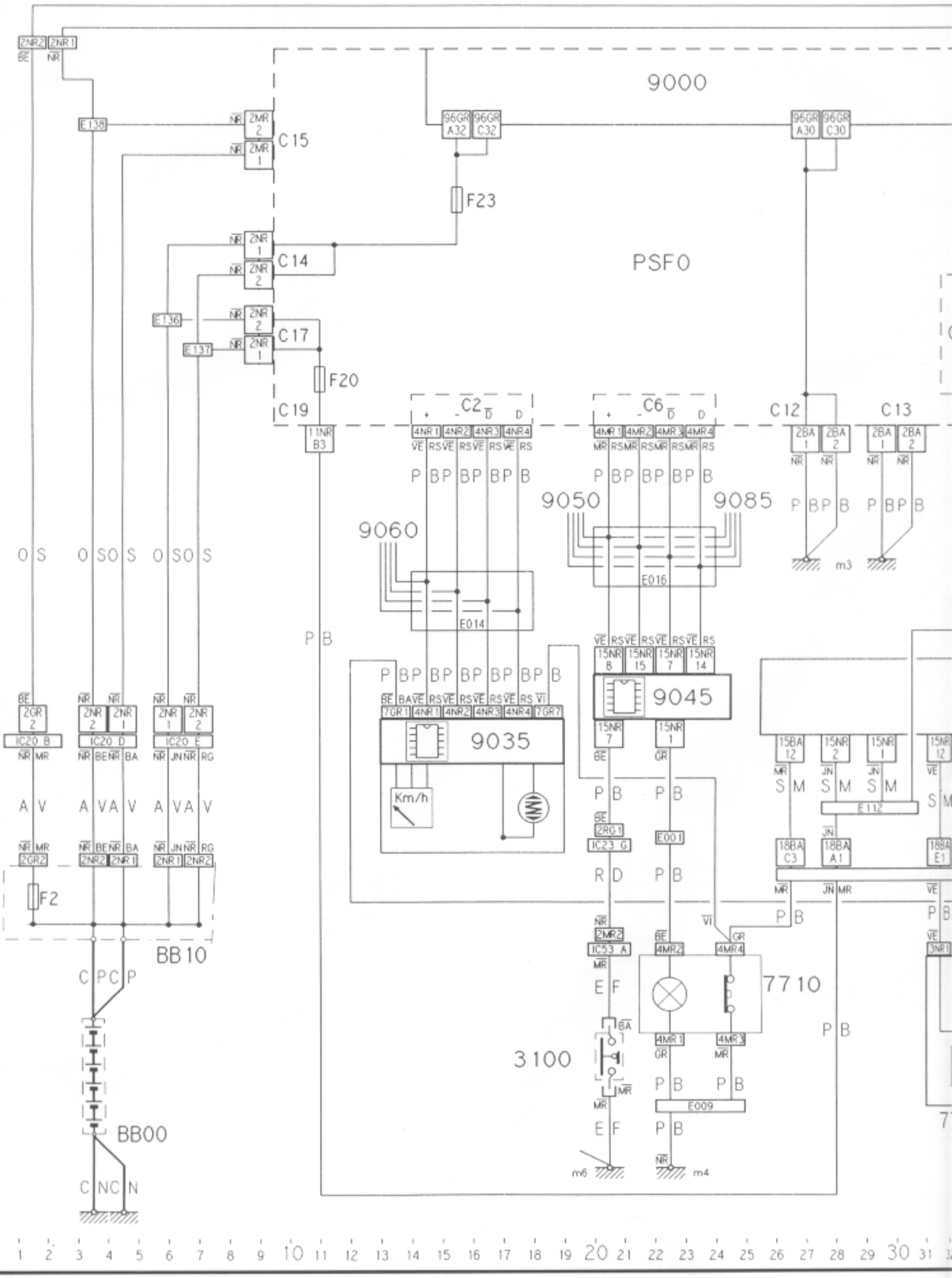
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

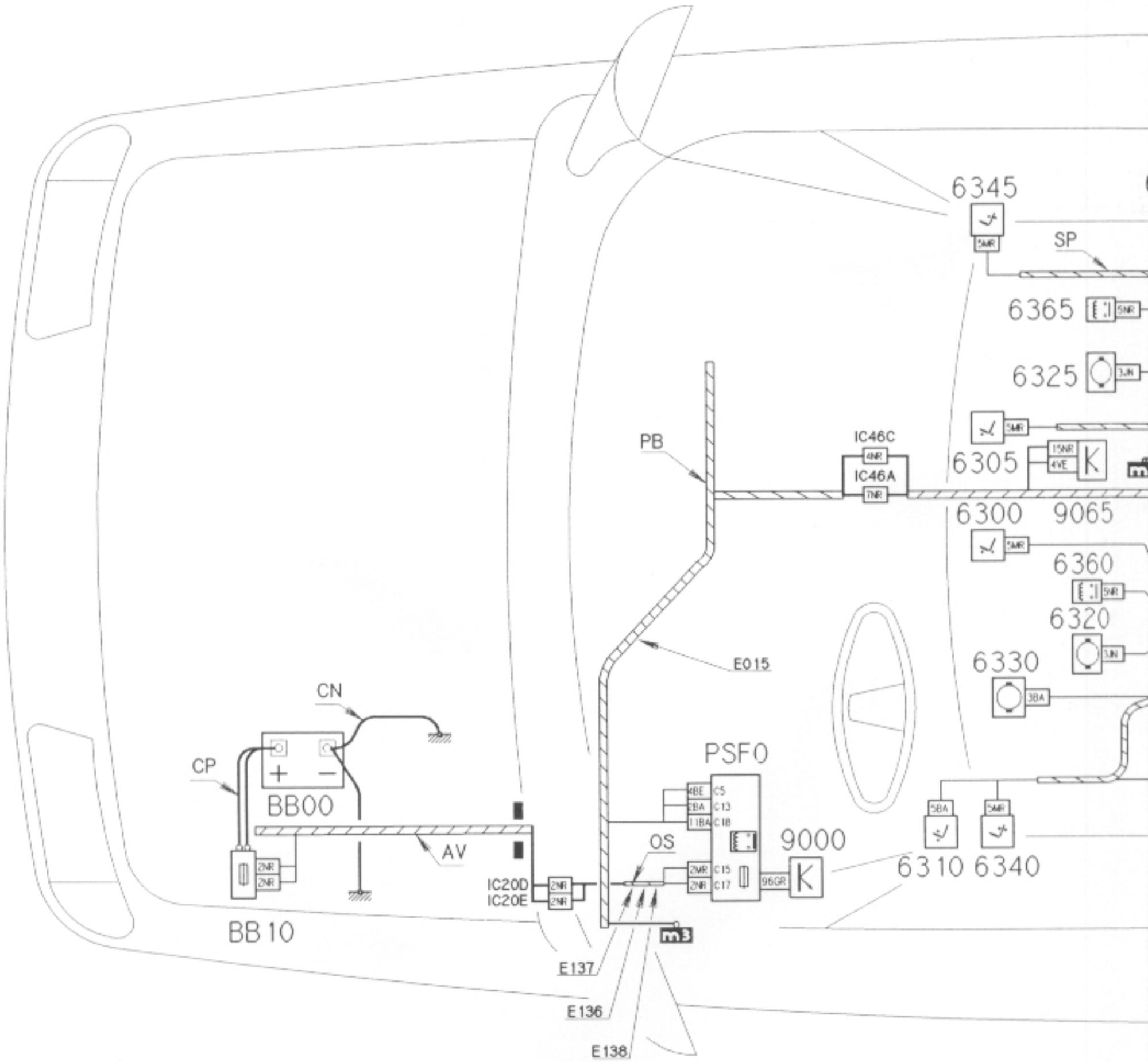


www.WorkshopManuals.co.uk

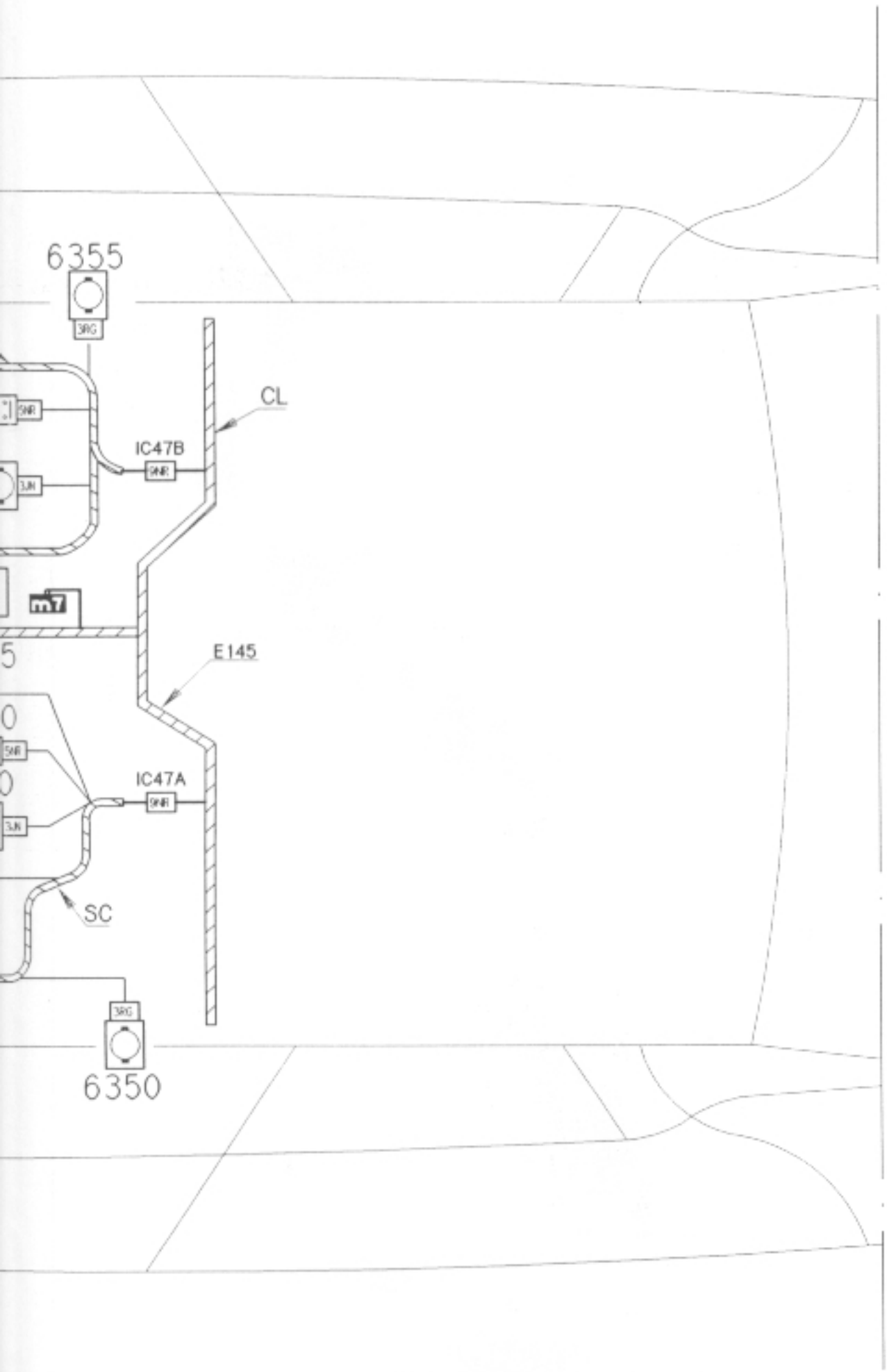
CA00 2MR1 2MR2 GR 2GR2 2GR1 C16 C18 F3 11BA A6 NR E006 P B 96GR A12 C8 C13 4MR 1-4 4NR 1-4 IC75 C E115 15MR 9 10 11 4 9025 9015 15MR 2 12 14 3 5 GR MR VE BE 51 1400 18BA B1 B3 IC75 M T S M E113 E114 15BA 14 6 15NR 5 7715 15NR 12 4 3 13 15 9 10 15BA 5 2 1 11 14 8 JN E111 E116 18BA E1 E2 E3 C1 D2 D3 D1 F1 C2 7NR6 7NR7 7NR1 7NR2 7NR4 7NR3 7NR5 IC76 A E087 52 2200 3NR1 3NR2 3NR3 5GR B1 A3 A1 B3 18MR E2 C001 7707 7700 7716 E162 E161 2MR1 2MR2 2BE1 2BE2 5MR1 5MR2 5MR3 5MR5 7717 (7716) 7706 7705 E086 5NR3 5NR1 IC78 A 51 1150 3BA2 3BA1 3BA3 G 1620 BE m2 90-58-1/0

30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

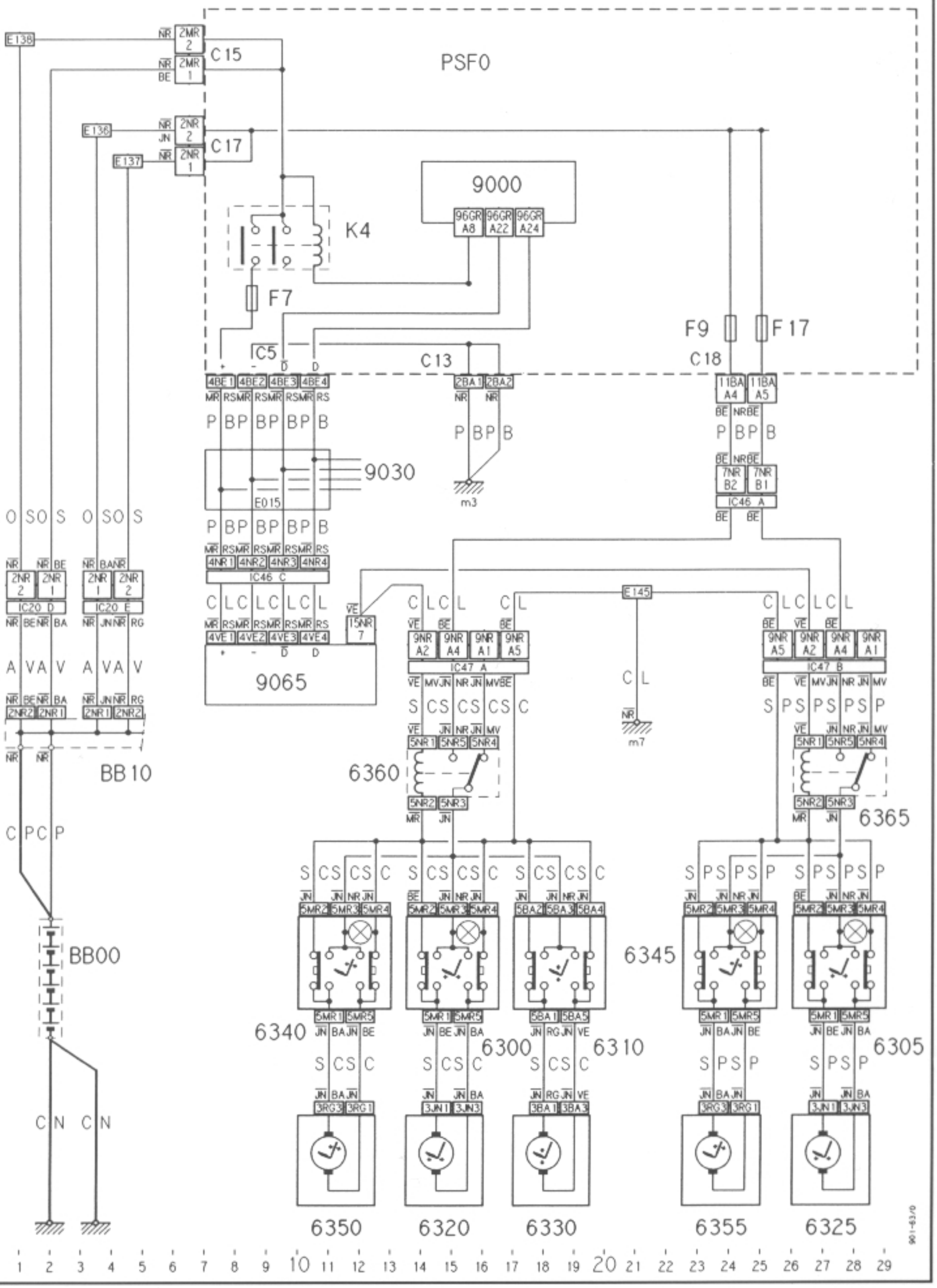
www.WorkshopManuals.co.uk



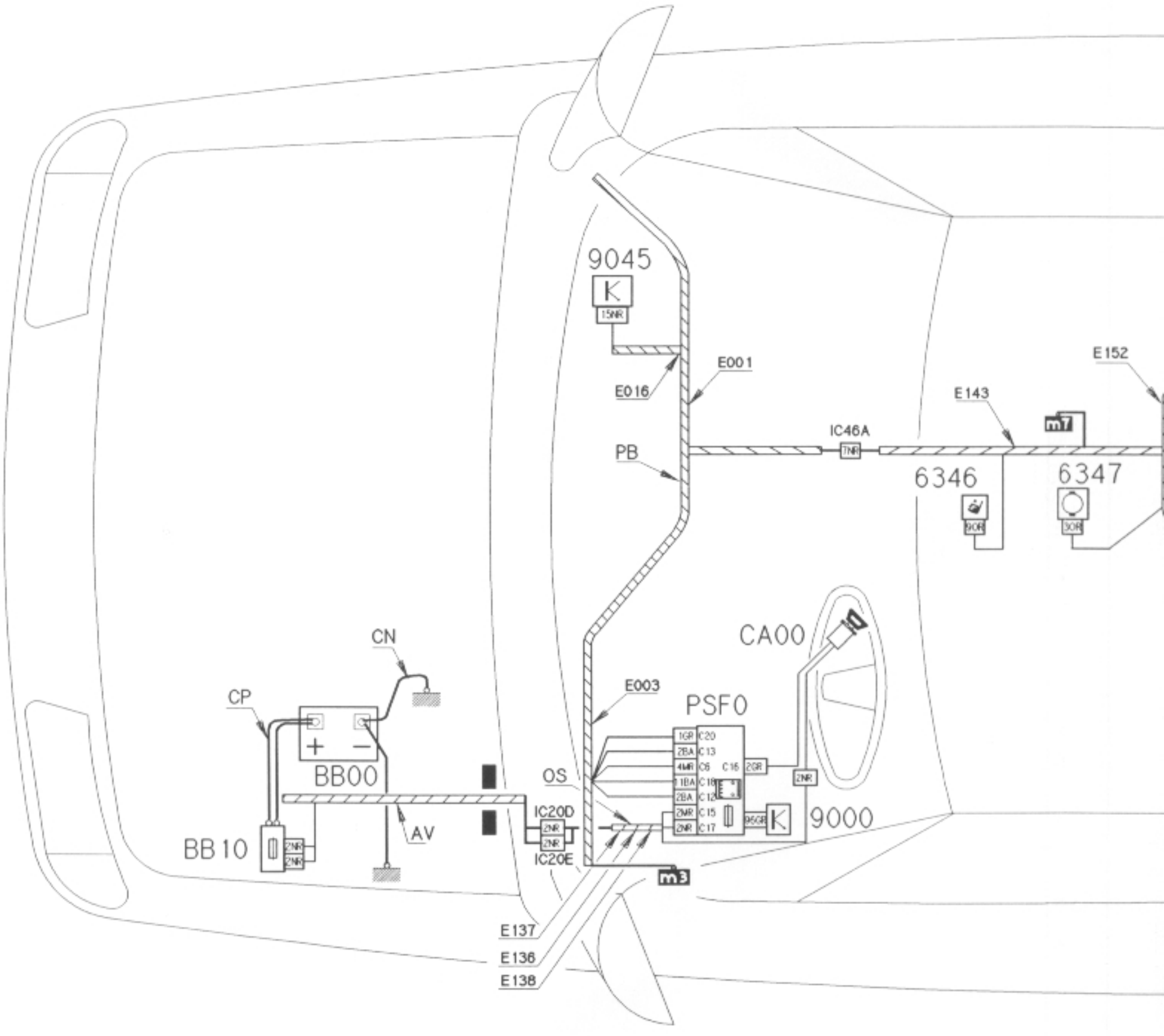
www.WorkshopManuals.co.uk



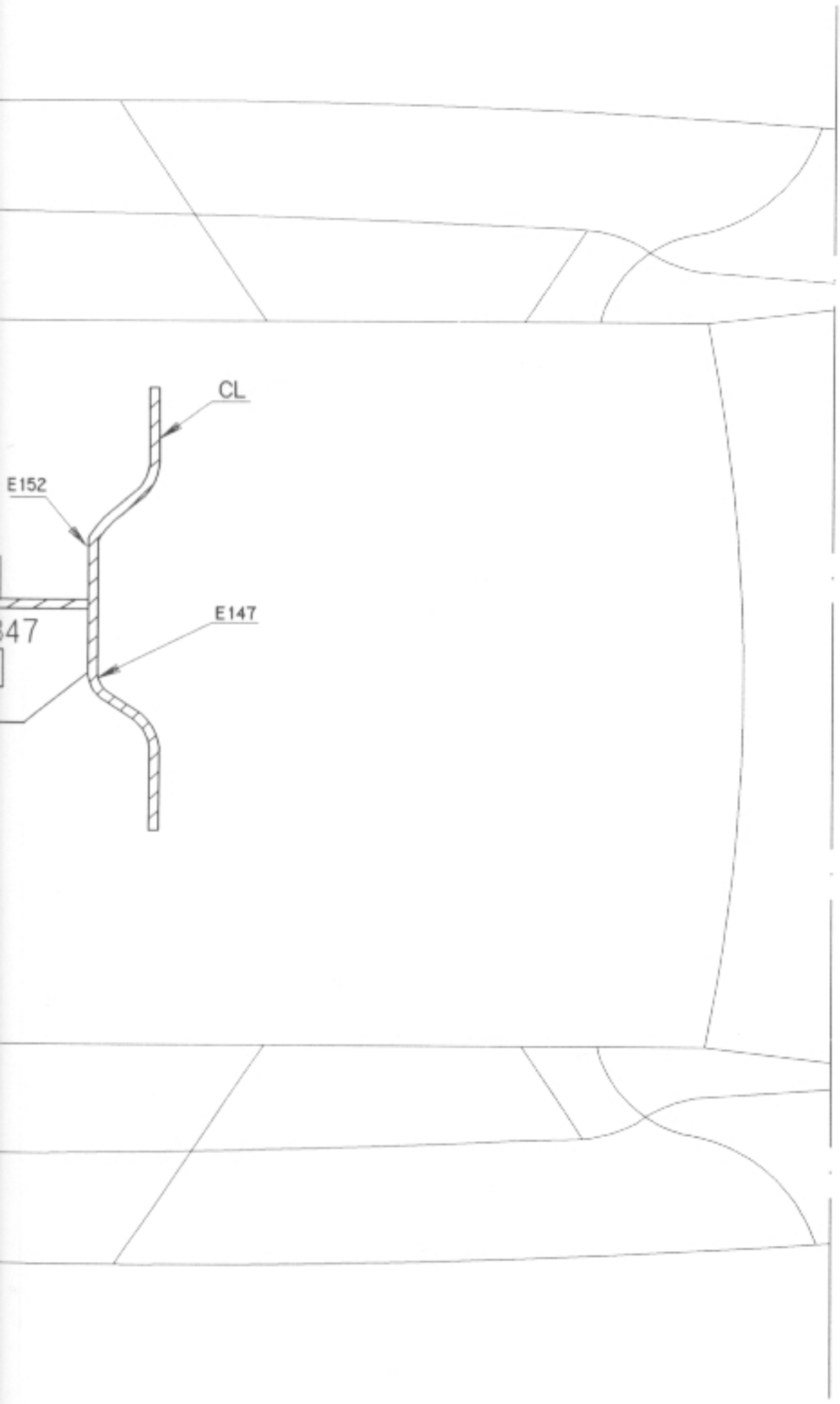
www.WorkshopManuals.co.uk



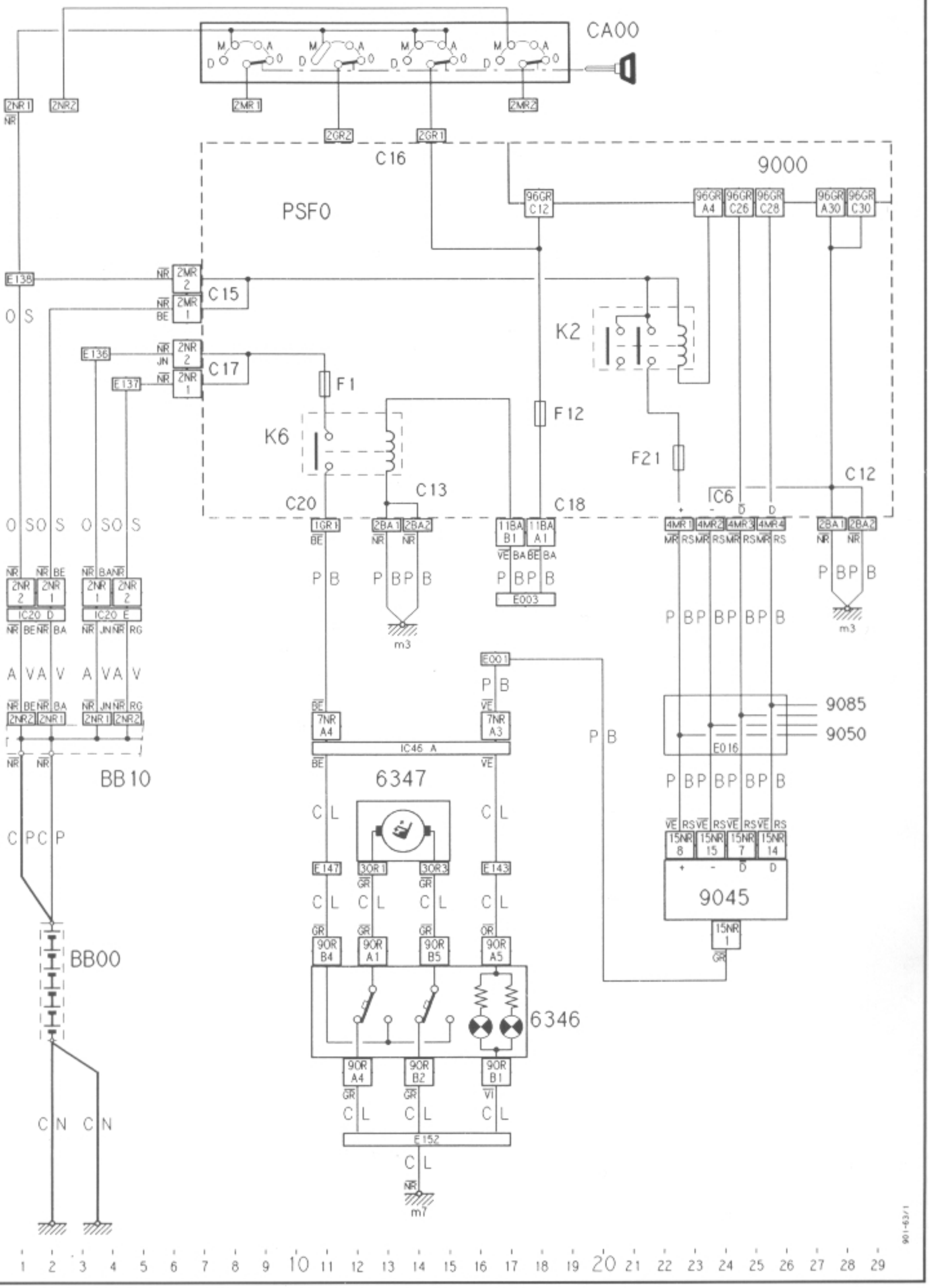
www.WorkshopManuals.co.uk



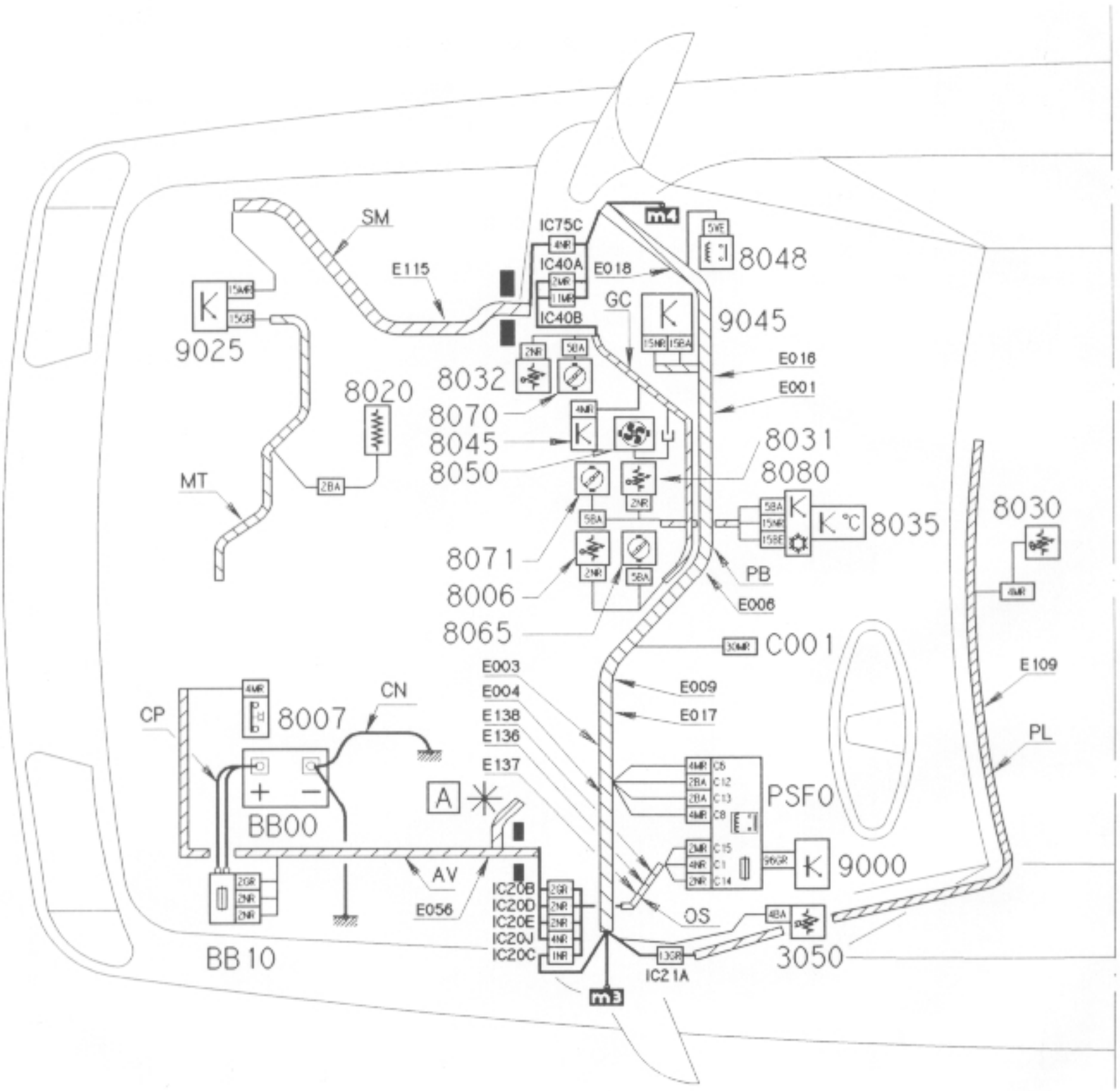
www.WorkshopManuals.co.uk

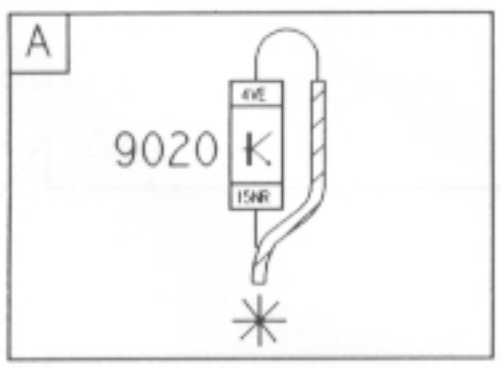


www.WorkshopManuals.co.uk

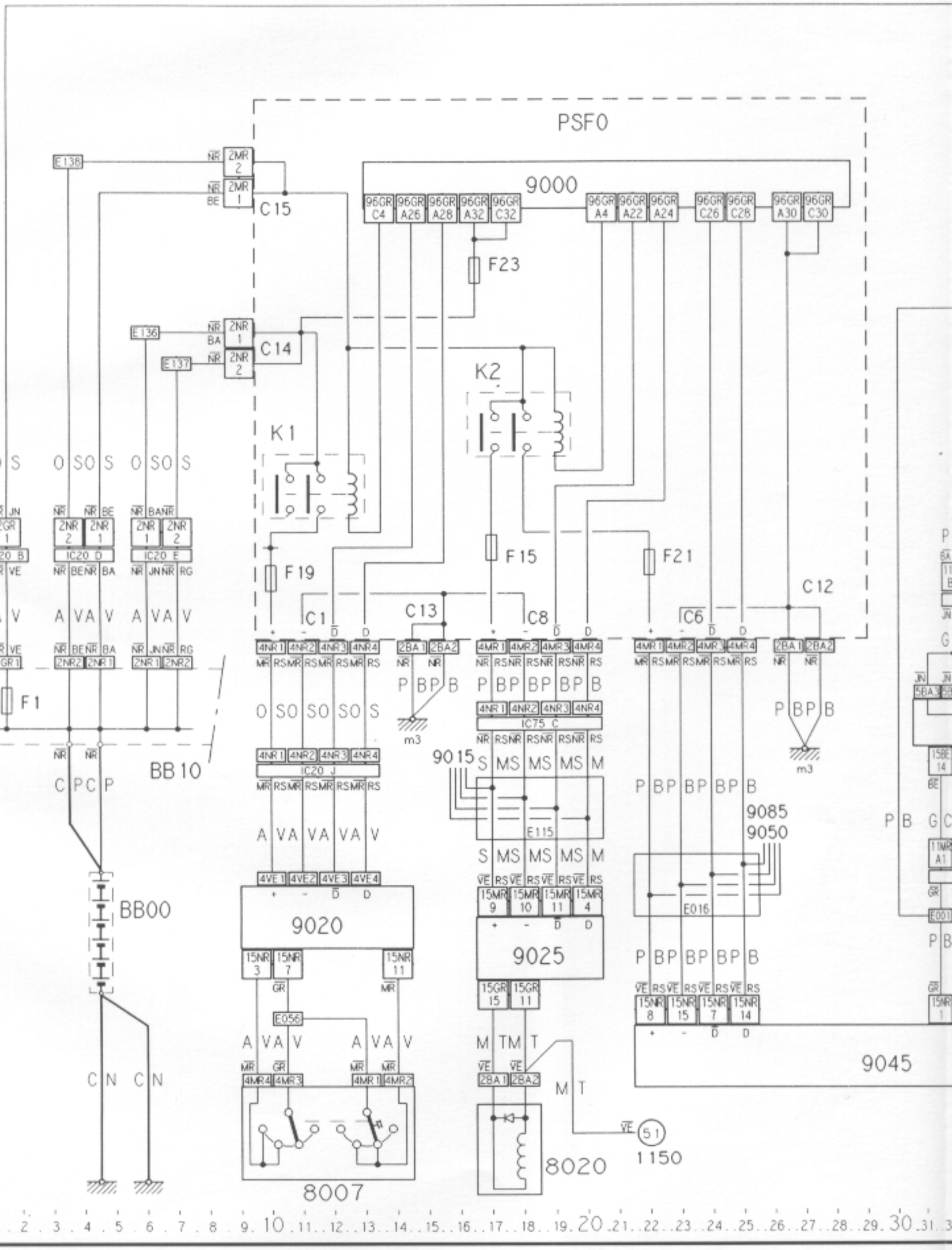


www.WorkshopManuals.co.uk

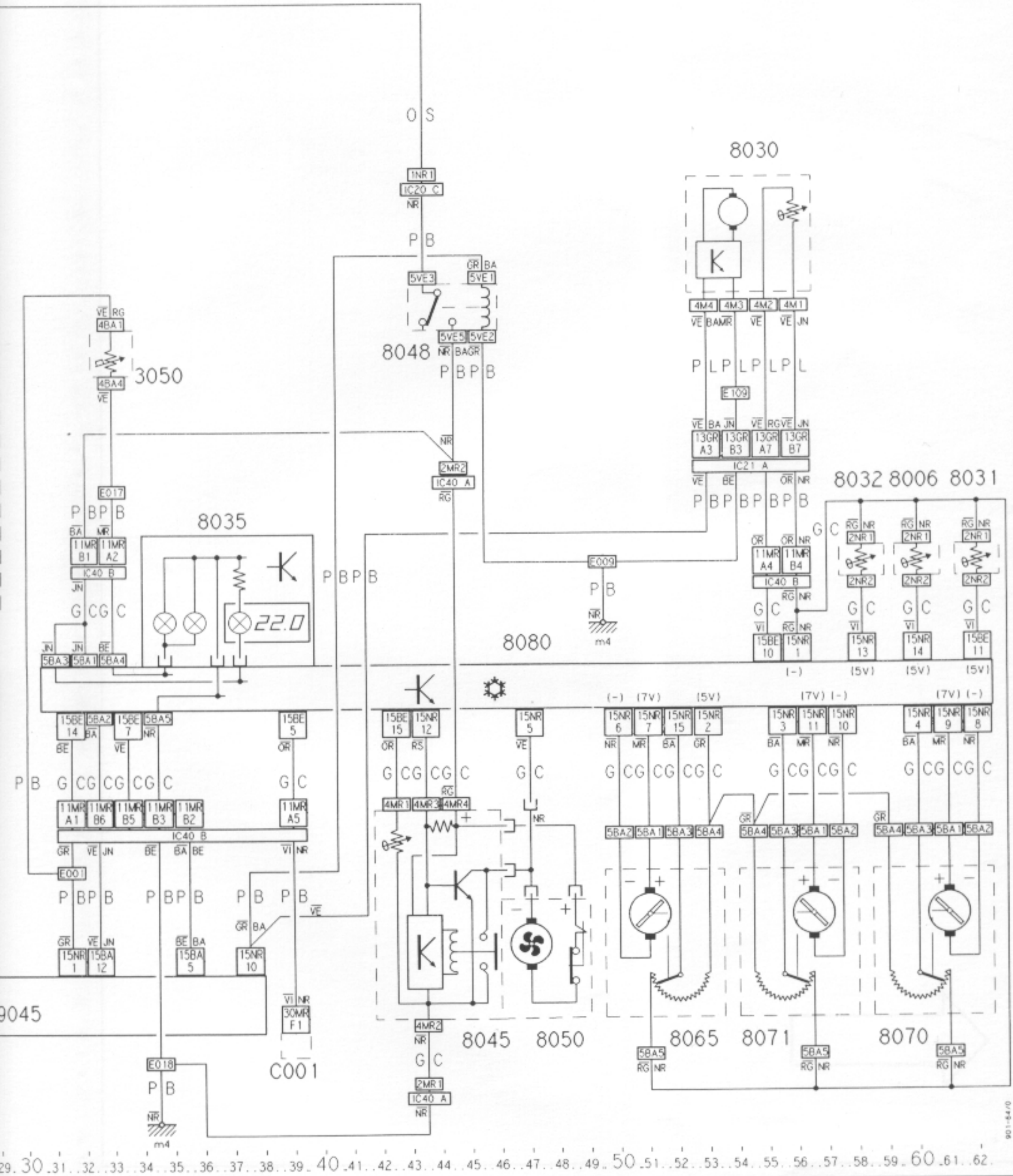




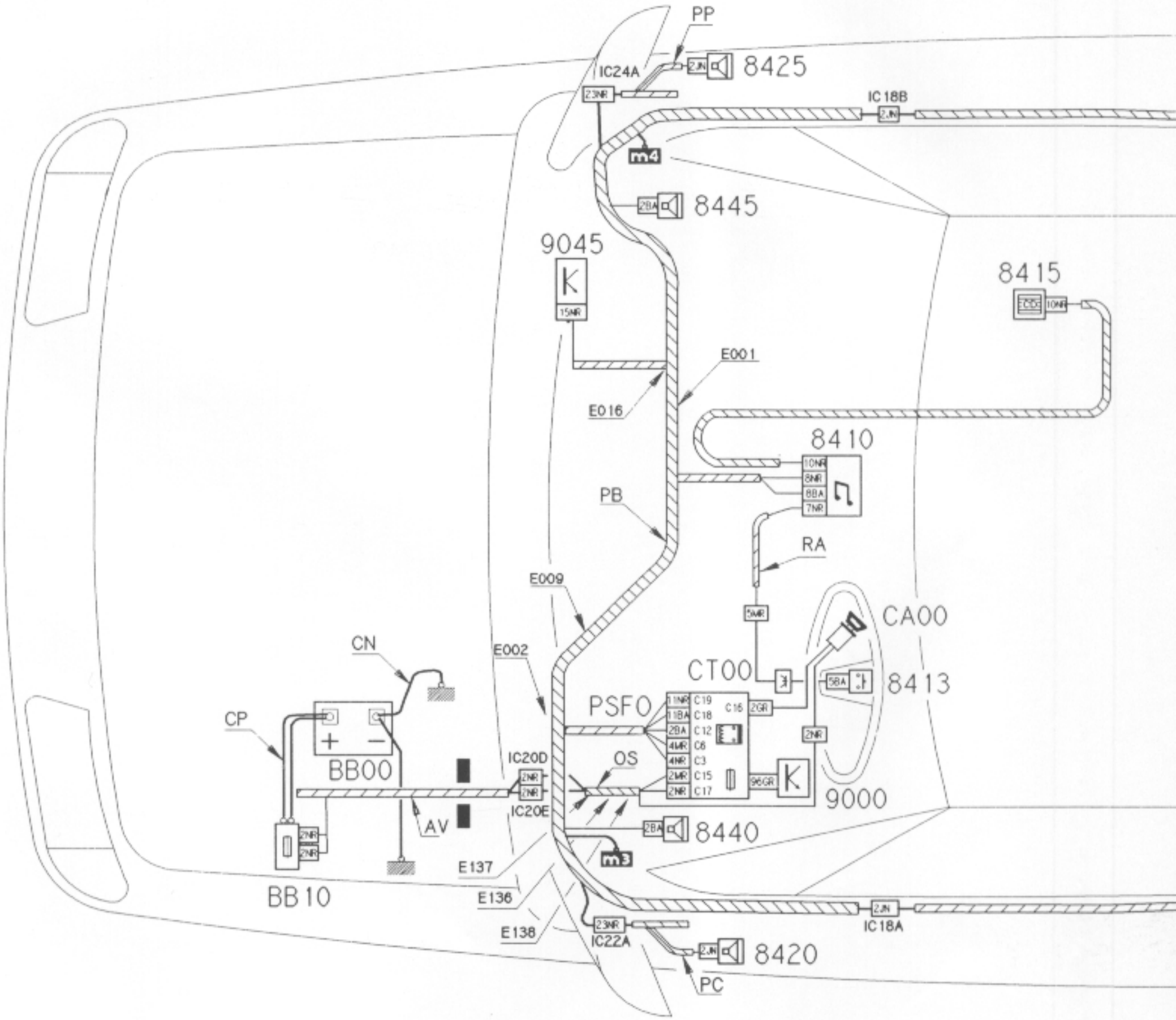
www.WorkshopManuals.co.uk



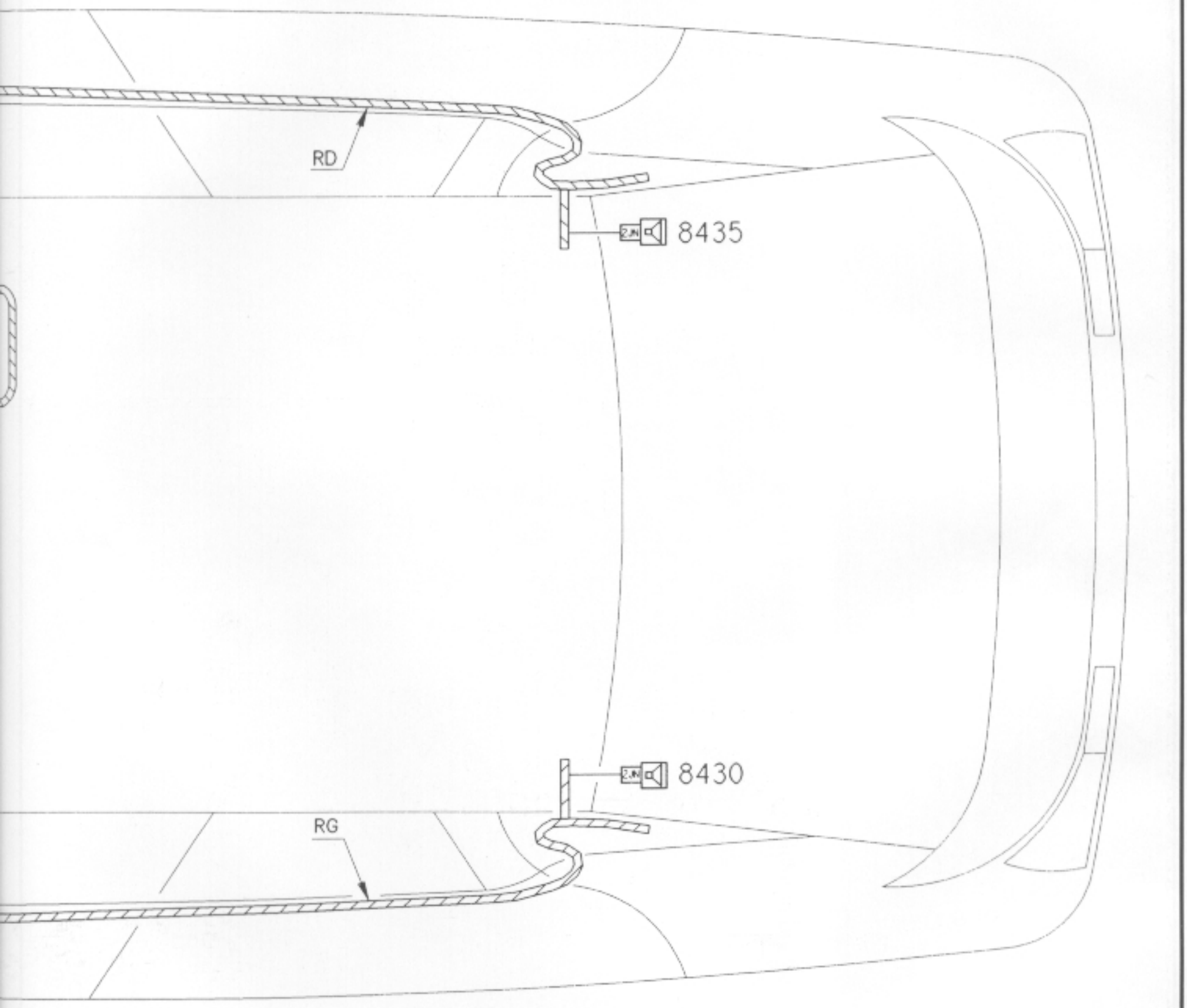
www.WorkshopManuals.co.uk



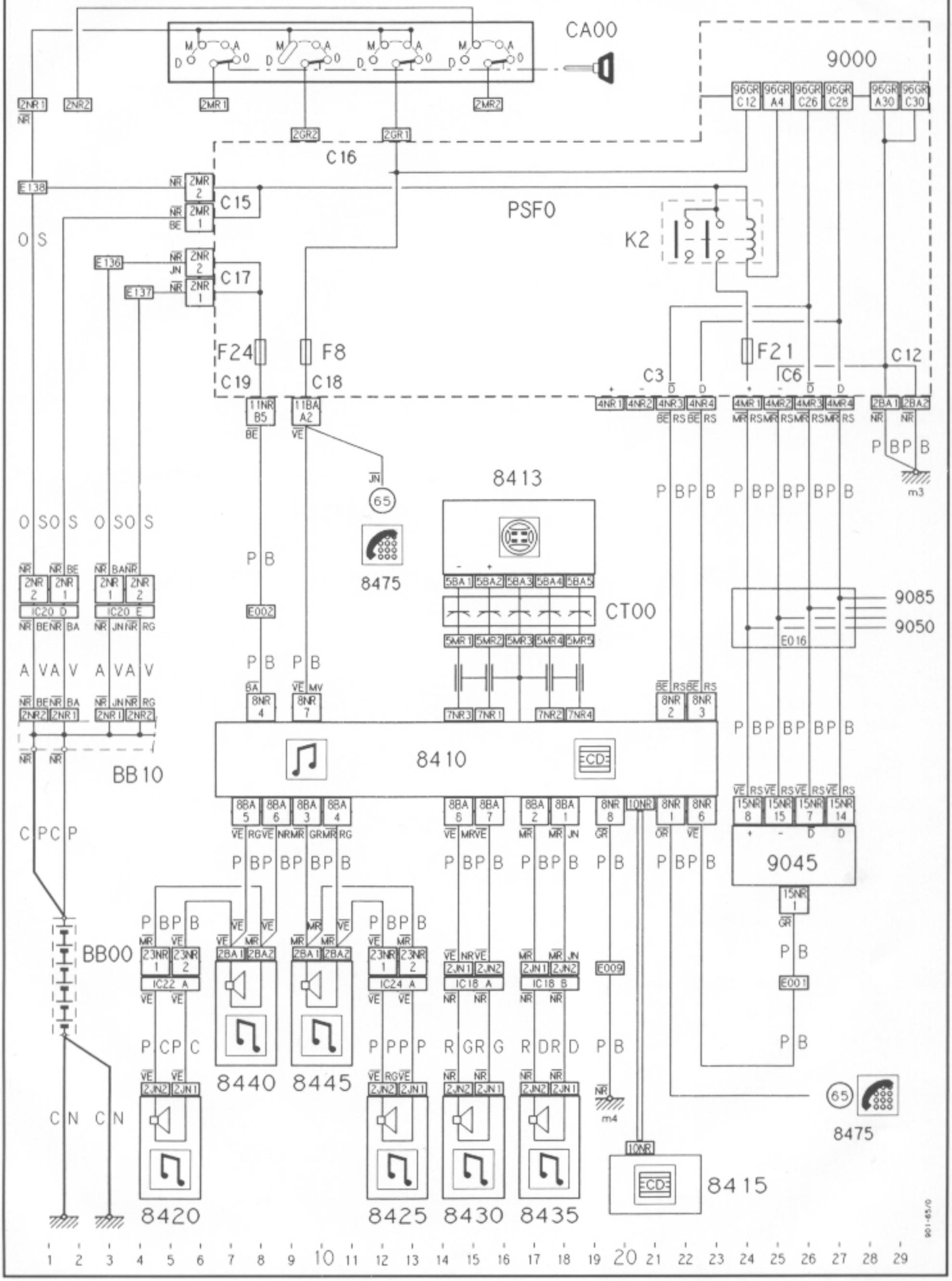
www.WorkshopManuals.co.uk



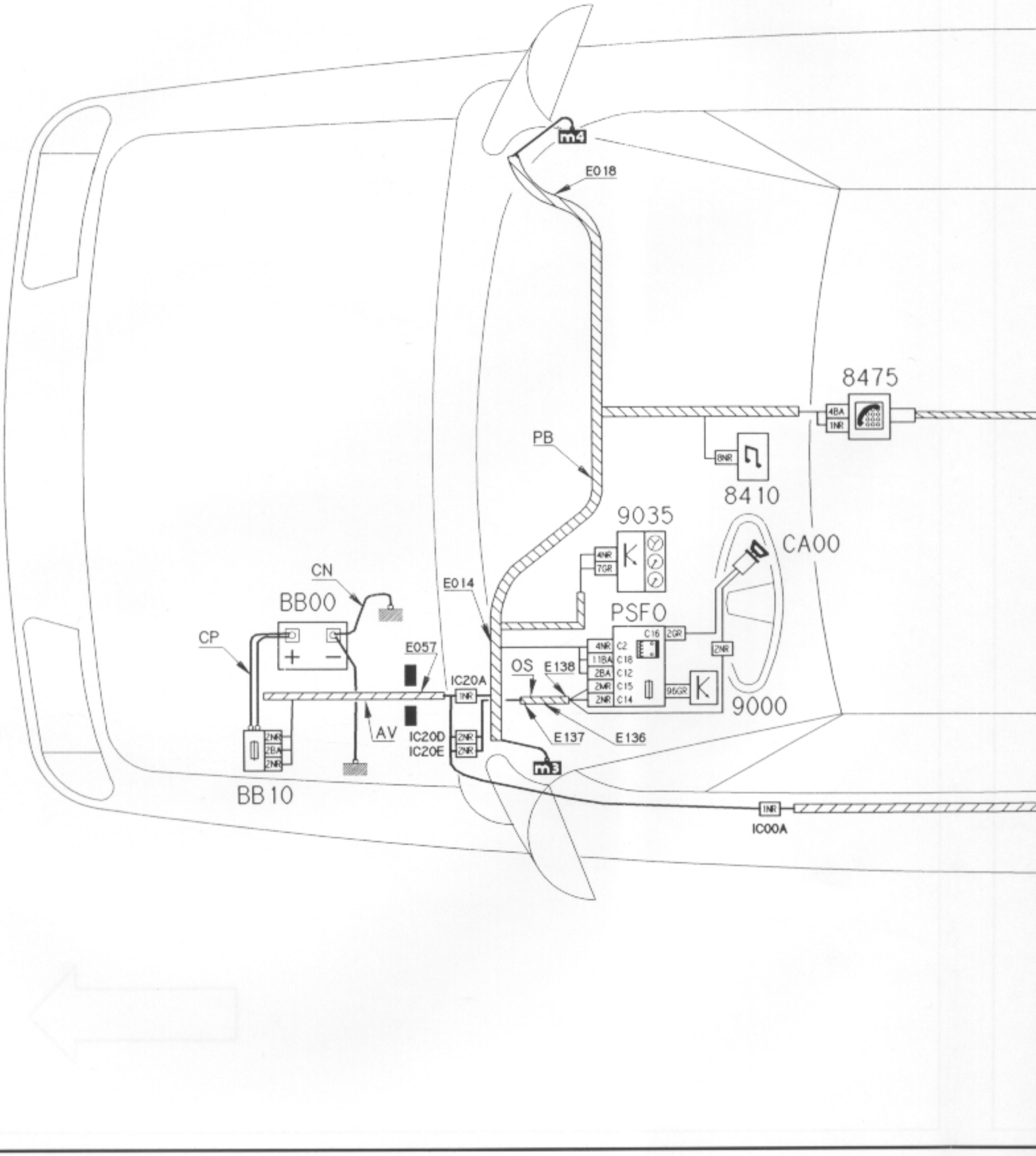
www.WorkshopManuals.co.uk



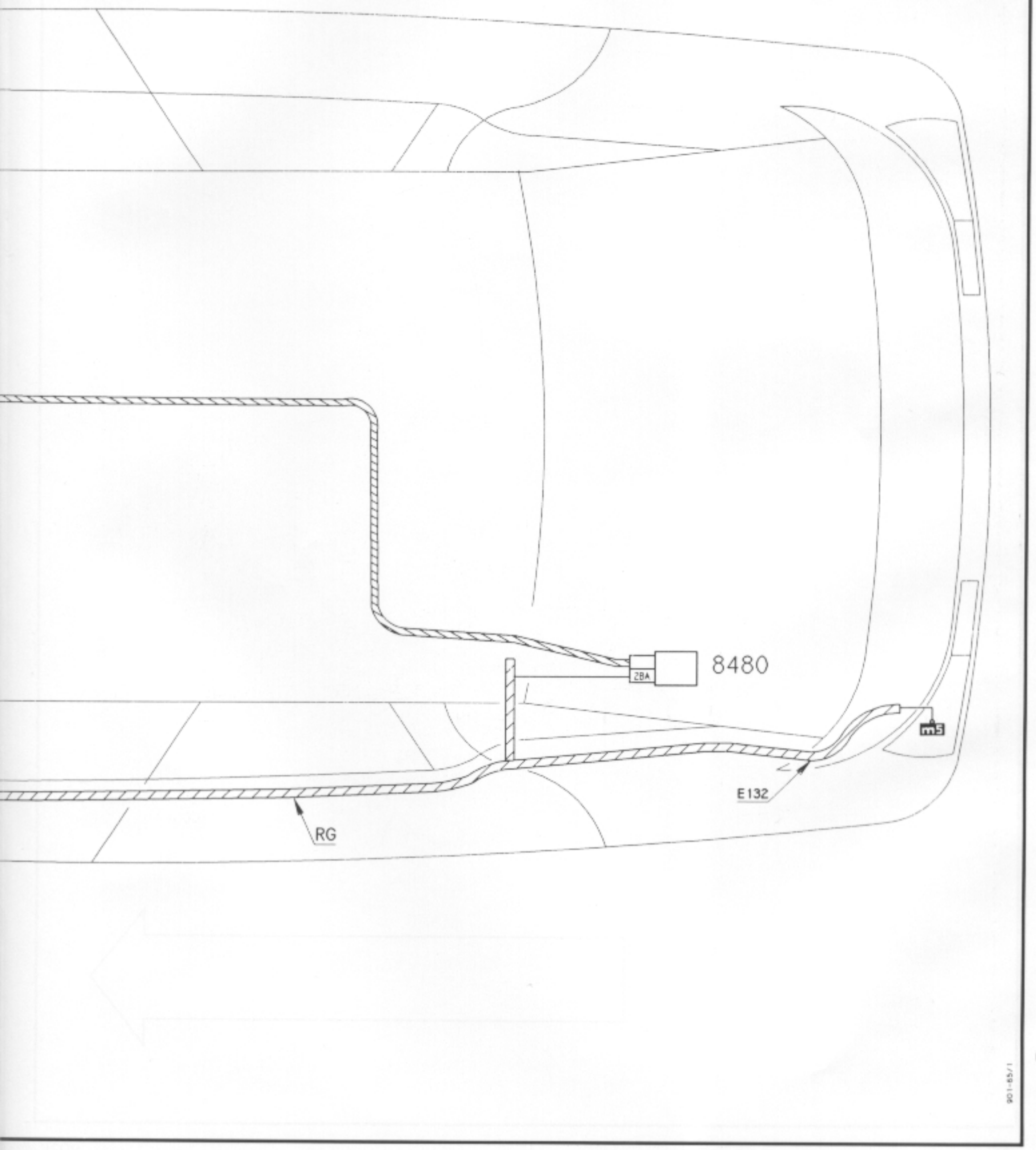
www.WorkshopManuals.co.uk



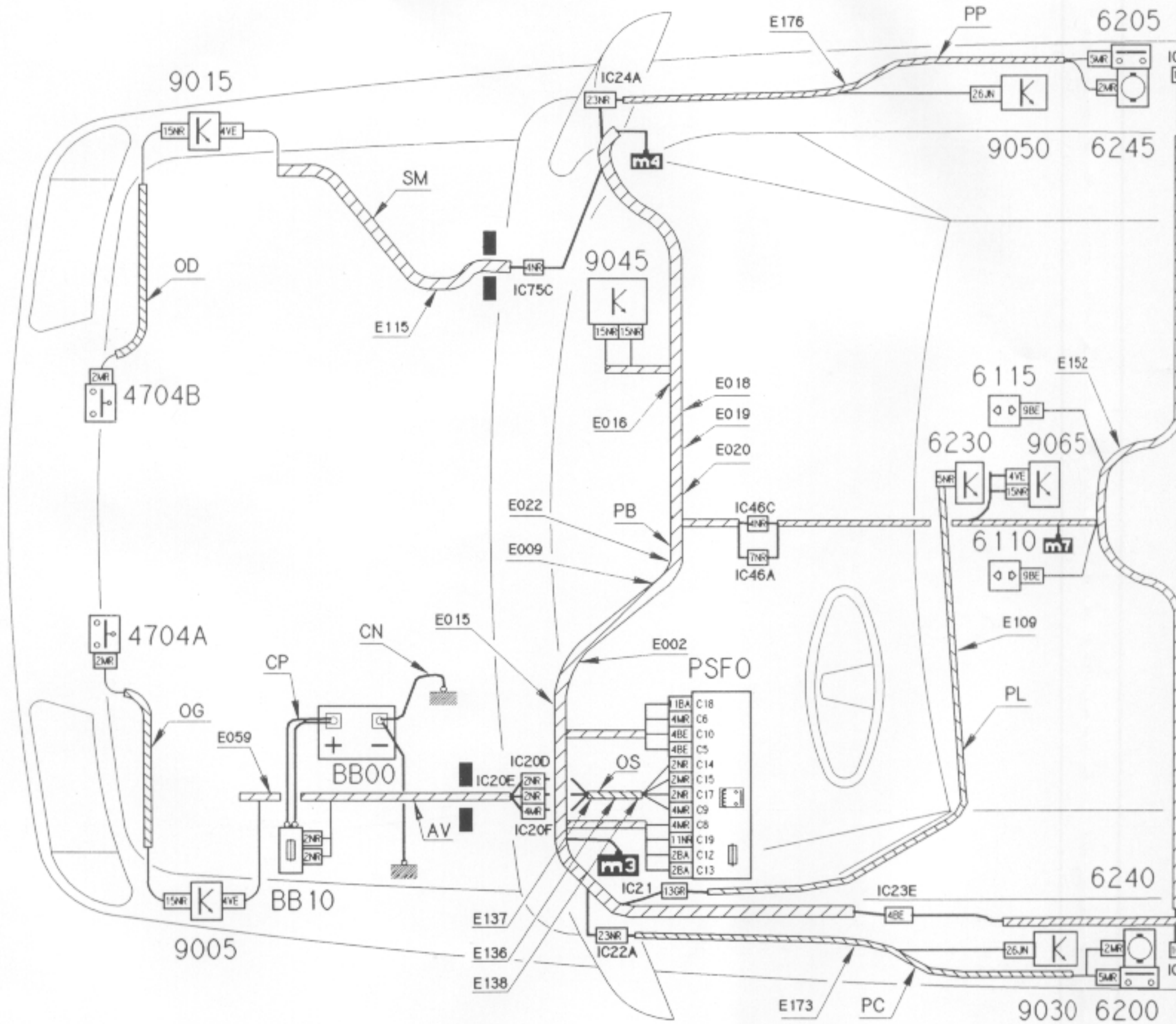
www.WorkshopManuals.co.uk



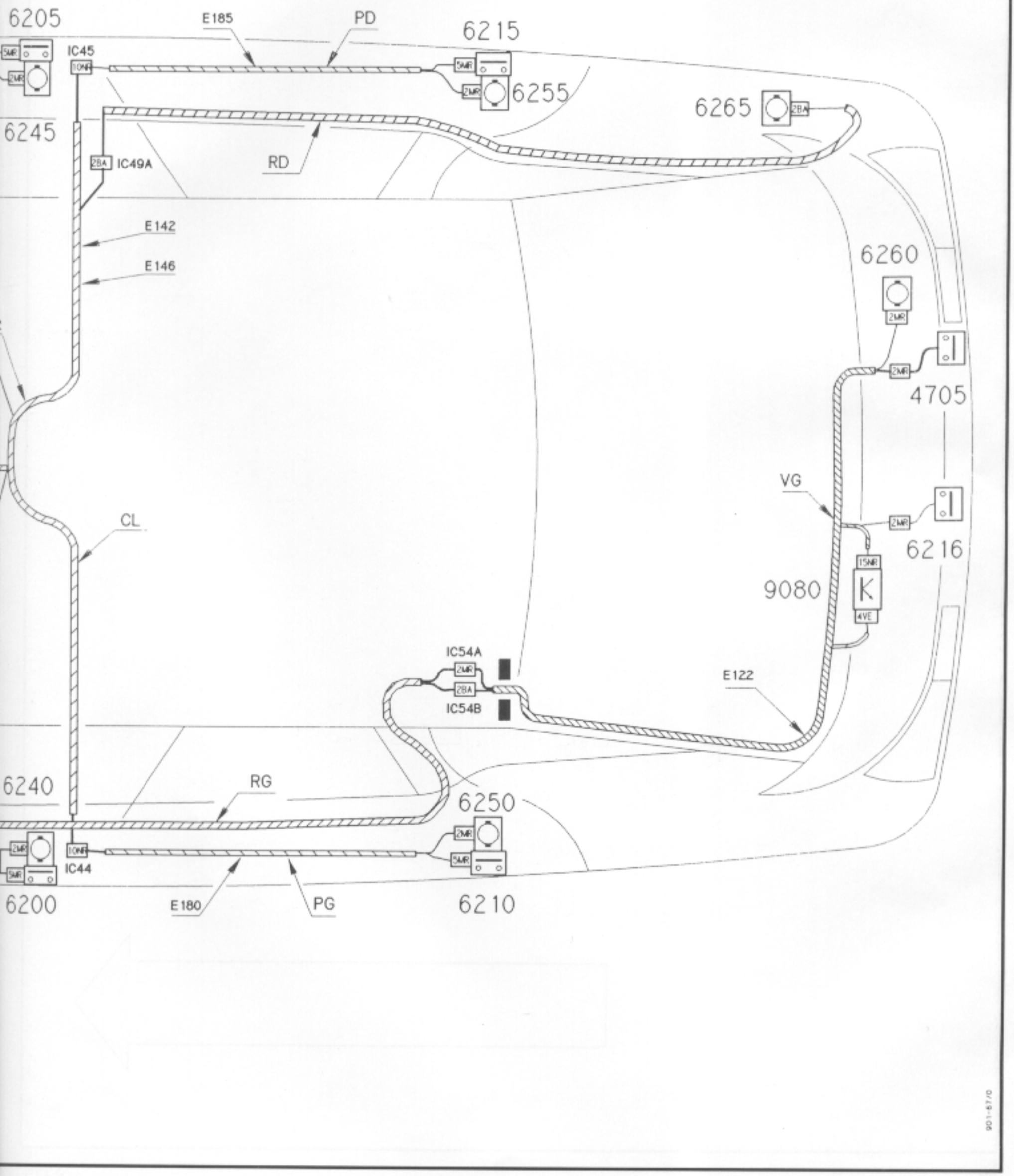
www.WorkshopManuals.co.uk



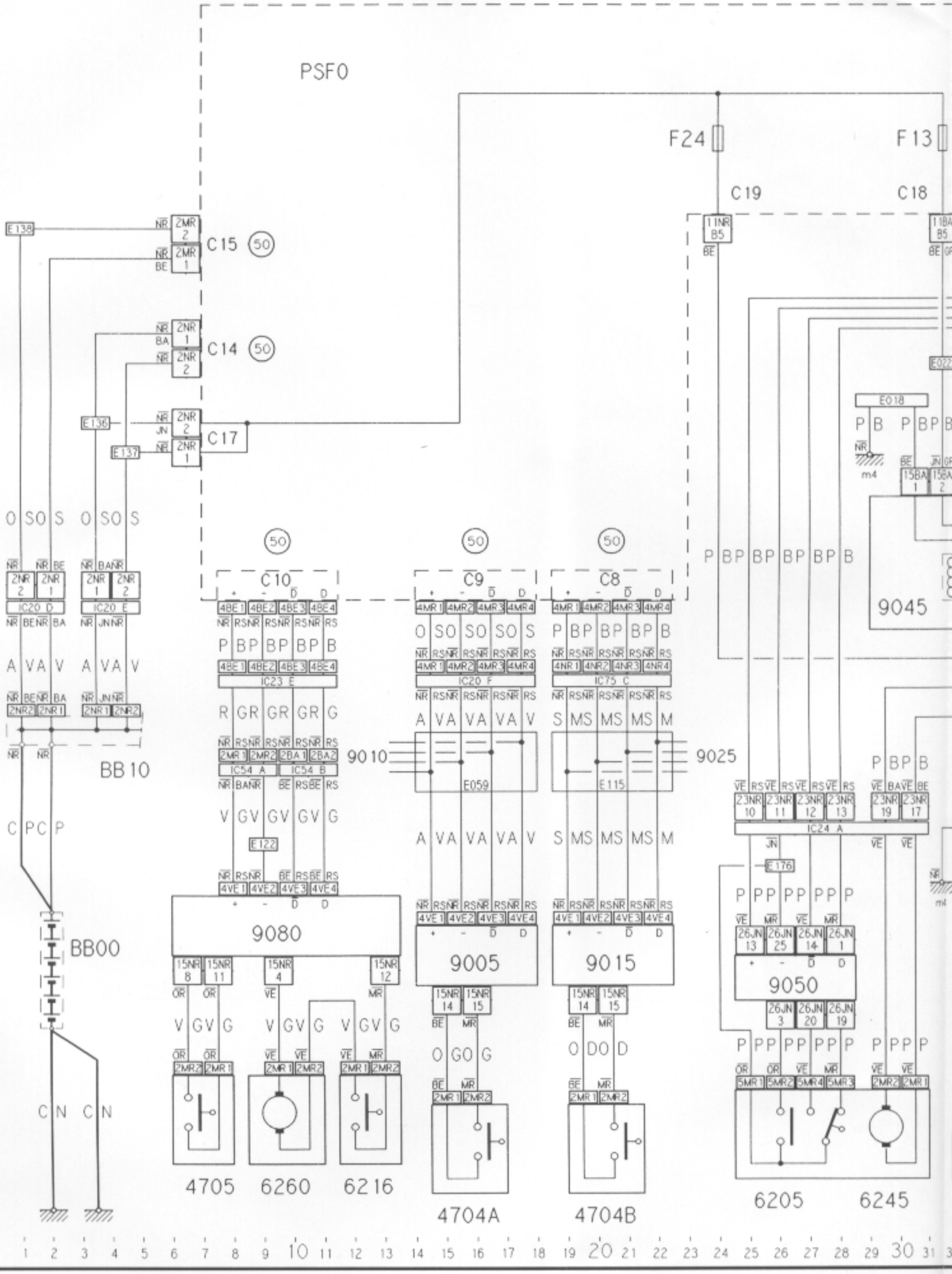
www.WorkshopManuals.co.uk



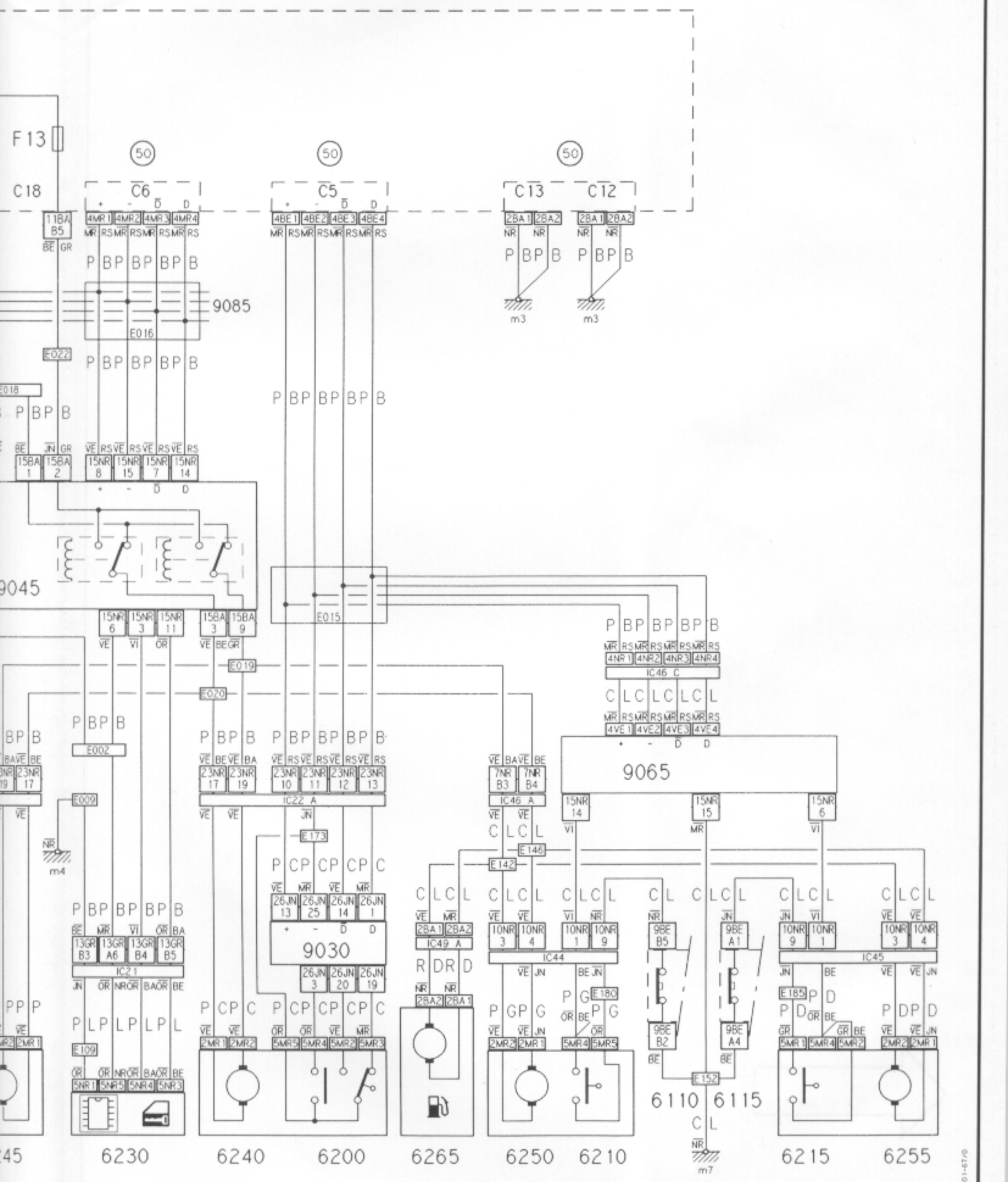
www.WorkshopManuals.co.uk



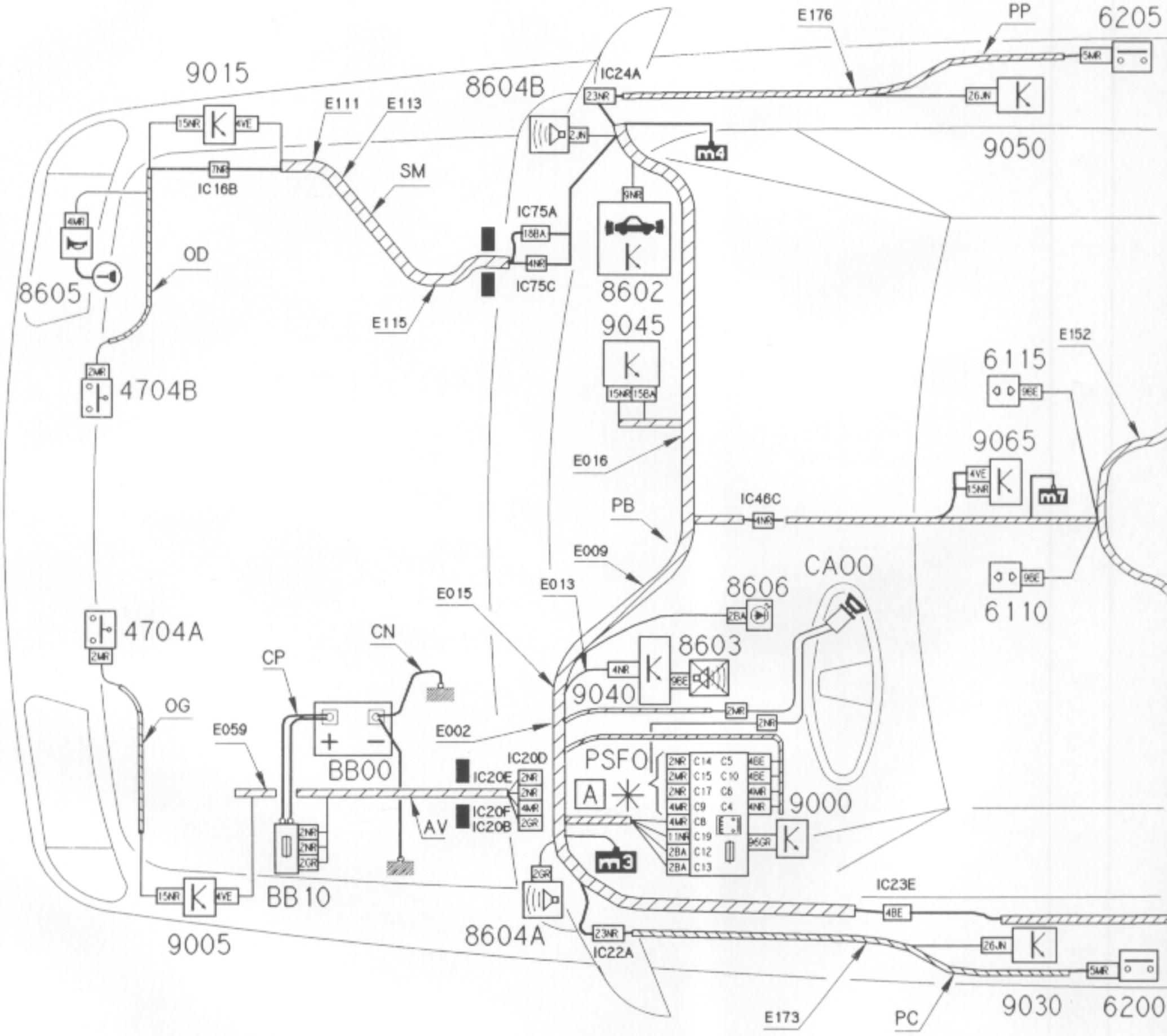
www.WorkshopManuals.co.uk

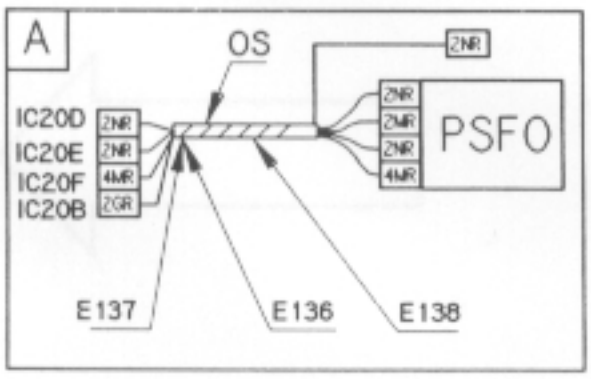


www.WorkshopManuals.co.uk

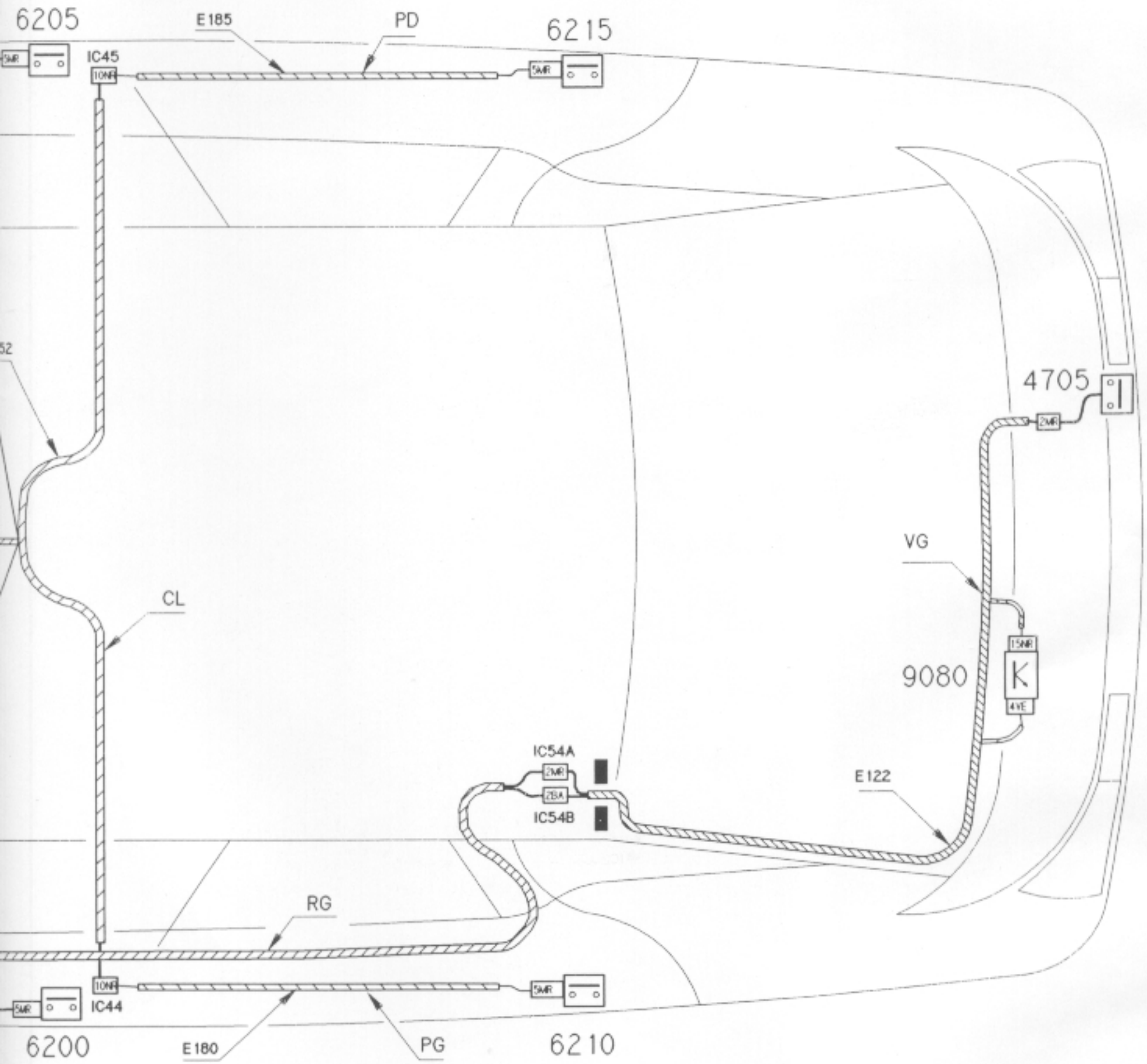


www.WorkshopManuals.co.uk

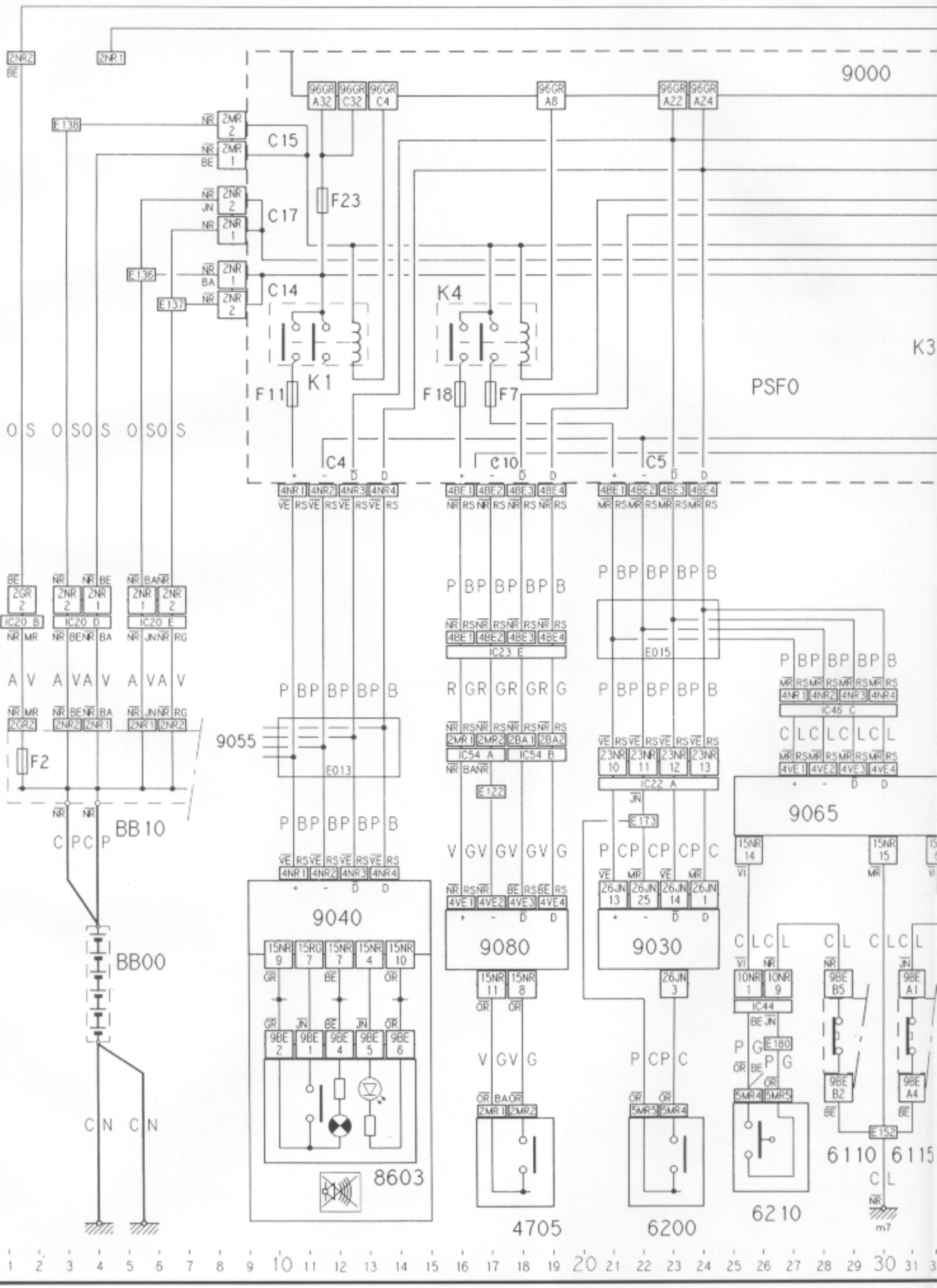




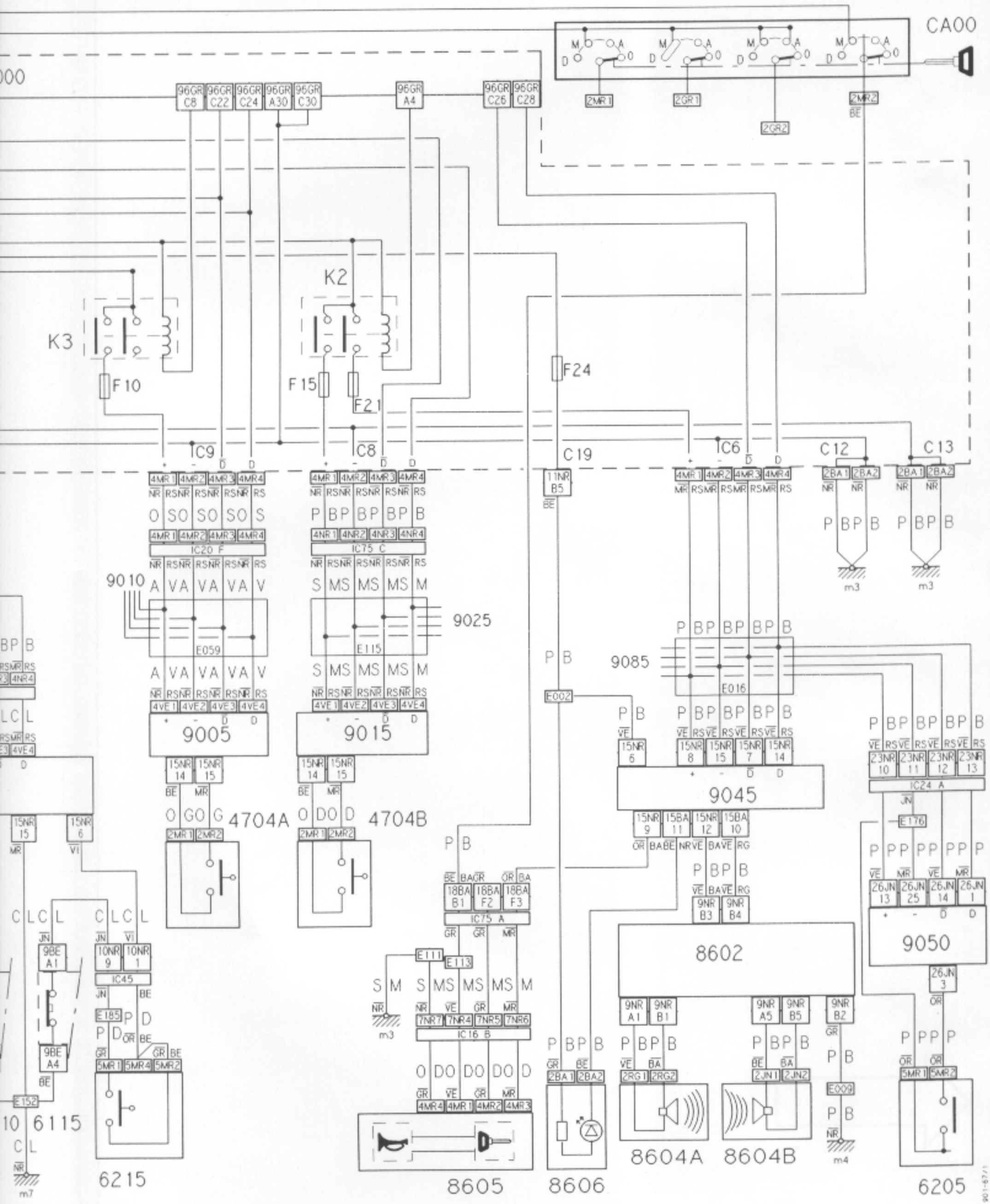
www.WorkshopManuals.co.uk



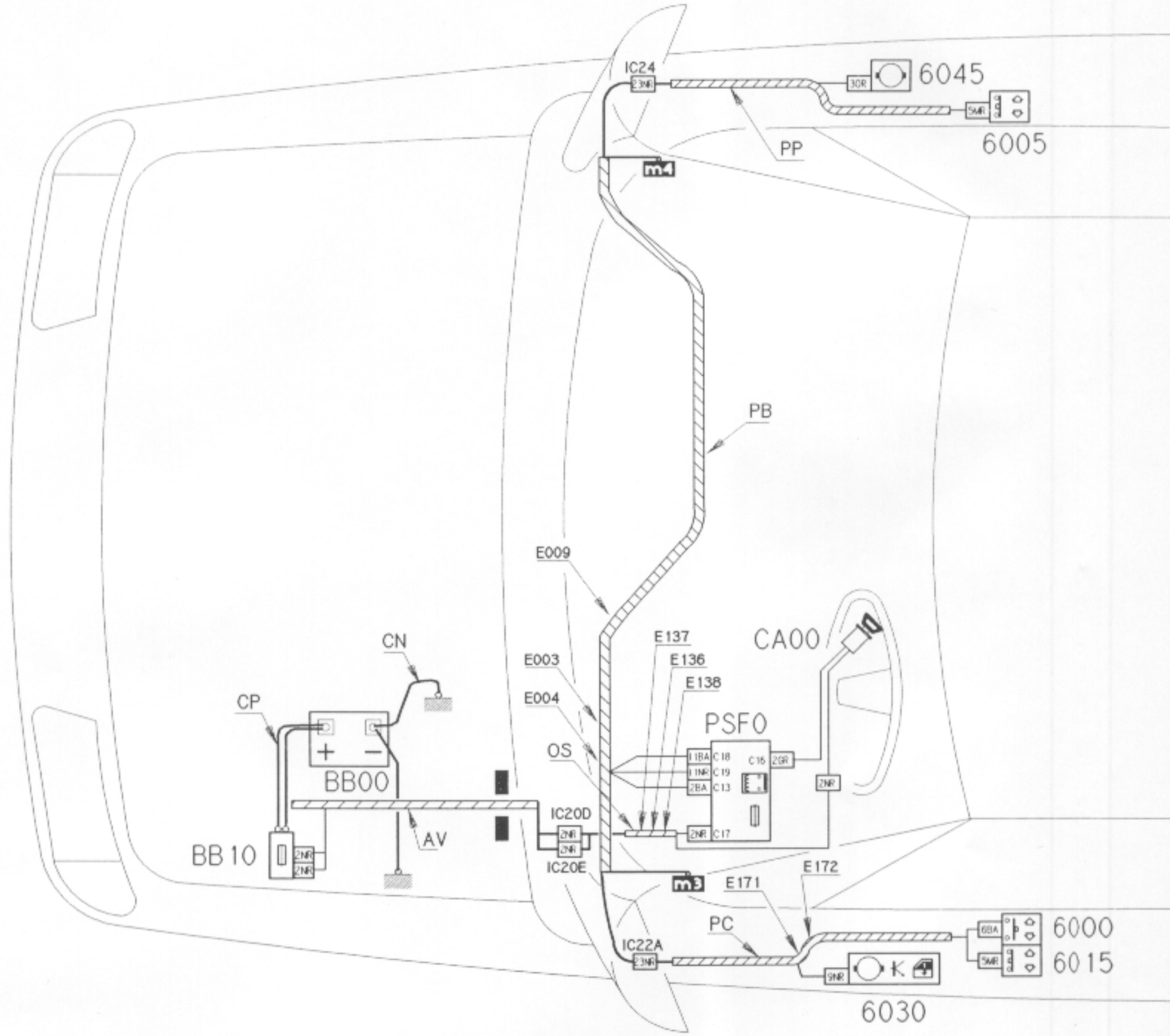
www.WorkshopManuals.co.uk



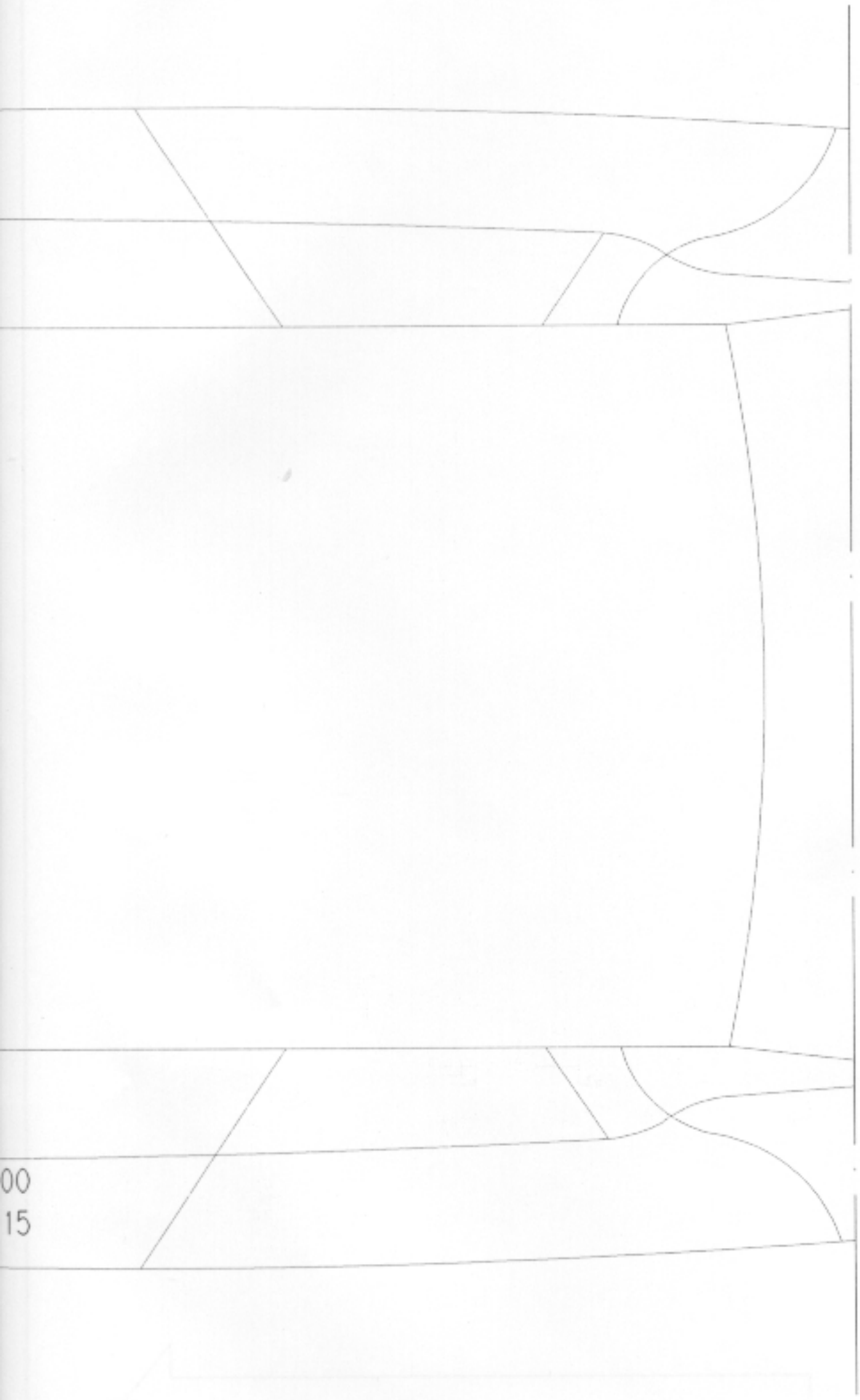
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

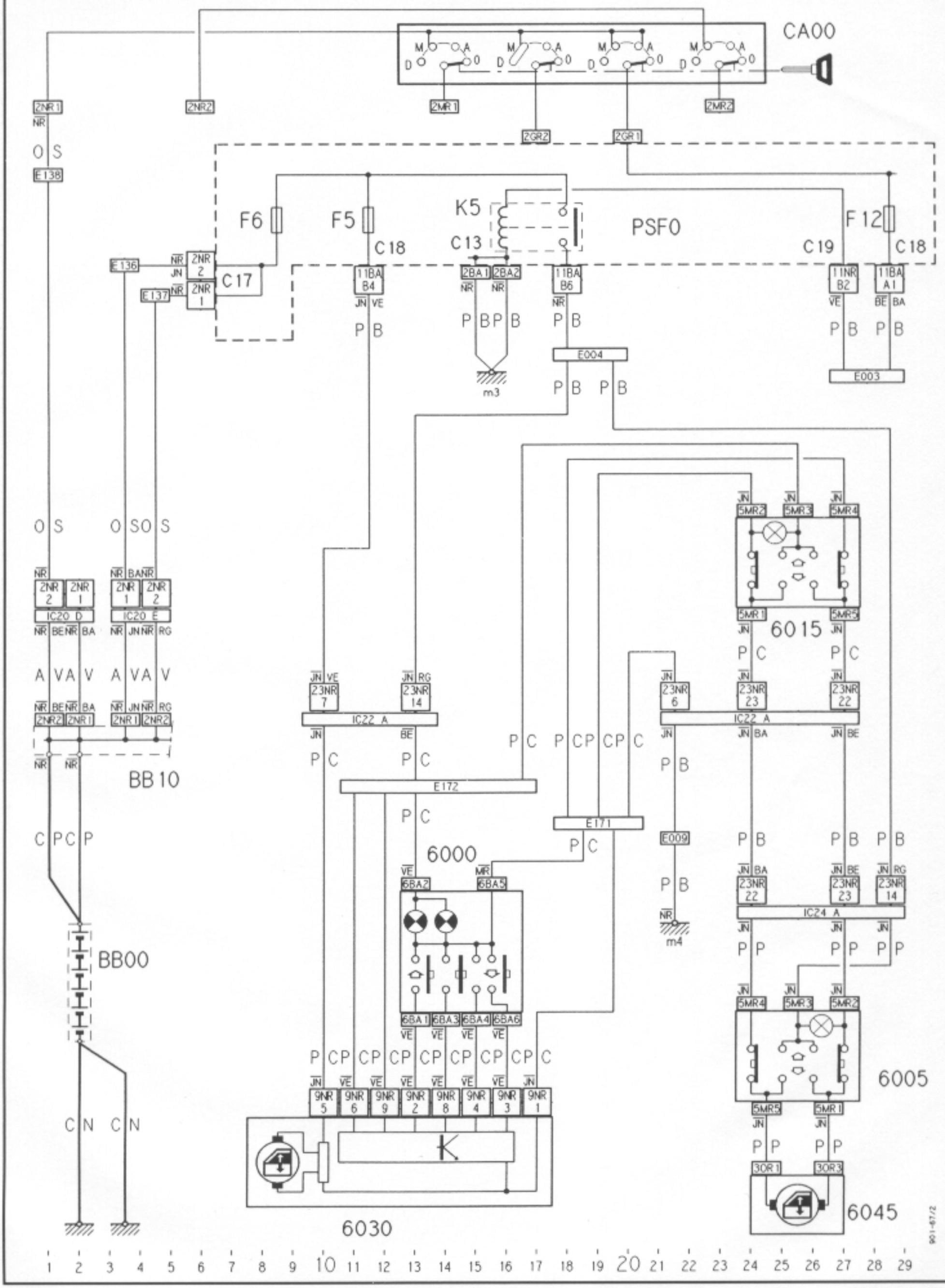


www.WorkshopManuals.co.uk

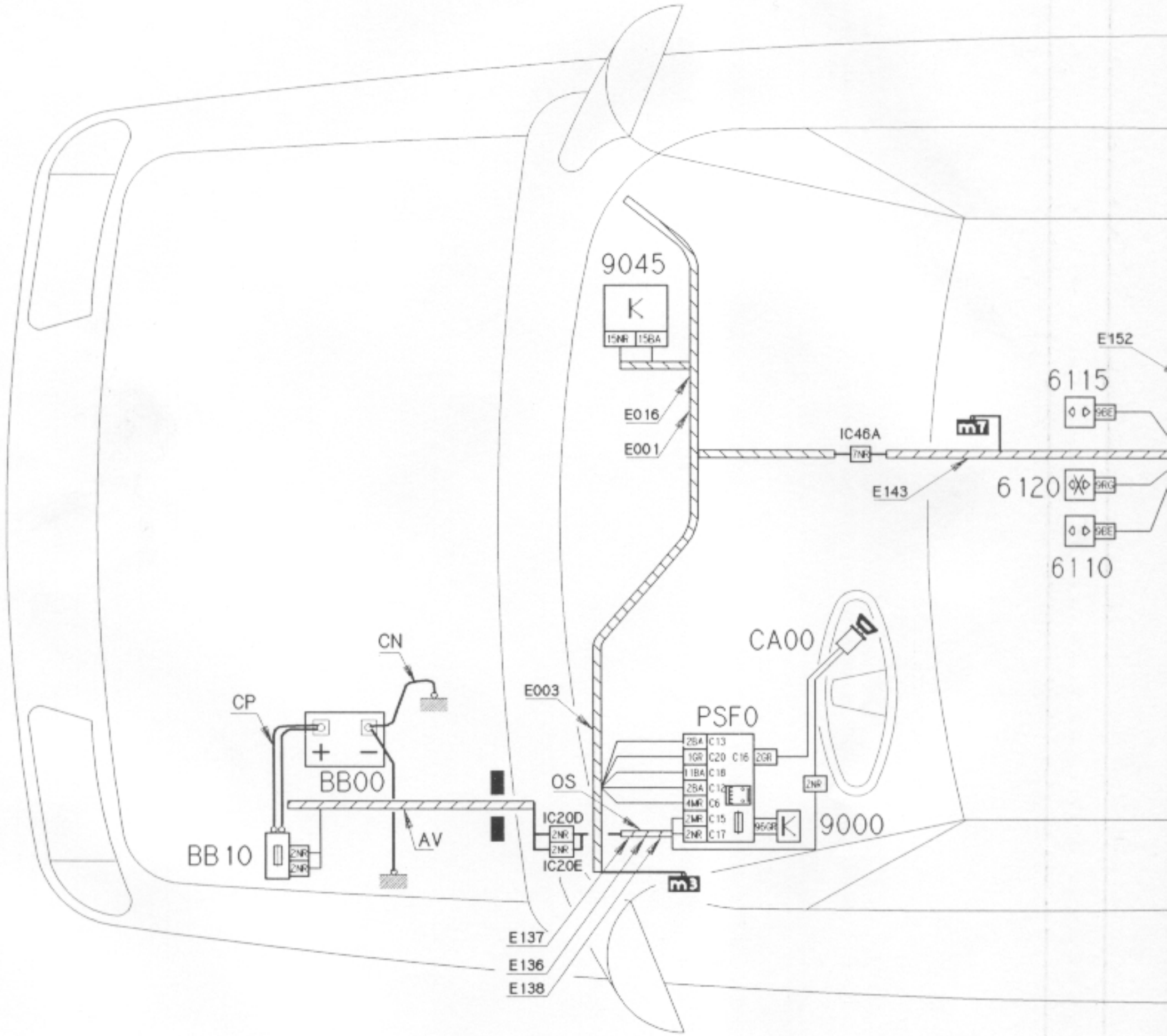


00
15

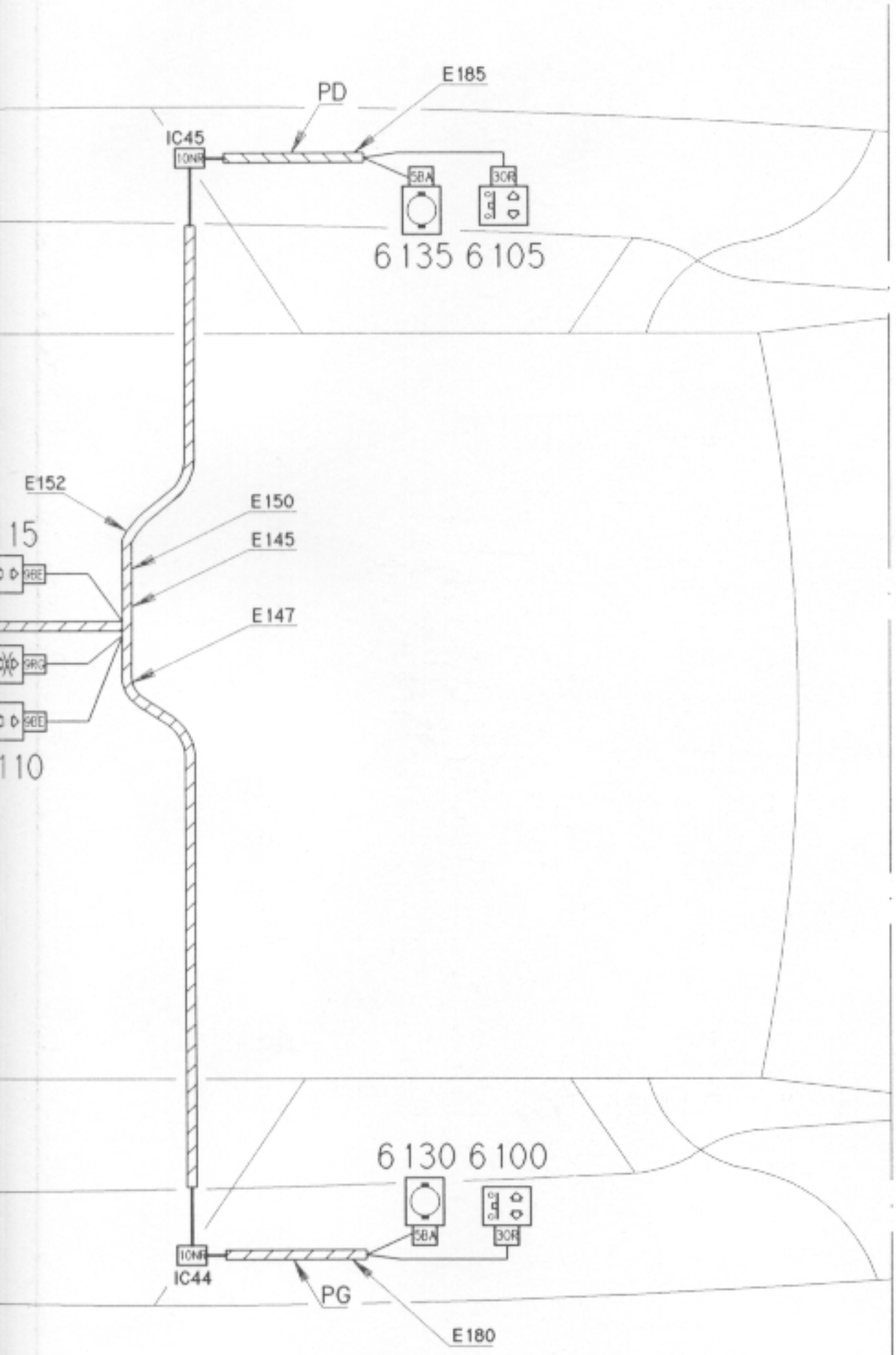
www.WorkshopManuals.co.uk



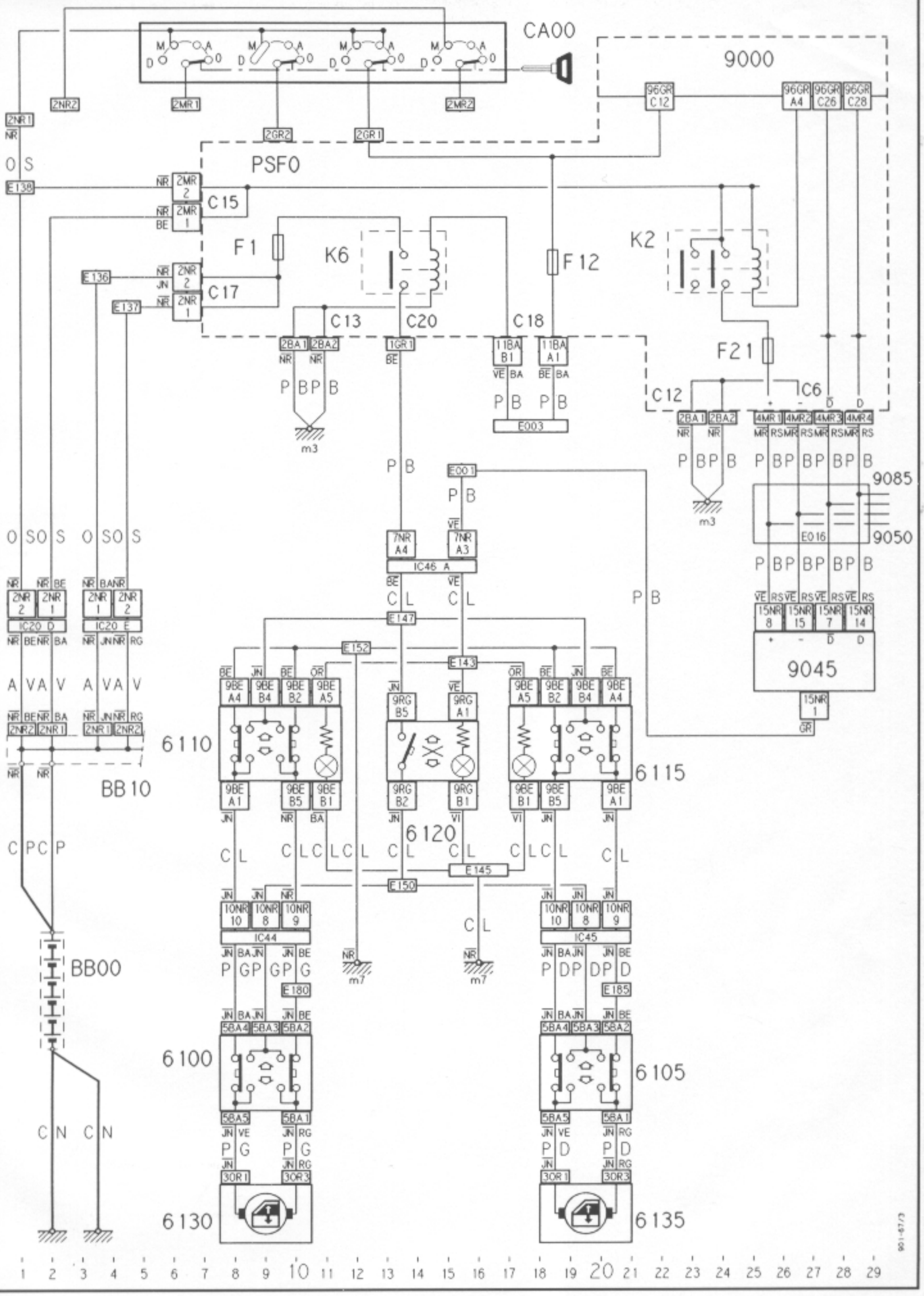
www.WorkshopManuals.co.uk



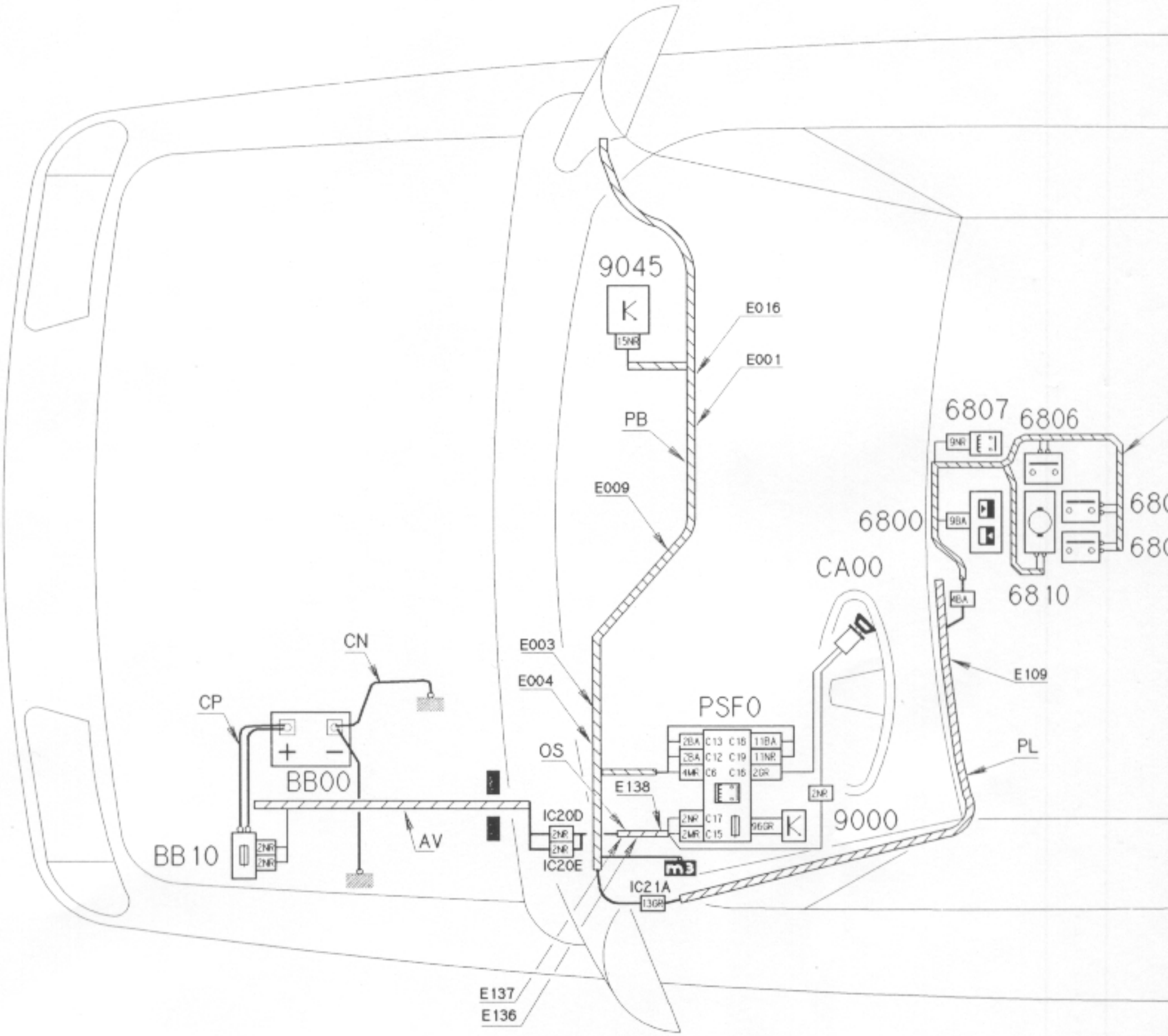
www.WorkshopManuals.co.uk



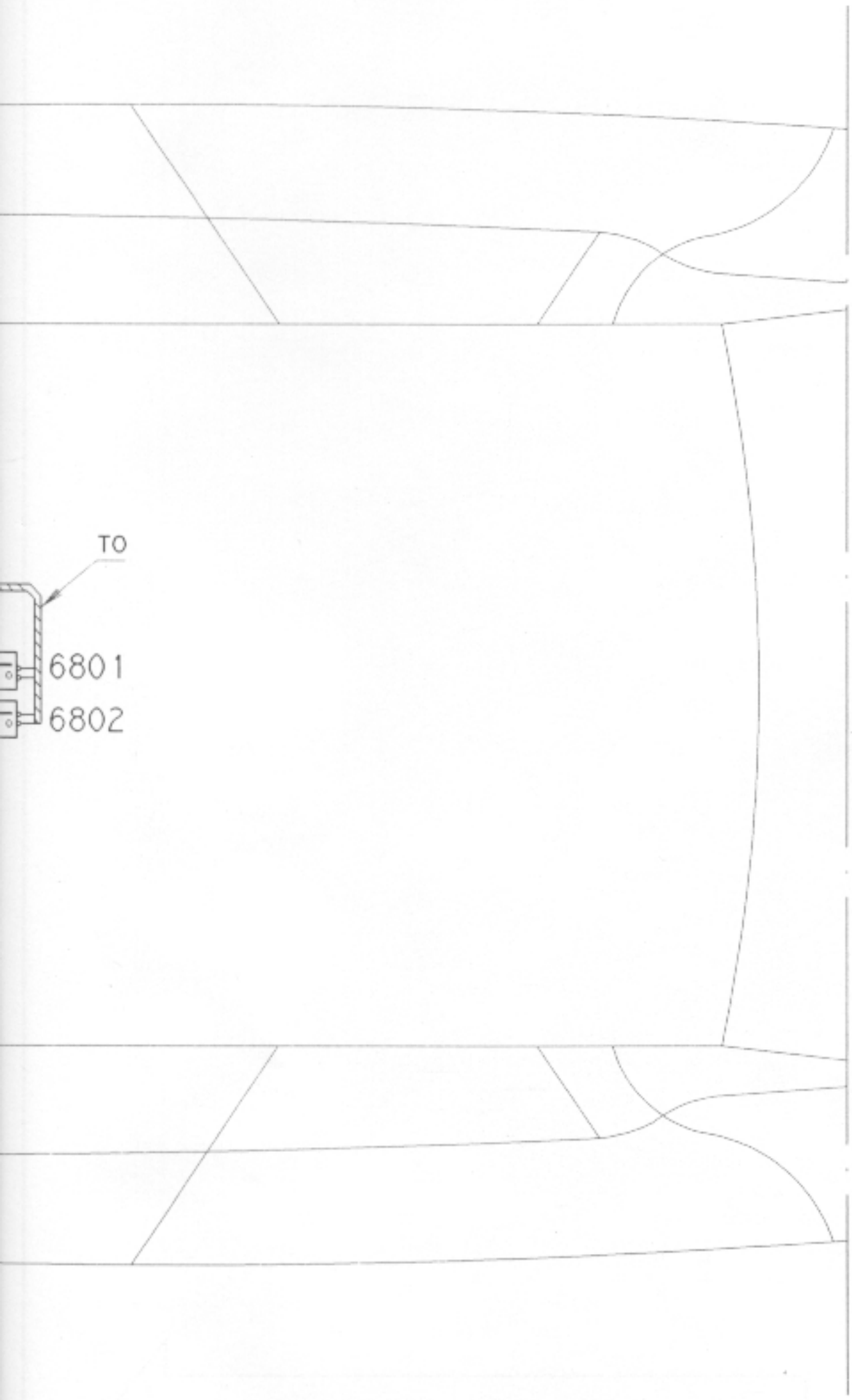
www.WorkshopManuals.co.uk



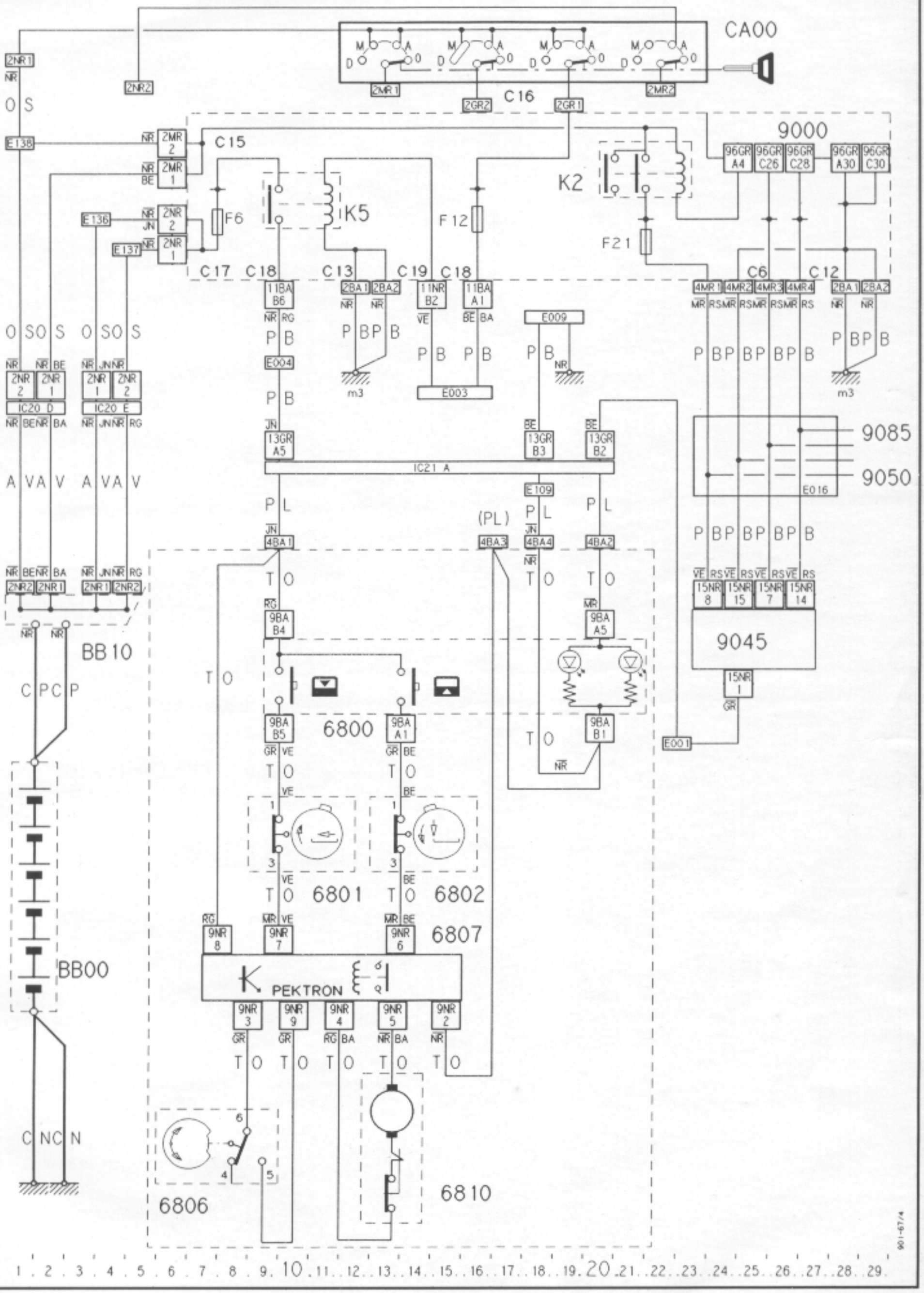
www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk



www.WorkshopManuals.co.uk

REMOVING

Remove the dashboard
(See (15) XM 856-1/1)

Air-conditioning system :

Empty the refrigerant from the air con.system.
(See brochure BRE 008886)

Remove, Fig. I : the two nuts **(2).**

Blank off, Fig. III :
- the two pipes **(6)** (separate them),
- the pressure relief valve **(5)**

Heating system, Fig. I and II

Clamp the two hoses **(1).**
Remove the two clamping collars.
Dislocate the hoses **(1).**
Drain the heater radiator.

Removing the heating unit :

Engine side

Take off, Fig. I and II
- the screw **(3),**
- the two screws ➡

Car interior side

Remove, Fig. IV :
- the screw **(7),**
- the nut **(8),**
- the angle bracket.

Uncouple the hose **(9)**.

Remove the heating unit.

REFITTING

Refitting the heating unit :

Car interior side

Refit, Fig. IV :
- the heating unit,
- the angle bracket,
- the screws **(7),**
- the nut **(8).**

Recouple the hose **(9).**

Engine side

Refit, Fig. I and II :
- the screw **(3),**
- the two screws ➡ .

Heating system, Fig. I and II :

Refit the hoses **(1)** and the clamping collars.
Remove the clamps **(4).**

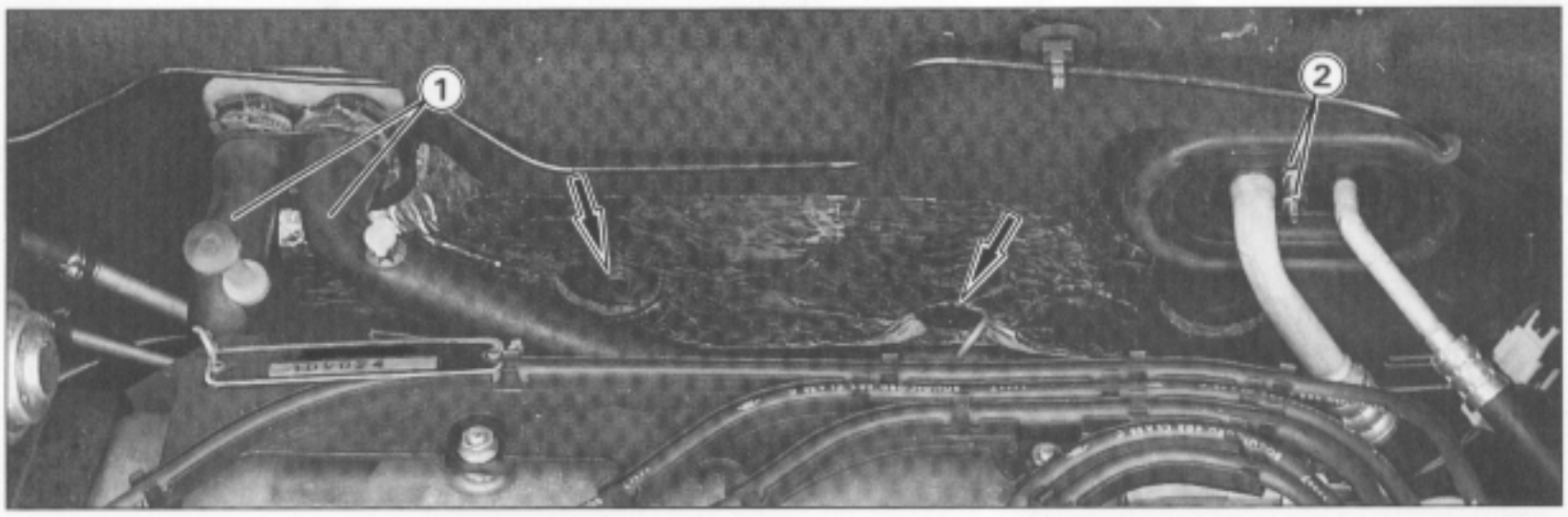
Air conditioning system :

Refit, Fig. I and II :
- the two pipes **(6)**, (fitted with NEW seals)
- the two nuts **(2)**.

Top up and bleed the engine coolant system.
(See (1) XM 230-0/1).

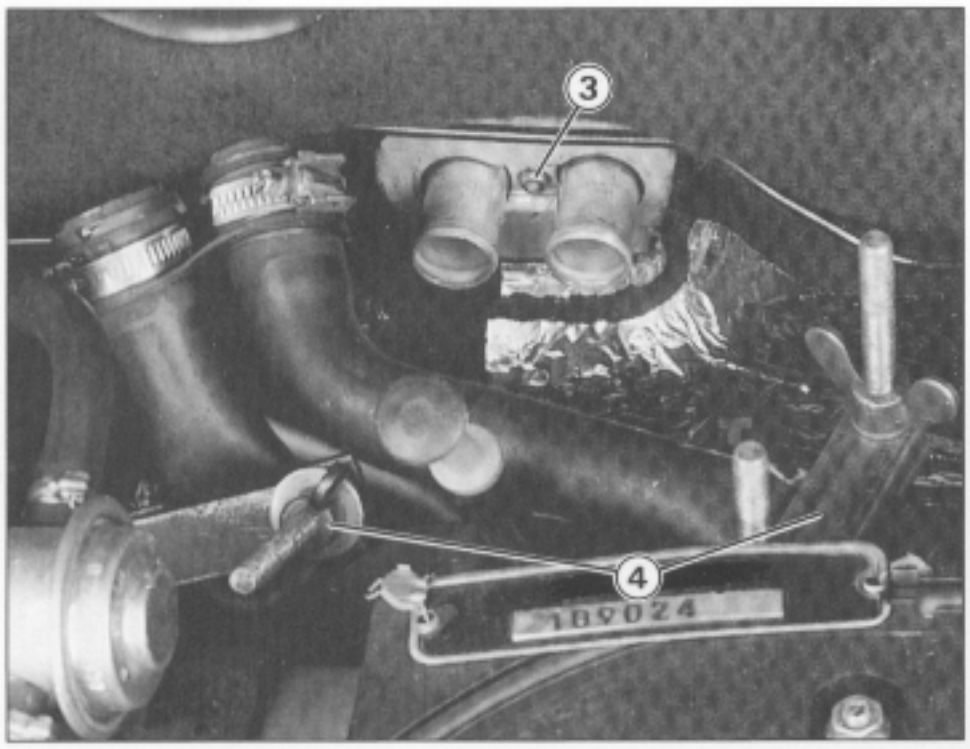
Refilling the air-conditioning system.
(See brochure BRE 008886).

www.WorkshopManuals.co.uk



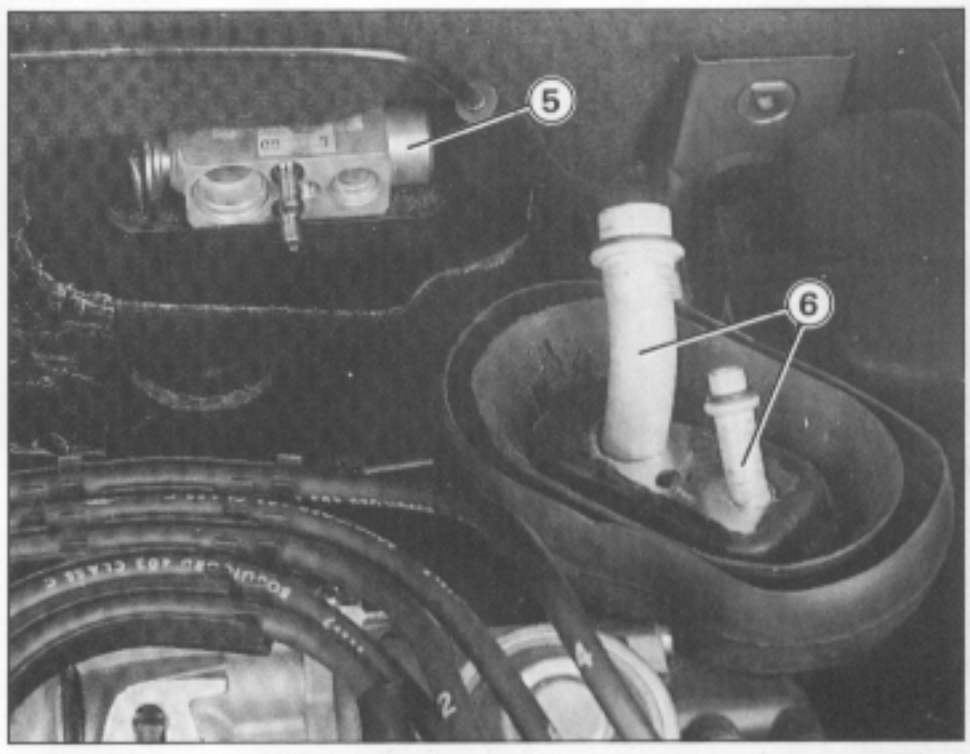
89-448

I



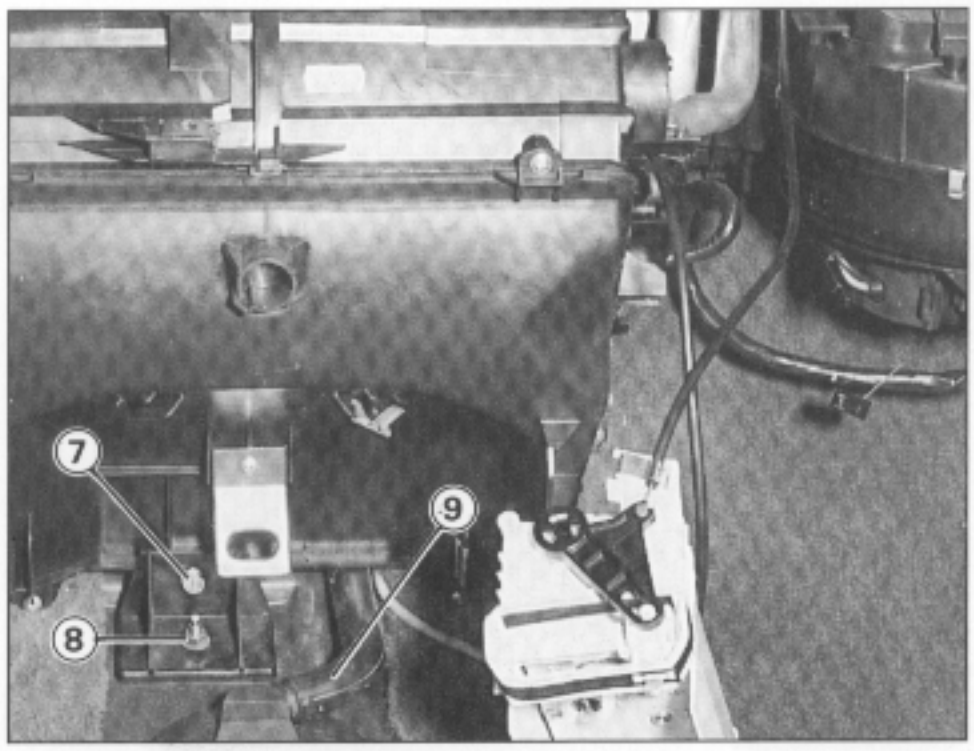
89-446

II



89-447

III



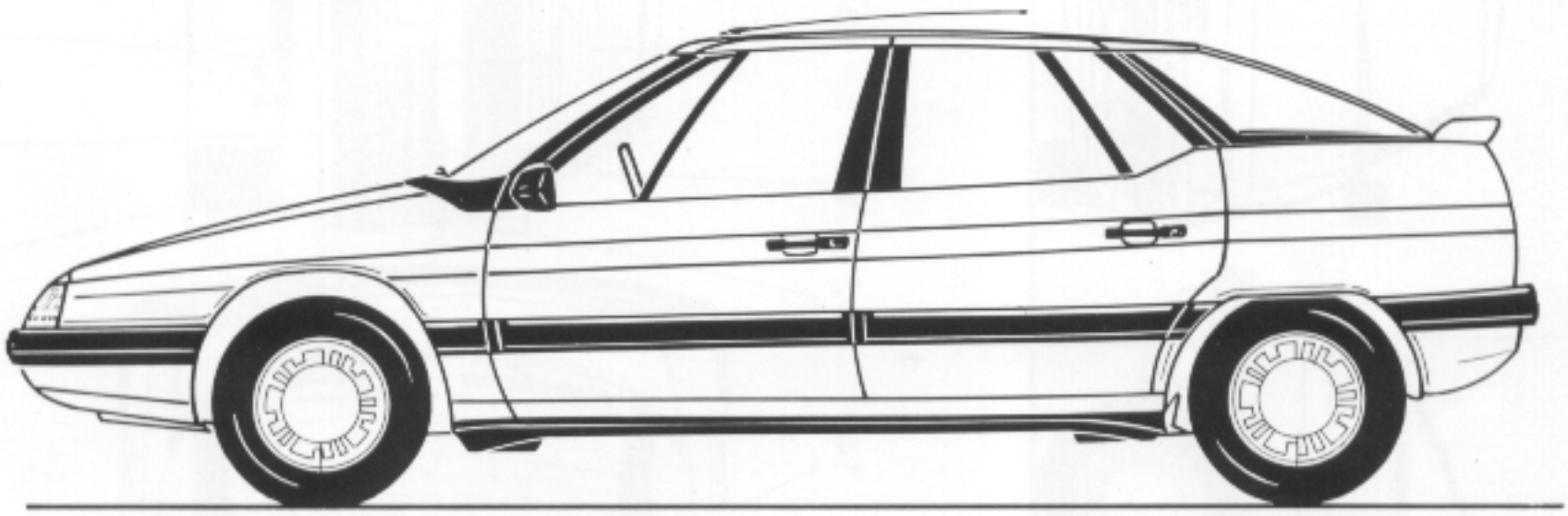
89-442

IV

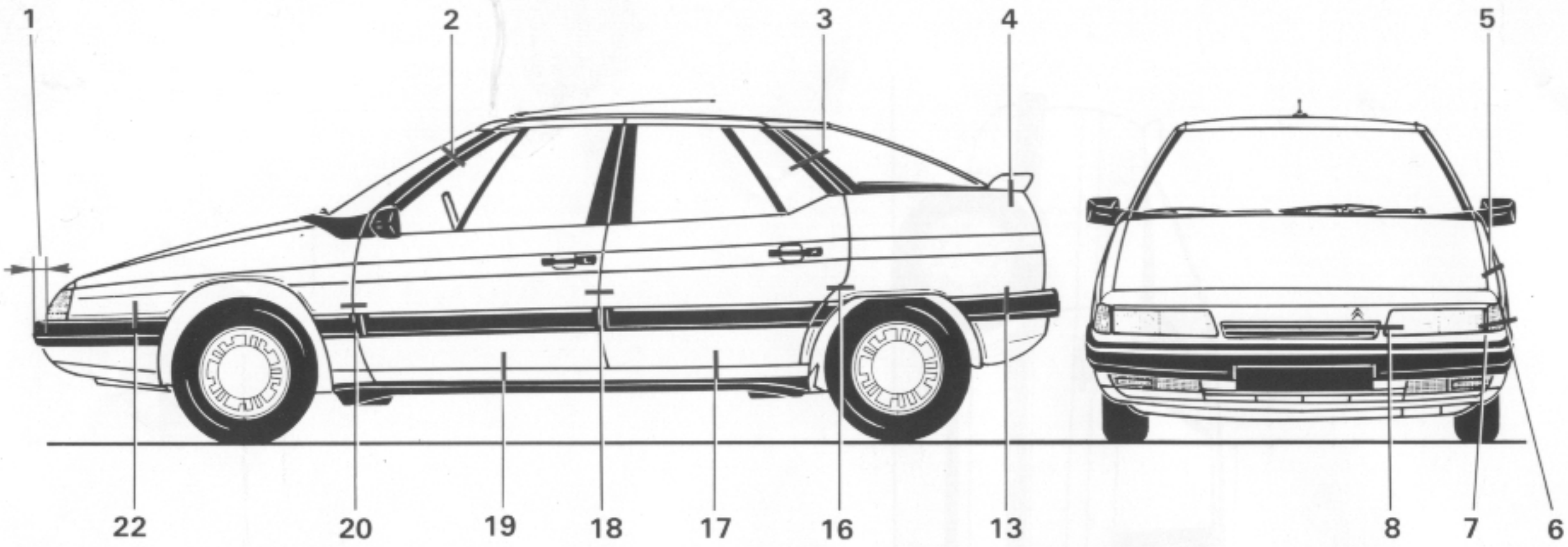
www.WorkshopManuals.co.uk

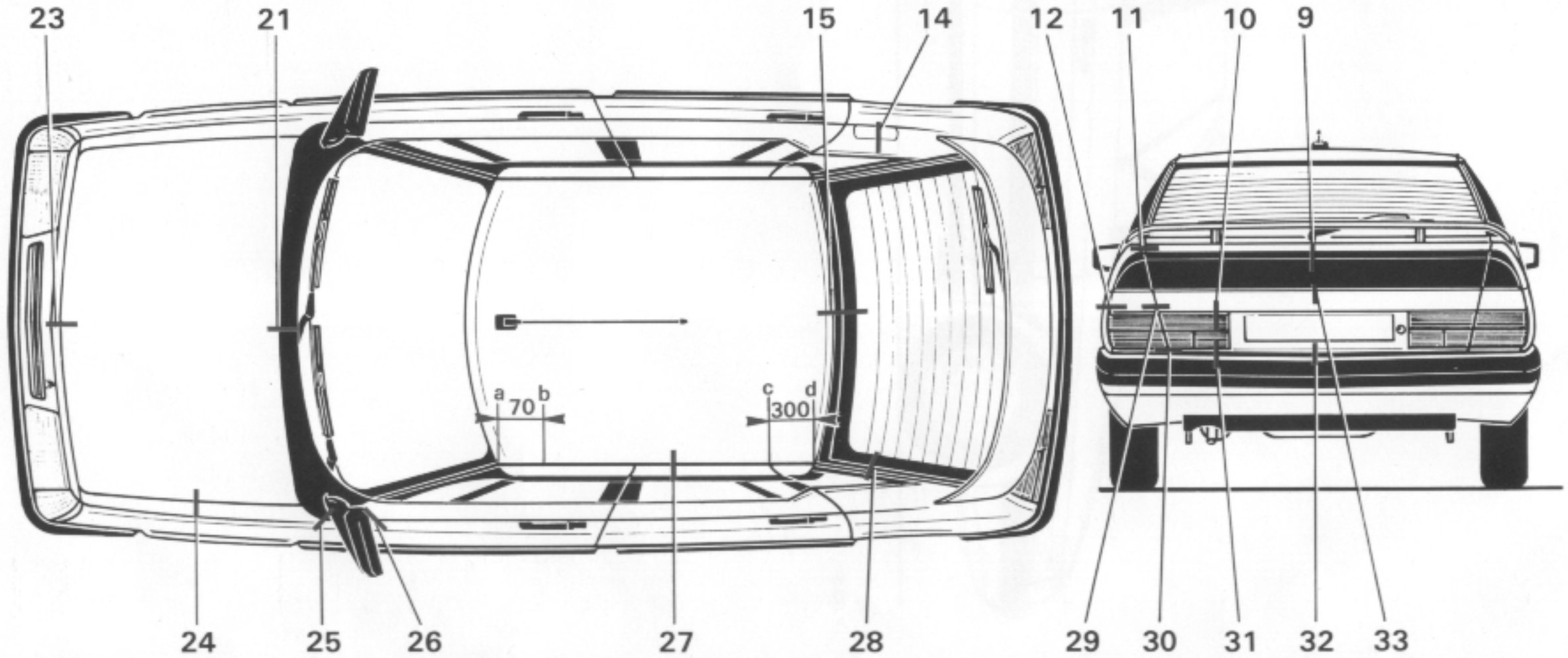
OPERATION NUMBER	DESCRIPTION
840-000/2	List of the operations appearing in chapter (15)
840-0/1	Removable component clearances
840-1/1	Fitting the number plates
841-0/1	Side door adjustments
841-1/1	Side door removal
842-1/3	Door trimming and stripping
844-1/1	Removing/refitting a front door lock
844-1/2	Removing/refitting a boot door lock
844-1/3	Removing/refitting the lock of a glove-box lid
844-3/1	Making up a door lock to suit the key code
845-3/1	Replacing a heated rear window
851-3/1	Replacing a front bumper
851-3/2	Replacing a front wing
851-3/3	Replacing a front grille
851-3/4	Replacing a front trim support
853-3/1	Replacing a rear bumper
853-3/2	Replacing a rear quarter window glass
961-3/1	Replacing a windscreen glass

www.WorkshopManuals.co.uk



Y.80-5



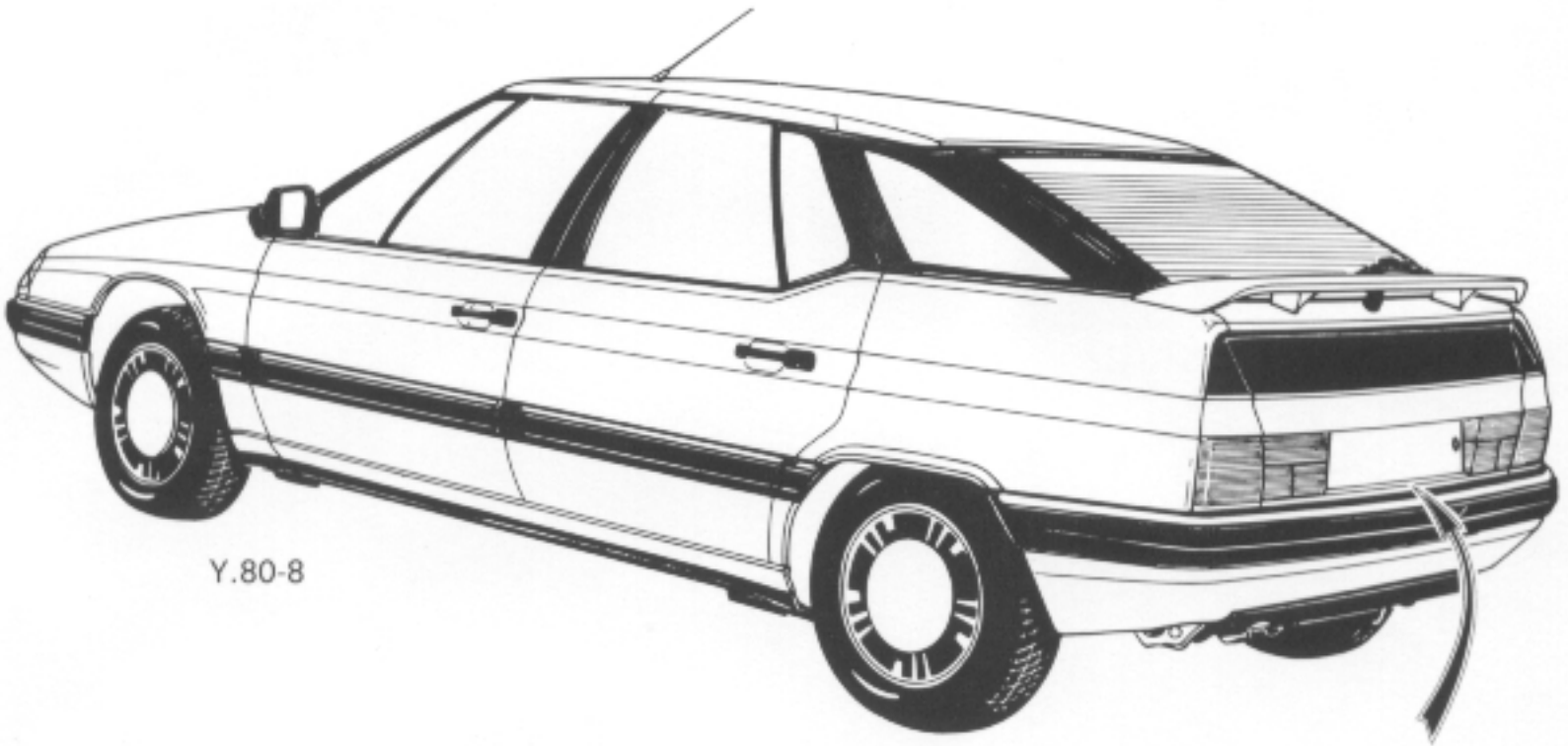


Y.80-5

www.WorkshopManuals.co.uk

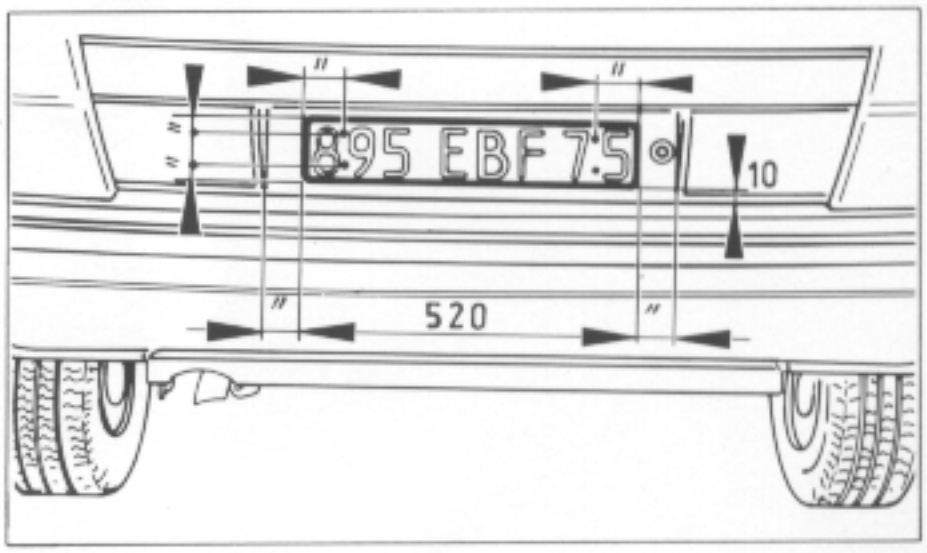
Ref.	Components	Clearance	Flush fit tolerance	Alignment tolerance
1	Bumpers - front grille	45		2.5 max.
2	Windscreen frame pillar - front door	4 $^{+2}_{0}$	±2	1 max.
3	Rear door - quarter light	4 $^{+2}_{0}$	1 max.	1 max.
4	Rear wing - deflector	7.7 $^{+2}_{0}$		1 max.
5	Front wing - grille	0 $^{+1}_{0}$	$^{0}_{-0.5}$	
6	Front wing - grille front side	0	$^{+0.5}_{0}$	0.5 max.
7	Side lamp - headlamp	0 $^{+1.5}_{0}$	±1	1 max.
8	Headlamp - grille front side	3 $^{+1}_{0}$	±1	1 max.
9	Tailgate - upper trim	3 $^{+1}_{0}$	1 max.	1 max.
10	Tailgate lamp - trim	4 $^{+1}_{0}$	1 max.	1 max.
11	Tailgate - rear wing	4 $^{+2}_{0}$	1 max.	1 max.
12	Rear wing - tailgate lamp	3 $^{+1}_{0}$	1 max.	1 max.
13	Rear wing - bumper	6 $^{+2}_{0}$		1 max.
14	Fuel filler flap - rear wing	2.5 ± 0.5	$^{0}_{-0.5}$	
15	Roof panel - tailgate	5 $^{+2}_{0}$	$^{+1}_{0}$	1 max.
16	Rear door - rear wing	4 $^{+2}_{0}$	1 max.	
17	Longeron - bottom of rear door	6 $^{+2}_{0}$	$^{0}_{-2}$	1 max.
18	Front door - rear door	4 $^{+2}_{0}$	1 max.	1 max.
19	Longeron - bottom of front door	6 $^{+2}_{0}$	$^{0}_{-2}$	1 max.
20	Front wing - front door	4 $^{+2}_{0}$	1 max.	
21	Bonnet - scuttle grille	4 $^{+2}_{0}$	$^{+1}_{0}$	1 max.
22	Front wing - grille front side - front bumper	6 $^{+2}_{0}$		1 max.
23	Bonnet - grille front side	4 $^{+2}_{0}$	$^{0}_{-0.5}$	1 max
24	Bonnet - front wing	4 $^{+2}_{0}$	$^{0}_{-1}$	1 max
25	Cowl - cowl end piece	4 ±2	$^{+0.5}_{0}$	0.5 max.
26	Cowl end piece - windscreen side assembly	3 ±1		
27	Roof and door clearance : 4 $^{+2}_{0}$ at "**a**", increases gradually to 8 $^{+2}_{0}$ at "**b**", remains constant from "**b**" to "**c**", and decreases gradually to 4 $^{+2}_{0}$ at "**d**"	8 $^{+2}_{0}$	±1	1 max.
28	Tailgate - rear quarter light	4 $^{+2}_{0}$	±2	1 max.
29	Rear lamp cluster - tailgate	6 $^{+2}_{0}$	1 max.	1 max.
30	Rear lamp cluster finishing embellisher - tailgate	5 $^{+2}_{0}$	1 max.	1 max.
31	Tailgate lamp - tailgate	3	1 max.	1 max.
32	Rear bumper - tailgate	6 $^{+2}_{0}$		1 max.
33	Trim - upper trim	2 $^{+2}_{0}$	1 max.	1 max.

www.WorkshopManuals.co.uk



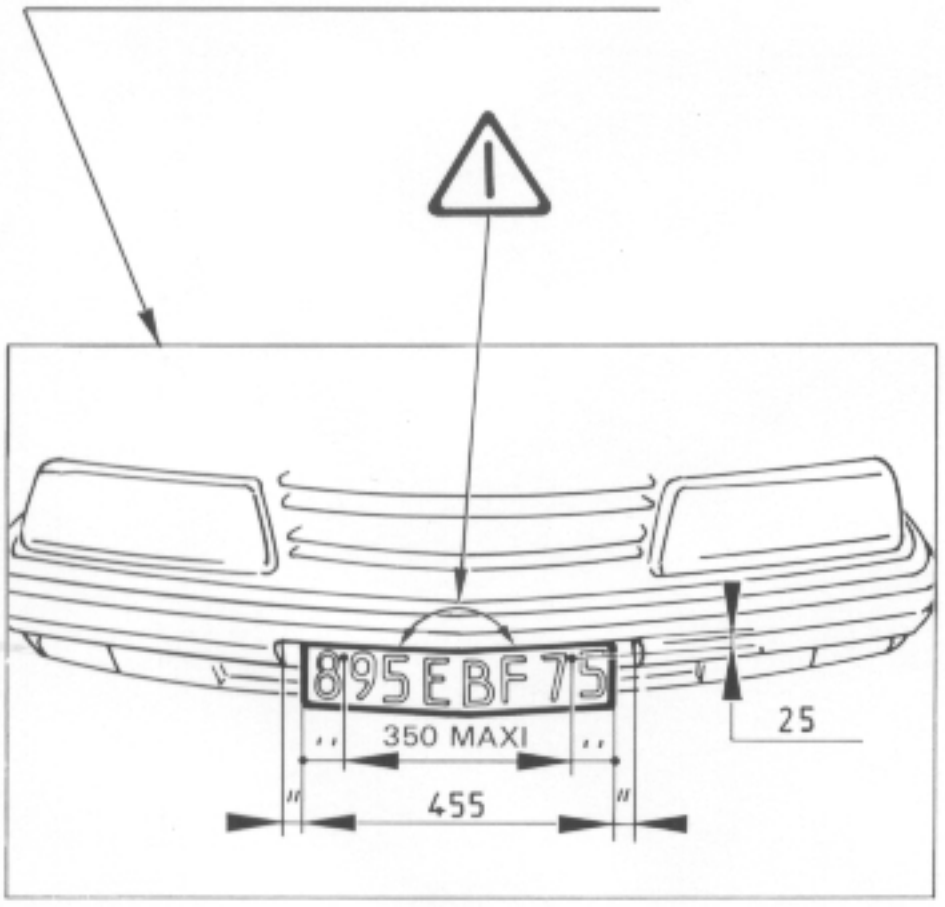
Y.80-8

Réf. : ZC 9 866 178 U (520 x 110)



Y.57-1

Réf. : ZC 9 866 177 U (455 x 100)

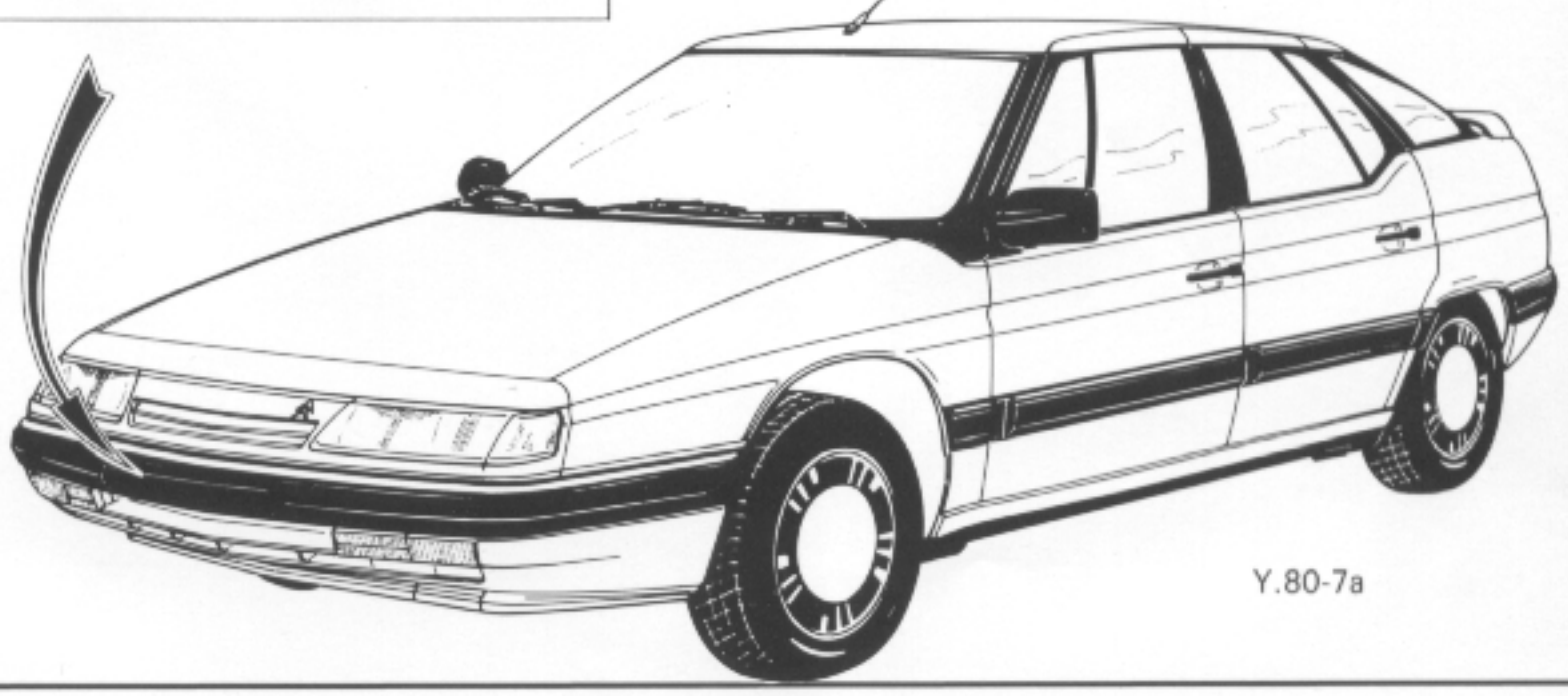


Y.57-1



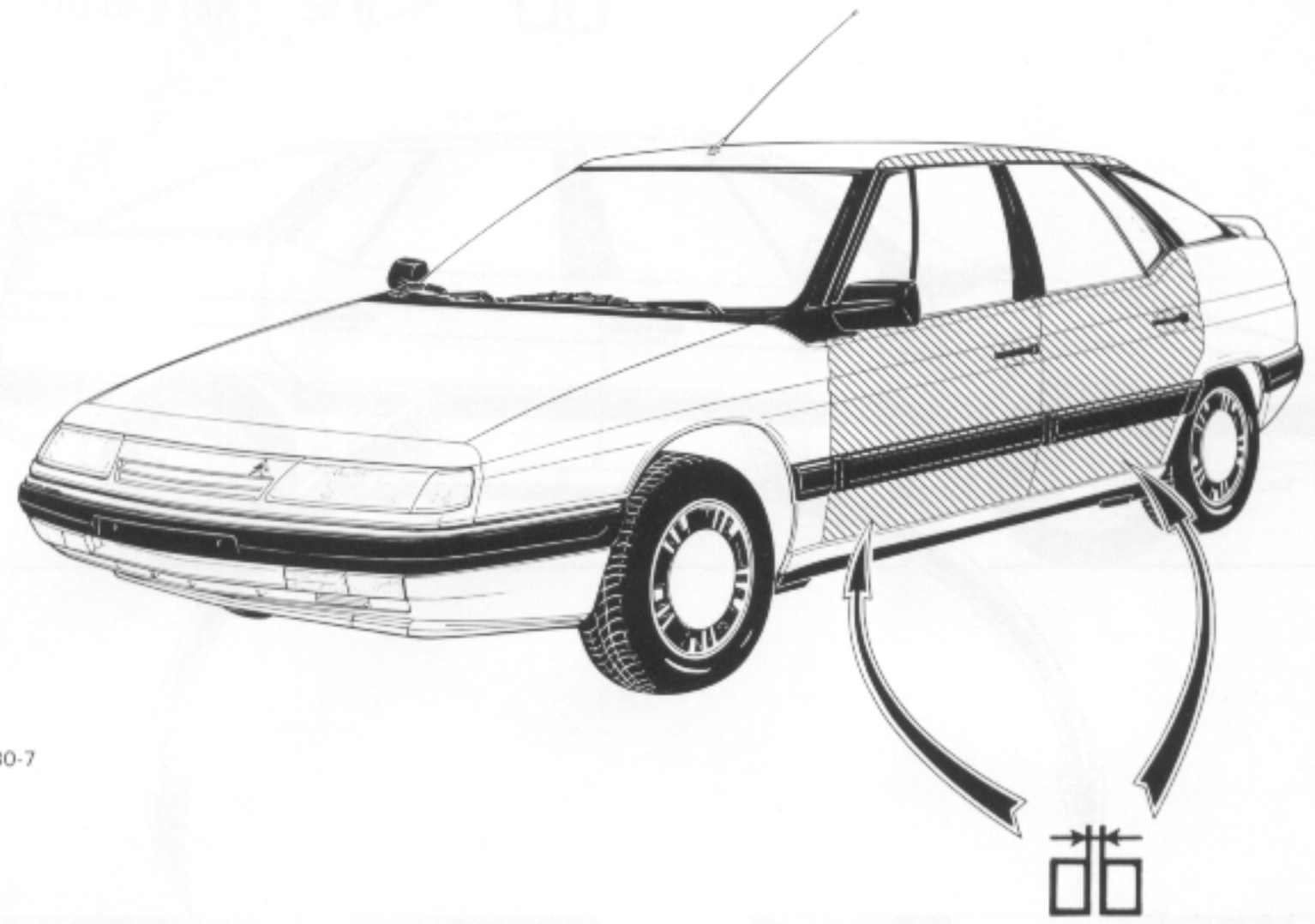
Réf. : ZC 9 861 664 U

Y-57-1



Y.80-7a

www.WorkshopManuals.co.uk



Y.80-7

Réf. FENWICK 8 1305

11 mm

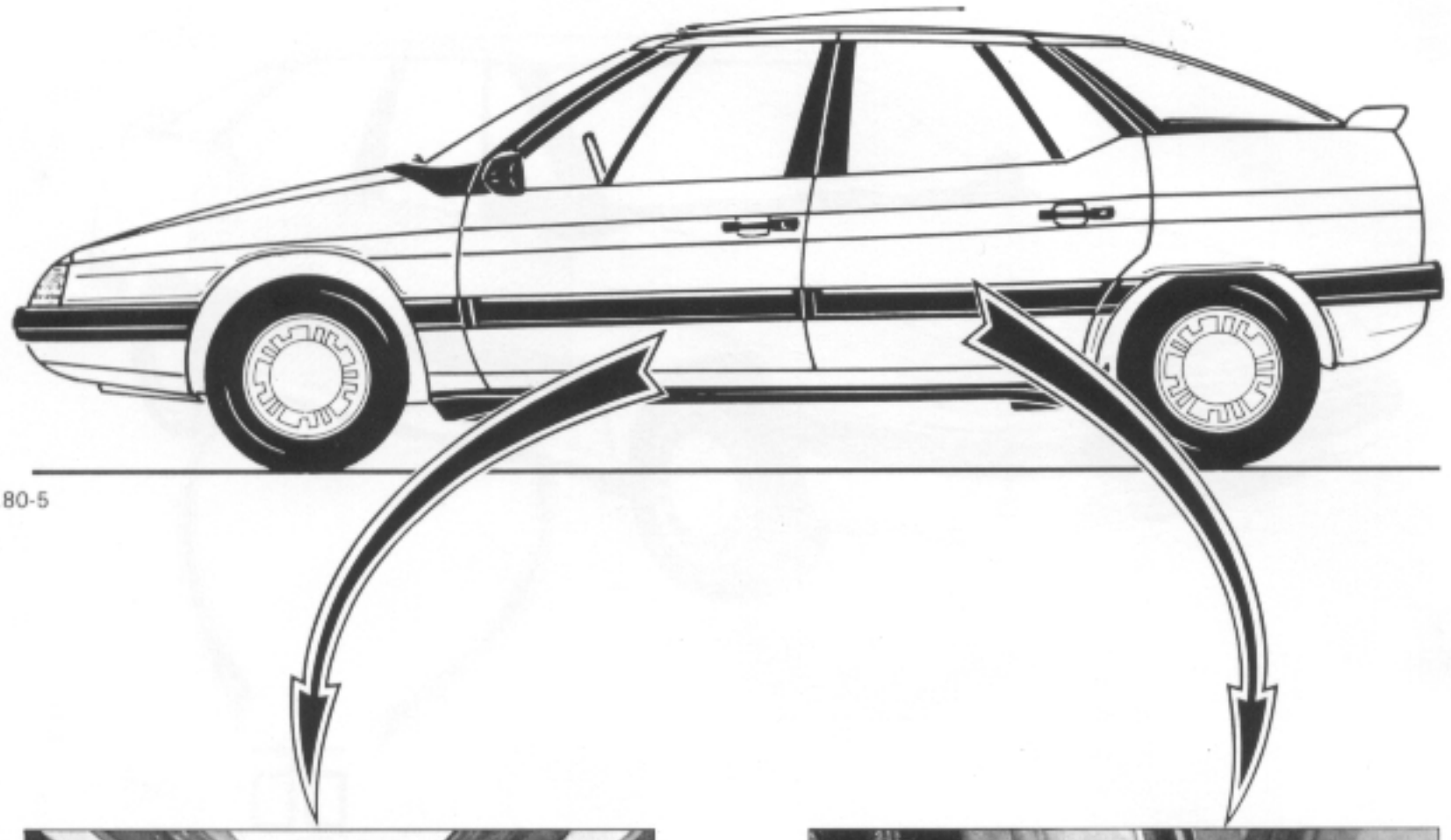


11 mm

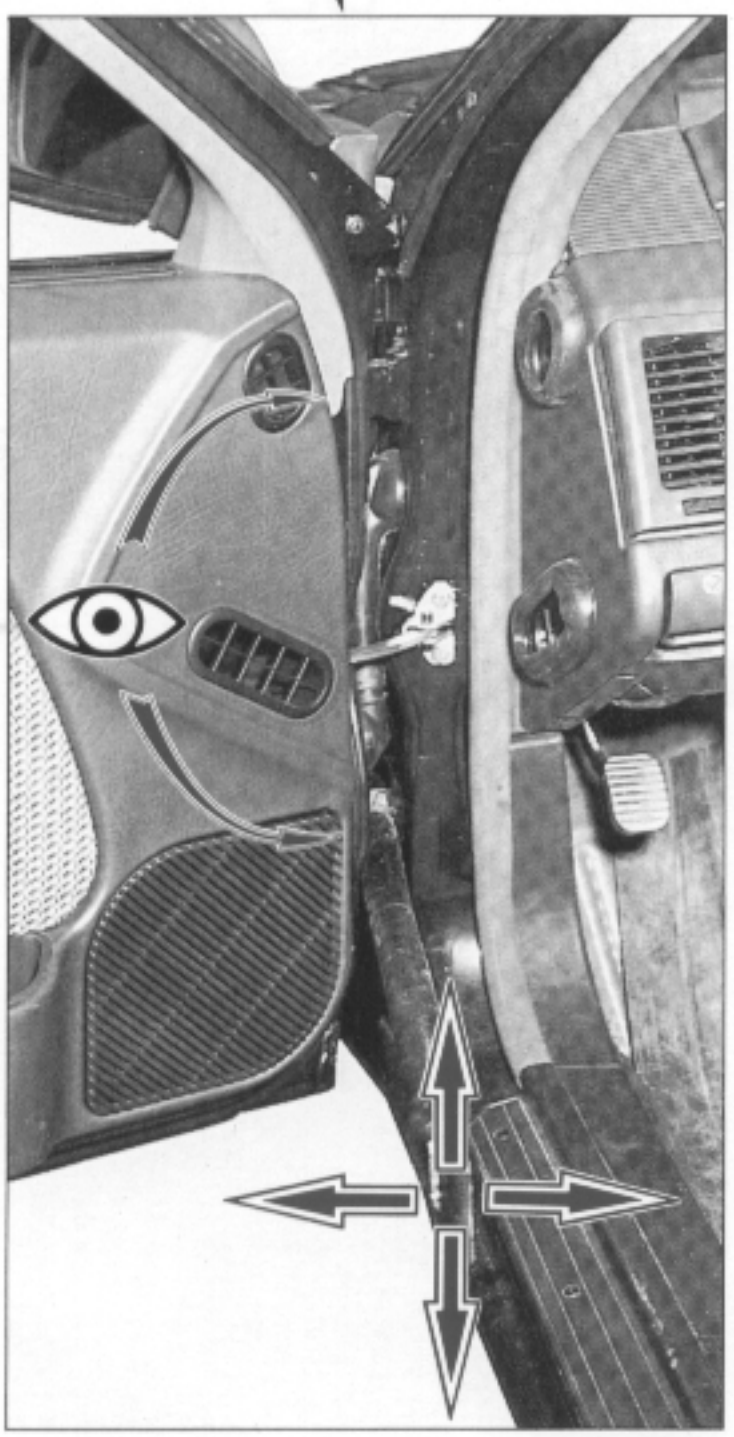
82-1881

www.WorkshopManuals.co.uk

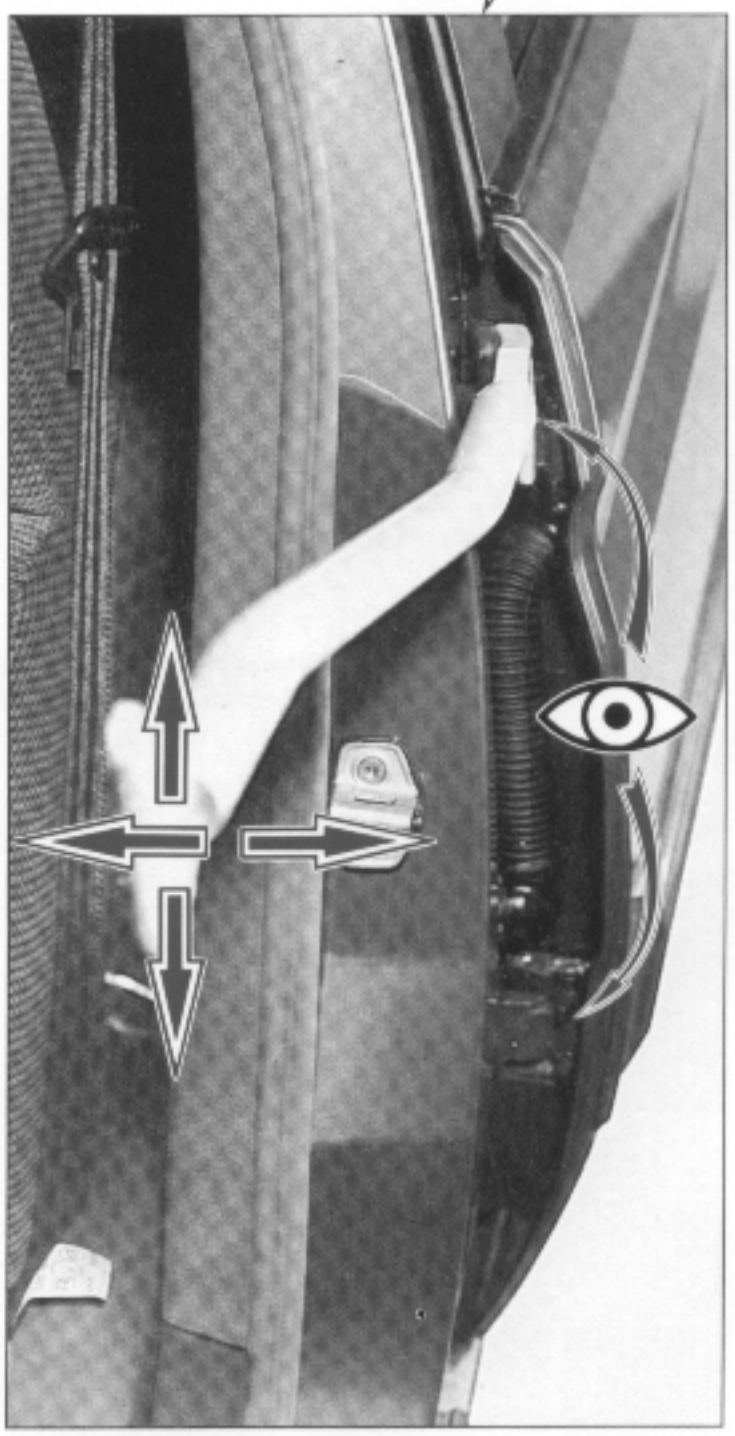
XM 840.0/1



Y.80-5

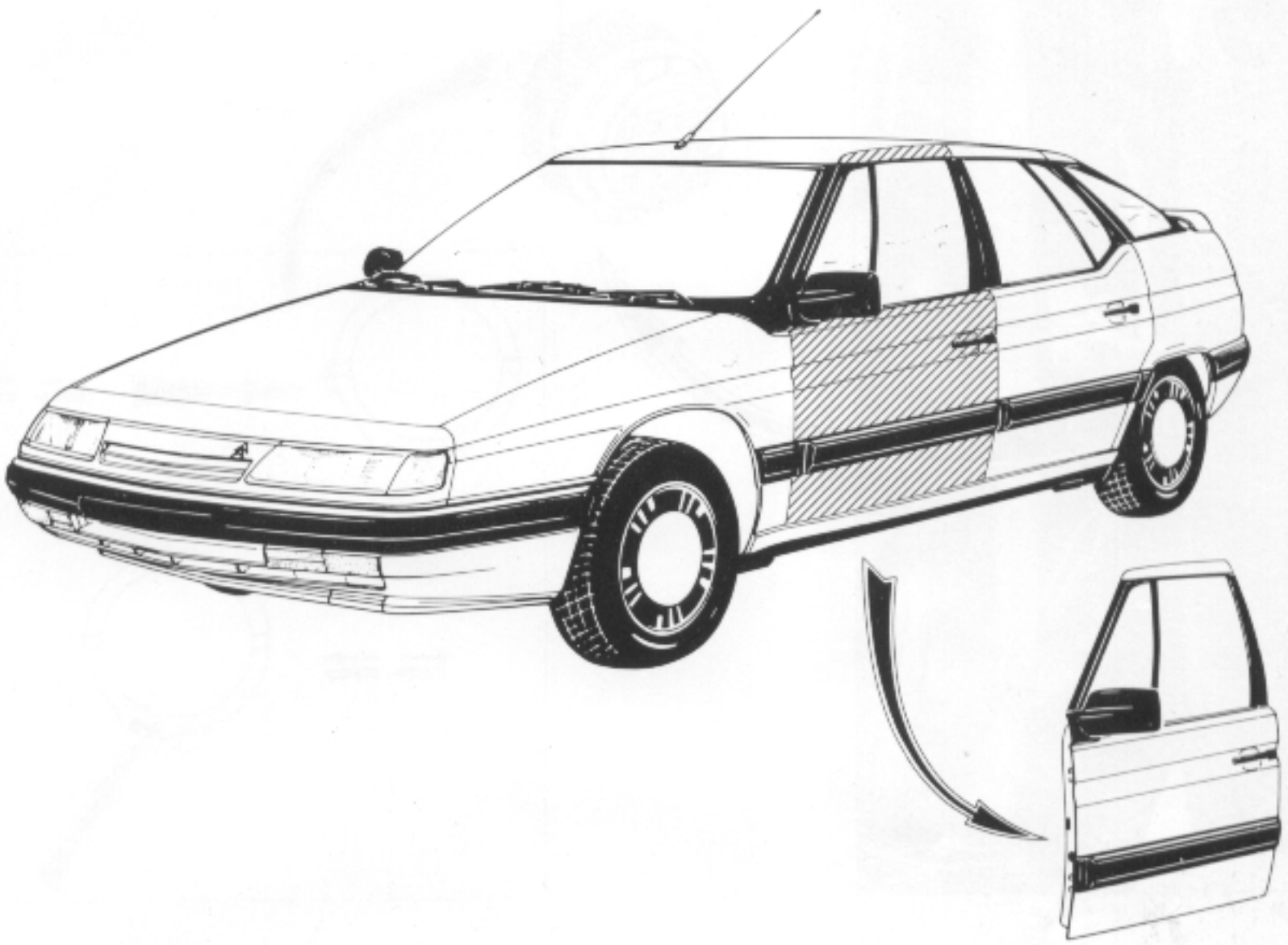


89-222



89-405

www.WorkshopManuals.co.uk



Y.80-7

81.303-AZ



- 81 303 M (∅ 5)
- 81 303 C (∅ 6)
- 81 303 D (∅ 7)

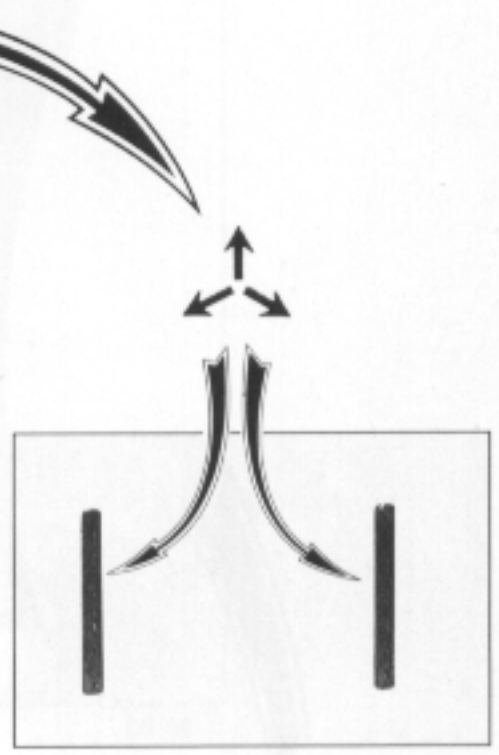
79-468

www.WorkshopManuals.co.uk



81.303 AZ
+ 81.303 D

89.72



82.2053

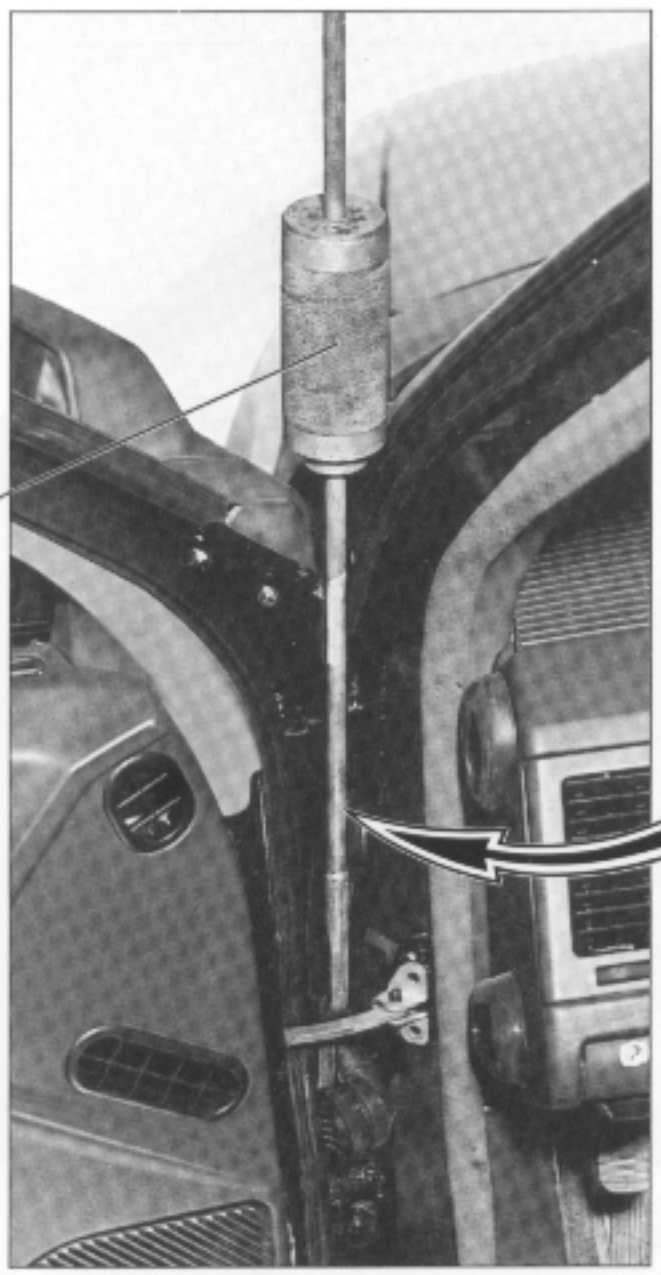


89.63

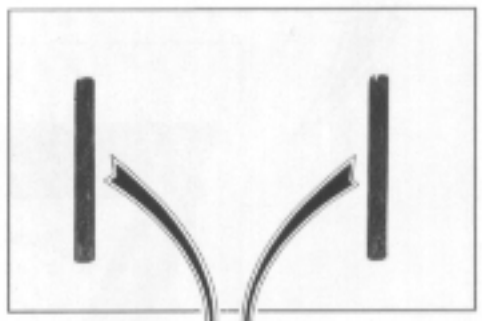
www.WorkshopManuals.co.uk



89.63



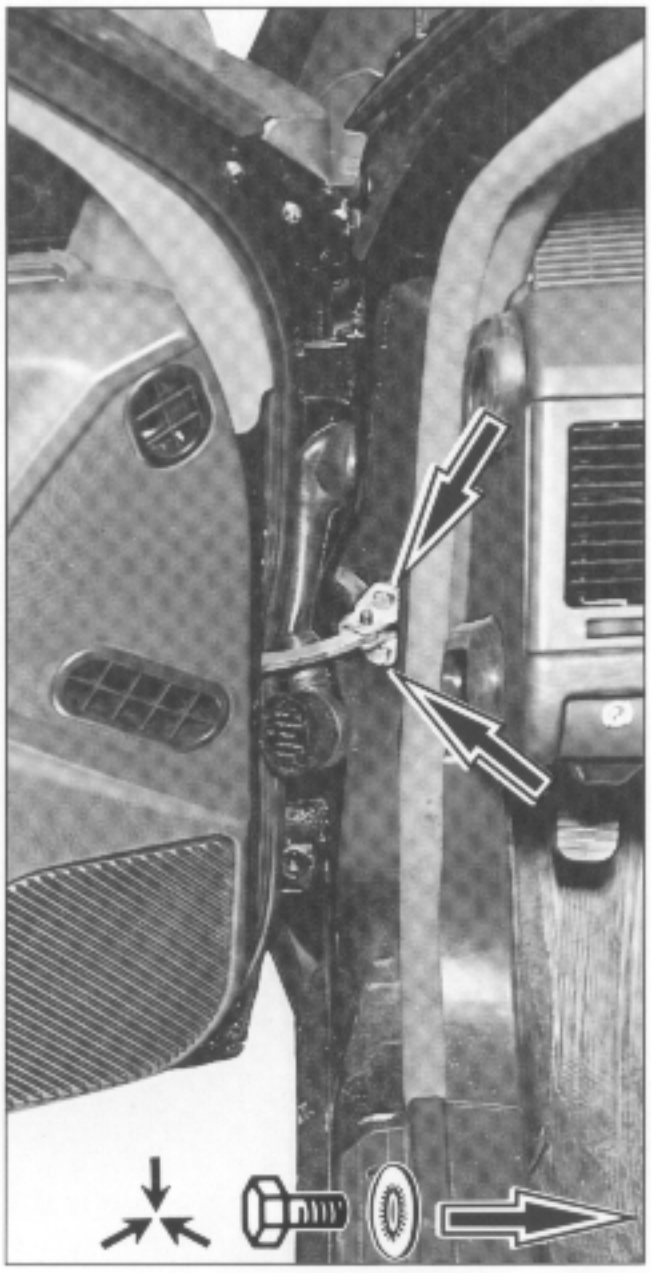
89.72



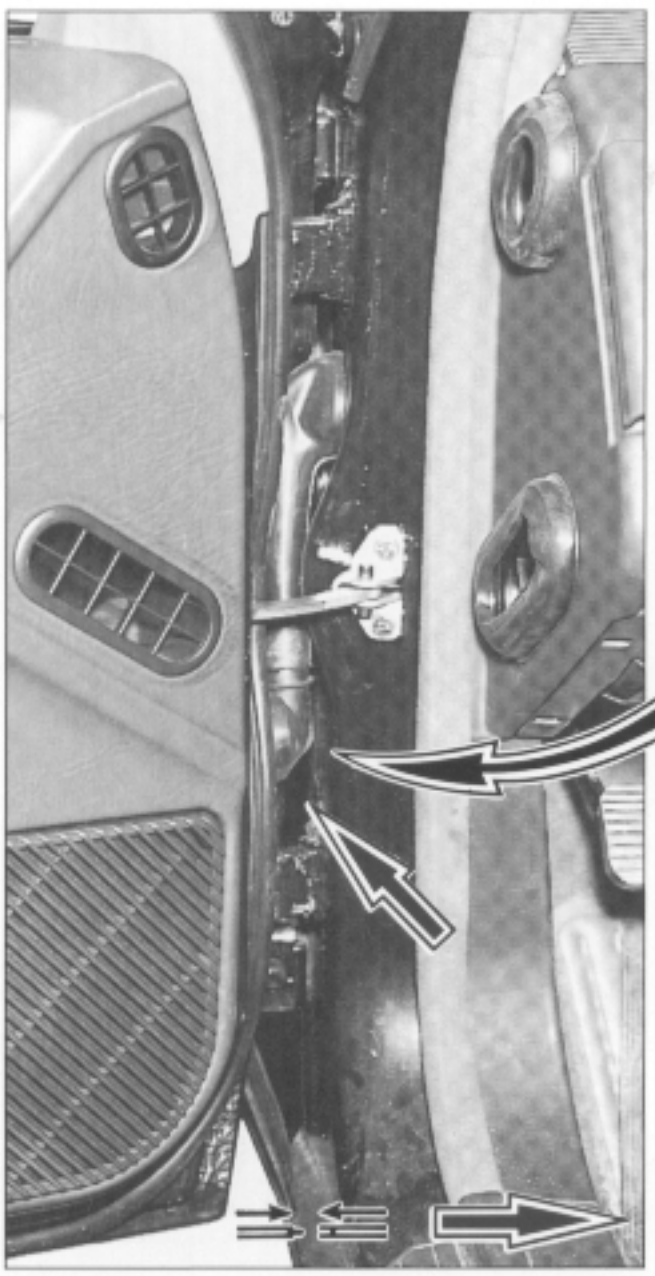
82.2053

81.303 AZ
+ 81.303 D

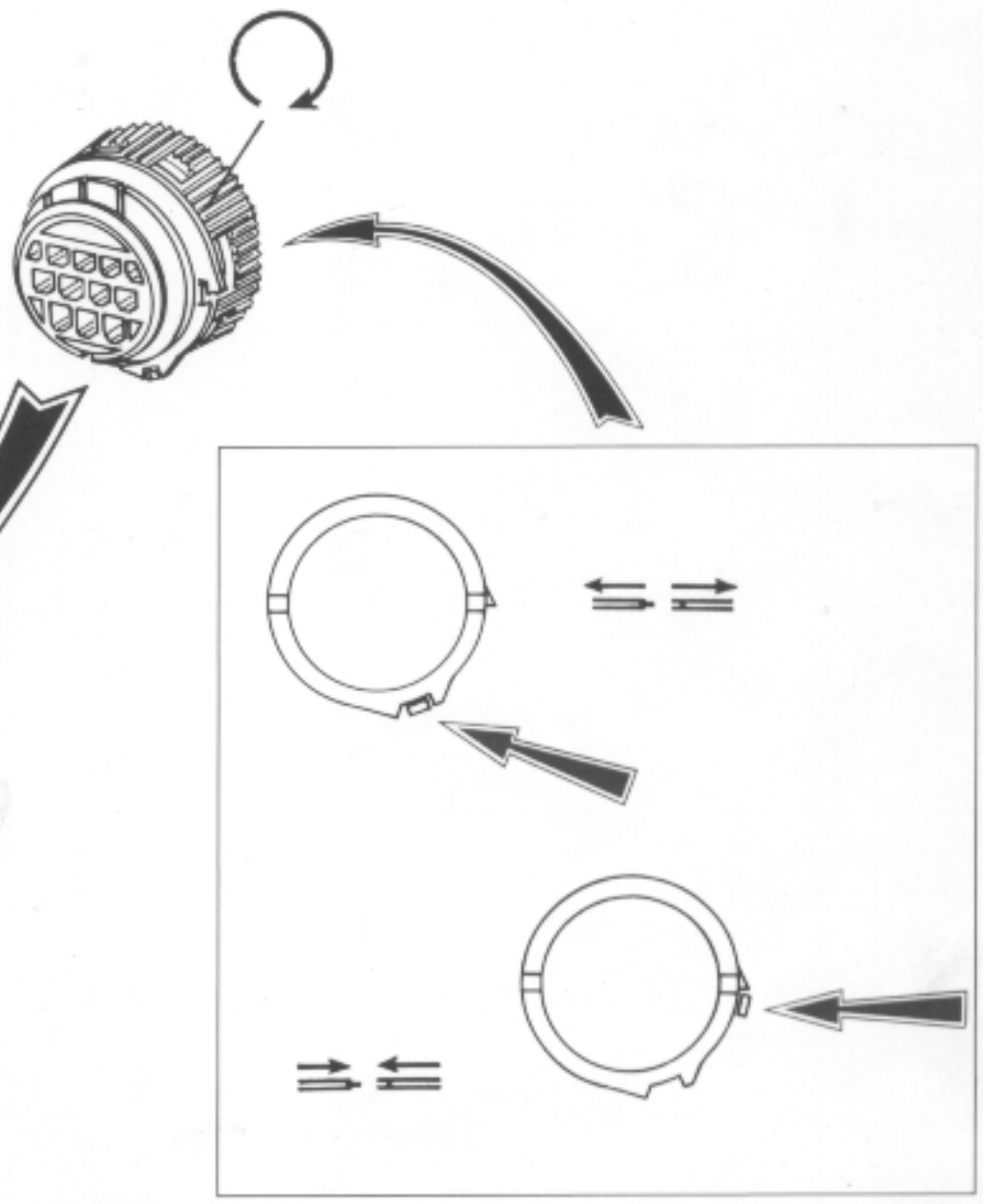
www.WorkshopManuals.co.uk



89.71

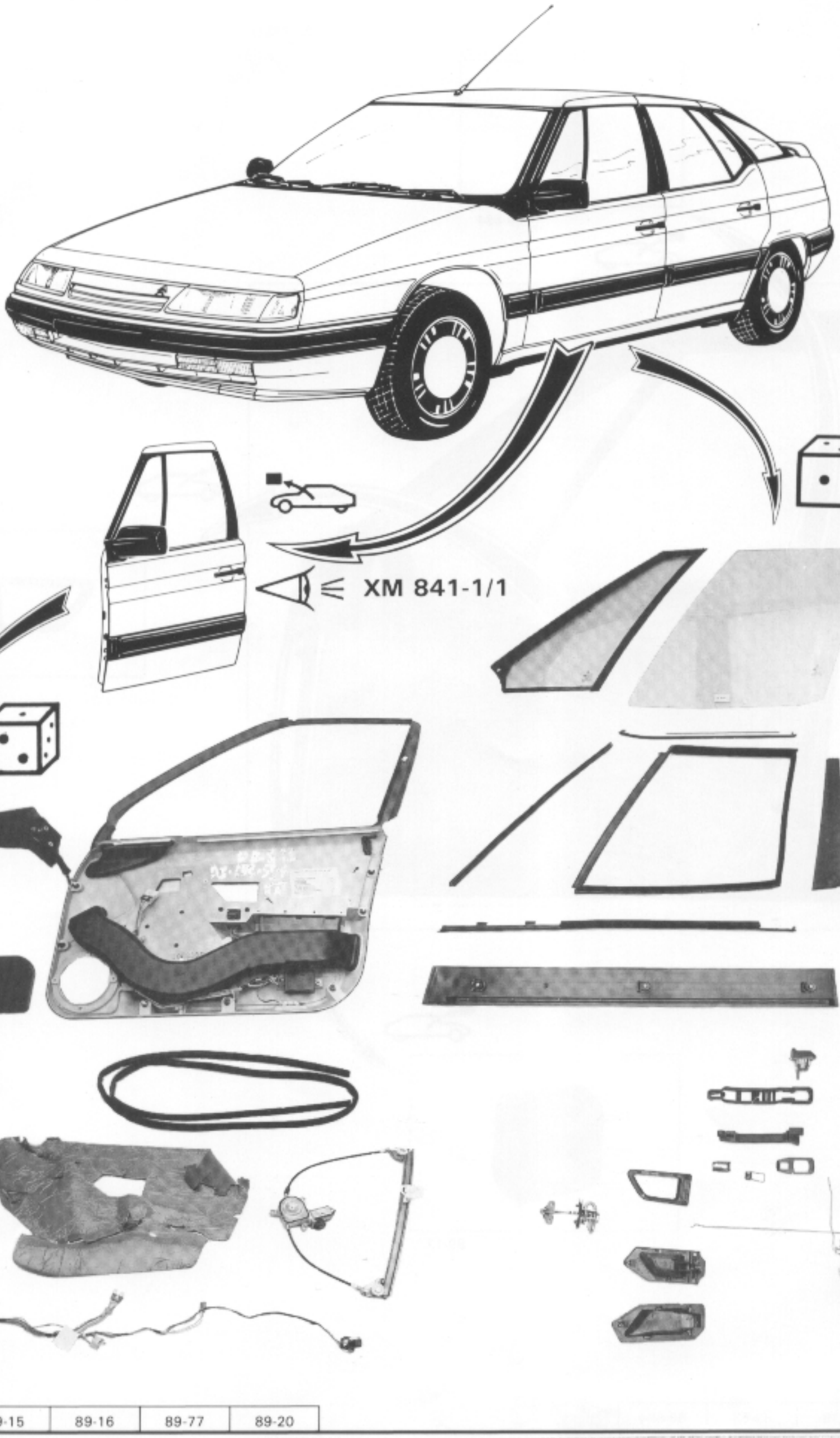


89.298



Y.51-3

www.WorkshopManuals.co.uk

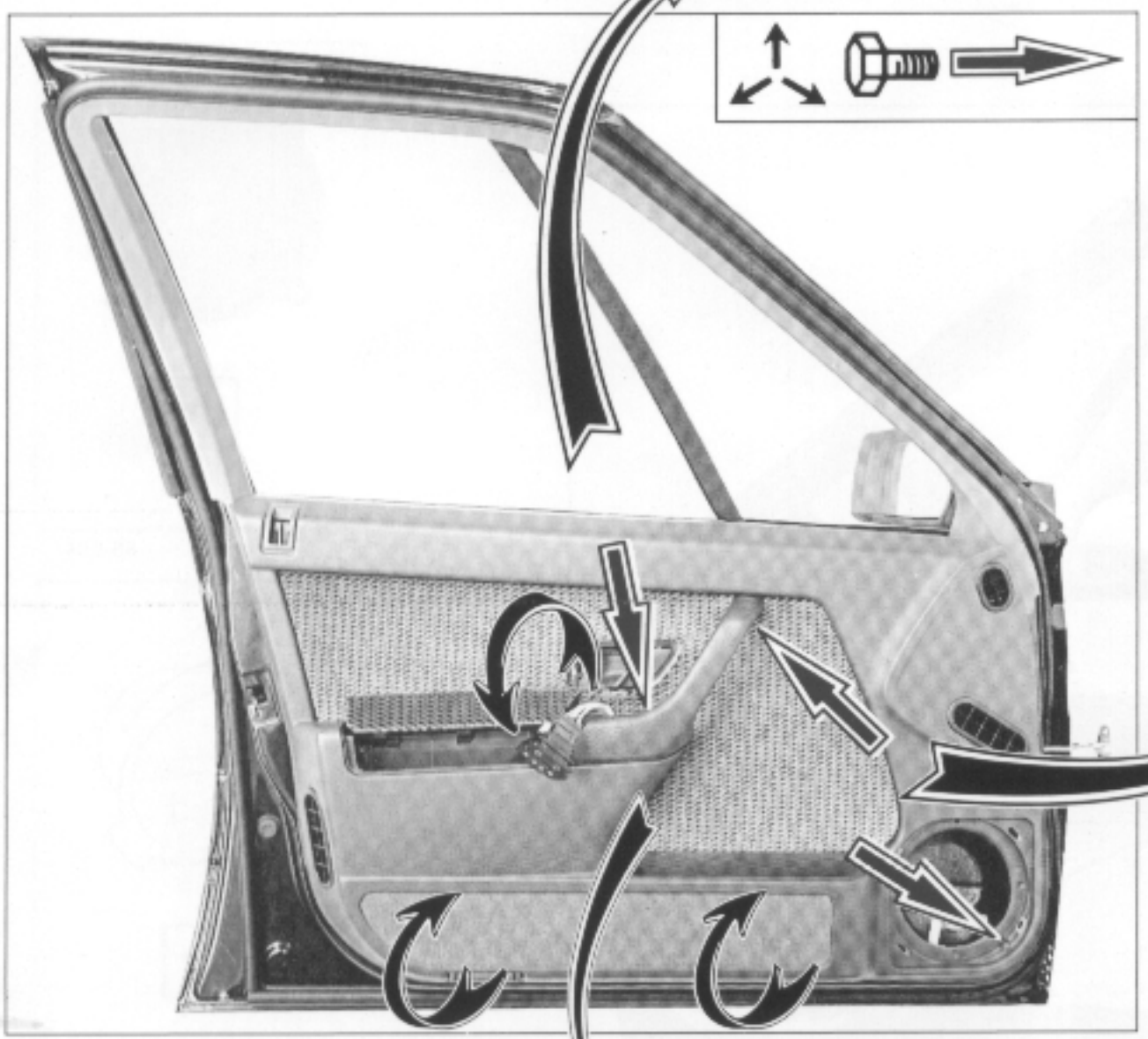


89-13 | 89-15 | 89-16 | 89-77 | 89-20

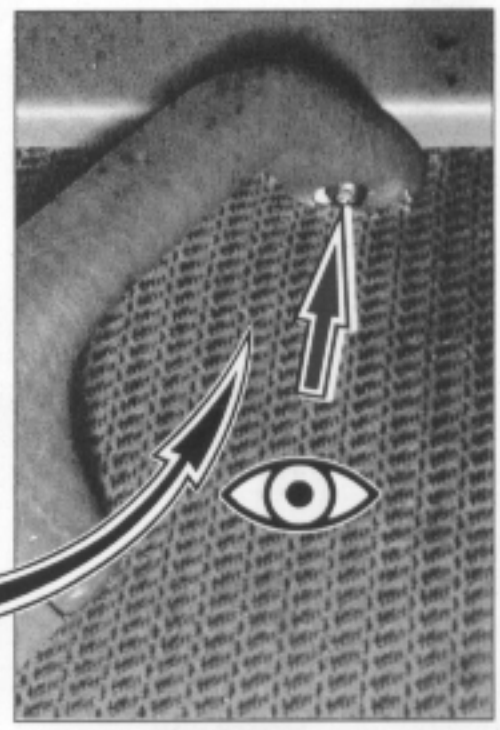
www.WorkshopManuals.co.uk



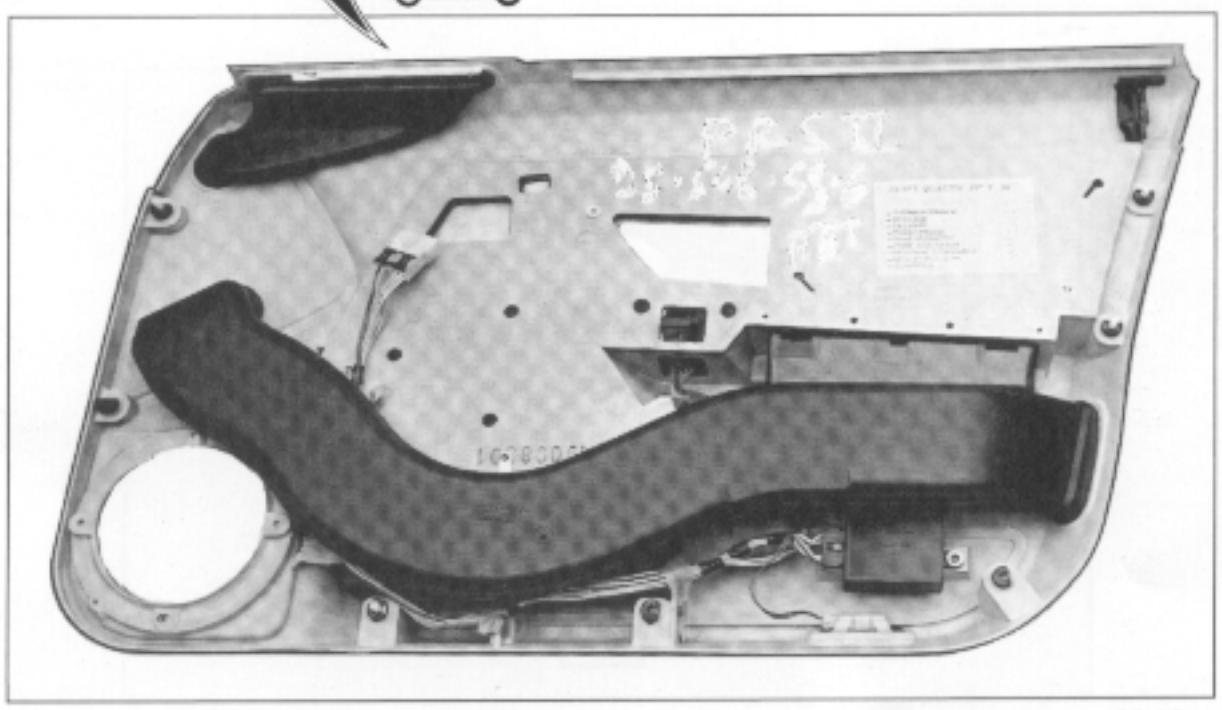
89-65



89.683



89.66



89-17

89-17	89-65	89-66	89-683

www.WorkshopManuals.co.uk

1º 2º _ _ _ _ _ _ _ 9º

2º

89-17

3º

89-13

5º

89-13

6º

89-93

4º

N.B. p. 17

89-17

7º

89-13

1º

89-15

89-61

8º

N.B. p. 18

89-20

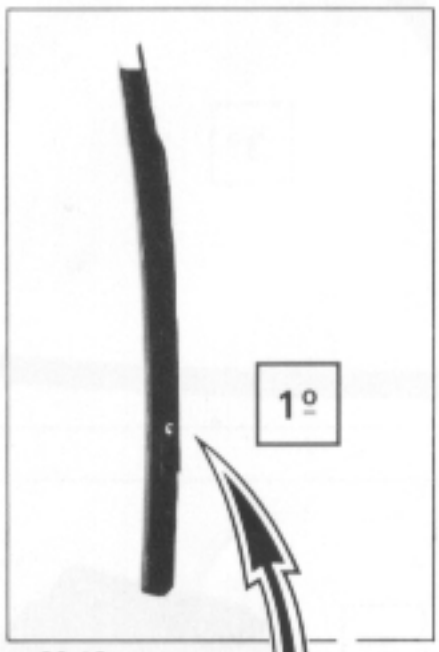
9º

89-15

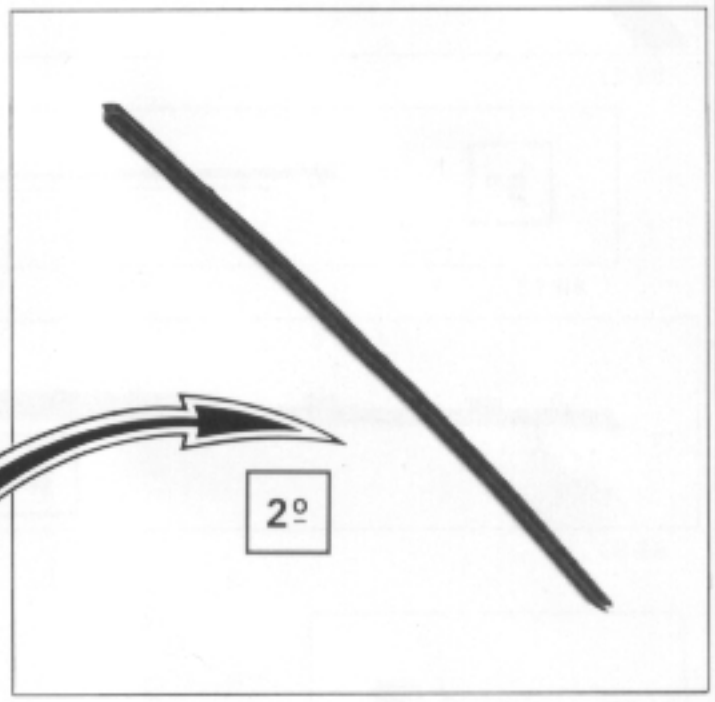
89-13	89-15	89-17	89-61	89-20	TT.82-5

www.WorkshopManuals.co.uk

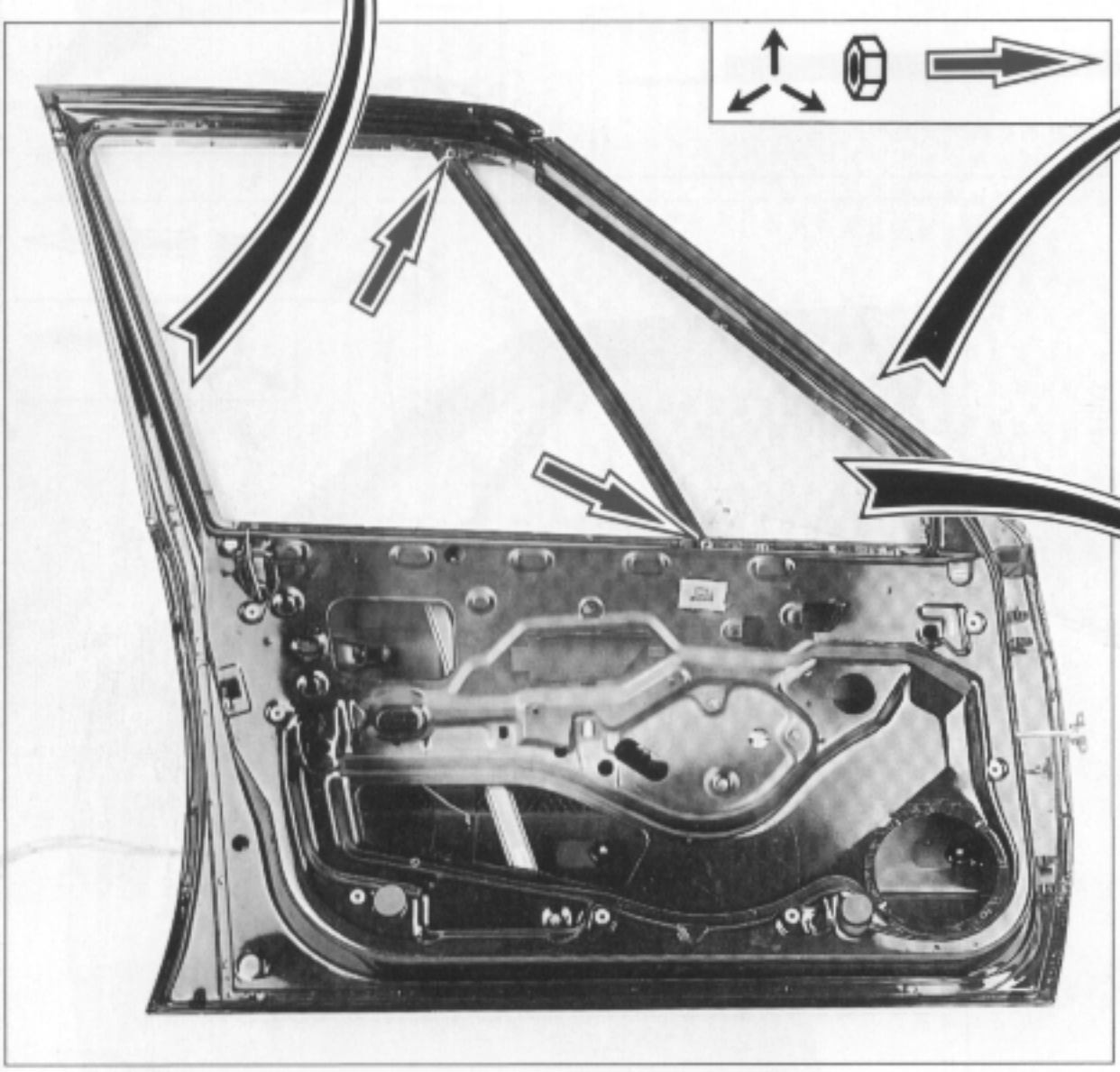
1º 2º 3º



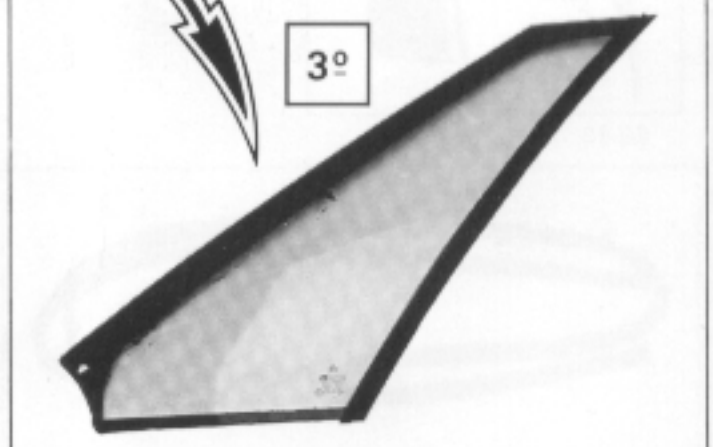
89-13



89-13



89-182



XM 842-3/2

89-20

89-13 | 89-20 | 89-182

www.WorkshopManuals.co.uk

1º 2º _ _ _ _ 7º



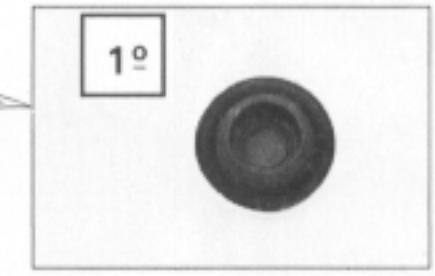
89-16

3º



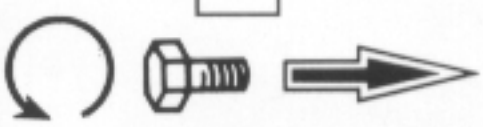
89-74

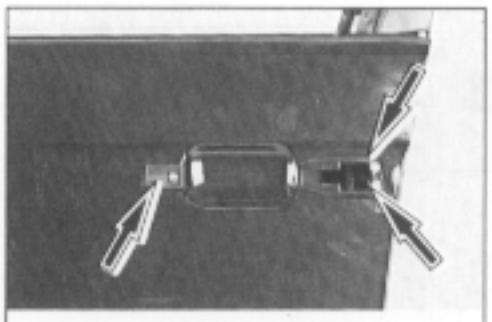
1º



89-43

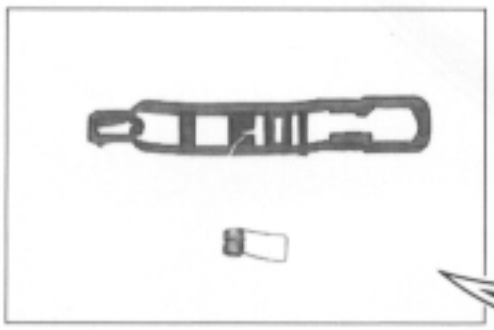
2º



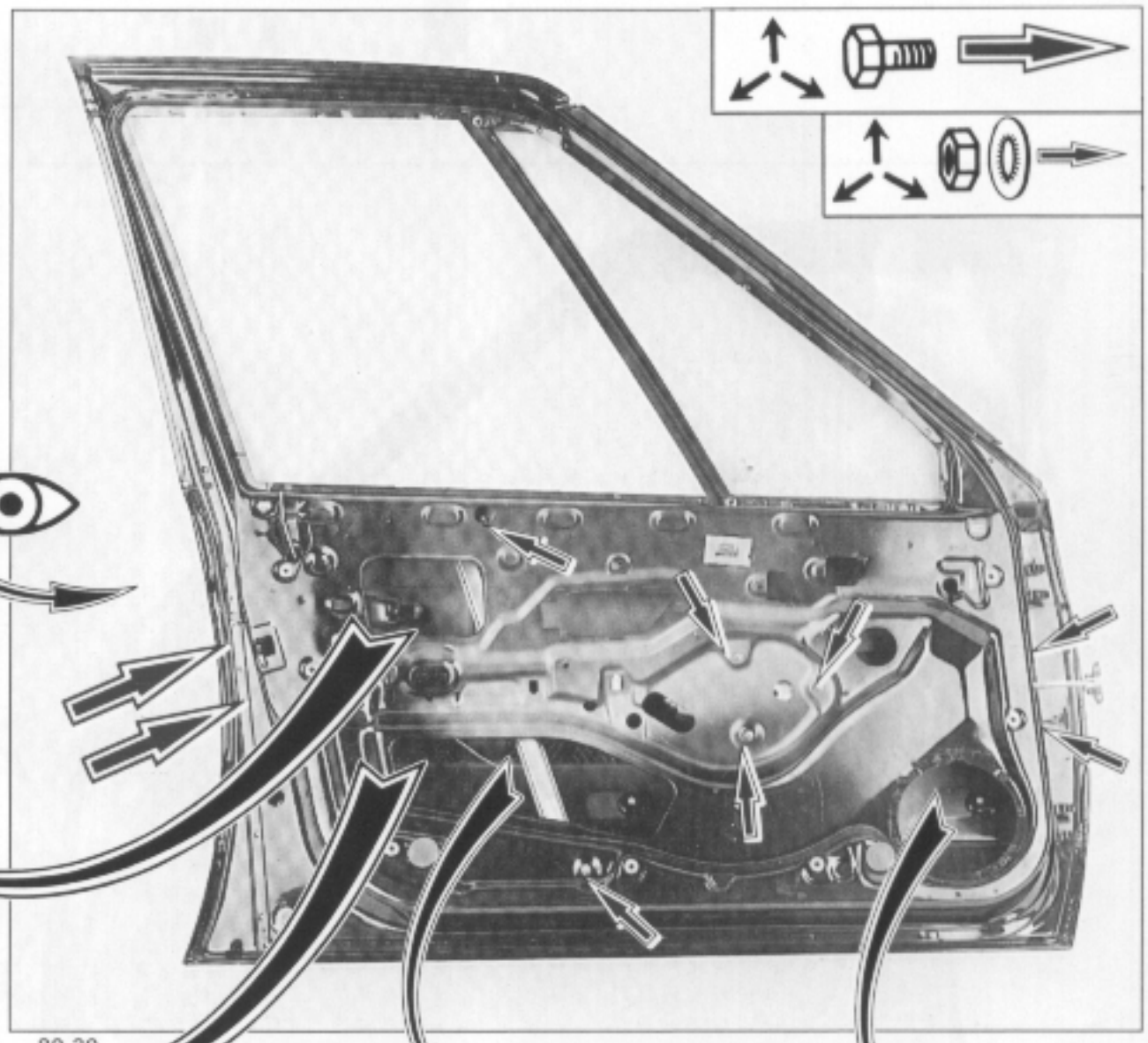


89-40

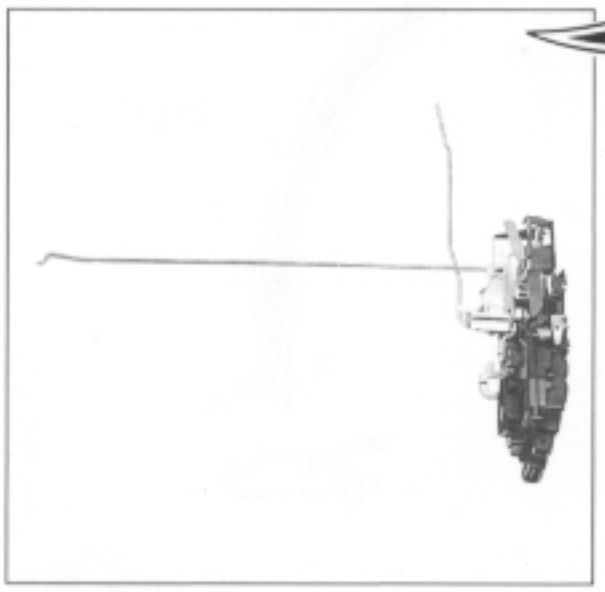
4º



89-16

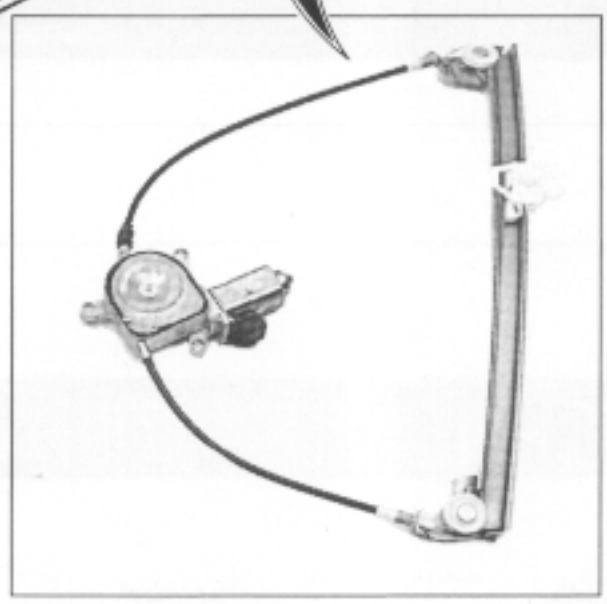


89-39



89-16

6º



89-15

5º



89-16

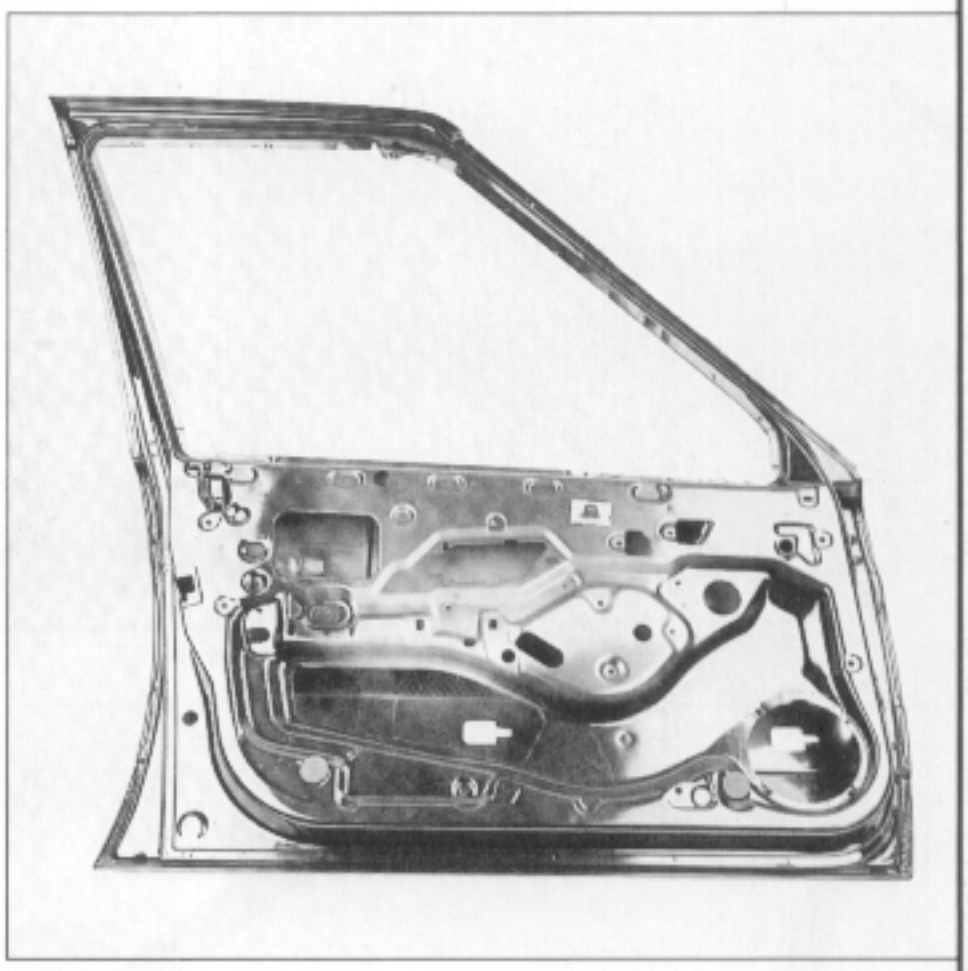
7º

89-15	89-16	89-39	89-40	89-43	89-74

www.WorkshopManuals.co.uk

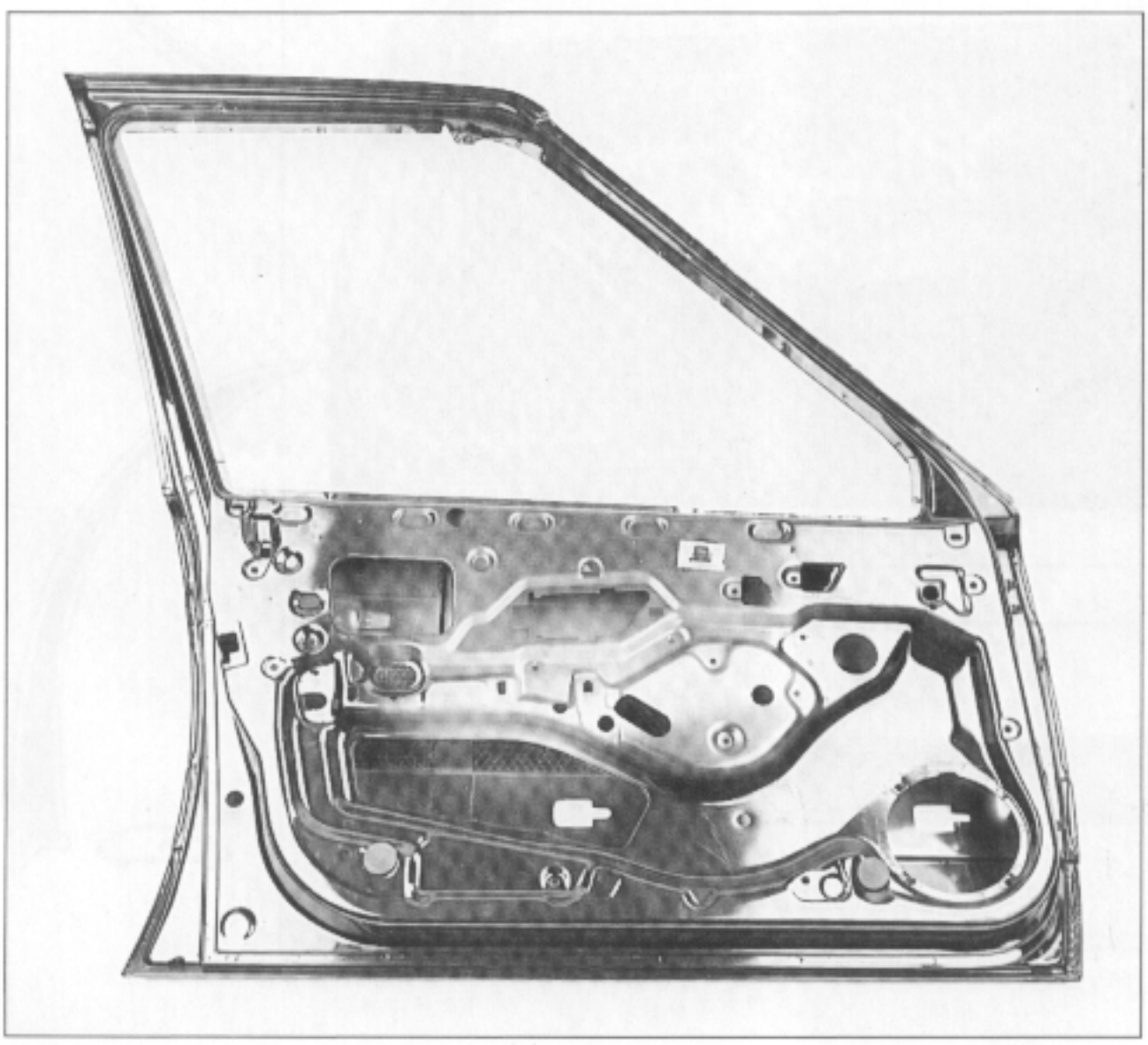


89-183



89-14

XM 800-00/3



89.14

www.WorkshopManuals.co.uk

1º 2º _ _ _ _ _ 7º

6º

5º

89-16

89-74

7º

89-43

89-40

4º

89-16

89-39

89-16

2º

89-15

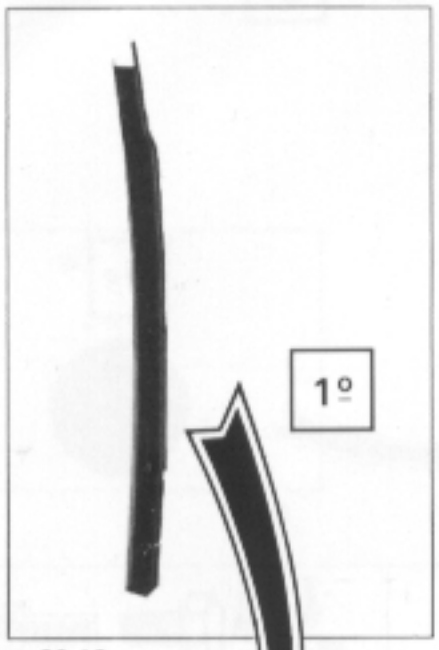
3º

89-16

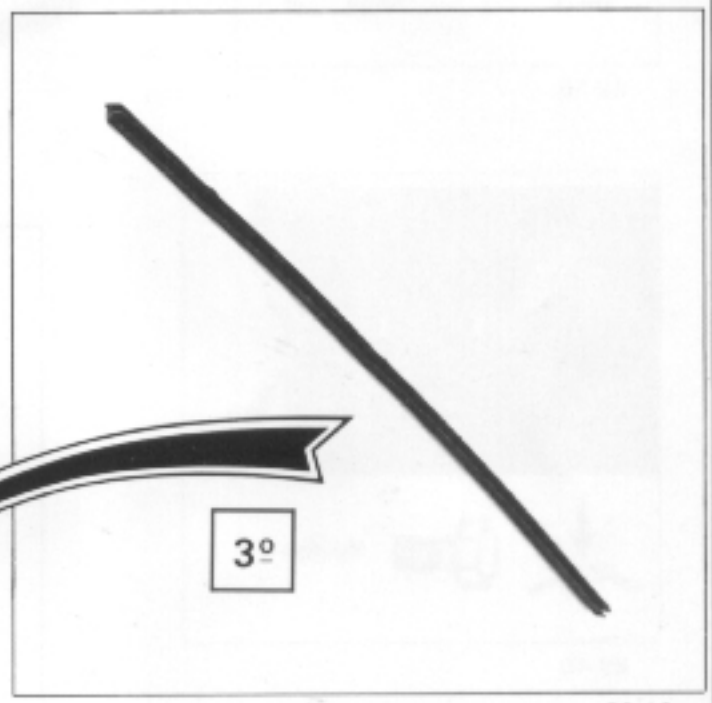
1º

www.WorkshopManuals.co.uk

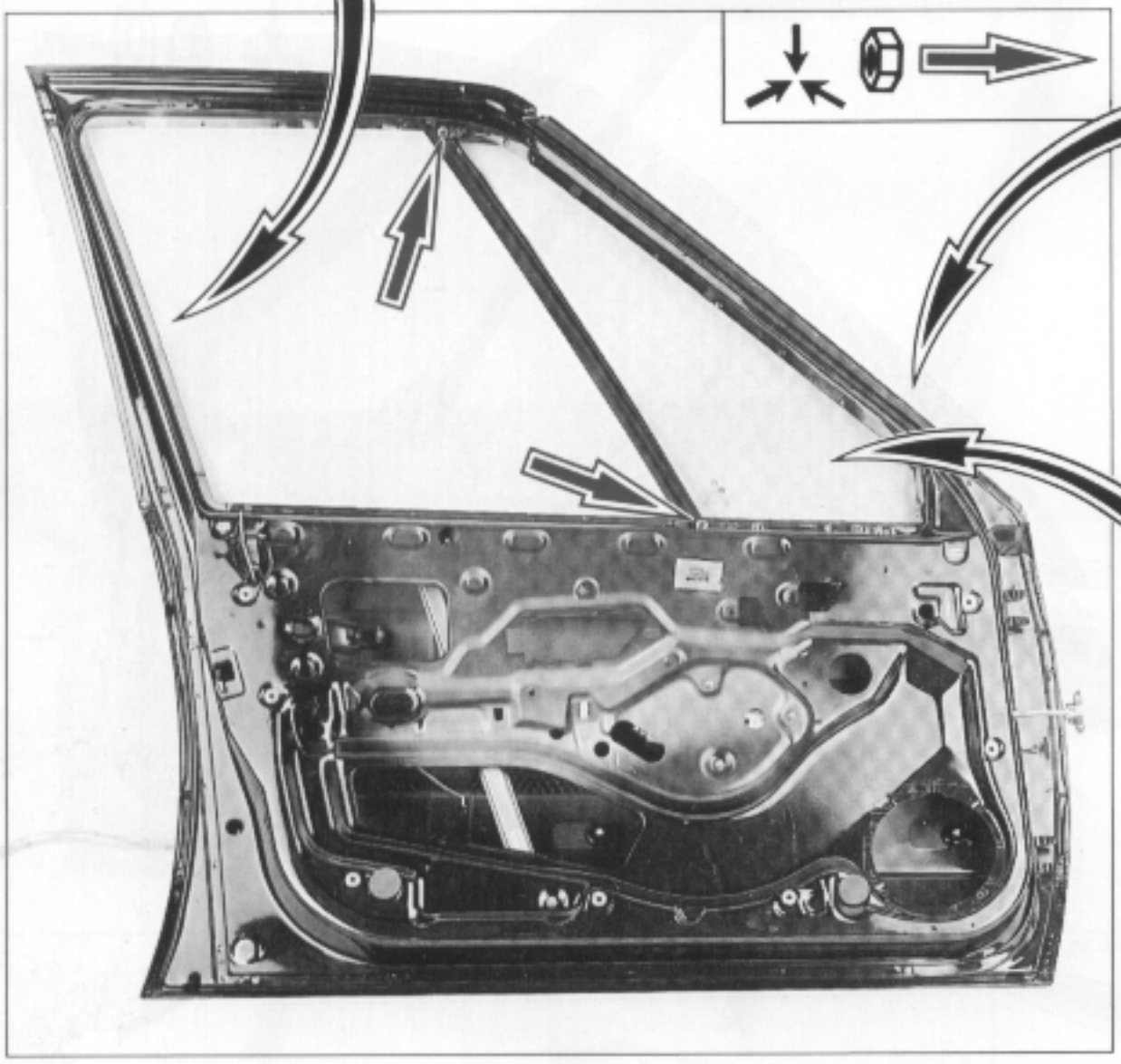
1º 2º 3º



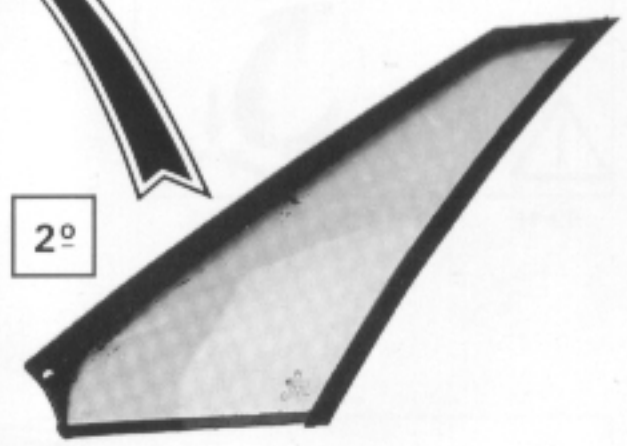
89-13



89-13



89-182



XM 842-3/2

89-20

www.WorkshopManuals.co.uk

1º 2º _ _ _ _ _ _ _ 9º

8º

89-17

7º

89-13

5º

89-13

6º

N.B. p. 17

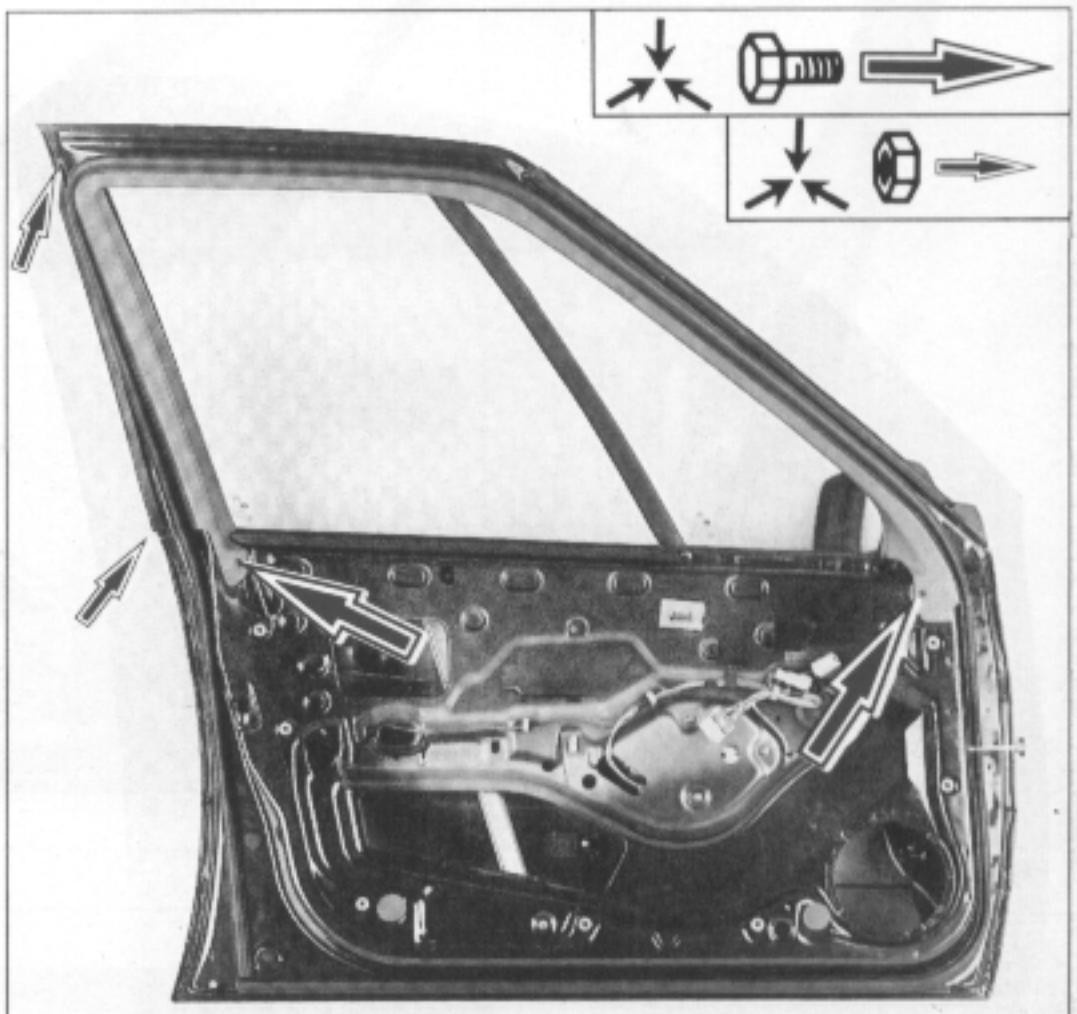
89-17

4º

89-13

3º

89-13



89-61

9º

89-15

2º

N.B. p. 18

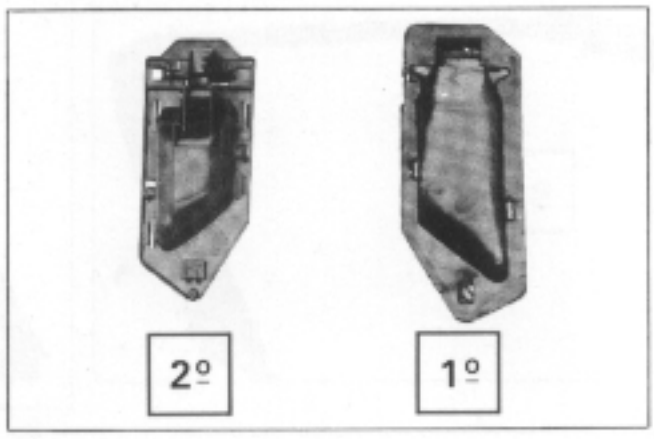
89-20

1º

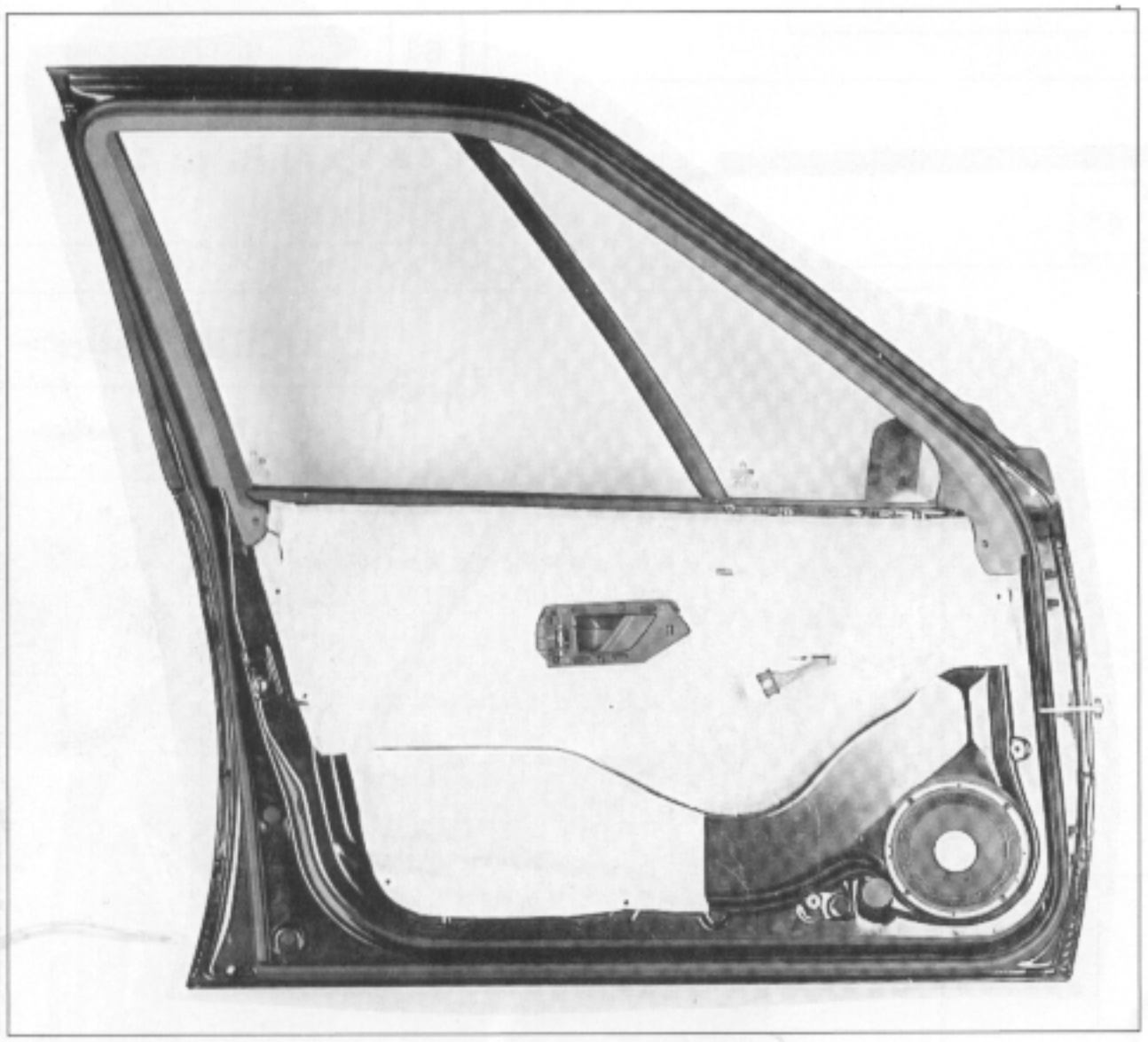
89-15

www.WorkshopManuals.co.uk

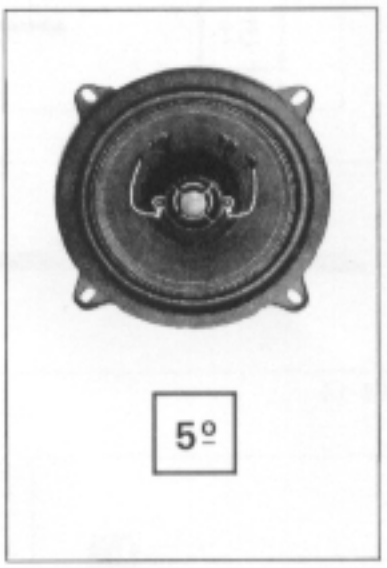
1º 2º 3º 4º 5º



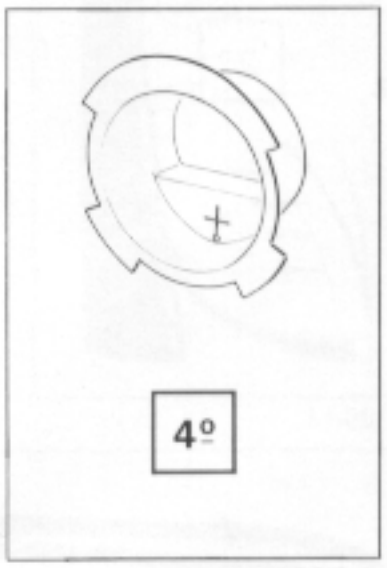
89-16



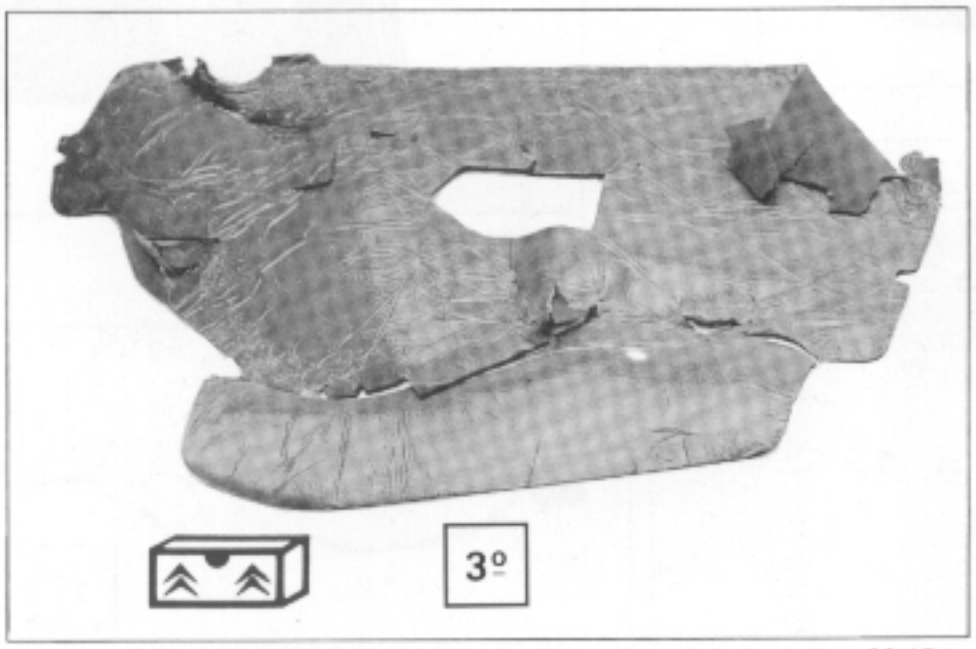
89-62



89-684



Y.96-7



89-15

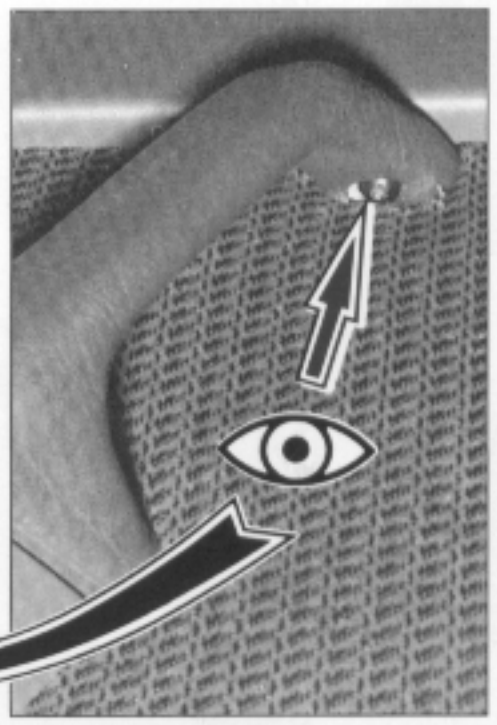
www.WorkshopManuals.co.uk



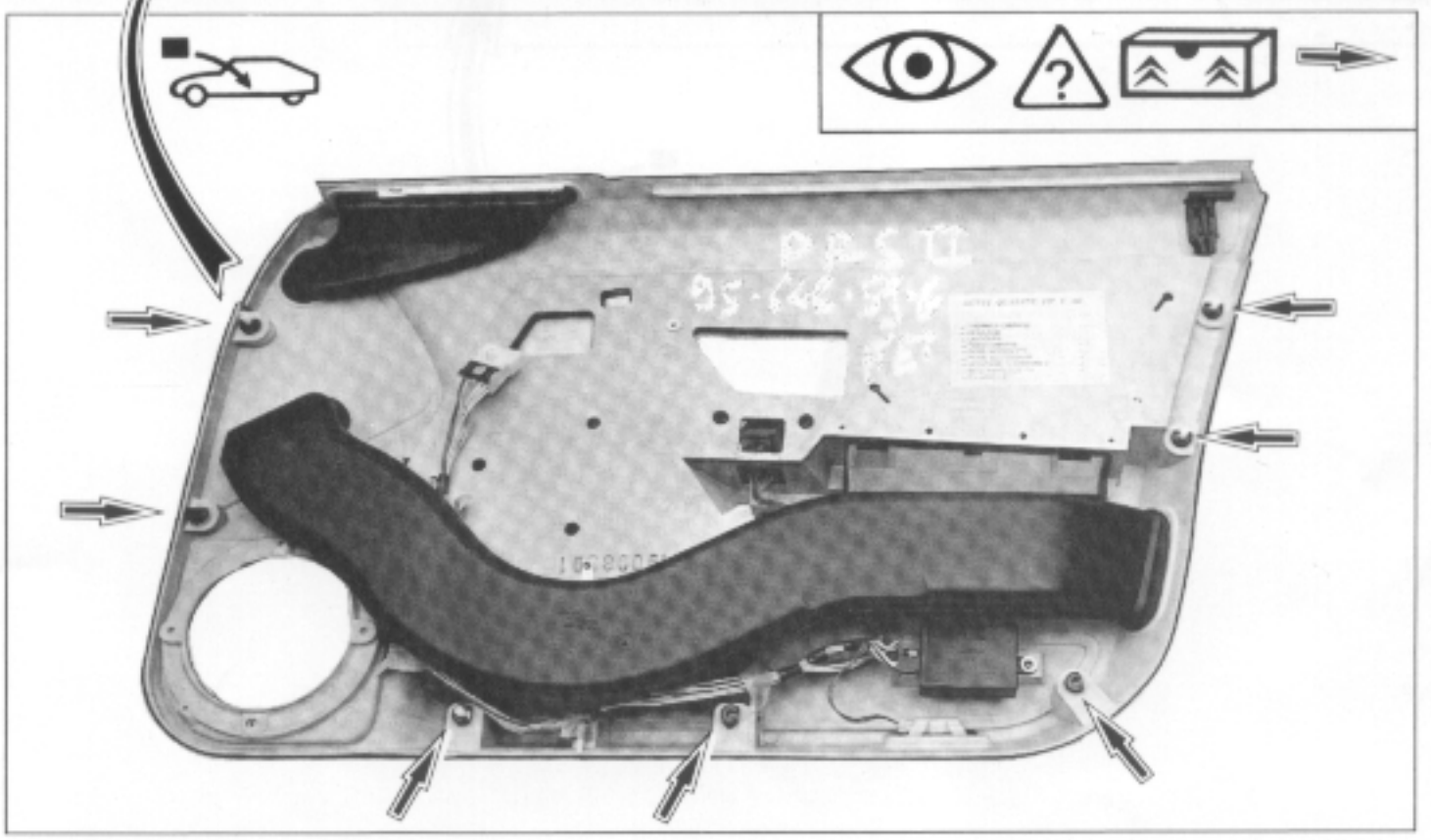
89-65



89.683



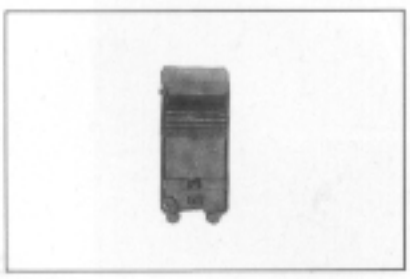
89.66



89-17

89-17	89-65	89-66	89-683

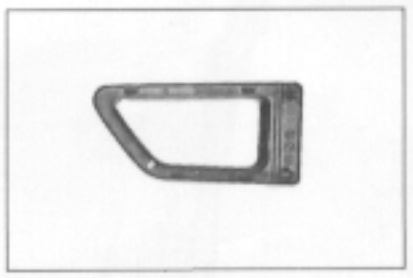
www.WorkshopManuals.co.uk



89-684



89-63

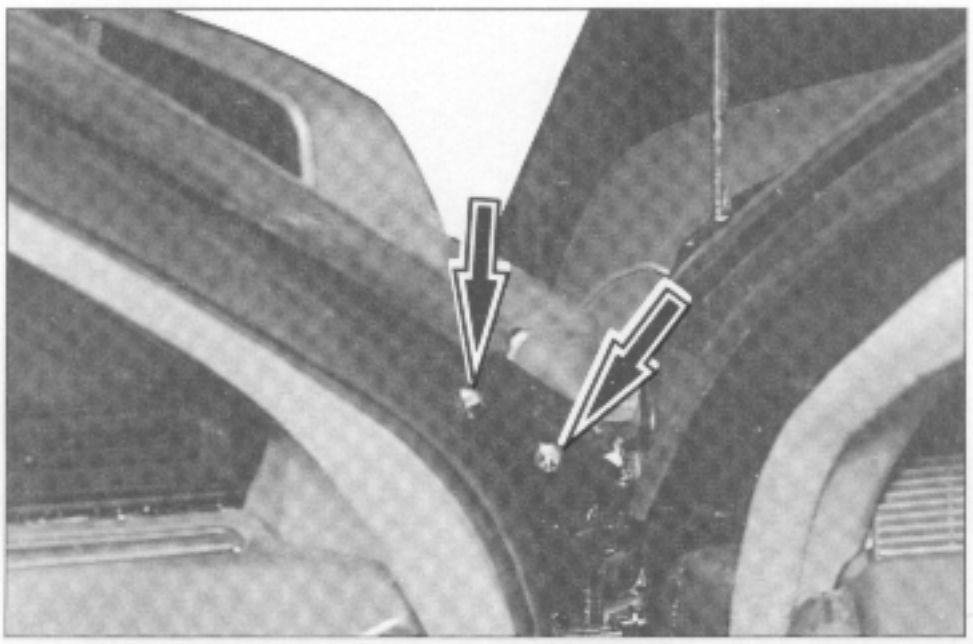


89-16

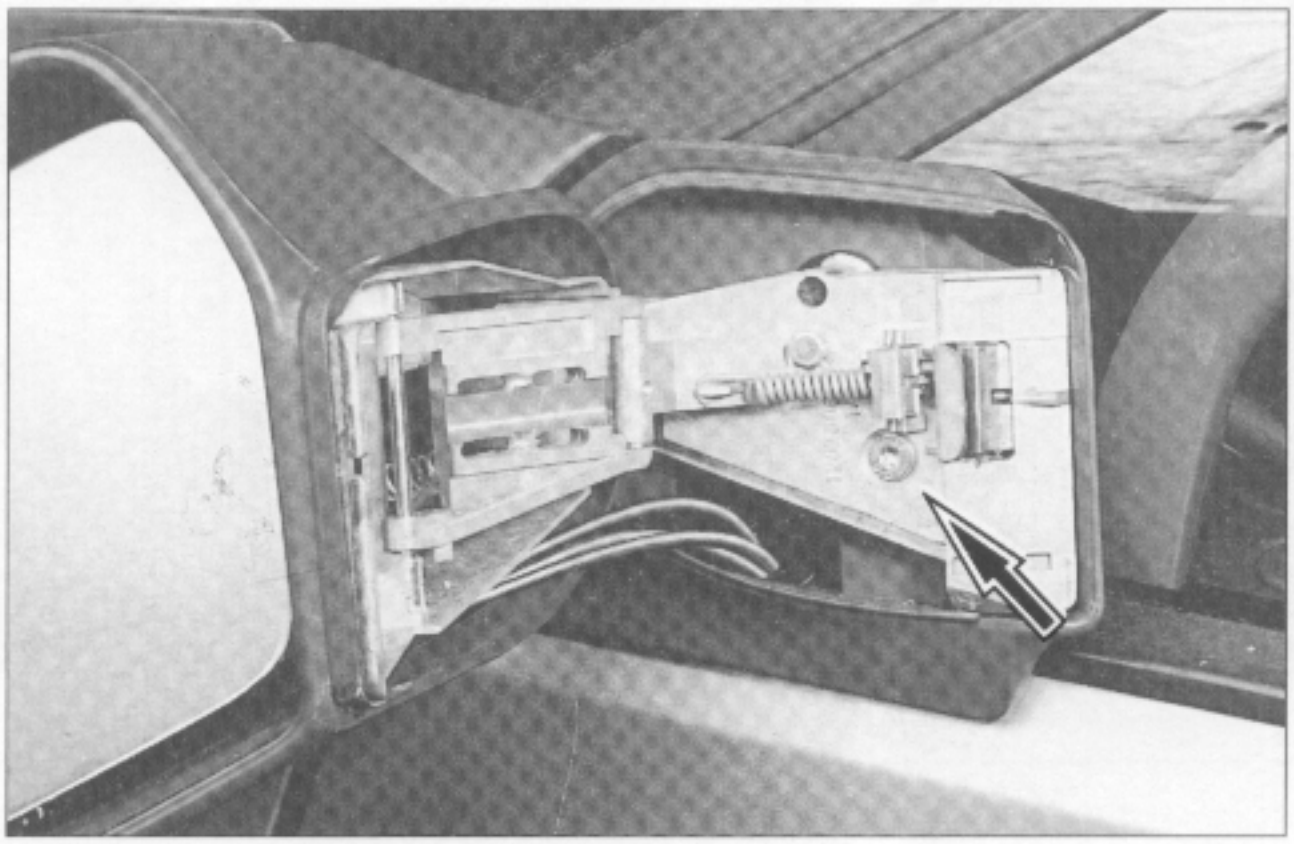
89-17

www.WorkshopManuals.co.uk

N.B.



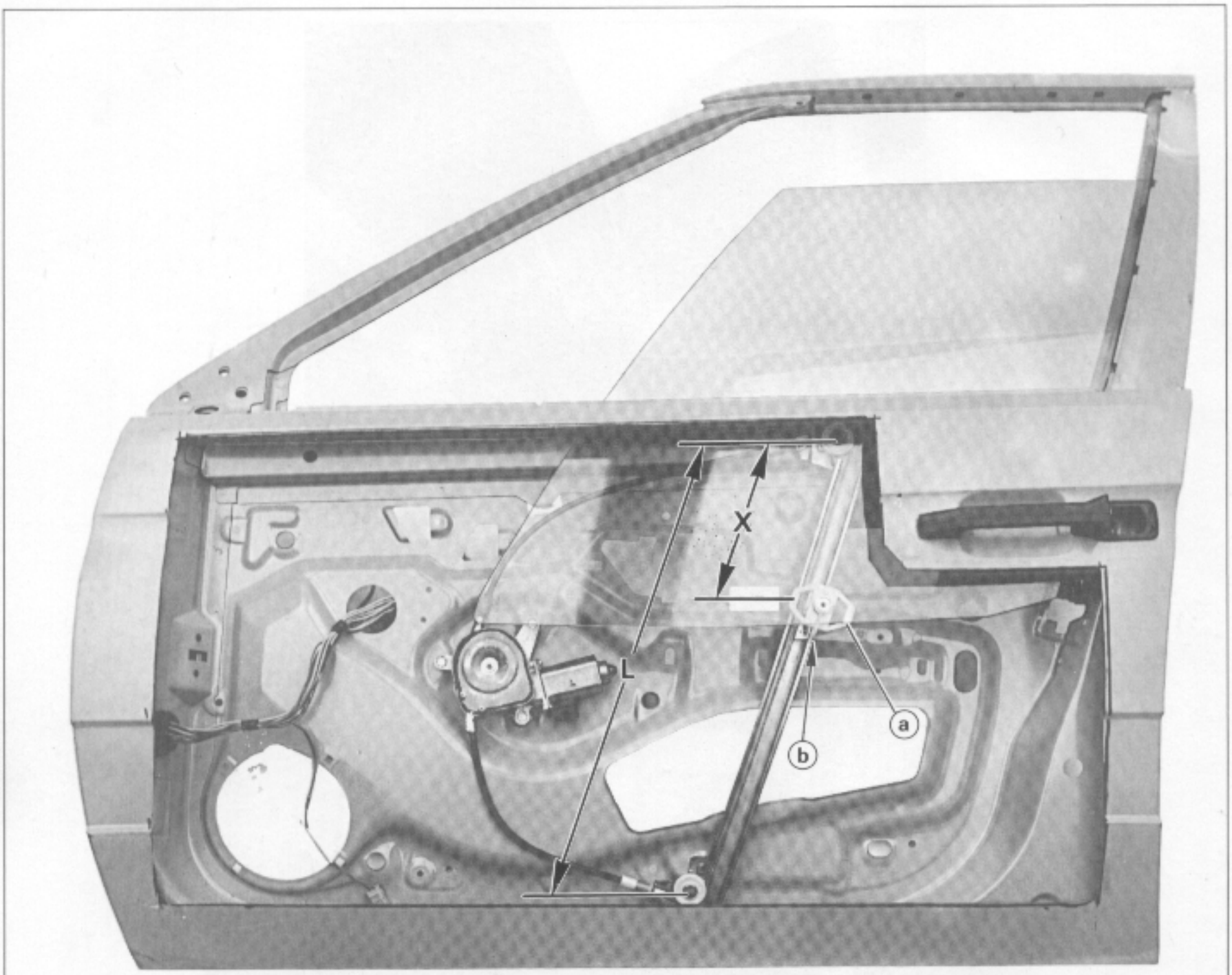
89-71



89.705

www.WorkshopManuals.co.uk

NOTE



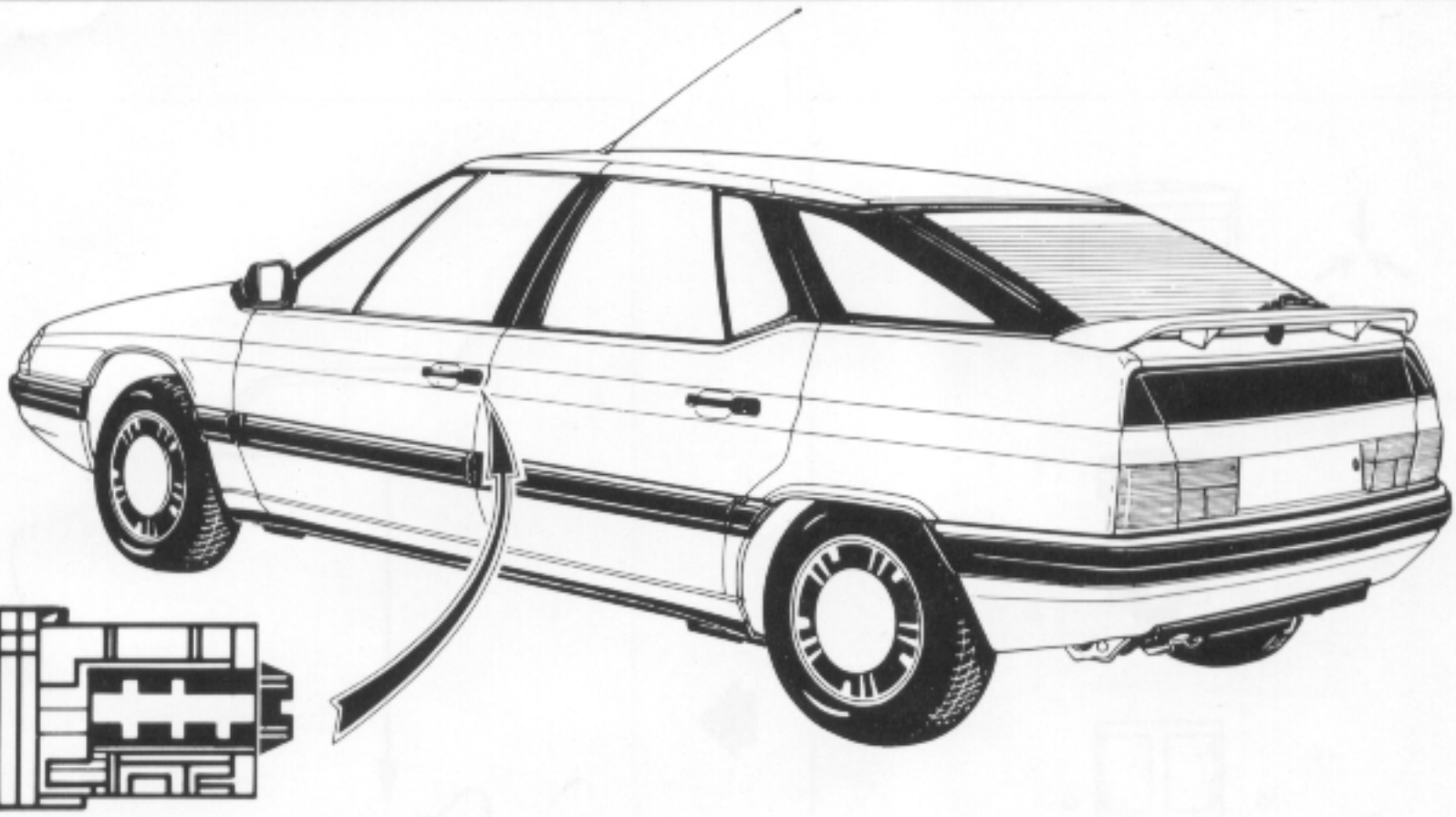
89-18

NOTE : This exploded view is not representative of the order in which the parts have to be either removed or refitted when dismantling or re-assembling a door.

To remove or refit a front door sliding glass, slide control (a) must be placed at a dimension **X** of between 1/3 and 1/2 of **L.**

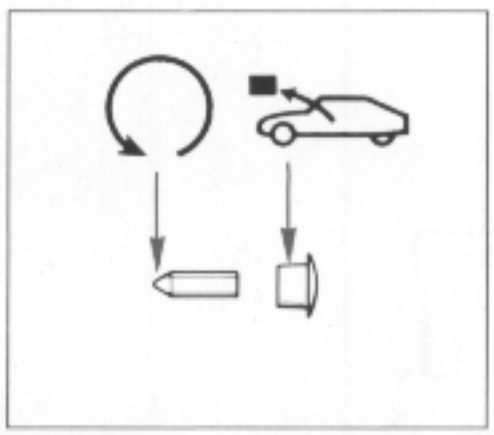
The glass can be released from the slider control by pulling downwards the lug (b) attached to the retaining clip. **The lug should never be cut out.**

www.WorkshopManuals.co.uk

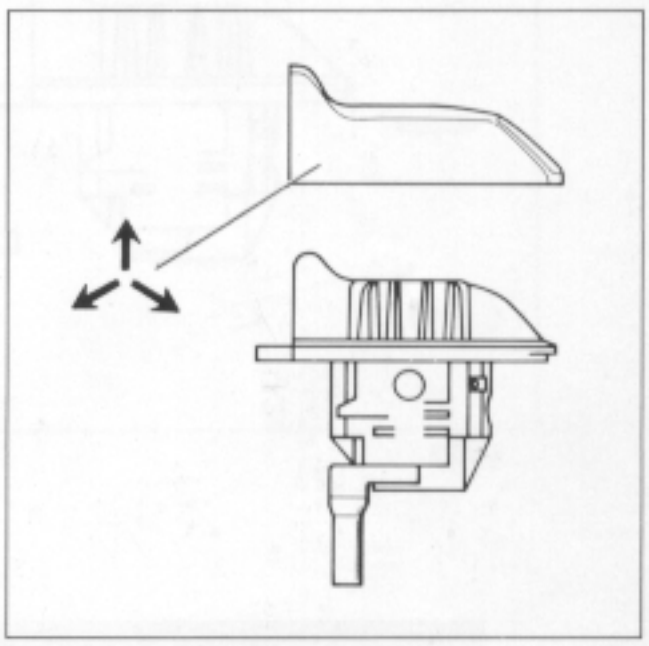




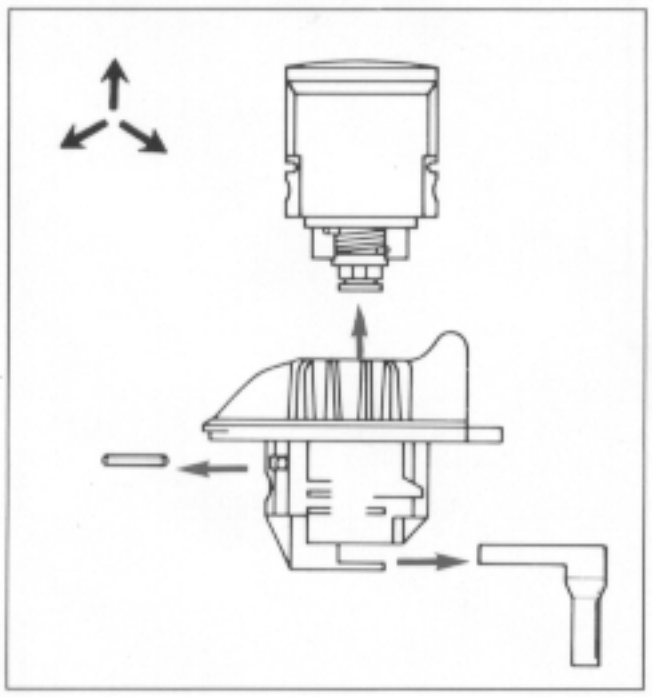
89-74



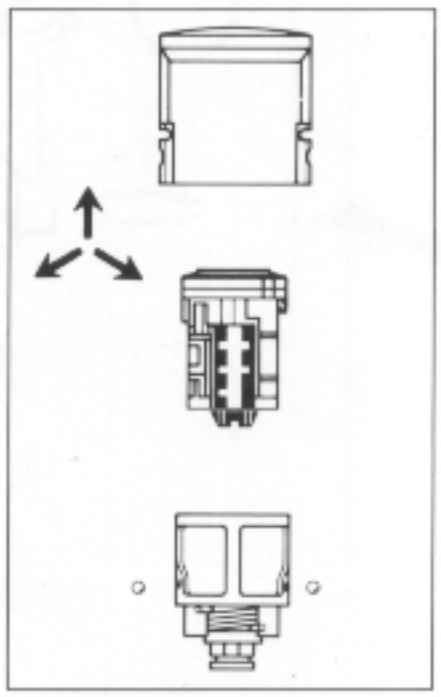
Y.86-2



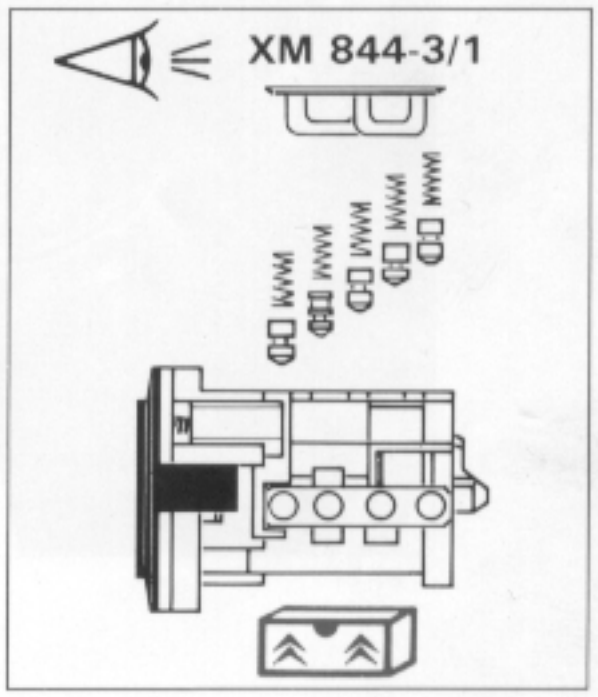
Y.86-2



Y.86-2

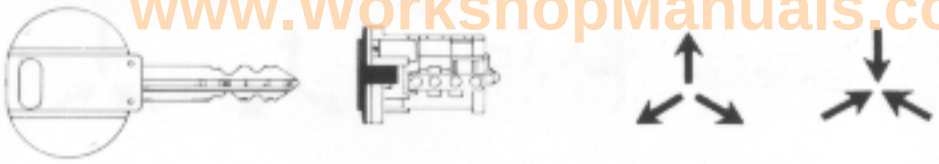


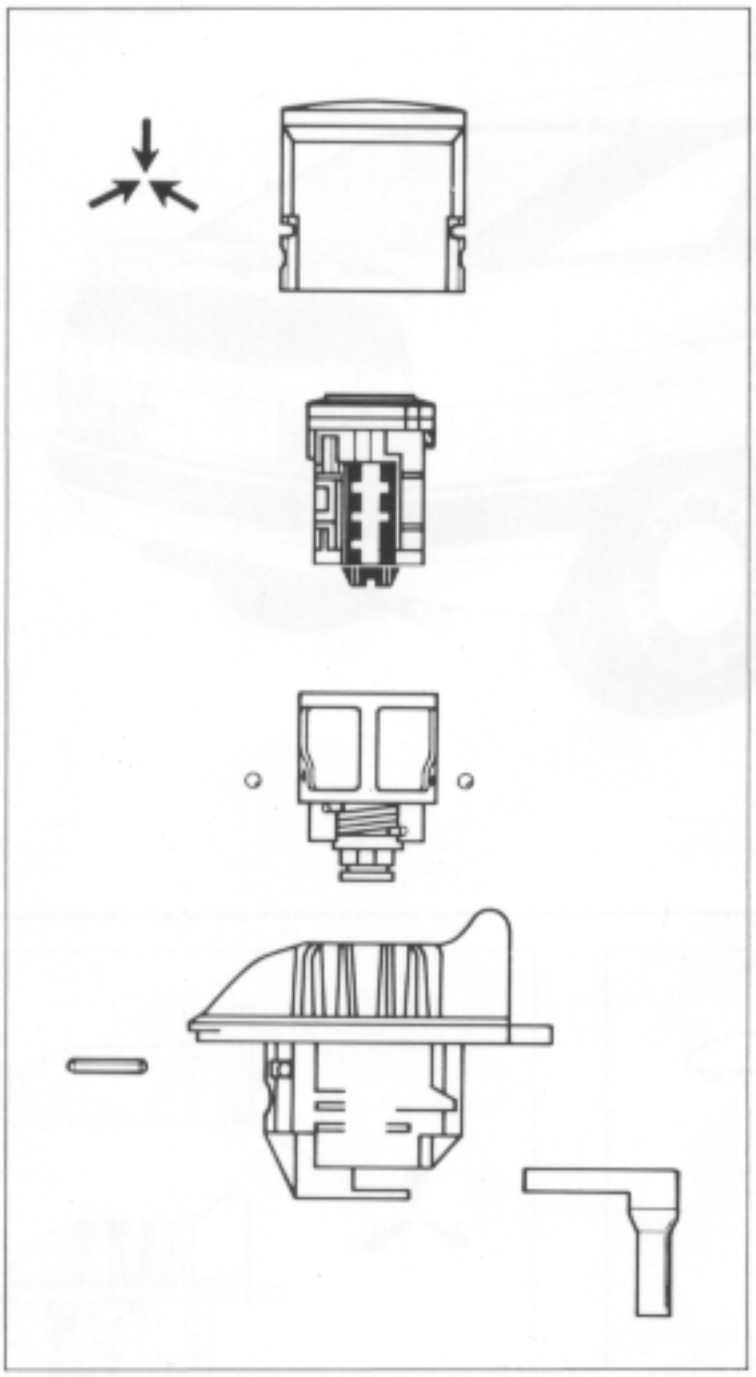
Y.86-2



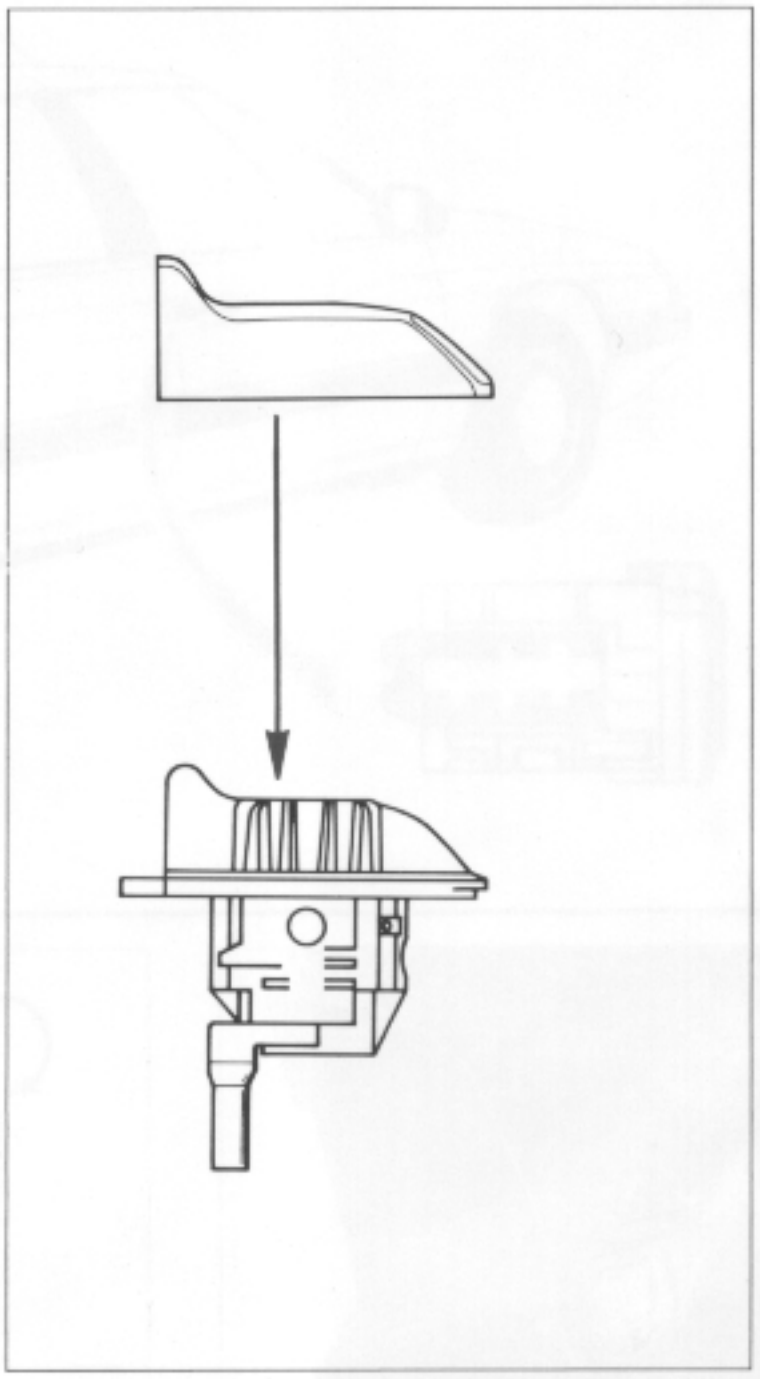
Y.86-1

www.WorkshopManuals.co.uk

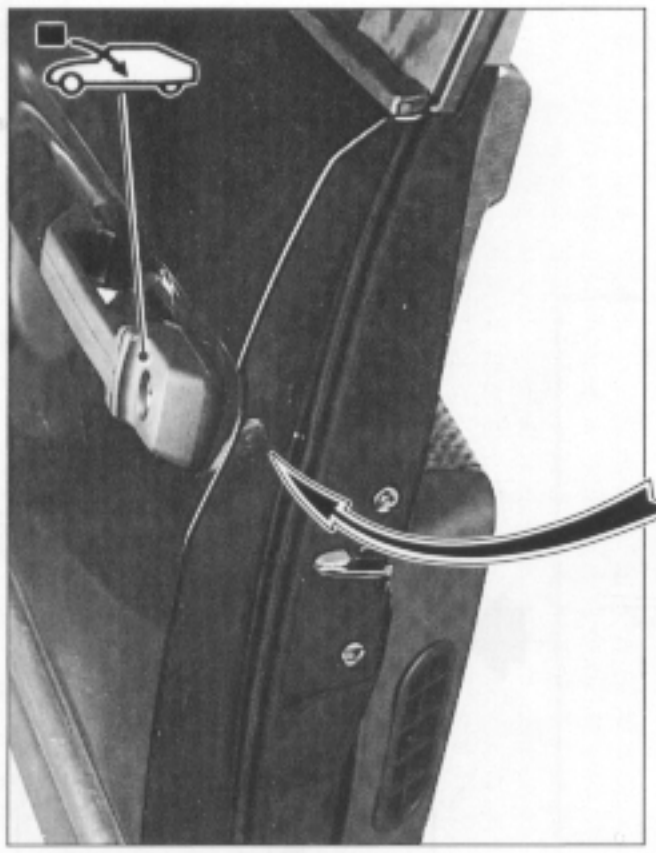




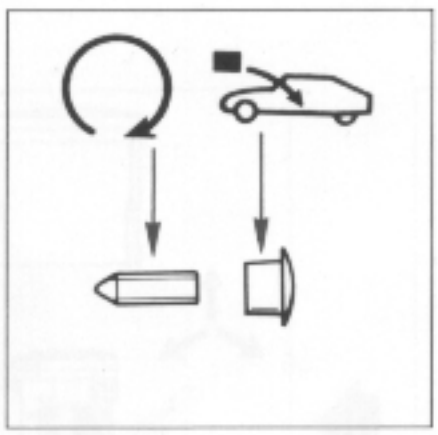
Y.86-2



Y.86-2



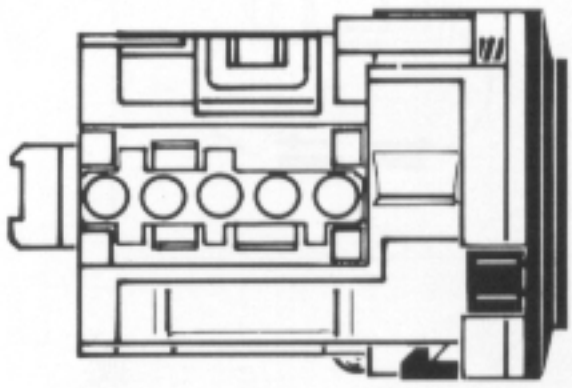
89-74

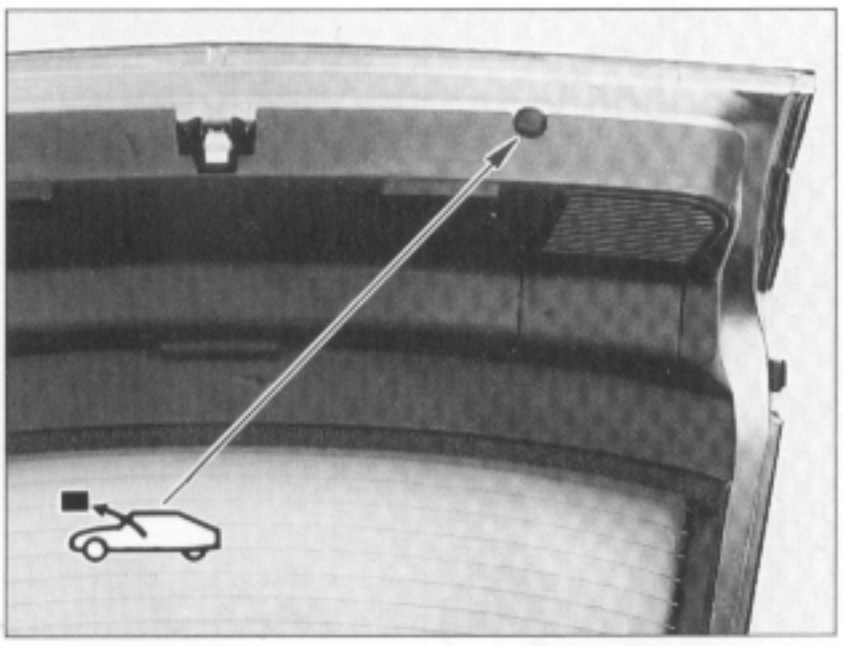


Y.86-2

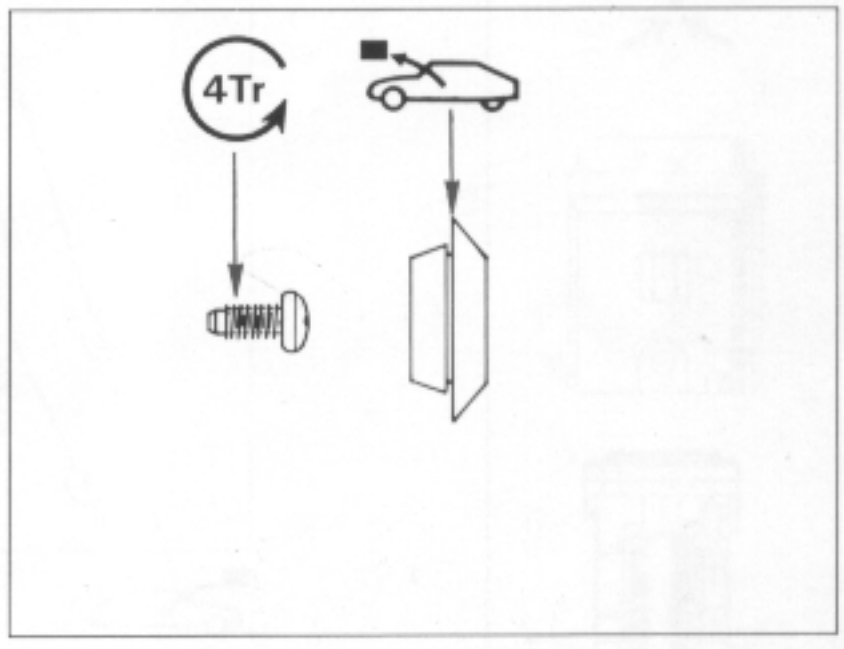
www.WorkshopManuals.co.uk





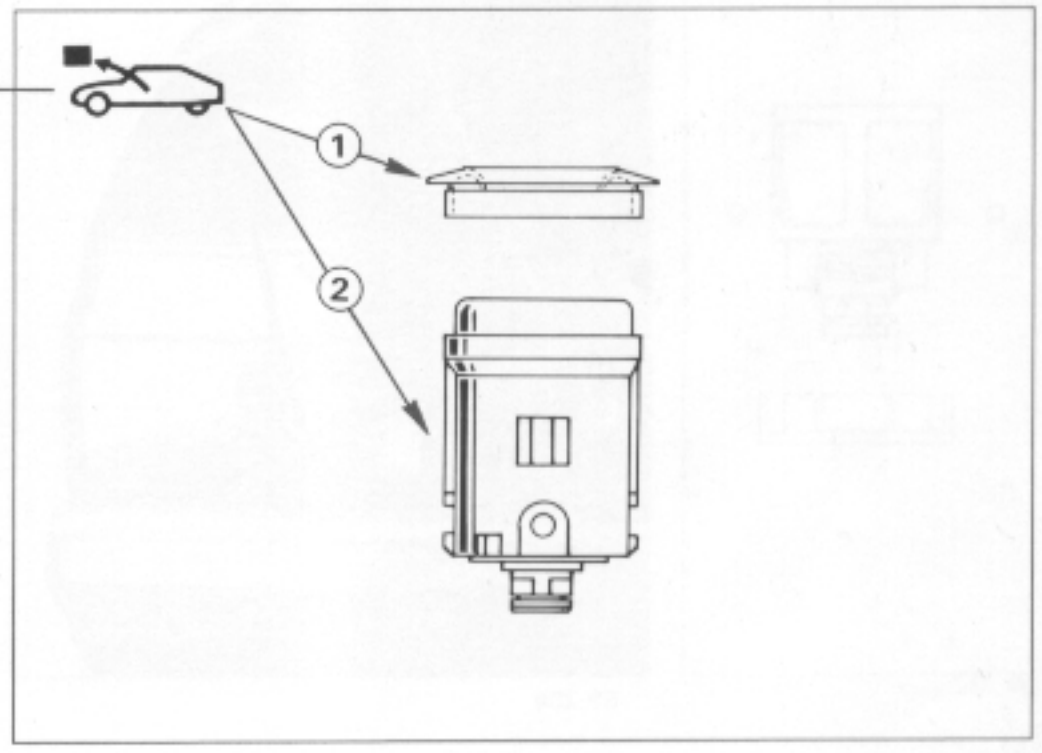


88-933

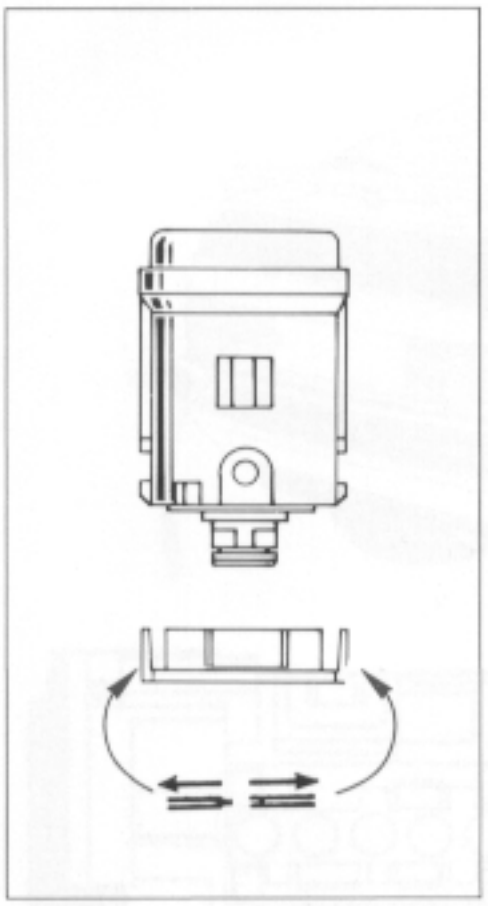




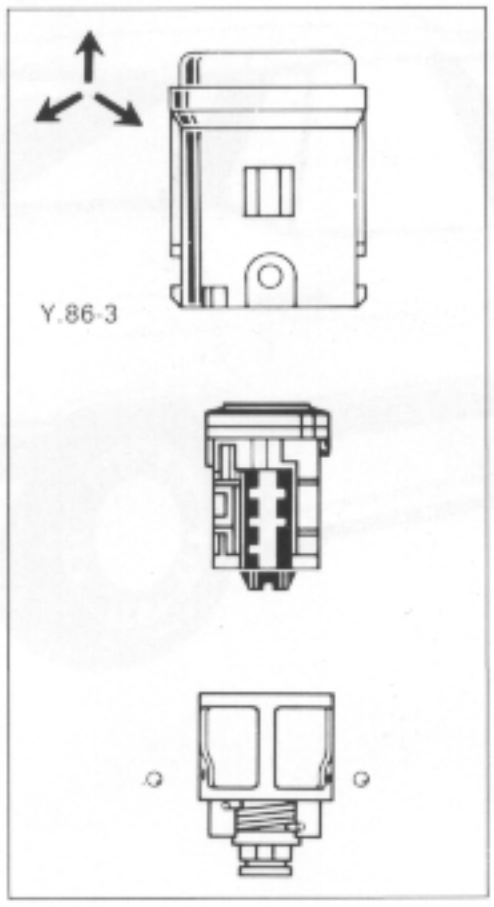
89-296



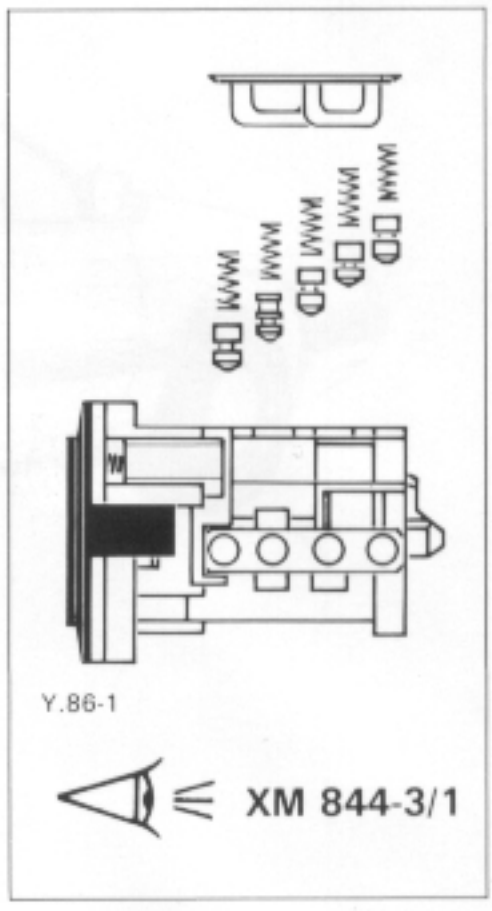
www.WorkshopManuals.co.uk

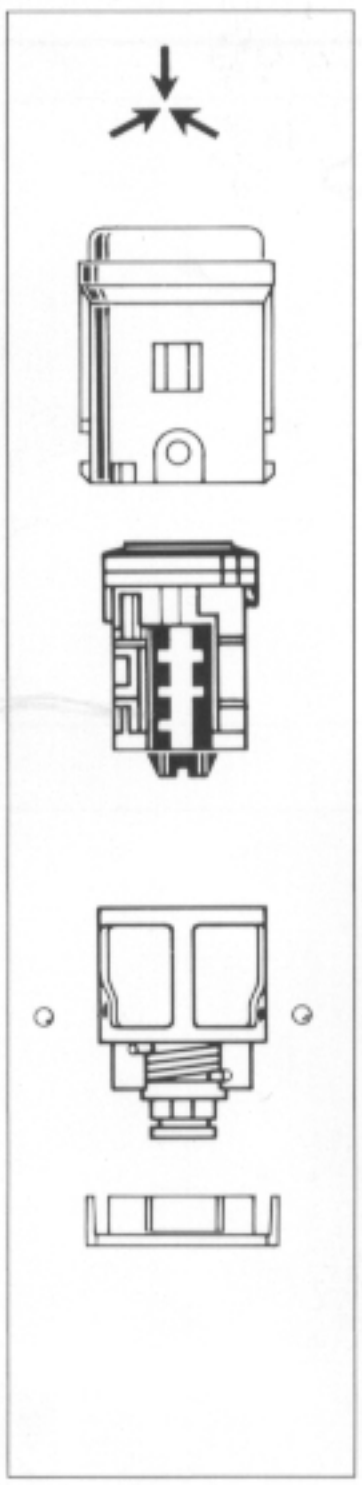


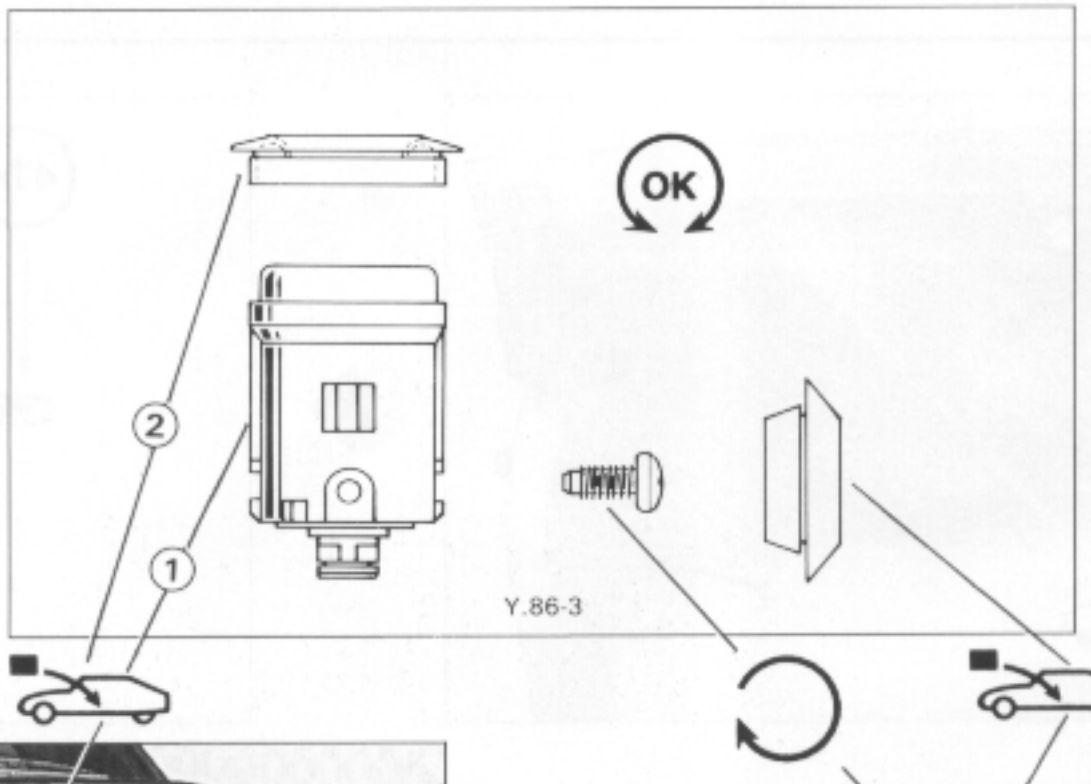
Y.86-3



Y.86-2

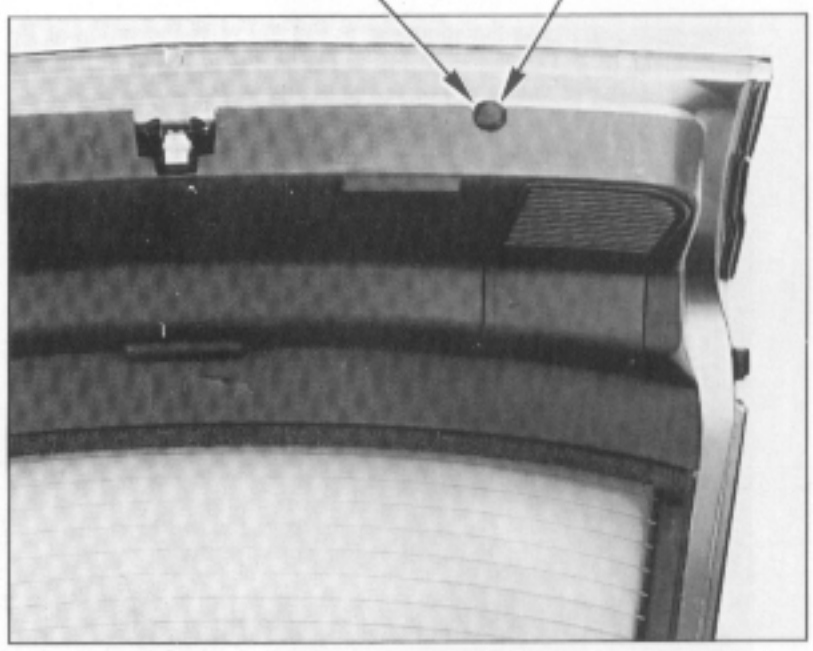






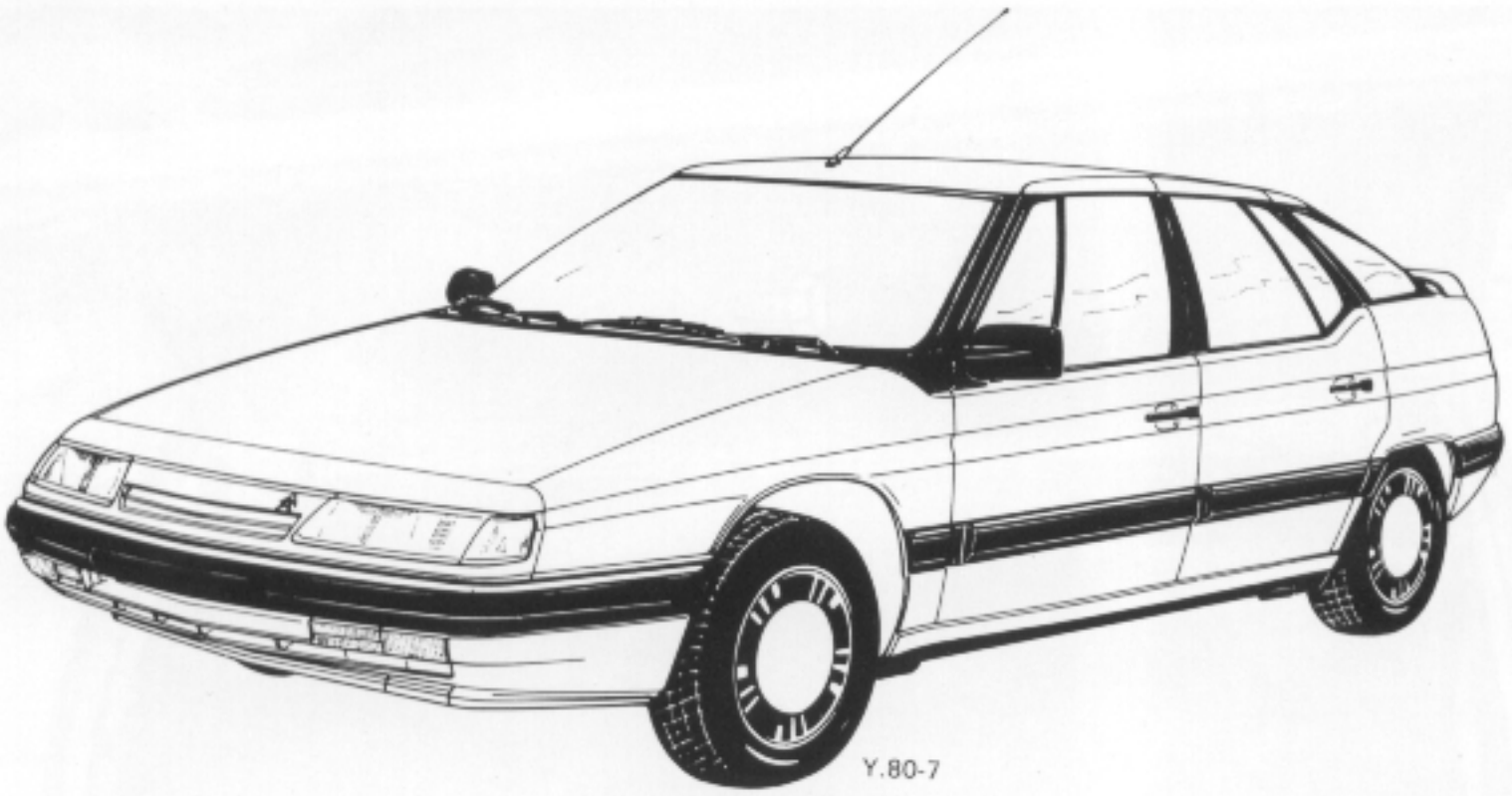


89-296

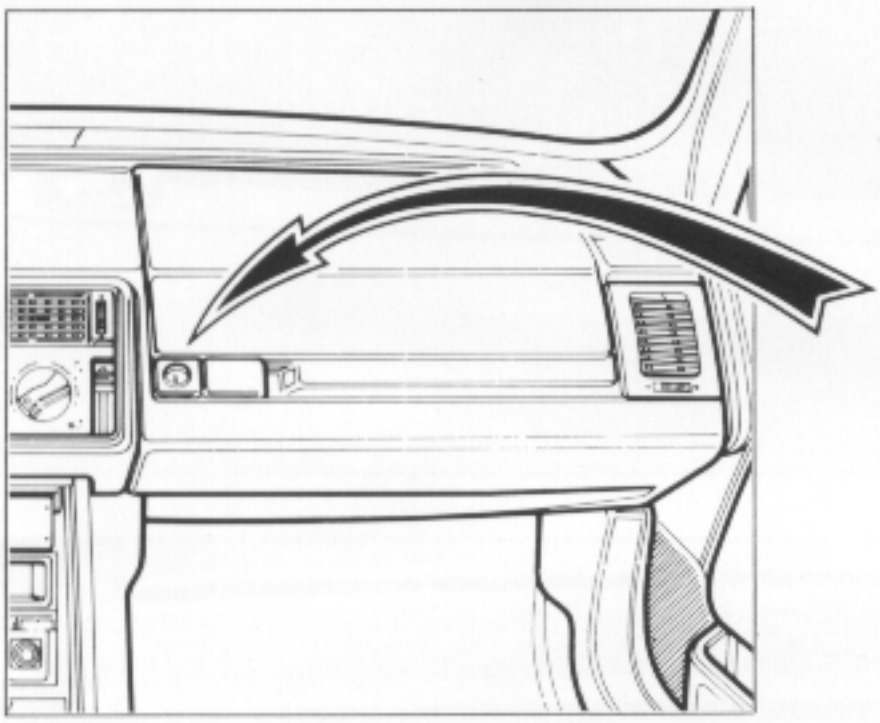


89-933

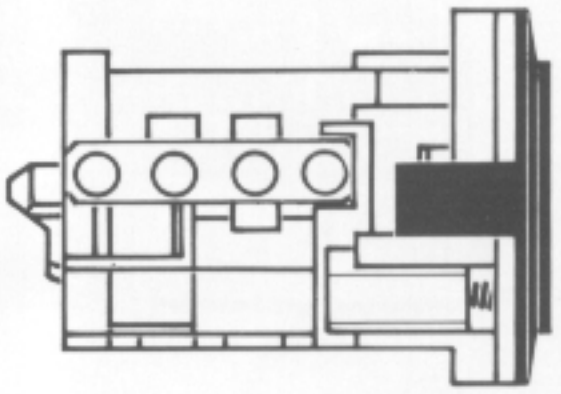
www.WorkshopManuals.co.uk



Y.80-7



Y.95-3

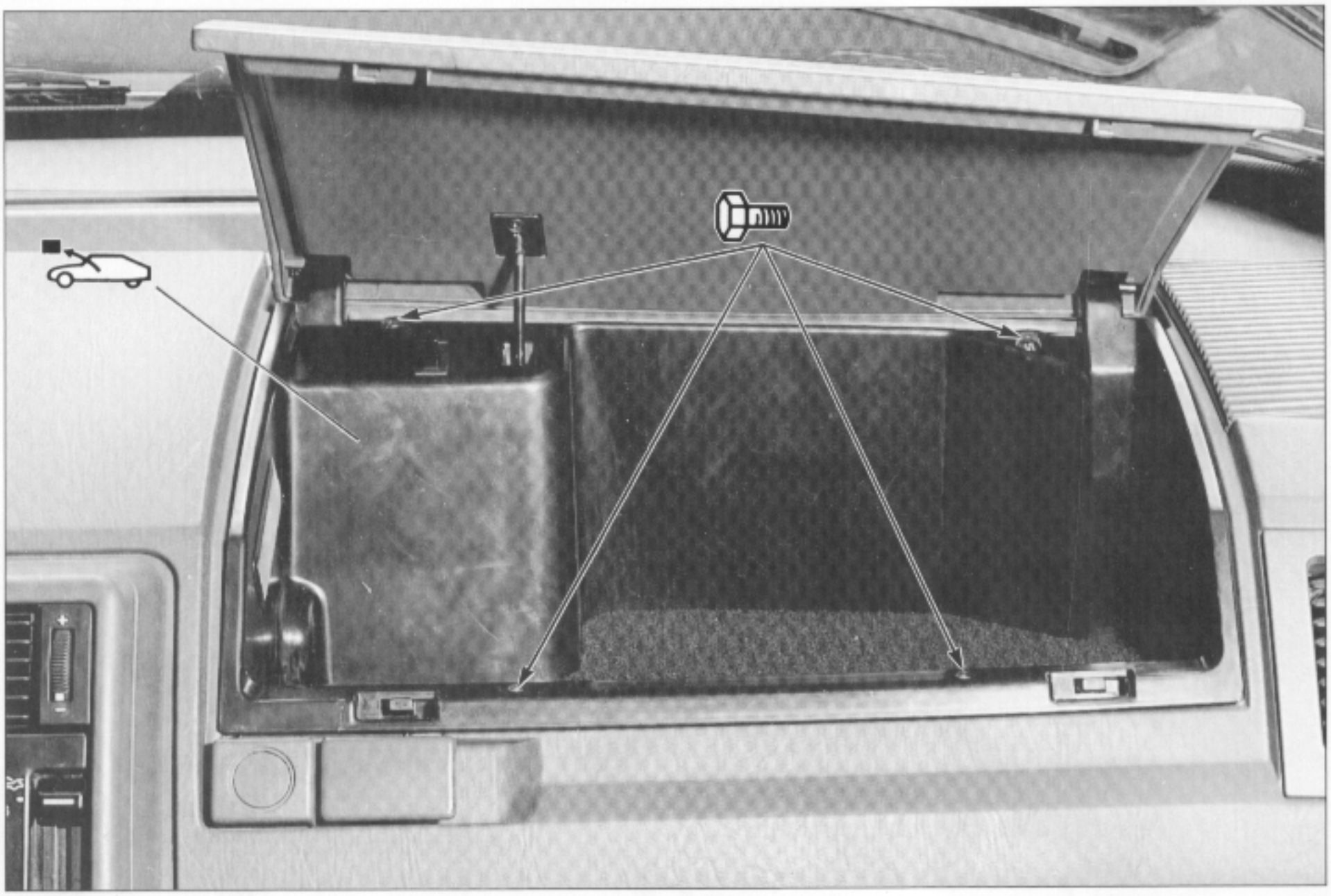


Y.86-1

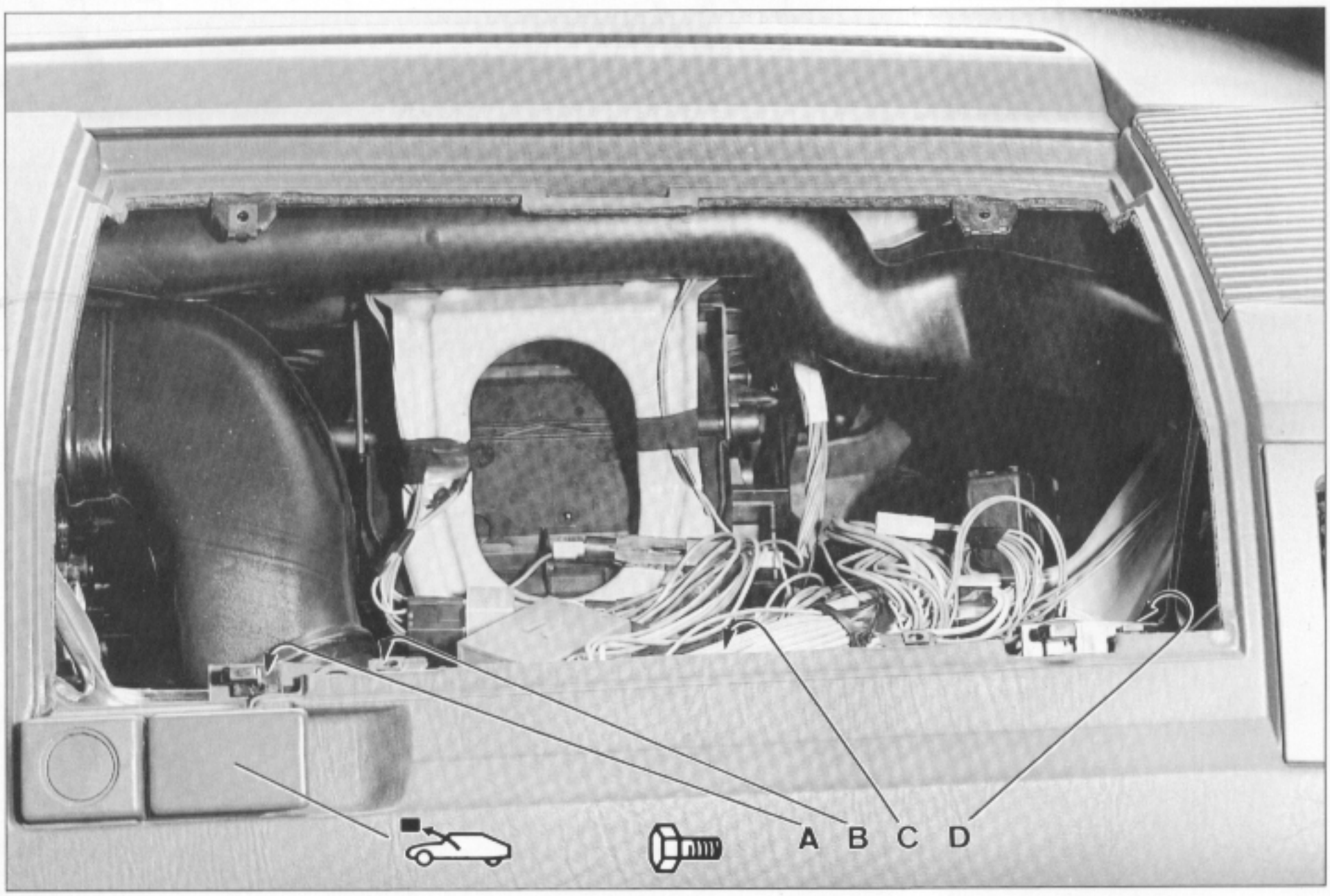


89-465

www.WorkshopManuals.co.uk

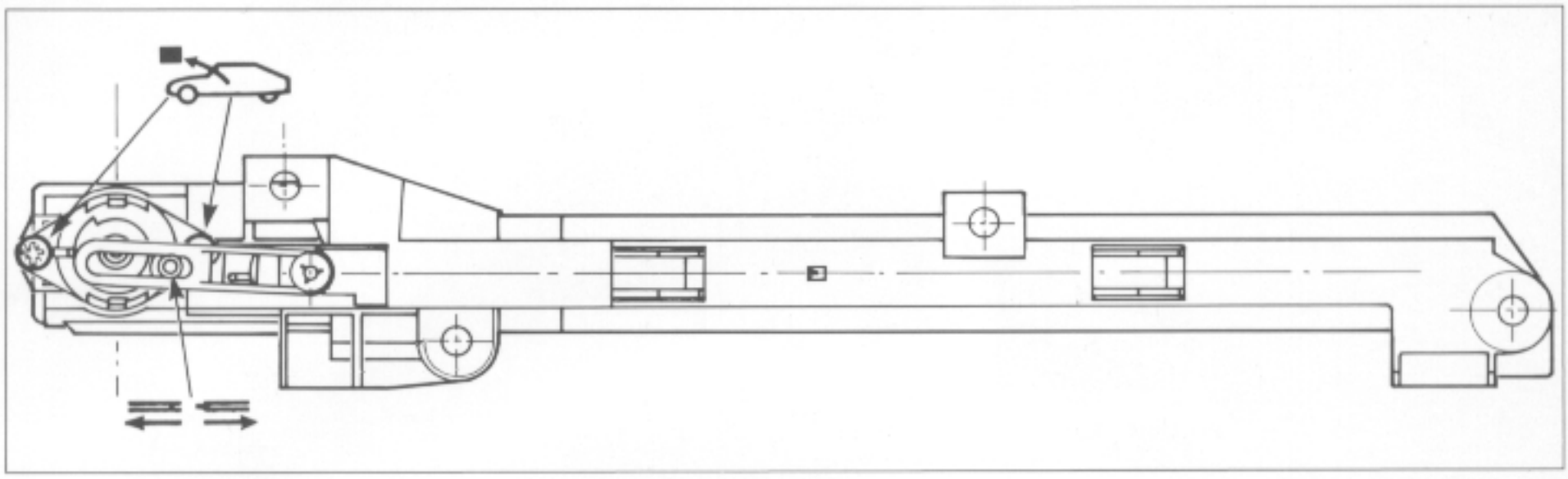


89-669

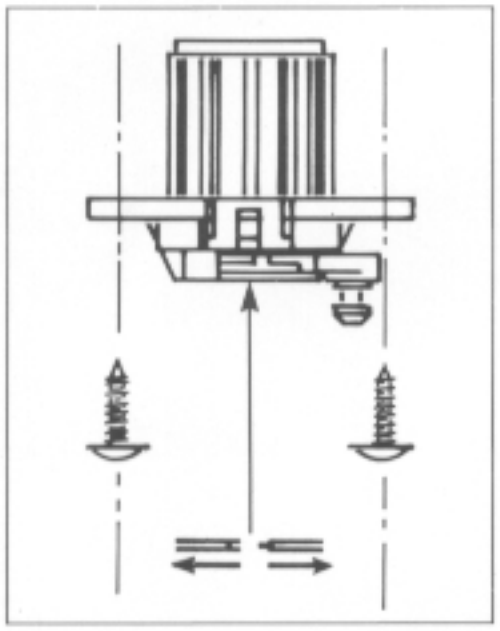


89-667

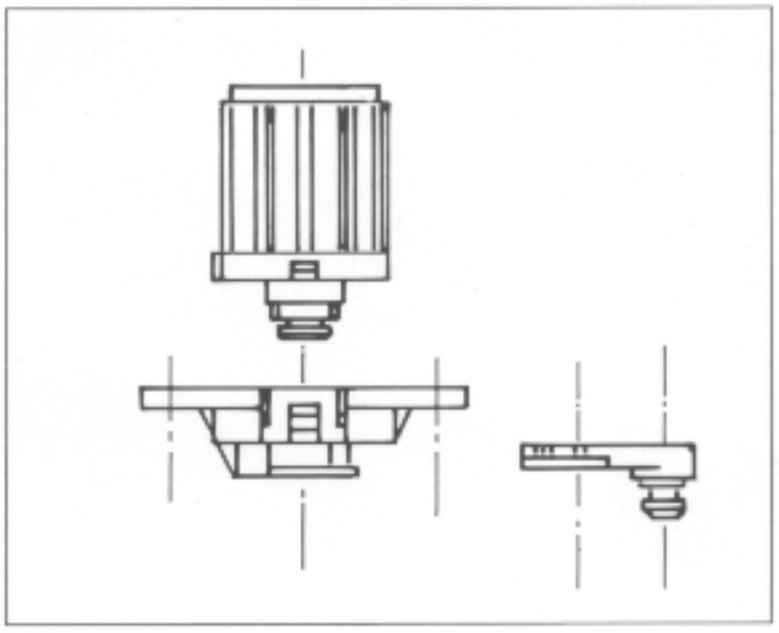
www.WorkshopManuals.co.uk



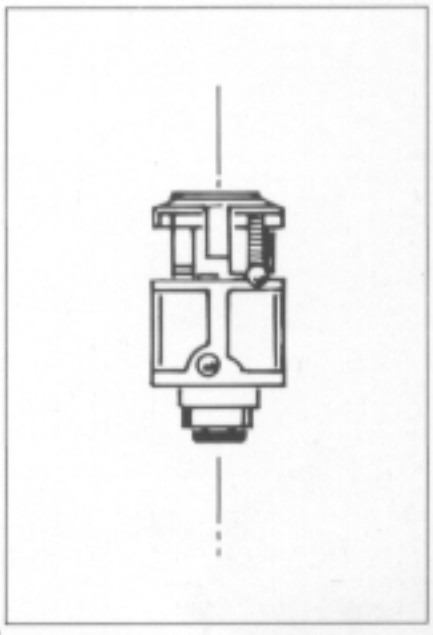
Y.95-2



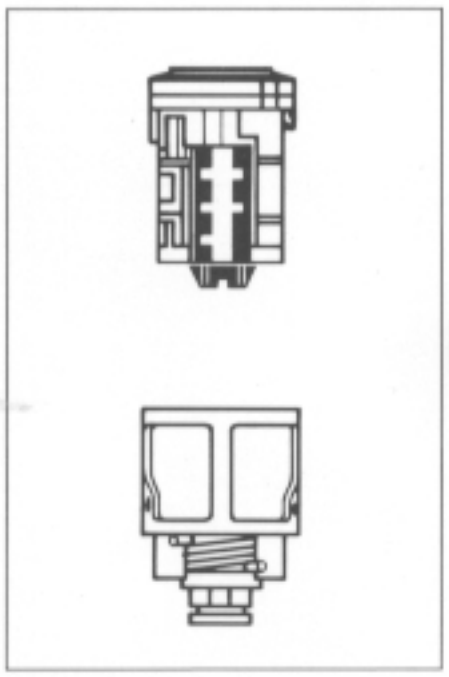
Y-95-2



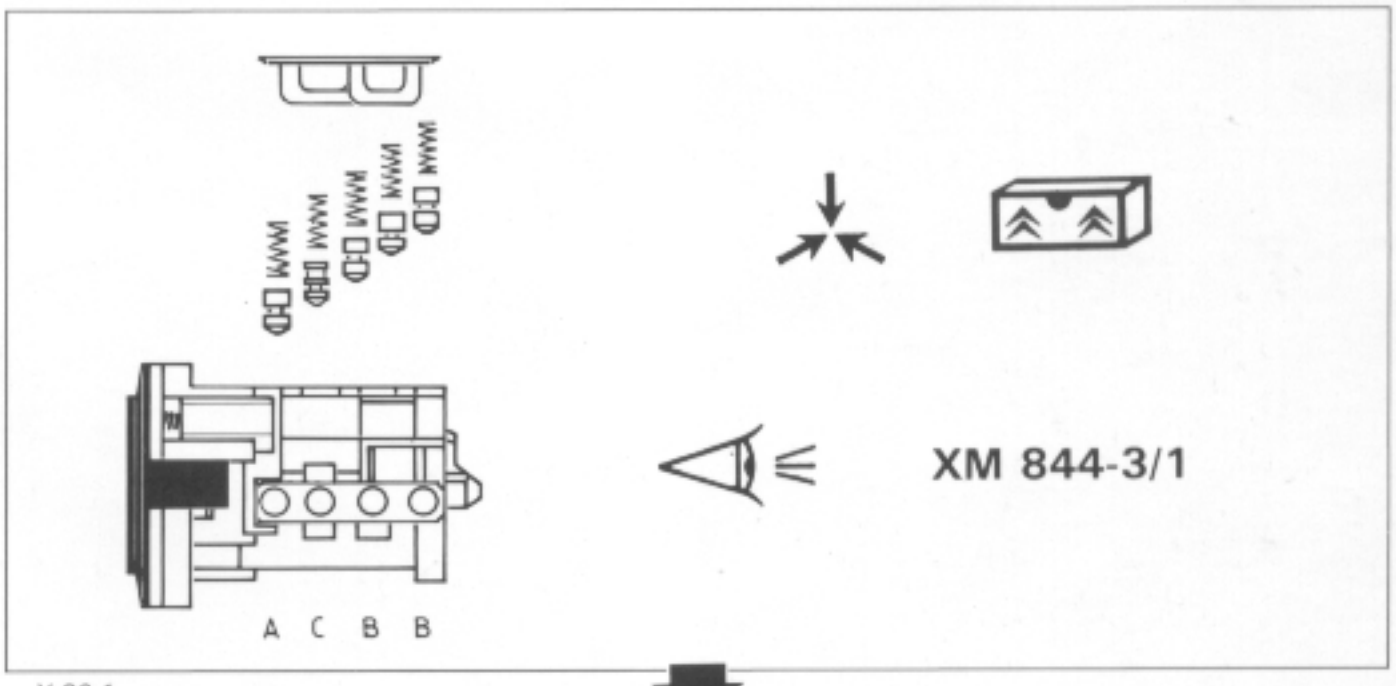
Y.95-2



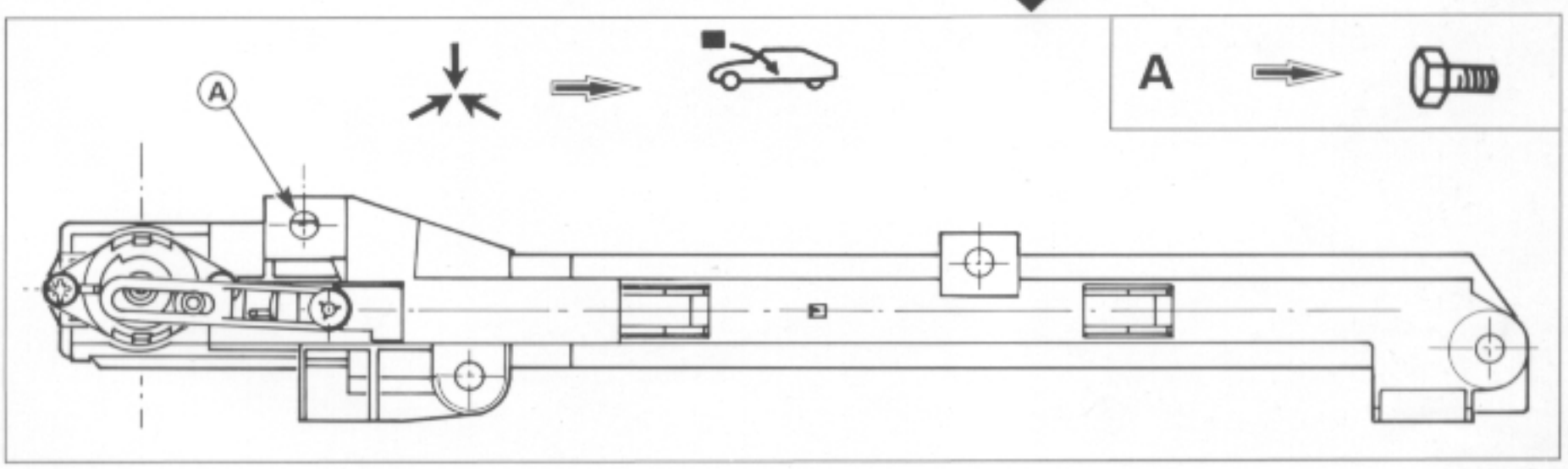
Y.95-2



Y.86-2

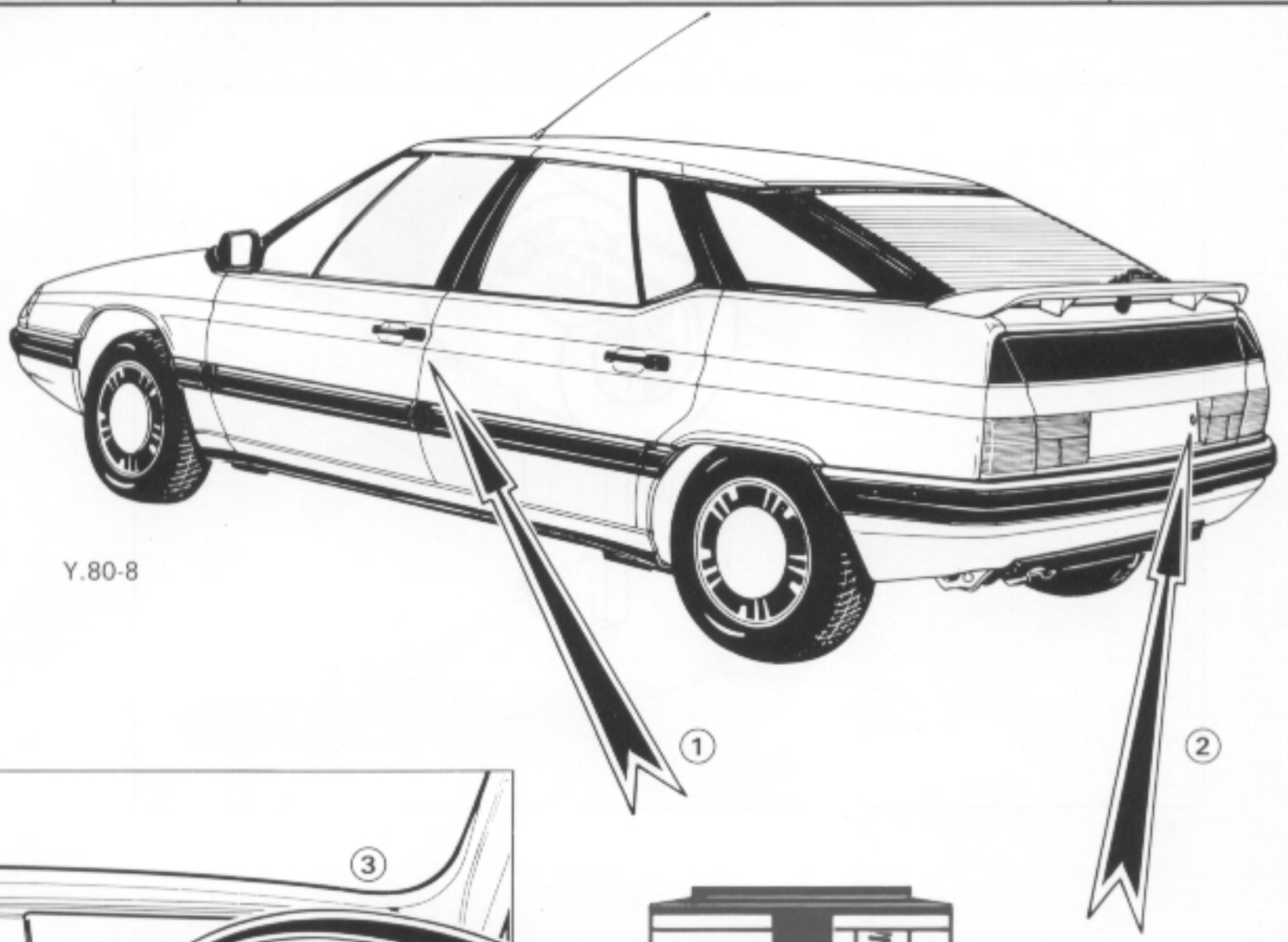


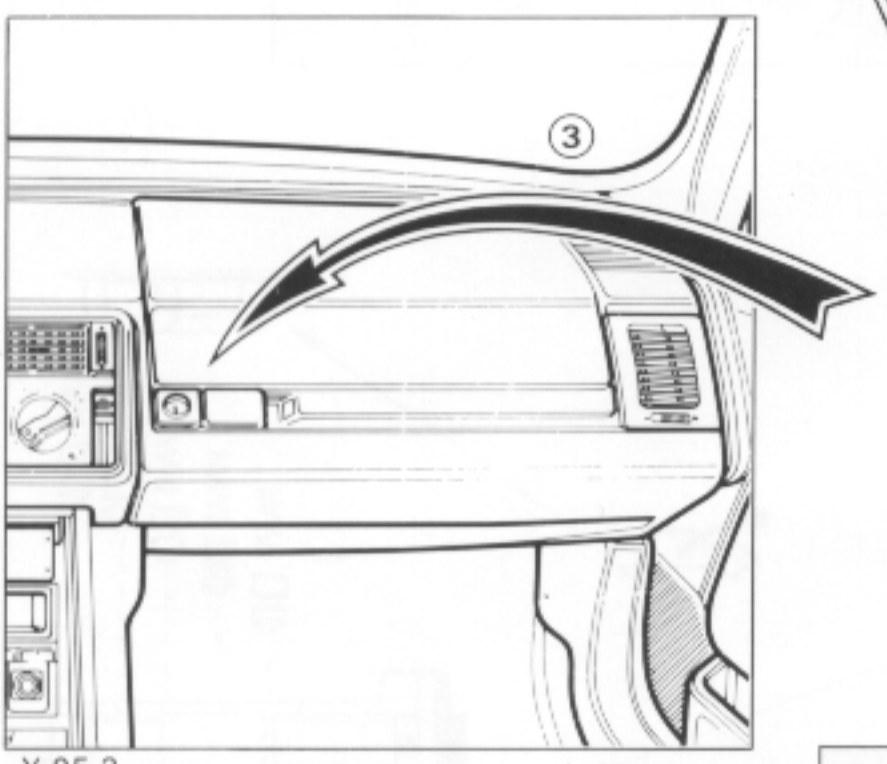
Y.86-1

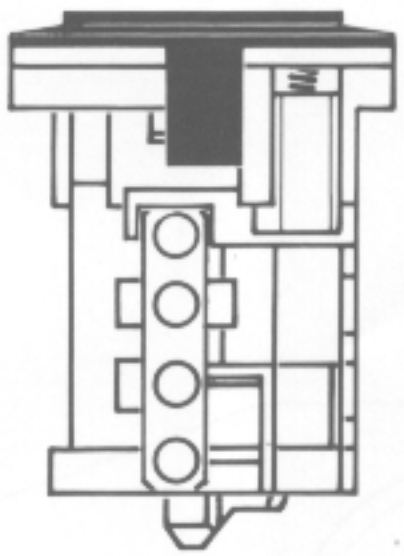


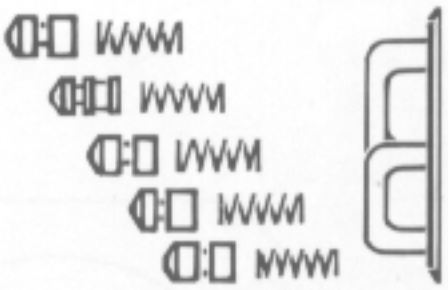
Y.86-2

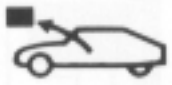
www.WorkshopManuals.co.uk











① XM 844-1/1

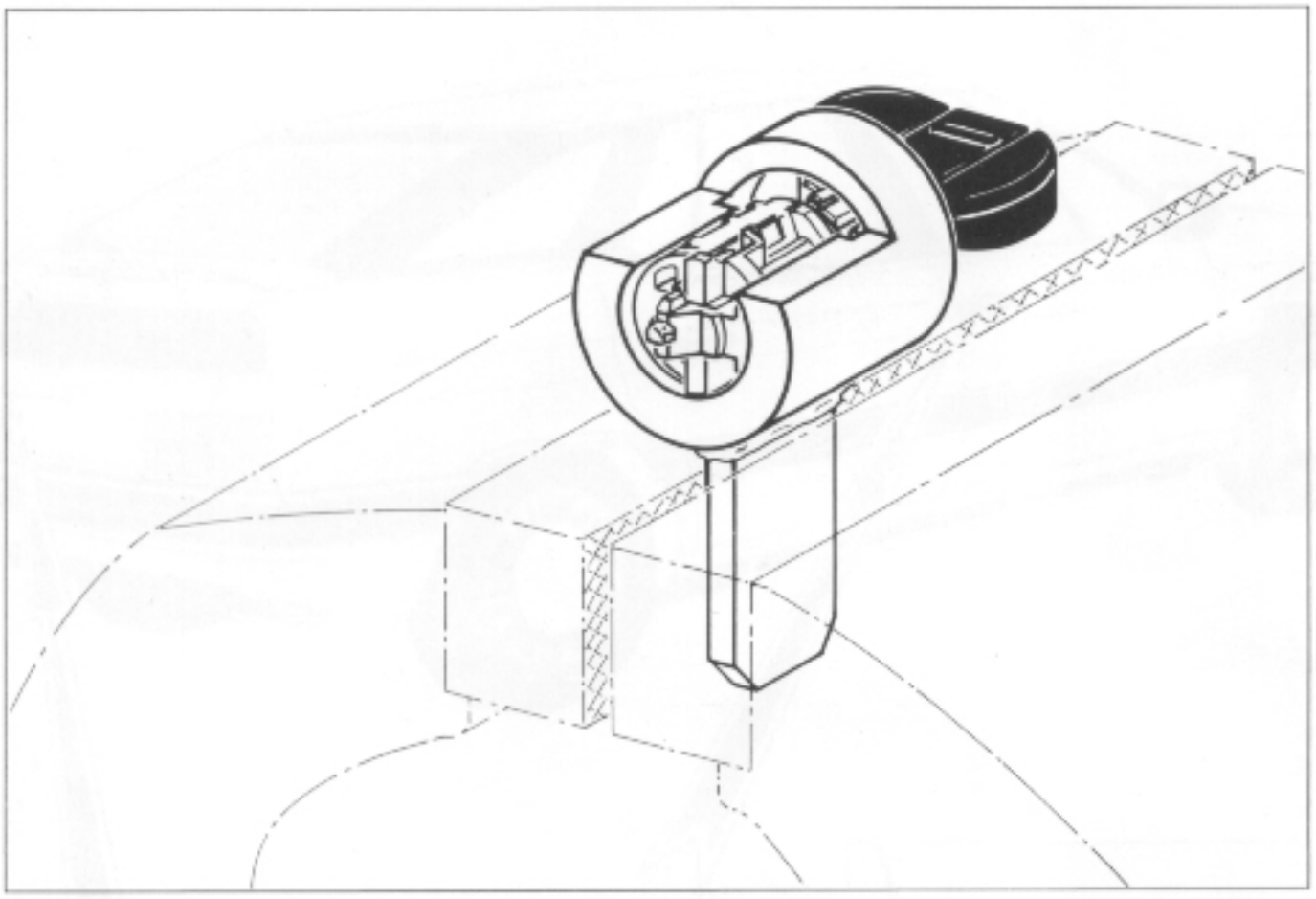
② XM 844-1/2

③ XM 844-1/3

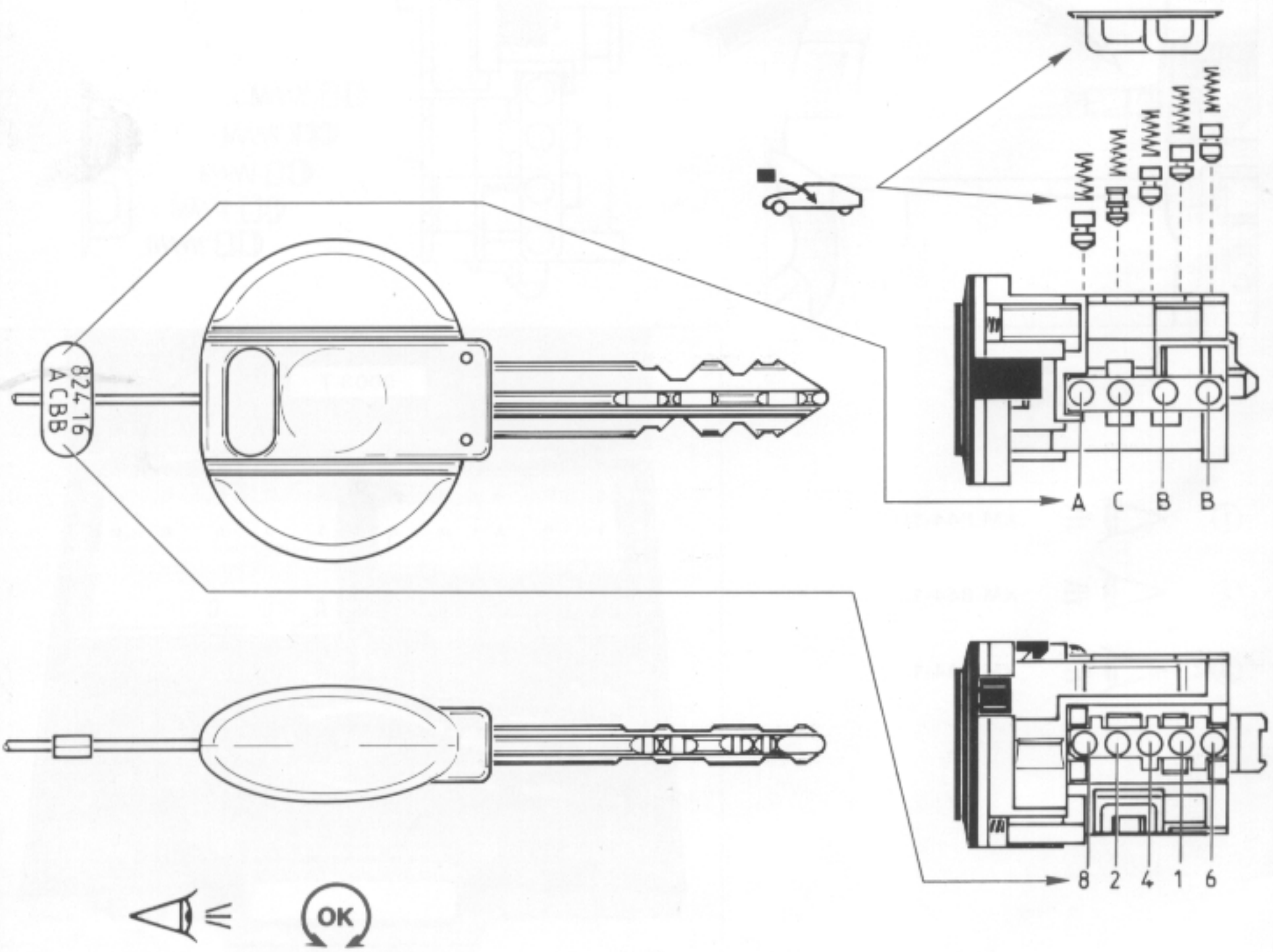


www.WorkshopManuals.co.uk





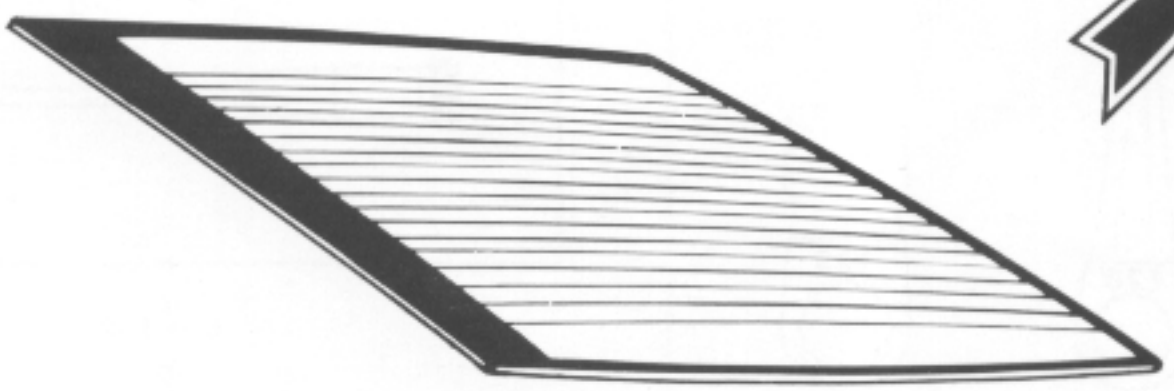
Y.86-3



www.WorkshopManuals.co.uk

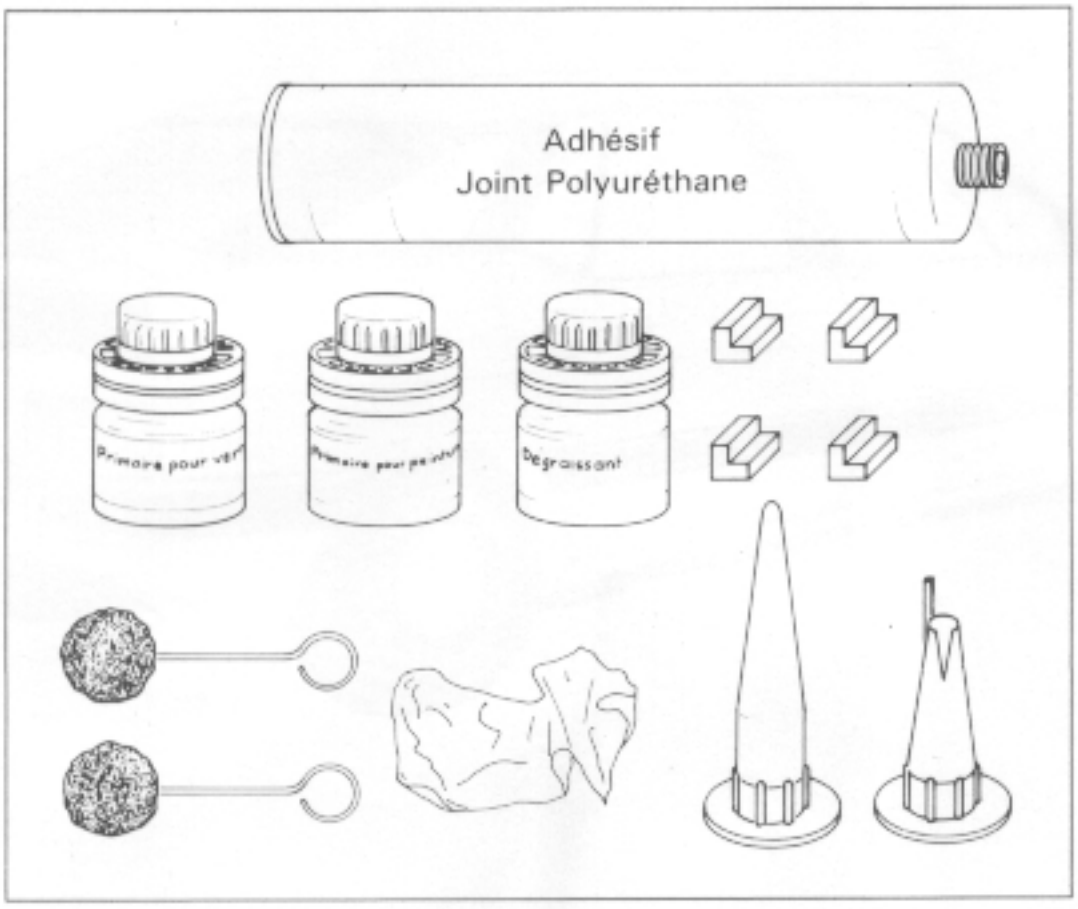


Y.80-4



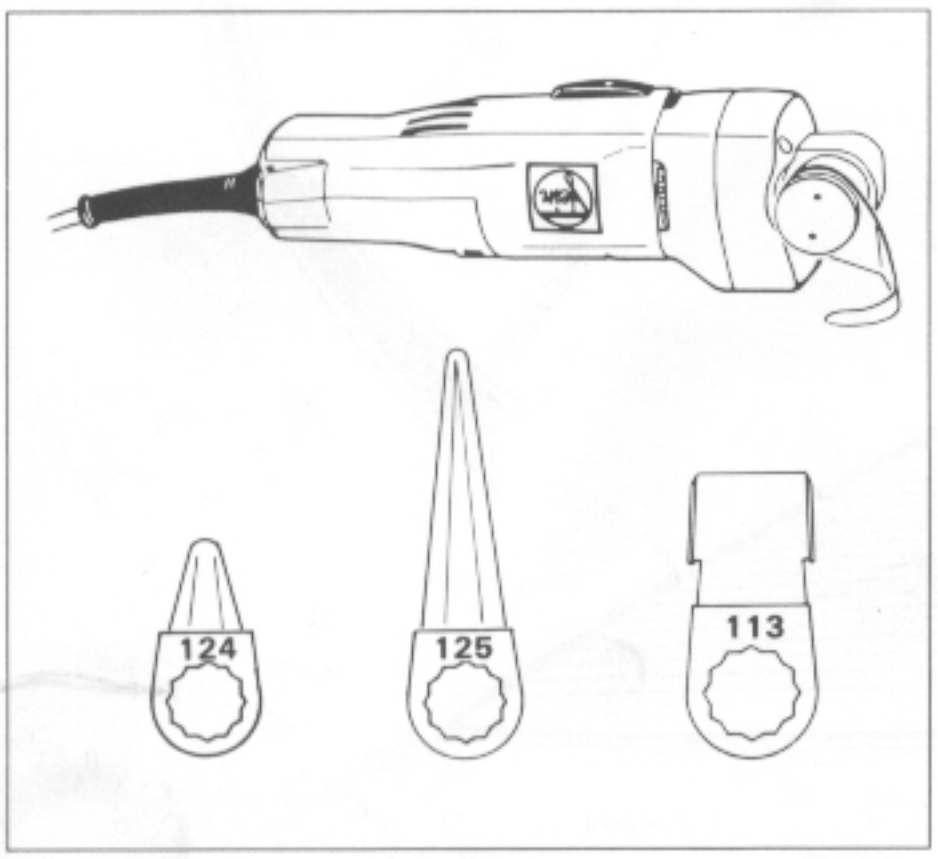
Y.80-8

www.WorkshopManuals.co.uk

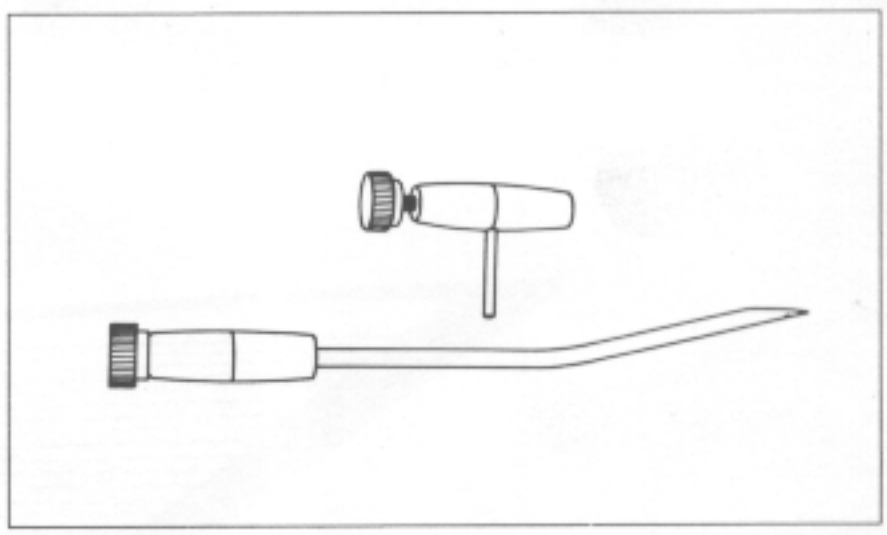


TT-96.10

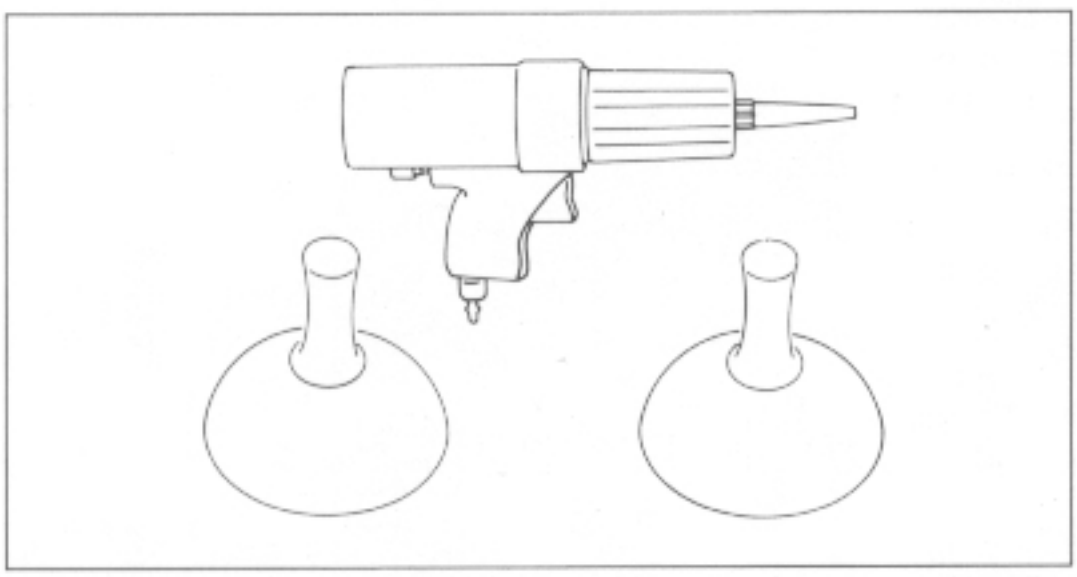
A3



TT-96.11 TT-96.9

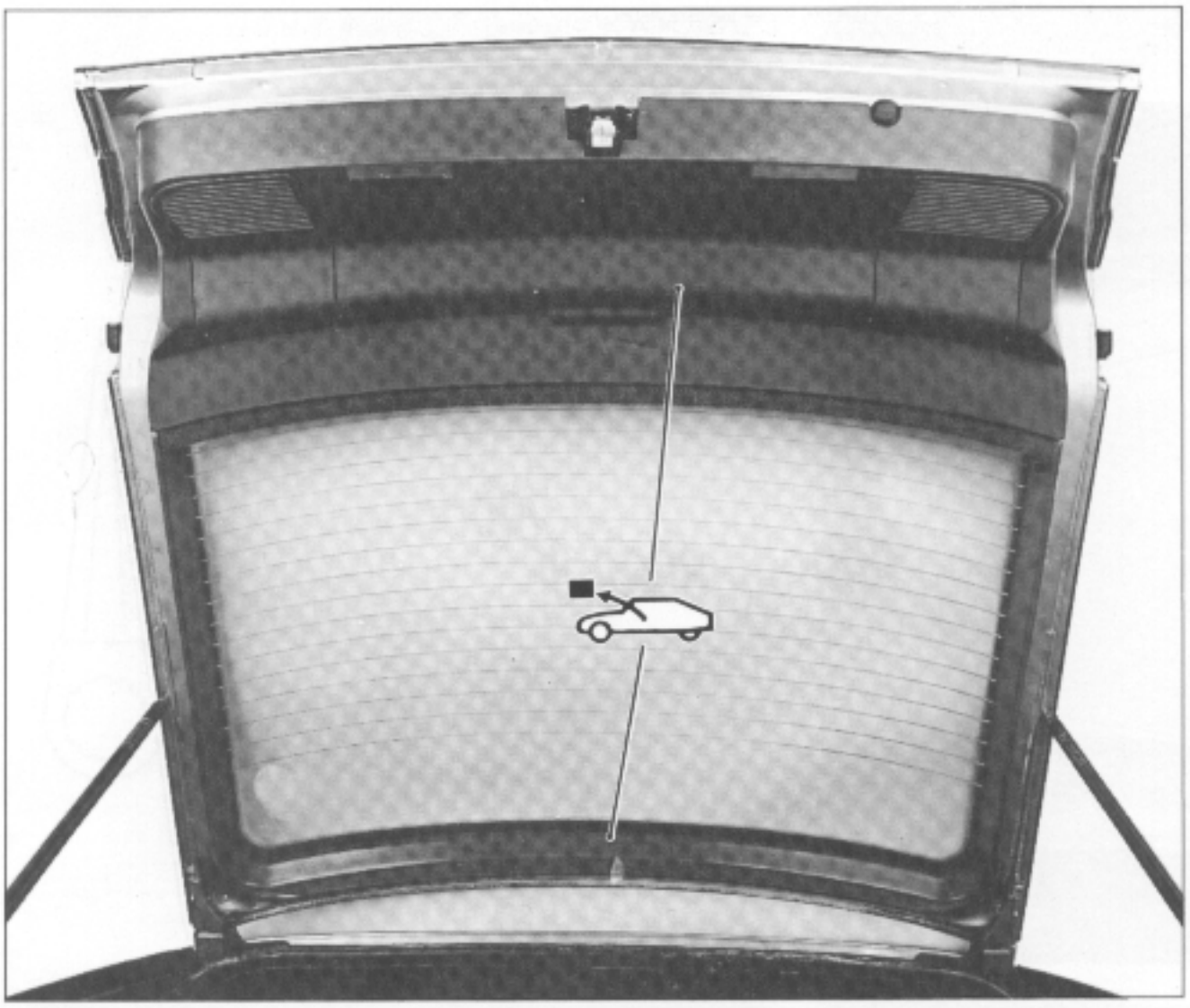


TT-96.7

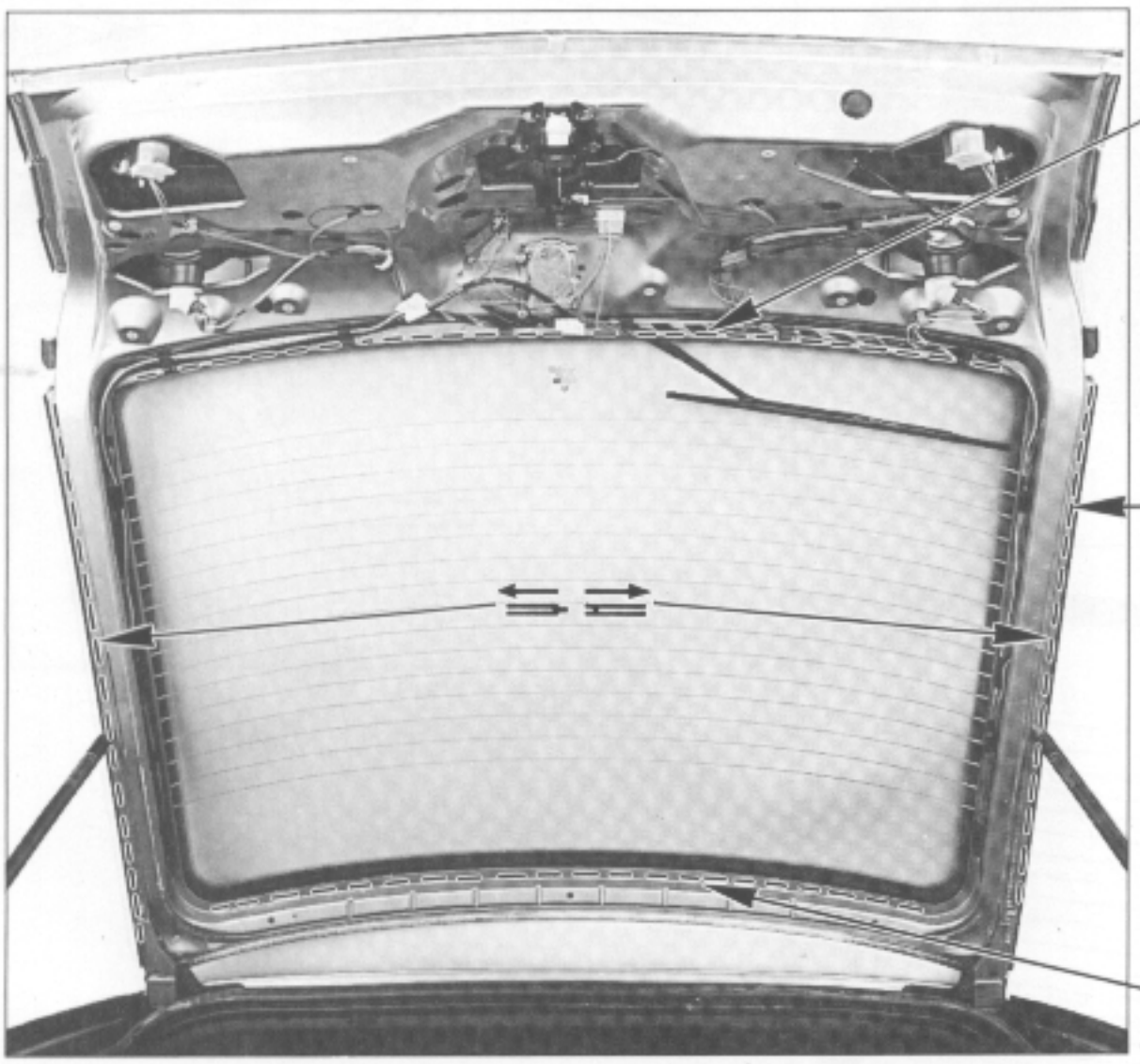


TT-96.7

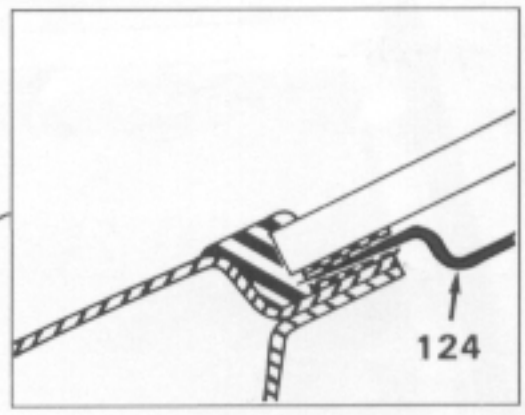
www.WorkshopManuals.co.uk



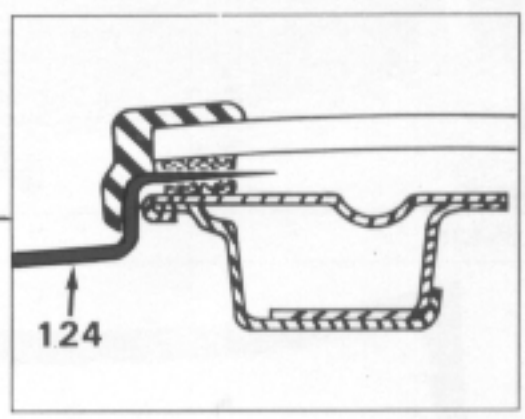
88-933



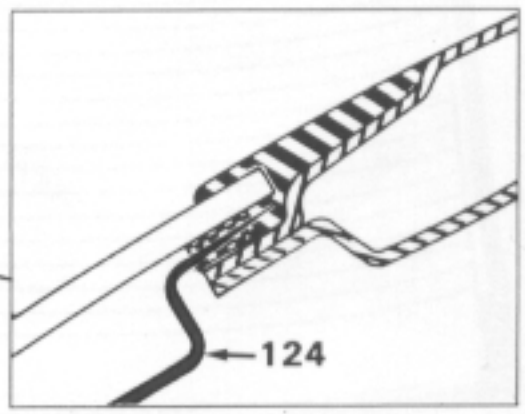
88-935



Y.96-6 (4)

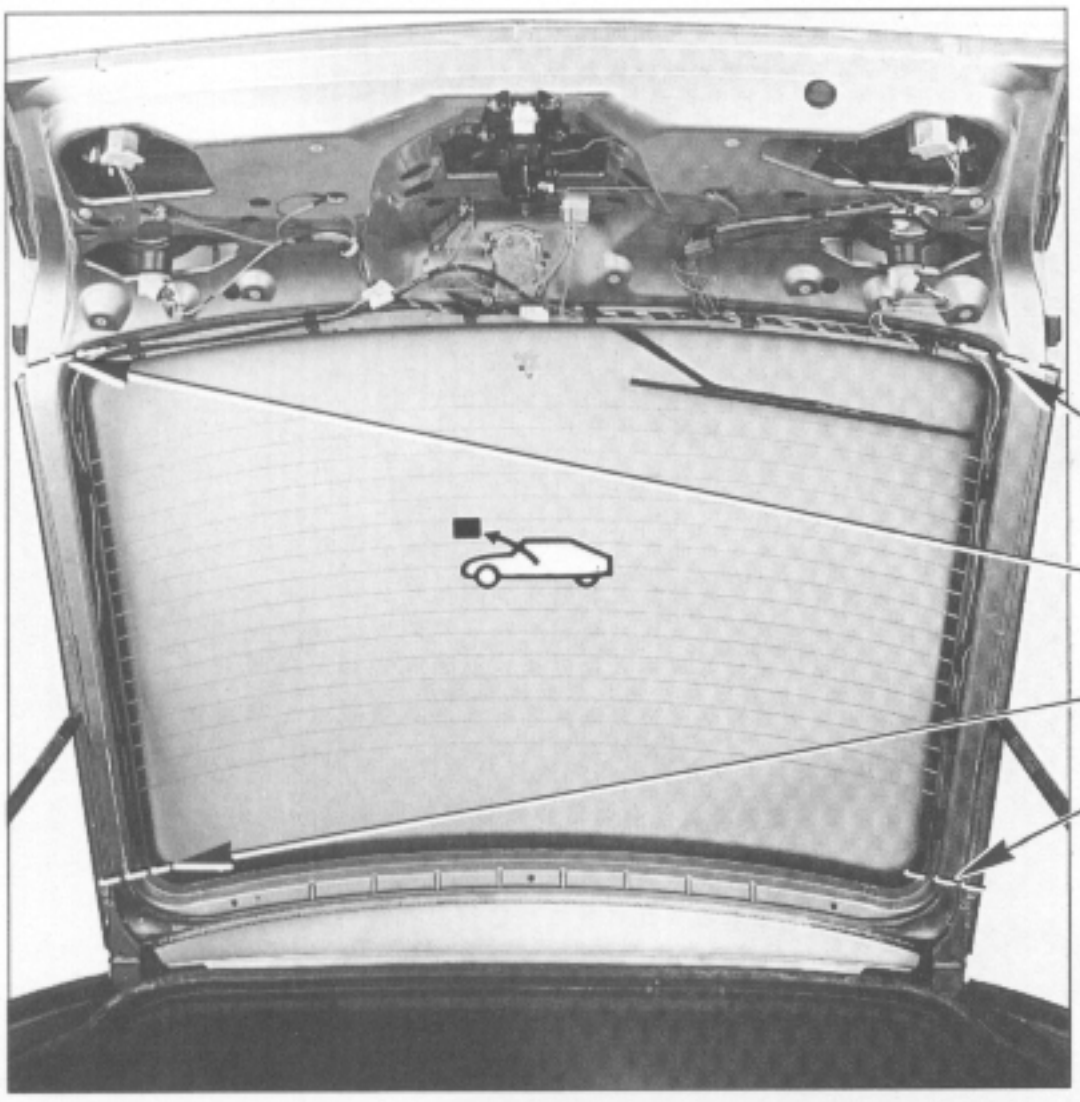


Y.96-6 (6)

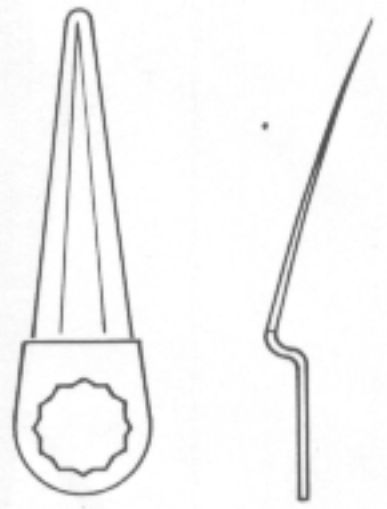


Y.96-6 (5)

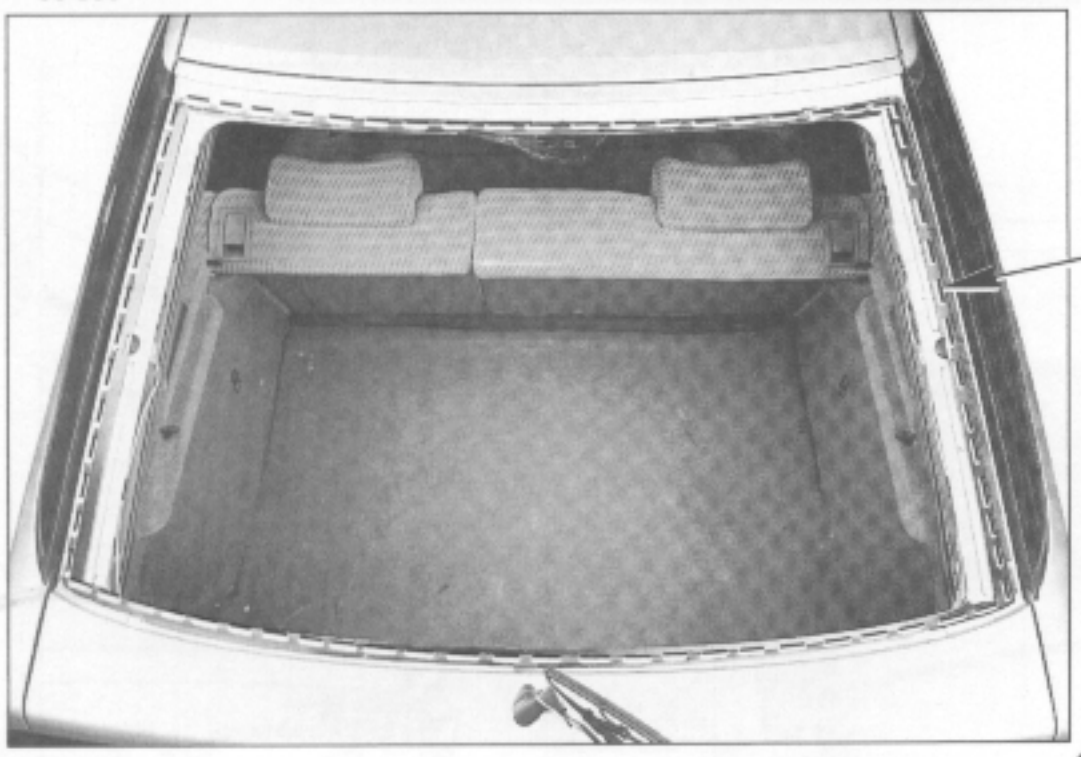
www.WorkshopManuals.co.uk



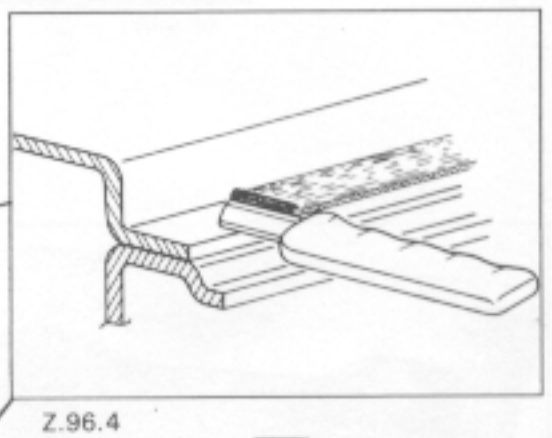
88-935



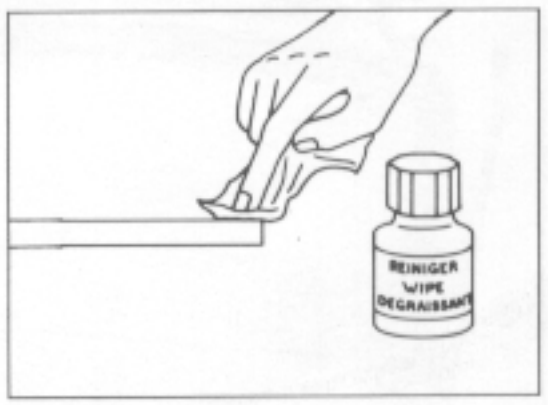
TT.96-11



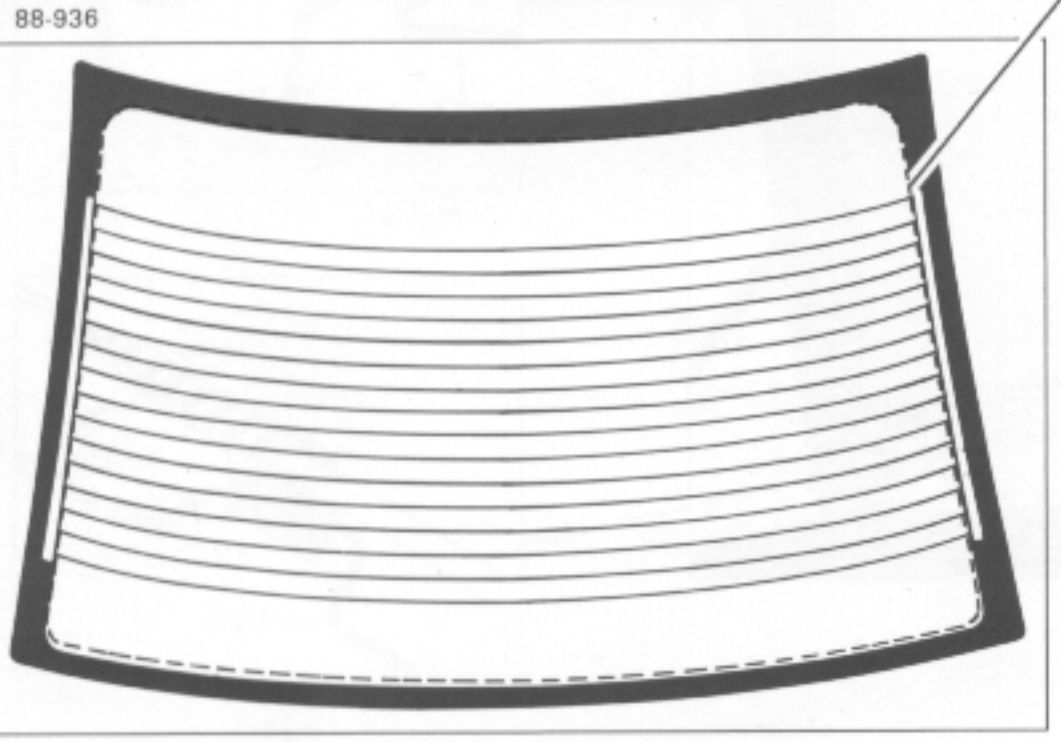
88-936



Z.96.4

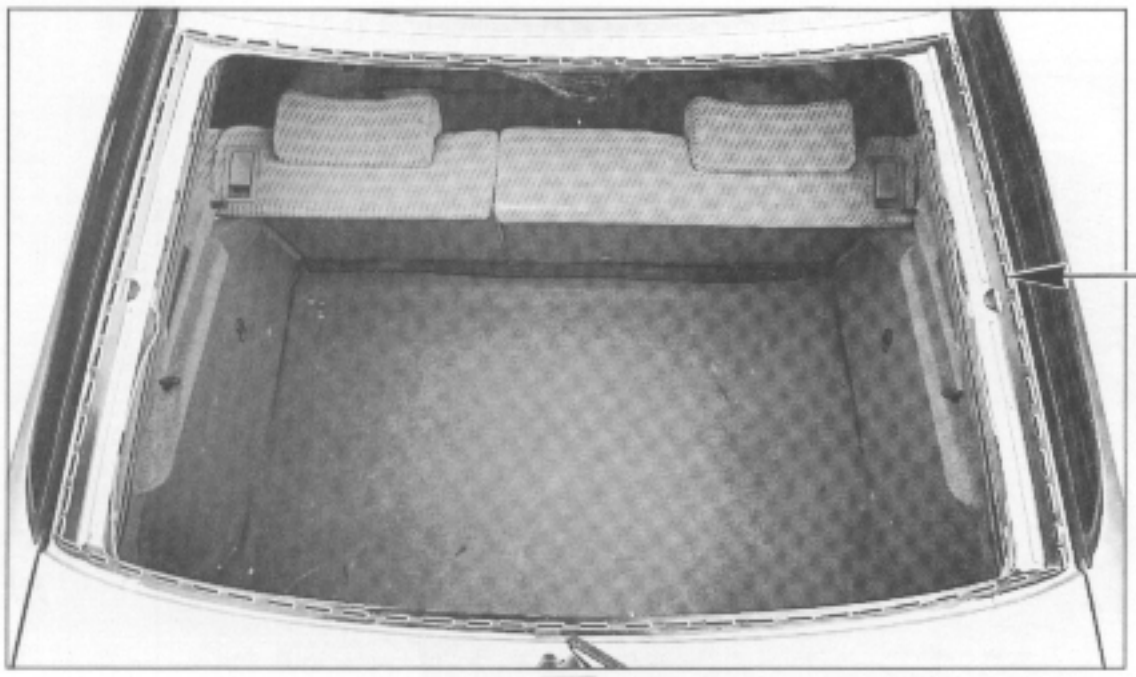


TT.96.1

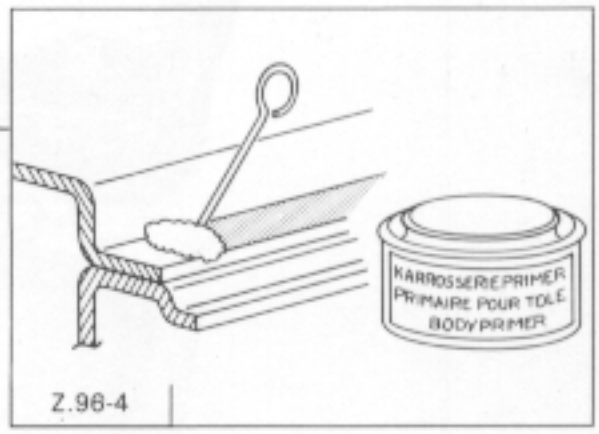


Y.96-7

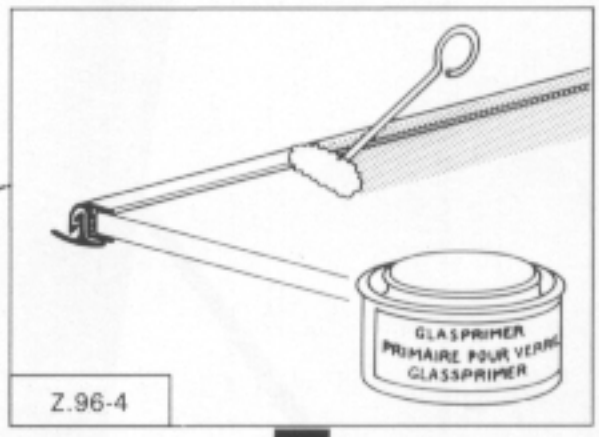
www.WorkshopManuals.co.uk



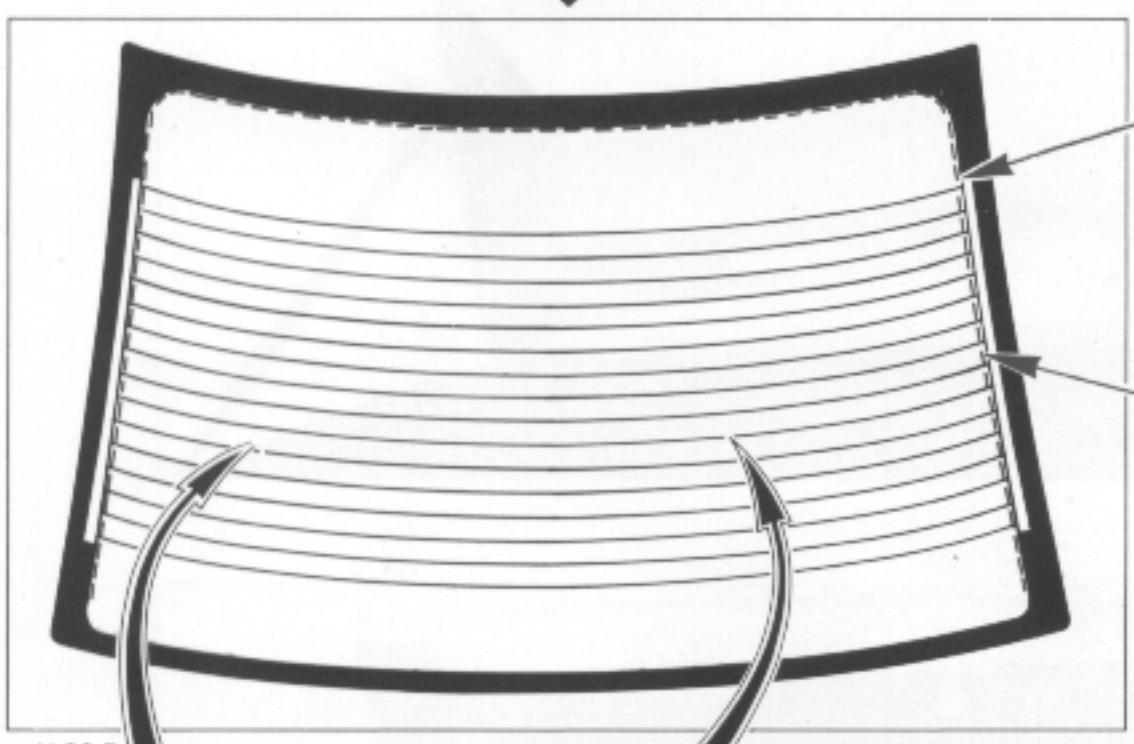
88-936



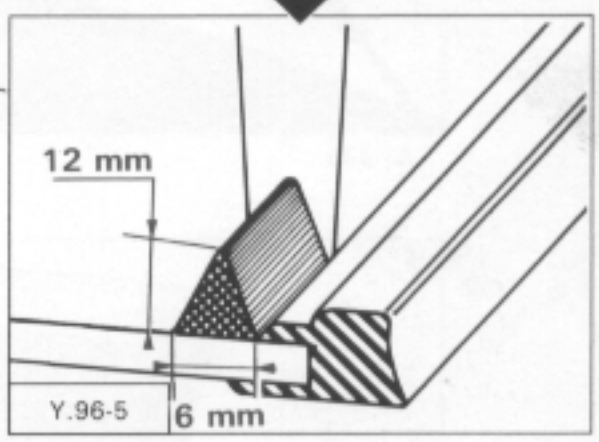
Z.96-4



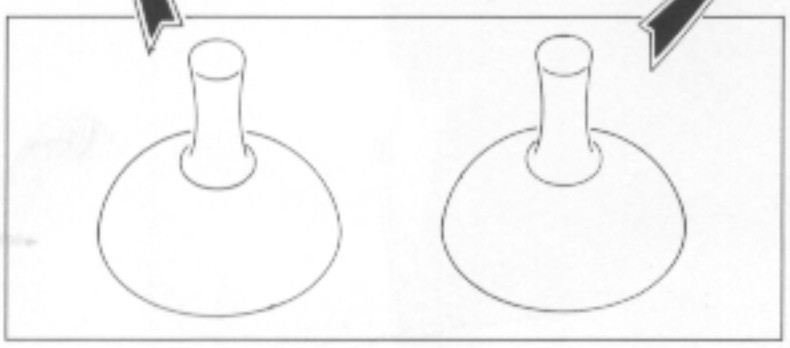
Z.96-4

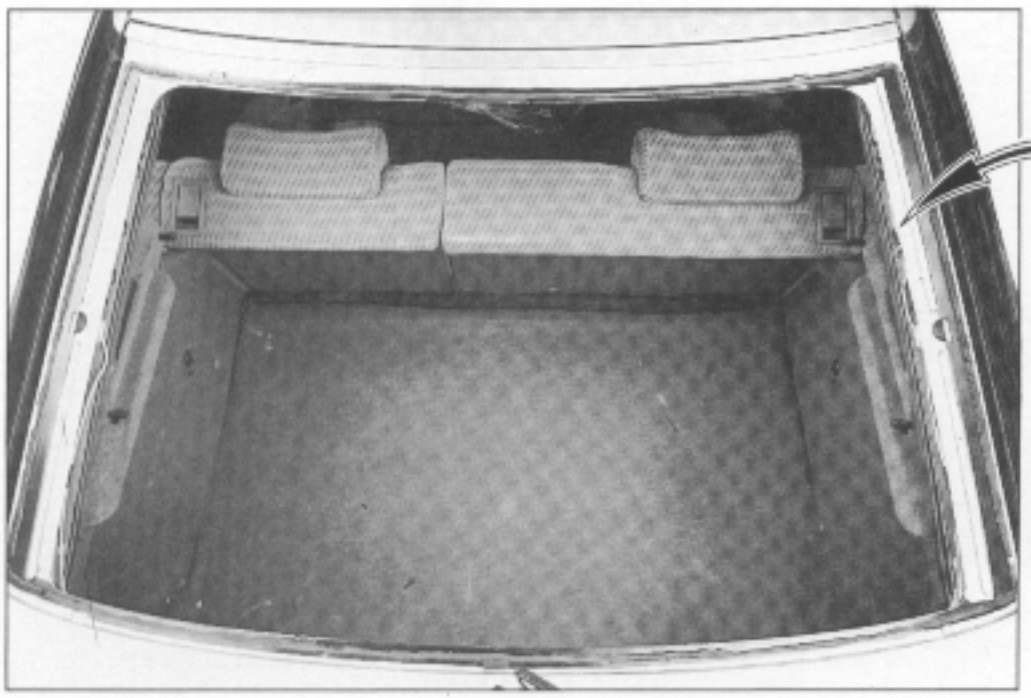


Y.96-7

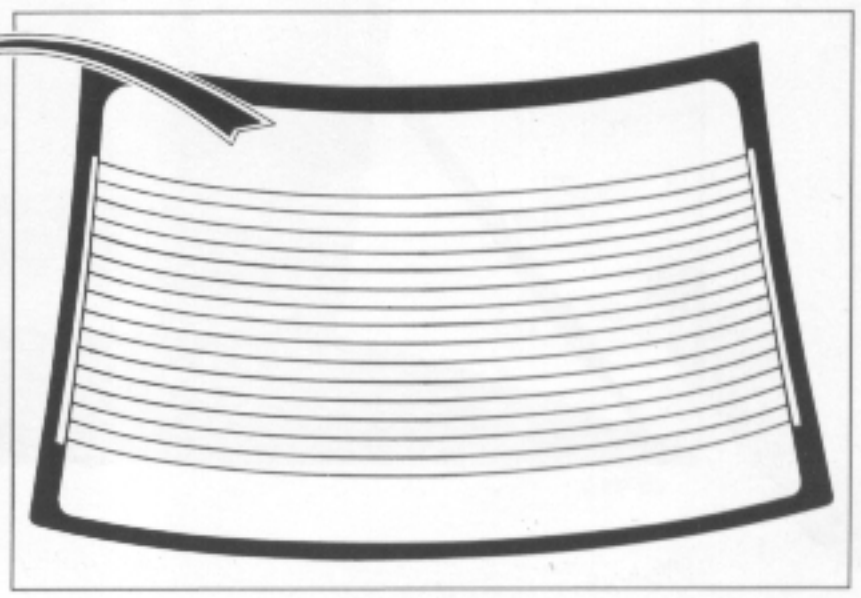


Y.96-5



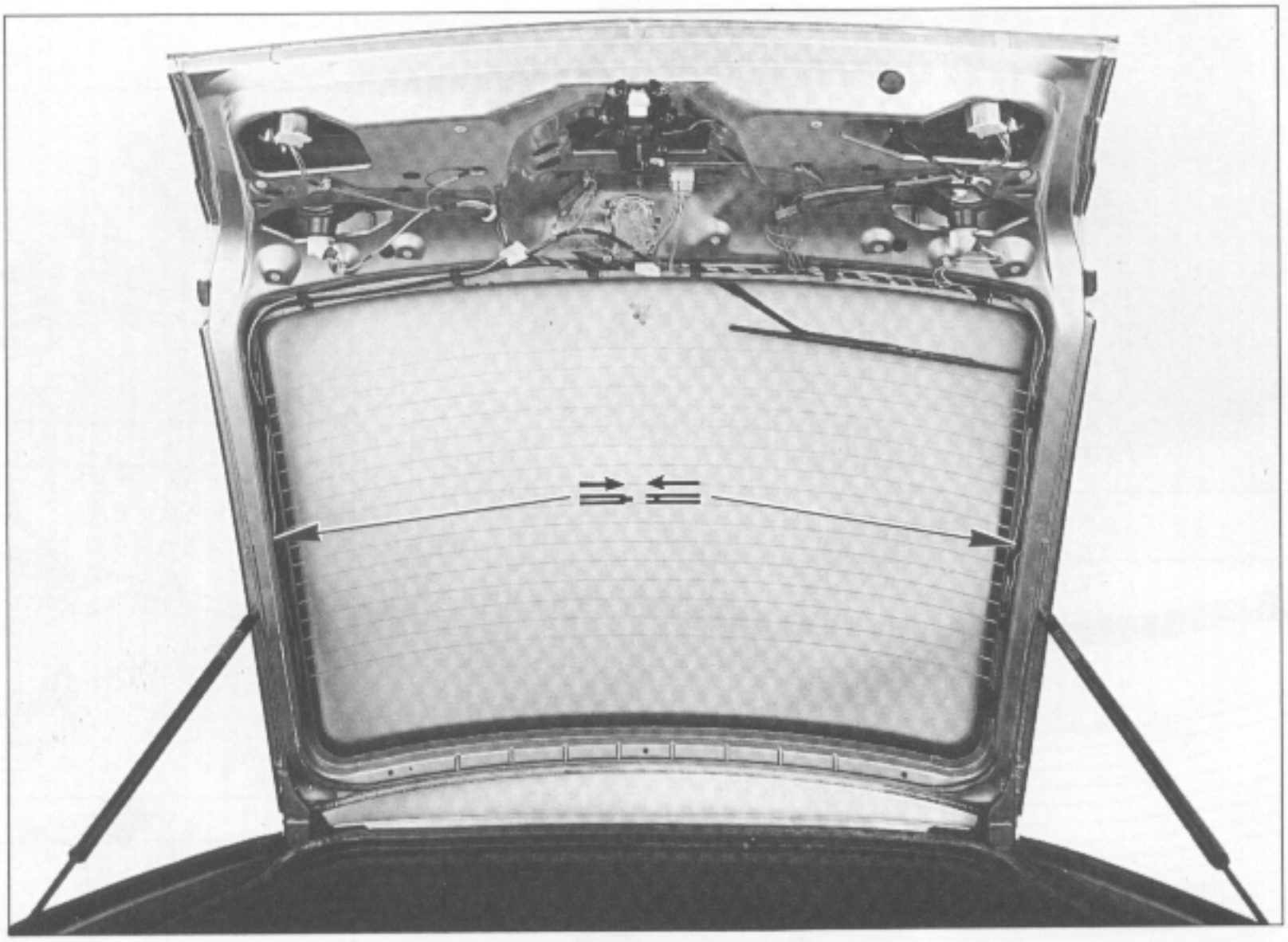


88-936

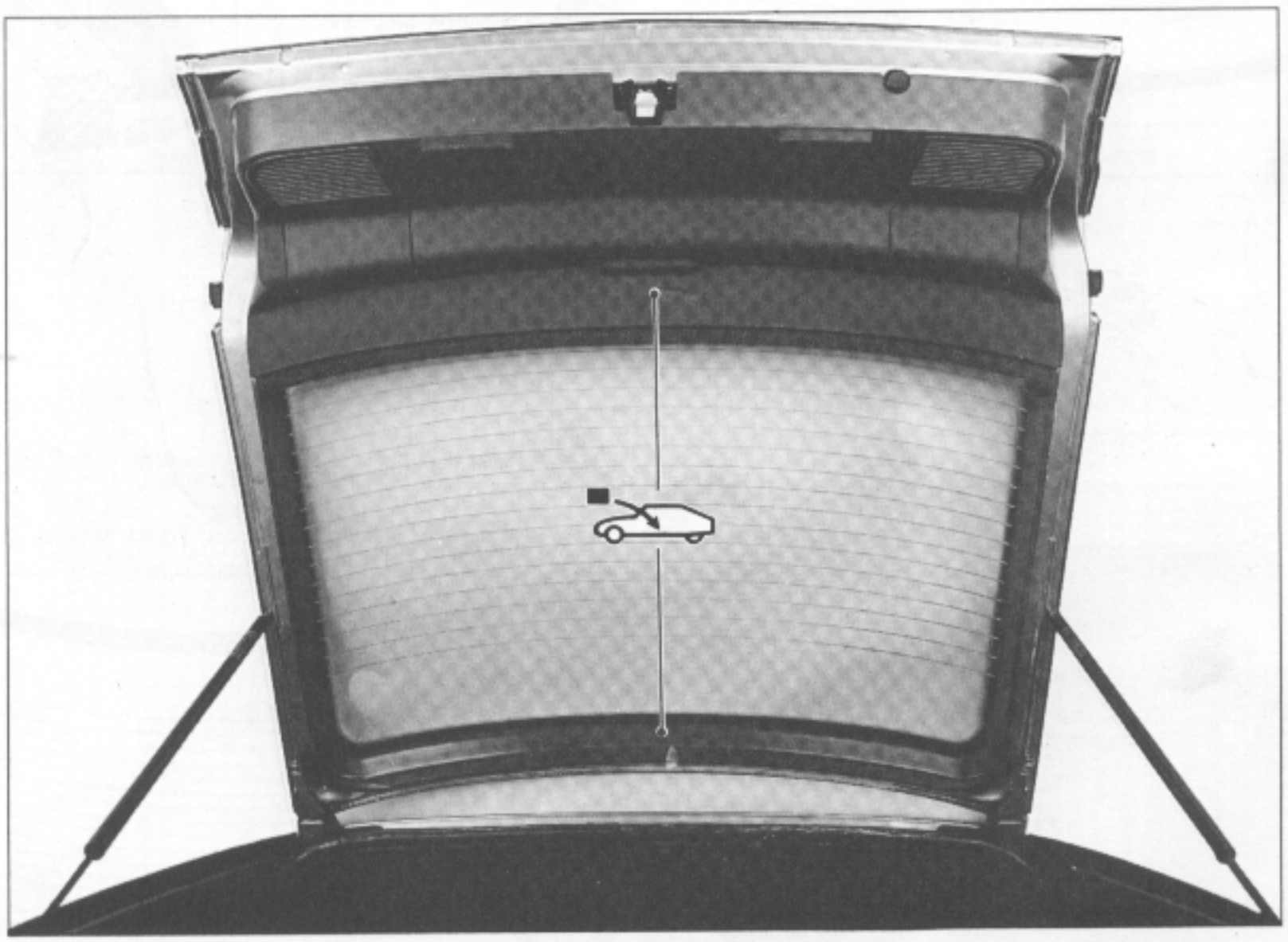


Y.96-7

www.WorkshopManuals.co.uk

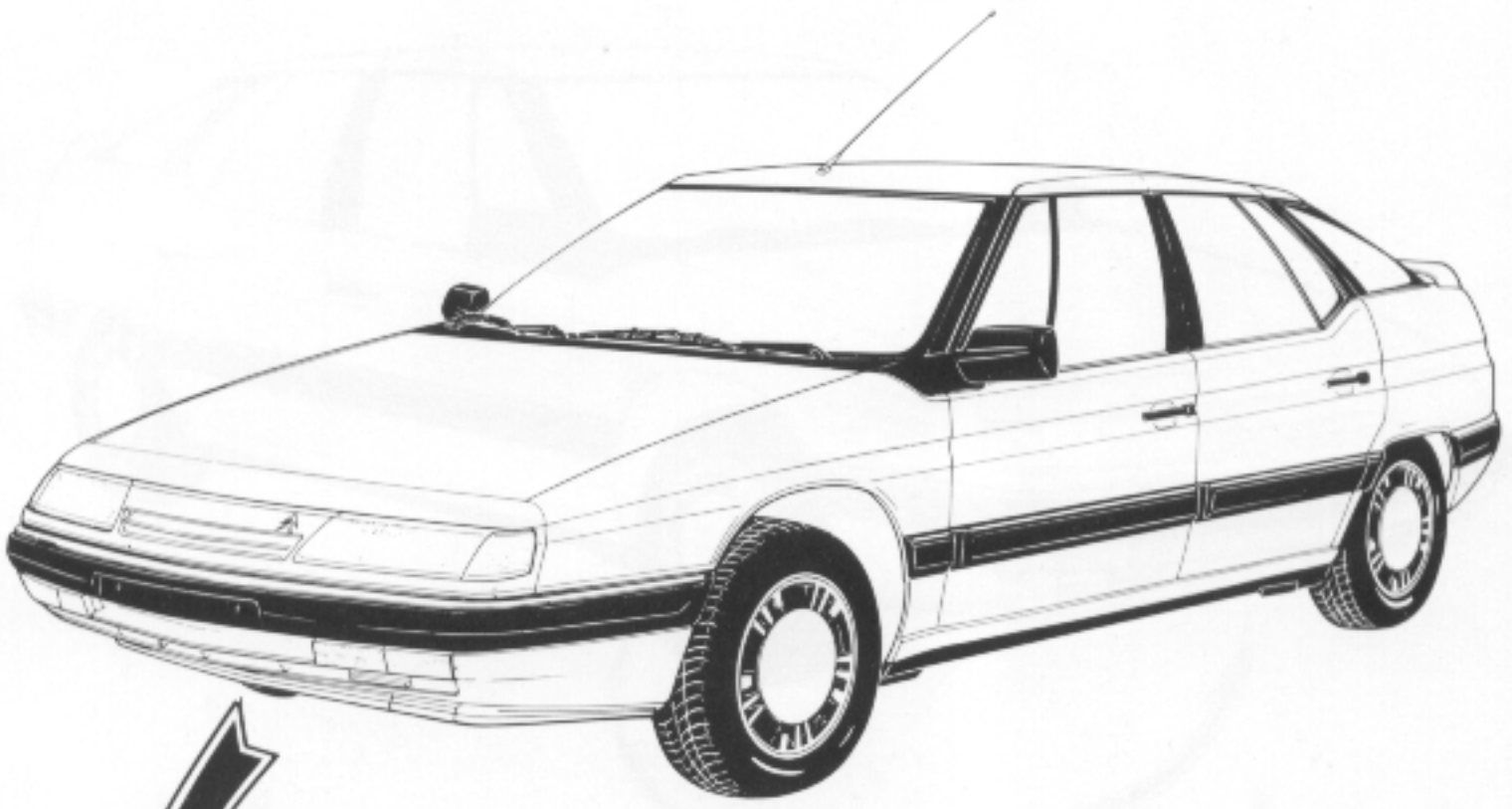


88-935

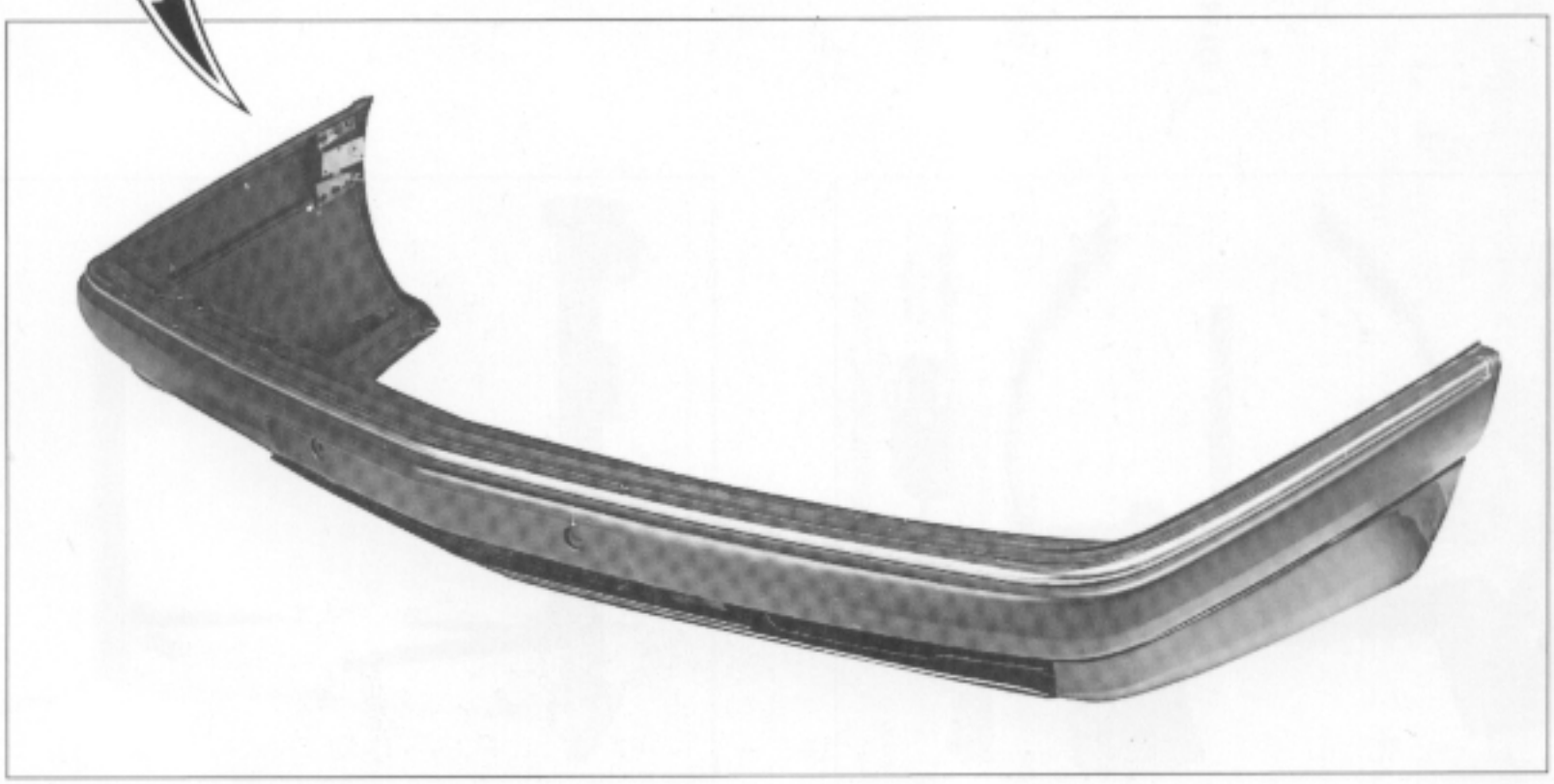


88-933

www.WorkshopManuals.co.uk



Y.80-3

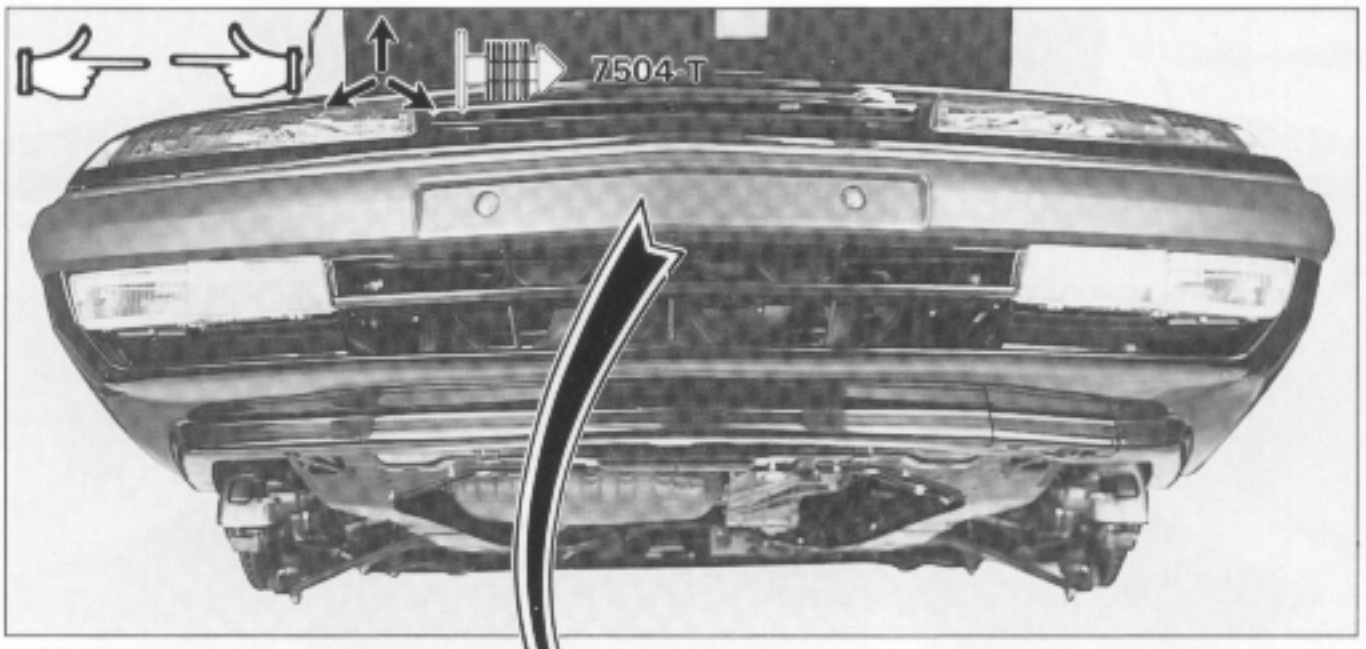


89-271

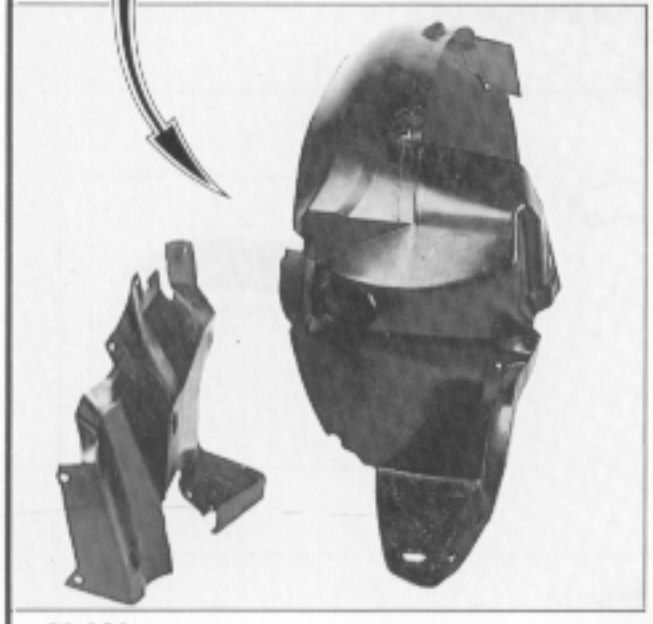


89-228

www.WorkshopManuals.co.uk



89-276

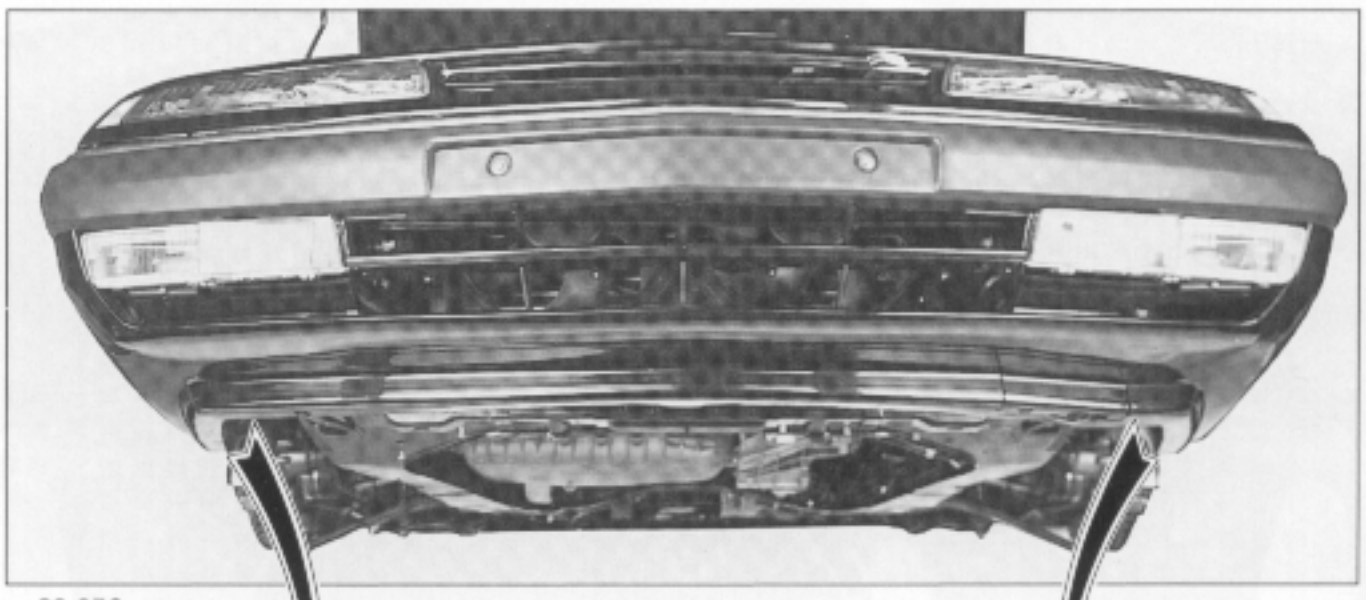


89-282

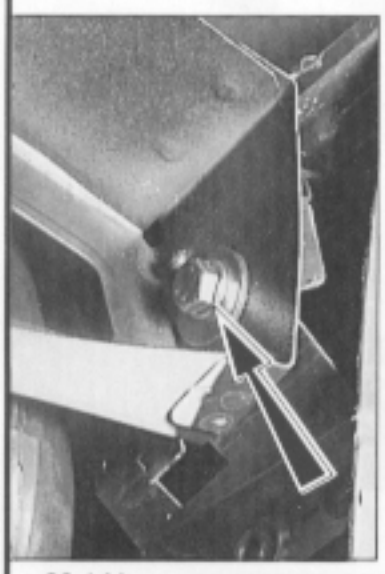
2305 XM 89



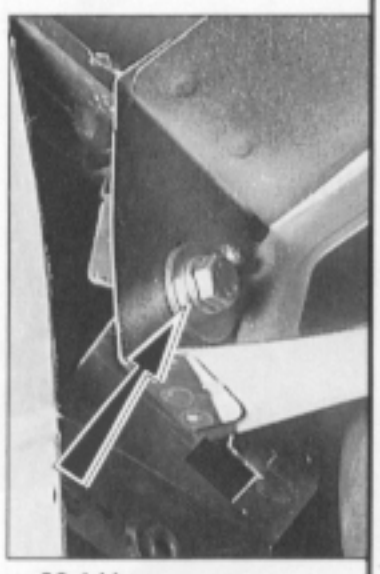
89-282



89-276



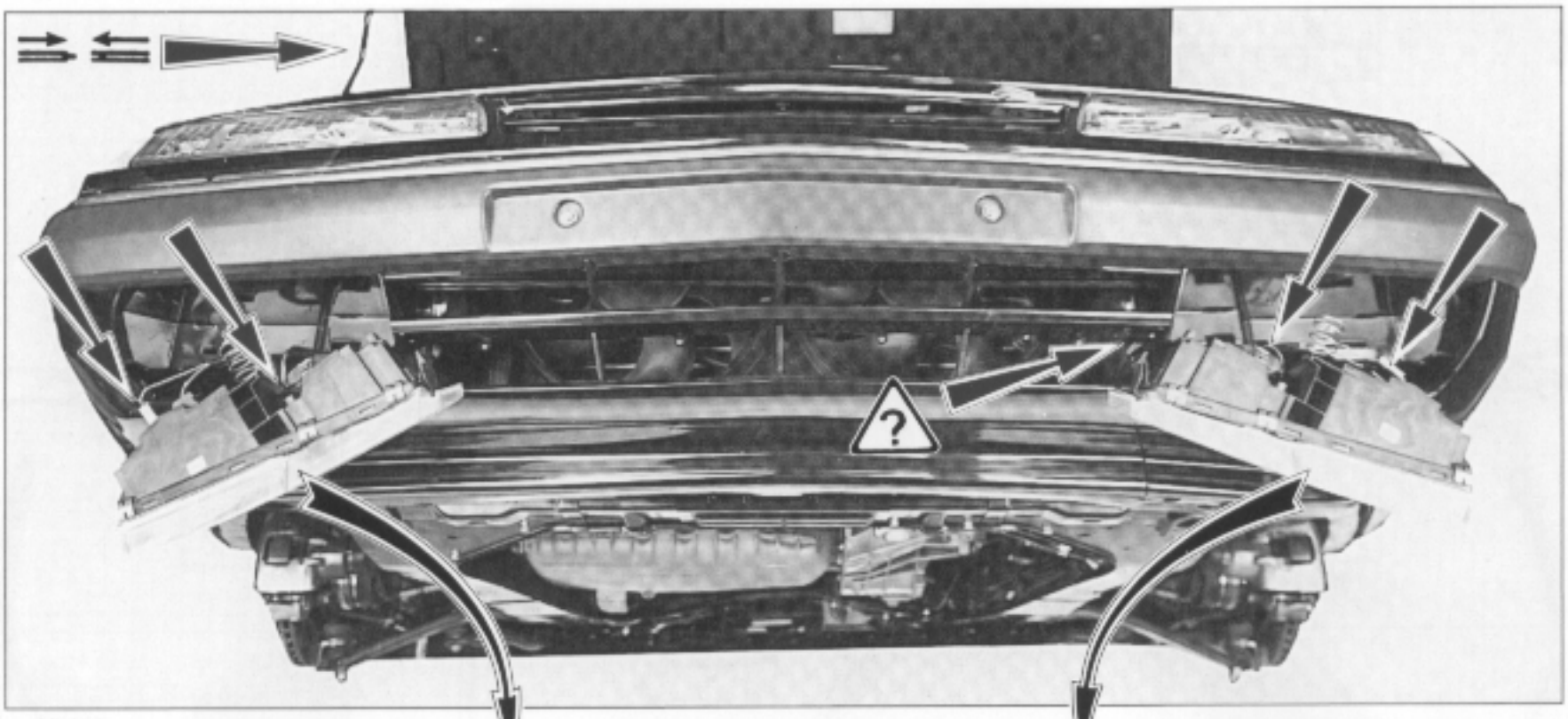
89-141



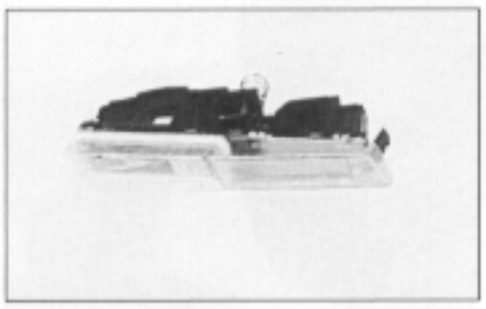
89-141

8932

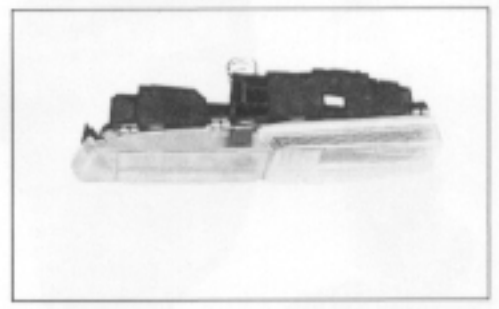
www.WorkshopManuals.co.uk



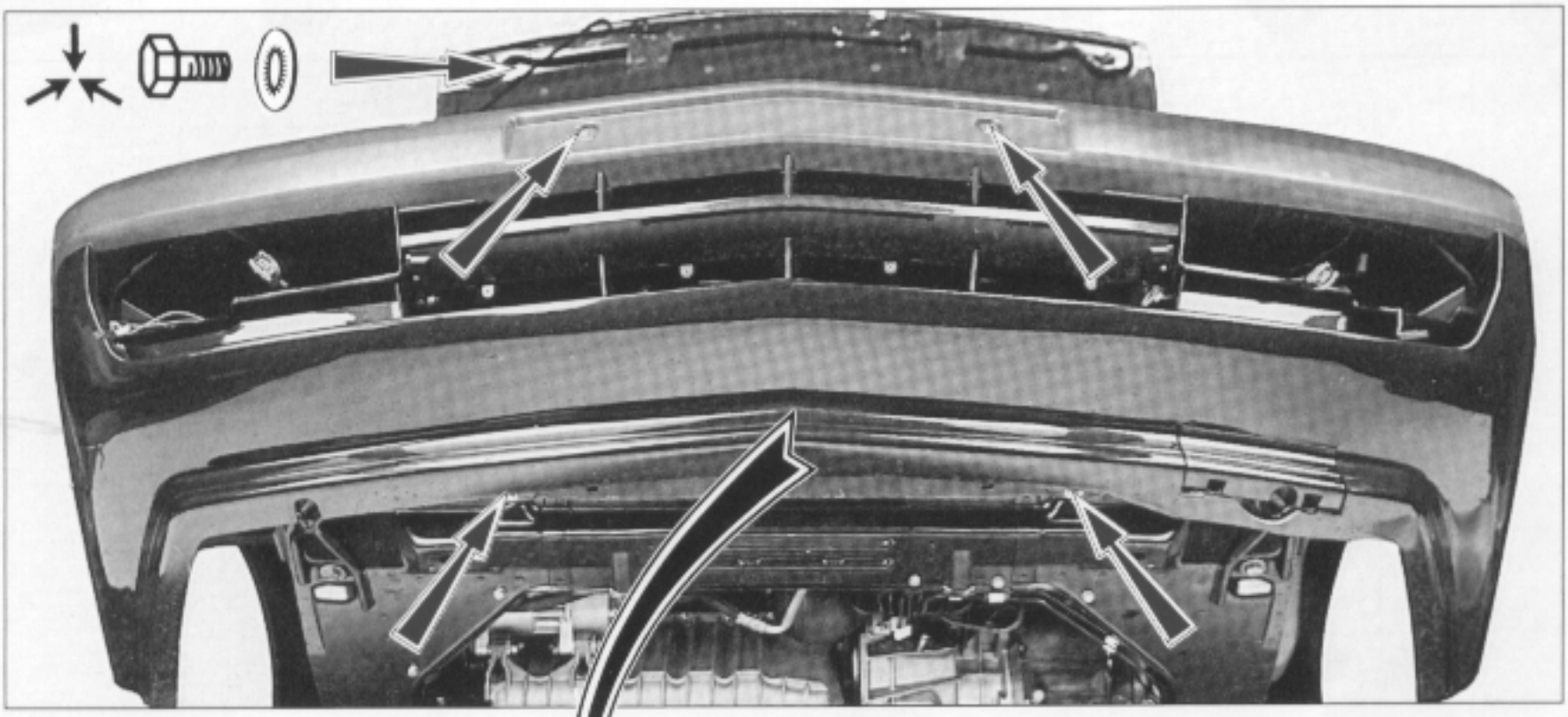
89-285



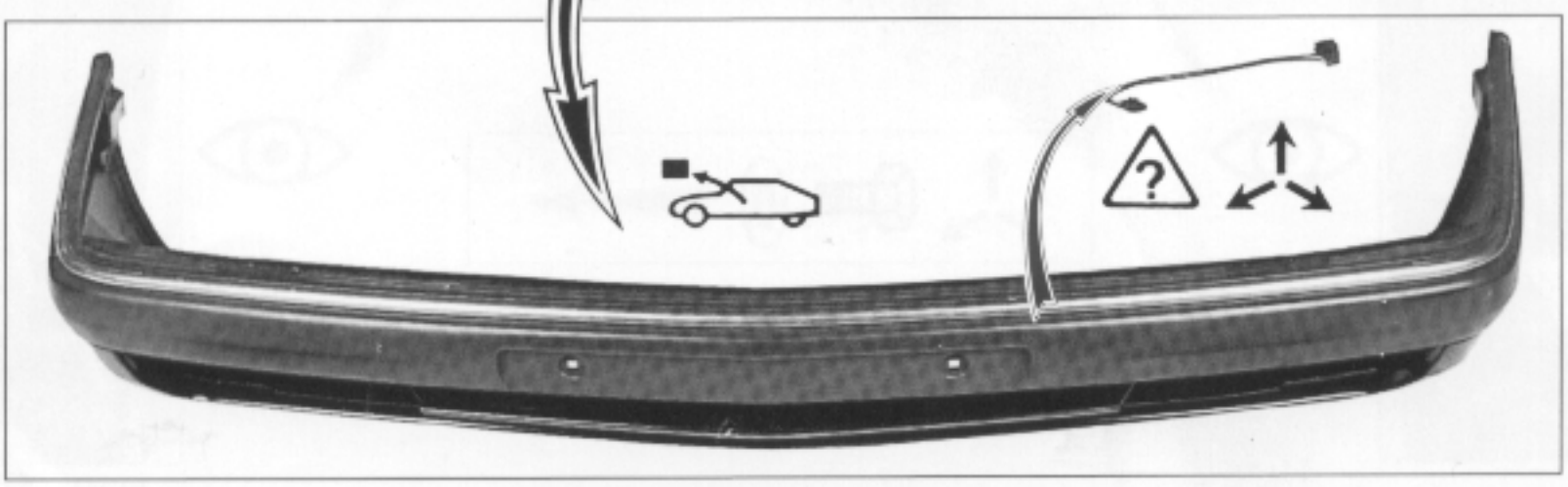
89-268



89-268

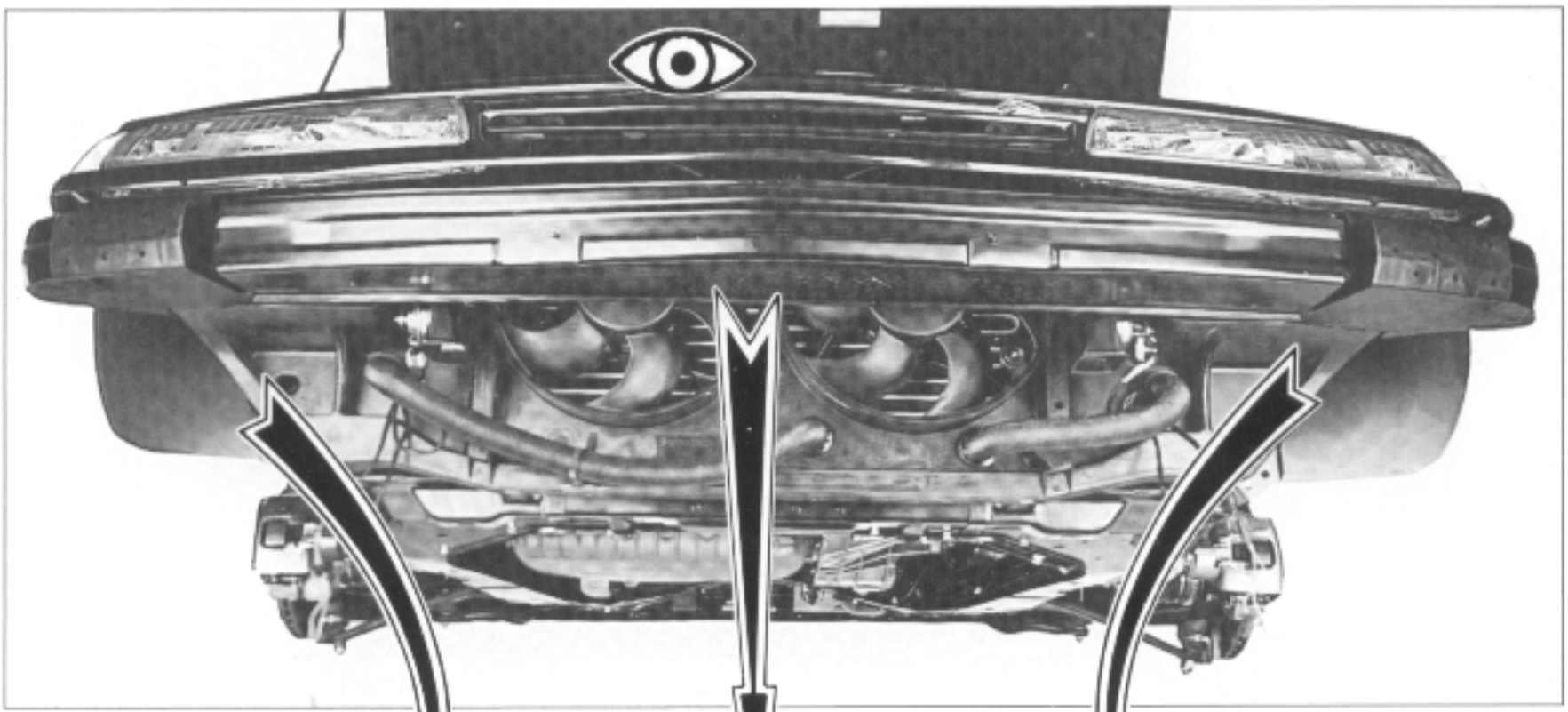


89-278

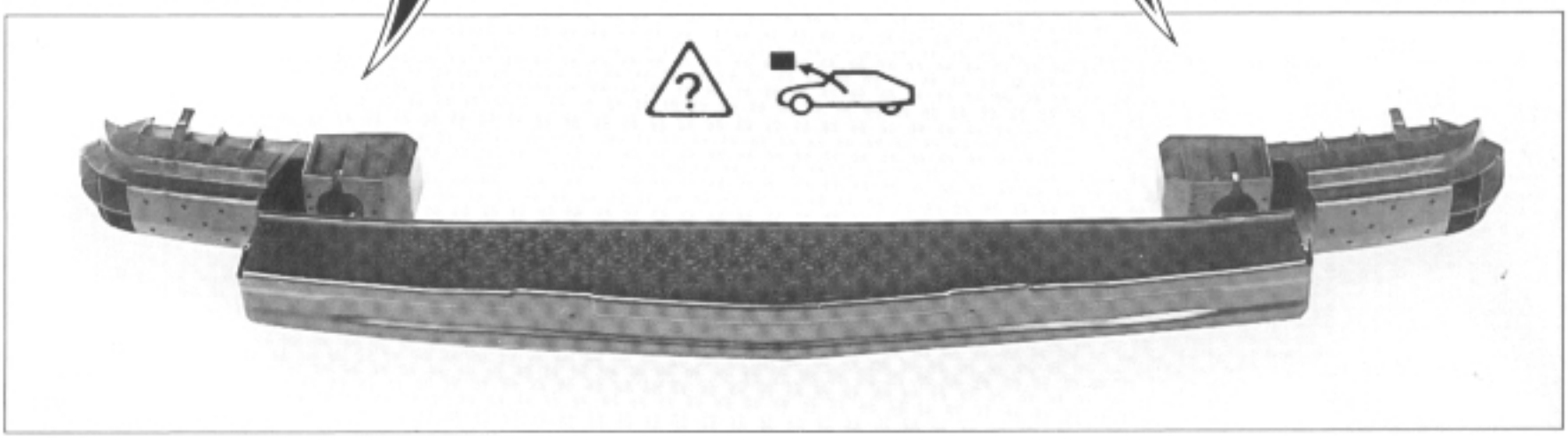


89-268

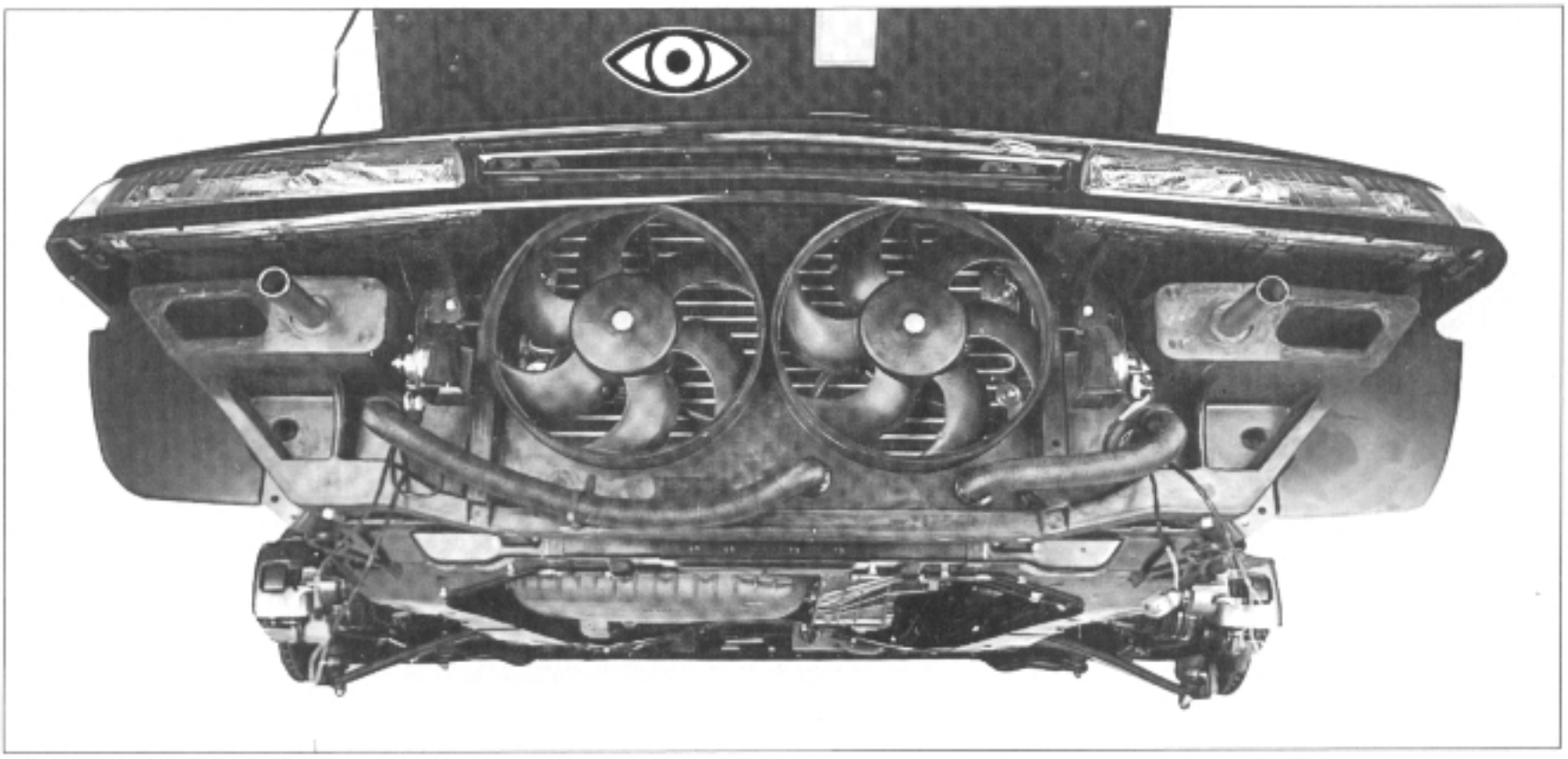
www.WorkshopManuals.co.uk



89-275

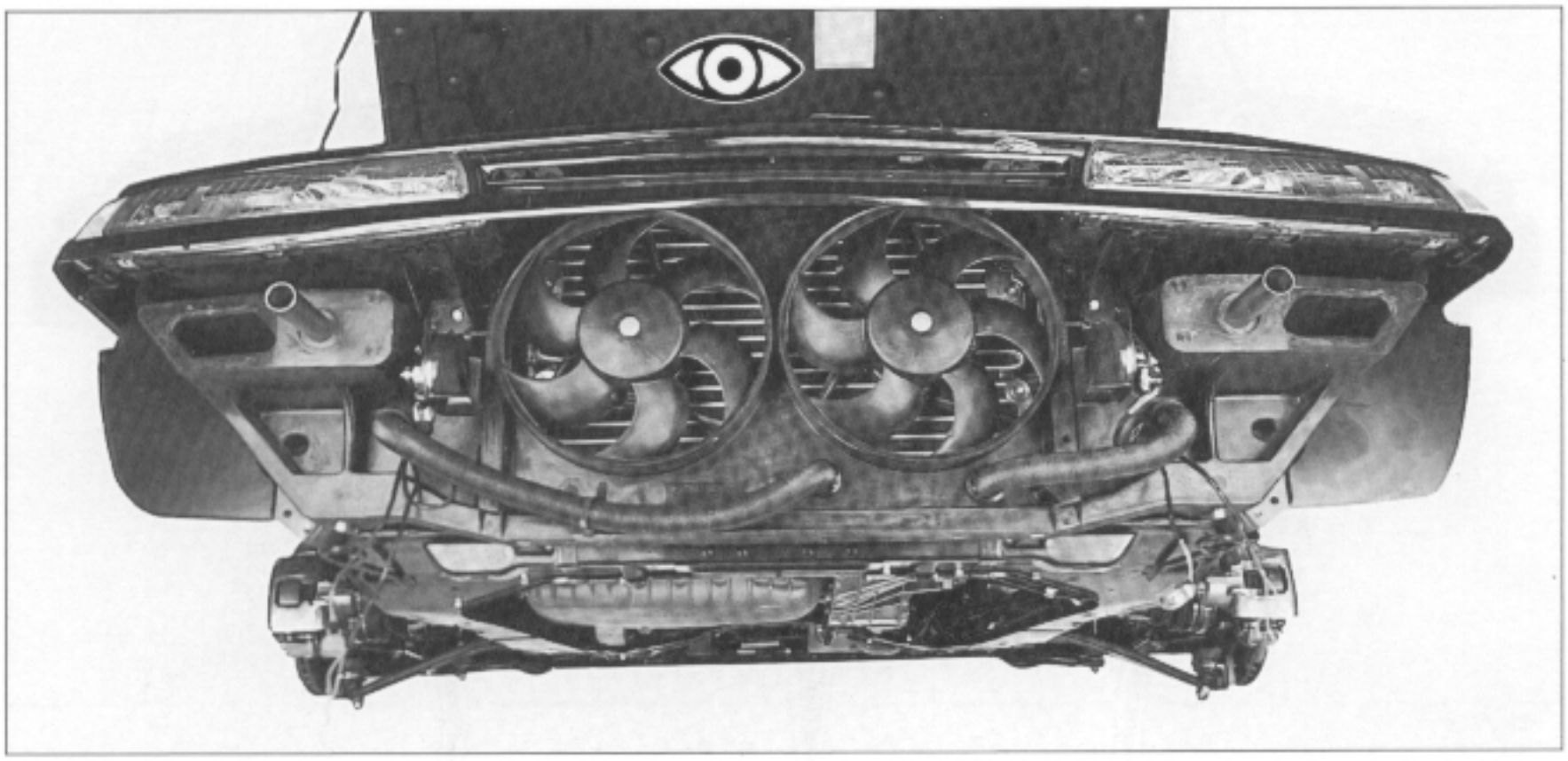


89-267

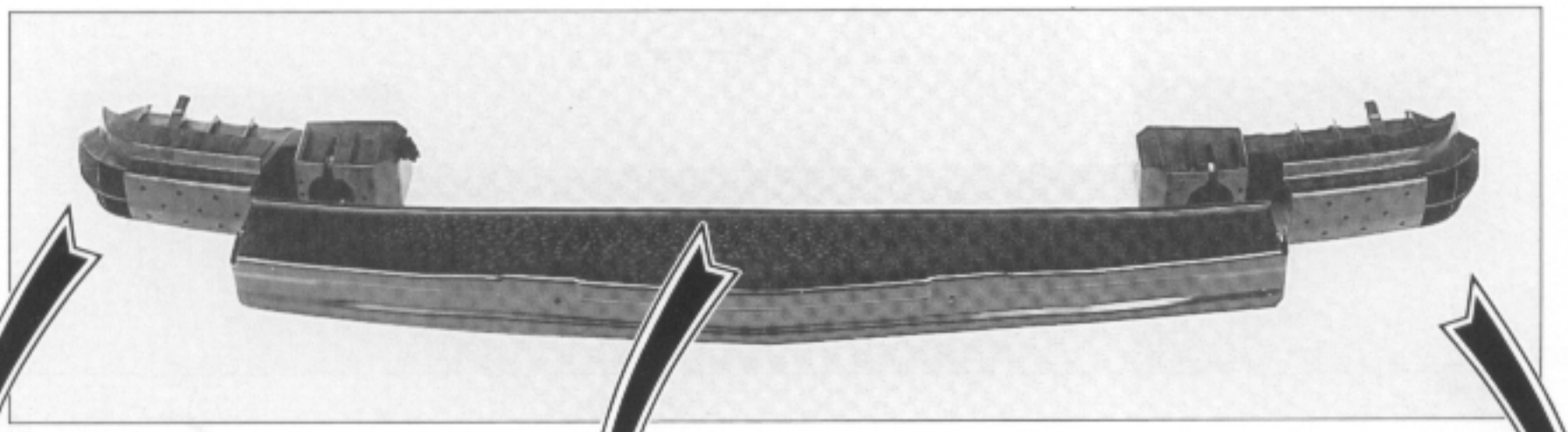


89-281

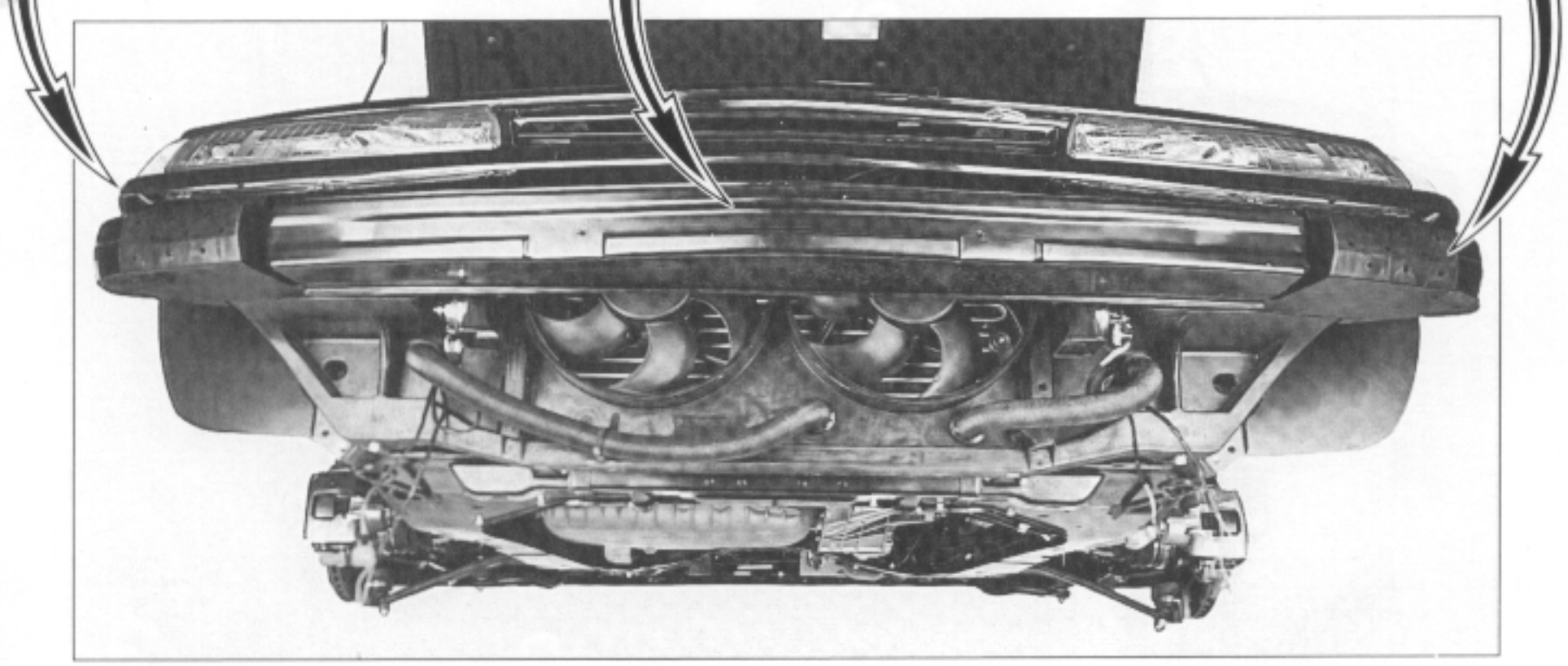
www.WorkshopManuals.co.uk



89-281

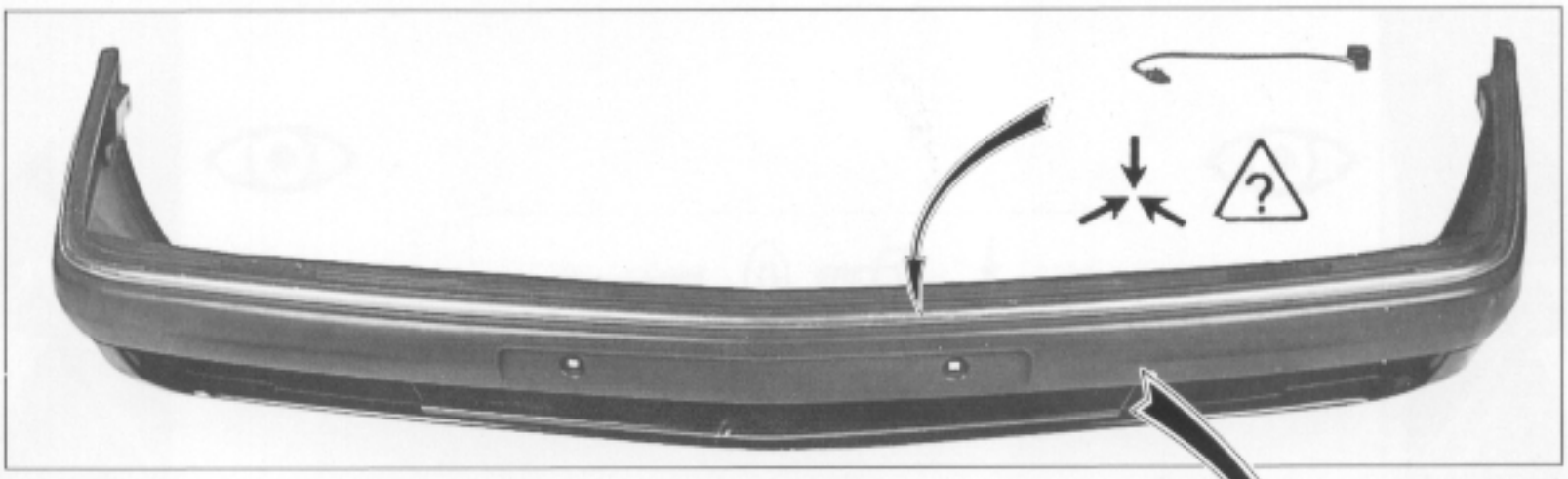


89-267

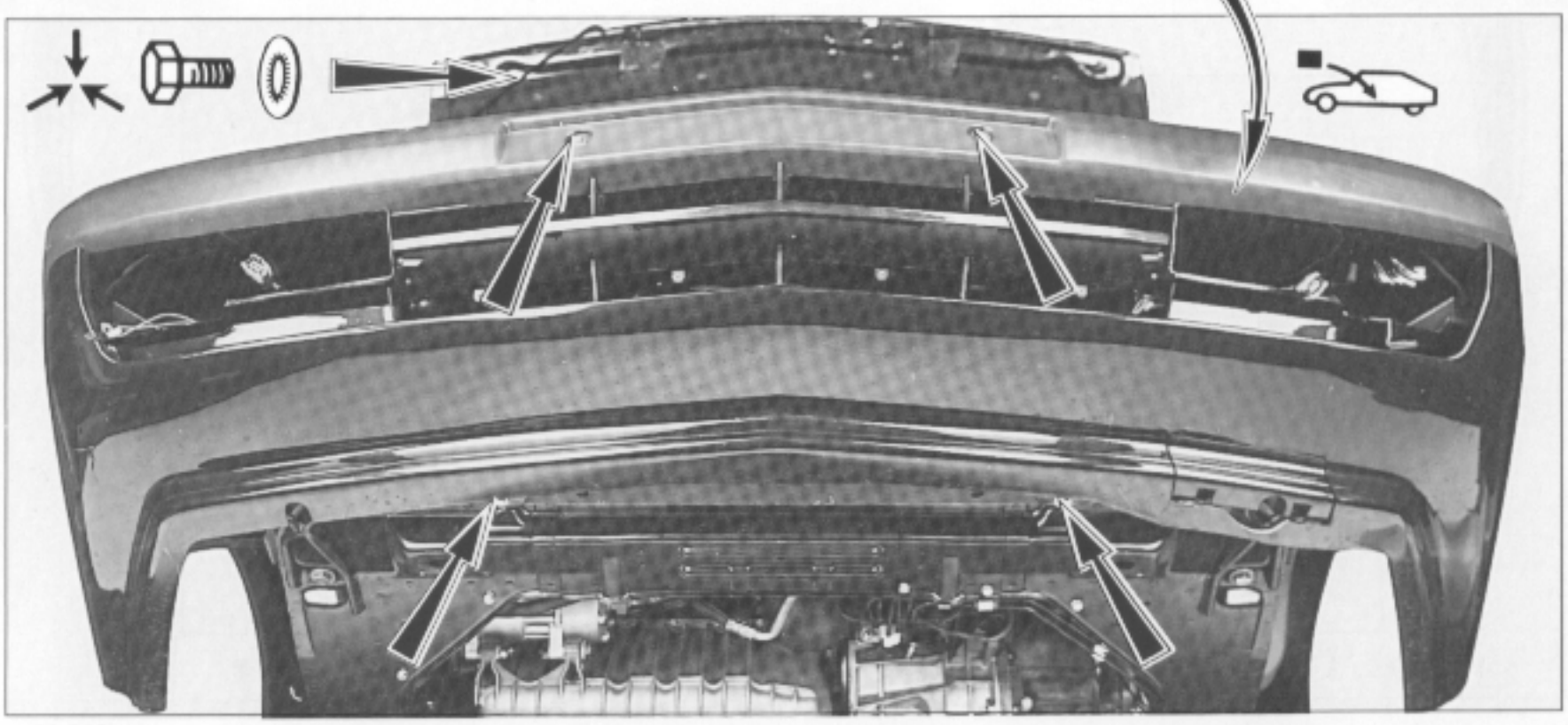


89-275

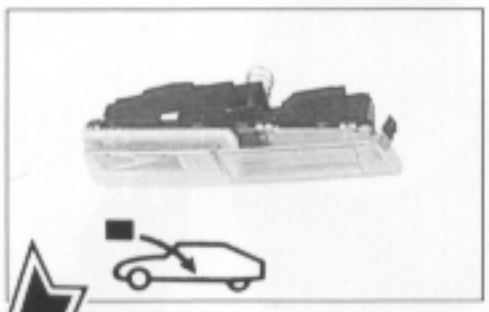
www.WorkshopManuals.co.uk



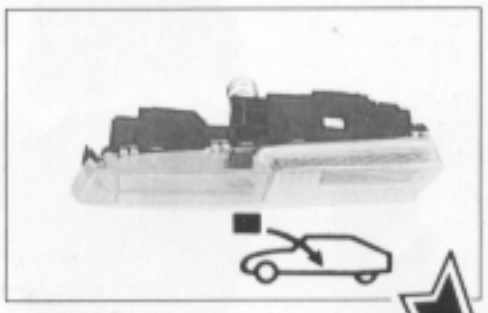
89-268



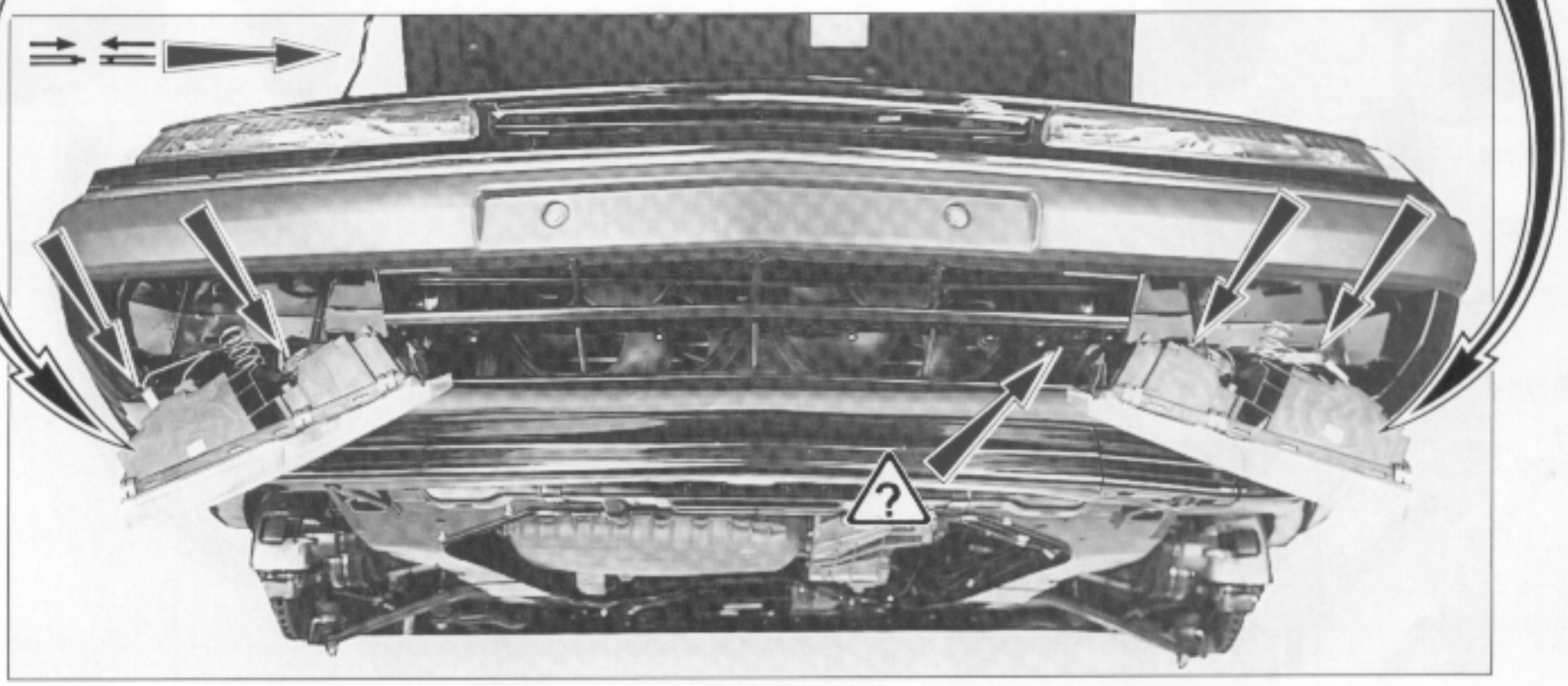
89-278



89-268

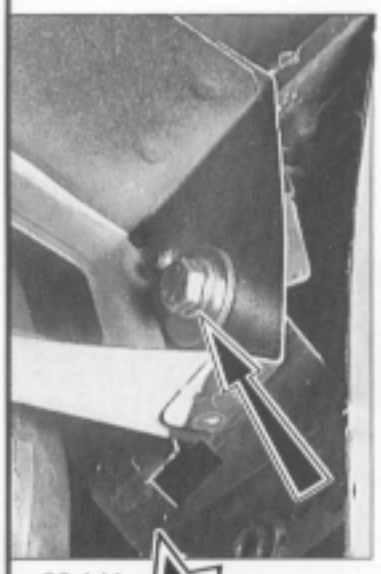


89-268

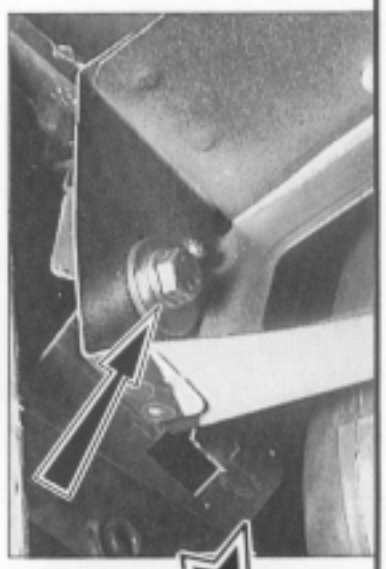


89-285

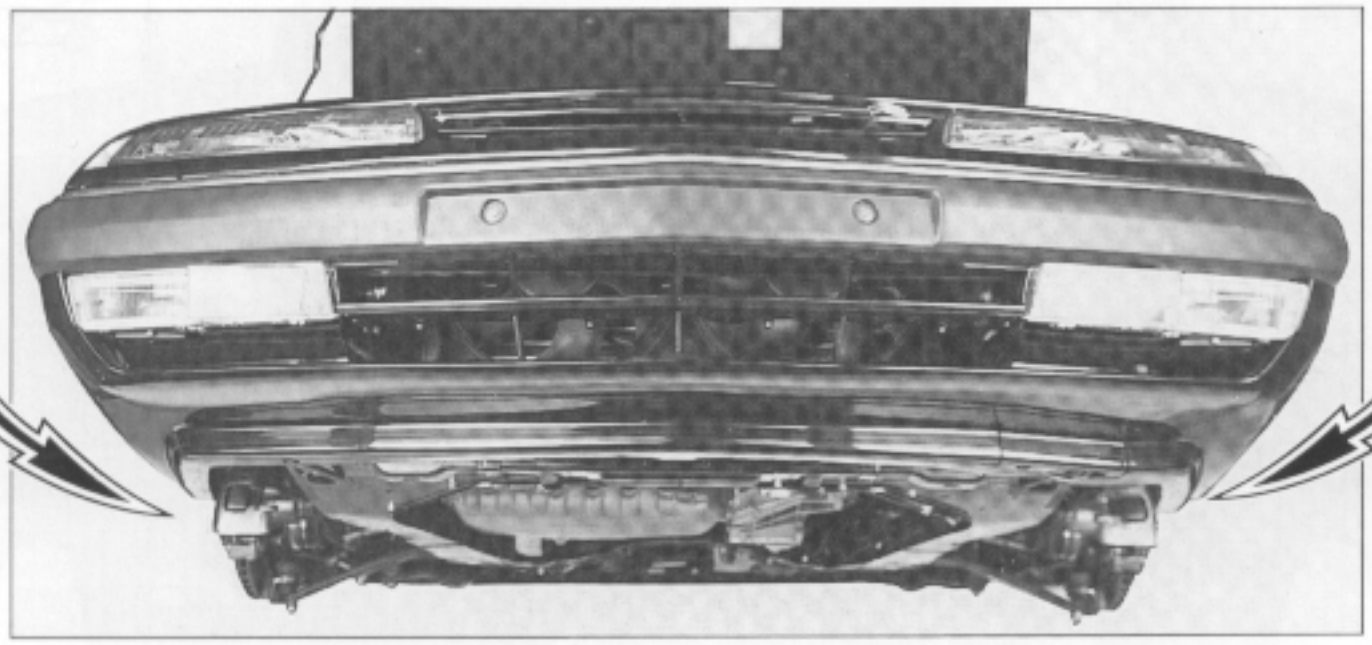
www.WorkshopManuals.co.uk



89-141



89-141

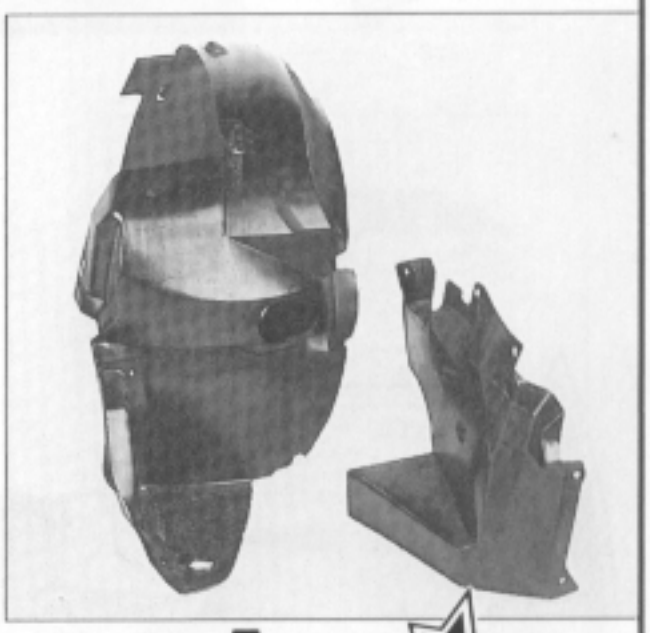


89-276

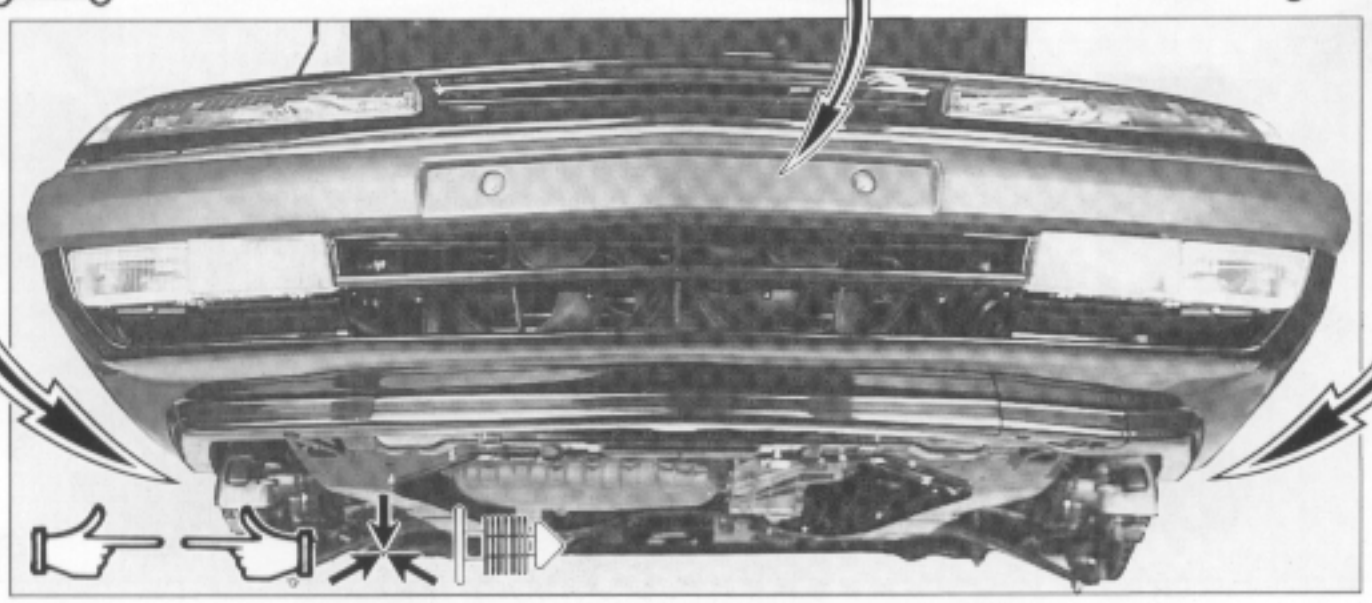


89-282

2305 XM 89

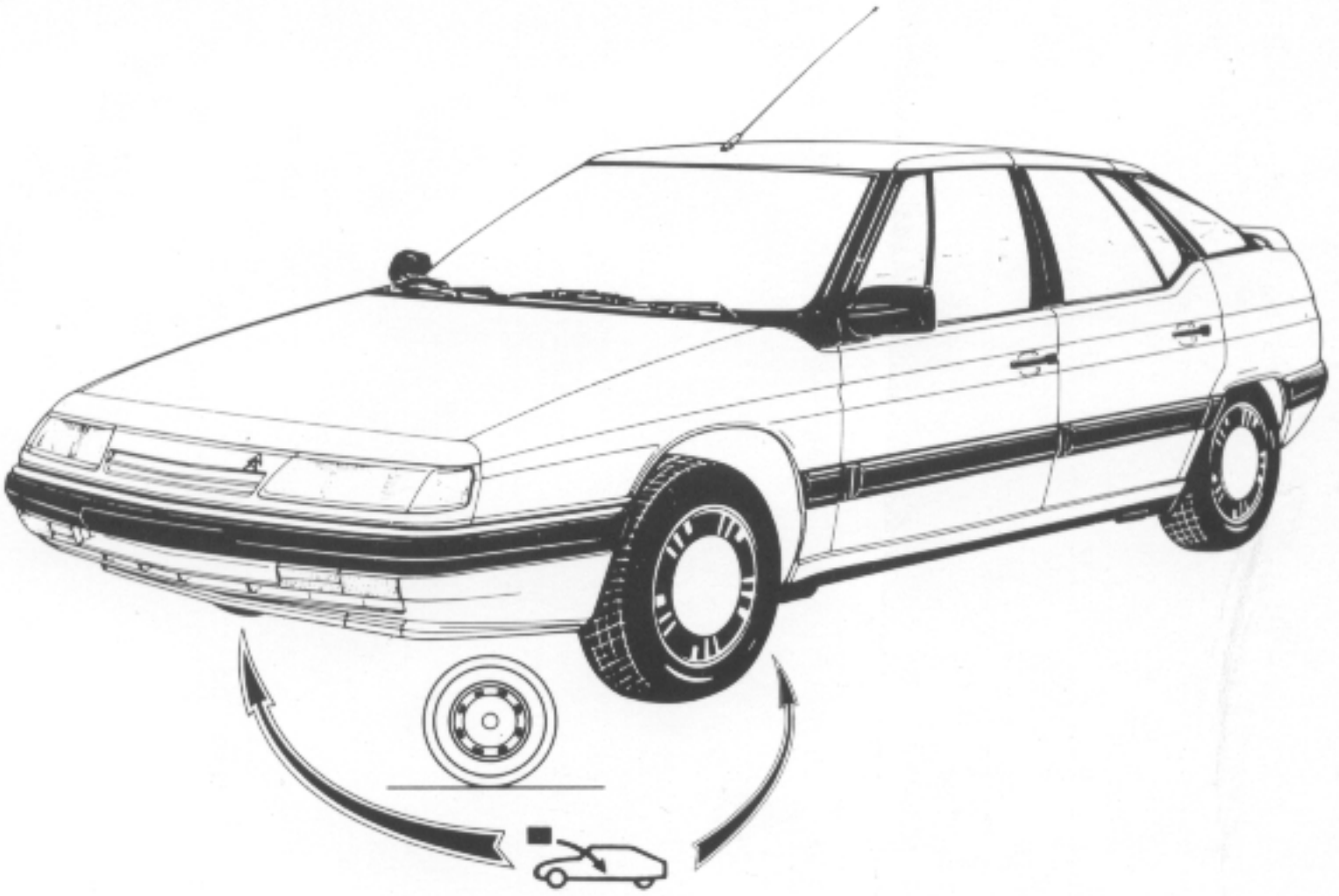


89-282

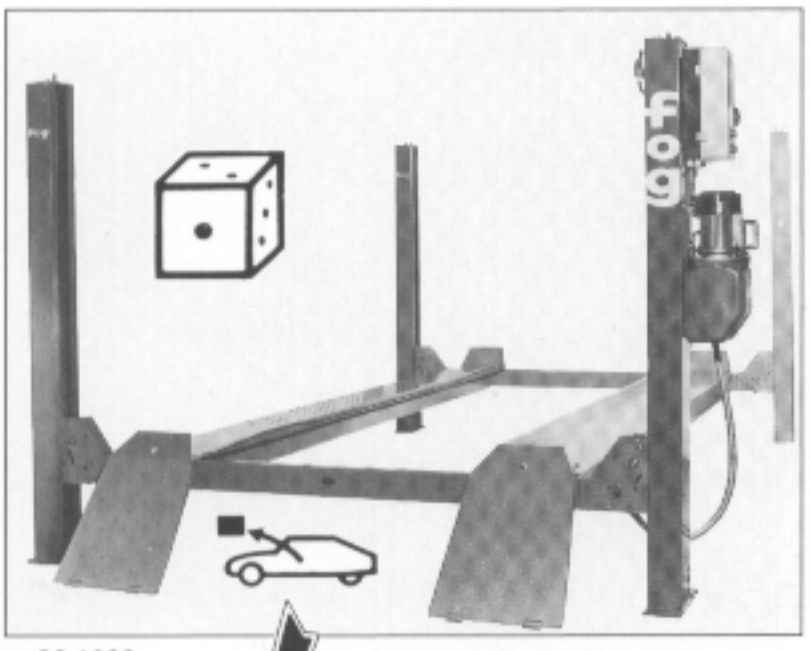


89-276

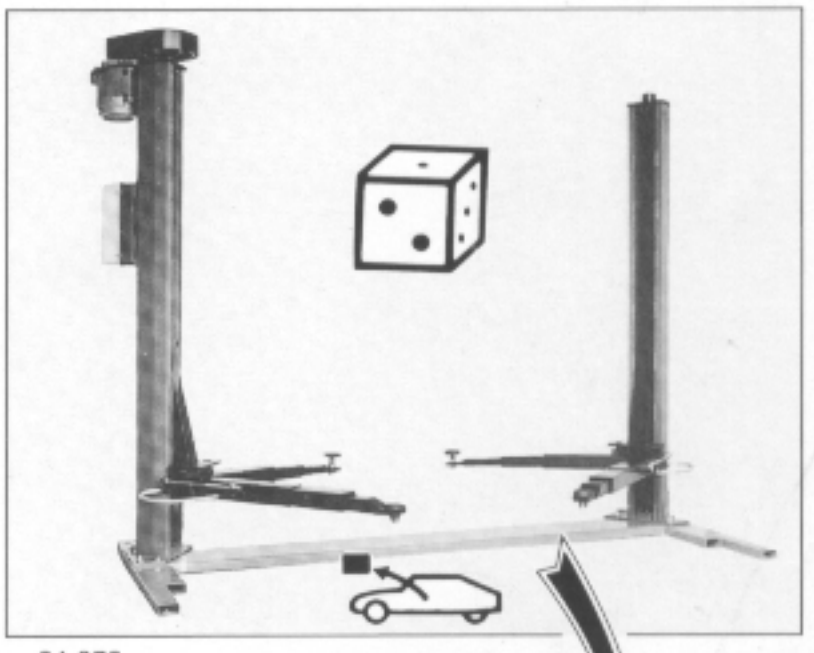
www.WorkshopManuals.co.uk



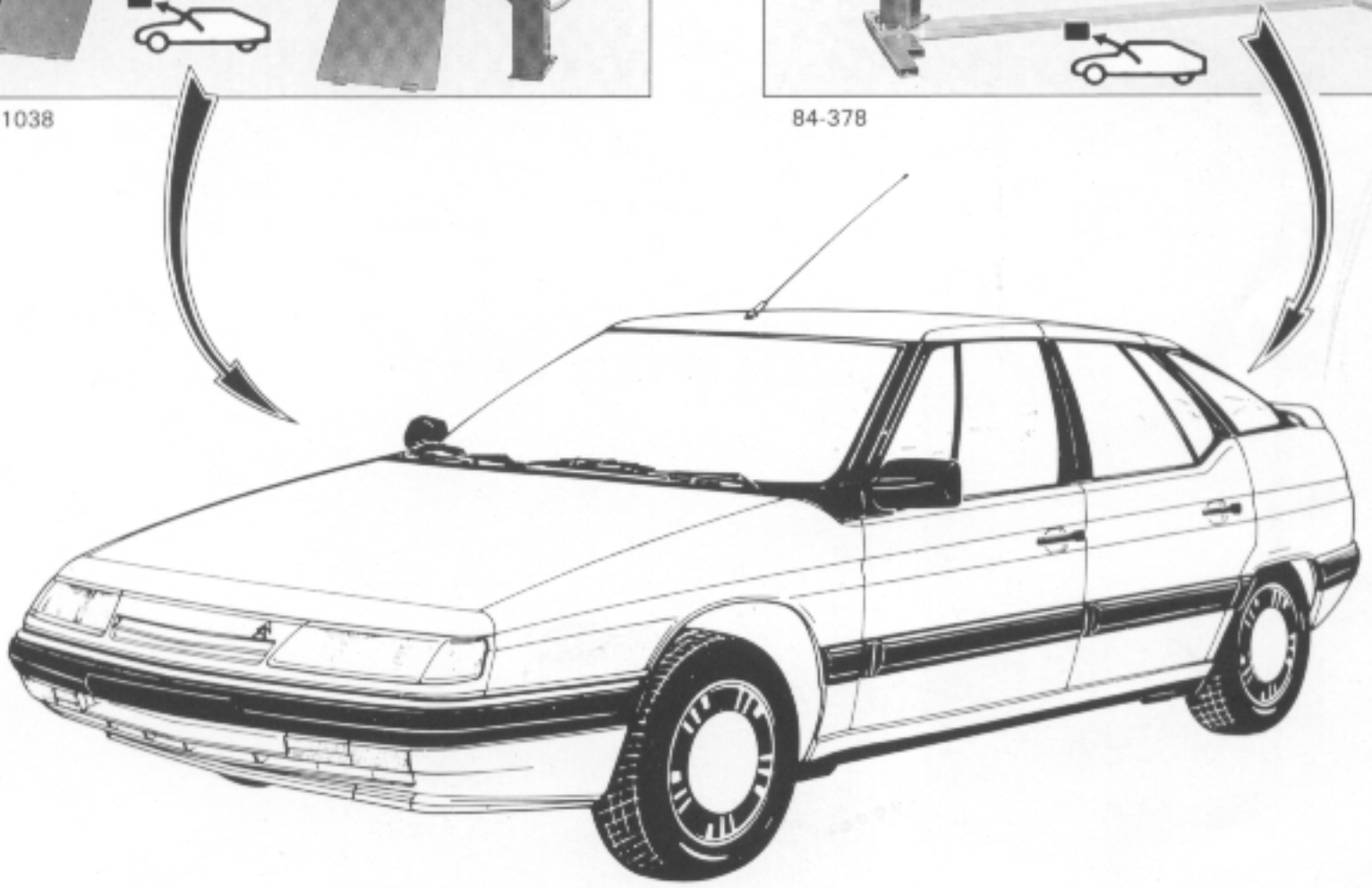
Y.80-3



86-1038



84-378



Y.80-3

www.WorkshopManuals.co.uk



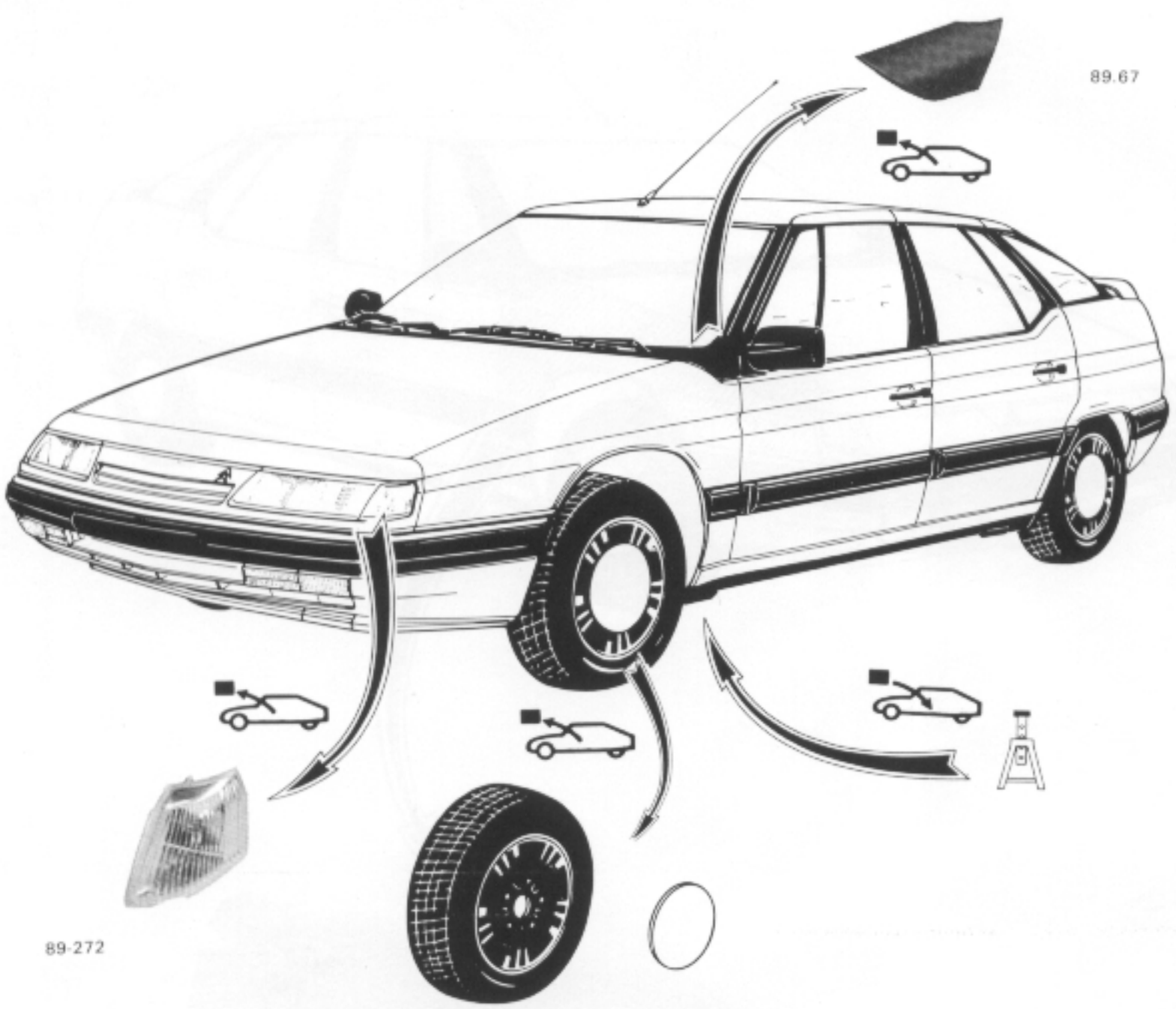
89-305

7504-T



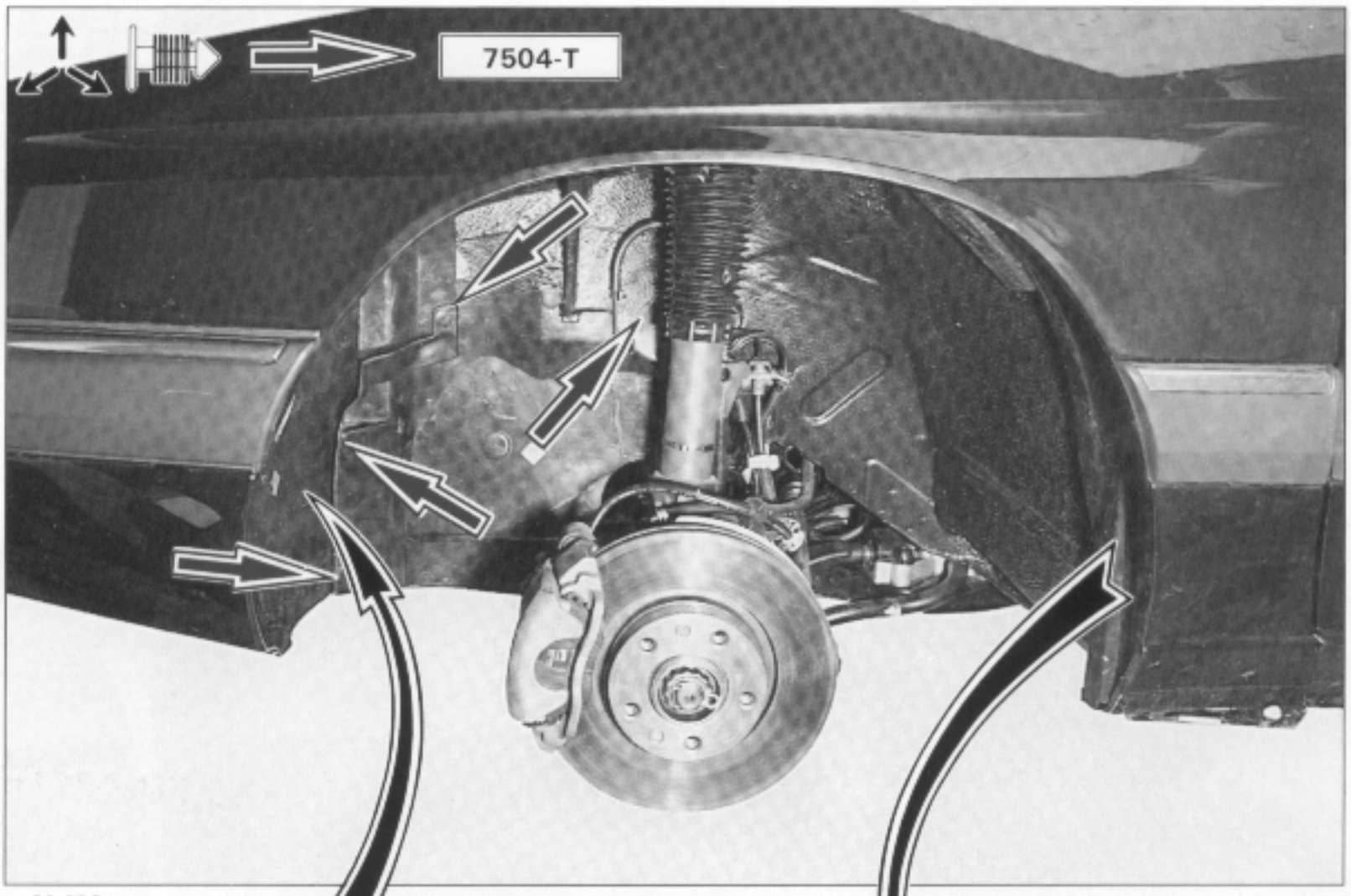
89-228

www.WorkshopManuals.co.uk



Y-80.7a

www.WorkshopManuals.co.uk



89-303

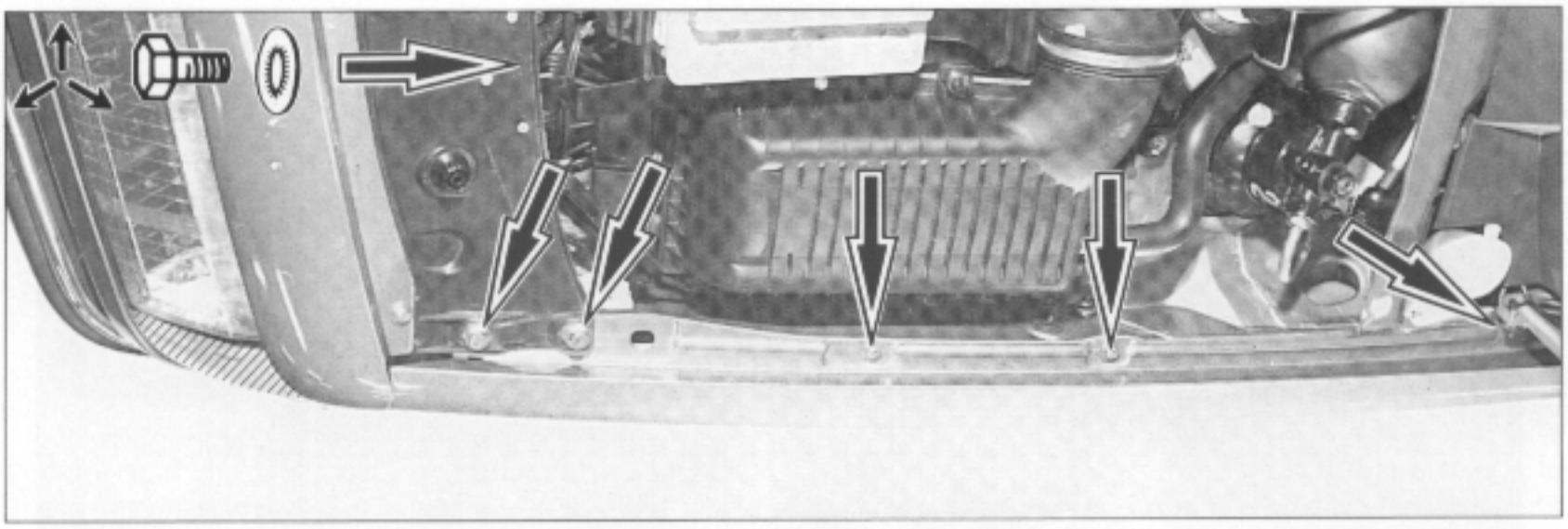


89-141

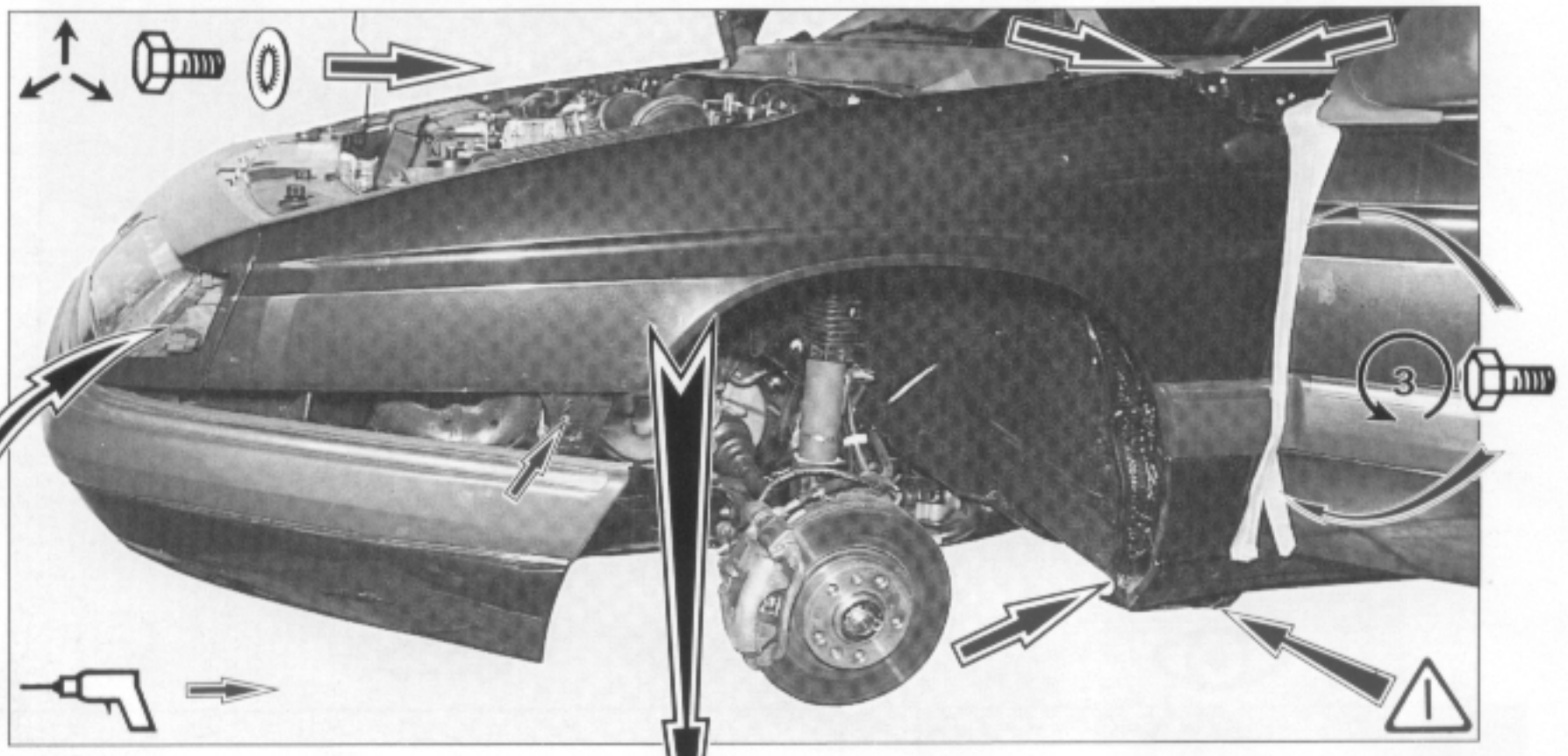


89-283

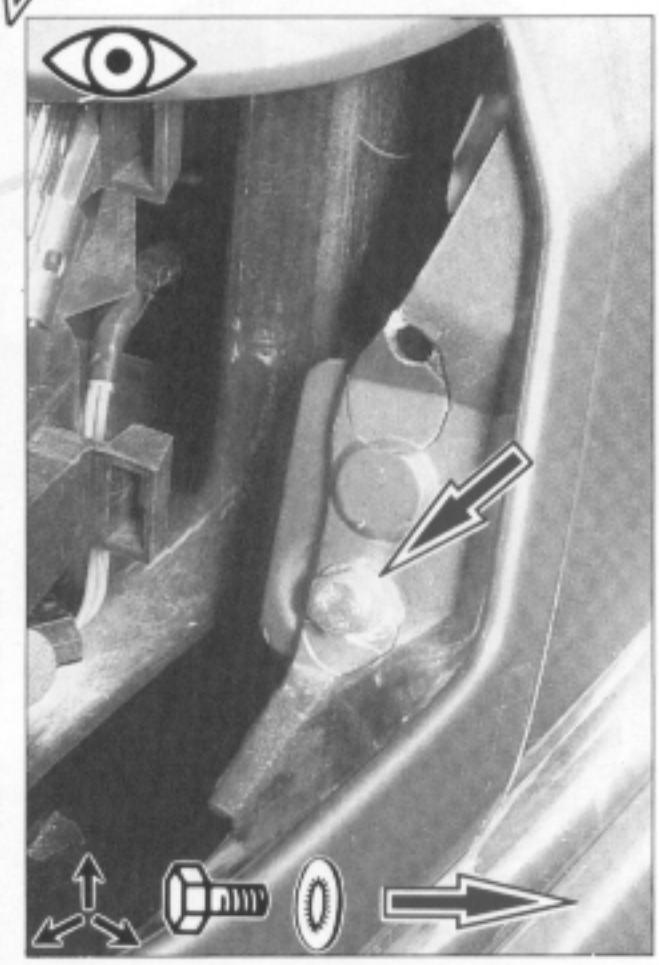
www.WorkshopManuals.co.uk



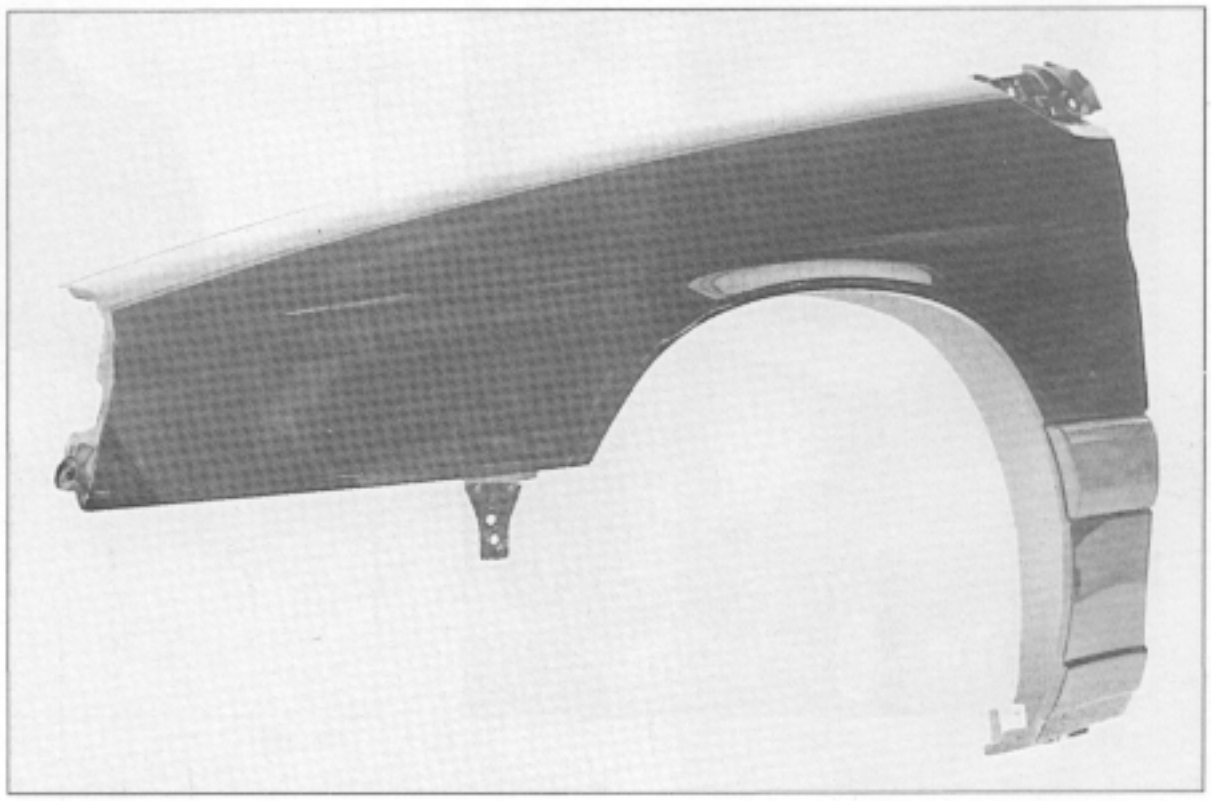
88-526



89-302



89-140

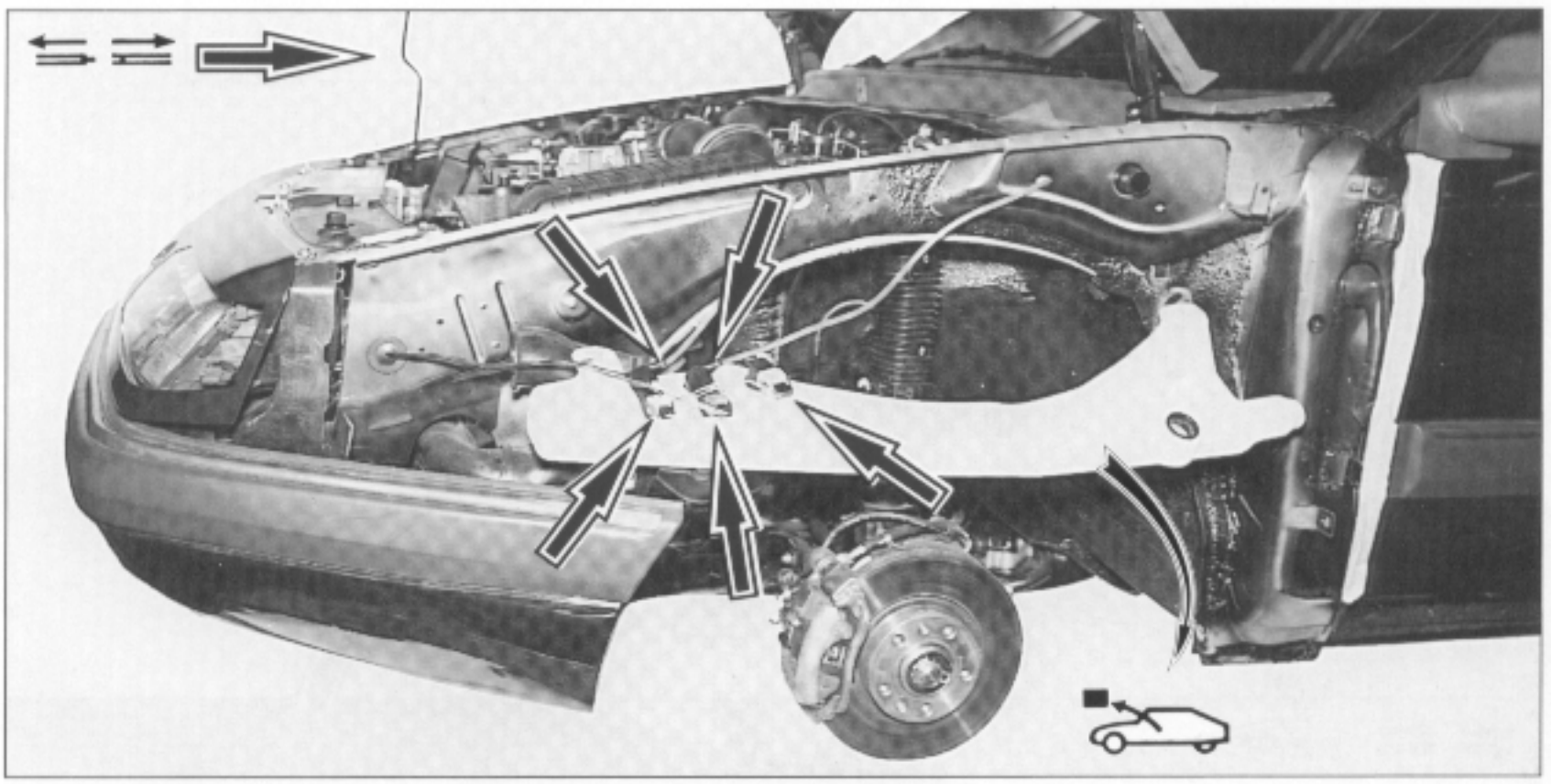


89-305

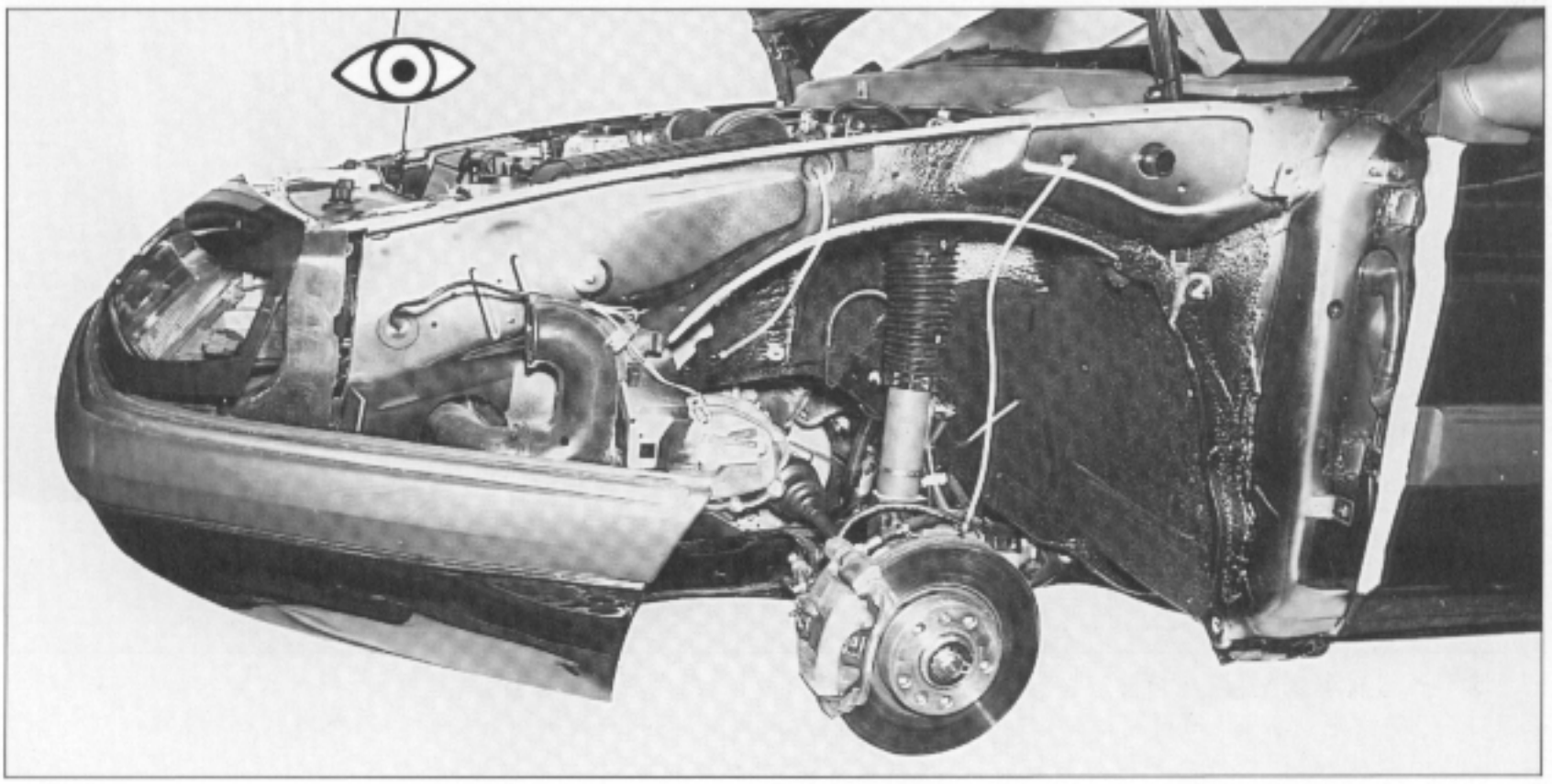
www.WorkshopManuals.co.uk



89-300

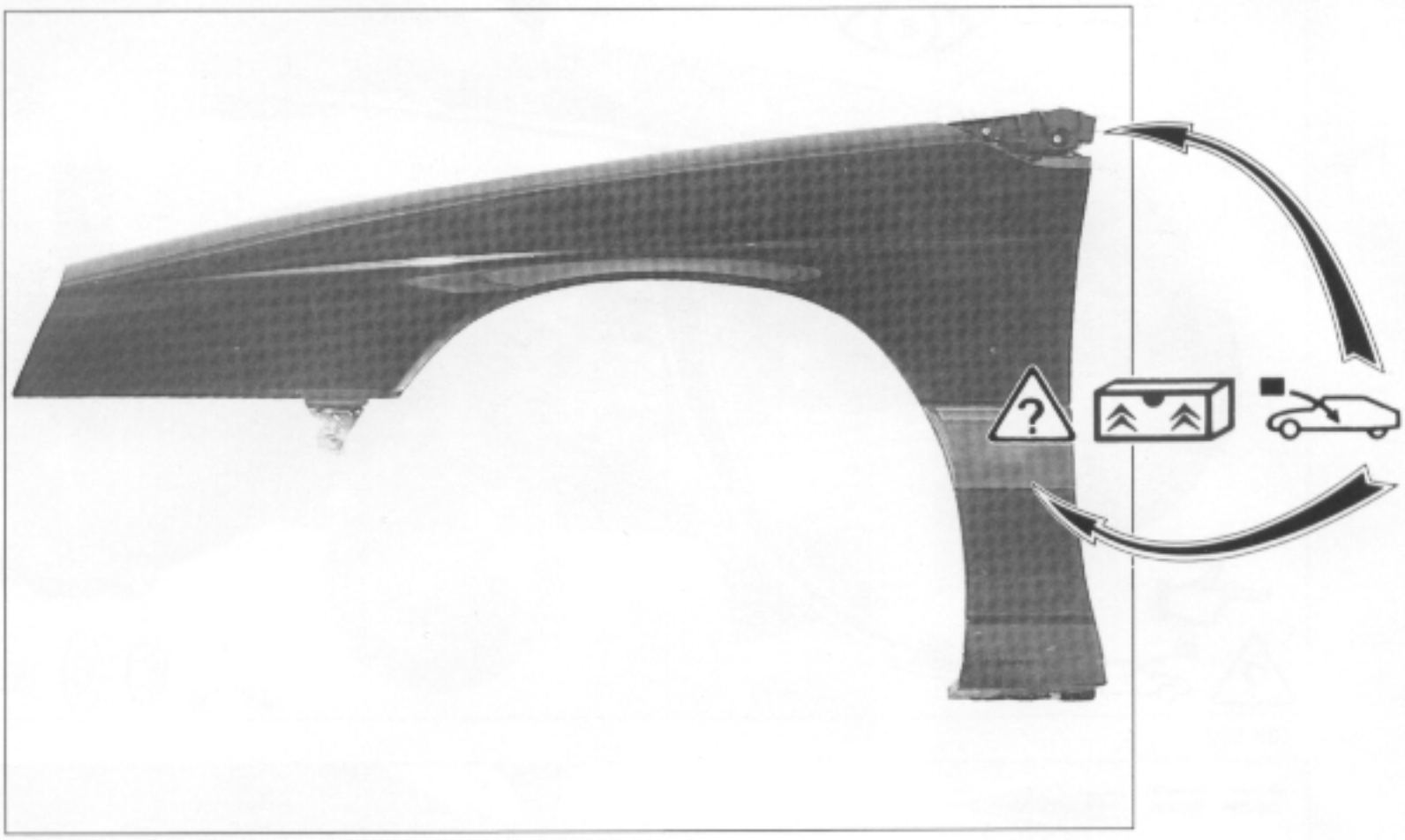


89-299

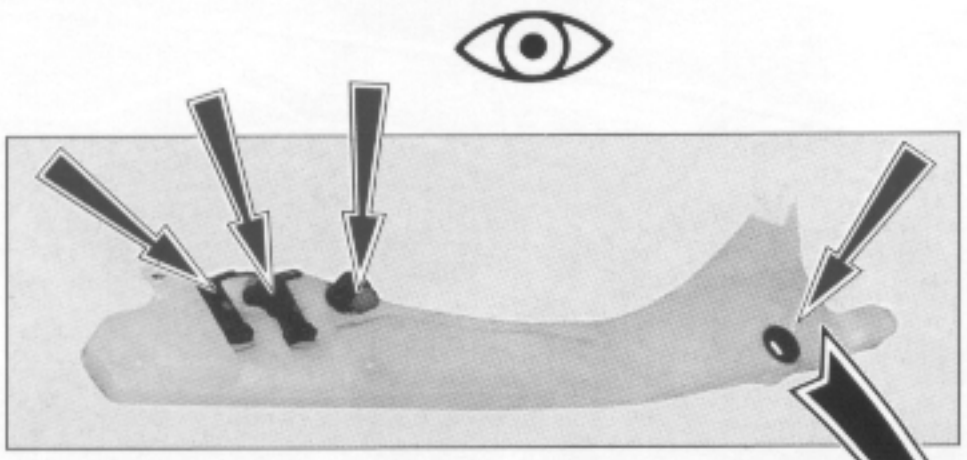


89-301

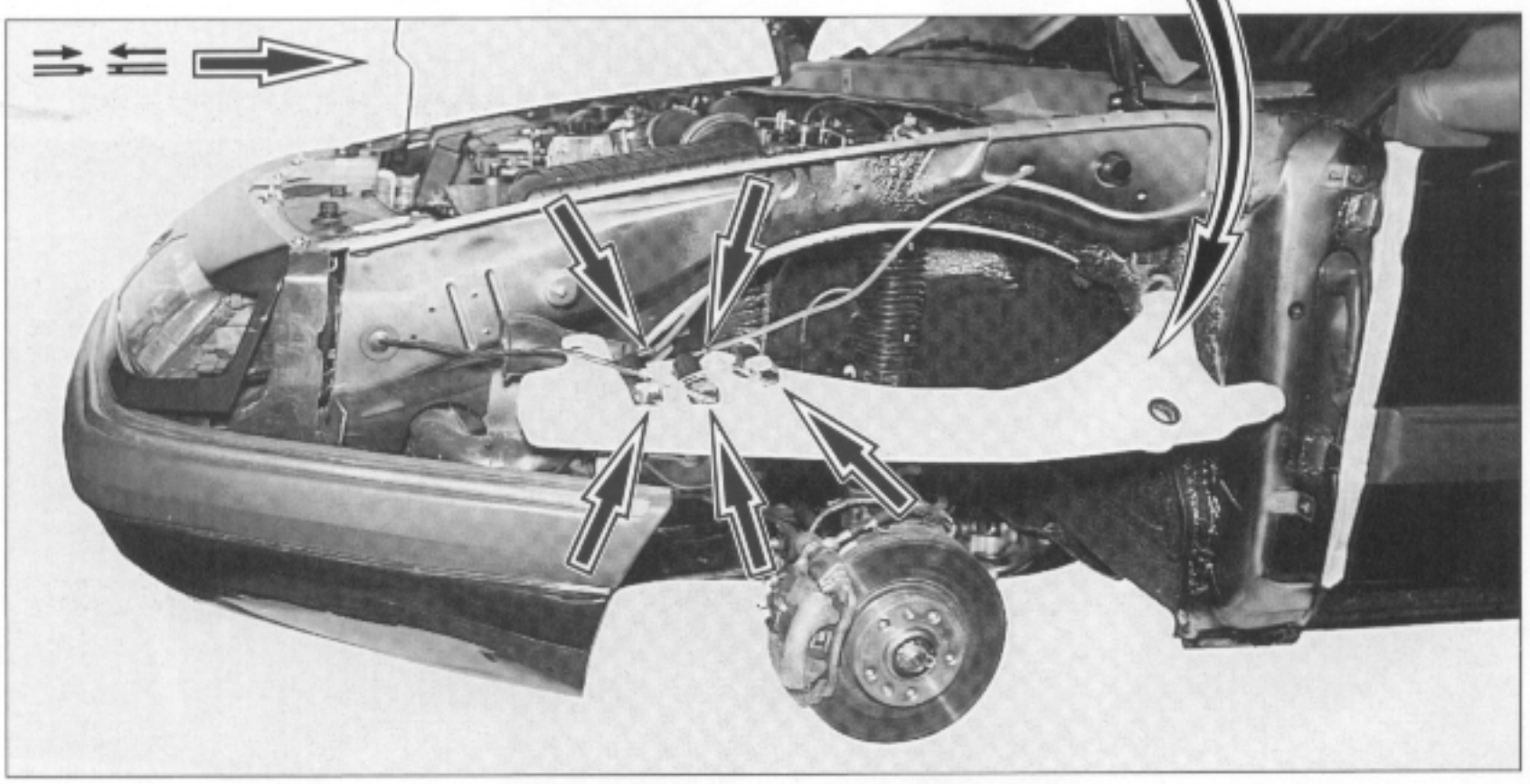
www.WorkshopManuals.co.uk



89-304

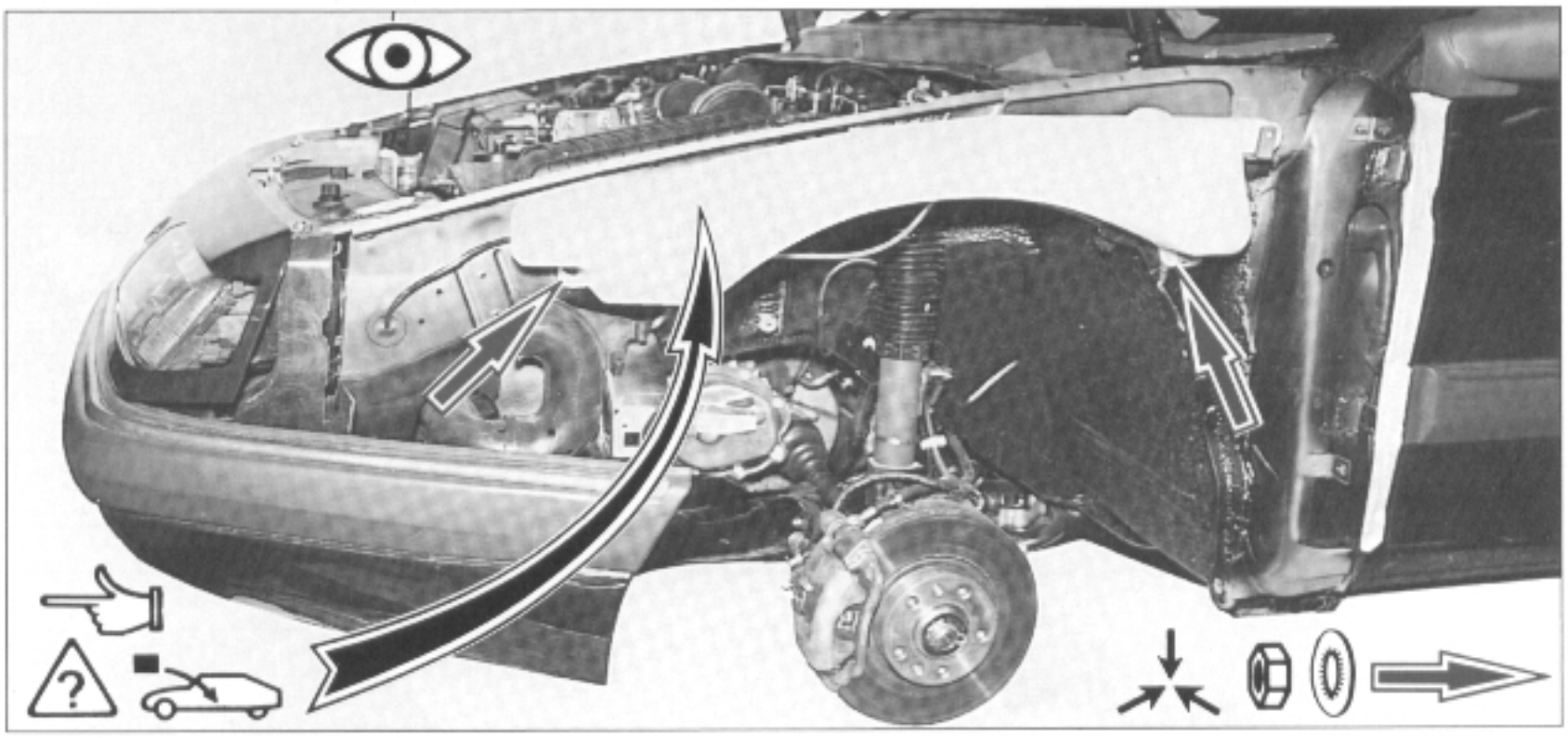


89-305

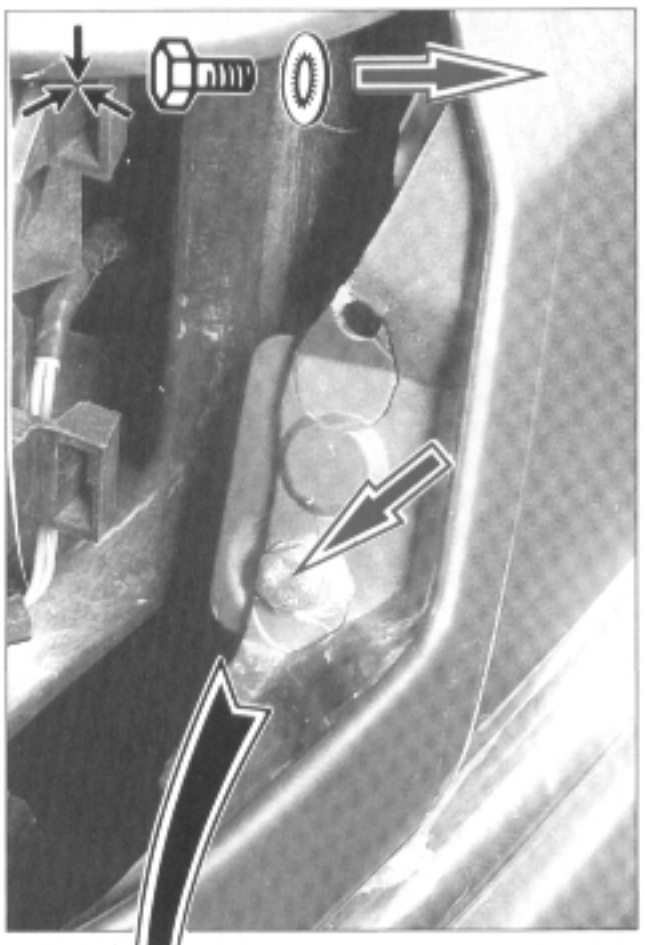


89-299

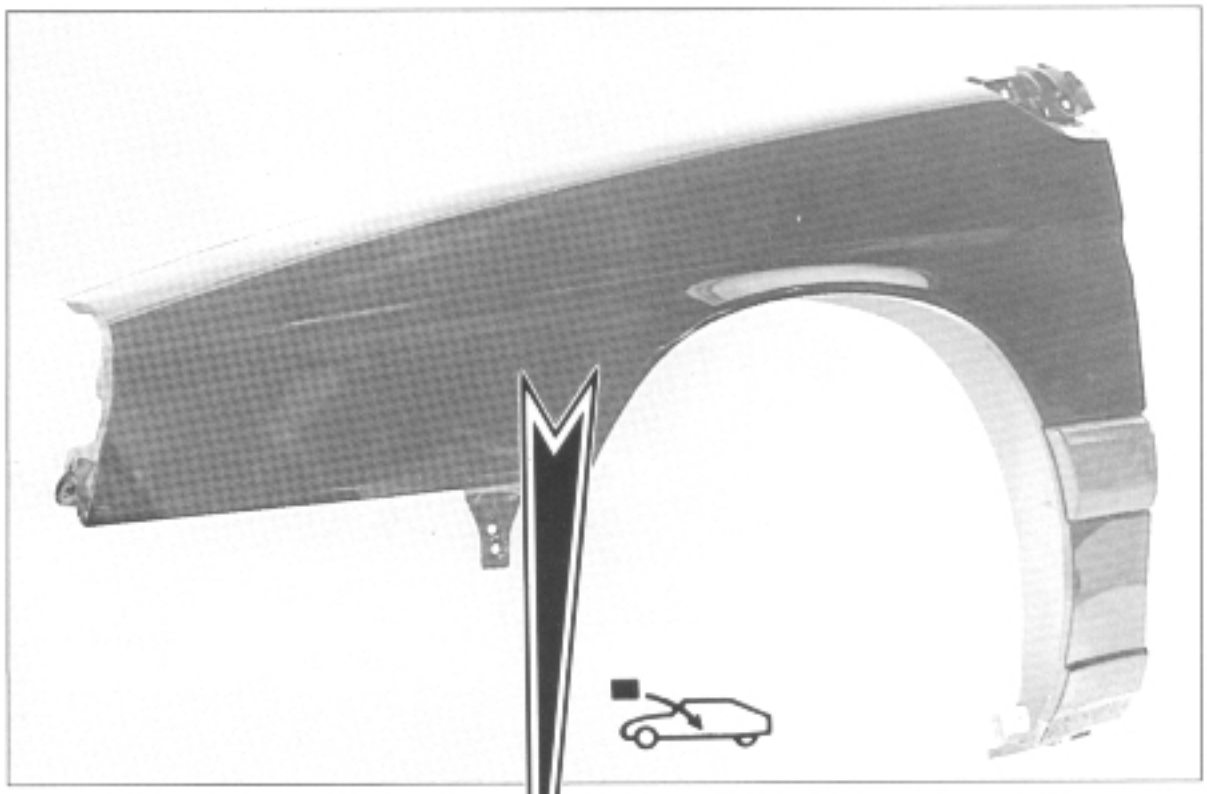
www.WorkshopManuals.co.uk



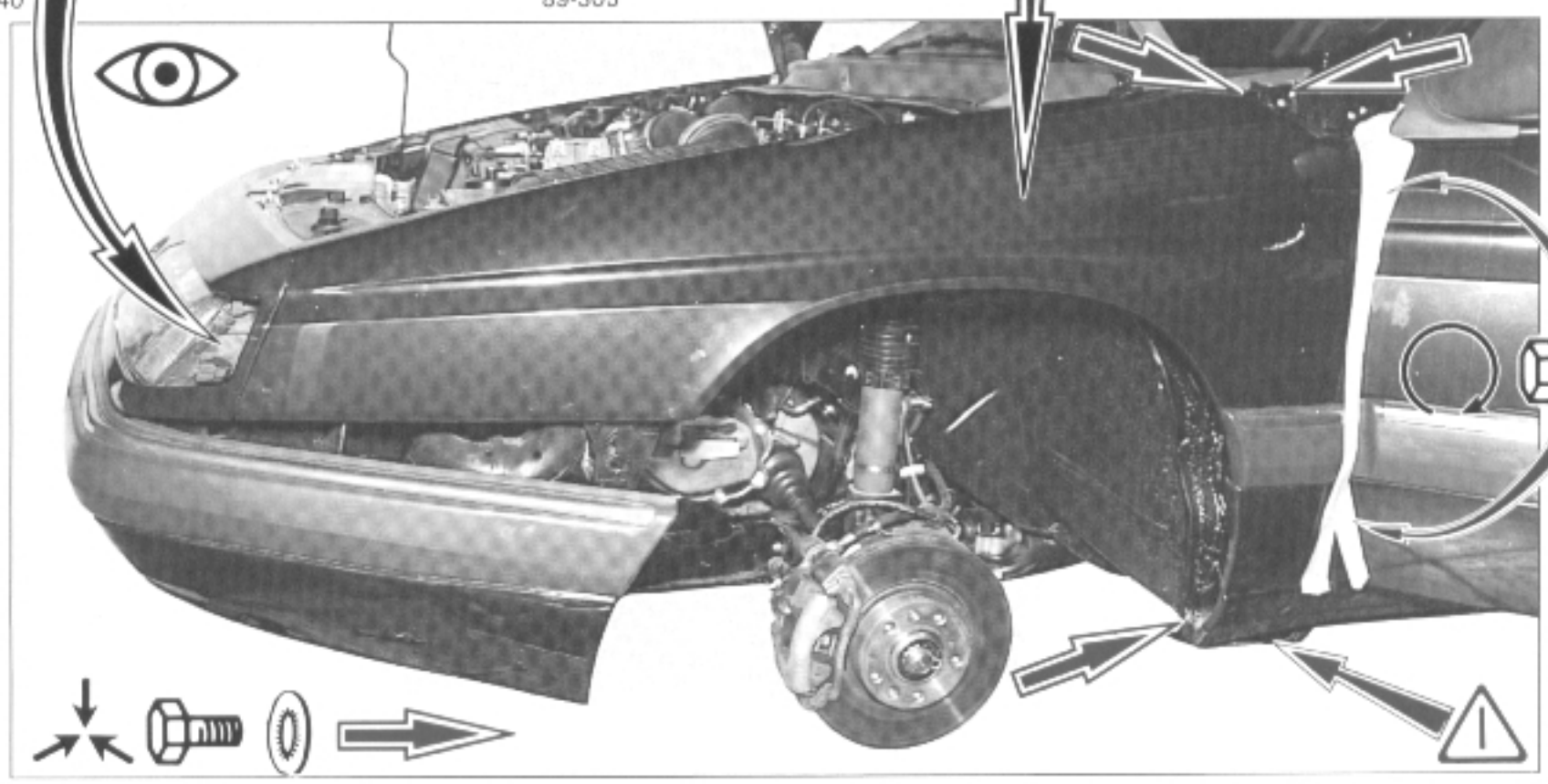
89-300



89-140

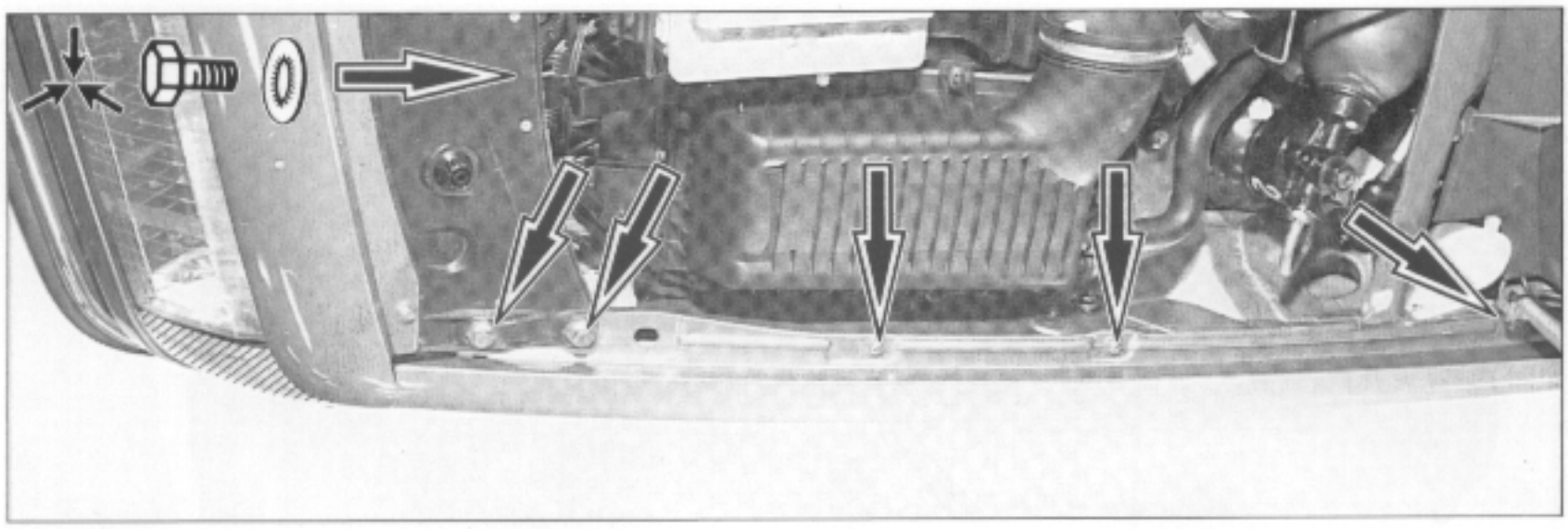


89-305



89-302

www.WorkshopManuals.co.uk



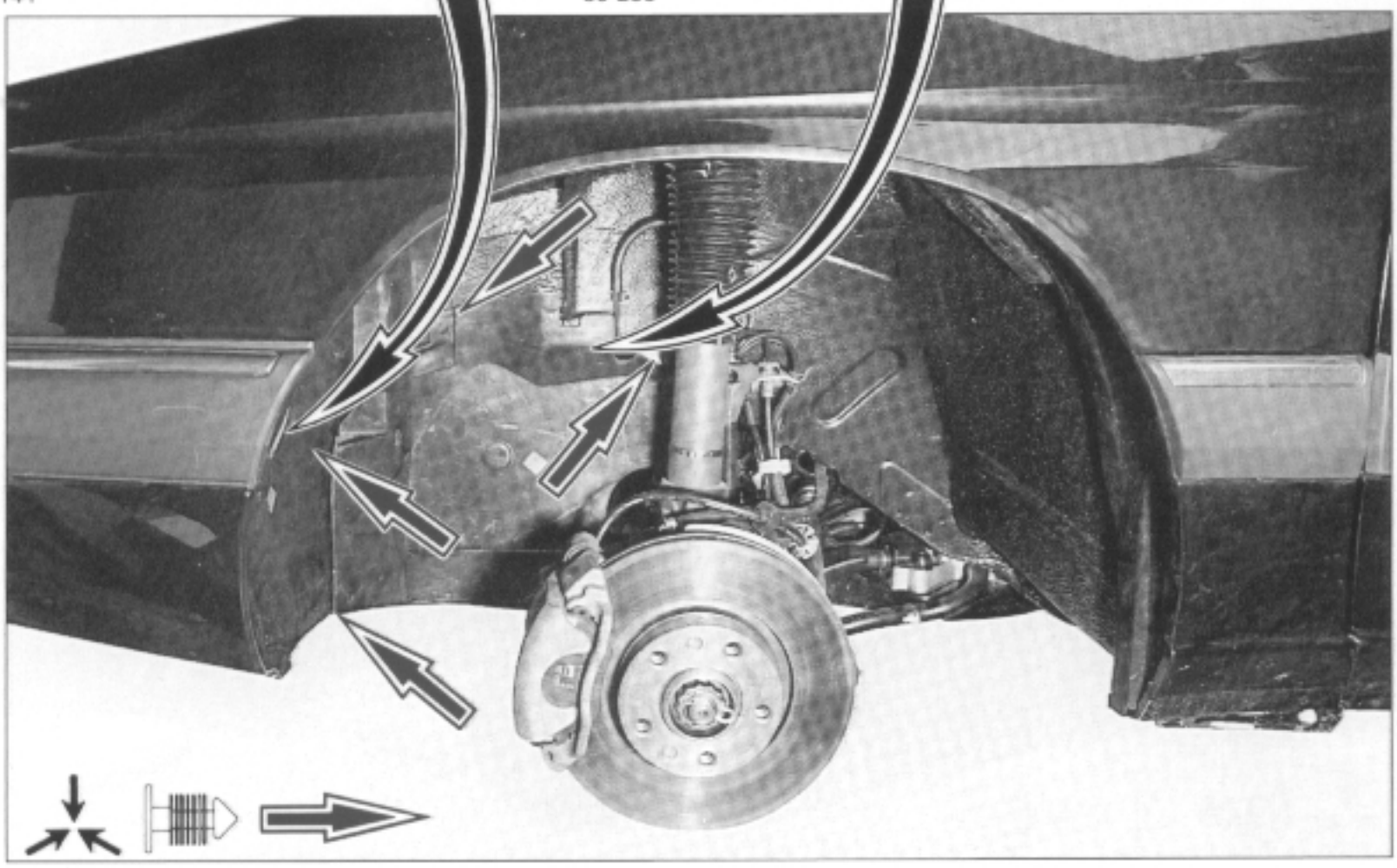
88-526



89-141



89-283

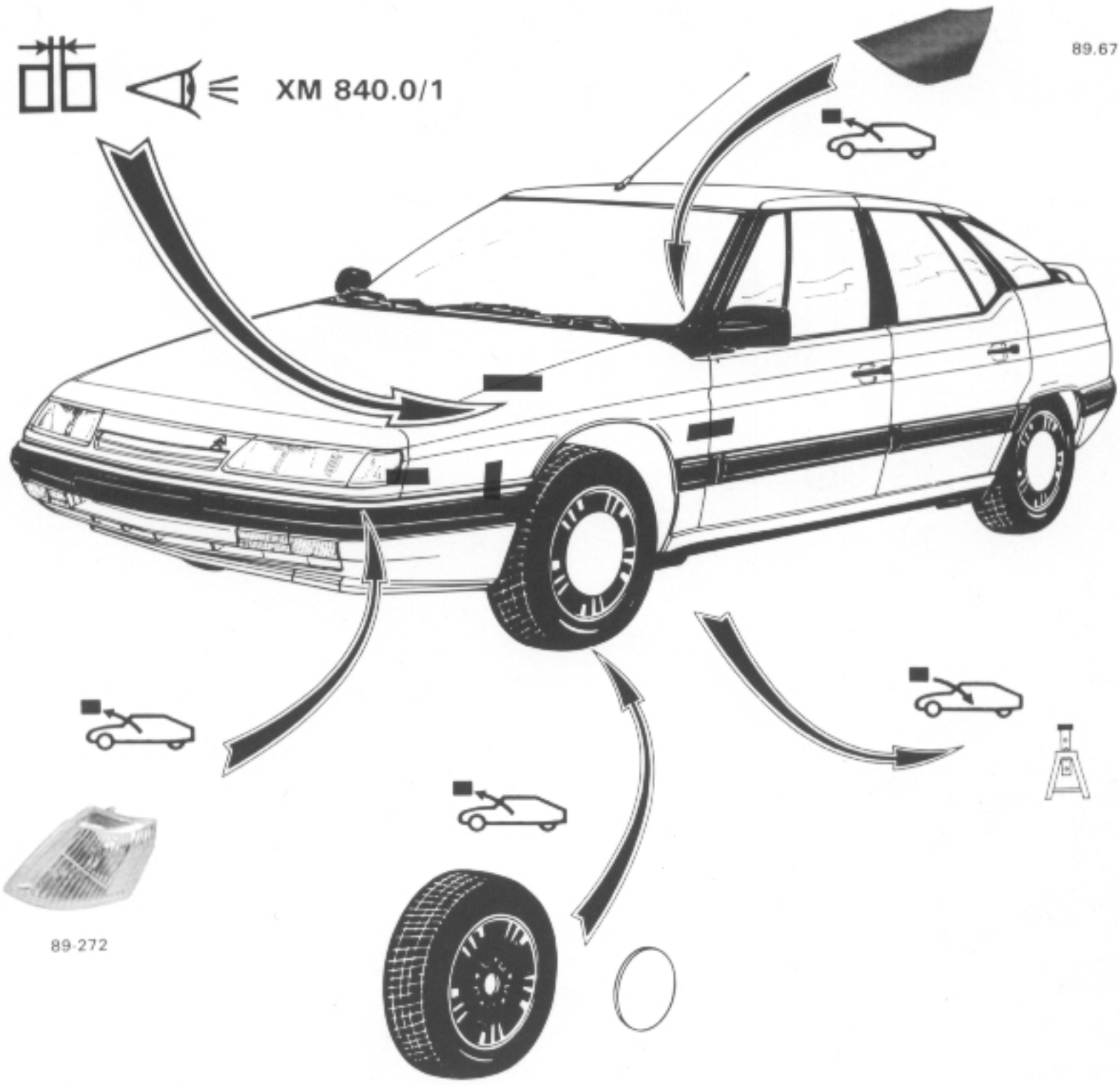


89-303

www.WorkshopManuals.co.uk

XM 840.0/1

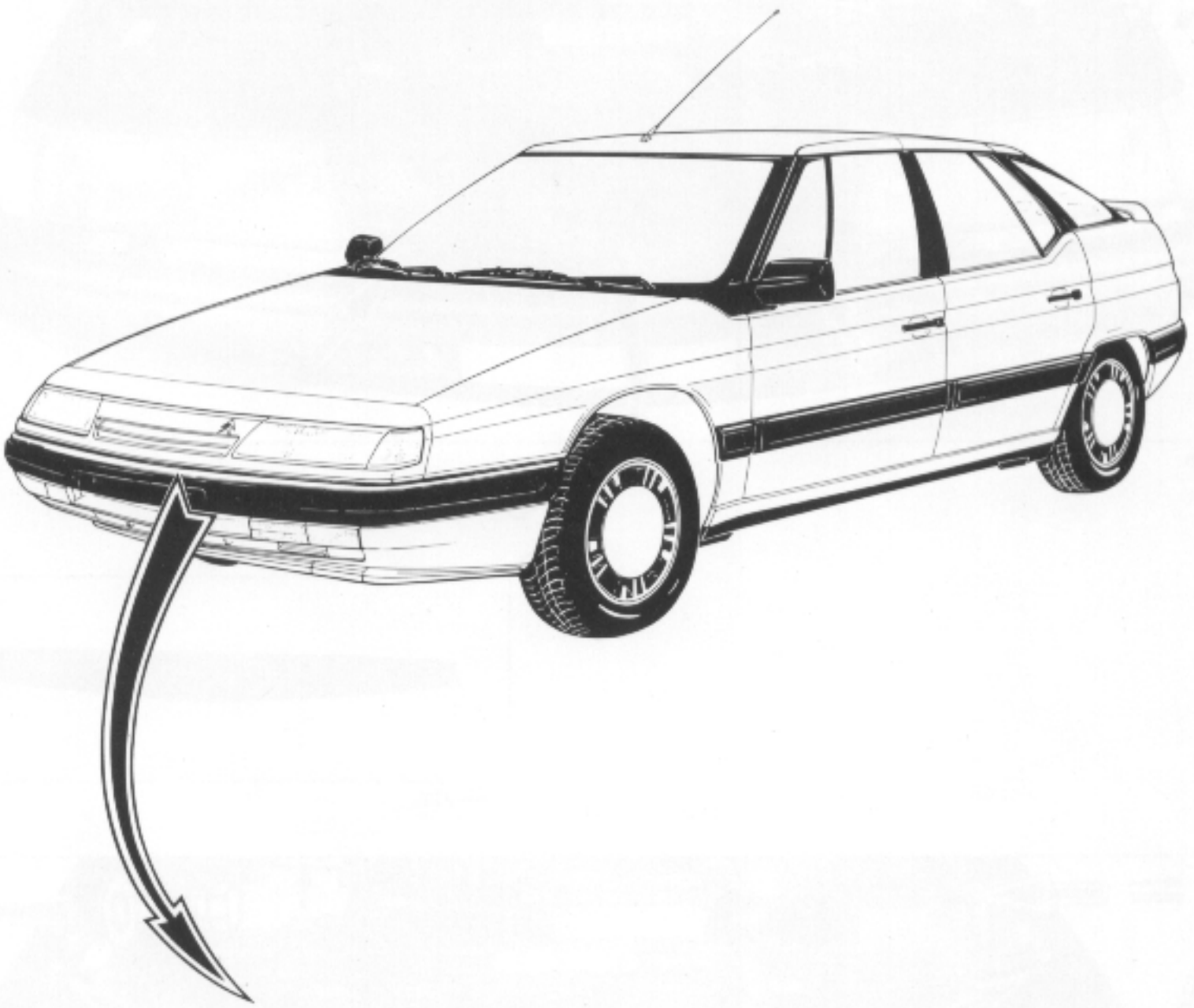
89.67



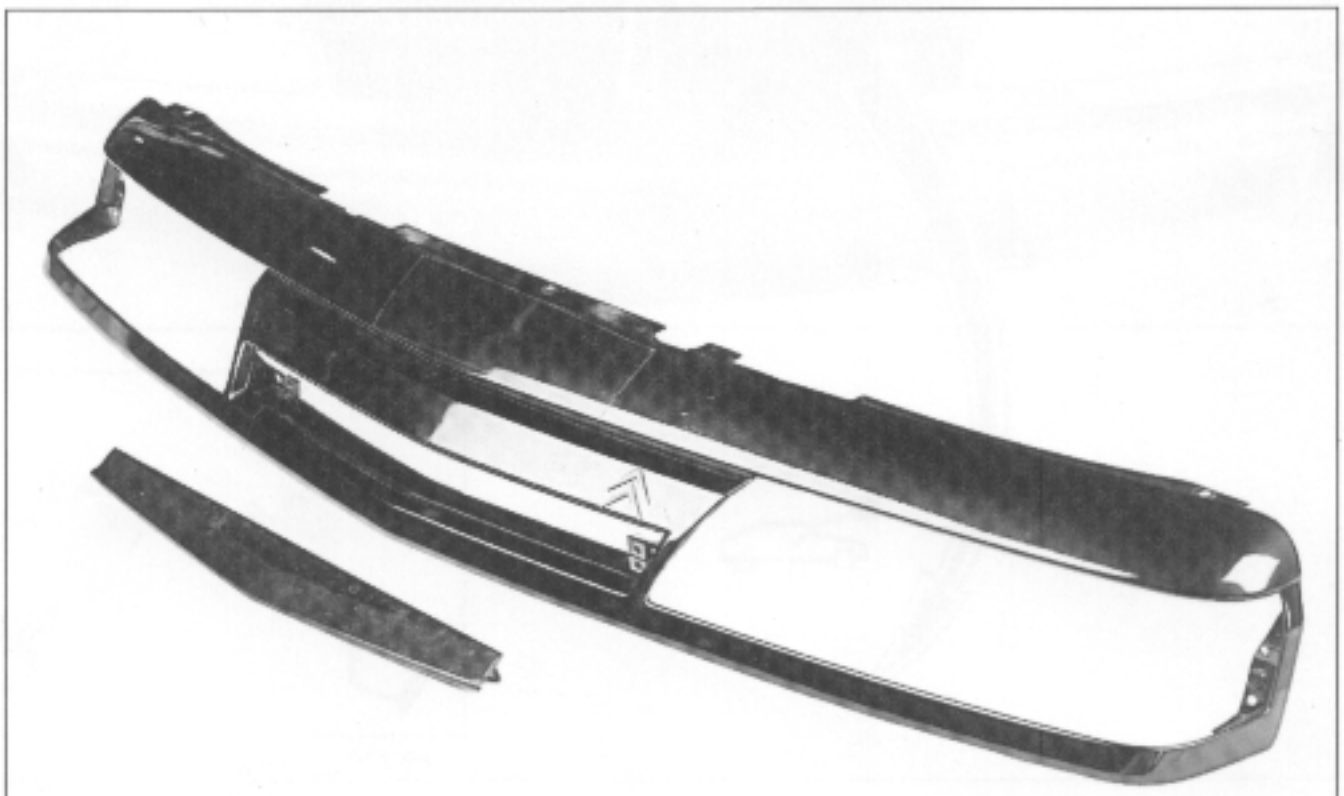
89-272

Y.80-72

www.WorkshopManuals.co.uk

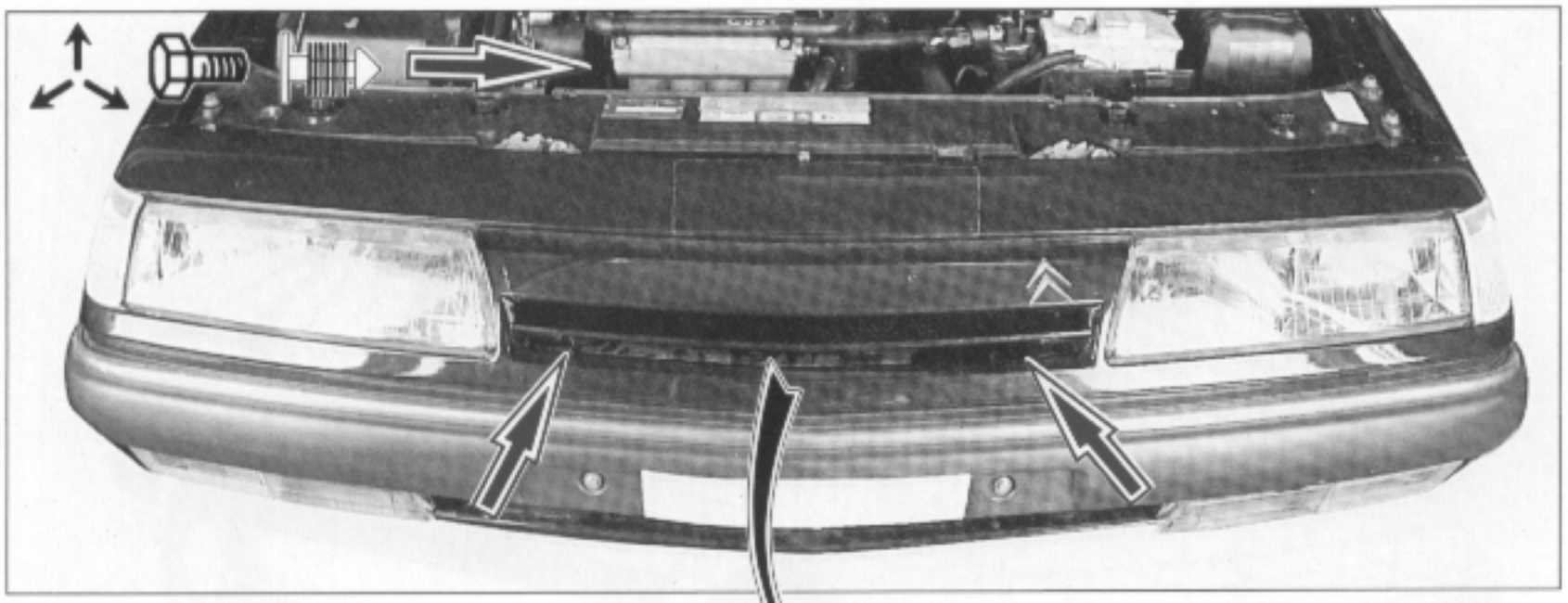


Y.80-7

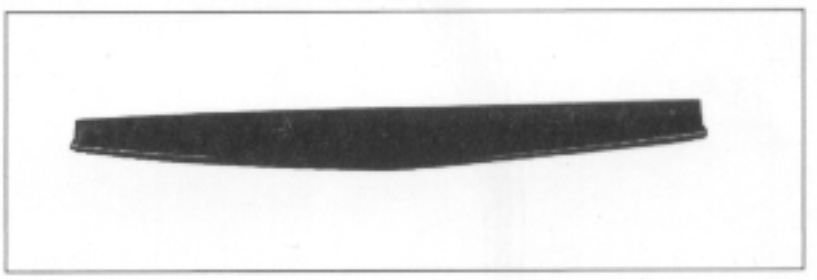


89-272

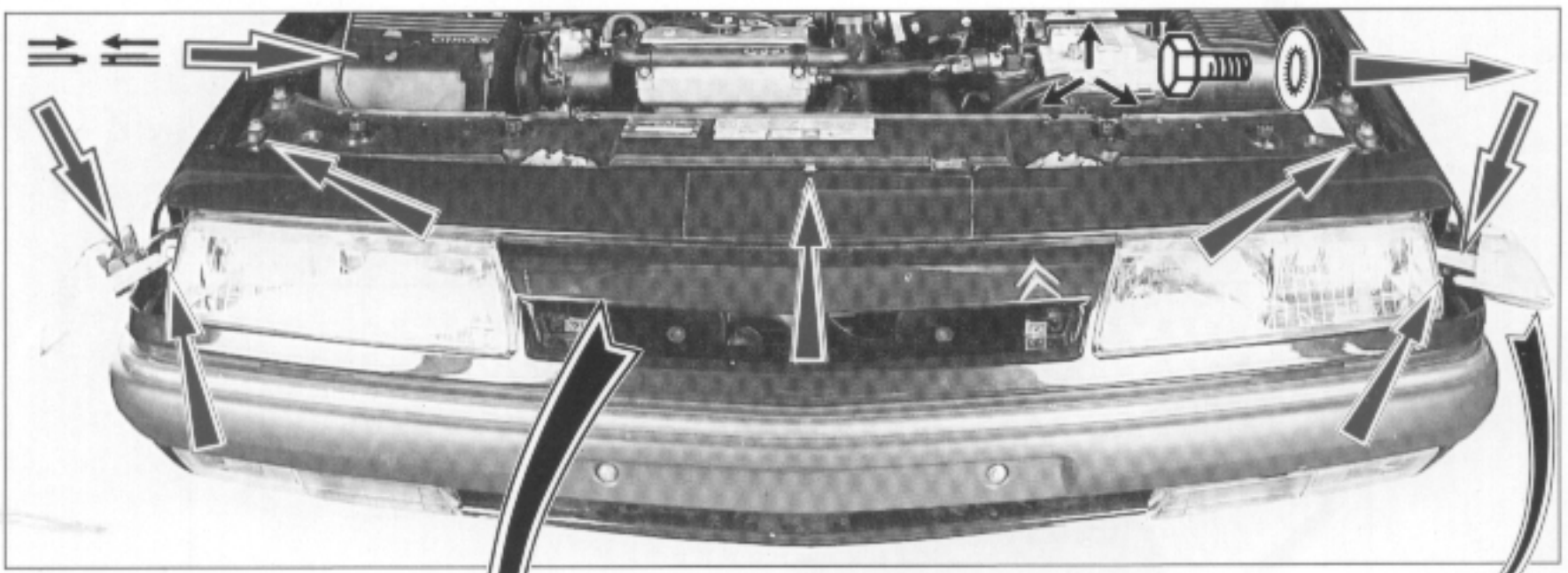
www.WorkshopManuals.co.uk



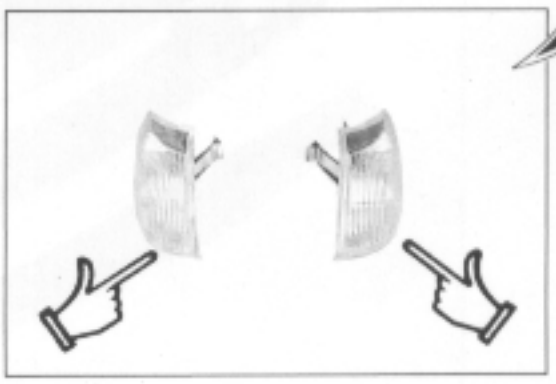
89-218



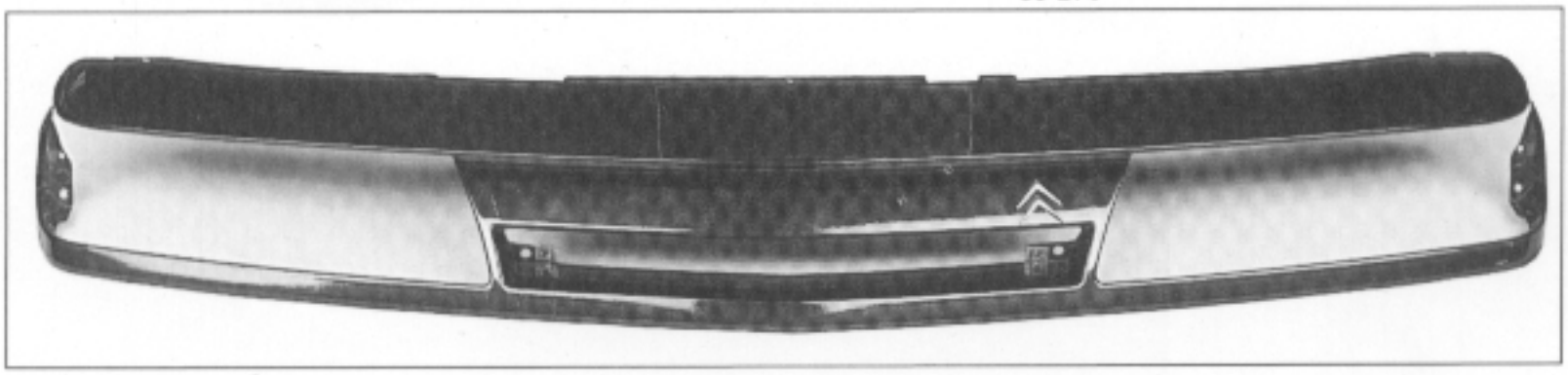
89-270



89-216

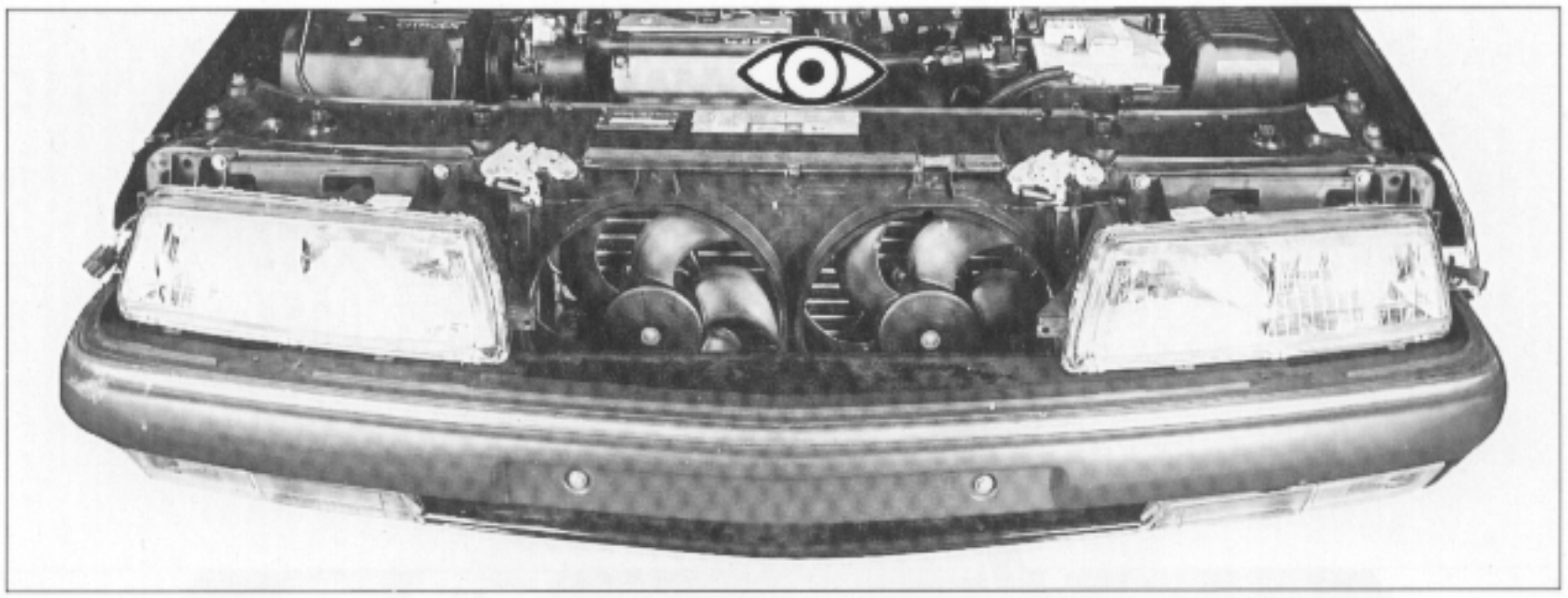


89-270

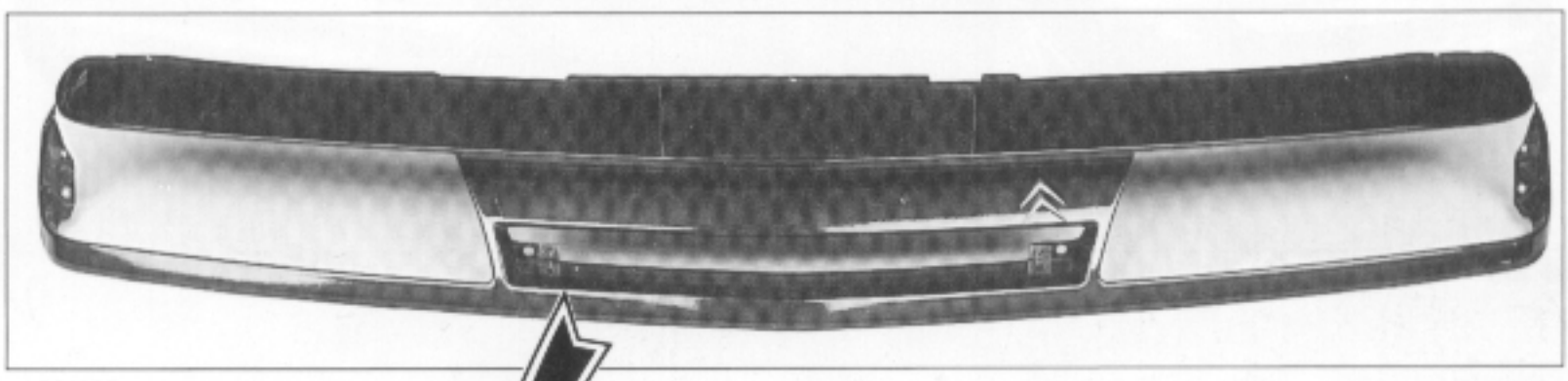


89-270

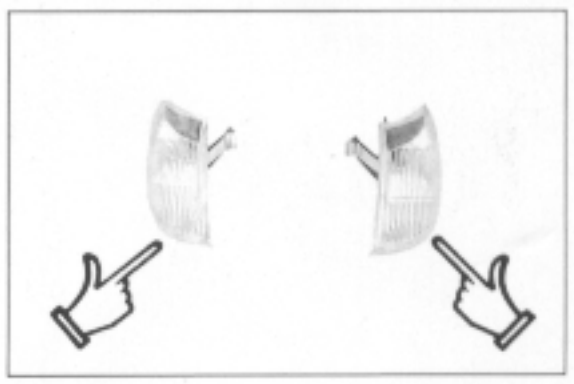
www.WorkshopManuals.co.uk



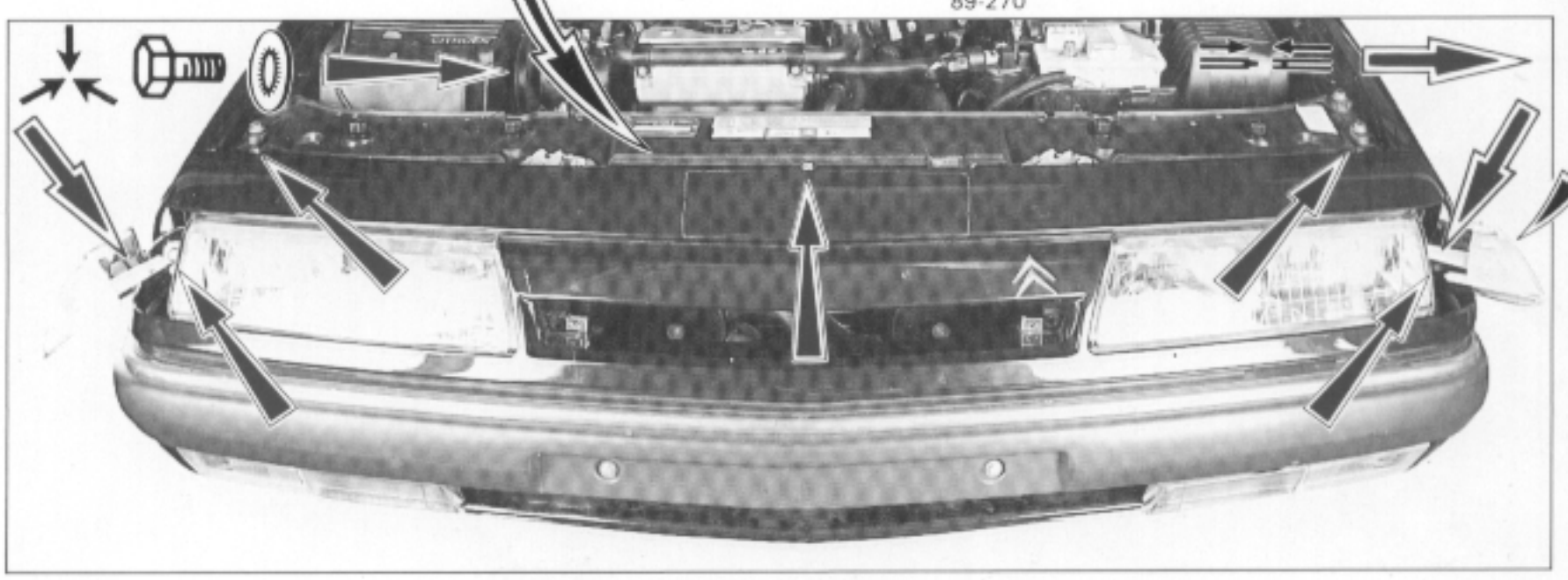
89-223



89-270



89-270

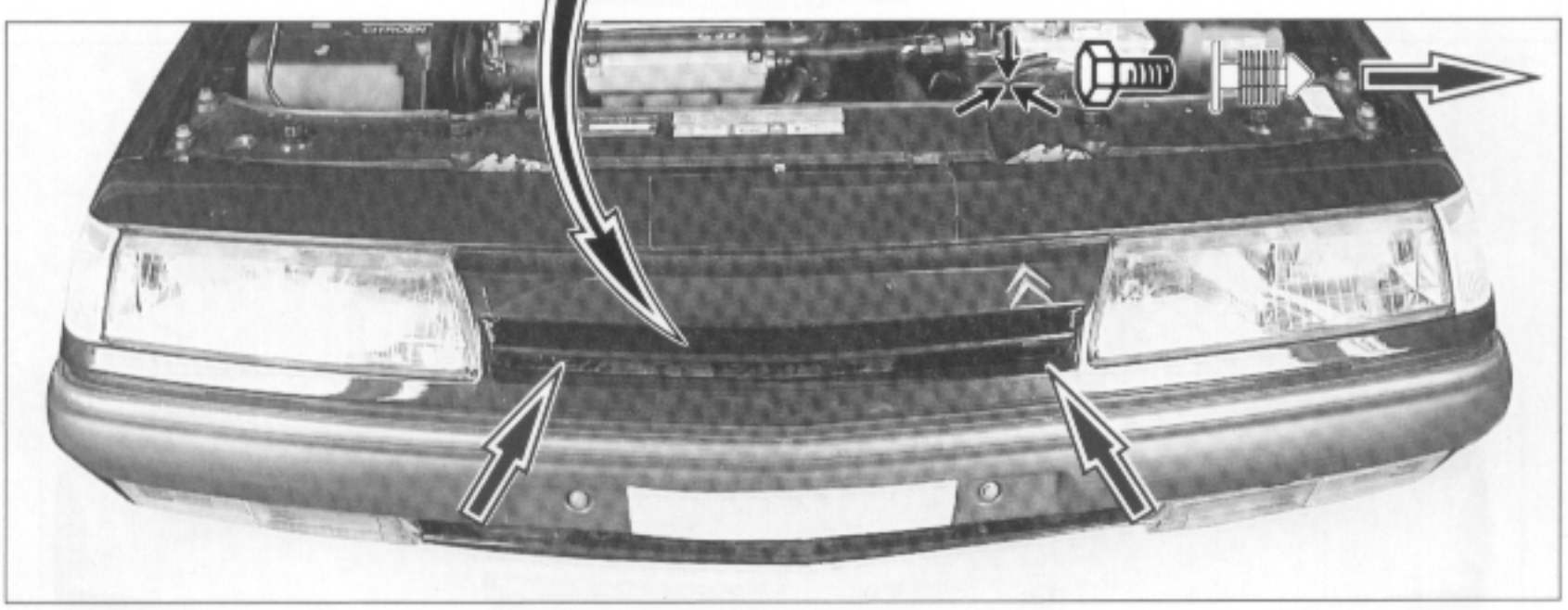


89-216

www.WorkshopManuals.co.uk



89-270



89-218

www.WorkshopManuals.co.uk



Y.80-3

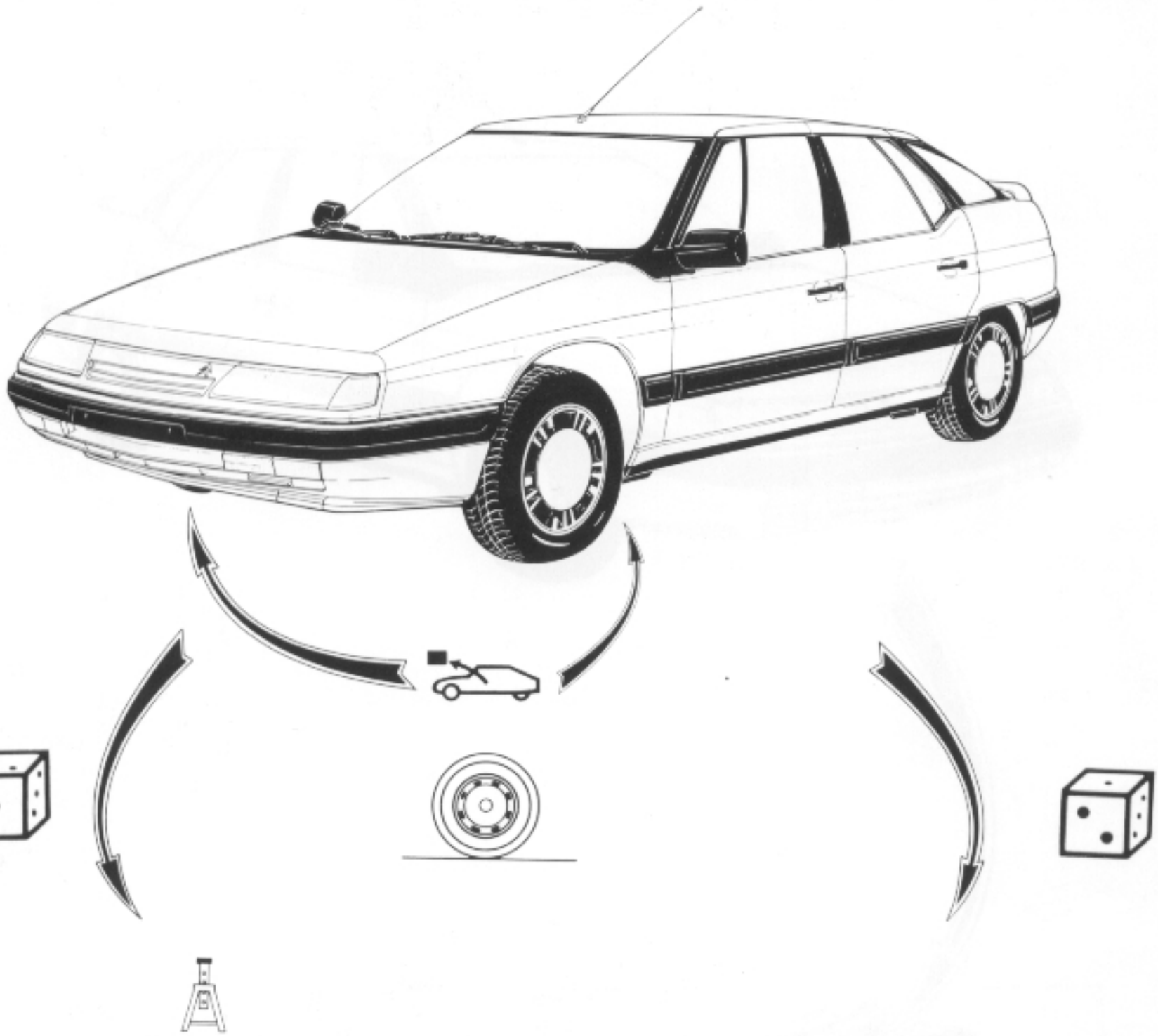


89-289



89-228

www.WorkshopManuals.co.uk

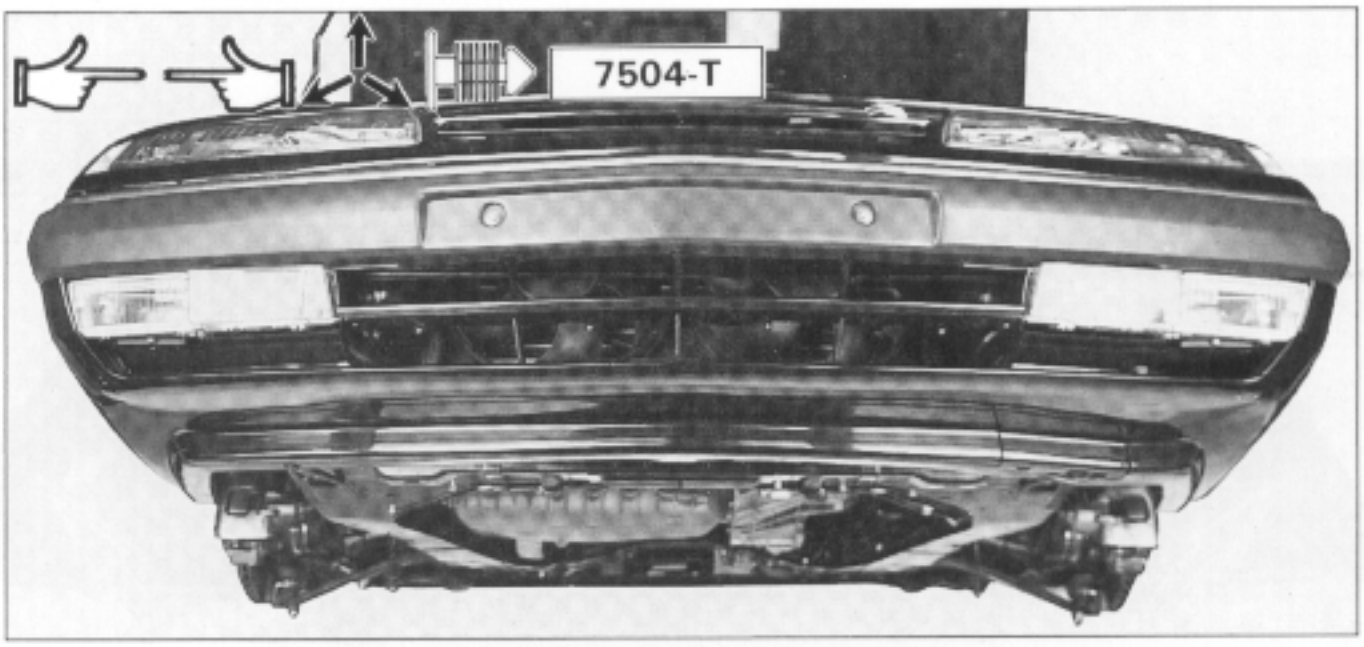


Y.80-3

86-1038

84-378

www.WorkshopManuals.co.uk



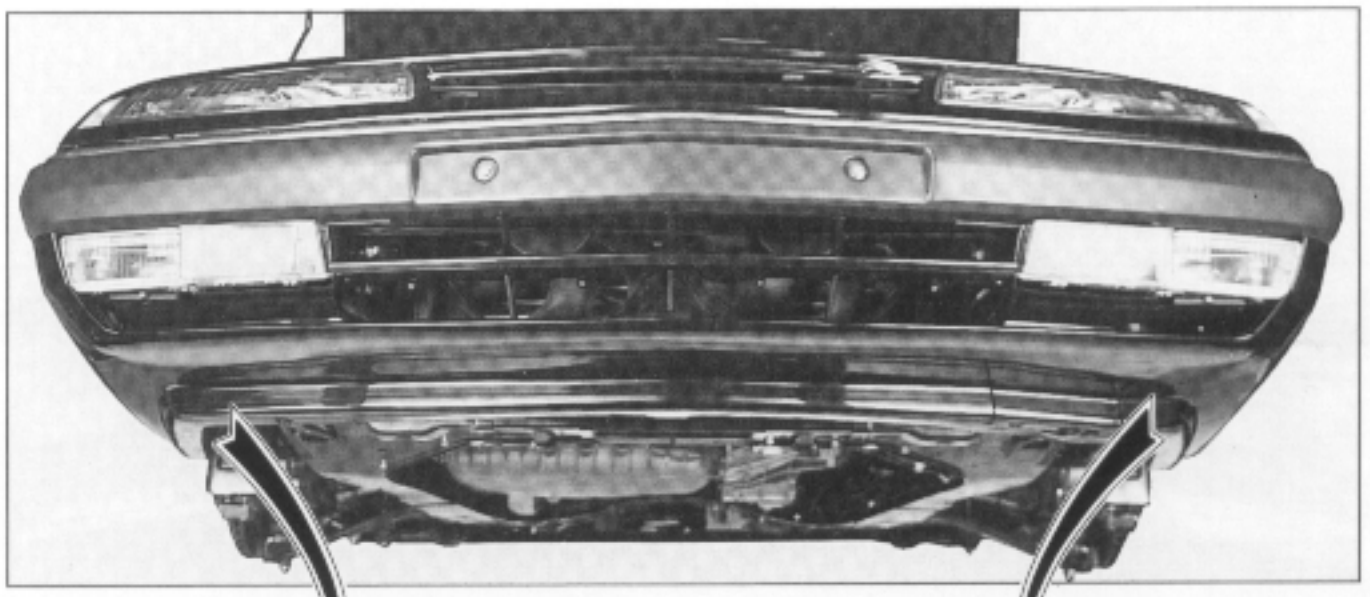
89-276



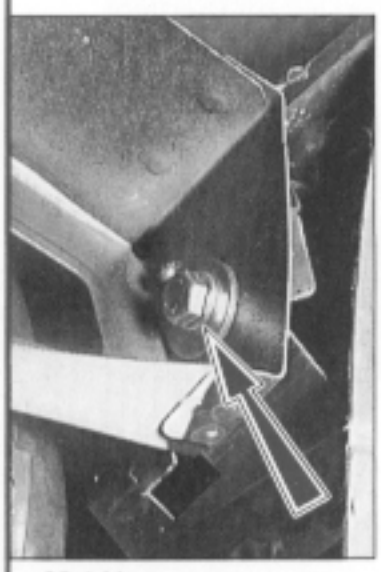
89-282



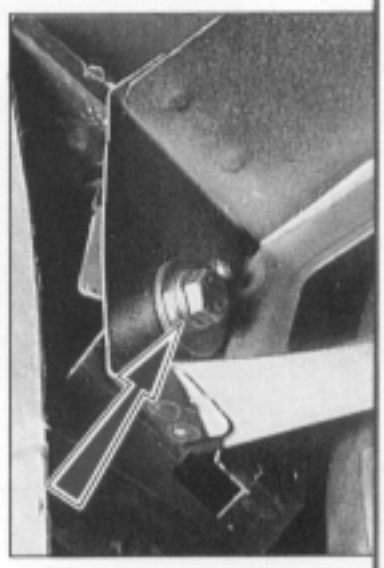
89-282



89-276



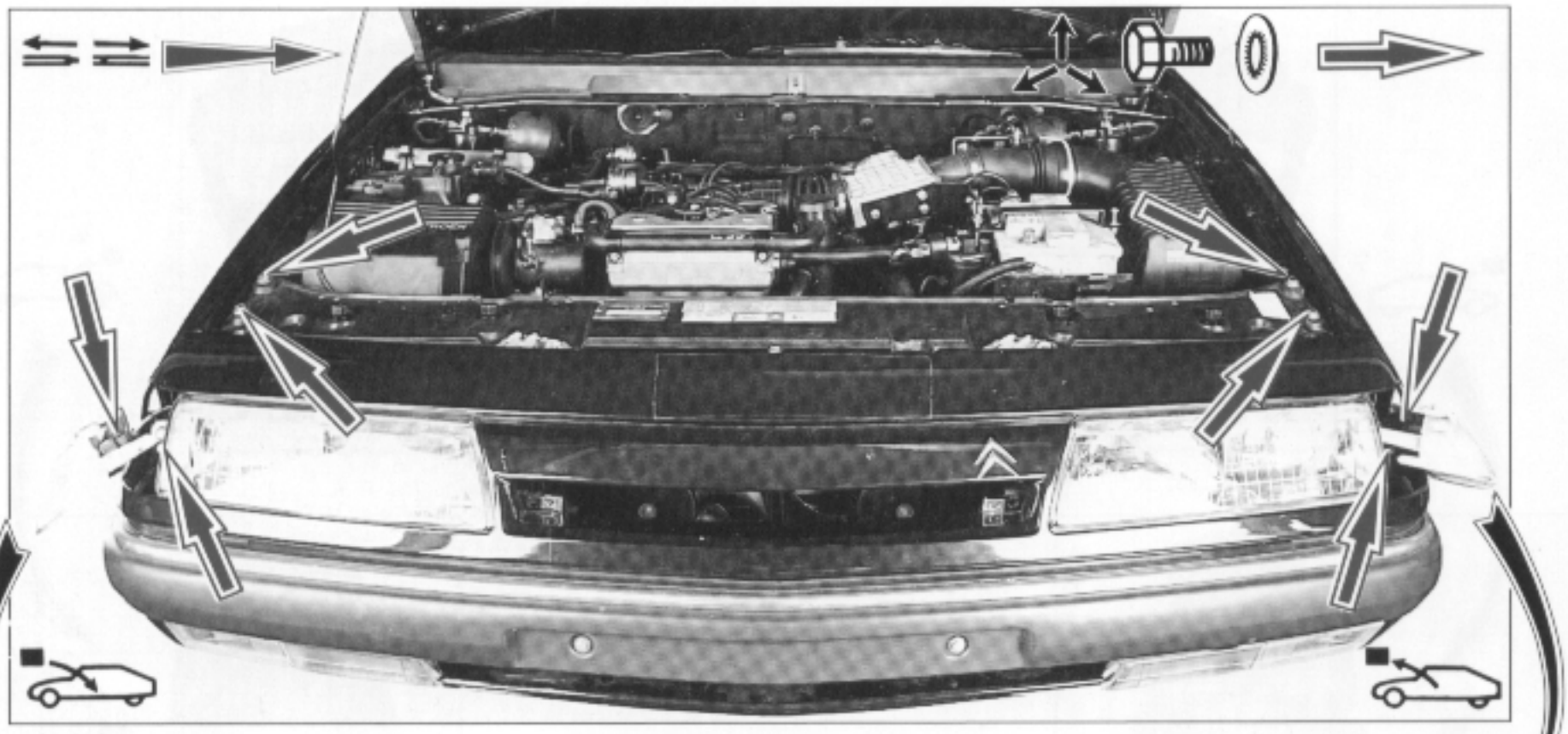
89-141



89-141

8932

www.WorkshopManuals.co.uk



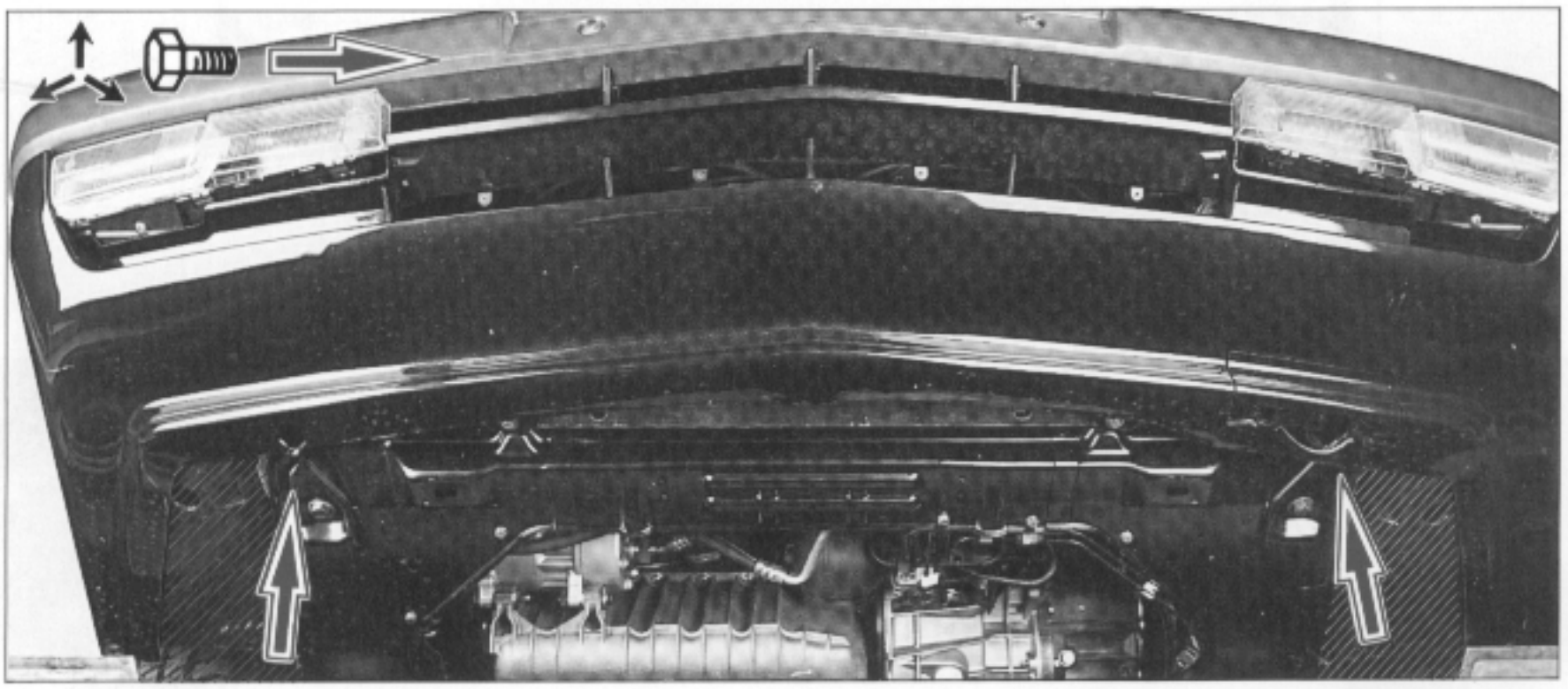
89-216



89-270



89-270

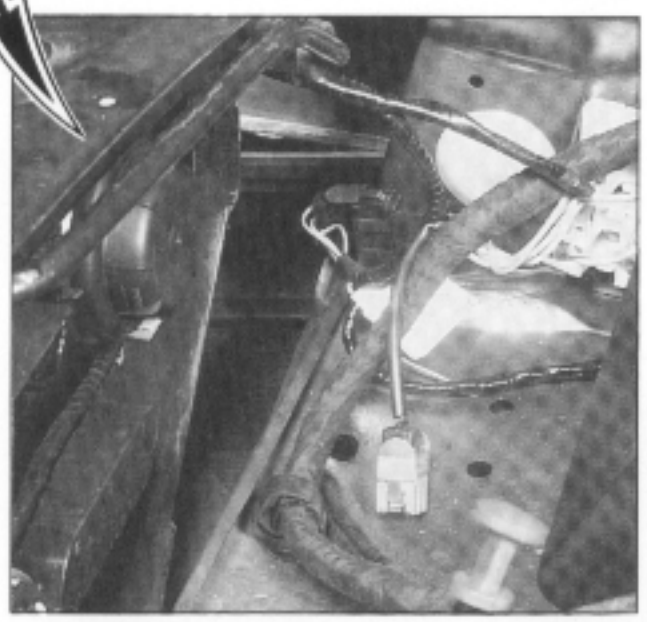


89-217

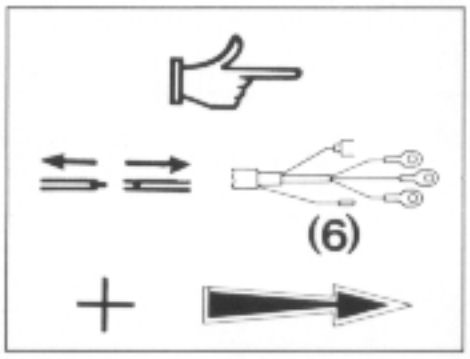
www.WorkshopManuals.co.uk

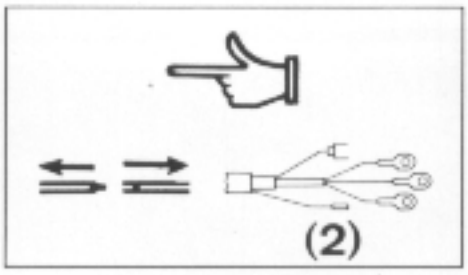


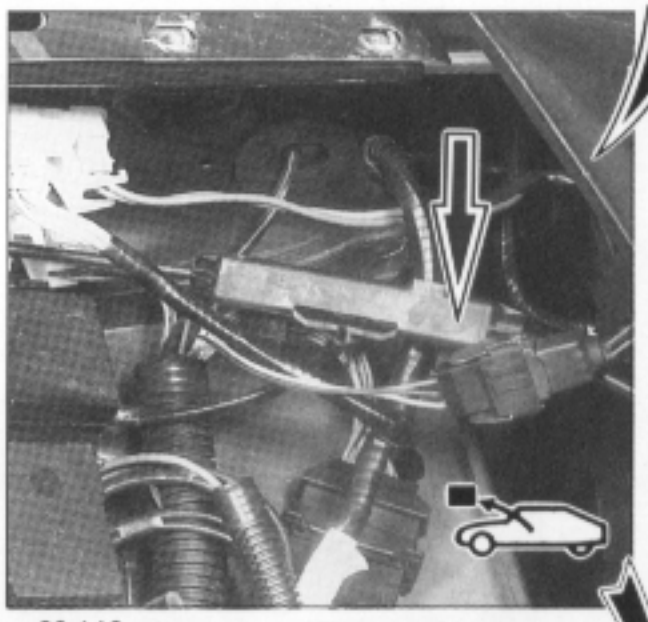
88-525



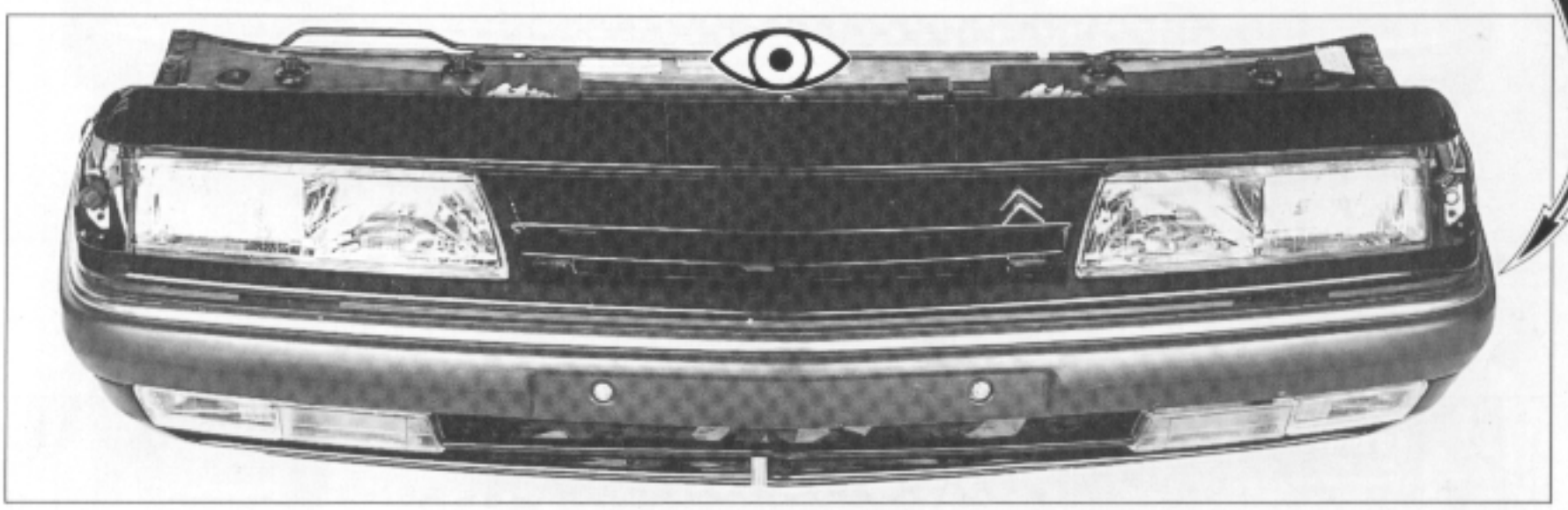
89-143



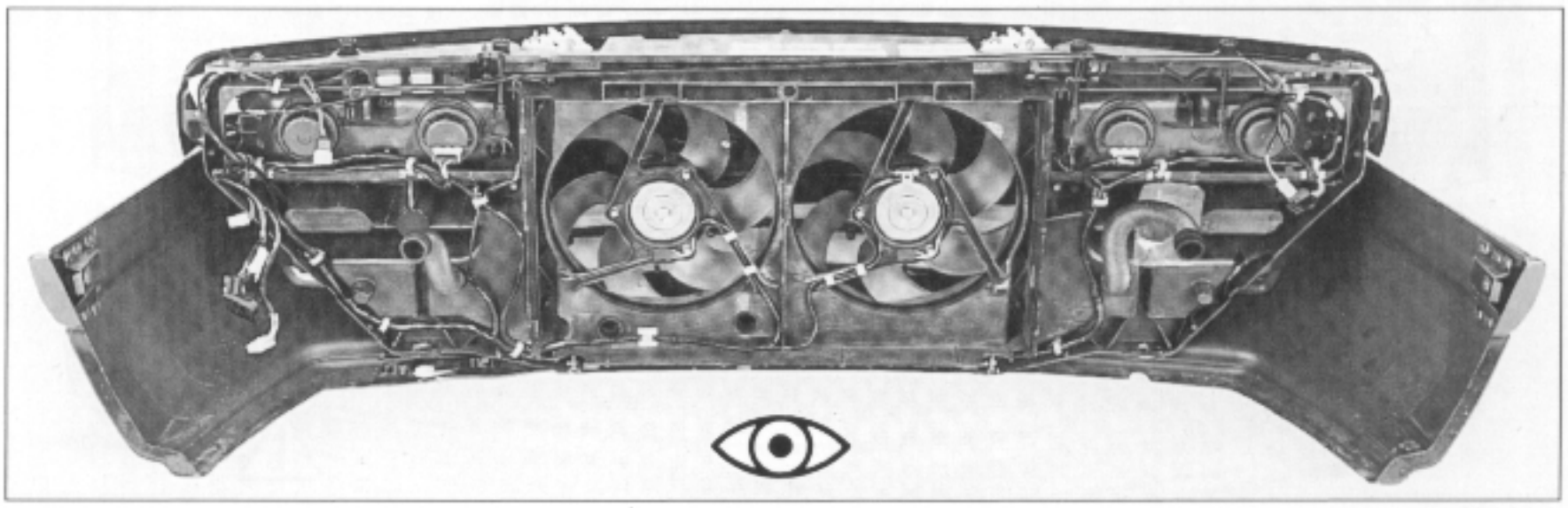




89-142

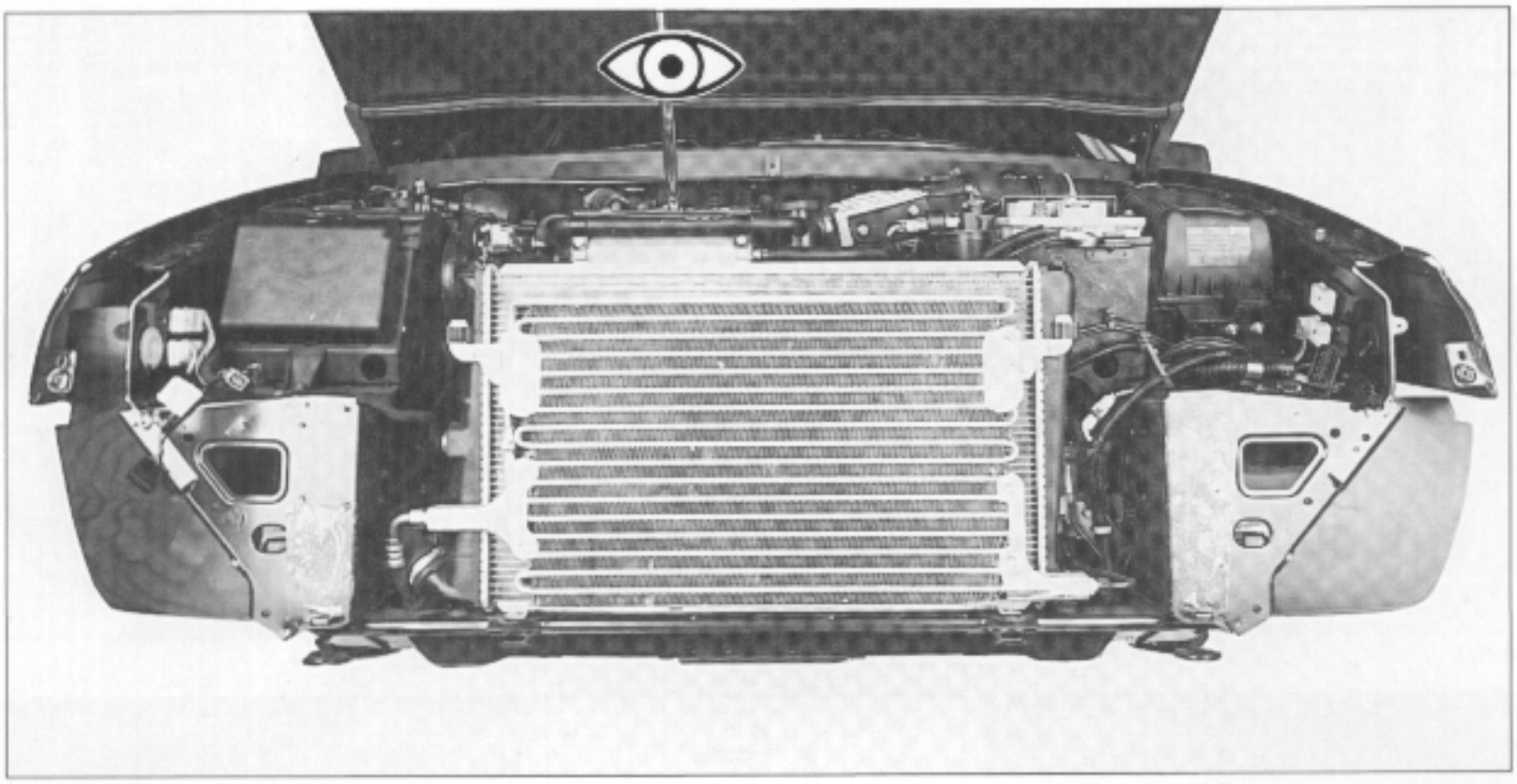


89-292

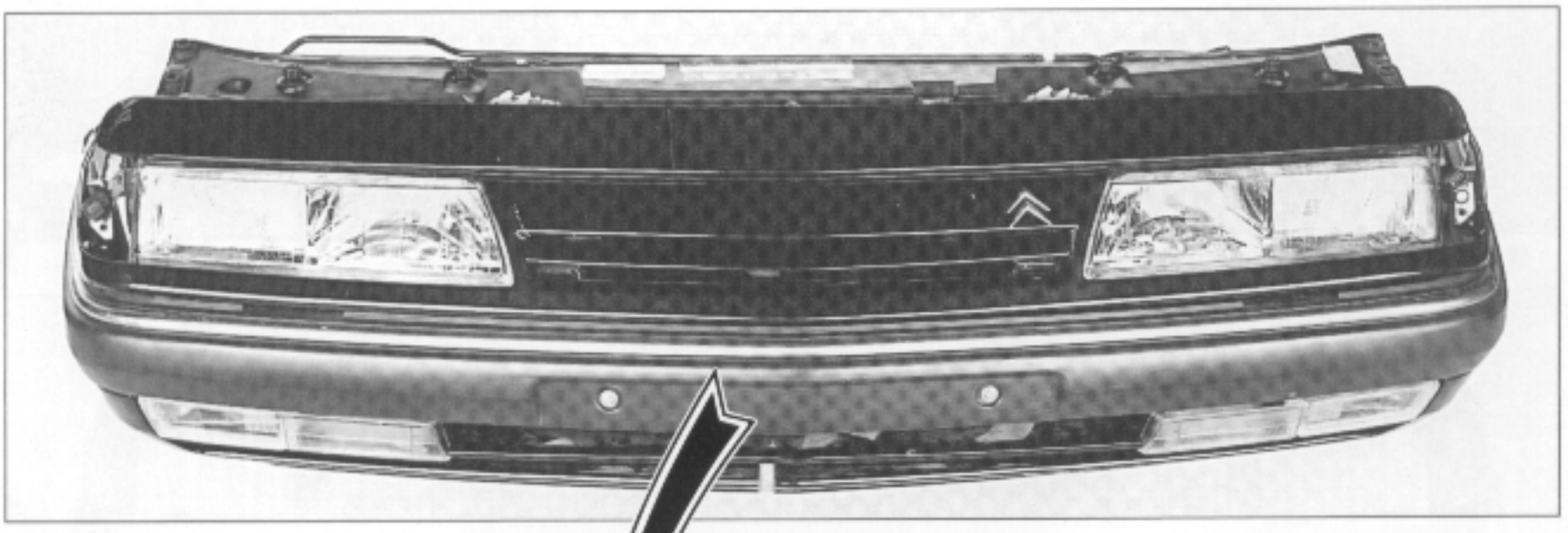


89-291

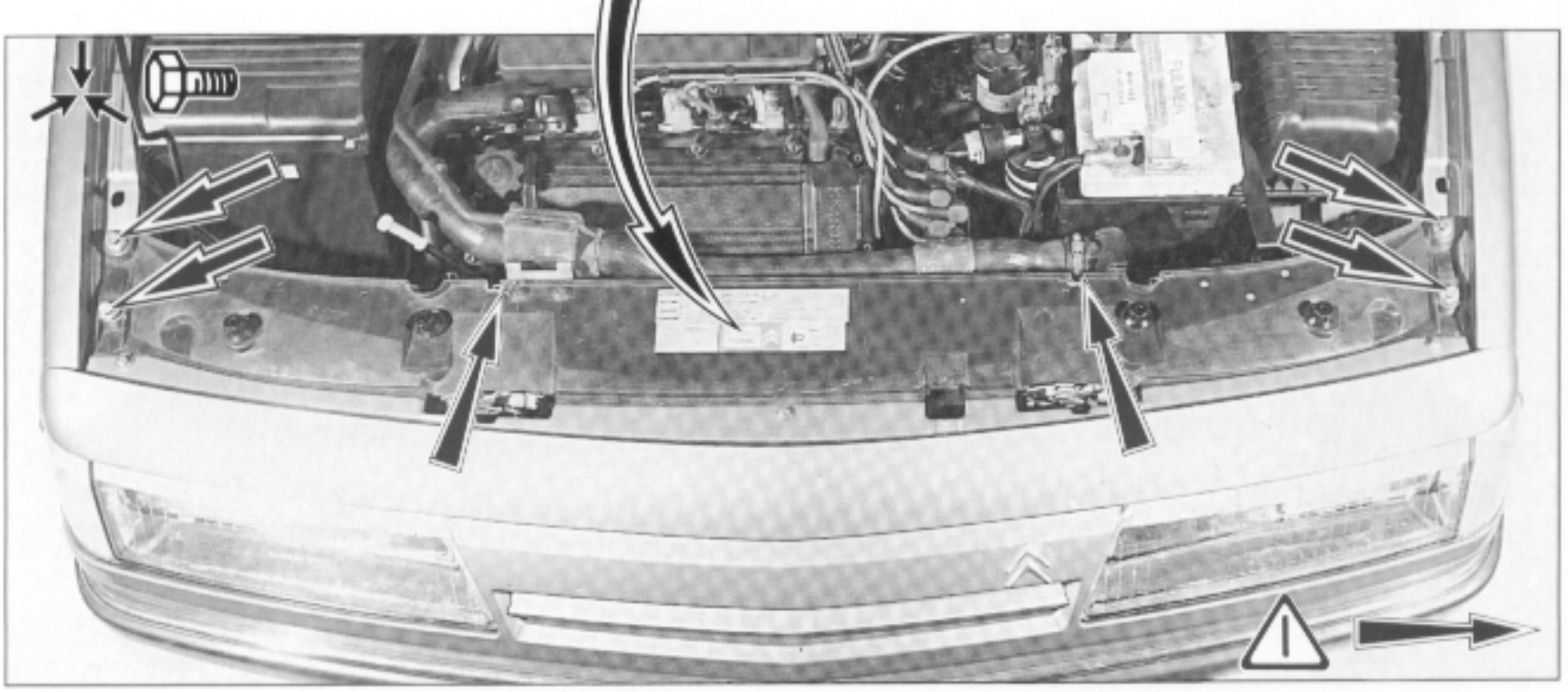
www.WorkshopManuals.co.uk



89-286



89-292

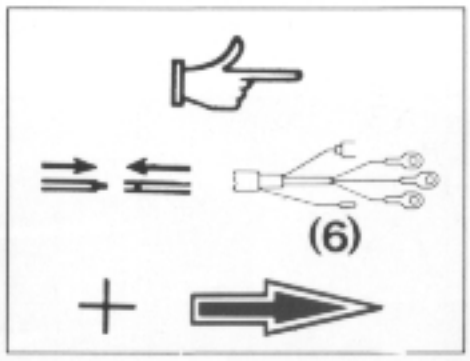


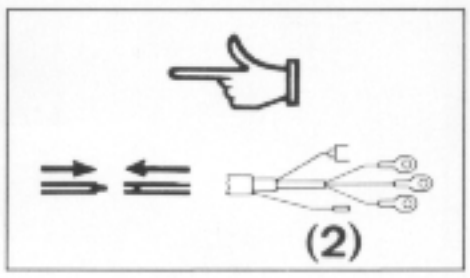
88-525

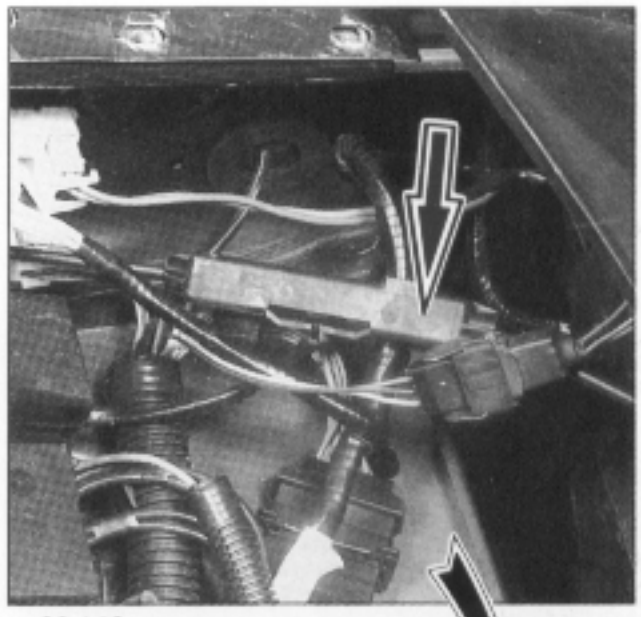
www.WorkshopManuals.co.uk



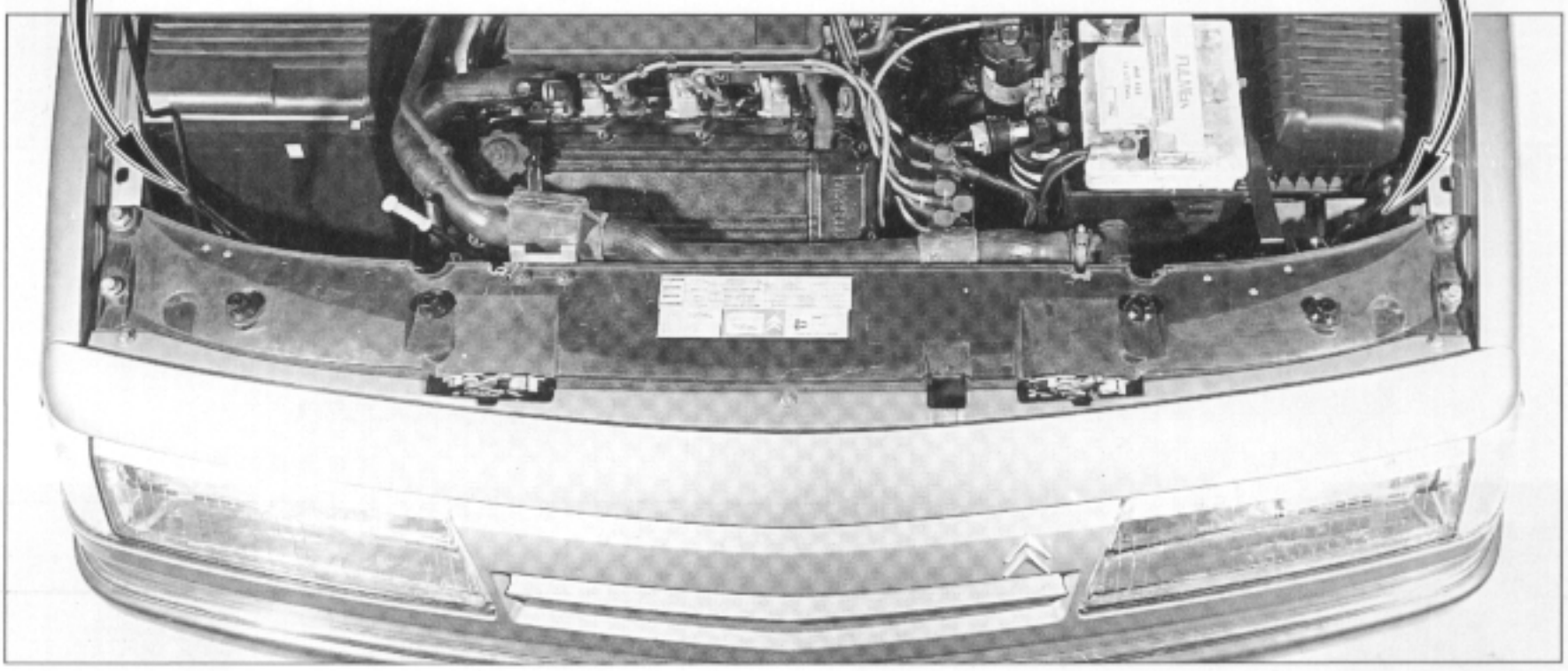
89-143







89-142



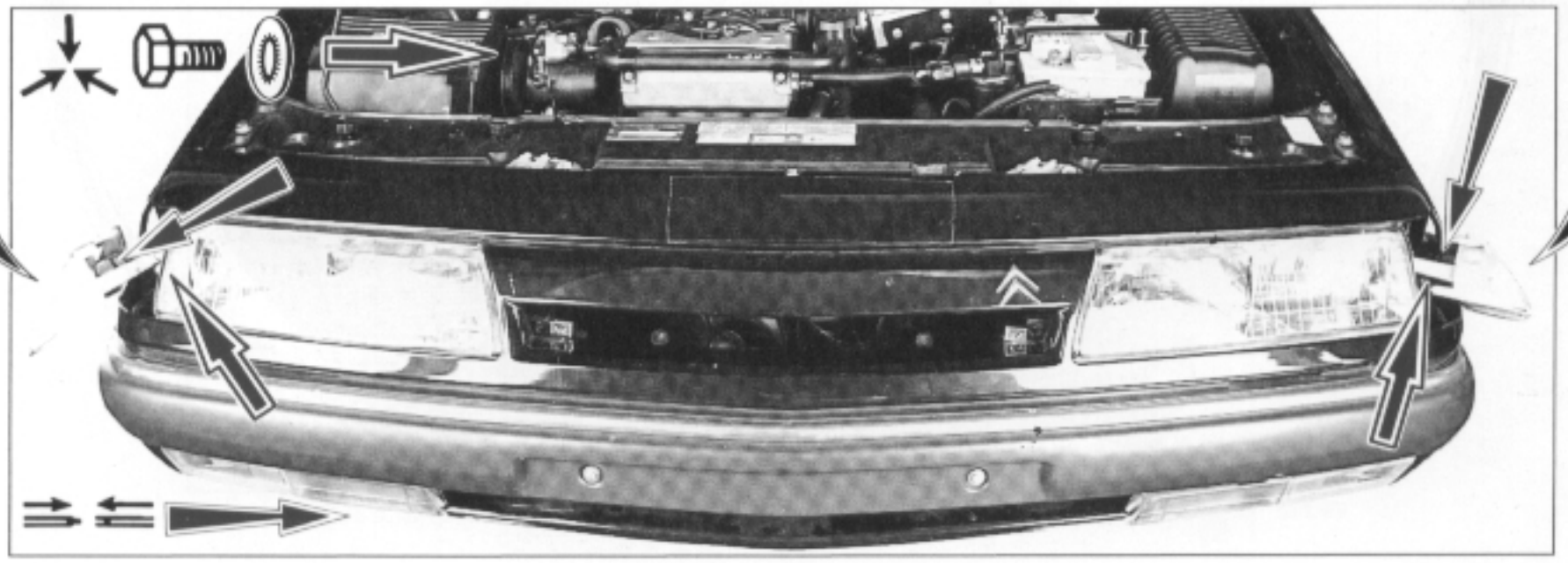
88-525



89-270

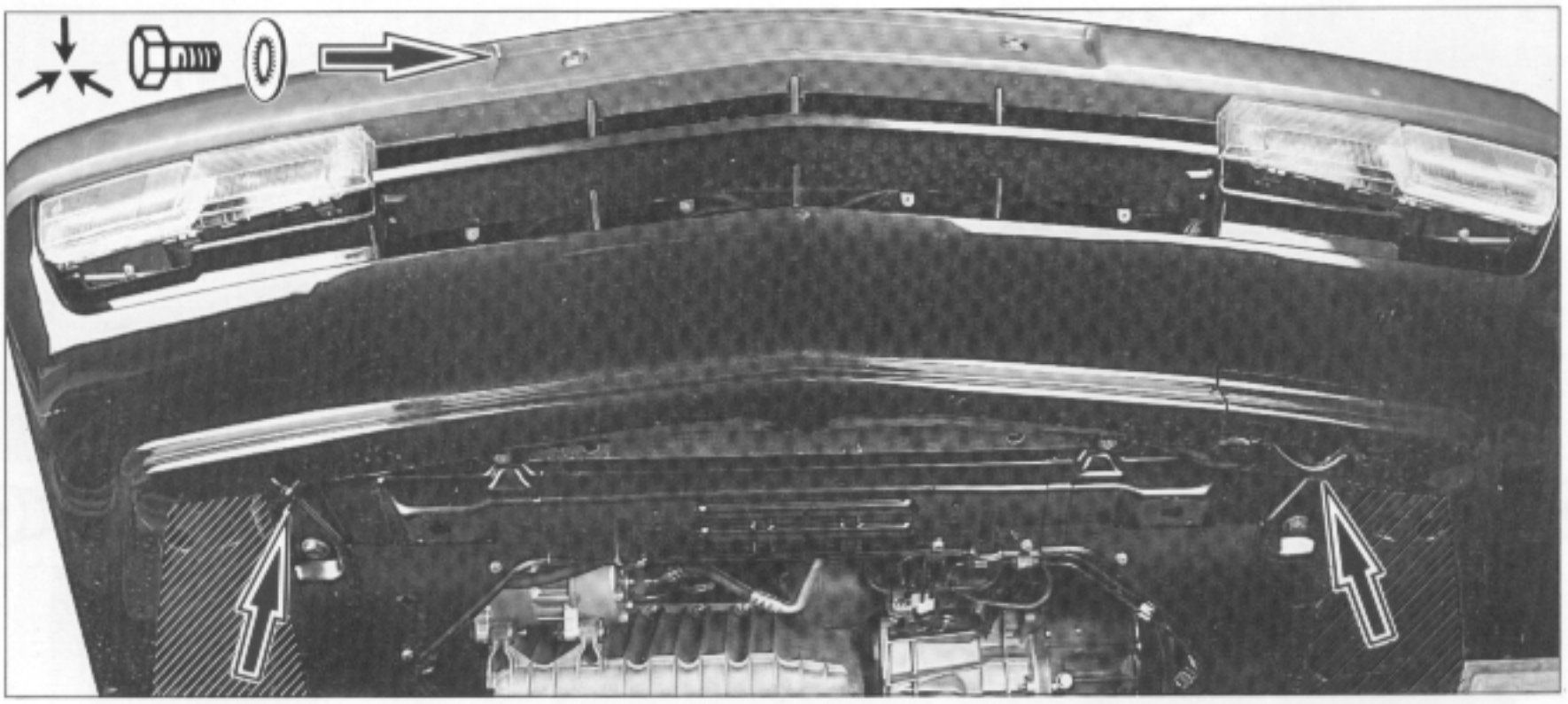


89-270

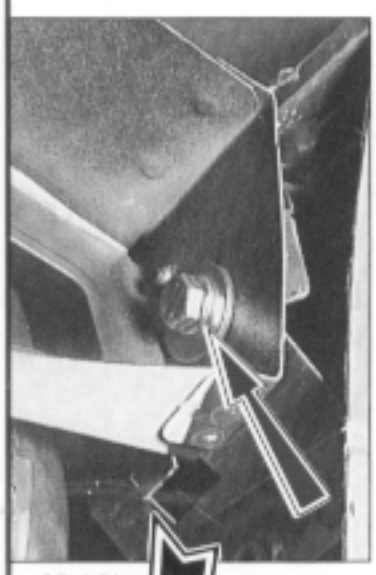


89-216

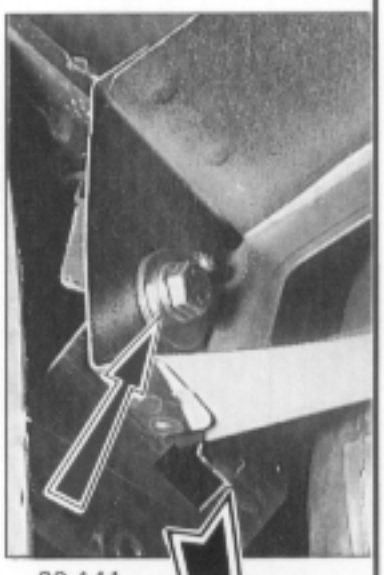
www.WorkshopManuals.co.uk



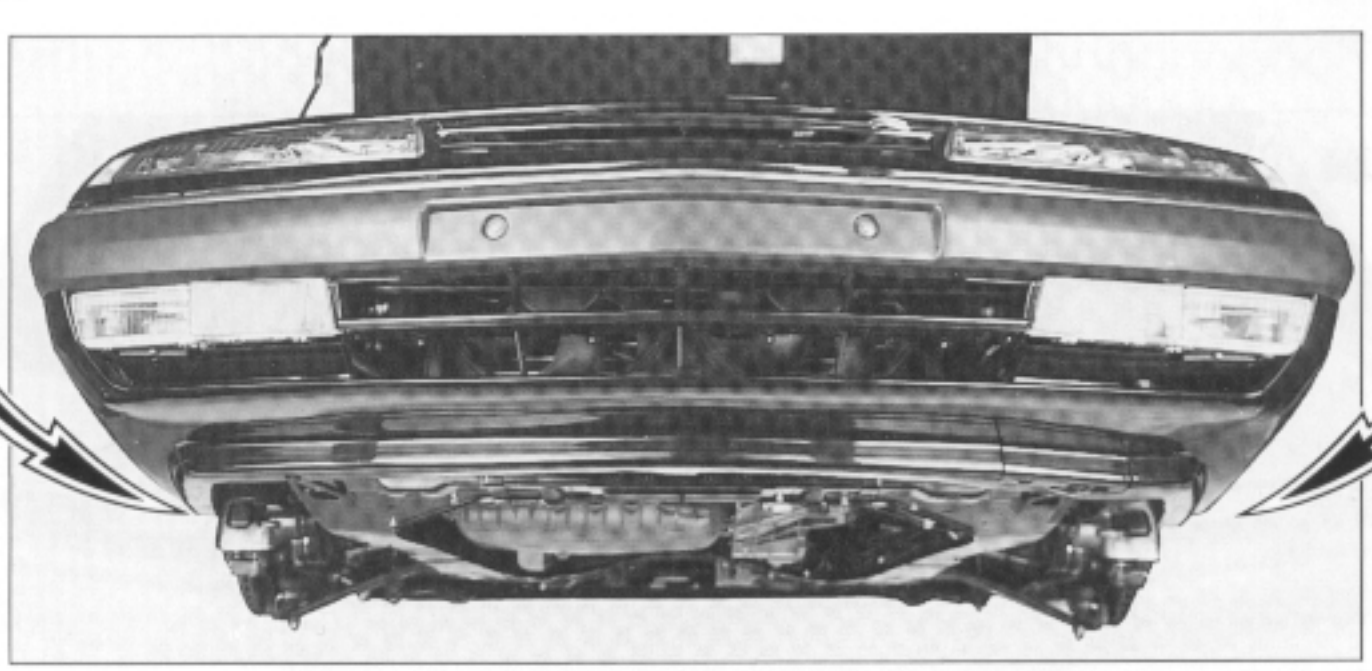
89-217



89-141

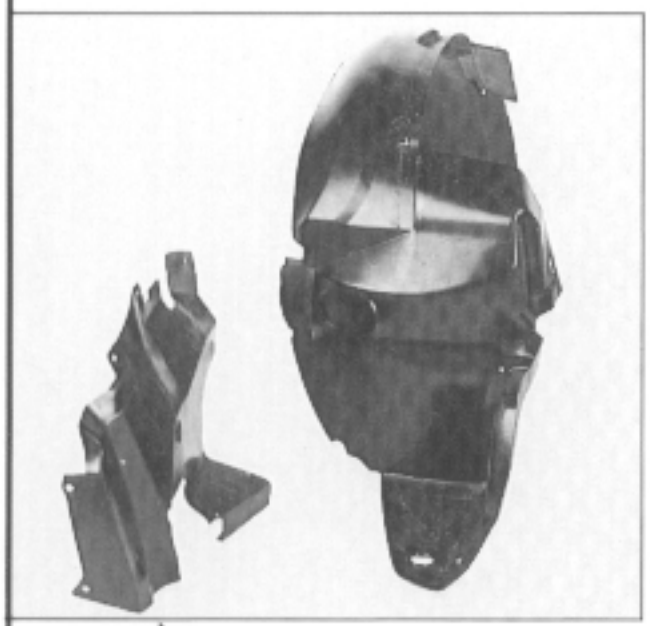


89-141

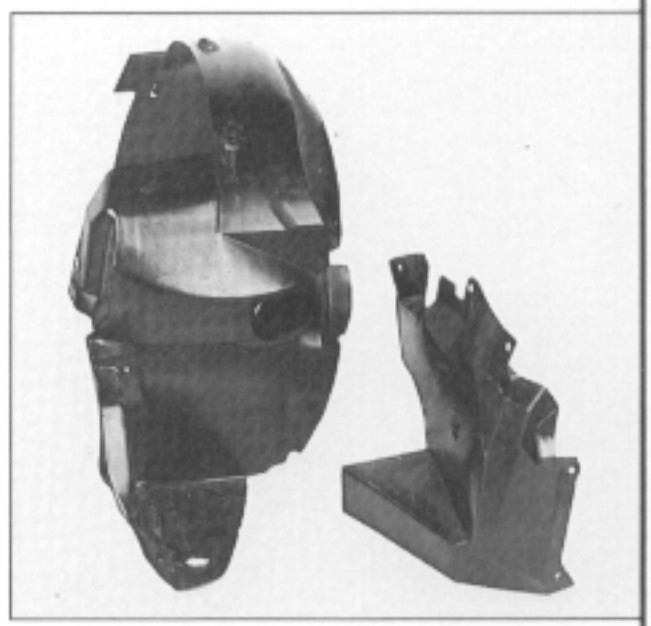


89-276

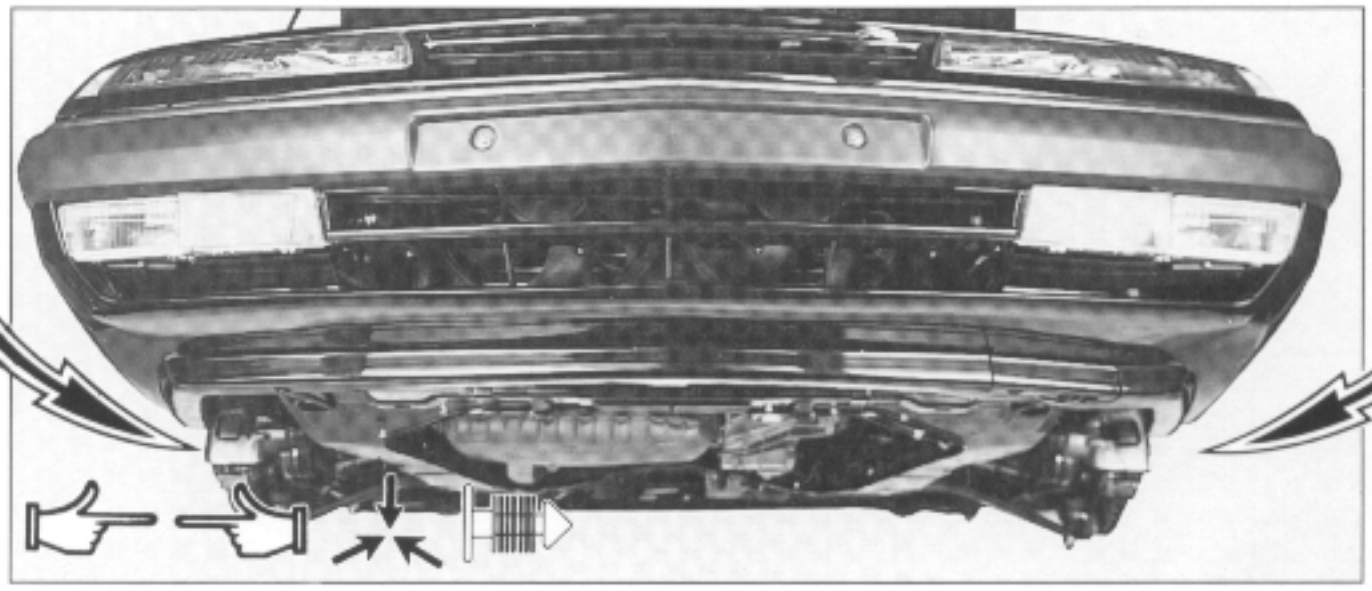
www.WorkshopManuals.co.uk



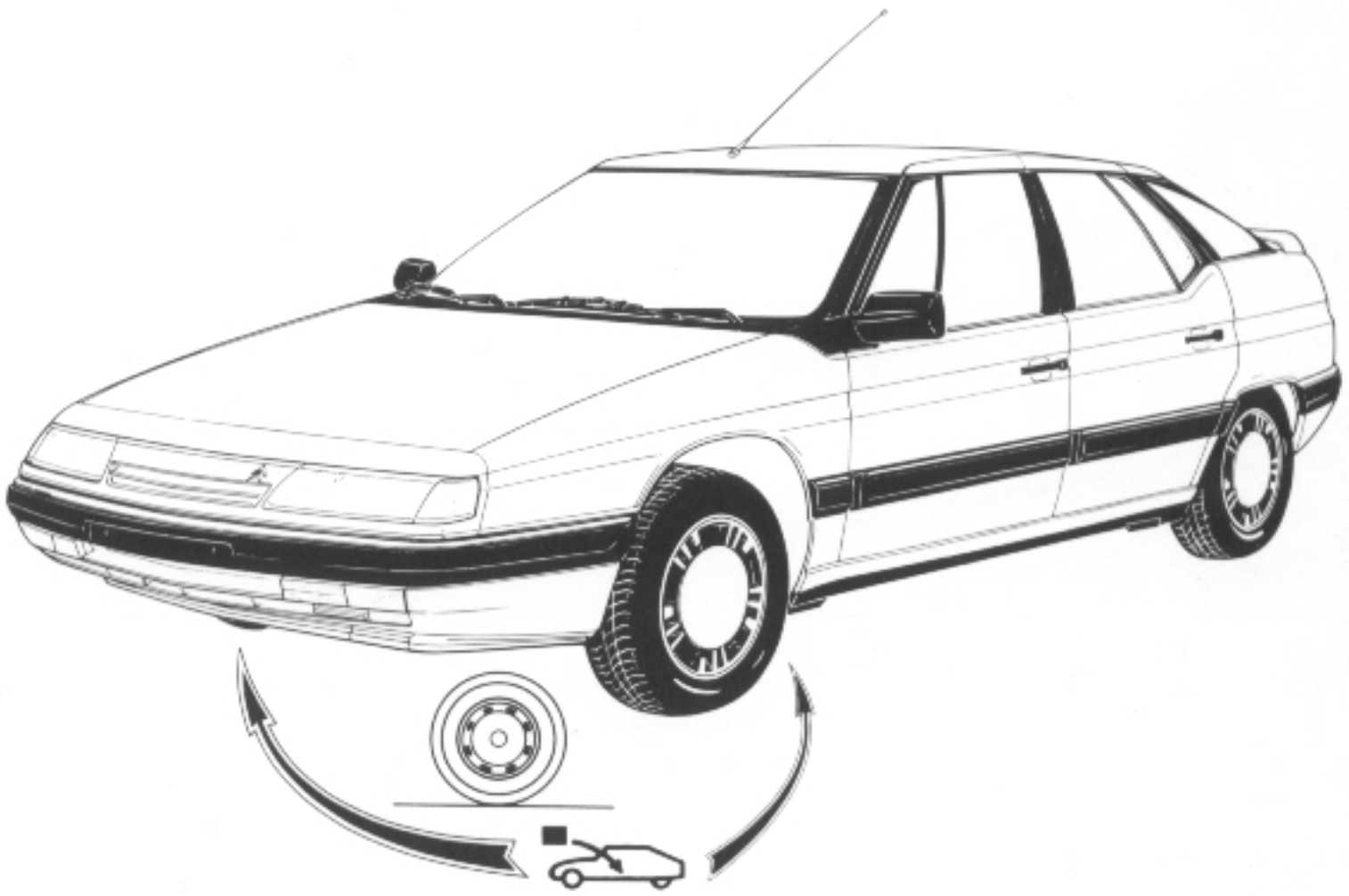
89-282



89-282

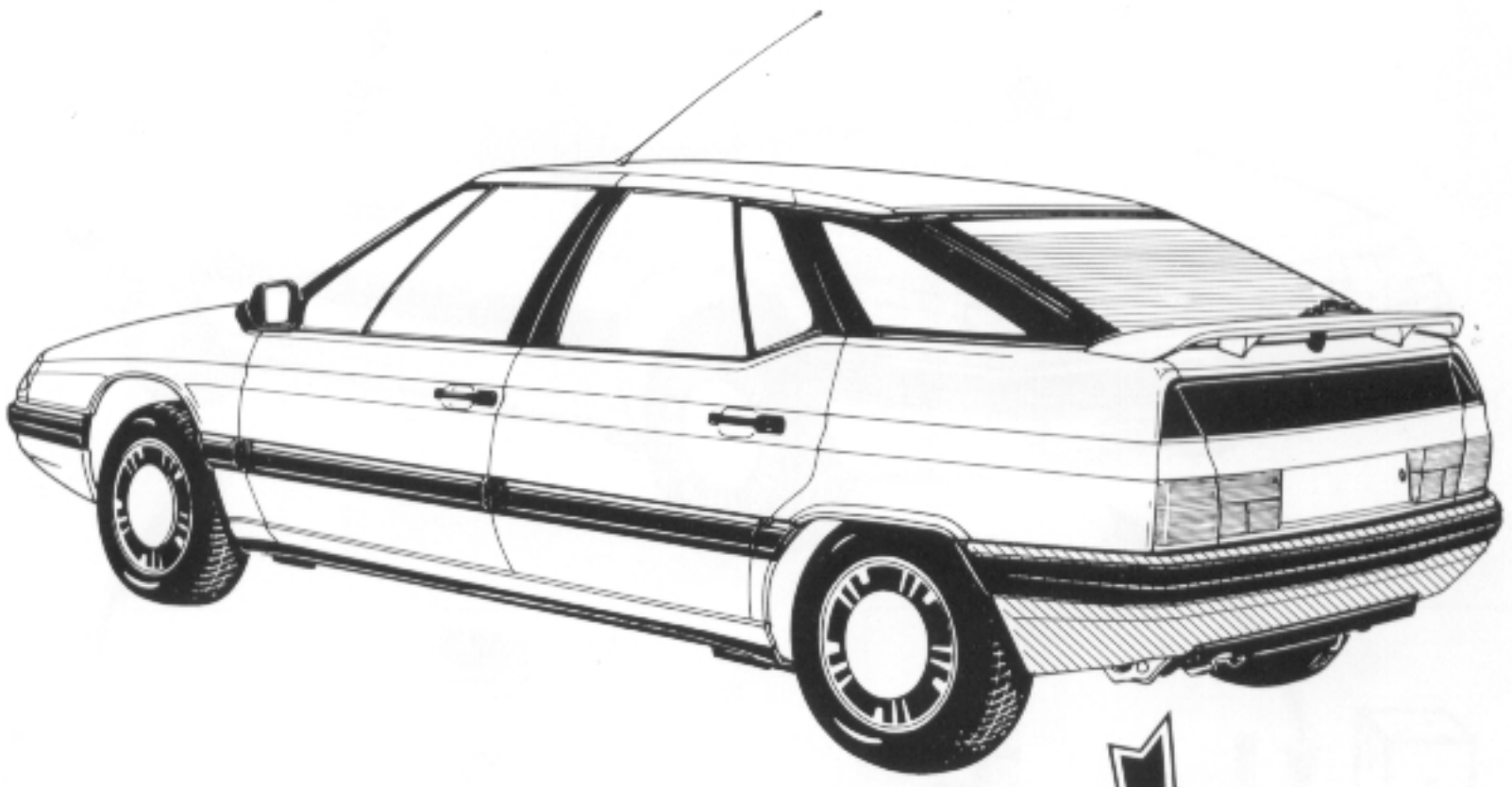


89-276

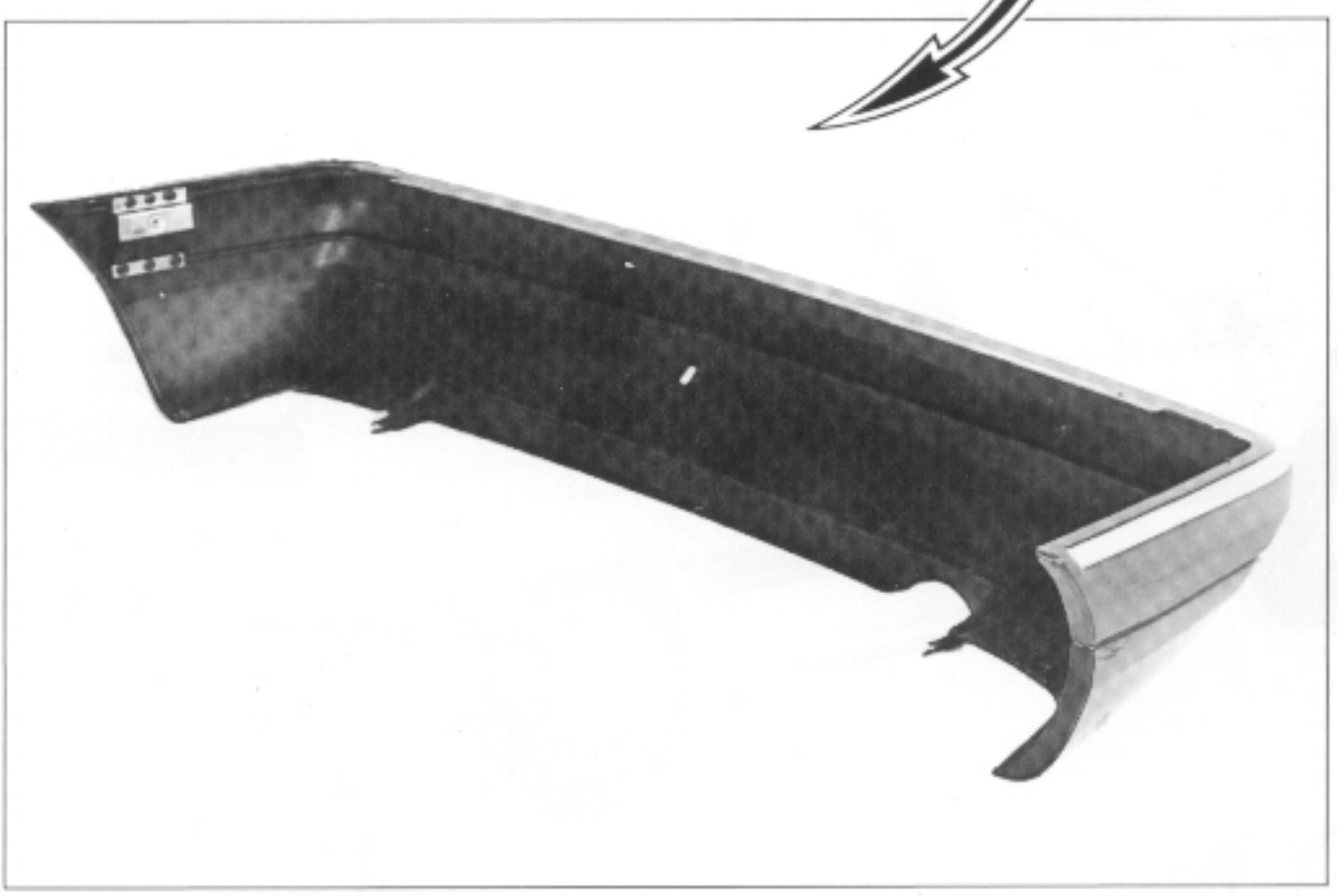


Y.80-3

www.WorkshopManuals.co.uk

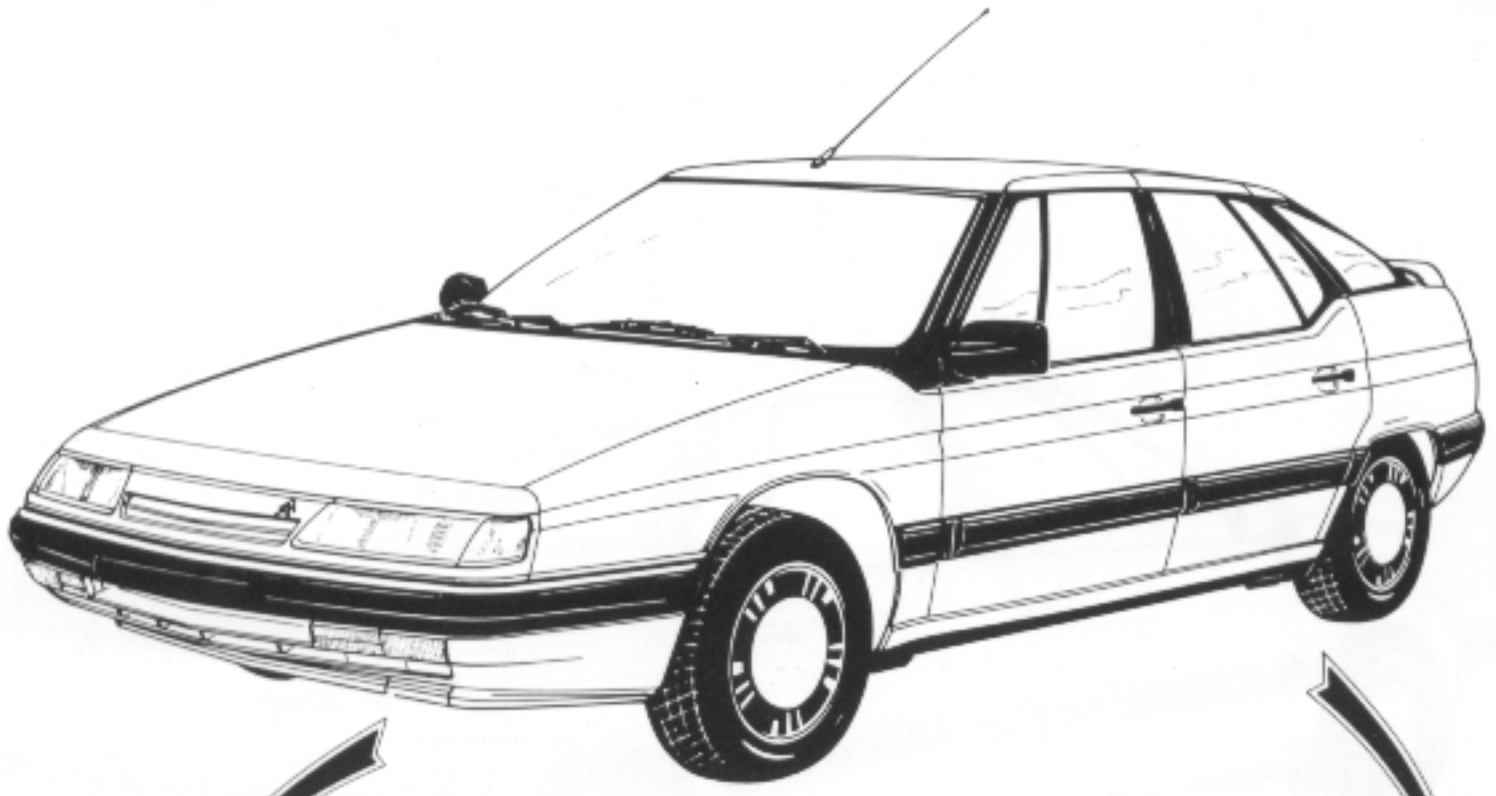


Y.80-4

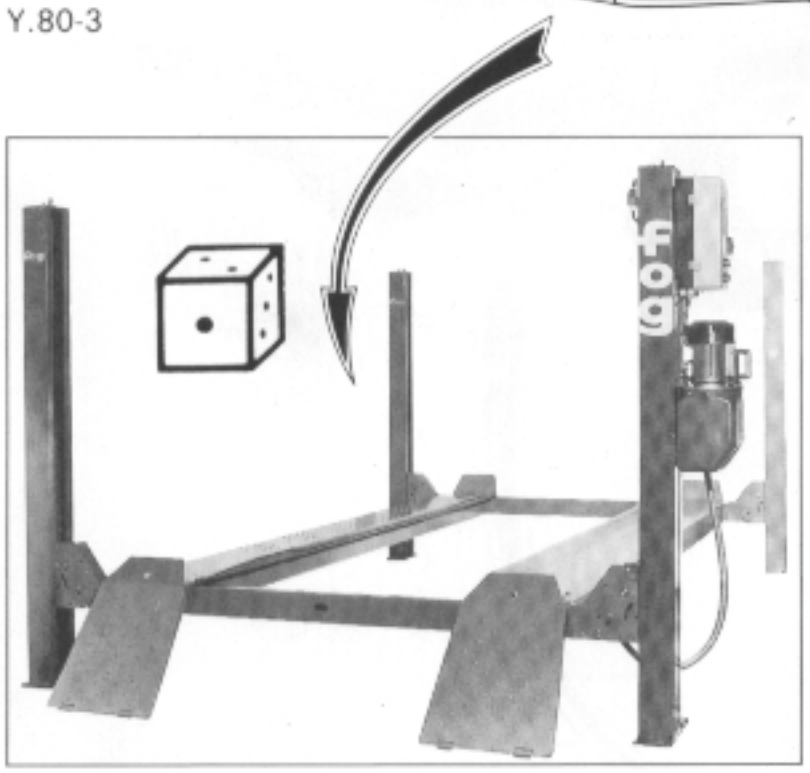


89-287

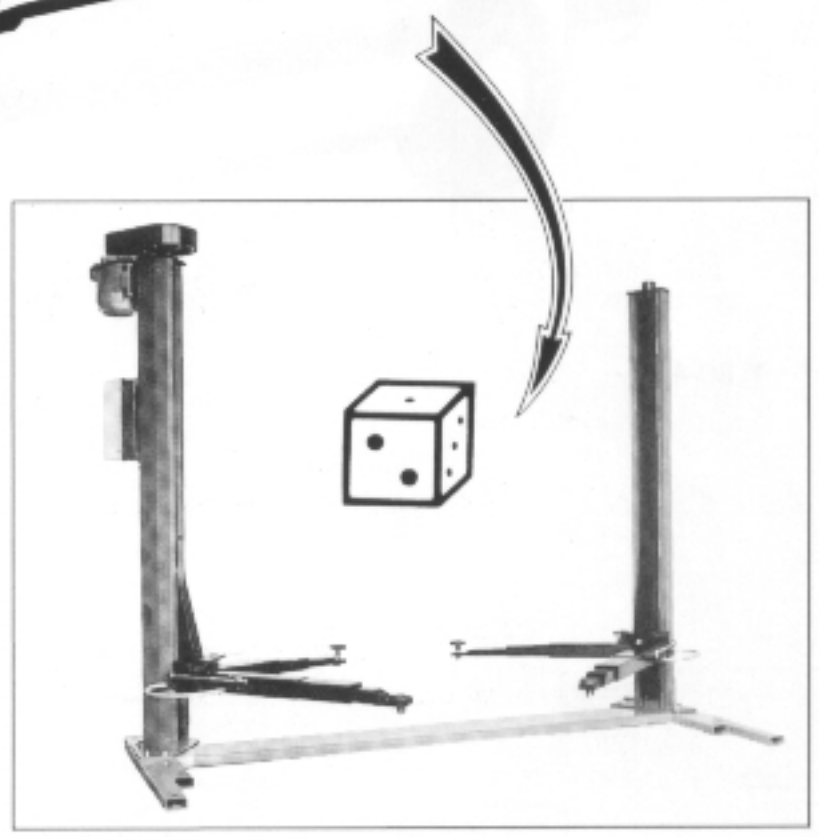
www.WorkshopManuals.co.uk



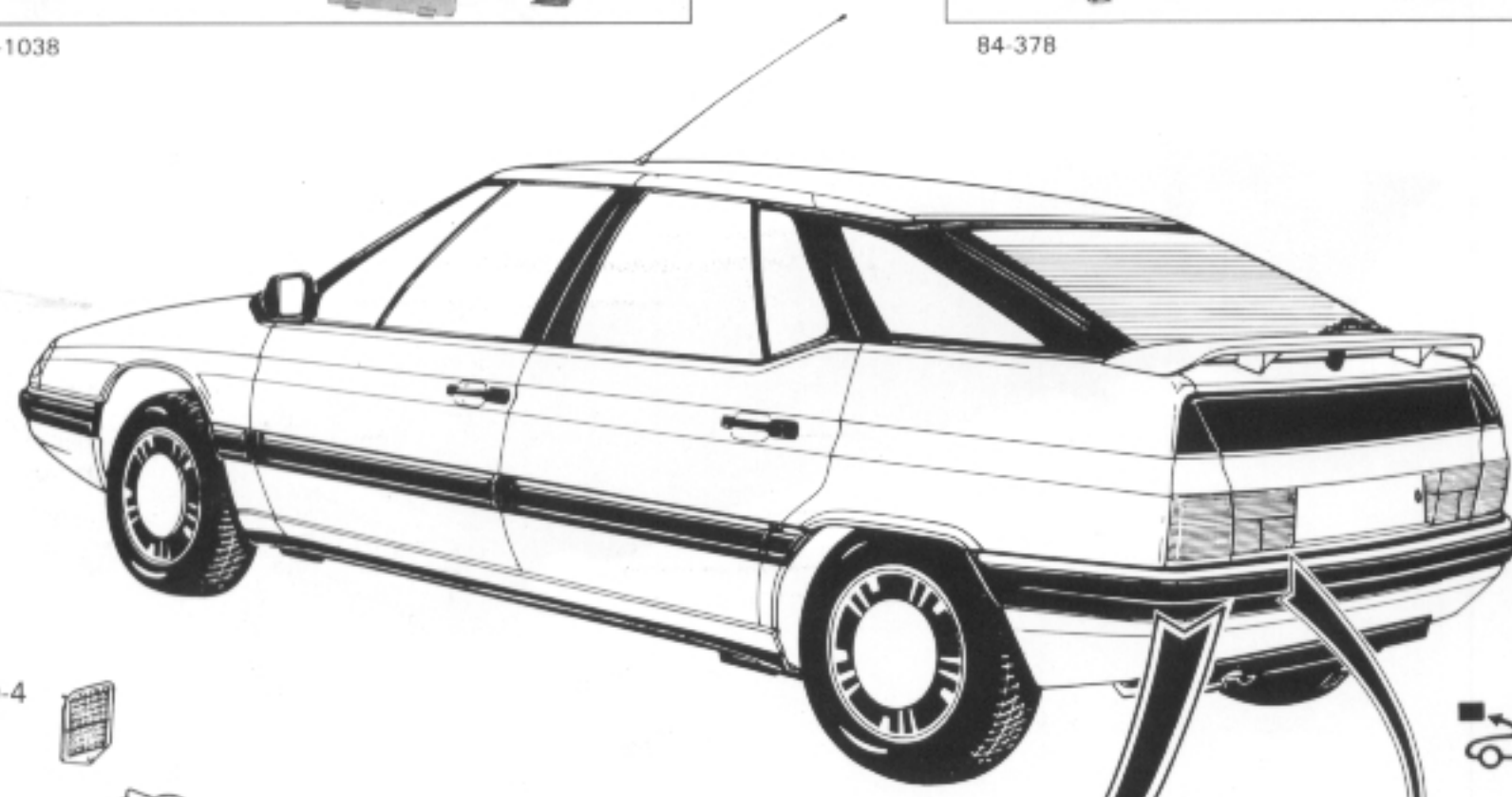
Y.80-3



86-1038

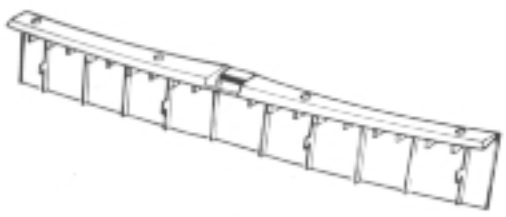


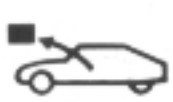
84-378



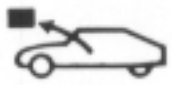
Y.80-4















Y.80-8

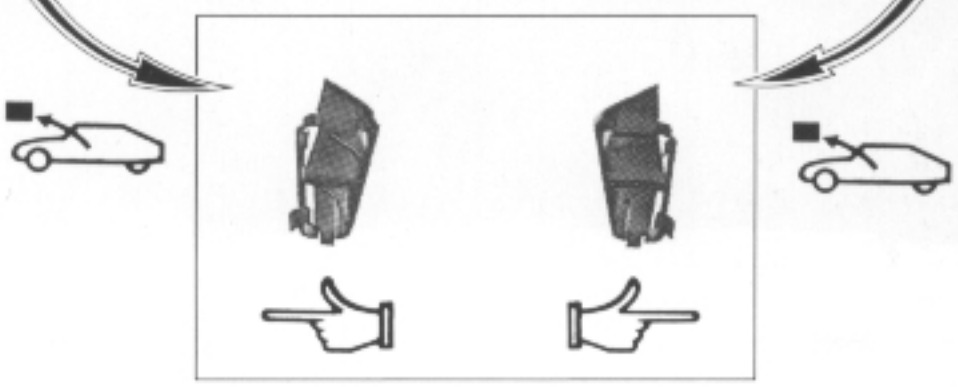


Y.80-23 Y.98-1

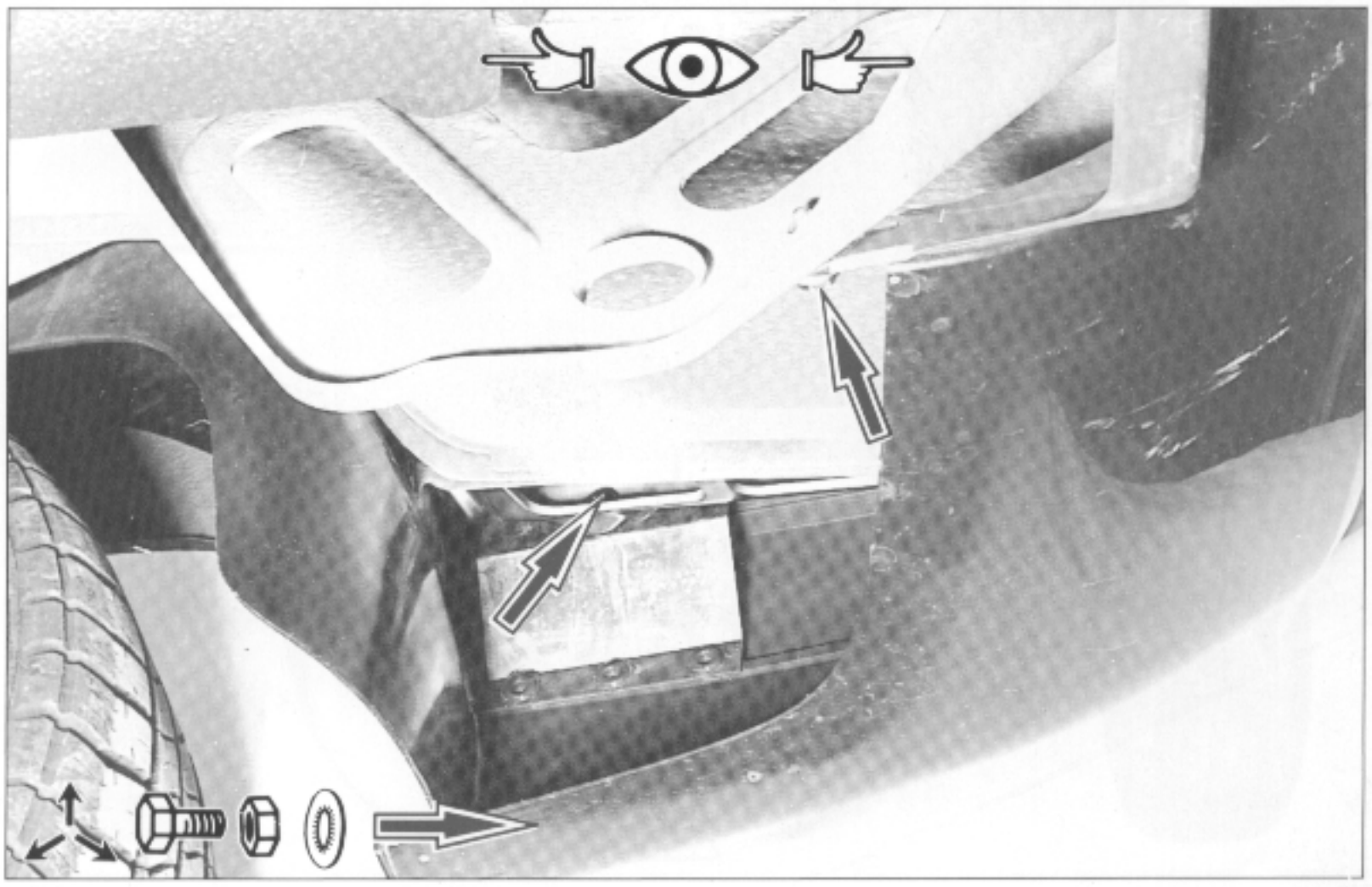
www.WorkshopManuals.co.uk



89-295



89-293

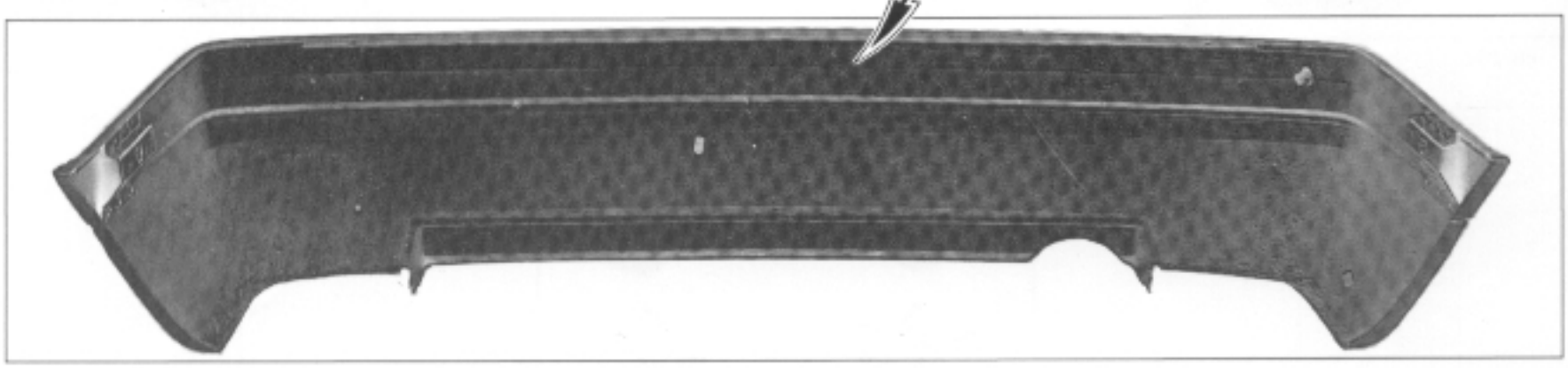


89-308

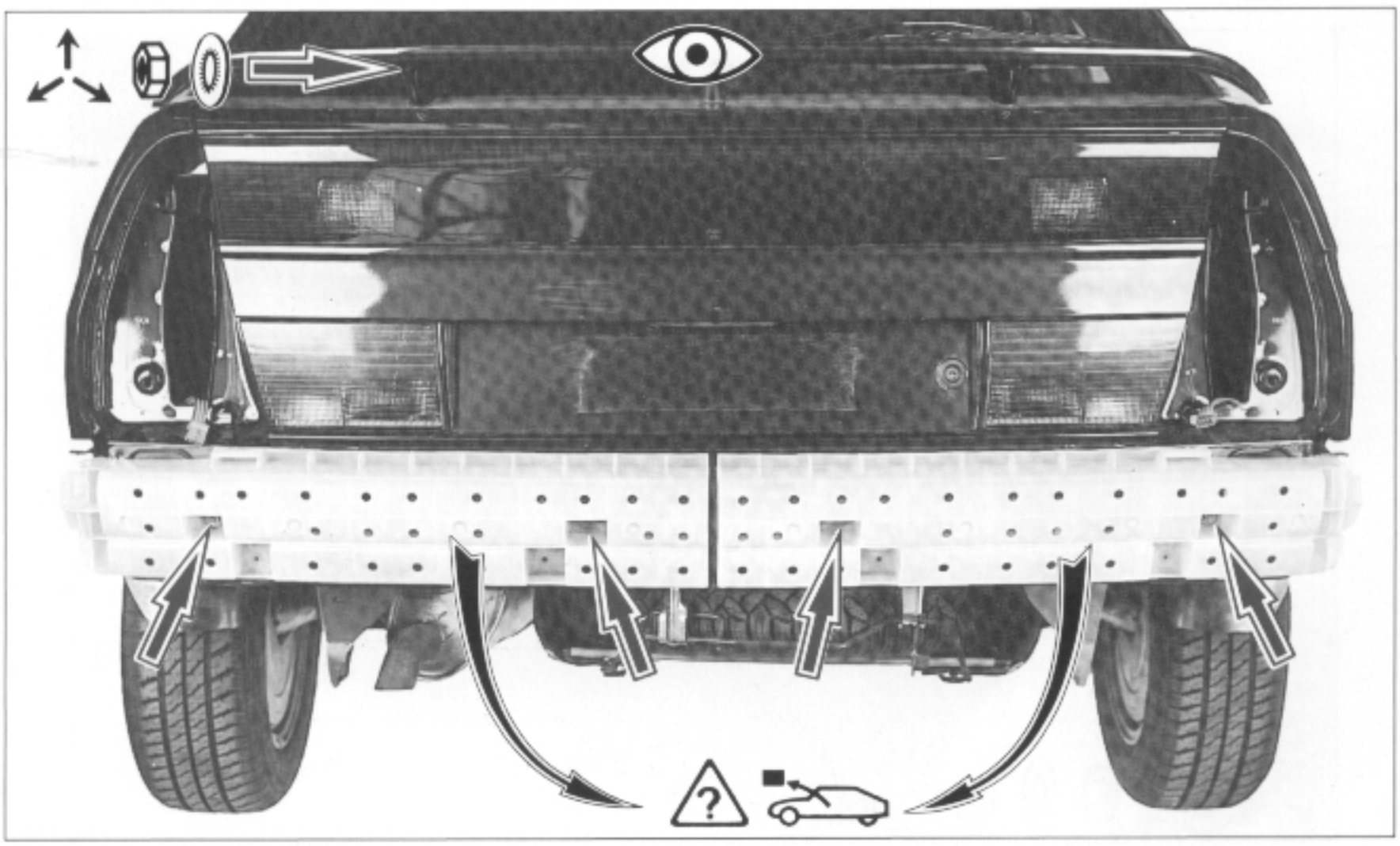
www.WorkshopManuals.co.uk



89-295

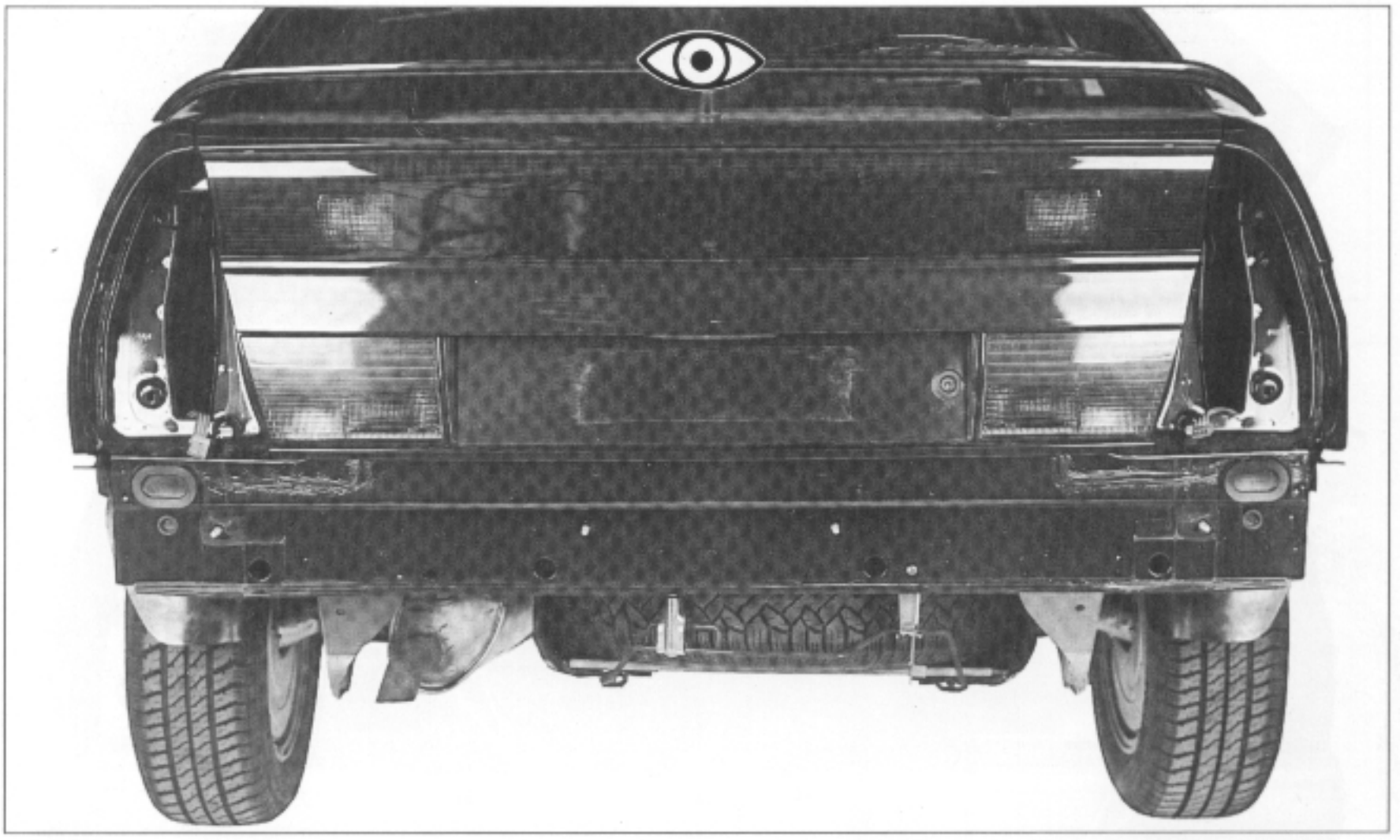


89-293

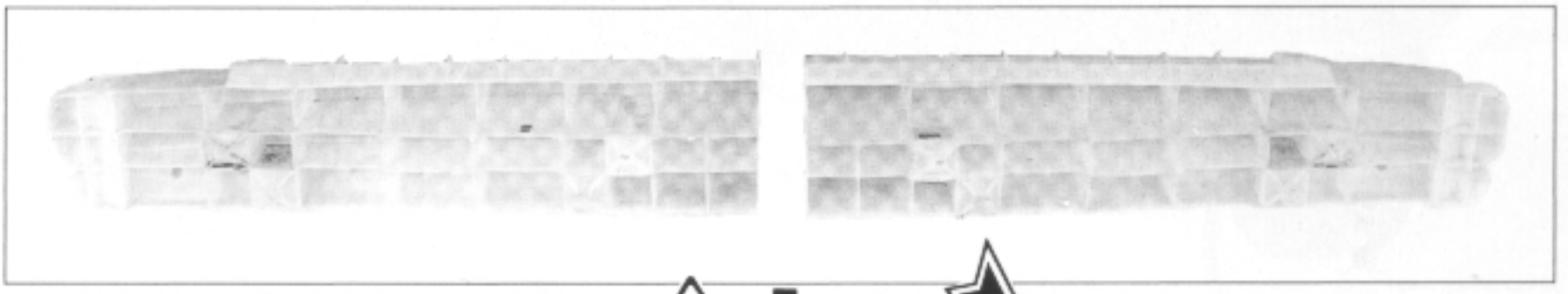


89-297

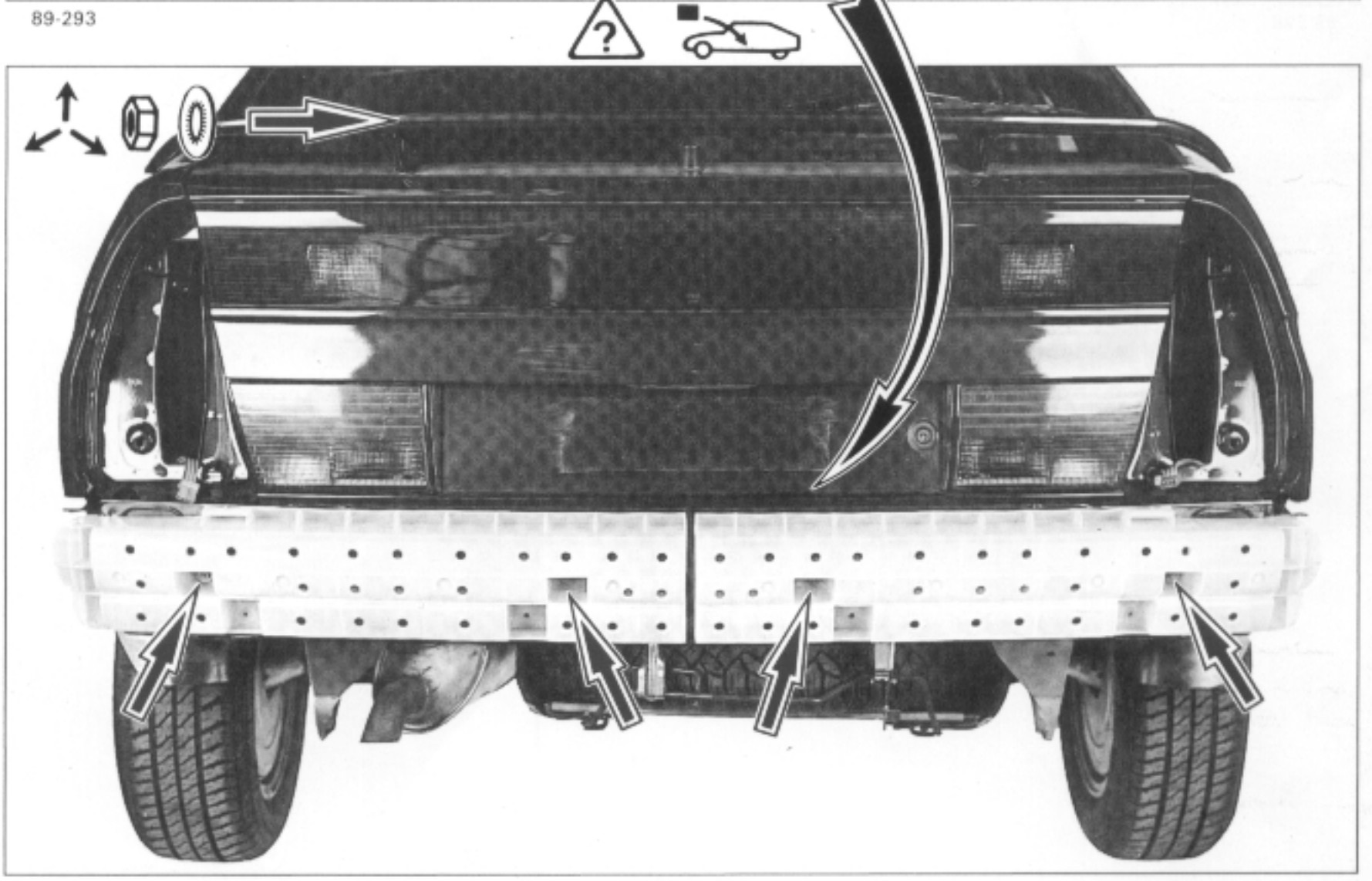
www.WorkshopManuals.co.uk



89-294

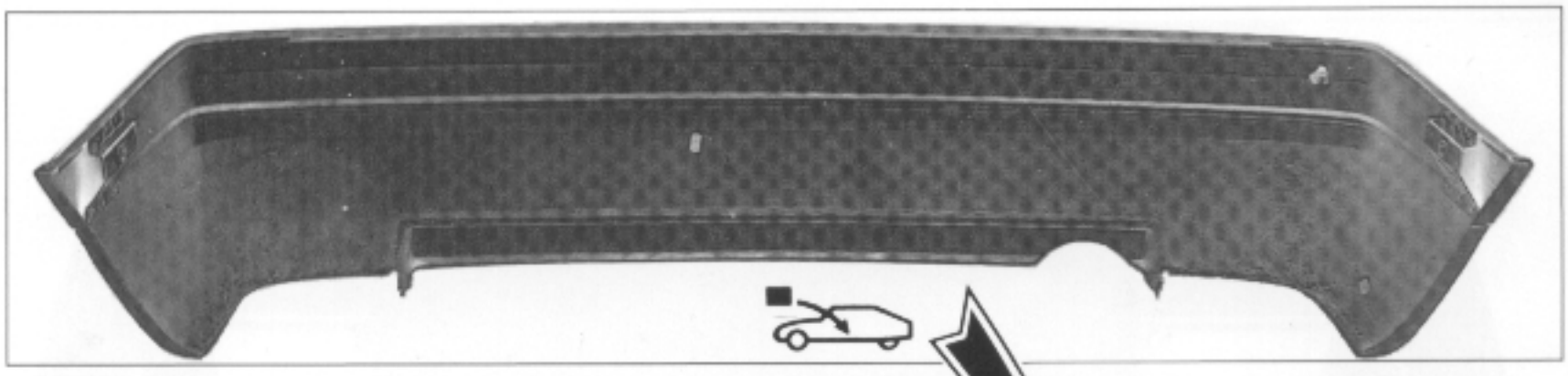


89-293

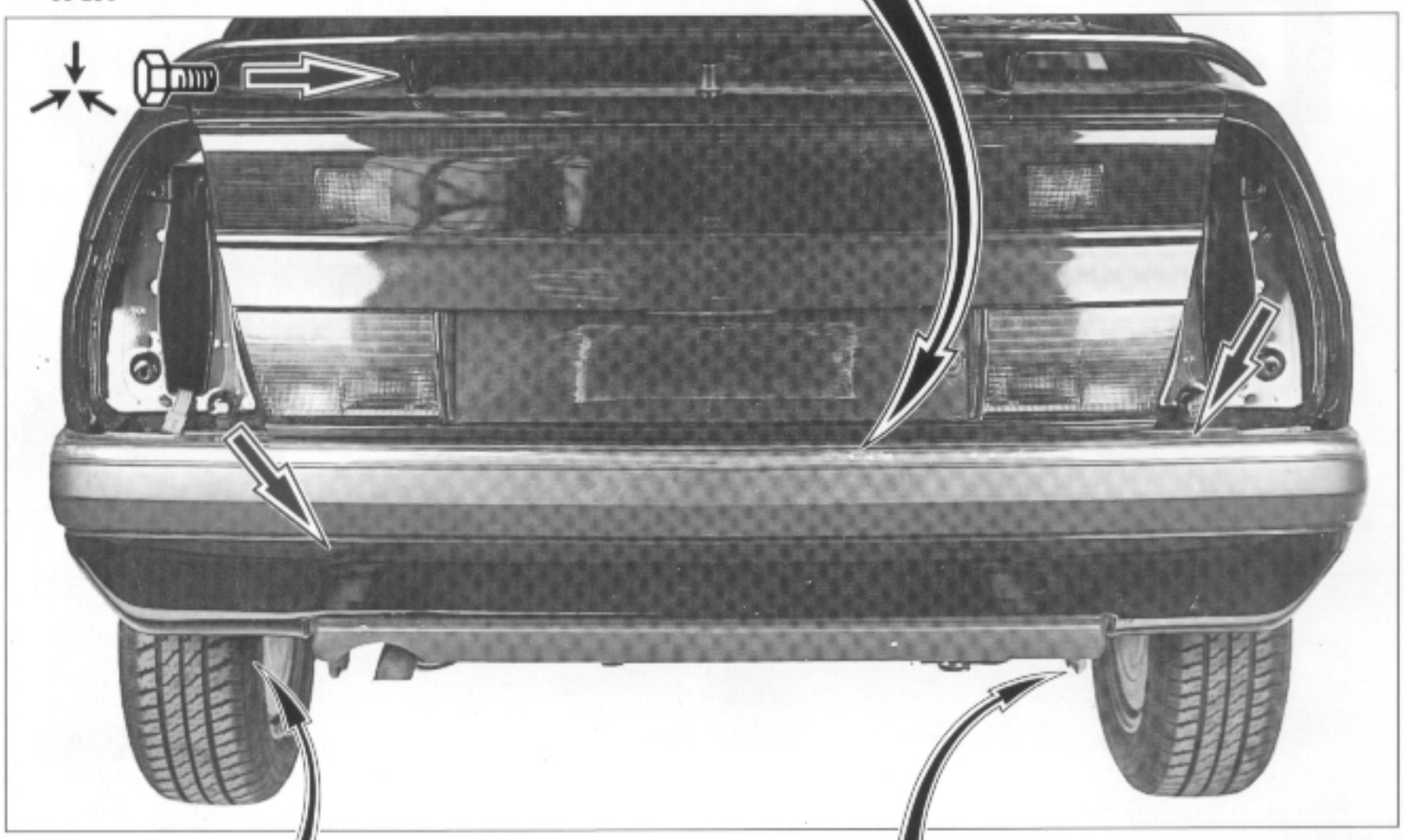


89-297

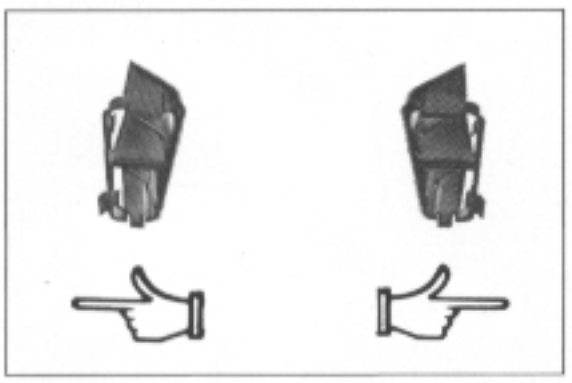
www.WorkshopManuals.co.uk



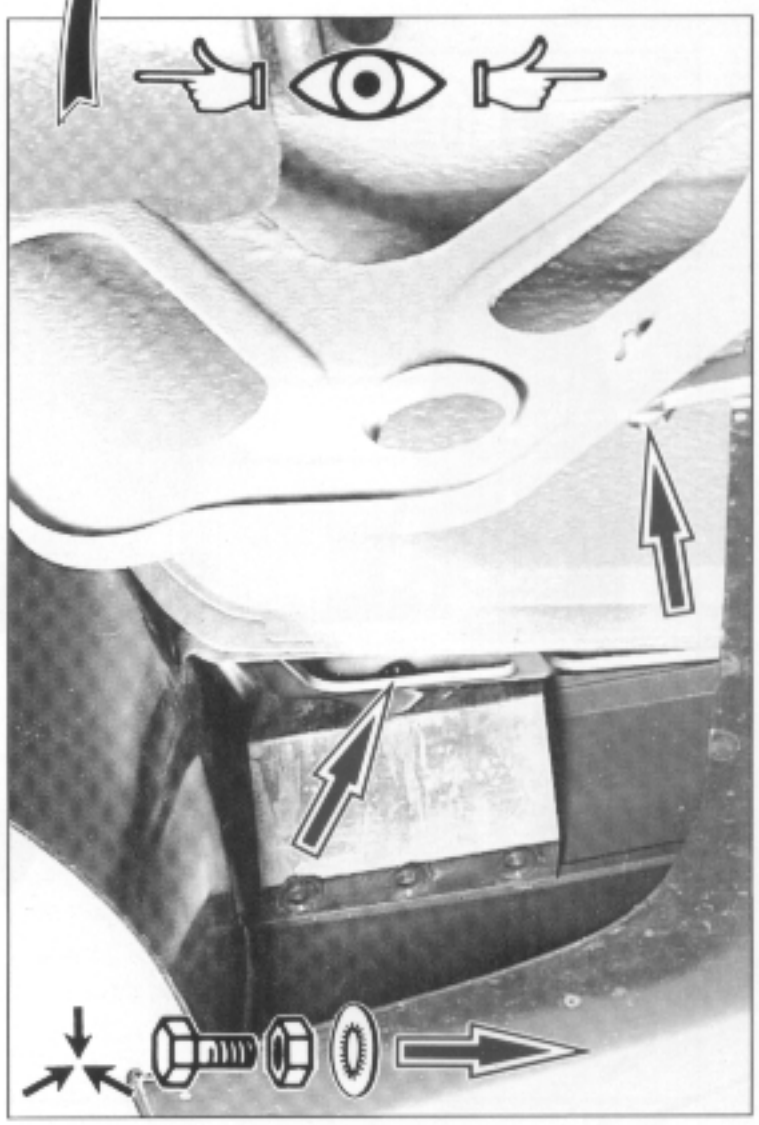
89-293



89-295



89-293



89-308

www.WorkshopManuals.co.uk

Y.80-8

Y.80-4

Y.80-23

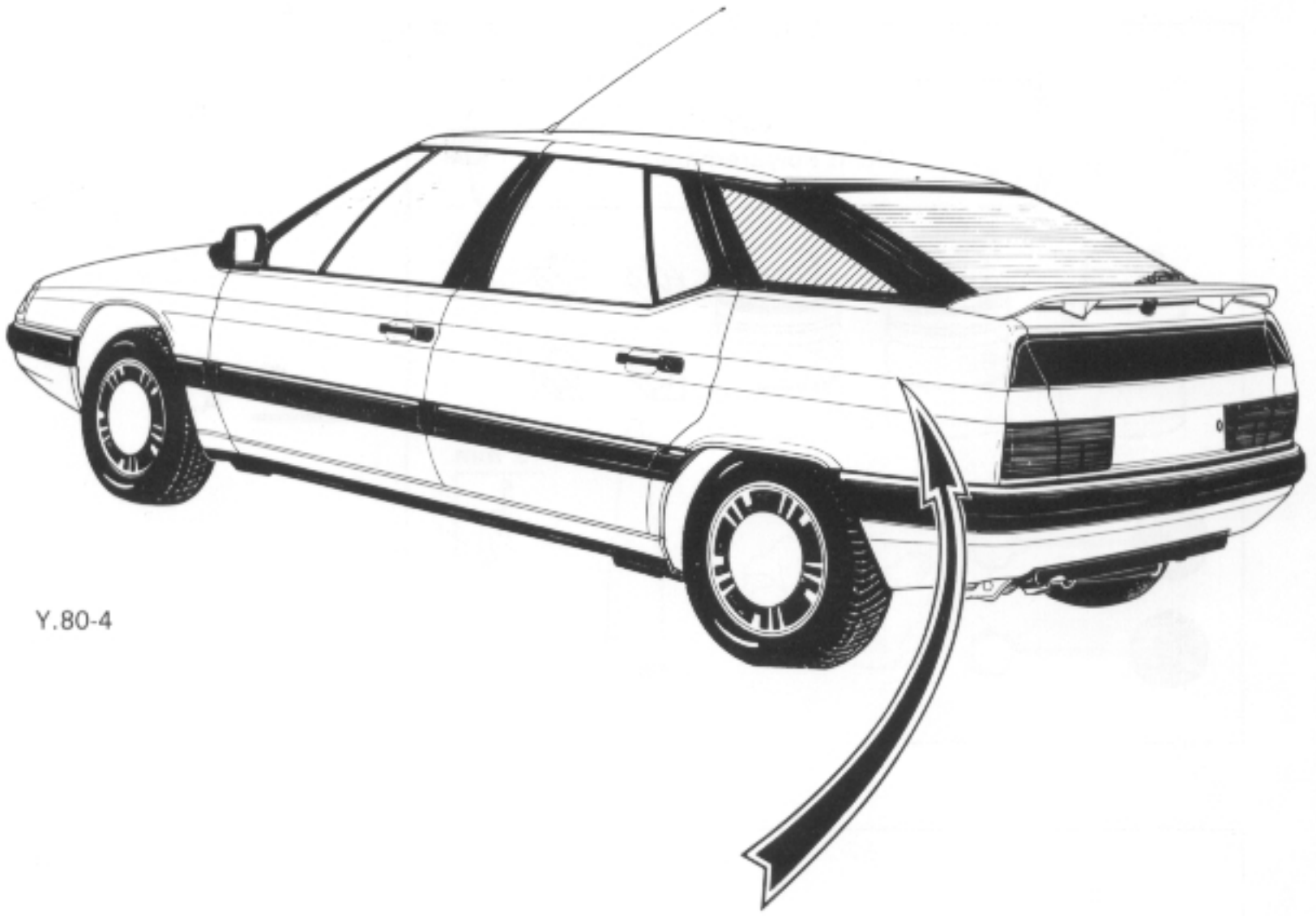
Y.98-1

86-1038

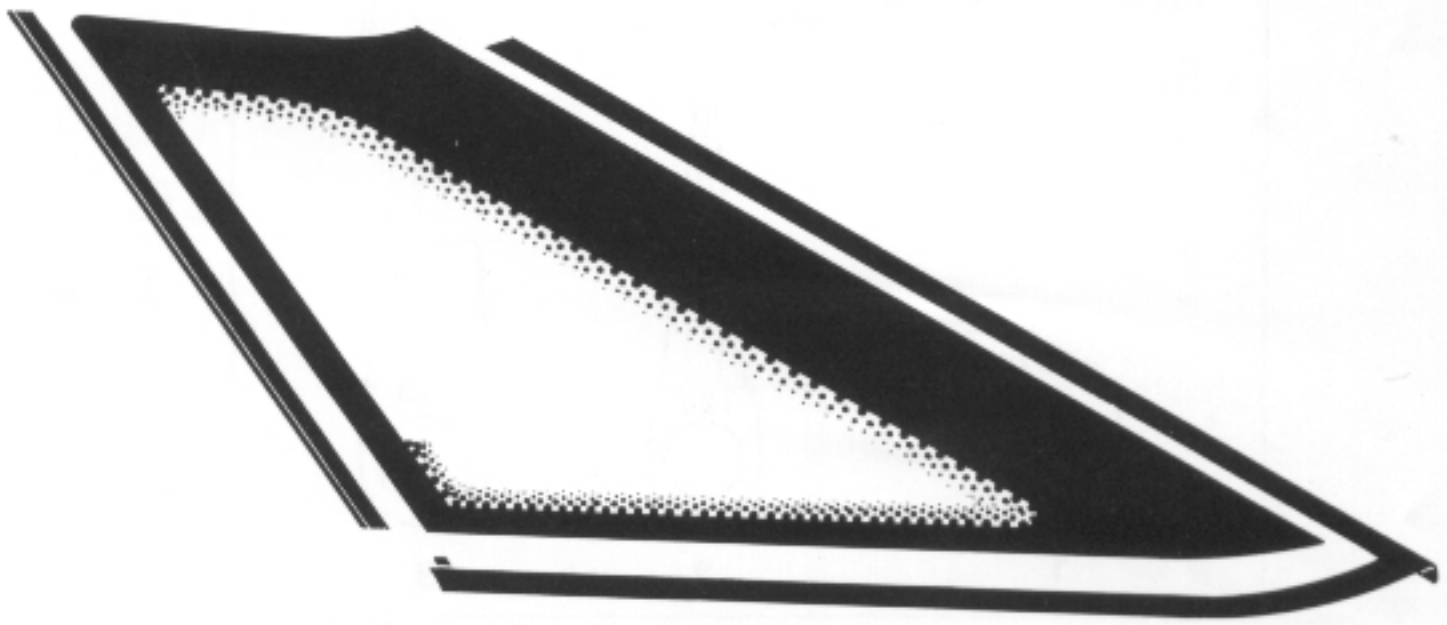
84-378

Y.80-3

www.WorkshopManuals.co.uk

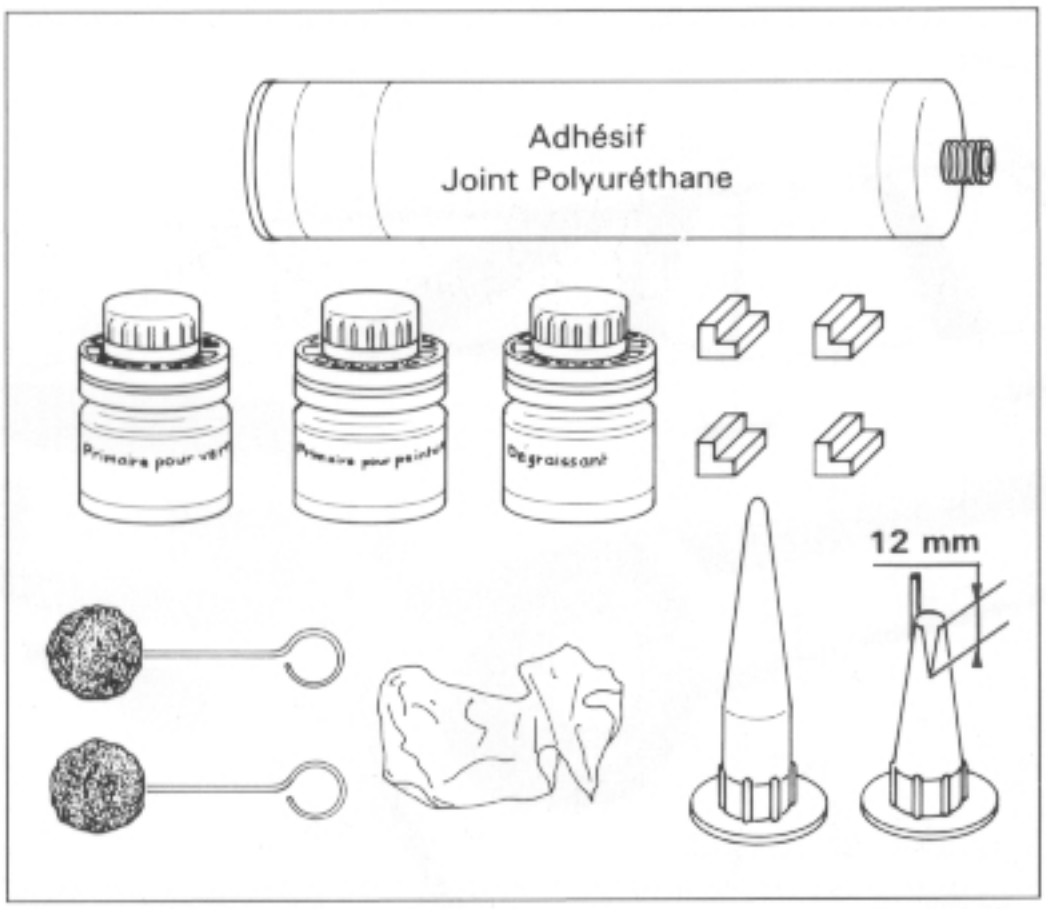


Y.80-4



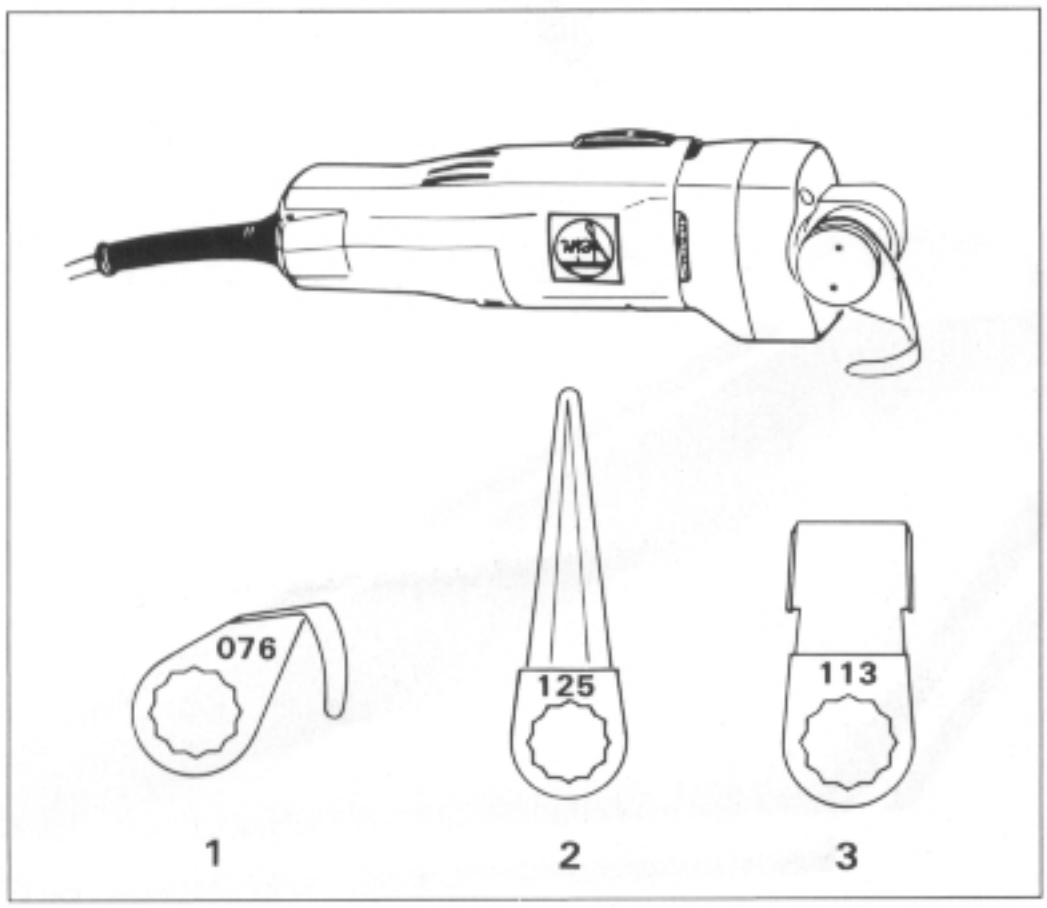
Y.96-1

www.WorkshopManuals.co.uk



TT-96.10

A3

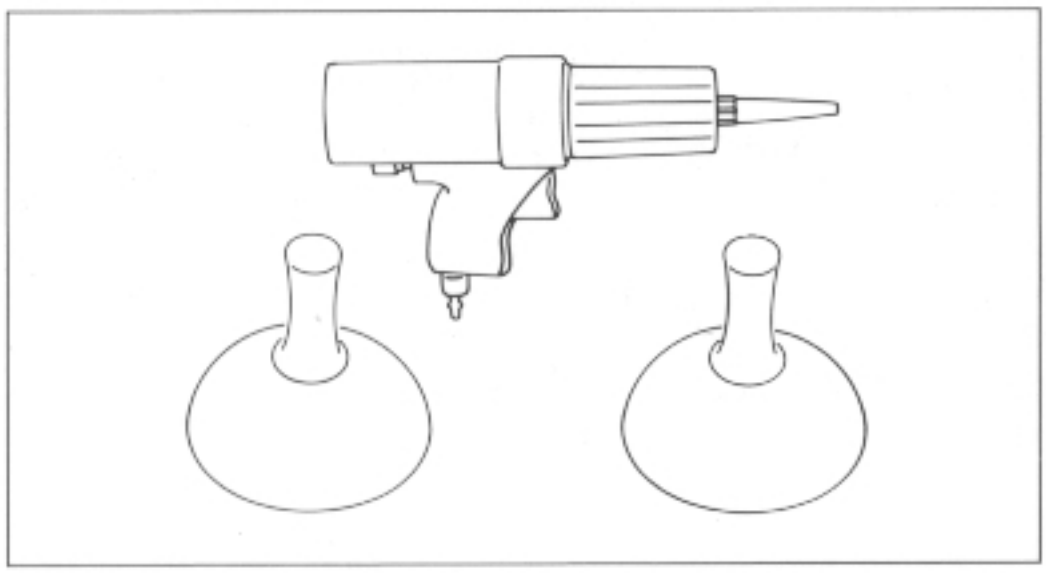


① L = 24 mm

② L = 70 mm

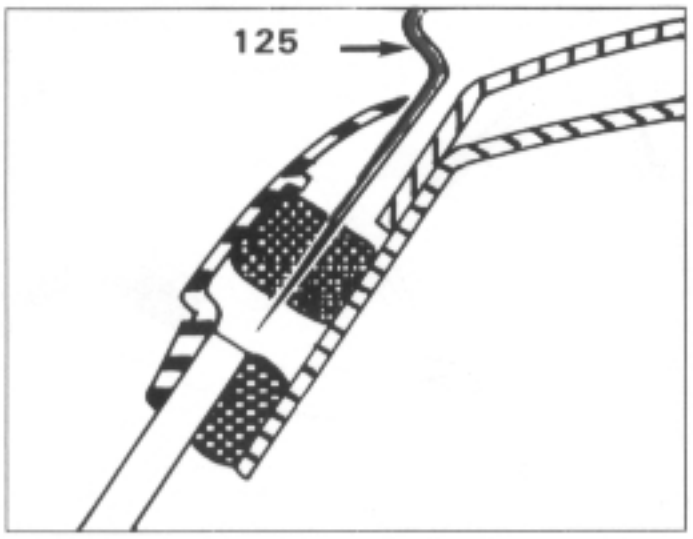
③ L = 25 mm

TT-96.11 TT-96.9

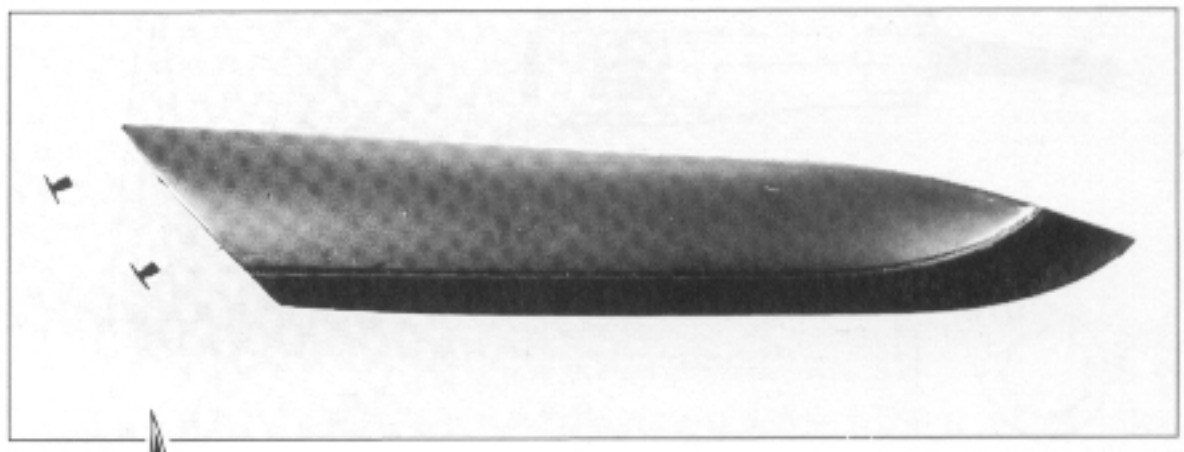


TT-96.7

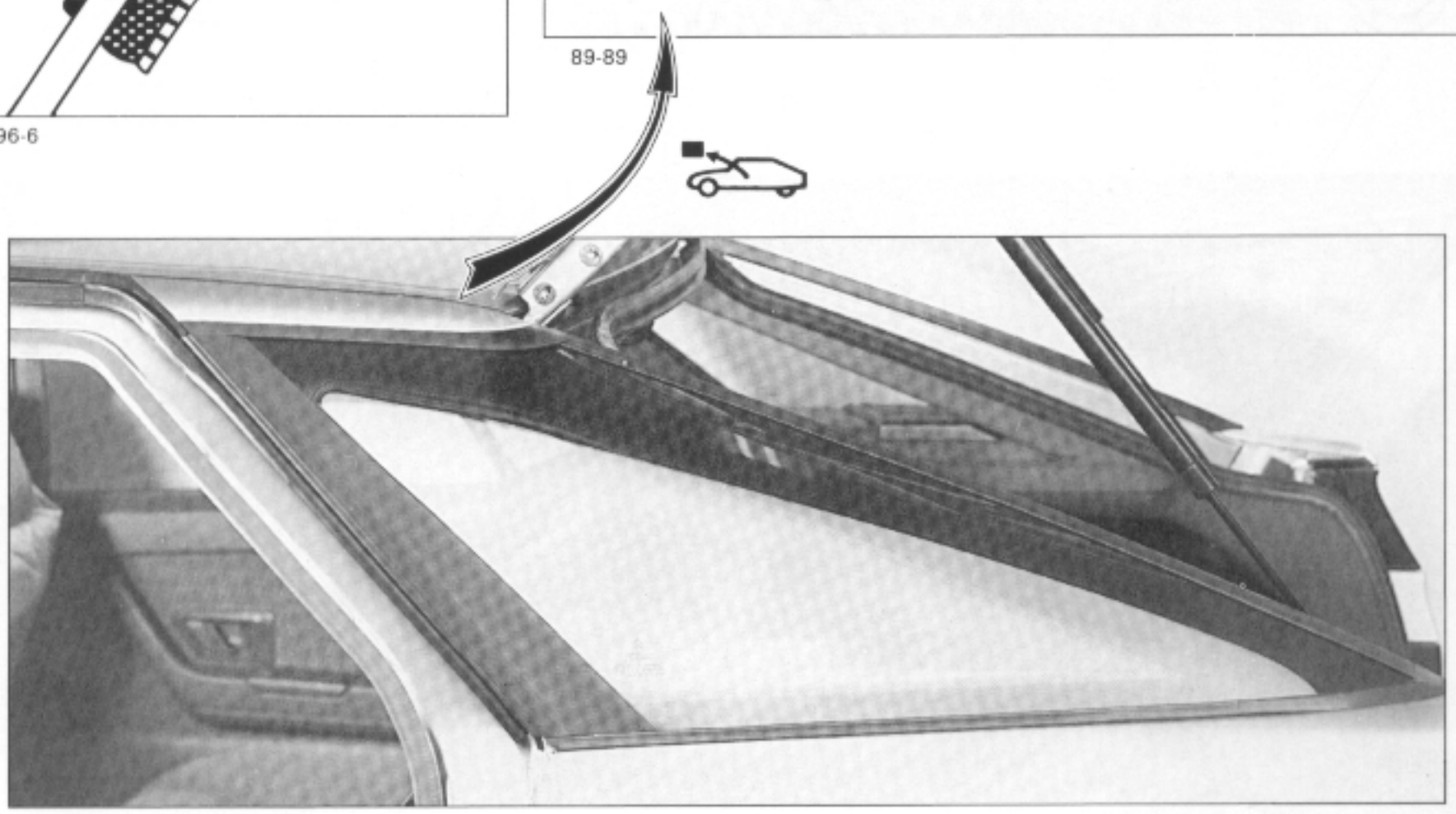
www.WorkshopManuals.co.uk



Y.96-6



89-89



88-936



89-84

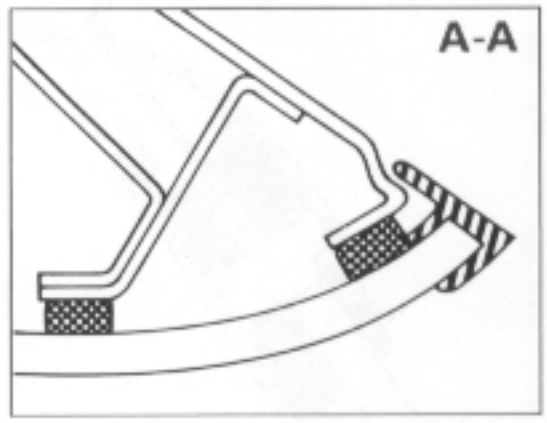
www.WorkshopManuals.co.uk


TT.96-9

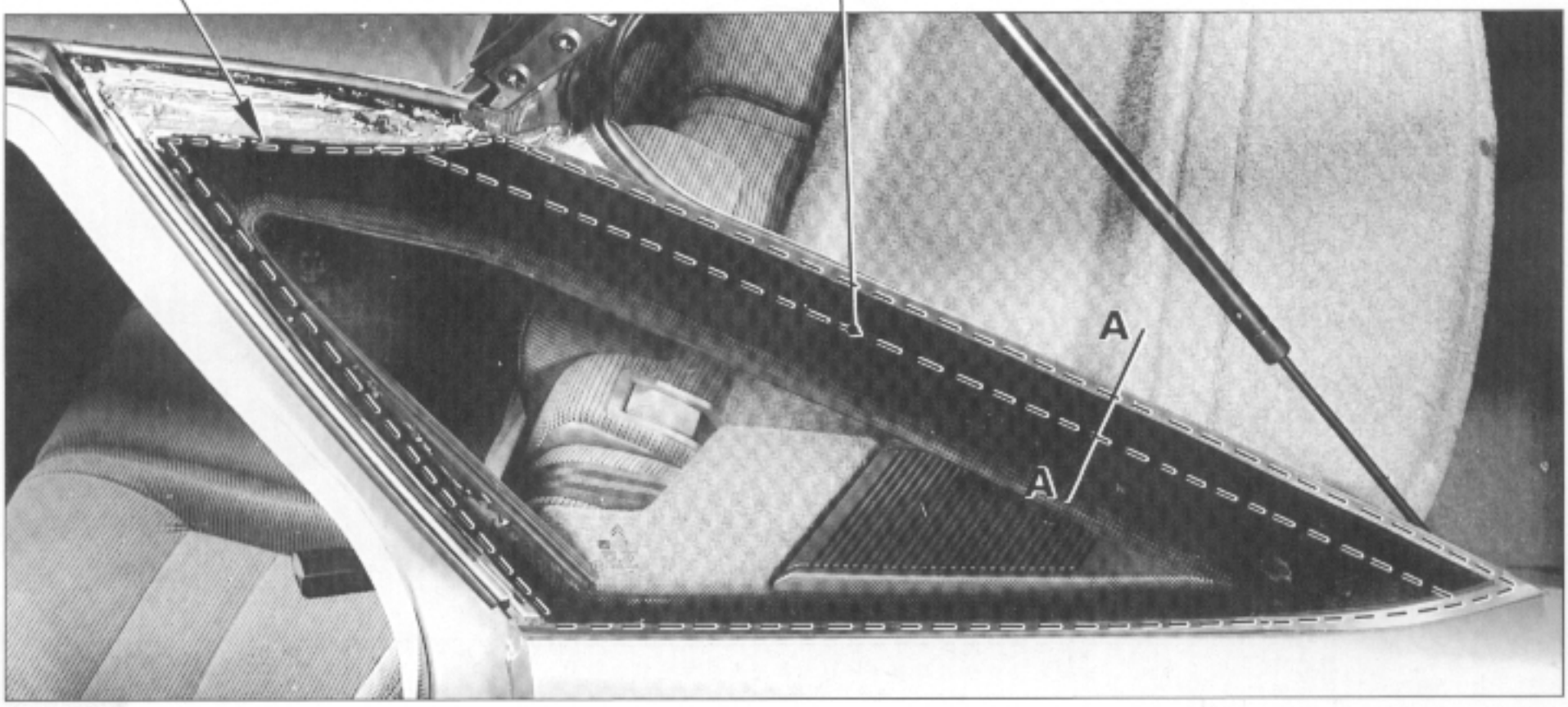




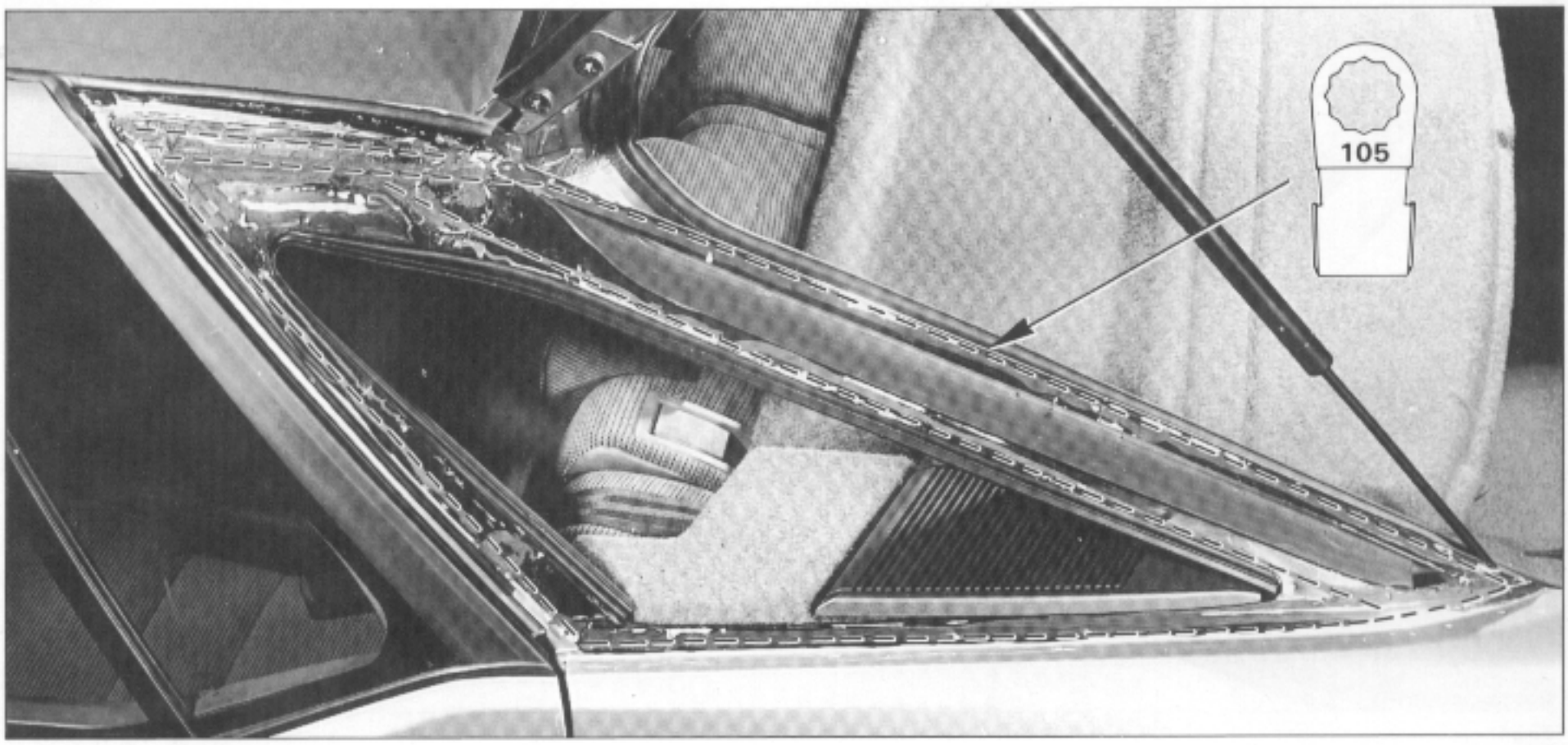

TT.96-11



Y-96-5

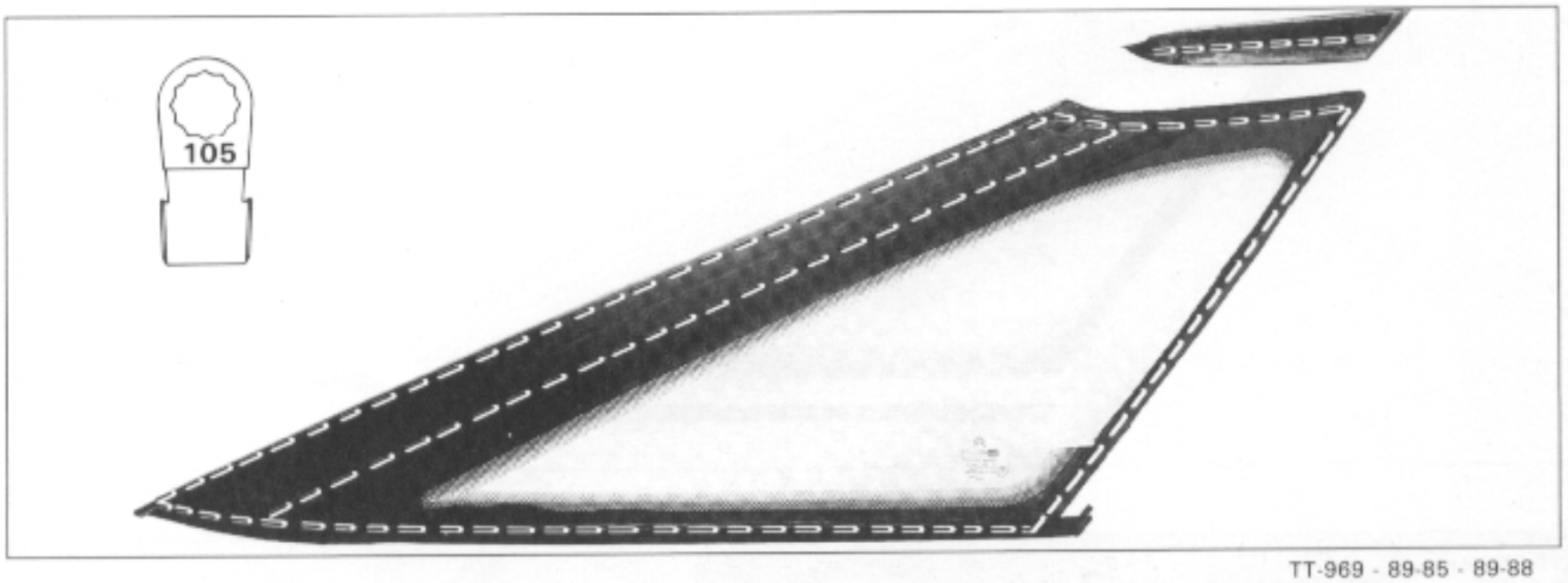


89-82

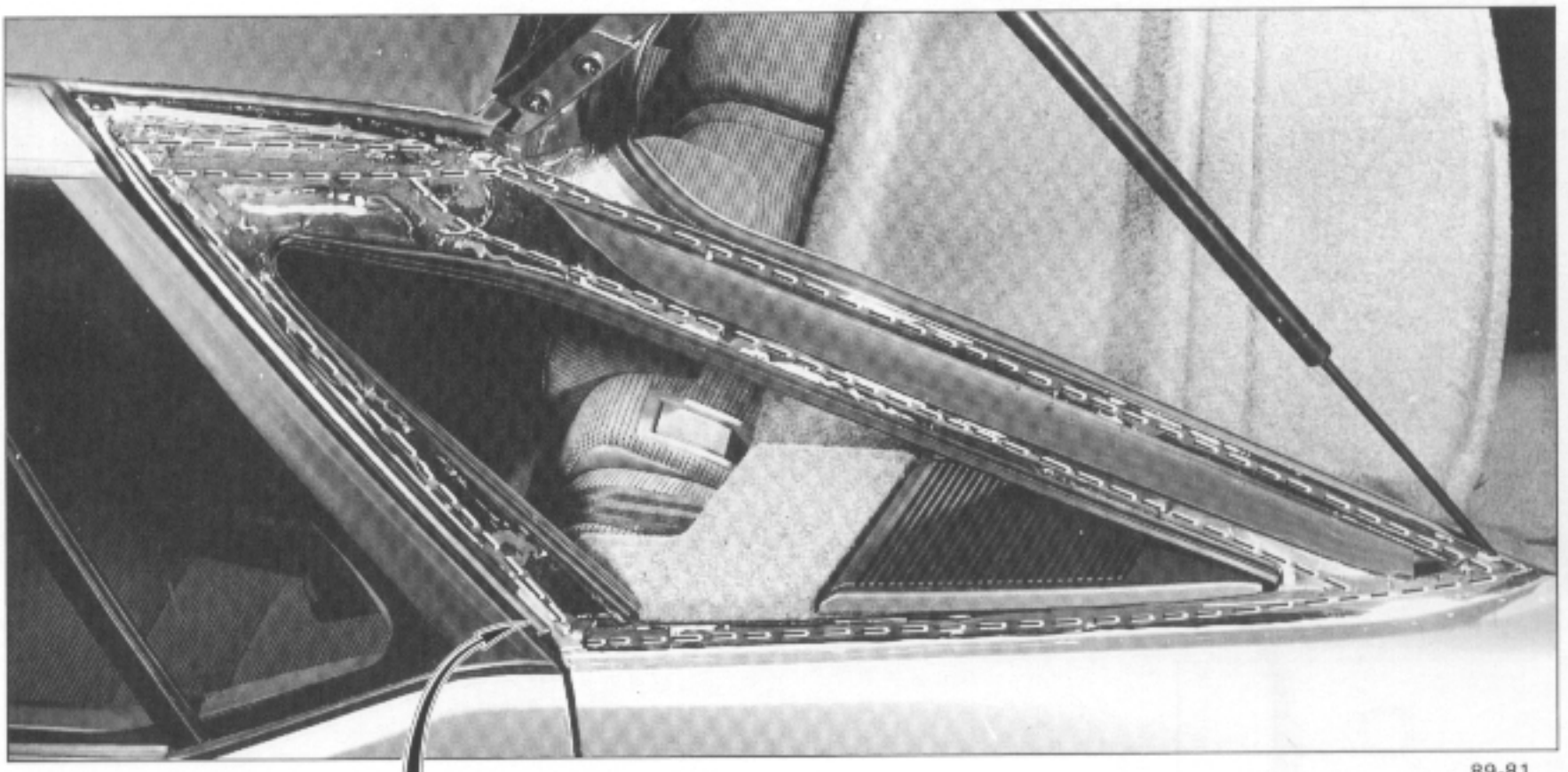


89-81

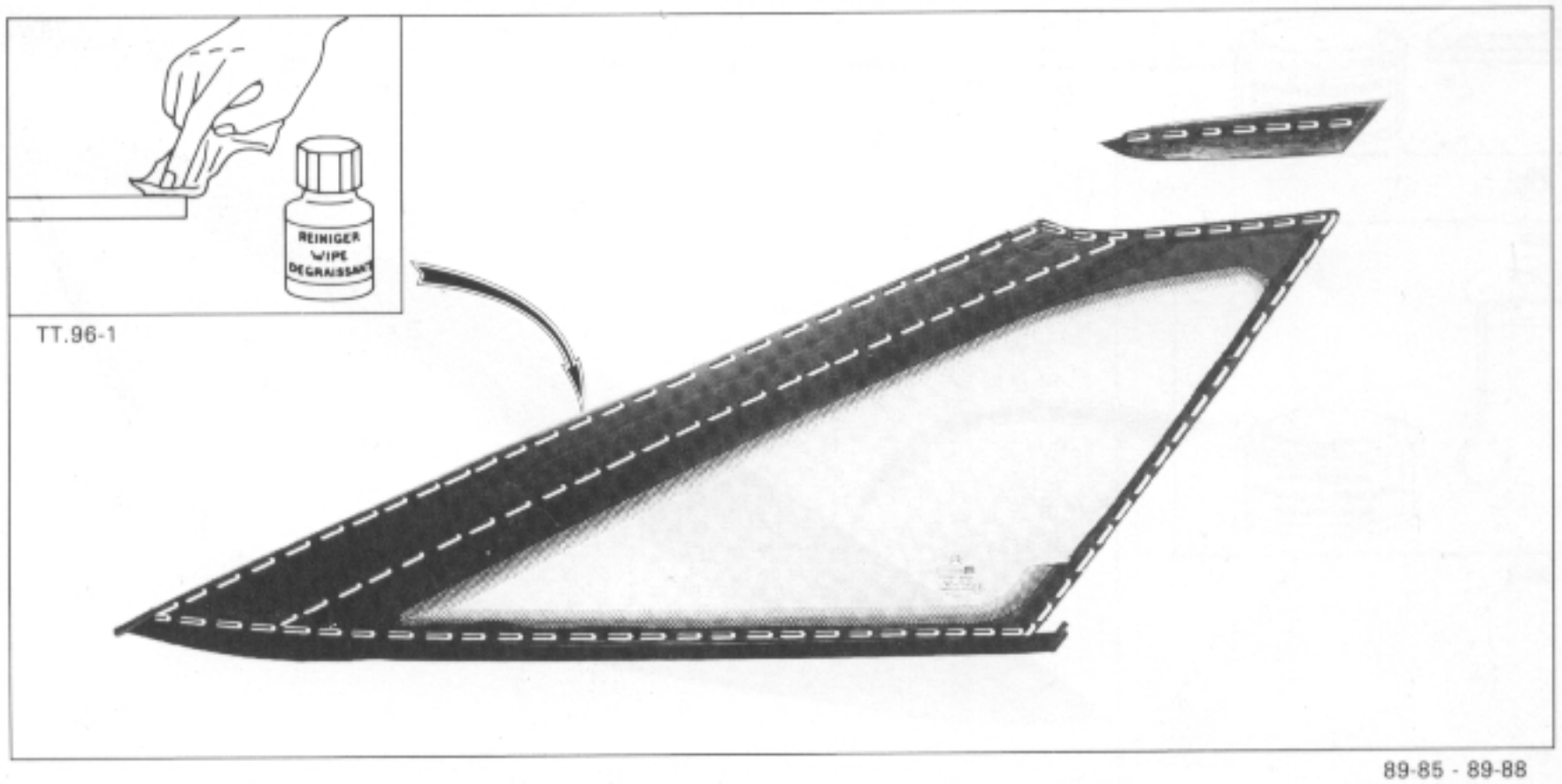
www.WorkshopManuals.co.uk



TT-969 - 89-85 - 89-88



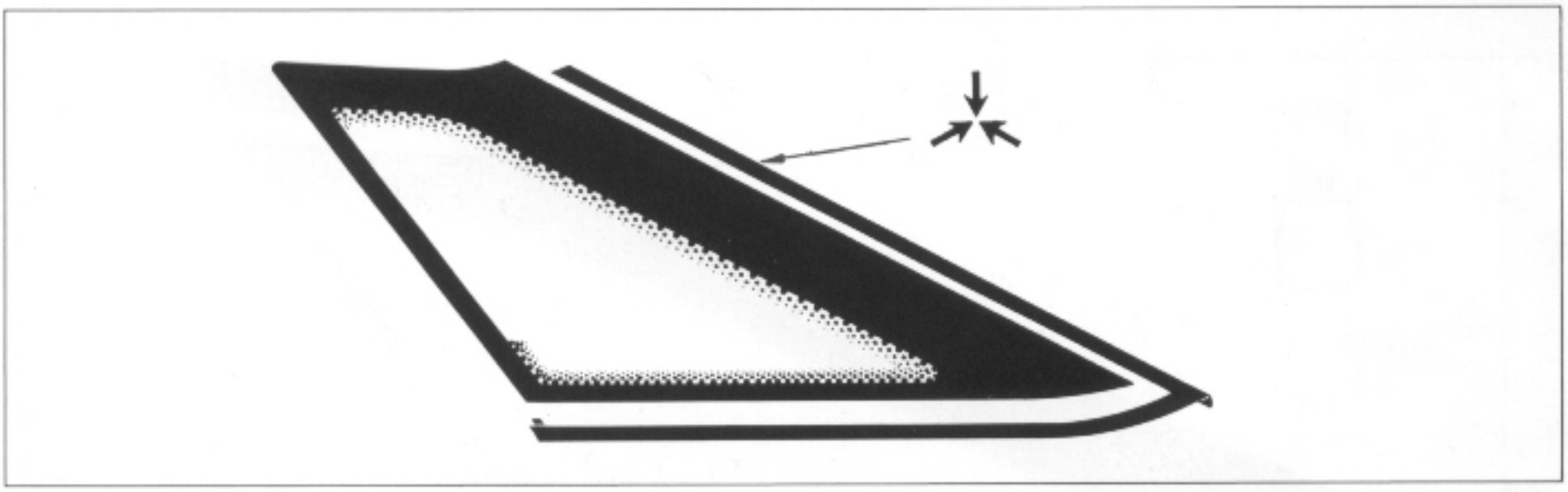
89-81



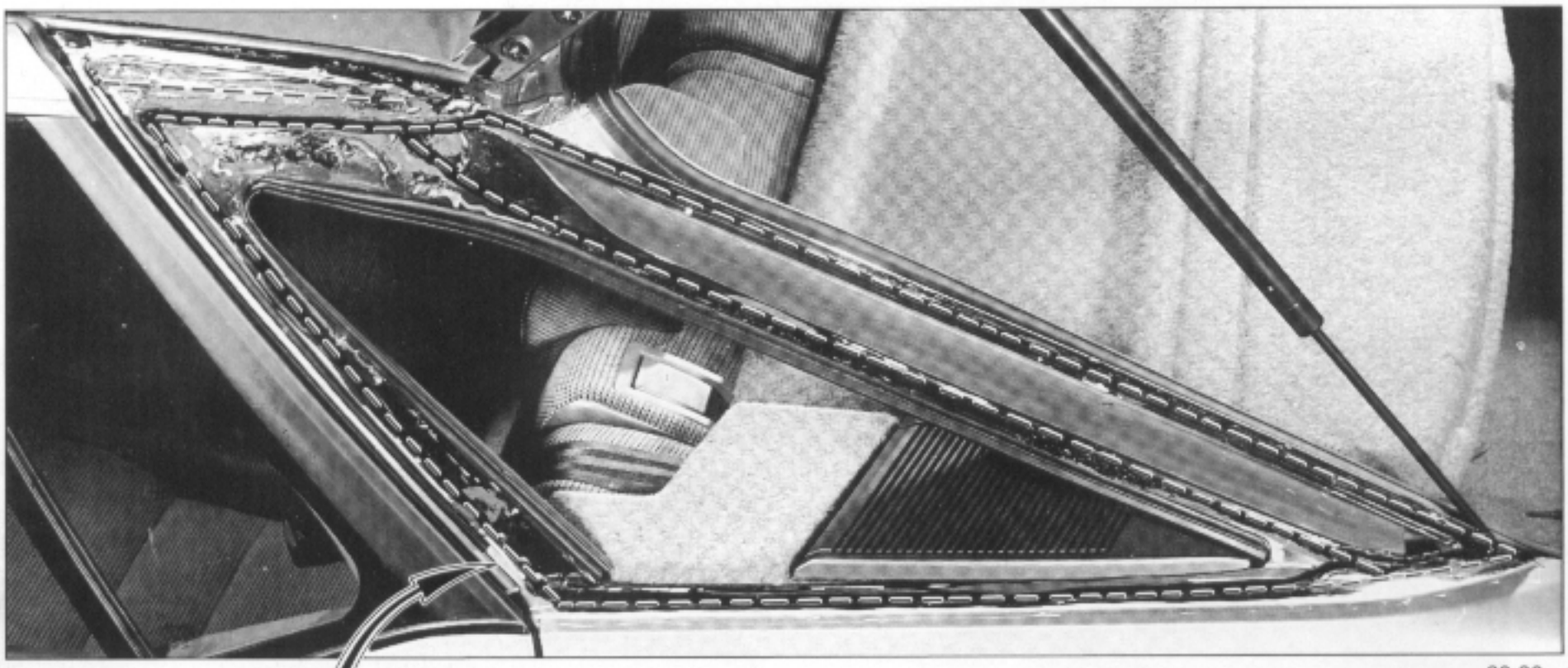
TT.96-1

89-85 - 89-88

www.WorkshopManuals.co.uk



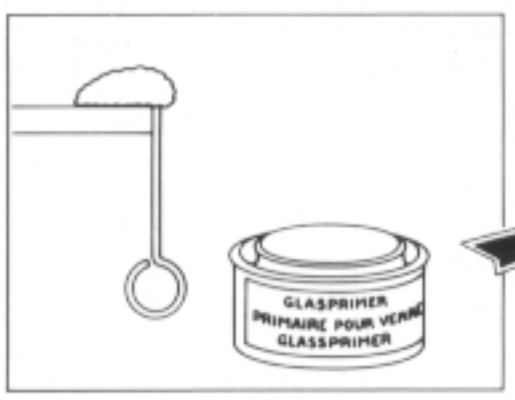
Y.96-1



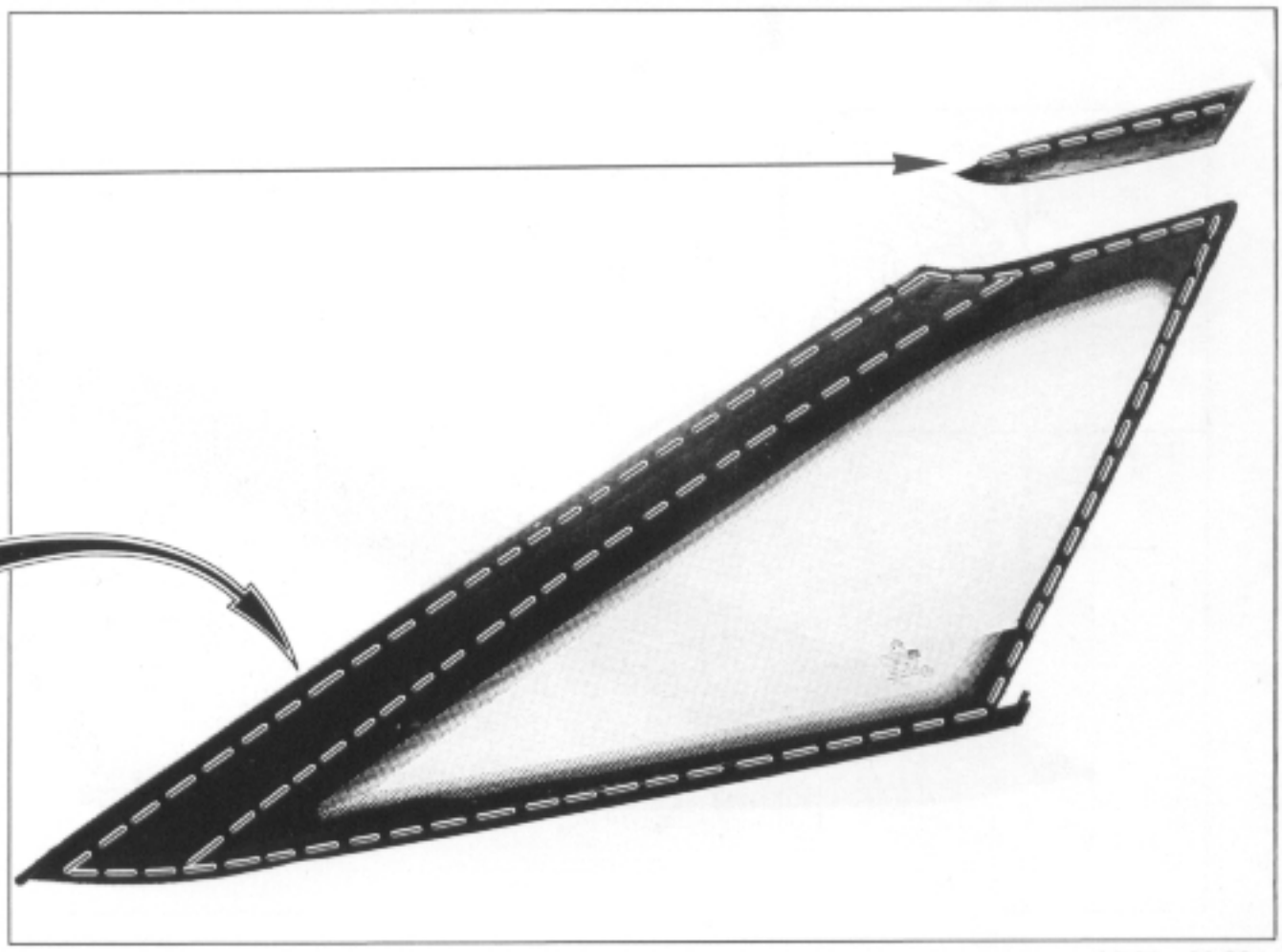
89-80



TT.96-1

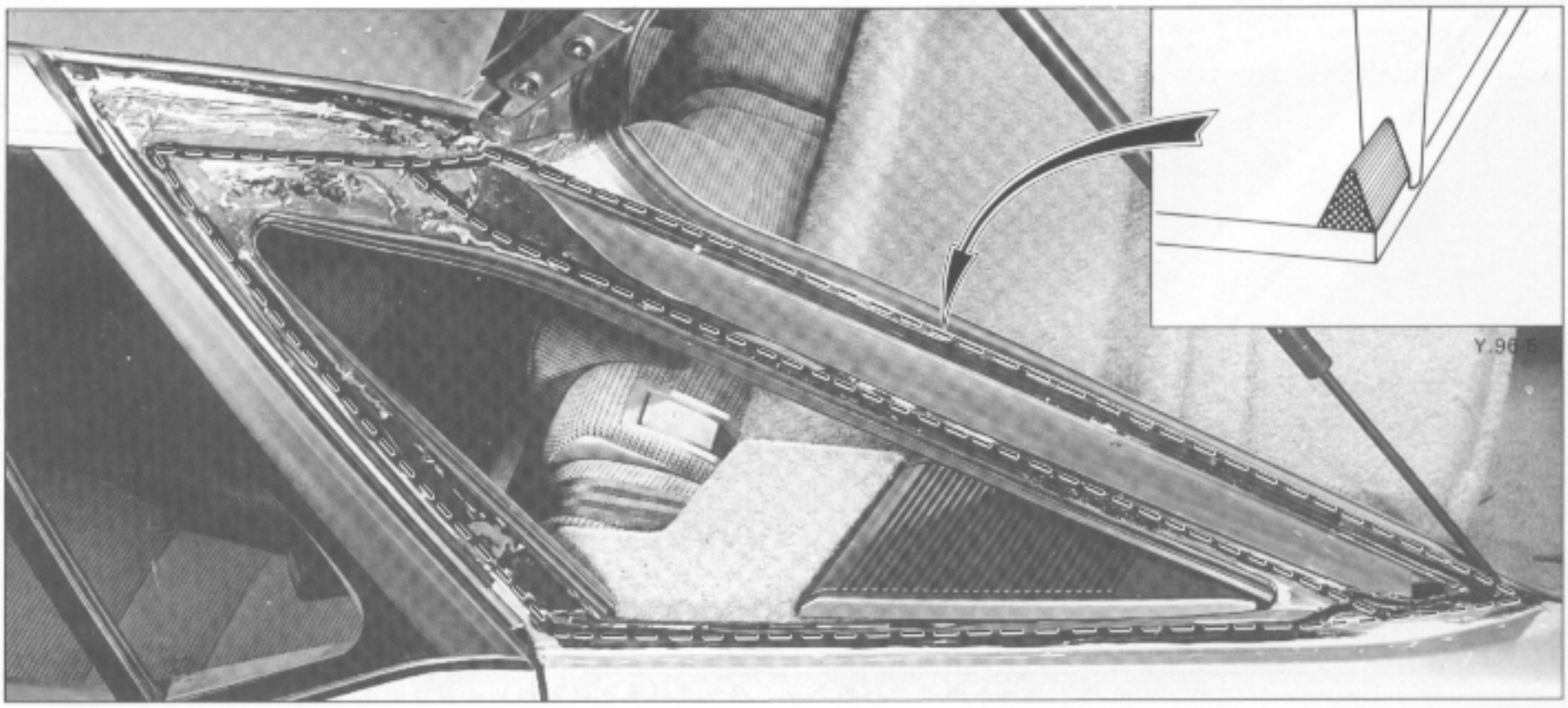


TT.96-1

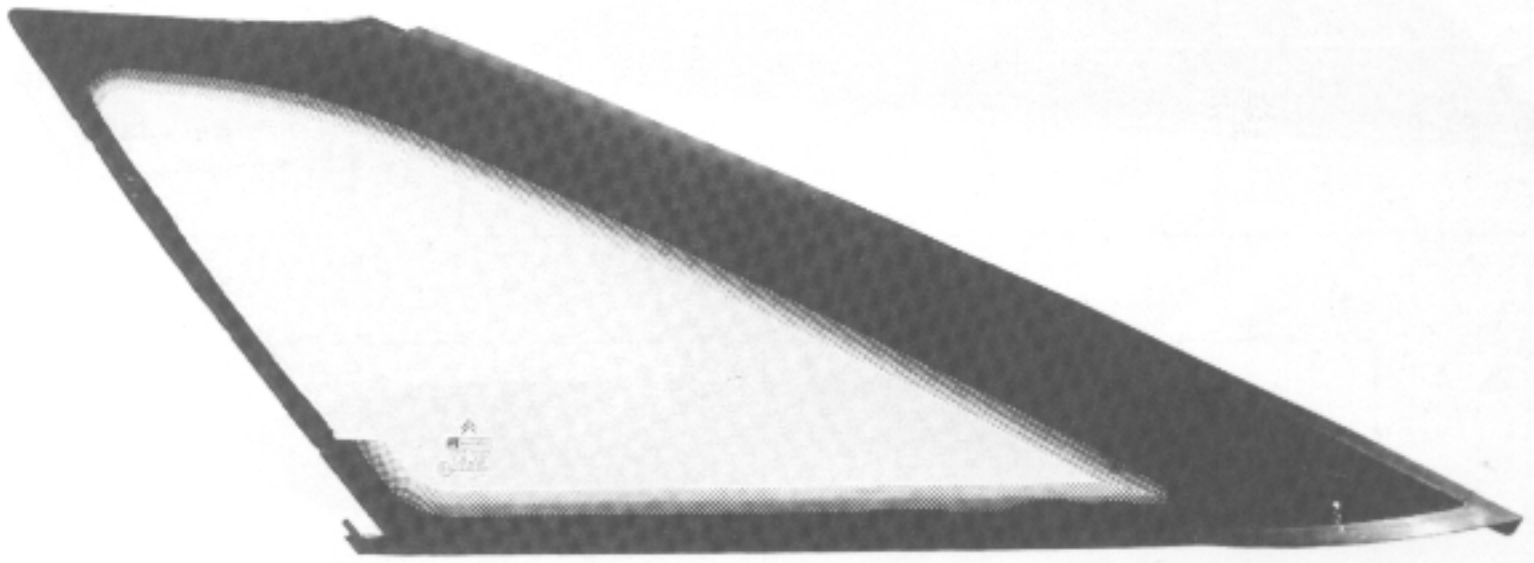


89-85 - 89-88

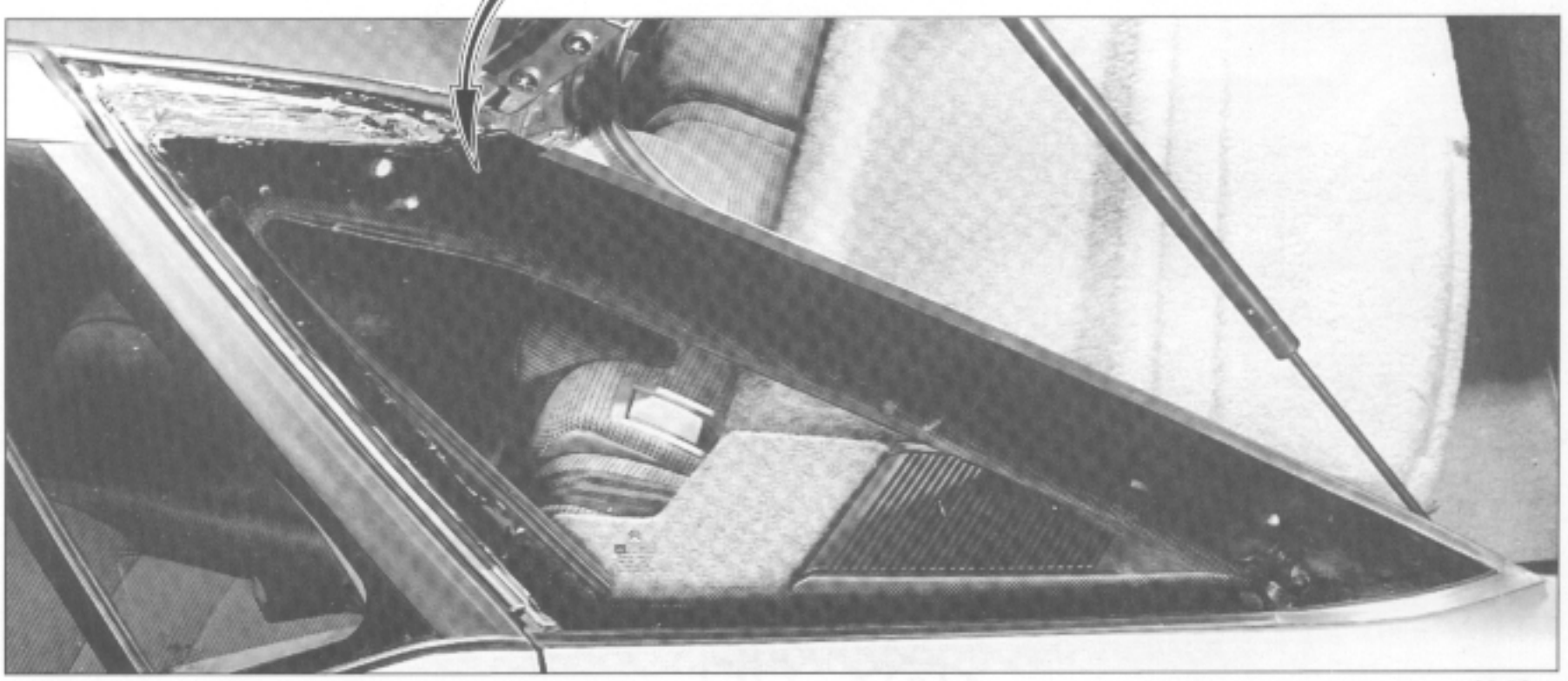
www.WorkshopManuals.co.uk



89-80

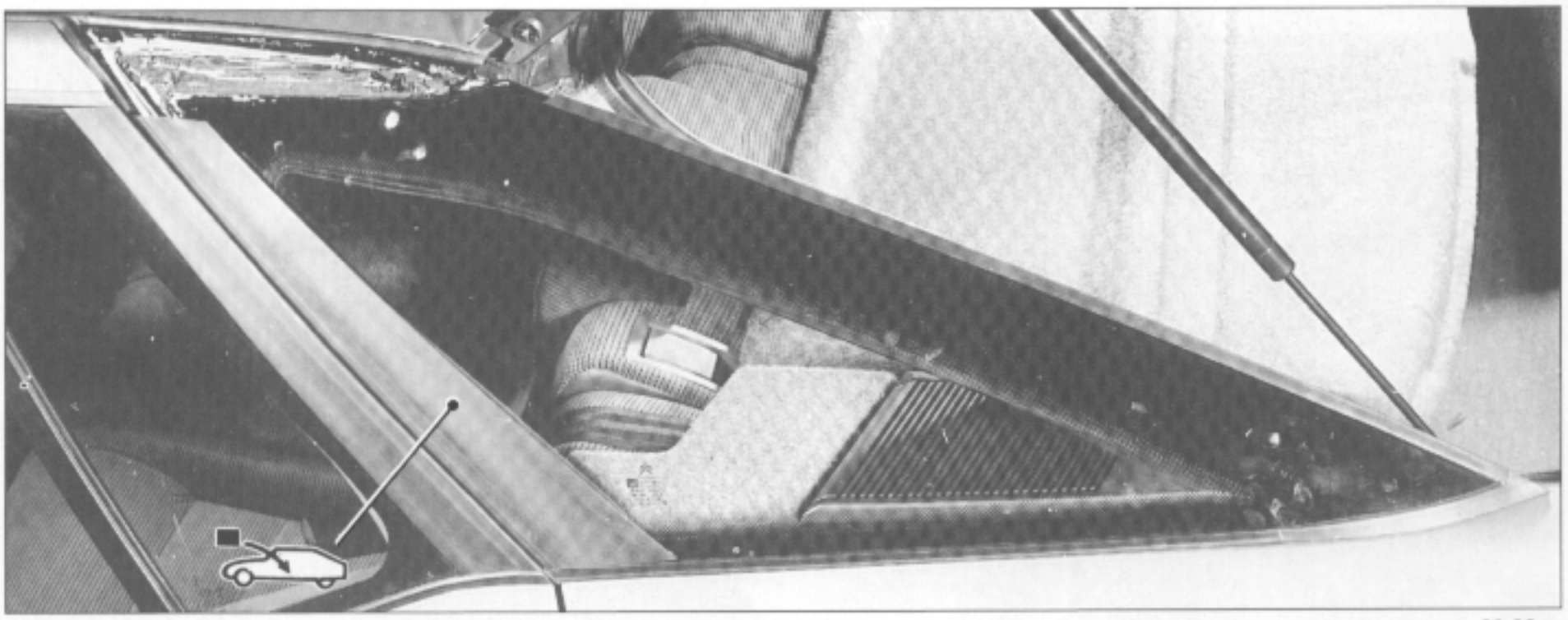


89-86

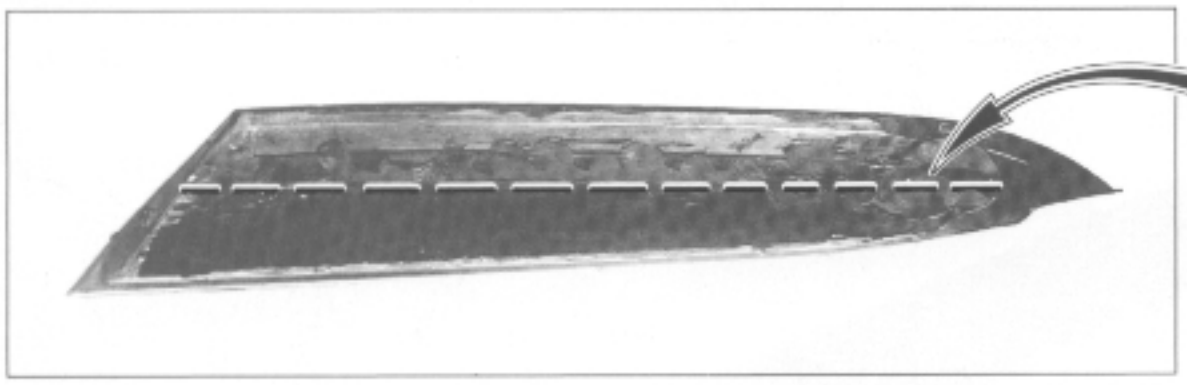


89-83

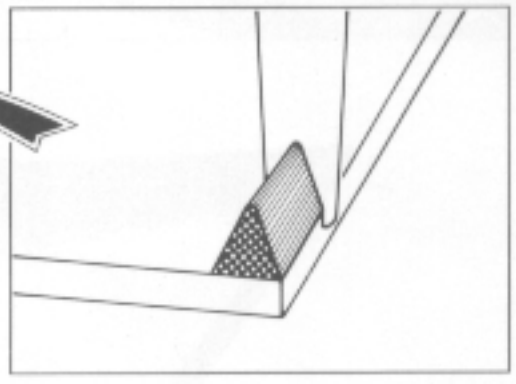
www.WorkshopManuals.co.uk



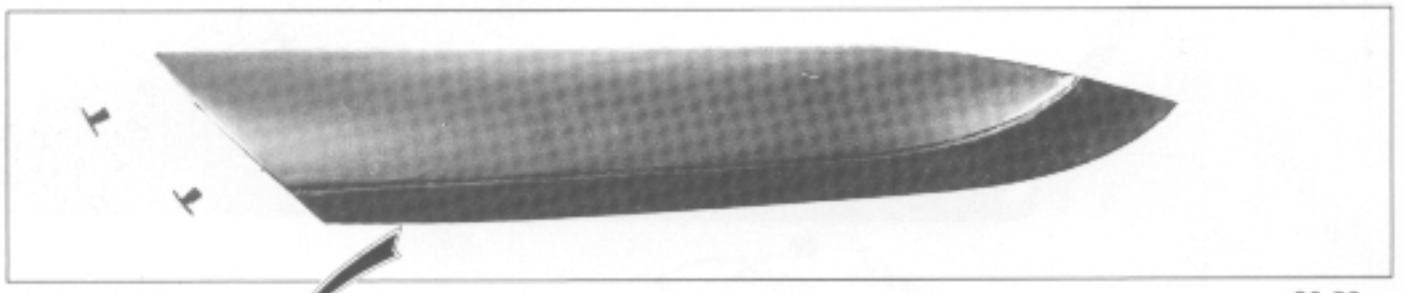
89-83



89-88



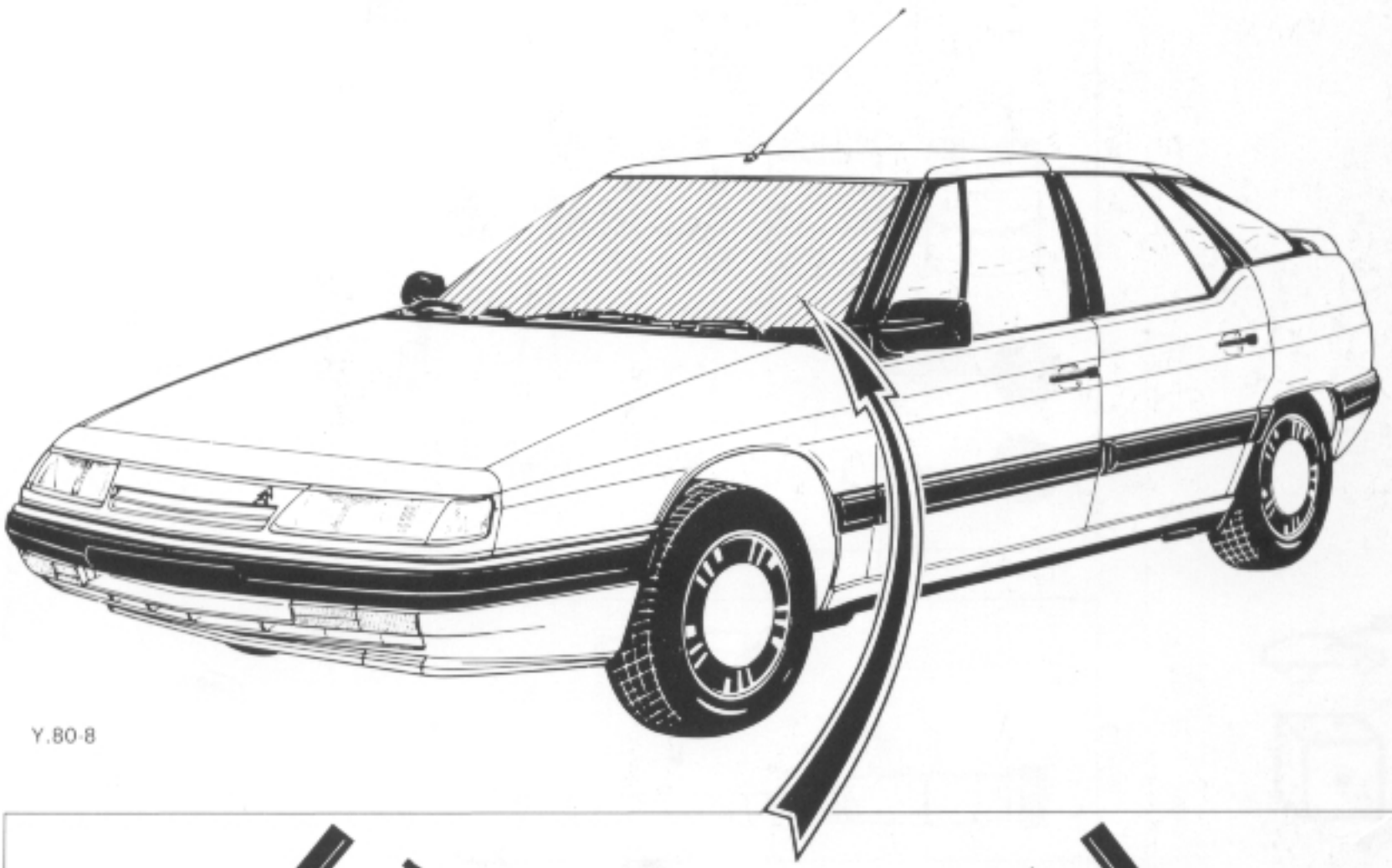
Y.96-5



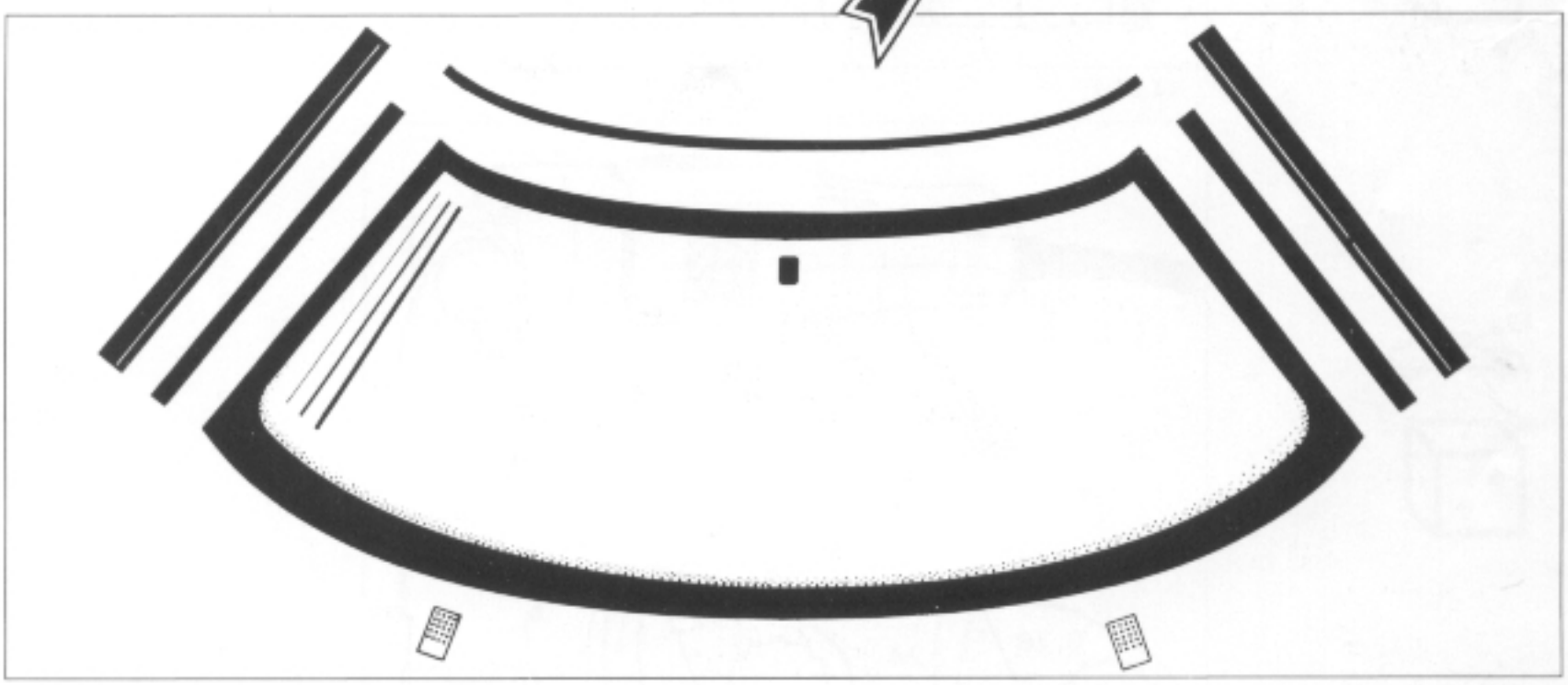
89-89

88-936

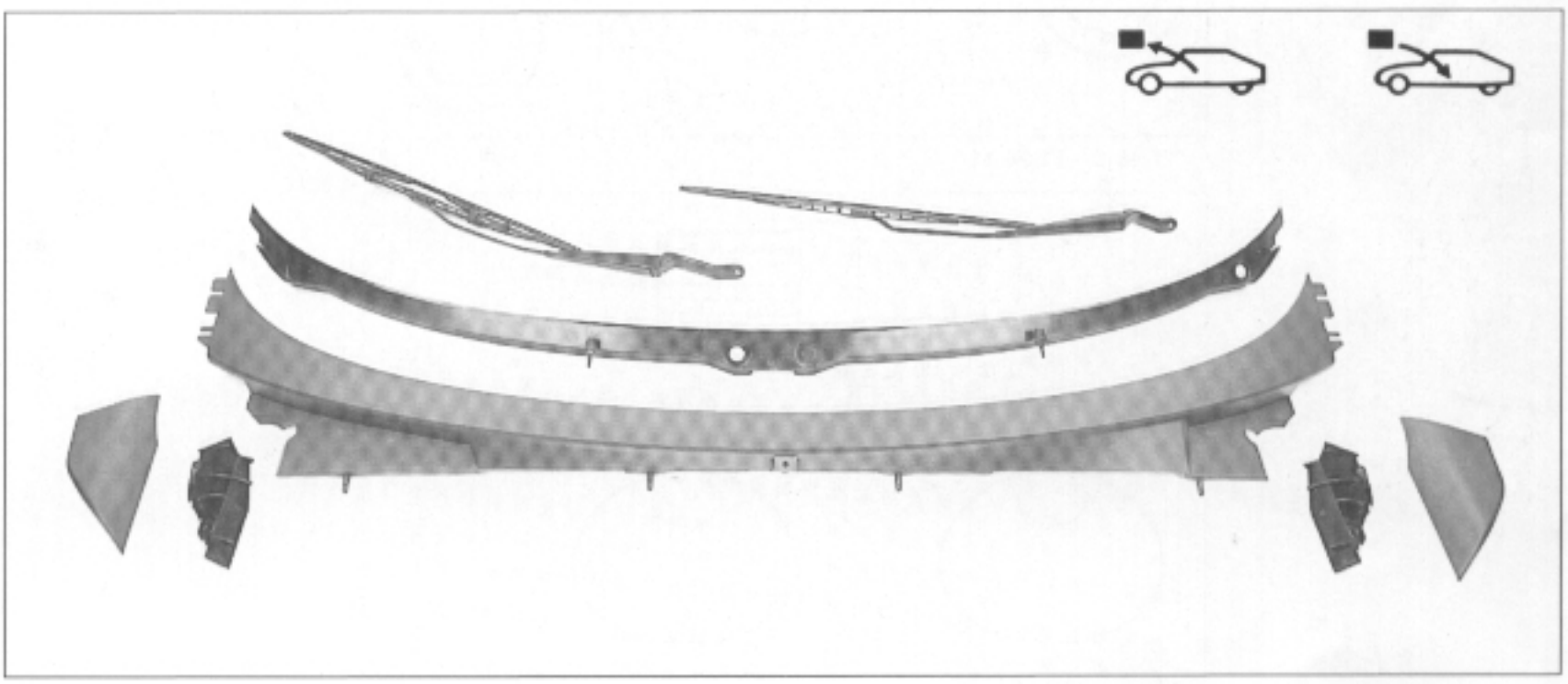
www.WorkshopManuals.co.uk



Y.80-8

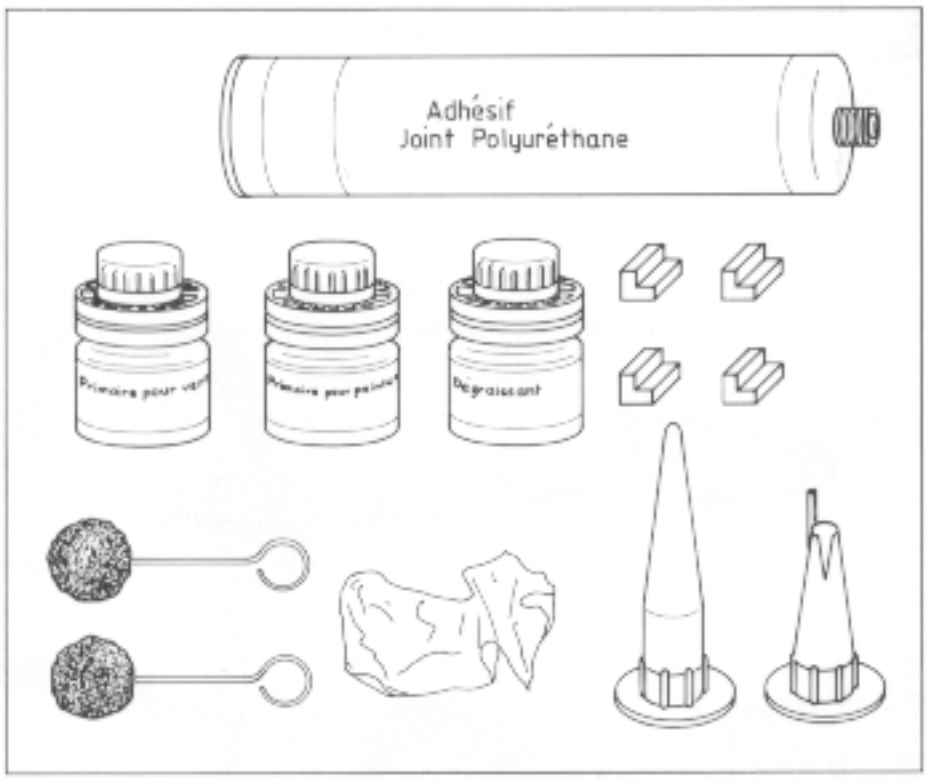


Y.96-2

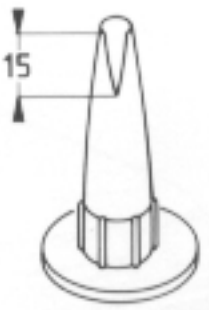


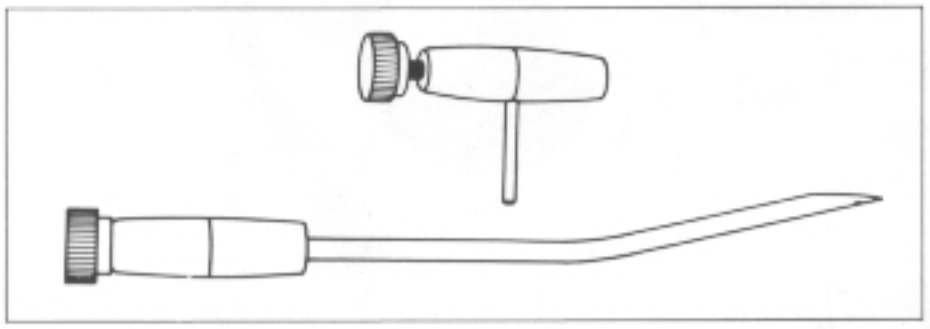
89-67

www.WorkshopManuals.co.uk

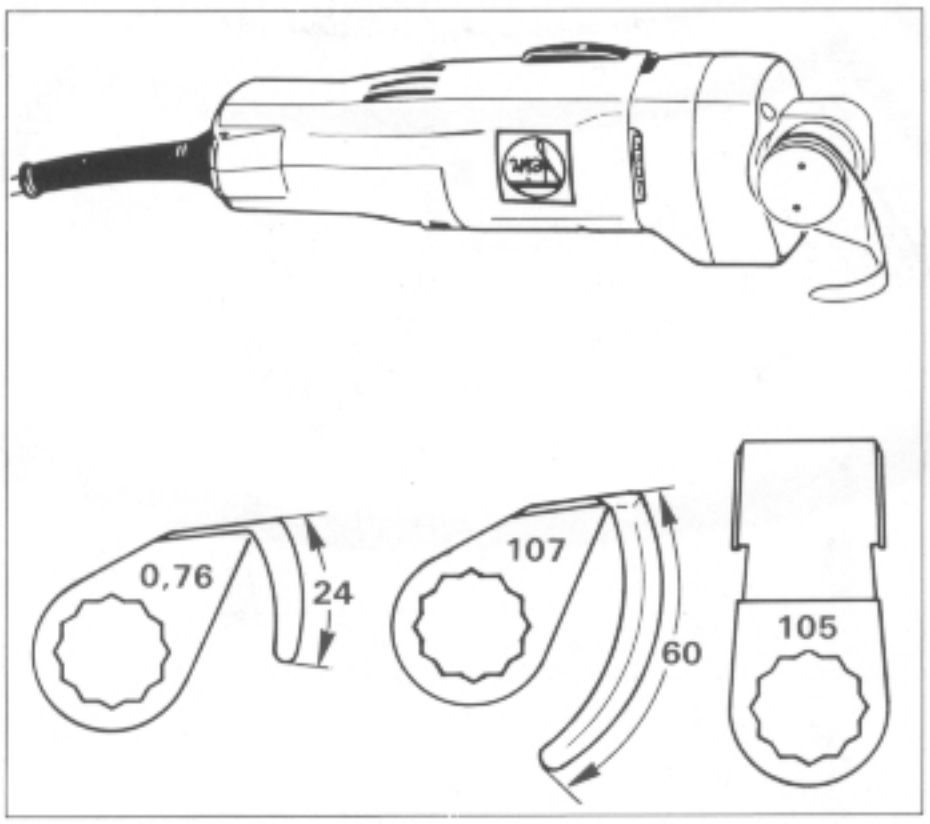


TT.96-10

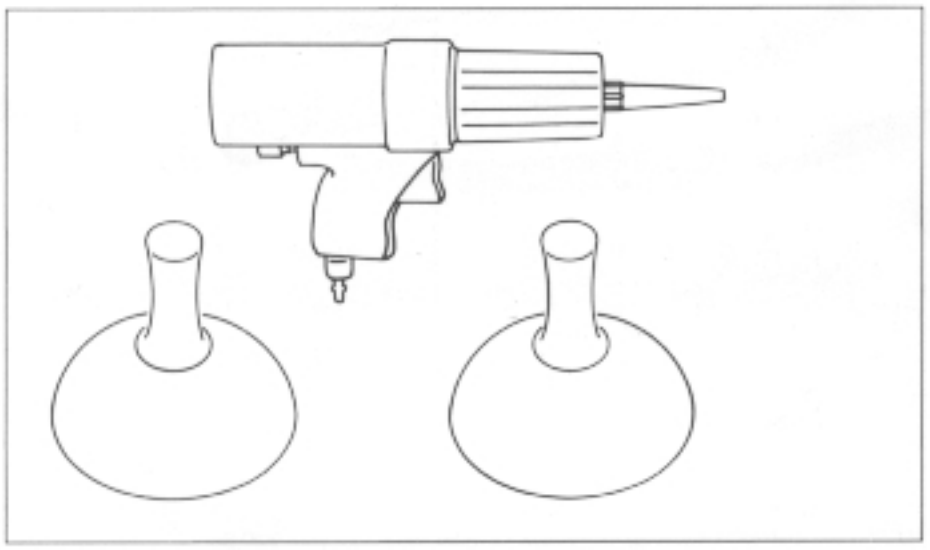




TT.96-7

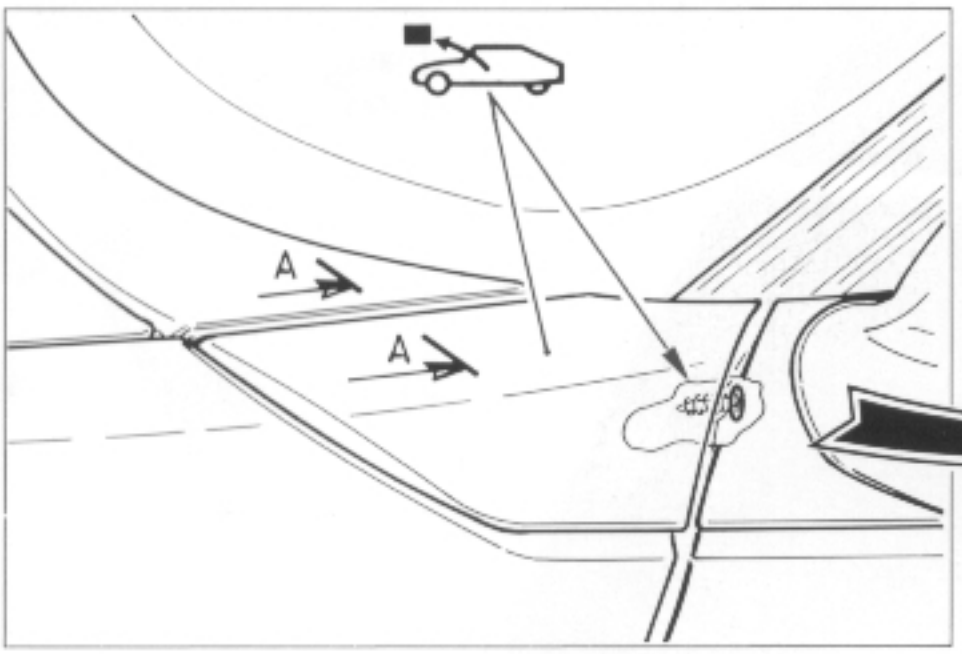


TT.96-9 - TT.96-11

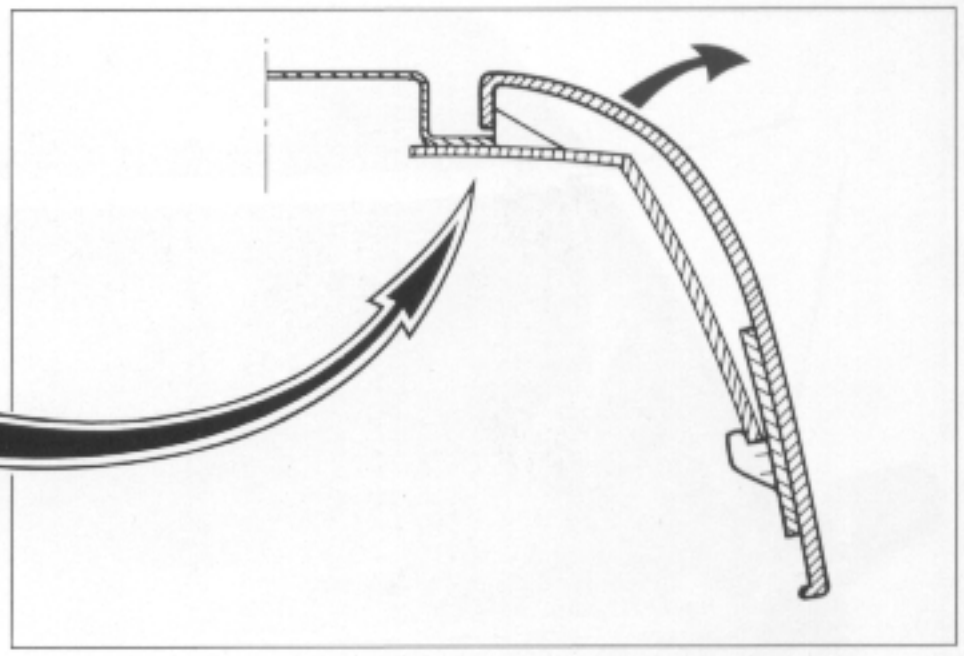


TT.96-7

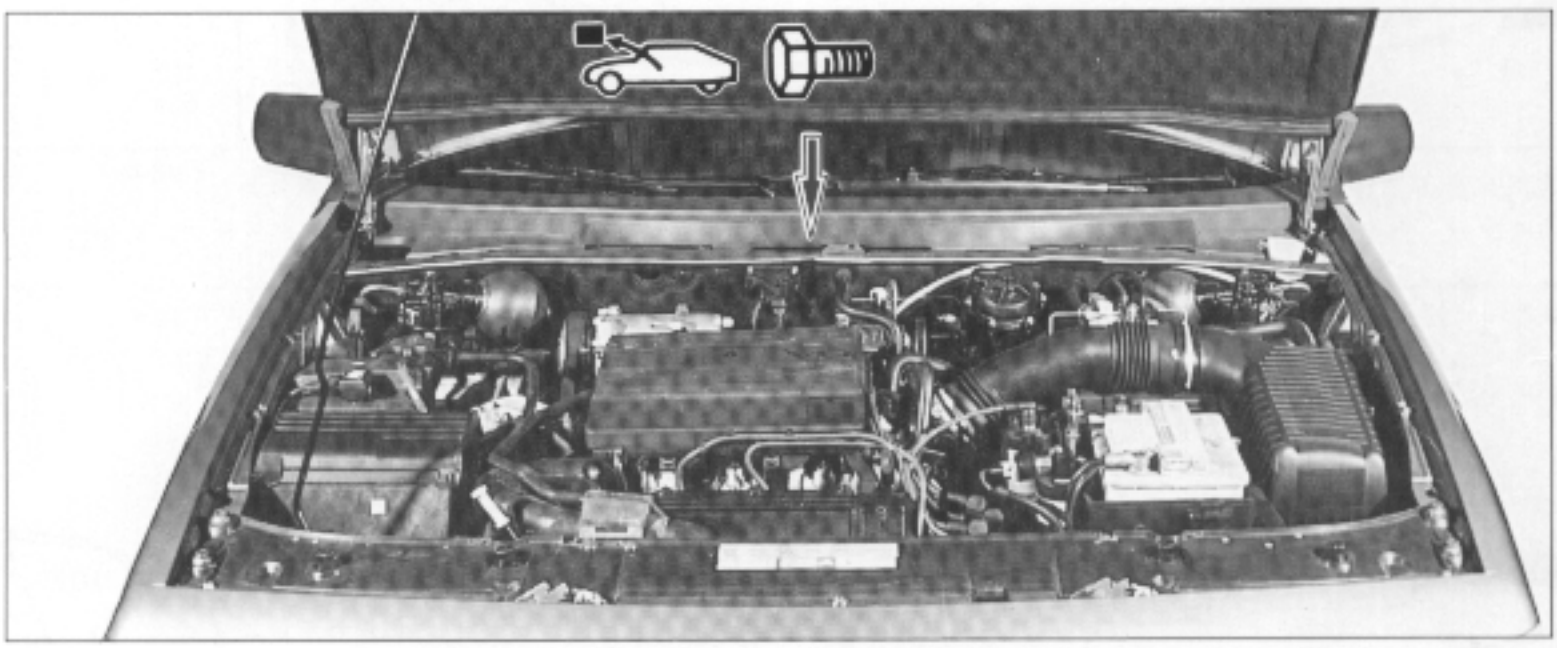
www.WorkshopManuals.co.uk



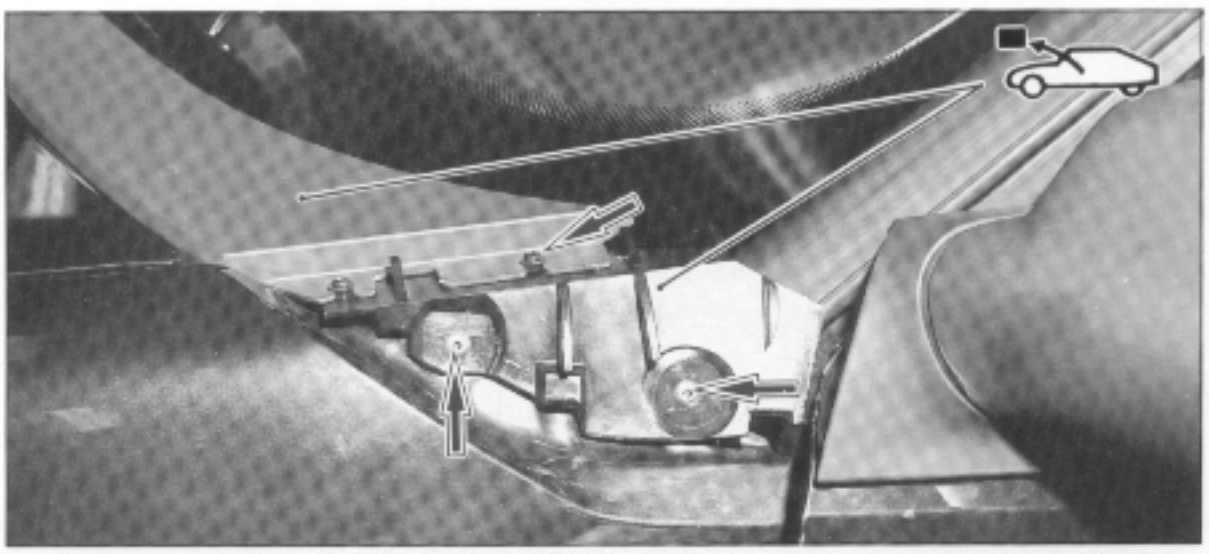
Y.96-4



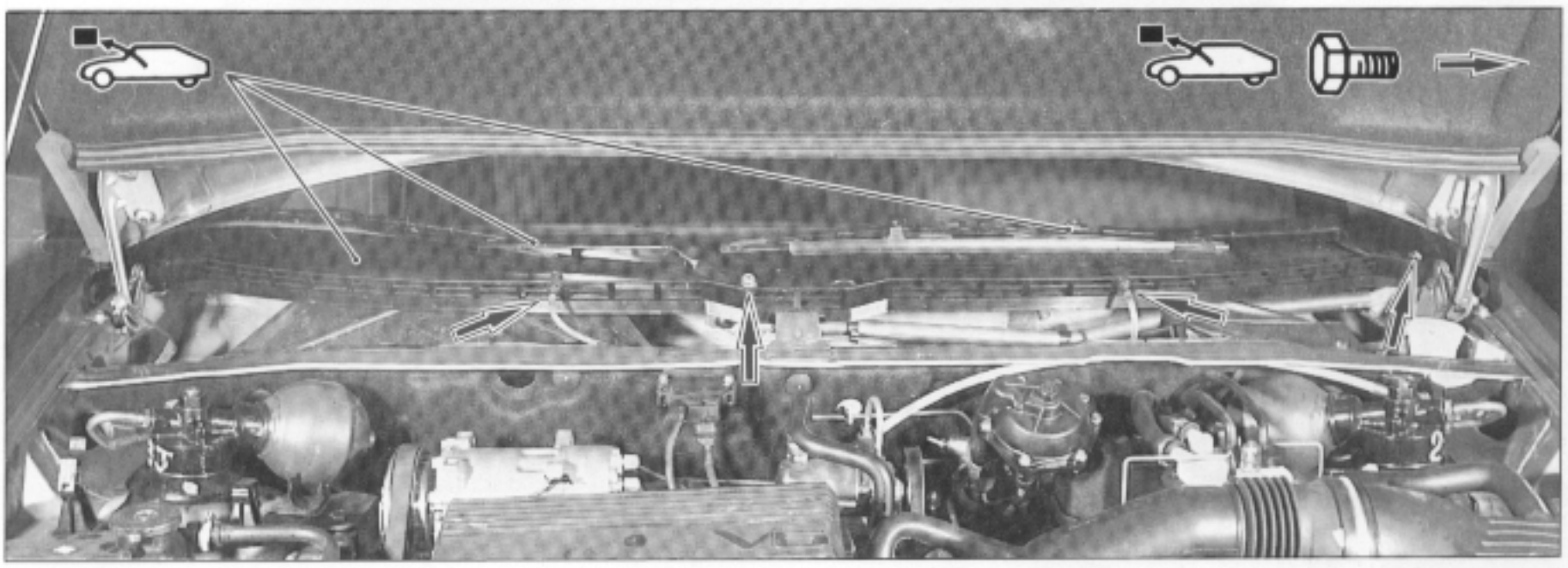
Y.96-4



88-528



89-219

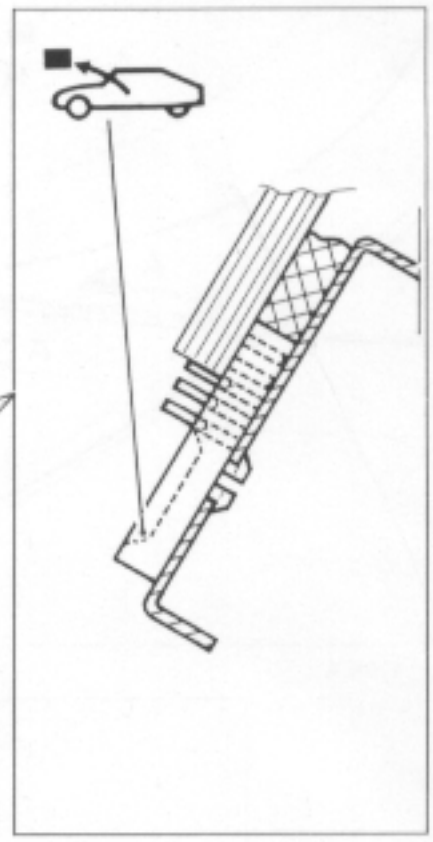


88-529

www.WorkshopManuals.co.uk

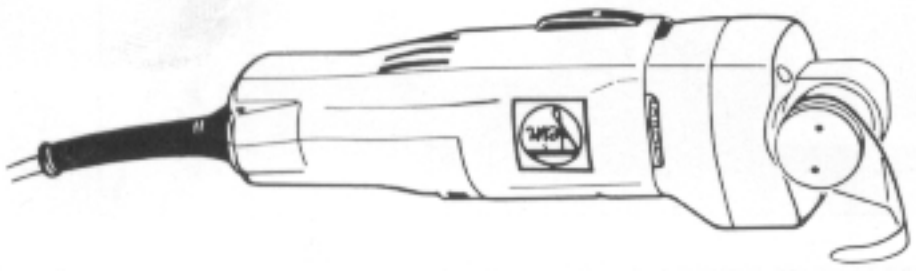


88-532

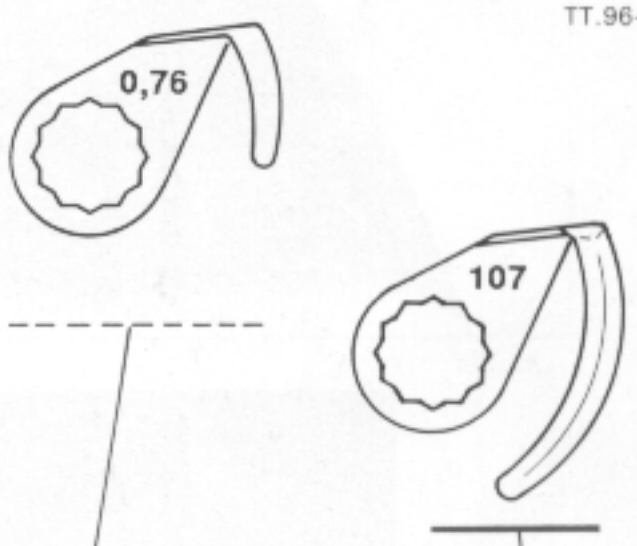


Y.96-4

TT.96-9



TT.96-11





88-532

www.WorkshopManuals.co.uk

Y.96-3

Z.96-4

TT.96-9

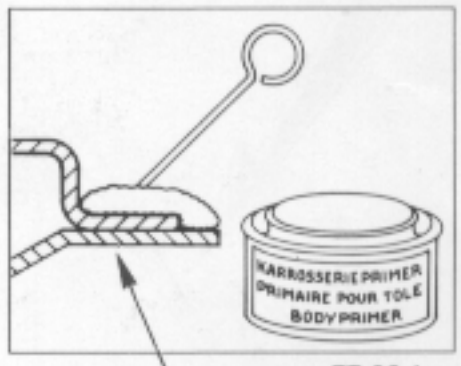
Z.96-4

88-530

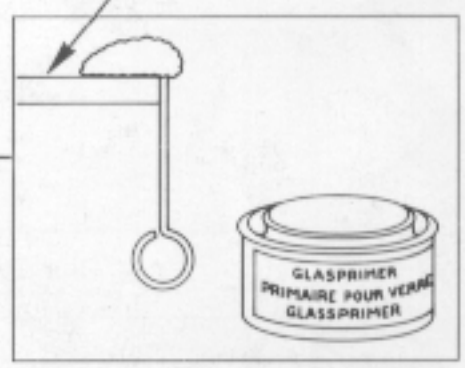
www.WorkshopManuals.co.uk



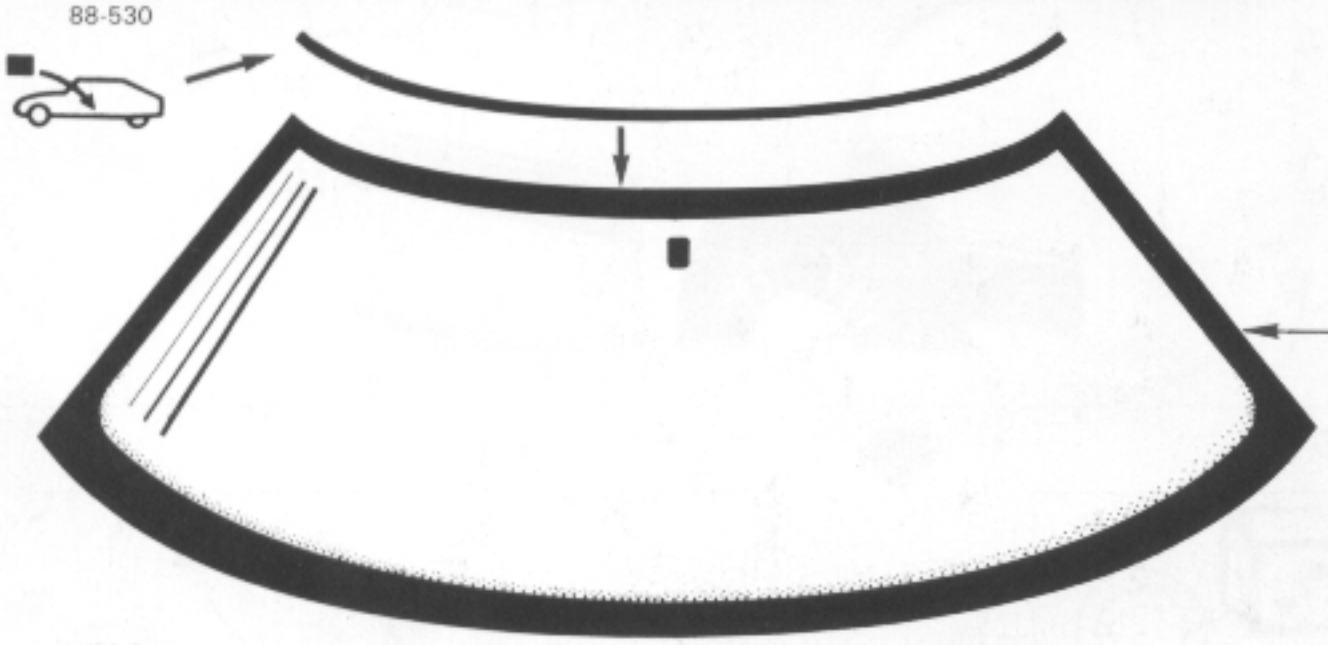
88-530



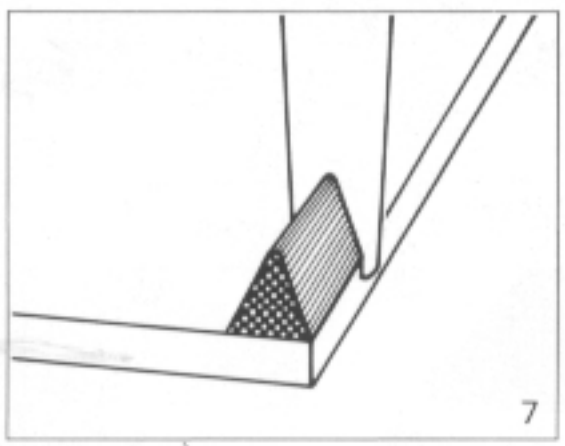
TT.96-1



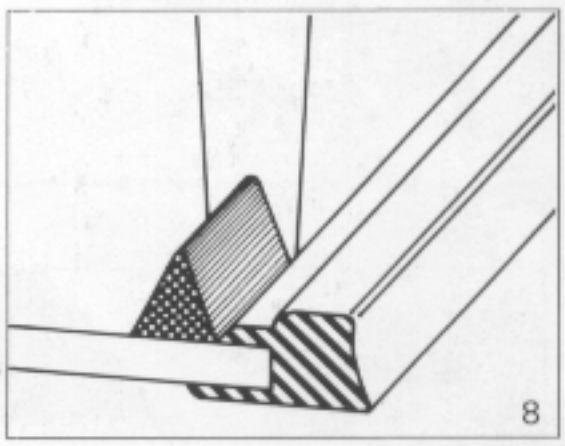
TT.96-1



Y.96-2



Y.96-5



Y.96-5

88-568

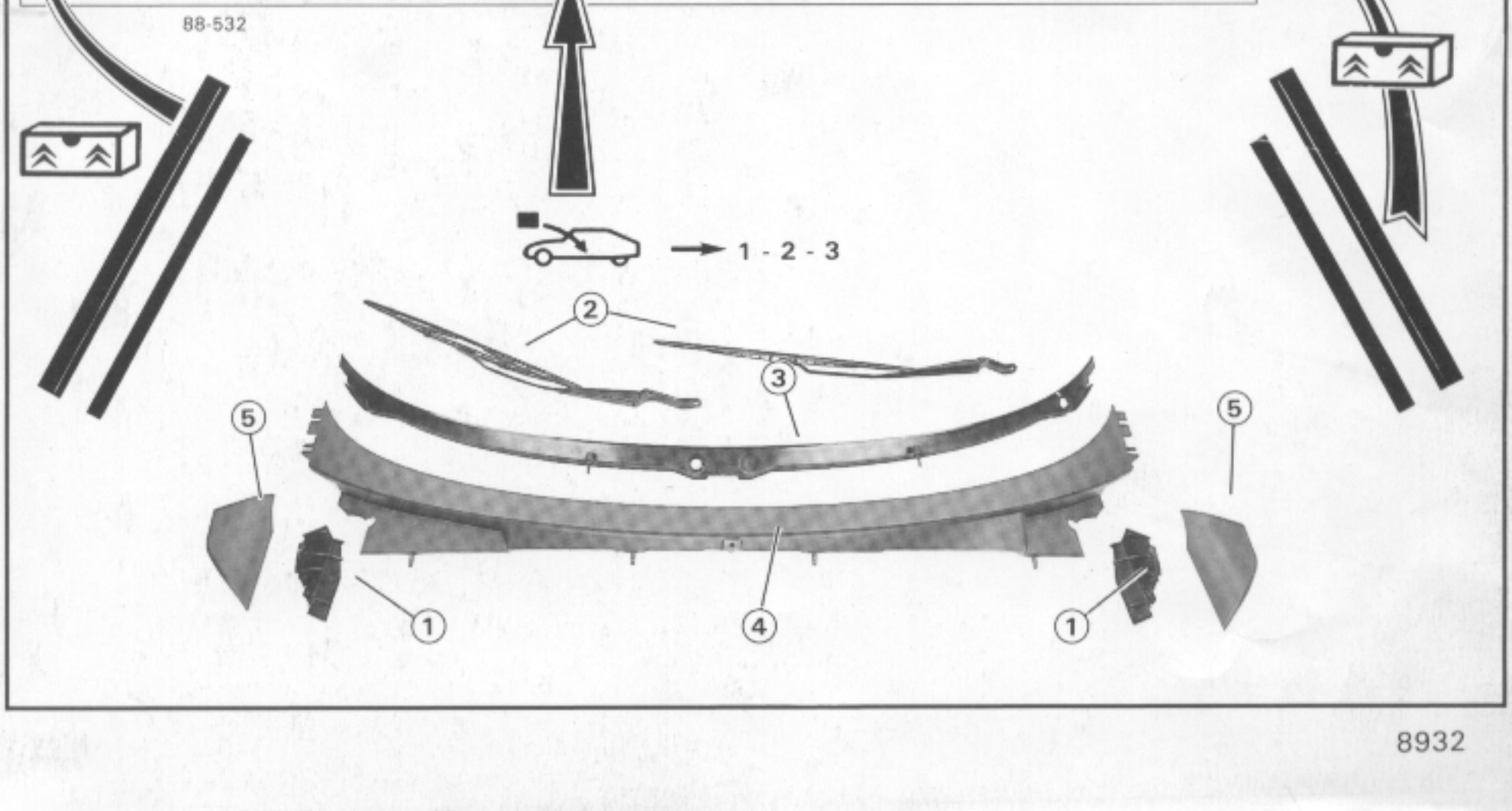
www.WorkshopManuals.co.uk



88-530



88-532



8932

www.WorkshopManuals.co.uk

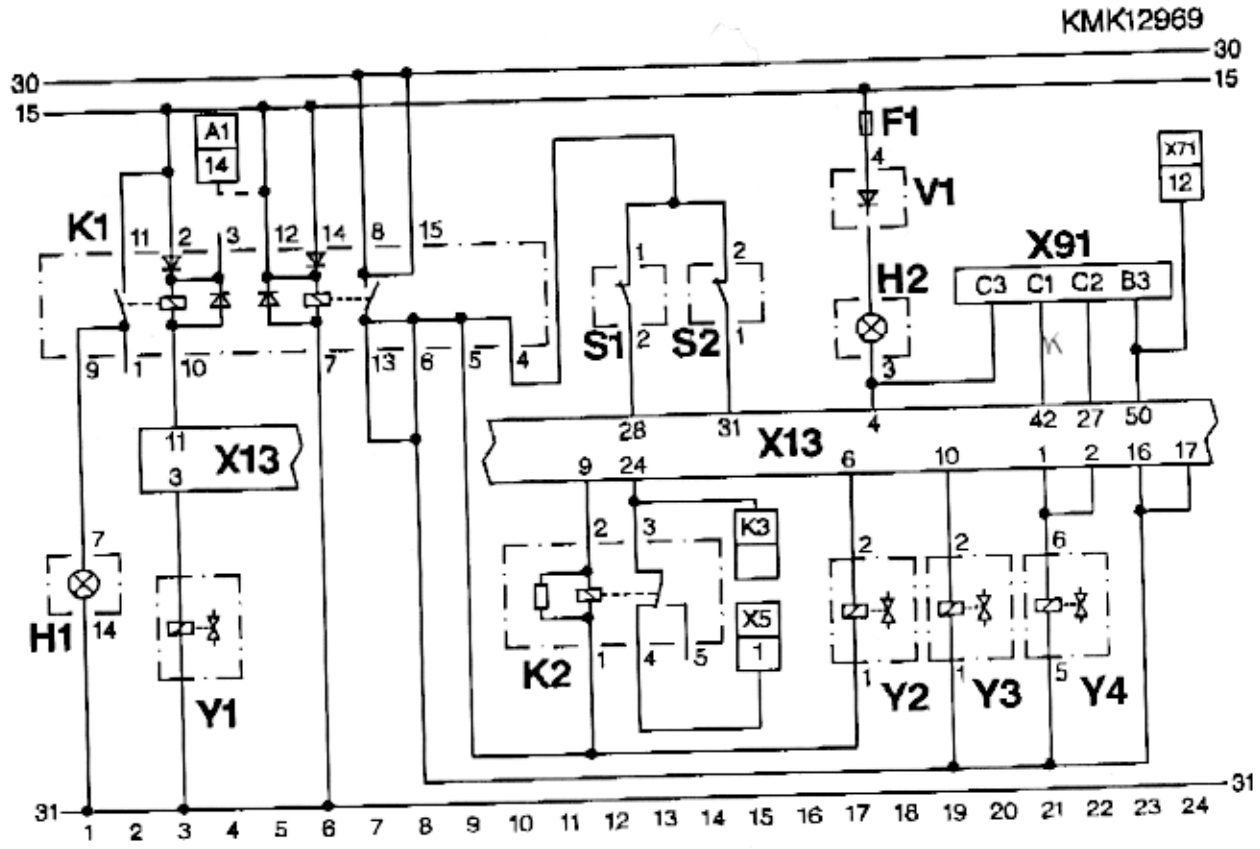
11/03/2003
08:55:59

BOSCH
ESI[tronic]
Electronic Service Information

Vehicle diagnosis SIS/CAS

Vehicle	PEUGEOT / 605 2.5 Diesel Turbo / 07/1994 - 05/1999 / Limousine
Country of manufacture	EU
Cubic capacity/Power	2.5 / 94 - 96 kW
Motor tag	THY
RB key	PEU 555
Sector	All
System	Engine control / VE/EDC 1.3.8

KMK12969



ELECTRICAL TERMINAL DIAGRAM

A 1 = Immobilizer keypad
F 1 = Fuse no. 23
H 2 = Self-diagnostics warning lamp
K 1 = Relay module
S 1 = Safety switch for speed control (clutch)
S 2 = Safety switch for speed control (brakes)
V 1 = Diode
X13 = Electronic diesel control unit
X71 = Multi-function instrument
X91 = Diagnostics plug

H1 = Pre-glow warning lamp
K2 = Relay for fuel injection control unit to switch off compressor
K2 = Relay for coolant temperature control unit to switch off compressor
X5 = Air conditioning compressor
WARM - 9.5Ω Y1 = Solenoid-actuated shut-off TOP OF PUMP
Y2 = Exhaust gas recirculation solenoid
Y3 = Start of injection solenoid BOTTOM OF PUMP
Y4 = Fuel quantity actuator solenoid INSIDE PUMP

www.WorkshopManuals.co.uk

11/03/2003
08:56:16

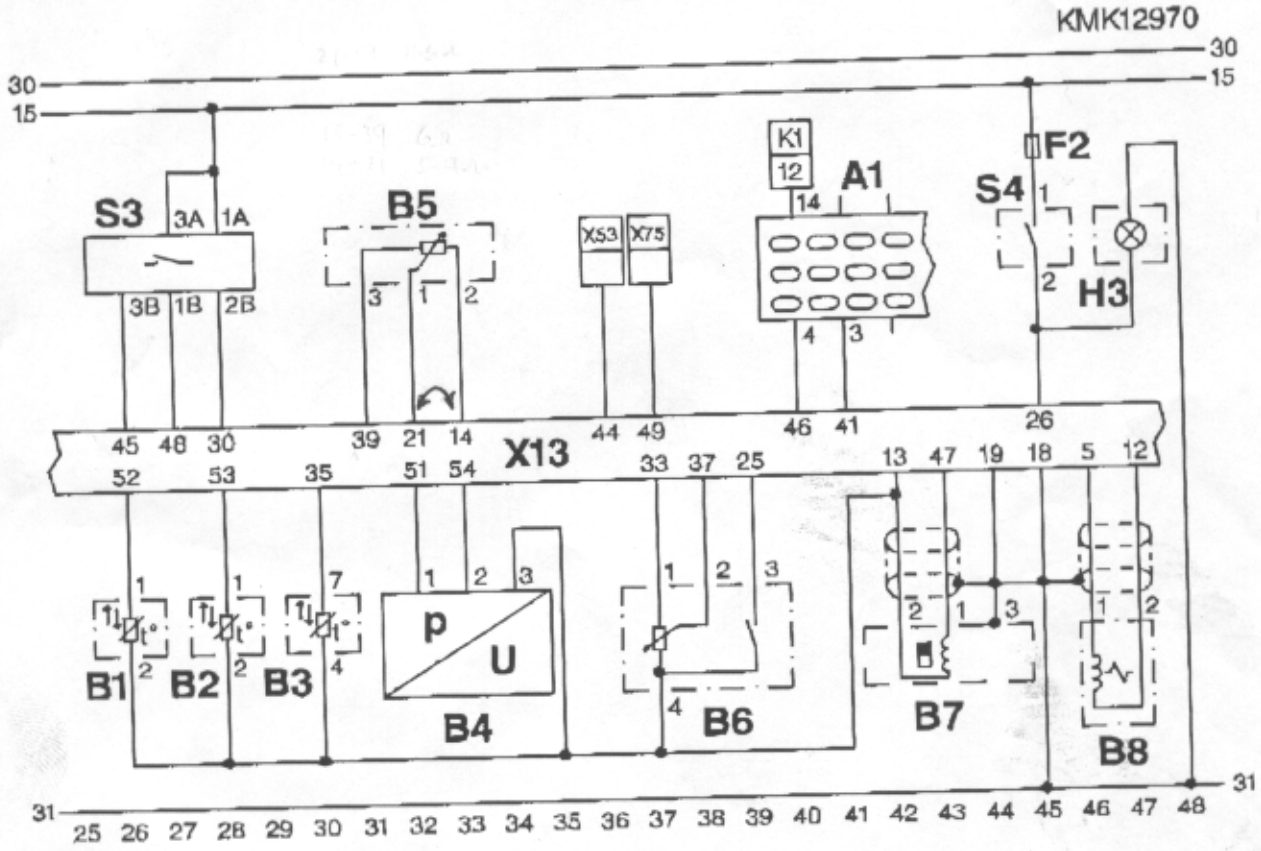


BOSCH
ESI [tronic]
Electronic Service Information

Vehicle diagnosis SIS/CAS

Vehicle	PEUGEOT / 605 2.5 Diesel Turbo / 07/1994 - 05/1999 / Limousine
Country of manufacture	EU
Cubic capacity/Power	2.5 / 94 - 96 kW
Motor tag	THY
RB key	PEU 555
Sector	All
System	Engine control / VE/EDC 1.3.8

KMK12970



ELECTRICAL TERMINAL DIAGRAM

A 1 = Immobilizer keypad
B 5 = Sleeve travel sensor (Diesel pump)
F 2 = Fuse no. 2
H 3 = Brake warning lamp
K 1 = Relay module
S 3 = Lever switch for road speed controller (FGR)
S 4 = Brake lights switch
X13 = Electronic diesel control unit
X53 = Control unit for heating / ventilation / air conditioning
X75 = On-board computer

B1 = Intake air temperature sensor
B2 = Engine temperature sensor
B3 = Fuel temperature sensor
B4 = Induction tube pressure sensor
B6 = Pedal position sensor
B7 = Engine speed sensor
B8 = Needle travel sensor

www.WorkshopManuals.co.uk

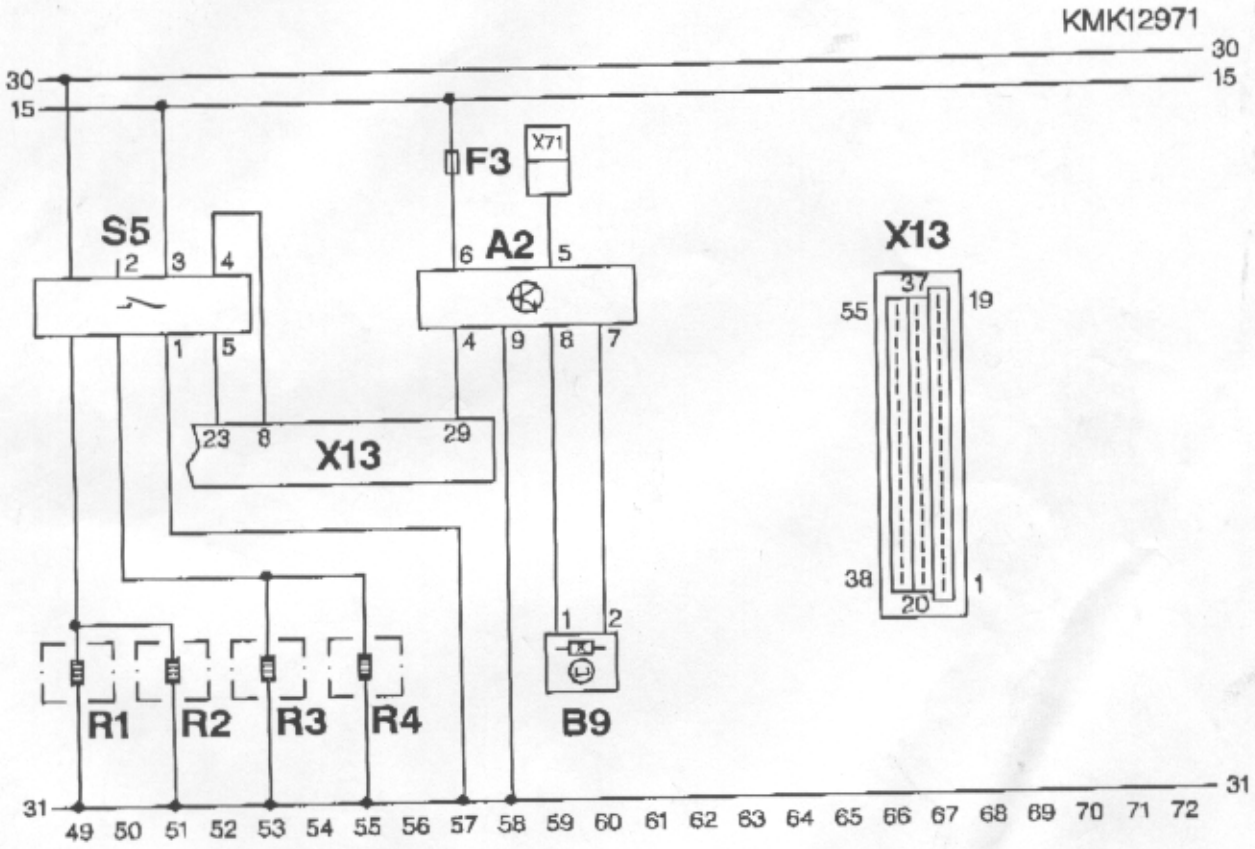
11/03/2003
08:56:23

BOSCH
ESI[tronic]
Electronic Service Information

Vehicle diagnosis SIS/CAS

Vehicle	PEUGEOT / 605 2.5 Diesel Turbo / 07/1994 - 05/1999 / Limousine
Country of manufacture	EU
Cubic capacity/Power	2.5 / 94 - 96 kW
Motor tag	THY
RB key	PEU 555
Sector	All
System	Engine control / VE/EDC 1.3.8

KMK12971



ELECTRICAL TERMINAL DIAGRAM

A 2 = Road speed interface
B 9 = Vehicle speed sensor MOUNTED ON GEARBOX / DIFF
F 3 = Fuse no. 19
R1-R4 = Glow plugs

S 5 = Glow system control unit
X13 = Electronic diesel control unit
X71 = Multi-function instrument

www.WorkshopManuals.co.uk

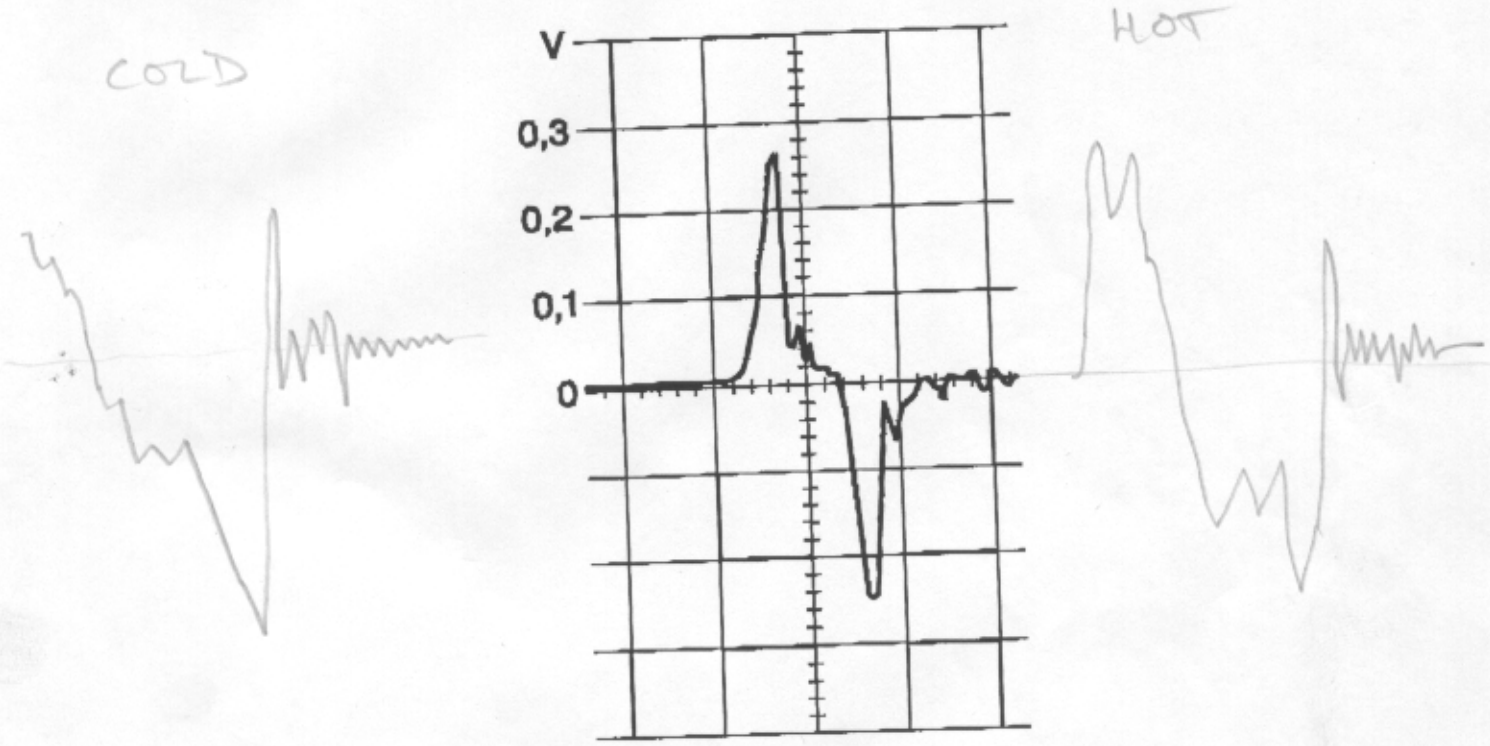
11/03/2003
10:02:23

BOSCH
ESI [tronic]
Electronic Service Information

Vehicle diagnosis SIS/CAS

Vehicle	PEUGEOT / 605 2.5 Diesel Turbo / 07/1994 - 05/1999 / Limousine
Country of manufacture	EU
Cubic capacity/Power	2.5 / 94 - 96 kW
Motor tag	THY
RB key	PEU 555
Sector	All
System	Engine control / VE/EDC 1.3.8

KMK06129



SET VALUES

B8

Needle travel sensor

Resistance at -40...140 °C:
80...120 Ohm Actual: Ohm COLD 106Ω WARM 118Ω.
Signal stroke at idling:
> 0,25 V Actual: V
Note: The first signal peak must be positive (see diagram).
Nozzle opening pressure:
170...175 bar

Nozzle holders tightening torque:
55 Nm
Fuel injection leads: 20 Nm

www.WorkshopManuals.co.uk

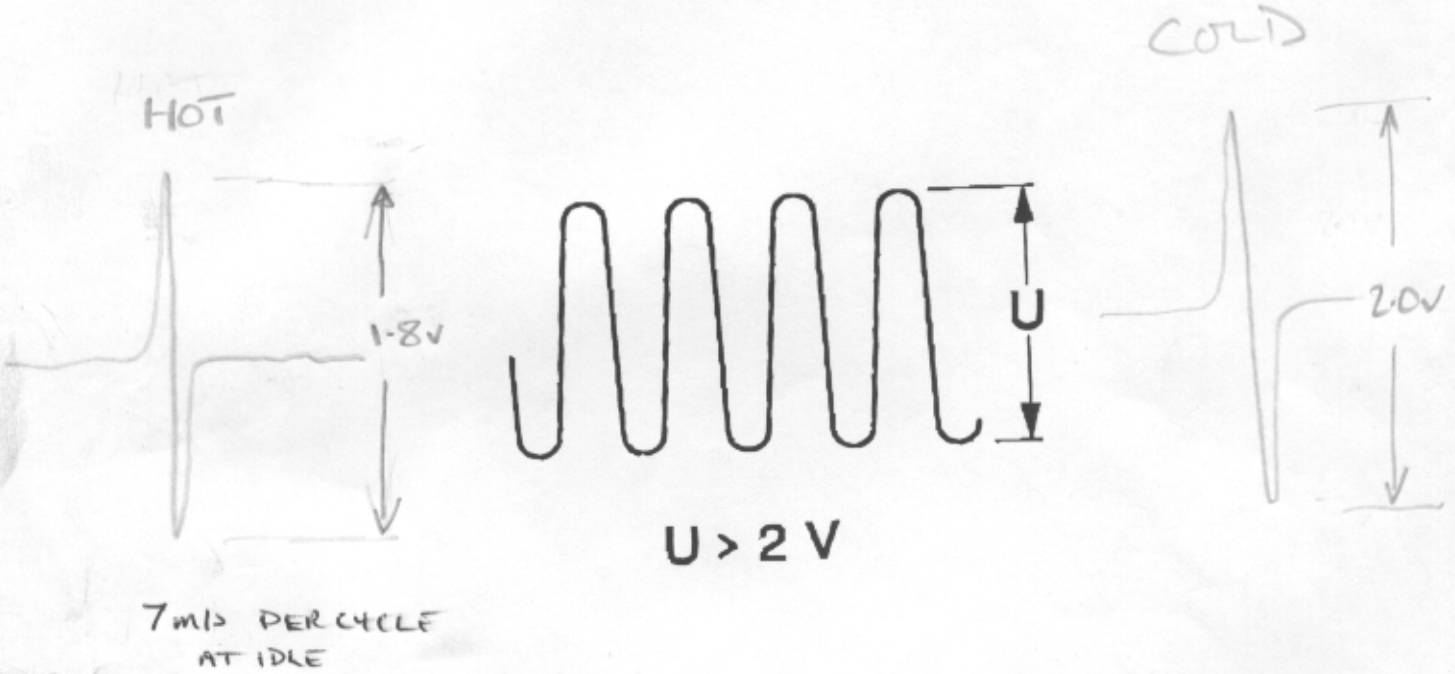
11/03/2003
10:02:35

BOSCH
ESI[tronic]
Electronic Service Information

Vehicle diagnosis SIS/CAS

Vehicle	PEUGEOT / 605 2.5 Diesel Turbo / 07/1994 - 05/1999 / Limousine
Country of manufacture	EU
Cubic capacity/Power	2.5 / 94 - 96 kW
Motor tag	THY
RB key	PEU 555
Sector	All
System	Engine control / VE/EDC 1.3.8

KMK06121



7 m/s PER CYCLE
AT IDLE

SET VALUES (B7)

Speed sensor BELLHOUSING TDC

Resistance at 0...80 degrees C:
300...450 Ohm 400R.

Signal stroke at idling:
> 2 V Actual: V

Notes:
- The first signal peak must be positive.
- The voltage signals may not vary from one another by more than 30 percent.

www.WorkshopManuals.co.uk

11/03/2003
10:03:36



BOSCH
ESI[tronic]
Electronic Service Information

Vehicle diagnosis SIS/CAS

Vehicle	PEUGEOT / 605 2.5 Diesel Turbo / 07/1994 - 05/1999 / Limousine
Country of manufacture	EU
Cubic capacity/Power	2.5 / 94 - 96 kW
Motor tag	THY
RB key	PEU 555
Sector	All
System	Engine control / VE/EDC 1.3.8

SET VALUES

B2	Engine temperature sensor resistance: 20...40 °C: 1000...3000 Ohm Actual: Ohm 80 °C: 275...375 Ohm Actual: Ohm 270Ω
B1	Air temperature sensor resistance: 20...40 °C: 1000...3000 Ohm Actual: Ohm 2022Ω 80 °C: 275...375 Ohm Actual: Ohm
B3	Fuel temperature sensor resistance: 15...30 Actual: °C: 160Ω. 1200...4000 Ohm 50...70 °C: 1600Ω. 300...1200 Ohm

www.WorkshopManuals.co.uk

11/03/2003
10:03:58



BOSCH
ESI[tronic]
Electronic Service Information

Vehicle diagnosis SIS/CAS

Vehicle	PEUGEOT / 605 2.5 Diesel Turbo / 07/1994 - 05/1999 / Limousine
Country of manufacture	EU
Cubic capacity/Power	2.5 / 94 - 96 kW
Motor tag	THY
RB key	PEU 555
Sector	All
System	Engine control / VE/EDC 1.3.8

SET VALUES (B6)

Pedal position sensor
Power supply for potentiometer:
4,5...5,5 V Actual: V

1 - 4 911Ω
3 - 4 1000Ω ABOVE IDLE
∝ Ω AT IDLE

Voltage at pedal position sensor:
Measuring between terminals
2 (+) and 4 (-).
Idling:
> 0,3 V
Full load:
< 4 V
Resistance at pedal position sensor
terminals 2 and 4.
idling:
1000...1500 Ohm Actual: Ohm 1021Ω
Full load:
1500...2000 Ohm Actual: Ohm 1708Ω

THROTTLE PEDAL
RED POT

1
2
3 EARTH

www.WorkshopManuals.co.uk

11/03/2003
10:03:48



BOSCH
ESI[tronic]
Electronic Service Information

Vehicle diagnosis SIS/CAS

Vehicle	PEUGEOT / 605 2.5 Diesel Turbo / 07/1994 - 05/1999 / Limousine
Country of manufacture	EU
Cubic capacity/Power	2.5 / 94 - 96 kW
Motor tag	THY
RB key	PEU 555
Sector	All
System	Engine control / VE/EDC 1.3.8

SET VALUES

Brake/brake safety switch comparison

Unbraked:
Brake switch
< 0,3 V
Brake safety switch
< 0,3 V

Braked:
Brake switch
> 8,5 V Actual: V
Brake safety switch
> 8,5 V Actual: V

	S4 26 - 18	S2 4 ON RELAY 1 31 ON ECU
BRAKE ON	12V	∝ Ω.
BRAKE OFF	0V	0 Ω.

www.WorkshopManuals.co.uk

11/03/2003
10:05:17



BOSCH
ESI[tronic]
Electronic Service Information

Vehicle diagnosis SIS/CAS

Vehicle	PEUGEOT / 605 2.5 Diesel Turbo / 07/1994 - 05/1999 / Limousine
Country of manufacture	EU
Cubic capacity/Power	2.5 / 94 - 96 kW
Motor tag	THY
RB key	PEU 555
Sector	All
System	Engine control / VE/EDC 1.3.8

SET VALUES (B6)

Pedal position sensor

Checking the safety switch.

Measure resistance between pins
3 and 4

with gas pedal not pressed.
Set value:
> 1 MOhm Actual: MOhm ∞ Ω
with gas pedal pressed to the floor.
Set value:
0...1 Ohm Actual: Ohm 1000 Ω.

www.WorkshopManuals.co.uk

11/03/2003
10:05:28



BOSCH
ESI [tronic]
Electronic Service Information

Vehicle diagnosis SIS/CAS

Vehicle	PEUGEOT / 605 2.5 Diesel Turbo / 07/1994 - 05/1999 / Limousine
Country of manufacture	EU
Cubic capacity/Power	2.5 / 94 - 96 kW
Motor tag	THY
RB key	PEU 555
Sector	All
System	Engine control / VE/EDC 1.3.8

SET VALUES (A2)

Speed signal sensor
Switch ignition on.
Turn the wheel.
Signal alternates:
0...10 V Actual: V
Measured between control unit pins
18 and 29.

www.WorkshopManuals.co.uk

11/03/2003
10:05:48

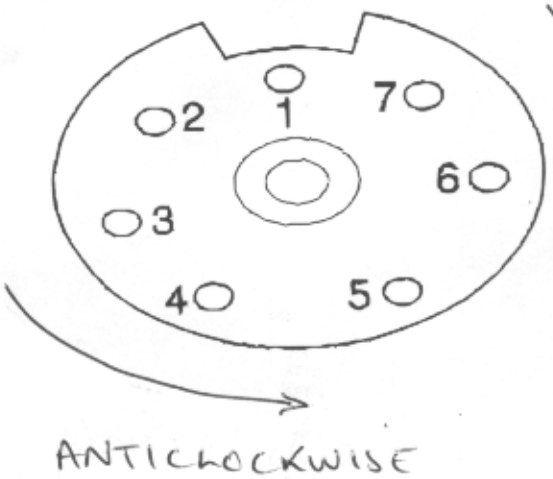
BOSCH
ESI[tronic]
Electronic Service Information

Vehicle diagnosis SIS/CAS

Vehicle	PEUGEOT / 605 2.5 Diesel Turbo / 07/1994 - 05/1999 / Limousine
Country of manufacture	EU
Cubic capacity/Power	2.5 / 94 - 96 kW
Motor tag	THY
RB key	PEU 555
Sector	All
System	Engine control / VE/EDC 1.3.8

KKE01274

B3 4-7 FUEL TEMP.
B5 1-2-3 SLEEVE SENSOR
Y4 5-6 FUEL QUANTITY



SET VALUES (Y3)

Start-of-injection control
Resistance, start-of-injection solenoid valve:
13...17 Ohm Actual: Ohm
Voltage supply
Start-of-injection solenoid valve:
> 8,5 V Actual: V

Injected-quantity adjuster

(Y4)

Supply voltage, injected-quantity adjuster:
> 8,5 V Actual: V
Resistance, injected-quantity adjuster at
0...80 Grad C:
0,5...1,5 Ohm
Term. 5 and 6, connector.

www.WorkshopManuals.co.uk

11/03/2003
10:05:56

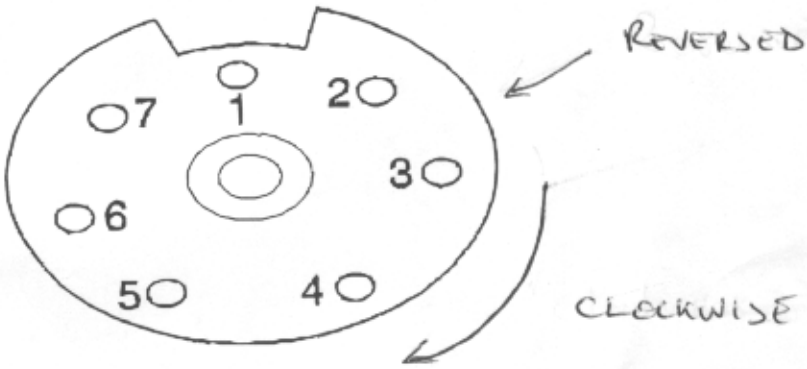
BOSCH
ESI[tronic]
Electronic Service Information

Vehicle diagnosis SIS/CAS

Vehicle	PEUGEOT / 605 2.5 Diesel Turbo / 07/1994 - 05/1999 / Limousine
Country of manufacture	EU
Cubic capacity/Power	2.5 / 94 - 96 kW
Motor tag	THY
RB key	PEU 555
Sector	All
System	Engine control / VE/EDC 1.3.8

KKE01275

1-2 5.9Ω.
1-3 11.6Ω.
2-3 6Ω



SET VALUES (BS)

Sleeve travel sensor

Power supply for sleeve travel sensor:
4,5...5,5 V Actual: V
Measured between terminals 1 and 2, also 1 and 3 of the control unit

cable plug.

Resistance values:
5...7 Ohm Actual: Ohm
Measured at the pump plug terminals 1 and 2, also 1 and 3.