Technical Service Guide

Wide Format Scanners

Model: SD One X

December 2019

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Information

Revision Table

1.0	First release.	Sept 2025 GJV

Work in progress, some images are still showing the one SD One +, but will be correct soon

Document Title.:	**SD One X Technical Service Guide**
Doc. No.:	**FST/TSG/002**
Prepared by.:	GJV
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Scanners covered by this Service Guide.:

SD One X 24" (TN53D)
SD One X 36" (TP53D)
SD One X 44" (TR53D)

This service guide is for the SD One X, and has been taken from the original SD One+ Service Guide. Most of the photos will still show the original SD One+, as the models shares the same technics for replacing components.

Design

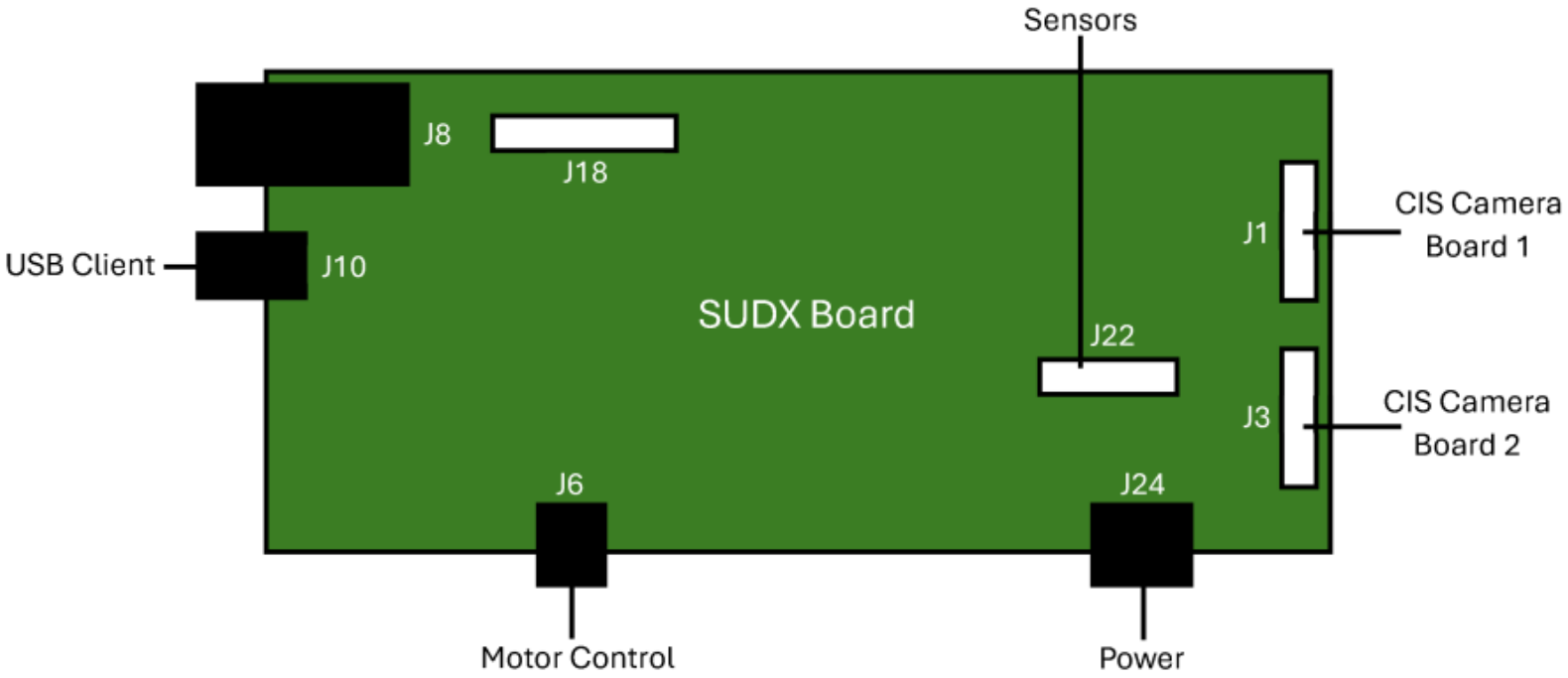
Electronics.

- Block Diagram.
- Wiring Diagram.
- Circuit Board Layouts.
- CIS Unit Construction.

Adjustments.

- Belt tension.

Block Diagram

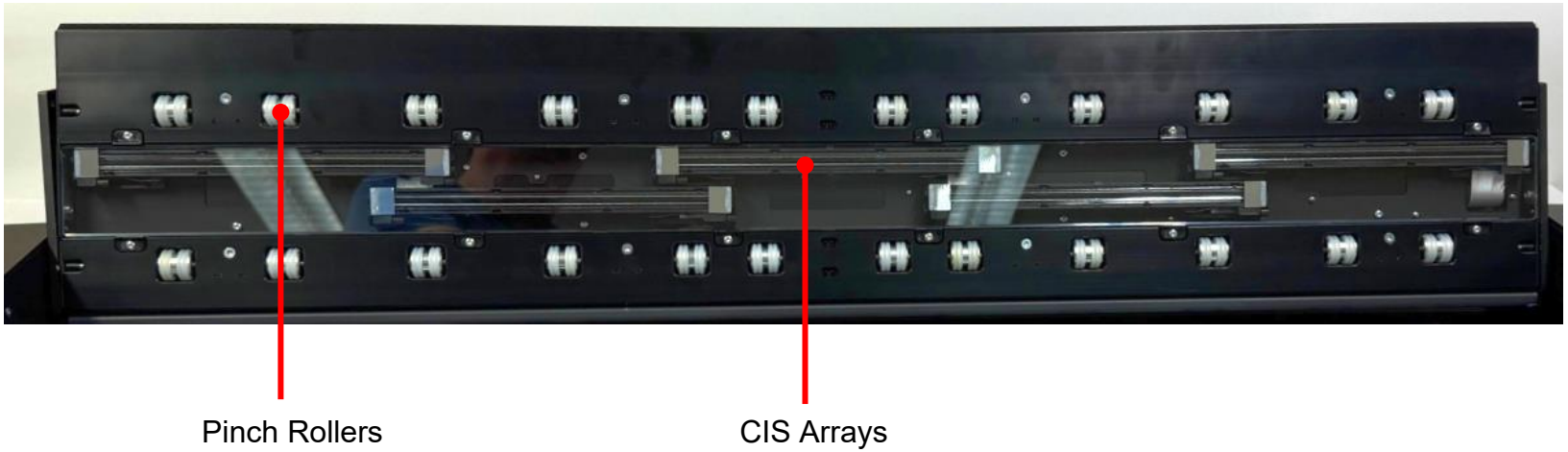


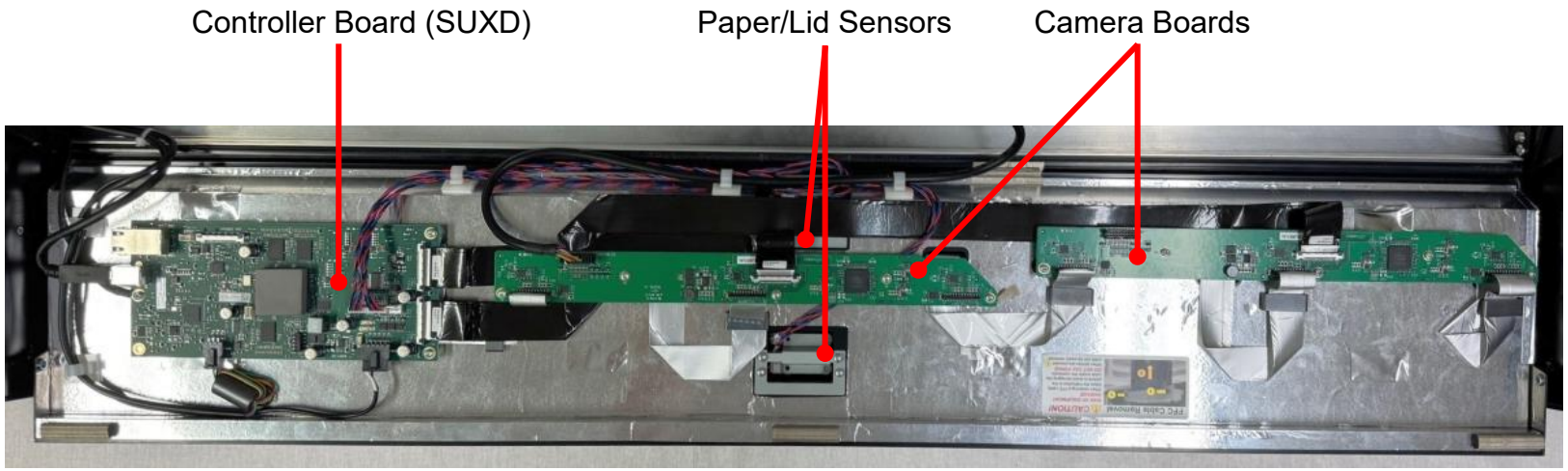
Power Supply (external)

The External Power Supply has a build in surge protection feature, if the surge protection is triggered it will shut down for about 3 min before it will recover.

The Power Supply is 19V DC.

CIS Unit Construction





Raising CIS Bridge Unit

Tools: T20 Torx Screwdriver.

Prerequisites: Switch power off.

1. Depress the latch levers at both ends of the scanner.

2. Raise the CIS Bridge Unit.

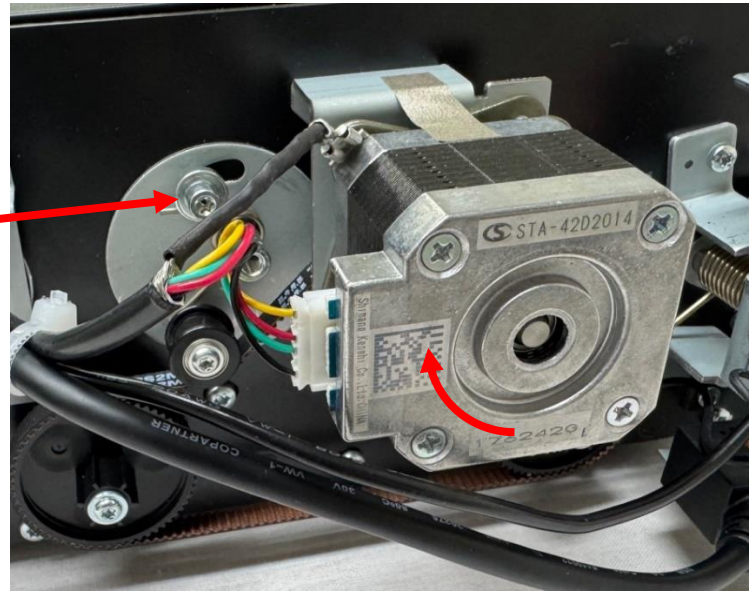
Note: Close by pressing down on the CIS Bridge Unit until the latches click shut at both ends.

Belt tension (Motor)

Tools: T15 Torx Screwdriver.

Prerequisites: Switch power off.
Raise CIS Bridge Unit as shown on page 9.
Remove RHS cover, see page 18.

1. Loosen the Locking screw.
2. Rotate the drive shaft without touching the belt.
3. Tighten the locking screw.



4. Remount the Cover

Troubleshooting

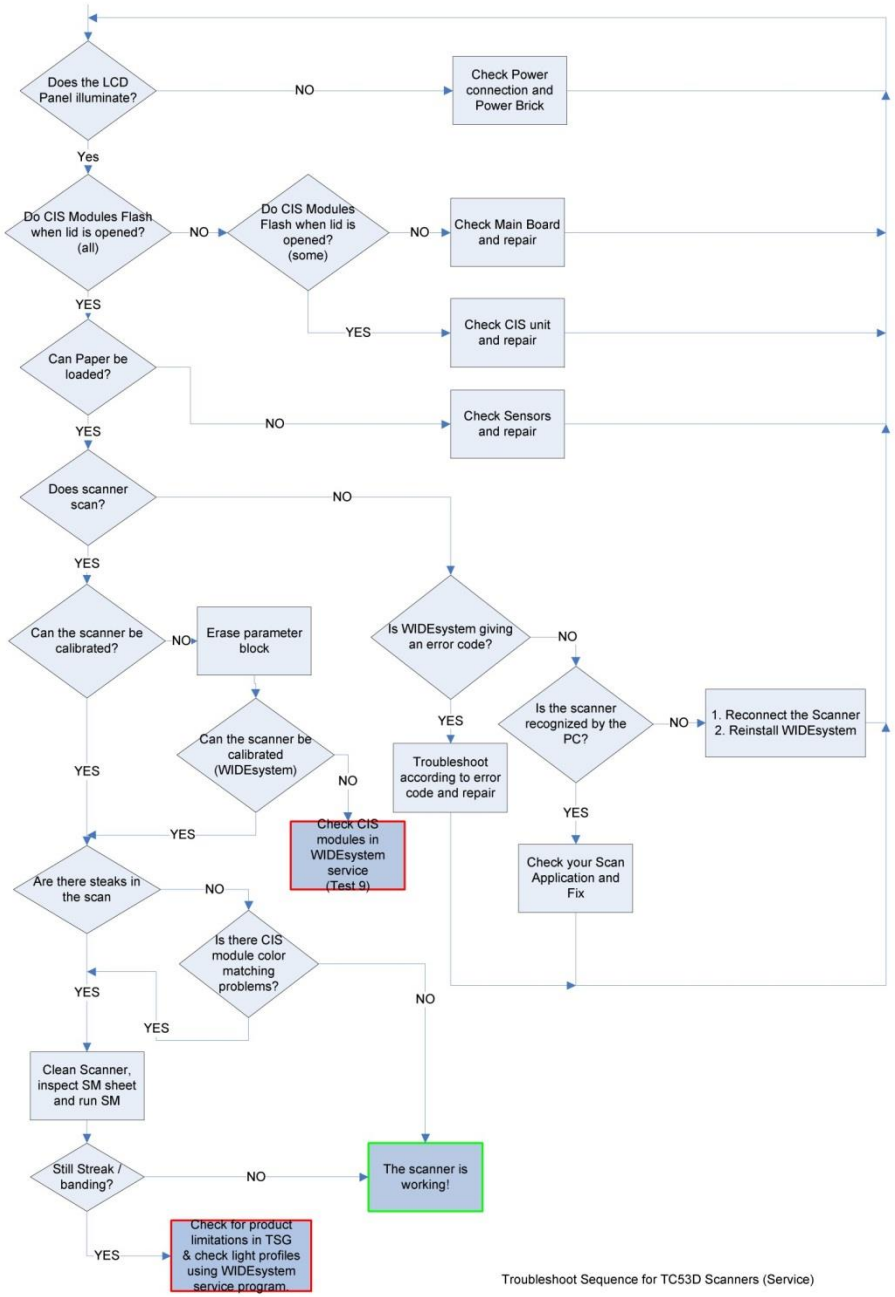
Troubleshooting Sequence.
Image Quality problems.

- Dust Related Errors.
- Calibration Related Errors.
- Crumpled or Folded Originals.

Note!
Before replacing any electrical parts such as SUXD (Controller Board), Camera Boards or the CIS Unit, the parameter block should be erased and the scanner calibrated. This will solve the problem in most cases, especially if the reported problem is about image quality or identifying the calibration sheet. The Pressure Rollers and the Glass Plate should also be inspected for wear and tear.

Troubleshooting Sequence

This is a suggested Troubleshooting Sequence and will work in most cases. There are always some grey zones, especially if the problem is related to image quality.



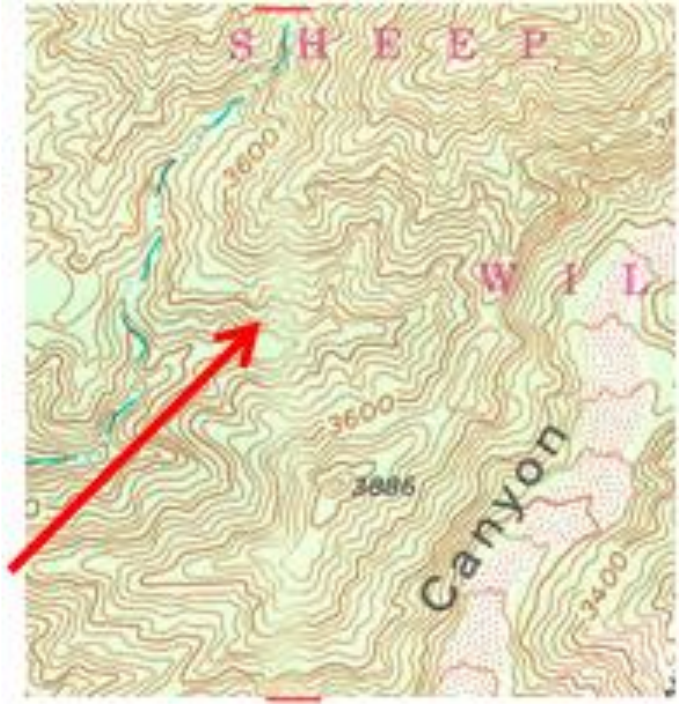
Troubleshooting

Banding Problems.

- Bad/no grey balance calibration (CIS module to module match).

Image Quality Problems.

- Scanning originals that have folds or are crumpled on CIS scanners is often confused as a defect in the scanner, where it is actually a limitation of the technology used. Due to the very short distance from the sensor to the surface of the original, referred to as the “Focal Length”, if the document does not stay in contact with the glass plate then it is very likely to be out of focus.

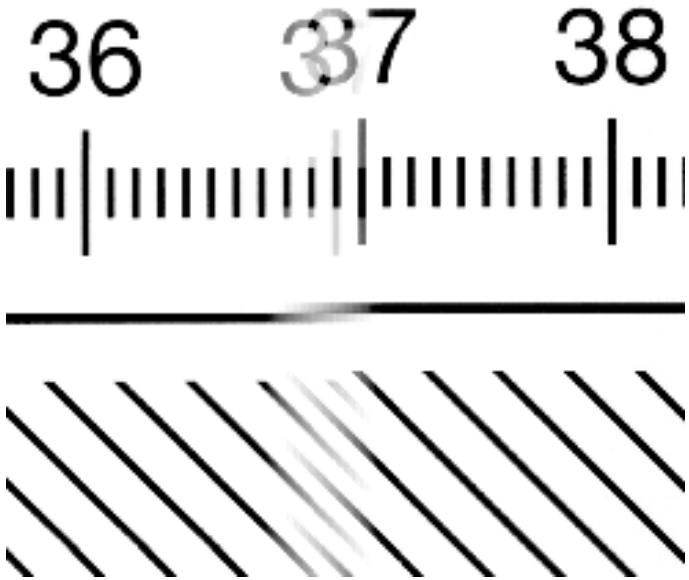


Dust Problems.

- There are image quality problems that are not related to HW errors. These could be due to insufficient cleaning, bad calibration or limitations in the CIS technology. Streak's running in the scan direction which seems to appear and disappear during the scan is most likely caused by dust. Clean the scanner and the original. The streaks are often a darker shade of color.
- Streaks that run in scan direction, that are color independent or a lighter shade of the color, are often related to the calibration. Dust that was present in the scanner during calibration, but has been cleaned away since.

Stitching Problems.

- Other issues could be that the scanner simply needs to be calibrated, either because the parameter block has been erased, never been calibrated or that the scanner has been moved around.



Stitching problem between 2 CIS modules.

Part Replacement

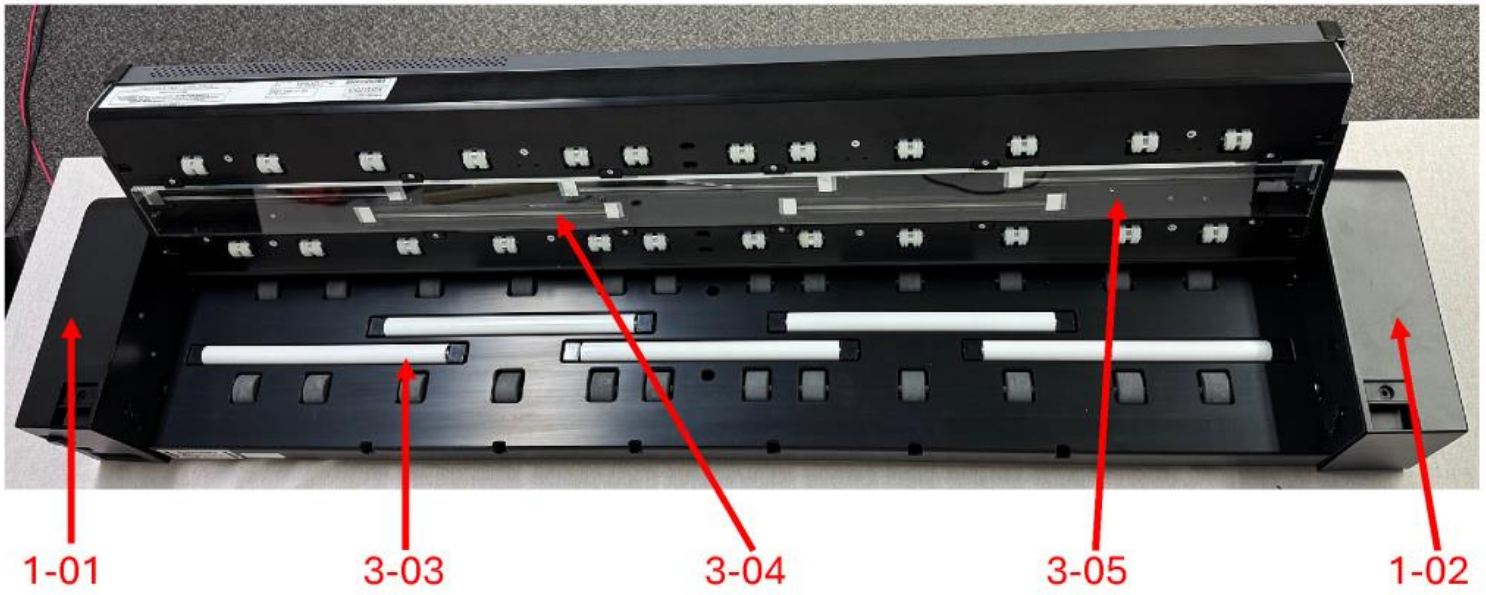
Identifying Parts.

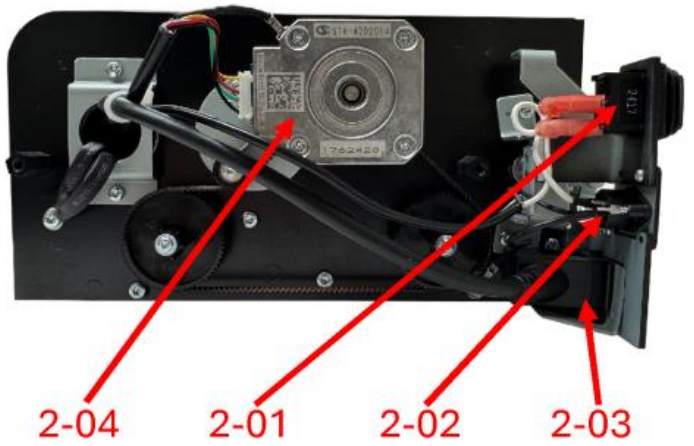
Parts List.

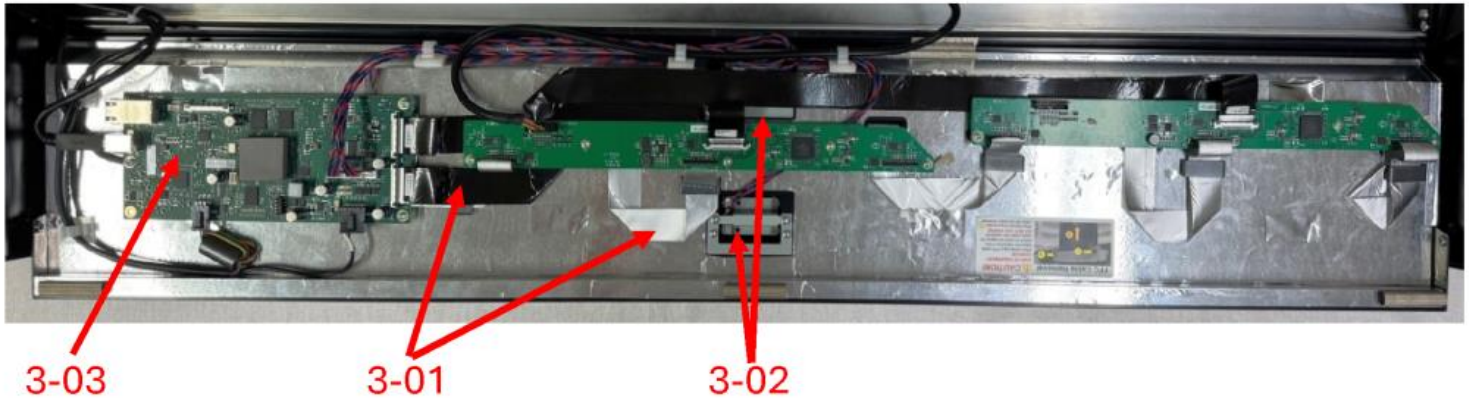
Electronics.	Scanner Controller Board (SUXD). Camera Boards CIS Element. CIS Cables. Stepper Motor Assy. Paper/ Lid Sensor. USB Cable and Connector. Power Switch and Connector.
Mechanics.	RHS Cover. LHS Cover. Pressure Rollers. Damper Assy for CIS Bridge. Top Lid Cover (including Control Panel)
Common Hand Tools.	Torx 10 Straight. Torx 15 Straight. Torx 20 Straight.

Note!
Before replacing any electrical parts such as SUXD (Controller Board) or a CIS Elements, try Erasing the Parameter Block and re-calibrate the scanner in order to force the scanner to re-create the contents of the parameter block. This will solve the problem in most cases.

Identifying Parts







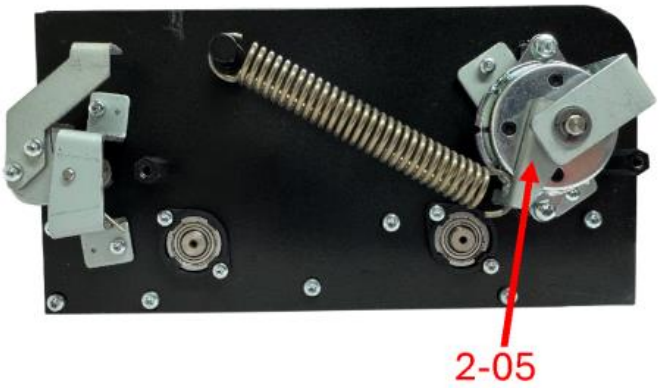


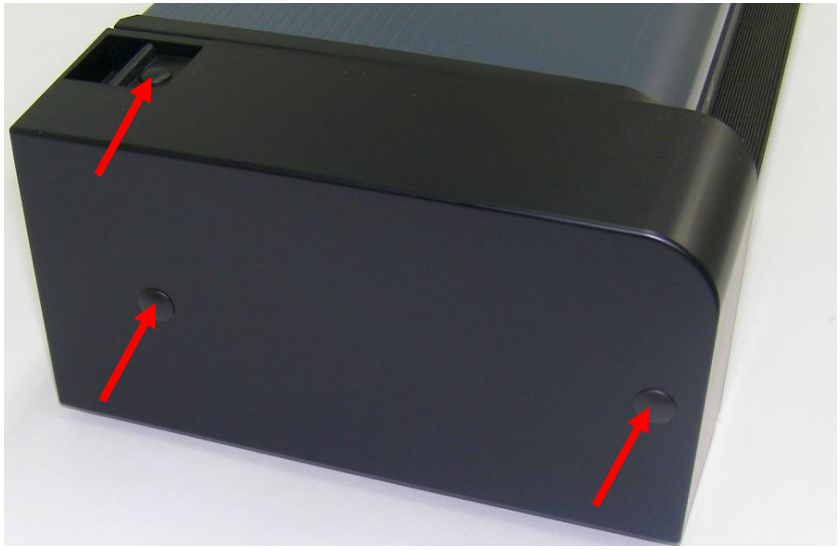
Fig	Part no.	SD One X 24”	SD One X 36”	Description
Service parts				
3-03	2853D101	X		SULO Controller Board (SD One X 24)
3-03	2853D102		X	SULN Controller Board (SD One X 36)
3-02	0075A160R01	X	X	Paper/Lid Sensor (1 pcs.)
1-04	2853D105	X	X	CIS Element (1 pcs) (LSH1208)
3-01	2853D107	X		Cable Set for CIS Elements (3 pcs)(24’’)
3-01	2853D106		X	Cable Set for CIS Elements (5 pcs)(36’’)
2-01 & 2-02	2853D108	X		Power Inlet Assy, SD One X 24
2-01 & 2-02	2853D109		X	Power Inlet Assy, SD One X 36
2-03	0090B087R01	X	X	USB2.0 Cable, Panel Mount
2-04	2853D104	X	X	Stepper Motor, STA-42D2014
2-05	2853D110	X	X	Damper Assy. for CIS Bridge, SD One X
1-02	2853D111	X	X	LHS Cover, SD One X
1-01	2853D112	X	X	RHS Cover, SD One X
-	2853D127	X		Top Lid Cover incl. Control Panel (SD One X 24)
-	2853D128		X	Top Lid Cover incl. Control Panel (SD One X 36)
Consumable’s & Customer replaceable parts				
1-05	5229D014R01	X		Glass Plate, 24”
1-05	5398A008		X	Glass Plate, 36”
1-03	2853D115	X		Pressure Rollers (SD One)(3 pcs)
1-03	2853D116		X	Pressure Rollers (SD One)(5 pcs)
N/A	2853D113	X		Calibration Sheet, SD One X 24
	2853D114		X	Calibration Sheet, SD One X 36
	5398A009	X	X	USB2.0 Cable with Ferrite, A/B, 3m
	2853D103	X	X	DC Adapter, SD One X

RHS & LHS Cover

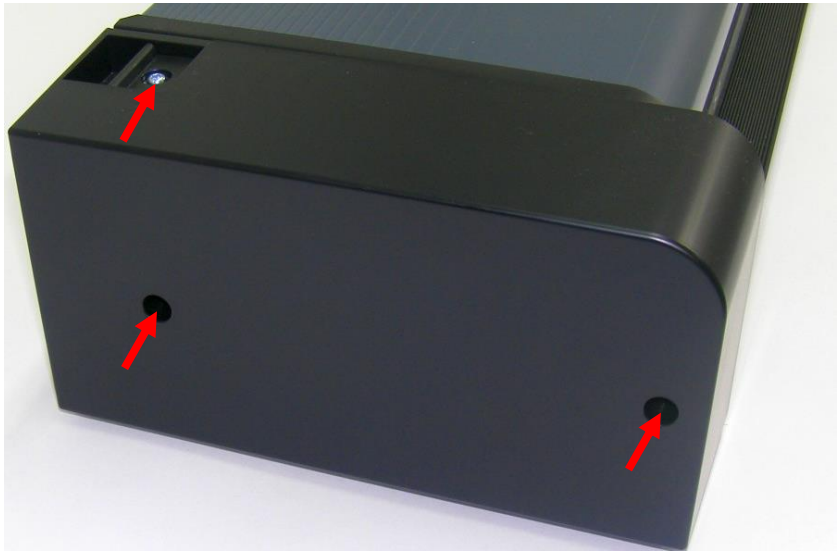
Tools:

T20 Torx Screwdriver.

NOTE:
The procedure of removing the covers is the same for both the Right Hand Side (RHS) & Left Hand Side (LHS).



1. Remove plastic screw covers.

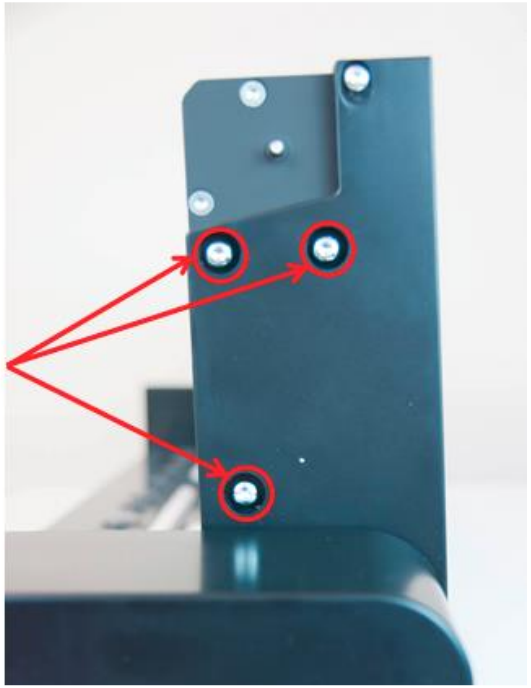


2. Remove handle screw (T20).
3. Remove handle.
4. Remove cover screws.
5. Remove cover.

Scanner Controller Board (SUXD)

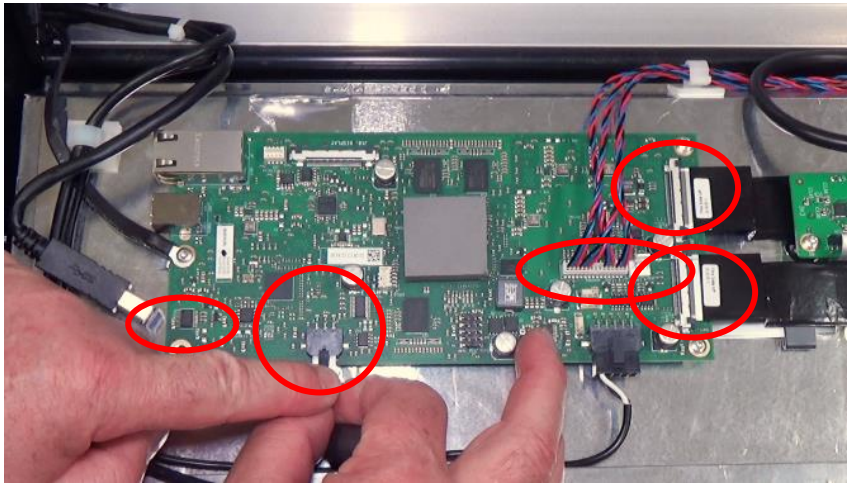
Tools:

T20 Torx Screwdriver.

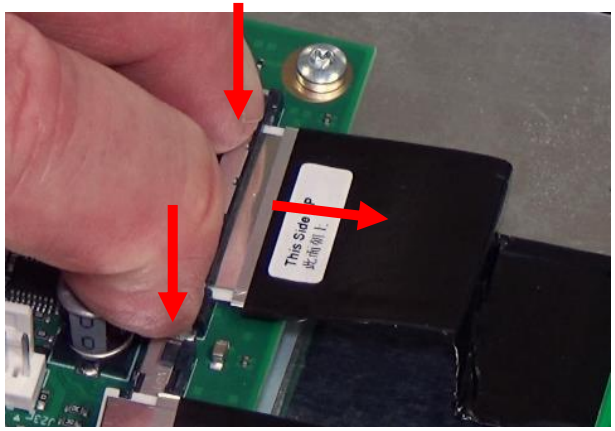


Prerequisites
Switch power off.
Raise CIS Bridge Unit as shown on page 9.

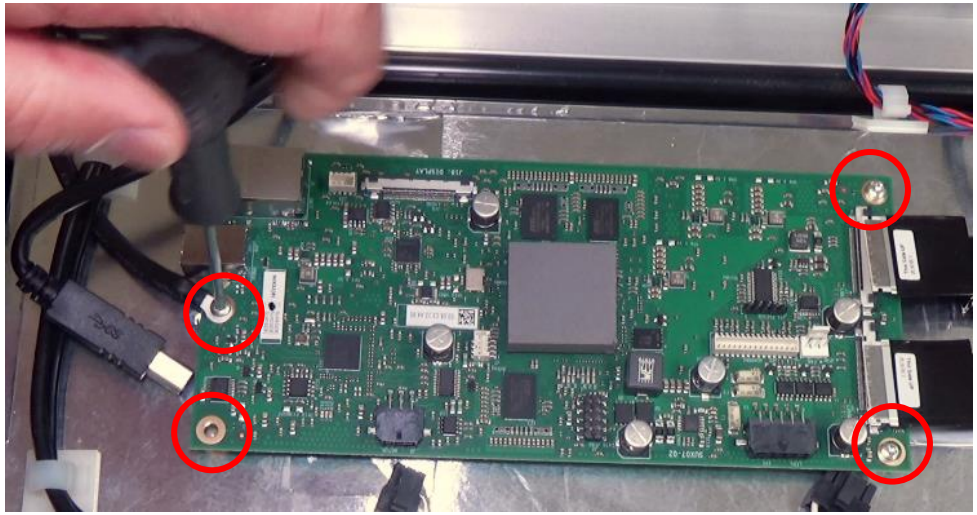
1. Remove screws (3 x T20) in both ends of the CIS bridge.
2. Open the CIS Bridge.



3. Disconnect the ribbon cables by pressing down on the locking buttons (item 5, on the next page).
4. Disconnect the cables.



5. To release the cable, press down on BOTH locking buttons, to allow the Ribbon cable to be removed. Failure to do so will damage the cable and/or the connector needing non-warranty replacement.



6. Remove screws (4 x T10).
7. Lift out the board from under the retaining clips.
8. Replace the Scanner Controller board and the reverse the steps.

Post actions

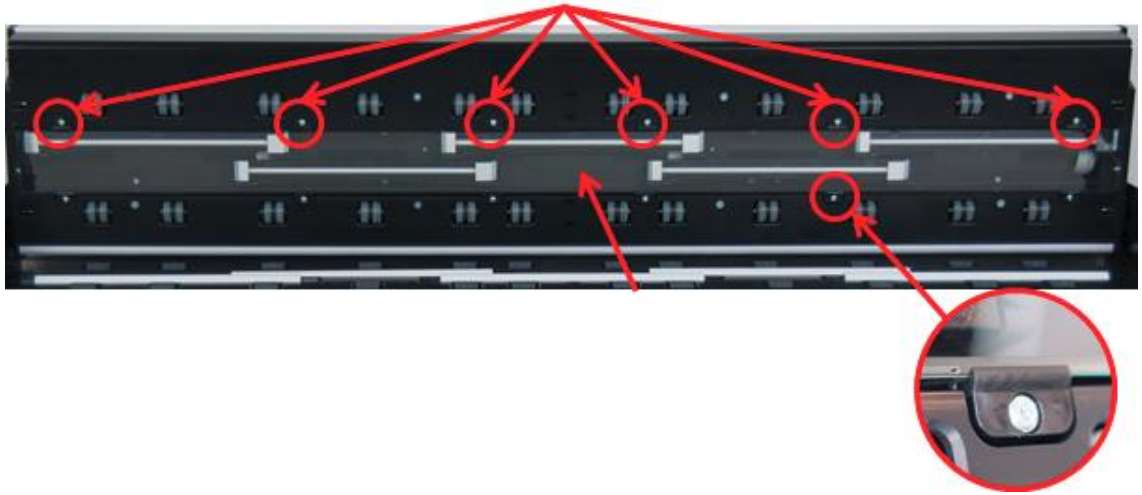
Since the scanner has a new Controller board it will boot up as “Not Activated”. See Appendix E for further instructions on how to reactivate the scanner.

Since it’s a new board it does not hold any calibration data and will therefore need to be calibrated. Calibration is done though WIDEsystem.

CIS Element

Tools:

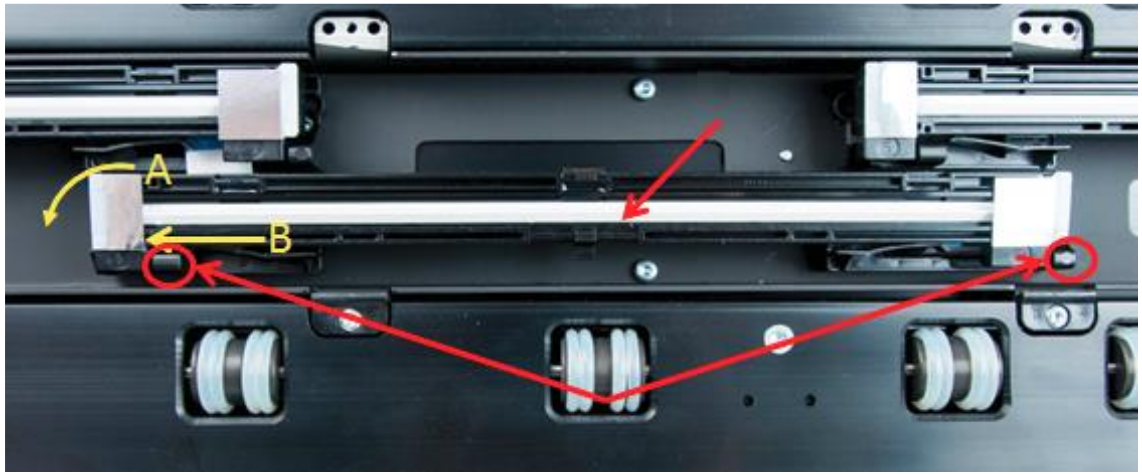
T10 Torx Screwdriver.



Prerequisites
Switch power off.
Raise CIS Bridge Unit as shown on page 9.

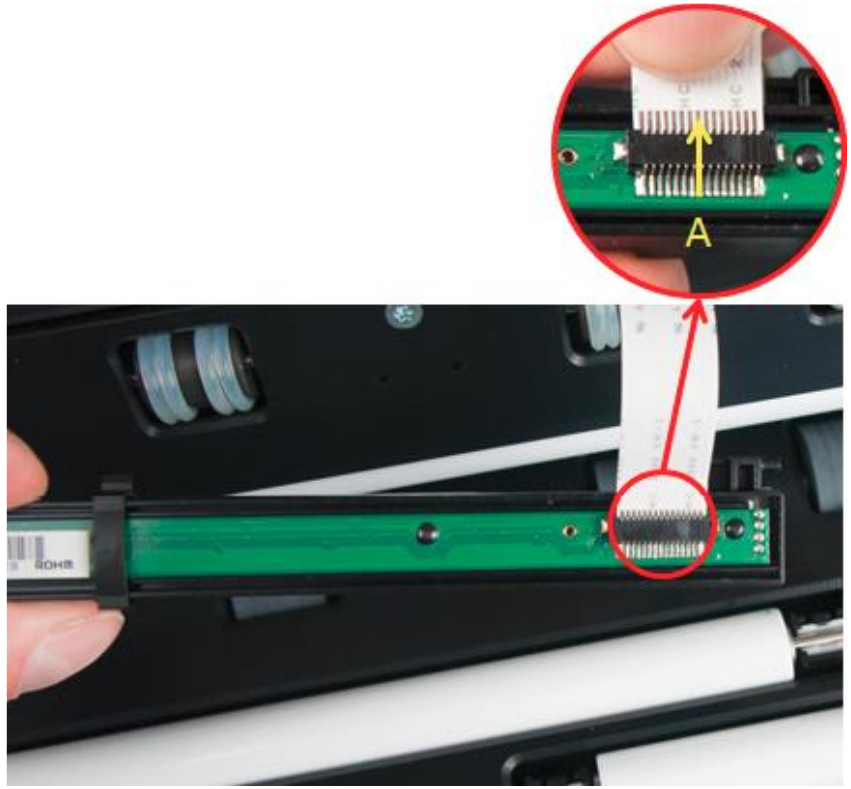
1. Remove screws and bracket.
2. Remove the glass plate by holding on to each end without touching the backside.

NOTE. When re-inserting the glass plate, ensure the edge of the glass is properly seated under the bracket.



NOTE
DO NOT touch the surface of the CIS Element.

3. Carefully flip the CIS Element forward (A) and slide it to the Left (B).
4. Once free of the hinges lift out the CIS Element.



5. Carefully disconnect the ribbon cable by making a straight pull (A) on the cable as close to the connector as possible.

(When reconnecting a straight / aligned push).

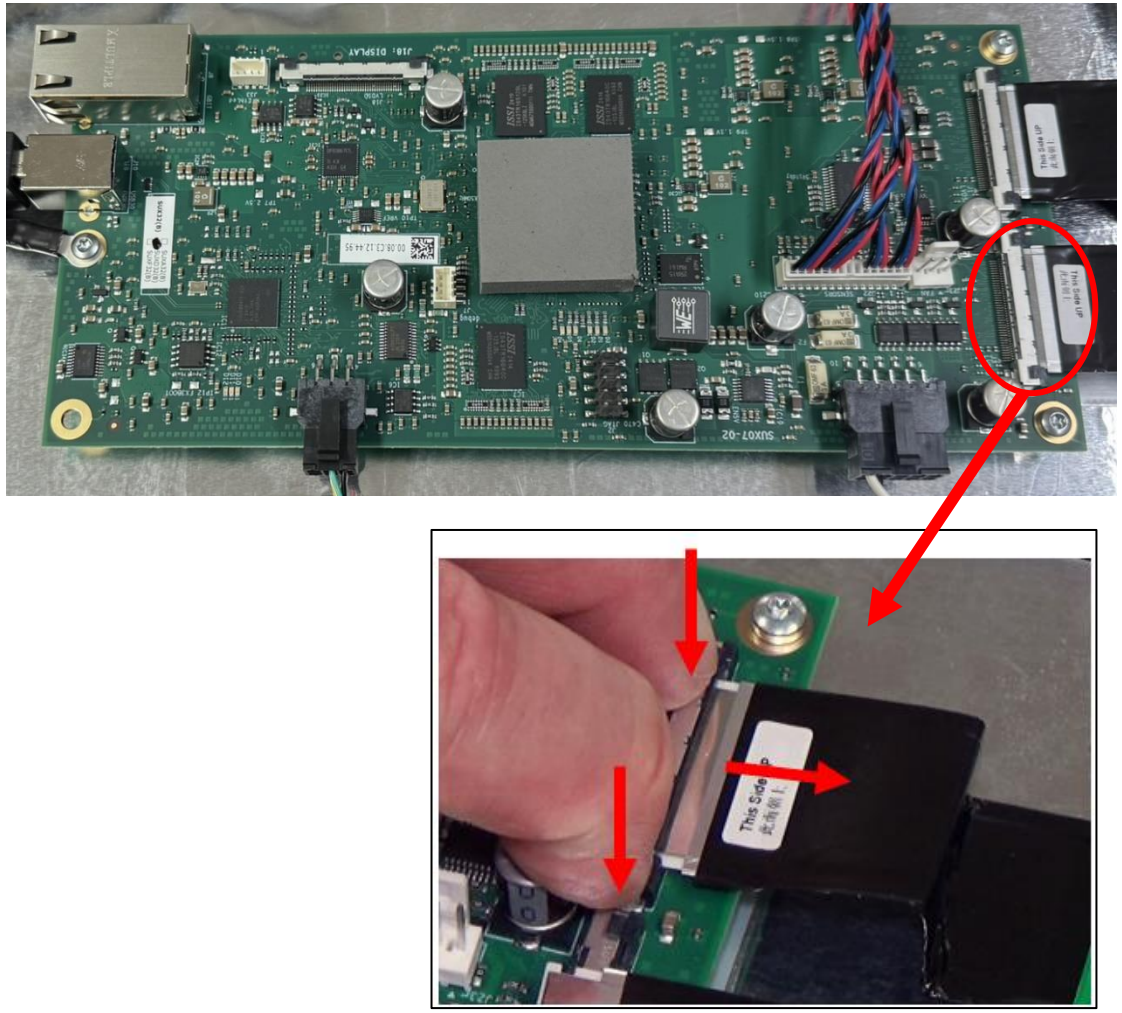
6. Replace the CIS Element and reverse the steps.

Post actions.
After replacing CIS element, the scanner needs to be re-calibrated.

CIS Cable

Tools:

T10 Torx Screwdriver.



Prerequisites.
Switch power off.
Raise CIS Bridge Unit as shown on page 9.

1. To release the cable, press down on BOTH locking buttons, to allow the Ribbon cable to be removed. Failure to do so will damage the cable and/or the connector needing non-warranty replacement.

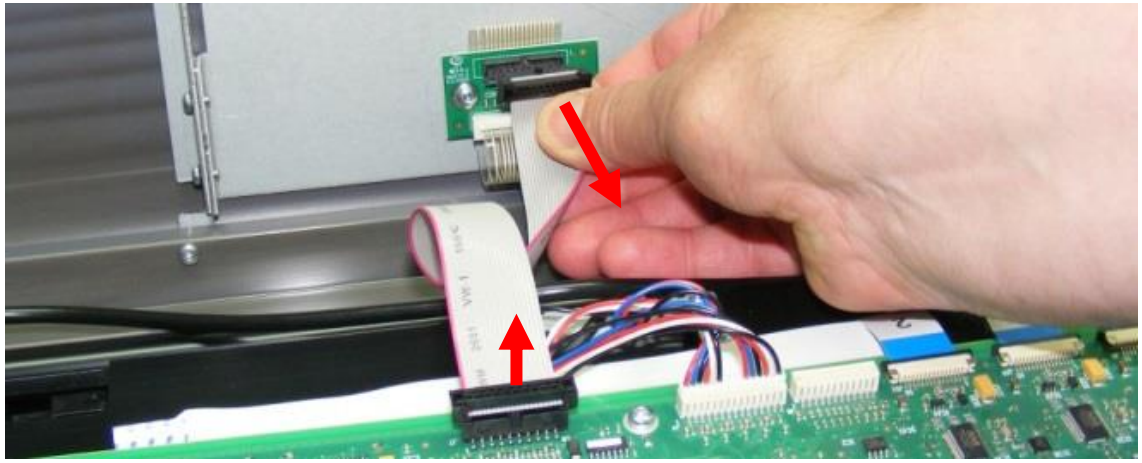
2. Remove and Replace the CIS ribbon cable.

3. Reverse the steps

Paper and Lid Sensors

Tools:

T10 Torx Screwdriver.



Prerequisites.
Switch power off.
Raise CIS Bridge Unit as shown on page 9.

For Load and Paper sensors:

1. Remove the Control Panel Ribbon Cable for easy access to the sensors bracket.

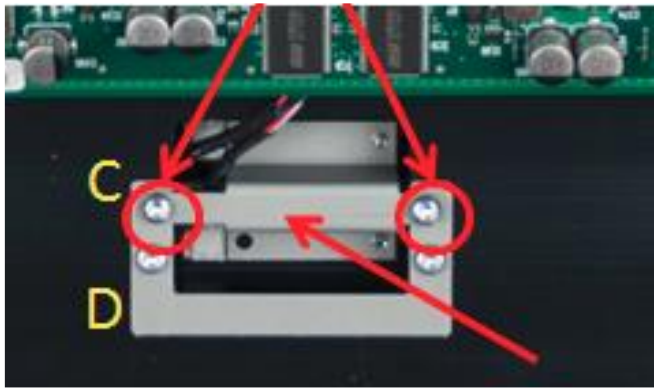
2. Move the ribbon cables aside to access the sensors.

3. Lift out sensor bracket.

A = Load Sensor.
B = Paper Sensor.

For Lid and Exit sensor:

1. Remove the Scanner Controller Board (SUXD), as shown on page 21.

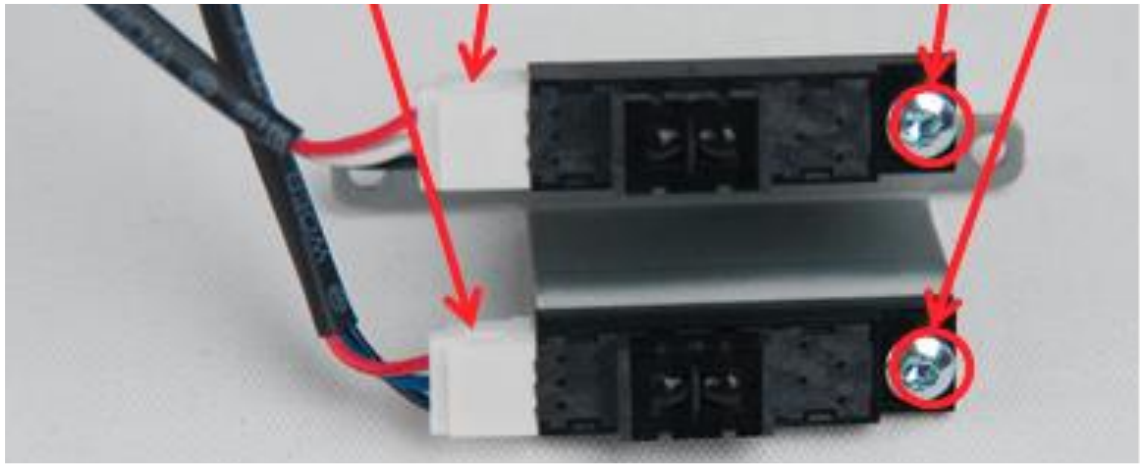


For Lid and Exit sensor:

1. Remove screws (2xT10).

2. Lift out sensor bracket.

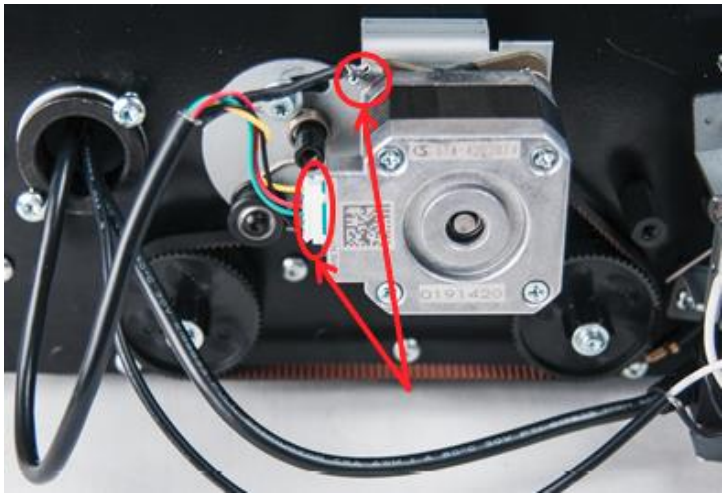
C = Exit Sensor
D = Lid Sensor

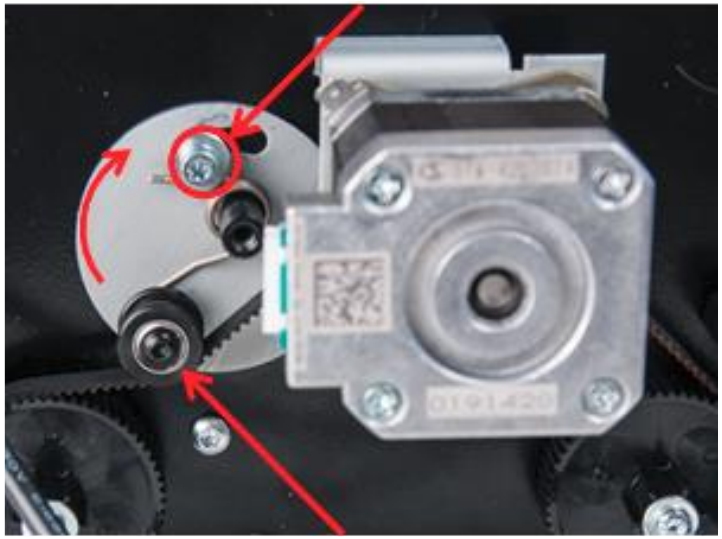


3. Disconnect the sensor cable.

4. Remove the screw and sensor.

Stepper Motor Assy



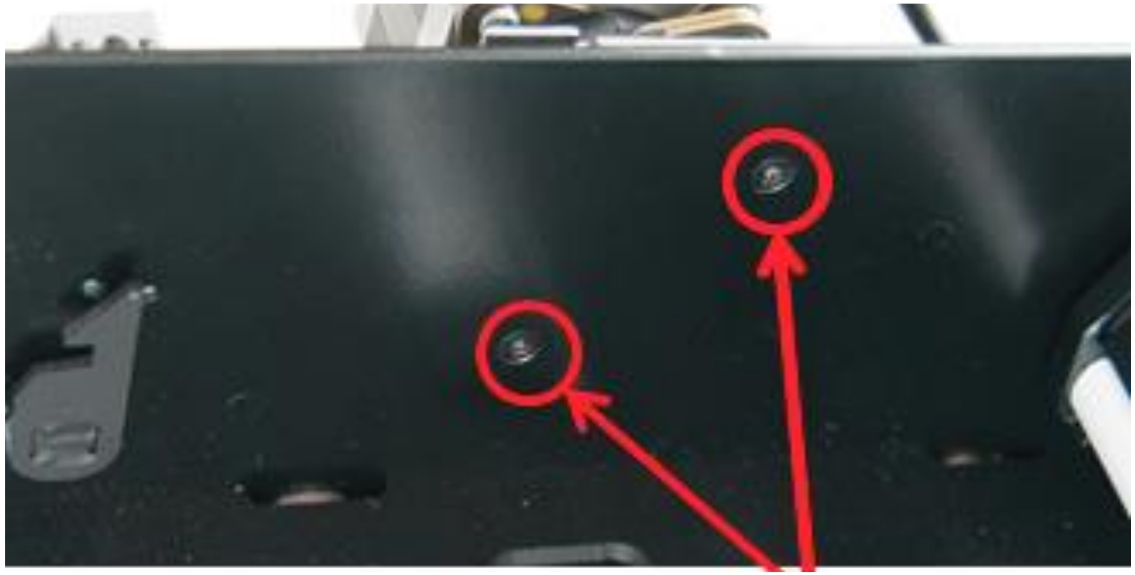


Prerequisites.
Switch power off.
Raise CIS Bridge Unit as shown on page 9.
Remove RHS cover, see page 18.

1. Disconnect motor cables.

Release belt tension:

2. Loosen locking screw (don't remove).
3. Push tension wheel upwards.
4. And tighten locking screw again.



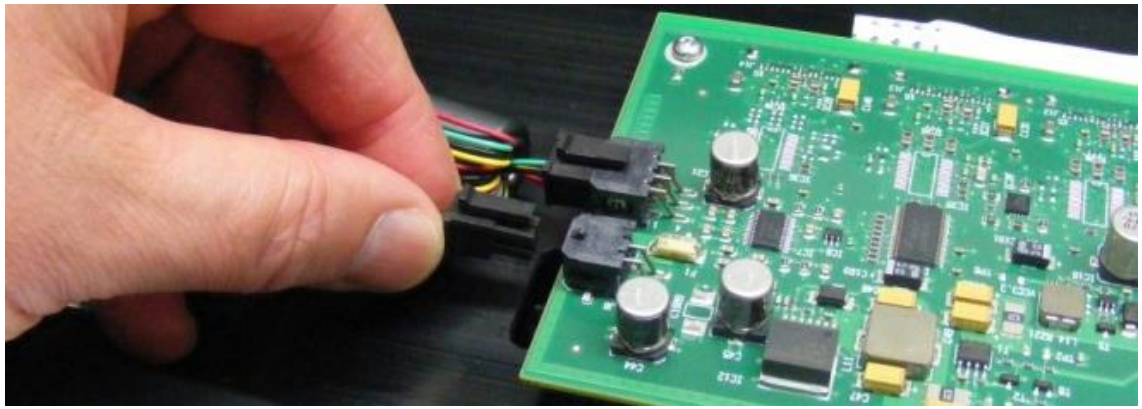
Remove Motor Assy:

5. Remove screw (2xT10) while holding the Motor Assy.

Remove Motor Bracket:

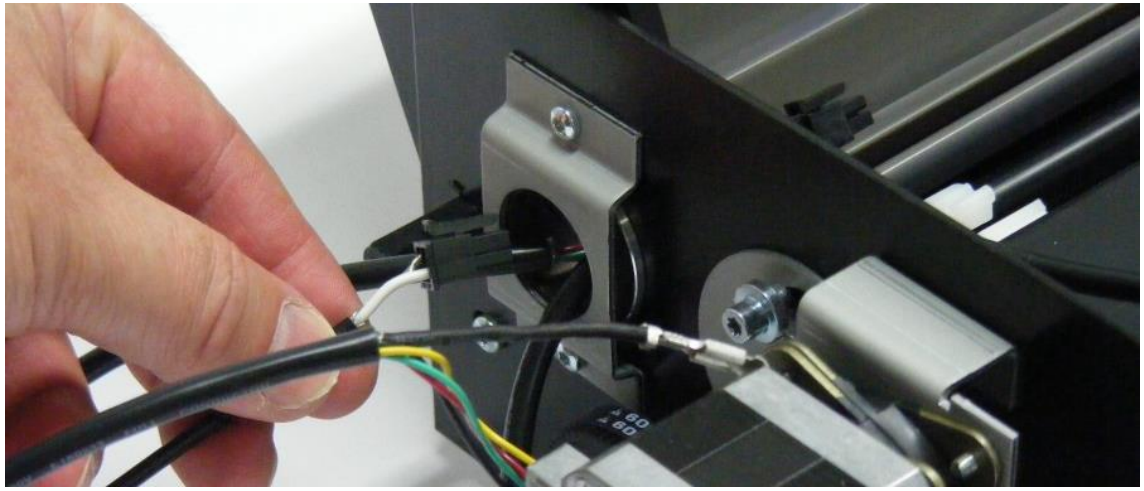
6. Remove screws (2xT10).
7. Remove bracket from assy.
8. Replace the motor and reverse the steps.

Power Switch & Connector

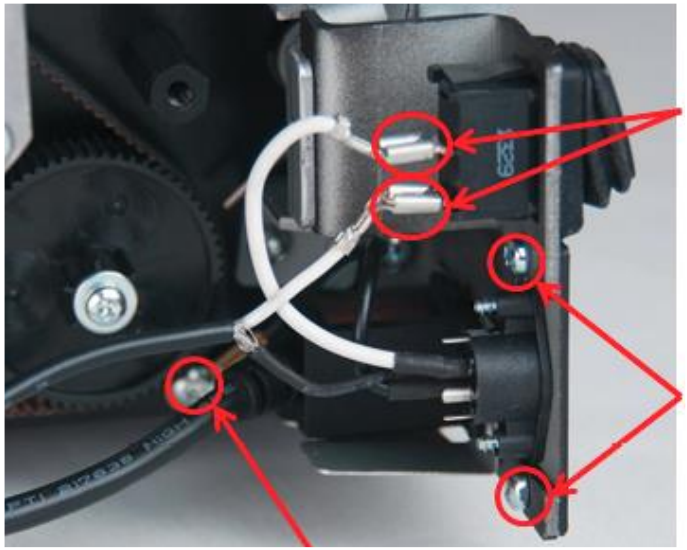


Prerequisites
Switch power off.
Raise CIS Bridge Unit as shown on page 9.
Remove LHS cover, see page 18.

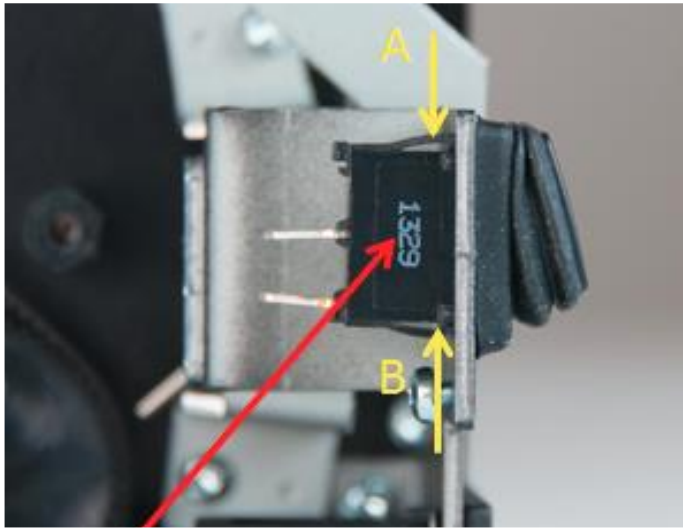
1. Disconnect the Power cable.



2. Guide the cable carefully out though the hole.



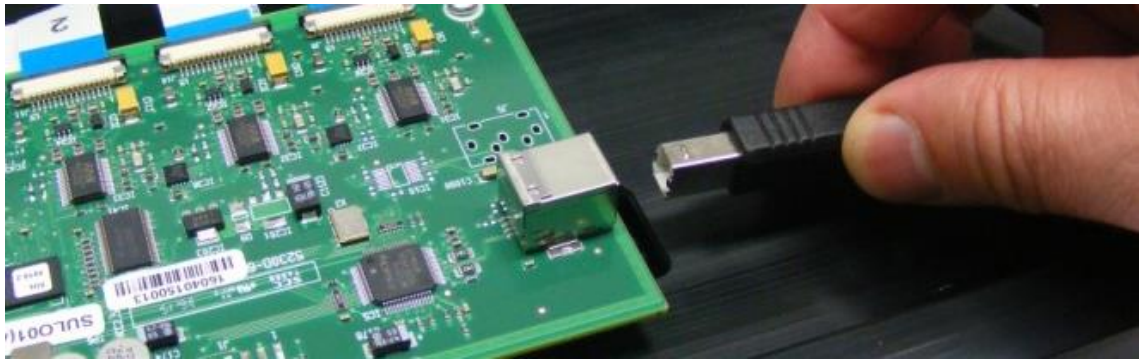
3. Disconnect the cables on the switch.
4. Remove screw for ground cable.
5. Remove screws for power connector (2xT10) and remove the connector.

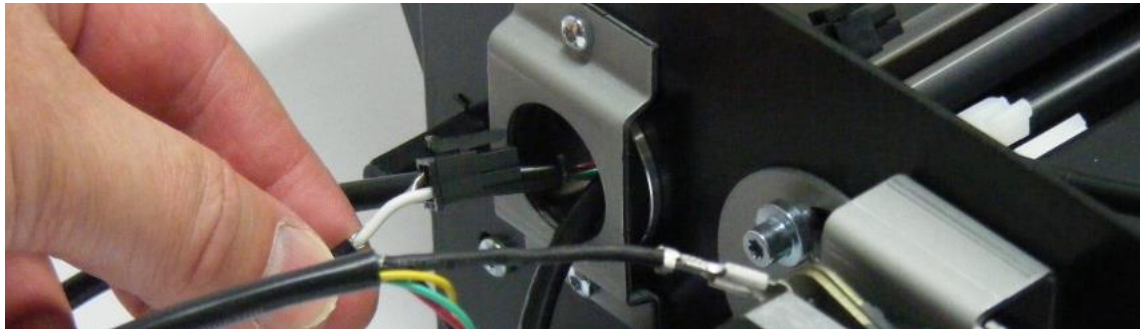


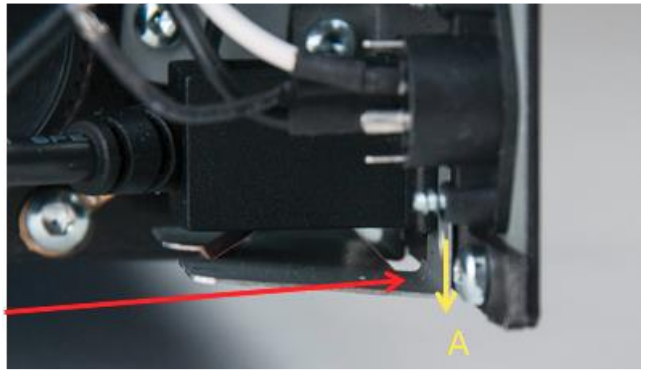
6. Push A and B towards each other and carefully remove the switch out though the back plate.

7. Replace the switch and connector and reverse the steps.

USB Cable, Panel mount



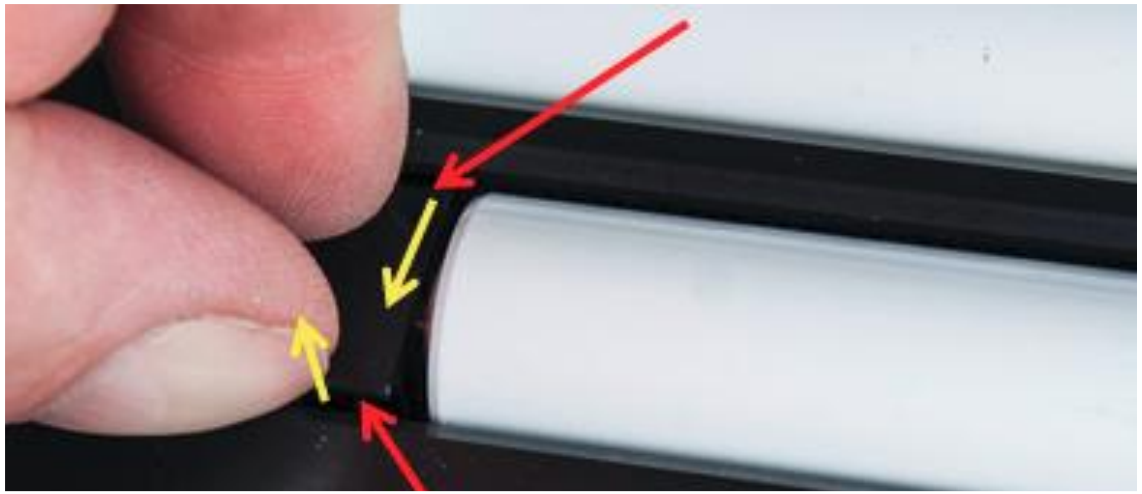




Prerequisites
Switch power off.
Raise CIS Bridge Unit as shown on page 9.
Remove LHS cover, see page 18.

1. Disconnect the 4 cables to the Ethernet / USB cable.
2. Guide the cables carefully out though the hole.
3. Remove the locking bracket from the Ethernet / USB connector by sliding it across and out.
4. Replace the Ethernet / USB connector and reverse the steps.

Pressure Rollers



Prerequisites
Switch power off.
Raise CIS Bridge Unit as shown on page 9.

1. Gently push clip forward.
2. Gently pull clip upward.

Repeat at other end and for all Pressure Rollers

3. Carefully use a screwdriver or similar to click pressure roller out of pressure foot.

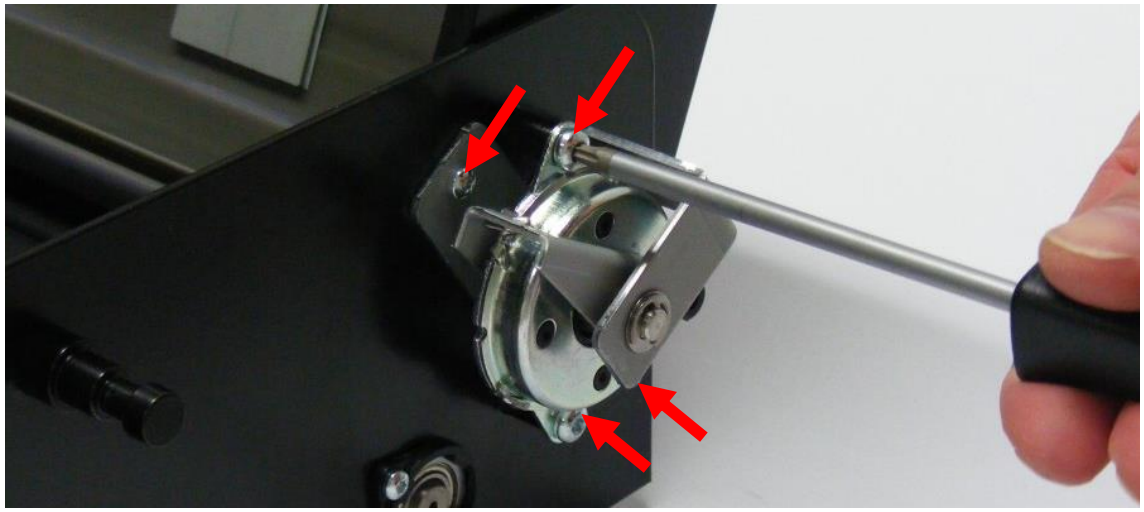
Repeat for all Pressure Rollers

4. Replace the Pressure Rollers and reverse the steps.

Damper for CIS Bridge

Prerequisites
Switch power off.
Raise CIS Bridge Unit as shown on page 9.
Remove RHS cover, see page 18.

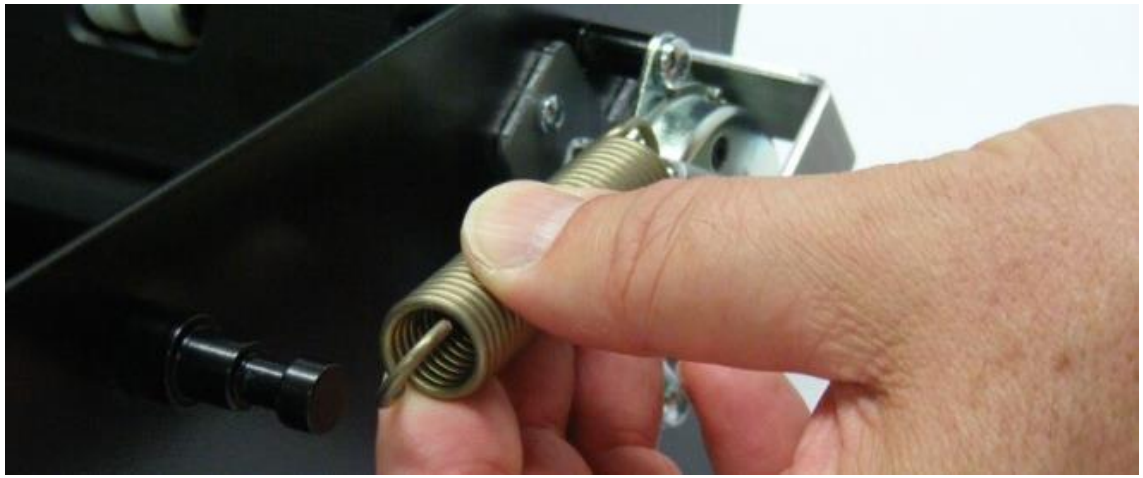
1. Remove the spring.
2. Pull the spring over rod
3. Remove screws to release clamp and remove the clamp.

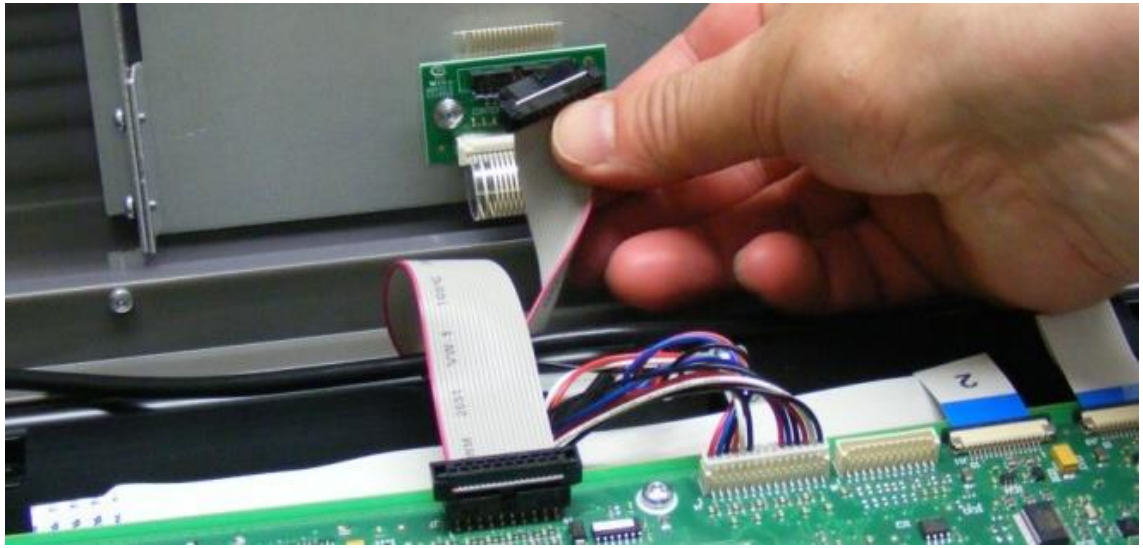


4. Remove screws (2x T20).
5. Remove screws (2xT10).
6. Pull out Damper Assy. While holding the CIS bridge cover.

7. Replace the Damper Assy. and reverse the steps. Do not forget to tighten the clamp!

Top Lid Cover incl. Control Panel



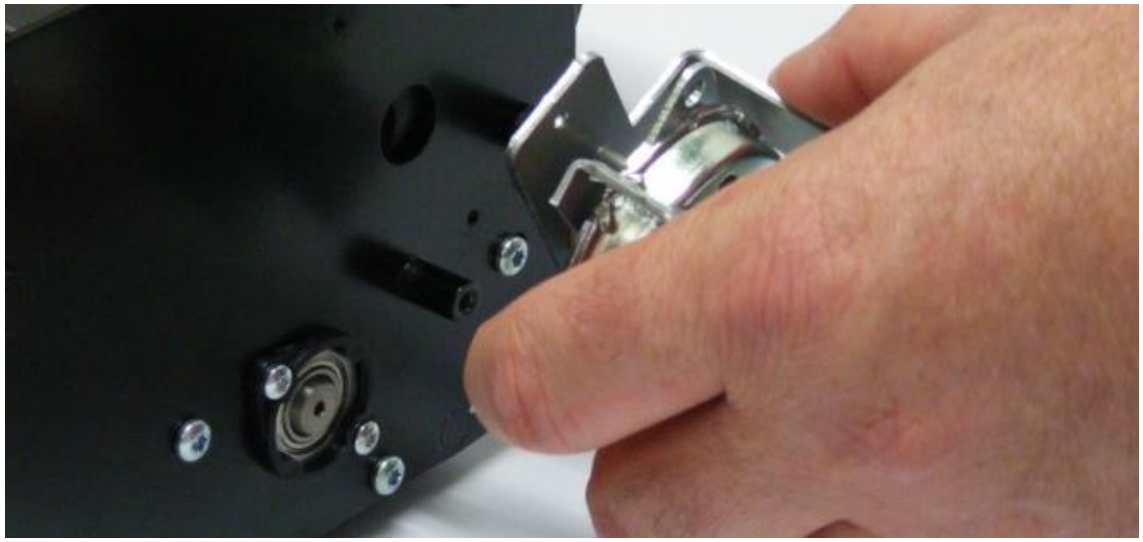


Prerequisites
Switch power off.
Raise CIS Bridge Unit as shown on page 9.
Remove LHS & RHS covers, see page 18.

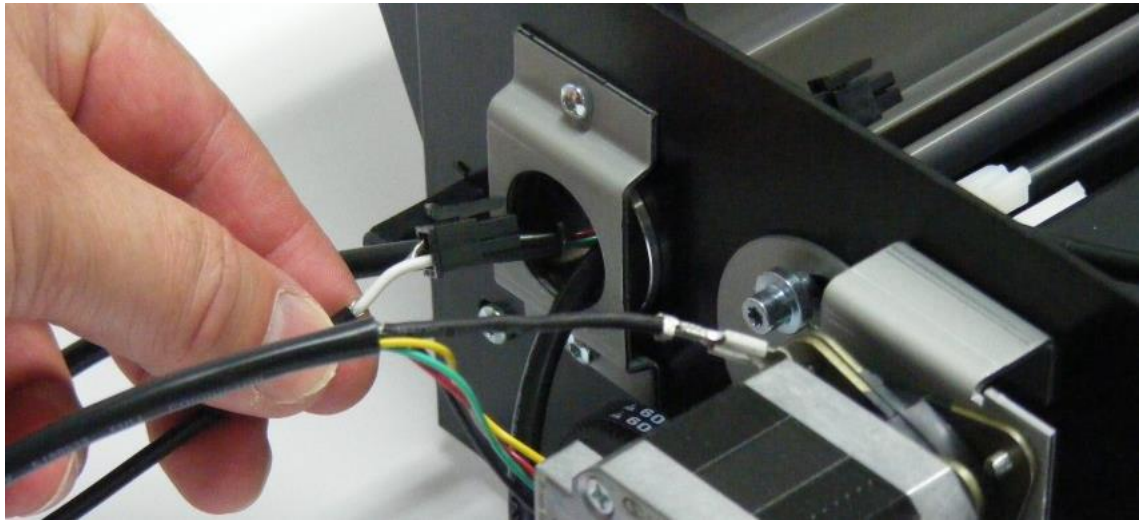
1. Pull spring over rod and remove.

2. Disconnect the Control Panel Ribbon Cable from the Lid Cover.

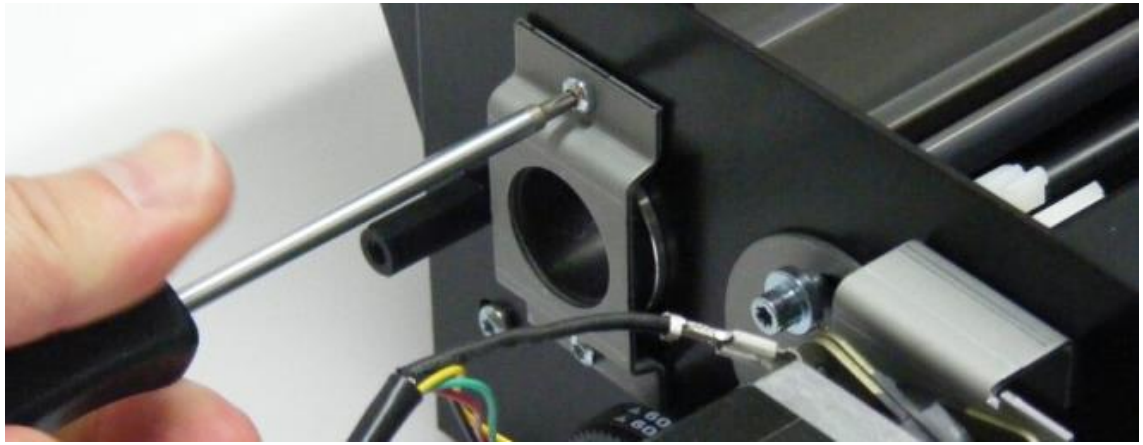
Note: The Control Panel is replaced along with the Lid Cover only.



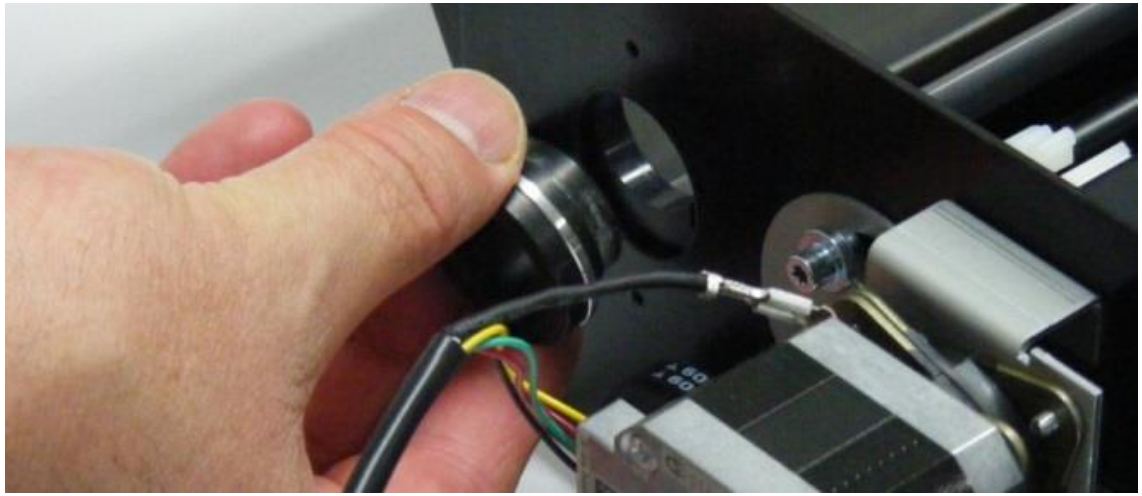
3. Remove the Damper Unit as shown on page 32.



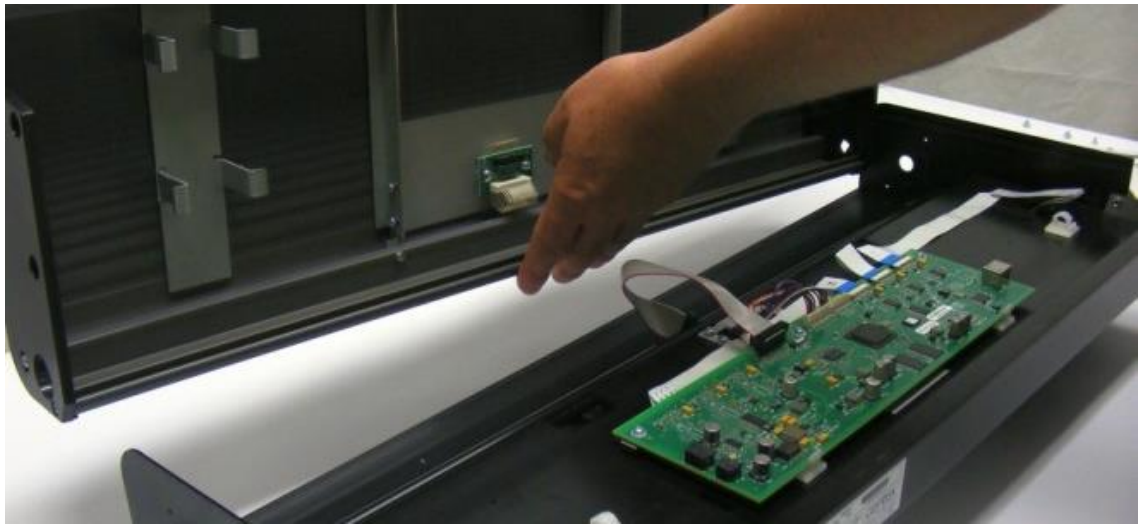
4. Release and remove the cables though the access hole on the left hand side.



5. Remove the 2 (T20) screws holding the retaining plate.



6. Remove the hinge and washer.



7. Lift the CIS Bridge off from the Lid Cover and remove the Lid Cover (including Control Panel).

8. Replace the Damper Assy. and reverse the steps. Do not forget to tighten the clamp!

Appendix A

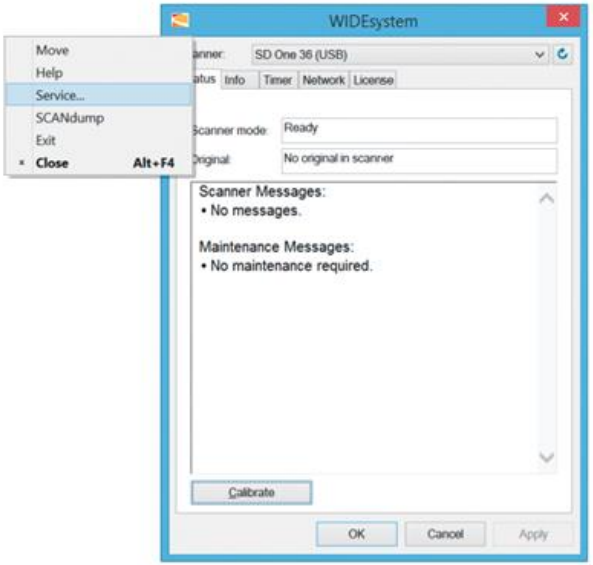
WIDEsystem Service, walk though

- Since this chapter is not scanner specific, some of the illustrations may not apply completely to the scanner you are working on, like number of Cameras and transition areas.
- Widesystem / Service consists of 17 different tests designed to help you service the scanner. These test are divided on 5 different tabs according to what you are doing on the scanner.

Paper Path/Handling
Image Quality
Electrical
Utilities
Post Replacement

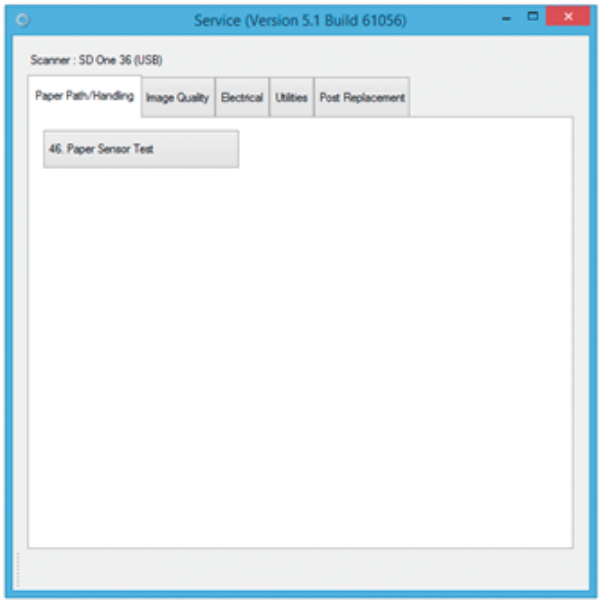
Some of the tests may appear on one or more tab's. Each test is also associated with a number for easy reference.

No.	Name.	Tab.
1	Set Serial no.	(Post Replacement)
6	Motor Test	(Electrical, Post Replacement)
9	Oscilloscope View Cameras	(Image Quality, Post Replacement)
11	Manual Camera (alignment & Stitching)	(Image Quality)
12	Manual Scaling	(Image Quality, Post Replacement)
20	Streak / Noise Test	(Image Quality)
42	Backup Calibration and Statistics	(Utilities)
43	Restore Calibration and Statistics	(Utilities, Post Replacement)
46	Paper Sensor Test	(Paper Path/Handling, Post Replacement)

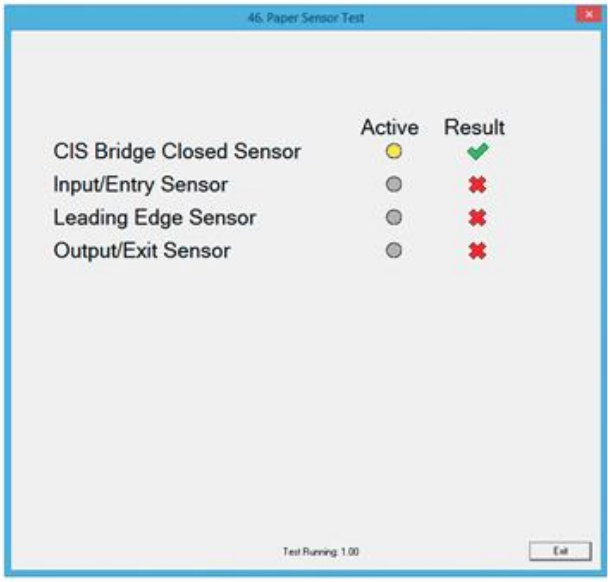


1. Getting access to the Service module in WIDEsystem is done by clicking on the logo in top left-hand corner of WIDEsystem and selecting “Service”

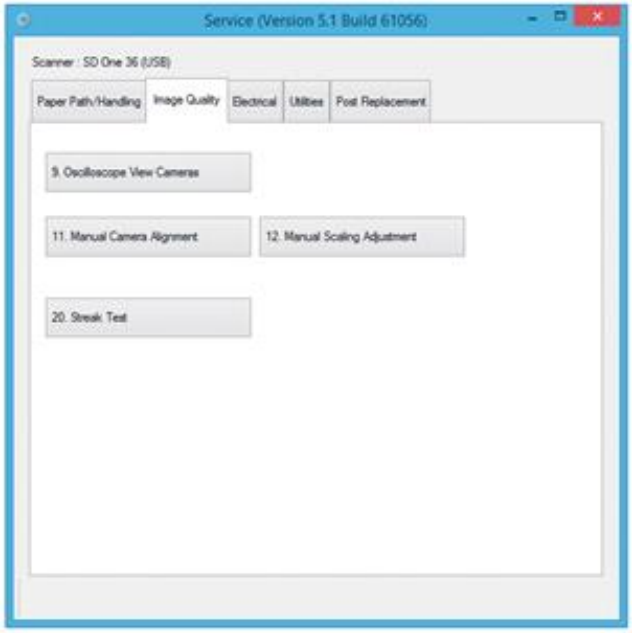
2. A password is required. (Only available to authorized Technicians)



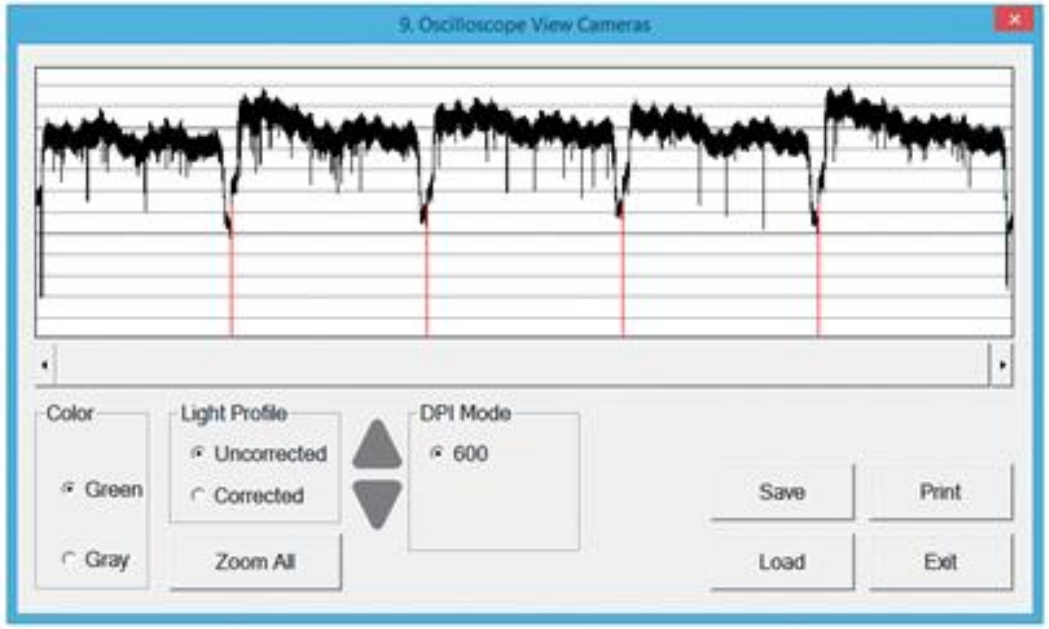
3. The service module defaults to the first tab, “Paper Path / handling”.



4. Test 46. Paper Sensor Test. Checking all the sensors in the paper path.



5. Tab for test related to Image Quality

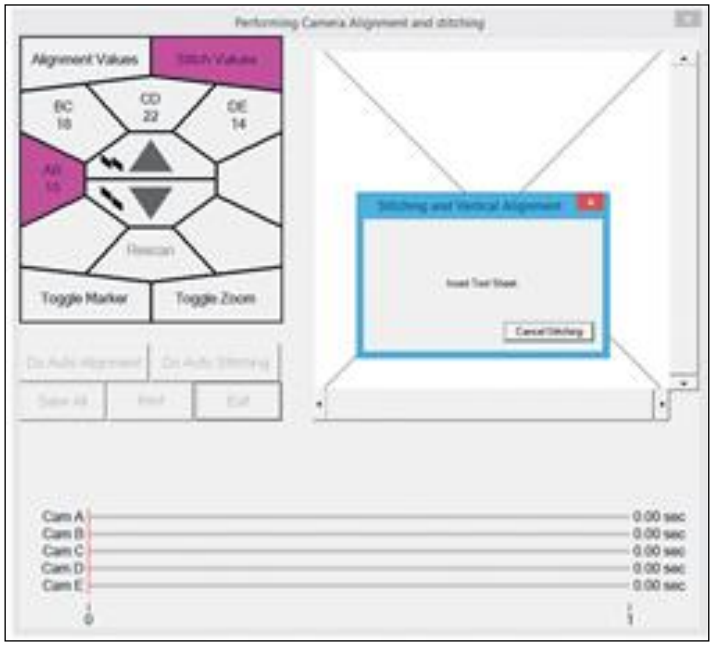


6. Test 9. Oscilloscope View Cameras.

   Provides you with a live image of what the CIS elements are looking at.

   “Light Profile”

   Uncorrected light profile shows the raw data from the CIS module. Corrected light profile shows the calibrated data.



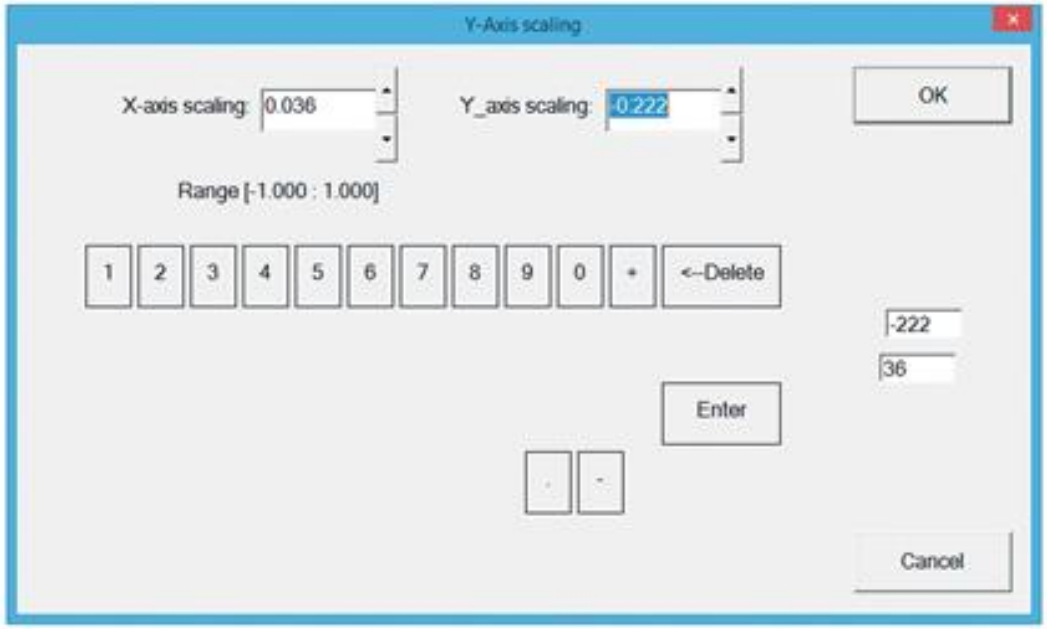
7. Test 11. Stitching & Vertical Align.

   Allows you to adjust either Alignment or Stitching between two CIS modules.

   1) Select Alignment or Stitching.

   2) Select the transition area (AB, BC.....)

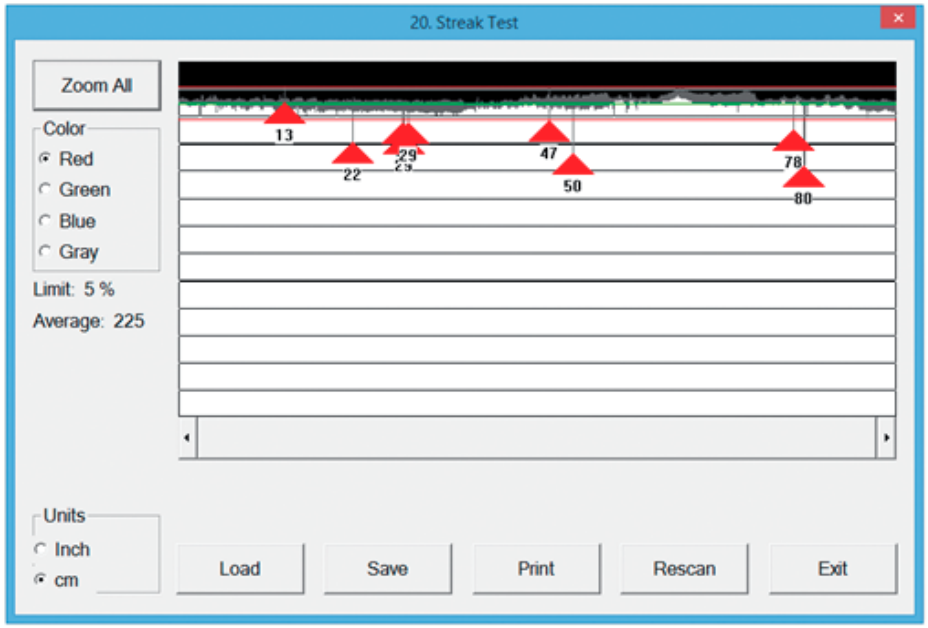
   3) Use the arrows to either increase or decrease the value.



8. Test 12. Adjust Y-axis Scaling.

   Here can you adjust the X and Y scaling.

   Scan a known size image, measure in Nextimage, compare and adjust. The correction is done in % of the deviation.

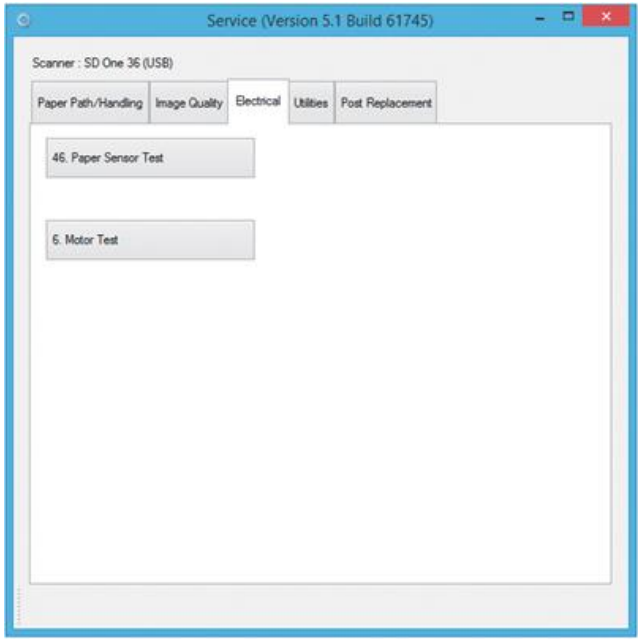


9. Test 20. Streak & Noise test.

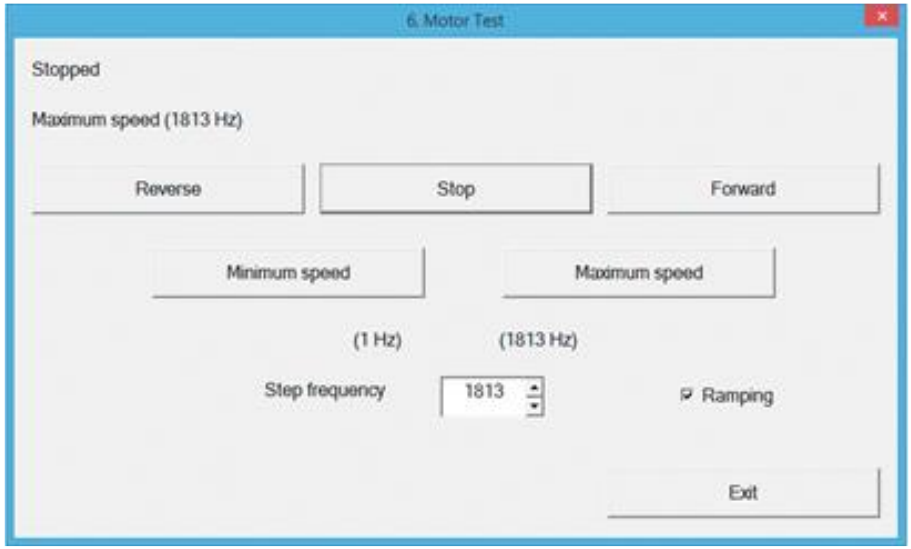
   This test is very useful if there are image quality issues such as streaks throughout the scan. (scan direction).
   It can be determined if the streaks are: dust that are:

   1) Present in the scanner (Dark streak that goes below the average line).
   2) It has been present during Scanner Maintenance (White streak that goes above the average line).

   Insert SM calibration sheet when asked.

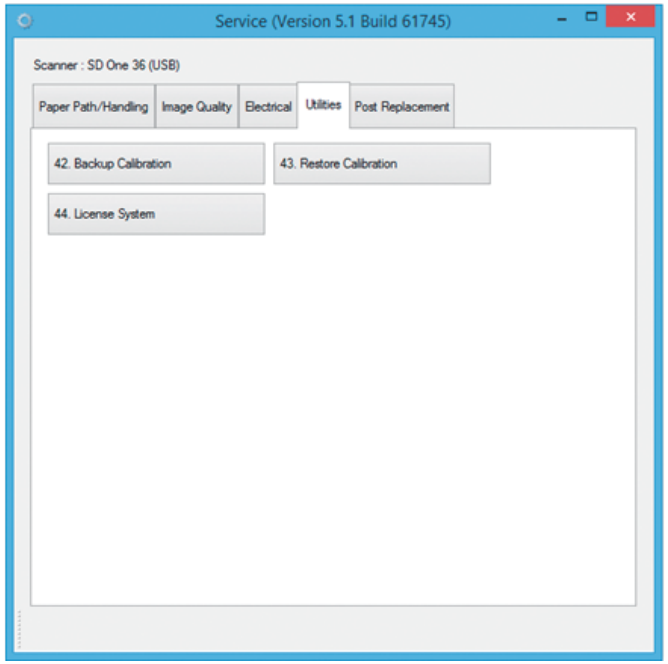


10. Tab for test related to electrical components.

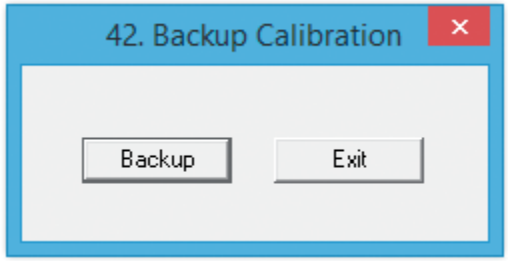


11. Test 6. Motor Test.

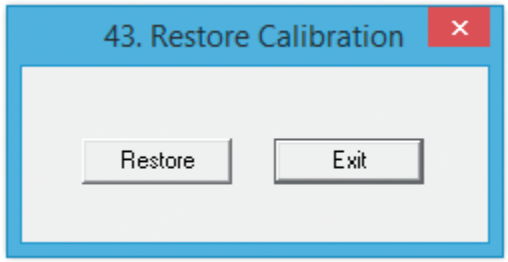
    To control and test the movement of the motor.



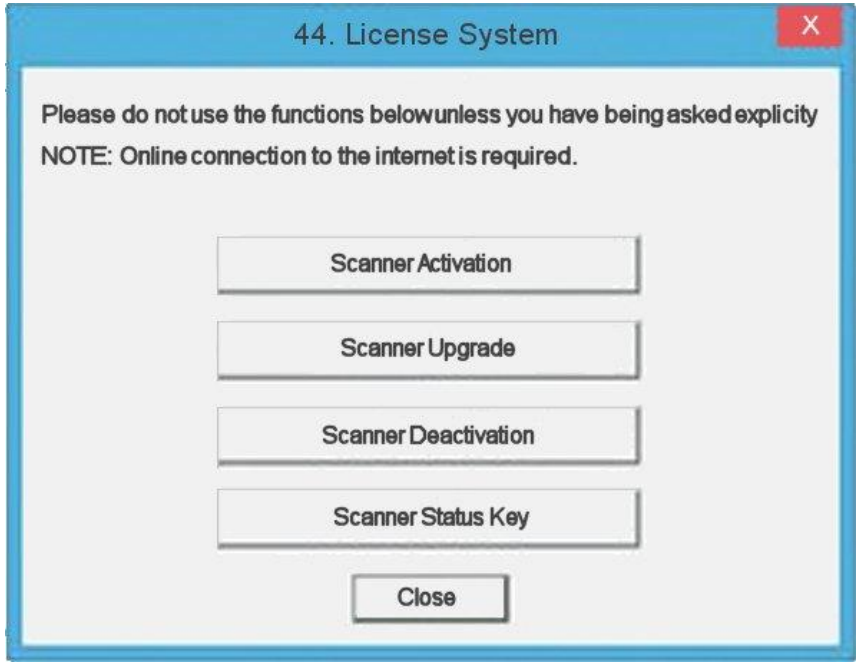
12. Tab for test related to the main board.



13. Test 42. Backup Calibration and Statistics.

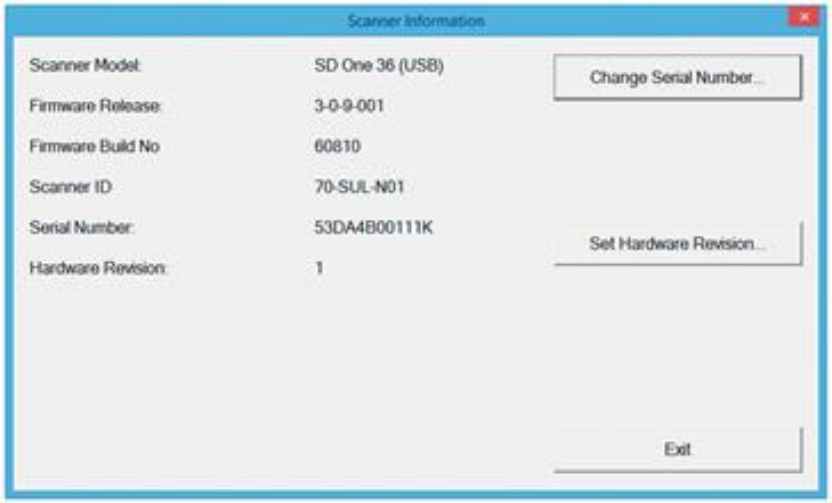


14. Test 43. Restore Calibration and Statistics.



15. Test 44. License System.

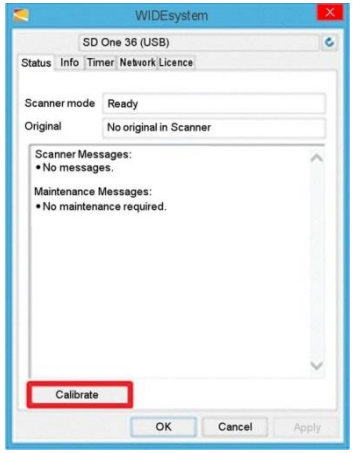
16. Tab for test related to Part replacement



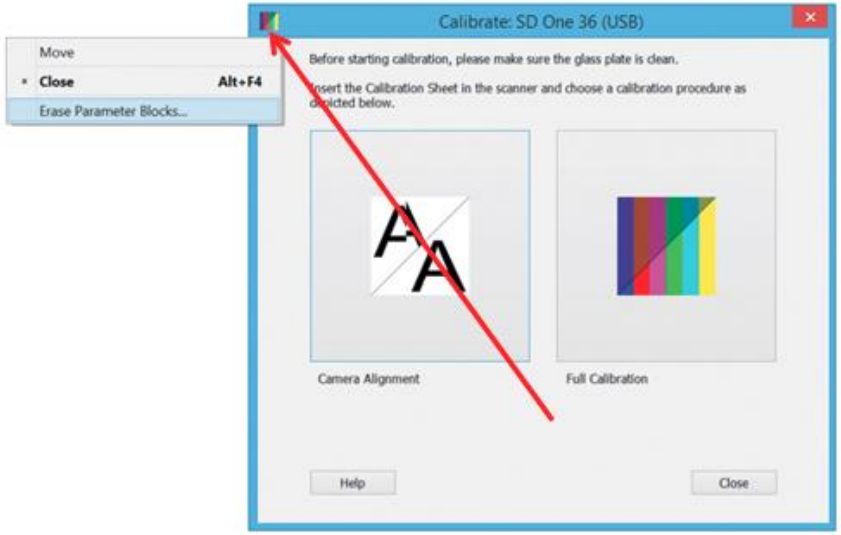
17. Test 1. Scanner Information.

Erase Parameter block

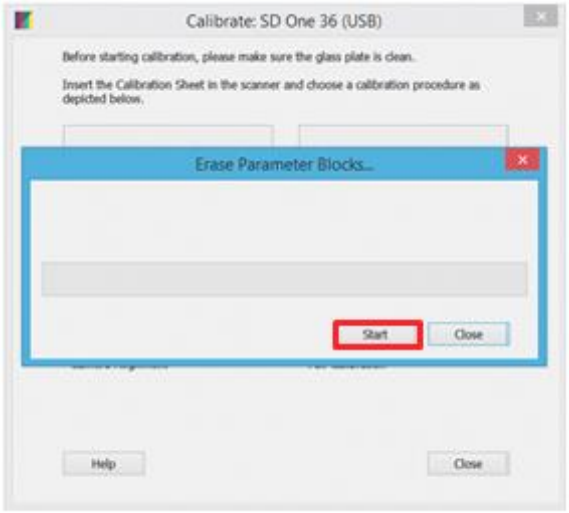
- The Parameter block in the scanner can be erased through the Calibration Dialog in WIDEsystem.
- Always Use the latest version of WIDEsystem and have the latest version of Firmware loaded in the scanner. Both can be downloaded from our web.



1. Open WIDEsystem on the Status tab.
2. Select Calibration

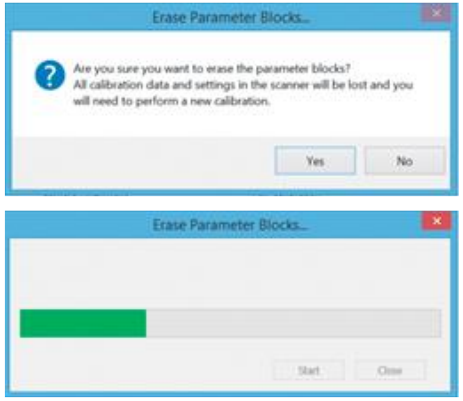


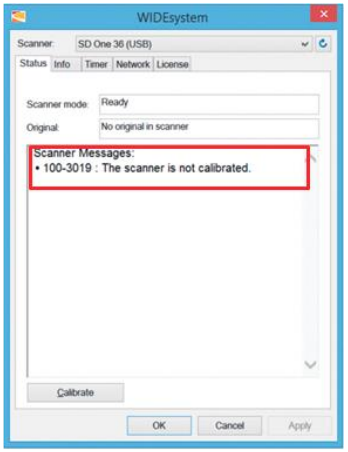
3. Click on the Calibration icon.
4. Select Erase Parameter Blocks



5. Click Start to continue with Erase the Parameter Block.

Only data that can be restored by a Calibration will be erased!



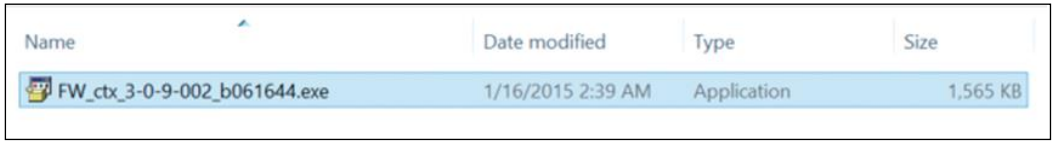


Once the scanner has rebooted, WIDEsystem will report that “The scanner is not calibrated”

Appendix B

Firmware Download, walk-through

- The latest Firmware can be obtained from www.contex.com. Identify the scanner model and download.
- The computer that will be used for the firmware download needs to have WIDEsystem installed!

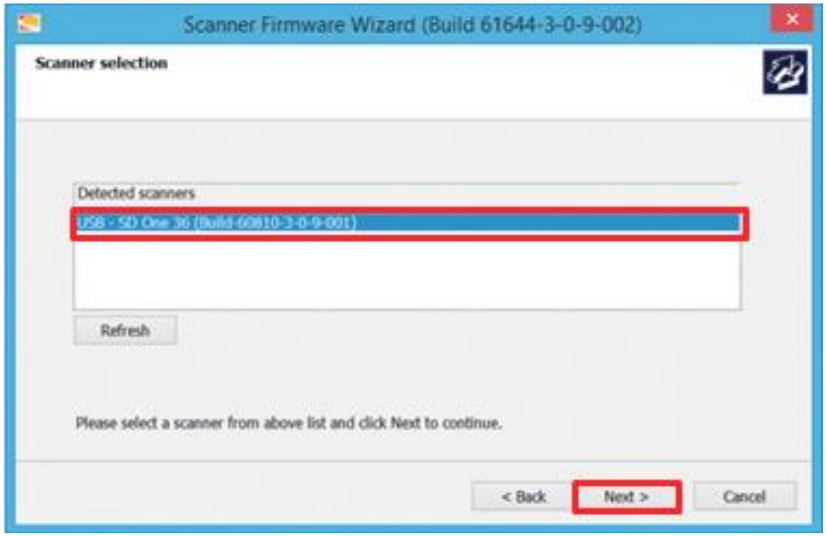


1. Execute the file.

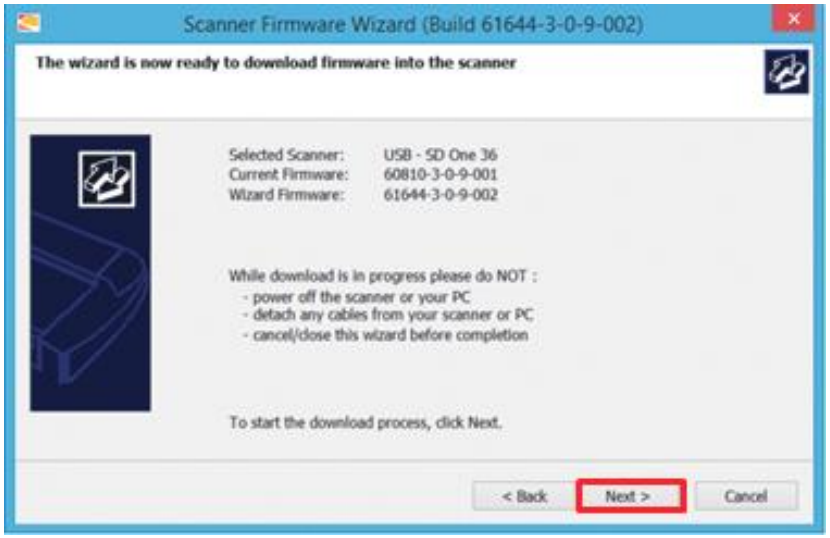
Note: The name on the downloaded file will change according to the Firmware version.

2. Follow the instructions in the Scanner Firmware Wizard.

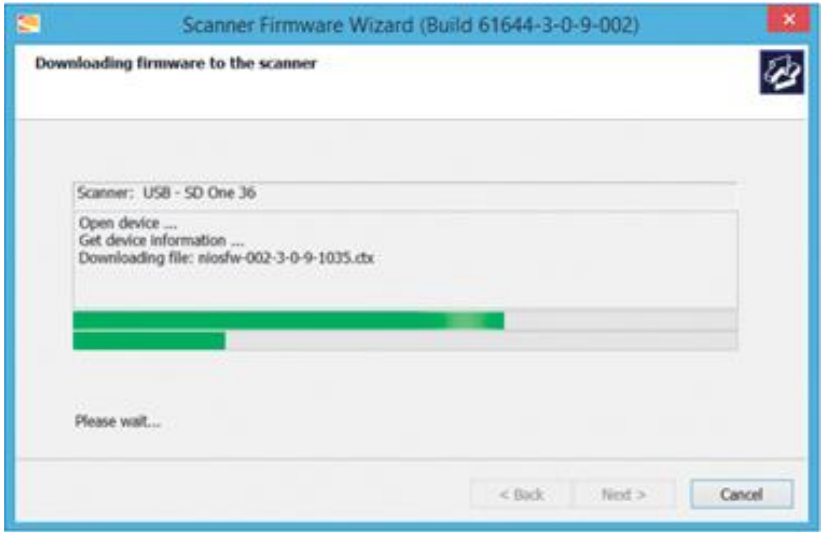
3. Do not turn power off to the scanner or the PC during Firmware upgrade process.



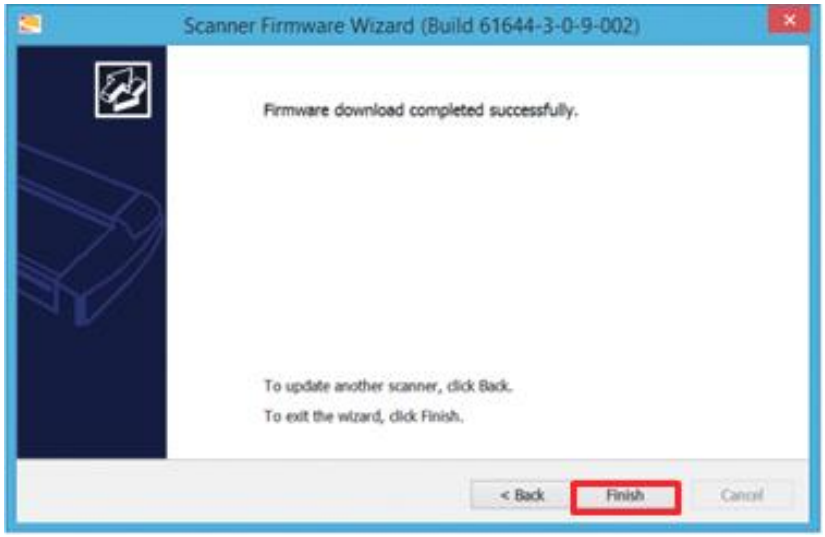
4. Select the scanner that you wish to upgrade and click next.



5. After validating the info, click next.

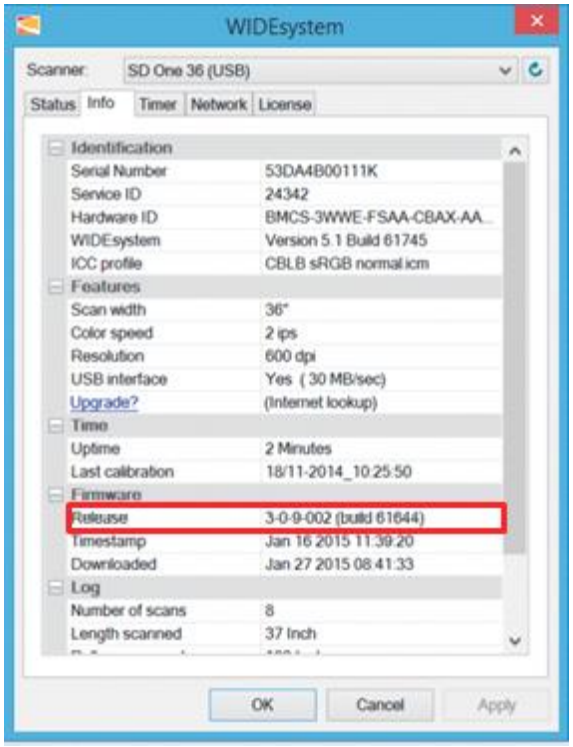


6. The Firmware program will now unpack, download, activate the firmware in the scanner and finish with rebooting the scanner.



7. The scanners firmware has now been updated.

8. Don’t forget to calibrate the scanner.



9. Once the scanner is back up and recognized by WIDEsystem, check that it has the new firmware.

Appendix C

Scanner Terms

Activation Code:	Is the when the product specific License code has been pared with a Scanner serial no.
AdaptiveThresholding:	Advanced 2-D Adaptive Thresholding estimates the background grey level in a window area around each pixel. The difference between the actual pixel value and the background is then compared to the adaptive settings to determine if a pixel is thresholded as a black or a white pixel.
AdaptiveThresholding:	Advanced 2-D Adaptive Thresholding estimates the background grey level in a window area around each pixel. The difference between the actual pixel value and the background is then compared to the adaptive settings to determine if a pixel is thresholded as a black or a white pixel.
Additive Colors:	The additive primary colors are red, green and blue. These additive primaries represent the three main components of white light. Used individually or together, these three colors of light can be mixed to create nearly all colors. When these three primary colors are mixed in equal parts they produce white. Additive color is used in scanners and computer displays.
ADL+ Error Diffusion Halftoning:	Image Processing that supports visibility of greytones in printed output by adding toned shades of grey in regions between black and white. Carried out as a segment of Dual 2D-Adaptive enhancement processing in copy modes.
ALE - Accuracy Lens Enhancement:	Accuracy Lens Enhancement (ALE) is an electronic correction of spherical errors in CCD based camera- scanning systems.When looking at pixels across the range of a camera, the pixels tend to be more elliptical at the outside edges of the lens and more round in the middle of the lens. This anomaly is known as a spherical lens error and can introduce inaccuracies in the scanning system that can vary quite substantially between different points along the scan line. Most manufactures typically state a +-0.1% accuracy of the scanner between the two outermost end-points of the scan line. However, when measuring between two points that do not fall across the entire scan line, it is not unusual to see variations of up to +- 0.5% or even higher. This is naturally unacceptable in demanding environments and markets such as GIS, which need a stable and well-defined maximum error of 0.1% or less. ALE solves this problem by a process to electronically correct the spherical errors in the scanner and maintain a stable maximum error across any two points of less than 0.05% ± 1 pixel.

ATAC:	Automatic Thickness Adjustment Control - A special technology that allows the scanner pressure platen to be raised to accommodate thick originals and then lowered - both actions performed by pressing a key from the operators panel. Sensors in the platen detect when perfect pressure is applied to the the original and automatically stop the downwards motion of the platen so it rests on the original with an optimal grip.
Bitmap:	An image format made from a matrix of individual pixels (.bmp).
Bitmapped Image:	A bitmapped image is a computer file representing a line-art image that was scanned with a scanner. Refers to the pattern (map) of bits that are either black or white.
Black Level:	The Black Level is a setting in scan programs used to change dark greytone colors to true black. For example, if one is copying a brochure with a mixture of text and pictures, the text will often be digitized to a color that we may see as black but really is a dark greytone. When the printer digests this greytone data, it will print the original's text with a halftone pattern, meaning scattered dots instead of solid black. By increasing the Black Level value, one can get the text to be copied in real black and it will therefore appear clearer.
Black Point Adjustment:	An adjustment made that will determine the amount of shadow detail in an image. It is considered proper to set the black point so that the darkest part of an image will only just have zero detail.
Blueprint:	A process of photographic printing used mainly for copying architectural and mechanical drawings; produces blue lines on a white/bluish background.
Blur:	The averaging of pixel elements.
Brightness Adjustment:	An adjustment on a scanner that allows the user to compensate for a light or dark original.
Calibration:	Adjusting a device so that it performs in accordance with an established standard. Scanner calibration is minimizing color deviation between scanned ANSI IT8 reference color patches and the known color reference values. Generally, Calibration is the process of setting a device to known color conditions - stabilizing the device to a known and quantifiable state. Calibration is commonly done with devices that change color frequently, such as monitors (phosphors lose brightness over time), scanners (light changes) and printers (proofers and other digital printing devices can change output when colorant or paper stock is changed).
CALS:	Computer-aided Acquisition and Logistics Support (CALS) standard, a U.S. Defence Department and industry initiative that addresses the design, manufacture, and support issues of generation, access, management, and use of technical data in digital form.

CCD:	Charge Coupled Device, CCD is the image sensor in the scanner that converts light to voltages. These voltages are converted by the scanner into the image.
CCITT Group3:	Standard run-length compression format used with FAX transmission. It utilizes modified Huffman coding to further compress the run-length numbers. Most scanner file formats are dialects of this format.
CCITT Group4:	Two-dimensional compression format, giving very compact image files. Standardized by CALS (MIL 28002) and ISO-ODA for Drawing Archival and Interchange.
CIE LAB:	A device-independent color space specified by CIE, used in modern color management software to facilitate conversion of data from a scanner to a display, or from a display to an output device.
CIE:	Centre Internationale d'Eclairage (CIE) is an international organization that establishes methods for measuring color. These color standards for colormetric measurements are internationally accepted specifications that define color values mathematically. The first color space model, the CIE xyz, was developed in 1931. CIE defines color as a combination of three axes: x, y,and z. The two color spaces released in 1978 are CIE Lab and CIE Luv. The goal was to provide an accurate and uniform reference of visual perception.
CMYK:	The subtractive printing colors. Cyan, Magenta, Yellow, Black.
Color Balance:	The visual effect of an image when the amount of each color and the overall amount of color are balanced.
Color bit depth:	The simplest pixel has two options: black or white. (A pixel with two choices is known as a 1-bit image, or two raised to the power of one). Adding more bit information increases the number of color options. The number of potential color options for a pixel is called color bit depth. For example a 4-bit pixel would have 16 color options, and an 8-bit pixel would have 256 color options, while a 24-bit pixel would have 16,777,216 color options.
Color Cast:	An image is said to have a color cast if its colors are not true. A color cast will usually be described by stating the particular color predominant in the image, e.g., the grass appears to have a red color cast.
Color Correction:	To improve the color rendition. Correcting for, and eliminating an unwanted color cast.

Color Management System:	Color Management System (CMS) software increases the accuracy of color interchange between scanners, displays and printers based on profiles for each device. The CMS is a layer of software resident on the computer that negotiates color reproduction between the application and color devices. The CMS performs the color transformations necessary to exchange accurate color between diverse devices. The Color manager needs access to characterization data for the device. The format and content of such device profiles is standardized by the International Color Consortium (ICC.)
Color Separation:	Process of separating colors, in an image, into primary color components for printing. Converting an RGB color image into CMYK color image. Color separation is a technical function during which critical settings such as GCR, black ink limit and total ink limit are applied to the image.
Color Space:	A color space is a particular language used to describe color. Examples of color spaces are: RGB, CMYK, HSV, CIE LAB.
Contrast:	The difference between the lightest and darkest significant areas in a picture. A picture with high contrast has nearly white areas and nearly black areas with sharp changes in brightness between them. The picture seems dominated by stark light and dark tones.
Density units:	Photographers and printers measure transmission in base-10 logarithmic density units, where transmission of unity corresponds to a density of 0, transmission of 0.1 corresponds to a density of 1, transmission of 0.01 corresponds to a density of 2, and so on.
Density:	The light stopping ability of a film. Density is inversely proportional to the amount of light reflected or transmitted by an image.
Device Dependent Color Space:	For example RGB. A device dependent color space, e.g., the same scan file will appear different when viewed on different computer displays. For example CIE LAB. A device independent color space is one in which color values are absolute, e.g., defined by CIE standard. CIE LAB is the central color space in color management systems (CMS) and is used to translate between different device dependent color spaces such as scanner RGB and display RGB.
Device Profile:	A file used as part of a Color Management System (CMS). A device profile contains information about the characteristics of a scanner, computer display or printer. The format for device profiles (Win95, Colorsync. etc.) is standardized by ICC (International Color Consortium).
DIP:	Digital Image Processor. Hardware embedded function that does image enhancement in real-time while scanning.

Dither:	To use patterns of different colored pixels to create blended colors; or, to use dots of different sizes to simulate greyscale images. (see below).
Dithering:	A printing or display device may have only a small number of greyscale or color values for each device pixel. However, if the viewer is sufficiently distant from the printed page or display, the value of neighbouring pixels can be set so that the viewer's eye integrates several pixels to achieve an apparent improvement in the number of levels or colors that can be reproduced.
Dots Per Inch (dpi):	A measure of dots in a square inch where the individual element is a round dot on the printed page.
DPI:	Dots Per Inch, equivalent to Pixels Per Inch. An expression of resolution of a scanned image.
DSP:	Digital Signal Processor, does image enhancement in real-time while scanning.
Dual 2D-Adaptive Enhancement:	Enhancement processing on the foreground and background separately. Processing is performed on-the-fly. The separate enhancement processes are simultaneously performed on different drawing aspects.
Dynamic Range:	A measurement of scanner quality; the density difference between highlights and shadows.
Edit:	Modify an entry using standard Windows text-editing techniques.
Emulsion:	The light sensitive silver, coated on the clear acetate film base, that forms the photograph when a picture is taken and the film is developed.
Equalizing:	Distributing all color or tone equally along a density range.
File Format (image):	The format in which a scanned picture is saved. Many programs can insert or import a picture from a file, if it is saved in a file format that the program supports. Common file formats include TIFF (Tagged Image File Format), BMP (Windows bitmap), JPEG (Joint Photograph Expert Group), and FPX (FlashPix format).
Flip Horizontal:	To flip the picture left/right.

Foreground:	Foreground when scanning raster data (black and white, or monochrome data) refers to the pixels that represent data of interest (background refers to everything else). Typically, lines and shapes are represented by black pixels (foreground) and empty space is represented by white pixels (background). When scanning greyscale data, background means the grey level of a region of pixels that surrounds some desired foreground data.
Gamma Adjustment:	An adjustment that makes the tone distribution lighter or darker in an image.
Gamut Transformation:	Color Management System function, where out-of-gamut colors are converted to colors within the gamut of the targeted device, e.g., a printer.
Gamut:	The color range scanable, printable or displayable by a device; e.g., if some of the displayable colors are outside of the gamut of the printer they cannot be printed.
GCR:	Grey component replacement. A color separation setting used on color photographs where cyan, magenta and yellow inks are replaced by black ink (in a balance that would yield a grey value). The advantages are a reduction in overall ink usage and some increase in image detail.
Greyscale:	A term for a black and white photographic image or a scanner setting. Refers to the range of 256 greytones that make up the image.
Halftoning:	The processes of offset printing and laser printing are intrinsically bi-level. However, these devices can reproduce a range of tone levels by halftoning; e.g., an array of widely spaced dots produces the perception of light grey, and an array of tightly spaced dots produces dark grey. Halftone dots are usually placed in a regular grid. In color printing it is conventional to use cyan, magenta, yellow and black grids that have exactly the same dot pitch but different carefully-chosen screen angles.
Hardware id:	Is a unique ID no for the scanner, based on the scanners serial no and MAC address.
Highlights:	The lightest part of a picture reproduced as white on the screen or when printed.
Histogram:	A bar graph representing the statistical distribution of Greytones or colors in an image. Each column represents the number of pixels at that grey level or color.
HLS:	A color space with the three variables of Hue, Lightness, Saturation. See HSV.

HSV:	A color space with the three variables of Hue, Saturation, Value. Hue means color (as in the color wheel.) Saturation is an indication relating to the richness or vibrancy of the color. Value is a term best related to the intensity of light illuminating the object.
Hue:	A named color. In discussions of color that relate to photography, scanning, and printing, six hues are especially important: red, yellow, green, cyan, blue, and magenta. These hues make up every color we can see, and are the designated hues on color wheels. Hue is also a measurement of color that can be related by pointing towards a certain color on the color wheel. Hue indicates the relative redness, blueness, greenness, yellowness, etc, of a color.
ICC:	The International Color Consortium (ICC) was formed to address the need for a common color framework. The ICC has developed a standard device profile that contains information about how various devices render color. This concept is supported by Apple (Colorsync), Microsoft for Windows 95, Sun for Solaris, and by Silicon Graphics for Irix.
Image Editor:	A program used to edit pictures to change colors, increase detail, scale or otherwise alter the picture.
Indexed color:	Indexed color (or pseudo-color) is the provision of a relatively small number, say 256, of discrete colors in a colormap or palette. For each pixel in the image, the index number of a color is then stored. When retrieving the image, a lookup table uses the index to retrieve red, green and blue components that are then sent to the display. In graphic file formats such as PCX of TIFF, an indexed color image is accompanied by its colormap.
Interpolation:	Using the interpolation method of resampling generates values for points in between the actual pixels by looking at the surrounding colors or intensities. In a scanner resolution is increased beyond the actual number of CCD cells. As each line of pixel data arrives from the cameras, new interpolated pixels are added between original pixels. The added pixels enhance line edge definition.
JPEG Compression:	Joint Photographic Experts Group Compression. A method to save storage space by compressing files. JPEG achieves a high degree of compression by discarding non-important picture detail.
JPEG:	A compressed file format for images. Named after the Joint Photographic Expert Group, JPEG images feature small file size and speed, but lower quality than other formats.
License Code:	Is the product/model specific code that the Customer receives with his Scanner (base model).
Loosless Compression:	File compression and subsequent de-compression without any loss of data.

Lossy Compression:	File compression that will compress data to a high degree. When subsequently un-compressed, data will have been lost.
LZW:	Method of lossless compression used with many file formats; developed by Lempel, Zev and Welch.
Midtones:	The most important part of a picture between black (shadows) and white (highlights).
Negative:	A reversed photographic image used to produce a positive print or a scanned image.
NET - NET Architecture:	NET Architecture is a solution for scanning across local networks. What does it do? • Enables Sharing a scanner on a network. • Enables scanning to a Designated Scan. Folder on another computer. NET Architecture allows a scanner to scan to a client PC in a single coherent and secure process. The client does not need to expose or share his local hard disk as the system can be set up for authorized transfer to the client. Example of usage - a company that needs to create digital documents of its drawing archive, can send the drawings to a service bureau that scans all the documents directly to the client (company) file server allowing immediate feedback from the client and prevents digital distribution of confidential documents outside the client company. NET Architecture also allows users in a company to use a scanner, from their own PC workstations although the scanner is physically placed elsewhere. It only need to be on the same LAN. In this way a single scanner is “shared” throughout the company.
Noise:	A term used to describe the occurrence of pixels that contain random colors within an image.
Original:	The paper, negative, slide, or film to be scanned.
Palette:	The set of colors available for an image.
PICT:	A file format for pictures used primarily on the Macintosh.
Pixels Per Inch (ppi):	A measurement of resolution for scanners, where the individual element is a square picture element (pixel).

Pixels:	The word pixel is a combination of the two words picture and element. It is the smallest building block within a scanned line-art or photographic image. A pixel is the small square picture element that is filled with a color, black or white. The value of a pixel depends on the luminance of the area, and is either a single bit for a black and white image, or multi-bit for a color or grey-tone image. Pixels come in various sizes and their size is expressed in terms of resolution. Resolution is measured in pixels per inch (ppi) or the equivalent dots per inch (DPI.)
PostScript:	A computer language developed by Adobe (R) Systems, Inc. for printing text, graphics, and scanned images. PostScript (R) is a vector format that can include scanned bitmapped images.
Raster File	Also called Raster Image or Bitmapped Image. A picture composed of individual dots (picture elements, pixels) the way a scanner perceives it. The rows in a high-resolution raster file typically contain 200 or 300 dots per horizontal inch of the original drawing, and there are typically 200 or 300 rows per vertical inch. As each of these dots is defined by location, and by whether it is on or off, raster images generally result in large data files.
Resolution of a Scanner:	Expressed as DPI (dots per inch) or the equivalent ppi (pixels per inch). The higher the resolution of a scanner, the smoother the scanned images.
Resolution:	A measure of how many pixels per inch are scanned. Generally, more pixels per inch means more detail in the picture and a larger file when saved. Defines the level of detail that can be captured or shown by a scanner, display, or output device. For scanners, the resolution is defined by the number of dots (pixels) per inch (DPI) that can be captured horizontally and vertically, e.g. 300 DPI equals 90,000 pixels per square inch. Screen Resolutions are normally 72 pixels per inch of screen. Additional detail is thrown away by the screen display driver, anyway. For Printer Resolution scans, you need 150 dots per inch and above for good results on the printed output. One must find the level of detail that is still visible in printed output on the printer in question, and not dramatically increase the size of a saved file without bettering the result.
RGB:	Red, Green, Blue. These additive primary colors are the basic elements of white light. By mixing them on a computer monitor or in a scanned image file, other colors can be created. For instance, Red and Green produces Yellow, and equal amounts of all three produce grey.
RIP:	Raster Image Processor. A RIP is a special software that converts scanned images into a color dithered (halftone) image that can be output directly. An image must be ‘ripped’ before it can be output on a CMYK device, e.g., an inkjet printer.
Rotate:	To turn the picture left (clockwise) or right (counter-clockwise) from the orientation in which it was scanned.

Runlength Encoding:	A method of compressing raster or bitmap data by representing “runs” of white or black dots along a scanned line as the number of dots in each run. Many variations of this scheme exist, with varying compression efficiency. Typically, run length compression formats yield a file 20-25% the size of an uncompressed file.
Saturation:	The level of colorfulness of the picture. A picture with high saturation has vivid color. A black and white picture has zero saturation. The purity of a color or the degree to which it is diluted with white light. Red is a highly saturated color. Pink is a diluted red (has lower saturation). Saturation is one attribute of color in the color space called HSV (Hue Saturation, Value). Saturation is a characteristic indicating the vibrancy or intensity of a hue. A color with high saturation will appear more intense than the same color with less.
Scale:	To reduce or enlarge the size of a picture proportionally.
Scanner Calibration:	A program that helps adjust the scanner to achieve stable colors and work with a printer. Calibration gives better scanning results. The program should be run whenever changing printing equipment, toner, and inks, and whenever getting poor results when printing pictures.
Screen Calibration:	A program that helps adjust the computer screen to get the best display of scanned pictures and documents. This program is run during installation and should be used again any time that the computer screen or the lighting around the computer is changed.
SCSI:	Small Computer System Interface. An interface that allows hard disks and other high performance peripherals to be attached to Macintosh and PC computer systems. Specification of interface to computer equipment like disks, printers, scanners etc.
SCSI Card	The printed circuit card that came with the scanner. With its driver software, the card allows the computer to talk to the scanner. The card is ASPI compatible with a SCSI-II output connector.
Shadow Detail:	The amount of detail contained in the dark parts of an image. It is desirable to maintain shadow detail, but there is a risk of decreasing overall contrast if one lightens the shadow too much in an attempt to expose additional detail. If an image is scanned without shadow detail, it will be impossible to regain detail using an image editing program.
Shadow:	The darkest part of a picture; reproduced as black onscreen or when printed.
Sharpness:	An attribute of a scanned image and also an attribute of scanner quality.

sRGB:	Hewlett-Packard and Microsoft proposed the addition of support for a standard color space, sRGB, within the Microsoft operating systems, HP products, the Internet, and all other interested vendors. The aim of this color space is to complement the current color management strategies by enabling a third method of handling color in the operating systems, device drivers and the Internet that utilizes a simple and robust device independent color definition. This is to provide good quality and backward compatibility with minimum transmission and system overhead. Based on a calibrated colorimetric RGB color space well suited to Cathode Ray Tube (CRT) monitors, television, scanners, digital cameras, and printing systems, such a space can be supported with minimum cost to software and hardware vendors.
Stitching:	In large format multiple CCD camera scanners, electronic stitching adjusts for overlap in the field of view of adjacent cameras. Automatic stitching at start of scan ensures that each camera captures the correct number of pixels independently of mechanical and thermal changes.
Subtractive Colors:	The subtractive primary colors: cyan, magenta, yellow. As ink applied to a piece of paper by a printer, these colors absorb light and alter the colors seen by looking at the printed paper. Cyan ink absorbs the red third of the spectrum, magenta ink absorbs the green third, and yellow ink absorbs the blue third. This should theoretically cause the viewer to see a black color, but due to unavoidable impurities in the inks, there is still light reflected and the viewer sees a muddy brown. The absence of CMY pigments results in white.
TIFF:	Tagged Image File Format. One of the most common graphic file formats for line-art and photographic images.
Tonal Distribution:	Tonal Distribution describes the distribution of various bright or dark tones within an image. During the scanning or image editing stage, tones can be redistributed, lightening a dark image or darkening a light one.
Tone Compression:	A term used in scanning and image editing that refers to compressing the broad range of tones and colors in an image down to the narrower range available on a printer.
Tone Curves:	The shape of the tone transfer curves can be adjusted by the user to alter color or tone correction. The lower left end of the curve typically represents the dark portions of a picture and an upward bend will typically lighten the shadows. Similar capabilities exist by working with the middle or highlight parts of the curve. In this way it is possible to alter only certain tonal ranges of an image without making un-wanted changes to other parts of the image.
Tone:	Any color or neutral that is denser than white.
True color:	True color systems provide eight bits for each of the three components (red, green and blue). Therefore true color is often referred to as 24-bit color.

TWAIN:	A standard method of communications that programs can use to send instructions to hardware (such as scanners) and receive data back from them (such as pictures).
UCR:	Under Color Removal. A color separation setting used on color photographs where cyan, magenta and yellow inks are removed from dark, neutral areas and substituted by black ink. The advantages are a reduction in overall ink usage. See also GCR.
Vector Drawing:	Also called Vector File. Consists of mathematically defined elements, such as “Line from A to B”, “Circle with centre and radius”, etc. CAD systems use vector drawings because of their accuracy, relatively low memory requirement and data-file sizes compared to raster images.
Vector File:	Also called Vector Drawing. Consists of mathematically defined elements such as: Line from A to B, Circle with centre and radius etc. CAD systems use vector drawings because of their accuracy and relatively low memory and data file sizes compared to raster images.
Vectorization:	Also called raster-to-vector conversion (RTV). The process of automatically converting a raster (bit-mapped) image into a vector (CAD) drawing.
White Level:	White Level is a setting in scan programs used if one has an original with a background that is not completely white. To get the background to appear as pure white one can set the White Level to a lower value.
White Point Adjustment	An adjustment made that will determine the amount of highlight detail in an image. The white point should be set so that the lightest part of an image will only just have zero detail.
XYZ	The CIE system is based on the description of color as a brightness (luminance) component Y (as described above), and two additional components X and Z. The spectral weighting curves of X and Z have been standardized by the CIE, based on statistics from experiments involving human observers. XYZ tri-stimulus values can describe any color.
Zoom:	The ability to enlarge or shrink the view of the picture in a window. Zoom does not alter the size of the final scanned picture; it only provides a better view while creating a selection border on the screen.

Appendix D

Error Codes

Software Related Errors

System Error: **262-51**
Description: Error closing file, corrupted image.
Corrective Action:
- Image size and resolution exceeds file format limitations. Reduce resolution or image size

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System Error: **55-101**
Description: No scanner found.
Corrective Action:
- Check that the scanner is properly connected and turned on.
- Reboot the system.

System Error: **55-121**
Description: Unknown error.
Corrective Action:
- Restart the system.

System Error: **55-302**
Description: Failed to initialize Basic Calibration.
Corrective Action:
- Check sheet, pressure rollers and glass plate.
- Clean if needed.

System Error: **55-319**
Description: The calibration sheet was not recognized as the right sheet for this scanner.
Corrective Action:
- Please check that the correct sheet is being used.
- Inspect the sheet for scratches or wear, and replace it if the problem continues.

System Error: **55-351**
Description: CIS Alignment and Stitching Failed.
Corrective Action:
- Please check sheet.

System Error: **55-503**
Description: Color calibration failed.
Corrective Action:
- Please clean scanner.
- Please run application again.
- Inspect the sheet for scratches or wear, and replace it if the problem continues.

System Error: **55-509**
Description: IT8 file is not accessible.
Corrective Action:
- If you have received a new Calibration Sheet, please allow application to find reference file over the internet.
- If problem persists reinstall the software to correct the issue.

System Error: **55-513**
Description: The IT8 reference file could not be found on the internet.
Corrective Action:
- Browse to it manually www.contex.com and retrieve the correct IT8 file or use standard.

System Error: **55-523**
Description: Sheet not recognized.
Corrective Action:
- Please clean scanner.
- Please run application again.
- Inspect the sheet for scratches or wear, and replace it if the problem continues.

System Error: **55-530**
Description: When checking new calibration the result was not within the limits.
Corrective Action:
- Inspect the sheet for scratches or wear, and replace it if the problem continues.

System Error: **55-611**
Description: Unknown Scanner Status Error
Corrective Action:
- Reboot system.

System Error: **55-613**
Description: No paper was detected in the scanner.
Corrective Action:
- Place the correct sheet in the scanner.

Scanner Related Errors

Error Code: **100-50122**
Keypad Error Code: None
Level: RD Correctable
Description: Pop request failed, position unknown
Potential Failed Component: External, Firmware
Corrective Action:
- PC (cable, PC hardware/software etc.)
- Firmware.

Error Code: **100-50123**
Keypad Error Code: None
Level: RD Correctable
Description: Pop request failed, invalid command.
Potential Failed Component: External, Firmware
Corrective Action:
- PC (cable, PC hardware/software etc.)
- Firmware.

Error Code: **100-00119**
Keypad Error Code: None
Level: RD Correctable
Description: Invalid SCSI command
Potential Failed Component: External, Firmware
Corrective Action:
- PC (cable, PC hardware/software etc.)
- Firmware.

Error Code: **100-00120**
Keypad Error Code: None
Level: RD Correctable
Description: Invalid value in SCSI CDB
Potential Failed Component: External, Firmware
Corrective Action:
- PC (cable, PC hardware/software etc.)
- Firmware.

Error Code: **100-00121**
Keypad Error Code: None
Level: RD Correctable
Description: Invalid SCSI parameter list length.
Potential Failed Component: External, Firmware
Corrective Action:
- PC (cable, PC hardware/software etc.)
- Firmware.

Error Code: **100-00123**
Keypad Error Code: None
Level: RD Correctable
Description: Unsupported SCSI parameter
Potential Failed Component: External, Firmware
Corrective Action:
- PC (cable, PC hardware/software etc.)
- Firmware.

Error Code: **100-00124**
Keypad Error Code: None
Level: RD Correctable
Description: Invalid SCSI parameter value
Potential Failed Component: External, Firmware
Corrective Action:
- PC (cable, PC hardware/software etc.)
- Firmware.

Error Code: **100-00125**
Keypad Error Code: None
Level: RD Correctable
Description: Incorrect scanner status. Please check the paper path and reload the media.
Potential Failed Component: External, Firmware
Corrective Action:
- PC (cable, PC hardware/software etc.)
- Firmware.

Error Code: **100-00126**
Keypad Error Code: None
Level: RD Correctable
Description: SCSI time-out.
Potential Failed Component: External, Firmware
Corrective Action:
- PC (cable, PC hardware/software etc.)
- Firmware.

Error Code: **100-00127**
Keypad Error Code: None
Level: User Correctable
Description: The scanner keyboard was used during communication with the scanner.
Potential Failed Component: User
Corrective Action:
- User interaction.

Error Code: **100-00128**
Keypad Error Code: None
Level: User Correctable
Description: The scanner has paper jam. Please reload the media.
Potential Failed Component: User, Mech, LMx, SMPS, SUXD
Corrective Action:
- User interaction.
- Related mechanical parts.
- Lamp and Motor driver board (LMx).
- Switch Mode Power Supply (SMPS).
- Main controller board (SUXD).

Error Code: **100-00129**
Keypad Error Code: None
Level: User Correctable
Description: The scanner does not support this test command in normal mode. Please restart test program.
Potential Failed Component: User.
Corrective Action:
- User interaction.

Error Code: **100-00131**
Keypad Error Code: None
Level: User Correctable
Description: The scanner is initializing. Please retry the operation when the scanner has finished initializing.
Potential Failed Component: User.
Corrective Action:
- User interaction.

Error Code: **100-00132**
Keypad Error Code: None
Level: User Correctable
Description: The scanner is warming up. Please retry the operation when the scanner has finished warming up.
Potential Failed Component: User.
Corrective Action:
- User interaction.

Error Code:	**100-50231**
Keypad Error Code:	BOOT (1)
Level:	RD Correctable
Description:	Firmware download is in progress
Potential Failed Component:	Firmware
Corrective Action:	• Firmware.

Error Code:	**100-50232**
Keypad Error Code:	ERR_GENERAL (3)
Level:	User Correctable
Description:	Firmware is incomplete. Please download new firmware.
Potential Failed Component:	User.
Corrective Action:	• User interaction.

Error Code:	**100-50234**
Keypad Error Code:	None.
Level:	User Correctable
Description:	Scanner is in safemode. Please reboot scanner or download new firmware.
Potential Failed Component:	User, SUXD
Corrective Action:	• User interaction. • Main controller board (SUXD).

Error Code:	**100-50237**
Keypad Error Code:	ERR_GENERAL (3)
Level:	User Correctable
Description:	Host PC does not support SSE2 calculations.
Potential Failed Component:	User.
Corrective Action:	• User interaction.

Error Code:	**100-20088**
Keypad Error Code:	ERR_GENERAL (3)
Level:	Support Correctable
Description:	Motor system error, motor movement not detected.
Potential Failed Component:	Mech, SUXD, Cable, Motor
Corrective Action:	

Error Code: **100-50259**
Keypad Error Code: ERR_SU (12)
Level: Support Correctable
Description: Firmware unable to identify SU-board id.
Potential Failed Component: SUXD
Corrective Action:
- Main controller board (SUXD).

Error Code: **100-50260**
Keypad Error Code: ERR_SU (12)
Level: Support Correctable
Description: Firmware unable to identify SU-board variant.
Potential Failed Component: SUXD
Corrective Action:
- Main controller board (SUXD).

Error Code: **100-50600**
Keypad Error Code: ERR_SU (12)
Level: Support Correctable
Description: SUXD, Main controller board error
Potential Failed Component: SUXD, SMPS
Corrective Action:
- Main controller board (SUXD).
- Switch Mode Power Supply (SMPS).

Error Code: **100-50601**
Keypad Error Code: ERR_CB (13)
Level: Support Correctable
Description: CIS unit error
Potential Failed Component: CIS, SUXD
Corrective Action:
- CIS Unit (CIS).
- Main controller board (SUXD).

Error Code: **100-50602**
Keypad Error Code: ERR_GENERAL (3)
Level: User Correctable
Description: Firmware error. Please download latest firmware.
Potential Failed Component: Firmware, SUXD
Corrective Action:
- Firmware.
- Main controller board (SUXD).

Error Code:	**100-50603**
Keypad Error Code:	ERR_GENERAL (3)
Level:	User Correctable
Description:	Unrecoverable scanner state. Please reboot the scanner. Download of the latest firmware and PC application/driver may be required.
Potential Failed Component:	Reboot, Firmware, Software
Corrective Action:	• Reboot scanner. • Firmware. • PC driver/software.

Error Code:	**100-50700**
Keypad Error Code:	ERR_SMC (17)
Level:	User Correctable
Description:	The scanner needs to be activated.
Potential Failed Component:	User.
Corrective Action:	• User interaction.

Error Code:	**100-50701**
Keypad Error Code:	None.
Level:	User Correctable
Description:	Scanner serial does not match.
Potential Failed Component:	User.
Corrective Action:	• User interaction.

Error Code:	**100-50702**
Keypad Error Code:	None.
Level:	User Correctable
Description:	Scanner main board ID does not match.
Potential Failed Component:	User.
Corrective Action:	• User interaction.

Error Code:	**100-50703**
Keypad Error Code:	None.
Level:	User Correctable
Description:	Scanner Activation code has expired (sac).
Potential Failed Component:	User.
Corrective Action:	• User interaction.

Error Code: **100-50704**
Keypad Error Code: None.
Level: User Correctable
Description: Scanner firmware does not support one or more features.
Potential Failed Component: User.
Corrective Action:
- User interaction.

Error Code: **100-50265**
Keypad Error Code: ERR_SU (12)
Level: Support Correctable
Description: IMx, ETH internal DMA error
Potential Failed Component: IMx, SUXD
Corrective Action:
- Interface board (IMx).
- Main controller board (SUXD).

Error Code: **100-50266**
Keypad Error Code: ERR_SU (12)
Level: Support Correctable
Description: IMx, ETH internal DMA error
Potential Failed Component: IMx, SUXD
Corrective Action:
- Interface board (IMx).
- Main controller board (SUXD).

Error Code: **100-50267**
Keypad Error Code: ERR_SU (12)
Level: Support Correctable
Description: IMx, ETH PHY internal I/F error
Potential Failed Component: IMx, SUXD
Corrective Action:
- Interface board (IMx).
- Main controller board (SUXD).

Error Code: **100-50268**
Keypad Error Code: ERR_SU (12)
Level: Support Correctable
Description: SUXD, ETH PHY loopback error
Potential Failed Component: SUXD
Corrective Action:
- Main controller board (SUXD).

Error Code:	**100-50269**
Keypad Error Code:	ERR_SU (12)
Level:	Support Correctable
Description:	IMx, Flash error
Potential Failed Component:	IMx, SUXD
Corrective Action:	• Interface board (IMx). • Main controller board (SUXD).

Error Code:	**100-50270**
Keypad Error Code:	ERR_SU (12)
Level:	Support Correctable
Description:	IMx, RAM error
Potential Failed Component:	IMx, SUXD
Corrective Action:	• Interface board (IMx). • Main controller board (SUXD).

Error Code:	**100-50271**
Keypad Error Code:	ERR_SU (12)
Level:	Support Correctable
Description:	SUXD, Scanner has no MAC address
Potential Failed Component:	SUXD
Corrective Action:	• Main controller board (SUXD).

Error Code:	**100-50705**
Keypad Error Code:	None.
Level:	User Correctable
Description:	Scanner serial cannot be changed while activated.
Potential Failed Component:	User.
Corrective Action:	• User interaction.

Error Code:	**100-50218**
Keypad Error Code:	None.
Level:	RD Correctable
Description:	Data never arrives in the Image
Potential Failed Component:	Buffer, Firmware
Corrective Action:	• Firmware.

Appendix E

Scanner License

Scanner License System, General

Brief description of how the Scanner License works.

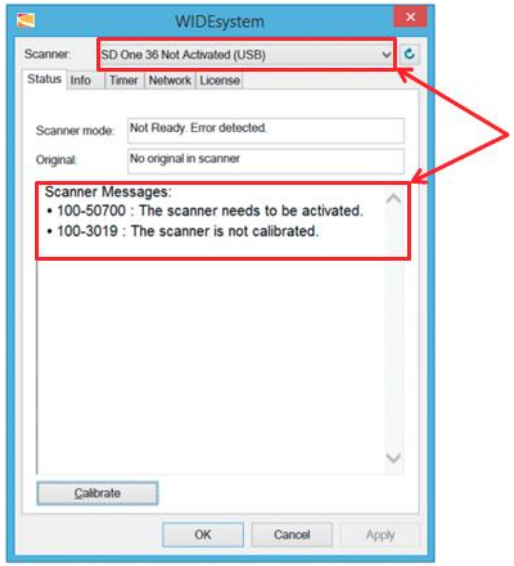
Since this chapter is not scanner specific, some of the illustrations may not apply completely to the scanner you are working on, the CIS Units and transition areas.

Replacing Main Board
Non-functional main board

Loaner Board
Temporary Loaner

Wrong License key used to Activate Scanner

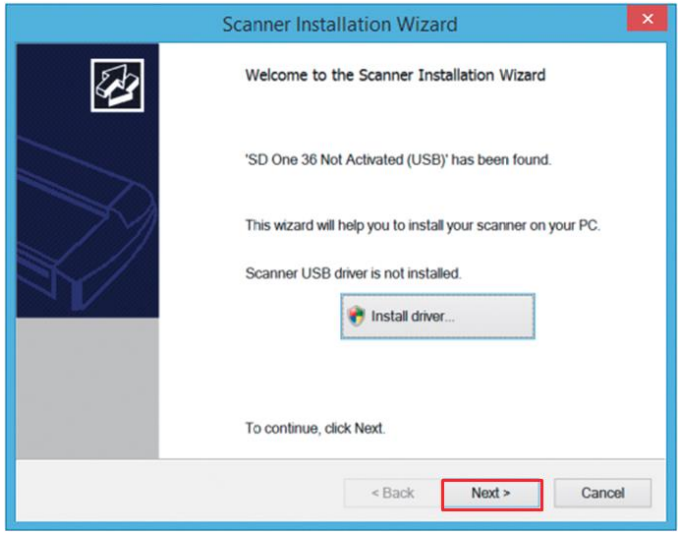
Main Board Replacement



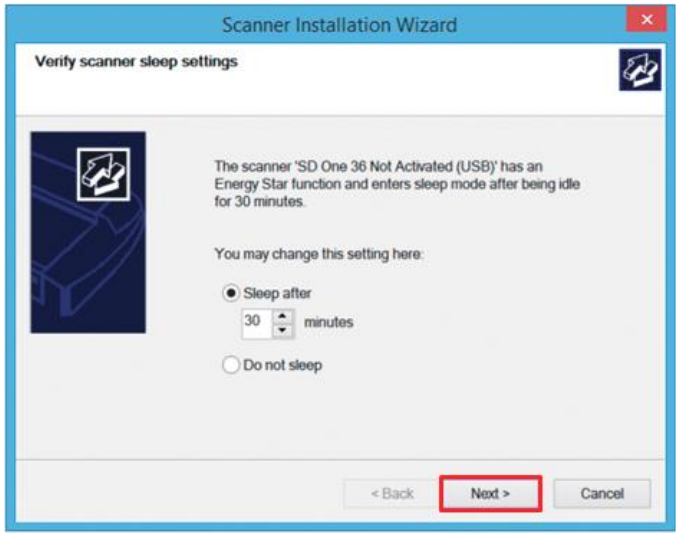
Prerequisites

After the Main Board has been replaced and it has been verified that the scanner is now working correct, the scanner needs to be reactivated.

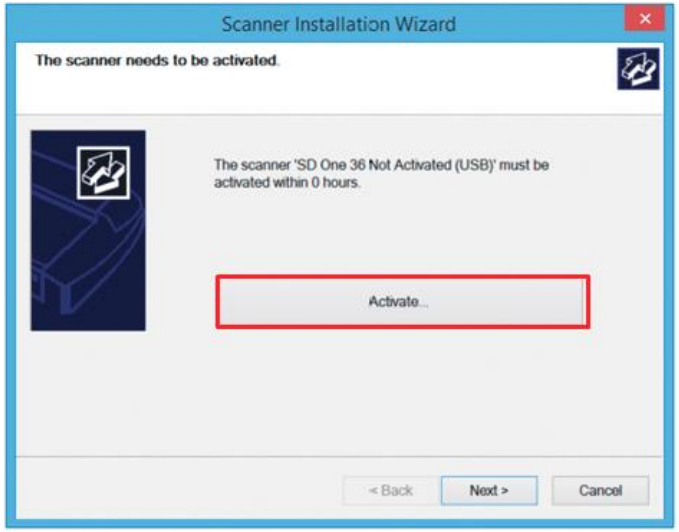
1. When the scanner boots up and the scanner is recognized by the PC it will show up in WIDEsystem as “Not Activated” and not Calibrated.



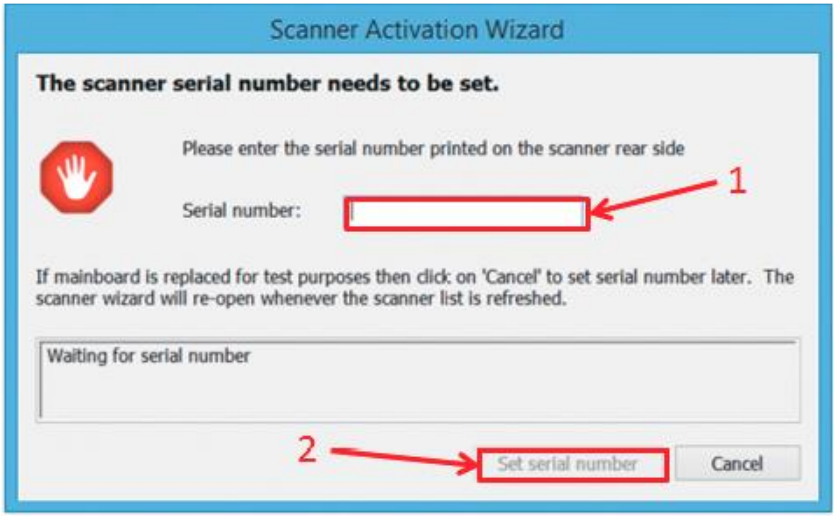
2. The Scanner Installation Wizard will automatically launch when WIDEsystem detects a new scanner.



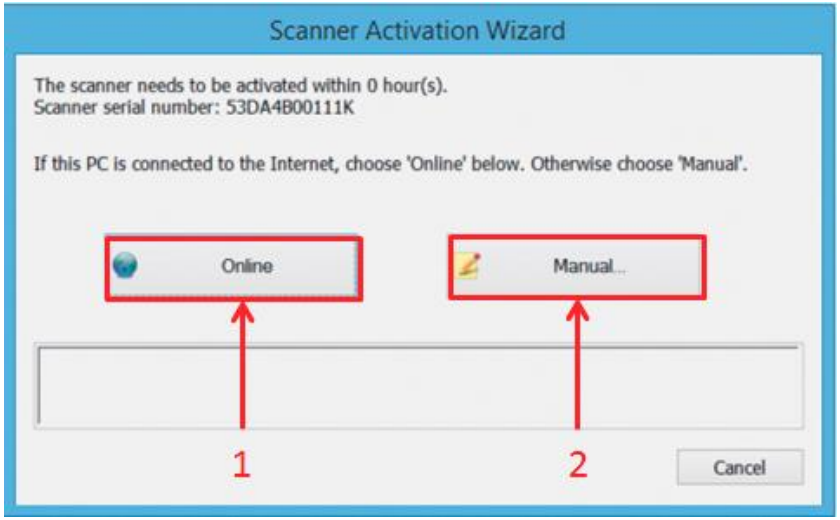
3. The first dialogue is to set up the Energy Star functions.



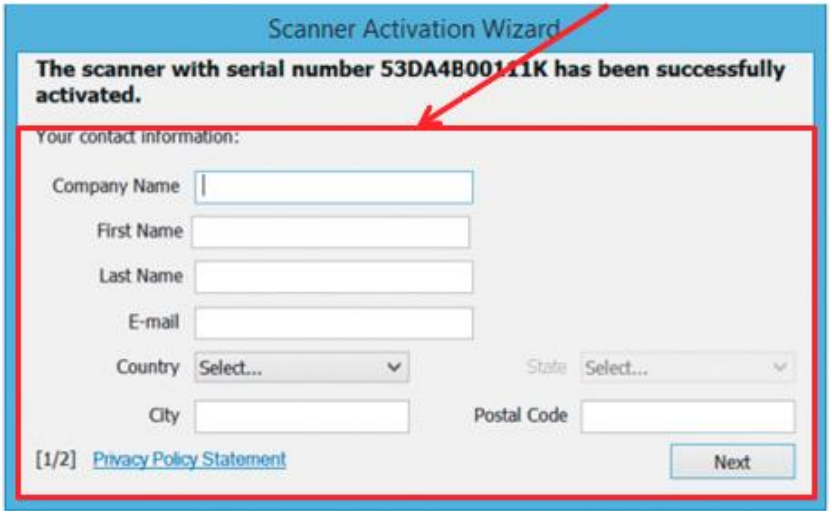
4. All Main board (Spare Parts) are shipped, “Not Activated” and without a serial no.



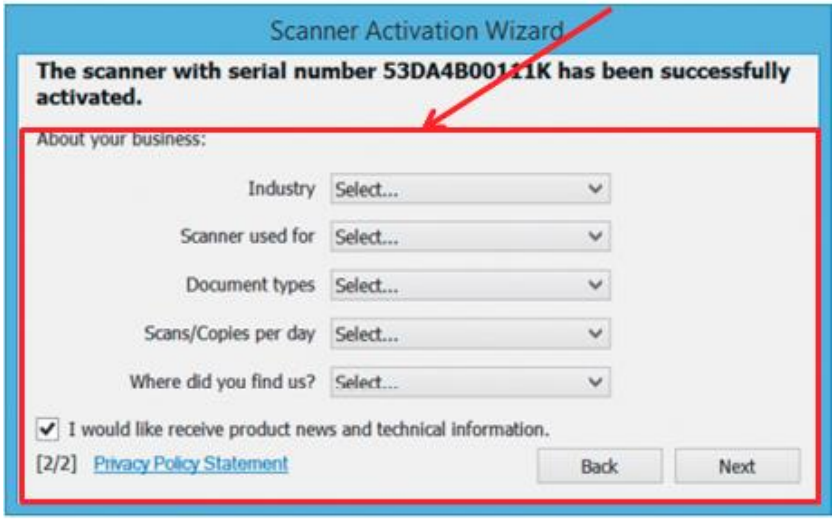
5. In order to activate the scanner you must first type in the serial no. from the back of the scanner.



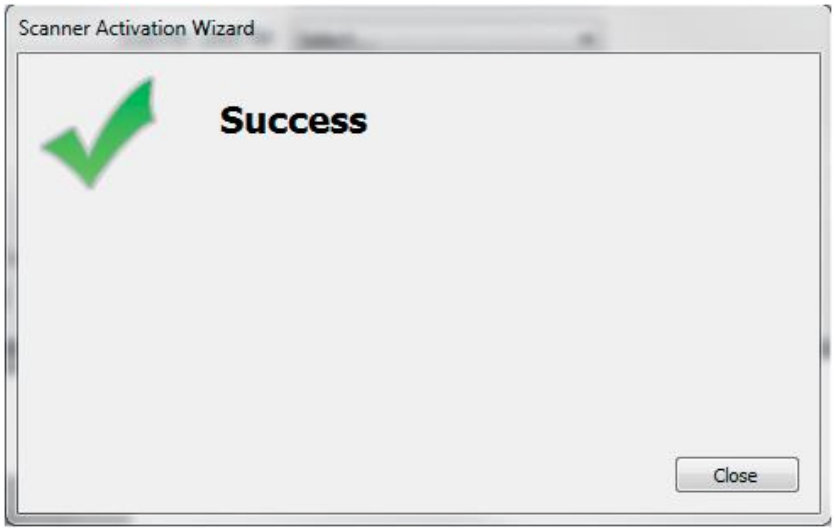
6. (Ref. 1.) If the PC is connected to the internet, it is recommend to do the online activation for ease and to eliminate unnecessary complication due to typing errors.
7. (Ref. 2.) See page E-5



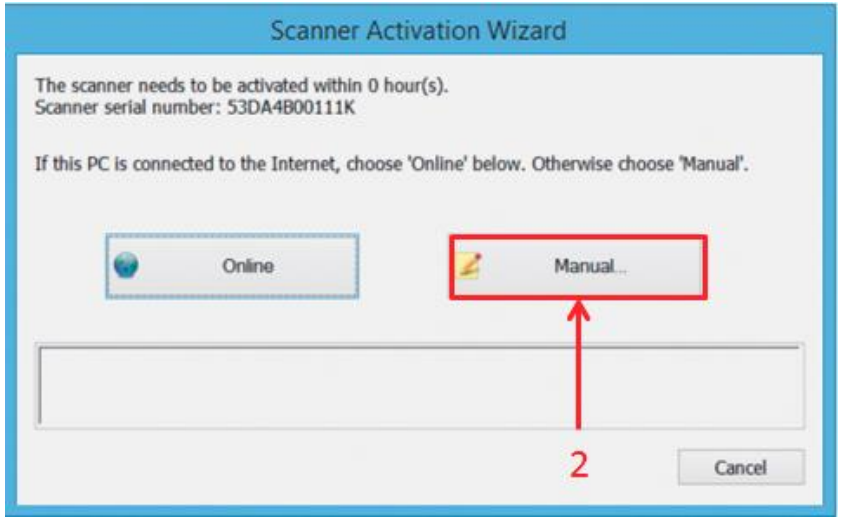
8. Type in the customers contact information.



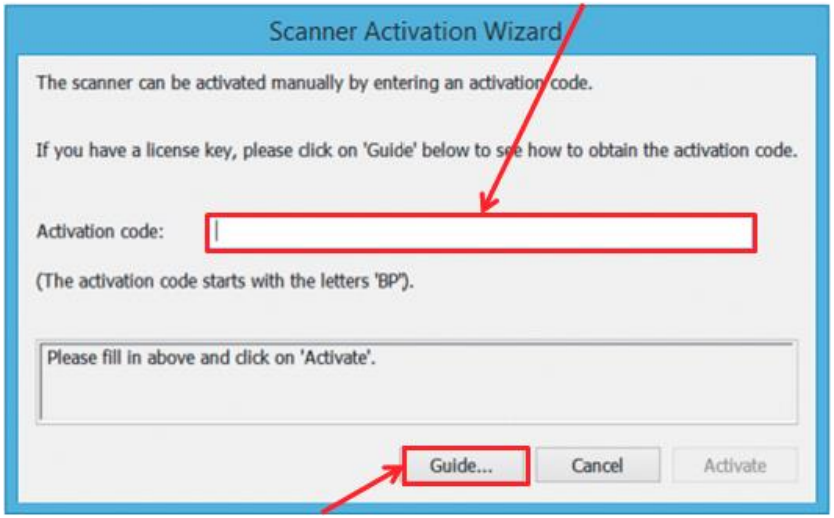
9. Please make the proper selections. Once the Next button is clicked, the wizard will activate the scanner according to the stored registered on the server.



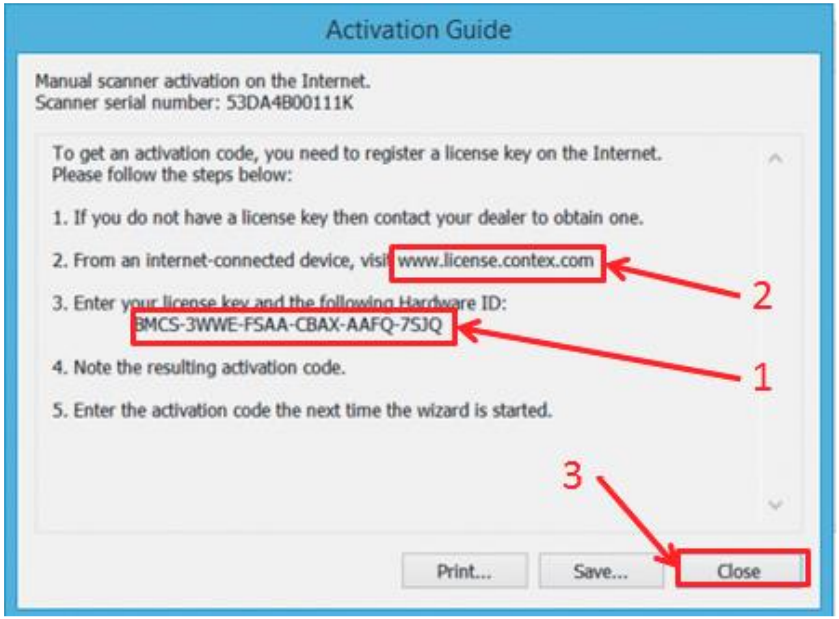
10. The scanner is now ready to be calibrated.



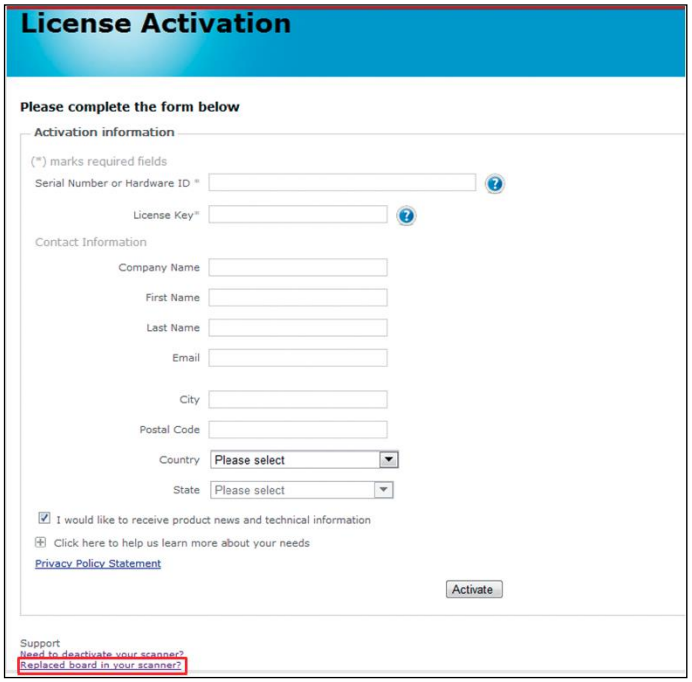
11. Click on Manual.



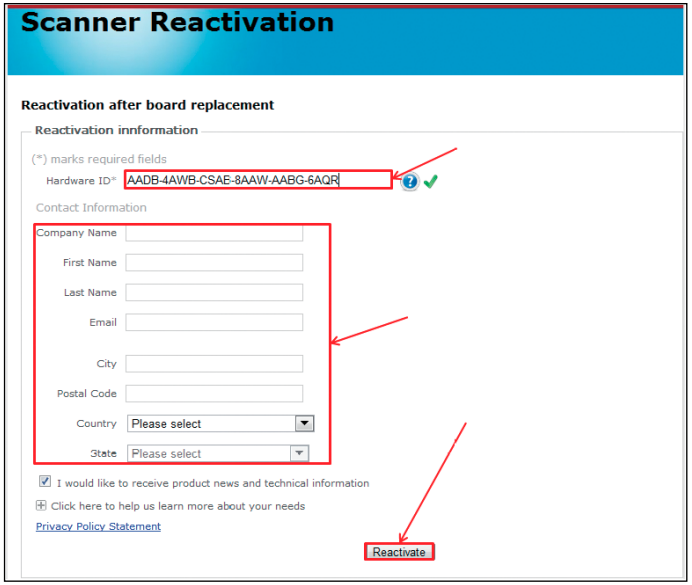
12. Type or copy in the Activation Code if it is available and Click Activate. If the Activate Code is invalid the button will remain greyed out.
13. If the Activation Code is not available select the Guide Button to continue



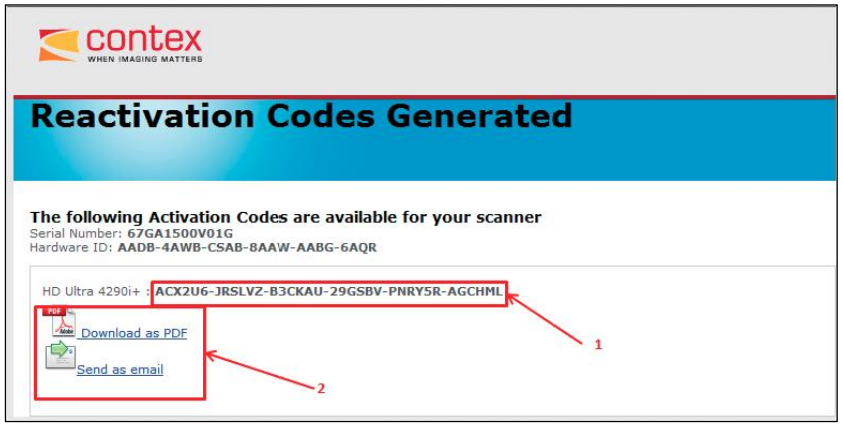
14. (Ref. 1.) Copy the Scanners HW id.
15. (Ref. 2.) Go to the License Activation site license.contex.com
16. (Ref. 3). Click close



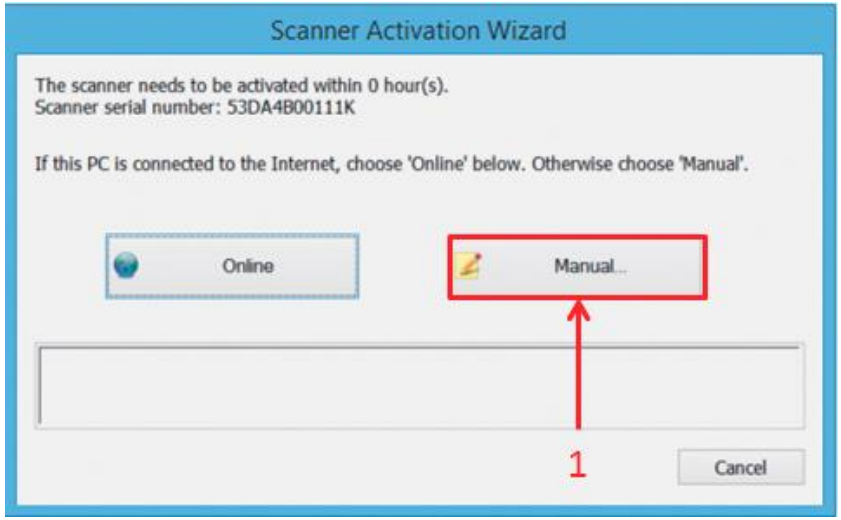
17. Click “Replaced board in your scanner”



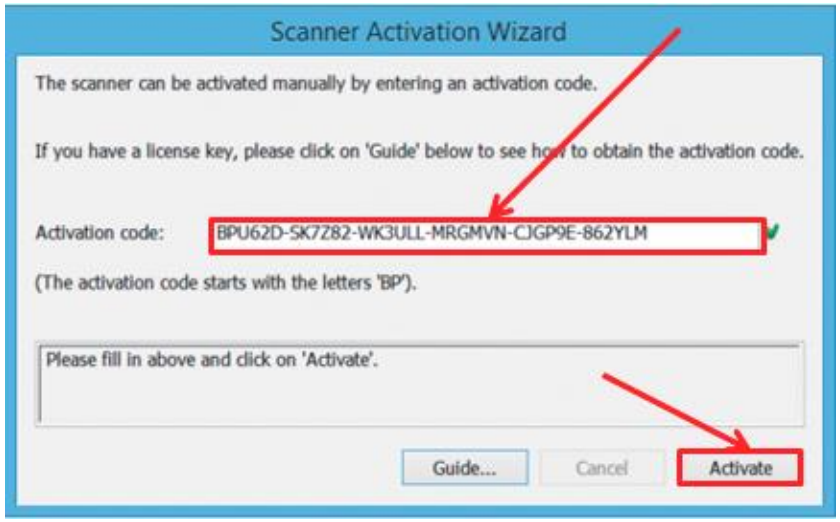
18. Paste in the HW id.
19. Fill in the Company info.
20. Click Reactivate.



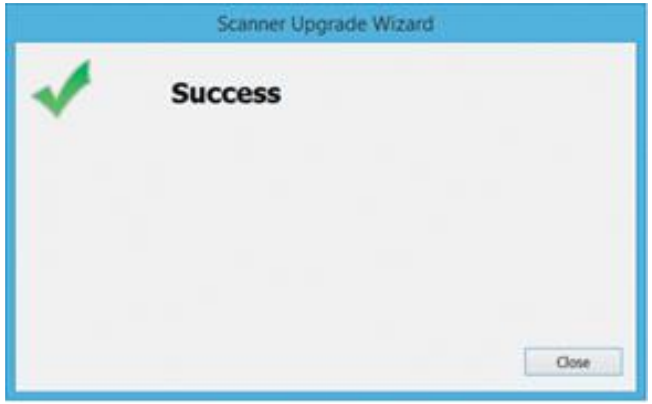
21. Copy the Activation code.
22. You can also email or download a PDF with the Activation code if you are not connected with the scanner.



23. Select Manual.



24. Type or copy in the Activation code Click Activate. If the Activate Code is invalid the button will remain greyed out.



25. The scanner is now successfully activated.

    Be sure to calibrate the scanner.

Temporary Board swap

If you do not have a spare board to fix the scanner or you just want to make sure that a new main board will fix the issue, you can temporarily use a main board from another scanner of the same scanner type, without changing model or serial number. However, once you confirm the main board needs to be replaced and you have ordered a new spare part, you will then be required to go through the Activation Wizard.

Problem with Activation

If the wrong License key has been accidently merged with a new scanner, you will have to contact Support to solve the problem.

Please contact support@contex.com with the following info.

Customer Name.:
Customer email.:
Scanner Serial no.
License key.:
Activation code.: