

BA00206EN



Operating Instructions

descon[®] dos vision public

Item no.: 13002P

**Peristaltic metering pump for dosing of flocculant
with two adjustable dosing quantities**

Read the instruction manual before commissioning the device!

Keep for future reference.

NEXT WATER
GENERATION. [®]

descon

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EC Declaration of Conformity



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erklärt hiermit, dass die Mess- und Regelgeräte mit der Serienbezeichnung:

descon@dos vision

übereinstimmen mit den Bestimmungen folgender EG-Richtlinien:

EMV Richtlinie 2004/108/EG
Niederspannungsrichtlinie 2006/95/EG

sofern die in der technischen Produktinformation angegebenen Einbau- und Installationsvorschriften eingehalten werden.

Die CE-Kennzeichnung erfolgt aufgrund der Richtlinie 2004/108/EG des Rates der Europäischen Gemeinschaft vom 15. Dezember 2004 zur Angleichung der Rechtsvorschriften der Mitgliedsstaaten.

Angewendete Normen und technische Spezifikationen:

- EN 61000 6-13-1(3), VDE 0839 Teil 6-1(3): 2002 (Wohnbereich)
- EN 61000 6-13-2(4), VDE 0839 Teil 6-2(4): 2006 (Industriebereich)
- EN 61326-1: 2006, VDE 0843-20-1: 2006 Elektrische Mess-, Steuer-, Regel- und Laborgeräte- EMV-Anforderung
- EN 61010-1: 2002-08 Sicherheitsbestimmungen für elektrische Mess-, Steuer-, Regel- und Laborgeräte

63755 Alzenau, den 23.11.2018

Bernhard Thoma
Geschäftsführer



General information

1.1 General

This manual contains instructions for installation, commissioning, maintenance and repair of the **descon® dos vision public**.

It is imperative that the safety instructions and notes in bold type are observed at all times!

1.2 Notes in bold

In this technical information, the headings CAUTION, WARNING and NOTE have the following meaning:

- CAUTION: This heading is used if failure or non-compliance with operating instructions, working instructions, prescribed procedures and the like may result in injury or accidents.
- WARNING: This heading is used if failure or non-compliance with operating instructions, work instructions, prescribed procedures and the like may result in damage to the equipment.
- NOTE: This heading is used to call attention to important points.

1.3 Warranty

The manufacturer guarantees the operational safety and reliability of the system only if the following conditions are observed:

Installation, connection, adjustment, maintenance and repair are carried out by authorized personnel. Only original accessories are used. Only original spare parts and wear parts are used for repair or replacement. The device is used in accordance with the instructions in the technical manual (specified normal operation).

| | |
|-----------------|---|
| WARNING: | The use of concentrated hydrochloric acid in the immediate vicinity of our equipment invalidates the guarantee. |
|-----------------|---|

1.4 Safety Instructions

| |
|---|
| <p>The equipment is manufactured and tested in accordance with DIN 57411/German VDE 0411 Part 1, Protective Measures for Electrical Equipment, and left the factory in a safe condition. To maintain this condition and to ensure a safe operation, the user must observe the notes and warnings contained in this technical information. If it must be assumed that a safe operation is no longer possible, turn the device off and put it out of service; secure it against unintended operation.</p> <p>This is the case:</p> <ul style="list-style-type: none">- if the system shows visible damage,- if the system seems no longer operational- after longer periods of storage under unfavourable conditions. |
|---|

| |
|--|
| <p>WARNING: Any assembly and installation information in this manual is based on general, well-known experiences. Since each swimming pool and whirlpool system may have specific requirements, it is the responsibility of the respective plant manufacturer to carry out the installation in such a way that a proper functioning of the overall system is ensured.</p> <p>For installations in public swimming pool facilities, the relevant valid regulations of the Bathing Water Directive/DIN and other applicable rules and regulations must be complied with.</p> |
|--|

1.5 Transport damage

The **descon[®] dos vision public** are carefully packed for transport. Please check that the delivery is complete and undamaged. Any transport damage must be reported immediately (freight carrier).

WARNING: The transport packaging must not be exposed to direct sunlight for long periods during transportation. No liability is taken over for damage caused by non-observance of this information!

WARNING: The transport packaging must not be exposed to moisture during transportation. No liability is taken over for damage caused by non-observance of this information!

1.6 Conformity

The **descon[®] vision** device meets the essential requirements of the following EC directives, harmonized standards and national standards.

EC directives: EC Low Voltage Directive 2006/95/EC / EC EMC Directive (89/336/EEC) Harmonized standards: DIN EN 60335-1 DIN EN 55011/5502 / DIN EN 61000-4-x

2. Product information

The **descon[®] dos vision public** device is used for a precise metering of flocculant in pool water treatment.

The material of the pump hoses must be suitable for the pumped liquid. The hoses are to be replaced in due time. Maintenance works are to be carried out within the prescribed intervals. The operator bears the sole responsibility and liability for uses other than the intended use.

3. Description

3.1 General

The **descon[®] dos vision public** is supplied with a wear-free stepper motor and display, and is ready for connection. The peristaltic pump used in the **descon[®] dos vision devices** is a high-quality microprocessor-controlled peristaltic metering pump with speed-controlled drive for a continuous metering of liquid water treatment agents.

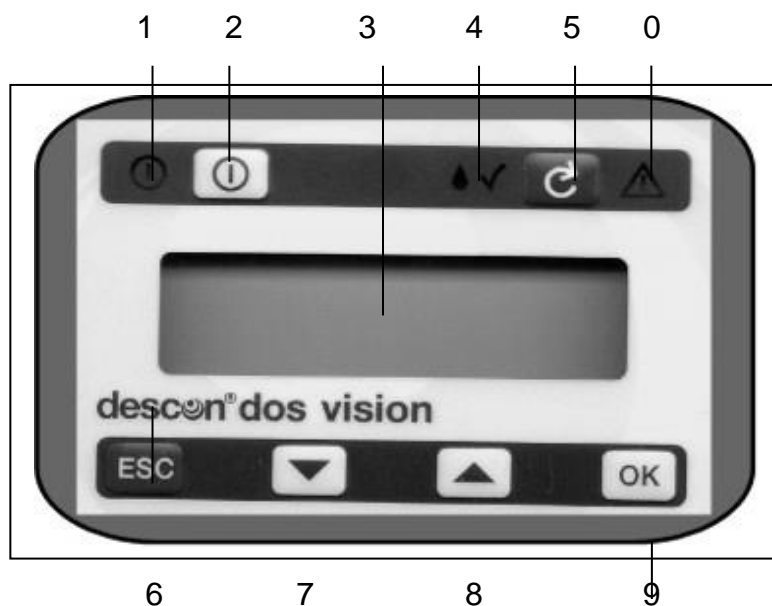
3.2 Operation and function

The peristaltic pump is self-priming, with no seals and no valves. It is controlled by a wear-free stepper motor, a rotor moves spring-loaded pressure rollers, which press the pump hose together. This creates a vacuum that draws in the dosing agent to be pumped.

The speed of the rotor controls the delivery rate according to the set system specifications (flow rate in m³/h and the concentration of the flocculant in ml/m³). The current feed rate is continuously displayed. According to regulations, flocculation is to be carried out continuously during the filter operation.

The flow rate is calculated from the entered circulation capacity of the circulation pump and the desired dosing quantity per m³ circulation capacity. Two different volume flow rates can be entered, e.g. for a reduced dosing capacity with reduced circulation volume (night switching).

3.3 Display



| | | | | | |
|---|-----------------------|--|---|---------------|--|
| 1 | Operation LED (green) | Flashes when the operating voltage is applied, lights when "pump on" | 6 | ESC | Switches back from the menu to the default display |
| 2 | On / Off button | | 7 | Menu down | |
| 3 | Display | | 8 | Menu up | |
| 4 | Pump LED | Flashes when the operating voltage is applied | 9 | OK | Confirms the last entry |
| 5 | Button | Turns the pump on for a minute | 0 | Alarm display | Flashes in case of an empty signal |

NOTE: After about 60 minutes, the backlight of the display is switched off and is re-activated by pressing any key.

4. Technical data

4.1 Chemical resistance

NOTE: Use only water treatment products that have been tested and recommended by descon®, and that have been specifically developed for this application area and are subject to continuous stringent quality controls.

The pump hoses are resistant to the following liquids (without manufacturer-specific additions) (at 25°):

Polyaluminum chloride (PAC), descon® LiquiFloc, descon® SuperFloc
 Sodium hypochlorite (NaClO), e.g. descon® liquiChlor or generated by UNIDES electrolysis systems
 Sodium hydroxide (NaOH), g.t. descon® pH plus
 Sulphuric acid (H₂SO₄) up to 38%
 Organic chlorine products; other chemicals on request.

4.2 Capacity ranges

| Hose kit | Flow rate ml/h | Counter pressure* | Hose Ø |
|---------------------|----------------|-------------------|--------|
| descon-dos DLS 1000 | 5 – 1000 | 1.5 bar | 4.8 mm |

- In case of a lower back pressure, the capacity is increased by about 10%.

4.3 Dimensions and weight (pump)

| | |
|-------------------------------------|---|
| Dimensions (WxHxD): | 90x170x130 mm |
| Operating temperature: | +10° C to max. +40° C |
| Connections suction/metering lines: | DN 4, 6/4 mm |
| Speed range: | 0.1 to 100 rpm |
| Protection class/protection type: | IP 65 / II |
| Mains connection: | 230 V, +/- 10%, 50/60 Hz |
| Power input: | approx. 20 VA max. |
| Counter pressure: | max.: 1.5 bar |
| Suction lift: | max.: 1.8 m |
| Cable entries: | 4 (it is <u>not</u> permitted to add additional openings) |
| Weight: | Approx. 1.25 kg |

(Subject to technical changes)

4.4 Connecting the descon® suction lance

The empty signal of the suction lances is set to “**normally closed contact**” at the factory, i.e.: if the float is in the lower position, the contact is closed - there is an empty signal in the device. If the float is raised, or if the liquid level in the tank is sufficient, the contact is interrupted - there is no empty signal to the device (function for all **descon®** measuring and control devices as well as the **descon® dos vision pH And floc**).

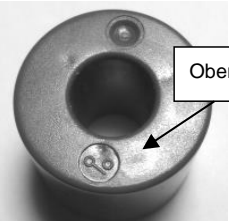



NOTE

For **descon®** peristaltic metering pumps **descon® dos sm and mcs**,
descon® dos vision public,

the float on the suction lance must be switched to “**normally open contact**”.

Switching is made by plugging the float  to another port.



| Normally open contact | | Normally closed contact | |
|--|--|---|--|
|  |  |  |  |
| descon® sm and descon® mcs descon® vision- public | | Measuring and control devices – descontrol® S / R / M descontrol® XV, XV-S, XV-M descon® vision pH, floc | |

- Unscrew the PVC cap from the foot valve (Caution - ball may fall out)
- Remove the lock ring from the float shaft
- Turn the float and plug it on (symbol on the float)
- Put on the lock ring on the float shaft
- Screw on the PVC cap on foot valve
- (Attention - ball and seat must be installed)

5. Installation and assembly

An ambient temperature of 0°C to +40 °C must be ensured at the installation place.

NOTE: If the peristaltic pump is used for pumping of hazardous substances, all safety regulations, provisions, guidelines and dangers involved in the handling and storing of hazardous substances must be observed. The corresponding safety data sheets must be observed.

RECOMMENDATION: Use drip trays under the chemical containers to avoid danger and damage, e.g. due to a rupture of a pump hose (item no. 15090T).

The max. suction lift of 1.80 m must not be exceeded. The peristaltic metering pump is to be installed at a location that is protected from:

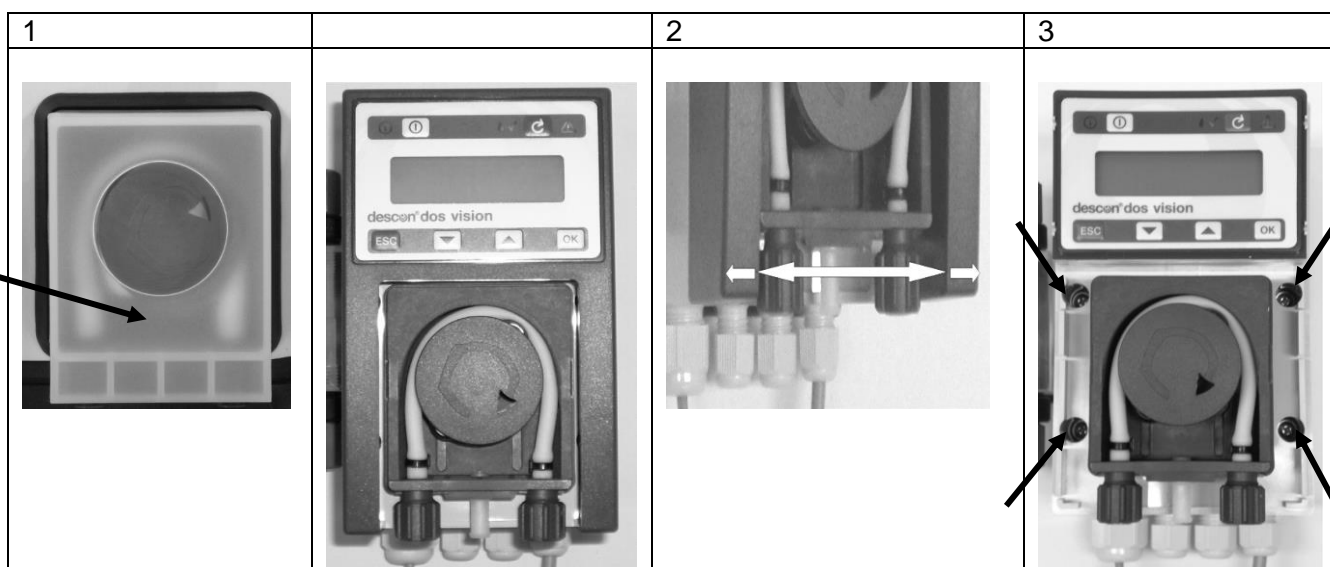
- > mechanical damage
- > shocks
- > water, steam, alkalis and acids

Installation position: Vertically above the level of supply container, hose connections on bottom.

For fixing and connecting an empty signal device (electrical connection of the suction lance or an analog signal), the upper part of the pump has to be removed.

CAUTION: Disconnect the pump from the mains supply before opening the housing!

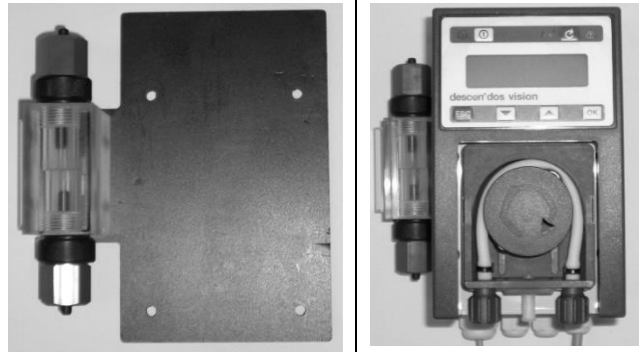
1. Remove the transparent pump rotor cover (pry to the front).
2. Press the frame (anthracite colour) to the right and left and pull it forward (latching points on bottom - ideally, loosen left and right alternatively).
3. Loosen the four screws, then remove the entire pump housing from the base plate (Phillips screwdriver).



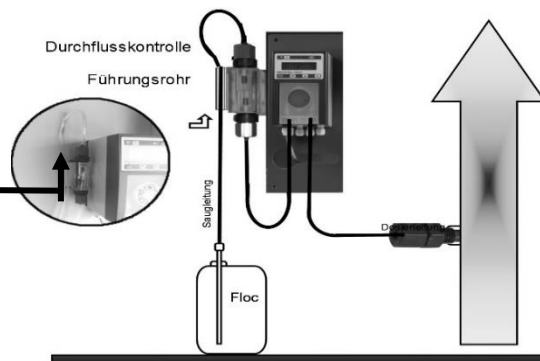
NOTE

Right next to the metering pump, a flow control for a visual inspection of the metering function can be installed. This is mounted on a wall mounting plate, which can also be used as drilling template for the pump.

Item no. 13225



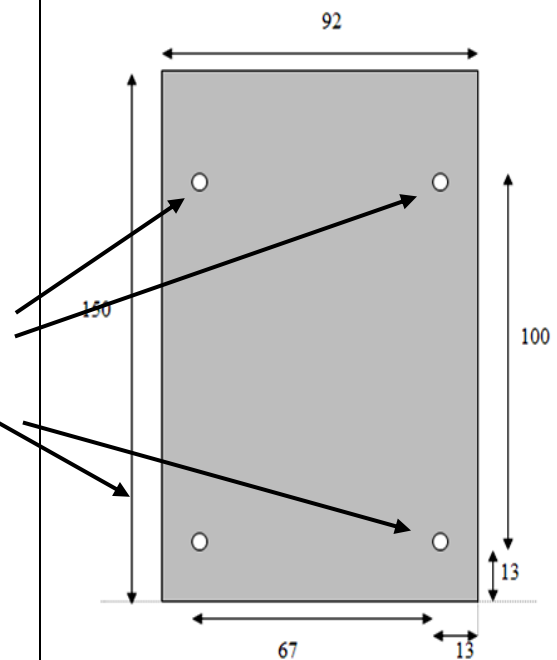
Moisten the suction hose and slide it through the guide tube.



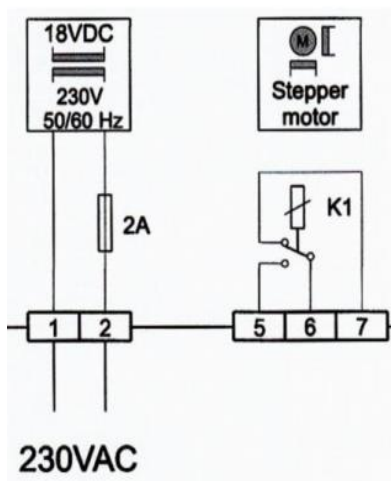
4. Attach the wall mounting plate for the pump on the wall using four screws/dowels. When using the flow control, the screws are inserted through the pump housing and the wall mounting plate.
5. Connect electrical connections (empty signal, controller stop or dosing quantity 1, dosing quantity 2).
6. Reassemble in reverse order.
- 7.



Wall fastenings



5.1 Electrical connections:



| GND | SL | GND | FG | GND | Sens. | +18V |
|--|----|---|----|---|-------|------|
| | | | | | | |
| Connection Suction lance | | Connection Release dosing quantity1 Normal quantity | | Connection Release dosiermenge2 Reduced quantity | | |
| | | Display: vision public e.g. Q1 = 40 ml/h | | Display: vision public e.g. Q2 = 20 ml/h | | |
| If contact is open, dosing is interrupted | | If contact is open, dosing is interrupted | | If contact is open, dosing Q1 is displayed and added, or pump is in "Standby". | | |
| Display: Error Low Level | | Display: vision public Q1 = 0.0 ml/h | | | | |

Connection options:

Version A with dosing quantity Q1: One dosing quantity -
with constant circulation volume/flow rate

The device is supplied with continuous voltage 230V. A jumper is inserted at GND/FG at the factory. A closed contact at **terminal GND/FG** means release and dosing in the set dosing quantity Q1. The flocculation can be switched on/off via a filter control at **terminal GND/FG** (potential-free normally open contact).

Version B with dosing quantity Q1 and Q2: Two dosing quantities -
for alternating circulation quantities/volume flows

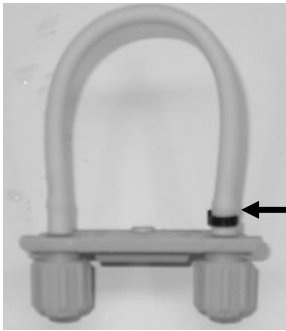


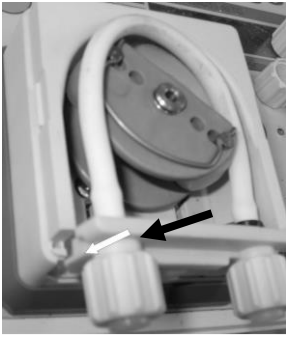
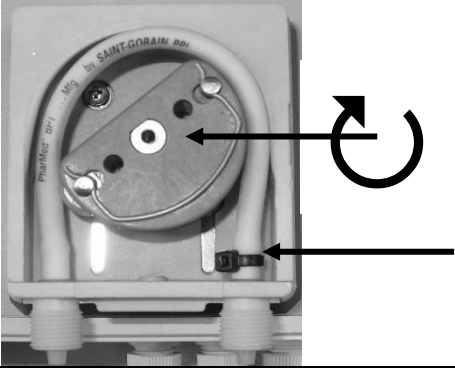
A second potential-free make contact for a second freely adjustable dosing quantity can be connected to **terminals GND/Sens.** A closed contact at **terminal GND/FG** and a closed contact at **terminals GND/Sens** means release and dosing in the set dosing quantity Q2. Used, for example, for circuits with frequency-controlled pumps, or for circuits that switch off one of the two circulation pumps overnight.

Alternatively:

The unit is only supplied with voltage when the filter system is in circulation mode, i.e. the metering pump starts up directly with the preset dosing quantity when voltage is applied.

In both variants, a suction lance with empty signal device can be connected to the **terminals GND/SL** (potential-free break contact). A jumper is inserted at the factory. If a suction lance (tank empty signal) is connected, **jumper GND/SL** must be removed. When the contact is closed (float on the suction lance is on top), dosing is enabled - according to version A or B.

5.2 Assembly of the pump hose kits

| | |
|--|--|
|  <p>Right side</p> | <p>The pump hose kit has not been inserted on delivery. Insertion or replacement according to the instructions in this manual.</p> <p>The pump hose kit (complete with bracket, hose and fittings) and the roller rotors are wearing parts and are available as spare parts.</p> |
|  | <p>Remove the transparent cover and the rotor cover (anthracite colour) from the pump.</p>  |
|  | <p>Press the retaining plate of the pump hose kit into the guide groove of the pump housing.</p> <p>The pressure connection - which can be recognized from black cable clip - must be placed on the right side.</p> |
|  | <p>Thread pump hose into pump housing by simultaneously turning rotor clockwise.</p> <p>Black cable clip = pressure side</p> |

Place the rotor cover and the transparent housing cover back on the pump housing.

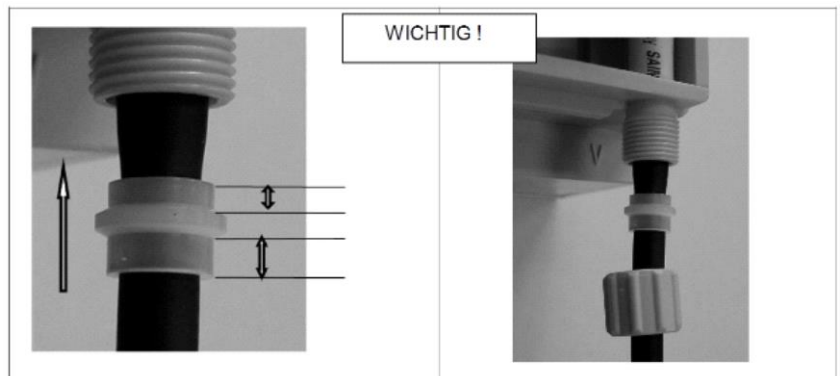
Demounting is carried out in reverse order:

WARNING: Take care not to overstretch or bend the pump hose while inserting it.

After the pump hose kit has been properly installed, the suction and pressure lines can be connected. In the direction of rotation of the pump (clockwise), the suction line is connected on the left and the metering line on the right. The pumps are self-priming, and shut off automatically on the pressure side.

5.3 Connection of suction and pressure lines

Attach the union nut and clamp ring onto the end of the hose (see figure). Press the end of the hose firmly onto the cone and secure it with the nut.



6. Initial commissioning

Turn on the power for the device. The display is turned on and the green LED (1) flashes, the metering pump is in standby mode.

Alternately, the current mode and the current pump capacity is displayed.

Turn on the dosing function by pressing the On/Off button (2). The green LED (1) lights, LED (4) flashes, the dosing quantity xx ml/h is displayed.

7. Parameter entry (system-specific settings)

Factory-entered parameters:

| | |
|-------------------|---|
| Circulation 1 | 0 m ³ /h |
| Dosing quantity 1 | 0.0 ml/m ³ (dependent on the concentration of the used flocculant) |
| Circulation 2 | 0 m ³ /h |
| Dosing quantity 2 | 0.0 ml/m ³ (dependent on the concentration of the used flocculant) |

The settings menu is opened by simultaneously pressing the two buttons ▼ and ▲.

Use the two direction keys ▲ and ▼ to call individual menu items.

A function is called up with ✓ (OK key). When pressing ✓ (OK key) again, the function can be modified. Use ▲ and ▼ to change the values and confirm with ✓ (OK key). If you do not want to accept the setting, press the "ESC" key once.

7.1 Display and input menu

| | | | |
|---------------------------|--------------------------------|--------------------------------|------------------------|
| vision public Off mode | vision public Q1 = 2.0 ml/h | vision public Q2 = 1.0 ml/h | vision public Error |
|---------------------------|--------------------------------|--------------------------------|------------------------|

| Display changes depending on operating status. To set: press ▲ and ▼ simultaneously | | | | | | | | | |
|--|--------|---|----|---|---------|-------------------------------|----|---|----|
| Settings vision public | ▼ | Only for service | | | | | | | |
| Input date, time | ✓ ▼ | Input during initial commissioning: date and time | | | | | | | |
| Parameters vision public | OK | Input circulation 1 | OK | Circulation 1 15 m ³ /h Use ▲▼ to set | OK ▼ | Input dosing quantity 1 | OK | Dosing quantity 1 0.5 ml/m ³ Use ▲▼ to set | OK |
| | | Input circulation 2 | OK | Circulation 2 05 m ³ /h Use ▲▼ to set | OK ▼ | Input dosing quantity 2 | OK | Dosing quantity 2 0.5 ml/m ³ Use ▲▼ to set | OK |
| | | | | Setting range 0 m ³ /h – 999 m ³ /h | | | | Setting range 0 ml/m ³ – x ml/m ³ | |
| Info vision public | OK | Ver. 3.45 | ▼ | Flocculation | | | | | |
| vision public configuration | | no function | | | | | | | |
| NOTE: The entries for circulation capacity and dosing quantity in ml/m ³ are limited so that the result of circulation capacity x dosing quantity does not exceed 600 ml/h. | | | | | | | | | |

7.2 Settings (Code 0000)

Further settings or function changes are reserved exclusively for the factory service and are protected by a code.

NOTE After the code has been entered incorrectly three times, operation of the device is blocked for 20 minutes. (Do not switch off the operating voltage during this off-period!)

8. Maintenance

| | |
|-----------------|---|
| NOTE: | The delivery hoses of the metering pumps have a limited working life. The pump hose kits must be replaced after a maximum of 1 year of operation, or earlier in case of high stress (pump running continuously at 100 %). |
| WARNING: | Non-observance of the instruction to regularly replace the pump hose kits voids any warranty! |

When using metering lines supplied by **descon®**, the short side of the clamp ring shows in the direction of the pump housing (see figure on page 11). With a different wall thickness, it may be necessary to install the jacking ring the other way round.

| | |
|--------------|---|
| NOTE: | It is recommended to cut off about 1 cm of the suction and pressure lines each time the hose kit is replaced, in order to maintain the tightness of the connections. |
|--------------|---|

If the pump does not start by itself during **initial commissioning** of the pump or after **replacement** of the pump hose kit, the drive shaft is to be turned by hand for **one** complete turn. By pressing the button (5), the pump can be switched to full capacity for 1 minute, which is interrupted by pressing the button (5) again.

If there is too much air in the suction and pressure line during the start-up phase, the pump should be supported. Proceed as follows: Loosen the metering line at the pressure site of the pump and allow the liquid to drip out into a plastic container. Reconnect the line after it has been completely ventilated.

| |
|--|
| Be careful when handling chemicals! |
|--|

Removal /replacement of the pump hose kits

- De-energise the device.
- Wear protective gloves and safety goggles.
- Remove the transparent pump hose cover.
- Remove the suction and pressure lines under a cloth.

WARNING: Risk of splashing!

See: Assembly of the pump hose kits - Chapter 5

- Pull the hose kit out of the pump housing to the front and
- turn the rotor by hand to remove the pump hose kit from the housing.
- Assembly is carried out in reverse order.

9. Troubleshooting

| Fault | Cause | What to do |
|---------------------------------|--|--|
| Device is off, pump not running | <ul style="list-style-type: none"> ● No mains connection ● Operating voltage is locked ● Power failure | <ul style="list-style-type: none"> ☞ Check voltage supply |
| Device is on, pump not running | <ul style="list-style-type: none"> ● No request for metering ● Container empty, empty signal has responded ● External controller stop | <ul style="list-style-type: none"> ☞ Turn the filter pump on ☞ Replace the container ☞ Unlock controller stop |
| Pump not priming | <ul style="list-style-type: none"> ● Leaking suction line ● Cross section of suction line too narrow or too long ● Suction line clogged ● Foot valve defective or not placed vertically in the container ● Suction line bent ● Crystalline deposits in the suction line ● Pump hose torn or defective | <ul style="list-style-type: none"> ☞ Replace or seal the suction line ☞ Check against factory data ☞ Flush the suction line or replace it ☞ Place the suction line higher ☞ Install suction line correctly, check for damage ☞ Clean the line ☞ Replace |
| No dosing | <ul style="list-style-type: none"> ● Metering valve clogged ● Metering line clogged ● Metering line leaking ● Counter pressure at injection point too high | <ul style="list-style-type: none"> ☞ Check for above errors ☞ Check injection point, clean if required ☞ Check / replace the metering line ☞ Check pressure of overall system (max. 1.5 bar) |
| Pump running too slowly | <ul style="list-style-type: none"> ● Temperature monitor has responded, the inside temperature of the pump surpassed 70°C ● Dosing quantity set to more than 600 ml/h | <ul style="list-style-type: none"> ☞ Allow the pump to cool, determine the cause of failure ☞ Choose a lower setting |
| Error message "Error Low Level" | <ul style="list-style-type: none"> ● Tank empty ● Suction lance defective | <ul style="list-style-type: none"> ☞ Fill container or replace ☞ Replace suction lance |

10. Wear parts

NOTE: Wear parts (hoses and rotors) are not covered by the warranty. Use only original spare parts and wear parts.

Hose kit
 pump hose mounted on hose support =
 pump hose kit)

13204 Hose kit for descon®dos vision
 DLS 1000
 (5-1000 ml/h, hose d=Ø 4,8 mm)

13220 Roller rotor with thrust block bearing and spring



11. Factory settings

| Parameter | Factory setting | Changed parameters |
|-------------------|------------------------------|--------------------|
| Circulation 1 | $Q = 0 \text{ m}^3/\text{h}$ | |
| Dosing quantity 1 | $0.0 \text{ ml}/\text{m}^3$ | |
| Circulation 2 | $Q = 0 \text{ m}^3/\text{h}$ | |
| Dosing quantity 2 | $0 \text{ ml}/\text{m}^3$ | |

12. Maintenance documentation

The **descon[®] dos vision public** peristaltic metering pump should be serviced at regular intervals by a specialist company.

| Date: | Type of maintenance / spare parts used: | Carried out by: |
|-------|---|-----------------|
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