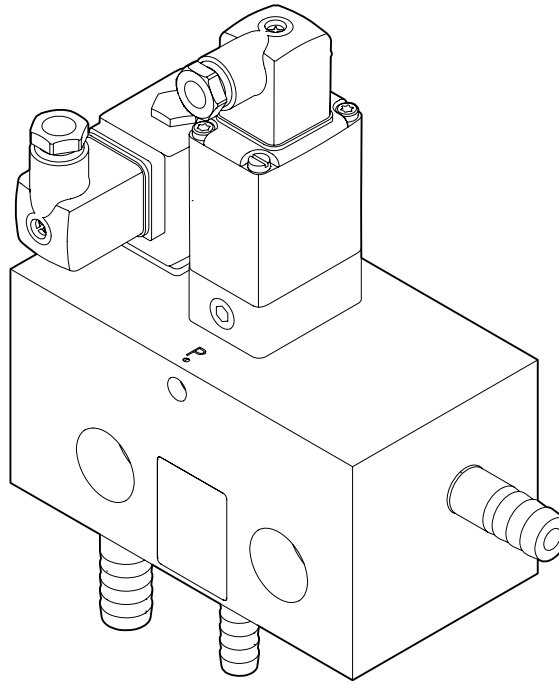
BA01982C/07/EN/01.19
71469878
2019-11-30



# Operating Instructions
# **Chemoclean CYR10B**

Cleaning injector for spray cleaning and retractable assemblies



Endress+Hauser
People for Process Automation

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# 1 About this document

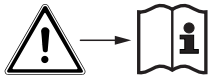
## 1.1 Warnings

| Structure of information | Meaning |
|---|---|
| DANGER<br>**Causes (/consequences)**<br>If necessary, Consequences of non-compliance (if applicable)<br>▶ Corrective action | This symbol alerts you to a dangerous situation.<br>Failure to avoid the dangerous situation **will** result in a fatal or serious injury. |
| WARNING<br>**Causes (/consequences)**<br>If necessary, Consequences of non-compliance (if applicable)<br>▶ Corrective action | This symbol alerts you to a dangerous situation.<br>Failure to avoid the dangerous situation **can** result in a fatal or serious injury. |
| CAUTION<br>**Causes (/consequences)**<br>If necessary, Consequences of non-compliance (if applicable)<br>▶ Corrective action | This symbol alerts you to a dangerous situation.<br>Failure to avoid this situation can result in minor or more serious injuries. |
| NOTICE<br>**Cause/situation**<br>If necessary, Consequences of non-compliance (if applicable)<br>▶ Action/note | This symbol alerts you to situations which may result in damage to property. |

## 1.2 Symbols

| Symbol | Meaning |
|---|---|
| | Additional information, tips |
| | Permitted or recommended |
| | Not permitted or not recommended |
| | Reference to device documentation |
| | Reference to page |
| | Reference to graphic |
| | Result of a step |

## 1.3 Symbols on the device

| Symbol | Meaning |
| --- | --- |
|  | Reference to device documentation |

# 2 Basic safety instructions

## 2.1 Requirements for personnel

- Installation, commissioning, operation and maintenance of the measuring system may be carried out only by specially trained technical personnel.
- The technical personnel must be authorized by the plant operator to carry out the specified activities.
- The electrical connection may be performed only by an electrical technician.
- The technical personnel must have read and understood these Operating Instructions and must follow the instructions contained therein.
- Faults at the measuring point may only be rectified by authorized and specially trained personnel.

Repairs not described in the Operating Instructions provided must be carried out only directly at the manufacturer's site or by the service organization.

## 2.2 Designated use

The CYR10B cleaning injector is a spray cleaning system for pH / ORP sensors as well as oxygen and turbidity sensors. The system is based on the same principle as a Venturi water jet pump, which is used to mix motive water and cleaning agent. The resulting mixture is used to clean a sensor in an appropriate assembly.

Use of the device for any purpose other than that described, poses a threat to the safety of people and of the entire measuring system and is therefore not permitted.

The manufacturer is not liable for damage caused by improper or non-designated use.

## 2.3 Workplace safety

As the user, you are responsible for complying with the following safety conditions:
- Installation guidelines
- Local standards and regulations

**Electromagnetic compatibility**
- The product has been tested for electromagnetic compatibility in accordance with the applicable European standards for industrial applications.
- The electromagnetic compatibility indicated applies only to a product that has been connected in accordance with these Operating Instructions.

## 2.4 Operational safety

**Before commissioning the entire measuring point:**

1. Verify that all connections are correct.
2. Ensure that electrical cables and hose connections are undamaged.
3. Do not operate damaged products, and protect them against unintentional operation.
4. Label damaged products as defective.

**During operation:**

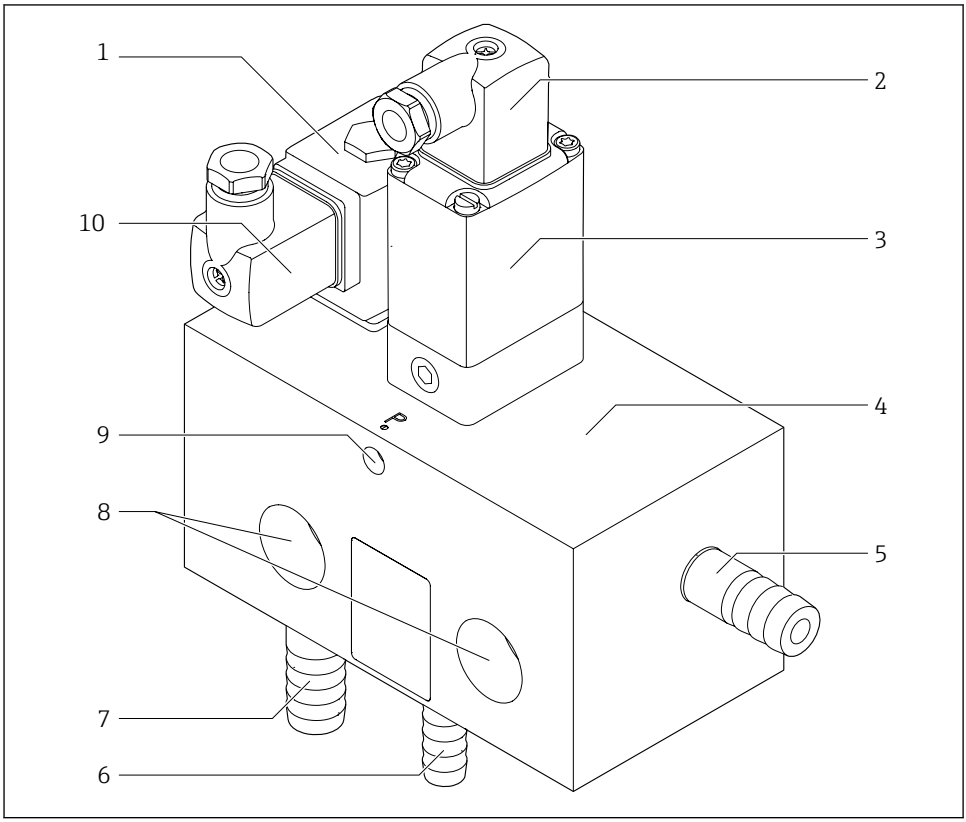
- If faults cannot be rectified:
  products must be taken out of service and protected against unintentional operation.

## 2.5 Product safety

The product is designed to meet state-of-the-art safety requirements, has been tested, and left the factory in a condition in which it is safe to operate. The relevant regulations and European standards have been observed.

# 3 Product description

## 3.1 Product design

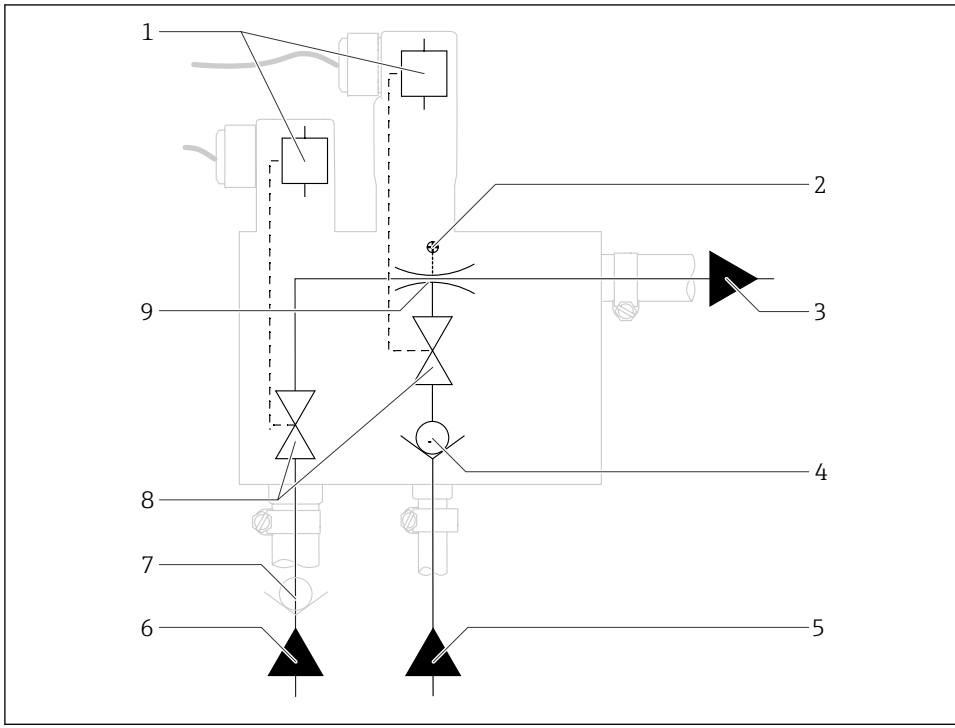



*1 CYR10B injector unit*

*1 Motive water valve*
*2 Device plug for cleaner valve*
*3 Cleaner valve*
*4 Housing block*
*5 Connection for cleaning mixture*
*6 Connection for cleaner (suction line)*
*7 Connection for motive water*
*8 Attachments for securing the unit*
*9 Metering screw*
*10 Device plug for motive water valve*

## 3.2 Operating principle

### 3.2.1 Function of CYR10B




*2 Operating principle*

*1 Valve controls*
*2 Metering screw*
*3 Outlet for cleaning mixture (the installation of a check valve is recommended on the assembly side)*
*4 Check valve*
*5 Inlet for cleaner (suction line)*
*6 Inlet for motive water*
*7 Check valve (to be provided by customer)*
*8 Solenoid valves*
*9 Water jet pump*

The cleaning injector uses the Venturi principle to mix motive water and cleaner to form a cleaning mixture.

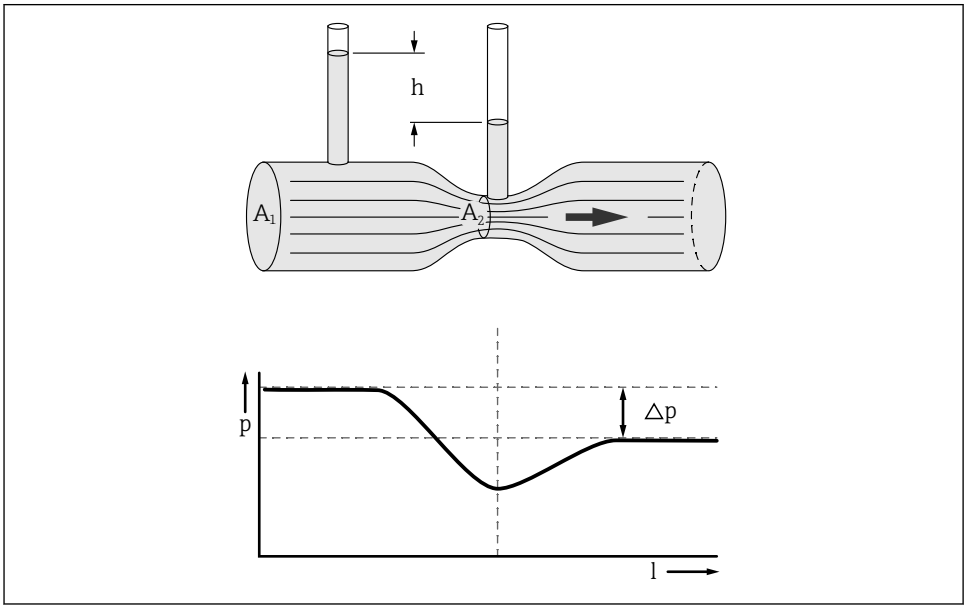
In the process, the motive water flows through a water jet pump (injector) to the spray head. The resulting negative pressure causes the cleaner to be sucked in and mixed with the motive water.

The flow rate of motive water and cleaner is controlled by the Liquiline CM44x via two solenoid valves in the injector.

The mixture ratio can be configured using a metering screw.→ 29

Hose lines are used to supply the motive water and cleaner and to route the cleaning mixture to the spray head.

### 3.2.2 Function of water jet pump




*3 How a water jet pump works*

The water jet pump installed in the injector functions without mechanical components in accordance with the Venturi principle.

For this purpose, cross-section $A_1$ of the motive water line within the injector is tapered in sections to match cross-section $A_2$.

The suction line for the cleaner is attached at the point of the narrowest cross-section. This is where the speed of the motive water is at a maximum. The high speed induces a negative pressure in the suction line, causing the cleaner to be sucked in and mixed with the motive water.

The suction process causes a reduction in pressure downstream from the water jet pump.

# 4 Incoming acceptance and product identification

## 4.1 Incoming acceptance

1. Verify that the packaging is undamaged.
   ↳ Notify the supplier of any damage to the packaging.
   Keep the damaged packaging until the issue has been resolved.
2. Verify that the contents are undamaged.
   ↳ Notify the supplier of any damage to the delivery contents.
   Keep the damaged goods until the issue has been resolved.
3. Check that the delivery is complete and nothing is missing.
   ↳ Compare the shipping documents with your order.
4. Pack the product for storage and transportation in such a way that it is protected against impact and moisture.
   ↳ The original packaging offers the best protection.
   Make sure to comply with the permitted ambient conditions.

If you have any questions, please contact your supplier or your local Sales Center.

## 4.2 Product identification

### 4.2.1 Nameplate

The nameplate provides you with the following information on your device:
- Manufacturer identification
- Device name
- Order code
- Serial number
- Input and output values
- Ambient and process conditions
- Protection class
- Approvals as per version ordered
- Safety information and warnings

### 4.2.2 Product identification

**Product page**

www.endress.com/CYR10B

**Interpreting the order code**

The order code and serial number of your product can be found in the following locations:
- On the nameplate
- In the delivery papers

**Obtaining information on the product**

1. Go to www.endress.com.

2. Call up the site search (magnifying glass).
3. Enter a valid serial number.
4. Search.
   ↳ The product structure is displayed in a popup window.
5. Click on the product image in the popup window.
   ↳ A new window (**Device Viewer**) opens. All of the information relating to your device is displayed in this window as well as the product documentation.

**Manufacturer's address**

Endress+Hauser Conducta GmbH+Co. KG
Dieselstraße 24
D-70839 Gerlingen

## 4.3 Scope of delivery

The delivery comprises:
- 1 CYR10B in the version ordered
- 1 Operating Instructions (DE)
- 1 Operating Instructions (EN)
- 1 Operating Instructions (FR)

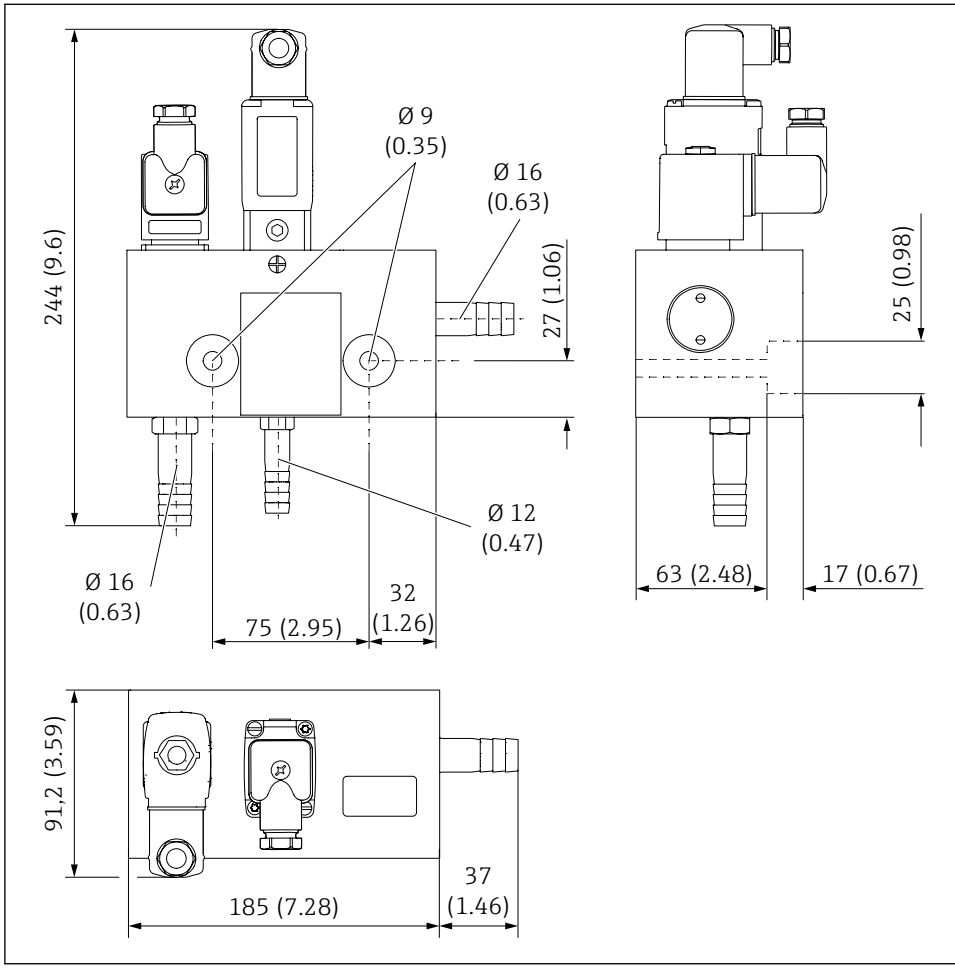
## 4.4 Certificates and approvals

The product meets the requirements of the harmonized European standards. As such, it complies with the legal specifications of the EU directives. The manufacturer confirms successful testing of the product by affixing to it the CE mark.

# 5 Installation

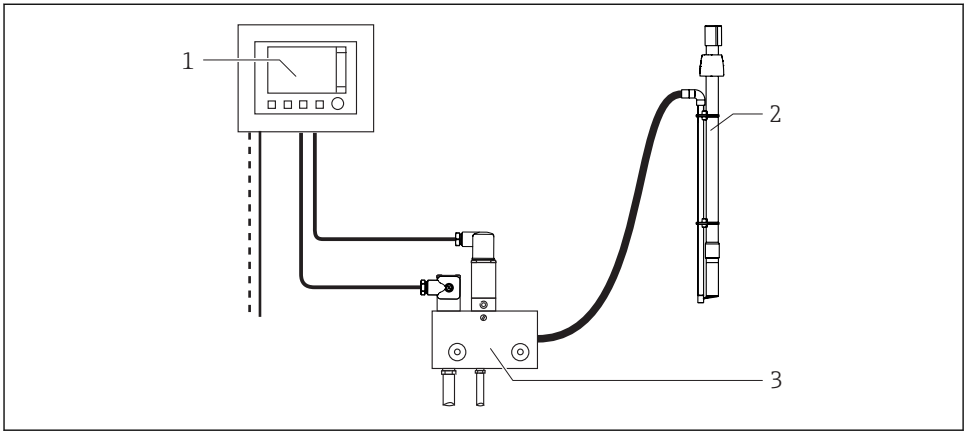
## 5.1 Installation conditions

### 5.1.1 Dimensions




4 *Dimensions in mm (in)*

### 5.1.2 Complete measuring system for spray cleaning

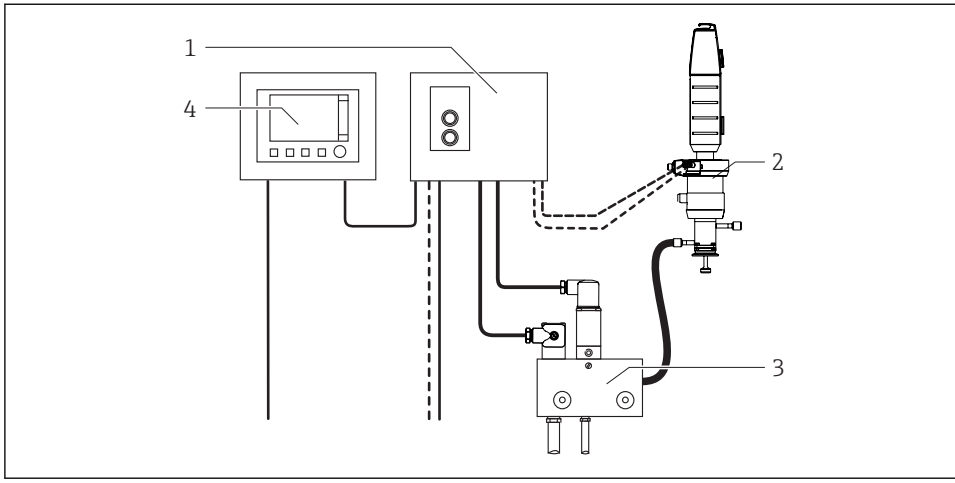



*5 Measuring system without CYC25*

*1 Transmitter Liquiline CM44x*
*2 Assembly CYA112 with mounted spray cleaning 71158245*
*3 Cleaning injector CYR10B*

A complete measuring system comprises:
- 1 cleaning injector CYR10B
- Liquiline CM44x (incl. sensor) with at least 2 relays and Chemoclean function
- Assembly with mounted spray cleaning (e. g. CYA112 with mounted spray cleaning 71158245 / 71158246)

### 5.1.3 Complete measuring system for retractable assembly




*6 Measuring system with CYC25*

*1 Cleanfit Control CYC25*
*2 Pneumatic retractable assembly*
*3 Cleaning injector CYR10B*
*4 Transmitter Liquiline CM44x*

A complete measuring system comprises:
- 1 cleaning injector CYR10B
- Cleanfit Control CYC25 with pneumatic pilot valve to control the assembly
- Liquiline CM44x (including sensor) with at least 4 relays and Chemoclean Plus (optional 2 digital inputs for feedback)
- Pneumatically controlled retractable assembly, optionally with limit switches, e.g. Cleanfit CPA875 or CPA871 in standard version.

## 5.2 Installation conditions

### 5.2.1 Maximum cable lengths

| Cable between | Maximum cable length |
|---|---|
| CYR10B and CYC25 | 30 m (98 ft) |
| CYR10B and CM44x | 30 m (98 ft) |

### 5.2.2 Maximum hose lengths

| Hose between | Maximum hose length | Maximum delivery head |
|---|---|---|
| CYR10B and cleaner vessel | 3 m (9.8 ft) | 3 m (9.8 ft) |

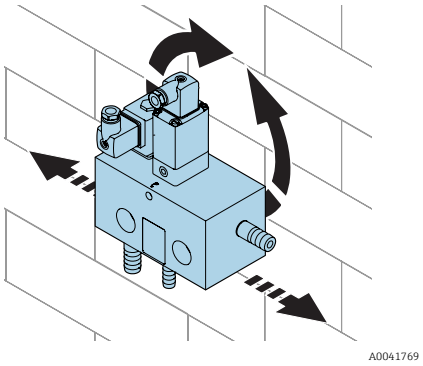
## 5.3 Mounting the device

### 5.3.1 Wall mounting

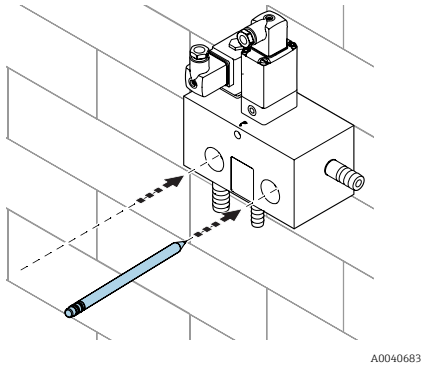
Use suitable fastening fixtures* that are appropriate to the condition of the wall.

Pay attention to the characteristics of the device:
- Screw diameter: max. 9 mm (0.35 in)
- Length of bore in device: 63 mm (2.45 in)
- Device weight: 2 kg (4.41 lb)

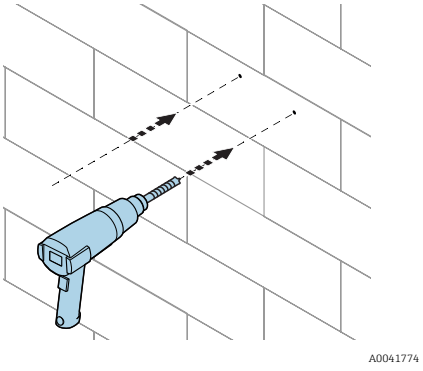
* to be provided by the customer



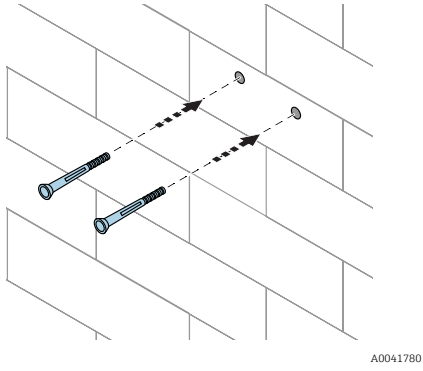

1. Position the device horizontally.



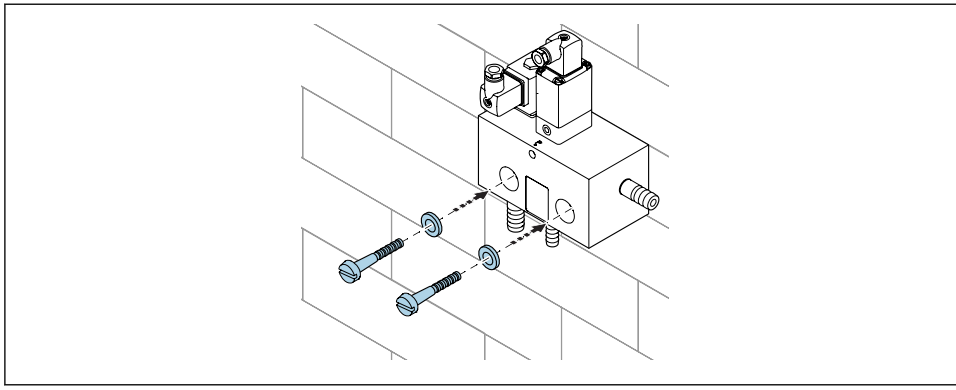

2. Mark the hole positions.




3. Drill the holes.




4. Affix wall plugs.



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5. Secure the device using screws and washers.

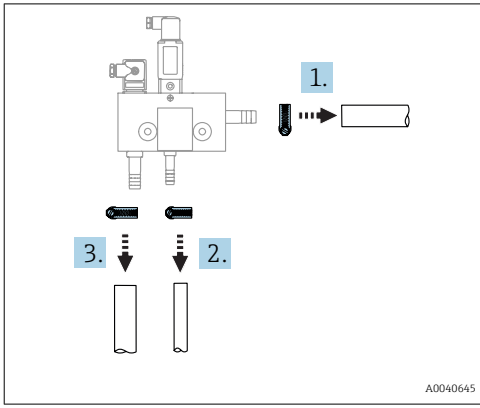
### 5.3.2 Mounting the hoses

**NOTICE**

**Contamination of pipes (solder residue, welding beads, metal chips, sealing material)!**
Damage to cleaning injector and sensor.
► Remove contamination in pipes before mounting and commissioning.

**NOTICE**

**Kinks in hose lines!**
Assembly cannot be cleaned.
► Check hose lines for kinks and protect hoses against kinking.

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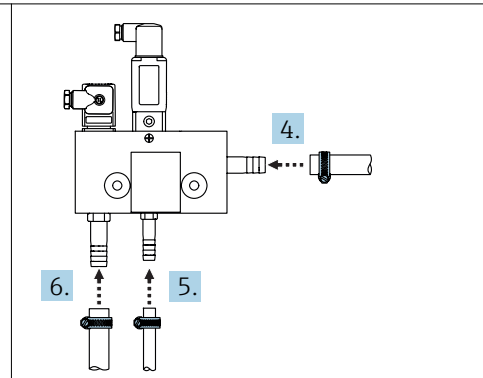


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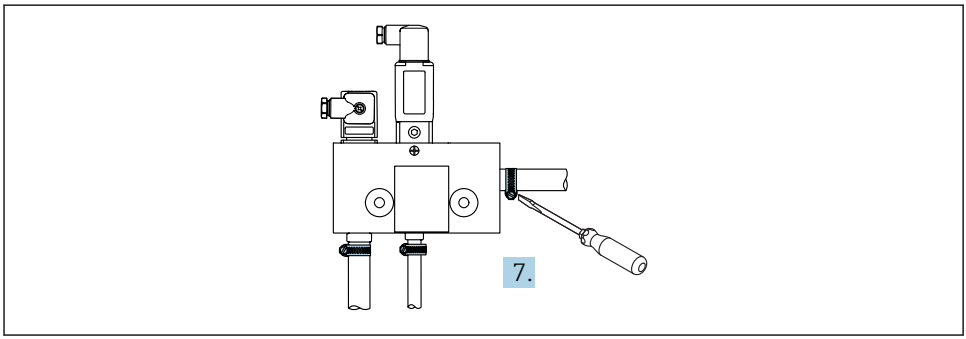
1. Attach hose clip* to hose for cleaning mixture.
2. Attach hose clip* to hose for cleaner.
3. Attach hose clip* to hose for motive water.

4. Attach hose* for cleaning mixture to hose nozzle D 16 (G 3/8).
5. Attach hose* for cleaner to hose nozzle D 12 (G 1/4).
6. Attach hose* for motive water to hose nozzle D 16 (G 3/8).

* to be provided by the customer

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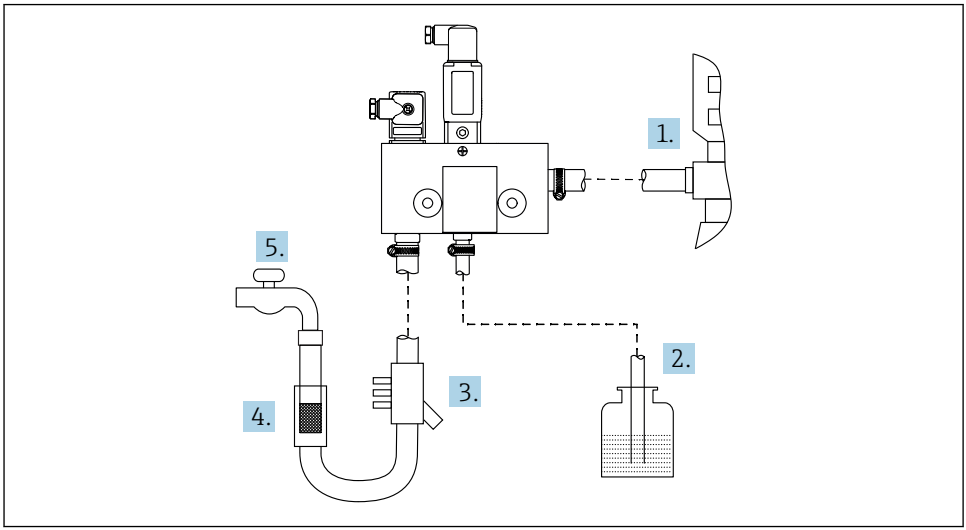
7. Tighten the hose clips with a screwdriver.

### 5.3.3 Mounting the process connections

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1. Connect hose* for cleaning mixture to assembly.
2. Connect hose* for cleaner to vessel for cleaner.
   ↳ Place vessel for cleaner* below the device.
3. Connect backflow valve* to hose for motive water.

4. Connect dirt trap (pore size 0.25 mm (0.01 inch)* to hose for motive water.
5. Connect hose* for motive water to water supply.

* to be provided by the customer

An additional check valve is recommended at the assembly.

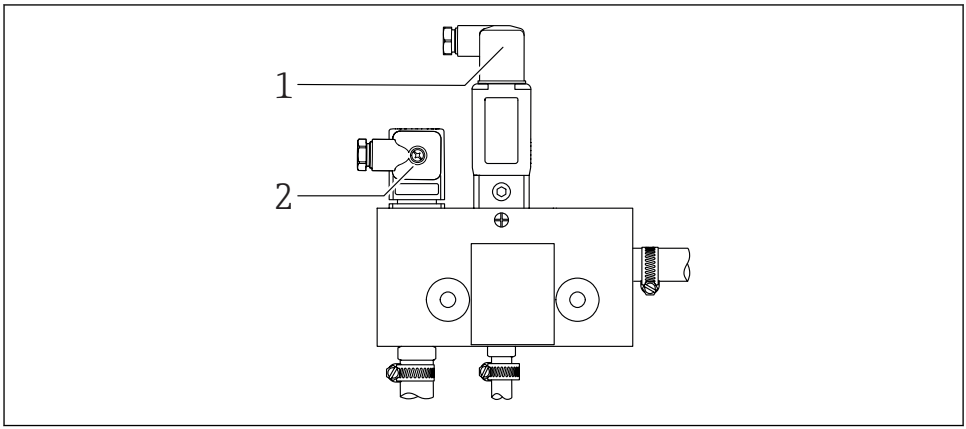
## 5.4 Post-installation check

Put the device into operation only if you can answer "yes" to the following questions:

1. Is the device positioned securely and does it have the correct orientation?
2. Are all hose connections leak-tight and positioned securely?
3. Are all hoses undamaged and kink-free?

# 6 Electrical connection

## 6.1 Connection conditions

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*1 Device plug for cleaner valve*
*2 Device plug for motive water valve*

## 6.2 Connecting the device

**⚠ WARNING**

**Device is live!**

Incorrect connection may result in injury or death!

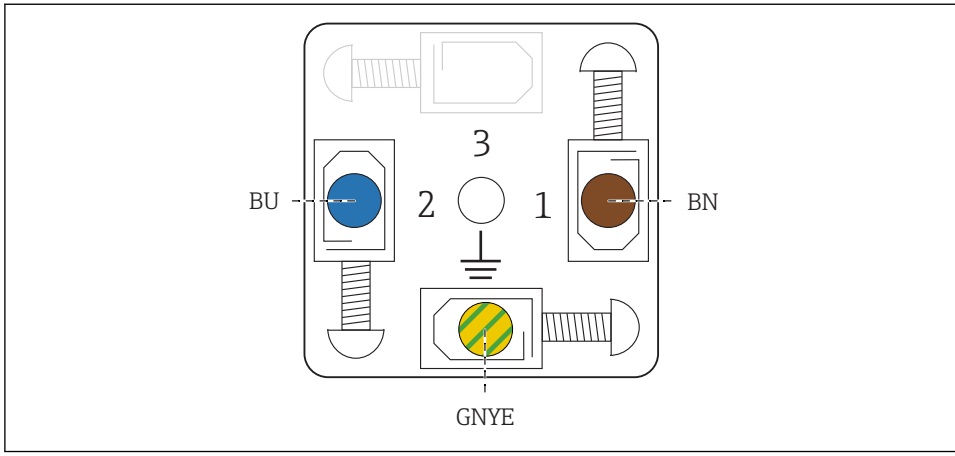
- The electrical connection may be performed only by an electrical technician.
- The electrical technician must have read and understood these Operating Instructions and must follow the instructions contained therein.
- **Prior** to commencing connection work, ensure that no voltage is present on any cable.

**NOTICE**

**The device does not have a power switch**

- The customer must provide a protected circuit breaker in the vicinity of the device.
- The circuit breaker must be a switch or power switch, and you must label it as the circuit breaker for the device.
- At the supply point, the power supply must be isolated from dangerous live cables by double or reinforced insulation in the case of devices with a 24 V supply voltage.

### 6.2.1 Wiring diagram

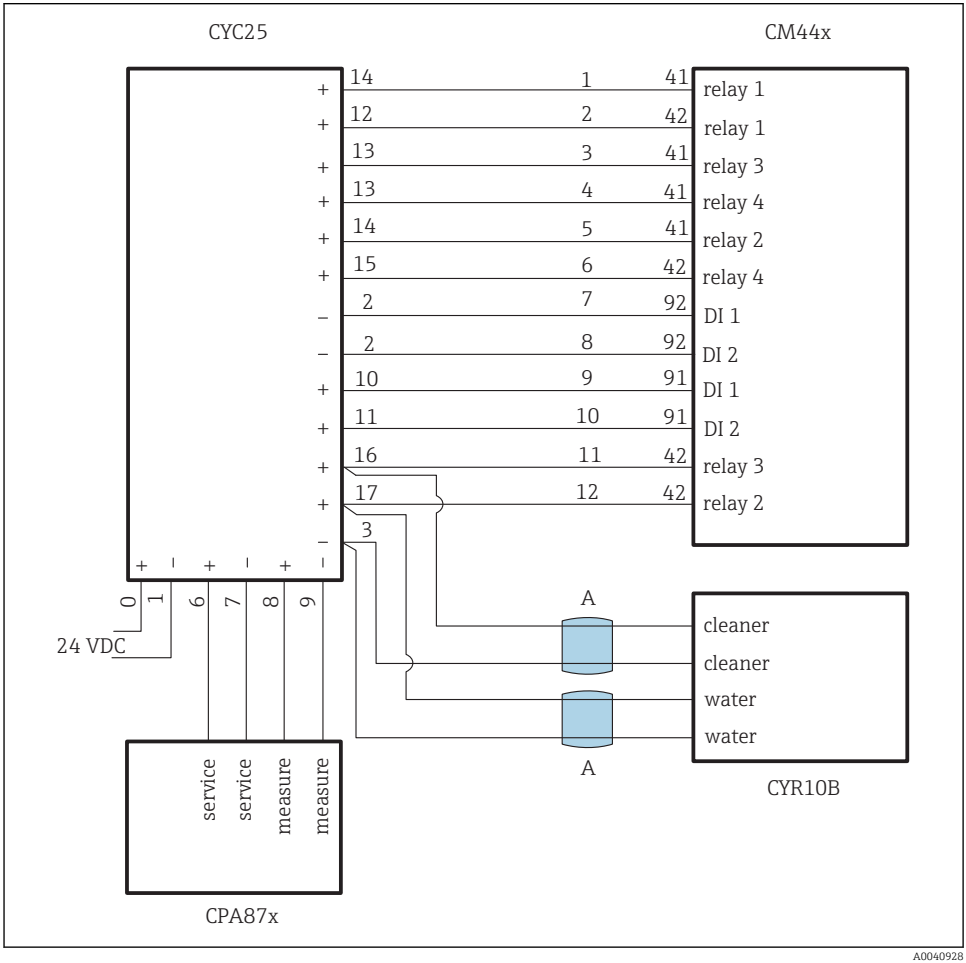



7 *Cable assignment for device plug*

### 6.2.2 Example of wiring

Wiring example with CYC25, CPA87x and CM44x

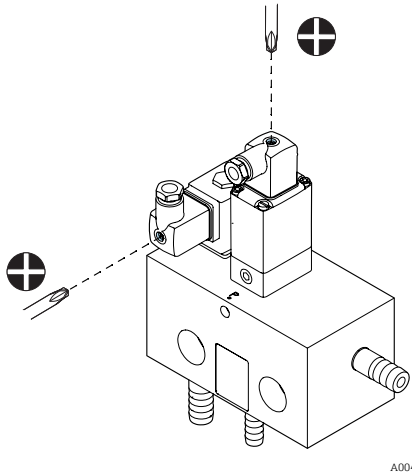
Cleanfit Control CYC25 only supports versions of the Chemoclean injector CYR10B with 24 VDC.



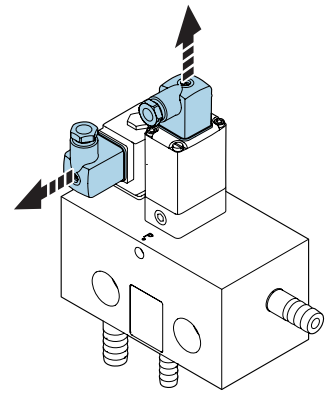

*8 Example of wiring*

*A Connecting cable CYR10B to CYC25 (to be provided by the customer, min. cross-section: 0.5 mm², max. length: 30 m (98 ft)*

### 6.2.3 Removing the device plug



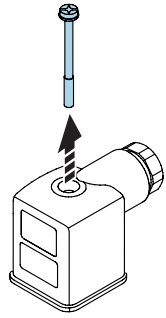

1. Release the central screws.



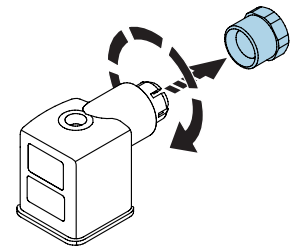

2. Remove the device plug.

### 6.2.4 Connecting the device

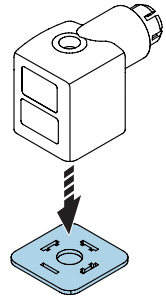
1. Release the device plug. → 23




2. Remove the central screw.




3. Release the pressure screw.



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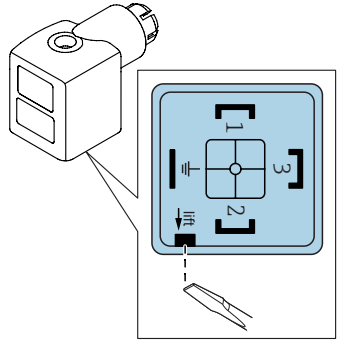
4. Remove the rubber seal.

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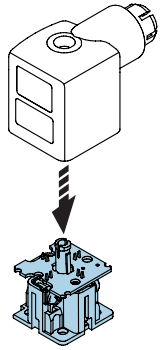
5. Use a flat-blade screwdriver to lever out the contact carrier in the cut-out.



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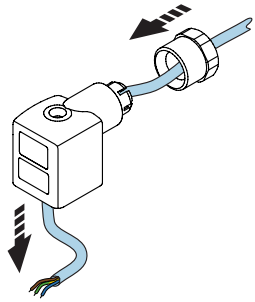
6. Remove the contact carrier from the device plug using a downwards motion.



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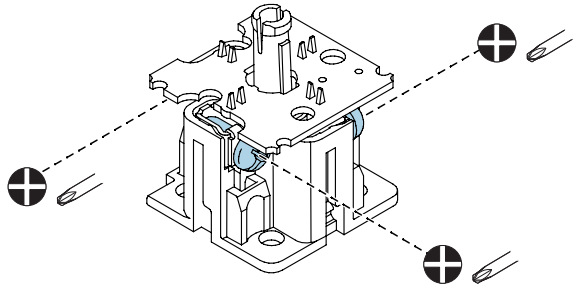
7. Guide the cable through the pressure screw and device plug.



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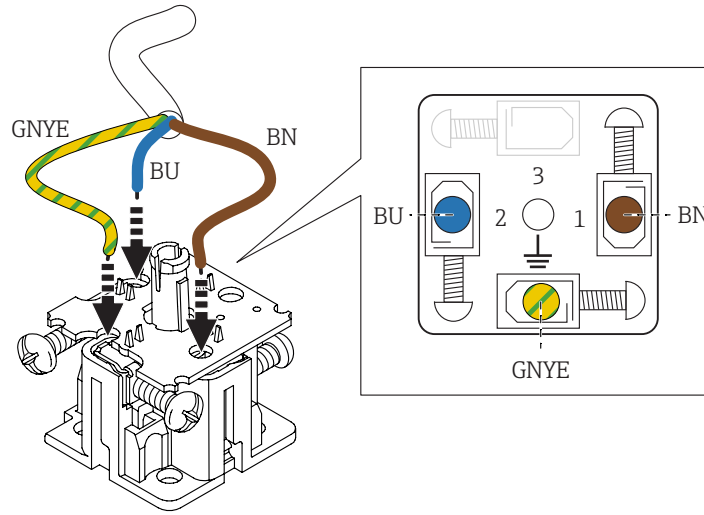
8. Release the screws at the cable terminals.

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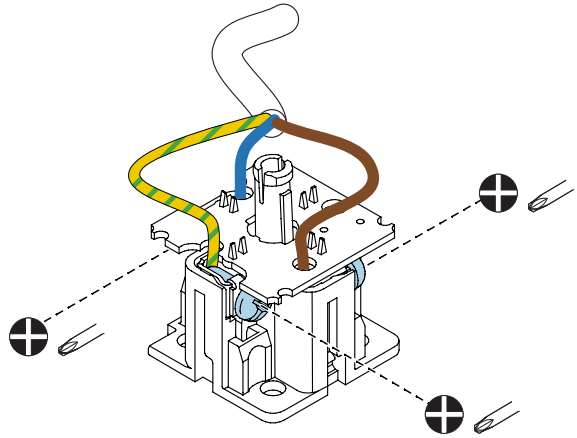
9. Connect the cables according to the wiring diagram.



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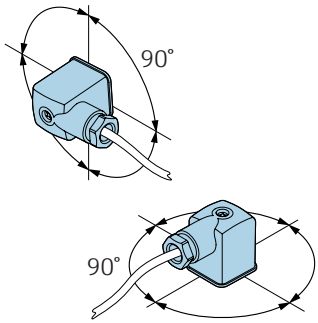
10. Tighten screws at cable terminals to fix the cables in place.

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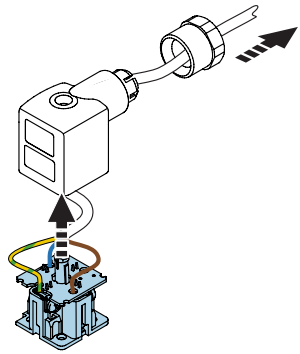
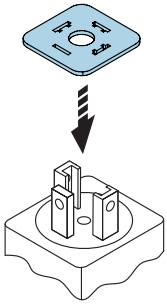
11. Turn the device plug in 90 ° increments in the desired direction of connection.
    - ↳ Do not turn the contact carrier. Pay attention to the direction of connection of the valve head.



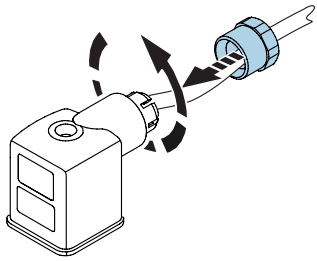
A0041580

12. Guide the contact carrier into the device plug and snap it into place,
    - ↳ carefully pulling the cable behind the pressure screw.



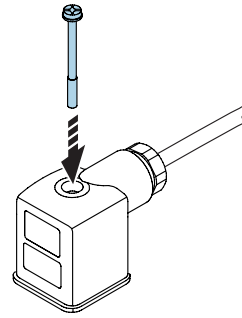
A0041581

13. Apply rubber seal to connector lugs on valves.



A0041582

14. Tighten the pressure screw.

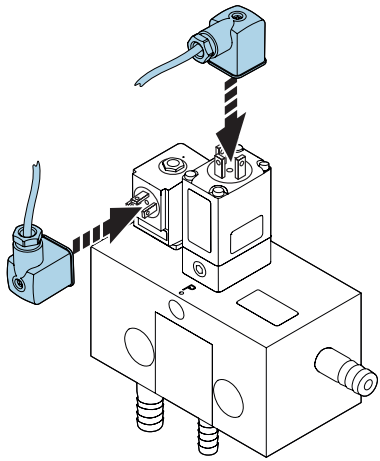


A0041583

15. Mount the central screw.

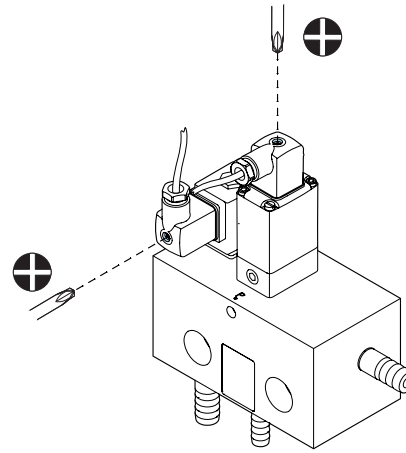
16. Mount the device plug. → 27

## 6.3 Mounting the device plug



A0040873

1. Attach the cable heads.
   ↳ Note the alignment of the connector lugs on the valves.



A0042042

2. Tighten the central screws.

## 6.4 Ensuring the degree of protection

Only the mechanical and electrical connections which are described in these instructions and which are necessary for the required, designated use, may be carried out on the device delivered.

► Exercise care when carrying out the work.

Otherwise, the individual types of protection (Ingress Protection (IP), electrical safety, EMC interference immunity) agreed for this product can no longer be guaranteed due, for example, to covers being left off or cable (ends) which are loose or insufficiently secured.

## 6.5 Post-connection check

**⚠ WARNING**

**Connection errors**

The safety of people and of the measuring point is at risk! The manufacturer does not accept any responsibility for errors that result from failure to comply with the instructions in this manual.

► Put the device into operation only if you can answer **yes** to **all** the following questions.

Device condition and specifications

► Are the device and all the cables free from damage on the outside?
► Does the supply voltage match the voltage indicated on the nameplate?

Electrical connection

► Are the mounted cables strain relieved?
► Are the cables correctly connected as per the wiring diagram?
► Are all plug-in terminals securely engaged?
► Are all the connection wires securely positioned in the cable terminals?
► Are all the cable entries and seals installed, tightened and sealed?

# 7 Commissioning

## 7.1 Function check

**WARNING**

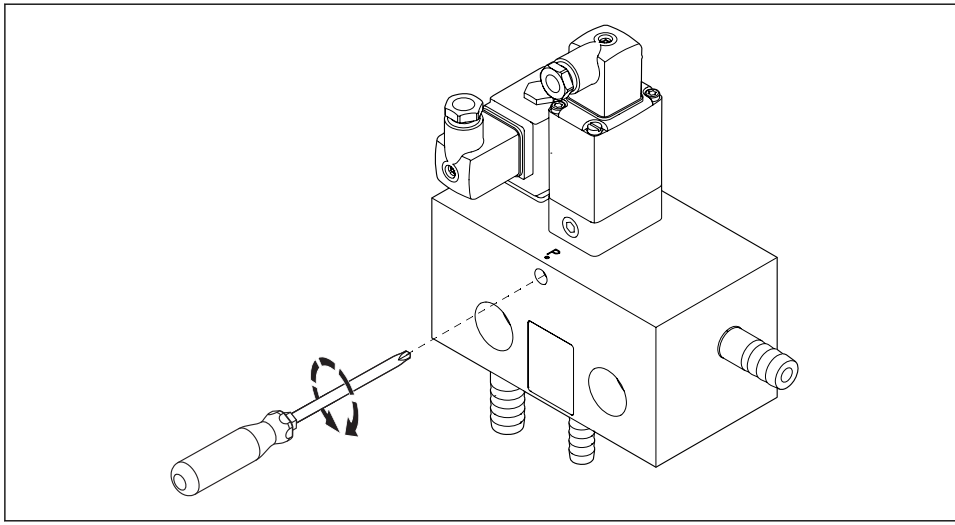
**Incorrect connection, incorrect supply voltage**
Safety risks for staff and device malfunctions!
- ▶ Check that all connections have been established correctly in accordance with the wiring diagram.
- ▶ Ensure that the supply voltage matches the voltage indicated on the nameplate.

## 7.2 Configuring the mixture ratio

### 7.2.1 Defining the cleaning cycle

Controlling the cleaning cycle via CM44x with Chemoclean and Chemoclean+ function Operating Instructions BA00444C

### 7.2.2 Setting the metering screw



A0040779

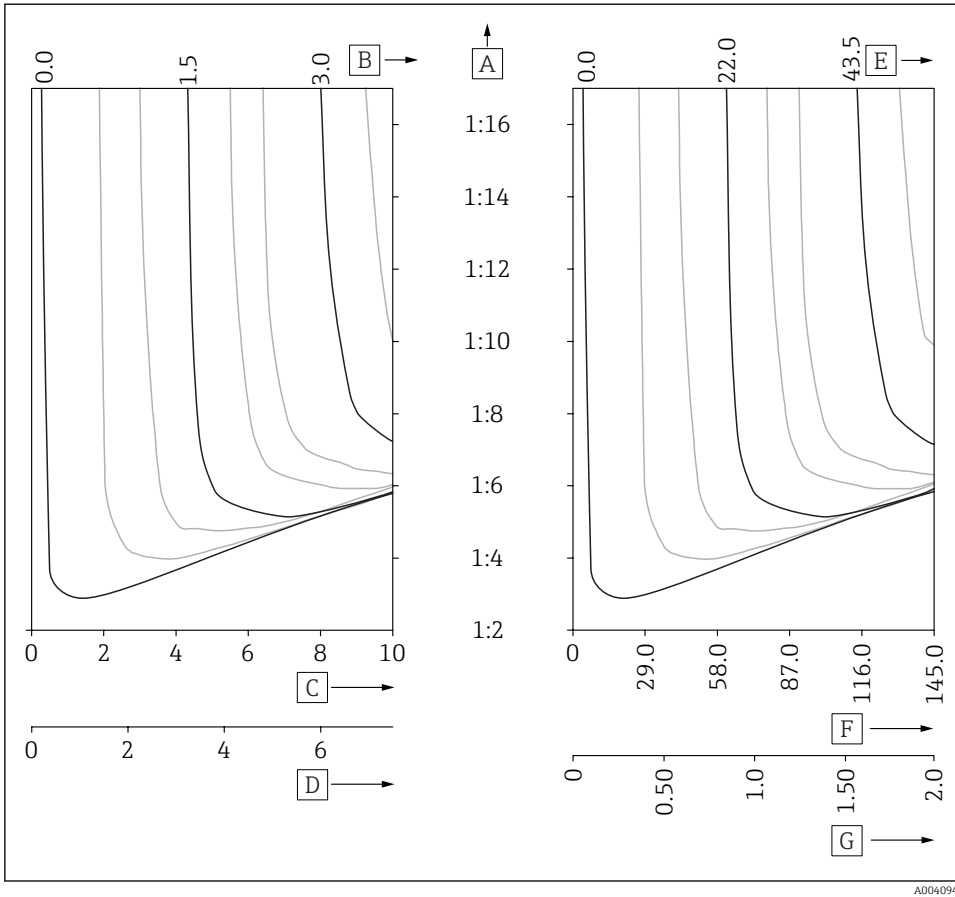
9 *Setting the metering screw*

| Setting the metering screw | Cleaner throughput |
|---|---|
| "closed" to ¼ revolutions "open" | 50 % |
| ½ revolutions "open" | 75 % |
| via 1½ revolutions "open" | 100 % |

### 7.2.3 Characteristic curve for mixture ratio

The mixture ratio of cleaner to water depends on several factors. The influence of these factors is shown in the following diagram.

The characteristic curve represents an approximation only and is used to estimate the mixture ratio.




10 *Characteristic curve when metering valve is completely open*

*A Mixture ratio cleaner : motive water*
*B Medium counterpressure (in bar)*
*C Motive water pressure (in bar)*
*D Motive water flow rate (in l/min)*
*E Medium counterpressure (in psi)*
*F Motive water pressure (in psi)*
*G Motive water flow rate (in US gpm)*

Application example:

When the medium counterpressure is 1.5 bar (22 psi) and the metering valve is completely open, a motive water pressure of 4 bar (58 psi) is required in order to configure a mixture ratio of cleaner : motiveof 1 : 10.

# 8 Operation

Configuring the mixture ratio→ 29

Controlling the cleaning cycle via CM44x with Chemoclean and Chemoclean+ function Operating Instructions BA00444C

## 8.1 Cleaner for cleaning mixture

ORP sensors should only be cleaned mechanically. Chemical cleaning subjects the sensor to a potential over several hours. The potential causes errors in the measurement.

**WARNING**

**Organic solvents containing halogens**

Limited evidence of carcinogenicity! Dangerous for the environment with long-term effects!

- Do not use organic solvents that contain halogens.

**WARNING**

**Thiocarbamide**

Harmful if swallowed! Limited evidence of carcinogenicity! Possible risk of harm to the unborn child! Dangerous for the environment with long-term effects!

- Wear protective goggles, protective gloves and appropriate protective clothing.
- Avoid all contact with the eyes, mouth and skin.
- Avoid discharge into the environment.

The most common types of soiling and the cleaning agents used in each case are shown in the following table.

| Type of soiling | Cleaning agent |
|---|---|
| Greases and oils | Hot water or tempered (alkaline) agents containing surfactants or water-soluble organic solvents (e. g. ethanol) |
| Limescale deposits, metal hydroxide buildup, lyophobic biological buildup | Approx. 3% hydrochloric acid |
| Sulfide deposits | Mixture of 3% hydrochloric acid and thiocarbamide (commercially available) |
| Protein buildup | Mixture of 3% hydrochloric acid and pepsin (commercially available) |
| Fibers, suspended substances | Pressurized water, possibly surface-active agents |
| Light biological buildup | Pressurized water |

- Choose a cleaning agent to suit the degree and type of soiling.

# 9 Maintenance

## 9.1 Cleaning

▶ Clean the front of the housing using commercially available cleaning agents only.

The device is resistant to:
- Ethanol (for a short time)
- Soap-based household cleaning agents
- Detergent

**NOTICE**

**Cleaning agents not permitted**

Damage to the housing surface or housing seal

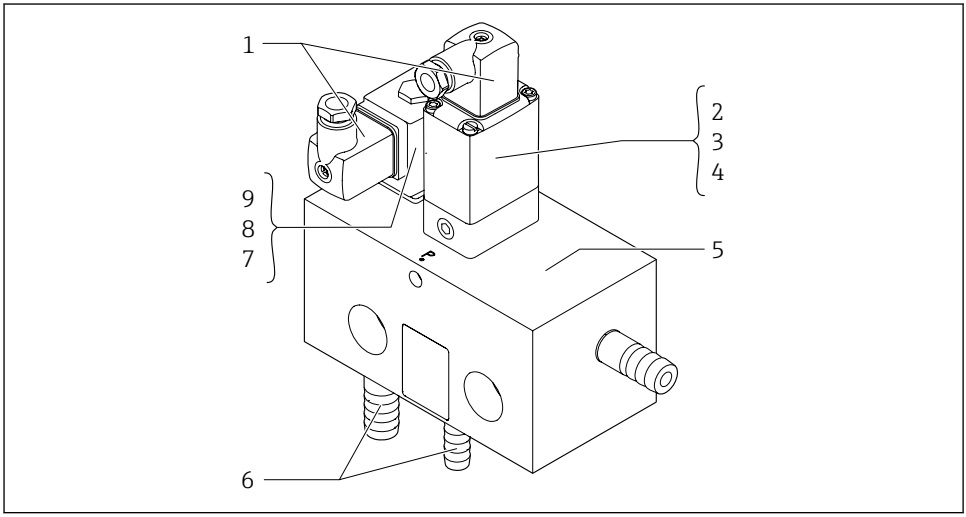
▶ Do not use concentrated mineral acids or alkaline solutions for cleaning.
▶ Do not use organic cleaners such as acetone, benzyl alcohol, methanol, methylene chloride, xylene or concentrated glycerol cleaner for cleaning.
▶ Do not use high-pressure steam for cleaning.

# 10 Repair

## 10.1 Spare parts

A list of spare parts can also be found at www.endress.com/CYR10B.

Contact the Endress+Hauser Service Department if you have any questions about the spare parts.




A0041812

| Item No. | Designation | Order number<br>Spare parts kit |
|---|---|---|
| 1 | Device plugs | 71461440 |
| 2 | Cleaner valve 110V | 71461446 |
| 3 | Cleaner valve 230V | 71461448 |
| 4 | Cleaner valve 24V | 71461450 |
| 5 | PVC valve manifold | 71461443 |
| 6 | Hose nozzle set | 71462914 |
| 7 | Water valve 110V | 71461445 |
| 8 | Water valve 230V | 71461447 |
| 9 | Water valve 24V | 71461449 |
| not illustrated | Wear parts for water valve | 71461451 |
| not illustrated | Wear parts for check valve | 71461452 |

| Item No. | Designation | Order number<br>Spare parts kit |
|---|---|---|
| not illustrated | Kit, water filter | 71390988 |
| not illustrated | Kit, filter element for water filter | 71390990 |

## 10.2 Repair work

**WARNING**

**Device is live!**

Incorrect connection may result in injury or death!

- The electrical connection may be performed only by an electrical technician.
- The electrical technician must have read and understood these Operating Instructions and must follow the instructions contained therein.
- **Prior** to commencing connection work, ensure that no voltage is present on any cable.

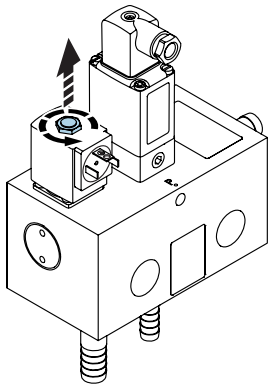
**Before** working on the device:

1. De-energize the device.
2. Close all hose lines.

### 10.2.1 Replacing the motive water valve

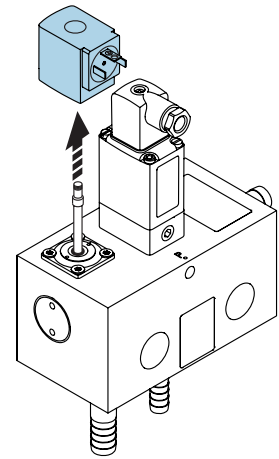
#### Removing the motive water valve

1. Remove device plug from motive water valve. → 23



A0041445

2. Remove the hexagonal nut on the top of the valve.



A0041446

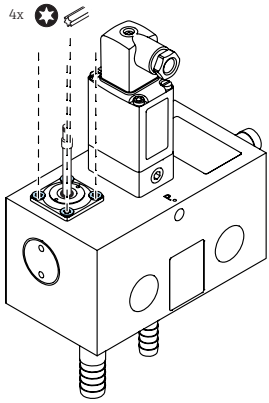
3. Remove the valve head.

**NOTICE**

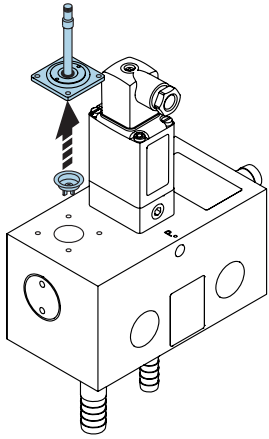
**Loose components**

Loss of internal components.

- ▶ During removal, secure the plug assembly and its internal components against loss and remove carefully.

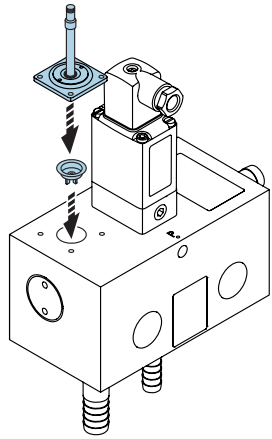



4. Remove the torx screws (4x).



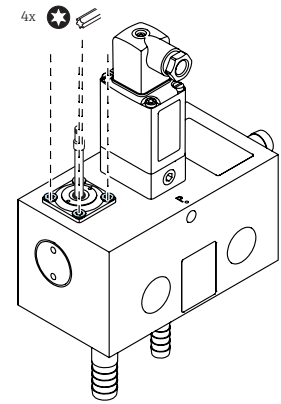

5. Remove the plug assembly and sealing rubber.

## Mounting the motive water valve



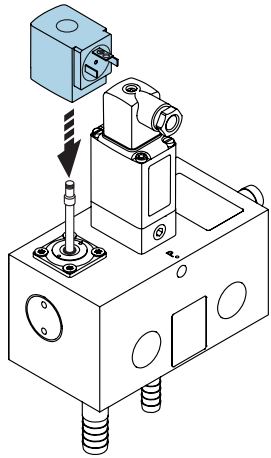
A0041532

1. Attach the plug assembly and sealing rubber.



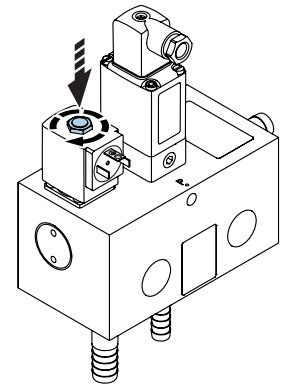

A0041533

2. Tighten the torx screws in a criss-cross sequence.
   ↳ torque: 1.5 to 2.0 Nm



A0041534

3. Attach the valve head.



A0041535

4. Attach the hexagonal nut to the top of the valve and tighten.

3. Attach the device plug. → 27

### 10.2.2 Replacing the cleaner valve

#### Removing the cleaner valve

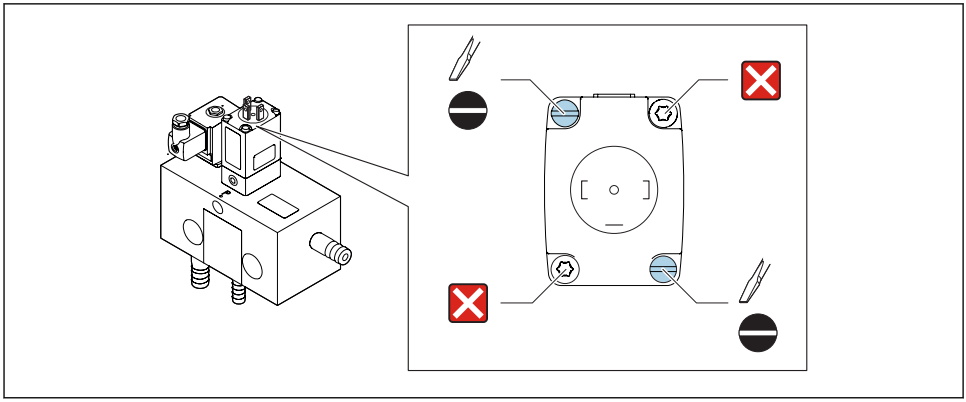
1. Remove the device plug from the cleaner valve.→ 23

**NOTICE**

**Releasing the device screws**

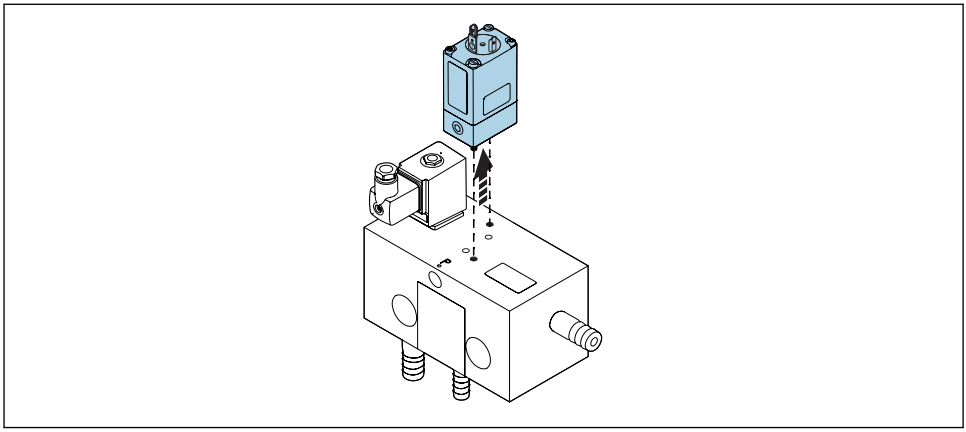
can lead to the loss of components and void the warranty.

- The sealed torx device screws must not be loosened.



A0041458

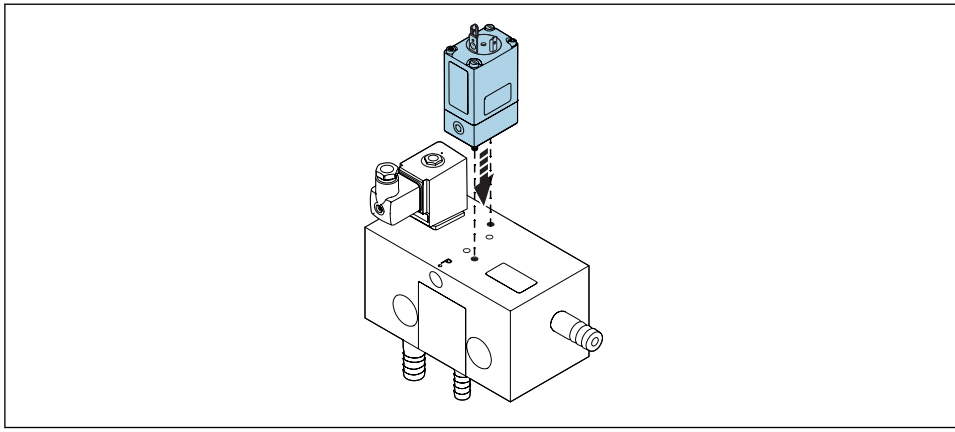
2. Release the slotted screws.



A0041459

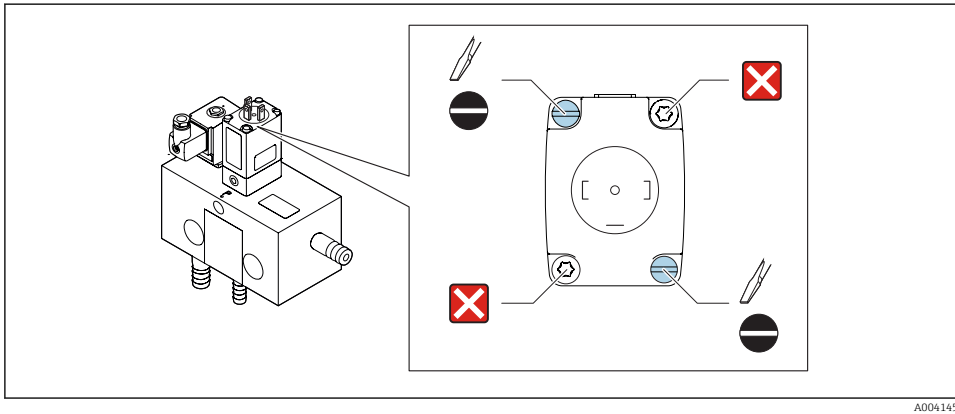
3. Remove the cleaner valve.

### Installing the cleaner valve



A0041530

1. Attach the cleaner valve to the thread.
   ↳ Note the direction of installation with the label to the front of the device.



A0041458

2. Tighten the slotted screws.
3. Attach the device plug. → 27

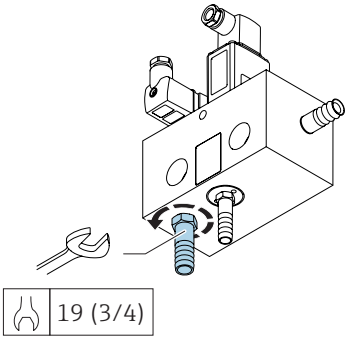
## 10.2.3 Replacing the hose nozzles

### Preparatory steps

**Before** working on the device:

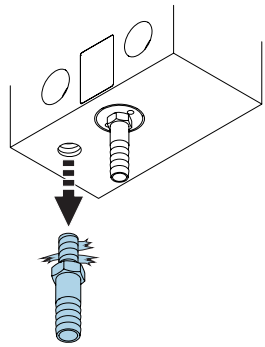
1. De-energize the device.
2. Close all hose lines.
3. Remove the hose clip and hose from the hose nozzle to be replaced. → 17

## Replacing the motive water nozzle



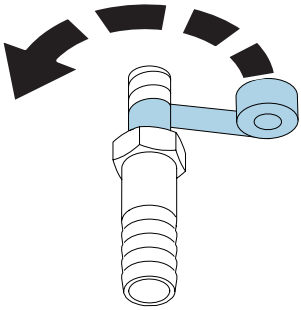

A0041657

1. Release the hose nozzle using a hexagon wrench.



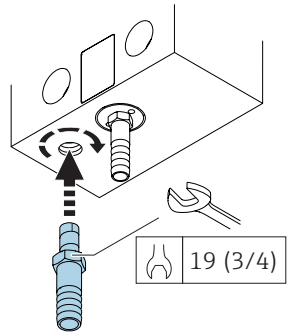
A0041658

2. Remove the hose nozzle and seal residue from the hole in the injector block.



A0041659

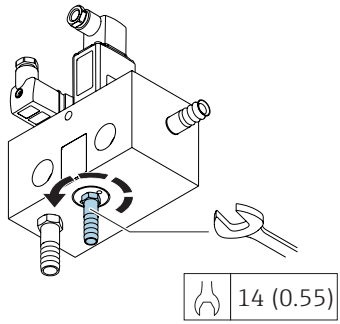
3. Seal the thread of the new hose nozzle with Teflon tape.




A0041662

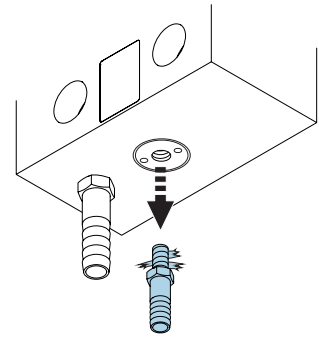
4. Screw in the hose nozzle using a hexagon wrench.

### Replacing the cleaner nozzle



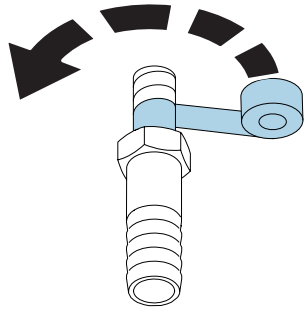

A0041660

1. Release the hose nozzle using a hexagon wrench.



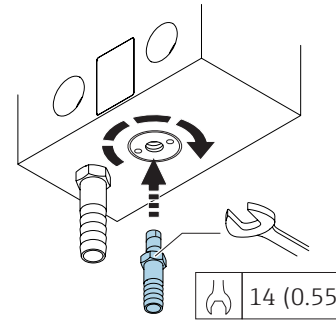
A0041661

2. Remove the hose nozzle and seal residue from the hole in the injector block.



A0041659

3. Seal the thread of the new hose nozzle with Teflon tape.




A0041663

4. Screw in the hose nozzle using a hexagon wrench.

### 10.2.4 Replacing wear parts of water valve

Replacing the wear parts:

- Pay attention to the instructions supplied with the spare parts set.

### 10.2.5 Replacing wear parts of internal check valve

Replacing the wear parts:

- Pay attention to the instructions supplied with the spare parts set.

## 10.3 Return

The product must be returned if repairs or a factory calibration are required, or if the wrong product was ordered or delivered. As an ISO-certified company and also due to legal regulations, Endress+Hauser is obliged to follow certain procedures when handling any returned products that have been in contact with medium.

To ensure swift, safe and professional device returns, please read the return procedures and conditions at www.endress.com/support/return-material.

## 10.4 Disposal

The device contains electronic components and must therefore be disposed of in accordance with regulations on the disposal of electronic waste.

Observe the local regulations.

# 11 Accessories

The following are the most important accessories available at the time this documentation was issued.

▶ For accessories not listed here, please contact your Service or Sales Center.

**Cleanfit CPA472D**
- Robust retractable assembly for pH, ORP and other industrial sensors
- Heavy-duty version made of durable materials
- For manual or pneumatic, remote-controlled operation
- Product Configurator on the product page: www.endress.com/cpa472d

Technical Information TI00403C

**Cleanfit CPA473**
- Stainless steel process retractable assembly with ball valve shutoff for particularly reliable separation of the medium from the environment
- Product Configurator on the product page: www.endress.com/cpa473

Technical Information TI00344C

**Cleanfit CPA474**
- Plastic process retractable assembly with ball valve shutoff for particularly reliable separation of the medium from the environment
- Product Configurator on the product page: www.endress.com/cpa474

Technical Information TI00345C

**Cleanfit CPA871**
- Flexible process retractable assembly for water, wastewater and the chemical industry
- For applications with standard sensors with 12 mm diameter
- Product Configurator on the product page: www.endress.com/cpa871

Technical Information TI01191C

The CPA871 immersion chamber version is not supported because the counterpressure of the assembly is too high.

**Cleanfit CPA875**
- Retractable process assembly for sterile and hygienic applications
- For in-line measurement with standard sensors with 12 mm diameter, e.g. for pH, ORP, oxygen
- Product Configurator on the product page: www.endress.com/cpa875

Technical Information TI01168C

### Flexdip CYA112
- Immersion assembly for water and wastewater
- Modular assembly system for sensors in open basins, channels and tanks
- Material: PVC or stainless steel
- Product Configurator on the product page: www.endress.com/cya112

Technical Information TI00432C

### Flexdip CYH112
- Modular holder system for sensors and assemblies in open basins, channels and tanks
- For Flexdip CYA112 water and wastewater assemblies
- Can be affixed anywhere: on the ground, on the coping stone, on the wall or directly onto railings.
- Stainless steel version
- Product Configurator on the product page: www.endress.com/cyh112

Technical Information TI00430C

# 12 Technical data

## 12.1 Power supply

### 12.1.1 Supply voltage

24 V DC

110 V AC

230 V AC

### 12.1.2 Power consumption

| | |
|---|---|
| 24 V version | 2 solenoid valves, each with 8 W (16 W in total) |
| 115 V version | 2 solenoid valves, each with 8 VA (16 VA in total) |
| 230 V version | 2 solenoid valves, each with 8 VA (16 VA in total) |

### 12.1.3 Actuators

2x solenoid valves

## 12.2 Environment

### 12.2.1 Ambient temperature range

−5 to +40 °C (+23 to +104 °F)

### 12.2.2 Storage temperature

−40 to +60 °C (−40 to +140 °F)

### 12.2.3 Humidity

0 to 95 %, non-condensating

### 12.2.4 Degree of protection

IP65

### 12.2.5 Operating altitude

<2000 m (6500 ft)

## 12.3 Process

### 12.3.1 Medium temperature

max. 60 °C (140 °F)

### 12.3.2 Process pressure range

| | |
|---|---|
| Motive water pressure | 2 to 10 bar (29 to 145 psi) |
| Medium counterpressure | max. 3 bar (43 psi) |

### 12.3.3 Suction height of cleaner

max. 3 m (9.8 ft)

### 12.3.4 Mixture ratio

1 : 4 to 1 : 17 (cleaner : motive water)

### 12.3.5 Motive water flow range

2 to 10 l/min (0.53 to 2.64 gal/min)

## 12.4 Mechanical construction

### 12.4.1 Dimensions

Dimensions → 13

### 12.4.2 Weight

2 kg (4.41 lb)

### 12.4.3 Materials

| | |
|---|---|
| Housing block | PVC |
| Hose nozzles | PVC |
| Valve head 6213 | EDPM, stainless steel |
| Valve head 0331 | EDPM, PP |
| Seals | EDPM, PTFE |
| Check valve | Glass |

# Index

## S



## T



## U



## W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Endress+Hauser

People for Process Automation