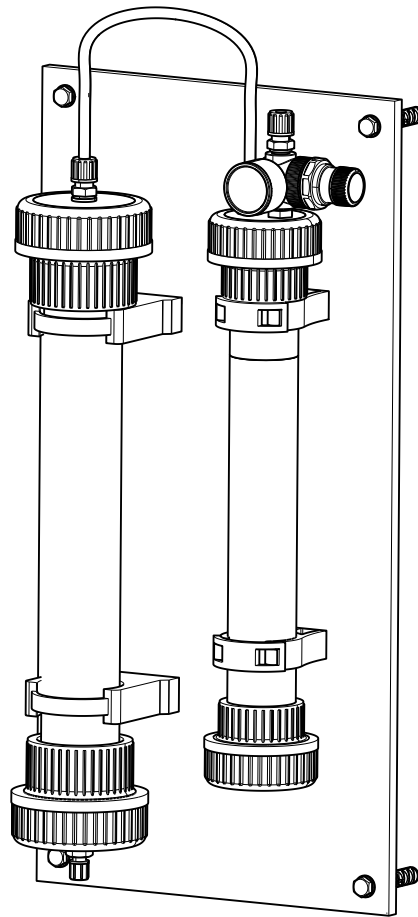


Operating Instructions

CO₂ scrubber for CA72TOC

Gas scrubber with soda lime



Document information

Warnings

The structure, signal words and safety colors of the signs comply with the specifications of ANSI Z535.6 ("Product safety information in product manuals, instructions and other collateral materials").

| Safety message structure | Meaning |
|--|--|
| ⚠ DANGER Causes (/consequences) Consequences if safety message is not heeded ▶ Corrective action | This symbol alerts you to a dangerous situation. Failure to avoid the situation will result in a fatal or serious injury. |
| ⚠ WARNING Causes (/consequences) Consequences if safety message is not heeded ▶ Corrective action | This symbol alerts you to a dangerous situation. Failure to avoid the situation can result in a fatal or serious injury. |
| ⚠ CAUTION Causes (/consequences) Consequences if safety message is not heeded ▶ Corrective action | This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or more serious injuries. |
| NOTICE Cause/situation Consequences if safety message is not heeded ▶ Action/note | This symbol alerts you to situations that can result in damage to property and equipment. |

Symbols used




-  Additional information, tips
-  Permitted or recommended
-  Forbidden or not recommended

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1 Basic safety instructions

1.1 Requirements for personnel

- ▶ Installation, commissioning, operation and maintenance of the measuring system must only be carried out by specially trained technical personnel.
 - ▶ The technical personnel must be authorized for the specified activities by the system operator.
 - ▶ Electrical connection must only be carried out by a certified electrician.
 - ▶ Technical personnel must have read and understood these Operating Instructions and must adhere to them.
 - ▶ Faults at the measuring point may only be rectified by authorized and specially trained personnel.
- i** Repairs not described in the enclosed Operating Instructions may only be carried out directly at the manufacturer's or by the service organization.

1.2 Designated use

The gas scrubber is designed for the removal of carbon dioxide (CO₂) from compressed air. Any other use than the one described here compromises the safety of persons and the entire measuring system and is therefore not permitted. The manufacturer is not liable for damage resulting from improper or non-designated use.

NOTICE

Off-spec usage

Incorrect measurements, malfunctions and even the failure of the measuring point are possible

- ▶ Only use the product in line with the product specifications.
- ▶ Pay particular attention to the technical data on the nameplate.

1.3 Occupational safety

As the user, you are responsible for complying with the following safety conditions:

- Installation instructions
- Local prevailing standards and regulations

1.4 Operational safety

- ▶ Before commissioning the entire measuring point, make sure all the connections are correct. Ensure that electrical cables and hose connections are not damaged.
- ▶ Do not operate damaged products, and secure them against unintentional commissioning. Label and identify the damaged product as defective.
- ▶ If faults cannot be rectified, you must take the products out of service and secure them against unintentional commissioning.

1.5 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. Relevant regulations and European standards have been observed.

2 Incoming acceptance and product identification

2.1 Incoming acceptance

- Make sure the packaging is undamaged!
- Notify the supplier of any damage to the packaging. Keep the damaged packaging until the matter has been settled.
- Make sure the contents are not damaged!
- Notify the supplier of any damage to the delivery contents. Keep the damaged products until the matter has been settled.
- Check the delivery to make sure nothing is missing. Compare it against the shipping documents and your order.
- Pack the product for storage and transportation in such a way that it is reliably protected against impact and moisture. The original packaging offers the best protection. Furthermore, the permitted ambient conditions must also be observed (see "Technical data").
- If you have any questions, contact your supplier or your local sales center.

2.2 Product identification


2.2.1 Nameplate

You can find the following information on the nameplate:

- Manufacturer details
- Order code
- Extended order code
- Serial number
- Operating conditions
- Safety information symbols

Compare the order code on the nameplate with your order.

2.2.2 Identifying the product

-  To find out the version of your product, enter the order code indicated on the nameplate in the search screen at the following address:
www.products.endress.com/order-ident

2.3 Scope of delivery

The scope of delivery comprises:

- Gas scrubber
- Consumables
- PE hose 6/8 mm, 2 m
- Operating Instructions, English

2.4 Certificates and approvals

Declaration of Conformity

The product meets the requirements of the harmonized European standards.

As such, it complies with the legal specifications of the EC directives.

The manufacturer confirms successful testing of the product by affixing to it the **CE** mark.

3 Installation

3.1 Installation conditions

Mount the gas scrubber upright on a wall. The scrubber is mounted with the screws supplied.

3.1.1 Dimensions

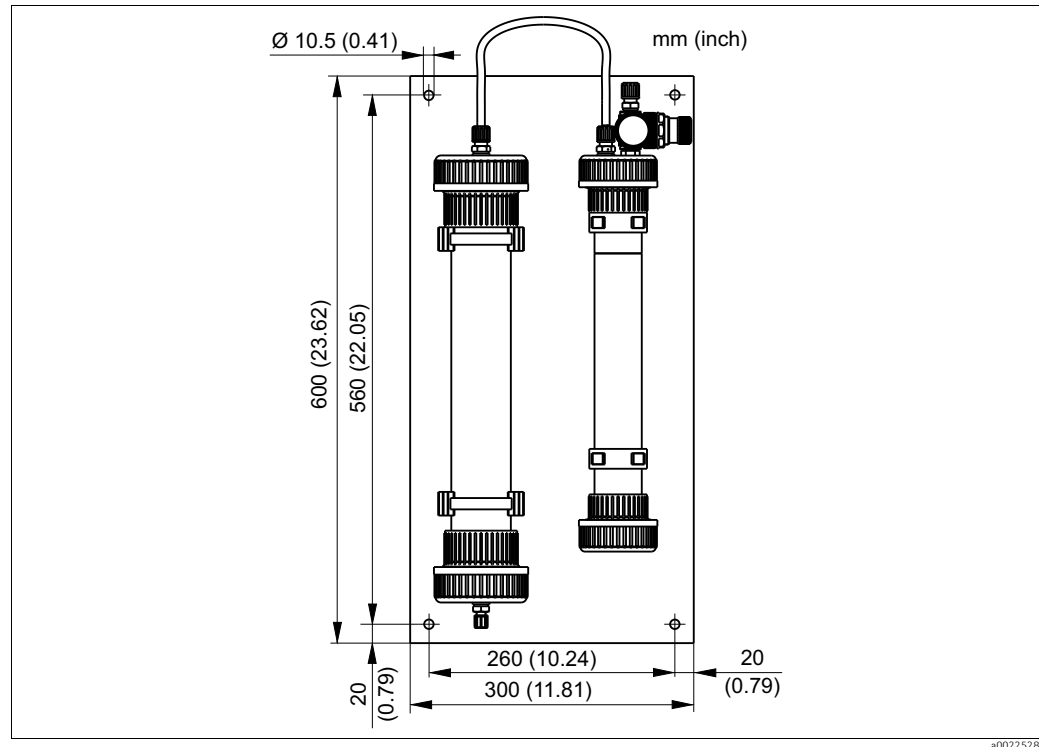


Fig. 1: Dimensions in mm (inch)

3.1.2 Compressed air supply

The compressed air must meet the following conditions:

- The compressed air must be dry.
- The compressed air must be free of oil, grease and particles.
- The supply pressure must be between 4 and 10 bar (58 to 145 psi).

Compressed air connection: DN 6/8

3.2 Installation instructions

⚠ CAUTION

Caustic pellets can cause injury

- ▶ Pay attention to the instructions on the safety data sheet.
- ▶ Wear protective goggles and safety gloves.

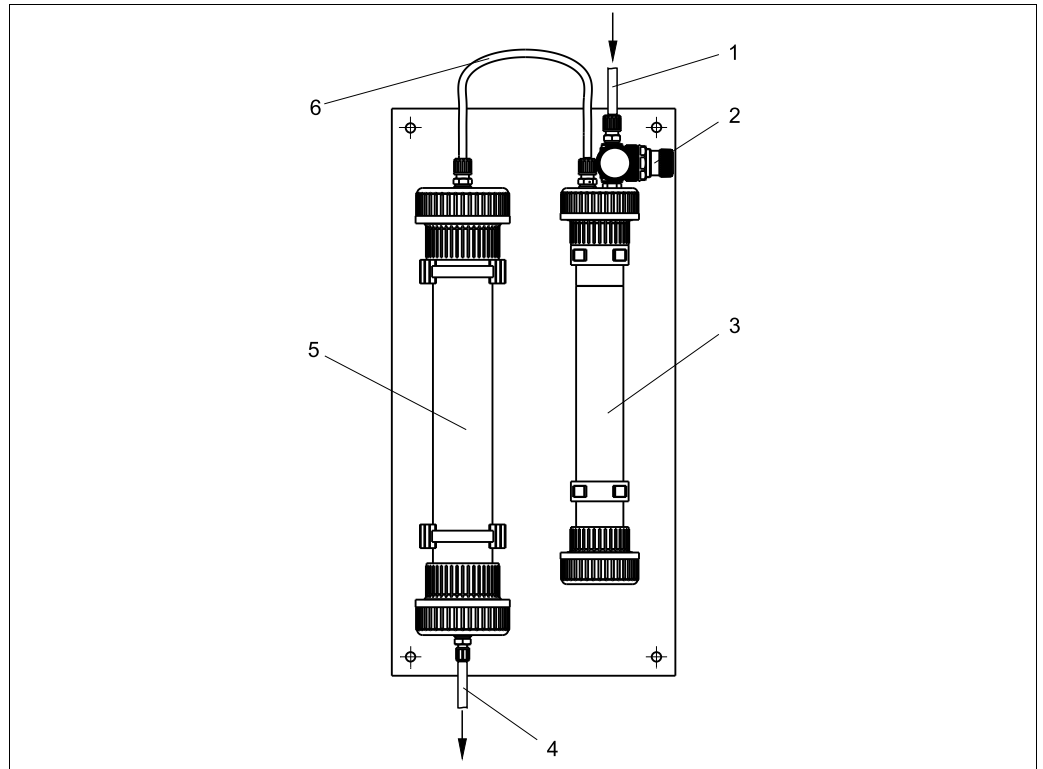


Fig. 2: Connection

- 1 Compressed air inlet (must be supplied from above)
- 2 Compressed air regulator
- 3 Water vessel
- 4 Outlet for CO₂-free compressed air (must exit at the bottom)
- 5 Pellet vessel
- 6 Gas pipe from water vessel to pellet vessel (6/8 PE hose)

Fill the pellet and water vessels:

1. Unscrew the pellet vessel (item 5) at the bottom.
2. Insert a filter pad into the pellet vessel (hard surface towards pellets) and screw the vessel closed again at the bottom.
3. Unscrew the pellet vessel at the top.
4. Pour pellets into the pellet vessel until it is completely full (shake the pellet vessel gently to compact the pellets).
5. Place the second filter pad over the pellets (hard surface towards pellets) and screw the pellet vessel closed again.
6. Fill the water vessel (item 3) with approx. 400 ml (13.5 fl.oz) of deionized water.

Connect the gas pipes:

1. Connect the gas pipe (item 6) between the water vessel and pellet vessel.
2. Connect the outlet (item 4) to the analyzer.
3. Connect the compressed air line (do not open the compressed air) to the inlet (item 1).
4. Turn the control knob on the pressure regulator (item 2) counterclockwise as far as it will go.
5. Open the compressed air supply.
6. Set the pressure regulator to 2 bar (turn the control knob clockwise).

3.3 Post-installation check

- After mounting, make sure that all the screws are firmly tightened.
- After the installation, make sure that all connections are secure and that there are no leaks.
- Examine all hoses for damage.

4 Diagnostics and troubleshooting

| Problem | Possible cause |
|---|--|
| Alarm "Check CO ₂ basic line" (is displayed on the analyzer) | Pellets are used up and complete CO ₂ removal no longer takes place. |
| Pellets consumed at an unusually fast rate | A higher concentration of CO ₂ in the compressed air or acid gases cause a significant increase in pellet consumption. Leaks when mounting result in higher gas consumption and thereby higher pellet consumption. |

5 Maintenance

Maintenance work must be carried out at regular intervals to ensure the efficient operation of the gas scrubber.

i Before you attempt to service the device, you must be completely familiar with the maintenance processes and understand them fully. All the maintenance processes listed in this section may only be performed by a properly trained technician. Incorrect maintenance can result in inexact operation and cause a safety hazard.

| Interval | Maintenance work |
|--|--|
| At least once a week | <ul style="list-style-type: none"> ▪ Visual inspection |
| Every 3 months or based on consumption | <ul style="list-style-type: none"> ▪ Replace the content of the pellet vessel ▪ Replace the hydraulic seal |

The maintenance intervals depend heavily on your application. For this reason, adapt the maintenance intervals to your specific requirements but always ensure that these maintenance tasks are performed regularly!

5.1 Visual inspection

Perform the visual inspection at least once a week:

- Check the water level in the water vessel. If the water level has dropped significantly (approx. 10 cm (4 inch) above the lower gland), you must replace the water (see the "Replacing water and pellets" section).
- Check pellet consumption. If the pellets are completely discolored (color has changed from white to violet), you must replace the pellets (see the "Replacing water and pellets" section).

5.2 Replacing water and pellets

▲ CAUTION

Caustic pellets can cause injury

- ▶ Pay attention to the instructions on the safety data sheet.
- ▶ Wear protective goggles and safety gloves.

Replace the water and pellets as follows:

1. At the analyzer select the **Service / Cleaning / Bypass screen** menu.
2. Cut off the compressed air supply to the gas scrubber and vent the pressure regulator (turn the control knob counterclockwise).
3. Once the pressure has dropped completely, unscrew the gas pipe between the pellet vessel and water vessel and the gas pipe at the outlet of the pellet vessel.
4. Take the pellet vessel out of the retaining clips and remove the filter pads and the used pellets.
5. Insert a new filter pad (hard surface towards pellets), fill the vessel with new pellets and compact the pellets by shaking the vessel gently.
6. Place the second filter pad on top (hard surface towards pellets).
7. Put the pellet vessel into the holder.
8. Unscrew the gas pipe at the compressed air inlet and remove the water vessel from the retaining clips.
9. Drain the water vessel completely and fill the vessel with approx. 400 ml (13.5 fl.oz) of deionized water.
10. Insert the water vessel into the holder and screw on the thread adapter nut and pressure regulator. Connect the gas pipes.
11. Turn on the compressed air and set the pressure regulator to 2 bar.
12. In the **Service / Cleaning / Bypass screen** menu acknowledge the service and return to measuring operation.

5.3 Pellet storage and disposal

Disposal

It is not possible to regenerate the calcium sodium hydroxide pellets. Dispose of used pellet material in line with legal regulations. For more information, please see the safety data sheet.

Storage

Store the pellets as follows:

- Airtight in plastic vessels
- Dry storage location at 0 to 35 °C (32 to 95 °F)
- Protect against strong sunshine

The pellets can adsorb moisture and CO₂ from the ambient air and become used up in this way.

6 Repair

6.1 Spare parts

| Description | Order number |
|--|--------------|
| Annual consumption for pellet replacement 6 filter pads, 3 liters of pellets (sorbent), 2 sets of O-rings | 71232256 |
| Pressure regulator | 71232257 |
| Humidifier | 71232258 |
| Absorber vessel | 71232259 |
| CO ₂ scrubber, complete | 71232260 |
| Sorbent (2 liters) | 71232261 |
| Filter pads (10 pcs.) | 71232262 |
| Glands Sealing ring G ¹ / ₄ PVC (5 pcs.), gland D 6/8 x G ¹ / ₄ (2 pcs.), Hose D 6/8 mm (1 m), gland D 4/6 x G ¹ / ₄ (2 pcs.), O-ring 60 x 5.34 (2 pcs.), O-ring 46.99 x 5.33 (2 pcs.), Sealing ring G 1/8 (2 pcs.), double reduction nipple (1 pc.), Gland D 6/8 x G1/8 (2 pcs.) | 71232263 |
| Accessories Pipe holder D 63 (2 pcs.), pipe holder D 50 (2 pcs.), Screw M6x25 (2 pcs.), screw M8x20 (2 pcs.), Screw 8x70 mm (4 pcs.), washer (4 pcs.), wall plug S12 (4 pcs.) | 71232264 |

6.2 Return

The product must be returned if repairs or a factory calibration are required, or if the wrong product has been ordered or delivered. According to legal regulations Endress+Hauser, as an ISO-certified company, is required to follow certain procedures when handling returned products that are in contact with the medium.

To ensure swift, safe and professional device returns:

Visit our website to obtain information about the return procedure and basic conditions.
www.services.endress.com/return-material

6.3 Disposal

Please comply with local regulations when disposing of the product.

7 Technical data

7.1 Environment

Ambient temperature range 5 to 40 °C (41 to 104 °F)

7.2 Process

Supply pressure 4 to 10 bar (58 to 145 psi)

7.3 Mechanical construction

Dimensions See "Installation" section

Weight Approx. 5 kg (11 lbs)

| | | |
|-----------------|----------------------|------------------|
| Material | Mounting plate | PVC, gray |
| | Water vessel | PVC, transparent |
| | Pellet vessel | PVC, transparent |
| | Compressed air hoses | PE |
| | Glands | PVDF |

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