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# Installation Instructions
# **Liquiline System CA80TN analyzer**

Hose connector set

Endress+Hauser
People for Process Automation

## Table of contents

# 1 Overview

## 1.1 Spare parts kits

These installation instructions apply to the following spare parts kits:

| Order code | Designation | Page |
|---|---|---|
| 71516284 | CA80TN Hose connector set | → 9 |
| 71704529 | CA80TN Pump hose and PharMed hose | → 9 |

## 1.2 Overview of CA80TN (total nitrogen)

The figures below show an overview of the CA80TN for the photometric measurement of the total nitrogen.


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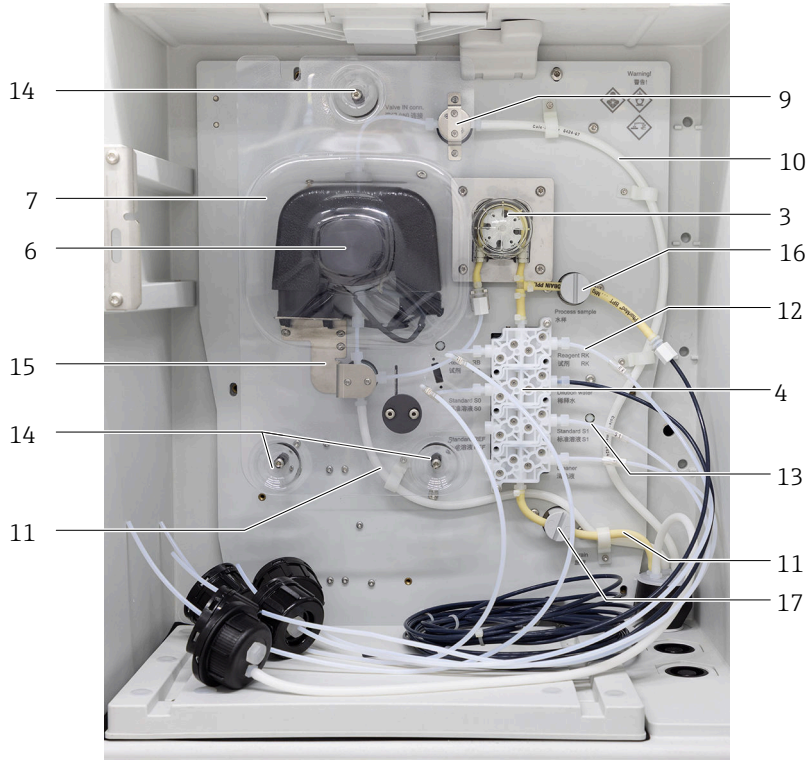
*1 CA80TN assembly overview*

1 *Electronics compartment cover*
2 *Carrier plate*
3 *Peristaltic pump*
4 *Valve block for reagent dosing*
5 *Bottle tray for reagents, sample + standard*
6 *Reactor (behind protective cover)*
7 *Protective cover*
8 *Measuring and control device*

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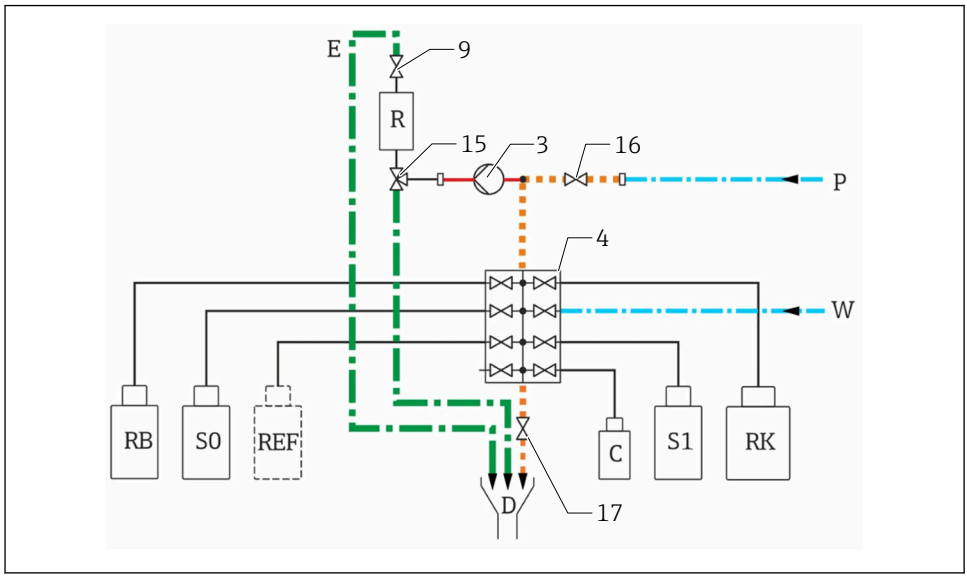
2 *CA80TN carrier plate*

*9 Vent valve*
*10 Ventilation hose*
*11 Drain hoses*
*12 Sample hose*
*13 Dilution water hose*
*14 Screws of protective cover*
*15 Reactor valve*
*16 Sample valve*
*17 Drain valve*

## 1.3 Layout




*3 CA80TN layout*

*3 Peristaltic pump*
*4 Valve block for reagent dosing*
*9 Vent valve*
*15 Reactor valve*
*16 Sample valve*
*17 Drain valve*
*R Reactor*
*E Vent*
*P Sample*
*W Dilution water*
*S0 Standard S0*
*S1 Standard S1*
*RB Reagent RB*
*RK Reagent RK*
*REF CA80TN-HRxxxx only*
*D Drain*
*C Cleaner*

# 2 Intended use

- The parts of the kits must only be used as spare parts for CA80TN analyzers. Any other use is not permitted!
- Only use original parts from Endress+Hauser.
- In the Device Viewer, check if the spare part is suitable for the device in question.

# 3 Personnel authorized to carry out conversion

- 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 perform the stated tasks.
- The electrical connection may only be established by an electrical technician.
- The technical personnel must have read and understood these Installation Instructions and must follow the instructions they contain.
- Measuring point faults may be repaired only by authorized and specially trained personnel.
- In the case of Ex-certified devices, the technical staff must also be trained in explosion protection.

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

# 4 Safety instructions

**⚠ WARNING**

**Risk of electric shock!**

- ▶ Perform work on the device with the utmost caution, especially when the device remains fully or partially powered on during maintenance tasks.
- ▶ Follow the instructions in the relevant sections of this manual, as the procedure for electrical safety depends on the service kits used. The device does not have a power switch for the power supply.
- ▶ All work must be carried out according to applicable safety standards.
- ▶ Note the instructions in the Operating Instructions for the analyzer.

**⚠ CAUTION**

**Risk to health due to contact with reagents, chemicals or process solutions!**

- ▶ Wear protective gloves, protective goggles and protective clothing.
- ▶ Immediately rinse splashes with plenty of water and a 1% sodium bicarbonate solution ($NaHCO_3$, baking soda).
- ▶ In case of eye contact, rinse the affected area with plenty of water and then seek medical advice. Show the relevant safety data sheet to the physician.
- ▶ Note the nationally applicable workplace safety regulations for the work area when handling toxic or corrosive chemicals.

**⚠ CAUTION**

**Electronic assemblies are sensitive to electrostatic discharges (ESD)!**

- Before removing an assembly from the antistatic packaging, it must be discharged, e.g. at a protective ground. Continuous grounding, e.g. with an ESD wristband, is recommended.

**Potential impact on the process**

Before decommissioning an active device, the potential impact on the overall process must be taken into account! This applies in particular when using the switching contacts, the analog signal outputs or the communication interface of the associated measuring instrument to control process variables. Coordinate service tasks with the operator!

Contact Endress+Hauser Service if you have questions: www.addresses.endress.com

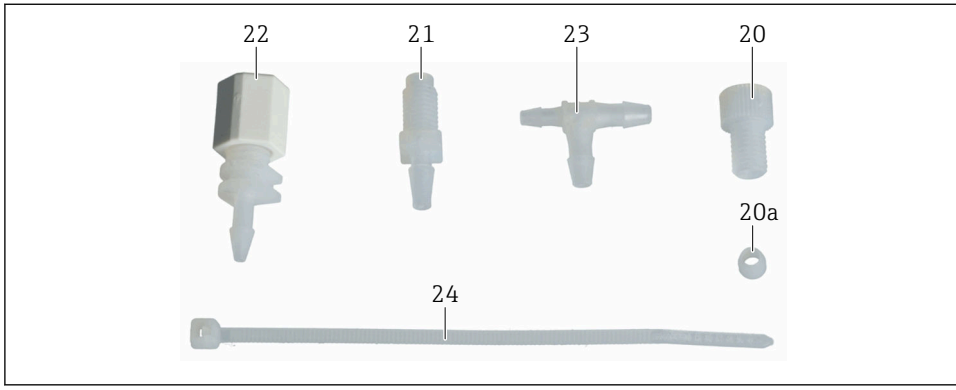
# 5 Scope of delivery

## 5.1 71516284 Kit CA80TN hose connector set

The contents of Kit 71516284 correspond to the accessories included with CAV880-SXSx1+**RC**.

The kit contains the following parts → 4, 9, the items refer to → 4, 9 and → 9, 13:

| | | | |
|---|---|---|---|
| 12 x | Short-thread ¼"-28 UNF fitting | 1 x | T-section with reduction ⅛" - 3/32" |
| 12 x | Cone for ¼"-28 UNF fitting | 7 x | Cable ties |
| 4 x | ¼"-28 fitting with nozzle for ID 3.2 | 1 x | Kit instructions |
| 2 x | Hose connector ID 3.2 to AD 3.2 | | |

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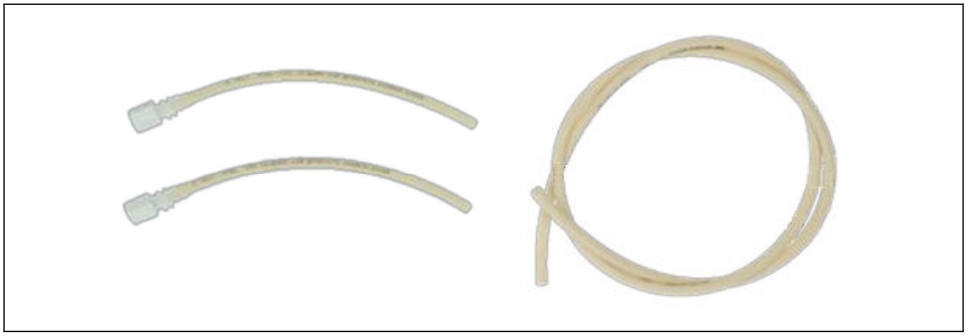
4 *CA80TN Hose connector set*

## 5.2 71704529 Kit CA80TN pump hose and PharMed hose

The kit contains the following parts → 5, 10:

| | | | |
|---|---|---|---|
| 5 x | Hose, pump ID 1.6 W 1.6 L143 J8 BPT | 1 x | Kit instructions |
| 0.5 m | Hose ID 3.2 W 1.6 PharMed | | |



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*5 CA80TN Pump hose and PharMed hose*

# 6 Replacing components

## 6.1 Preparation

1. Select **Mode → Manual mode** and confirm by pressing the navigator button.
2. Wait until the analyzer has finished the measurement and **Manual** is displayed as the **Current mode**.
3. Stop the sample feed.
4. Remove the covers of the reagent bottles and the hoses and place them in a plastic vessel.

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*6 Beaker for covers with hoses*

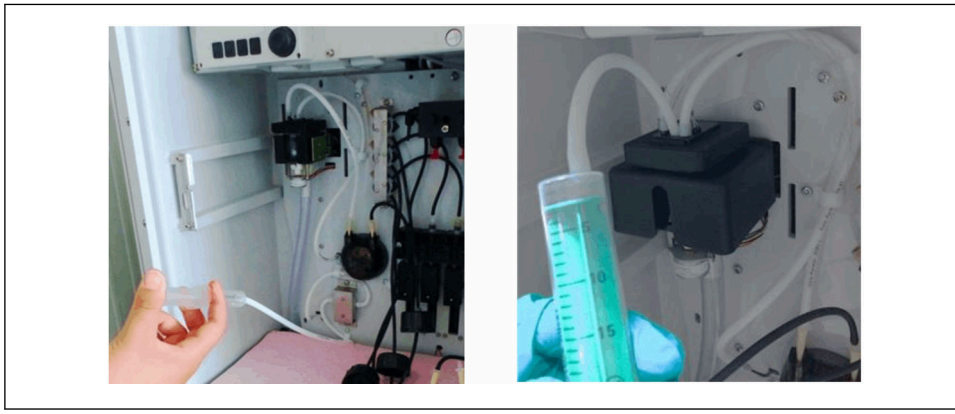
5. Remove the bottle tray together with the bottles from the analyzer.
6. Place the hoses in an empty beaker and select **Menu → Operation → Maintenance → Decommissioning → Empty hoses**.

The software evaluates this as the bottles being removed. Therefore, they need to be reinserted at a later time.

7. Place the hoses in a beaker with distilled or treated water and select **Menu → Operation → Maintenance → Decommissioning → Rinse with water**. Wait until flushing is finished.
8. Place the hoses in an empty beaker again and select **Menu → Operation → Maintenance → Decommissioning → Empty hoses**.

All the hoses are now flushed, clean and filled with air. It is now possible to work on the analyzer without danger.

9. The analyzer cannot drain the SPx sample hose and, if applicable, the photometer cuvette/reactor (depending on parameters). To do this, remove the hose and drain it with a dispenser.



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*7 Draining the SPx sample hose and photometer*

10. **Disconnect the analyzer from the power supply and secure the circuit breaker against unintentional recommissioning.**

## 6.2 Replacing the hose connectors

**Use:**

The hose connectors are only replaced when necessary, e.g., due to embrittlement, rupture, thread damage, or leakage.

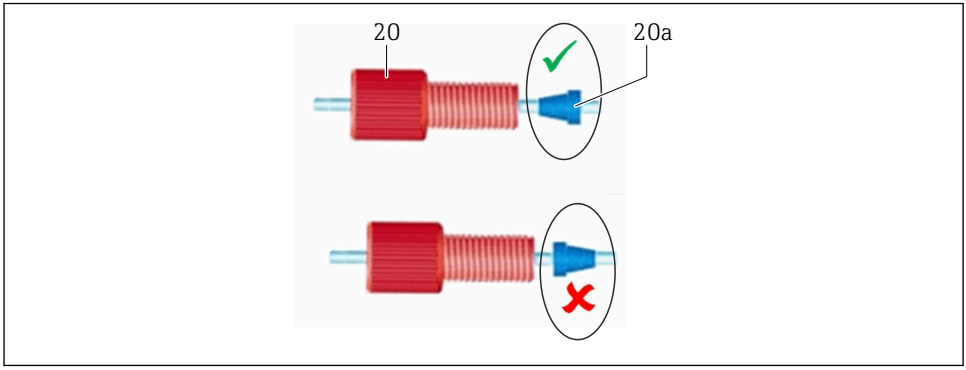
The threads of the plastic hose connectors are sensitive!

Carefully tighten the connectors and union nuts; finger tight only!

The hose connector items can be seen in → 9, 13.

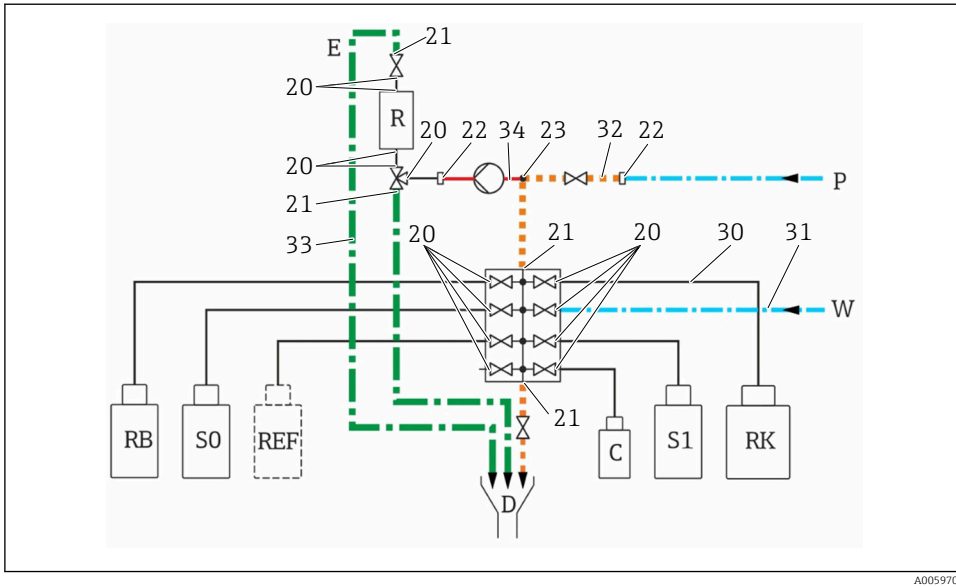
For the ⅛"-28 UNF fittings with separate clamping cone, ensure the cone is installed in the correct position (→ 8, 12).

1. Carry out preparatory work as per section 6.1 → 10.
2. For all hose connections with a hose nozzle (items 21, 22, and 23), secure the hoses with cable ties.




8 *Fitting with clamping cone*

3. Putting the analyzer back into operation → 13.




9 *Hose system, hose connectors and chemicals*

*20 Hose connector, incl. 20a ¼"-28 UNF fitting for hose ID 1.6 + cone*
*21 ¼"-28 UNF fitting with nozzle for hose ID 3.2 mm*
*22 Hose conn. OD 3.2 to ID 3.2*
*23 T-reduction ⅛" - 3/32"*
*30 Rigid hose PTFE WT ID 1.6 (1/16") / OD 3.2 (⅛")*
*31 Rigid hose PTFE BK ID 1.6 (1/16") / OD 3.2 (⅛")*
*32 PharMed® flexible hose ID 3.2 mm (⅛")*
*33 C-Flex flexible hose WT ID 3.2 mm (⅛")*
*34 Pump hose ID 1.6 (1/16") / AD 4.8 (3/16")*

## 6.3 Recommissioning

1. Insert the bottle tray with reagents, standard and cleaner.
2. Switch the power supply to the analyzer back on.
3. Connect hoses to the reagent containers and fill as described below:
4. Select **Menu → Operation → Maintenance → Bottle replacement → Bottle insertion → Bottle selection**.
5. Highlight all the bottles and confirm by pressing the **OK** softkey.
6. Select the **Bottles inserted confirmation** entry.
7. Activate the sample feed.
8. Select **Mode → Continue automatic mode** to start the normal measuring operation.

9. Check all the new components for leaks.

Recalibration is not required if only the hose connectors have been replaced.

A two-point calibration may be necessary if additional maintenance work has been performed. In this case, follow the Operating Instructions or the relevant kit instructions.

# 7 Additional documentation

Detailed information on the devices can be found in the Operating Instructions for the analyzer and in the other documentation, available at:

- www.endress.com/device-viewer
- Smartphone/tablet: Endress+Hauser Operations app

# 8 Disposal

If required by the Directive 2012/19/EU on waste electrical and electronic equipment (WEEE), the product is marked with the depicted symbol in order to minimize the disposal of WEEE as unsorted municipal waste. Do not dispose of products bearing this marking as unsorted municipal waste. Instead, return them to the manufacturer for disposal under the applicable conditions.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