

# Installation Instructions

## **Liquiline System CA80SI/82HA analyzer**

Maintenance



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






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# 1 Overview

## 1.1 Spare parts kits

These installation instructions apply to the following spare parts kits:

Description	Page
CAV800-AH/R1 for CA80SI/82HA (silicate + hardness), for 1-channel device, for 1 year	→  6
CAV800-AH/R1 for CA80SI/82HA (silicate + hardness), for 2-channel device, for 1 year	→  7
CAV800-AH/R1 for CA80SI/82HA (silicate + hardness), for 4-channel device, for 1 year	→  8
CAV800-AH/R1 for CA80SI/82HA (silicate + hardness), for 6-channel device, for 1 year	→  9
CAV800 silicate and low range hardness, option PP = capillaries incl. holder	→  9
CAV800 silicate and low range hardness, option PQ = magnetic stir bar	→  10
CAV800 silicate and low range hardness, option PR = pump head	→  10
CAV800 low range hardness, option PW = reactor cuvette	→  11

## 1.2 Product structure

		Device, parameter			
	AH	SiO <sub>2</sub> , CA80SI, heteropoly blue method			
	R1	CaCO <sub>3</sub> , CA82HA, 0 to 2.5 mg/l			
		Annual kit, quantity			
		1	1 kit (for 1 year of maintenance)		
		2	2 kits (for 2 years of maintenance or 2 devices/1 year)		
		3	3 kits (for 3 years of maintenance or 3 devices/1 year)		
			Number of sampling points		
			1	1 sampling point	
			2	2 sampling points	
			4	4 sampling points	
			6	6 sampling points	
				Enclosed accessories	
				PP	Capillaries incl. holder
				PQ	Magnetic stir bar (2x)
				PR	Pump head with hose, without motor
				PW	Reactor cuvette

## 2 Intended use

- The parts of the kits must only be used as spare parts for CA80SI/82HA analyzers. Any other use is not permitted!
- Use only 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 chapters of this manual, as the procedure for electrical safety depends on the service kits used. The CA8x analyzer 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 the process medium!**

- ▶ Wear protective gloves, protective goggles and protective clothing, particularly when working with reagents, chemicals or process medium.

**⚠ CAUTION****Risk to health due to contact with chemicals!**

- ▶ When handling chemicals, note the warnings on the safety data sheets. Wear acid-proof protective gloves, a protective coat, and safety goggles.
- ▶ Note the nationally applicable workplace safety regulations for the work area when handling toxic or corrosive chemicals. If necessary, consult a physician and show the safety data sheet or the information on the chemical container.

**⚠ 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](http://www.addresses.endress.com)

# 5 Scope of delivery

The scope of delivery depends on the order version:

- 2-year maintenance kits contain double the quantity of parts compared with the relevant 1-year kits.
- 3-year maintenance kits contain triple the quantity of parts compared with the relevant 1-year kits.

## 5.1 CAV800-AH/R1 kit for CA80SI/82HA (silicate + hardness), for 1-channel device, for 1 year

The kit contains the following parts →  1,  6:

- |   |        |                                       |    |     |  |
|---|--------|---------------------------------------|----|-----|--|
| 1 | 6 x    | Dispenser 2.5 ml with adapter         | 8  | 6 m | Hose OD 8 W 1.25 PUN-H bk  |
| 2 | 6 x    | Luer connector with grommet ID 1.6 PP | 9  | 2 m | Hose OD 6 W 1.0 PUN-H bk   |
| 3 | 1 x    | Hose connector 3.1x3.1 (C-Flex)       | 10 | 2 x | Filter mat G2, 55x95x10 mm                                       |
| 4 | 1 x    | Hose connector 3.2x1.6 (Norprene)     | 11 | 2 x | CA80SI cuvette/82HA (injection-molded, only included for CA80SI) |
| 5 | 2 m    | Hose, C-Flex, OD 6.4, ID 3.2          | 12 | 1 x | Hose cutter SMC TK-3 12 mm                                       |
| 6 | 3 m    | Hose, Norprene A, OD 4.8, ID 1.6      |    | 1 x | Kit instructions   |
| 7 | 0.35 m | Hose OD 17 ID 13, PVC                 |    |     |  |



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 1 CAV800-AH/R1 for CA80SI/82HA (silicate + hardness), for 1-channel device, for 1 year

## 5.2 CAV800-AH/R1 kit for CA80SI/82HA (silicate + hardness), for 2-channel device, for 1 year

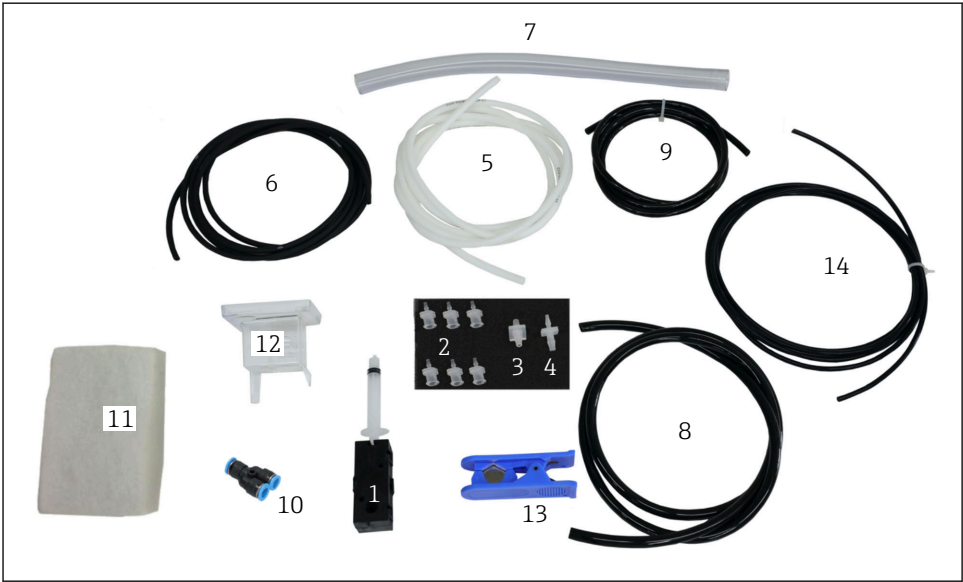
The kit contains the following parts →  1,  6:

<b>1</b>	6 x	Dispenser 2.5 ml with adapter	<b>8</b>	6 m	Hose OD 8 W 1.25 PUN-H bk
<b>2</b>	6 x	Luer connector with grommet ID 1.6 PP	<b>9</b>	4.5 m	Hose OD 6 W 1.0 PUN-H bk
<b>3</b>	1 x	Hose connector 3.1x3.1 (C-Flex)	<b>10</b>	2 x	Filter mat G2, 55x95x10 mm
<b>4</b>	1 x	Hose connector 3.2x1.6 (Norprene)	<b>11</b>	2 x	CA80SI cuvette/82HA (injection-molded, only included for CA80SI)
<b>5</b>	2 m	Hose, C-Flex, OD 6.4, ID 3.2	<b>12</b>	1 x	Hose cutter SMC TK-3 12 mm
<b>6</b>	3 m	Hose, Norprene A, OD 4.8, ID 1.6		1 x	Kit instructions
<b>7</b>	0.35 m	Hose OD 17 ID 13, PVC			

5.3 CAV800-AH/R1 kit for CA80SI/82HA (silicate + hardness), for 4-channel device, for 1 year

The kit contains the following parts → 📦 2, 📦 8:

- |   |        |                                       |    |     |  |
|---|--------|---------------------------------------|----|-----|--|
| 1 | 6 x    | Dispenser 2.5 ml with adapter         | 9  | 5 m | Hose OD 6 W 1.0 PUN-H bk   |
| 2 | 6 x    | Luer connector with grommet ID 1.6 PP | 10 | 1 x | Y-connector DA 4 mm  |
| 3 | 1 x    | Hose connector 3.1x3.1 (C-Flex)       | 11 | 2 x | Filter mat G2, 55x95x10 mm                                       |
| 4 | 1 x    | Hose connector 3.2x1.6 (Norprene)     | 12 | 2 x | CA80SI cuvette/82HA (injection-molded, only included for CA80SI) |
| 5 | 2 m    | Hose, C-Flex, OD 6.4, ID 3.2          | 13 | 1 x | Hose cutter SMC TK-3 12 mm                                       |
| 6 | 3 m    | Hose, Norprene A, OD 4.8, ID 1.6      | 14 | 5 m | Hose OD 4 mm W1 PTFE bk  |
| 7 | 0.35 m | Hose OD 17 ID 13, PVC                 |    | 1 x | Kit instructions   |
| 8 | 5 m    | Hose OD 8 W 1.25 PUN-H bk             |    |     |  |



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📦 2 CAV800-AH kit for 4/6 measuring points, 1 year



## 5.4 CAV800-AH/R1 kit for CA80SI/82HA (silicate + hardness), for 6-channel device, for 1 year

The kit contains the following parts →  2,  8:

1	6 x	Dispenser 2.5 ml with adapter	9	7 m	Hose OD 6 W 1.0 PUN-H bk
2	6 x	Luer connector with grommet ID 1.6 PP	10	1 x	Y-connector DA 4 mm
3	1 x	Hose connector 3.1x3.1 (C-Flex)	11	2 x	Filter mat G2, 55x95x10 mm
4	1 x	Hose connector 3.2x1.6 (Norprene)	12	2 x	CA80SI cuvette/82HA (injection-molded, only included for CA80SI)
5	2 m	Hose, C-Flex, OD 6.4, ID 3.2	13	1 x	Hose cutter SMC TK-3 12 mm
6	3 m	Hose, Norprene A, OD 4.8, ID 1.6	14	5 m	Hose OD 4 mm W 1 PTFE bk
7	0.35 m	Hose OD 17 ID 13, PVC		1 x	Kit instructions
8	5 m	Hose OD 8 W 1.25 PUN-H bk			

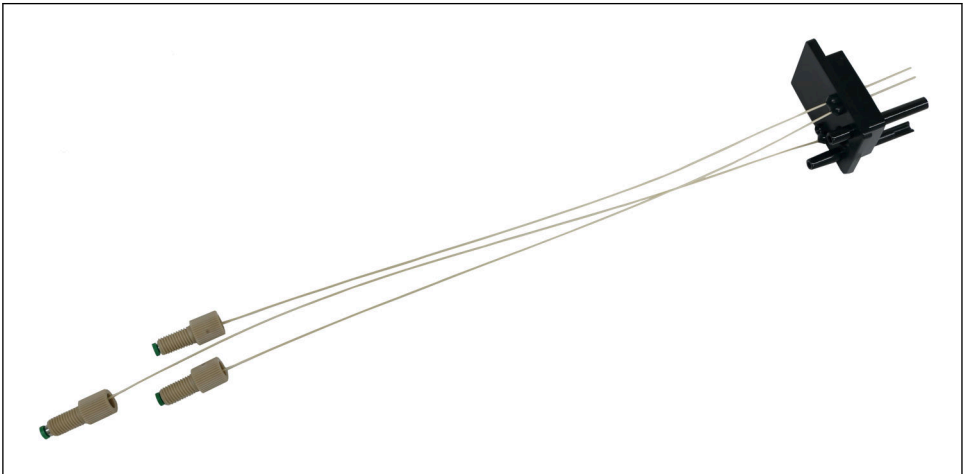
## 5.5 CAV800 silicate and low range hardness kit, option PP = capillaries incl. holder

The kit contains the following parts →  3,  9:


1 x	Capillaries including holder	1 x	Kit instructions
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Only tighten the couplings of the capillaries hand-tight!



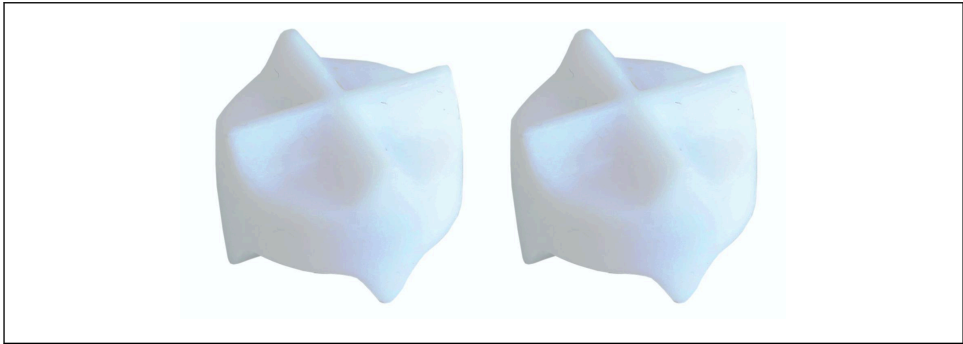
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 3 CAV800-AH/R1 kit, option PP = capillaries incl. holder


5.6      **CAV800 silicate and low range hardness kit, option PQ = magnetic stir bar**

The kit contains the following parts →  4,  10:



- |     |   |     |                  |
|-----|---|-----|------------------|
| 2 x | Magnetic stir bar dia. 14 mm x H 10 mm, for magnetic stirrer in the cuvette | 1 x | Kit instructions |
|-----|---|-----|------------------|



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 4      CAV800-AH kit, option PQ = magnetic stir bar

5.7      **CAV800 silicate and low range hardness kit, option PR = pump head**

The kit contains the following parts →  5,  11:

- |     |   |     |                  |
|-----|---|-----|------------------|
| 1 x | Pump head with hose (without motor), for standard S1 pump | 1 x | Kit instructions |
|-----|---|-----|------------------|



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5 CAV800-AH/R1 kit, option PR = pump head

## 5.8 CAV800 kit, low range hardness, option PW = reactor cuvette

The kit contains the following parts → 6, 11:

1 x Cuvette (injection-molded)

1 x Kit instructions



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6 CAV800 kit, low range hardness, option PW = reactor cuvette

## 6 Notes on maintenance work

### 6.1 Description of maintenance measures

Maintenance measures are described in the Operating Instructions of the CA80SI/82HA analyzer (E+H Operating Instructions BA01650C/07/EN or BA02427C/07/EN).

#### **Carry out maintenance measures as described in these Operating Instructions!**

Maintenance work on the analyzer can be carried out by Endress+Hauser specialist staff or by a trained user.

For optimal maintenance of the analyzer, Endress+Hauser recommends signing a maintenance contract.

More information regarding maintenance contracts is available from your Endress+Hauser sales organization.

### 6.2 Maintenance intervals

The various maintenance intervals are also explained in the Operating Instructions.



Unauthorized extension of these intervals can lead to measurement errors and voiding of the warranty.



The maintenance intervals may need to be reduced under extreme measuring conditions (cold, heat, dirt, aggressive medium, etc.).

### 6.3 Documentation of maintenance



#### **All maintenance and repair work must be documented!**

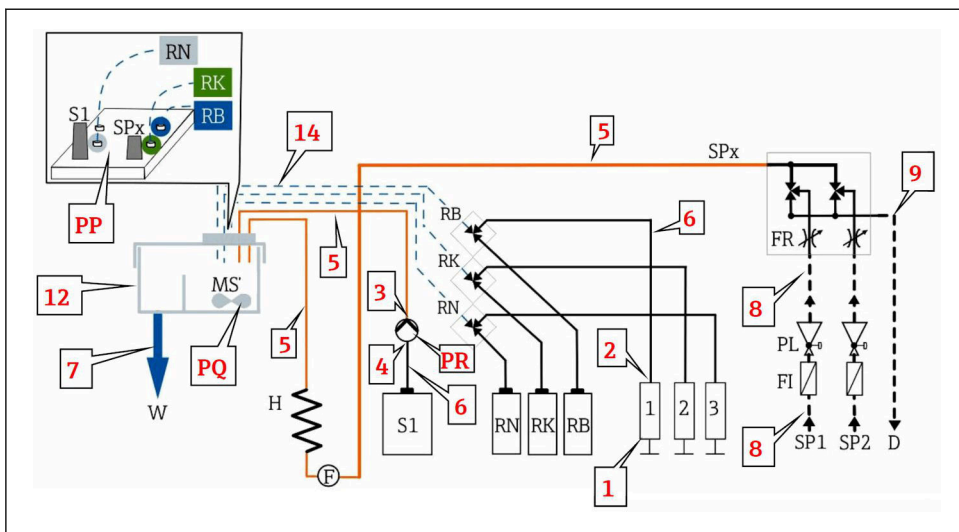
A maintenance booklet is enclosed with each analyzer for this purpose. Please document all work on the analyzer in this maintenance booklet.

New maintenance booklets for the CA80SI/82HA are available from the Endress+Hauser service organization.

## 7 Use of maintenance parts

### 7.1 Maintenance of 1/2-channel device

The figure below shows the use of maintenance parts for 1-channel devices and 2-channel devices →  7,  13. The item numbers and ordering options refer to the information in Chapter 2.



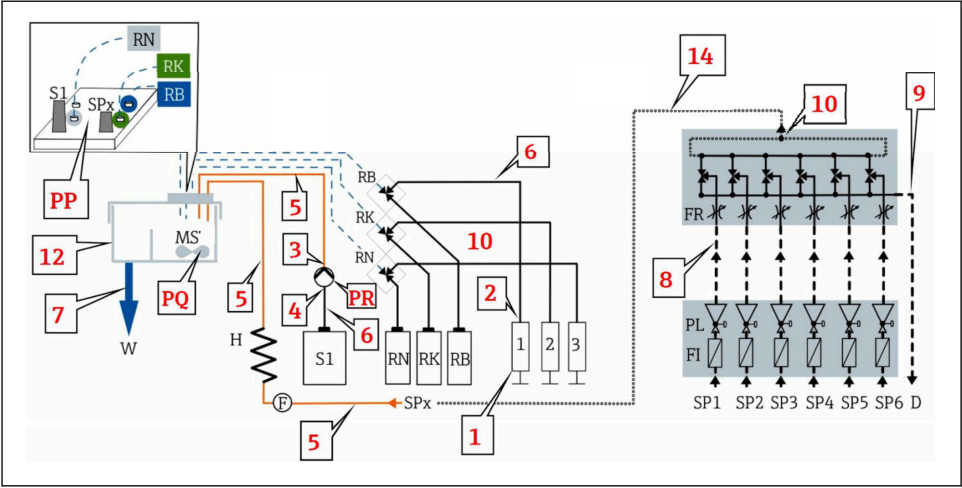
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7 Use of maintenance parts, 1/2-channel devices

D	Sample outlet	RK	Reagent RK
F	Flow sensor	RN	Reagent RN
FR	Flow controller	S1	Standard S1
FI	Filter	SP	Pump for standard solution
PL	Pressure limiter	SPx	Sample inlet
H	Heater (only on CA80SI)	W	Drain
MS	Magnetic stirrer	1 - 3	Dispensers
RB	Reagent RB		

## 7.2 Maintenance of 4/6-channel device

The figure below shows the use of maintenance parts for 4-channel devices and 6-channel devices → 8, 14. The item numbers and ordering options refer to the information in Chapter 2.



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8 Use of maintenance parts, 4/6-channel devices

D	Sample outlet	RK	Reagent RK
F	Flow sensor	RN	Reagent RN
FR	Flow controller	S1	Standard S1
FI	Filter	SP	Pump for standard solution
PL	Pressure limiter	SPx	Sample inlet
H	Heater (only on CA80SI)	W	Drain
MS	Magnetic stirrer	1 - 3	Dispensers
RB	Reagent RB		

## 8 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](http://www.endress.com/device-viewer)
- Smartphone/tablet: Endress+Hauser Operations app

## 9 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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