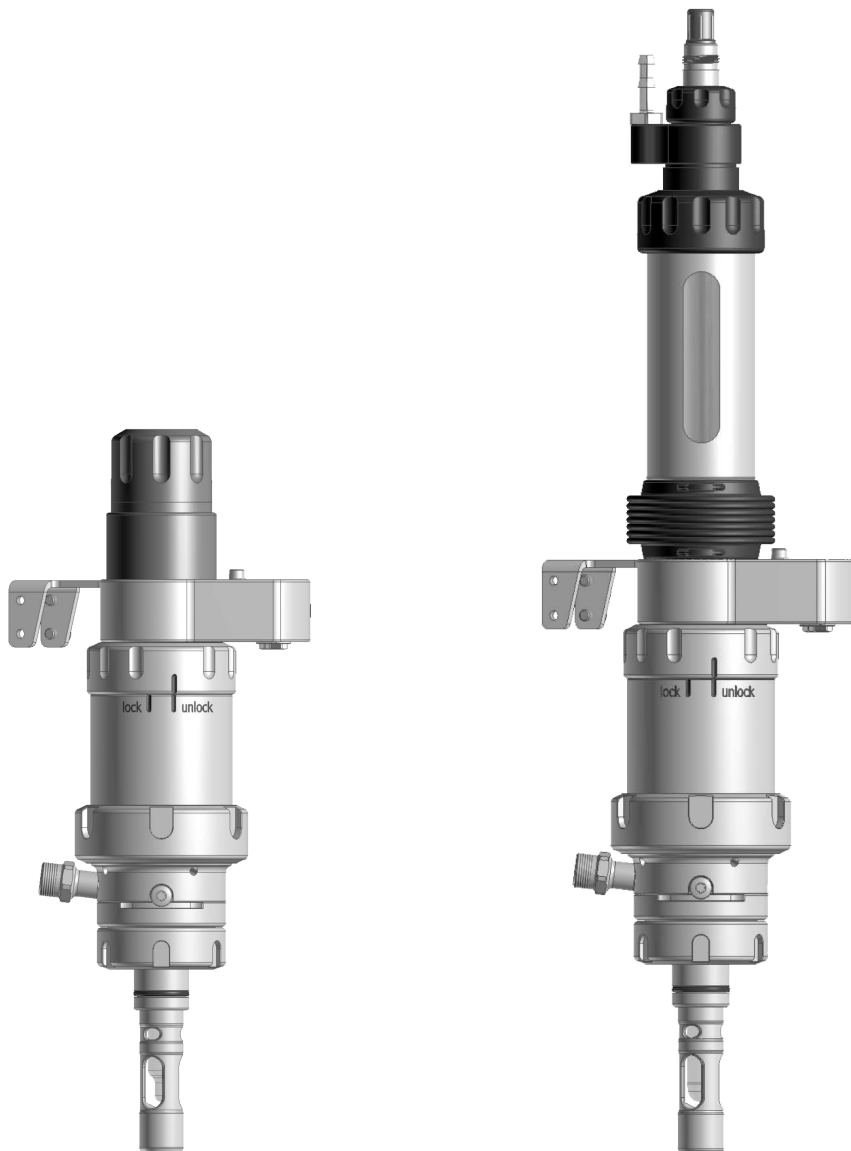


SensoGate WA130H

Retractable Fitting



Read before installation.
Keep for future use.



Supplemental Directives

READ AND SAVE THIS DOCUMENT FOR FUTURE REFERENCE. BEFORE ATTEMPTING TO ASSEMBLE, INSTALL, OPERATE OR MAINTAIN THE PRODUCT, PLEASE ENSURE A COMPLETE UNDERSTANDING OF THE INSTRUCTIONS AND RISKS DESCRIBED HEREIN. ALWAYS OBSERVE ALL SAFETY INFORMATION. FAILURE TO COMPLY WITH INSTRUCTIONS IN THIS DOCUMENT COULD RESULT IN SERIOUS INJURY AND/OR PROPERTY DAMAGE. THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.



These supplemental directives explain how safety information is laid out in this document and what content it covers.

Safety Chapter

This document’s safety chapter is designed to give the reader a basic understanding of safety. It illustrates general hazards and gives strategies on how to avoid them.

Warnings

This document uses the following warnings to indicate hazardous situations:

Symbol	Category	Meaning	Remark
	WARNING	Designates a situation that can lead to death or serious (irreversible) injury.	The warnings contain information on how to avoid the hazard.
	CAUTION	Designates a situation that can lead to slight or moderate (reversible) injury.	
<i>None</i>	NOTICE	Designates a situation that can lead to property or environmental damage.	

Symbols Used in this Document

Symbol	Meaning
→	Reference to additional information
✓	Interim or final result in instructions for action
▶	Sequence of figures attached to an instruction for action
①	Item number in a figure
(1)	Item number in text

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1 Safety

This document contains important instructions for the use of the product. Always follow all instructions and operate the product with caution. If you have any questions, please contact Knick Elektronische Messgeräte GmbH & Co. KG (hereinafter sometimes referred to as “Knick”) using the information provided on the back page of this document.

1.1 Intended Use

The SensoGate WA130H (the “product”) is a retractable fitting for installation in boilers, tanks, and pipes. The product is used to mount a sensor for measuring process parameters. The sensor is immersed in the process medium by the SensoGate WA130H. The SensoGate WA130H is pneumatically operated.

Cleaning, calibration, or sensor replacement under process conditions by the customer (hereinafter sometimes referred to as the “operating company”) may be conducted, subject to the requirements set forth herein, by placing the product into the service position (SERVICE limit position).

If the product is used with any product or part not authorized by Knick, the operating company assumes all risks and liabilities related thereto.

The SensoGate WA130H fitting can be used with the following sensor types:

Solid-electrolyte sensors	Body diameter 12 mm, length 225 mm, sensor head thread PG 13.5
Liquid-electrolyte sensors	Body diameter 12 mm, length 250 mm
Optical sensors	Body diameter 12 mm, sensor head thread PG 13.5

For further information, refer to the applicable documentation of the sensor manufacturer.

The defined operating conditions must be observed when using this product. → *Specifications, p. 56*

Thanks to its modular design, the SensoGate WA130H can be adapted to changed conditions by the customer.

→ *Permissible Changes, p. 20*

USE CAUTION AT ALL TIMES WHEN INSTALLING, USING, MAINTAINING OR OTHERWISE INTERACTING WITH THE PRODUCT. ANY USE OF THE PRODUCT EXCEPT AS SET FORTH HEREIN IS PROHIBITED, AND MAY RESULT IN SERIOUS INJURY OR DEATH, AS WELL AS DAMAGE TO PROPERTY. THE OPERATING COMPANY SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGES RESULTING FROM OR ARISING OUT OF AN UNINTENDED USE OF THE PRODUCT.

The SensoGate WA130H-X version is certified for operation in explosive atmospheres.

→ *Operation in Hazardous Locations, p. 9*

When installed, SensoGate WA130H can be sterilized with steam. An independent testing institute evaluated the product in terms of its sterilizability.¹⁾

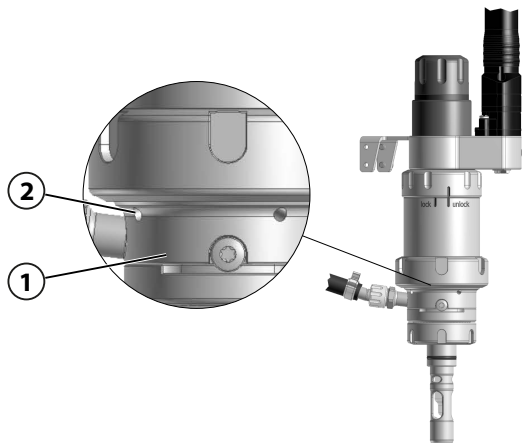
1.2 Personnel Requirements

The operating company shall ensure that any personnel using or otherwise interacting with the product is adequately trained and has been properly instructed.

The operating company shall comply and cause its personnel to comply with all applicable laws, regulations, codes, ordinances, and relevant industry qualification standards related to product. Failure to comply with the foregoing shall constitute a violation of operating company’s obligations concerning the product, including but not limited to an unintended use as described in this document.

¹⁾ TNO report V7942 dated February 25, 2008 → www.tno.nl

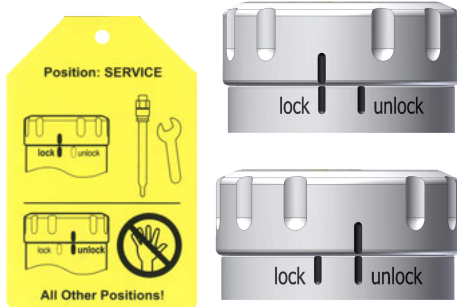
1.3 Safeguards



Leakage Bores

The calibration chamber (1) is provided with three radial leakage bores (2).

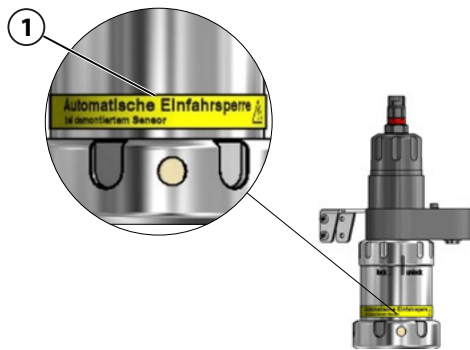
Process medium escaping from the leakage bores (2) is indicative of damage to the calibration chamber's O-rings. This damage can be detected and repaired.



SensoLock Locking

The SensoLock immersion lock prevents the SensoGate WA130H from accidentally moving into the process position (PROCESS limit position).

In the service position (SERVICE limit position), manually setting the SensoLock ring to "lock" locks the SensoGate WA130H and prevents it from moving into the process position (PROCESS limit position).

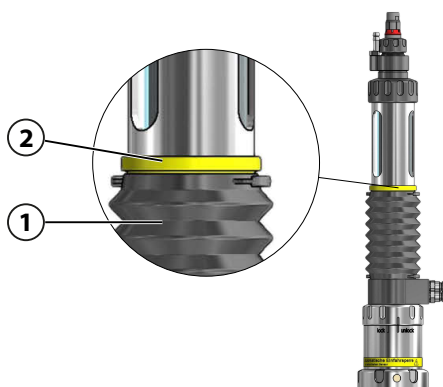


Immersion Lock Without a Mounted Solid-Electrolyte Sensor

The safeguard is only available with special version W.
→ Product Code, p. 12

The immersion lock can be seen at the yellow indicator ring (1) on the drive unit of the SensoGate WA130H. If the yellow indicator ring (1) is missing, the safeguard function is not available.

A mechanical lock prevents the SensoGate WA130H without a mounted solid-electrolyte sensor from being moved into the process position (PROCESS limit position).



Immersion Lock Without a Mounted Liquid-Electrolyte Sensor

The safeguard is only available with special version V.
→ Product Code, p. 12

The immersion lock can be seen at the yellow indicator ring (2) above the bellows (1). If the yellow indicator ring (2) is missing, the safeguard function is not available.

A mechanical lock prevents the SensoGate WA130H without a mounted liquid-electrolyte sensor from being moved into the process position (PROCESS limit position).

1.4 Residual Risks

The product has been developed and manufactured in accordance with generally accepted safety rules and regulations, as well as an internal risk assessment. Despite the foregoing, the product may among others bear the following risks:

Environmental Influences

The effects of moisture, ambient temperature, chemicals, and corrosion can negatively impact the safe operation of the product.

Please observe the following instructions:

- If possible, install the product inside a protected area of the plant. Alternatively, take appropriate measures to protect the SensoGate WA130H (e.g., install ZU0759 protective cap¹⁾).
→ *Accessories, p. 47*
- If using aggressive chemical process media, adjust the inspection and maintenance intervals accordingly. → *Inspection and Maintenance Intervals, p. 33*
- Adhering and sticky process media can impact the functionality of the SensoGate WA130H (e.g., by causing components to stick together). Adjust the inspection and maintenance intervals accordingly. → *Inspection and Maintenance Intervals, p. 33*

Accidental Loosening of the Process Connection

Movement of the sensor into the SERVICE/PROCESS limit positions is triggered on the SensoGate WA130H by the pressurization of the control or process air.

Some versions of the SensoGate WA130H are screwed to process connections with a thread or secured with coupling nuts. Travel movements or process-related vibrations may cause the process connection to accidentally come loose from the process or a coupling nut. Pressurized process medium may escape.

Use of an appropriate retainer clamp or locking clamp is strongly recommended.

→ *Safety Accessories, p. 8*

Operating the SensoGate WA130H without a retainer or locking clamp is at the risk of the operating company. The operating company must take action to rule out the possibility of the screw joint coupling nut accidentally loosening.

¹⁾ The ZU0759 protective cap protects against the effects of weather exposure and prevents the ingress of external liquids or particles into the area of the sensor connections.

1.5 Safety Accessories

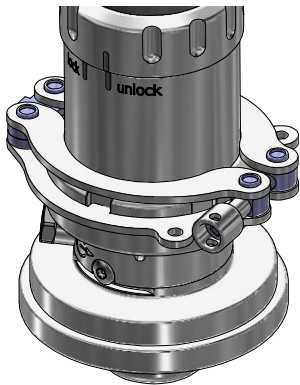
Specially developed accessories are available to increase safety. → *Accessories, p. 47*



ZU0818 Retainer Clamp for Ingold Socket, 25 mm

The retainer clamp prevents the coupling nut of the Ingold socket (25 mm) screw joint from accidentally coming loose.

The wires of the retainer clamp connect the SensoGate WA130H to the customer's process port. A locking lug on the retainer clamp engages in the groove of the coupling nut (form-fit).



ZU1138 Retainer Clamp for SensoGate Retractable Fitting

The accessory prevents the screw joint between the retractable fitting's drive unit and the process connection from accidentally coming loose.

The retainer clamp wires connect the SensoGate WA130H's drive unit with the coupling nut. The locking lugs on the retainer clamp engage in the grooves of the coupling nut (form-fit) and secure the screw joint.

1.6 Hazardous Substances

IN THE EVENT OF ANY CONTACT WITH HAZARDOUS SUBSTANCES OR OTHER INJURY HEREUNDER, SEEK IMMEDIATE MEDICAL ATTENTION OR FOLLOW APPLICABLE PROCEDURES TO ADDRESS HEALTH AND SAFETY OF PERSONNEL. FAILURE TO SEEK IMMEDIATE MEDICAL ATTENTION MAY RESULT IN SERIOUS INJURY OR DEATH.

In certain situations (e.g., sensor replacement or corrective maintenance), personnel may come into contact with the following hazardous substances:

- Process medium
- Calibration or cleaning medium
- Lubricant

The operating company is responsible for conducting a risk assessment.

See the relevant manufacturers' safety datasheets for hazard and safety instructions on handling hazardous substances.

1.7 Operation in Hazardous Locations

The SensoGate WA130H-X is certified for operation in hazardous locations.

- EU Type Examination Certificate KEMA 04ATEX4035X

The conditions for installation and operation in explosive atmospheres can be found on the corresponding certificates.

Exceeding the standardized atmospheric conditions within the manufacturer's specifications, e.g., with regard to the ambient temperature and pressure, does not endanger the retractable fitting's durability.
→ *Specifications, p. 56*

Related certificates are included in the product's scope of delivery and are available at www.knick.de in the current version.

Observe all applicable local and national codes and standards for the installation of equipment in explosive atmospheres. For further guidance, consult the following:

- IEC 60079-14
- EU directives 2014/34/EU and 1999/92/EC (ATEX)

1.7.1 Possible Ignition Hazards During Installation and Maintenance

To avoid mechanically generated sparks, handle the SensoGate WA130H-X with care and take suitable protective action, e.g., use covers and pads.

The metallic parts of the SensoGate WA130H-X must be connected to the plant's equipotential bonding system using the metallic process connection and the grounding connection provided for that purpose.

When components are replaced with genuine Knick spare parts made of other materials (e.g., O-rings), the information on the nameplate may then deviate from the actual version of the SensoGate WA130H-X. The operating company must assess and document the changes.

→ *Nameplates, p. 14*

Electrostatic Charging

The drive unit of specific versions of the SensoGate WA130H-X contains housing components made of non-conductive plastic. Due to their surface, the housing components may build up an electrostatic charge. To prevent this charge from becoming an effective ignition source in Zone 0, ensure that the following conditions are met:

- There is no risk of highly efficient charge-generating mechanisms.
- Non-metallic components are cleaned with a moist cloth only.

Mechanically Generated Sparks

Single impacts on metal parts or collisions between metal parts of the SensoGate WA130H-X are not a potential ignition source if the following conditions are met:

- Possible impact velocity is less than 1 m/s.
- Possible impact energy is less than 500 J.

If these conditions cannot be ensured, the operating company must reassess single impacts on metal parts or collisions between metal parts as potential sources of ignition. The operating company must implement suitable risk minimization measures, e.g., by ensuring a non-explosive atmosphere.

1.7.2 Possible Ignition Hazards During Operation

When using non-water-based cleaning, rinsing, or calibration media with a low conductivity of less than 1 nS/m, electrostatic charging of internal, conductive components may occur. The operating company must assess the associated risks and take appropriate action.

The sensors that are used must be approved for operation in explosive atmospheres. Further information can be found in the sensor manufacturer's documentation.

1.8 Safety Training

Upon request, Knick Elektronische Messgeräte GmbH & Co. KG will provide safety briefings and product training during initial commissioning of the product. More information is available from the relevant local contacts.

1.9 Maintenance and Spare Parts

Preventive Maintenance

Preventive maintenance can keep the product in good condition and minimize downtimes. Knick provides recommended inspection and maintenance intervals. → *Maintenance, p. 33*

Lubricants

Only use lubricants approved by Knick. Special applications or upgrades to special lubricants are available on request. Usage of any other lubricants shall constitute an unintended use of the product.
→ *Maintenance, p. 33*

Tools and Accessory Tools

Special and accessory tools help maintenance personnel to replace components and wear parts safely and professionally. → *Tools, p. 50*

Spare Parts

For professional corrective maintenance of the product, only use Knick genuine spare parts. Usage of any other spare parts shall constitute an unintended use of the product.
→ *Spare Parts, p. 47*

Repair Service

The Knick Repair Service offers professional corrective maintenance for the product to the original quality. Upon request, a replacement unit can be obtained for the period of the repair.

Further information can be found at www.knick.de.

2 Product

2.1 Package Contents

- SensoGate WA130H in the version ordered
- User Manual
- EU Declaration of Conformity¹⁾
- EU Type Examination Certificate¹⁾
- As applicable, supplementary datasheet for special versions¹⁾

2.2 Product Identification

The different versions of the SensoGate WA130H are encoded in a model designation.

The model designation is stated on the nameplate, the delivery note, and the product packaging.

→ *Nameplates, p. 14*

2.2.1 Model Designation Example

Model Designation ²⁾	WA130H	-	X	9	W	W	J	F	A	B	-	0	0	P	
Explosion protection	ATEX Zone 0		X								-				
Sensor	pH sensor ø12 mm with PG 13.5 and lateral electrolyte refill opening			9							-				
Seal material	FFKM - FDA - USP VI				W						-				
Wetted materials ³⁾	1.4404/1.4404/1.4404					H					-				
Process connections	Clamp 1.5", inclined							J	F			-			
Immersion depth	Short								A			-			
Connection	PEEK media connection									B			-		
Special version	Immersion tube with 2 ligaments, for pasty media											-	0	0	P

¹⁾ Supplied depending on the ordered version of the SensoGate WA130H. → *Product Code, p. 12*

²⁾ Hygienic design, basic unit with pneum. drive incl. 2 limit switches and 2 rinse connections, stainless steel version

³⁾ Material combinations: process-wetted part of calibration chamber / rinse-wetted part of calibration chamber / immersion tube

2.2.2 Product Code

Basic Unit¹⁾		WA130H	-	-	-	-	-	-	-	-	-	-	-	-
Explosion protection	ATEX Zone 0		X											
	None		N											
Sensor	Sensor, ø12 mm with PG13.5		0											
	pH sensor ø12 mm with pressurization unit, pressure chamber for compressed air supply		1											
	Optical sensor, ø12 mm with PG 13.5		4											
	pH sensor ø12 mm with PG 13.5 and lateral electrolyte refill opening		9											
Seal material	EPDM - FDA			E										
	FKM - FDA			F										
	FFKM/EPDM - FDA ²⁾			G										
	FFKM - FDA			H										
	EPDM - FDA - USP VI			U										
	FFKM - FDA - USP VI			W										
Wetted materials ³⁾	1.4404/1.4404/1.4404			H										
Process connections	Ingold socket, 25 mm				H	0								
	Ingold socket hygienic, 25 mm, groove 29 mm				H	1								
	Dairy pipe DN 40				C	0								
	Dairy pipe DN 50				C	1								
	Dairy pipe DN 65				C	2								
	Dairy pipe DN 80				C	3								
	Dairy pipe DN 100				C	4								
	Clamp 1.5"				J	1								
	Clamp 2"				J	2								
	Clamp 2.5"				J	3								
	Clamp 3"				J	4								
	Clamp 3.5"				J	5								
	Clamp 2", inclined				J	G								
	Clamp 1.5", inclined				J	F								
	BioControl DS 50				L	1								
	BioControl DS 65				L	2								
	Clamp 2.5", inclined				J	K								
	Varivent (≥ DN 50)				V	1								
	Varivent (≥ DN 65 short, ≥ DN 80 long)				V	2								
	Varivent, inclined 12° (≥ DN 50)				V	4								
Immersion depth	Short									A				
	Long									B				

¹⁾ Hygienic design, basic unit with pneum. drive incl. 2 limit switches and 2 rinse connections, stainless steel version

²⁾ Process-wetted seals / rinse-wetted seals

³⁾ Material combinations: process-wetted part of calibration chamber / rinse-wetted part of calibration chamber / immersion tube

Basic Unit¹⁾		WA130H	-	-	-	-	-	-	-	-	-	-	-	-				
Connection	PEEK media connection												B	-				
	PEEK media connection with integrated connection for additional medium													C	-			
Special version	None														-	0	0	0
	Equipped with special grease (provided by customer)														-	0	0	1
	Customer-specific special datasheet														-	0	0	F
	Immersion tube with 2 ligaments, for pasty media														-	0	0	P

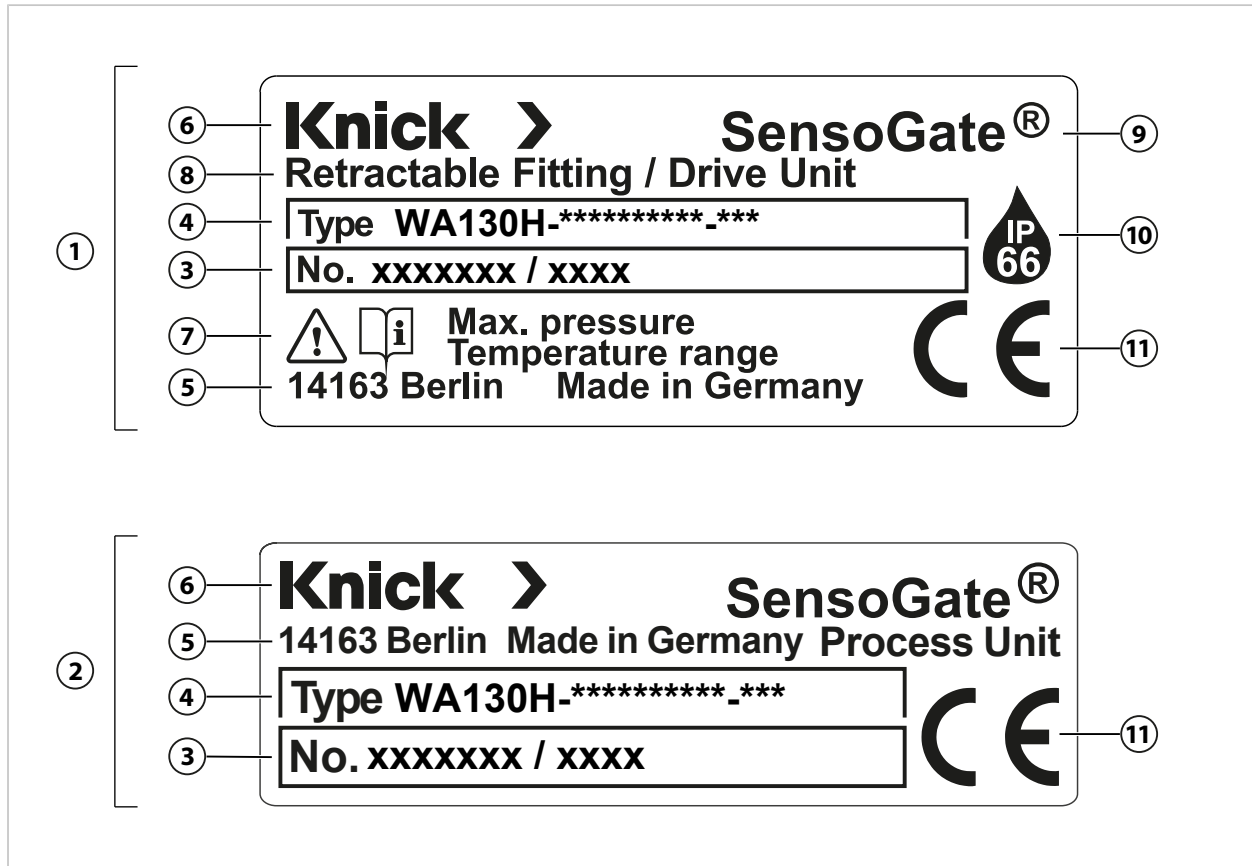
¹⁾ Hygienic design, basic unit with pneum. drive incl. 2 limit switches and 2 rinse connections, stainless steel version

2.3 Nameplates

The SensoGate WA130H is identified by nameplates on the drive unit and the process unit. The information provided on the nameplates varies according to the version of the SensoGate WA130H.

Nameplate, Version Without Ex Approval

Note: The figure shows a nameplate for the SensoGate WA130H-N version by way of example.

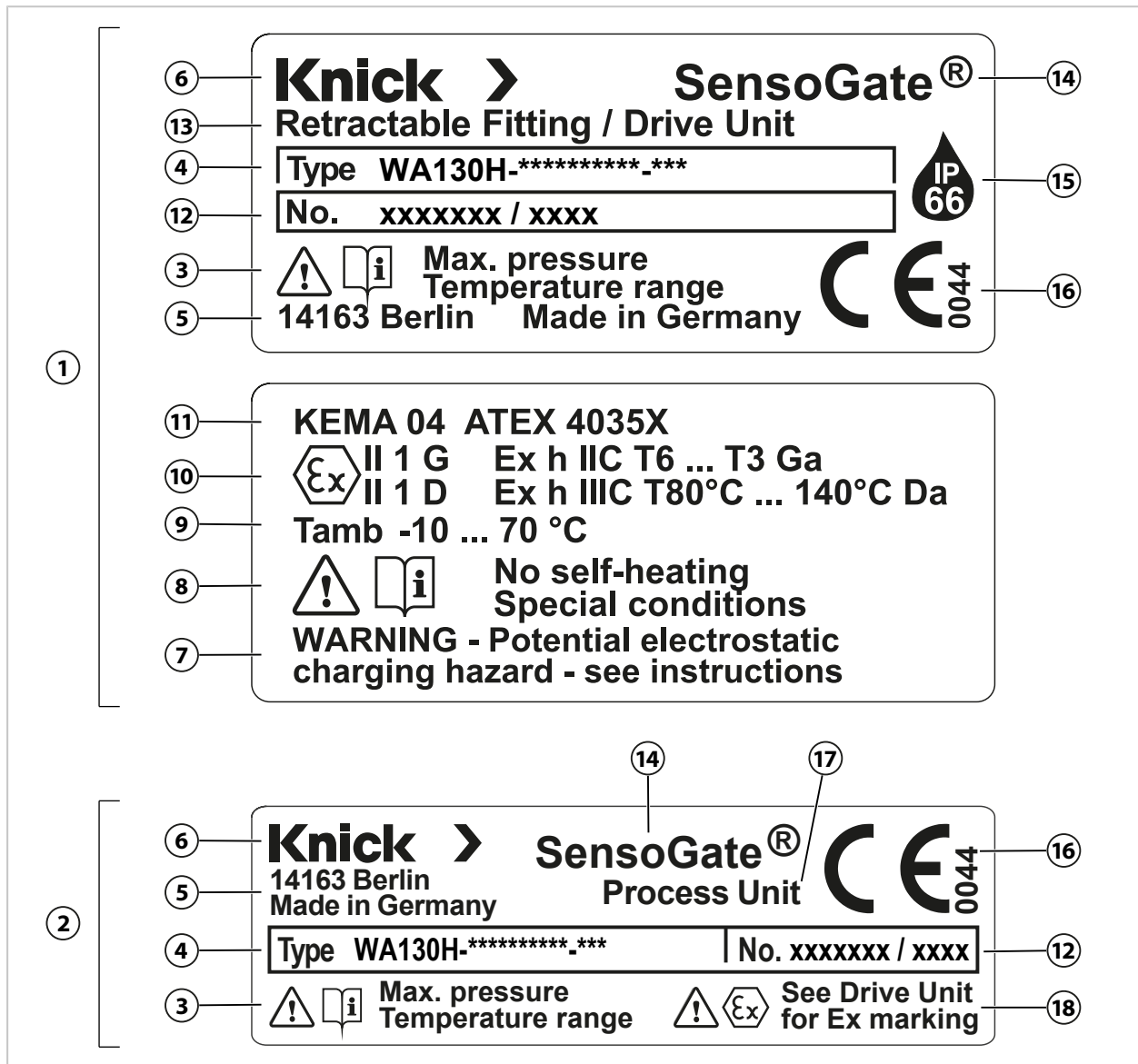


1 Drive unit nameplate	7 Max. operating pressure and temperature range ¹⁾
2 Process unit nameplate	8 Product group: retractable fitting Assembly group: process unit
3 Serial number/year and week of production	9 Product family
4 Model designation	10 IP degree of protection
5 Manufacturer's address with designation of origin	11 CE mark
6 Manufacturer	

¹⁾ Further information is available in the → *Safety*, p. 5 and → *Specifications*, p. 56 chapters.

Nameplate, Version With Ex Approval








Note: The figure shows a nameplate for the SensoGate WA130H-X version by way of example.



1	Drive unit nameplates	10	ATEX marking, information on explosion protection
2	Process unit nameplate	11	EU type examination certificate test number
3	Max. operating pressure and temperature range ¹⁾	12	Serial number/year and week of production
4	Model designation	13	Product group: retractable fitting Assembly group: drive unit
5	Manufacturer's address with designation of origin	14	Product family
6	Manufacturer	15	IP degree of protection
7	Reference to explosion protection information ¹⁾	16	CE marking with identification number
8	No self heating/special conditions ¹⁾	17	Assembly group: process unit
9	Permissible ambient temperature	18	Reference to ATEX information for the drive unit

¹⁾ Further information is available in the related EU Type Examination Certificate and in the → *Safety*, p. 5 and → *Specifications*, p. 56 chapters.

2.4 Symbols and Markings

	Special conditions and danger points! Observe the safety information and instructions on safe use of the product as outlined in the product documentation.
	Reminder to read the documentation
	CE mark with identification number ¹⁾ of the notified body involved in the production control.
	ATEX marking ¹⁾ of the European Union for operation of the SensoGate WA130H-X in hazardous locations → <i>Operation in Hazardous Locations, p. 9</i>
	IP66 protection: The product is dust-tight and offers complete protection against contact as well as protection against strong water jets.
	Symbol to show that the SensoGate WA130H is mechanically locked.
	Symbol to show that the SensoGate WA130H is not mechanically locked.

2.5 Design and Function

SensoGate WA130H consists of two main assemblies:

- Drive unit
- Process unit

The drive unit is connected to the process unit with a coupling nut. The drive unit and process unit can be separated. → *Drive Unit: Removal, p. 35*

Various different versions of drive and process unit can be combined. → *Permissible Changes, p. 20*

The process connection is used to fasten the SensoGate WA130H to the process port.

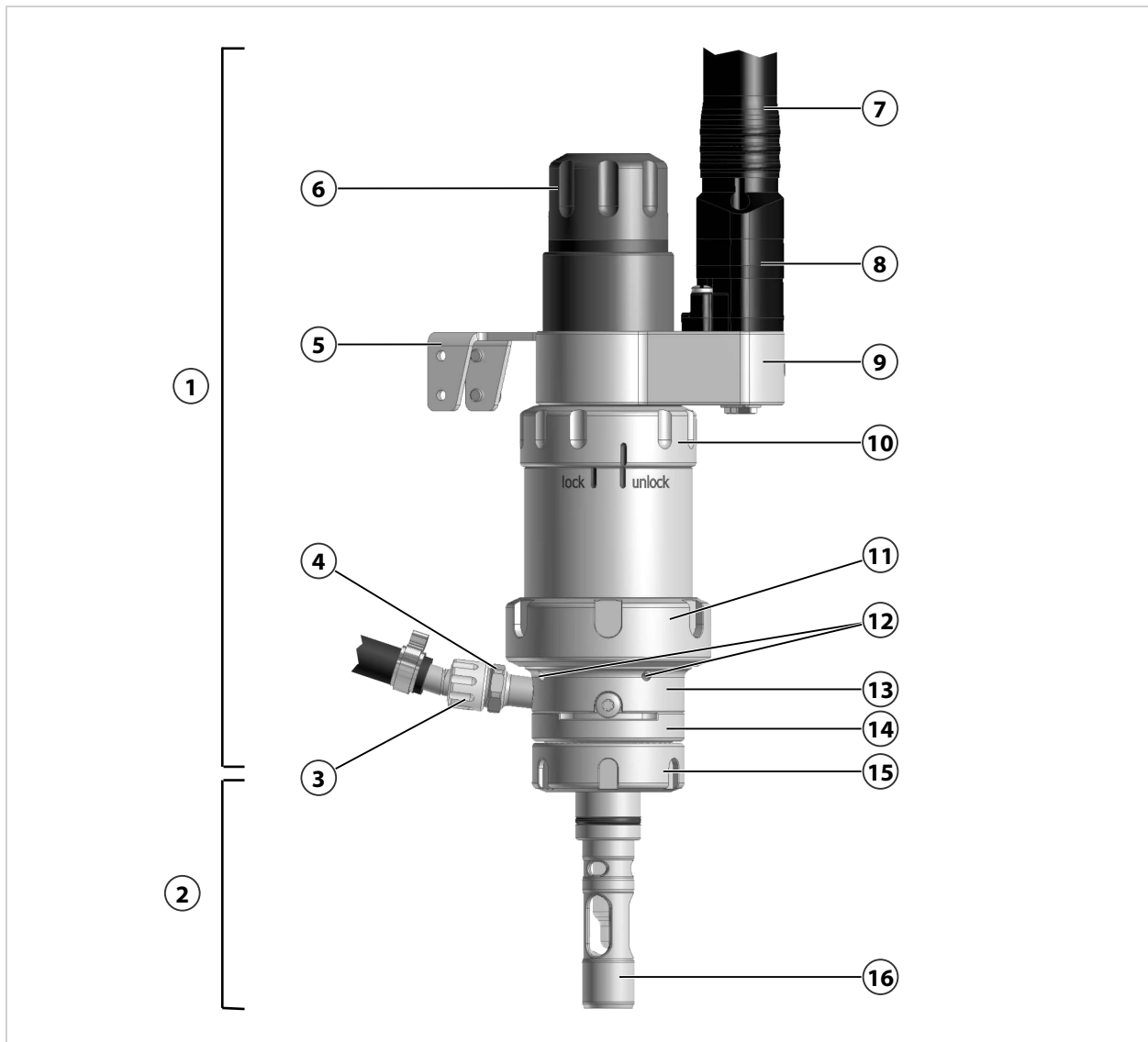
The pneumatically operated drive unit moves the SensoGate WA130H into the service position (SERVICE limit position) or the process position (PROCESS limit position).

→ *SERVICE/PROCESS Limit Positions, p. 21*

¹⁾ Dependent on the ordered version → *Product Code, p. 12*

2.5.1 Retractable Fitting

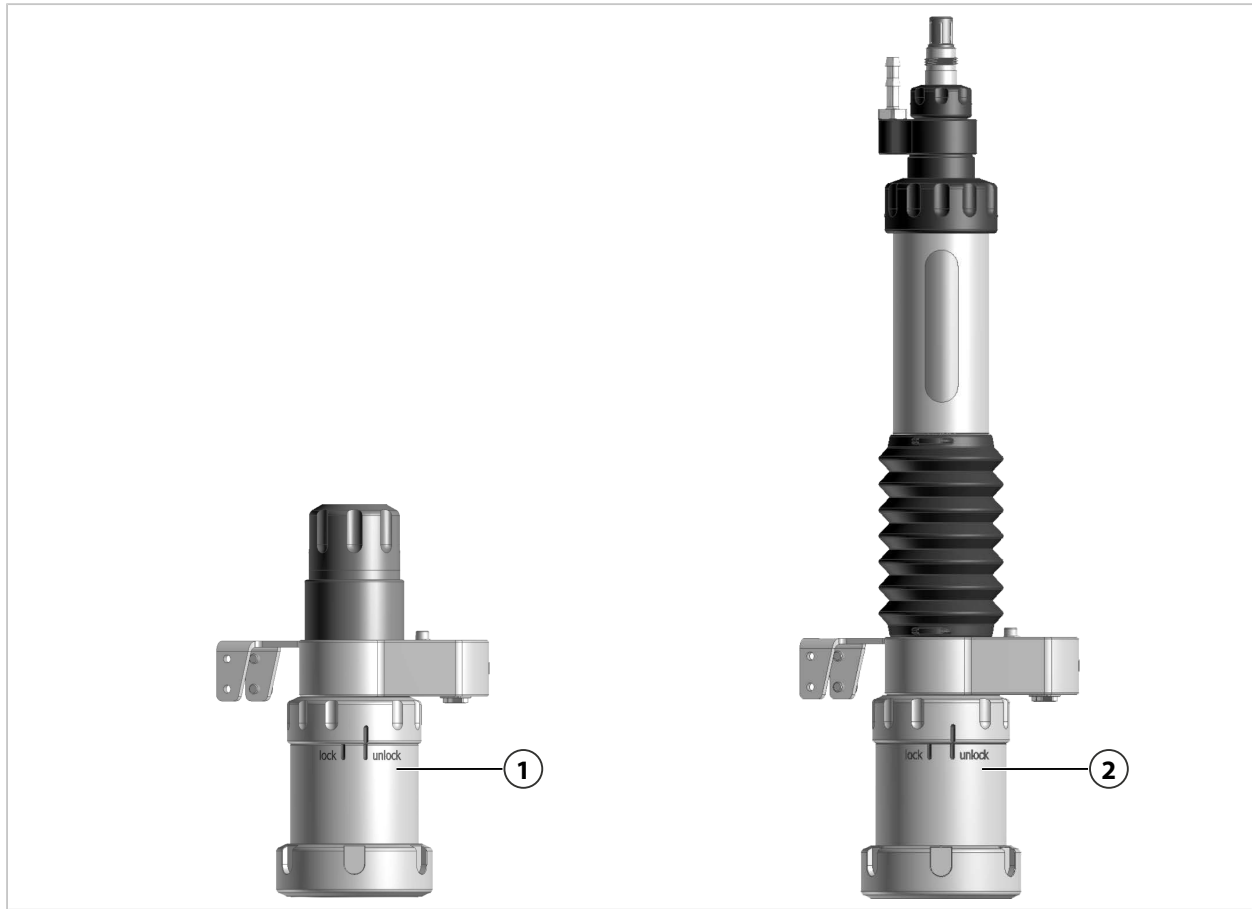
Note: The figure shows an example version of the SensoGate. → *Product Code, p. 12*



1 Drive unit	9 Multiplug connection piece
2 Process unit	10 SensoLock
3 Outlet hose (not included)	11 Coupling nut
4 Outlet port	12 Leakage bores
5 Strain relief bracket	13 Calibration chamber top part
6 Sensor holder	14 Calibration chamber bottom part
7 Media connection to Unical 9000 (not included)	15 Process connection (e.g., Ingold socket)
8 Multiplug (not included)	16 Immersion tube

2.5.2 Drives and Sensor Holders

Note: The figure shows a selection from the product line. → *Product Code*, p. 12

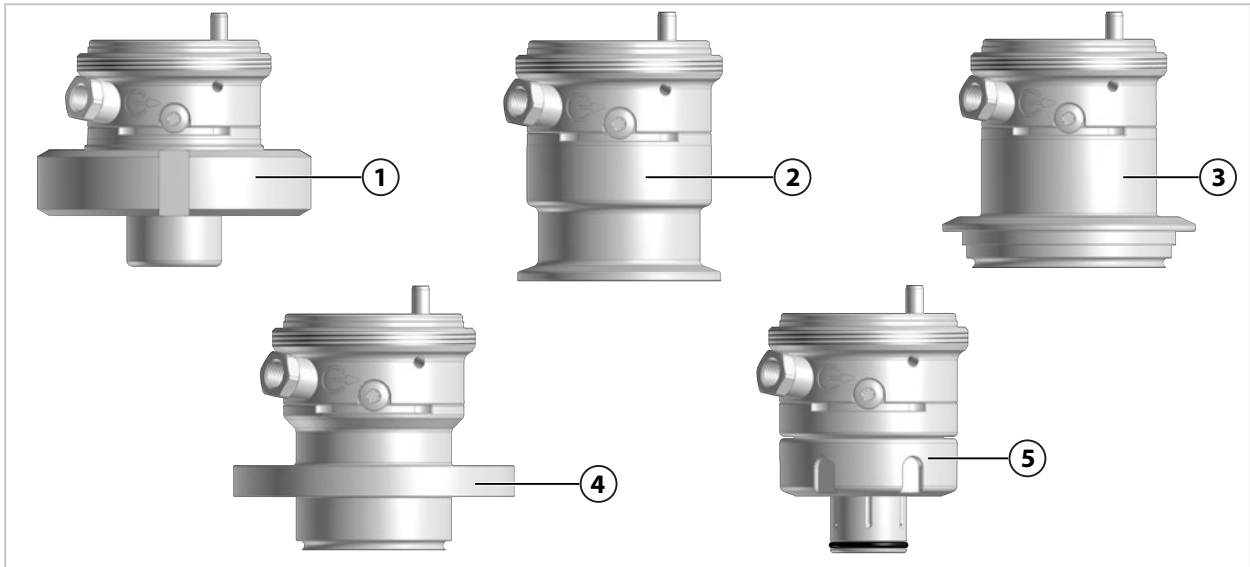


1 Short immersion depth, sensors with solid electrolyte

2 Short immersion depth, sensors with liquid electrolyte

2.5.3 Process Connections

Note: The figure shows a selection from the product line. → *Product Code, p. 12*



- | | |
|--------------------------|-----------------|
| 1 Dairy-pipe screw joint | 4 BioControl |
| 2 Tri-Clamp | 5 Ingold socket |
| 3 Varivent | |

2.5.4 Immersion Tube



- | |
|--|
| 1 Stainless steel immersion tube 1.4404 (135 mm) |
|--|

2.6 Permissible Changes

The SensoGate WA130H can be adapted to changed conditions by the customer. Prior to making any changes, contact Knick Elektronische Messgeräte GmbH & Co. KG. The following are examples of possible changes:

- Change to a different process connection → *Process Connections, p. 19*
- Modification of the sensor holder to fit another sensor type → *Drives and Sensor Holders, p. 18*
- Replacement of process-wetted components (calibration chamber, immersion tube, seals) with other material characteristics → *Maintenance, p. 33*
- Retrofit of safeguards, e.g., "Immersion Lock Without a Mounted Liquid-Electrolyte Sensor" → *Safeguards, p. 6*

Any changes may result in deviations between the information on the nameplate and the actual version of the SensoGate WA130H. The operating company must assess and document the changes. In the event of a change to the version, the product must be identified accordingly.

It is recommended that changes to the SensoGate WA130H be carried out by the Knick Repair Service. After making the necessary changes, a functional and pressure test is carried out and, if necessary, a modified nameplate is attached. → *Knick Repair Service, p. 40*

More information on changes can be found in the related supplementary datasheet. Maintenance instructions with detailed instructions for action are available on request.

2.7 SERVICE/PROCESS Limit Positions

2.7.1 Service and Process Position

The SensoGate WA130H can assume two limit positions (service or process position).

Note: The SensoGate WA130H is only disconnected from the process in the service position (SERVICE limit position). This is *not* the case in any other position, i.e., there remains contact with the process.

Service Position (SERVICE Limit Position)

- The sensor is not in contact with the process medium.
- The sensor can be installed, removed, and, as necessary, cleaned while the process is running.
- The measuring system can be calibrated and adjusted.
- The limit position can be electrically monitored.

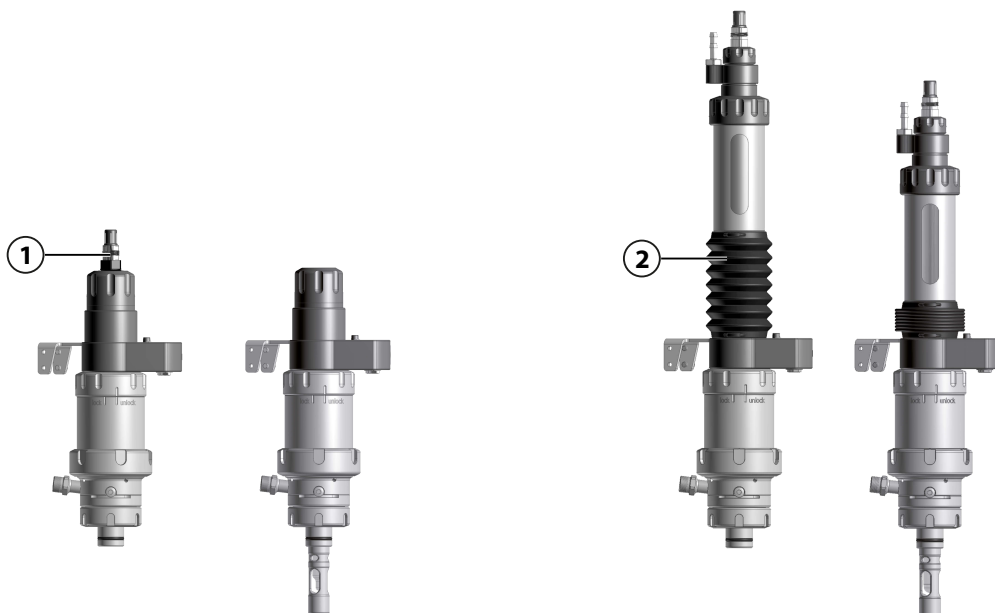
Process Position (PROCESS Limit Position)

- The sensor is in contact with the process medium.
- The desired process parameters can be measured.
- The limit position can be electrically monitored.

The service position (SERVICE limit position) and process position (PROCESS limit position) are indicated in different ways depending on the version of the SensoGate WA130H.

Solid-electrolyte sensor,
short immersion depth

Liquid-electrolyte sensor,
short immersion depth



SERVICE

PROCESS

SERVICE

PROCESS

In the SERVICE position, the sensor head (1) is visible at the top end of the protection sleeve.

In the PROCESS position, the sensor head (1) is retracted into the protection sleeve.

In the SERVICE position, the bellows (2) are expanded.

In the PROCESS position, the bellows (2) are compressed.

3 Installation

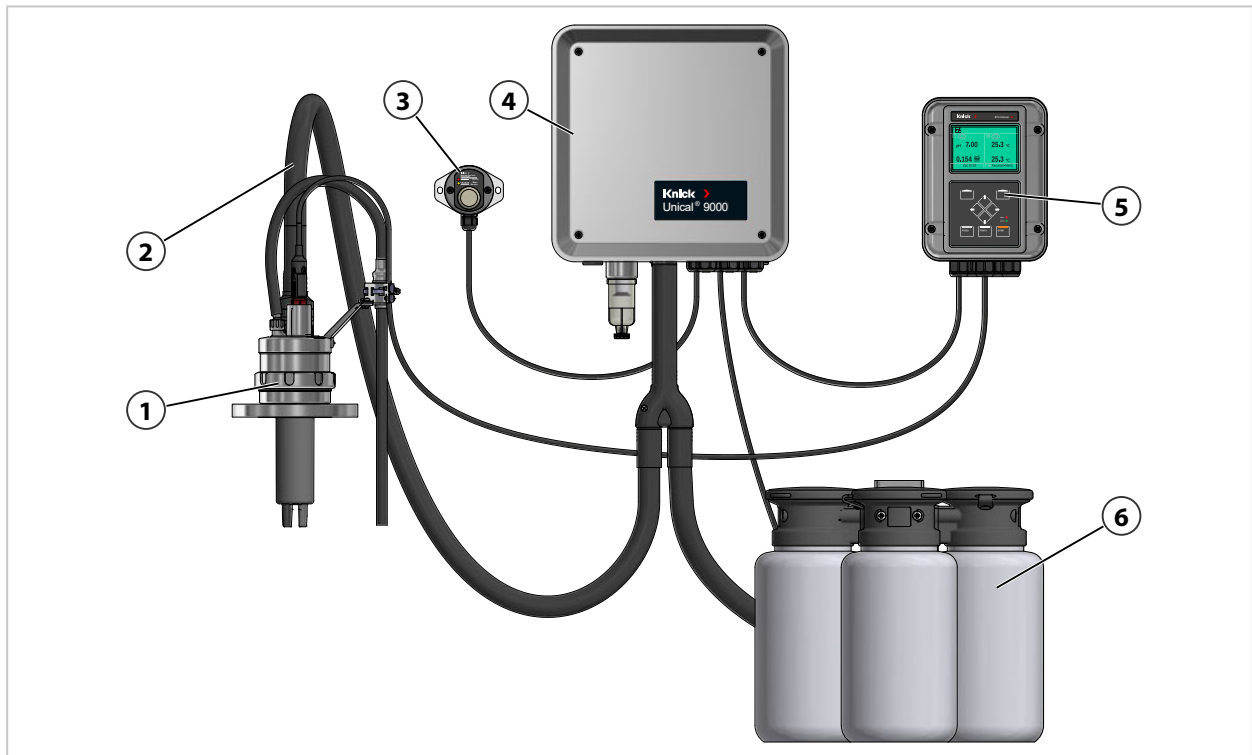
3.1 General Installation Instructions

Process Analysis System: Installation Example

The SensoGate WA130H is designed for operation within a fully automatic Knick process analysis system. The process analysis system may typically comprise the following products:

- Protos industrial transmitter
- Unical 9000 electro-pneumatic controller
- SensoGate WA130H retractable fitting

Note: The figure shows an example installation of a Knick process analysis system. Further information can be found at www.knick.de.



1 Retractable fitting (shown here: Ceramat WA153)

2 Media connection

3 Service switch

4 Unical 9000 controller

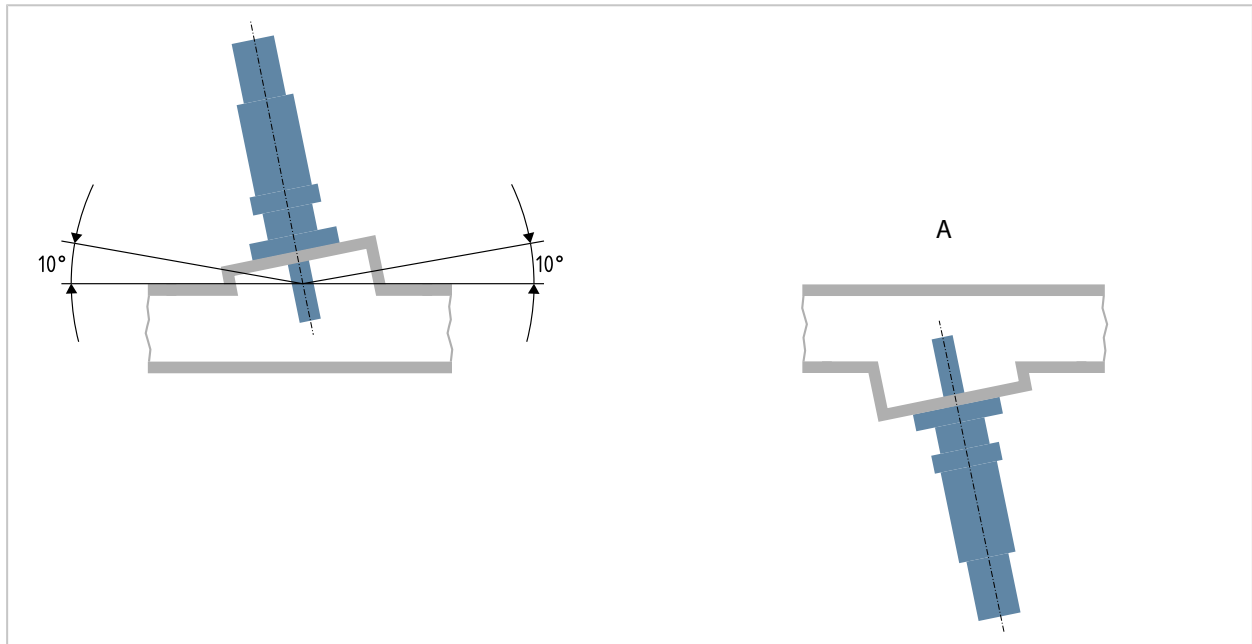
5 Protos industrial transmitter

6 Media adapter with metering pumps

Note: The SensoGate WA130H may also be operated without a process analysis system. Accessory ZU0733, ZU0734, or ZU0742 "Adapter for Free Hose Connection" is required for this. The adapter is installed instead of the multiplug with media connection. → *Accessories, p. 47*

3.2 Retractable Fitting: Installation

⚠ WARNING! Risk of explosion from mechanically generated sparks when used in explosive atmospheres. Take appropriate action to prevent mechanically generated sparks. Follow the safety instructions. → *Operation in Hazardous Locations, p. 9*



01. Check the package contents of the Sensogate WA130H for completeness.
→ *Package Contents, p. 11*
02. Check the Sensogate WA130H for damage.
03. Ensure the required sensor installation clearances. → *Dimension Drawings, p. 51*
Note: The installation angle of the Sensogate WA130H depends on the sensor type. An installation angle of up to 10° above the horizontal plane is permissible for all sensor types. An installation angle upside down (see view A) is only permitted if using sensors approved for upside-down operation.
04. Fasten the Sensogate WA130H to the process port using the process connection.
05. Optional: If using the product in explosive atmospheres, connect the grounding connection of the Sensogate WA130H to the plant's equipotential bonding system.

See also

→ *Operation in Hazardous Locations, p. 9*

→ *Commissioning, p. 27*

3.3 Safety Accessories: Installation

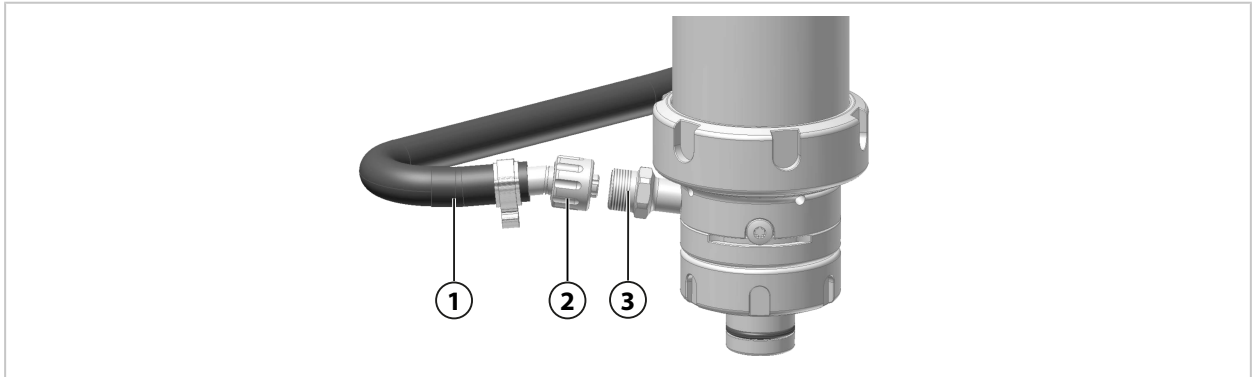
Consult the related instructions for information on installing the safety accessories (e.g., ZU0818 retainer clamp).

See also

→ *Safety Accessories, p. 8*

3.4 Outlet Hose: Installation

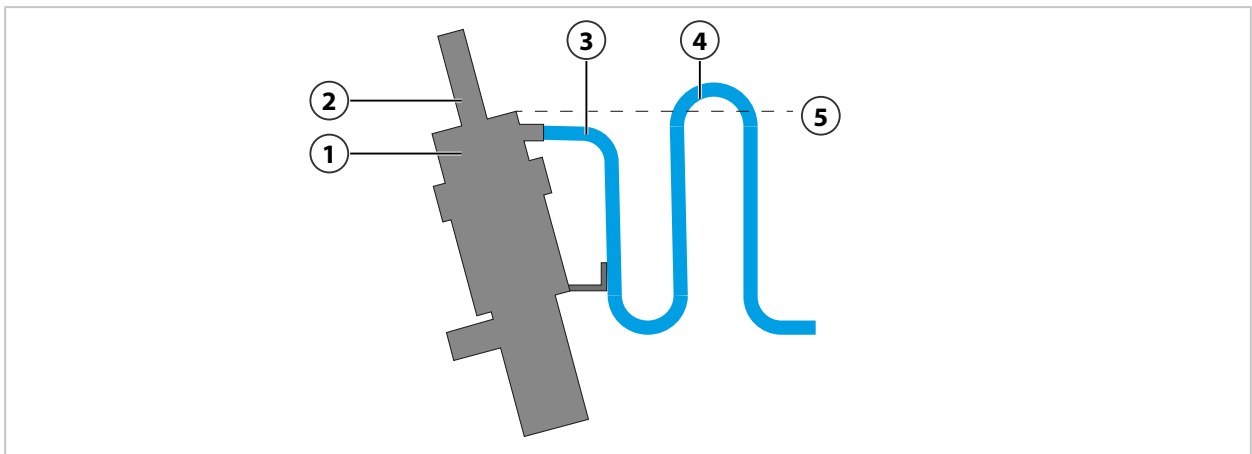
Note: The outlet is used to discharge rinse medium and trapped process medium and must not be closed. Installation of the supplied drain hose is also recommended for versions without a rinse connection. By moving the sensor to the SERVICE/PROCESS limit positions, pressurized process medium can enter the calibration chamber and be compressed when the outlet is closed. This process medium may splash out during sensor replacement.



01. Tightly screw the outlet hose **(1)** to the outlet port **(3)** using the coupling nut **(2)**.

Upside-Down Installation

If installing the SensoGate WA130H upside down, lay the outlet hose in an arc above the level of the calibration chamber. This prevents gravity from causing the calibration chamber to leak.



1 Calibration chamber	4 Hose arc
2 Sensor	5 Calibration chamber level
3 Outlet hose	

3.5 Media Connection

3.5.1 Media Connection: Installation Instructions

Media can be connected to the SensoGate WA130H in the following ways:

- “Media connection” of the electro-pneumatic controller (operation with process analysis system)
- Accessory ZU0733, ZU0734, or ZU0742 “Adapter for Free Hose Connection” (operation without process analysis system)

“Media Connection” for Operation With Process Analysis System

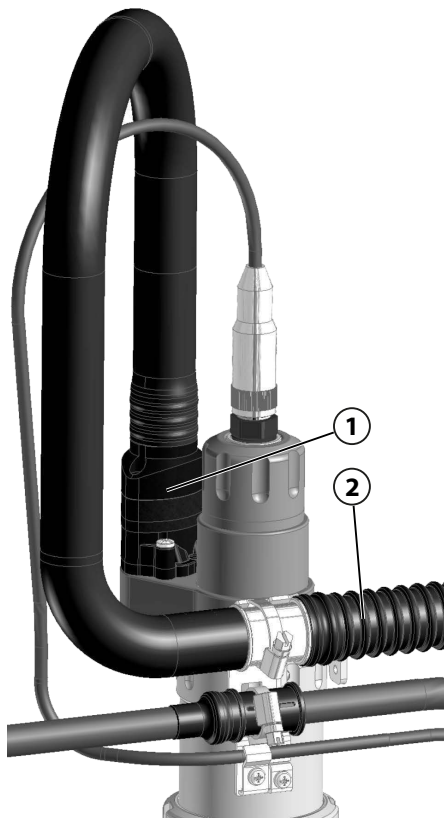
When using a Knick process analysis system, all media cables and the connecting cable for limit signals are combined in one hose, the media connection **(2)**. The media connection is connected to the SensoGate WA130H using a shared connector, the multiplug **(1)**.

The supply cables for the various media are connected to the process analysis system’s electro-pneumatic controller. Further information is available in the documentation for the electro-pneumatic controller.

“Adapter for Free Hose Connection” for Operation Without Process Analysis System

To control the SensoGate WA130H without a process analysis system, the media are supplied to the retractable fitting via accessory ZU0733, ZU742, or ZU0734 “Adapter for Free Hose Connection”. The accessory is plugged into the media adapter connection.

The supply cables for the various media are connected to accessory ZU0733, ZU0742, or ZU0734, “Adapter for Free Hose Connection” **(3)**. Further information can be found in the accessory documentation. → *Accessories, p. 47*



“Media connection” for operation with process analysis system

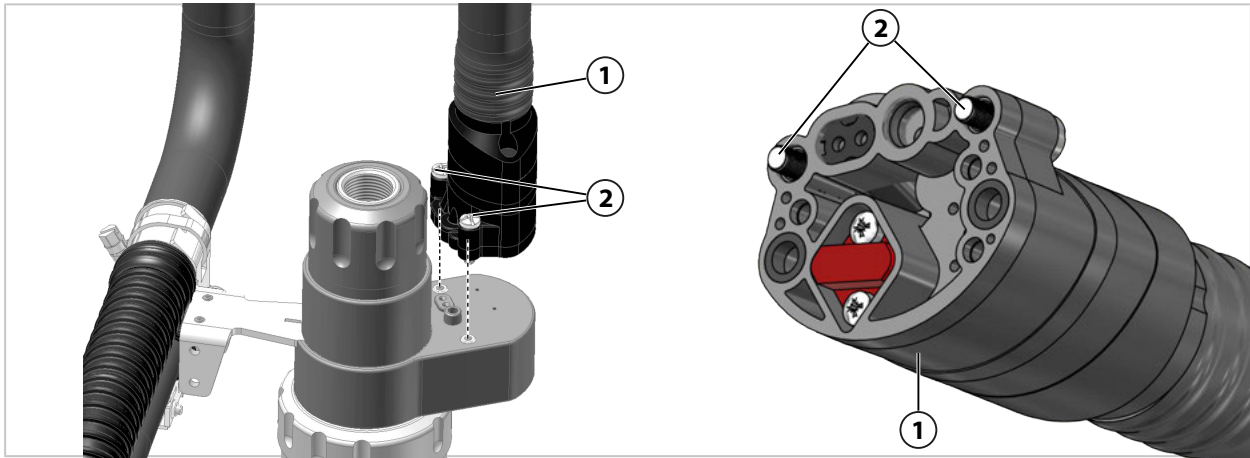


Accessory ZU0733, ZU0734, ZU0742 “Adapter for Free Hose Connection” for operation without process analysis system

See also

→ *Process Analysis System: Installation Example*, p. 22

3.5.2 Multiplug: Installation



01. Check the gaskets and O-rings of the multiplug **(1)** for correct positioning and damage, and replace them if necessary. → *Troubleshooting*, p. 41
02. Position and connect the multiplug **(1)** to the SensoGate WA130H.
03. Fasten the multiplug **(1)** with two screws **(2)**.

4 Commissioning

▲ WARNING! If the SensoGate WA130H fitting is damaged or improperly installed, process medium, potentially containing hazardous substances, may escape. Follow the safety instructions.
→ *Safety, p. 5*

Note: Upon request, Knick will provide safety briefings and product training during initial commissioning of the product. More information is available from the relevant local contacts.

01. Install the SensoGate WA130H. → *Retractable Fitting: Installation, p. 23*
 02. Install the outlet hose. → *Outlet Hose: Installation, p. 24*
 03. Install the media connection or the accessory "Adapter for Free Hose Connection".
→ *Media Connection, p. 25*
 04. Mount the sensor. → *Installing and Removing Sensors, p. 29*
 05. Ensure that the process connection is securely fastened.
 06. Optional: Ensure that installed safety accessories (e.g., ZU0818 retainer clamp) are securely fastened. → *Safety Accessories, p. 8*
 07. If using the product in hazardous locations, check that the SensoGate WA130H is correctly connected to the plant's equipotential bonding system. → *Installing and Removing Sensors, p. 29*
 08. Turn the SensoLock ring to the "unlock" position.
✓ SensoGate WA130H is unlocked.
 09. Move the SensoGate WA130H into the process position (PROCESS limit position).
→ *Moving into the Process Position (PROCESS Limit Position), p. 28*
 10. Move the SensoGate WA130H into the service position (SERVICE limit position).
→ *Moving into the Service Position (SERVICE Limit Position), p. 28.*
 11. Check the SensoGate WA130H for leaks under process conditions.
Note: Pressure and leak tests must be carried out in accordance with the relevant operating regulations or the operating company's instructions.
✓ There are no leaks in the SensoGate WA130H or its connections.
- ✓ SensoGate WA130H is ready for operation.

5 Operation

5.1 Moving into the Process Position (PROCESS Limit Position)

⚠ WARNING! Process, rinse, or additional media, potentially containing hazardous substances, may escape from the SensoGate WA130H. Only move the SensoGate WA130H into the process position (PROCESS limit position) if a sensor is installed. → *Installing and Removing Sensors, p. 29*

⚠ CAUTION! Risk of crushing injuries to hands and fingers. When moving to the limit positions, the SensoGate WA130H with liquid-electrolyte sensor performs a stroke movement (approx. 43 mm). Do not touch the SensoGate WA130H while it is moving to the limit positions.

Note: Movement to the limit positions is triggered differently depending on the installation of the SensoGate WA130H: (a) industrial transmitter, (b) service switch of the electro-pneumatic controller, (c) process control system (PCS), or (d) ZU0604 manually when using the accessory "Adapter for Free Hose Connection". → *Process Analysis System: Installation Example, p. 22*

01. Install the sensor. → *Installing and Removing Sensors, p. 29*
02. Move the SensoGate WA130H into the process position (PROCESS limit position).

5.2 Moving into the Service Position (SERVICE Limit Position)

⚠ CAUTION! Risk of crushing injuries to hands and fingers. When moving to the limit positions, the SensoGate WA130H with liquid-electrolyte sensor performs a stroke movement (approx. 43 mm). Do not touch the SensoGate WA130H while it is moving to the limit positions.

Note: Movement to the limit positions is triggered differently depending on the installation of the SensoGate WA130H: (a) industrial transmitter, (b) service switch of the electro-pneumatic controller, (c) process control system (PCS), or (d) ZU0604 manually when using the accessory "Adapter for Free Hose Connection". → *Process Analysis System: Installation Example, p. 22*

01. Move the SensoGate WA130H into the service position (SERVICE limit position).
✓ The sensor head is visible.

5.3 Installing and Removing Sensors

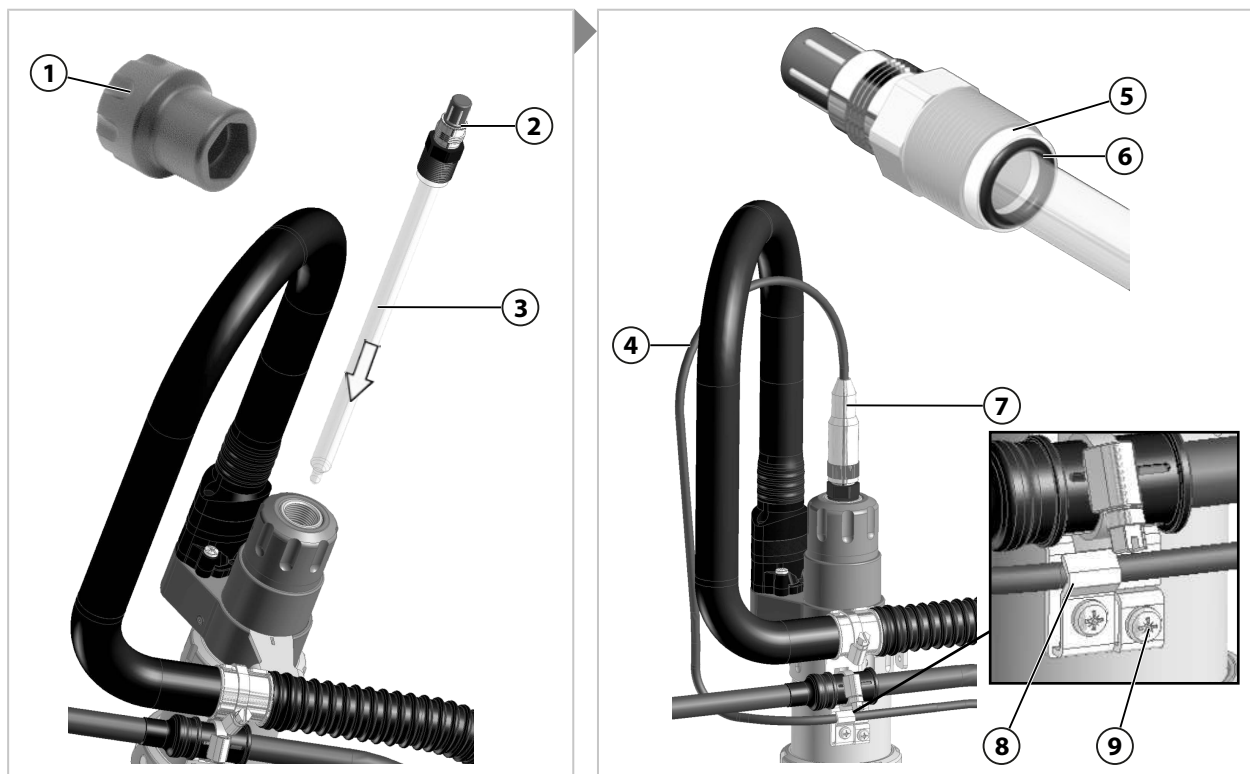
5.3.1 Safety Instructions on Installing and Removing Sensors

⚠ WARNING! Process medium, potentially containing hazardous substances, may escape from the SensoGate WA130H. Follow the safety instructions. → *Safety, p. 5*

⚠ CAUTION! Risk of cutting injuries from broken sensor glass. Handle the sensor with care. Follow the safety instructions in the sensor manufacturer's documentation.

Note: The outlet is used to discharge trapped rinse medium and must not be closed. By moving the SensoGate WA130H to the limit positions, pressurized process medium may enter the calibration chamber. When the outlet is closed, this process medium may be compressed and splash out during a sensor replacement. → *Design and Function, p. 16*

5.3.2 Solid-Electrolyte Sensor, Short Immersion Depth: Installation



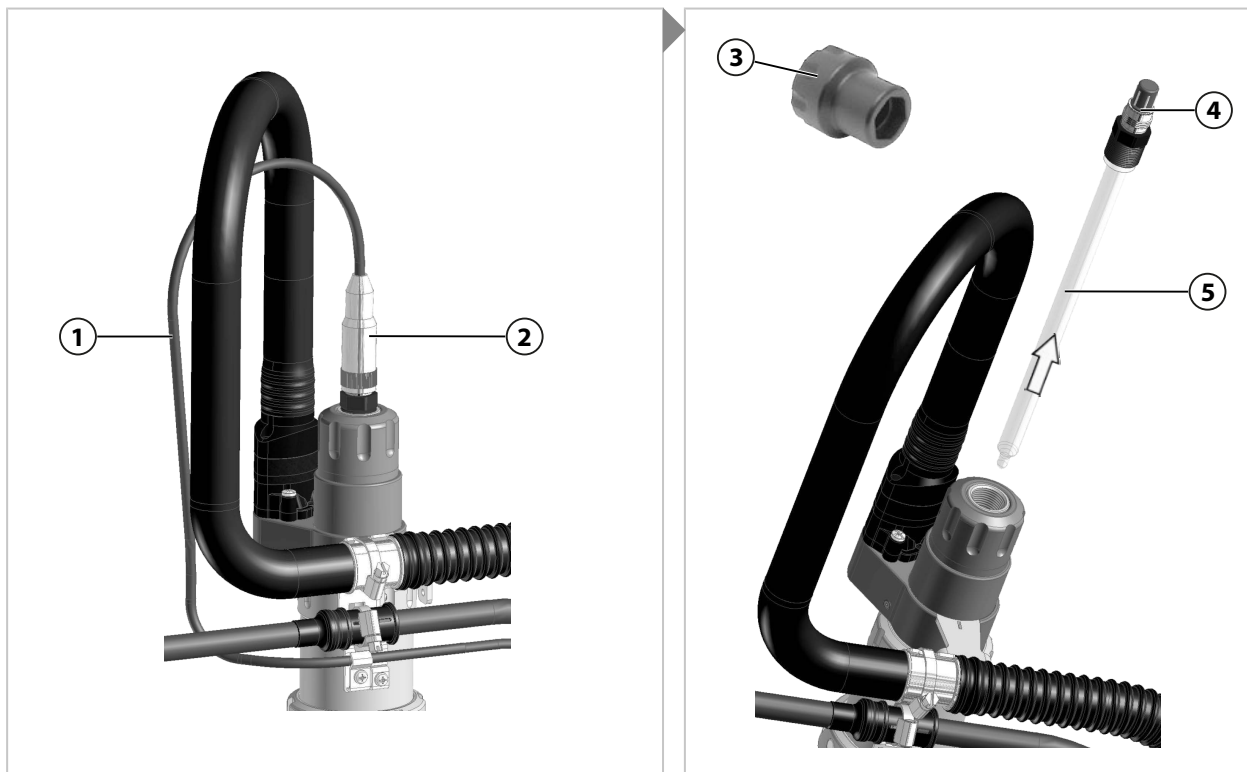
01. Move the SensoGate WA130H into the service position (SERVICE limit position).
→ *Moving into the Service Position (SERVICE Limit Position), p. 28.*
02. Check outlet and leakage bores for escaping process medium. If process medium escapes: Stop the process (depressurize if necessary) and perform troubleshooting. → *Troubleshooting, p. 41*
03. Turn the SensoLock ring to the "lock" position.
✓ SensoGate WA130H is mechanically locked and cannot move.
04. Check the washer (5) and O-ring (6) of the sensor (3) for correct positioning and damage, and replace them if necessary.
05. Push the sensor (3) into the SensoGate WA130H.
06. Tighten the sensor (3) using the spanning wrench (1) to max. 3 Nm (A/F 19 mm). Recommended tool: ZU0647 sensor spanning wrench → *Tools, p. 50*
07. Connect the cable bushing (7) to the sensor head (2).
08. On first-time installation: Hold the sensor cable (4) in a loop and fasten it with the clamp (8).
During this process, the sensor cable loop must be long enough so that the sensor cable does not impede the stroke movement of the SensoGate WA130H.

09. On first-time installation: Connect the equipotential bonding cable to the clamp **(9)**.
10. Optional: Install the ZU0759/1 protective cap. → *Accessories, p. 47*
11. Turn the SensoLock ring to the “unlock” position.
 ✓ SensoGate WA130H is unlocked.

✓ The sensor is now installed.

5.3.3 Solid-Electrolyte Sensor, Short Immersion Depth: Removal

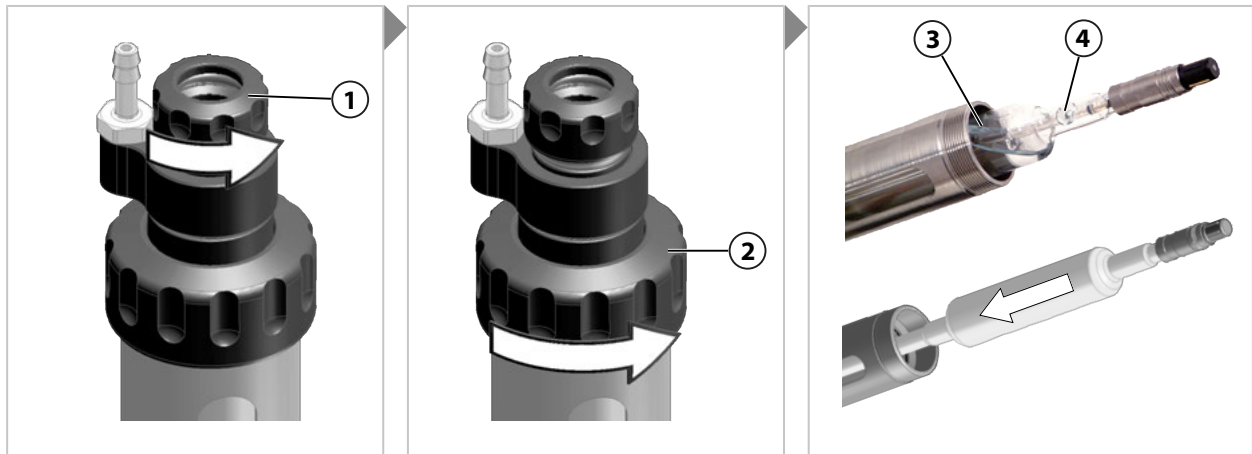
Note: Rinse the sensor prior to removal in order to prevent entrainment of chemically aggressive process medium in the area of the sensor holders.



01. Move the SensoGate WA130H into the service position (SERVICE limit position).
 → *Moving into the Service Position (SERVICE Limit Position), p. 28.*
 02. Check outlet and leakage bores for escaping process medium. If process medium escapes: Stop the process (depressurize if necessary) and perform troubleshooting. → *Troubleshooting, p. 41*
 03. Turn the SensoLock ring to the “lock” position.
 ✓ SensoGate WA130H is mechanically locked and cannot move.
 04. Optional: Remove the ZU0759 protective cap.
 05. Disconnect the cable bushing **(2)** of the sensor cable **(1)** from the sensor head **(4)**.
 06. Release the sensor **(5)** using the spanning wrench **(3)** (A/F 19 mm). Recommended tool: ZU0647 sensor spanning wrench. → *Tools, p. 50*
 07. Pull out the sensor **(5)**.
 08. If the sensor glass is broken, check the immersion tube seal for damage and replace it if necessary. → *Immersion Tube: Removal, p. 37*
- ✓ The sensor is now removed.

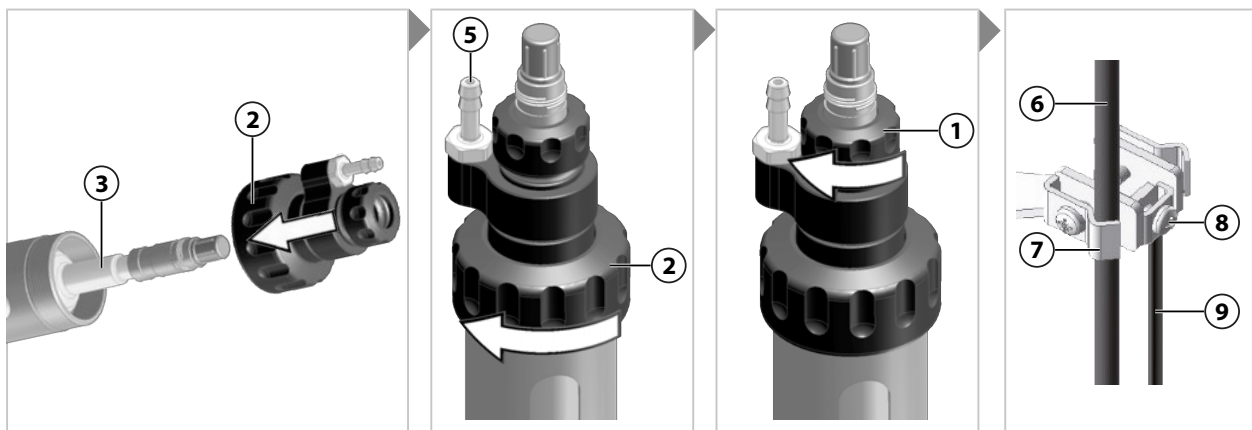
5.3.4 Liquid-Electrolyte Sensor: Installation

Note: To ensure that the electrolyte flows from the reference electrode to the process medium, the air pressure in the pressure chamber must be 0.5 to 1 bar above that of the process medium.



01. Move the SensoGate WA130H into the service position (SERVICE limit position).
→ *Moving into the Service Position (SERVICE Limit Position)*, p. 28.
02. Check outlet and leakage bores for escaping process medium. If process medium escapes: Stop the process (depressurize if necessary) and perform troubleshooting. → *Troubleshooting*, p. 41
03. Turn the SensoLock ring to the “lock” position.
04. Loosen the small coupling nut **(1)** by a few rotations; do not loosen completely.
05. Fully loosen the large coupling nut **(2)** and pull off the entire unit.
06. Remove the watering cap from the sensor tip and rinse the sensor **(3)** with water.
07. Remove the cap of the filling hole **(4)** of the sensor **(3)**.
08. Push in the sensor **(3)**.

Note: In the case of inclined installation, turn the electrolyte filling hole towards the top to prevent electrolyte from flowing out during operation of the SensoGate WA130H. Observe any deviating direction of installation specified by the sensor manufacturer.



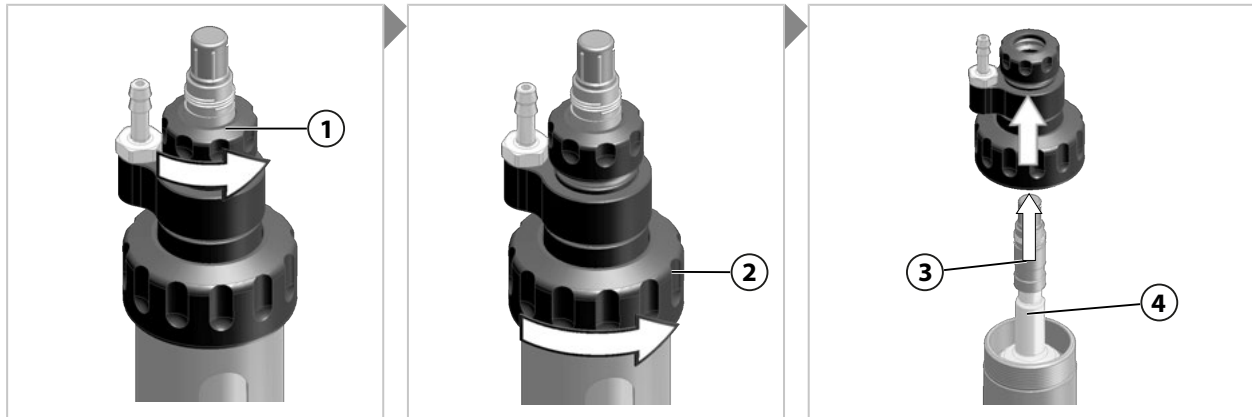
09. Position the large coupling nut **(2)** and fasten finger tight.
10. Fasten the small coupling nut **(1)** finger tight.
11. Connect the sensor cable **(6)**.
12. On first-time installation: Hold the sensor cable **(6)** in a loop and fasten it with the clamp **(7)**.
During this process, the sensor cable loop must be long enough so that the sensor cable does not impede the stroke movement of the SensoGate WA130H.

13. On first-time installation: Connect the air pressure inlet for the pressure chamber to the connection nozzle **(5)**.
14. On first-time installation: Connect the equipotential bonding cable **(9)** to the clamp **(8)**.
15. Turn the SensoLock ring to the “unlock” position.

✓ The sensor is now installed.

5.3.5 Liquid-Electrolyte Sensor: Removal

Note: Rinse the sensor prior to removal in order to prevent entrainment of chemically aggressive process medium in the area of the sensor holders.



01. Move the SensoGate WA130H into the service position (SERVICE limit position).
→ *Moving into the Service Position (SERVICE Limit Position), p. 28.*
02. Check outlet and leakage bores for escaping process medium. If process medium escapes: Stop the process (depressurize if necessary) and perform troubleshooting. → *Troubleshooting, p. 41*
03. Turn the SensoLock ring to the “lock” position.
04. Disconnect the sensor cable.
05. Loosen the small coupling nut **(1)** by a few rotations; do not loosen completely.
06. Fully loosen the large coupling nut **(2)** and pull off the entire unit.
07. Pull out the sensor **(3)**.
Note: Hold the sensor’s filling hole **(4)** upward at an inclined angle during removal to prevent electrolyte from escaping. Follow the instructions in the sensor manufacturer’s documentation. During transport and storage, close the sensor’s filling hole with the cap.
08. If the sensor glass is broken, check the immersion tube seal for damage and replace it if necessary. → *Immersion Tube: Removal, p. 37*

✓ The sensor is now removed.

6 Maintenance

6.1 Inspection

6.1.1 Inspection and Maintenance Intervals

NOTICE! Different process conditions (e.g., pressure, temperature, chemically aggressive media) will affect the inspection and maintenance intervals. Analyze the specific application and process conditions at hand. Define appropriate intervals based on similar application cases where experience has already been gained.

Interval ¹⁾	Work Required
First inspection after a few days/weeks	Move the SensoGate WA130H into the service position (SERVICE limit position). If the product is not tight, process medium will escape from the outlet hose. → <i>Moving into the Service Position (SERVICE Limit Position), p. 28</i> As necessary, replace process-wetted (dynamically loaded) O-rings. → <i>Seal Kits, p. 44</i>
After 6 ... 12 months ²⁾	Repeat the measures implemented during the first inspection. Check leakage bores for process deposits. → <i>Safeguards, p. 6</i> As necessary, replace process-wetted (dynamically loaded) O-rings. → <i>Seal Kits, p. 44</i>
After 10,000 ... 20,000 strokes	As necessary, replace process-wetted (dynamically loaded) O-rings. → <i>Seal Kits, p. 44</i>
After approx. 2 years	In particular if using chemically aggressive cleaning agents, check the rinse-wetted seals and replace them if necessary. → <i>Seal Kits, p. 44</i>
After approx. 5 years	Service the drive, replace O-rings, and re-grease. → <i>Corrective Maintenance, p. 35</i>

6.1.2 Immersion Lock Without a Mounted Solid-Electrolyte Sensor: Functional Test

Note: The functional test is possible only on a SensoGate WA130H with the corresponding safeguard.
 → *Safeguards, p. 6*

01. Move the SensoGate WA130H into the service position (SERVICE limit position).
 → *Moving into the Service Position (SERVICE Limit Position), p. 28.*
02. Turn the SensoLock ring to the “unlock” position.
 ✓ SensoGate WA130H is unlocked.
03. Loosen the sensor a maximum of 1.5 turns.

NOTICE! In the event of a malfunction, pressurized process medium, potentially containing hazardous substances, may escape from the SensoGate WA130H. Loosen the sensor no more than a maximum of 1.5 turns to ensure that pressure resistance is still available in the event of a malfunction.

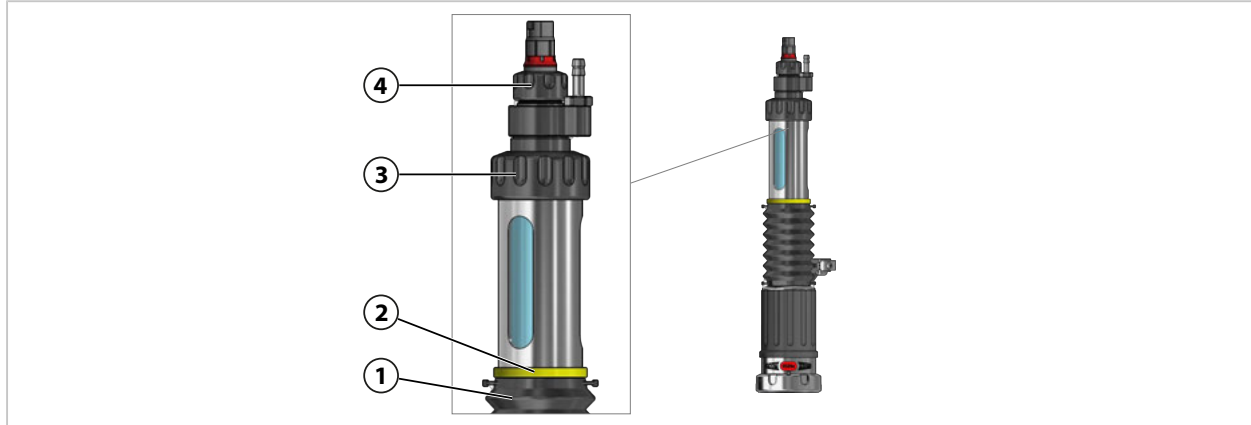
04. Check the function of the “Immersion Lock Without a Mounted Solid-Electrolyte Sensor”.
05. Move the SensoGate WA130H into the process position (PROCESS limit position).
 → *Moving into the Process Position (PROCESS Limit Position), p. 28*
 ✓ The process position (PROCESS limit position) of the SensoGate WA130H is locked.
06. Screw in the sensor completely. Tightening torque 1 ... 3 Nm:
07. Repeat the functional test every 12 months. As applicable, adjust the interval to match the specific application for which the SensoGate WA130H is used.

¹⁾ The stated intervals are general recommendations based on Knick’s experience. The actual intervals are dependent on the specific application for which the SensoGate WA130H is used.
²⁾ Following successful first inspection and confirmation of the suitability of all materials used, the interval may be lengthened.

6.1.3 Immersion Lock Without a Mounted Liquid-Electrolyte Sensor: Functional Test

To check the function of the immersion lock, the situation of a missing sensor is simulated.

Note: The functional test is only available for a SensoGate WA130H with the safeguard “Immersion Lock Without a Mounted Liquid-Electrolyte Sensor”. The safeguard can be seen at the yellow indicator ring (2) above the bellows (1). → *Safeguards, p. 6*



01. Move the SensoGate WA130H into the service position (SERVICE limit position).

→ *Moving into the Service Position (SERVICE Limit Position), p. 28.*

✓ SensoGate WA130H is unlocked.

02. Loosen but do not remove the small coupling nut (4).

03. Loosen the large coupling nut (3) by around 1.5 turns.

▲ WARNING! In the event of a malfunction, pressurized process medium may escape from the SensoGate WA130H. Do not completely loosen the large coupling nut (3) to ensure that pressure resistance is still available in the event of a malfunction.

04. Move the SensoGate WA130H into the process position (PROCESS limit position).

→ *Moving into the Process Position (PROCESS Limit Position), p. 28*

✓ The process position (PROCESS limit position) of the SensoGate WA130H is locked.

05. Tighten the coupling nuts (3) and (4).

06. Repeat the functional test every 12 months. As applicable, adjust the interval to match the specific application for which the SensoGate WA130H is used.

6.2 Maintenance

Approved Lubricants

Application	Pharma and Food		Chemicals and Wastewater
Lubricant	Beruglide L ¹⁾ (silicone-free)	Paraliq GTE 703 ²⁾ (containing silicone)	Syntheso Glep 1 (silicone-free)
Elastomer seal materials			
FKM	+	+	+
FFKM	+	+	+
EPDM	+	+	+

Note: Lubricant Paraliq GTE 703 contains silicone and has good lubricating properties even at elevated temperatures and with numerous travel movements. Paraliq GTE 703 is used as a special version at the customer’s express request.

¹⁾ FDA compliant, NSF-H1 registered

²⁾ FDA compliant, USDA-H1 registered

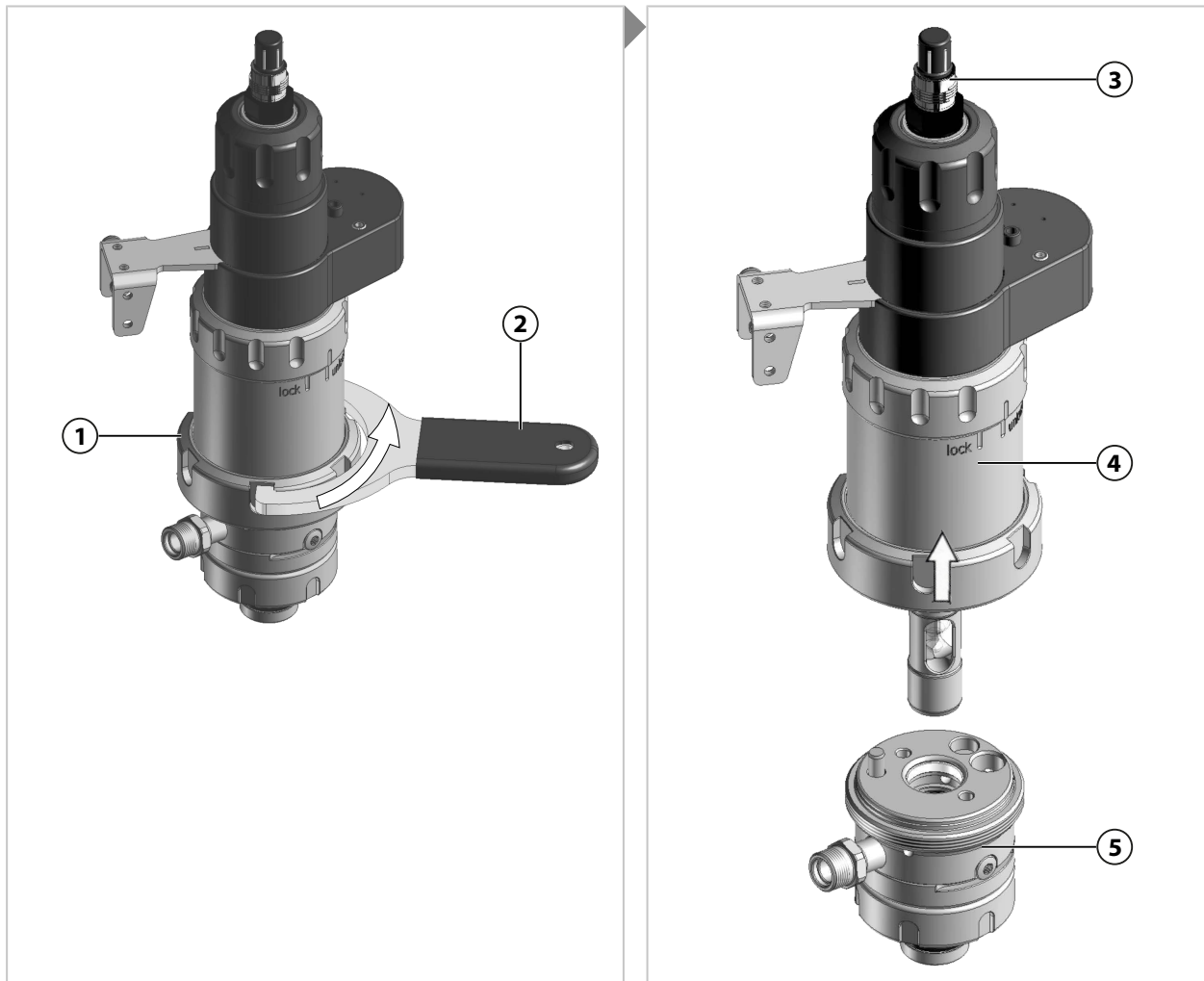
6.3 Corrective Maintenance

6.3.1 Corrective Maintenance Safety Instructions

⚠ WARNING! Process medium, potentially containing hazardous substances, may escape from the SensoGate WA130H. Follow the safety instructions. → *Safety, p. 5*

⚠ CAUTION! Risk of cutting injuries from broken sensor glass. Handle the sensor with care. Follow the safety instructions in the sensor manufacturer's documentation.

6.3.2 Drive Unit: Removal



01. Remove the SensoGate WA130H. → *Retractable Fitting: Removal, p. 43*

02. Using the spanning wrench **(2)**, loosen the coupling nut **(1)** counterclockwise.

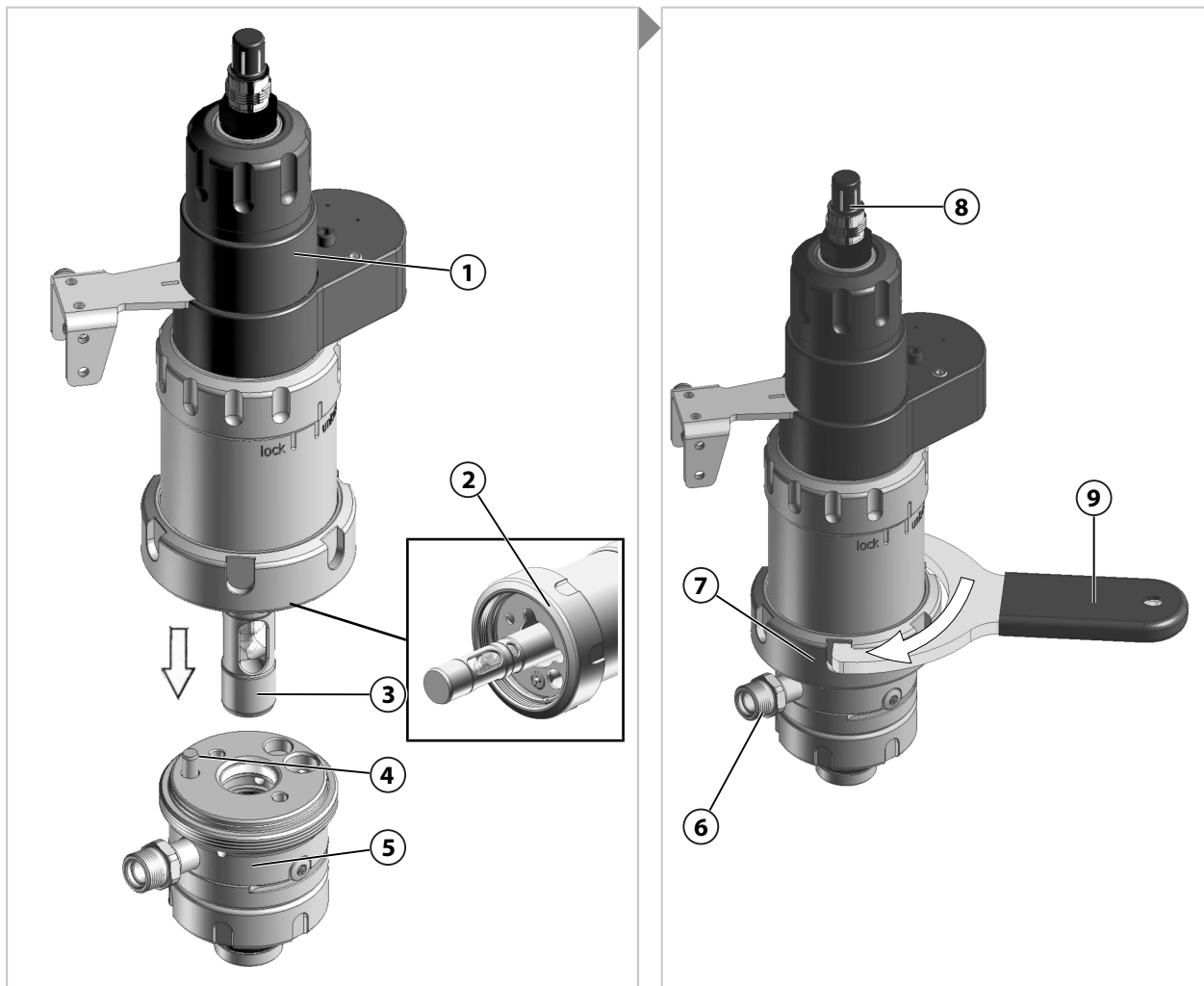
Note: Do not tilt the coupling nut. Use a suitable spanning wrench (e.g., the one contained in ZU0680 service set or ZU0740 service set). → *Tools, p. 50*

03. Pull the drive unit **(4)** out of the process unit **(5)**.

✓ The drive unit is now removed.

6.3.3 Drive Unit: Assembly

Note: The radial installation position of the drive unit is determined by a coding pin in the calibration chamber and a hole in the drive unit. The coupling nut can be tightened only if the drive unit is correctly inserted into the process unit.



01. Turn the SensoLock ring to the “unlock” position.
✓ SensoGate WA130H is unlocked.
02. Push the drive unit (1) with the immersion tube (3) into the process unit (5). While doing so, position the coding pin (4) in the hole (2).
03. Position the coupling nut (7) and tighten clockwise finger tight or to approx. 10 Nm using the spanning wrench (9).

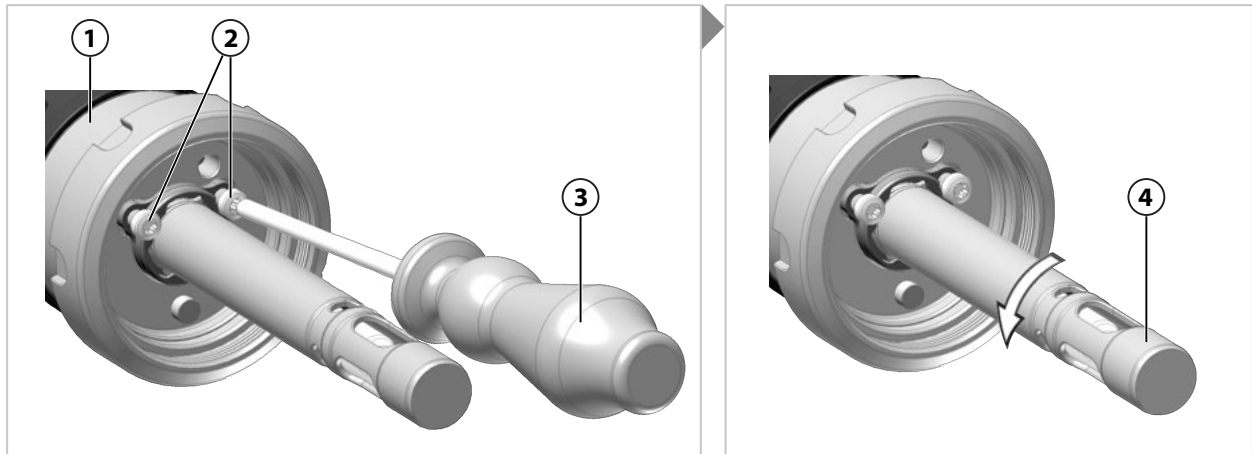
Note: Do not tilt the coupling nut. Use a suitable spanning wrench (e.g., the one contained in ZU0680 service set or ZU0740 service set). → *Tools, p. 50*

✓ The drive unit is now installed.

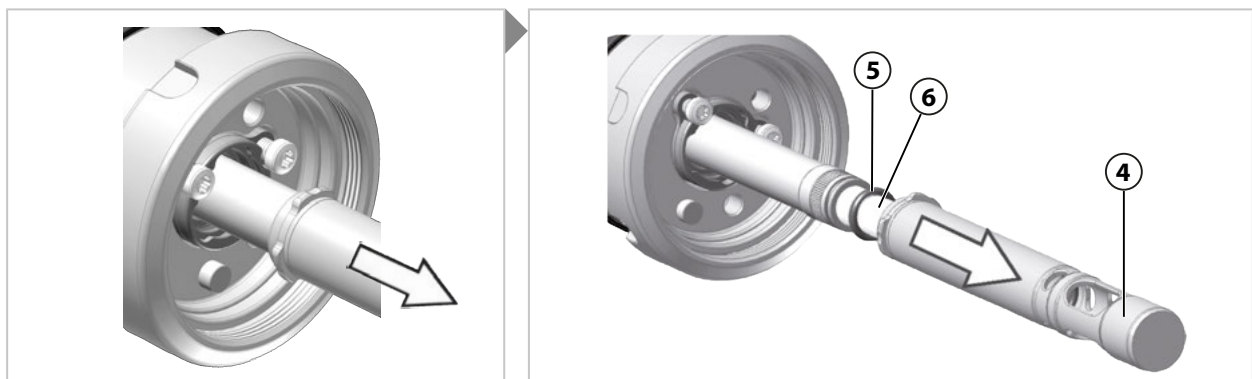
See also

→ *Commissioning, p. 27*

6.3.4 Immersion Tube: Removal

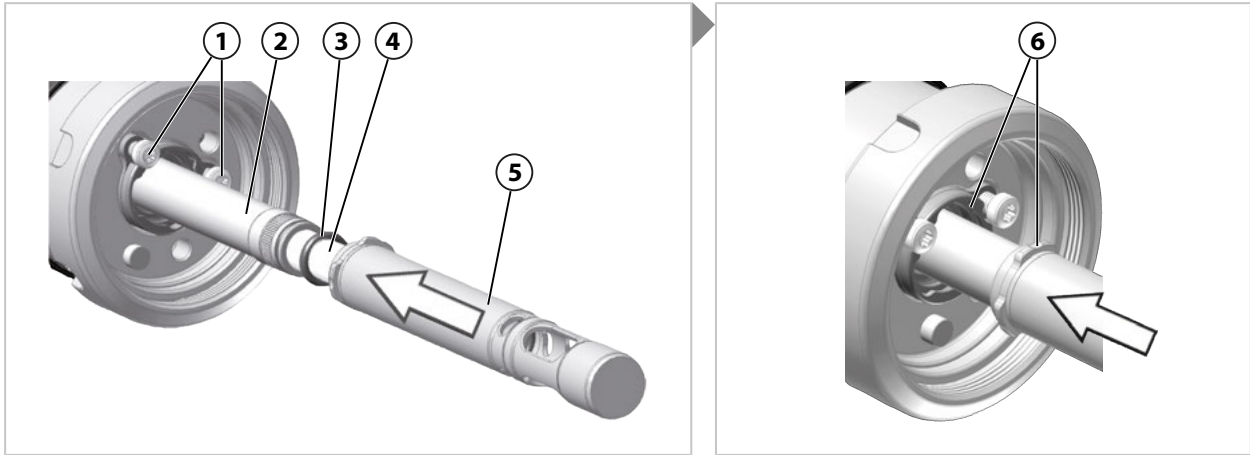


01. Remove the drive unit **(1)**. → *Drive Unit: Removal, p. 35*
 ✓ SensoGate WA130H is unlocked.
02. Pull on the immersion tube **(4)** until the process position (PROCESS limit position) is reached.
03. Loosen the screws **(2)** around 4 rotations using a screwdriver of type TX25 **(3)** (do not completely unscrew).
04. Rotate the immersion tube **(4)** around 60° counterclockwise until the bayonet coupling of the immersion tube **(4)** is open.

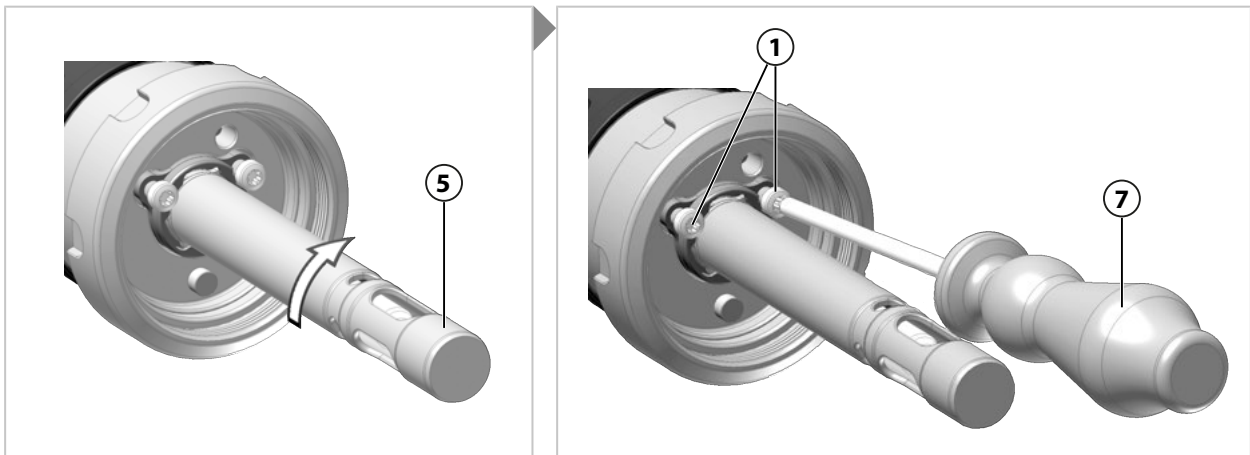


05. Pull the immersion tube **(4)** off the sensor **(6)**.
 ✓ The O-ring **(5)** is now visible, or it may be located in the removed immersion tube **(4)**.
06. Check the O-ring **(5)** for damage; replace the O-ring **(5)** if necessary. → *Seal Kits, p. 44*
 ✓ The immersion tube is now removed.

6.3.5 Immersion Tube: Installation



01. Install the sensor (4). → *Installing and Removing Sensors, p. 29*
02. If the drive unit is not in process position (PROCESS limit position): Firmly push the immersion tube (5) into the sensor protection tube (6), at the same time rotating around 60° clockwise up to the hard stop.
Pull the immersion tube (5) until the process position (PROCESS limit position) is reached.
03. Check the O-ring (3) for damage; replace the O-ring (3) if necessary. → *Seal Kits, p. 44*
04. Push the O-ring (3) fully onto the sensor (4).
05. If the screws (1) were not loosened during removal, loosen them around 4 rotations now using a screwdriver of type TX25 (7) (do not completely unscrew).
06. Carefully push the immersion tube (5) onto the sensor (4) and insert it into the bayonet coupling (6).
Note: There may be an O-ring in the immersion tube left over from the removal process. Remove this O-ring from the immersion tube prior to installation.

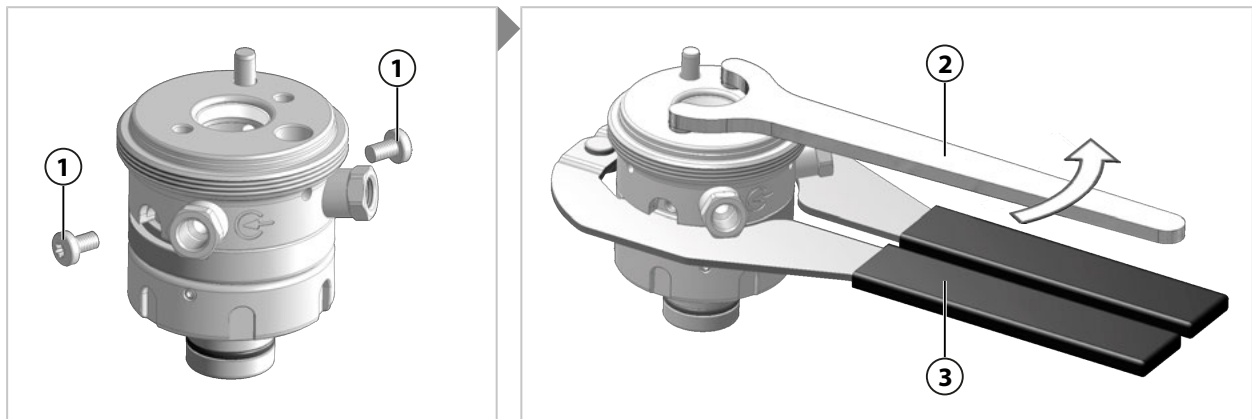


07. Firmly push the immersion tube (5) into the bayonet coupling (6), at the same time rotating around 60° clockwise up to the hard stop.
08. Tighten the screws (1) with a screwdriver of type TX25 (7).
Note: The bayonet coupling is locked by the form-fit screw heads. The immersion tube, however, remains movable to compensate for tolerances.

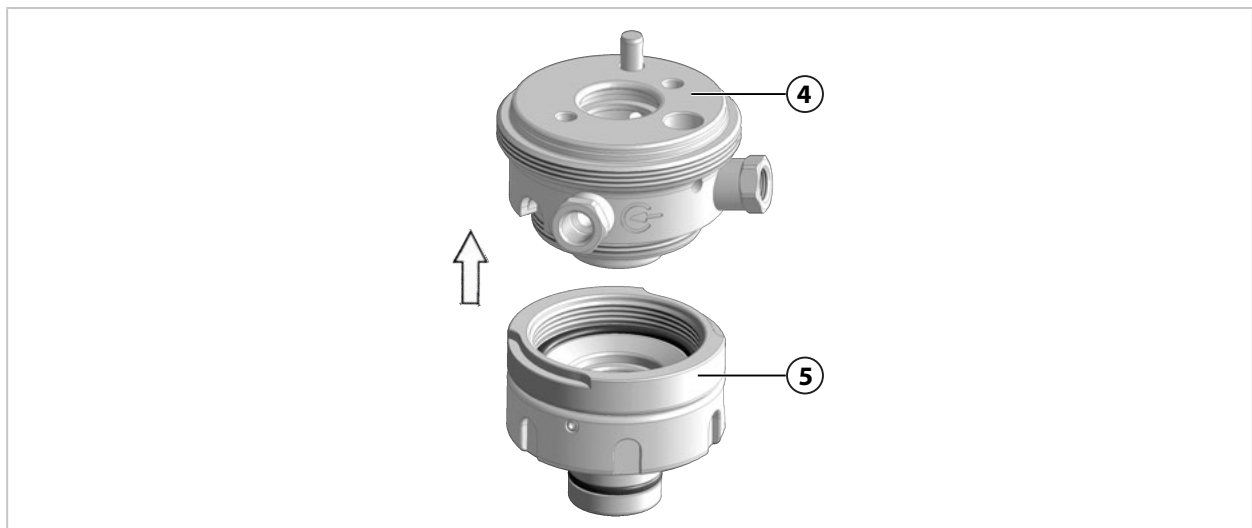
✓ The immersion tube is now installed.

6.3.6 Calibration Chamber: Removal

Note: Service sets ZU0754 or ZU0740 are required to remove the calibration chamber. → *Tools, p. 50*



01. Remove the process unit from the drive unit. → *Drive Unit: Removal, p. 35*
02. Remove the screws **(1)** with a screwdriver of type TX25. Keep the screws **(1)** in a safe place for assembly later on.
03. Position the pliers **(3)** and use the face pin spanner wrench **(2)** to loosen the coupling of the split calibration chamber.



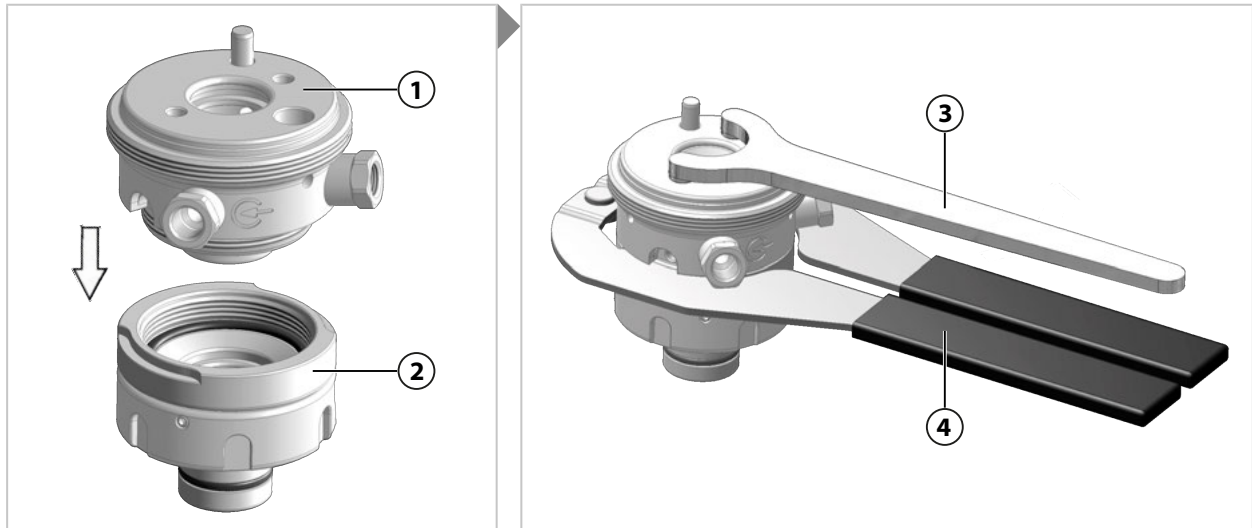
04. Unscrew the top **(4)** from the bottom **(5)** of the calibration chamber and separate the two parts.

✓ The calibration chamber is now removed.

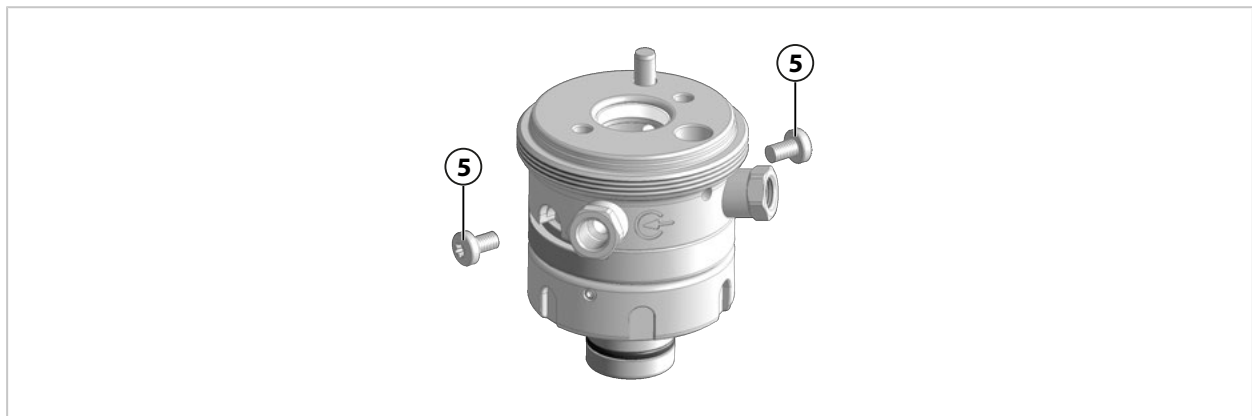
6.3.7 Calibration Chamber: Installation

Note: Service sets ZU0754 or ZU0740 are required to install the calibration chamber. → *Tools, p. 50*

Note: To ensure correct assembly of the O-rings and the scraper ring, use the accessory tools ZU0746 and ZU0747. The procedure for handling the accessory tools is described in the relevant documentation. → *Tools, p. 50*



01. Check the O-rings and scraper ring for damage; replace the O-rings and scraper ring if necessary. → *Seal Kits, p. 44*
02. Connect the top (1) and the bottom (2) of the calibration chamber and screw together finger tight.
03. Position the pliers (4) and use the face pin spanner wrench (3) to screw the calibration chamber together.



Note: Securing the calibration chamber with the two screws is not possible until the top and bottom parts have been firmly screwed together (to the hard stop).

04. Tighten the screws (5) with a screwdriver of type TX25 .

✓ The calibration chamber is now installed.

6.3.8 Knick Repair Service

The Knick Repair Service offers professional corrective maintenance for the product to the original quality. Upon request, a replacement unit can be obtained for the period of the repair.

Further information can be found at www.knick.de.

7 Troubleshooting

Malfunction State	Possible Causes	Remedy	
Process medium escapes from the leakage bore.	Leaking due to damaged O-rings.	Replace damaged O-rings. ¹⁾ → <i>Seal Kits, p. 44</i>	
Sensor glass shattered.	Mechanical impact on the sensor glass (e.g., by process medium).	Replace faulty sensor. → <i>Installing and Removing Sensors, p. 29</i> Remove any glass splinters from the SensoGate WA130H. Check immersion tube seal and replace if necessary. → <i>Seal Kits, p. 44</i>	
Medium escapes from the multiplug's connection point.	Multiplug not installed correctly.	Install the multiplug correctly. → <i>Multiplug: Installation, p. 26</i>	
	Gaskets or O-rings of the multiplug damaged or missing.	Check the gaskets and O-rings of the multiplug for correct positioning and damage, and replace them if necessary.	
	Connection point contaminated.	Clean the connection point and the multiplug.	
	Foreign objects between connection point and multiplug.	Remove foreign objects (e.g., old O-rings).	
	Faulty multiplug.	Send the media connection to your local contact for repair. → <i>knick.de</i>	
SensoGate WA130H does not move.	Multiplug not installed correctly.	Install the multiplug correctly. → <i>Multiplug: Installation, p. 26</i>	
	Sensor not installed correctly.	Install the sensor correctly. → <i>Installing and Removing Sensors, p. 29</i>	
	Compression ring or O-ring of the sensor damaged or missing.	Check the compression ring and O-rings of the sensor for correct positioning and damage, and replace them if necessary.	
	Foreign objects in the sensor holder.	Remove foreign objects (e.g., old compression ring or O-ring).	
	Gaskets or O-rings of the drive unit damaged.	Replace the gaskets or O-rings of the drive unit and calibration chamber.	
	Faulty drive unit.	Send the SensoGate WA130H to your local contact for repair. → <i>knick.de</i>	
	No compressed air supply.		Install the multiplug correctly. → <i>Multiplug: Installation, p. 26</i>
			Check the function of the compressed air system.
Check the function of the electro-pneumatic controller.			
		Check the process analyzer for error messages.	

¹⁾ After replacing the damaged O-rings, clean the leakage bores so that any further escape of process medium can be detected.

Malfunction State	Possible Causes	Remedy
No or wrong measured value displayed.	Faulty sensor.	Replace the sensor. → <i>Installing and Removing Sensors, p. 29</i>
	Defective plug connection or damaged sensor cable.	Fasten plug connection or replace damaged sensor cable. → <i>Installing and Removing Sensors, p. 29</i>
Safeguard "Immersion Lock Without a Mounted Sensor" not working.	Corrosion or clogging by penetrated process medium.	Send the SensoGate WA130H to your local contact for repair. → <i>knick.de</i>

See also

- *Corrective Maintenance, p. 35*
- *Knick Repair Service, p. 40*
- *Return, p. 43*

7.1 Malfunction State: Retractable Fitting Does Not Fully Move to the SERVICE or PROCESS Limit Position

01. Increase the drive control pressure up to the maximum permissible value to move fully to the service position (SERVICE limit position) or the process position (PROCESS limit position).
→ *Specifications, p. 56*
✓ Sensor head is visible in service position (SERVICE limit position). In process position (PROCESS limit position), the sensor head is not visible.
02. Troubleshooting successful: Check the cause of the malfunction. If required, remove the drive unit. Perform maintenance on the drive unit or check the functionality of the process unit using a replacement drive.
03. Troubleshooting unsuccessful: Stop the process; depressurize or drain off the process medium if necessary. Remove the SensoGate WA130H and send it to your local contact for repair. → *knick.de*

See also

- *Drive Unit: Removal, p. 35*
- *Retractable Fitting: Removal, p. 43*

8 Decommissioning

8.1 Retractable Fitting: Removal

⚠ WARNING! Risk of explosion from mechanically generated sparks when used in explosive atmospheres. Take appropriate action to prevent mechanically generated sparks. Follow the safety instructions. → *Operation in Hazardous Locations, p. 9*

⚠ WARNING! Process or rinse medium, potentially containing hazardous substances, may escape from the SensoGate WA130H or the process port. Follow the safety instructions. → *Safety, p. 5*

01. Stop the process; depressurize or drain off the process medium if necessary.
 02. Move the SensoGate WA130H into the service position (SERVICE limit position).
→ *Moving into the Service Position (SERVICE Limit Position), p. 28.*
 03. Turn the SensoLock ring to the "lock" position.
✓ SensoGate WA130H is mechanically locked and cannot move.
 04. Switch off the compressed air supply and vent the compressed air system.
 05. Remove the multiplug or the accessory "Adapter for free hose connection".
 06. Remove the sensor. → *Installing and Removing Sensors, p. 29*
 07. Remove the outlet hose.
 08. Optional: Disconnect the equipotential bonding cable from the grounding connection and remove it.
 09. Optional: Remove installed safety accessories (e.g., ZU0818 retainer clamp).
 10. Loosen the process connection.
 11. Remove the SensoGate WA130H from the customer's process port.
 12. Seal off the process port appropriately.
- ✓ The retractable fitting is now removed.

8.2 Return

If required, send the product in a clean condition and securely packed to your local contact.
→ *knick.de*

If there has been contact with hazardous substances, the product must be decontaminated or disinfected prior to shipment. The consignment must always be accompanied by a corresponding return form (declaration of decontamination) to prevent service employees being exposed to potential hazards. → *knick.de*

8.3 Disposal

Local codes and regulations must be observed when disposing of the product.

The SensoGate WA130H can contain various materials, depending on the version concerned.
→ *Product Code, p. 12*

9 Spare Parts, Accessories, and Tools

9.1 Seal Kits

The seal kits are available in different materials.

The smaller seal kits ("Set X/1") only contain O-rings for direct contact with the process medium.

The extended seal kits ("Set X/2") also include O-rings for contact with the rinse medium.

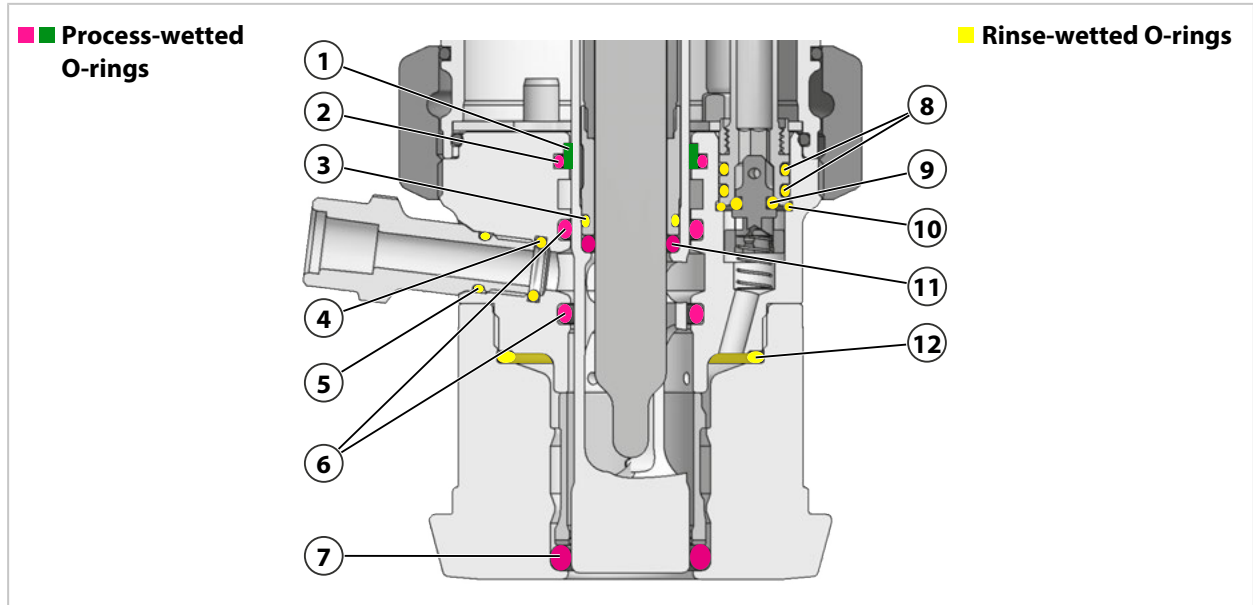
Each seal kit comes with an accompanying slip that provides information about the package contents, where the O-rings are to be installed, and where the lubrication points are. Replacement O-rings must be greased with the lubricant that is supplied.

To ensure correct installation of the O-rings and the scraper ring, we recommend using the accessory tools ZU0746 and ZU0747. The procedure for handling the accessory tools is described in the relevant product documentation. → *Tools, p. 50*

Seal Kits		Order Code	
Dairy-pipe, Tri-Clamp, Varivent, BioControl process connection	Set E/1	Process-wetted seal material: EPDM FDA	ZU0700/1
	Set E/2	Process-wetted seal material: EPDM FDA, wetted by rinse medium: EPDM FDA	ZU0700/2
	Set F/1	Process-wetted seal material: FKM FDA	ZU0697/1
	Set F/2	Process-wetted seal material: FKM FDA, wetted by rinse medium: FKM FDA	ZU0697/2
	Set G/1 Set H/1	Process-wetted seal material: FFKM FDA	ZU0766/1
	Set G/2	Process-wetted seal material: FFKM FDA, wetted by rinse medium: EPDM FDA	ZU0766/2
	Set H/2	Process-wetted seal material: FFKM FDA, wetted by rinse medium: FFKM FDA	ZU0767
Ingold socket H0 process connection	Set E/1	Process-wetted seal material: EPDM FDA	ZU0704/1
	Set E/2	Process-wetted seal material: EPDM FDA, wetted by rinse medium: EPDM FDA	ZU0855
	Set F/1	Process-wetted seal material: FKM FDA	ZU0703/1
	Set F/2	Process-wetted seal material: FKM FDA, wetted by rinse medium: FKM FDA	ZU0856
	Set G/1 Set H/1	Process-wetted seal material: FFKM FDA	ZU0768/1
	Set G/2	Process-wetted seal material: FFKM FDA, wetted by rinse medium: EPDM FDA	ZU0857
	Set H/2	Process-wetted seal material: FFKM FDA, wetted by rinse medium: FFKM FDA	ZU0858
Ingold socket H1 process connection	Set E/1	Process-wetted seal material: EPDM FDA	ZU0704/1
	Set E/2	Process-wetted seal material: EPDM FDA, wetted by rinse medium: EPDM FDA	ZU0704/2
	Set F/1	Process-wetted seal material: FKM FDA	ZU0703/1
	Set F/2	Process-wetted seal material: FKM FDA, wetted by rinse medium: FKM FDA	ZU0703/2
	Set G/1 Set H/1	Process-wetted seal material: FFKM FDA	ZU0768/1
	Set G/2	Process-wetted seal material: FFKM FDA, wetted by rinse medium: EPDM FDA	ZU0768/2
	Set H/2	Process-wetted seal material: FFKM FDA, wetted by rinse medium: FFKM FDA	ZU0769

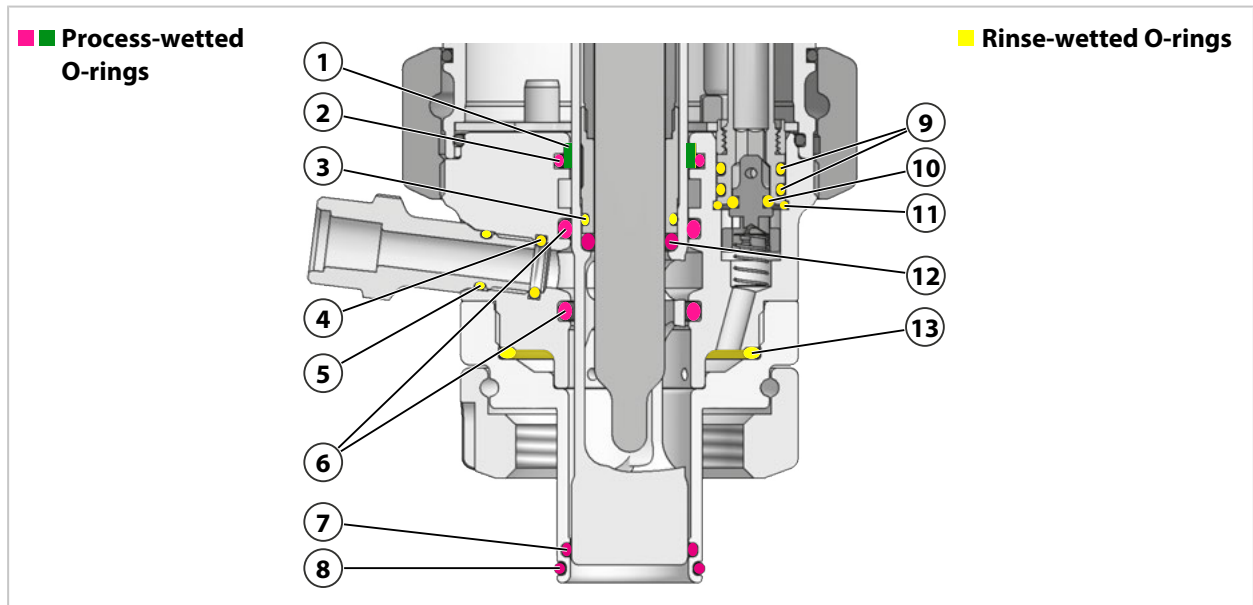
Note: Further seal kits are available on request.

Seal Kits for Dairy-Pipe, Tri-Clamp, Varivent, BioControl Process Connection



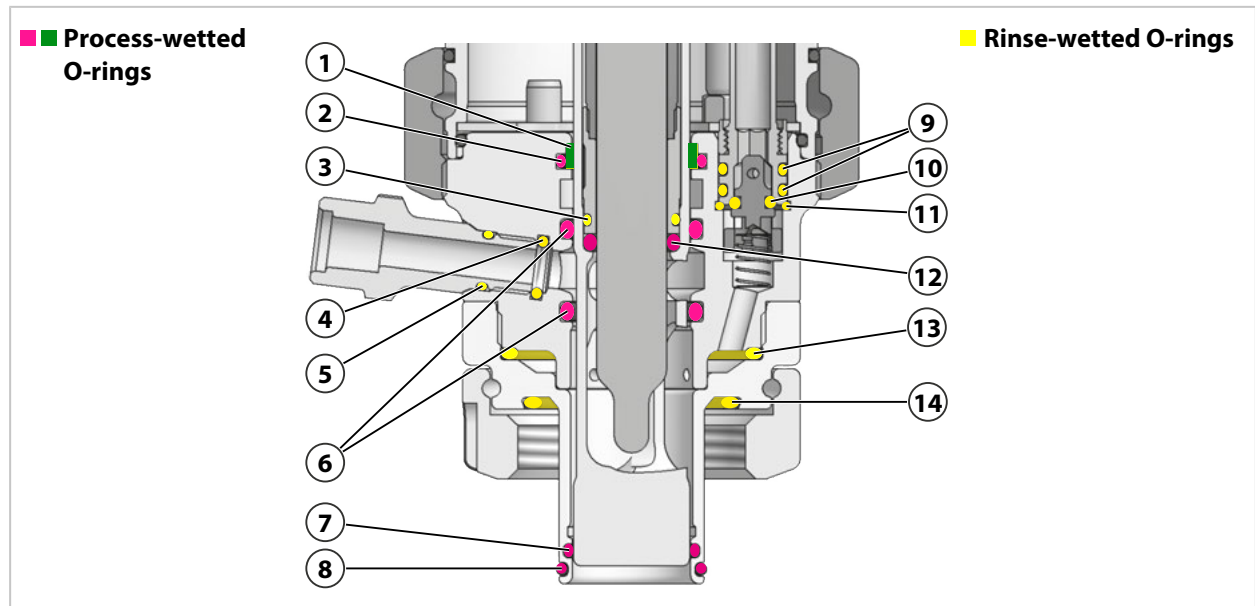
1 Scraper ring 215.000-420	7 O-ring 20 × 4 mm
2 O-ring 23 × 2 mm	8 O-ring 8 × 2 mm
3 O-ring 13 × 1.5 mm	9 O-ring 4 × 2 mm
4 O-ring 6 × 2 mm	10 O-ring 10 × 1.5 mm
5 O-ring 8 × 1.5 mm	11 O-ring 11.9 × 2.6 mm
6 O-ring 20 × 2.5 mm	12 O-ring 40 × 2.5 mm

Seal Kits for Ingold-Socket H0 Process Connection



1 Scraper ring 215.000-420	8 O-ring 21 × 2 mm
2 O-ring 23 × 2 mm	9 O-ring 8 × 2 mm
3 O-ring 13 × 1.5 mm	10 O-ring 4 × 2 mm
4 O-ring 6 × 2 mm	11 O-ring 10 × 1.5 mm
5 O-ring 8 × 1.5 mm	12 O-ring 11.9 × 2.6 mm
6 O-ring 20 × 2.5 mm	13 O-ring 40 × 2.5 mm
7 O-ring 20 × 2 mm	

Seal Kits for Ingold-Socket H1 Process Connection



1 Scraper ring 215.000-420	8 O-ring 21 × 2 mm
2 O-ring 23 × 2 mm	9 O-ring 8 × 2 mm
3 O-ring 13 × 1.5 mm	10 O-ring 4 × 2 mm
4 O-ring 6 × 2 mm	11 O-ring 10 × 1.5 mm
5 O-ring 8 × 1.5 mm	12 O-ring 11.9 × 2.6 mm
6 O-ring 20 × 2.5 mm	13 O-ring 40 × 2.5 mm
7 O-ring 20 × 2 mm	14 O-ring 33 × 2.5 mm

9.2 Spare Parts



Safety Label

The safety label provides information on the safeguard "Immersion Lock Without a Mounted Solid-Electrolyte Sensor". → *Safeguards, p. 6*

Damaged or lost safety labels will be replaced on request.



ZU0739 Bellows

The bellows (only used on versions with liquid-electrolyte sensors) protect the fitting beneath the pressure chamber against external contamination and wear.



ZU0889 Outlet Hose

The outlet hose is used to discharge calibration, cleaning, or rinse media from the calibration chamber. → *Outlet Hose: Installation, p. 24*

9.3 Accessories



ZU0733 Adapter for Free Hose Connection With Electric Limit Switches, Housing PP

This adapter is used to operate the SensoGate WA130 without Unical 9000 and the associated media connection via multiplugs.



ZU0734 Adapter for Free Hose Connection Without Electric Limit Switches, Housing PP

This adapter is used to operate the SensoGate WA130 without Unical 9000 and the associated media connection via multiplugs.



ZU0742 Adapter for Free Hose Connection With Electric Limit Switches, Housing PEEK

This adapter is used to operate the SensoGate WA130 without Unical 9000 and the associated media connection via multiplugs.



ZU0670/1 Air Supply for Pressurized Sensors 0.5 ... 4 bar
ZU0670/2 Air Supply for Pressurized Sensors 1 ... 7 bar
ZU0713 Hose, 20 m (Extension for ZU0670)

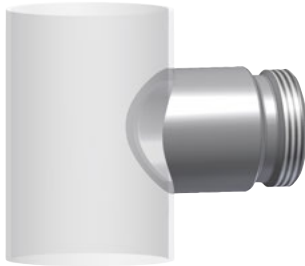
This assembly group maintains the defined gauge pressure in the pressure chamber in versions of the SensoGate WA130H for liquid-electrolyte sensors.



ZU0759 and ZU0759/1 Protective Cap

The protective cap protects against the effects of weather exposure and prevents the ingress of external liquids or particles into the area of the sensor connections.

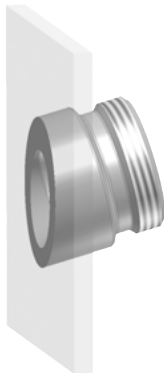
ZU0759: suitable for versions with solid-electrolyte sensors
 ZU0759/1: suitable for versions with liquid-electrolyte sensors



ZU0717/DN (Straight) Weld-In Socket for Pipelines

Process connection: Ingold socket (Ø 25 mm, G1¼)

adapted to DN50 ZU0717/DN50
 adapted to DN65 ZU0717/DN65
 adapted to DN80 ZU0717/DN80
 adapted to DN100 ZU0717/DN100



ZU0718 (15° Incline) Weld-In Socket for Boiler Walls

Process connection: Ingold socket (Ø 25 mm, G1¼)



ZU0718/DN (15° Incline) Weld-In Socket for Pipelines

for connecting with Ingold socket (Ø 25 mm, G1¼)

adapted to DN50 ZU0718/DN50
 adapted to DN65 ZU0718/DN65
 adapted to DN80 ZU0718/DN80
 adapted to DN100 ZU0718/DN100



ZU0717 (Straight) Weld-In Socket for Boiler Walls

Process connection: Ingold socket (Ø 25 mm, G1¼)

Weld-in sockets with an HSD (Handling Safety Design) safety function feature special grooves on the sealing surface for the process connection O-ring. These grooves prevent the O-ring from sealing if the Ingold coupling nut loosens inadvertently when process pressure is present. A minor leak means the loosening can be detected quickly and remedied before the Ingold coupling nut comes loose from the thread completely. This increases safety for personnel.



ZU0922 (Straight) Safety Weld-In Socket HSD for Boiler Walls

Process connection: Ingold socket (Ø 25 mm, G1¼)



ZU0922/DN (Straight) Safety Weld-In Socket HSD for Piping

Process connection: Ingold socket (Ø 25 mm, G1¼)

- adapted to DN50 ZU0922/DN50
- adapted to DN65 ZU0922/DN65
- adapted to DN80 ZU0922/DN80
- adapted to DN100 ZU0922/DN100



ZU0923 (15° Incline) Safety Weld-In Socket HSD for Boiler Walls

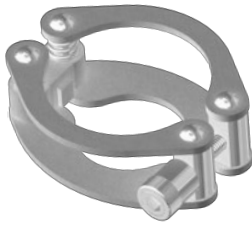
Process connection: Ingold socket (Ø 25 mm, G1¼)



ZU0923/DN (15° Incline) Safety Weld-In Socket HSD for Piping

Process connection: Ingold socket (Ø 25 mm, G1¼)

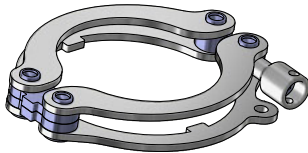
- adapted to DN50 ZU0923/DN50
- adapted to DN65 ZU0923/DN65
- adapted to DN80 ZU0923/DN80
- adapted to DN100 ZU0923/DN100



ZU0818 Retainer Clamp for Ingold Socket, 25 mm

The retainer clamp ZU0818 prevents the coupling nut of the Ingold socket (25 mm) screw joint from accidentally coming loose.

The wires of the retainer clamp connect SensoGate WA130H to the customer's process port. A locking lug on the retainer clamp engages in the groove of the coupling nut (form-fit).

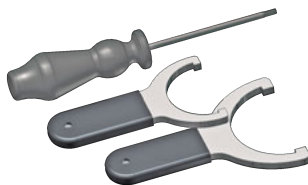


ZU1138 Retainer Clamp for SensoGate Retractable Fitting

The retainer clamp ZU1138 prevents the screw joint between the retractable fitting's drive unit and the process connection from accidentally coming loose.

The retainer clamp wires connect the retractable fitting's drive unit to the coupling nut. The locking lugs on the retainer clamp engage in the grooves of the coupling nut and secure the screw joint.

9.4 Tools



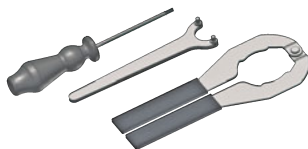
ZU0680 SensoGate Service Set, Basic Equipment

This tool set is suitable for minor maintenance work. It allows easy separation of the drive unit from the process unit, mounting of an Ingold socket, and replacement of the immersion tube, including O-ring maintenance.



ZU0740 SensoGate Service Set, Maintenance, Repair, Modification

This tool set contains all the tools required to carry out extensive maintenance and corrective maintenance, as well as to modify the product. SensoGate WA130H can be fully dismantled using this tool set.



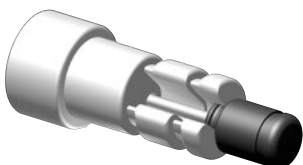
ZU0754 SensoGate Service Set, Calibration Chamber

This tool set is suitable for maintenance work on the calibration chamber and its seals. It allows easy separation of the split calibration chamber.



ZU0746 Accessory Tool for Scraper Ring

The ZU0746 accessory tool allows easy and correct fitting of the scraper rings in the calibration chamber of the SensoGate WA130H.



ZU0747 Accessory Tool for O-Rings 20 x 2.5

The ZU0747 accessory tool allows easy and correct fitting of the O-rings 20 x 2.5 in the calibration chamber of the SensoGate WA130H.



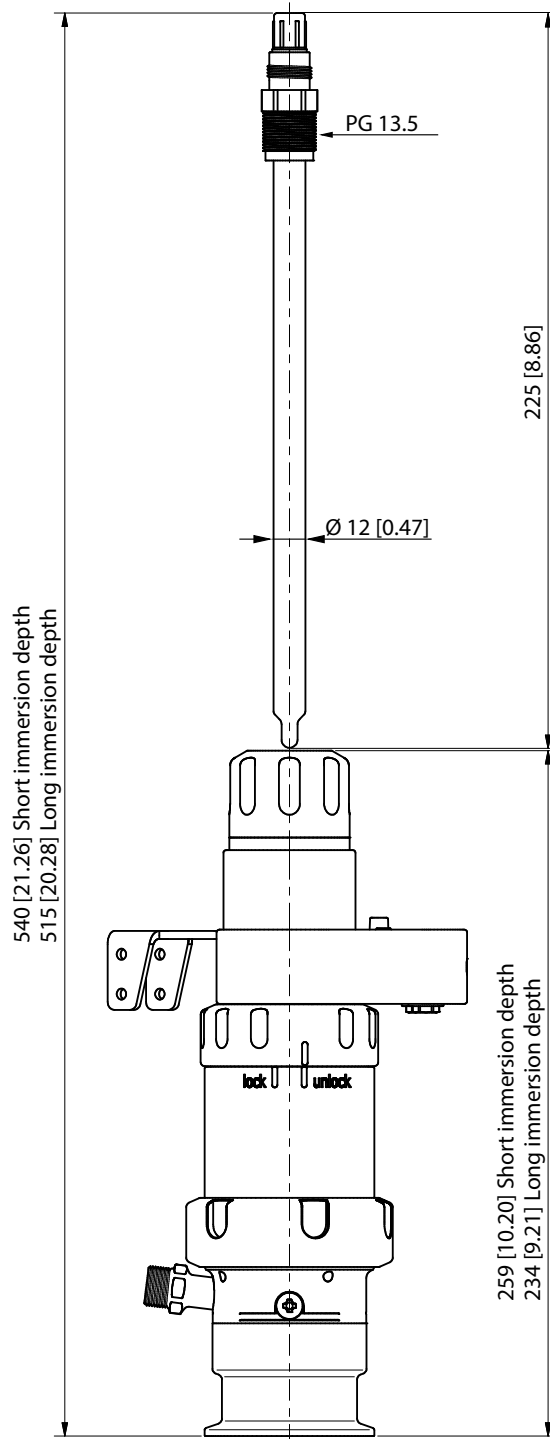
ZU0647 Sensor Spanning Wrench

ZU0647 sensor spanning wrench is used to properly tighten sensors. It prevents damage to the PG 13.5 plastic thread of the sensor head caused by applying an excessive tightening torque (e.g., when using an open-end wrench).

10 Dimension Drawings

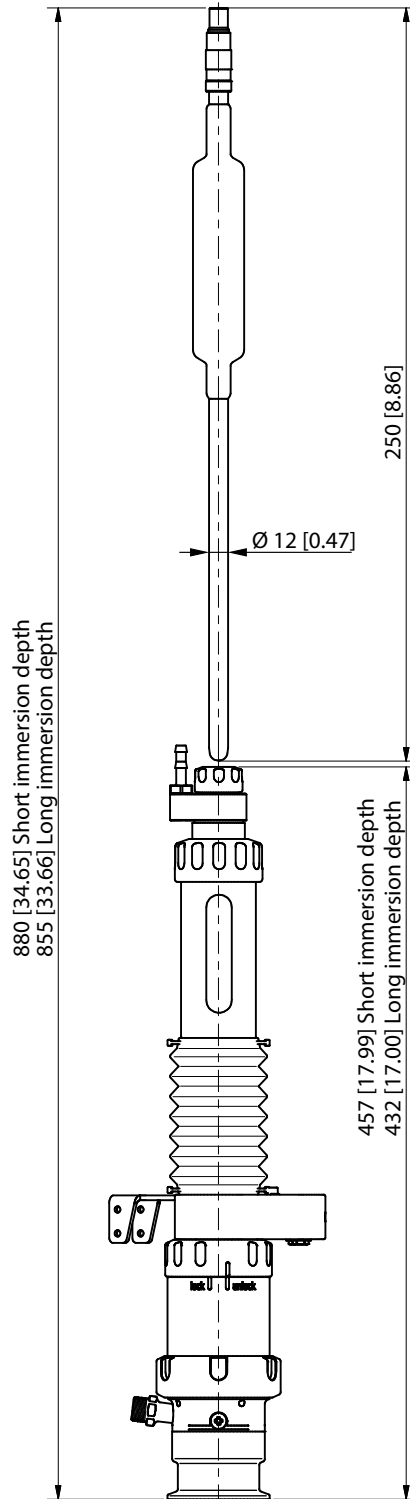
Retractable Fitting for Solid-Electrolyte Sensor, Short and Long Immersion Depth

Note: All dimensions are given in millimeters [inches].

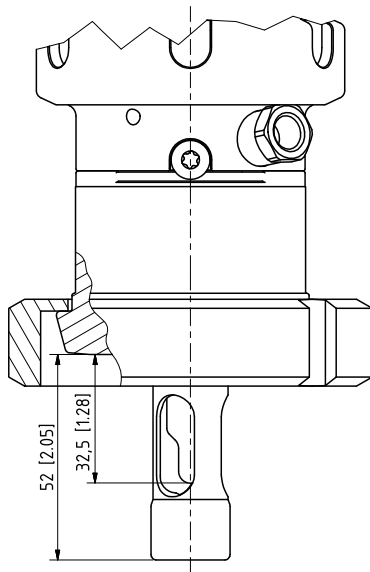


Retractable Fitting for Liquid-Electrolyte Sensor, Short and Long Immersion Depth

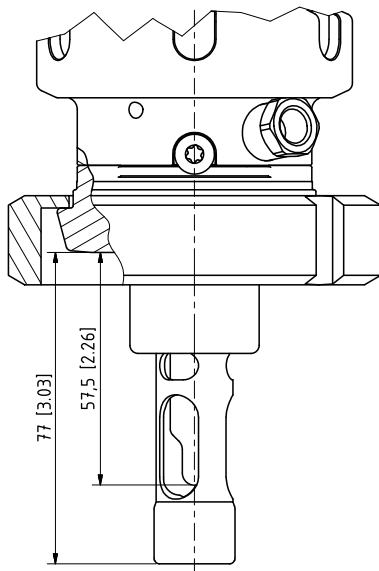
Note: All dimensions are given in millimeters [inches].



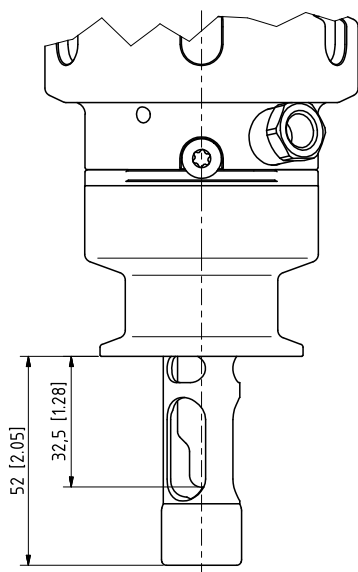
Process Connections



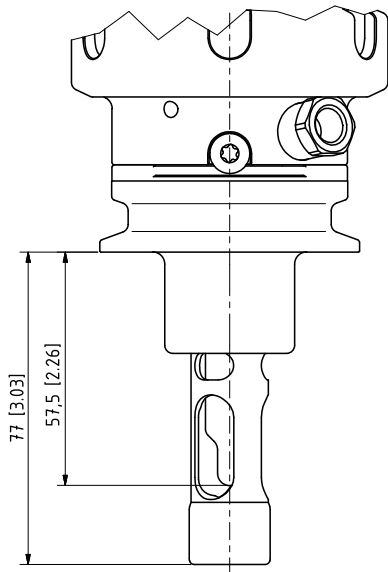
Dairy pipe DIN 11851 DN 40 ... DN 100
Short immersion depth (ID)



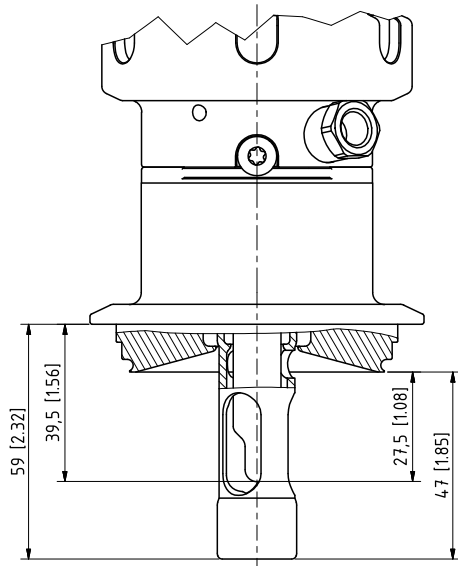
Dairy pipe DIN 11851 DN 40 ... DN 100
Long immersion depth (ID)



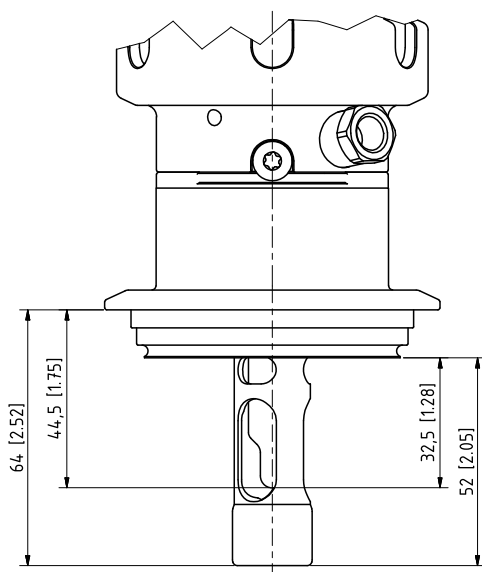
Clamp 1" ... Clamp 3.5"
Short immersion depth (ID)



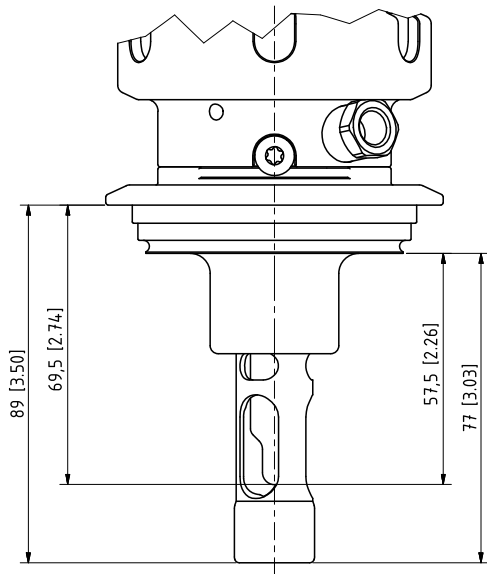
Clamp 2" ... Clamp 3.5"
Long immersion depth (ID)



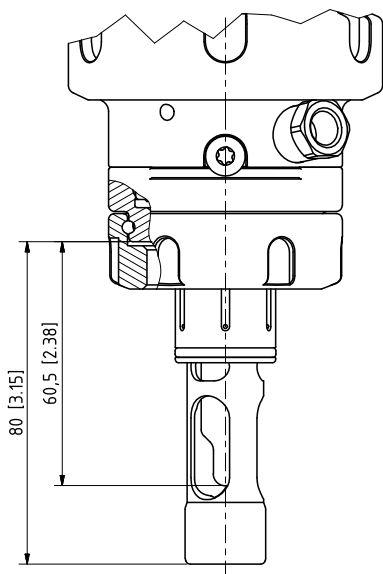
Varivent \geq DN 50
Short immersion depth (ID)



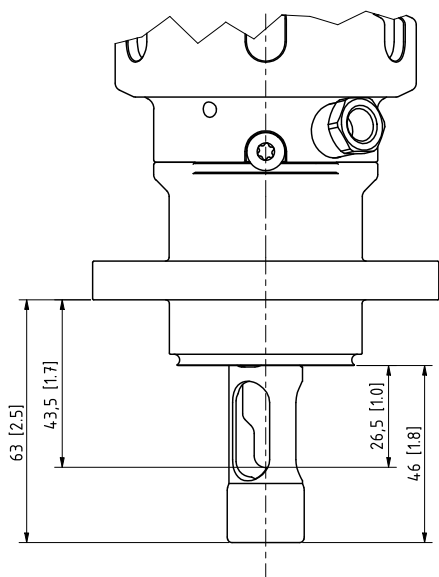
Varivent \geq DN 65
Short immersion depth (ID)



Varivent ≥ DN 80
Long immersion depth (ID)



25 mm Ingold socket



BioControl DS 50 or DS 65

11 Specifications

Permissible process pressure and temperature during movement	10 bar at 0 ... 140 °C (145 psi at 32 ... 284 °F)
Permissible process pressure and temperature when static in service position	16 bar at 0 ... 40 °C (232 psi at 32 ... 104 °F)
Permissible rinsing pressure and temperature	6 bar at 5 ... 60 °C (87 psi at 41 ... 140 °F) When using a PEEK media connection with integrated connection for additional medium (connection option C) up to 135 °C (275 °F) → <i>Product Code, p. 12</i>
Permissible pressure for sensor control	4 ... 7 bar (58 ... 101.5 psi)
Ambient temperature	-10 ... 70 °C (14 ... 158 °F)
Degree of protection	IP66
Sensors	→ <i>Product Code, p. 12</i>
Process connections	→ <i>Product Code, p. 12</i>
Immersion depths/dimensions	→ <i>Dimension Drawings, p. 51</i>
Wetted materials	→ <i>Product Code, p. 12</i>
Quality of compressed air	
Standard	according to ISO 8573-1:2001
Quality class	3.3.3 or 3.4.3
Solid contaminants	3 (max. 5 µm, max. 5 mg/m ³)
Water content for temperatures > 15 °C (59 °F)	Class 4, pressure dew point 3 °C (37.4 °F) or lower
Water content for temperatures 5 ... 15 °C (41 ... 59 °F)	Class 3, pressure dew point -20 °C (-4 °F) or lower
Oil content	Class 3 (max. 1 mg/m ³)
Connections	
Outlet	Female thread G 1/8" with connection nozzle for outlet hose DN 8 EPDM 3 m → <i>Outlet Hose: Installation, p. 24</i>
For pressurized sensors	Connection nozzle DN 6 with thread G1/8 for connection a pneumatic hose with an inner diameter of 6 mm or 1/4" Pressure in pressure chamber 0.5 ... 1 bar (7.25 ... 14.5 psi) above process pressure of max. 7 bar (101.5 psi)
For compressed air, rinse and calibration media (retractable fitting control air)	Unical 9000 multiplug
Weight	Depending on material and version. Please contact Knick or your designated sales representative for detailed information.

Abbreviations

A/F	Width across flats
ATEX	Atmosphères Explosibles (explosive atmospheres)
CE	Conformité Européenne (European conformity)
CLP	Classification, labeling, and packaging
DIN	Deutsches Institut für Normung (German Institute for Standardization)
DN	Diamètre nominal (nominal size)
EPDM	Ethylene propylene diene monomer rubber
EU	European Union
FDA	U.S. Food and Drug Administration
FFKM	Perfluoro rubber
FKM	Fluoro rubber
ID	Immersion depth
IEC	International Electrotechnical Commission
IP	International Protection / Ingress Protection
ISO	International Organization for Standardization
KEMA	Keuring van Elektrotechnische Materialen te Arnhem (inspection of electrical equipment in Arnhem)
LED	Light-emitting diode
NSF-H1	Lubricants approved by the US organization NSF (National Sanitation Foundation) for the food and feed industry.
PCS	Process control system
PEEK	Polyether ether ketone
PP	Polypropylene
PVDF	Polyvinylidene fluoride
USDA-H1	Lubricants approved by the U.S. Department of Agriculture (USDA).

Technical Terms

CE Marking

Manufacturer's declaration, in accordance with EU Regulation 765/2008, that the product is in conformity with the applicable requirements set out in the European Union harmonization legislation providing for its affixing.

Corrective Maintenance

Measures taken to return an item under review to an operational condition, with the exception of improvements.

Hazard

A hazard is defined as a potential source of damage. The term "hazard" can be specified to further describe the origin or nature of the expected damage. (Source: EN ISO 12100)

Highly Efficient Charge Generating Mechanism

A highly efficient charge generating mechanism is [...] any charging mechanism stronger than manual rubbing of surfaces. (Source: EN ISO 80079-36)

Inspection

Measures for determining and assessing the actual condition of an item under review, including determining the causes of wear and deriving the necessary steps for future use.

Maintenance

Combination of all technical, administrative and managerial actions during the life cycle of an item intended to retain it in, or restore it to, a state in which it can perform the required function. (Source: EN 13306 Maintenance – Maintenance terminology)

Preventive Maintenance

Measures for maintaining the target condition [...] and delaying the reduction of the available wear margin of an item under review.

Risk

Combination of the probability of occurrence of harm and the severity of that harm (source: EN ISO 12100)

Risk Assessment

Overall process of risk analysis and risk evaluation (source: EN ISO 12100)

Zone 0

Area in which an explosive gas atmosphere is present continuously or for long periods or frequently. (Source: IEC 60079-10-1)

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