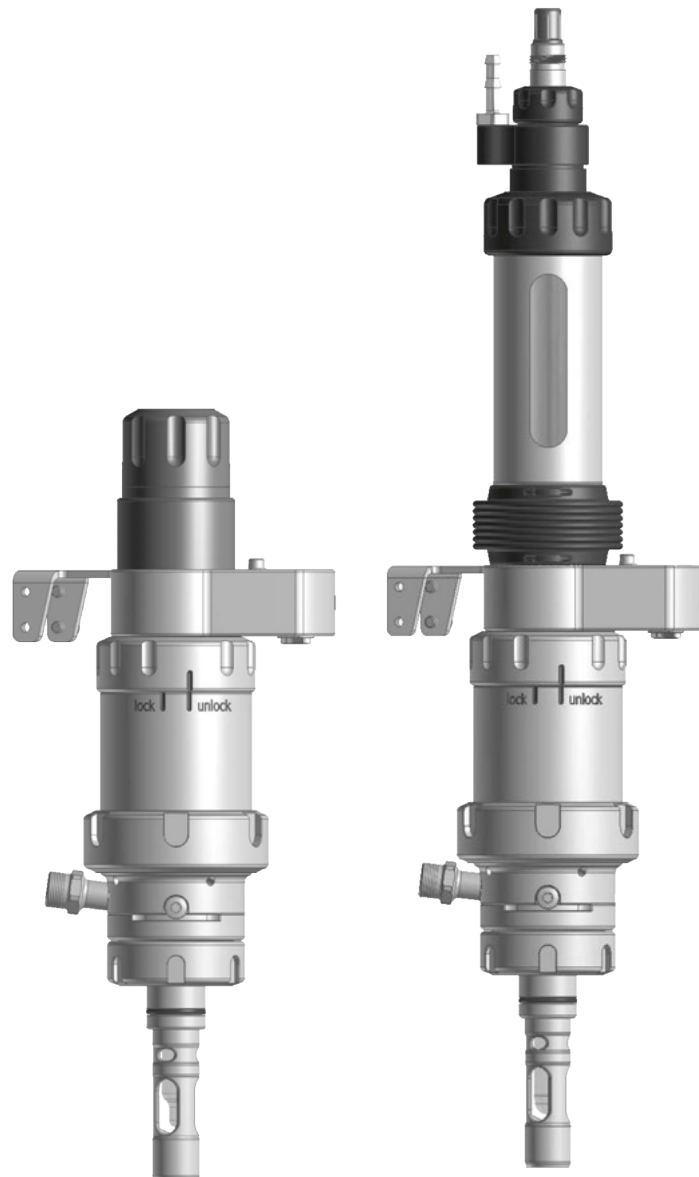


SensoGate® WA 130 H

User Manual



Retractable Fitting

Knick >

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SensoGate® WA 130 H Retractable Fitting

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Safety Information

SensoGate® WA 130 H Retractable Fitting



Process-Related Risks

Knick Elektronische Messgeräte GmbH & Co. KG assumes no liability for damages caused by process-related risks known to the operator, which would in fact not permit the use of the WA 130 H retractable fitting.

Be sure to observe:

Work on the retractable fitting must only be performed by personnel authorized by the operating company and specially trained for handling and operating the retractable fitting.

Return of Products

Please contact our Service Team before returning a defective device. Ship the cleaned device to the address you have been given. If the device has been in contact with process fluids, it must be decontaminated/disinfected before shipment. In that case, please attach a corresponding Declaration of Contamination (see Page 46), for the health and safety of our service personnel.

Safety Information

SensoGate® WA 130 H Retractable Fitting

Operation in Explosive Atmospheres

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

- EU-Type Examination Certificate KEMA 04ATEX4035X

Exceeding the standard atmospheric conditions within the manufacturer's specifications, such as ambient temperature, process pressure and temperature, does not impair the durability of the retractable fittings.

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)

Possible Ignition Hazards During Installation and Maintenance

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

The metallic parts of the SensoGate WA130H-X must be connected to the plant's equipotential bonding 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 given on the nameplate may deviate from the actual version of the SensoGate WA130H-X. The operating company must assess and document this deviation.

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:

- Highly efficient charge generating mechanisms are excluded
- 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 only 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.

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 implement appropriate measures.

The sensors that are used must be approved for operation in hazardous locations. Further information can be found in the sensor documentation.

Intended Use

SensoGate® WA 130 H Retractable Fitting

Intended Use

The SensoGate® WA 130 H pneumatic retractable fitting is used for installing a sensor for measurements in liquids. The sensor can be cleaned, calibrated or replaced under process conditions (pressure and temperature).

The modular concept allows simple installation, operation and maintenance.

The operator can exchange process adaptations or convert the fitting for the use with gel sensors or liquid-electrolyte sensors.

The retractable fitting is suitable for sensors with an outer diameter of 12 mm:

- with gel electrolyte, length 225 mm, sensor head with PG 13.5
- with liquid electrolyte, length 250 mm

The SensoGate® WA 130 H retractable fitting allows:

- inserting and retracting the sensor under process pressure (retractable fitting)
- calibrating or adjusting the measuring system and cleaning the sensor in the running process (different options available)
- replacing the sensor in the running process (in SERVICE position)
- variable process adaptation by the operator at any time

Take account of the influences of humidity, ambient temperature, chemicals and corrosion.



Safe use

If you are not sure whether the retractable fitting can be safely used for your intended application, please contact the manufacturer.

To ensure safe use of the equipment, you must follow the instructions given in this manual and observe the specified temperature and pressure ranges.

The SensoGate® WA 130 H retractable fitting has been developed and manufactured in compliance with the applicable European guidelines and standards. Compliance with the European Harmonized Standards for use in hazardous locations is confirmed by the EC-Type-Examination Certificate. Compliance with the European guidelines and standards is confirmed by the EC Declaration of Conformity.

Hygienic Design

With regard to hygienic design and sterilizability, the retractable fitting complies with the recommendations of EHEDG. This was established and verified in the TNO report V7942 dated February 25, 2008. If required, the TNO report can be viewed or obtained from the manufacturer.

For hazardous-area applications, the sensors used must ensure proper separation of the ATEX zones. When the retractable fitting is in SERVICE position and the SensoLock ring has been locked, the sensor may be replaced within a Zone 0 hazardous location.

There is no particular direct hazard caused by the operation of the device in the specified environment.

Intended Use

SensoGate® WA 130 H Retractable Fitting

NOTICE!

Observe the general requirements of protection devices to prevent pollution of potable water (EN 1717) when drawing water from drinking water pipes.

We recommend installing a check valve on the water supply to protect the drinking water from pollution.





We recommend installing a check valve on the water inlet e.g. on the water valve provided by the customer or on the rinse connection of the retractable fitting (inlet to calibration chamber) to prevent backflow of rinse or process medium or compressed air into the water pipe.

Suitable check valves made from different materials are available from Knick.


Rating plates

SensoGate® WA 130 H-N

Drive





| | |
|--|---|
| Knick > | SensoGate® |
| Retractable Fitting / Drive Unit | |
| Type | |
| No. | |
|   Max. pressure Temperature range |  |
| 14163 Berlin Made in Germany |  |




Process

| | |
|---|---|
| Knick > | SensoGate® |
| 14163 Berlin Made in Germany Process Unit | |
| Type | |
| No. | |
| |  |





SensoGate® WA 130-X

Drive

| | |
|--|---|
| Knick > | Sensogate® |
| Retractable Fitting / Drive Unit | |
| Type | |
| No. | |
|   Max. pressure Temperature range |  |
| 14163 Berlin Made in Germany |  |

| | |
|--|---------------------------------------|
| KEMA 04 ATEX 4035X | |
|  II 1 G | Ex h IIC T6 ... T3 Ga |
| II 1 D | Ex h IIIC T80°C ... 140°C Da |
| Tamb -10 ... 70 °C | |
|   | No self-heating Special conditions |
| WARNING - Potential electrostatic charging hazard - see instruction | |

Process

| | | |
|--|---|---|
| Knick > | SensoGate® |  |
| 14163 Berlin Made in Germany Process Unit | | 0044 |
| Type | No. | |
|   Max. pressure Temperature range |  | See Drive Unit for Ex marking |

Properties and Features

SensoGate® WA 130 H Retractable Fitting

Hygienic design and sterilizability apply not only to the process side but also to the rinsing chamber. The only part of the immersion tube which comes into contact with the process is that part which was previously sterilized in the rinsing chamber.

This means that its suitability for use in pharmaceutical and food applications is proven, which allows validation in FDA-regulated production processes.

Properties and Features

- With regard to hygienic design and sterilizability, all process-wetted parts incl. the rinsing/ calibration chamber comply with the recommendations of EHEDG (TNO report V7942 dated February 25, 2008)
- Directed flow rinses the process seal from the process side as well as from the inside of the fitting
- Prevention of re-contamination and safe separation to the process during probe movement
- Double sealings with leakage bores prevent microbial contamination of the drive
- Cost reduction by simple installation, operation and maintenance
- Protective rinsing of the seals for a long service life
- SensoLock for high safety of operation
- Integrated limit switches
- Fast and uncomplicated replacement of calibration chamber and immersion tube
- Cyclone rinsing for optimum cleaning effect
- Superior sensor immersion depth
- Standard sensor length (225 mm) even for large immersion depths
- Process-wetted parts made of electropolished stainless steel 1.4404
- Special version for sensors with pressurizable liquid electrolyte
- SIP and CIP capable process side

Package Contents

SensoGate® WA 130 H Retractable Fitting

Check the shipment for transport damage and completeness.

The package should contain:

- Retractable fitting
- Documentation
- Test certificates

SensoGate® WA 130 H Product Coding

| | | | | | | | | | | | | | |
|--|---|---|---|---|---|--|--|--|--|---|---|---|--|
| WA 130 H - <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | | | | | | | | | | | | | |
| Explosion protection | Hazardous area Zone 0 | X | | | | | | | | | | | |
| | Without | N | | | | | | | | | | | |
| Sensor | Solid electrolyte | | 0 | | | | | | | | | | |
| | Liquid electrolyte (pressurization possible) | | 1 | | | | | | | | | | |
| Gasket material | Elastomeric ring set F, FKM (Viton) FDA | | F | | | | | | | | | | |
| | Elastomeric ring set E, EPDM FDA | | E | | | | | | | | | | |
| | Elastomeric ring set G, FFKM/EPDM FDA | | G | | | | | | | | | | |
| | Elastomeric ring set H, FFKM/FFKM FDA | | H | | | | | | | | | | |
| Process-wetted materials *) | 1.4404 / 1.4404 / 1.4404 (electropolished) | | G | | | | | | | | | | |
| Process adaptation | Dairy pipe DN 50 | | C | 1 | | | | | | | | | |
| | Dairy pipe DN 65 | | C | 2 | | | | | | | | | |
| | Dairy pipe DN 80 | | C | 3 | | | | | | | | | |
| | Ingold socket 1.4404, 25 mm (G 1 1/4") | | H | 0 | A | | | | | | | | |
| | Ingold socket 1.4404, 25 mm (G 1 1/4"), hygienic | | H | 1 | A | | | | | | | | |
| | Clamp 1.5", 1.4404 | | J | 1 | A | | | | | | | | |
| | Clamp 2", 1.4404 | | J | 2 | | | | | | | | | |
| | Clamp 2.5", 1.4404 | | J | 3 | | | | | | | | | |
| | Clamp 3", 1.4404 | | J | 4 | | | | | | | | | |
| | Clamp 3.5", 1.4404 | | J | 5 | | | | | | | | | |
| | Varivent, 1.4404, for pipe, DN 50 or larger | | V | 1 | A | | | | | | | | |
| | Varivent, 1.4404, for pipe, ≥ DN 65 short, ≥ DN 80 long | | V | 2 | | | | | | | | | |
| | BioControl size 50 | | L | 1 | A | | | | | | | | |
| | BioControl size 65 | | L | 2 | A | | | | | | | | |
| Immersion depth | Short | | | | A | | | | | | | | |
| | Long | | | | B | | | | | | | | |
| Connection | Media connection, PEEK | | | | B | | | | | | | | |
| | Media connection, PEEK, with integr. connector for additional medium | | | | C | | | | | | | | |
| | Free hose connection, PEEK (meas air, service air, rinse-medium connection, additional-medium connection) | | | | E | | | | | | | | |
| Special variant | Without | | | | | | | | | 0 | 0 | 0 | |
| | Equipped with special grease (provided by customer) | | | | | | | | | 0 | 0 | 1 | |
| | With pneumatic limit signal for Unical 79(X)-2 | | | | | | | | | 0 | 0 | 4 | |

*) Material combinations: Process-wetted part of calibration chamber / rinse-wetted part of calibration chamber / immersion tube

Function Description

SensoGate® WA 130 H Retractable Fitting

The pneumatically operated retractable fitting allows calibrating or adjusting the measuring system and cleaning the sensor in the running process. For that purpose, the retractable fitting can be moved between two positions using compressed air:

- **PROCESS position:** Sensor located in the process medium.
- **SERVICE position:** Sensor located in the calibration chamber.

In SERVICE position you can clean, maintain, calibrate or adjust the measuring system.

A control unit, such as the Unical® 9000, moves the probe to SERVICE or PROCESS position and leads different calibration and/or cleaning liquids to the sensor located in the calibration chamber. For operation of the SensoGate®, you must connect control air, rinsing or calibration media, and the electrical check-back signal for display of the probe position with the SensoGate®.

There are two basic options for this.

In conjunction with the UNICAL® or UNICLEAN® electro-pneumatic controllers and the PROTOS® measuring system, air pressure, rinsing, or calibration media, and the check-back cable are combined in a single hose with just one plug connection (multiplug, in the following referred to as media connection).

This media connection is installed on the SensoGate® together with the outlet hose.

When you do not use a probe controller (UNICAL® or UNICLEAN® and the PROTOS® measuring system), you can connect the supply lines for control air, rinsing or calibration media and electrical check-back with a free hose connection via an adapter (ZU 0742 / ZU 0733 / ZU 0734, see Accessories Page 41).

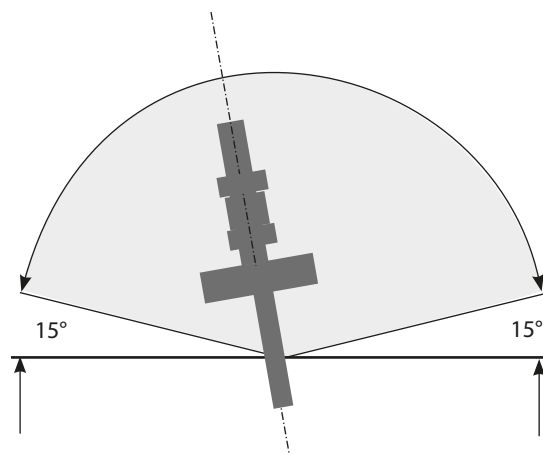
These liquids leave the calibration chamber through an outlet hose, i.e. they are displaced from the calibration chamber by following liquids or by compressed air.

To replace the sensor, you must move the retractable fitting into SERVICE position.

With Unical® 9000 probe controller, all media, control air and the check-back cable for position indication of the probe are connected to the retractable fitting through a compact connector (multiplug).

Assembly

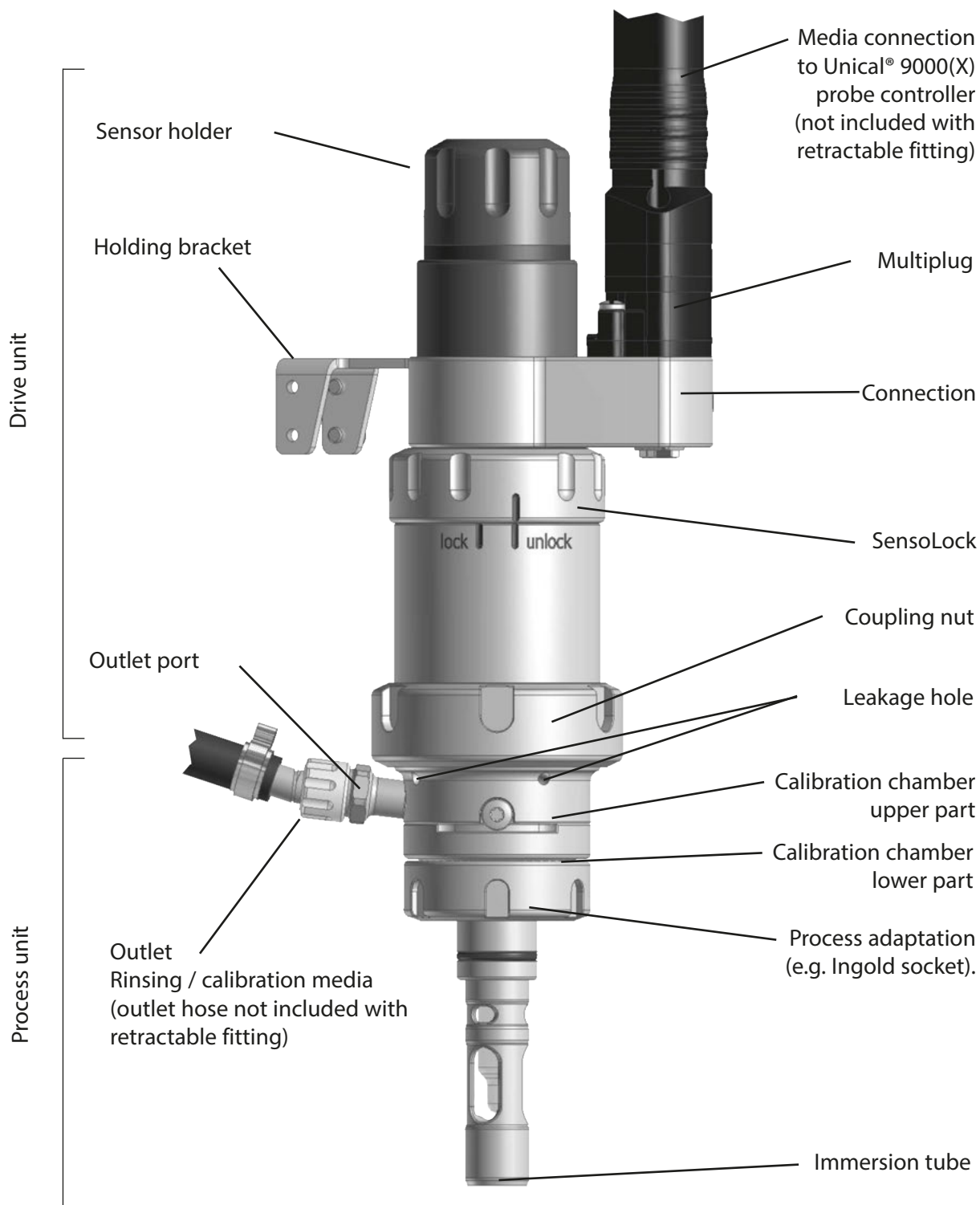
- Possible mounting angle 15° above horizontal:
- Mounting angle 360° (i.e. even upside down) for special sensors only containing thickened electrolytes which thus cannot flow.



Build-up of the Retractable Fitting

SensoGate® WA 130 H Retractable Fitting

The SensoGate® retractable fitting consists of 2 main units: drive unit and process unit. The drive unit performs the required movements to move the sensor into and out of the process. The process unit comprises the process-wetted calibration chamber as well as the process adaptation. Drive unit and process unit can be separated by the operator (see Page 24).



Build-up of the Retractable Fitting

Modules available: Rotary drives, immersion tubes, process adaptations

Rotary drives

Sensors with
gel electrolyte

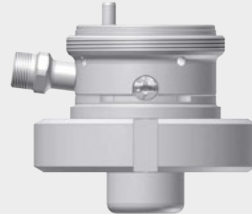


Sensors with
liquid electrolyte



Process adaptations

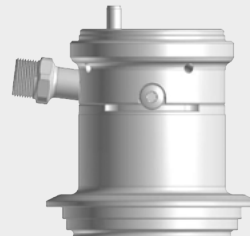
Dairy-pipe screw joint



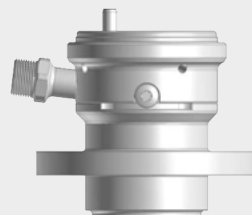
Tri-Clamp



Varivent



BioControl



Ingold socket



Immersion tube

Available material:
• 1.4404



SensoLock

Optionally, the WA 130 H is equipped with a SensoLock ring. SensoLock securely blocks the retractable fitting in SERVICE position. Turning the SensoLock ring to "LOCK" position mechanically locks the internal lift piston and thus prevents the retractable fitting from moving to PROCESS position.

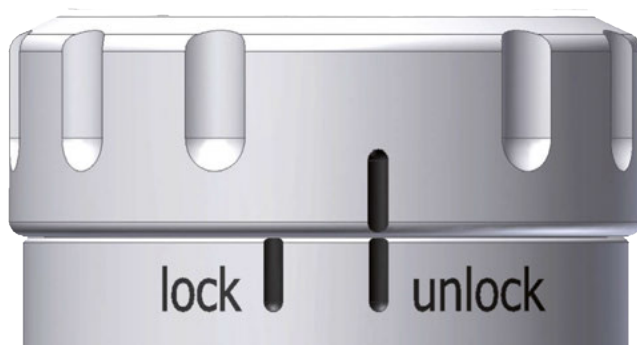
The SensoLock ring can only be turned in SERVICE position. In PROCESS position and all intermediate positions the SensoLock ring is blocked.

This prevents operation errors. Before starting maintenance work or replacing a sensor, you must activate SensoLock (LOCK) to:

- make sure that the retractable fitting is in SERVICE position.
- prevent that the retractable fitting is accidentally moved to PROCESS position.



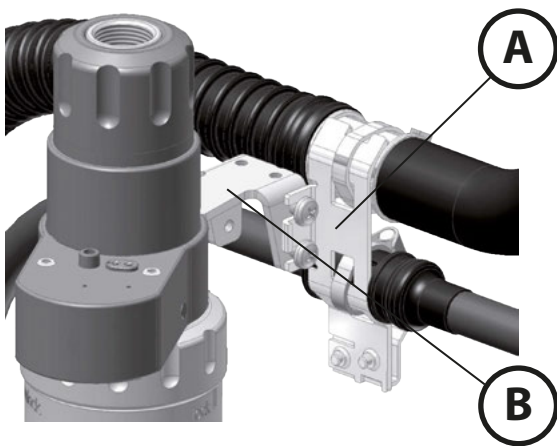
Turning the SensoLock ring to "LOCK" position prevents the immersion in the process when the sensor has been removed. (blocking the travel function, safety function)



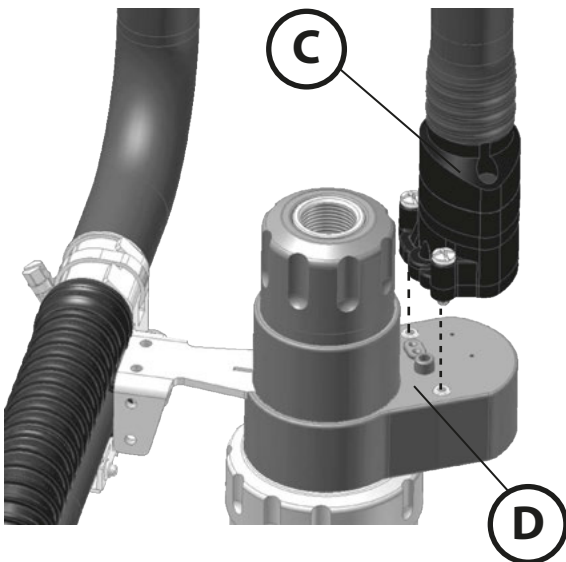
After the sensor has been installed, you can unlock the travel movement by turning the SensoLock ring to "UNLOCK".

Installing the Media Connection

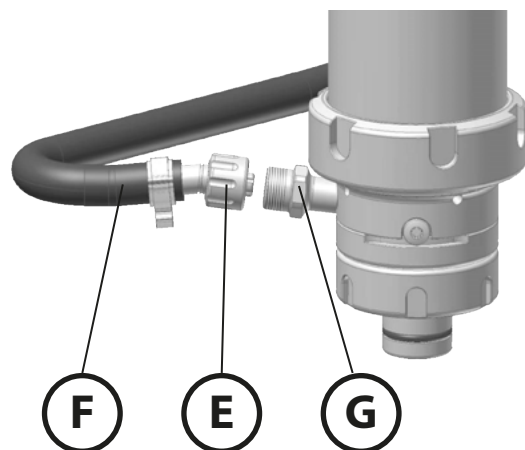
Using the media connection and the Unical® 9000(X) probe controller with multiplug



- 1) Screw mounting bracket **(A)** of media connection to holding bracket **(B)** of retractable fitting. One of three possible arrangements is shown here. (3 x 2 threaded holes on the holding bracket **(B)** allow 3 different arrangements of the hose.)



- 2) Screw multiplug **(C)** of the media connection to connector **(D)** of the retractable fitting.

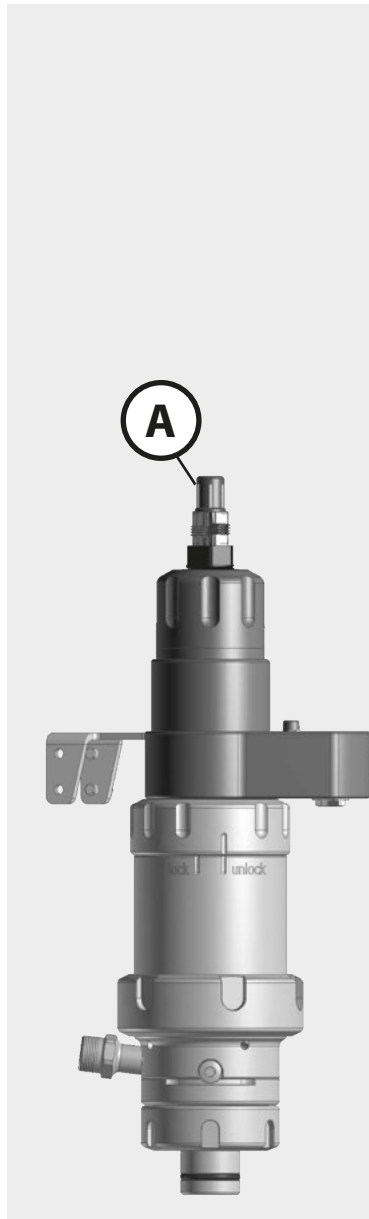


- 3) Screw coupling nut **(E)** of the outlet hose **(F)** to outlet port **(G)** of the retractable fitting.

Identifying the SERVICE Position

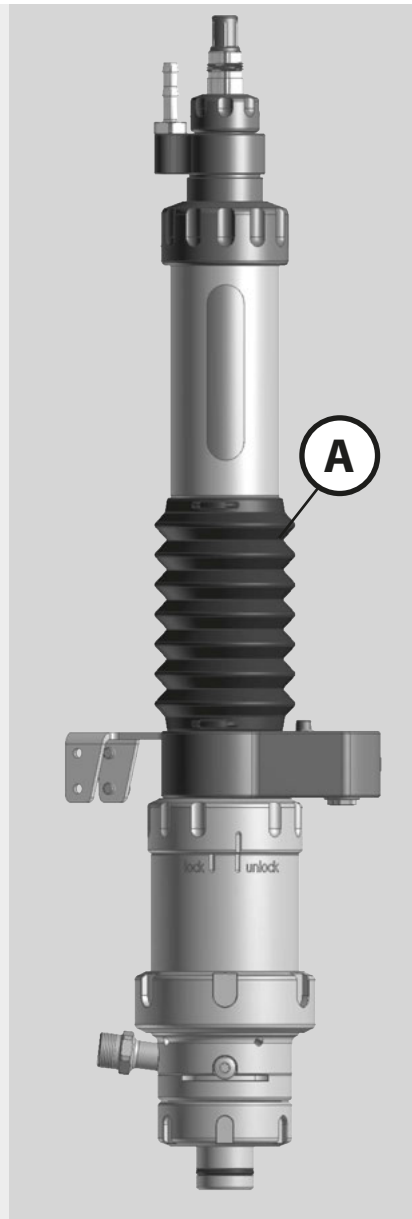
SensoGate® WA 130 H Retractable Fitting

Solid-electrolyte sensor



SERVICE position – indicated by the sensor connector **(A)** protruding out of the drive unit.

Liquid-electrolyte sensor



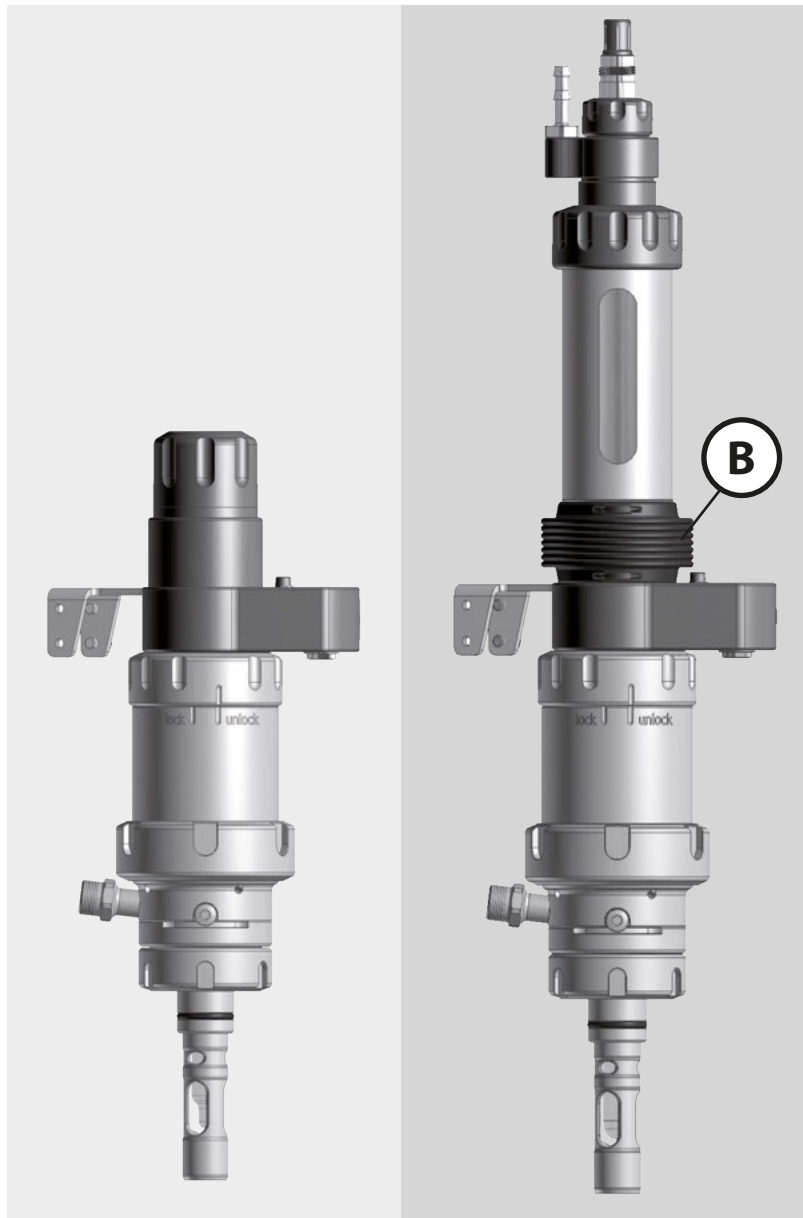
SERVICE position – indicated by the rubber bellows **(A)** being expanded

Identifying the PROCESS Position

SensoGate® WA 130 H Retractable Fitting

Short immersion depth
Solid-electrolyte sensor

Short immersion depth
Liquid-electrolyte sensor



PROCESS position –
indicated by the sensor
connector not protruding
out of the drive unit.

PROCESS position –
indicated by the rubber
bellows (**B**) being
compressed.

Installing and Removing a Sensor

SensoGate® WA 130 H Retractable Fitting



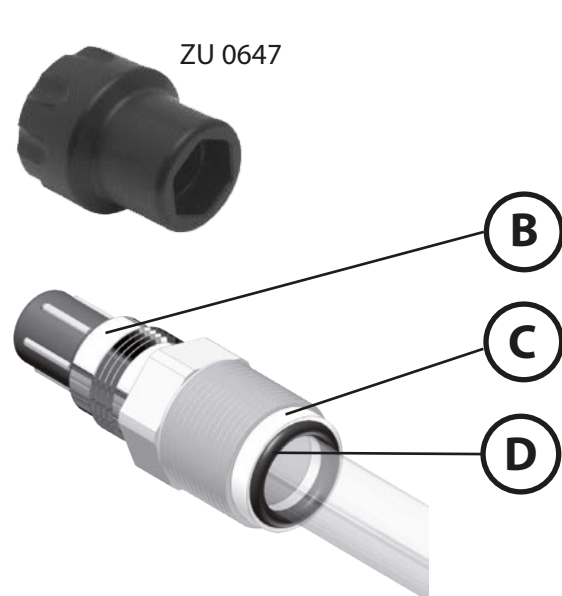
Sensors must only be installed or removed by trained personnel authorized by the operating company. **Make sure that the retractable fitting is in SERVICE position** (see "Function Description" on Page 10).

Be sure to follow the assembly instructions step by step.

Preparations:

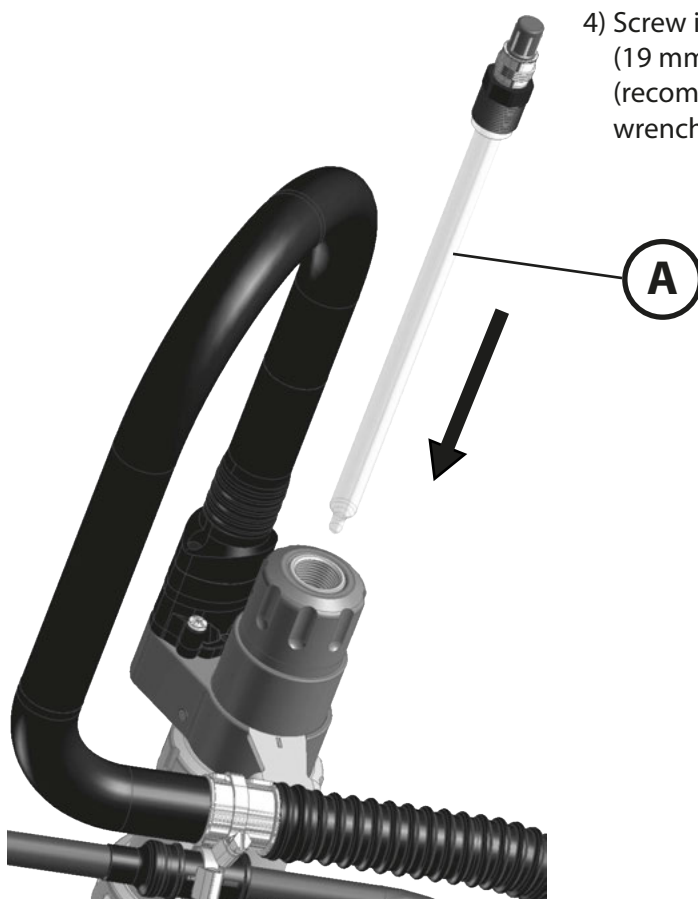
- Check whether the sensor is damaged (glass broken?).
Never install a damaged sensor.
- Check whether slide washer or O-ring on the sensor are damaged and replace if required.
- Remove watering cap from the sensor tip and rinse sensor with water.
- Internally pressurized sensors might have a silicone seal on the diaphragm (as transport protection). Remove this seal using the knife shipped with the sensor.

Installing a Gel-Electrolyte Sensor



Installing the sensor

- 1) The sensor must only be installed in **SERVICE position**.
- 2) Use appropriate sensors **(A)** only:
Diameter: 12 mm Length: 225 mm
Observe pressure resistance of the sensor.
- 3) Check whether slide washer **(C)** or O-ring **(D)** on the sensor are damaged.

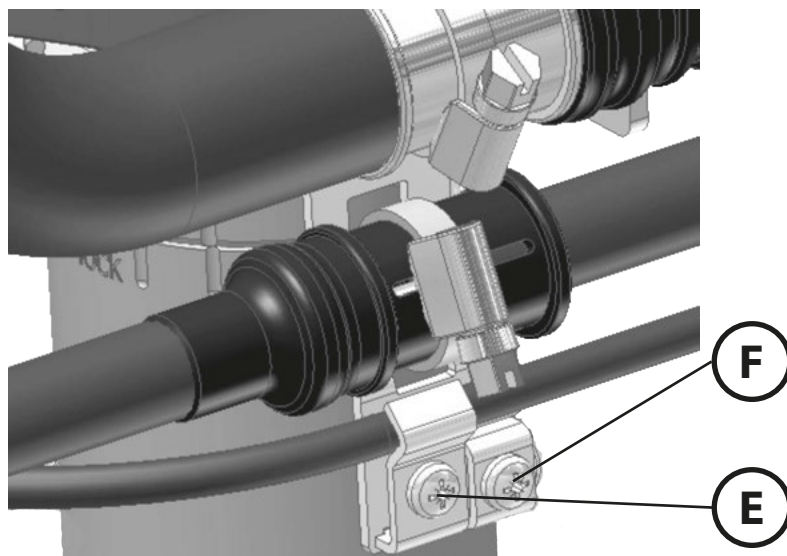


- 4) Screw in the sensor head **(B)** (19 mm, PG 13.5) with a max. torque of 3 Nm (recommended tool: 19 mm, e.g. Knick ZU0647 wrench).

Installing a Gel-Electrolyte Sensor

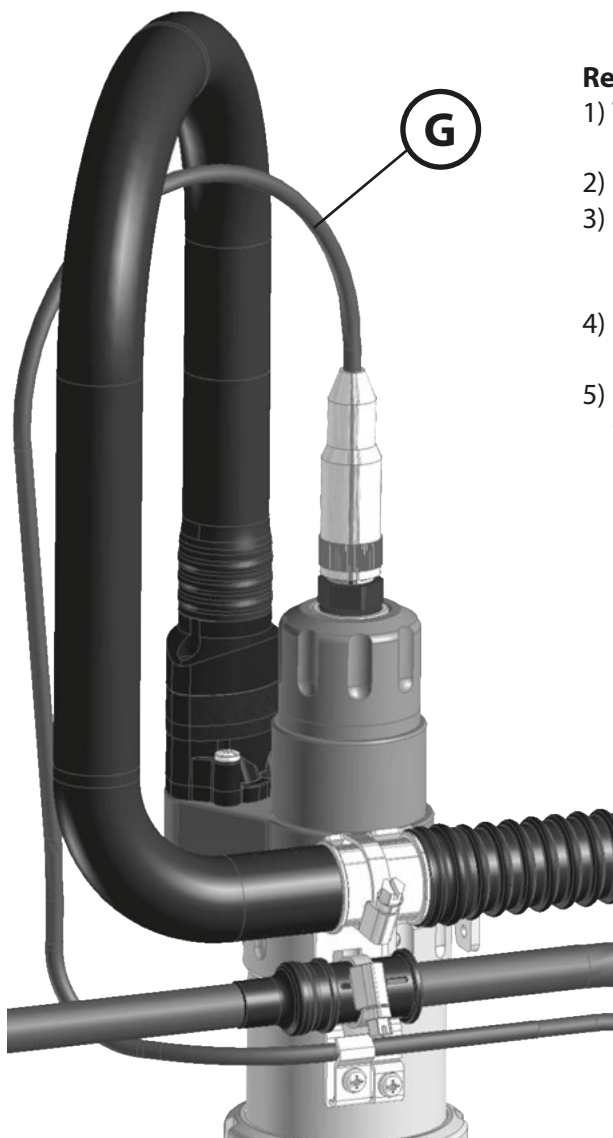


- 5) Connect cable socket with cable **(G)**.
Hold the cable in a loop and fix it using clamp **(E)**.
CAUTION! The cable loop must be long enough so that the cable does not impede the stroke movement of the fitting.



- 6) Connect equipotential bonding cable to terminal **(F)** (if required).

Removing a Gel-Electrolyte Sensor



Removing the sensor

- 1) The sensor must only be removed in **SERVICE position**.
- 2) Remove cable socket with cable (G)
- 3) Before removing the sensor, check that there is no liquid leaking from the outlet (process sealing might be defective).
- 4) Remove the sensor (recommended tool: 19 mm, e.g. Knick ZU0647 wrench).
- 5) Check whether slide washer (C) or O-ring (D) on the sensor are damaged.

CAUTION!

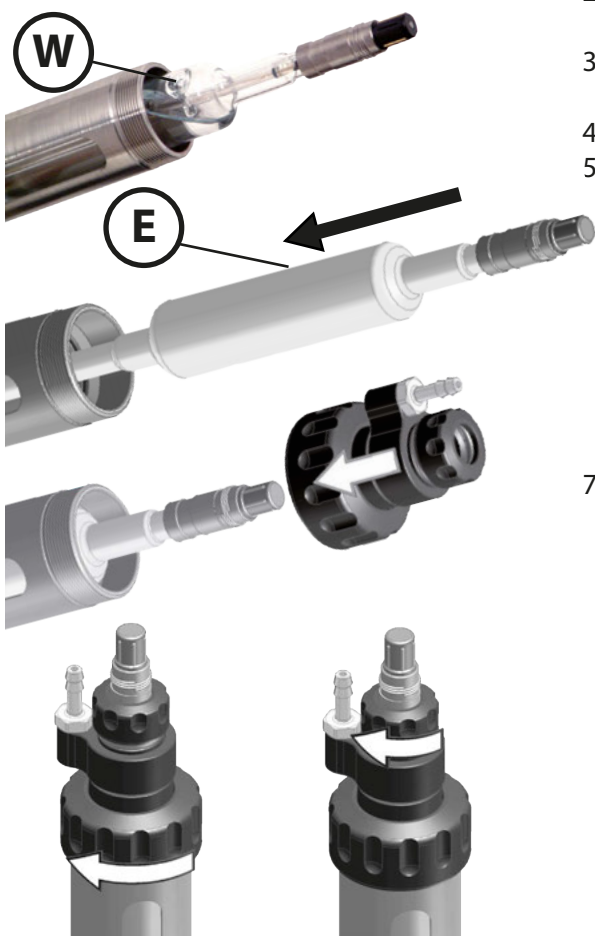
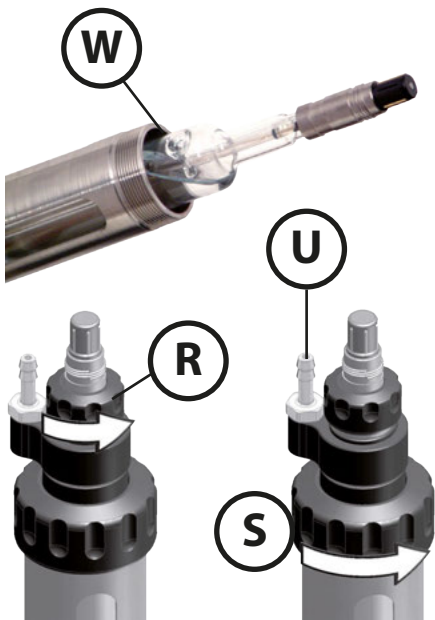
When replacing damaged sensors (glass breakage), you must check the sensor seal in the immersion tube and replace it if required.

(See section "Replacing the Immersion Tube" on Page 26)



Installing a Liquid-Electrolyte Sensor

You can use sensors with a length of 250 mm and a diameter of 12 mm, e.g. Knick SE551. To ensure that the electrolyte flows from the reference electrode to the process medium, the air pressure in the sensor pressure chamber must be 0.5 to 1 bar above that of the process medium. Compressed-air connection (**U**) for sensor pressure chamber via connection nipple (dia. 6 mm). Check whether the sensor is damaged (glass broken?). Remove watering cap from the sensor tip and rinse sensor with water.



NOTICE!

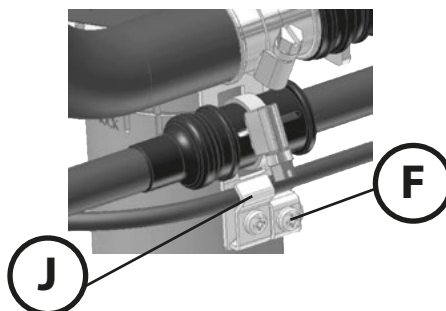
In the case of inclined installation, the sensor must be installed as described below to prevent electrolyte from flowing out during operation of the retractable fitting.

First, move the retractable fitting into SERVICE position.

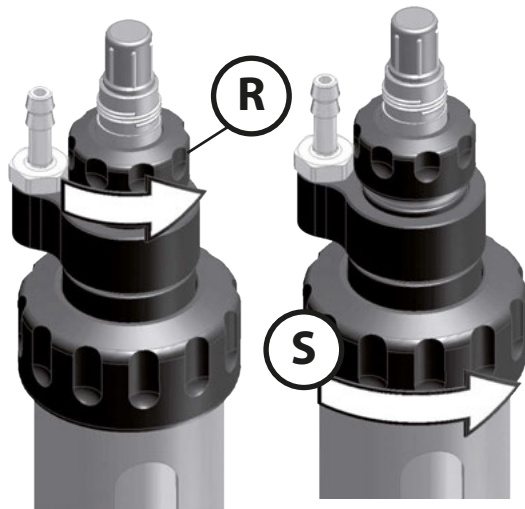
Remove the plug and turn the electrolyte filling hole (**W**) towards the top to prevent electrolyte from flowing out when the sensor is inclined. Observe the installation instructions of the sensor manufacturer.

Installing the Sensor

- 1) The sensor must only be removed in **SERVICE position**.
- 2) Loosen small coupling nut (**R**) – do not remove it.
- 3) Unscrew large coupling nut (**S**) completely and pull the detached unit upwards.
- 4) Install sensor (**E**).
- 5) Replace the unit you have detached in step 3. First hand-tighten the large coupling nut (**S**) and then the small coupling nut (**R**). Connect cable socket and cable. Hold the cable in a loop and fix it using clamp (**J**).
- Caution!** The cable loop must be long enough so that the cable does not impede the stroke movement of the fitting.
- 7) Connect equipotential bonding cable to terminal (**F**) (if required).

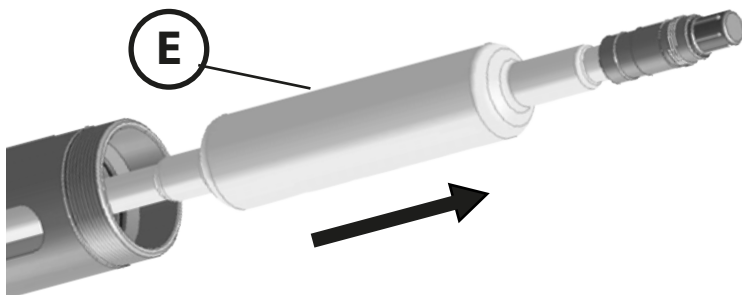


Removing a Liquid-Electrolyte Sensor



Removing the sensor

- 1) The sensor must only be removed in **SERVICE position**.
- 2) Remove cable socket with cable.
- 3) Before removing the sensor, check that there is no liquid leaking from the outlet (process sealing might be defective).
- 4) Loosen small coupling nut **(R)** – do not remove it.
- 5) Unscrew large coupling nut **(S)** completely and pull the detached unit upwards.
- 6) Remove sensor **(E)**.



Maintenance Work on the Drive Unit

SensoGate® WA 130 H Retractable Fitting

The drive unit must be removed, for example:

- for general maintenance or inspection
- to clean the calibration chamber, e.g. after a sensor has broken
- to change the sensor / calibration-chamber gaskets
- in the event of a technical fault of the drive unit.



WARNING!

To separate the retractable fitting safely from the process, make sure that it is disconnected from all process media and process pressure.

CAUTION!

Before working on the drive unit make sure that the retractable fitting is in SERVICE position (see "Function Description" on Page 10).

Removing the Drive Unit

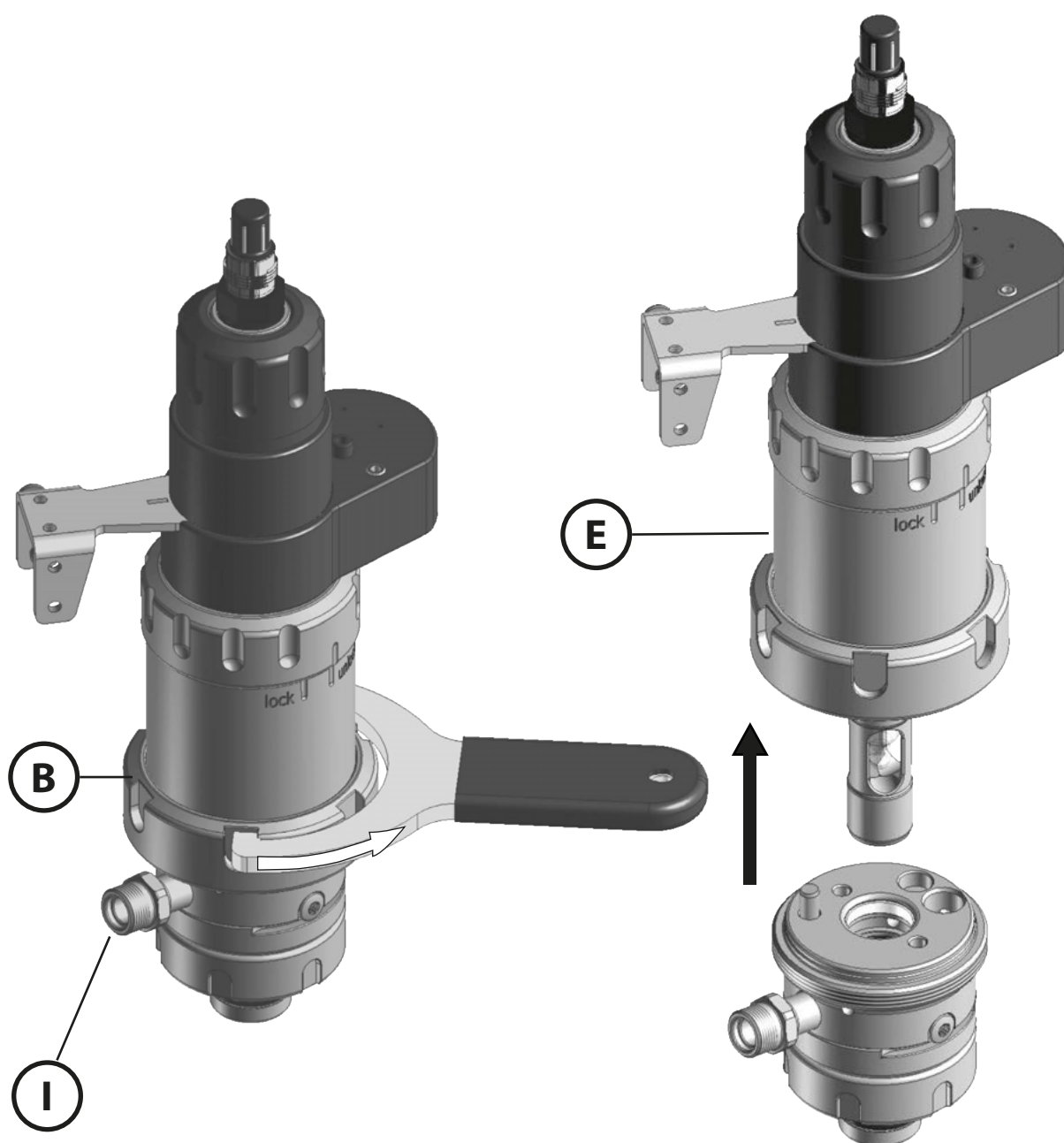
Step-by-Step Instructions

CAUTION:

Be sure to follow the steps below in the correct order.

Take appropriate safety precautions against escaping process fluids.

- 1) Move probe into SERVICE position.
- 2) Make sure that no process fluid is leaking from the outlet **(I)**.
- 3) If required, remove sensor as described in section "Installing and Removing a Sensor" on Page 17.
- 4) Separate outlet **(I)** and rinse connection if required.
- 5) Turn coupling nut **(B)** counterclockwise (using the ZU 0680 accessory wrench if required – see figure). Do not cant the unit and do not exert force.
- 6) Pull off the drive unit upwards **(E)**.



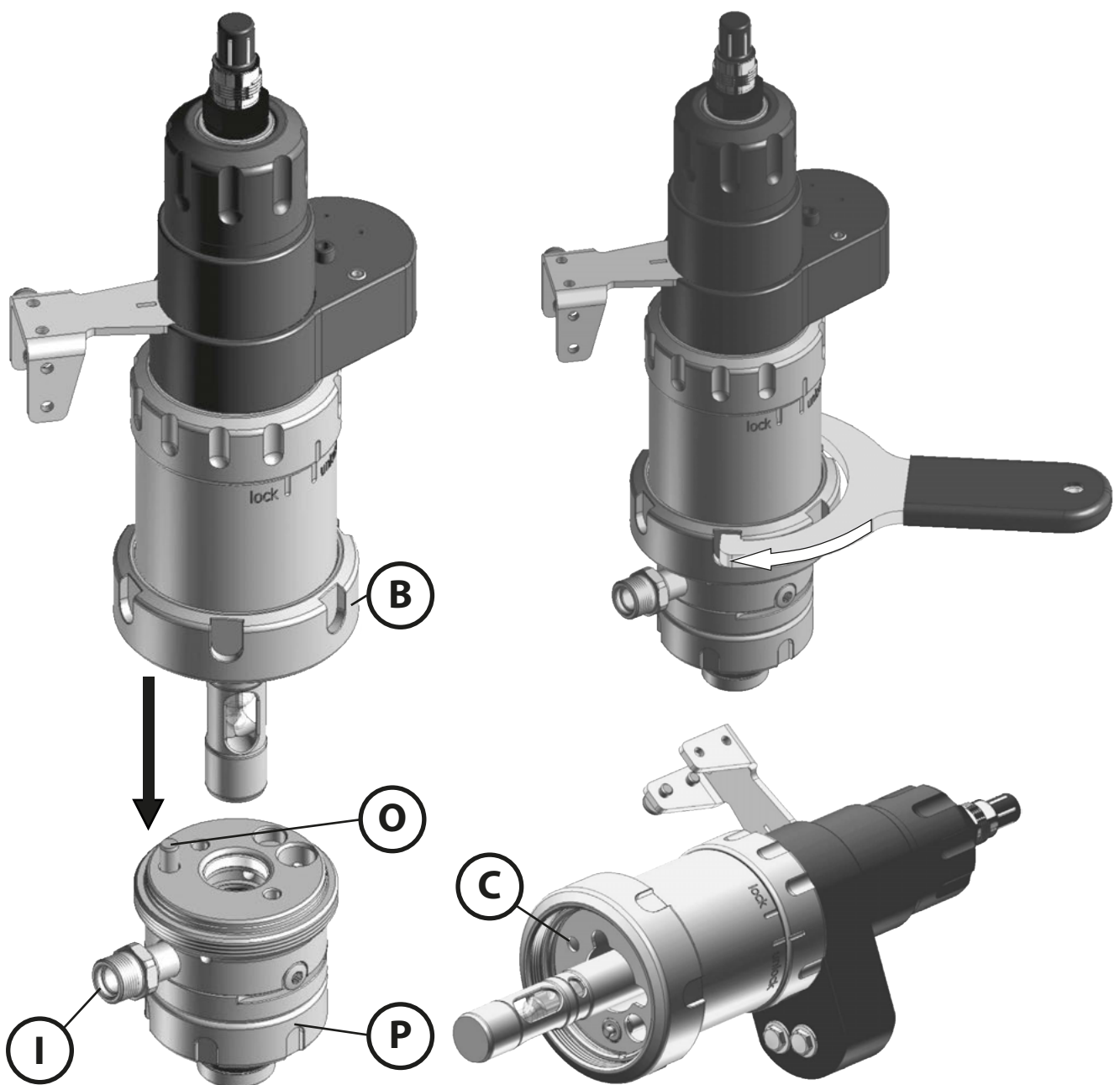
Installing the Drive Unit

Step-by-Step Instructions

CAUTION:

Be sure to follow the steps below in the correct order.

- 1) Insert the drive unit (in **SERVICE position**) into the process unit (**P**).
The radial position of the drive unit is determined by a coding pin (**O**) in the calibration chamber and an opening (**C**) in the drive unit. The coupling nut can only be tightened when the drive unit is in the correct position.
- 2) Now tighten the coupling nut (**B**) (turn clockwise – hand-tight or 10 Nm – using the ZU 0680 accessory wrench if required).
- 3) Install inlet and outlet (**I**) if provided.
- 4) Install sensor as described in section “Installing and Removing a Sensor” on Page 17.



Replacing the Immersion Tube

The immersion tube must be removed or replaced:

- for general maintenance
- for cleaning the immersion tube, e.g. after the sensor is broken
- for replacing the sensor gasket (O-ring)
- in the event of a technical fault of the drive unit



WARNING!

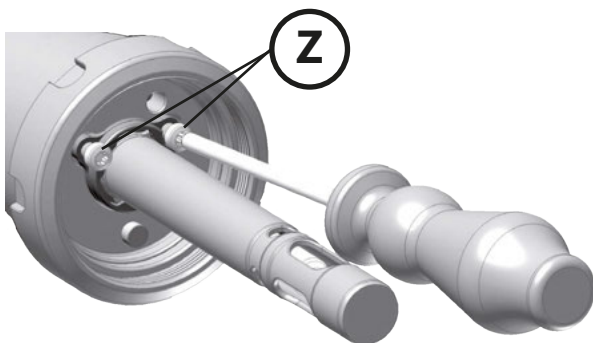
To separate the retractable fitting safely from the process, make sure that it is disconnected from all process media and process pressure.

CAUTION!

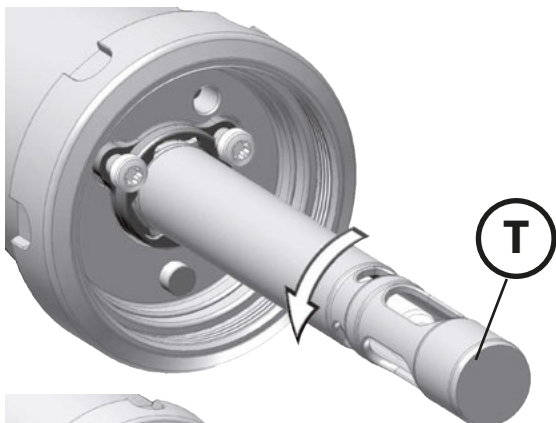
Before working on the drive unit, make sure that the retractable fitting is in SERVICE position (see "Function Description" on Page 10).

Removing the Immersion Tube

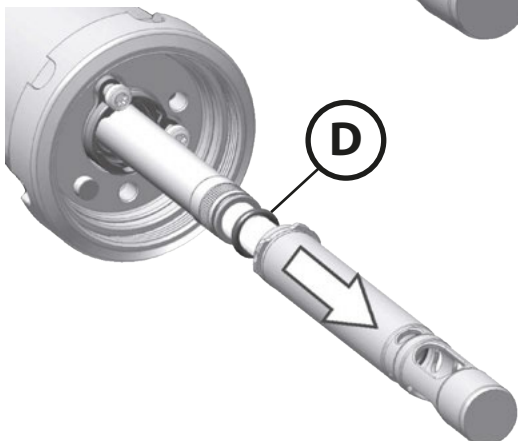
First, separate the drive unit from the process unit. (See "Removing the Drive Unit" on Page 24)



- 1) After having separated the drive unit from the process unit, move the drive unit into PROCESS position.
- 2) In PROCESS position two screws (**Z**) are accessible.
- 3) Loosen the two screws (**Z**) by approx. 4 turns using a screwdriver (TX25) (do not remove them).



- 4) Turn the immersion tube (**T**) counterclockwise by approx. 60°.

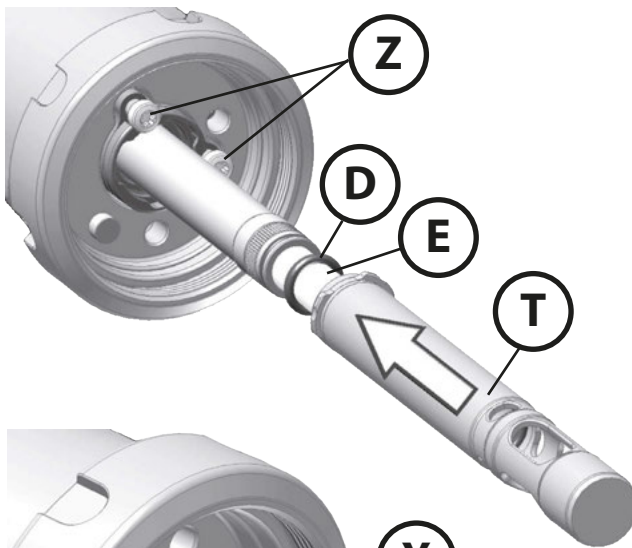


- 5) The bayonet coupling opens and the immersion tube (**T**) can be pulled out in direction of the arrow.
- 6) Now, O-ring (**D**) (sensor gasket) is visible. Check and replace if required. (For O-ring dimensions, see Page 44 "Sealing Kits for Maintenance and Servicing".)

Note:

Contrary to the figure, the O-ring may still be in the immersion tube. From there, you can easily remove it.

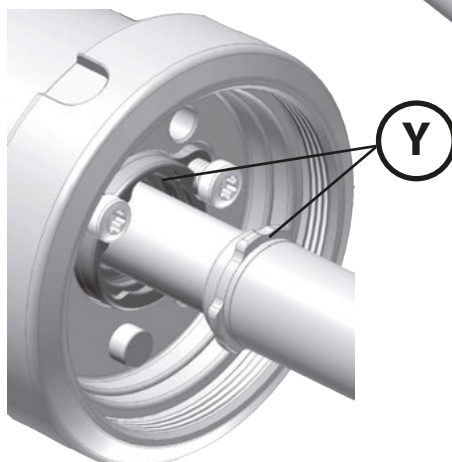
Installing the Immersion Tube



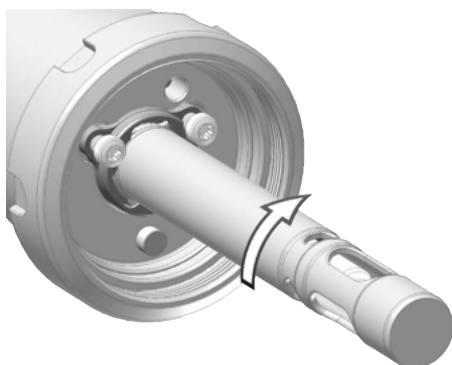
- 1) Push the O-ring (**D**) (sensor gasket) onto the sensor (**E**) as shown.

Note: Make sure that there is no further O-ring in the immersion tube (**T**) (installed by mistake). (For O-ring dimensions, see Page 44 "Sealing kits for maintenance and servicing")

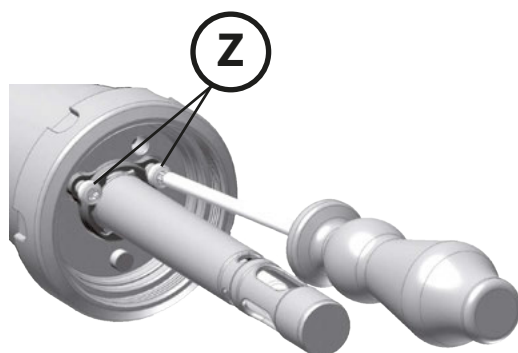
- 2) Loosen the two screws (**Z**) by approx. 4 turns (do not detach them) if you have not done that when removing the immersion tube.



- 3) Push the immersion tube (**T**) in direction of the arrow and insert it in the bayonet coupling (**Y**).



- 4) Press the tube firmly in place and turn it clockwise until the stop (approx. 60°).



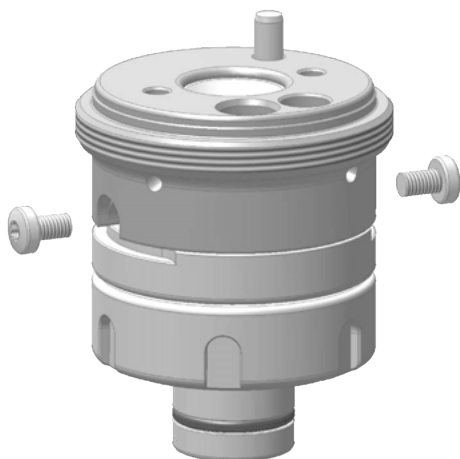
- 5) Fasten the two screws (**Z**) using a screwdriver (TX25).

Note:

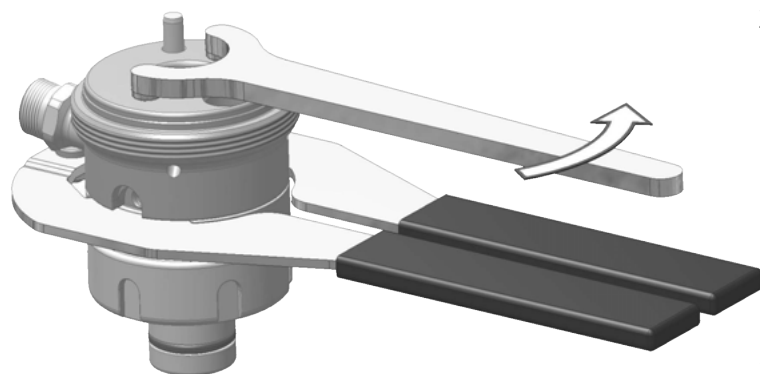
The bayonet coupling is locked by the form-fit screw heads. The immersion tube, however, remains movable to compensate for tolerances.

Removing and Installing the Calibration Chamber

To separate the calibration chamber, you require ZU 0754 or ZU 0740 Service Set (see Accessories). We recommend the ZU 0746 and ZU 0747 mounting aids for proper mounting of the gaskets and scraper rings.



- 1) Remove the screws (screwdriver TX25).



- 2) Position a plier and loosen the thread of the split calibration chamber using a face pin spanner wrench.



- 3) Completely screw off the split calibration chamber. Now, the gaskets are accessible and can be checked and replaced if required. Use the ZU 0746 and ZU 0747 mounting aids for mounting the gaskets and scraper rings.

How to handle the mounting aids is described in the respective user manual.



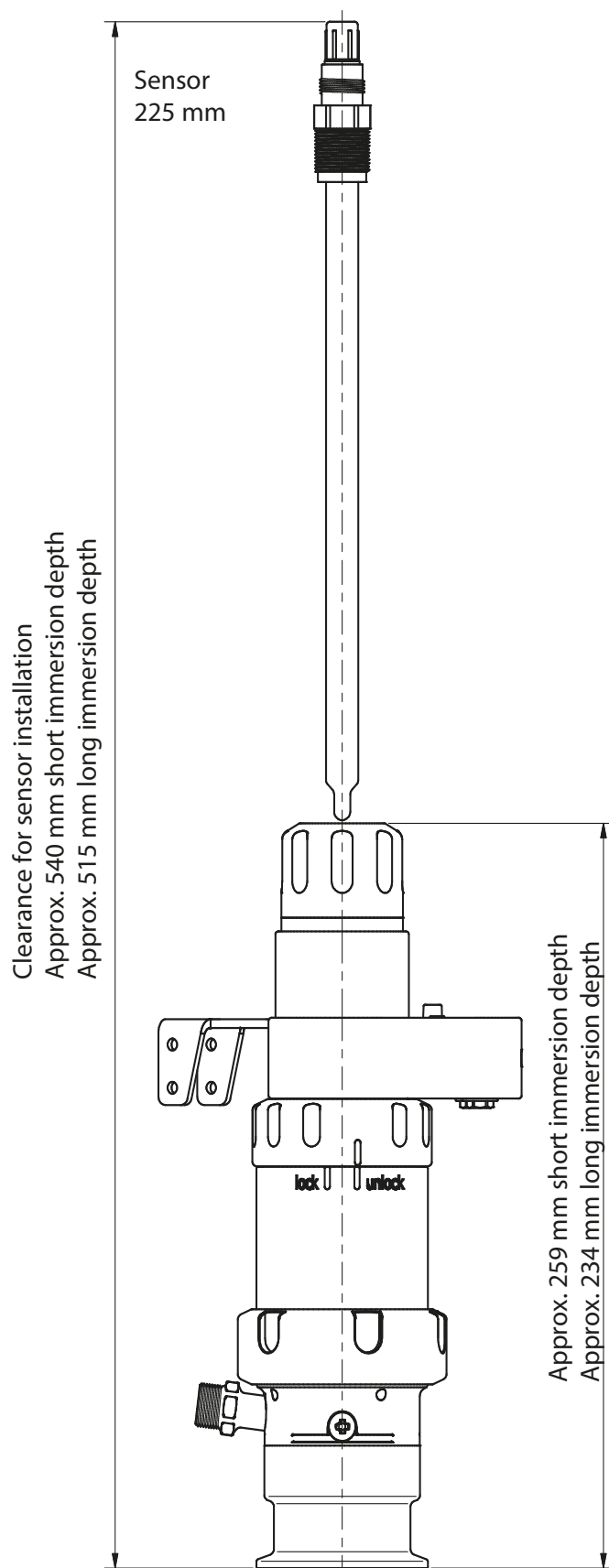
- 4) To re-install the split calibration chamber, screw the parts together using plier and face pin spanner wrench and secure them with screws.

Note:

The calibration chamber parts must be firmly screwed together (until the stop is reached) before it can be secured with the two screws.

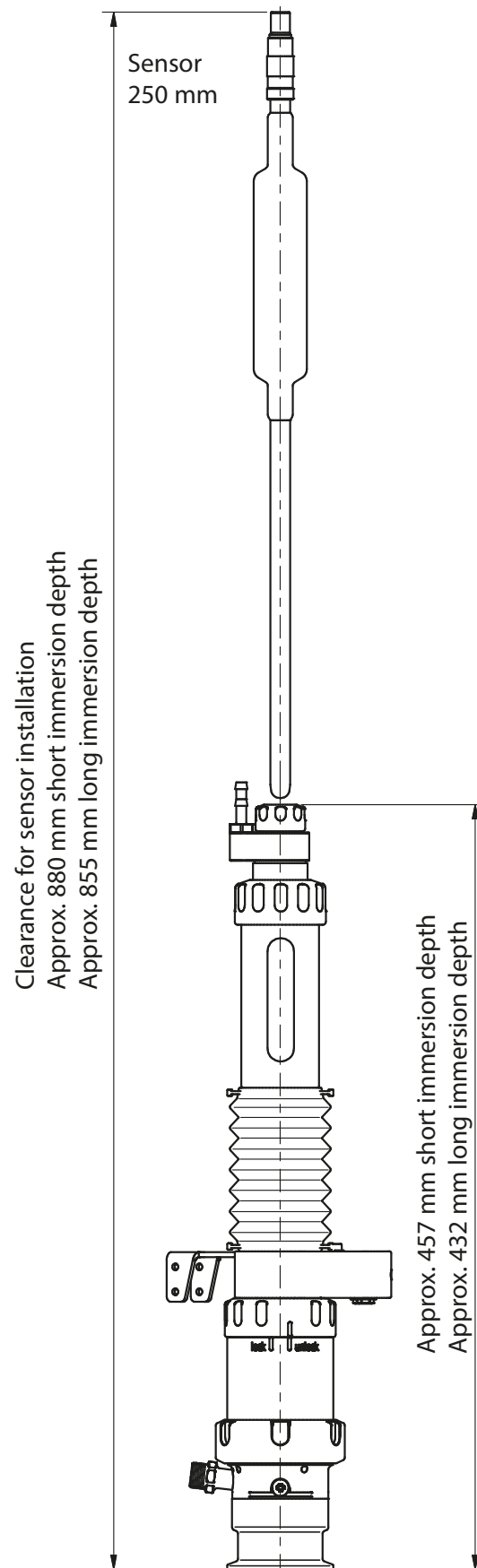
Installation Dimensions

WA 130 H for sensors with gel electrolyte



Installation Dimensions

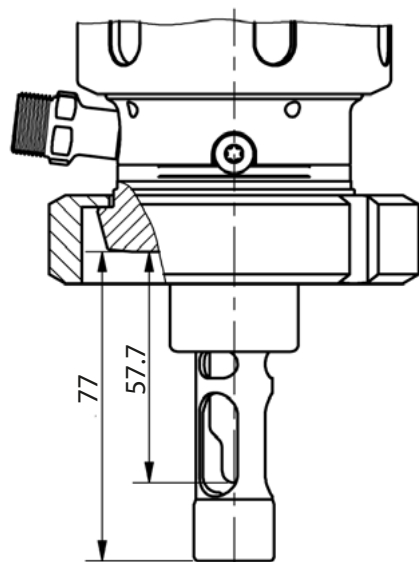
WA 130 H for sensors with liquid electrolyte



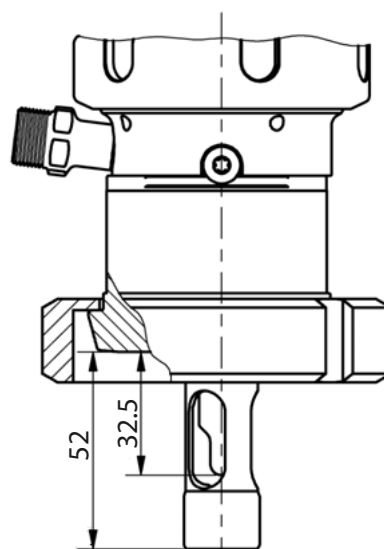
Immersion Depths

SensoGate® WA 130 H process adaptations dairy pipe, TriClamp

Process adaptation dairy pipe, 11851, DN 50 ... DN 100

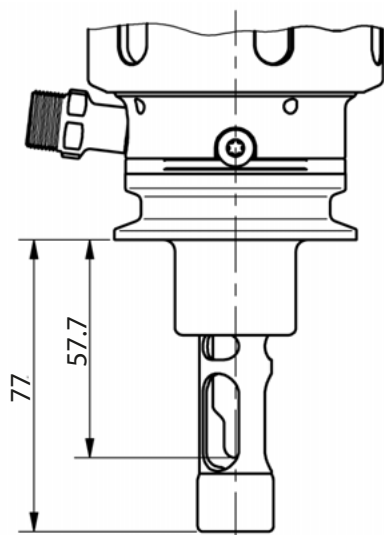


Long immersion depth

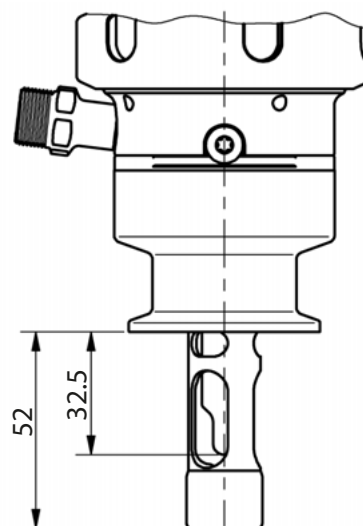


Short immersion depth

Process adaptation clamp 1" ... 3.5"



Long immersion depth



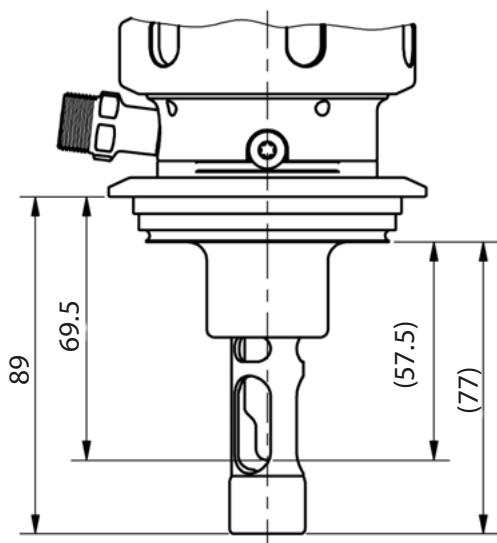
Short immersion depth

Note: All dimensions in mm

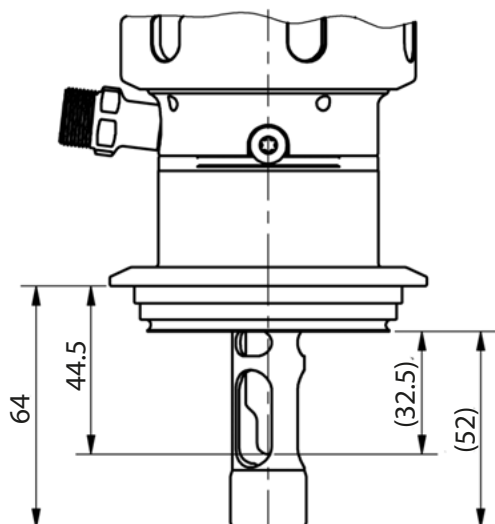
Immersion Depths

SensoGate® WA 130 H process adaptation Varivent

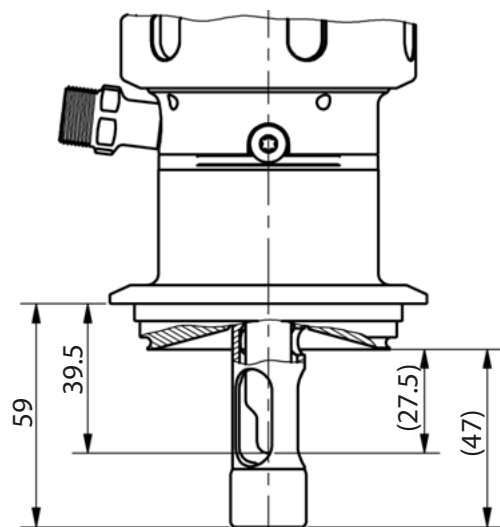
Process adaptation Varivent \geq DN 80 long immersion depth



Process adaptation Varivent \geq DN 65 short immersion depth



Process adaptation Varivent \geq DN 50 long immersion depth

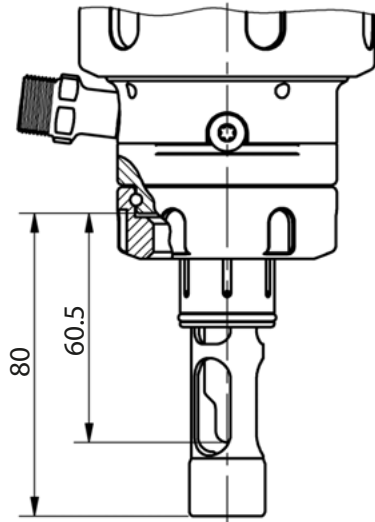


Note: All dimensions in mm

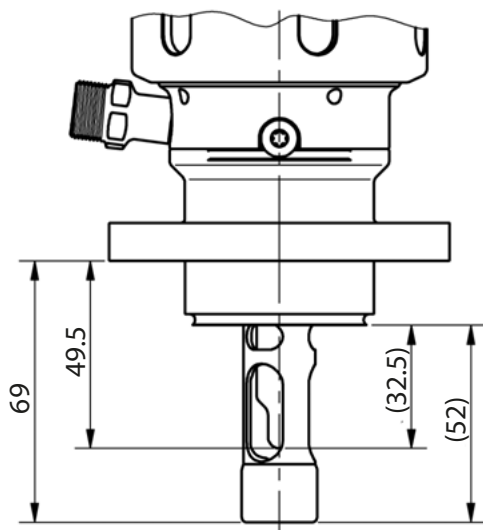
Immersion Depths

SensoGate® WA 130 H process adaptations Ingold socket, BioControl

Process adaptation Ingold socket, 25 mm



Process adaptation BioControl DN 50 or DN 65



Note: All dimensions in mm

Specifications

SensoGate® WA 130 H

Permissible process pressure and temperature during movement

Process adaptation 1.4404

10 bar (at 0 ... 140 °C)

Permissible process pressure and temperature, statically in SERVICE position

16 bar (at 0 ... 40°C)

Ambient temperature

-10 ... 70 °C

Ingress protection

IP 66

Permissible pressure for probe control

4 ... 7 bar

Quality of compressed air

Standard

acc. to ISO 8573-1:2001

Quality class

3.3.3 or 3.4.3

Solid contaminants

3 (max. 5 µm, max. 5 mg/m³)

Water content for temperatures ≥ 15 °C

Class 4, pressure dew point 3 °C or below

Water content for temperatures 5 ... 15°C

Class 3, pressure dew point -20 °C or below

Oil content

Class 3 (max. 1 mg/ m³)

Sensors

with gel electrolyte

Ø12 mm, length 225 mm with temp detector, PG 13.5 thread

with liquid electrolyte

Ø12 mm, length 250 mm with temp detector

Process adaptations

Dairy pipe, DIN 11851

DN50 to DN100

Ingold socket, 25 mm

25 mm

Clamp 1.4404

Clamp 1" – 3.5"

Varivent 1.4404

for pipes ≥ DN 50, ≥ DN 65 short, ≥ DN 80 long

BioControl 1.4404

Size 50, size 65

Connections

Outlet

Outlet hose, NW 8 EPDM 3m

for pressurized sensors

Hose connection NW6, pressure in sensor chamber 0.5 ... 1 bar above process pressure (max. 7 bar)

for compressed air (control air for retractable fitting)

for Unical multiplug

Immersion depths / Installation dimensions

See dimension drawings

Process-wetted materials

See order code

Maintenance Intervals

SensoGate® WA 130 H

As a result of highly variable process conditions (pressure, temperature, chemically aggressive media etc.), general information on necessary maintenance intervals is difficult to provide. If proven experience from similar points of measurement with regard to materials used and their resistance under process conditions is available, the maintenance intervals can be adjusted by the customer. If previous experience is positive, parts of the first inspection may be omitted.

The following maintenance intervals are generally recommended:

| Maintenance interval* | Operations required |
|---|---|
| First inspection after a few weeks | Move the probe to the SERVICE position and observe the outlet. If the retractable fitting is untight, process fluid will leak from the outlet hose. Observe the leakage holes (holes directly beneath the coupling nut, see "Build-up of the Retractable Fitting" on Page 34). When there are deposits on these leakage holes or compressed air is escaping, there may be leakages in calibration chamber or the pneumatic system. |
| After 6 – 12 months (after successful first inspection and suitability of all materials used, this time period may be extended.) | Repeat the measures of the first inspection. When there are deposits on the leakage holes or compressed air is escaping, replace the process-wetted (dynamically stressed) gaskets. |
| After 10,000 – 20,000 probe travels | You should replace the process-wetted (dynamically stressed) gaskets. |
| After approx. 2 years | Particularly if you use chemically aggressive cleaning agents, you should check the rinse-wetted gaskets and replace them if required. |
| After approx. 5 years | Servicing the pneumatic drive unit and relubricating the gaskets. |

*) These maintenance intervals are rough recommendations. The actual intervals depend on the application of the retractable fitting.

Lubricants, O-Rings

SensoGate® WA 130 H

For fittings used in the chemical industry, the lubricant Syntheso Glep1 (silicone-free) is applied.
For fittings used in the pharmaceutical / food industry (when FDA conformity is required), the lubricant Beruglide L (silicone-free) is applied (registered according to NSF-H1).

On request, the lubricant Paraliq GTE 703 can be applied (excellent lubricating properties also at increased temperatures and for a large number of travel movements).

This lubricant contains silicone and is only used as special application on specific request.

| Application | Pharma / Food | | Chemistry / Wastewater |
|----------------------------------|---|---|------------------------------------|
| Lubricant | Beruglide L (silicone-free) FDA-conforming NSF-H1-registered | Paraliq GTE 703 (containing silicone) FDA-conforming (USDA H1) | Syntheso Glep 1 (silicone-free) |
| Materials of elastomeric gaskets | | | |
| FKM | X | X | X |
| FFKM | X | X | X |
| EPDM | X | X | X |

Accessories / Spare Parts

Overview for SensoGate® WA 130 H

| Accessories | Order No. |
|---|------------------|
| Service set, basic | ZU 0680 |
| Service set, maintenance, repair, retrofit | ZU 0740 |
| Service set, calibration chamber | ZU 0754 |
| Sensor mounting wrench, 19 mm | ZU 0647 |
| Mounting aid for 20x2.5 O-rings | ZU 0747 |
| Mounting aid for scraper ring | ZU 0746 |
| Protective cap (for gel electrolyte only) | ZU 0759 |
| Air supply for pressurized sensors, 0.5 - 4 bar | ZU 0670/1 |
| Air supply for pressurized sensors, 1 - 7 bar | ZU 0670/2 |
| Hose, 20 m (extension for ZU 0670) | ZU 0713 |
| Retainer clamp for Ingold socket, 25 mm | ZU 0818 |
| Safety weld-in socket, straight | ZU 0717 |
| Safety weld-in socket, beveled 15° | ZU 0718 |
| Safety weld-in socket, straight, adapted for DN50 | ZU 0717/DN50 |
| Safety weld-in socket, straight, adapted for DN65 | ZU 0717/DN65 |
| Safety weld-in socket, straight, adapted for DN80 | ZU 0717/DN80 |
| Safety weld-in socket, straight, adapted for DN100 | ZU 0717/DN100 |
| Safety weld-in socket, 15°, adapted for DN50 | ZU 0718/DN50 |
| Safety weld-in socket, 15°, adapted for DN65 | ZU 0718/DN65 |
| Safety weld-in socket, 15°, adapted for DN80 | ZU 0718/DN80 |
| Safety weld-in socket, 15°, adapted for DN100 | ZU 0718/DN100 |
| Adapter for free hose connection, with electrical limit switches, PP housing | ZU 0733 |
| Adapter for free hose connection, without electrical limit switches, PP housing | ZU 0734 |
| Adapter for free hose connection, with electrical limit switches, PEEK housing | ZU 0742 |

| Spare Parts | Order No. |
|--|------------------|
| Bellows (for liquid-electrolyte sensors) | ZU 0739 |

Accessories

SensoGate® WA 130 H



ZU 0680

SensoGate® service set, basic

These tools are suitable for minor maintenance operations. They help separating the drive unit from the process unit, allow mounting an Ingold socket and replacing the immersion tube including sensor gasket maintenance.



ZU 0754

SensoGate® calibration chamber service set

These tools are suitable for maintenance operations at the calibration chamber and its gaskets. They allow easy separation of the split calibration chamber.



ZU 0740

SensoGate® service set maintenance/repair/retrofit

This set provides all tools required for comprehensive maintenance, repair or retrofitting of the retractable fitting. With this set, you can completely dismantle every SensoGate®.



ZU 0647

Sensor mounting wrench

Required for safely screwing in the sensor without overloading the PG 13.5 plastic thread of the sensor head by an excessive torque (caused by an open-end wrench).



ZU 0747

Mounting aid for 20 x 2.5 O-rings

The ZU 0747 mounting aid is used for easy and correct fitting of the 20x2.5 O-rings in the calibration chamber of the Sensogate®.

Accessories

SensoGate® WA 130 H



ZU 0746

Mounting aid for scraper ring

The ZU 0746 mounting aid is used for easy and correct fitting of the scraper rings in the calibration chamber of the Sensogate®.



ZU 0670/1

Air supply for pressurized sensors

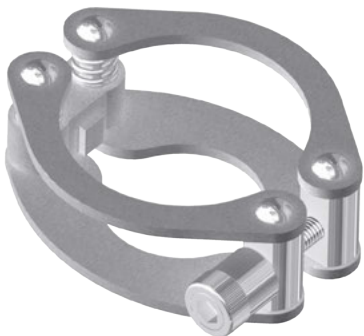
0.5 – 4 bar

ZU 0670/2

Air supply for pressurized sensors

1 – 7 bar

This module maintains the defined overpressure in the pressure chamber of the sensor.



ZU 0818

Retainer clamp for 25mm socket (Ingold)

The ZU 0818 retainer clamp is only suitable for Ingold sockets. It prevents unintended loosening or twisting of the coupling nut or the fitting from the tank port, thus avoiding possible hazards. Even if the coupling nut is not properly tightened (due to incorrect mounting, vibrations, or the like), it cannot loosen any further (increased safety).

Accessories

SensoGate® WA 130 H



ZU 0759

Protective cap

The ZU0759 protective cap protects against intrusion of liquids or particles into the area of the electrical connector of a sensor (e.g. due to weather exposure during outdoor use).

NOTICE!

Can only be used with fittings for gel-electrolyte sensors.



Safety weld-in socket, straight

adapted to DN50 **ZU 0717/DN50**

adapted to DN65 **ZU 0717/DN65**

adapted to DN80 **ZU 0717/DN80**

adapted to DN100 **ZU 0717/DN100**



Safety weld-in socket, beveled 15°

adapted to DN50 **ZU 0718/DN50**

adapted to DN65 **ZU 0718/DN65**

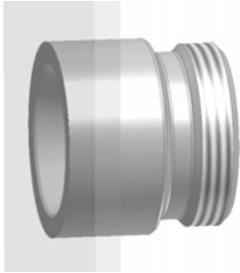
adapted to DN80 **ZU 0718/DN80**

adapted to DN100 **ZU 0718/DN100**

The weld-in sockets are suitable for mounting fittings with Ingold socket (dia. 25 mm, G1 ¼). The contour-optimized straight and beveled (15°) weld-in sockets are adapted to the nominal width of the pipeline (outer diameter). This minimizes the gap widths during welding. The sockets are designed in a way that the thicknesses of socket and pipe wall are similar at the welding point. This allows welding with low energy input and therefore reduced warping. Thanks to the special contour and the weld zone being separated from the mating hole (dia. 25 H7), there should be no need to rework the parts after welding, provided that the welding has been done properly. If required, check the hole using a plug gauge, dia. 25 H7.

Accessories

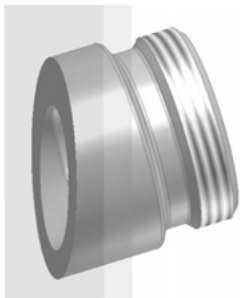
SensoGate® WA 130 H



ZU 0717

Safety weld-in socket, straight

The safety weld-in sockets are suitable for mounting fittings with Ingold socket (dia. 25 mm, G1 ¼) to plane tank walls, straight version.



ZU 0718

Safety weld-in socket, beveled 15°

The safety weld-in sockets are suitable for mounting fittings with Ingold socket (dia. 25 mm, G1 ¼) to plane tank walls, 15° beveled version.



ZU 0742

Adapter for free hose connection with electrical limit switches, PEEK housing

This adapter is used for operating the SensoGate WA130 via multiplug without Unical 9000(X) probe controller and the corresponding media connection.



ZU 0733

Adapter for free hose connection with electrical limit switches, PP housing

This adapter is used for operating the SensoGate WA130 via multiplug without Unical 9000(X) probe controller and the corresponding media connection.



ZU 0734

Adapter for free hose connection without electrical limit switches, PP housing

This adapter is used for operating the SensoGate WA130 via multiplug without Unical 9000(X) probe controller and the corresponding media connection.

Spare Parts

SensoGate® WA 130 H



ZU 0739 Bellows

The bellows (for liquid-electrolyte sensors only) protects the fitting beneath the sensor pressure chamber against pollution and wear.

Sealing Kits for Maintenance and Servicing

SensoGate® WA 130 H

The sealing kits are available in different materials. The smaller sealing kits ("Set X/1") only contain gaskets for direct contact with the process.

The extended sealing kits ("Set X/2") also include gaskets for contact with the rinse medium.

NOTICE! Take account of the process adaptations.

Special sealing kits are available for Ingold sockets.

The sealing kits come with detailed illustrations for installation.

The new gaskets must be lubricated with the included lubricant.


The following sealing kits are available:


| Gaskets | | | Order No. |
|--|-----------------|---|-----------|
| Process connection dairy pipe, Tri-Clamp, Varivent, BioControl | Set E/1 | Process-wetted sealing material: EPDM FDA | ZU 0700/1 |
| | Set E/2 | Process-wetted sealing material: EPDM FDA, wetted by rinse medium: EPDM FDA | ZU 0700/2 |
| | Set F/1 | Process-wetted sealing material: FKM FDA | ZU 0697/1 |
| | Set F/2 | Process-wetted sealing material: FKM FDA, wetted by rinse medium: FKM FDA | ZU 0697/2 |
| | Set G/1 Set H/1 | Process-wetted sealing material: FFKM FDA | ZU 0766/1 |
| | Set G/2 | Process-wetted sealing material: FFKM FDA, wetted by rinse medium: EPDM FDA | ZU 0766/2 |
| | Set H/2 | Process-wetted sealing material: FFKM FDA, wetted by rinse medium: FFKM FDA | ZU 0767 |
| | | | |
| Process connection Ingold socket H0 | Set E/1 | Process-wetted sealing material: EPDM FDA | ZU 0704/1 |
| | Set E/2 | Process-wetted sealing material: EPDM FDA, wetted by rinse medium: EPDM FDA | ZU 0855 |
| | Set F/1 | Process-wetted sealing material: FKM FDA | ZU 0703/1 |
| | Set F/2 | Process-wetted sealing material: FKM FDA, wetted by rinse medium: FKM FDA | ZU 0856 |
| | Set G/1 Set H/1 | Process-wetted sealing material: FFKM FDA | ZU 0768/1 |
| | Set G/2 | Process-wetted sealing material: FFKM FDA, wetted by rinse medium: EPDM FDA | ZU 0857 |
| | Set H/2 | Process-wetted sealing material: FFKM FDA, wetted by rinse medium: FFKM FDA | ZU 0858 |
| | | | |
| Process connection Ingold socket H1 | Set E/1 | Process-wetted sealing material: EPDM FDA | ZU 0704/1 |
| | Set E2 | Process-wetted sealing material: EPDM FDA, wetted by rinse medium: EPDM FDA | ZU 0704/2 |
| | Set F/1 | Process-wetted sealing material: FKM FDA | ZU 0703/1 |
| | Set F/2 | Process-wetted sealing material: FKM FDA, wetted by rinse medium: FKM FDA | ZU 0703/2 |
| | Set G/1 Set H/1 | Process-wetted sealing material: FFKM FDA | ZU 0768/1 |
| | Set G/2 | Process-wetted sealing material: FFKM FDA, wetted by rinse medium: EPDM FDA | ZU 0768/2 |
| | Set H/2 | Process-wetted sealing material: FFKM FDA, wetted by rinse medium: FFKM FDA | ZU 0769 |

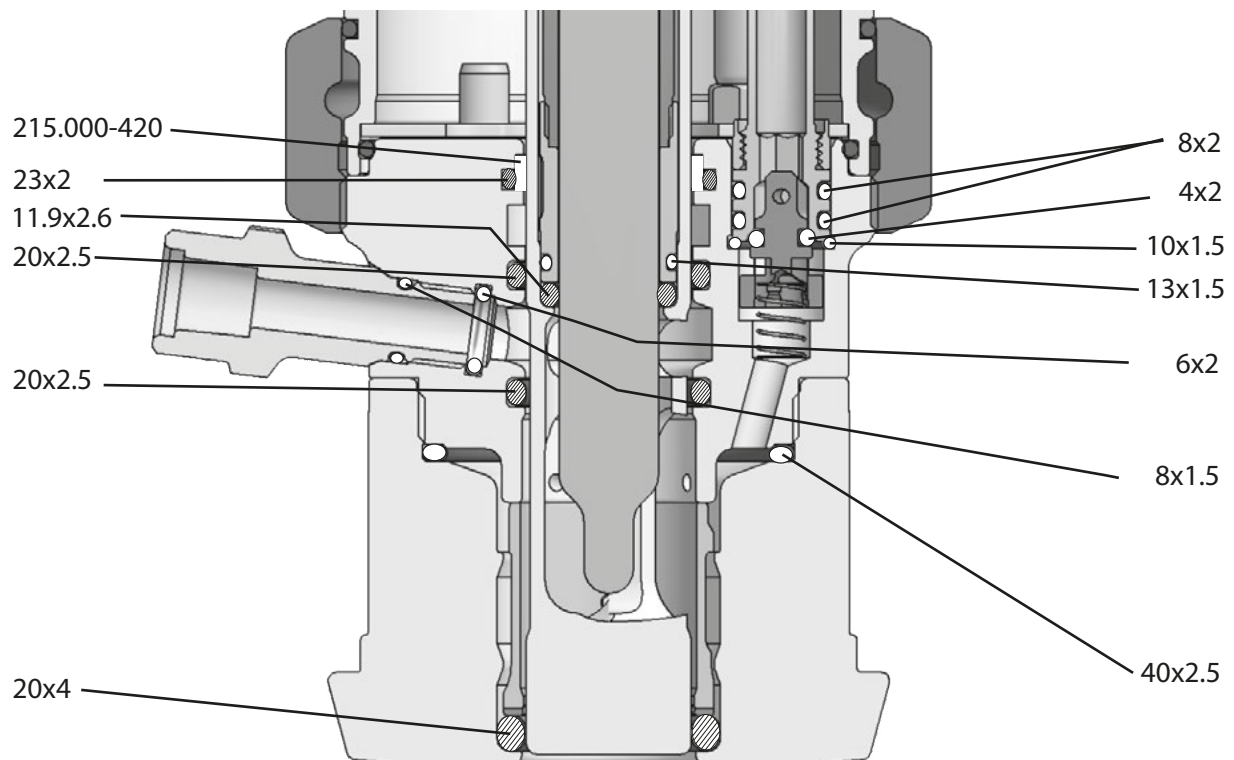
Sealing Kits for Maintenance and Servicing

Process adaptation dairy pipe, Tri-Clamp, Varivent, BioControl

Process adaptation dairy pipe, Tri-Clamp, Varivent, BioControl

 Process-wetted
gaskets

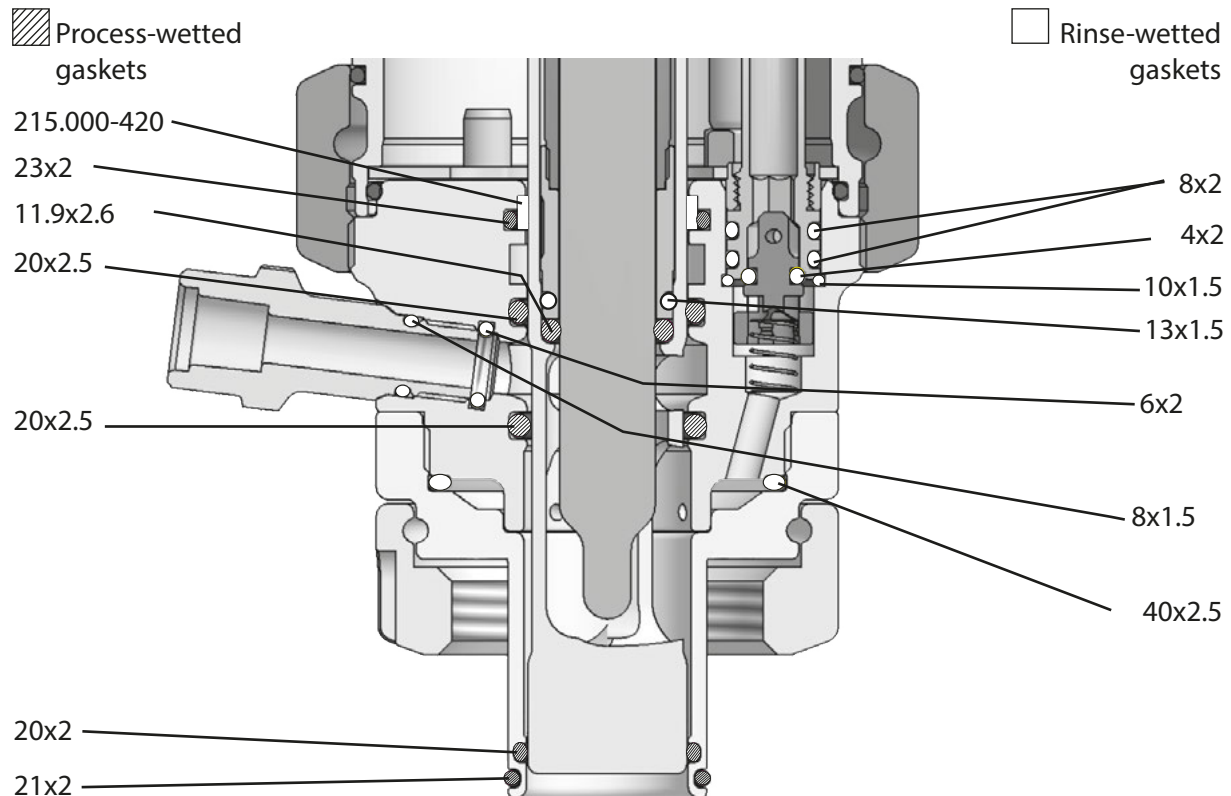
 Rinse-wetted
gaskets



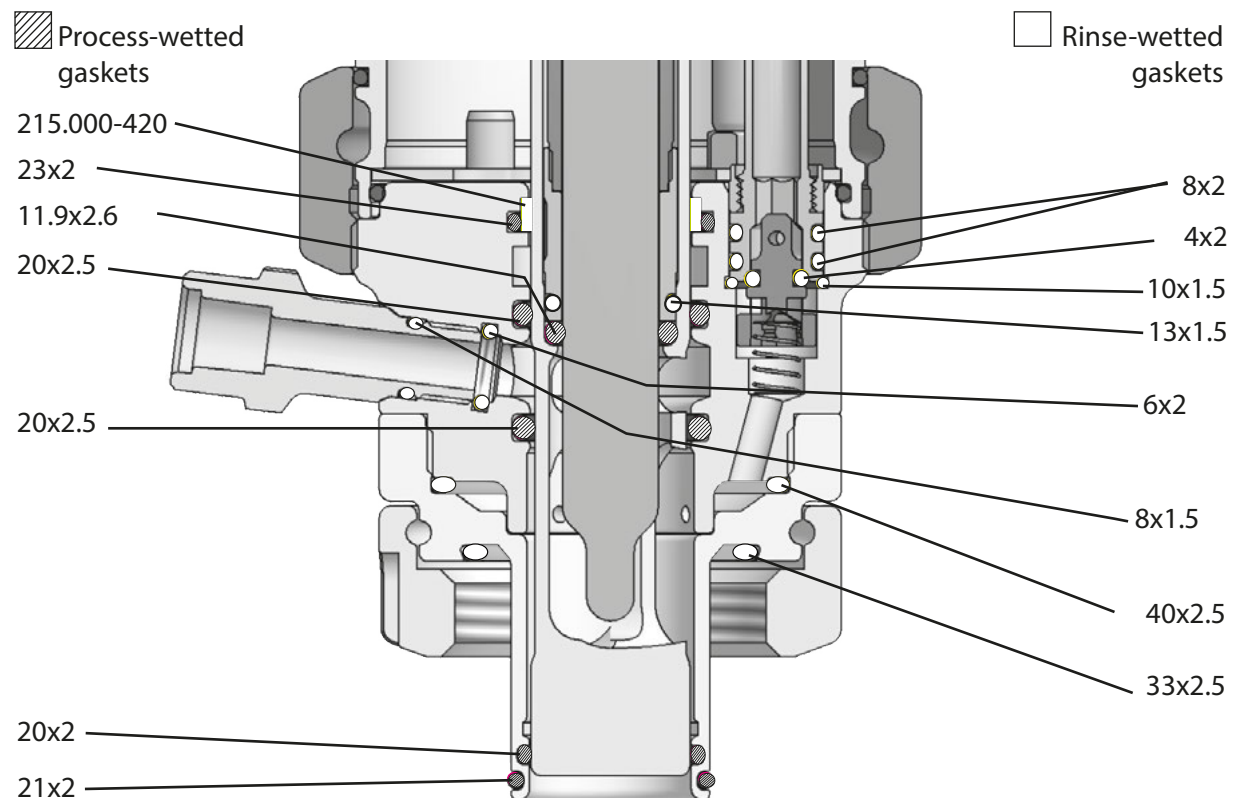
Sealing kits for Maintenance and Servicing

Process adaptation Ingold socket H1, Ingold socket H0

Process adaptation Ingold socket H0 (see order code)



Process adaptation Ingold socket H1 (see order code)



Declaration of Contamination

SensoGate® WA 130 H



Return Form

Declaration of potential hazards in the enclosed products from exposure to chemicals

We can only accept and carry out the service order if this declaration is filled out completely.

Please include it with the shipping documents.

If you have any questions, please contact our repairs department in Berlin.

RMA number (can be obtained by calling +49 30 80 191-233):

Customer information (must be completed if no RMA no. available):

Company:

Address:

Contact: Tel./E-mail:

Information on the product:

Product name:

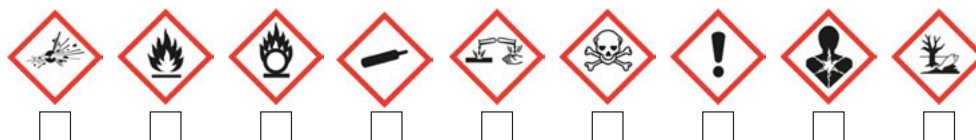
Serial number:

Included accessories:

☐ The product being returned is new/unused or has not been exposed to hazardous substances.

☐ The product has been exposed to hazardous substances.

Please preferably state the classification of the hazardous substance, as applicable together with the H-phrases (or R-phrases), or at minimum provide the relevant hazard pictograms:



☐ The product has been exposed to infectious substances.

☐ The product was subjected to suitable cleaning procedures to prevent exposure to hazards prior to return.

☐ The product was not freed of hazardous substances prior to return.

I have answered the above questions to the best of my knowledge.

Name: Company:

Date: Signature:

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