



Operating instructions
Welding adapter
for units with Aseptoflex Vario adaption
for units with G ½ sealing cone

GB

E3325x
E43xxx



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1 Preliminary note

You will find instructions, technical data, approvals and further information using the QR code on the unit / packaging or at www.ifm.com.

1.1 Symbols used

- ✓ Requirement
- ▶ Instructions
- ▷ Reaction, result
- [...] Designation of keys, buttons or indications
- Cross-reference
-  Important note
Non-compliance may result in malfunction or interference.
-  Information
Supplementary note

1.2 Warnings used



CAUTION

Warning of personal injury

- ▷ Slight reversible injuries may result.

2 Safety instructions

- The unit described is a subcomponent for integration into a system.
 - The system architect is responsible for the safety of the system.
 - The system architect undertakes to perform a risk assessment and to create documentation in accordance with legal and normative requirements to be provided to the operator and user of the system. This documentation must contain all necessary information and safety instructions for the operator, the user and, if applicable, for any service personnel authorised by the architect of the system.
- Read this document before setting up the product and keep it during the entire service life.
- The product must be suitable for the corresponding applications and environmental conditions without any restrictions.
- Only use the product for its intended purpose (→ Intended use).
- Only use the product for permissible media (→ Technical data).
- If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property may occur.
- The manufacturer assumes no liability or warranty for any consequences caused by tampering with the product or incorrect use by the operator.
- Installation, set-up, operation and maintenance of the product must be carried out by qualified personnel authorised by the machine operator.
- The welding operation must be carried out by authorised personnel.
- The welding operation must be carried out carefully and according to state-of-the-art technology.
- During the welding process, ensure sufficient fume extraction.
- Protect the product against damage.

3 Intended use

The welding adapter (hereinafter referred to as inline adapter) allows installation of sensors with Aseptoflex Vario adaption or G ½ external thread sealing cone in pipe systems.

Using this ensures a hygienic integration of the sensor. At the same time the required welding operation is reduced to orbital welding at the two pipe ends.



The sensor to be mounted is flush with the inner wall of the pipe, which makes it fit for drainage. Vertical installation of the sensor into a horizontal pipe is possible. The medium flows directly across the sensor surface, which guarantees ideal cleaning conditions in accordance with standardised CIP conditions.



Installation of a pressure sensor: the small recess of the ceramic measuring cell inside the sensor must be taken into consideration if the sensor is installed from below into a horizontal pipe.



Installation of sensors with probe: in order to prevent malfunction or damage, the probe must be shorter than the internal pipe diameter!

Note: the available pipe cross-section is restricted by the probe of the installed sensor. Observe minimum distances from probe tip to opposite walls → Operating instructions of the installed unit.



Pressure Equipment Directive (PED): the inline adapter complies with the Pressure Equipment Directive and is designed and manufactured for group 2 fluids in accordance with the sound engineering practice.

4 Installation



CAUTION

During the welding operation, the adapter, the surrounding material and any welding aid used can increase in temperature to over 65 °C (149 °F).

- ▷ Risk of burns.
- ▶ Allow the adapter and any other components to cool.

4.1 Basics

The inline adapter can be welded into pipes or provided with connection fittings.



During the installation or the welding process, the experience of qualified staff has priority. Procedures deviating from these instructions are permissible. (DIN EN ISO 3834-1 to -6 and DIN FB CEN ISO / TR3834-6).



The pipe must correspond with the wall thickness and the diameter of the two pipe connections on the inline adapter (DIN 11866).



The inline adapter must not warp.



Recommendation: if the TIG method is applied make reference to → EHEDG DOC 35 "Hygienic welding of stainless steel tubing in the food processing industry".



Recommendation: use a welding mandrel for optimum heat dissipation. Aseptoflex Vario = order no. E30452. G ½ sealing cone = E43314

- ▶ Ensure correct alignment of the inline adapter.
- ▶ Prepare the pipe ends for orbital welding.
- ▶ Ensure rectangularity, freedom from burrs and chamfers.
- ▶ The inline adapter and its surfaces must be free from any kind of soiling and damage.
- ▶ Choose welding materials that are appropriate for the material of the adapter and the pipe.
- ▶ First, weld one side of the inline adapter to a pipe, then weld the other side to the other pipe.

4.2 Sensor display marking



The marking (1) indicates the direction of the sensor display (once fitted), provided the sensor is equipped with a display.

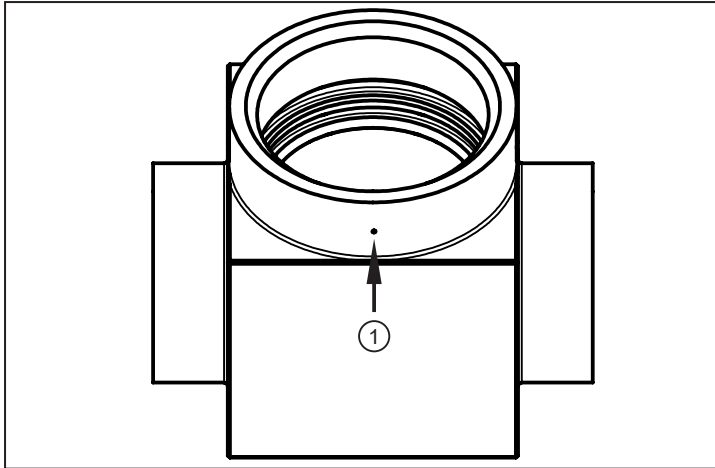


Fig. 1: Aseptoflex Vario inline adapter

1: Marking

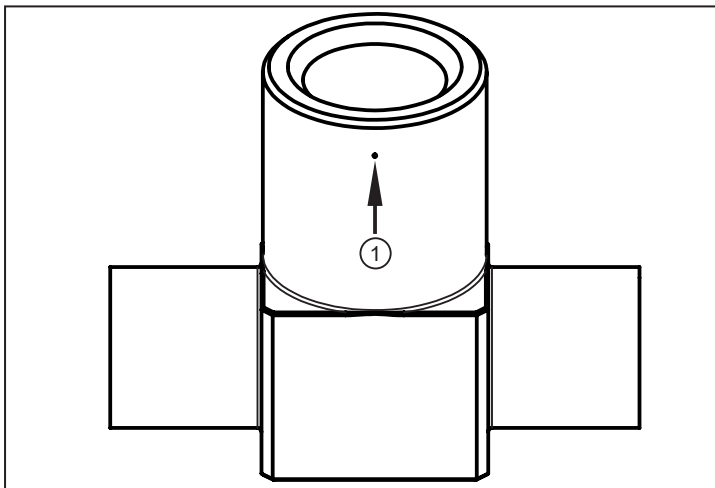


Fig. 2: G 1/2 sealing cone inline adapter

1: Marking

4.3 Forming



Welding with stainless steel: the welding material may not come into contact with oxygen during the welding process.

- ▶ Rinse the inside of the pipe with forming gas.
- ▶ Seal the pipe upstream and downstream of the weld seam using an end cap.
- ▶ Connect feed line for inert gas to the pipe.
- ▶ Bore holes into the opposite side (pipe seal), so that the gas can escape.
- ▶ Ensure emission of gas with the required volume flow.



The forming gas may not produce any pressure inside the pipe.



The forming gas must be suitable for the applied welding method: TIG; MIG; MAG.

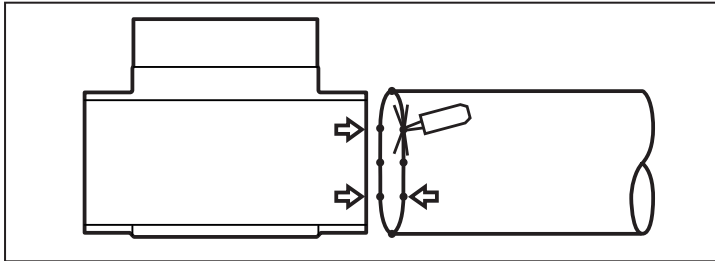
4.4 Tack welding

- ▶ Ensure plane-parallel alignment of the pipe end, perpendicular to the axis.
- ▶ Clamp the inline adapter and the pipe against each other using an appropriate mounting solution.
- ▶ During welding and the following cooling phase the sensor must not be in place.



Using forming gas is recommended during the tack welding process.

- ▶ Add weld tacks between the inline adapter and the pipe ends. Apply each new tack on the opposite side of the former, inside and outside of the pipe.
- ▷ Apply tack welds at regular intervals around the pipe.



Recommendation: apply at least 8 tacks in order to prevent damage and torsion of the inline adapter during the welding process.

4.5 Welding operation



The power of the welding device must be adapted to the thickness of the wall.

In case of hygienic requirements take the appropriate measures to obtain a hygienic weld seam, in particular:

Choose the suitable welding method.

Choose the suitable welding parameters.

Align pipe ends accurately to avoid gaps or linear misalignment, etc.

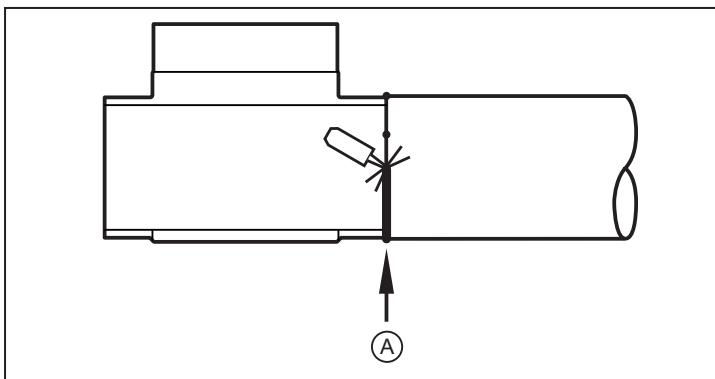
Avoid overheating between the weld seams.

Avoid undercuts (hygienic areas) → EHEDG DOC 35.

- ▶ During welding and the following cooling phase the sensor must not be in place.
- ▶ Apply weld seams between the weld tacks. Add each new seam on the opposite side of the former.



Recommendation: start welding at the lowest point (A).



- ▶ Do not damage the sealing edge of the adapter (number 1 in the following drawings) with weld spatter or the like.

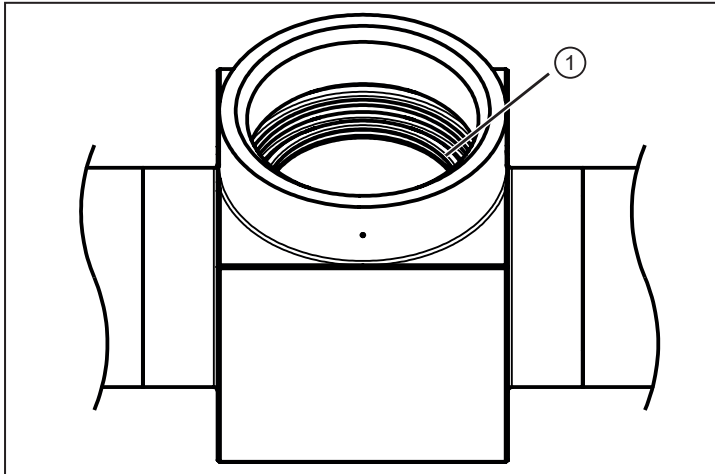


Fig. 3: Aseptoflex Vario inline adapter

1: Sealing edge

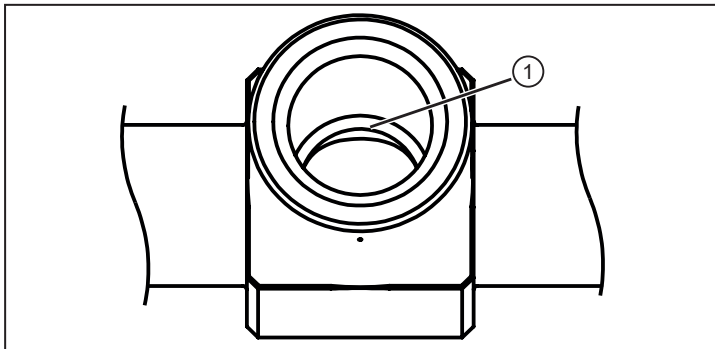


Fig. 4: G 1/2 sealing cone inline adapter

1: Sealing edge

4.6 After welding

- ▶ Let the adapter cool down.
- ▶ If used: remove the welding mandrel.
- ▶ Check the quality of the weld seam. It must meet the applicable requirements for a hygienic weld seam, in particular:
 - full weld penetration
 - no gaps / cracks / porosity / tarnish
 - no increased surface roughness
 - no protruding outwards
 - no sagging inwards
 - no inclusions
- ▶ The thread and sealing edge must be free from welding residues.



If the sealing edge of the inline adapter is damaged, the adapter can no longer be used.

- ▶ Replace the inline adapter.

4.7 Installing the sensor with an Aseptoflex Vario adaption



General information for sensor installation: → Operating instructions of the sensor.



A lubricating paste is required to install the sensor. It must be suitable and approved for the given application and compatible with the elastomers used (e.g. seal).

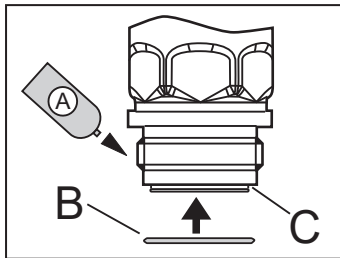


Only use O-rings for sealing.

The inline adapter is supplied with an EPDM O-ring = order no. E30054.

More sealing rings are available as accessories: FKM O-ring = order no. E30123.

- ▶ Remove the protective packaging only just before mounting.
- ▶ Ensure cleanliness of the sealing areas.



- ▶ Place the sealing ring (B) in the groove (C) of the sensor.
- ▶ Use the lubricating paste (A) sparingly and apply it to threaded parts.

- ▶ Screw the sensor into the inline adapter.
- ▶ Tighten the sensor using a spanner until you can feel the end stop (this corresponds to a maximum tightening torque of approx. 35 Nm).



Too much torque may impair the seal.



If the sealing area is damaged:

- ▶ Replace the inline adapter.

4.8 Installing the sensor with a G ½ sealing cone



General information for sensor installation: → Operating instructions of the sensor.



A lubricating paste is required to install the sensor. It must be suitable and approved for the given application and compatible with the elastomers used (e.g. seal).

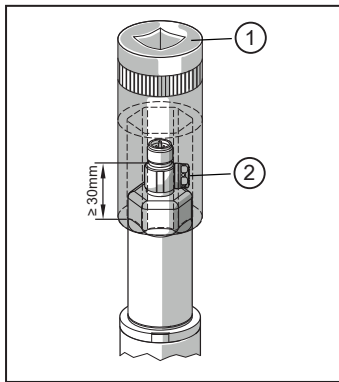


Do not remove the O-ring (PEEK sealing ring) that is installed on the sensor.



During sensor installation, do not exert any axial leverage with the tool on the rotatable filter cover.

- ▶ Remove the protective packaging only just before mounting.
- ▶ Ensure cleanliness of the sealing areas.



In case of installation by means of a hexagon socket (1), make sure that the tool's spanner flat has an inner height of at least 30 mm. Align the rotatable filter cover (2) so that it is flush with one of the spanner flats.

- ▶ Use the lubricating paste sparingly.
- ▶ Screw the sensor into the inline adapter.
- ▶ Tighten the sensor using a spanner. Recommended tightening torque: 20 Nm



Too much torque may impair the seal.



If the sealing area is damaged:

- ▶ Replace the inline adapter.

5 Set-up

- ▶ Before setting up the system: Check all components for ingress resistance.
- ▶ Setting up the sensor: → Operating instructions of the sensor.

6 Disposal and return

- ▶ After use dispose of the unit in an environmentally friendly way in accordance with the applicable national regulations.
- ▶ In case of return shipment, ensure that the unit is free from soiling, especially from dangerous and toxic substances.