OPERATING / INSTALLATION INSTRUCTIONS

(Translation)

Non-return valve

with double guide for the valve plate

Non-return valve

with Double Guide for the Valve Plate (ATEX)

hygienic non-return valve

Concentric and eccentric design

hygienic non-return valve

Concentric and eccentric design (ATEX)

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Operating/Installation Instructions for Non-Return Valve

– with double guide of the valve plate (standard version):	Type:	DN 10 – 100 / PN10 1/2" – 4" / PN10 SMS 1" – 4" / PN10 (SMS FR)
– with double guide of the valve plate (ATEX version):	Type:	DN 10 – 100 / PN10 1/2" – 4" / PN10 SMS 1" – 4" / PN10 (SMS FR)
– hygienic, concentric design:	Type:	DN 25 – 100 / PN10 1" – 4" / PN10
– hygienic, eccentric design:	Type:	DN 25 – 100 / PN10 1" – 4" / PN10
– hygienic, concentric design: (ATEX design)	Type:	DN 25 – 100 / PN10 1" – 4" / PN10
– hygienic, eccentric design: (ATEX design)	Type:	DN 25 – 100 / PN10 1" – 4" / PN10

NOTE

These instructions are a component part of the non-return valve and must be available to operating and maintenance personnel at all times. The safety instructions contained therein must be observed.

If the non-return valve is sold on, the manual must be included in the delivery or downloaded from the following Internet page: http://www.awh.eu/de/downloads.

Translation

The operating instructions must be written in an official European Community language accepted by the manufacturer of the machinery in which the partly completed machinery will be assembled, or to his authorized representative. If any discrepancies arise in the translated text, the original operating instructions (German) shall be consulted for clarification, or the manufacturer shall be contacted.

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1 Introduction

These operating / installation instructions (hereinafter called "manual") provide you with all the information you need to operate the non-return valve smoothly (hereinafter also called "fitting").

The manual applies to the following variants

- Non-return valve with double guide of the valve plate (standard version).
- Non-return valve with double guide of the valve plate (ATEX version).
- Hygienic non-return valve in concentric and eccentric designs
- Hygienic non-return valve in concentric and eccentric design (ATEX. design)

In principle, this manual applies to all designs. In the event of differences between the designs, this will be pointed out with due clarity.

The manual must be read, understood, and applied by all persons assigned with the assembly, maintenance, cleaning and troubleshooting of the fitting. This applies in particular to the safety instructions listed.

After studying the manual, you will be able to

- assemble and operate the fitting safely,
- clean and service the fitting correctly and
- take the correct measures if a fault occurs.

In addition to these instructions, generally applicable, statutory and other binding regulations for the prevention of accidents and for environmental protection in the country of use must also be observed.

The manual must always be kept or made available at the place of use of the fitting. If necessary, download the manual from the http://www.awh.eu/de/downloads Internet page.

1.1 Means of presentation

As an instruction and for directly warning against danger, statements where special attention needs to be paid are identified as follows in this manual:

Section-Related Warnings

The section-related warnings apply not only to one particular action, but to all actions within a section.

HAZARD

This warning describes a hazard with a high level of risk that will result in death or serious injury if not avoided.

WARNING

This warning notice describes a hazard with a medium level of risk that could result in death or serious injury if not avoided.

CAUTION

This warning notice describes a hazard with a low level of risk that could result in minor or moderate injury if not avoided.

NOTE

This warning notice describes a hazard with a low level of risk that could result in damage to property if not avoided.

NOTE ON EXPLOSION PROTECTION

This note provides important information on explosion protection.

Non-compliance results in the explosion protection being removed, thus leading to hazards.

The "info" symbol provides useful information.

Embedded warnings

The embedded warnings apply to specific actions and are integrated directly into the action before the specific action step.

- ⚠ DANGER/WARNING/CAUTION
- *NOTE*

Symbols Used

Crush hazards are indicated by this symbol.

Burn hazards are indicated by this symbol.

Warnings about potentially explosive atmospheres are indicated by this symbol.

Operating materials for the explosive area are indicated by this symbol.

Instructions about necessary protective grounding connection are indicated by this symbol.

"Observe manual" is indicated by this symbol.

Environmental measures are indicated by this symbol.

1.2 Abbreviations

ATEX	'**At**mosphère **ex**plosible'; includes measures for explosive atmospheres / explosion protection
AWH	Armaturenwerk Hötensleben GmbH
C/C	Clamp/Clamp (connection variant)
D	Diameter
DN	Nominal width
E	Thread diameter
EPDM	Ethylene propylene diene monomer rubber (sealing material)
FKM	Fluorinated rubber (sealing material)
T/W	Thread/welded (connection variant)
L	Length
p	Pressure
PN	Nominal pressure in bar at a room temperature of 20 °C
Ra	Average roughness value (dimension for the surface roughness)

S/S Weld/weld (weld-on ends; connection variant)

ZFA Intermediate flange (connection variant)

1.3 Guarantee, Warranty and Liability

Guarantee

If the fitting is used as intended, a guarantee is provided according to the statutory warranty obligation. Exceptions to this are wear parts (gaskets, bushings).

Increased wear due to abrasive media is not a product defect. Any claims resulting from this cannot be taken into account as part of the warranty.

Warranty and Liability

The commitments agreed in the contract of supply and delivery, the general terms and conditions and the terms of delivery of Armaturenwerk Hötensleben GmbH (referred to hereinafter as AWH) and the statutory regulations valid at the time the contract was concluded shall apply.

Warranty and liability claims in the case of personal injury and damage to property shall be excluded in particular if these can be attributed to one or more of the following causes:

- Improper or incorrect use of the fitting.
- Incorrect assembly, commissioning, operation and maintenance of the fitting.
- Failure to observe the instructions in the manual in terms of assembly, commissioning, operation and maintenance of the fitting.
- Structural modifications to the fitting
  (conversions or other modifications to the fitting must not be carried out without previous written approval from AWH.
  In case of infringement, the fitting will lose its conformity and the operating license),
- Use of spare parts that do not meet the specified technical requirements.
- Repair work that is carried out incorrectly.
- Disasters, effects/influences from extraneous elements and force majeure.

Disclaimer

AWH reserves the right to make changes to this document at any time without prior notice. AWH provides no guarantee (neither explicitly nor implied) with regard to all information in this document, including but not limited to the implied warranty of merchantability and suitability for a particular purpose. Furthermore, AWH does not guarantee the correctness or completeness of information, text, graphics or other parts in this document.

2 Safety

The fitting has been designed in accordance with state-of-the-art technology and the recognized rules of safety. Nevertheless, use of the fitting may represent a danger to the life and limb of the user and third parties, or a risk of impairments to the device and other objects of material value as a result of its function.

The following fundamental safety notes are intended to avoid injury to personnel and damage to property. The operator must ensure that the basic safety instructions are observed and adhered to.

These instructions contain basic notes on installation, operation, maintenance and servicing of the fitting which must be complied with.

Anyone involved in installation, operation, maintenance and servicing must have read and understood these instructions.

The safety systems and safety instructions described in these instructions must be adhered to.

WARNING

Failure to comply with these instructions, incorrectly performed installation and repair work or incorrect operation could lead to malfunctions at the device and to dangerous situations!

There is a risk of death or severe physical injury.

- *Have all work performed on the fitting carried out only by an expert and in compliance with*
  - *the corresponding detailed operating and installation instructions,*
  - *the warnings and safety signs on the device,*
  - *the regulations and requirements specific to the plant and*
  - *the national/regional regulations for safety and the prevention of accidents.*
- *Never install damaged fittings or components.*

The illustrations in these instructions are used for basic understanding, and preferably represent the principles involved. They may differ from the actual design of the fitting.

2.1 Intended Use

AWH non-return valves are intended for installation in pipelines. They were developed, designed and built for unidirectional shut-off of the flow of fluid in commercial and industrial operations (food, chemical and pharmaceutical industries and low-germ processes). Suitable flow media include water, steam, mineral oil, food, and liquids from the chemical and pharmaceutical industry subject to a hygienic standard. They help prevent unwanted flows or draining of pipelines.

NOTE

It is urgently recommended that non-return valves are only to be installed in areas of predominately laminar flow. Use in areas in which there turbulent flows predominate reduces the service life and can result in failure in the short and medium-term.

Installation near pumps or function fittings that cause flow instabilities in the flow is not recommended.

NOTE ON EXPLOSION PROTECTION

Misuse, e.g.operation of a standard-design fitting in a potentially explosive atmosphere or when potentially explosive media are used, must be precluded. For use of the fitting in the ATEX design, see the section "2.1.1 Special conditions for safe application in an area with potentially explosive atmosphere" and the declarations of conformity in sections 10.2; 10.5 and 10.6.

WARNING

In the event of improper use, there is a risk of serious injury

This fitting was designed exclusively for the purposes described above. Any other use beyond that described here or alteration of the fitting without written approval from AWH is considered contrary to the intended use. AWH accepts no liability for damages arising from this. The operator alone bears the risk. The fitting must not be put in to operation until it has been assured that all the safety systems are fully functioning, and the system in which the fitting is installed meets the safety requirements of all relevant directives.

NOTE

The fitting may only be installed by an expert.

*The work described in this manual is described in a way intended to be understood and carried out by experts **only***
(see section "2.4Qualification Requirements to be met by the Personnel").

The intended use also includes compliance with this manual, including the maintenance conditions.

2.1.1 Special conditions for safe application in an area with potentially explosive atmosphere

HAZARD

Creation of potential ignition sources!

Improper use may result in the development of overheating, electrostatic charge and induced charge, mechanical and electrical sparks

There is a risk of death or severe physical injury.

- *The intended use of the fitting according to the operating instructions must be complied with under all circumstances.*
- *The temperature of the medium must not exceed the permissible operating temperature of the fitting.*
- *It is essential to connect the fitting to ground correctly during the installation.*

- Respective warnings are to be taken into account and precautions taken to protect personnel and objects.
- To ensure safe and trouble-free operation, the fitting needs to be serviced correctly and at regular intervals. Original parts must always be used for repairs/maintenance.
- Non-permitted operation is to be precluded:
  - The fitting may not be operated in the cavitation area.
  - The pressure/temperature range must not be exceeded.
  - No foreign objects may be on the gasket.

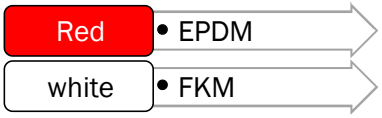
Commissioning is prohibited until it is determined that the overall system fulfils the provisions of the directives.

2.2 Labeling the fitting

The following details can be found on the fitting:

- Manufacturer
- Direction of flow
- Nominal width
- Material code number for the housing material
- Colored marking of the sealing material
- Where applicable, the ATEX marking (ATEX design only)

Color Key for Sealing Material



The sealing material is identified with a spot in the respective colour on the fitting.

2.3 Hazard Warnings

Attention must be paid to the safety systems and safety information described in this manual.

2.3.1 Hazards

WARNING

Risk of burns due to hot media!

There is a risk of burning during operation or maintenance if flow media have temperatures over +60 °C / +140 °F.

- *Let the flow m edium cool down prior to cleaning work.*
- *Empty the pipelines prior to assembly or disassembly work.*
- *Wear protective work clothing, protective gloves and protective goggles when carrying out the work on the fitting.*

Non-Return Valve in ATEX Design

WARNING

Risk of serious injury due to fire/explosion as a result of static charging!

- *The installation of the fitting may only be carried out by an expert.*
- *Make sure that the fitting is earthed accordingly.*

2.3.2 Installation of Replacement Parts and Wearing Parts

Replacement and accessory parts not supplied by AWH have not been checked or approved by AWH. Installing and/or using this type of product can therefore negatively alter the prescribed structural properties of the higher-level facility under certain circumstances. AWH accepts no liability for any damage arising from the use of non-original parts or non-original accessory parts. Standard parts can be obtained from specialist dealers.

2.3.3 Switch-off Procedure

WARNING

Risk due to moving parts and escaping compressed air or media at high pressure!

Before cleaning, maintenance or repair work is carried out (by specialist personnel only), the following shutdown procedure must always be completed.

- *Disconnect the higher-level facility/machine from the power supply.*
- *Shut off the pneumatic system.*
  - Close the shut-off valve.
  - Check that the system is depressurised.
  - Secure the shut-off valve against opening.
- *Shut off the flow of media. Relieve the pressure in the pipelines and then drain them (take particular care with hazardous materials). Check that there is no risk of media being supplied (insert dummy discs if necessary). Observe a cooling down phase for media temperatures of over +60 °C / +140 °F.*

2.4 Qualification Requirements to be met by the Personnel

The fitting may only be operated, serviced and repaired by persons who are qualified to do so. Such persons must be familiar with this manual and act in accordance with it. The respective competences of the personnel must be clearly defined.

The following qualifications are designated in the manual for various fields of activity:

Expert/Specialist Personnel

A person with appropriate training, suitable instruction and experience who is in a position to identify risks and avoid hazards.

An expert is a person whose professional training, knowledge and experience, and whose knowledge of the relevant standards and regulations, enables them to carry out work on the fitting, identify potential risks independently and to avoid them.

3 Overview and Function

3.1 Non-return valve with double guide

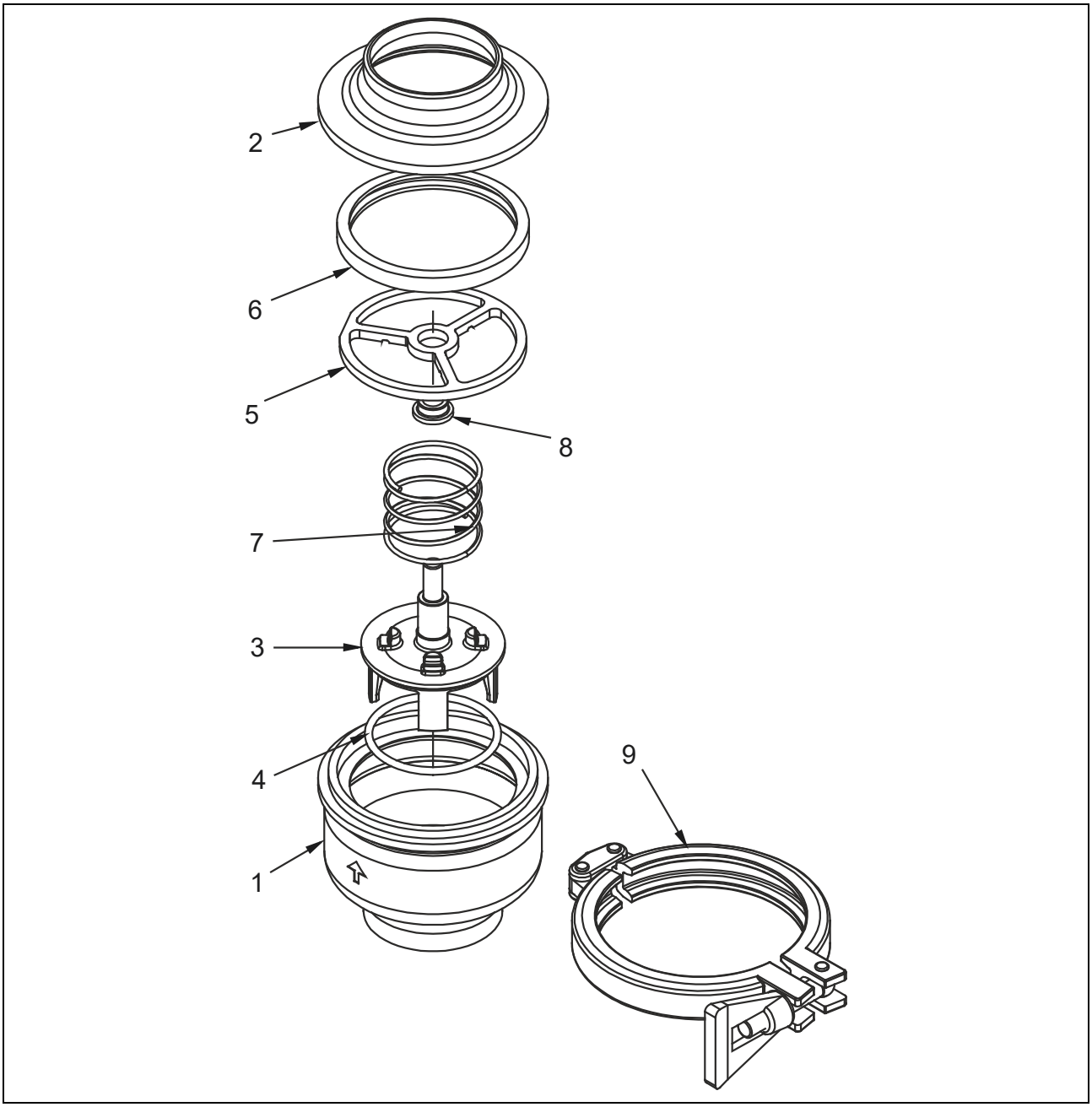


Fig. 3-1: Overview of the non-return valve with double guide, S/S version

1 Housing
2 Housing lid
3 Valve plate
4 O-ring
5 Spring guide or
ATEX spring guide with potential equalization
6 Seal ring
7 Spring
8 Bushing
9 Heavy duty clamp

3.2 Hygienic Non-Return Valve (ZFA), Concentric

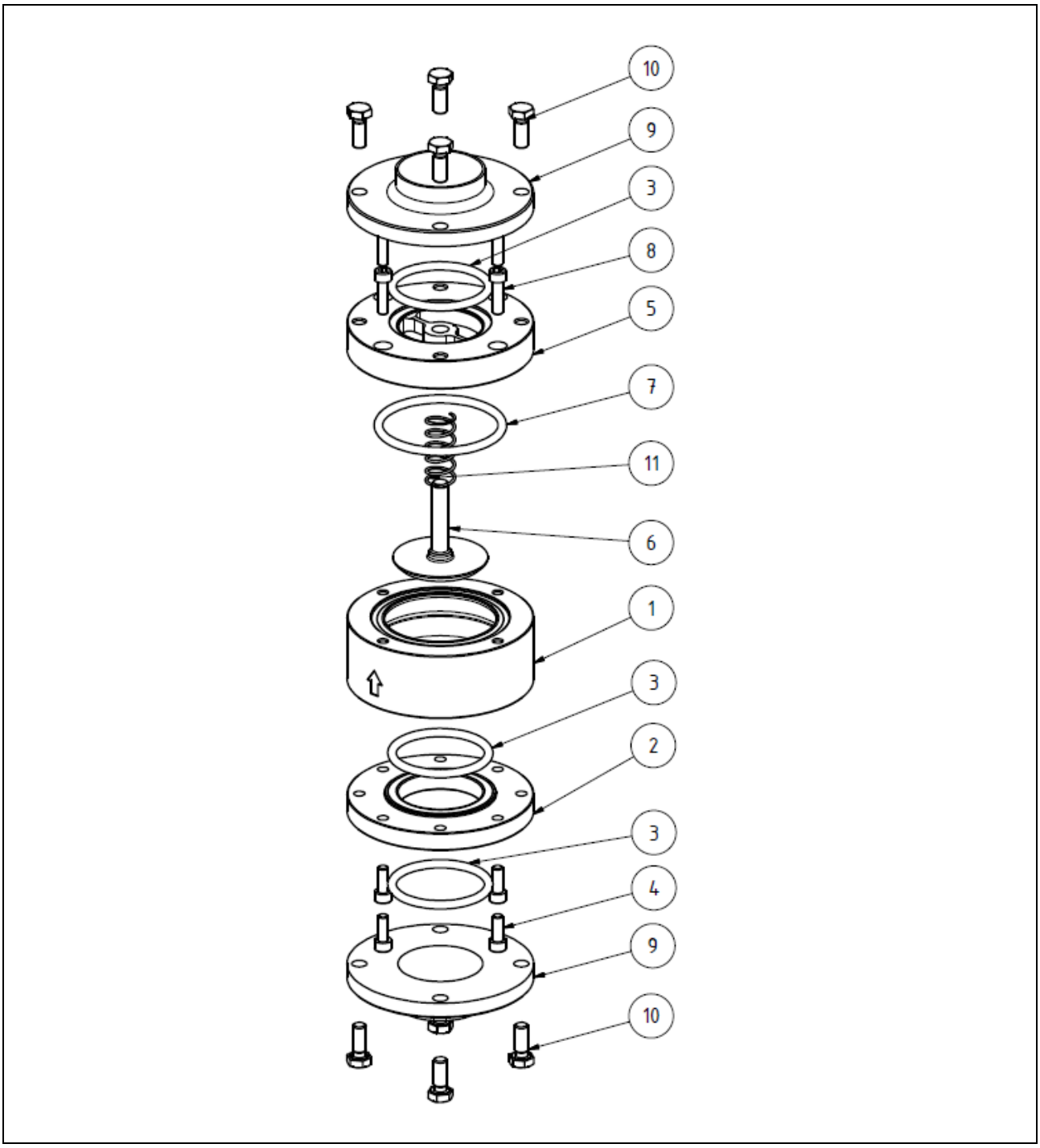


Fig. 3-2: Overview of hygienic non-return valve, ZFA version, concentric

1	Housing	7	O-ring
2	Inner flange	8	Socket-head screws
3	O-ring	9	Outer flange
4	Socket-head screws	10	Hexagonal bolts
5	Guide	11	Spring
6	Valve plate		

3.3 Hygienic Non-Return Valve (ZFA), Eccentric

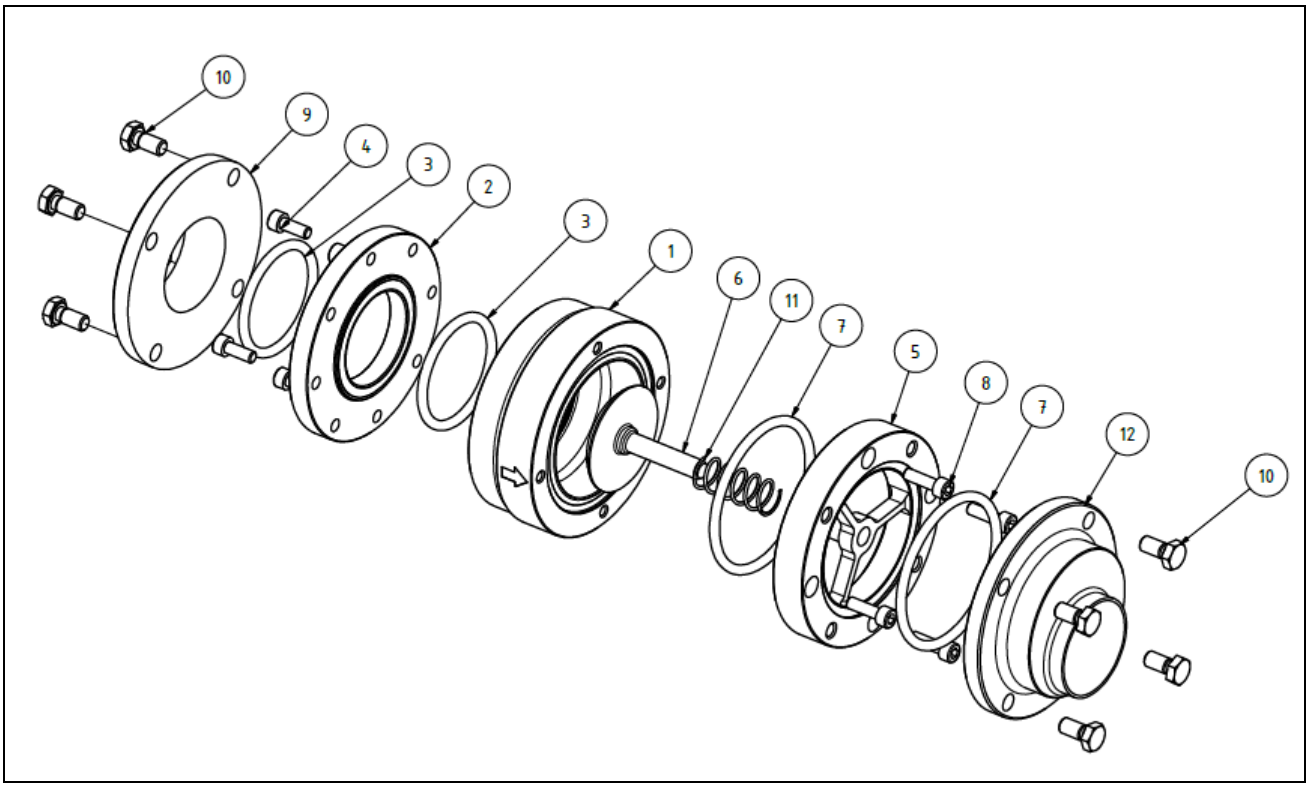


Fig. 3-3: Overview of hygienic non-return valve, ZFA version, eccentric

1	Housing	7	O-ring
2	Inner flange	8	Socket-head screws
3	O-ring	9	Outer flange
4	Socket-head screws	10	Hexagonal bolts
5	Guide	11	Spring
6	Valve plate	12	Outer flange, eccentric

3.4 Function

Non-return valves help prevent unwanted flows or draining of pipes. Furthermore, they are installed in pipes in which several substances are mixed.
A non-return valve is installed in every component line to prevent penetration of another component.

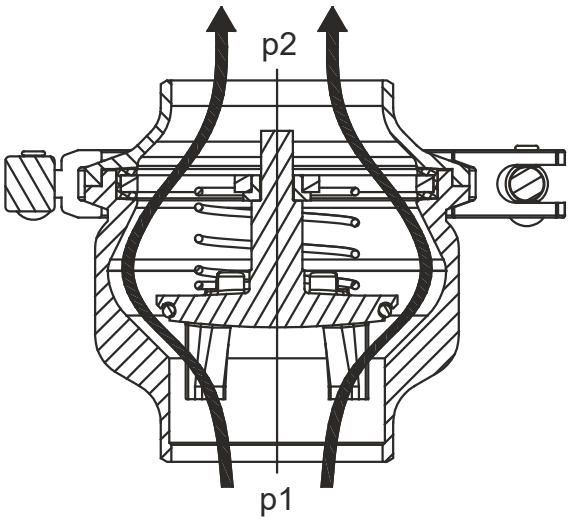
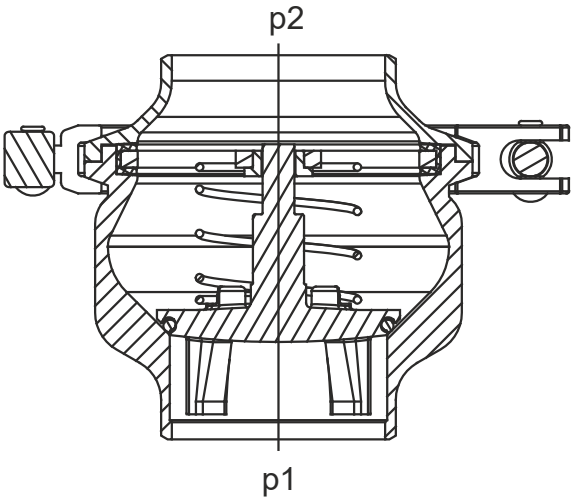
 Δp = p1 – p2 > pö (opening pressure)	 Δp = p1 – p2 ≤ pö (opening pressure)
When at rest (i.e. the pressure on either side of the valve plate is the same), the valve plate is pressed into the valve seat by spring force. The valve is closed. Ife.g. pumps are switched on and the pressure difference on either side of the valve plate increases beyond the opening pressure value, the spring force is overcome and the valve plate is moved out of the valve seat. The product can flow in the specified direction. The valve is open.	If the pressure difference on either side of the valve plate drops below the opening pressure value, the valve plate is pressed by spring force into the valve seat. The same happens if the pressure downstream of the valve plate is greater than the pressure upstream of the valve plate (e.g.static pressure of the liquid column on the valve seat e.g. in a riser or in a tank).

Fig. 3-4: Function of the non-return valve

3.4.1 Installation Instructions and Position for Non-Return Valves

Non-return valves are preferably installed on the pump's pressure side. This prevents a drop in the fluid level or draining of system parts located higher up when the pump is switched off/fails.
Install non-return valves with a minimum distance of 5 times the nominal diameter in front of or behind a pump.

Install a straight pipe section of at least 5 times the nominal diameter in front of and behind the non-return valve.

Pulsing flow conditions and pressure surges should be avoided.

This enables a laminar flow in the line and reduces noise.

The non-return valve with double guide and the concentric hygienic design should preferably be installed in vertical position. When installed horizontally, the valve cannot drain fully.

The eccentric hygienic non-return valve should preferably be installed in horizontal position.

With vertical flow, installation is only permitted if the valve disk can open upwards.

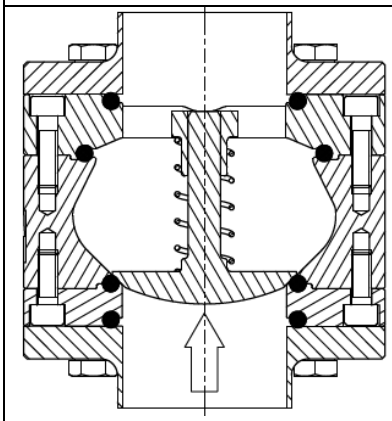
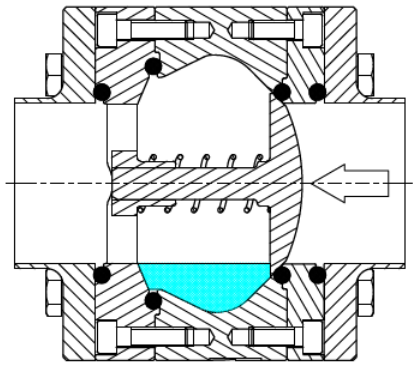
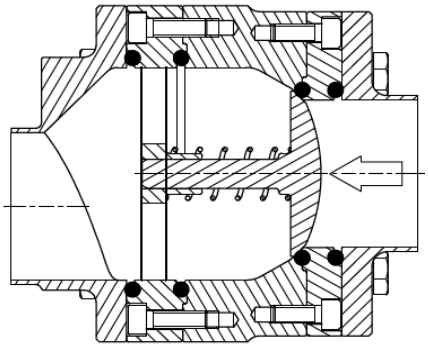
Concentric non-return valve		Eccentric non-return valve
		
Recommended	Not recommended	Recommended

Fig. 3-5 Installation positions of the non-return valve

4 Technical data

4.1 General Data

Ambient temperature range:	
Lower limit temperature:	+5 °C / +41 °F
Lower limit temperature ATEX:	+5 °C / +41 °F
Upper limit temperature:	+60 °C / +140 °F
Upper limit temperature ATEX:	+45 °C / +113 °F
Noise level:	< 70 dB (A)
Max. permissible operating pressure:	10 bar / 145 psi
Opening pressure (standard)	0.05 bar / 0.7 psi
Max. permissible operating temperature: (depends on the seal material and medium)	+95 °C / +203 °F

4.2 Materials in contact with the product

See Fig. 3-1

Housing (Item 1):	1.4301 / 1.4307 / 1.4404 // 304 / 304L/ 316L
Clamp lid (Item 2):	1.4301 / 1.4307 / 1.4404 // 304/ 304L/ 316L
Valve plate (Item 3):	1.4301 / 1.4307 / 1.4404 / 1.4408 // 304/ 304L/ 316L
Spring guide (Item 5):	1.4404 // 316L
Spring (Item 7):	1.4310 / 1.4571 // 301/ 316Ti

See Fig. 3-2 / 3-3

Housing parts (Items 1, 2, 5, 9, 12):	1.4404 / 316L
Valve plate (Item 3):	1.4404 / 316L
Spring (Item 7):	1.4571 / 316Ti

Sealing Material

EPDM:	Sterilization temperature: short-term max. +140 °C / +284 °F
FKM:	Sterilization temperature: short-term max. +130 °C / +266 °F

The fitting's area of application shall always be adjusted to the relevant operating conditions and the materials in contact with the product.

The maximum continuous temperature is dependent on the media.

Auxiliary Materials

To assist installation and protect the O-rings against damage, we recommend using the following grease approved for foodstuffs: BERULUB SIHAF

We further recommend that all threaded connections are smeared with BECHEM-ANTISEIZE before assembly, to prevent fretting corrosion.

Surfaces

Exterior surface:	metal bright/polished
Inner surfaces in contact with the product:	Ra ≤ 0.8 (1.6) µm

The service life of the fitting is approximately 5 years when chlorine-free drinking water is used.
If used with caustic media, the service life is correspondingly shorter.

4.3 Connection Variants, Type Series, Dimensions

The various connection dimensions for the fitting are listed below.
The dimensions can be found in the table (all details – except for nominal width (DN) and nominal diameter of the thread (E) – in millimeters).
You can find the technical data (including weights) on the product pages of the current AWH catalog at http://www.awh.eu or you can request it directly from AWH. The product identification numbers in the catalog and in the manual must be identical.

4.3.1 Connection Variants Non-Return Valve with Double Guide DIN

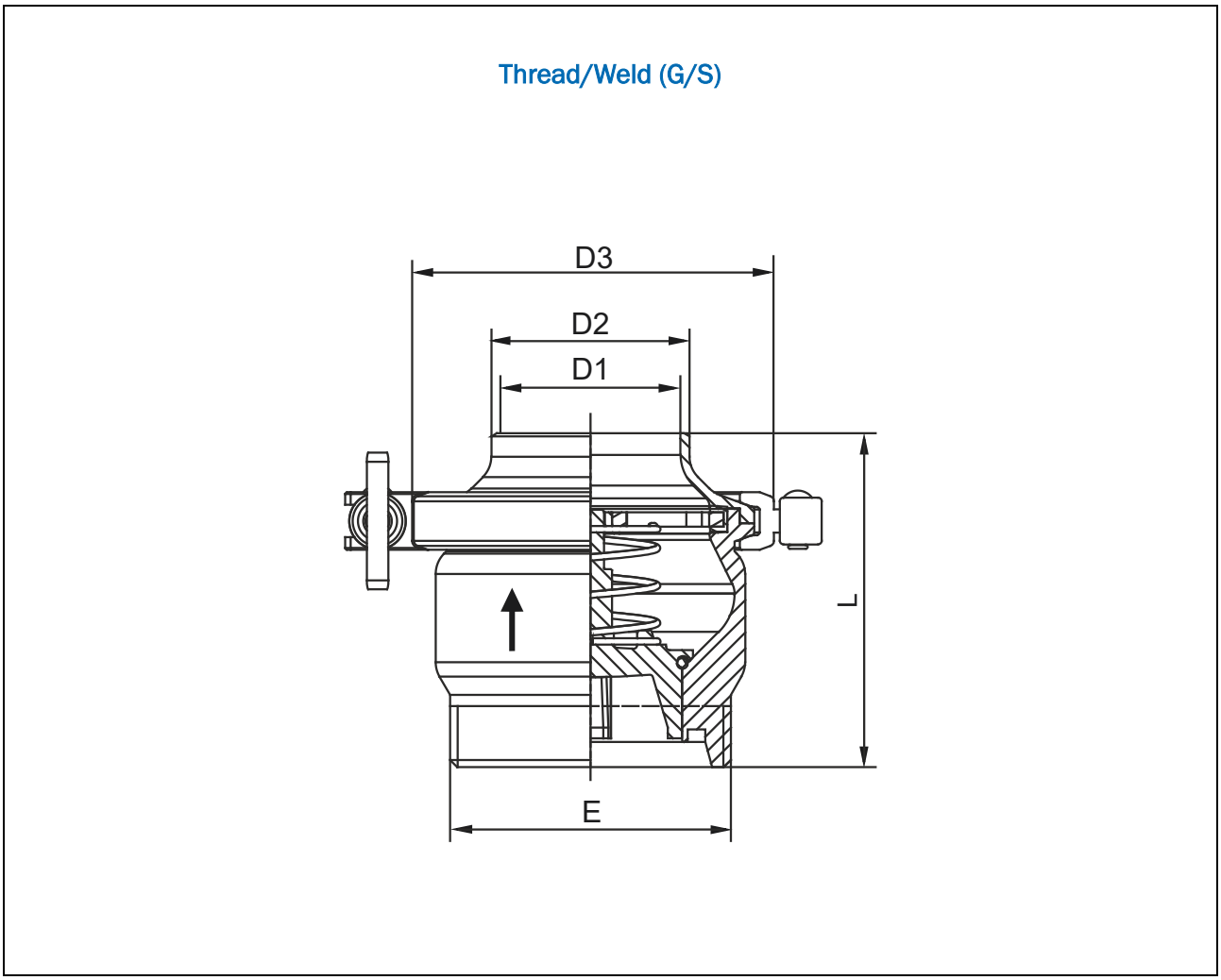


Fig. 4-1: DIN - G/S connection variants

DN	D1	D2	D3	E	L
10	10	15	64	Rd 52 x 1/6"	72
15	16	21	64	Rd 52 x 1/6"	72
20	20	25	64	Rd 52 x 1/6"	72
25	26	29	64	Rd 52 x 1/6"	72
32	32	35	64	Rd 58 x 1/6”	72
40	38	41	91	Rd 65 x 1/6"	83
50	50	53	104	Rd 78 x 1/6”	93
65	66	70	119	Rd 95 x 1/6”	105
80	81	85	145	Rd 110 x 1/4”	125
100	100	104	170	Rd 130 x 1/4”	140

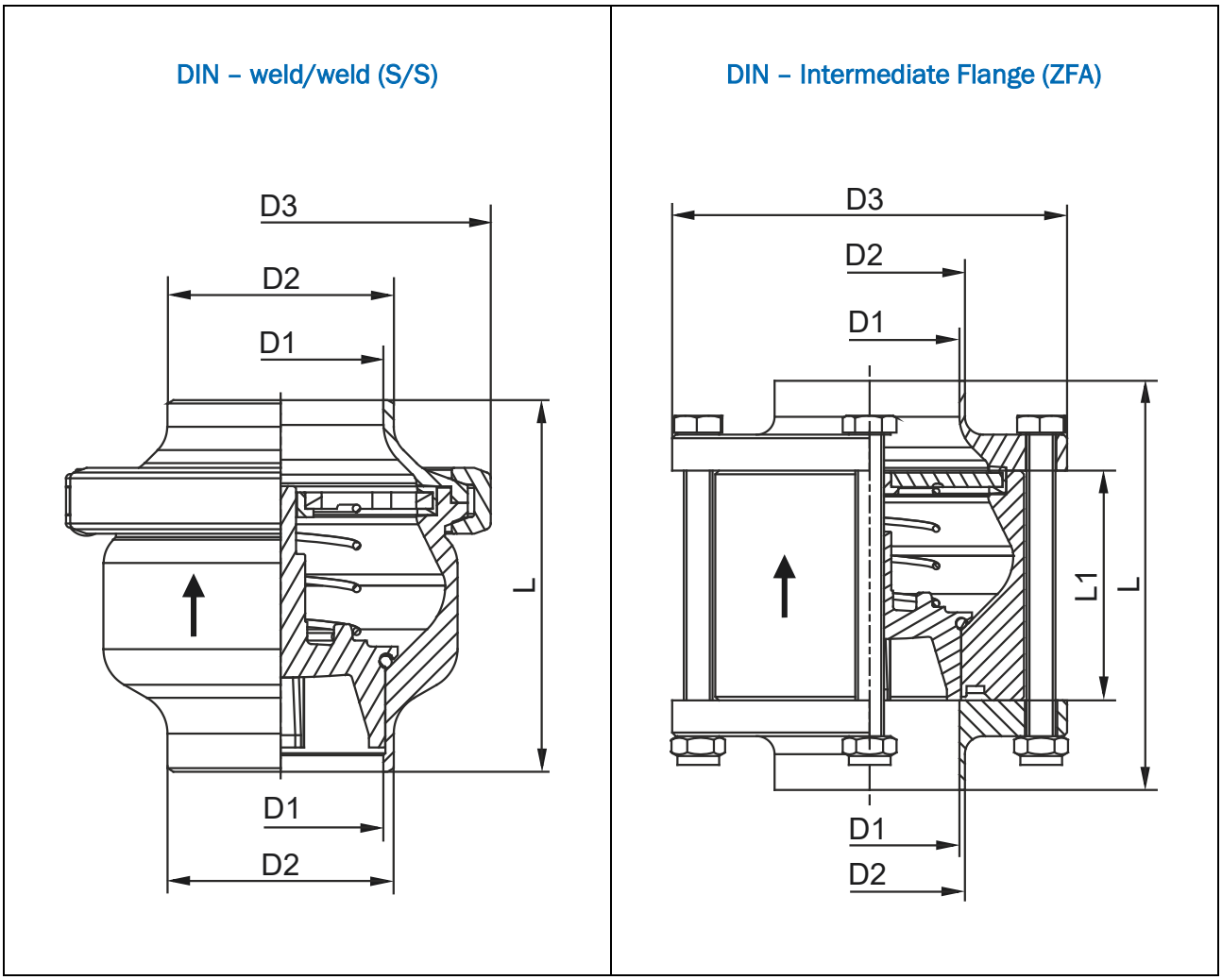


Fig. 4-2: DIN - S/S, ZFA connection variants

DN	DIN – weld/weld (S/S)				DIN – Intermediate Flange (ZFA)				
	D1	D2	D3	L	D1	D2	D3	L	L1
25	26	29	64	72	26	29	87	90	50
32	32	35	77	72	32	35	92	90	50
40	38	41	91	80	38	41	97	105	55
50	50	53	104	90	50	53	110	114	64
65	66	70	119	105	66	70	127	125	75
80	81	85	145	125	81	85	142	150	90
100	100	104	170	140	100	104	162	160	100

4.3.2 Connection Variants Non-return Valve with Double Guide Inch

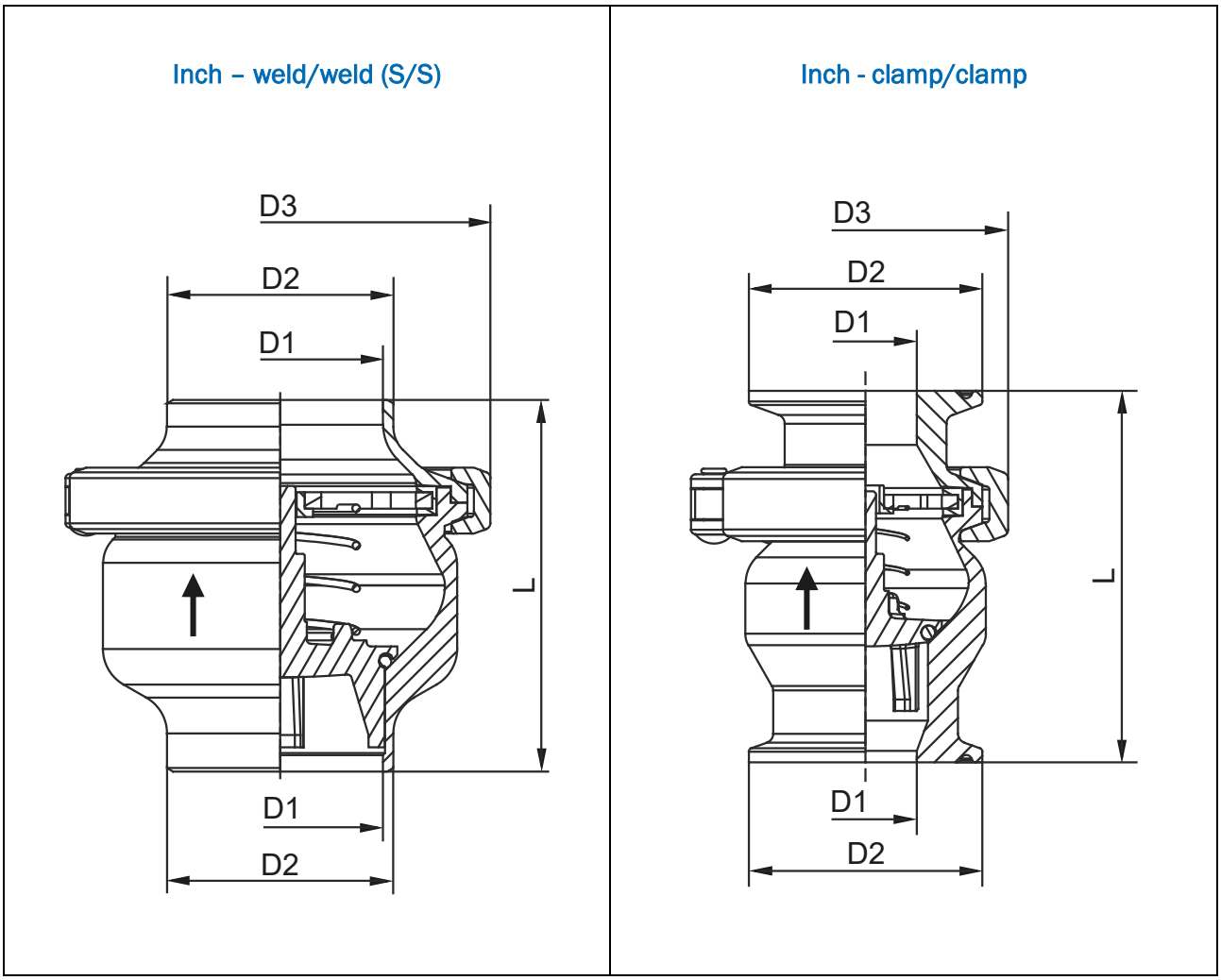


Fig. 4-3: Inch - S/S, C/C connection variants

DN	Inch – weld/weld (S/S)				Inch - clamp/clamp			
	D1	D2	D3	L	D1	D2	D3	L
1/2"	9.4	12.7	64	80	9.4	25	64	902
3/4"	15.75	19.05	64	80	15.75	25	64	90
1"	22.2	25.4	64	77	22.2	50.5	64	80
1 1/2"	34.8	38.1	64	72	34.8	50.5	64	80
2"	47.6	50.8	104	95	47.6	64	104	100
2 1/2"	60.3	63.5	119	110	60.3	77.5	119	115
3"	72.9	76.1	119	105	72.9	91	119	115
4"	97.4	101.6	170	140	97.4	119	170	145

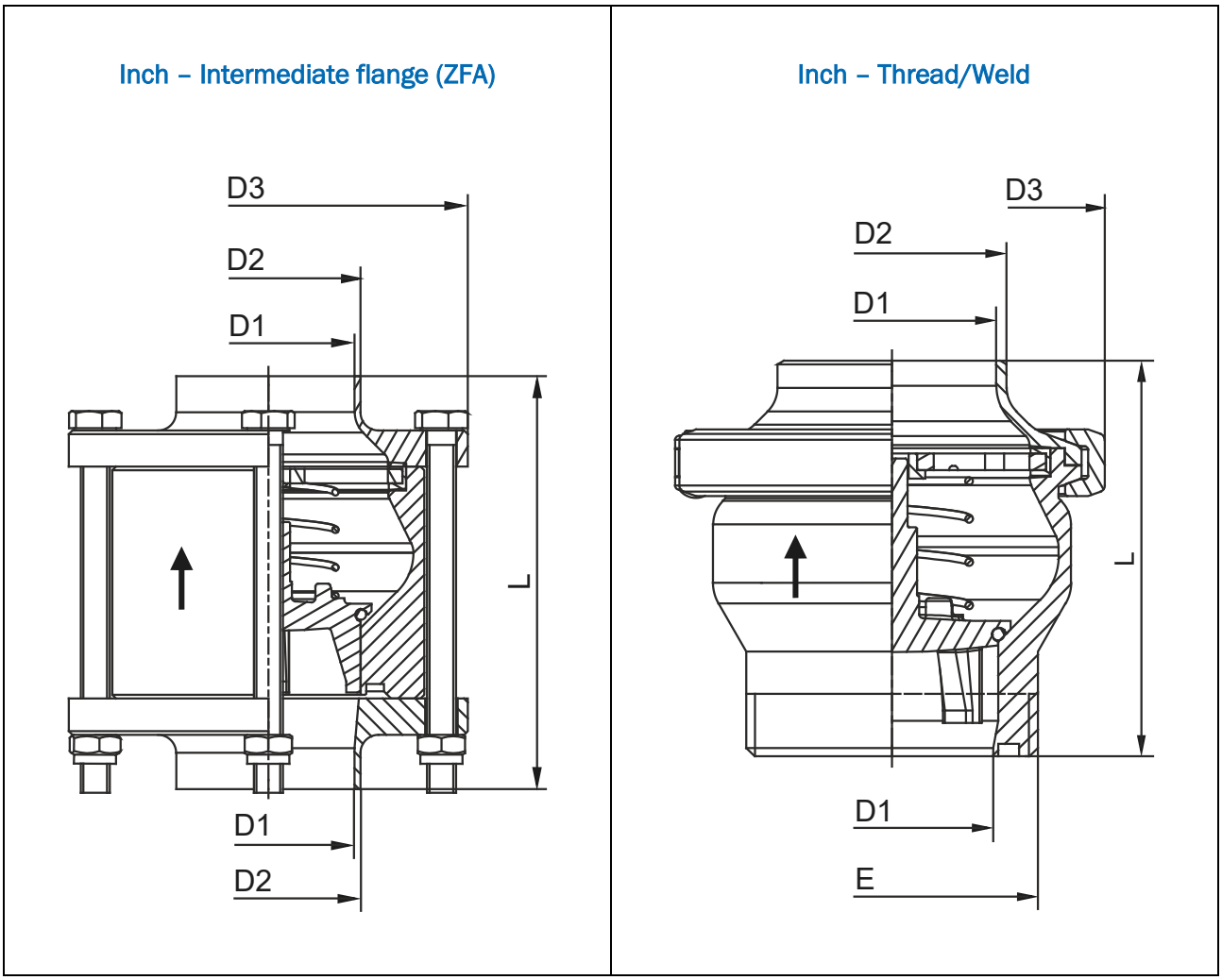


Fig. 4-4: Inch - ZFA, G/S connection variants

DN	Inch – Intermediate flange (ZFA)				Inch – Thread/Weld				
	D1	D2	D3	L	D1	D2	D3	E	L
1"	22.2	25.4	87	90	22.2	25.4	64	Rd 40 x 1/6"	77
1 1/2"	34.8	38.1	97	105	34.8	38.1	77	Rd 60 x 1/6"	72
2"	47.6	50.8	110	114	47.6	50.8	104	Rd 70 x 1/6"	95
2 1/2"	60.3	63.5	127	125	60.3	63.5	119	Rd 85 x 1/6"	110
3"	72.9	76.1	142	135	72.9	76.1	119	Rd 98 x 1/6"	105
4"	97.4	101.6	162	160	97.4	101.6	170	Rd 132 x 1/4"	140

4.3.3 Connection variants non-return valve with double guide SMS

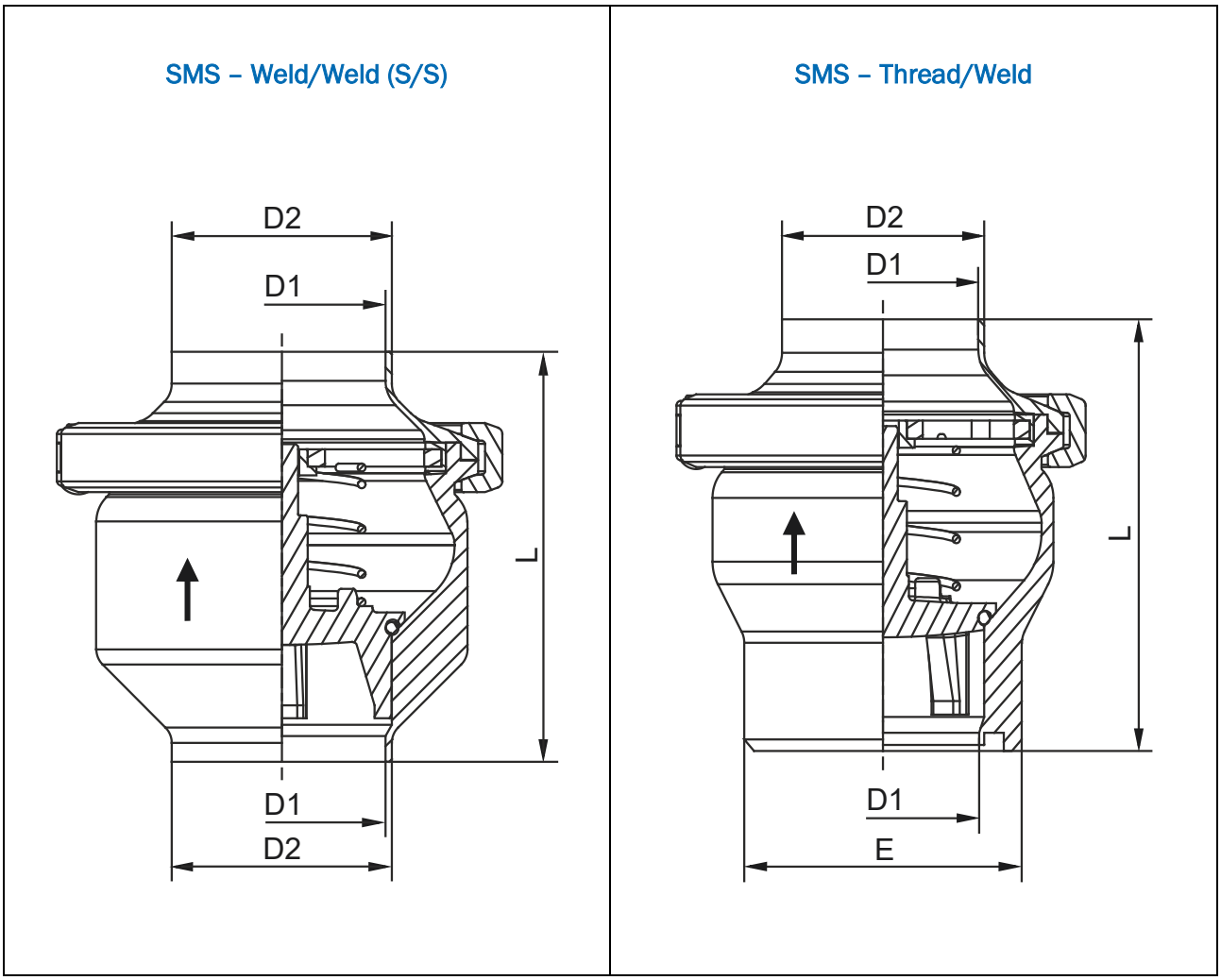


Fig. 4-5: SMS - S/S, G/S connection variants

DN	SMS – Weld/Weld (S/S)			SMS – Thread / Weld			
	D1	D2	L	D1	D2	E	L
1“	22.5	25	77	22.5	25	Rd 40 x 1/6"	77
1 1/2“	35.4	38	72	35.4	38	Rd 60 x 1/6"	72
2“	48	51	95	48	51	Rd 70 x 1/6"	95
2 1/2“	60.2	63.5	110	60.2	63.5	Rd 85 x 1/6"	110
3"	72.1	76.1	105	72.1	76.1	Rd 98 x 1/6"	105
4"	100	104	140	100	104	Rd 125 x 1/4"	140
100	100	104	140	100	104	Rd 125 x 1/4"	140

Upon prior agreement, further customer requests in relation to connection variants can be met for the non-return valve with double guide.

4.3.4 Hygienic Concentric Non-Return Valve Connection Variants

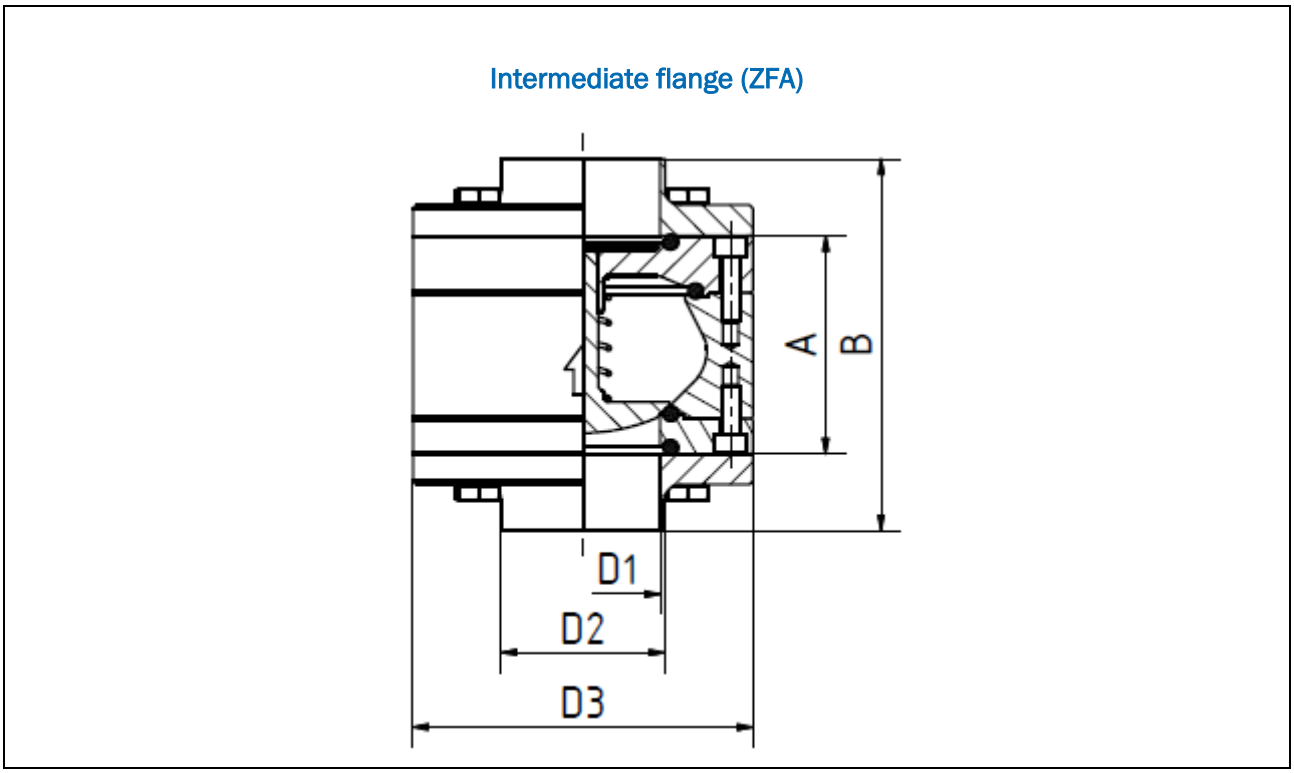


Fig. 4-6: Hyg. concentric non-return valve, connection variants

DN	A	B	D1	D2	D3
25	56.5	96.5	26	29	87
32	60	100	32	35	92
40	63	113	38	41	97
50	71	121	50	53	110
65	81	131	66	70	127
80	94	154	81	85	142
100	97	157	100	104	162

DN/OD	A	B	D1	D2	D3
1"	56.5	96.5	22.2	25.4	87
1 1/2"	63	113	34.8	38.1	97
2"	71	121	47.6	50.8	110
2 1/2"	81	131	60.3	63.5	127
3"	94	154	72.1	76.1	142
4"	97	157	97.4	101.6	162

4.3.5 Hygienic eccentric non-return valve connection variants

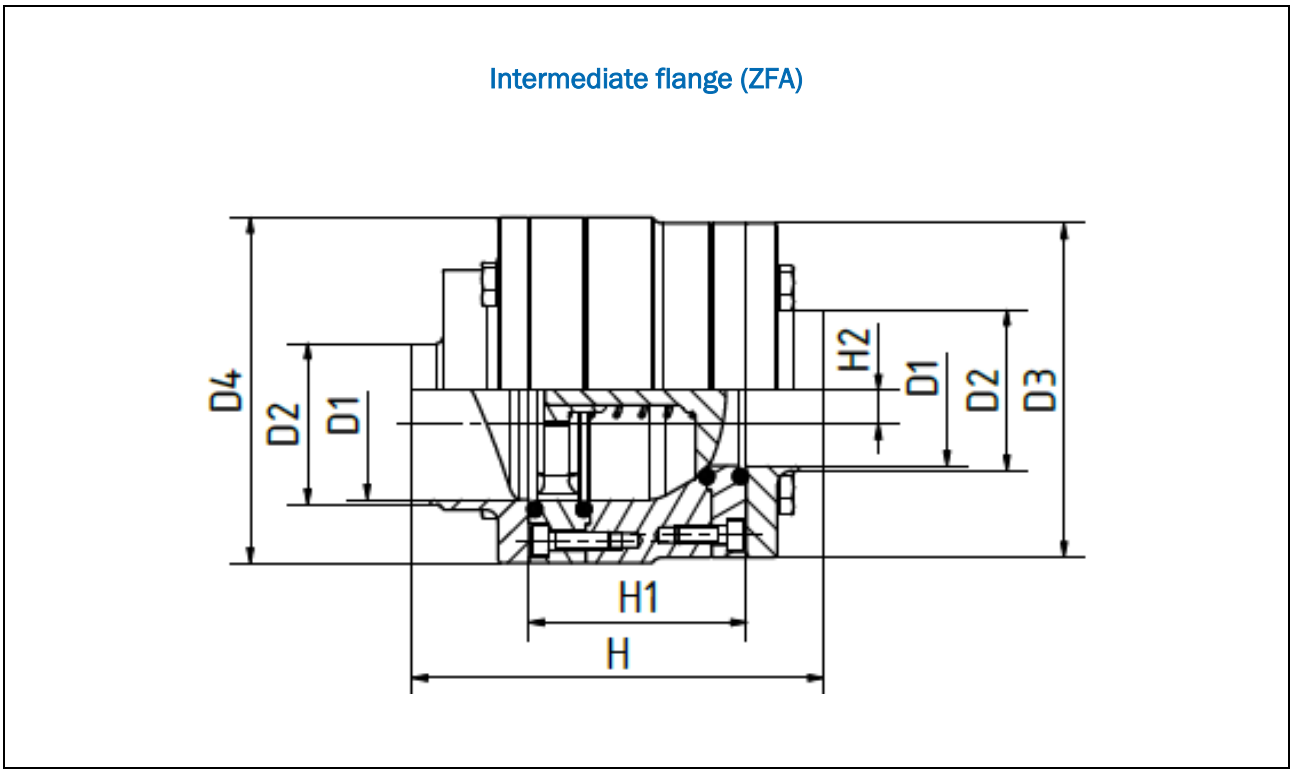


Fig. 4-7: Hyg. eccentric non-return valve, connection variants

DN	D1	D2	D3	D4	H	H1	H2
25	26	29	87	87	110.50	56.5	9.15
40	38	41	97	103	126	63	9.15
50	50	53	110	114	134	71	11.05
65	66	70	127	144	166	81	15.69
80	81	85	142	169	186	94	19.5
100	100	104	162	199	200	96	25

DN/OD	D1	D2	D3	D4	H	H1	H2
1"	22.2	25.4	87	87	115	56.5	11.05
1 1/2"	34.8	38.1	97	103	126	63	10.75
2"	47.6	50.8	110	114	137	71	12.25
2 1/2"	60.3	63.5	127	144	166	81	18.54
3"	72.1	76.1	142	169	196	94	23.95
4"	97.4	101.6	162	199	201	96	26.3

5 Installation

5.1 Scope of Delivery

The detailed scope of delivery can found on the delivery note.

5.2 Transport and Packaging

Products from AWH are carefully checked and packed before shipping. However it is still possible the product may become damaged during transport.

CAUTION

When setting down the packaging, there is a risk of minor injury being caused by crushing.

– *When transporting the packaging, proceed with particular care.*

– *Wear safety shoes and protective gloves.*

5.2.1 Delivery (including spare and replacement parts)

Unpacking

- Remove the protective caps from the pipe connections (if present).
- Remove the packaging remains.

Incoming Goods Inspection

- Check that the product was delivered in complete form against the delivery note.

In the event of damage

- Check the delivery for damage (visual inspection).

In the event of complaints

If the delivery was damaged during transport:

- Contact the last shipping agent immediately.
- Retain the packaging (for possible inspection by the shipment agent or for return delivery).

Packaging for Return Delivery

If possible, use the original packaging and the original packaging material. If neither is available any more, request a packaging company with experts. Consult AWH if you have any questions regarding packaging and transport security.

5.2.2 Temporary Storage

Storage in a closed room

Storage conditions:
- Temperature: +10 °C to +45 °C / +50 °F to +113 °F
- Ambient humidity: < 60 %

Outdoor storage is not permitted.

Sea Freight Packaging

For transport overseas, the non-return valve is wrapped in foil.

5.3 Installation

The fitting is installed in accordance with the structural layout of the pipe system and the technical data for the connection variants (see section 4.3).
See the dimensional drawings for the installation dimensions.
Make sure sufficient space is available for operation and maintenance. Note the correct direction of installation, in accordance with the flow of direction indicated.
Make sure that the pipe unions are leak-tight. Tensile and compression stresses must be ruled out.

The fitting may not be installed or serviced unless the pipelines have been previously drained.

WARNING

Risk of serious injury due to leaking flange connections and pipe unions!
- *The installation of the fitting may only be carried out by an expert.*
- *Make sure that the flange connections and pipe unions are leak-proof.*
- *After installation, tensile and compressive stress must be ruled out.*

Non-Return Valve in ATEX Design

WARNING

Risk of serious injury due to fire/explosion as a result of static charging!
- *The installation of the fitting may only be carried out by an expert.*
- *Make sure that the fitting is earthed accordingly.*

5.3.1 Installing the Non-Return Valve (Clamp/Clamp Connection)

Before assembly, check the seal rings in the clamp supports for damage and to ensure that they are installed in the correct position. Replace if necessary.

5.3.2 Installation of the Non-Return Valve (Weld/Weld Connection)

Welding Guidelines

The welding into pipes is carried out acc. to DIN EN 10357 / DIN 11866 series C or similar.

Welding procedure: TIG or orbital welding

Weld type: Butt weld I-joint acc. to DIN EN 29692

Installed condition

The fitting must be removed before welding (see chapter "6 Disassembly/Assembly").

Weld seam preparation

- Cut the ends of the pipes level and at a right angle.
- Remove burrs from the interfaces.
- Align the housing weld-on ends with the pipe so they are level radially and axially.
  The weld-on ends must fit flush and be welded without a gap.

Filler Materials

Base material	Suitable filler material
1.4301/304	1.4302, 1.4316, 1.4551
1.4404/316L	1.4430, 1.4455, 1.4576
1.4435/316L	1.4430, 1.4440

Welding

- Connect forming gas before welding.
- Affix 3 to 4 tack welds before welding.

Welding Post-Treatment

No treatment is necessary on the interior after welding. The surface of accessible points can be improved by grinding.
The exterior can be treated afterwards by staining, brushing, grinding and polishing.

Cleaning

- Clean all welded parts before assembly.

5.3.3 Installation of the Non-Return Valve (Thread/Weld Connection)

Thread Side

When installing the fitting, ensure that the connection fittings and slotted nut conform to the same standard (for example, DIN 11851 or DIN 11864).

Before assembly, check the seal ring on the male for damage and ensure that it is installed in the correct position. Replace if necessary.

NOTE

The thread must not be damaged during assembly.
The fitting is fastened using the slotted nut and a slotted nut spanner.

Weld-on End

See section "5.3.2 Installation of the Non-Return Valve (Weld/Weld Connection)".

6 Disassembly/Assembly

WARNING

Risk of serious injury due to incorrect disassembly/assembly!

When using media that are hazardous to health, toxic or hazardous in any other way, there is a risk of poisoning or irritation!

- *The work may be performed only by an expert.*
- *Always adhere to the shutdown procedures before all assembly, maintenance and repair work (see section 2.3.3).*
- *Wear work protective clothing, protective gloves and protective goggles when carrying out the work.*
- *If in doubt, contact a specialist company or AWH.*

WARNING

Risk of burns due to hot media!

There is a risk of burning if flow media have temperatures over +60 °C / +140 °F.

- *Let the flow medium cool down prior to work.*
- *Empty the pipelines prior to disassembly work.*
- *Wear work protective clothing, protective gloves and protective goggles when carrying out the work.*

6.1 Disassembly from the system

When disassembling the fitting from the system, proceed as follows (see Fig Fig. 3-1):

- Depressurise the pipe system.
- Drain the pipe system. Note the direction of flow in the fitting.
- Undo the nut on the screw connection and the butterfly screw on the heavy-duty clamp (Item 9), open the housing (Items 1+2).
- ⚠ **CAUTION** When the housing (Item 1) is removed from the pipeline, the spring guide (Item 5) may spring out of its seat together with the spring (Item 7).
- ⚠ **WARNING** When the housing is opened, medium above the valve plate may escape. There is a risk of burning if flow media temperatures are over 60 °C/+140 °F.
- Remove the valve plate (pos. 3) with the O-ring (pos. 4) from the housing (pos. 1).

6.1.1 Disassembly of the Hygienic Non-Return Valve

To remove the hygienic non-return valve, proceed as follows (see Fig. 3-2):

- Depressurise the pipe system.
- Drain the pipe system. Note the direction of flow in the fitting.
- Release the hexagonal bolts (Item 10) and pull the valve body laterally between the outer flanges (Item 9) and out of the system.
- ⚠ **WARNING** Medium located above the valve plate (Item 6) may escape while the housing is being opened. There is a risk of burning if flow media temperatures are over 60°C/+140°F.
- Release the socket-head screws (Item 8) and remove the guide (Item 5).
- ⚠**CAUTION** The spring (Item 11) may spring out of its seat while the guide (Item 5) is being removed.
- Release the socket-head screws (Item 4) and remove the inner flange (Item 2).

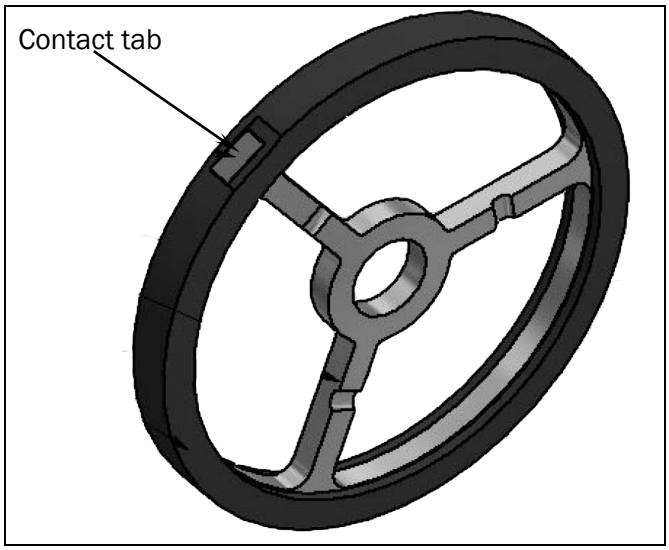
6.2 Assembly with Replacement of the Valve Plate

NOTE

> *Proceed carefully and meticulously to avoid damage.*

For assembly with valve plate replacement, proceed as follows (see Fig. 3-1):

- Check the O-ring (Item 4) in the valve plate (Item 3) for damage.
- When replacing the seal ring, press it diagonally and evenly into the seat.
  Moisten the seal ring with flushing medium to make assembly easier
- Clean the installation space and individual parts and check for any damage.
- Place the valve plate (pos. 3) in the housing (pos. 1). Make sure that the valve plate fits properly in the sealing seat.
- Position the spring (pos. 7) on the valve plate's spigot.
- Complete the spring guide (pos. 5) with the seal ring (pos. 6) and the bushing (pos. 8).
- Slide the spring guide (pos. 5) over the pin of the valve plate (pos. 3) and press this unit flush into the housing sat.



For ATEX design:
NOTE The contact tab at the spring guide (Item 5) absolutely must have contact with the housing.

Fig. 6-1: Installation of spring guide with contact tab

- Slide the housing lid (Item 2) onto the pre-tensioned unit and secure it with the heavy-duty clamp (Item 9).
- Tighten the nut on the screw connection.
- Perform a leak test under operating conditions.

6.2.1 Assembly of the hygienic non-return valve with replacement of gaskets and the valve plate

NOTE

Proceed carefully and meticulously to avoid damage.

The O-rings (Item 3) have a dimension.
The O-ring between the housing (Item 1) and the inner flange (Item 2) is used as the valve seat and to form a seal between the housing and inner flange.

Proceed as follows (see
Fig. 3-2) for installation with replacement of the seals and the valve plate:

- Check the O-rings (Item 7 and Item 3) between the housing (Item 1) and the guide (Item 5) and between the housing (Item 1) and the inner flange (Item 2) for damage.
- Clean the installation space and individual parts and check for any damage.
- Grease the O-ring (Item 3) and place it into the groove in the housing (Item 1).
- Install the inner flange (Item 2) with the socket-head screws (Item 4).
- Rotate the housing (Item 1).
- Place the valve plate (Item 6) in the housing (Item 1).
- Position the spring (Item 11) on the valve plate's spigot (Item 6).
- Grease the O-ring (Item 7) and place it into the groove in the housing (Item 1).
- Install the guide (Item 5) using the socket-head screws (Item 8).

- Grease the two remaining O-rings (Item 3) and place them in the grooves in the guide (Item 5) and the inner flange (Item 2).
- Taking the direction of flow into account, insert the valve body into the system between the two outer flanges (Item 9) and fasten it with the hexagonal bolts (Item 10).

7 Maintenance/Cleaning

NOTE ON EXPLOSION PROTECTION

During maintenance work, care must be taken to ensure that no explosive atmosphere develops.

The national regulations with respect to occupational safety must be observed.

WARNING

Risk of serious injury due to incorrect maintenance!

When using media that are hazardous to health, toxic or hazardous in any other way, there is a risk of poisoning or irritation!

- *The work may be performed only by an expert.*
- *Always adhere to the shutdown procedures before all cleaning, maintenance and repair work (see section 2.3.3).*
- *Wear work protective clothing, protective gloves and protective goggles when carrying out the work.*
- *If in doubt, contact AWH.*

WARNING

Risk of burns due to hot media!

There is a risk of burning if flow media have temperatures over +60 °C / +140 °F.

- *Let the flow medium cool down prior to work.*
- *Empty the pipelines prior to disassembly work.*
- *Wear work protective clothing, protective gloves and protective goggles when carrying out the work.*

CAUTION

Risk of minor injury due to crushing.

There is a risk of crushing between individual components during cleaning, maintenance or repair work as well as by the residual energy of the spring in the non-return valve.

- *Proceed with particular care with this type of work.*
- *Wear protective gloves when carrying out the work.*

7.1 Cleaning/Maintenance Intervals

To ensure proper operation of the fitting, it must be cleaned and maintained at regular intervals.

- Define the cleaning interval depending on the operating environment and the type of flow medium used.
- Define the inspection intervals for gaskets depending on the operating environment and the type of flow medium used.
- The fitting is subject to vibrations during operation, which can loosen the screwed and clamp connections. To prevent damage, check the fitting for loose connections at regular intervals (recommended interval for single-shift operation: 3 months).

Refer to the relevant manufacturer's instructions for details on cleaning and maintenance work for supplier components.

7.2 Notes on cleaning

WARNING

Risk of injury due to incorrect handling of cleaning agents!

- *Store the cleaning agents in accordance with the relevant safety guidelines.*
- *When handling cleaning agents, follow the safety instructions on the cleaning agent manufacturer's data sheet.*
- *Always wear rubber gloves and protective goggles when cleaning.*
- *Take care not to touch the fitting or pipeline when processing hot media or during the sterilisation process.*

To clean the product when installed, simply wash the surfaces that come into contact with the media (CIP cleaning).

Cleaning agents:	3% nitric acid	max. +60 °C / +140 °F
	3% caustic soda	max. +80 °C / +176 °F

Please observe the following:

- Use only clean and chlorine-free water.
- Measure the quantities carefully to avoid overly strong concentrations of cleaning agent.
- Rinse with plenty of clean water after cleaning.

7.3 Spare Parts Stock/Customer Service

When requesting spare parts, the type of fitting must always be specified.

Important for all spare part requests or questions are the following details:

- Nominal width
- Seal material
- Housing material
- Connection type (DIN 11851, DIN 11864, etc.)
- Accessories
- Where applicable, the ATEX marking (ATEX design only)

NOTE

Use only genuine spare parts, since only these will guarantee perfect functioning.

Replacement and accessory parts not supplied by AWH have not been checked or approved by AWH. The installation and/or the use of such products could therefore under certain circumstances result in changes with negative results to the properties of the fitting specified by its design and the higher-level facility. AWH accepts no liability for any damage arising from the use of non-original parts or non-original accessory parts. Standard parts can be obtained from specialist dealers.

Spare parts and the associated spare part numbers can be found in the Spare Parts catalog (available on the Internet page http://www.awh.eu/de/downloads).

Customer Service

For technical questions or spare part requests, you can contact customer service as follows:

Phone	*+49 39405 92-0*
Fax	*+49 39405 92-111*
E-mail	*info@awh.eu*
Internet	*http://www.awh.eu*

8 Faults

8.1 Safety Instructions

WARNING

Risk of serious injury due to incorrectly performed repair work!

When using media that are hazardous to health, toxic or hazardous in any other way, there is a risk of poisoning or irritation!

- *Troubleshooting work should only be carried out by specialist personnel.*
- *Always adhere to the shutdown procedures prior to repair work (see section 2.3.3).*
- *Wear work protective clothing, protective gloves and protective goggles when carrying out the work.*
- *If in doubt, contact AWH.*

WARNING

Risk of burns due to hot media!

There is a risk of burning if flow media have temperatures over +60 °C / +140 °F.

- *Let the flow medium cool down prior to work.*
- *Empty the pipelines prior to disassembly work.*
- *Wear work protective clothing, protective gloves and protective goggles when carrying out the work.*

8.2 Faults and Remedial Action

Malfunction	Cause	Remedy
Non-return valve with double guide		
Non-return valve is leaking	Heavy-duty clamp not fully tightened	Tighten wing nut
	Gasket faulty or missing	Replace gasket
Non-return valve not functioning	O-ring in valve plate is damaged	Replace O-ring
	O-ring not sitting evenly in the valve plate	Press O-ring diagonally into the sealing seat
	Spring forgotten during assembly	Install spring
	Valve disc twisted in housing	Replace bushing for upper guide
Hygienic non-return valve		
Non-return valve is leaking	Screw connections loose	Tighten screws
	Housing O-rings are missing or damaged	Replace O-ring
Non-return valve not functioning	O-ring in valve plate is damaged	Replace O-ring
	Spring forgotten during assembly	Install spring
	Valve disk is sticking	Clean the bore in the guide and shaft of the valve disk

8.3 Conduct in an Emergency

- Activate the emergency stop function on the higher-level system (e.g. by pressing the emergency stop switch).
- Shut off the media supply.

9 Decommissioning/Disposal

WARNING

Risk of serious injury due to incorrect decommissioning/disposal!

There is a risk of intoxication or chemical burns when using harmful or toxic media, or media which is hazardous in any other way!

- *The work may be performed only by an expert.*
- *Always adhere to the shutdown procedures prior to disassembly work.*
- *Wear work protective clothing, protective gloves and protective goggles when carrying out the work.*
- *If in doubt, contact AWH.*

9.1 Shutdown

- Perform the switch-off procedures for the higher-level facility (see section 2.3.3).

9.2 Disassembly

WARNING

Risk of burns due to hot media!

There is a risk of burning if flow media have temperatures over +60 °C / +140 °F.

- *Let the flow medium cool down prior to work.*
- *Empty the pipelines prior to disassembly work.*
- *Wear work protective clothing, protective gloves and protective goggles when carrying out the work.*

9.3 Disposal

CAUTION

Danger of injuries from harmful fluids that are a health hazard

During disposal, there is a risk of injury from contact with harmful fluids.

- *Wear the appropriate personal protective equipment (e.g.e.g. safety goggles, protective gloves).*

NOTE

The fitting is mainly made of stainless steel and should be disposed of in accordance with the applicable local environmental regulations.

Oils and cleaning agents must be disposed of in accordance with local regulations and the information in the cleaning agent manufacturer's safety data sheets.

Contaminated cleaning tools (such as brushes, cloths etc.) must be disposed of in accordance with the manufacturer's specifications.

Packaging material must be disposed of in accordance with the environmental regulations and supplied for recycling.

10 Declarations

Declarations for variants can be found on the following pages:

- Non-return valve with double guide for the valve plate
- Non-Return Valve with Double Guide of the Valve Plate (ATEX)
- Hygienic non-return valve
- Hygienic non-return valve (ATEX)

Declarations for Fittings pursuant to the Pressure Equipment Directive 2014/68/EU

Fittings that come under article 4 section 3 receive no EU Declaration of Conformity and no CE mark pursuant to that directive (see sections 10.1, 10.2, 10.3, 10.4 10.5 and 10.6)

Declarations for Fittings Pursuant to the Directive Relating to Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres 2014/34/EC (ATEX)

Fittings for which an evaluation of the sources of ignition according to DIN EN ISO 80079-36 states that there are no hazards are not given an EU Declaration of Conformity or a CE mark pursuant to said directive. Such fittings are given an “Ex” marking. (See sections 10.1, 10.2 and10.3).

10.1 Non-return valve with double guide for the valve plate

Armaturenwerk Hötensleben GmbH
Schulstraße 5-6
39393 Hötensleben, Germany

Declaration (Translation)

– Declaration pursuant to the EU Pressure Equipment Directive 2014/68/EU

We hereby declare that the design of

Designation: **Non-return valve with double guide for the valve plate**
Type: **DN 10 – DN 100 / PN10**
DN 1/2" – 4" / PN10
SMS 1" – 4", DN 100 / PN10

is consistent with the following directives and standards in its delivered version:

Directive/standard	Title	Version	Comments
2014/68/EU	EU Pressure Equipment Directive	05/2014	
DIN EN 12516-2	Industrial fixtures - Shell design strength – Part 2: Calculation method for pressurized shells of steel fittings	01/2015	
AD 2000 Information sheets	Regulations for pressure vessels (national standards)		
The fittings are designed for fluids in fluid group 1 and for gases in fluid group 2. According to this, the nominal widths are categorized as DN10 – 100, ½" – 4" , 1" – 4" SMS acc. to Article 4, Section 3.			

If any modifications are made to the fitting without our agreement, this declaration is void.

Commissioning is prohibited until it is determined that the overall system fulfils the provisions of the directives. For information about proper use of the fittings, see the operating/installation instructions.

Hötensleben, 21. March 2025

Thomas Erhorn (CEO) a) b)

a) Authorized representative to issue this declaration on behalf of the manufacturer.
b) Authorized representative to compile the technical documentation with identical address of the manufacturer

10.2 Non-return valve with double guide of the valve plate (ATEX)

Armaturenwerk Hötensleben GmbH
Schulstraße 5-6
39393 Hötensleben, Germany

Declaration (Translation)

- Declaration pursuant to the EU Pressure Equipment Directive 2014/68/EU
- Declaration pursuant to the EU Directive relating to Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres 2014/34/EU (ATEX)

We hereby declare that the design of

Designation: **Non-return valve with double guide for the valve plate**

Type: **DN10 – DN100, 1/2" – 4", SMS1" – 4“(DN100) / PN10 / ATEX label: 'ex'**

is consistent with the following directives and standards in its delivered version:

Directive/standard	Title	Version	Comments
2014/68/EU	EU Pressure Equipment Directive	05/2014	
AD 2000 information sheet	Regulations for pressure equipment (national standard)		
The fittings are designed for fluids in fluid group 1 and for gases in fluid group 2. According to this, the nominal widths are categorized as DN10 – 100, ½” – 4” , 1” – 4” SMS acc. to Article 4, Section 3.			
2014/34/EU	EU Directive relating to Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres	02/2014	

Ignition sources were tested according to DIN EN 80079-36. There are no hazards.
If any modifications are made to the fitting without our agreement, this declaration is void.

Commissioning is prohibited until it is determined that the overall system fulfils the provisions of the directives. For information about proper use of the fittings, see the operating/installation instructions.

Hötensleben, 21. March 2025

Thomas Erhorn (CEO) a) b)

a) Authorized representative to issue this declaration on behalf of the manufacturer.
b) Authorized representative to compile the technical documentation with identical address of the manufacturer

10.3 Hygienic non-return valve concentric design

Armaturenwerk Hötensleben GmbH
Schulstraße 5-6
39393 Hötensleben, Germany

Declaration (Translation)

– Declaration pursuant to the EU Pressure Equipment Directive 2014/68/EU

We hereby declare that the design of

Designation: **Hygienic non-return valve concentric design**
Type: **DN 25 – DN 100 / PN10**
DN 1" – 4" / PN10

is consistent with the following directives and standards in its delivered version:

Directive/standard	Title	Version	Comments
2014/68/EU	EU Pressure Equipment Directive	05/2014	
DIN EN 12516-2	Industrial fixtures - Shell design strength – Part 2: Calculation method for pressurized shells of steel fittings	01/2015	
AD 2000 Information sheets	Regulations for pressure vessels (national standards)		
The fittings are designed for fluids in fluid group 1 and for gases in fluid group 2. According to this, the nominal widths are categorized as DN 25 – 100, 1"– 4" acc. to Article 4, Section 3.			

If any modifications are made to the fitting without our agreement, this declaration is void.

Commissioning is prohibited until it is determined that the overall system fulfils the provisions of the directives. For information about proper use of the fittings, see the operating/installation instructions.

Hötensleben, 21. March 2025

Thomas Erhorn (CEO) a) b)

a) Authorized representative to issue this declaration on behalf of the manufacturer.
b) Authorized representative to compile the technical documentation with identical address of the manufacturer

10.4 Hygienic Non-Return Valve, Eccentric Design

Armaturenwerk Hötensleben GmbH
Schulstraße 5-6
39393 Hötensleben, Germany

Declaration (Translation)

– Declaration pursuant to the EU Pressure Equipment Directive 2014/68/EU

We hereby declare that the design of

Designation: **Hygienic non-return valve eccentric design**
Type: **DN 25 – DN 100 / PN10**
DN 1" – 4" / PN10

is consistent with the following directives and standards in its delivered version:

Directive/standard	Title	Version	Comments
2014/68/EU	EU Pressure Equipment Directive	05/2014	
DIN EN 12516-2	Industrial fixtures - Shell design strength – Part 2: Calculation method for pressurized shells of steel fittings	01/2015	
AD 2000 Information sheets	Regulations for pressure vessels (national standards)		
The fittings are designed for fluids in fluid group 1 and for gases in fluid group 2. According to this, the nominal widths are categorized as DN 25 – 100, 1"– 4" acc. to Article 4, Section 3.			

If any modifications are made to the fitting without our agreement, this declaration is void.

Commissioning is prohibited until it is determined that the overall system fulfils the provisions of the directives. For information about proper use of the fittings, see the operating/installation instructions.

Hötensleben, 21. March 2025

Thomas Erhorn (CEO) a) b)

a) Authorized representative to issue this declaration on behalf of the manufacturer.
b) Authorized representative to compile the technical documentation with identical address of the manufacturer

10.5 Hygienic non-return valve concentric design (ATEX)

Armaturenwerk Hötensleben GmbH
Schulstraße 5-6
39393 Hötensleben, Germany

Declaration (Translation)

- Declaration pursuant to the EU Pressure Equipment Directive 2014/68/EU
- Declaration pursuant to the EU Directive relating to Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres 2014/34/EU (ATEX)

We hereby declare that the design of

Designation: **Hygienic non-return valve concentric design**
Type: **DN 25 – DN 100 / PN10 DN 1" – 4" / PN10/ ATEX**

Marking; **"ex"**

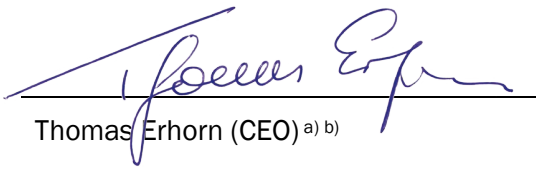
is consistent with the following directives and standards in its delivered version:

Directive/standard	Title	Version	Comments
2014/68/EU	EU Pressure Equipment Directive	05/2014	
DIN EN 12516-2	Industrial fixtures - Shell design strength – Part 2: Calculation method for pressurized shells of steel fittings	01/2015	
AD 2000 Information sheets	Regulations for pressure vessels (national standards)		
The fittings are designed for fluids in fluid group 1 and for gases in fluid group 2. According to this, the nominal widths are categorized as DN 25 – 100, 1"– 4" acc. to Article 4, Section 3.			
2014/34/EU	EU Directive relating to Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres	02/2014	

Ignition sources were tested according to DIN EN 80079-36.
There are no hazards. If any modifications are made to the fitting without our agreement, this declaration is void.
If any modifications are made to the fitting without our agreement, this declaration is void.

Commissioning is prohibited until it is determined that the overall system fulfils the provisions of the directives. For information about proper use of the fittings, see the operating/installation instructions.

Hötensleben, 21. March 2025



Thomas Erhorn (CEO) a) b)

a) Authorized representative to issue this declaration on behalf of the manufacturer.
b) Authorized representative to compile the technical documentation with identical address of the manufacturer

10.6 Hygienic non-return valve eccentric design (ATEX)

Armaturenwerk Hötensleben GmbH

Schulstraße 5-6
39393 Hötensleben, Germany

Declaration (Translation)

- Declaration pursuant to the EU Pressure Equipment Directive 2014/68/EU
- Declaration pursuant to the EU Directive relating to Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres 2014/34/EU (ATEX)

We hereby declare that the design of

Designation: **Hygienic non-return valve eccentric design**
Type: **DN 25 – DN 100 / PN10 DN 1" – 4" / PN10/ ATEX**

Marking; **"ex"**

is consistent with the following directives and standards in its delivered version:

Directive/standard	Title	Version	Comments
2014/68/EU	EU Pressure Equipment Directive	05/2014	
DIN EN 12516-2	Industrial fixtures - Shell design strength – Part 2: Calculation method for pressurized shells of steel fittings	01/2015	
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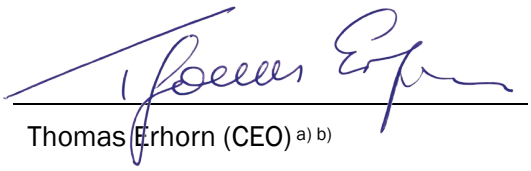
Commissioning is prohibited until it is determined that the overall system fulfils the provisions of the directives. For information about proper use of the fittings, see the operating/installation instructions.

Hötensleben, 21. March 2025



Thomas Erhorn (CEO) a) b)

a) Authorized representative to issue this declaration on behalf of the manufacturer.
b) Authorized representative to compile the technical documentation with identical address of the manufacturer

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