

OPERATING/INSTALLATION INSTRUCTIONS

(Translation)



Sampling valves

Type:

Compact EHEDG

Compact air

Standard ECO

Standard Vario

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NOTE



These operating/installation instructions are part of the sampling valve and must be available to operating and maintenance personnel at all times. The safety precautions contained therein must be observed.

If the sampling valve is sold on, the operating/installation instructions 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 acceptable to the manufacturer of the machinery in which the partly completed machinery will be installed, or to his authorized representative. If any discrepancies arise in the translated text, the original operating instructions (German) must be consulted for clarification, or the manufacturer must be contacted.

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1 Introduction

These operating / installation instructions (hereinafter called “manual”) provide you with all the information you need for fault-free operation of the sampling valve (hereinafter also called “fitting”).

The manual applies to the following variants

- Compact EHEDG,
- Compact air
- Standard ECO and
- Standard Vario.

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

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 listed safety instructions.

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 this manual, generally valid, statutory and other binding regulations in regard of accident prevention and in regard of 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. Download the instructions, if necessary, 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:



DANGER

This warning notice 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.



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**

The following means of presentation are also used:

- Texts which follow this mark are bulleted lists.
- Texts following this mark describe activities that need to be carried out in the specified order.
- “ ” Texts in quotation marks are references to other chapters or sections.

Symbols Used



Crushing hazards are indicated by this symbol.



Burn hazards are indicated by this symbol.



“Observe manual” is indicated by this symbol.



Environmental measures are indicated by this symbol.



Warning about substances which are a water hazard is indicated by this symbol.

1.2 Abbreviations

AWH	Armaturenwerk Hötensleben GmbH
BetrSichV	Betriebssicherheitsverordnung (German industrial safety ordinance); ordinance concerning health and safety when using work equipment; German implementation of Directive 2009/104/EC of the European Parliament concerning the minimum safety and health requirements for the use of work equipment by workers at work
CIP	Cleaning in place
D	Diameter
DIN	Deutsches Institut für Normung e.V.; is a national standards organization in the Federal Republic of Germany; The standards of this organization are referred to as DIN standards.
DN	Nominal width
EHEDG	European Hygienic Engineering & Design Group
EN	European Standard
EPDM	Ethylene propylene diene monomer rubber (sealing material)
EWG	European Economic Community
EWR	European Economic Area
G	Thread identifier for cylindrical Whitworth pipe threads
Item	Item number
L	Length
max.	maximum
PN	Nominal pressure



PTFE	Polytetrafluoroethylene (sealing material)
Ra	Average roughness value (dimension for the surface roughness)
SIP	Sterilization in Place
WIG	Welding process with tungsten electrode and inert gas

1.3 Guarantee, Warranty and Liability

Guarantee

If the fitting is used as intended, a guarantee is provided according to the statutory warranty obligation. This does not apply to wear parts.

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 terms of delivery of Armaturenwerk Hötensleben GmbH (hereinafter referred to as AWH), and the statutory regulations valid at the time the contract was concluded shall apply.

Warranty and liability claims in 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 Armaturenwerk Hötensleben GmbH. In case of infringement, the fitting will lose its EC conformity and the operating license.),
- Use of spare parts that do not comply with the specified technical requirements,
- Improperly performed repairs,
- Disasters, the effects of foreign objects and force majeure.

Disclaimer

AWH reserves the right to make alterations to this document at any time and without prior notice. AWH provides no guarantee (neither expressed 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 built 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 basic safety instructions are intended to prevent injury to personnel and material damage. The operating company 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 assembly, 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 this manual, incorrectly performed installation and repair work or incorrect operation could lead to malfunctions on 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 instruction(s),*
 - *the warning 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 figures in this manual are intended to provide basic understanding, and are primarily representations of the principles involved. They may differ from the actual design of the fitting.



2.1 Intended Use



WARNING

Improper use presents 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 such use. The operating company is solely responsible for the risk. The fitting may only be commissioned once it is certain that all the safety systems are fully functioning, and the facility in which the fitting is installed meets the safety requirements of all relevant EC directives.

NOTE

*The fitting may be installed only 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 “2.6 Qualification Requirements for Personnel”).*

Sampling valves have been designed and built for taking fluid samples 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.

All valve types can be actuated manually.

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

2.2 Labeling the Fitting

The information in these operating instructions only applies to the sampling valve of the type and version specified on the title page.

If you have any queries, specify the following correctly

- the housing material and the sealing material,
- the connection types,
- the accessory parts.

2.3 Danger Warnings

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

2.3.1 Dangers



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 medium 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 work on the fitting (see section “2.7 Personal Protective Equipment”).*

NOTE

Risk of damage to the fitting!

- The fitting, length and quality of the lines must meet the requirements.*
- Assembly is to be carried out by **specialist personnel**.*
- Make sure that only the media specified in the manual are used.*
- The parameters listed in the manual must always be complied with (see chapter “4 Technical Data”).*

2.3.2 Hazardous Area of the Fitting

The area around the fitting shall be kept accessible to the operator.

The hazardous area during setup, maintenance and repair work extends to 1 m around the fitting. Take into consideration the swing range of any switch cabinet doors that can open. The operator shall ensure that persons are prevented from entering the hazard area during motion sequences.

2.3.3 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 structural properties of your 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.

2.3.4 Switch-off Procedure



WARNING

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

Escaping compressed air or flow media at high pressure poses a risk of serious eye or skin injuries.

*It is imperative that the following **switch-off procedure** is observed before cleaning, maintenance or repair work is carried out (by **specialist personnel** only).*

- Disconnect the higher-level plant/machine from the power supply.
- Shut off the pneumatic system:
 - Close the shut-off valve.
 - Check that the plant is depressurized.
 - Secure the shut-off valve to prevent it from being reopened.
- Shut off the media supply:
 - Relieve the pressure in the pipelines.
 - Once this is done, drain the pipelines (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 over +60 °C/+140 °F.

2.4 Duties of the Operating Company

The fitting is used in the commercial sector. The operating company is thus subject to the legal obligations regarding occupational safety.

In the EEA (European Economic Area), the national implementations of the framework directive (89/391/EEC) on carrying out measures for improving safety and protecting the health of employees during work, as well as the associated individual directives on the minimum specifications for safety and health protection of employees using work equipment, shall be observed and complied with in their currently valid versions.

As a basic rule, the operating company in Germany must observe the Industrial Safety Ordinance (BetrSichV).

In other countries, the respective national guidelines, statutes and country-specific regulations regarding occupational safety and accident prevention must be complied with. At the same time, the following, non-exhaustive instructions apply in particular:

- The owner/operating company must ensure that the fitting is used only as intended (see section “2.1 Intended Use”).
- The owner/operating company must keep itself informed of locally applicable industrial safety regulations, and - in addition - use a risk assessment to determine the hazards resulting from the specific working conditions at the place of use of the fitting. This must then be implemented in the form of operating instructions for the operation of the fitting.
- When using hazardous materials, protective measures must be specified in accordance with the safety data sheets and operating instructions shall be compiled for hazardous materials. Personnel

must be briefed accordingly.

This also applies to hazardous substances that may arise during work processes.

- A continuous risk assessment must be carried out for workplaces, including temperature conditions for the medium and the place of use (falling). The measures must be recorded in operating instructions, and personnel must be instructed accordingly.
- Supervisors must monitor compliance with the measures specified in the operating instructions.
- Throughout the entire operating period of the fitting, the owner/operating company must check whether the operating instructions that they have compiled actually correspond to the current status of the regulations, and adjust the instructions if necessary.
- The operating company must clearly regulate and specify the responsibilities of personnel (e.g. for operation, maintenance and cleaning).
- The owner/operating company must allow only sufficiently qualified and authorized personnel to work on the fitting.
- The owner/operating company must ensure that all employees handling the fitting have read and understood the manual.
Furthermore, it must provide personnel with training at regular intervals with certification and inform them of the hazards.
- The owner/operating company must provide sufficient workplace lighting at the higher-level facility in accordance with the locally applicable regulations for occupational health and safety in order to prevent hazards occurring as a result of poor lighting.
- The owner/operating company must provide personnel with personal protective equipment and make sure that this is used (see section “2.7 Personal Protective Equipment”).
- The owner/operating company must make sure that no person works on the fitting whose ability to respond is impaired through drugs, alcohol, medication or similar.
- The owner/operating company must use appropriate measures to inform groups of persons who are not planned for direct contact with the fitting (e.g. visitor groups) about the potential dangers involved.
- The owner/operating company is obliged to operate the fitting in perfect condition at all times.
- Wherever high pneumatic pressures occur, there is a possibility of sudden failure of or damage to the lines and connections. This poses a hazard. The operating company must instruct operating and maintenance personnel at least once a year on the possible hazards.
- The constructor of the overall plant must install the switching and safety devices required for setting up, inspection, shutting down (including emergency shutdown), operating, maintenance, cleaning and repair, and provide proof of their installation.
- The operating company must provide fire safety devices, e.g. the appropriate quantity of suitable hand-held fire extinguishers of the appropriate size, in easily accessible places and provide employees with training in fire safety.
- Warnings in the documentation for externally supplied assembly groups must be adhered to and incorporated into the risk assessments for the specific workplace.
- Before operating the machine with the fitting, the owner/operating company shall ensure that the local specifications were followed during assembly and commissioning, if these were carried out by the owner/operating company.

NOTE



Due to deviating operating conditions at the operating company's site, additional safety measures may be required. In such cases, these measures must be added to the original safety measures by the operating company.

2.5 Safety Measures (to Be Implemented by Owner/Operating Company)

- The owner/operating company must ensure that unauthorized persons (not operating or maintenance personnel) are prevented from entering the hazardous area of the system in which the fitting is installed.
- The owner/operating company must empty the pipelines prior to assembly and maintenance work on the fitting.
- The disconnection of energy sources from the system shall be designed technically by the owner/operating company so as to enable compliance with the shutdown procedures described in section 2.3.4.
- This manual must be retained for future reference.
It must be available in the vicinity of the higher-level facility in which the fitting is installed.
- The operating company must define and adhere to the intervals for inspections and control measures in accordance with the environment and media used.
- The work described in the Installation/Removal, Maintenance, Malfunctions and Decommissioning/Disposal chapters must only be carried out by experts.

2.6 Qualification Requirements for Personnel

The fitting must be operated, maintained and repaired only by persons who have the appropriate qualifications. These persons must be familiar with this manual and act in accordance with them. The respective authorizations for 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 apprenticeship and experience who is in a position to identify risks and avoid dangers.

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.

Only personnel with the following specific knowledge may be employed for work on the fitting:

- **Assembly/disassembly:** Industrial mechanic or similar training, practical experience in the assembly/disassembly of fittings
- **Welding work:** Welder qualification in pipeline engineering or similar apprenticeship
- **Electrical work:** Electrician; person with appropriate specialized training, knowledge and experience, enabling them to identify and prevent risks which may be caused by electricity.

2.7 Personal Protective Equipment

In order to minimize health risks, personal protective equipment must be worn when working on the fitting.



Protective work clothing

Protective work clothing is tight-fitting work clothing with low resistance to tearing, with close-fitting sleeves and without protruding parts. It is mainly used for protection against becoming entangled in moving components.

Do not wear any rings, necklaces or other jewelry.



Safety shoes

Wear slip-resistant safety shoes for protection from heavy, falling objects and to prevent slipping on slippery surfaces.



Protective gloves

Wear protective gloves to protect your hands against friction, grazes, punctures or deeper injuries and against coming into contact with hot surfaces or chemical substances.



Protective goggles

Wear protective goggles for protection against media escaping at high pressure and against flying objects.



Hardhat

Wear a hardhat for protection against falling or flying objects.



Welding hood

Wear a welding hood for protection from damage to the eyes or skin due to the welding arc, and from burns caused by flying particles during welding.

Personal protective equipment must be provided by the operating company in accordance with the valid requirements.

Furthermore, both the national regulations and, if necessary, the internal instructions from the operating company, must be observed.

3 Overview and Function

3.1 Compact EHEDG

3.1.1 Overview/Structure

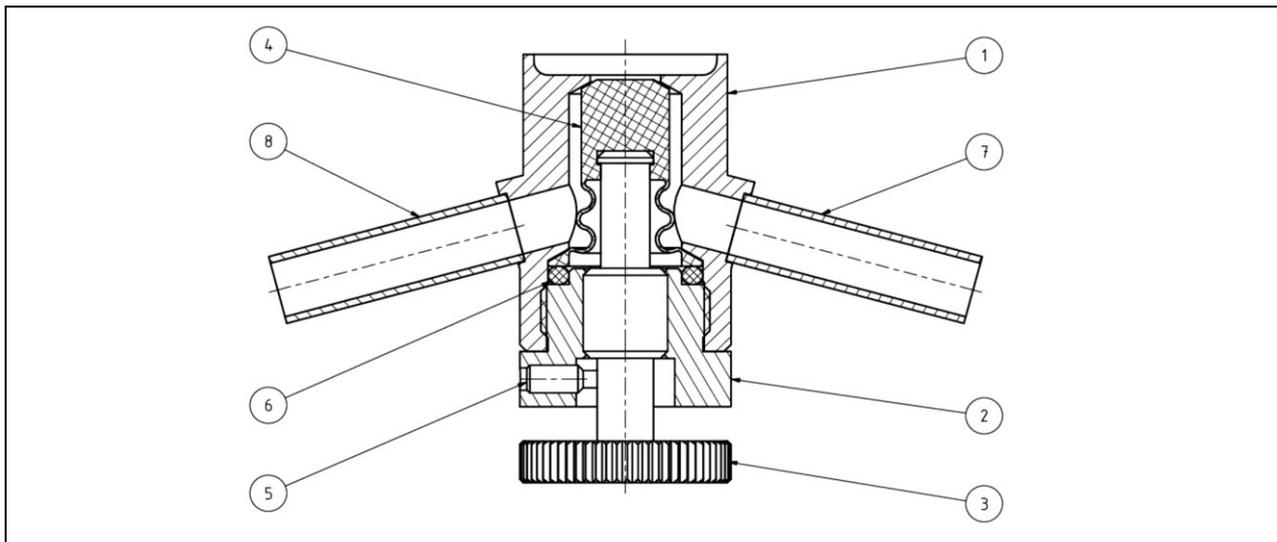


Fig. 3-1: Overview Compact EHEDG

- | | |
|---------------------|---------------------------------|
| 1 Housing | 5 Set screw |
| 2 Spindle guide | 6 O-ring |
| 3 Diaphragm spindle | 7 Outlet nozzle |
| 4 Diaphragm seal | 8 Rinsing connection (optional) |

3.1.2 Function

Actuating the Valve

The valve is opened by turning the knurled handle of the spindle (Fig. 3-1, item 3) counterclockwise. During this process, the diaphragm spindle (Fig. 3-1, item 3) and diaphragm seal (Fig. 3-1, item 4) are lifted and the fluid can flow into the valve housing (Fig. 3-1, item 1) and be removed via the outlet nozzle (Fig. 3-1, item 7). Normal CIP cleaning can be performed in the “open” position. The diaphragm seal is a bellows that prevents the medium from contacting the spindle.

Closing the Valve

When actuated in the opposite way, the spindle pushes the diaphragm seal into the valve seat of the housing and closes the valve. When a valve with the optional rinsing connection (Fig. 3-1, item 8) is closed, CIP or SIP can be performed after every sampling without draining the system.

3.2 Compact air

3.2.1 Overview/Structure

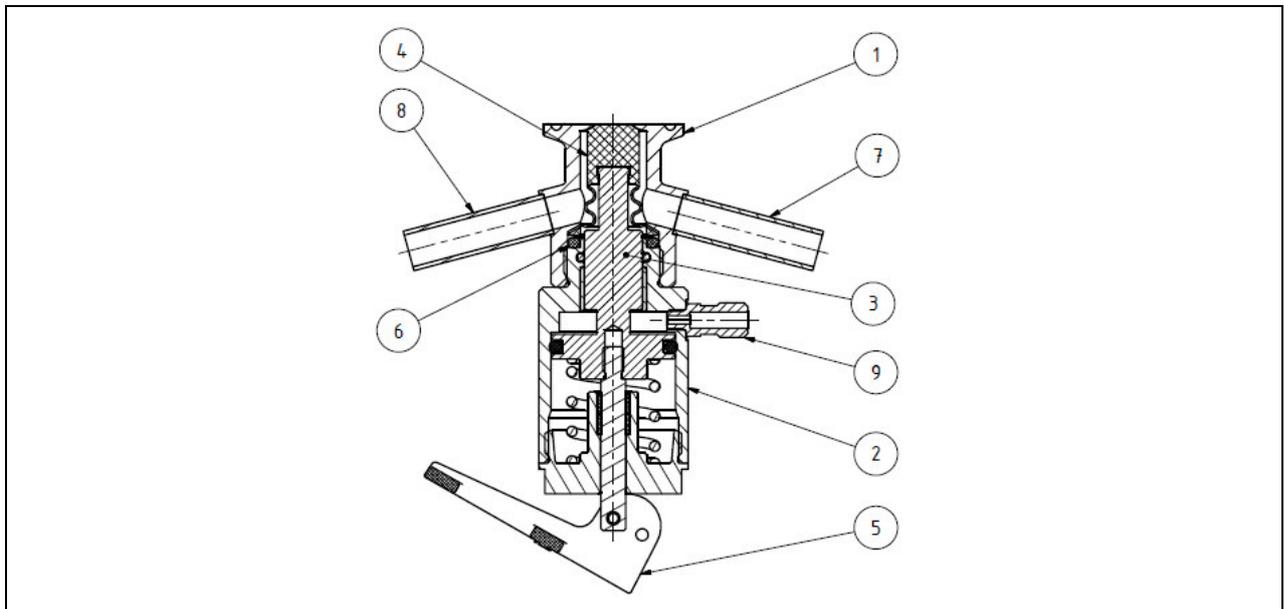


Fig. 3-2: Overview of PNV Compact air

- | | |
|-------------------------------|---------------------------------|
| 1 Housing | 6 O-ring |
| 2 Pneumatic cylinder | 7 Outlet nozzle |
| 3 Piston with diaphragm chuck | 8 Rinsing connection (optional) |
| 4 Diaphragm seal | 9 Air Connection |
| 5 Lever for manual operation | |

3.2.2 Function

This is used mainly in automated systems.

Due to its construction and design, the sampling valve can be used in AWH-Connect tank connections DN10.

NOTE

A conversion from “compact EHEDG” to “compact air” design is not possible due to the different valve seat geometry!

Actuating the Valve

The valve is actuated manually via a pneumatic cylinder. If there is control air pressure at the air connection (Fig. 3-2, item 9) the piston with the diaphragm check (Fig. 3-2, item 3) and the diaphragm seal (Fig. 3-2, item 4) are lifted and the fluid can flow into the housing (Fig. 3-2, item 1) and be removed via the outlet nozzle (Fig. 3-2, item 7). Normal CIP cleaning can be performed in the “open” position. The diaphragm seal is a bellows that prevents the medium from contacting the piston with the diaphragm chuck (Fig. 3-2, Pos. 3).



The valve can also be opened manually using the lever.

Closing the Valve

If the compressed air is interrupted, the spring tension pushes the diaphragm seal into the valve seat of the housing and closes the valve. When a valve with the optional rinsing connection (Fig. 3-2, item 8) is closed, CIP or SIP can be performed after every sampling without draining the system.

During manual operation, the valve closes by spring tension as soon as you release the lever (Fig. 3-2, item 5).

3.3 Standard ECO

3.3.1 Overview/Structure

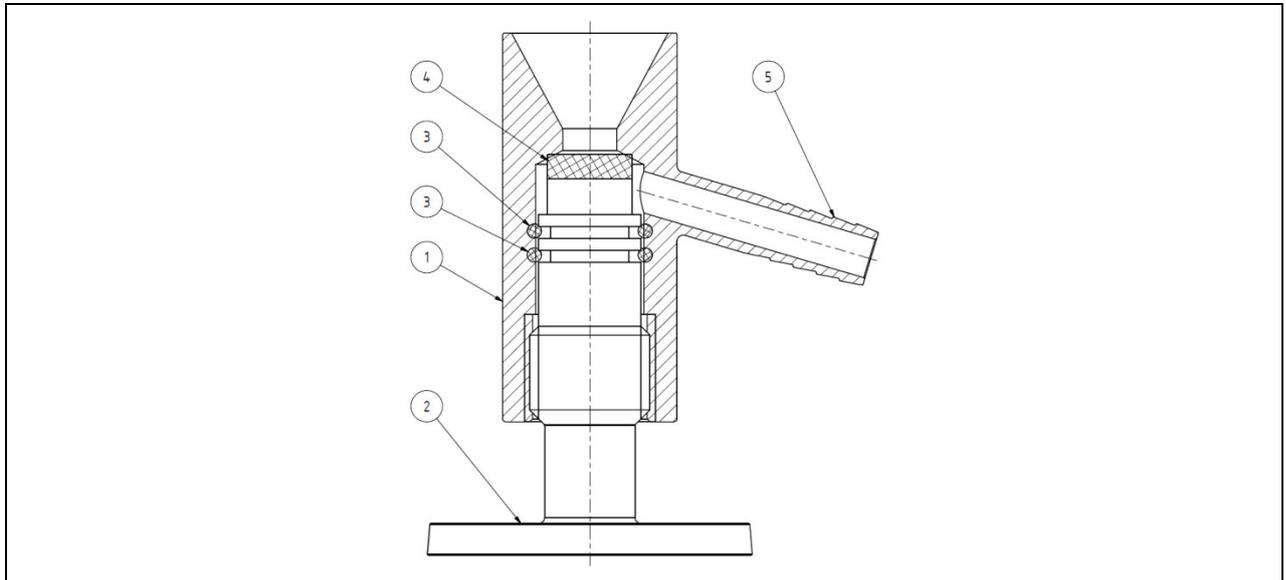


Fig. 3-3: Overview of Standard ECO

- | | |
|-----------------|-----------------|
| 1 Housing | 4 PTFE gasket |
| 2 Spindle guide | 5 Outlet nozzle |
| 3 O-ring | |

3.3.2 Function

Actuating the Valve

The valve is opened by turning the spindle guide (Fig. 3-3, item 2) counterclockwise. During this process, the spindle (Fig. 3-3, item 2) with the PTFE gasket (Fig. 3-3, item 4) are lifted and the fluid can flow into the valve housing (Fig. 3-3, item 1) and be removed via the outlet nozzle (Fig. 3-3, item 5). Normal CIP cleaning can be performed in the “open” position.

NOTE

The handwheel with the spindle must not be screwed completely out of the valve! The ECO version does not have an end-stop and may only be opened to a maximum of 3 turns.

3.4 Standard Vario

3.4.1 Overview/Structure

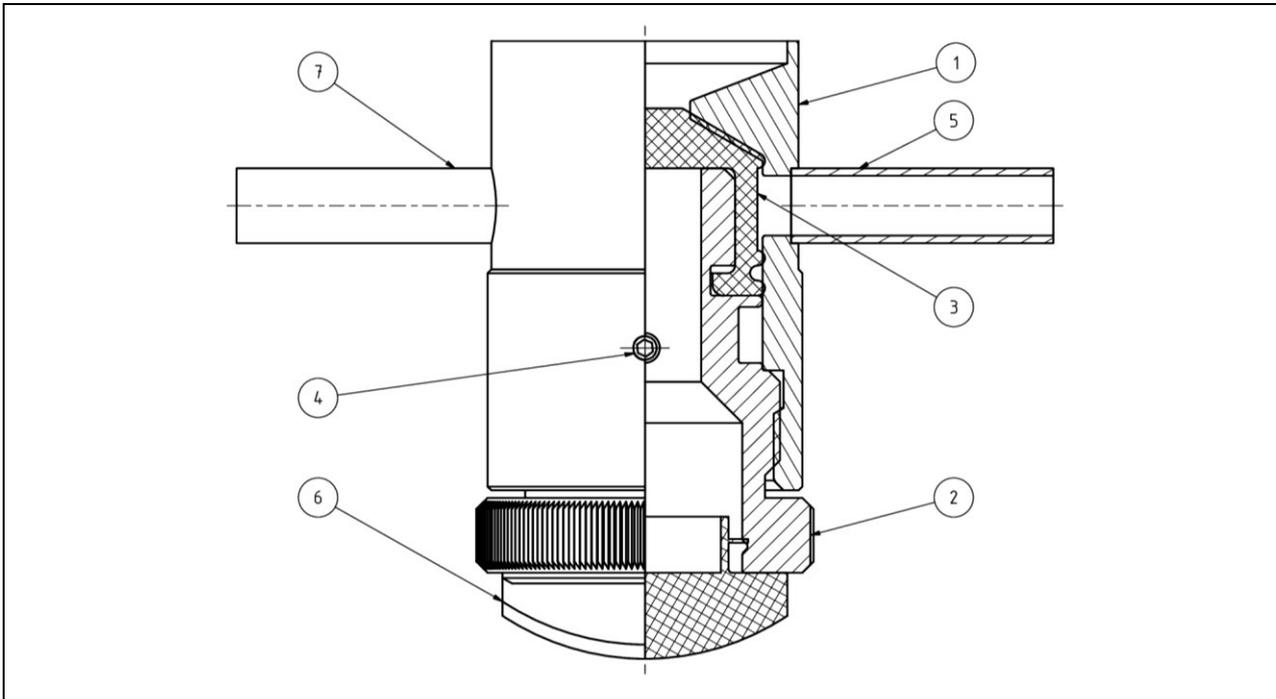


Fig. 3-4: Overview of Standard Vario

- | | |
|------------------|---------------------------------|
| 1 Housing | 5 Outlet nozzle |
| 2 Knurled screw | 6 Blanking plug |
| 3 Diaphragm seal | 7 Rinsing connection (optional) |
| 4 Set screw | |

3.4.2 Function

Actuating the Valve

The valve is opened by turning the knurled screw (Fig. 3-4, item 2) counterclockwise. During this process, the knurled screw and diaphragm seal (Fig. 3-4, item 2 + 3) are lifted and the fluid can flow into the valve housing (Fig. 3-4, item 1) and be removed via the outlet nozzle (Fig. 3-4, item 5). Normal CIP cleaning can be performed in the “open” position.

Diaphragm puncture is another possible sampling method. This allows removal of a sample using a hypodermic needle without opening the valve. The diaphragm closes automatically after the hypodermic needle is removed.

NOTE

Diaphragm puncturing can only be repeated a maximum of 20 times. The gasket should then be replaced after this.

We recommend using a 20 ml syringe and a hypodermic needle diameter of 1.2 mm. Suitable hypodermic needles can be found in the AWH Valve technology catalog, at <http://www.awh.eu>

When a valve with the optional rinsing connection (Fig. 3-4, item7) is closed, CIP or SIP can be performed after every sampling without draining the system.



4 Technical Data

4.1 General Data



The area of application for the fitting must always be adjusted to the corresponding operating conditions and the materials that come into contact with the product.

The maximum continuous temperature is dependent on the media.

Ambient temperature range:

Lower limit temperature:	+5 °C / +41 °F
Upper limit temperature:	+60 °C / +140 °F

Noise level: < 70 dB (A)

Max. permissible operating pressure:

Compact EHEDG	10 bar/145 psi
Compact air	8 bar/116 psi
Standard ECO	10 bar/145 psi
Standard Vario	4 bar/58 psi
– For sampling with a hypodermic needle	2 bar/29 psi

Compressed air connection: min.: 5 bar/73 psi
max.: 10 bar/145 psi

Hose connection for hose DA = 4 mm, DI = 2 mm

Max. permissible operating temperature: +80 °C / +176 °F
(depends on the sealing material and medium)

Auxiliary Materials

To assist installation and protect the O-rings against damage we recommend using the following grease approved for foodstuffs: BERULUB SIHAF 1.

Screw locking: LOCTITE 243

Installation Position

The valve should be installed so that the outlet nozzle is facing downward.

4.2 Materials in Contact with the Product

Housing:

(See Fig. 3-1, Fig. 3-2., Fig. 3-3, and Fig. 3-4) 1.4301 / 1.4307 / 1.4404 / 1.4435 / 304 / 304L / 316L

Gasket:

Compact EHEDG, air	PTFE
Standard ECO	PTFE, EPDM
Standard Vario	FKM, Silicone, EPDM

Surfaces

Exterior surface:	Bare metal/polished/matt
Inner surfaces in contact with the product:	Ra < 0.8 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.

A guarantee cannot be provided for gaskets. We recommend replacing the gaskets after 6 months.

4.3 Connection Variants, Dimensions



The various connection dimensions for the fitting are listed below. The dimensions in the table are in mm, except for the thread dimensions, which are in inches, e.g. G 1/2".

You can find the order information on the product pages of the current AWH valve technology catalog, at <http://www.awh.eu> or you can request it directly from AWH. Note the different design types. The product identification numbers in the catalog and in the manual must be identical.

4.3.1 Connection variants Compact EHEDG

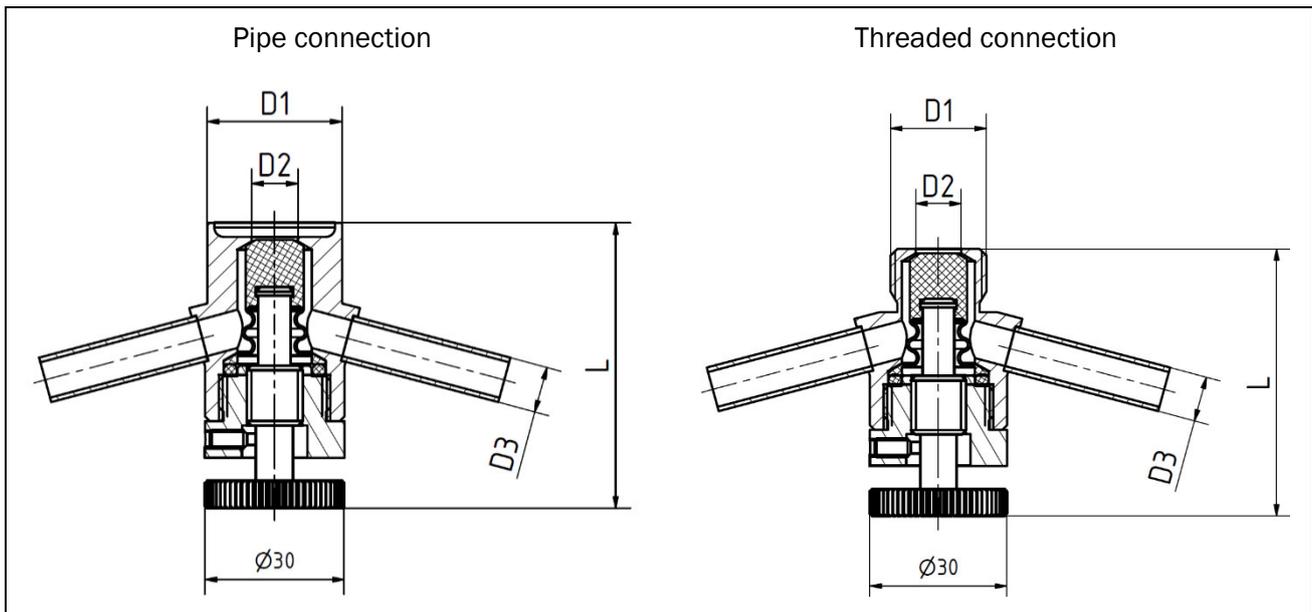


Fig. 4-1: Pipe connection variants, thread for compact EHEDG

Pipe connection				Threaded connection			
D1	D2	D3	L	D1	D2	D3	L
29 x 1.5	10	10 x 1	62	G 1/2"	10	10 x 1	59

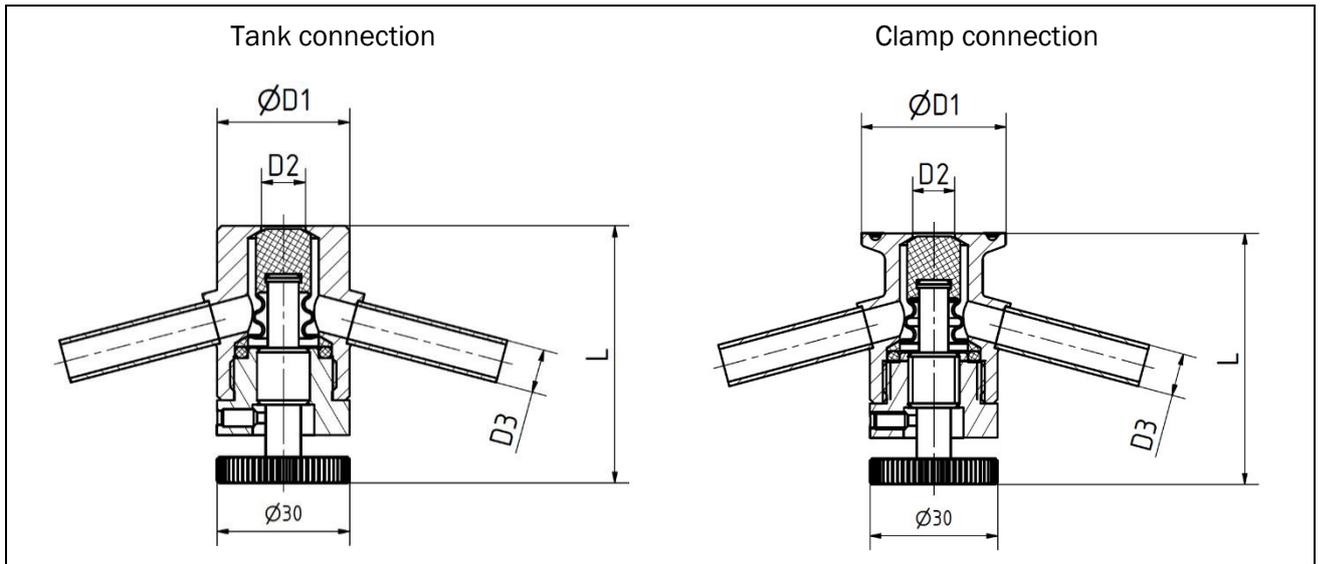


Fig. 4-2: Tank connection variants, clamp for compact EHEDG

Tank connection				Clamp connection			
D1	D2	D3	L	D1	D2	D3	L
30	10	10 x 1	59	34	10	10 x 1	62

4.3.2 Connection variant Compact air

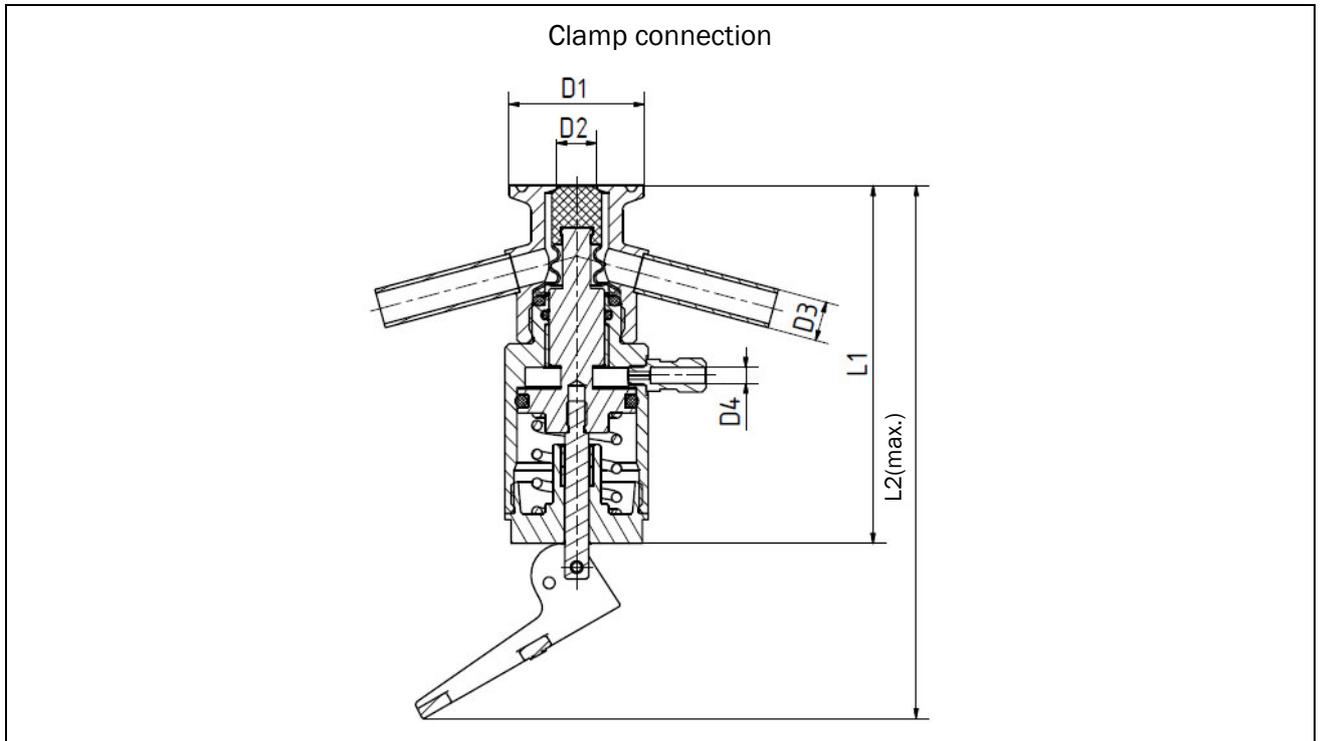


Fig. 4-3: Connection variant clamp for PNV compact air

Pneumatic/clamp connections					
D1	D2	D3	D4	L1	L2
34	10	10 x 1	4	60.5	150

4.3.3 Standard ECO Connection Variants

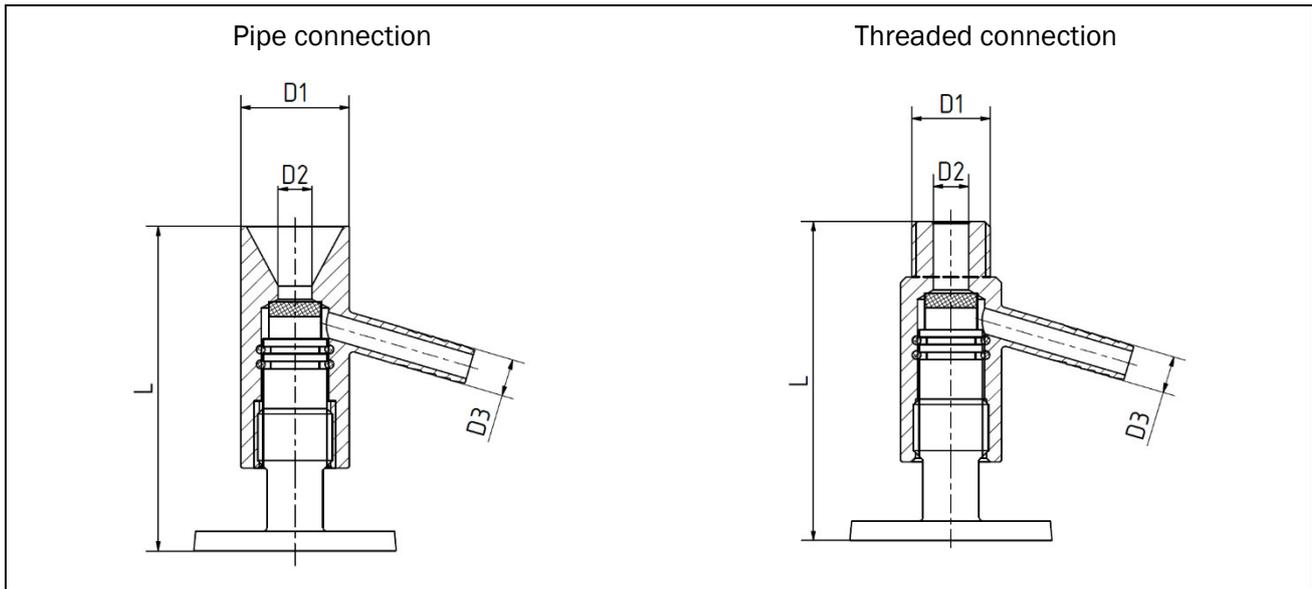


Fig. 4-4: Pipe connection variants, thread for Standard ECO

Pipe connection				Threaded connection			
D1	D2	D3	L	D1	D2	D3	L
29	9.5	10 x 1	87.5	G 1/2"	9.5	10 x 1	87.5

4.3.4 Standard Vario Connection Variants

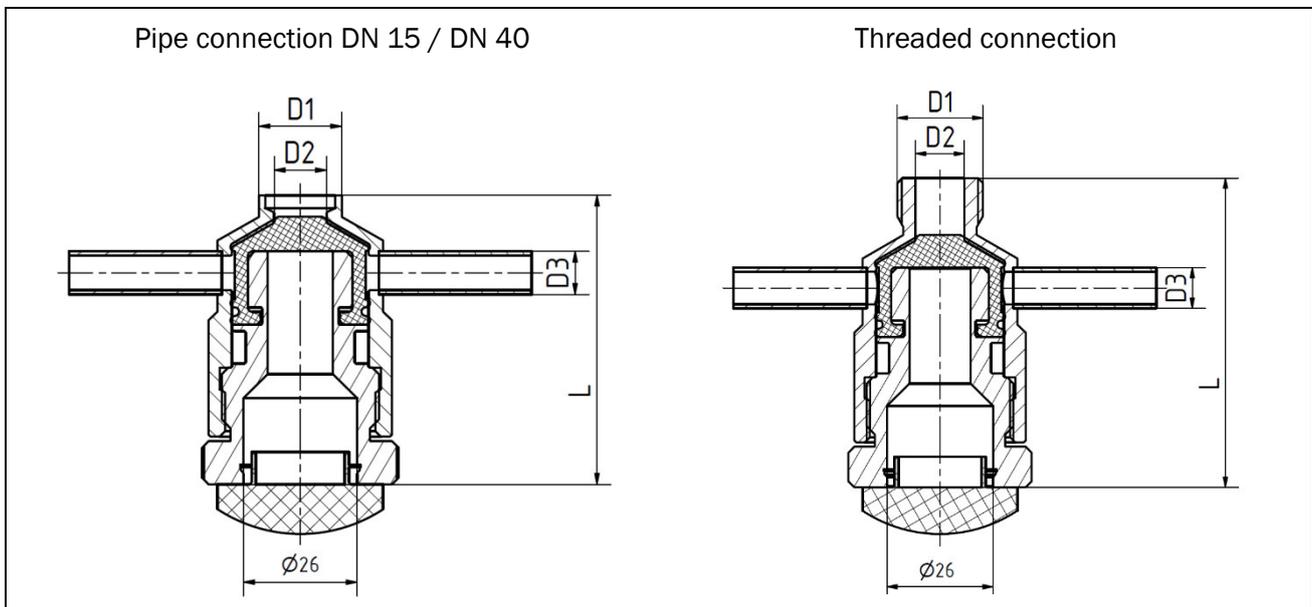


Fig. 4-5: Pipe connection variants, thread for Standard Vario

Pipe connection				Threaded connection			
D1	D2	D3	L	D1	D2	D3	L
19 x 1.5	12	10 x 1	67	G 1/2"	12	10 x 1	76
41 x 1.5	12	10 x 1	71				

5 Installation

5.1 Scope of Delivery



The detailed scope of delivery can also be found in the order confirmation.

5.2 Transport and Packaging

AWH products are carefully checked and packed before shipping. However, it is still possible for the product to become damaged during transport.



CAUTION



When setting down the packaging, there is a risk of minor injury due to crushing.

- When transporting the packaging, proceed with particular care.
- Wear safety shoes and protective gloves (see section “2.7 Personal Protective Equipment”).

5.2.1 Delivery (Including for Spare and Replacement Parts)

Incoming Goods Inspection

- Check the product against the delivery note to ensure that it has been delivered in complete form.
- Check for visible damage to the packaging.

Unpacking

- Remove the protective caps from the pipe connections (where applicable).
- Remove the remaining packaging.

Damage

- Check the delivery for damage (visual inspection).

Complaints

If the delivery has been damaged during transport:

- Contact the last shipping agent immediately.
- Retain the packaging (for possible inspection by the shipping 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 specialist personnel. Consult AWH if you have any questions regarding packaging and transport safety.

5.2.2 Temporary Storage

Storage in a closed room

Storage conditions:



- Temperature: +10 °C – +45 °C / +50 °F – +113 °F
- Humidity: < 60%

5.3 Installation



WARNING

Risk of serious injury due to leaking flange connections and pipe connections!

- *The fitting may be installed only by an **expert**.*
- *Make sure that the flange connections and pipe connections do not have any leaks.*
- *After installation, tensile and compressive stress must be ruled out.*

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 (1 m around the fitting).

5.3.1 Installation of the Sampling Valve on the Container / in the Pipeline

Welding Instructions

Welding in is carried out in pipes acc. to DIN 10357 or containers.

Welding method: TIG or orbital welding

Seam type: Butt weld joint according to DIN EN 29692

Installed Condition



The valve must be disassembled before welding (see chapter “6 Disassembly/Assembly”).

Welded Seam Preparation



The weld-on ends must fit flush and be welded without a gap.

- Cut the ends of the pipes level and right-angled.
- Remove burrs from the interfaces.
- Align the housing weld-on ends with the pipeline so they are level radially and axially.
- When welding the fitting onto a container or pipe without an appropriate collar, ensure that the product or CIP fluid drains completely.

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 weld-ons before welding.

Welding Post-Treatment

No treatment is necessary on the interior after welding.

Accessible points can be improved by grinding.

Finishing can be applied to the exterior afterwards by staining, brushing, grinding and polishing.

Cleaning

- Clean all welded parts before assembly.

6 Disassembly/Assembly



WARNING

Risk of serious injury due to incorrect disassembly/assembly!

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

- The work may be performed only by an **expert**.
- Always adhere to the shutdown procedures before all assembly, maintenance and repair work (see section 2.3.4).
- Wear protective work clothing, protective gloves and protective goggles when carrying out the work (see section “2.7 Personal Protective Equipment”).
- 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 has temperatures over +60 °C/+140 °F.

- Let the flow medium cool down prior to work.
- Empty the pipelines prior to assembly or disassembly work.



NOTE

Risk of damage to the fitting during disassembly/assembly

- The work may be performed only by an **expert**.
- Proceed carefully and meticulously.
- Do not use sharp-edged objects.
- Use a soft underlay during assembly to avoid damaging the gasket.

6.1 Compact EHEDG

6.1.1 Disassembly for Replacement of the Diaphragm Seal

- Perform the switch-off procedure (see section 2.3.4).
- Unscrew the spindle guide (Fig. 3-1, item 2) from the housing.
- Remove the set screw (Fig. 3-1, item 5).
- Screw the spindle out of the spindle guide.
The diaphragm seal is simultaneously pushed off (Fig. 3-1, item 4).
NOTE: The diaphragm seal cannot be installed more than once.
- Remove the O-ring (Fig. 3-1, item 6).

6.1.2 Assembly with Gasket Replacement

- Check the new diaphragm seal (Fig. 3-1, item 4) for damage.
- Check the O-ring (Fig. 3-1, item 6) for damage.
- Clean the installation space.
- Perform a general check for any damage.
- Screw the greased spindle (Fig. 3-1, item 3) into the spindle guide as far as it will go (Fig. 3-1, item 2).
- Place the O-ring (Fig. 3-1, item 6) on the spindle guide (Fig. 3-1, item 2).
- Place the diaphragm seal on the spindle.
- Press the diaphragm seal onto the spindle using a vice. The gasket is pressed into the housing during assembly.
- Screw the set screw (Fig. 3-1, item 5) far enough into the spindle guide so that the spindle (Fig. 3-1, item 3) can still move freely. Use a medium-strength thread-locking fluid for this (e.g., Loctite 243).
- Screw the entire assembly group into the housing (Fig. 3-1, item 1). Use a medium-strength thread-locking fluid for this (e.g., Loctite 243).
- Perform a leak test under operating conditions.

6.2 Compact air

6.2.1 Structure

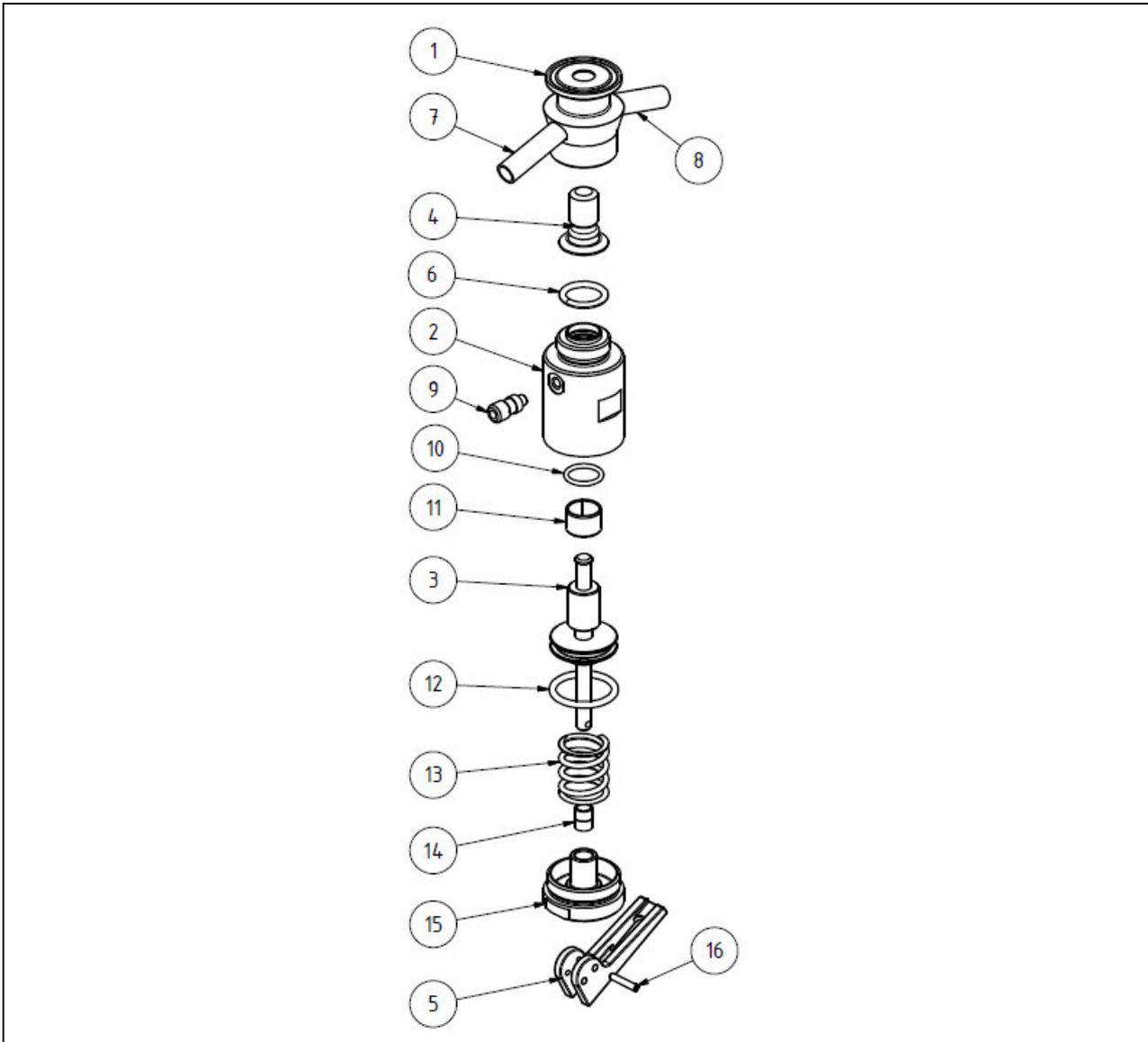


Fig. 6-1: Setup PNV compact air

- | | |
|---------------------------------|-----------------------------|
| 1 Housing | 9 Air Connection |
| 2 Pneumatic cylinder | 10 O-ring |
| 3 Piston with diaphragm chuck | 11 Plain bearing |
| 4 Diaphragm seal | 12 O-ring |
| 5 Lever for manual operation | 13 Compression spring |
| 6 O-ring | 14 Plain bearing (2 pieces) |
| 7 Outlet nozzle | 15 Lid |
| 8 Rinsing connection (optional) | 16 Stud screw |

6.2.2 Disassembly for replacement of the diaphragm seal

- Perform the switch-off procedure (see section 2.3.4).
- Disconnect the air hose from the air connection (Fig. 6-1, item 9) of the pneumatic cylinder (Fig. 6-1, item 2).
- Unscrew the pneumatic cylinder (Fig. 6-1, item 2) from the housing (Fig. 6-1, item 1).
- Remove the diaphragm seal (Fig. 6-1, item 4) from the chuck on the piston (Fig. 6-1, item 3).
- Push the lever (Fig. 6-1, item 5) into the “Open” position.
NOTE: The diaphragm seal cannot be installed more than once.
- Remove the O-ring (Fig. 6-1, item 6).

6.2.3 Assembly with gasket replacement

- Check the new diaphragm seal (Fig. 6-1, item 4) for damage.
- Check the O-ring (Fig. 6-1, item 6) for damage.
- Clean the installation space.
- Perform a general check for any damage.
- Place the O-ring (Fig. 6-1, item 6) on the pneumatic cylinder (Fig. 6-1, item 2).
- Place the diaphragm seal (Fig. 6-1, item 4) on the chuck of the piston (Fig. 6-1, item 3).
- Press the diaphragm seal (Fig. 6-1, item 4) onto the chuck using a vise. The gasket must audibly snap into place.
- Screw the entire assembly group onto the housing (Fig. 6-1, item 1). To secure the screw connection, use a medium-strength thread-locking fluid (e.g. Loctite 243).
- Restore the air connection and check correct operation by switching it on and off several times.
- Perform a leak test under operating conditions.

6.2.4 Conversion of Variant A to Variant B

Depending on the installation conditions, the lever for manual actuation of the sampling valve can be converted so that the valve is opened by pulling the lever upwards (variant A) or downwards (variant B).

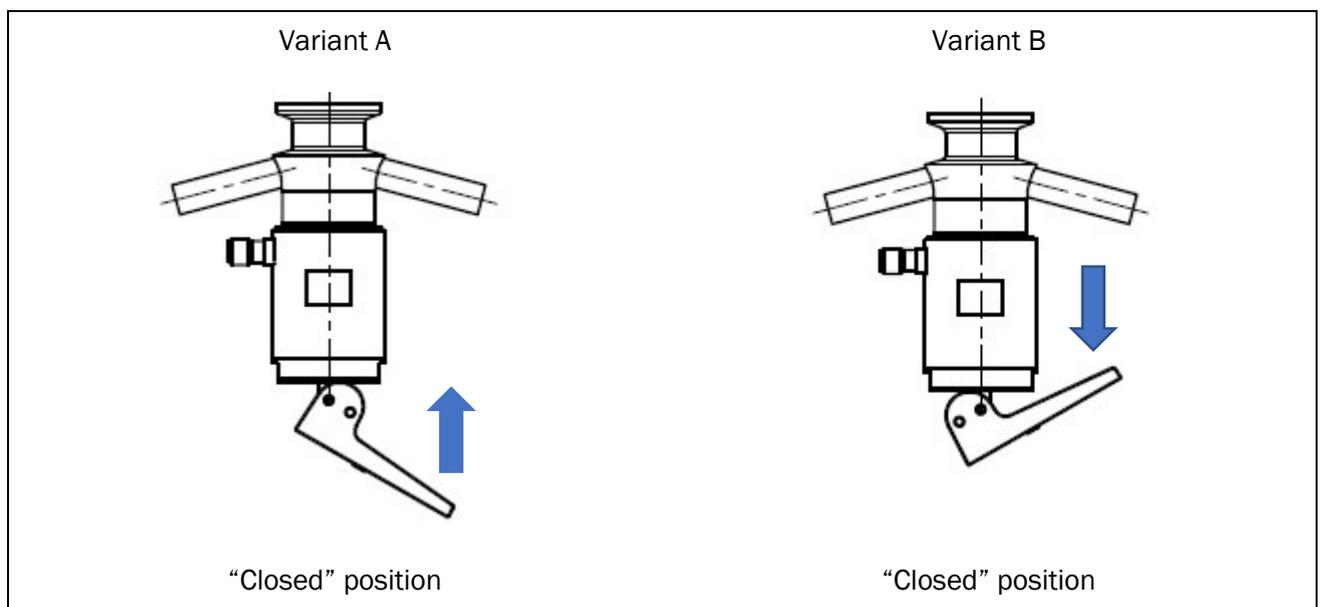


Fig. 6-2: Conversion of variant A to variant B



-
- Release the stud screw (Fig. 6-1, item 16) and pull it out of the lever (Fig. 6-1, item 5).
 - Position the lever (Fig. 6-1, item 5) in the desired position for variant A or variant B and make sure that the holes in the lever and cross holes in the piston (Fig. 6-1, item 6) are aligned.
 - Insert the stud screw (Fig. 6-1, item 16) into the larger of the two opposite holes in the lever (Fig. 6-1, item 5) and push it in as far as it will go.
 - Screw in the stud screw (Fig. 6-1, item 16), then continue under pressure, so that it cuts into the material of the lever (Fig. 6-1, item 5).

6.3 Standard ECO

6.3.1 Disassembly for Replacement of the PTFE gasket

- Perform the switch-off procedure (see section 2.3.4).
- Unscrew the spindle guide (Fig. 3-3, item 2) from the housing.
- Remove the PTFE gasket (Fig. 3-3, item 4).
NOTE: The PTFE gasket cannot be installed more than once!
- Remove the O-ring (Fig. 3-3, item 3).

6.3.2 Assembly with gasket replacement

- Check the new PTFE gasket (Fig. 3-3, item 4) for damage.
- Check the O-ring (Fig. 3-3, item 3) for damage.
- Clean the installation space.
- Perform a general check for any damage.
- Fit the new PTFE gasket (Fig. 3-3, item 4) on the spindle guide (Fig. 3-3, item 2).
- Fit the O-ring (Fig. 3-3, item 3) on the spindle guide (Fig. 3-3, item 2).
- Screw the greased spindle guide (Fig. 3-3, item 2) into the housing as far as it will go (Fig. 3-3, item 1).
- Perform a leak test under operating conditions.

6.4 Standard Vario

6.4.1 Disassembly for replacement of the diaphragm seal

- Perform the switch-off procedure (see section 2.3.4).
- Remove the set screw (Fig. 3-4, item 4).
- Unscrew the knurled screw (Fig. 3-4, item 2) from the housing (Fig. 3-4, item 1).
- Remove the diaphragm seal (Fig. 3-4, item 3) from the knurled screw (Fig. 3-4, item 2).
NOTE: The diaphragm seal cannot be installed more than once.

6.4.2 Assembly with gasket replacement

- Check the new diaphragm seal (Fig. 3-4, item 3) for damage.
- Clean the installation space.
- Perform a general check for any damage.
- Fit the diaphragm seal (Fig. 3-4, item 3) on the knurled screw (Fig. 3-4, item 2).
- Screw the greased knurled screw (Fig. 3-4, item 2) into the housing as far as it will go (Fig. 3-4, item 1).
- Screw the set screw (Fig. 3-4, item 4) far enough into the housing (Fig. 3-4, item 1), so that the knurled screw (Fig. 3-4, item 2) can still move freely. Use a medium-strength thread-locking fluid for this (e.g., Loctite 243).
- Perform a leak test under operating conditions.

7 Maintenance/Cleaning

WARNING

Risk of serious injury due to incorrect maintenance!

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

- The work may be performed only by an **expert**.
- Always adhere to the shutdown procedures before all cleaning, maintenance and repair work (see section 2.3.4).
- Wear protective work clothing, protective gloves and protective goggles when carrying out the work (see section “2.7 Personal Protective Equipment”).
- If in doubt, contact AWH.

WARNING



Risk of burns due to hot media!

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

- Let the flow medium cool down prior to work.
- Empty the pipelines prior to cleaning, maintenance or repair work.
- Wear protective work clothing, protective gloves and protective goggles when carrying out the work (see section “2.7 Personal Protective Equipment”).

CAUTION



Risk of minor injury due to crushing.

There is a risk of crushing between individual components during cleaning, maintenance or repair work.

- Proceed with particular care with this type of work.
- Wear safety shoes when working (see section “2.7 Personal Protective Equipment”).

7.1 Cleaning/Maintenance Intervals

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

- Define the cleaning intervals 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 (see section "2.7 Personal Protective Equipment").
- Take care not to touch the fitting or pipeline when processing hot media or during the sterilization process.

CIP Cleaning

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

Cleaning media:	3% nitric acid	max. +90 °C /+194 °F
	3% caustic soda	max. +90 °C /+194 °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.
- Flow rate at CIP cleaning should be between 1.5 and 2.1 m/s.
- Cleaning cycle with CIP medium max. 30 minutes.
- Valves should not be switched during the cleaning.

SIP Sterilization

The temperature should not exceed 135 °C/275 °F during hot steam sterilization.

The length of the sterilization should be 30 minutes max.

The valve must remain open during steaming and is not allowed to be switched before it has cooled down.



7.3 Spare Parts Stock

When requesting spare parts, always specify the type of fitting.

The following details are important for all spare part requests or questions:

- Nominal width
- Sealing material
- Housing material
- Connection type
- Accessories



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

Spare parts and the associated spare part numbers can be found in the Valve technology catalog (available on Internet page <http://www.awh.eu>).

8 Faults

8.1 Safety Instructions



WARNING

Risk of serious injury due to incorrectly performed repair work!

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

- Troubleshooting work should only be carried out by **specialist personnel**.
- Always adhere to the shutdown procedures prior to repair work (see section 2.3.4).
- Wear protective work clothing, protective gloves and protective goggles when carrying out the work (see section “2.7 Personal Protective Equipment”).
- If in doubt, contact AWH.



WARNING



Risk of burns due to hot media!

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

- Let the flow medium cool down prior to work.
- Empty the pipelines prior to repair work.
- Wear protective work clothing, protective gloves and protective goggles when carrying out the work (see section “2.7 Personal Protective Equipment”).

8.2 Faults and Remedial Action

Fault	Cause	Remedy
Valve not actuating	Diaphragm seal has slipped from spindle	Replace diaphragm seal and O-ring
Valve leaking	Diaphragm seal faulty or worn	Replace diaphragm seal and O-ring

8.3 What to Do in Case of an Emergency

- Activate the emergency stop function on the higher-level plant (for example, by pressing the emergency stop switch).
- Shut off the media supply.

9 Decommissioning/Disposal

- Perform the switch-off procedures for the higher-level facility (see section 2.3.4).



WARNING

Risk of serious injury due to incorrect disassembly!

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

- Disassembly work should be carried out only by **specialist personnel**.
- Always adhere to the shutdown procedures prior to disassembly work (see section 2.3.4).
- Wear protective work clothing, protective gloves and protective goggles when carrying out the work (see section “2.7 Personal Protective Equipment”).
- If in doubt, contact AWH.



WARNING



Risk of burns due to hot media!

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

- Let the flow medium cool down prior to work.
- Drain the pipelines prior to disassembly work.
- Wear protective work clothing, protective gloves and protective goggles when carrying out the work (see section “2.7 Personal Protective Equipment”).

9.1 Disposal



CAUTION

Danger of injuries from harmful liquids which are a health hazard

When performing disposal, there is a risk of injury from contact with harmful liquids.

- Wear appropriate personal protective equipment (e.g. protective goggles, protective gloves, see section “2.7 Personal Protective Equipment”).

NOTE***Risk of environmental damage as a result of improper disposal!***

- *The fitting is mainly made of stainless steel (except for gaskets) and should be disposed of in accordance with the applicable local environmental regulations.*
- *Oils and cleaning agents are NOT permitted to flow into ground water, bodies of waters or in the sewer system and must be disposed of in accordance with local regulations and in compliance with the information contained 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 recycled.*

10 Declarations

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

Fittings that fall within the scope of Directive 2014/68/EC receive an EU Declaration of Conformity and a CE mark pursuant to said Directive.

Fittings that come under article 4 section 3 receive no EU Declaration of Conformity and no CE mark pursuant to that directive (see section 10.1).

Declarations for Fittings pursuant to the Machinery Directive 2006/42/EC

Fittings that fall within the scope of Directive 2006/42/EC are items of incomplete machinery, and receive a declaration for incorporation but no CE mark, as per said Directive.

10.1 Sampling valve

Armaturenwerk Hötensleben GmbH
Schulstraße 5-6
39393 Hötensleben, Germany

Declaration (Translation)

- Declaration for incorporation pursuant to the EC Machinery Directive 2006/42/EC, Annex II B
- Declaration pursuant to the EU Pressure Equipment Directive 2014/68/EU

We hereby declare that the design of

Name: Sampling valve

Type: Compact EHEDG, Compact Air, Standard Eco, Standard Vario

is consistent with the following essential health and safety requirements of Directive 2006/42/EC: 1.1.2 – 1.1.7, 1.3, 1.4.1, 1.5.1 – 1.5.9, 1.5.15, 1., 5.16, 1.6, 1.7.1 – 1.7.3, 1.7.4, 1.7.4.1, 1.7.4.2., 1.7.4.3

The specific technical documents have been compiled in accordance with Directive 2006/42/EC, Annex VII, Part B.

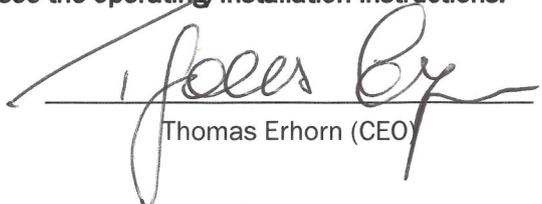
The fitting is consistent with the following guidelines and standards in its delivered version:

Directive/Standard	Title	Version	Comments
2014/68/ EU	EU Pressure Equipment Directive	2014	
DIN EN 12516-2	Industrial valves – Shell design strength – Part 2: Calculation method for pressurized shells of steel fittings	10/2004	
AD 2000 information sheets	Regulations for pressure equipment (national standards)		
The fittings are designed for fluids in fluid group 1 and for gases in fluid group 2. According to this, the nominal width DN 25 is categorized in accordance with Article 4 Paragraph 3.			
2006/42/EC	EC Machinery Directive	05/2006	
DIN EN ISO 12100	Safety of machinery – General principles for design – Risk assessment and risk reduction	2010	

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

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

Hötensleben, June 3, 2019


 Thomas Erhorn (CEO)

Person authorized to compile the technical documentation:

Armaturenwerk Hötensleben GmbH, Mr. Guth, Schulstr. 5/6, 39393 Hötensleben, Germany

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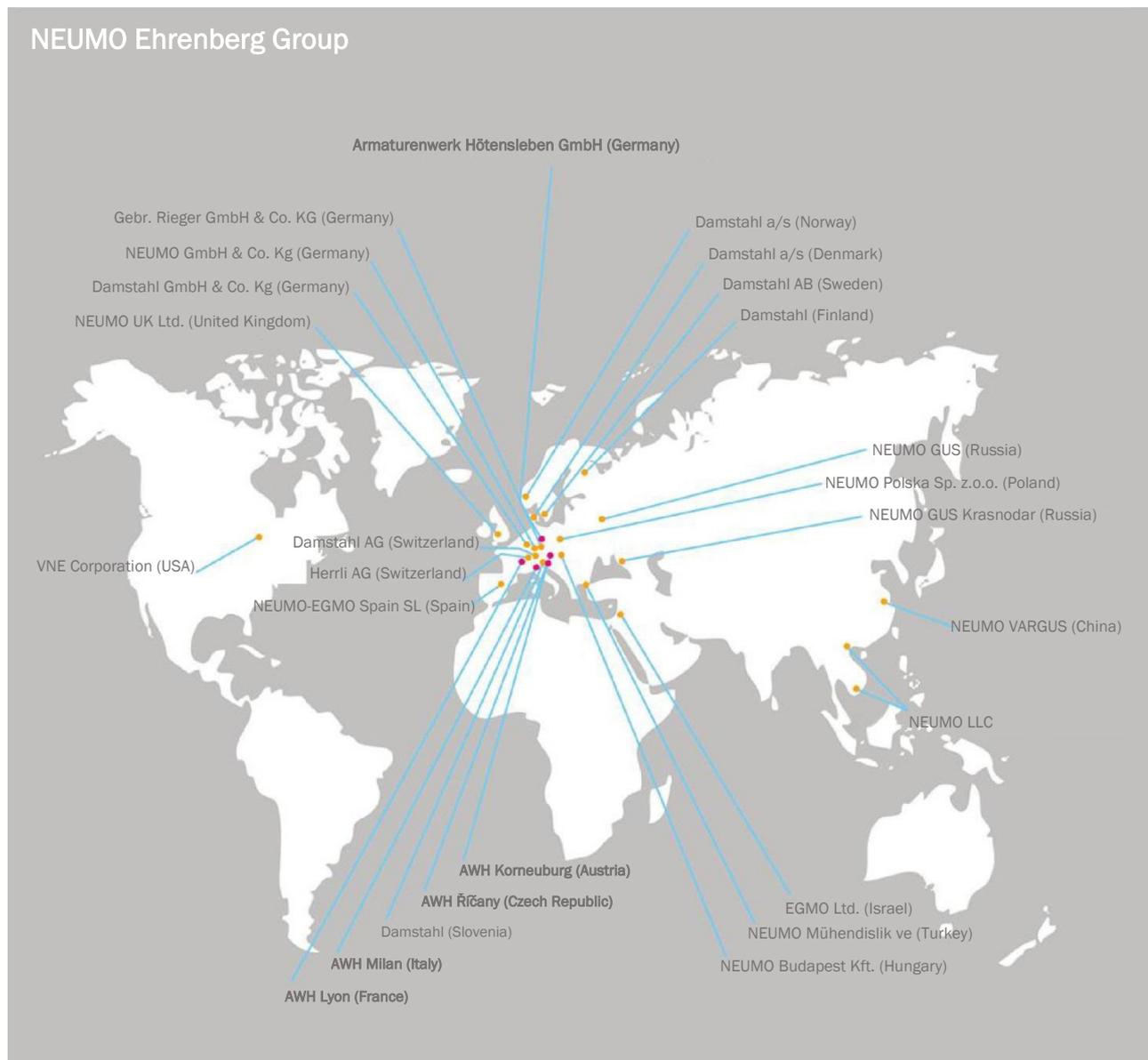
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