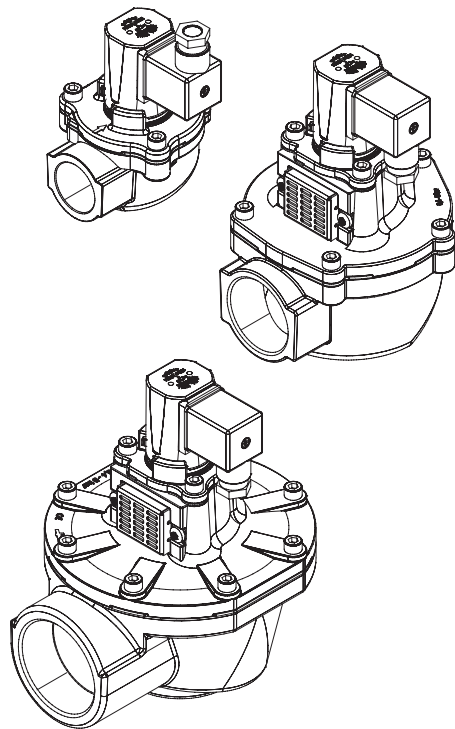


Operation manual for solenoid actuated filter pulse valves

Document No. EN1377087BA Revision 8

Keep documentation for future use!



Series

82960^G **82970^N**

83320^G **83330^N** ^G G-Thread
^N NPT-Thread

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Translation of the original operating manual
 Status as of November 2020

1 About this documentation

These mounting instructions guides you to mount, operate and maintain solenoid actuated filter pulse valves safely.

This operation manual is intended for:
 plant operators, installers, maintenance and service technicians.

1.1 Documentation validity

This operation manual applies to series

- 82960, 83320 (G-Thread)
- 82970, 83330 (NPT-Thread)
- for special products that are based on the series mentioned above

in combination with these **Twist-on®** solenoids:

Series	8171	8176 ^{Ex}	8186 ^{Ex}
82960 ^G	•	•	•
82970 ^N	•	•	•
83320 ^G	•	•	•
83330 ^N	•	•	•

Order No.	Connection	Connection
xxxx3xx	G 3/4	3/4 NPT
xxxx4xx	G 1	1 NPT
xxxx6xx	G 1 1/2	1 1/2 NPT
xxxx7xx	G 2 ^[1]	2 NPT ^[1]
xxxx8xx	G 1 1/2 ^[1]	1 1/2 NPT ^[1]
xxxx9xx	G 3 ^[1]	-
Series	82960 83320	82970 83330

^[1] only applies to series 82960 and 82970

1.2 Structure of safety instructions

Safety instructions warns against dangerous situations and must be observed in particular. Safety instructions are structured as follows:

SIGNAL WORD

Type of hazard

Consequences of non-observance

→ precautions necessary to avoid the hazard

1.3 Hazard classes (ANSI Z535.6)

DANGER

Safety information indicates a hazardous situation with high risk which, if not avoided, will certainly result in death or (serious) injury.

WARNING

Safety information indicates a hazardous situation with moderate risk which, if not avoided, can cause death or severe injury.

CAUTION

Safety information indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Information indicates a hazardous situation which, if not avoided, could result damage to property.

1.4 Styles and symbols

This documentation uses the following styles and symbols:

•	list
→	instruction
1. 2.	preset order of instructions
701	part number (according to part list)
1	flexible part number (section)
x	replace spare part

 + **DANGER** / **WARNING** / **CAUTION**;
NOTICE: embedded safety message

given limits or fixed value

1.5 Intended use

Only operate the valve with fluids of group 2 that are not explosive, flammable, toxic or oxidizing. The valve must not be operated with fluids that chemically attack or mechanically damage its constituent materials.

The valves are designed for compressed air with normal humidity or dried air purity class ISO 8573-1 3 3 3 and are in compliance with der Pressure Equipment Directive 2014/68/EU (PED).

1.6 Improper use

In the following cases it is prohibited to operate the valve:

- The valve is not used for the designated purpose.
- The permitted temperature range are exceeded.
- The approved pressure is exceeded by more than 10%.
- Damages to the valve – e.g. cracks, deformation – were detected but the valve remains in operation.
- Malfunctions were detected but the valve remains in operation.
- The valve has been modified without authorization of the manufacturer.
- The safety instructions of this documentation are not observed.

In the event that an allowable limit is exceeded, immediately shut down the valve and examine it carefully.

→ Consider appropriate facilities for pressure relief so that the operating pressure does not exceed the maximum permitted pressure "PS". Refer to Pressure Equipment Directive 2014/68 / EU, Appendix 1, entry 2.11.2.

For damages caused by improper use, the liability of the manufacturer is excluded.

Our guarantee expires in the following cases:

- Undue intervention and altering are done to the valve.
- This documentation or the operating limits as shown in the particular data sheet are not observed.

1.7 Obligations of operator

Product

- Over the entire life cycle of the valve all applicable regulations must be observed. The instructions of this operation manual must be observed and followed.
- Initiate a risk assessment of the overall installation, to detect potential dangers that may occur in combination of the valve with other components.

Persons

- Initiate the instruction of each person who is working with the valve. Applicable regulations about occupational safety and safety engineering must be known and applied.

Documentation

- This documentation must be fully read and understood.
- The instructions given in this operation manual must be put into practice.
- This documentation must be available at any time.

Markings at the operating site

→ Ensure adequate warning of the risks linked to the valve. Use in the area of the installed valve the following warning and prohibition signs in compliance with EN ISO 7010 and BGV A8 (VBG125):

	Warning sign to indicate risk of burns at the solenoid
	Warning sign to indicate electrical hazards at the solenoid
	Prohibition sign to prevent people from entering hazardous areas

1.8 Personnel qualification

- Ensure as operator that persons who work on or with the valve are sufficiently qualified for this job.
- Comprehensively train the operating personnel in terms of safety.
- Only allow trained specialists to perform electric connections, commissioning, maintenance and trouble shooting

Demands

Operating personnel must be instructed on operational sequences and procedures.

Operating personnel must know its responsibilities regarding the work to be performed.





Trained specialists must possess profound knowledge in mechanical engineering, electrical engineering, hydraulic and pneumatic.

Trained specialists must be authorized to commission, ground and designate devices, systems and power circuits according to the standards of safety technology.

Trained specialists must possess profound knowledge about design and principle of operation of the valves and the plant.

1.9 Personal protection equipment

→ Wear appropriate protection equipment. Observe the personal protection equipment as requested in "residual risks" (see chapter 2).

	Protective eye glasses to protect from escaping fluids or exhausting compressed air
	Protective gloves resistance to cutting to protect from sharp edges or ridges; resistance to acids to protect from hazardous fluids
	Protective footwear to protect from parts or tools falling down
	Hearing protection to protect from escaping exit air

2 General safety instructions

These safety instructions are only related to the single valve. In combination with other plant components there may be other potential dangers, which must be taken into account by carrying out a risk analysis for the system.

- Compare the details on rating plate and data sheet to the operating data. The limits for the particular application (e.g. pressure, temperature) must not be exceeded.
- Only perform assembly and maintenance works when the pipe system is in depressurized state.
- Flood the valve slowly during commissioning. Fast pressurizing will cause the valve to open briefly.
- Strength tests with the valve seat open are permitted maximum up to 1.5 times of the nominal pressure rating (PN) at room temperature. The valve must not be operated during these tests.

⚠ DANGER



Hazardous electrical voltage
(>25V AC; >60V DC)
There are risks from electrical voltage during assembly and maintenance.

- The electrical connection of the solenoid must be carried out only by a qualified electrician.
- You may only plug or remove the device socket in de-energized state.
- Disconnect the power supply off the solenoid prior to assembly or disassembly.

⚠ WARNING



Dangers caused by compressed air
Pressurized air poses a potential hazard.

- Make sure that the compressed air poses no potential hazard during mounting and maintenance.
- Depressurize the filter cleaning system and the compressed air supply.

Valve switches at too high pressure

The force of the compression spring under the magnet armature cannot withstand excessive pressure. The solenoid core lifts and the valve switches autonomously. The volume of the pressure shock can cause hearing loss.

- Make sure that the maximum operating pressure is never exceeded by more than 1.1 times.
- Install appropriate protective devices in the plant that meet the requirements of the risk analysis.
- Never switch the valves under pressure as long as the installation is not completely finished.
- Actuate the valves only when the system for filter cleaning is completely piped and ready for operation.




⚠ CAUTION



Risk of burns at the solenoid
Solenoid is heating up during operation. Touching the solenoid leads to risk of burns.

- Leave the solenoid to cool down before working on the valve.

Residual risks

	Weight of the valve Phases: transport, storage, assembly, maintenance, disposal Risk: falling off, tipping over Personal protection equipment (PPE): protective footwear
	Potentially explosive atmosphere Risk: Danger of explosion ⚠ WARNING: Use solenoid on device socket with Ex-protection.
	Sharp threads and edges Phases: transport, assembly, maintenance, disposal Risk: Risk of cuts PPE: Protective gloves

3 Avoid damage to property

NOTICE

Deposits and dirt lead to malfunctions
If the control bores are clogged or the core is blocked by soil the valve no longer closes or opens.

- Install a strainer (mesh size ≤ 0.25 mm) in front of the valve inlet **P** if necessary.

Damages through accumulation of heat

The solenoid will overheat during continuous duty if the heat can not be radiated. This shortens the service life of the solenoid.

- You must not cover the solenoid with paint.
- You must not encase the solenoid in a tight housing or in a thermal insulation.

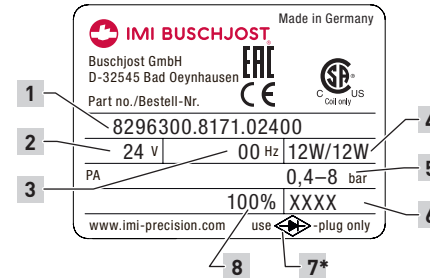
Residual risks



Pressure against valve outlet
Valve only firmly closes in flow direction.

4 Identifying the valve

The rating plate is situated on the solenoid body.



Rating plate (example)

- 1 Order number
- 2 Operating voltage
- 3 Frequency of voltage
- 4 Power consumption inrush/holding
- 5 Operating pressure range
- 6 Date of manufacture (week/year)
- 7 * if this marking is shown on the rating plate: use device socket with rectifier
- 8 Duty cycle

5 Transport and storage

NOTICE

Damage of the valve

Valve may be damaged if foreign particles get into the valve.

- Transport and store the valve dry and only in the delivery packaging.
- Take valve out of the packaging immediately prior to assembly.
- Leave the blanking plugs or protective collars into valve connections.

Prolonged storage: -10°C to +20°C

Avoid during transport:

mechanical loads: falling off, tipping over

Damages jeopardizes safety and may lead to malfunctions.

Avoid during storage:

thermal stress: permanently increased storage temperatures; distance to heat sources < 1m

mechanical loads: pressure on diaphragm; deformation of the diaphragm

chemical load: at the storing site through solvents, chemicals, acids, fuels and similar

weather conditions: at construction sites strong, watertight containers are necessary

Unfavourable storing conditions may reduce the service life of the sealing materials.

6 Function

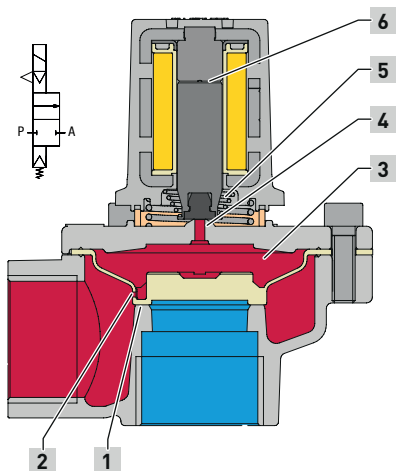
Design

2/2-Way angle valve with diaphragm as sealing device.

Operation

The valve is solenoid actuated.

6.1 Single-stage filter pulse valve



Sectional view (single-stage filter pulse valve)

- 1 Main valve seat
- 2 Control bore in the diaphragm (pressure build-up)
- 3 Chamber
- 4 Pilot seat (pressure reduction)
- 5 Compression spring on the core
- 6 Magnet face of the core tube

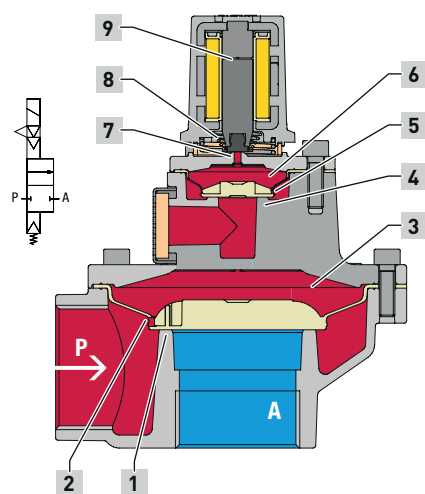
Normal position: closed

Due to the effect of the compression spring **5** inside the core the pilot seat **4** is closed. As a result of its shape, the diaphragm is forced against the main valve seat **1** so it is seated. The compressed air flows through the control bore **2** in the diaphragm to the chamber **3** above the diaphragm and increases the closing force.

Switching position: open

The magnetic force lifts the core towards the magnet face of core tube **6** when the solenoid is energized. Since the pilot seat **4** is open the fluid pressure is reducing from chamber towards into the atmosphere. More fluid is flowing off the chamber **3** than the amount flowing in via the control bore **2** in the diaphragm. The differential pressure lifts up the diaphragm and opens the main valve seat.

6.2 Two-stage filter pulse valve



Sectional view (two-stage filter pulse valve)

- 1 Main valve seat
- 2 Control bore in the diaphragm (pressure build-up)
- 3 Chamber
- 4 Second pilot seat
- 5 Control bore in the pilot diaphragm
- 6 Chamber of the pilot diaphragm
- 7 First pilot seat (pressure reduction)
- 8 Compression spring on the core
- 9 Magnet face of the core tube

Normal position: closed

Due to the effect of the compression spring **8** inside the core the first pilot seat **7** is closed. As a result of its shape, the pilot diaphragm is pressed sealingly to the second main valve seat **4**. The compressed air flows through control bore **5** inside the pilot diaphragm to the chamber **6** above the pilot diaphragm and increases the closing force.

Thus the chamber **3** above the main diaphragm is sealed to atmosphere. As a result of its shape, the main diaphragm is pressed sealingly to main valve seat **1**. The compressed air flows through the control bore **2** inside diaphragm to chamber **3** above the diaphragm and increases the closing force.

Switching position: open

The magnetic force lifts the core towards the magnet face of core tube **9** when the solenoid is energized. Since the first pilot seat **7** is open the fluid pressure is reducing from chamber towards into the atmosphere. More fluid is flowing off the chamber **6** than the amount flowing in via the control bore **5** in the diaphragm. The differential pressure lifts up the pilot diaphragm and opens the second pilot seat **4**.

The compressed air escapes in the chamber **3** above the second diaphragm. More fluid is flowing off the chamber **3** than the amount flowing in via the control bore **2** in the diaphragm. The differential pressure lifts up the diaphragm and opens the main valve seat **1**.

6.3 Solenoid types

The valve may be equipped without changing of the mechanical part with an DC voltage solenoid or AC voltage solenoid. In both cases the permissible voltage tolerance amounts to $\pm 10\%$. Special versions may cause deviations.

7 Mounting

NOTICE

Damage of the valve

The valve may be damaged through inappropriate installation.

- Only trained and authorized specialists may install the valve.
- Only use appropriate tools and suitable sealing materials.
- Make sure that the valve is mounted in flow direction.
- Make sure not to distort the valve body, particularly in case of a misaligned pipe-work.

There must be no mechanical loads applied to the solenoid.

- Do not use solenoid as a lever during mounting.

Valve only firmly closes in flow direction. Inflow against the valve's flow direction may lead to the destruction of components.

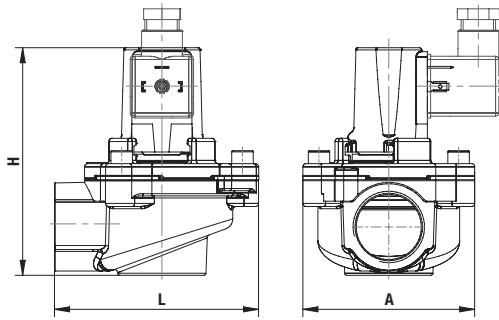
- Implement adequate measures if back flow is to expect; for example by adding check valves to the pipe system.

The valve subassembly may get damaged by external loads at the operating site.

- Protect valve from objects falling down.
- Secure the valve against direct weather influences and the possible effects.

7.1 Dimensions

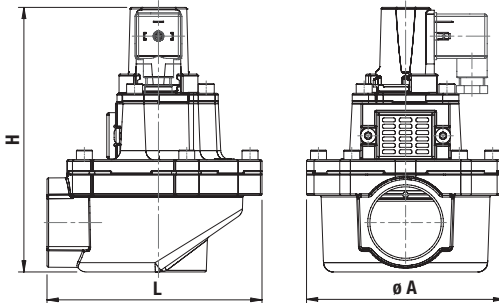
Single-stage filter pulse valve



Dimensions in mm

Connections		L	H	A
G 3/4	3/4 NPT	95	105.5	80
G 1	1 NPT	95	105.5	80

Two-stage filter pulse valve



Dimensions in mm

Connections		L	H	ø A
G 1 1/2	1 1/2 NPT	135	166	124.5
G 2	2 NPT	171.5	190.5	140
G 2 1/2	2 1/2 NPT	171.5	205.5	140
G 3	-	239.5	221	196

7.2 Conditions of installation

Compliance with operating limits

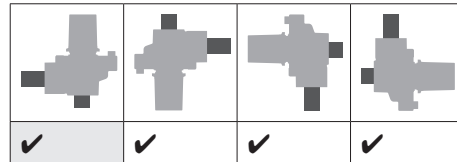
Ensure to comply with the operating limits prior to mounting the valve. Observe the valve's data sheet.

Planning of the pipe system

The manufacturer recommends to include manual stop valves and drain valves in the plant so that the pipe system may be depressurized and drained prior to working on the valve.

Valve's mounting position

Valve's mounting position may be any, preferably: Solenoid vertical on top

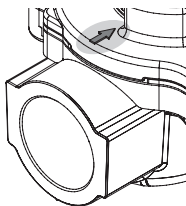


7.3 Preparation

- Check the valve for externally visible damages.
- Leave the valve in its protective package prior to mounting.
- Make sure that there is enough free space to disassemble the valve in case of maintenance.
- ⚠ **WARNING** Depressurize the pipe system.
- **NOTICE** Clean the pipe system prior to mounting the valve.

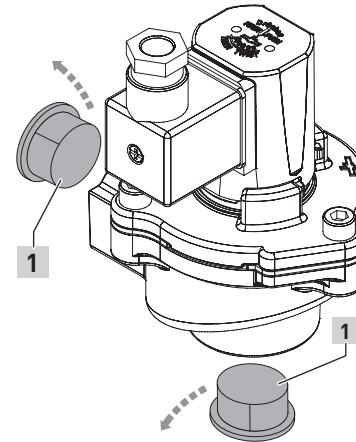
7.4 Mounting valve to pipeline

- Mount the valve to the designated pipeline. Comply with existing connections.
- Arrange the valve according to the pipeline's flow direction. An arrow on the valve cover marks the flow direction.



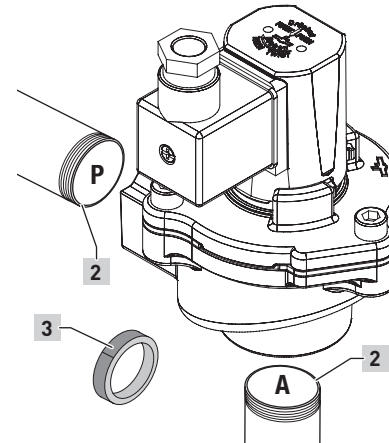
Valve with thread connection

1. Take out the blanking plugs **1** from valve inlet and valve outlet.



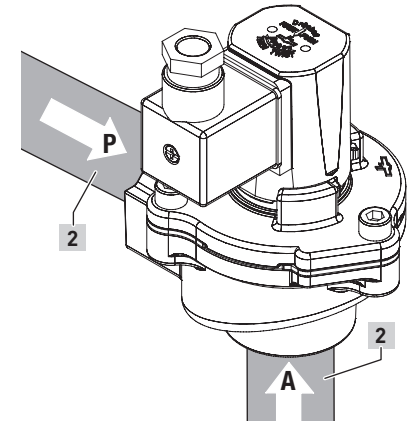
Take out blanking plugs

2. Install a strainer in front of the valve inlet **P** if necessary.
3. Firmly seal pipeline's thread **2** with an appropriate sealing material (e.g. PTFE sealing tape **3**).



Firmly seal pipeline's thread

4. Connect the valve outlet **A** to the filter cleaning system.
5. Connect the compressed air supply to the valve inlet **P**.



Attach pipelines to valve

8 Connecting solenoid electrically

→ Connect solenoid in accordance with the electrical regulations.

⚠ DANGER



Hazardous electrical voltage (>25V AC; >60V DC)

There are high risks from electrical voltage during assembly works.

→ Work on electrical installations may only be carried out by a qualified and authorized electrician (refer to 1.8).

→ You must connect the earth wire to the terminal marked with the grounding symbol ⊕.

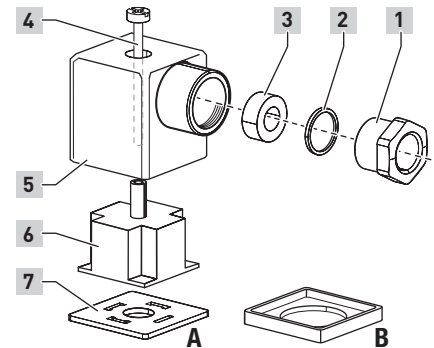
→ You may only plug the device socket in de-energized state.

→ Take care that the insulation is not trapped in the terminals.

Faulty connection causes risks.

→ To secure IP 65 protection after connecting: Carefully close the device socket. Check whether the flat seal between solenoid and device socket is properly seated. Check whether cable gland is properly sealed.

→ Use a round cable with diameters from 5 mm to 10 mm. The wire cross section must not exceed 1.5 mm².

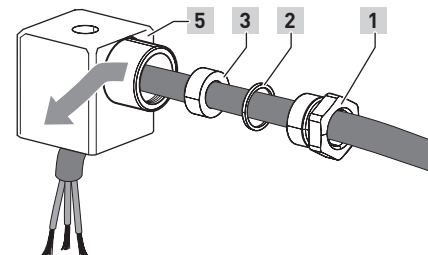


Overview: Device socket

- 1 Pressure screw
- 2 Pressure ring (metall)
- 3 Seal ring
- 4 Middle screw
- 5 Device socket's housing
- 6 Socket insert
- 7 type A: Flat gasket
type B: Profile seal

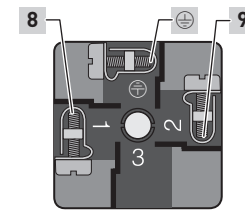
→ Make sure that the flat gasket **7** and socket insert **6** are mounted congruently with the connecting lugs of the solenoid.

1. Slide pressure screw **1**, pressure ring (metall) **2** and seal ring **3** as well als device socket's housing **5** on the cable.



Feed cable through device socket

2. Attach the protective conductor at first (insulation: yellow/green) to the terminal marked with the grounding symbol ⊕.



Configuration of socket insert

- ⊕ Protective earth (PE)
- 8 Terminal 1
- 9 Terminal 2

3. Attach the other wires to the terminals **8** and **9** of the socket insert **6**.

⚠ WARNING Ensure the correct polarity of terminals marked „+“ and „-“.

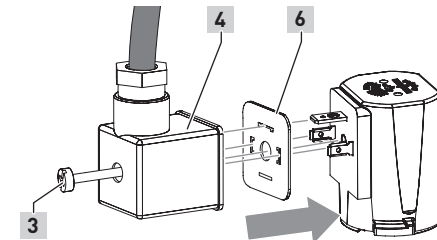
4. Put the housing of the device socket **5** in the chosen position (9 o'clock, 12 o'clock, 3 o'clock, 6 o'clock) onto socket insert **6**.

5. Tighten pressure screw **1** to cable gland.
NOTICE Cable gland must firmly seal.

6. Pull protective cap from the plug contacts of the solenoid.

7. Attach flat gasket **7** and housing **5** with socket insert to the connection lugs of the solenoid.

⚠ WARNING Make sure that the seal is evenly positioned on the entire surface between solenoid and device socket.



Place mounted device socket (example)

8. Tighten middle screw **4** with 40 Ncm.
NOTICE Avoid visible distortion of the device socket's housing.

Tightening torque 40 Ncm ±10 Ncm

9 Operating conditions

→ Ensure that all operating limits of the valve are considered during the configuration of the overall system.

Air supply

In order to ensure proper functioning of the valves, we recommend operating the dust filter units with normal moist or dried compressed air conforming to quality class ISO 8573-1 3 3 3.

Overpressure protection

A sufficiently assessed overpressure protection must ensure that a maximum working pressure of **p1 = 8 bar** (respectively 7 bar for port size G 3) is not exceeded.

Condensate connection

With moist compressed air, an optional condensate connection is recommended.

General operating limits

Operating pressure (up to port size G 2)	0.4 to 8 bar
Operating pressure (for port size G 3)	0.4 to 7 bar
Dusty gas temperature	−40°C to +85°C
Cleaning gas temperature	−40°C to +85°C
Ambient temperature	−20°C to +85°C

Permitted media

for compressed air

info For special products apply the operating limits specified on the article data sheet and the rating plate.

10 Commissioning

- Ensure compliance with the operating conditions specified in chapter 9.
- Ensure that the supply line has a sufficiently large cross-section to ensure a minimum pressure > 0.4 bar.
- Make sure that the complete filter cleaning system is ready for operation.

11 Operation

NOTICE

Thermal destruction of AC solenoids

Operating AC solenoids in unmounted state will cause them to burn out.

- Do not operate AC voltage solenoids without being mounted above core tube with core.

Actuate valve periodically

- **NOTICE** Actuate the valve at least **once a month** to prevent functional parts getting blocked.

Minimum pressure

Depending on the diaphragm used, a minimum pressure may be required for the solenoid valves to operate.

- Check whether the supply line for the valve function provides a minimum pressure > 0.4 bar (standard version). Otherwise, you must increase the pressure.

12 Maintenance

Maintenance work must only be carried out by qualified personnel (refer to section 1.8). Deposits of the medium, dirt particles, aged or worn out seals may lead to malfunctions.

12.1 Maintenance interval

The manufacturer recommends the following maintenance interval:

after 1.000.000 switching operations
or at least every 18 months

- As operator you may shorten the maintenance interval appropriate to the service conditions of the valve.

12.2 Cleaning and visual inspection

- Periodically clean the valve and perform a visual inspection at the same time.

1. **⚠ DANGER** Disconnect the solenoid from power supply.
2. **⚠ CAUTION** Leave the solenoid to cool down.
3. Check:
 - whether cover screws are properly fixed,
 - whether the device socket is firmly sealed,
 - for damages and leakages.

12.3 Preparing maintenance of internal parts

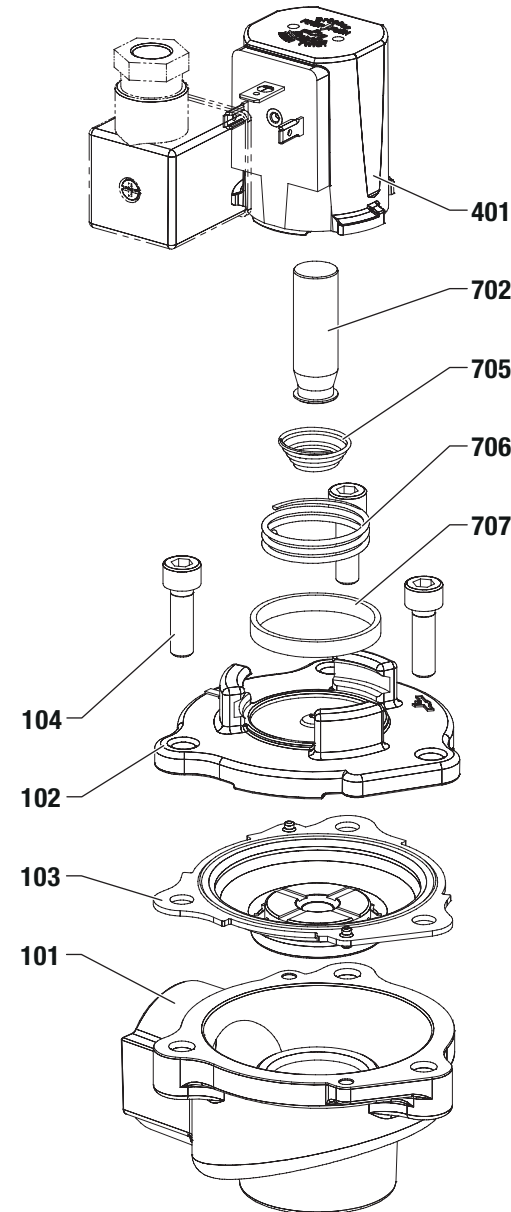
The valve body may remain in the pipework during maintenance.

1. **⚠ DANGER** Disconnect the solenoid from power supply.
2. **⚠ WARNING** Depressurize the pipe system.
3. **⚠ CAUTION** Risk of burns at the heated solenoid. Leave the solenoid to cool down before working at the valve.

- Choose the type of valve depending on the nominal width and familiarize yourself with the components in section 12.4 "Component Overview."

12.4 Component overview

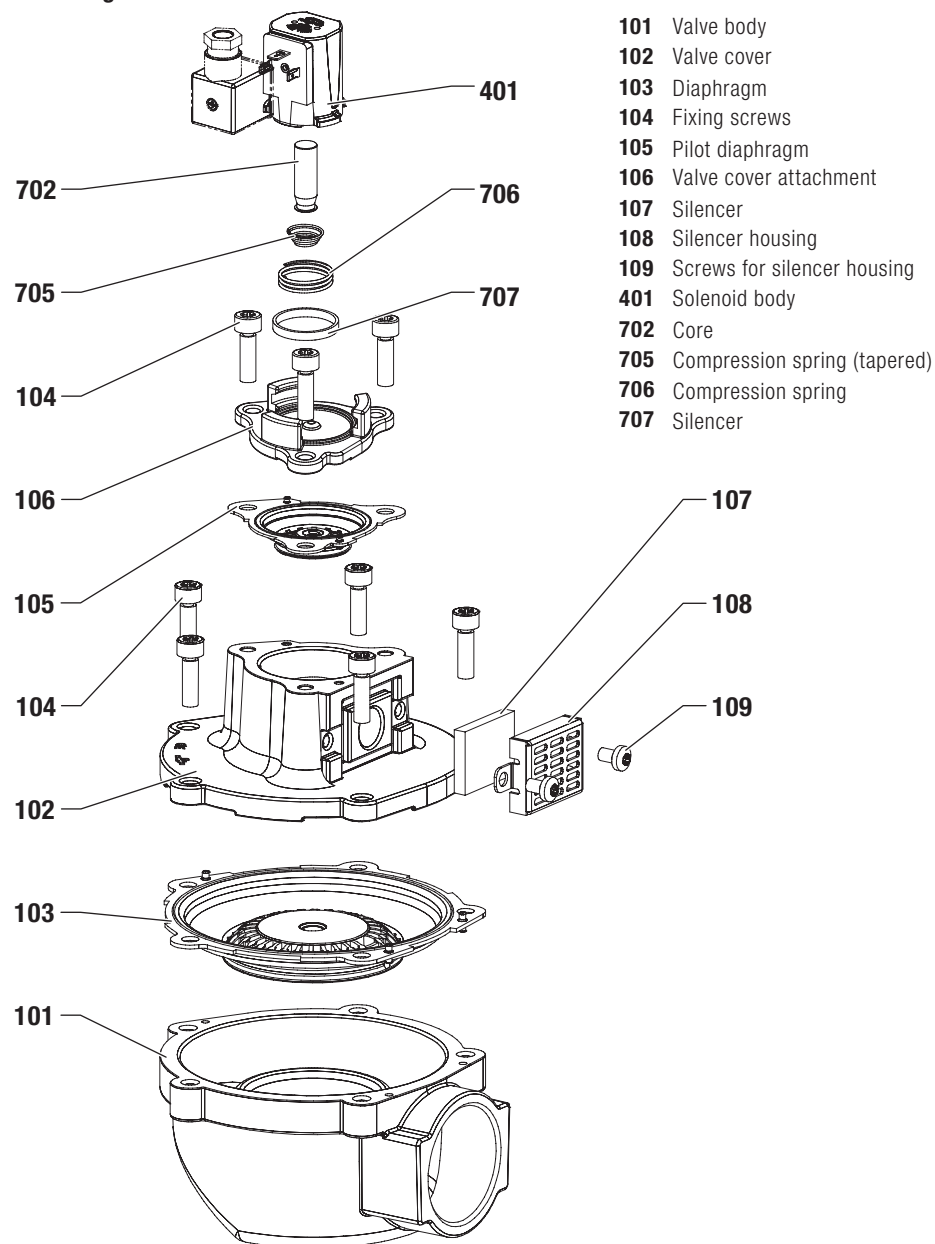
Single-stage valves ≤ G1 or 1 NPT



101	Valve body	
102	Valve cover	
103	Diaphragm	X
104	Fixing screws (length 20mm)	3 x
401	Solenoid body	
702	Core	X
705	Compression spring (tapered)	X
706	Compression spring	X
707	Silencer	X

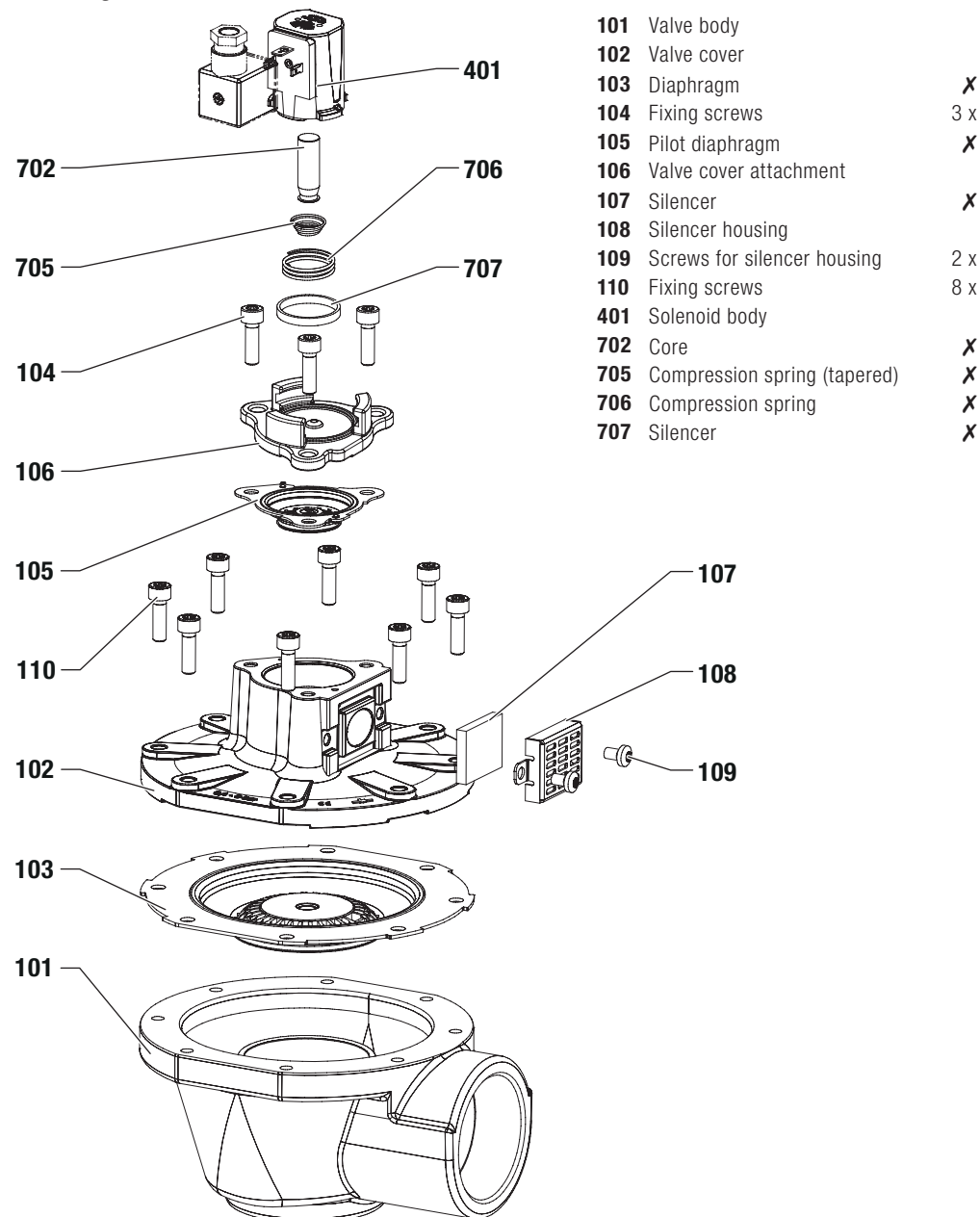
Component overview with solenoid 817x

Two-stage valves G 1 1/2 or 1 1/2 NPT



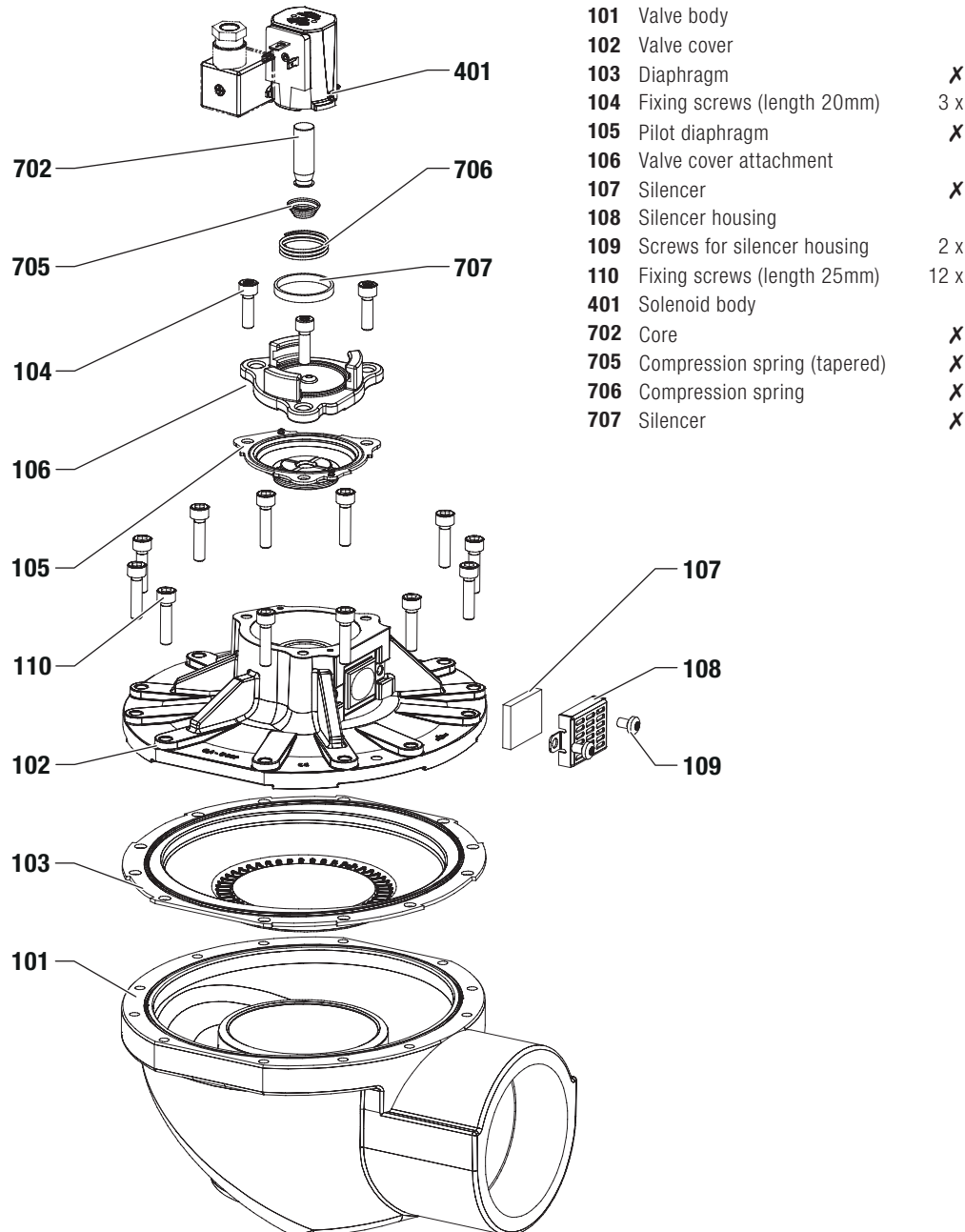
Component overview with solenoid 817x

Two-stage valve ≥ G 2 or 2 NPT



Component overview with solenoid 817x

Two-stage valve G 3



Component overview with solenoid 817x

11/2020

12.5 Disassembling solenoid 8171

1. Press the solenoid **401** against the power of the compression spring **706** towards the valve body **101** attachment.
2. Loosen the solenoid **401** with a 60° turn out of the bayonet.
3. Pay attention to loose components: Core **702**, compression spring **705**, compression spring **706** and silencer **707**.

12.6 Disassembling valve parts

Single-stage valve ≤ G1 or 1 NPT

1. Loosen three fixing screws **104** from the valve cover **102**.
2. Take off the valve cover **102**.
3. Take off the diaphragm **103** from the valve body **101**.

Two-stage valve

1. Loosen three fixing screws **104** from the valve cover attachment **106**.
2. Take off the valve cover attachment **106**.
3. Take off the pilot diaphragm **105**.
4. **G 1 1/2 or 1 1/2 NPT:**
Loosen five fixing screws **104** and take off the valve cover **102**.
- ≥ G 2 or 2 NPT:**
Loosen eight fixing screws **110** and take off the valve cover **102**.
- G 3:**
Loosen twelve fixing screws **110** and take off the valve cover **102**.
5. Take off the diaphragm **103** from the valve body **101**.
6. Loosen two screws **109** on the silencer housing **108**.
7. Take off the silencer housing **108** with silencer **107**.

12.7 Checking valve parts

1. Check disassembled valve parts for damages and wear.
2. Check whether valve seat is intact. The valve seat must not show any damages.
3. If the valve seat is **damaged** you must replace the valve body **101**.

12.8 Cleaning valve parts and valve

1. Clean the diaphragm **103** and the pilot diaphragm **105**.
NOTICE Use only neutral, non-aggressive cleaners.
2. Clean all contact surfaces to diaphragm.
3. Remove dirt in control bores, chambers and threads.
4. Clean the core **702**.

12.9 Replacing spare parts

⚠ CAUTION

Risk of injury caused through the installation of wrong parts
The installation of wrong components may lead to early wear and early failure of the component. This increases the risk of injury.

- Ensure that only original spare parts are installed.
- Specify the valve number when ordering a spare part kit.

→ The manufacturer recommends to replace all spare parts at the same time.

→ **NOTICE** Protect all components from dirt.

→ Each spare part is marked with **X**. Refer to section 12.4 "Component overview".

12.10 Mounting valve parts

Single-stage valves

1. **≤ G1 or 1 NPT:**
Place the diaphragm **103** correctly positioned on the valve body **101**. Observe the shape and cutouts.
2. Put valve cover **102** on.
NOTICE Make sure that diaphragm is flush between valve body and valve cover.
3. Insert three fixing screws **104**.
Tighten the fixing screws crosswise.

Tightening torque 8 Nm ± 10 %

Two-stage valves

1. Place the diaphragm **103** correctly positioned on the valve body **101**. Observe the shape and cutouts.
2. Put valve cover **102** on.
NOTICE Make sure that diaphragm is flush between valve body and valve cover.
3. **G 1 1/2 or 1 1/2 NPT:**
Insert five fixing screws **104**.
Tighten the fixing screws crosswise.

Tightening torque 8 Nm ± 10 %

4. **≥ G 2 or 2 NPT:**
Insert five fixing screws **110**.
Tighten the fixing screws crosswise.

Tightening torque 8 Nm ± 10 %

5. **G 3:**
Insert the twelve fixing screws **110**.
Tighten the fixing screws crosswise.

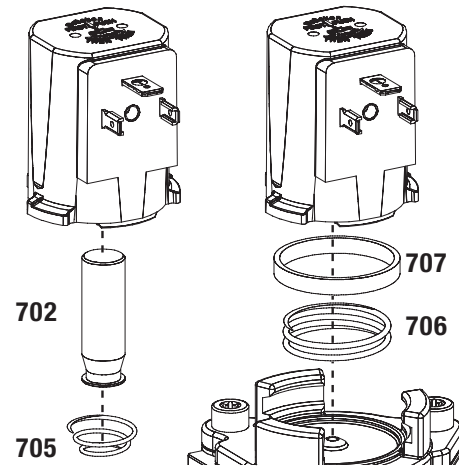
Tightening torque 8 Nm ± 10 %

6. Place the pilot diaphragm **105** correctly positioned on the valve body **102**.
Observe the shape and cutouts.
7. Put valve cover attachment **106** on.
NOTICE Make sure that pilot diaphragm is flush between valve body and valve cover.
8. Insert three fixing screws **104** into valve cover attachment **106**.
Tighten the fixing screws crosswise.

Tightening torque 8 Nm ± 10 %

9. Place silencer **107** inside the silencer housing **108**.
10. Firmly fix the silencer housing **108** with two screws **109** to valve cover **102**.

12.11 Mounting solenoid 817x



Loose components of the solenoid system

1. **Premount core:** Turn the core **702** into the small spiral of the compression spring **705** until it fits behind the collar.
2. Push the core **702** with compression spring **705** into the solenoid **401**.
3. Press the compression spring **705** with a screwdriver until it engages in the recess.
4. Press the compression spring **706** with a slight left turn into the groove of the solenoid **401**.
5. Press the silencer **707** into the groove of the solenoid **401**.
6. Place the solenoid **401** with premounted core on the valve cover **102** or cover attachment **106**.
7. Press the solenoid **401** against the power of the compression spring **706** towards the valve body **101** or cover attachment **106** and twist the solenoid 60° to lock it into the bayonet connection.

13 Re-commissioning

Checking switching function

1. Switch on the power supply of the solenoid.
2. It is advisable to carry out an **operating test** without compressed air before pressurizing. The clicking (impact) of the core must be audible during switching.

Pressurizing valve

1. Check whether all connections to pipe lines are firmly sealed.
2. Slowly pressurize the filter cleaning system for **tightness check**.
3. Check external tightness of valve cover **102**.
4. Check tightness of the valve seats while valve is closed. **NOTICE** Do not exceed the maximum operating pressure.

14 Decommissioning

1. ⚠ **DANGER** Disconnect the solenoid from power supply.
2. ⚠ **WARNING** Depressurize the pipe system.
3. ⚠ **CAUTION** Leave the solenoid to cool down.
4. Loosen the middle screw of the device socket.
5. Loosen the connected cables from the terminals of the device socket.
6. ⚠ **CAUTION** Wear protective gloves. Loosen the pipe connection.
7. Disassemble the valve.

15 Replacing complete valve

1. Disassemble the valve as described in chapter **14** "Decommissioning".
2. Assembly the new valve as described in chapter **7** "Mounting".
3. Connect the solenoid as described in chapter **8** "Connecting solenoid electrically".

16 Trouble shooting

→ Observe safety information and instructions in chapter **12** "Maintenance".

Error table

no function
possible cause: the solenoid coil defective Remedy: Replace solenoid
possible cause: the control voltage must be >90% of its nominal value. Remedy: Measure the control voltage directly in front of the solenoid. If the operating voltage is lower or a long cable is used, a heavier conductor (cross section up to 1.5 mm ²) must be chosen to keep the voltage drop small.
possible cause: crack in diaphragm Remedy: replace defective diaphragm
impaired function
Possible cause: diaphragm soiled Remedy: clean the control bore in the diaphragm
Possible cause: core jammed Remedy: clean core and core tube
Possible cause: Valve seat leaking Remedy: a) clean valve body b) clean or replace diaphragm
inadmissible operating conditions
possible cause: operating pressure too high or too low Remedy: Check maximum operating pressure and reduce pressure accordingly.

17 Return

1. Disassemble the valve as described in chapter 14 "Decommissioning".
2. Save the "goods return declaration" form – PDF file available online at: cdn.norgren.com/pdf/QMDOC122e_EN_Ruecksendeerklärung.pdf
3. Fill in the return form and work through the requirements listed there.
4. ⚠ **CAUTION** Consider the weight of the valve in the choice of packaging.
5. Attach the printed, completed and signed goods return declaration to the package.

18 Disposal

1. Disassemble the valve as described in chapter 14 "Decommissioning".
2. Disassemble the valve parts to enable reusable materials to be recycled.
3. Dispose of the valve parts as appropriate for their materials:

Material	Way of disposal
Valve body, valve cover	Metal recycling
Diaphragm	Industrial waste similar category to domestic refuse
Solenoid (copper wire)	Electrical waste recycling

19 Directives and certificates

Note to Pressure Equipment Directive (PED)

The valves of this series are according to Art. 4 § 3 of the Pressure Equipment Directive (PED) 2014/68/EU. This means interpretation and production are in accordance to engineers practice well known in the member countries.

The valve's CE marking is not related to the PED. Thus the declaration of conformity is not longer applicable for this directive.

Notes on EEC Directive

The valves shall be provided with an electrical circuit which ensures the limits of the harmonized standards EN 61000-6-3 and EN 61000-6-1 are observed, and hence the requirements of the Electromagnetic Compatibility Guideline (2004/108/EG) satisfied. The CE-marking is related to this EU-requirements.

Download paths on imi-precision.com/uk

- Home / Technical support / Certification
- Home / Technical support / Installation & Maintenance Instructions



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EU-declaration of conformity

to directive 2014/68/EU

We hereby declare under our sole responsibility that the

- ☞ solenoid actuated dustfilter valves of the series: 8286xxx, 8296xxx, 8297xxx, 8332xxx, 8367xxx, 8392xxx and the additional models and special designs 849XXXX / 859XXXX derived from these

are in conformity with directive 2014/68/EU clause 4, para 3 and are designed for gases of group 2.

The CE-making is not applicable to the directive.

This declaration has been subjected to the following procedure for assessing conformity:

- ☞ Comprehensive quality assurance (Module H)

Other applicable directives

- ☞ 2014/30/EU – Electromagnetic compatibility
- ☞ 2014/35/EU – Low voltage directive

Note

The existing CE marking relates to the relevant applicable directives. The application limits for the pressure device are stated on the type plate and in the associated operating instructions.

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Managing Director

Friedrich-Karl Böker
Representative

Bad Oeynhausen, 25 October 2018

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