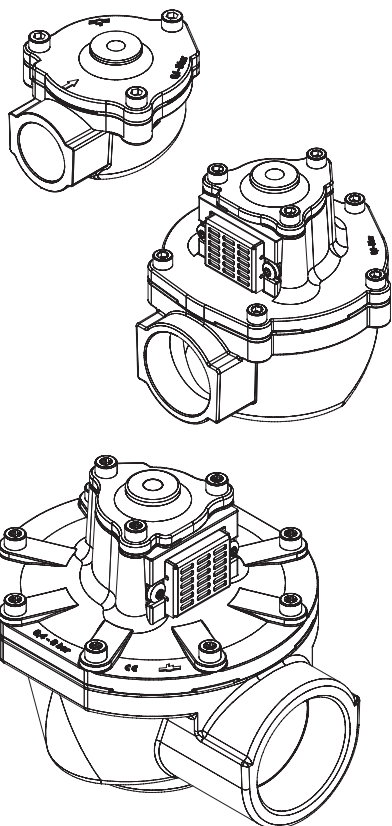


# Operation manual – pneumatically operated pulse valves for dust collector systems

Document No. 1377037.0000.10011 Revision 4

Keep documentation for future use!



## Series

**82900<sup>G</sup>** **82910<sup>N</sup>**

**83300<sup>G</sup>** **83310<sup>N</sup>** <sup>G</sup> G-Thread  
<sup>N</sup> NPT-Thread

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Translation of the original operating manual  
Status as of February 2019

## 1 About this documentation

These mounting instructions guides you to mount, operate and maintain pneumatically operated pulse valves safely.

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

### 1.1 Documentation validity

This operation manual applies for series

- 82900, 83300 (G-Thread)
- 82910, 83310 (NPT-Thread)
- for special products that are based on the series mentioned above

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 <sup>(1)</sup>	2 NPT <sup>(1)</sup>
xxxx8xx	G 1 1/2 <sup>(1)</sup>	1 1/2 NPT <sup>(1)</sup>
xxxx9xx	G 3 <sup>(1)</sup>	-
Series	82900 83300	82910 83310

<sup>(1)</sup> only applies for series 82900 and 82910

### 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 on 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.	preset order of instructions
2.	
<b>701</b>	part number (according to part list)
<b>1</b>	flexible part number (section)
<b>X</b>	replace spare part

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

given limits or fixed value

### 1.5 Intended use

The pulse valve is solely intended to clean a dust collector inside a baghouse by impulses of pressurized air within approved operating limits.

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 is 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

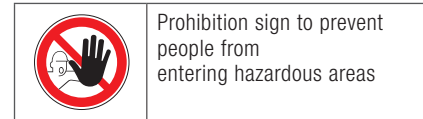
- Initiate the instruction of each person who is working with the valve. Applicable regulations about occupational safety and safety engineering must be known and applied.

#### 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 und BGV A8 (VBG125):



### 1.8 Personnel qualification

- Ensure as operator that persons who work on or with the valve are sufficient 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 und 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" (refer to chapter 2).

	<b>Protective eye glasses</b> to protect from escaping fluids or exhausting compressed air
	<b>Protective gloves</b> Resistance to cutting to protect from sharp edges or ridges; resistance to acids to protect from hazardous fluids
	<b>Protective footwear</b> to protect from parts or tools falling down
	<b>Hearing protection</b> 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 datasheet 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.


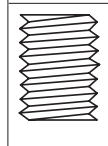
## ⚠ WARNING



**Danger from pressurized 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.

## Residual risks

	<p><b>Weight of the valve</b> Phases: transport, storage, assembly, maintenance, disposal Risk: falling off, tipping over <b>Personal protection equipment (PPE):</b> protective footwear</p>
	<p><b>Sharp-edges and threads</b> Phases: transport, assembly, maintenance, disposal Risk: risk of cuts <b>PPE:</b> protective gloves</p>

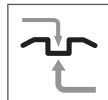
## 3 Avoid damage to property

### NOTICE

**Deposits and dirt lead to malfunctions**  
If the control bores are clogged the valve no longer closes or opens.

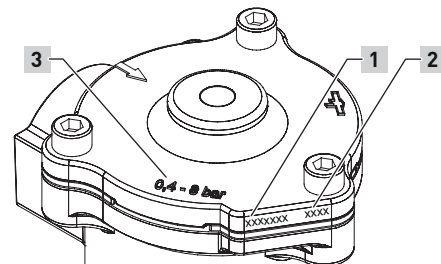
- Install a strainer (mesh size  $\leq 0.25$  mm) in front of the valve inlet **P** if necessary.

## Residual risks

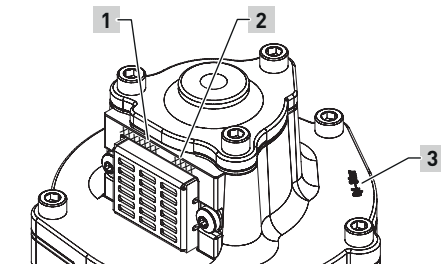
	<p><b>Pressure against valve outlet</b> Valve only firmly closes in flow direction.</p>
--	---

## 4 Identifying the valve

Information about the valve can be found on the valve body cover.



Valve 8290400 (example)



Valve 8290600 (example)

- 1 Order number
- 2 Date of manufacture (week/year)
- 3 Operating pressure range

## 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 at  $-10$  °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  $< 1$  m

**mechanical loads:** pressure on diaphragm; deformation of the diaphragm

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

**weather conditions:** in unprotected environments, solid, watertight containers are necessary

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

## 6 Function

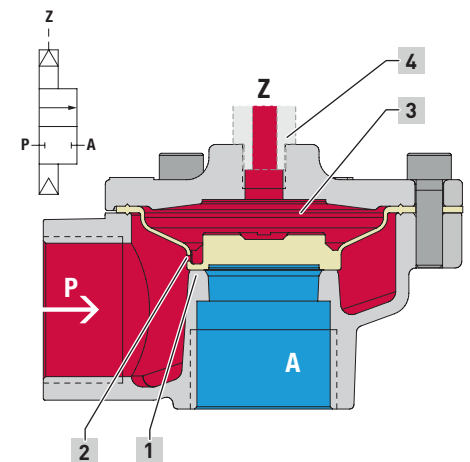
### Design

2/2-way angle valve with a diaphragm as shut-off element

### Operation

The valve is pneumatically operated.

## 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 valve (pressure reduction)

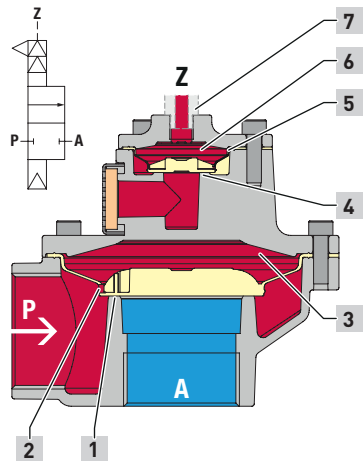
### Normal position: closed

The chamber **3** above the diaphragm is sealed to atmosphere by the closed external pilot valve **4** connected to control port **Z**. 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 chamber **3** above the diaphragm is vented to the atmosphere by the external pilot valve **4** via control port **Z**. More fluid is flowing off the chamber **3** than the amount flowing in via the control bore **2** in the diaphragm. The resultant differential pressure lifts the diaphragm and opens the main valve seat **1**.

### 6.2 Two-stage filter pulse valve



Sectional view (Two-stage filter pulse valve)

- 1** Main valve seat
- 2** Control bore in the main diaphragm (pressure build-up)
- 3** Chamber
- 4** Pilot seat
- 5** Control bore in the pilot diaphragm
- 6** Chamber of the pilot diaphragm
- 7** Pilot valve (pressure reduction)

### Normal position: closed

The chamber **6** above the pilot diaphragm is sealed to the atmosphere by the closed external pilot valve **7** connected to control port **Z**. Due to its shape, the pilot diaphragm is pressed sealingly onto the pilot seat **4**. The compressed air flows through the control bore **5** in pilot diaphragm to chamber **6** above pilot

diaphragm and increases the closing force.

The chamber **3** above the closed pilot diaphragm is sealed to the atmosphere. Due to its shape, the main diaphragm is pressed sealingly onto the main valve seat **1**.

The compressed air flows through the control bore **2** in the main diaphragm to the chamber **3** above and increases the closing force.

### Switching position: open

The chamber **6** above the pilot diaphragm is vented to atmosphere by the external pilot valve **7** via control port **Z**. More fluid is flowing off the chamber **6** than the amount flowing in via control bore **5** in pilot diaphragm. The differential pressure lifts up pilot diaphragm and opens pilot seat **4**.

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

## 7 Assembly

### NOTICE

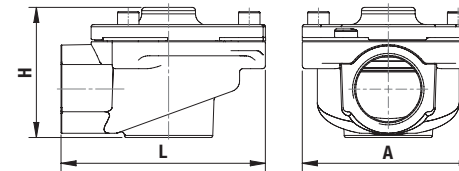
#### Damage of the valve

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.
- 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 in mm

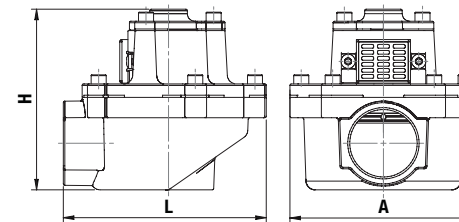
#### Single-stage filter pulse valve



bis Nennweite G1 bzw. 1 NPT

Connection		L	H	A
G 3/4	3/4 NPT	95	60.5	80
G 1	1 NPT	95	60.5	80

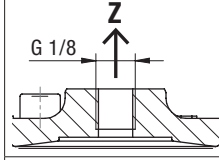
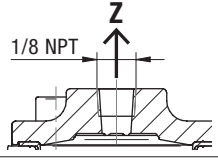
#### Two-stage filter pulse valve



ab Nennweite G 1 1/2 bzw. 1 1/2 NPT

Connection		L	H	A
G 1 1/2	1 1/2 NPT	135	121	124.5
G 2	2 NPT	171.5	146.5	140
G 2 1/2	2 1/2 NPT	171.5	161	140
G 3	-	239.5	176.5	196

### Control port

G 1/8	1/8 NPT
	
Series 82900, 83300	Series 82910, 83310

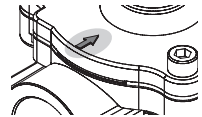
### 7.2 Conditions of installation

#### Compliance with operating limits

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

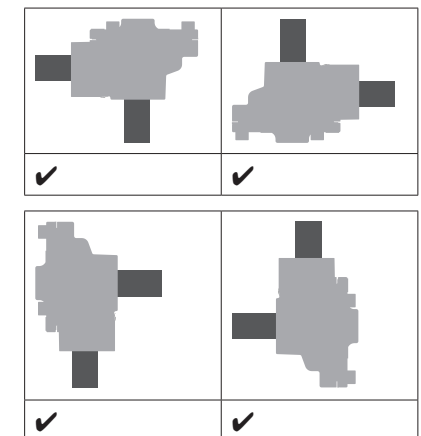
#### Planning of the pipe system

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

The pulse valve's mounting position may be any.



### 7.3 Preparation

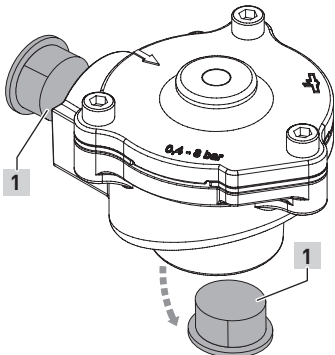
- Check the valve for externally visible damages.
- Leave the valve in its protective package prior to mounting.
- Make sure that there is enough free space for disassembly the valve in case of maintenance.
- **⚠ WARNING** Depressurize the pipe system.
- **NOTICE** Clean the pipe system prior to mounting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

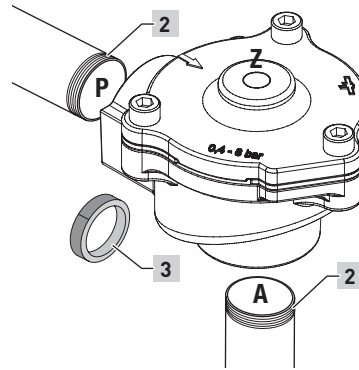
#### Valve with thread connection

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



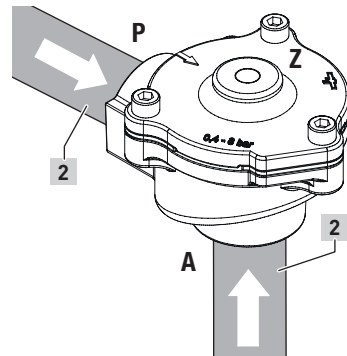
Take out blanking plugs

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**.
6. Connect the supply line for compressed air to G 1/8 control port **Z**.



Attach pipelines to valve

### 8 Operating conditions

- Ensure that all operating limits of the valve are considered during the configuration of the overall system.
- Perform a final installation inspection at 8.6 bar.
- Document the pressure test through internal production control as part of a quality assurance 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.

A sufficiently assessed overpressure protection must ensure that a maximum working pressure of  $p_1 = 8 \text{ bar}$  is not exceeded.

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

#### Operating limits

Operating pressure ≤ G 2	0.4 to 8 bar
Operating pressure 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

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

#### Permitted media

for compressed air

### 9 Commissioning

- Ensure compliance with the operating conditions specified in chapter **8**.
- Ensure that the supply line has a sufficiently large cross-section to ensure a minimum pressure > 0.4 bar.

#### 9.1 Flooding the valve

1. Check whether all connections to pipe lines are firmly sealed.
2. Slowly increase the pressure to flood the valve. Thus to prevent pressure hammers. **NOTICE** Fast pressurizing will cause the valve to open briefly. **⚠ WARNING** To fast flooding of the valve may lead fluid to escape. **NOTICE** Do not exceed the maximum operating pressure.

### 10 Operation

#### Actuate valve periodically

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



## 11 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. The manufacturer recommends the following maintenance interval:

### Maintenance intervals

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.

### 11.1 Cleaning and visual inspection

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

1. Check whether cover screws are properly fixed. Refer to section 11.7.
2. Check for damages and leakages.

### 11.2 Checking for tightness and strength

#### NOTICE

##### Risk of damaging the valve

Invalid test conditions may lead to damage of the valve.

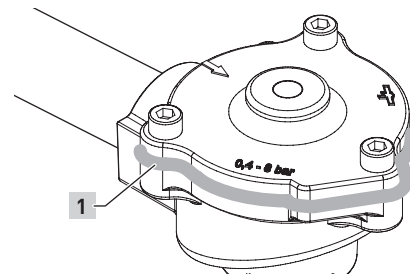
- Do not exceed the maximum operating pressure during the test for internal tightness (valve seat closed).
- The test for strength and external leakage (valve seat opened) according to EN12266 is permitted with maximum 1.5 times of the nominal pressure rating (PN) at room temperature.
- The valve must not be operated during these tests.
- Ensure to increase the pressure slowly.
- After each test, depressurize the valve outlet first.

### Checking internal tightness

1. Close the valve.
1. Flood the valve.
2. Pressurize up to the maximum operating pressure. There must no fluid escape.

### Checking strength and external tightness

1. Open the valve.
1. Flood the valve.
2. Pressurize maximum up to 1.5 times of the nominal pressure rating (PN) at room temperature. Apply soap sud to the outer sealing edges **1** and check for the formation of bubbles. There must no bubbles appear.



Check sealing edges

### 11.3 Preparing maintenance of internal parts

The valve body may remain in the pipework during maintenance.

→ ⚠ **WARNING** Depressurize the pipe system.

### 11.4 Checking valve parts

perform after disassembly (section 11.7)

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

### 11.5 Cleaning valve parts and valve

perform after disassembly (section 11.7)

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

### 11.6 Replacing spare parts

perform after disassembly (section 12.7)

#### ⚠ 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.
- The spare parts are marked with **X** in section 11.7 in the respective component overview for **A** to **D**.

### 11.7 Valve-specific disassembly/reassembly

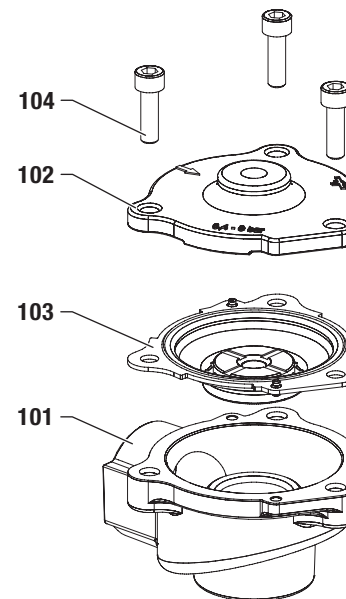
<b>A</b>	Single-stage pulse valve ≤ G1 or 1 NPT
<b>B</b>	Two-stage pulse valve G 1 1/2 or 1 1/2 NPT
<b>C</b>	Two-stage pulse valve ≥ G 2 or 2 NPT
<b>D</b>	Two-stage pulse valve G 3

→ refer to page 7

→ refer to page 8

→ refer to page 9

→ refer to page 10



Single-stage valve,  
port size ≤ G1 or 1 NPT

<b>A</b>	Single-stage pulse valve ≤ G1 or 1 NPT
----------	---

**101** Valve body

**102** Valve cover

**103** Diaphragm

**X**

**104** Fixing screws (length 20mm)

#### Disassembling valve parts

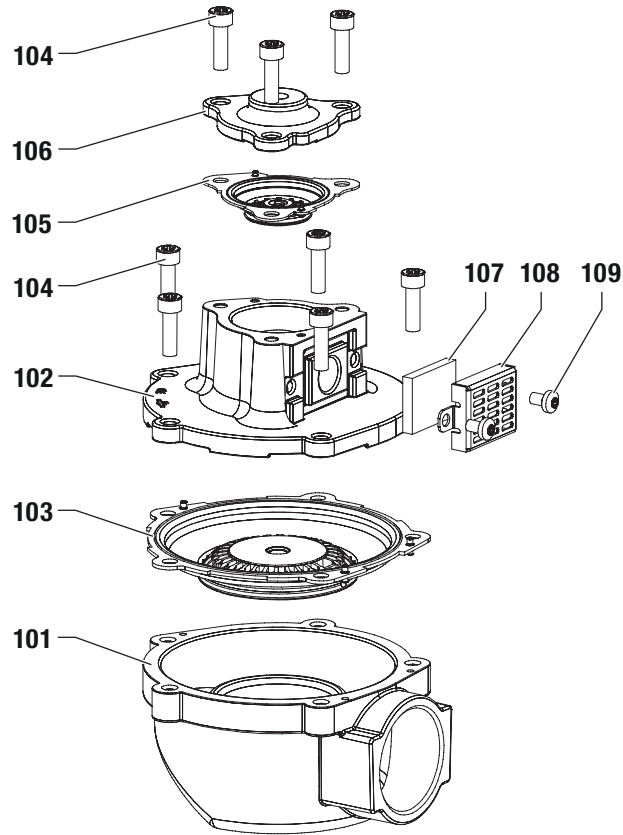
1. Loosen three fixing screws **104** from valve cover **102**.
2. Take off valve cover **102**.
3. Take off diaphragm **103** from valve body **101**.

→ After disassembly, comply with instructions in section **11.4** to **11.6**.

#### Reassembling valve parts

1. Place diaphragm **103** correctly positioned on valve body **101**. Observe shape and cutouts.
2. Put valve cover **102**. **NOTICE**
3. Insert three fixing screws **104**.  
Tighten fixing screws crosswise.

Tightening torque 8 Nm ± 10 %



two-stage valve,  
port size G 1 1/2 or 1 1/2 NPT

<b>B</b>	<b>Two-stage pulse valve</b> G 1 1/2 or 1 1/2 NPT
----------	--

<b>101</b>	Valve body	
<b>102</b>	Valve cover	
<b>103</b>	Diaphragm	X
<b>104</b>	Fixing screws (length 20mm)	
<b>105</b>	Pilot diaphragm	X
<b>106</b>	Cover attachment	
<b>107</b>	Silencer	X
<b>108</b>	Silencer housing	
<b>109</b>	Screws for silencer housing	

#### Disassembling valve parts

1. Loosen three fixing screws **104** from cover attachment **106**.
2. Take off cover attachment **106**.
3. Take out the pilot diaphragm **105**.
4. Loosen five fixing screws **110** and take off valve cover **102**.
5. Take off diaphragm **103** from valve body **101**.
6. Loosen two screws **109** of silencer housing **108**.
7. Take off silencer housing **108** with silencer **107**.

→ After disassembly, comply with instructions in section **11.4** to **11.6**.

#### Reassembling valve parts

1. Place diaphragm **103** correctly positioned on valve body **101**. Observe shape and cutouts.
2. Put valve cover **102**. **NOTICE** Make sure that the diaphragm will not get jammed.
3. Insert five fixing screws **110**.  
Tighten fixing screws crosswise.

Tightening torque 8 Nm ± 10 %

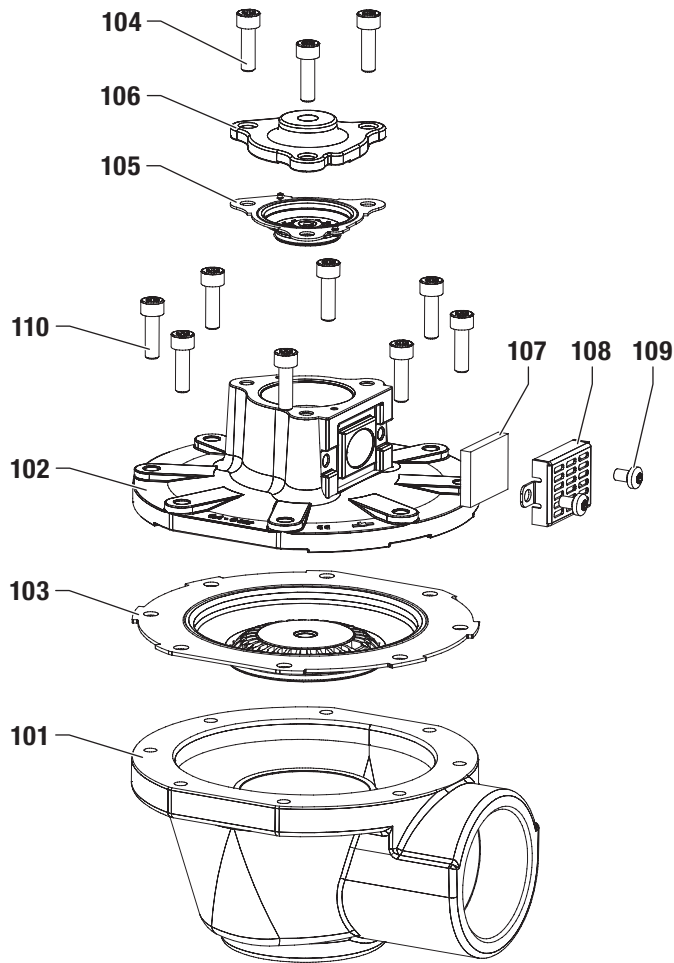
4. Place diaphragm **105** correctly positioned on valve body **102**. Observe shape and cutouts.
5. Put cover attachment **106**. **NOTICE** Make sure that the diaphragm will not get jammed.
6. Insert three fixing screws **104**.  
Tighten fixing screws crosswise.

Tightening torque 8 Nm ± 10 %

7. Place silencer **107** inside silencer housing **108**.
8. Fix silencer housing **108** with two screws **109** to valve cover **102**.

Tightening torque 8 Nm ± 10 %





Two-stage valve,  
port size  $\geq$  G 2 or 2 NPT

<b>C</b>	Two-stage pulse valve $\geq$ G 2 or 2 NPT
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<b>101</b>	Valve body	
<b>102</b>	Valve cover	
<b>103</b>	Diaphragm	X
<b>104</b>	Fixing screws (length 20mm)	3 x
<b>105</b>	Pilot diaphragm	X
<b>106</b>	Cover attachment	
<b>107</b>	Silencer	X
<b>108</b>	Silencer housing	
<b>109</b>	Screws for silencer housing	
<b>110</b>	Fixing screws (length 25mm)	8 x

#### Disassembling valve parts

1. Loosen three fixing screws **104** from cover attachment **106**.
2. Take off cover attachment **106**.
3. Take out the pilot diaphragm **105**.
4. Loosen eight fixing screws **110** and take off valve cover **102**.
5. Take off diaphragm **103** from valve body **101**.
6. Loosen two screws **109** of silencer housing **108**.
7. Take off silencer housing **108** with silencer **107**.

→ After disassembly, comply with instructions in section **11.4** to **11.6**.

#### Reassembling valve parts

1. Place diaphragm **103** correctly positioned on valve body **101**. Observe shape and cutouts.
2. Put valve cover **102**. **NOTICE** Make sure that the diaphragm will not get jammed.
3. Insert eight fixing screws **110**. Tighten fixing screws crosswise.

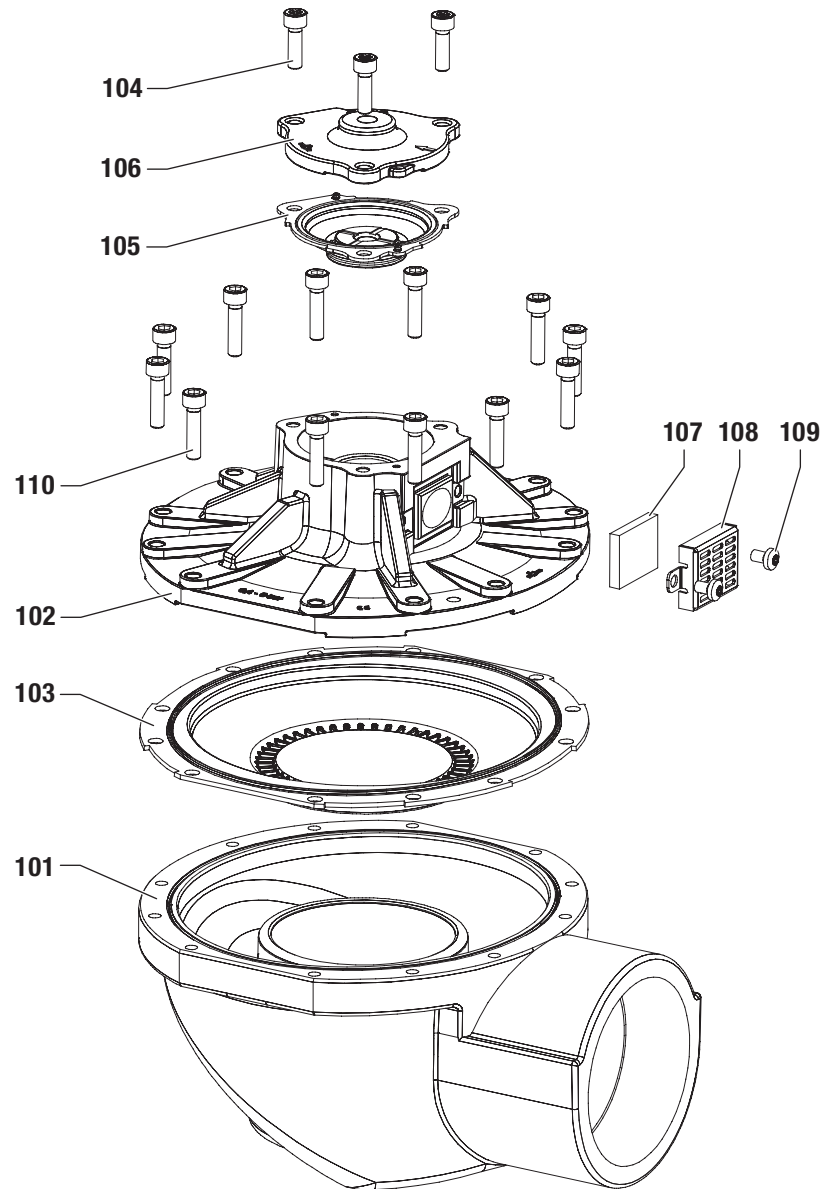
Tightening torque 8 Nm  $\pm$  10 %

4. Place diaphragm **105** correctly positioned on valve body **102**. Observe shape and cutouts.
5. Put cover attachment **106**. **NOTICE** Make sure that the diaphragm will not get jammed.
6. Insert three fixing screws **104**. Tighten fixing screws crosswise.

Tightening torque 8 Nm  $\pm$  10 %

7. Place silencer **107** inside silencer housing **108**.
8. Fix silencer housing **108** with two screws **109** to valve cover **102**.

Tightening torque 8 Nm  $\pm$  10 %



Two-stage valve,  
port size G 3

D	Two-stage pulse valve G 3
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101	Valve body	
102	Valve cover	
103	Diaphragm	X
104	Fixing screws (length 20mm)	
105	Pilot diaphragm	X
106	Cover attachment	
107	Silencer	X
108	Silencer housing	
109	Screws for silencer housing	
110	Fixing screws (length 25mm)	

#### Disassembling valve parts

1. Loosen three fixing screws **104** from cover attachment **106**.
2. Take off cover attachment **106**.
3. Take out the pilot diaphragm **105**.
4. Loosen twelve fixing screws **110** and take off valve cover **102**.
5. Take off diaphragm **103** from valve body **101**.
6. Loosen two screws **109** of silencer housing **108**.
7. Take off silencer housing **108** with silencer **107**.

→ After disassembly, comply with instructions in section **11.4** to **11.6**.

#### Reassembling valve parts

1. Place diaphragm **103** correctly positioned on valve body **101**. Observe shape and cutouts.
2. Put valve cover **102**. **NOTICE** Make sure that the diaphragm will not get jammed.
3. Insert twelve fixing screws **110**. Tighten fixing screws crosswise.

Tightening torque 8 Nm ± 10 %

4. Place diaphragm **105** correctly positioned on valve body **102**. Observe shape and cutouts.
5. Put cover attachment **106**. **NOTICE** Make sure that the diaphragm will not get jammed.
6. Insert three fixing screws **104**. Tighten fixing screws crosswise.

Tightening torque 8 Nm ± 10 %

7. Place silencer **107** inside silencer housing **108**.
8. Fix the silencer housing **108** with two screws **109** to valve cover **102**.

Tightening torque 8 Nm ± 10 %

## 12 Re-commissioning

1. Flood the valve slowly (refer to 9.1).
2. Perform a leak and strength tests (refer to 11.2).

## 13 Decommissioning

1. ⚠ **WARNING** Depressurize the pipe system.
2. Loose the connected lines.
3. ⚠ **CAUTION** Wear protective gloves.  
Loosen the pipe connection.
4. Disassemble the valve.

## 14 Replace complete valve

1. Disassemble the valve as described in chapter 13 "Decommissioning".
2. Assembly the new valve as described in chapter 7 "Assembly".

## 15 Trouble shooting

→ Observe safety information and instructions in chapter 11 "Maintenance".

### Error table

Not function	
Possible cause	air supply interrupted
Remedy	check and rebuild air supply
Possible cause	crack in diaphragm
Remedy	replace defective diaphragm
Impaired function	
Possible cause	pulse time too short
Remedy	prolong pulse time of filter control
Possible cause	diaphragm soiled
Remedy	clean the control bore in the diaphragm
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 13 "Decommissioning".
2. Save the "goods return declaration" form – PDF file available online at:  
<http://www.buschjost.com/service/other-documents/goods-return-declaration/>
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 13 "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, cover attachment	Metal recycling
Diaphragms, silencer	Industrial waste similar category to domestic refuse

## 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 wellknown in the member countries.

A certificate of conformity is not designated.



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