

# Rightangled diaphragm valve system

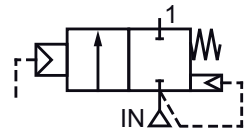
## Range VR-DN20 AL

Operating instructions



### Funktion

The VR-DN20 AL range from the CleaningLine series is a 2/2-way rightangled diaphragm valve featuring a Power Reflex diaphragm. The valve body is made from aluminium and is designed with a 3/4 inch internal thread for the input side and a 1 inch internal thread for the output side. The diaphragm cover is designed with a solenoid valve for the electrical control or with a internal 1/8" thread for the pneumatic control.



### Installation

Products and components from the CleaningLine series may only be used and operated within their indicated specifications. Before installing the valve bonnet, the compressed air system has to be cleaned inside and the pressure connection must be isolated from the pressure. Users are not allowed to perform any modifications on the valve bonnets.

These valves can be fitted in any position. For the flow direction and the piping connections see the dimensioned drawing. All commercial fittings with a straight 3/4 inch external thread can be used for all pipe connections.

#### Attention !



- Always use suited tools for the installation of these valves - wrench A/F 42.
- To prevent any damage to the valve body, only pipe connections with straight threads may be used. The maximum tightening torque for the connections is 12 Nm
- For a gas-tight connection of the valves, the pipe connections must be sealed using suitable sealing material. Make sure that no sealing material comes into the pipes or valve body.
- Any reduction in the piping will result in performance losses and may impair the function.
- For a reliable function of the valves, protect the pressurised parts against soiling.
- All pipe connections must be installed in line and at right angles and they must not transfer any stresses onto the valve.
- These valves are not allowed to be used as structural element and must always be operated within the admissible operating pressure range.

### Commissioning

The correct installation, especially compliance with the warning notices, should be verified before applying pressure to the valves. The pressure applied may not be higher than the max. operating pressure of the valves.

#### Attention !



The valves open suddenly across the full cross-section within 30-40 ms. Medium escaping under pressure may cause injuries.

Noise emission strongly depends on the application, fitting situation and the pilot pressure of the valves. The exact determination of the noise level is therefore possible only by the manufacturer of the final product.

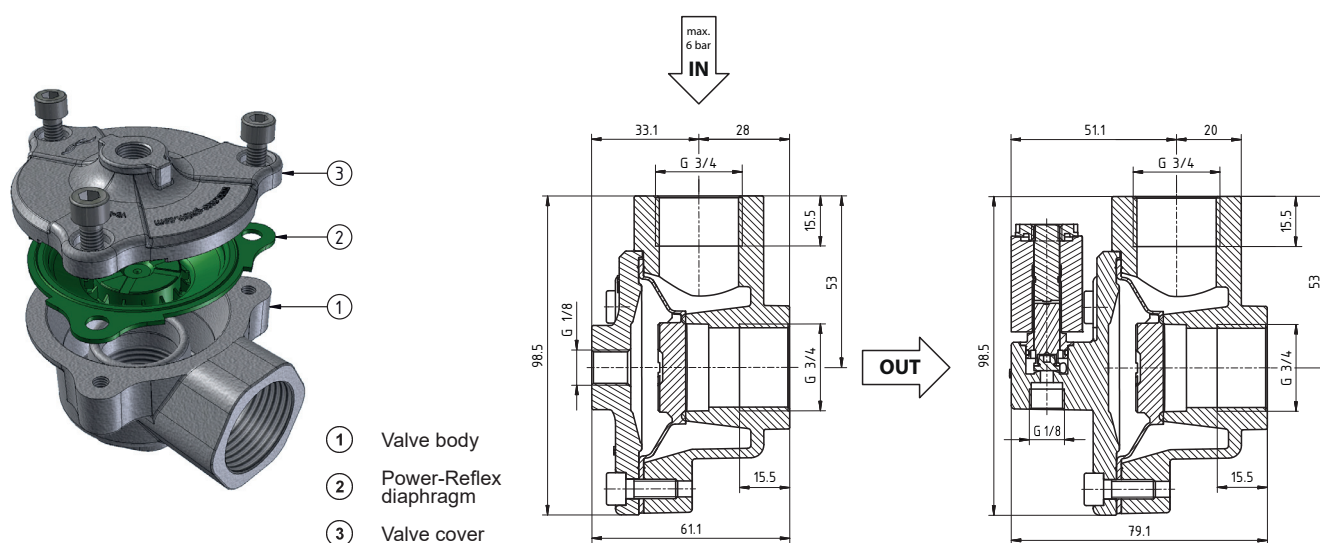
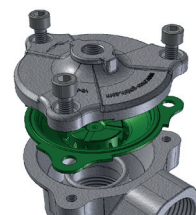
## Service

Service of pressurised structures and fittings depends largely on the operating conditions and should be performed at regular intervals. Flawless function must be verified and a visual check for wear and leaks performed during service. Spare parts are available for all products of RECO's CleaningLine series. The screws of the valve cover must be loosened and the parts removed to replace the diaphragm or perform service tasks. The order for dismantling and assembling the valves is shown on the explosion drawing (see below).

### Attention !



- Work on the diaphragm valve may be performed only while depressurised.
- The diaphragm must be inserted into the valve body with the pressure plate facing down.
- The valve cover must enclose the diaphragm from all three sides.
- First start all 3 valve cover screws.
- Then tighten the screws one after the other uniformly in several steps with a max. torque of 7Nm. If the screws are screwed down unevenly, the diaphragm may jump out of the groove of the valve bonnet, the bonnet may be damaged and the function of the diaphragm compromised.



## Item numbers / Technical data

<b>Product</b>	<b>VR-DN20 AL 1/8</b>
Product No.	70100096
Raw gas temperature	-20 ... +100°C
Ambient temperature	-20°C ... +85°C
Purge gas temperature	-20°C ... +85°C
Control connection	<b>Internal thread G 1/8 inch</b>
Valve type	2/2-way valve
Pressure range	1,5 bar ... 6 bar
Size	DN20
Installation connections	Internal thread DN20 G¾ i / Internal thread DN20 G¾ i
Medium	Compressed air of the quality class 2 (ISO 8573)
Material	Aluminium

Product	VR-DN 20 AL-24VDC	VR-DN 20 AL-24VDC HT PLUS	VR-DN 20 AL-24VDC ATEX	VR-DN 20 AL-24VDC ATEX HT PLUS	VR-DN20-24VDC UL	VR-DN20 AL-24VDC UL HT PLUS
Product No.	70100098	70100099	70100100	70100101	70100102	70100103
Raw gas temperature	-20 ... +100°C	-40 ... +140°C	-20 ... +100°C	-40 ... +140°C	-20 ... +100°C	-40 ... +140°C
Ambient temperature	-20°C ... +85°C	-40 ... +85°C	-20°C ... +85°C	-40 ... +85°C	-20°C ... +85°C	-40 ... +85°C
Purge gas temperature	-20°C ... +85°C	-40 ... +85°C	-20°C ... +85°C	-40 ... +85°C	-20°C ... +85°C	-40 ... +85°C
ATEX approval	—	—	✓	✓	—	—
UL approval	—	—	—	—	✓	✓
Control connection	<b>Solenoid valve 24VDC / 22 W / duty cycle 10%</b>					
Valve type	2/2-way valve					
Pressure range	1,5 bar ... 6 bar					
Size	DN20					
Installation connections	Internal thread DN20 G¾ i / Internal thread DN20 G¾ i					
Medium	Compressed air of the quality class 2 (ISO 8573)					
Material	Aluminium					

Product	VR-DN 20 AL-230VAC	VR-DN 20 AL-230VAC HT PLUS	VR-DN 20 AL-230VAC ATEX	VR-DN 20 AL-230VAC ATEX HT PLUS	VR-DN20-230VAC UL	VR-DN20 AL-230VAC UL HT PLUS
Product No.	70100088	70100106	70100107	70100108	70100109	70100110
Raw gas temperature	-20 ... +100°C	-40 ... +140°C	-20 ... +100°C	-40 ... +140°C	-20 ... +100°C	-40 ... +140°C
Ambient temperature	-20°C ... +85°C	-40 ... +85°C	-20°C ... +85°C	-40 ... +85°C	-20°C ... +85°C	-40 ... +85°C
Purge gas temperature	-20°C ... +85°C	-40 ... +85°C	-20°C ... +85°C	-40 ... +85°C	-20°C ... +85°C	-40 ... +85°C
ATEX approval	—	—	✓	✓	—	—
UL approval	—	—	—	—	✓	✓
Control connection	<b>Solenoid valve 230VAC / 23 VA / duty cycle 10%</b>					
Valve type	2/2-way valve					
Pressure range	1,5 bar ... 6 bar					
Size	DN20					
Installation connections	Internal thread DN20 G¾ i / Internal thread DN20 G¾ i					
Medium	Compressed air of the quality class 2 (ISO 8573)					
Material	Aluminium					

Product	VR-DN 20 AL-120VAC UL	VR-DN 20 AL-120VAC UL HT PLUS
Product No.	70100104	70100105
Raw gas temperature	-20 ... +100°C	-40 ... +140°C
Ambient temperature	-20°C ... +85°C	-40 ... +85°C
Purge gas temperature	-20°C ... +85°C	-40 ... +85°C
ATEX approval	—	—
UL approval	✓	✓
Control connection	<b>Solenoid valve 120VAC / 23 VA / duty cycle 10%</b>	
Valve type	2/2-way valve	
Pressure range	1,5 bar ... 6 bar	
Size	DN20	
Installation connections	Internal thread DN20 G¾ i / Internal thread DN20 G¾ i	
Medium	Compressed air of the quality class 2 (ISO 8573)	
Material	Aluminium	

The staff of RECO GmbH will be glad to answer any questions or provide additional information about the product, operation or service.

#### Disclaimer

The contents of this documentation have been verified for correctness and completeness. Nevertheless, errors can not be excluded so that we cannot guarantee the correctness of this information. Subject to alterations at any time.

RECO Gesellschaft für  
Industriefilterregelung mbH  
Mail [info@reco-gmbh.com](mailto:info@reco-gmbh.com)  
Web [www.reco-gmbh.com](http://www.reco-gmbh.com)

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