

Sealing Gas Valve



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1. Safety Instructions

- ☞ Read and follow all instructions in this manual.
- ☞ Inform yourself regarding:
 - Hazards which can be caused by the sealing gas valve;
 - Hazards which can be caused by your system.
- ☞ Observe the safety and accident prevention regulations.
- ☞ Regularly check that all accident prevention measures are being complied with.
- ☞ Do not carry out any unauthorised conversions or alterations to the sealing gas valve.
- ☞ When returning the sealing gas valve observe the instructions in the section on service.

Modifications reserved.



Caution, danger of injury from rotating parts.



Please note, attention to particularly important information on the product, handling the product or to a particular part of the documentation.

Please note: Current operating instructions are available via www.pfeiffer-vacuum.net

2. Understanding The Sealing Gas Valve

2.1. Main Features

The sealing gas valve can be utilised with all turbomolecular pumps which have connections for sealing gas. As an inert gas, dry Nitrogen (N₂) should be admitted through the sealing gas valve into the bearing part of the turbopump; this will prevent the ingress of corrosive gases into this part of the pump.

Four different levels of gas flow can be set with the sealing gas valve (figures 1-4 on the valve upper part).

Gas is admitted via the small flange connection DN 10 ISO-KF.

2.2. For Your Orientation

Instruction in the Text

- ➔ Working instruction: here, you have to do something.

Sealing gas valve

- 1 Valve upper part with connection DN 10 ISO-KF
- 2 Valve lower part
- 7 Connection turbopump (M6)



3. Installation

- ➔ Unscrew the locking screw from the sealing gas connection on the turbopump.
- ➔ Screw in sealing gas valve 66 with seal 8 (please refer to the sectional drawing on page 8).
- ➔ Remove the protective cap on the sealing gas valve.
- ➔ Flange on hose connection 67 (DN 16 ISO-KF-10, order no. PF 144 020).
- ➔ Make the hose connection 68 from pressure reducer 69 to the sealing gas valve.

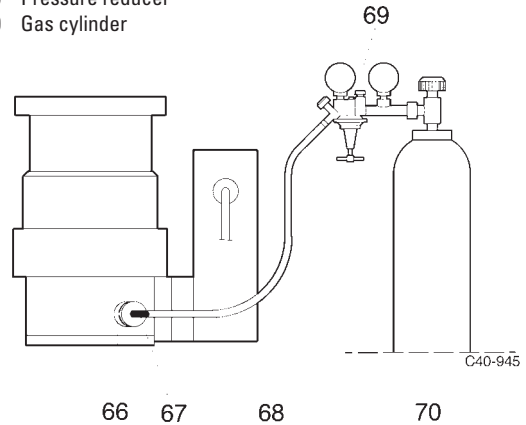
Positions 67-70 are to be provided by the customer.



If air has been used as the sealing gas, a dust filter must be positioned before the valve (for example, a centering ring with filter PF 117 210 -T and small flange with hose nozzle).

Installation, sealing gas valve

- 66 Sealing gas valve
- 67 Hose connection to the sealing gas valve
- 68 Connecting hose
- 69 Pressure reducer
- 70 Gas cylinder



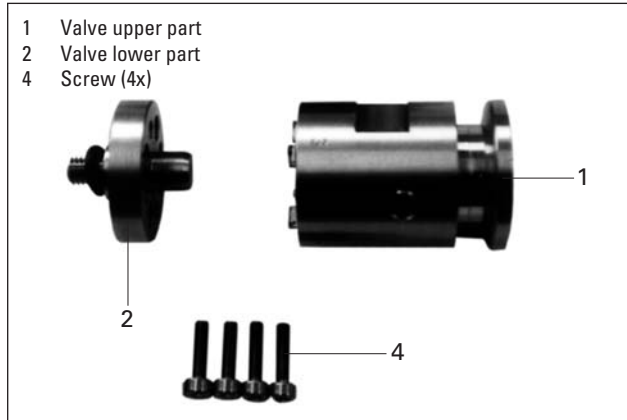
4. Setting The Gas Flow Level

Four different levels of gas flow, depending on the application and process gas flow involved, can be set on the sealing gas valve (please see Section 4.1.).

- ➔ Unscrew the four screws 4 from the valve lower part 2.
- ➔ Remove the valve lower part and turn so that the marking on the side (stroke on the valve lower part) points to the required figure on the valve upper part 1.
- ➔ Re-fit the four screws 4.

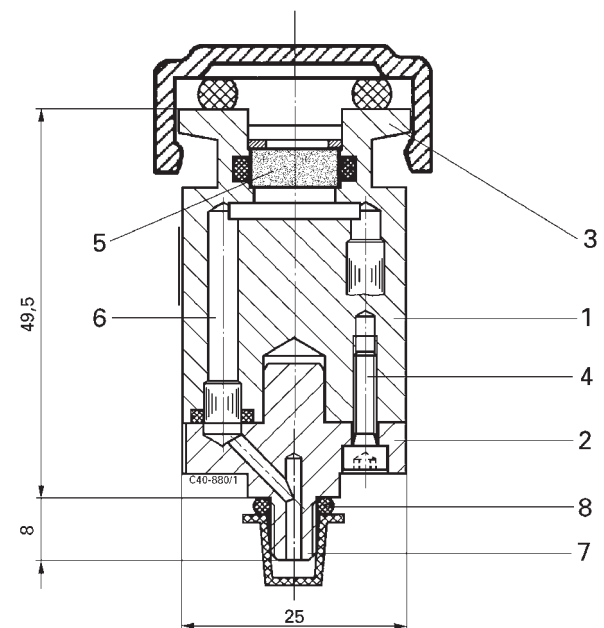


A leak test must be carried out before first-time operating.



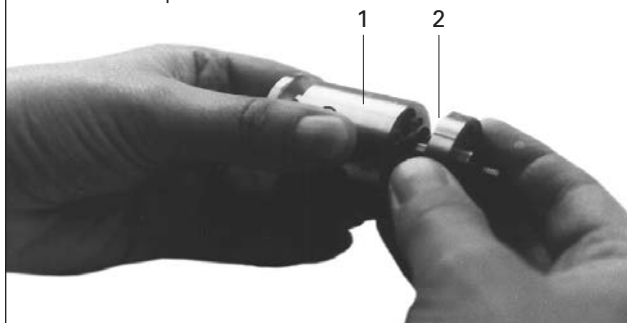
Sealing gas valve

- 1 Valve upper part
- 2 Valve lower part
- 3 Connection DN 10 ISO-KF
- 4 Screw (4x)
- 5 Sintered metal filter
- 6 Glass capillaries (4x)
- 7 Connection turbopump (M6)
- 8 Seal



Setting the gas flow level

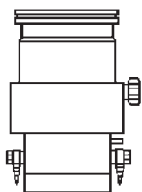
- 1 Valve upper part
- 2 Valve lower part



4.1. Sealing Gas Flow Levels

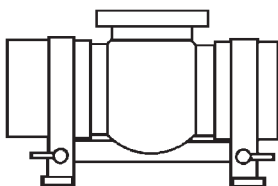
This data is valid for N₂ at 20 °C and 1000 mbar (absolute pressure).

Single Flow Pumps



Process gas flow, max. ¹⁾ (mbar l/s) (sccm)		Setting figure on	Sealing gas flow on sealing gas valve (mbar l/s) (sccm)	
0,5	27,6	1	0,13 – 0,17	7,5 – 9,5
4,0	220,8	2	0,22 – 0,27	12,0 – 15,0
15,0	828,0	3	0,32 – 0,36	17,5 – 20,0

Double Flow Pumps



Process gas flow, max. ¹⁾ (mbar l/s) (sccm)		Setting figure on	Sealing gas flow on sealing gas valve (mbar l/s) (sccm)	
0,25	13,8	1	0,13 – 0,17	7,5 – 9,5
1,5	82,8	2	0,22 – 0,27	12,0 – 15,0
8	441,6	3	0,32 – 0,36	17,5 – 20,0
> 8	> 441,6	4	0,40 – 0,49	22,0 – 27,0

1) Maximum permissible process gas flow levels for turbopumps are set out in the technical data section of the respective operating instructions.

Correcting inert gas flow levels where divergent pressure ratios are involved

Increasing the pressure on the admission side of the sealing gas valve increases the gas flow level at pressures of up to the maximally permissible pressure of 2000 mbar (absolute) in valve position 1 and 2 by approximately 25 % per 100 mbar. In valve position 3 and 4 the increase is approximately 20 % per 100 mbar.

5. Maintenance

The capillaries on the sealing gas valve are protected against contamination by a built-in filter. If normal air has been used as the sealing gas, the prior, additional filter must be re-newed each time the lubricant is changed.

Vacuum is nothing, but everything to us!



Turbopumps



Rotary vane pumps



Roots pumps



Dry compressing pumps



Leak detectors



Valves



Components and feedthroughs



Vacuum measurement



Gas analysis



System engineering



Service

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