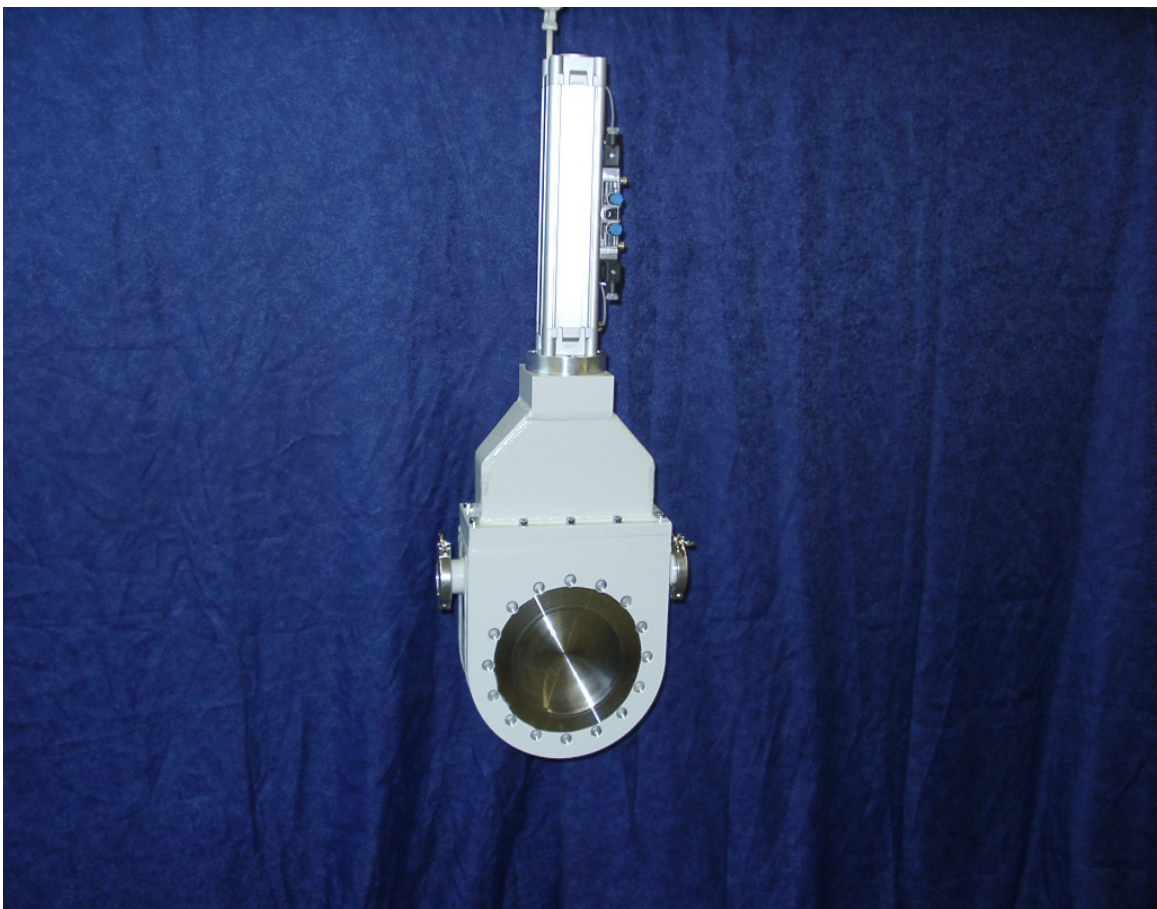


Vacuum Gate Valve DN 100 and DN 150

WER Dok.E.02.050 02.051

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1. Introduction/Safety Instructions

This documentation should be carefully read before installation and operation of this vacuum gate valve, in order to avoid harm to personnel or damage to materials.

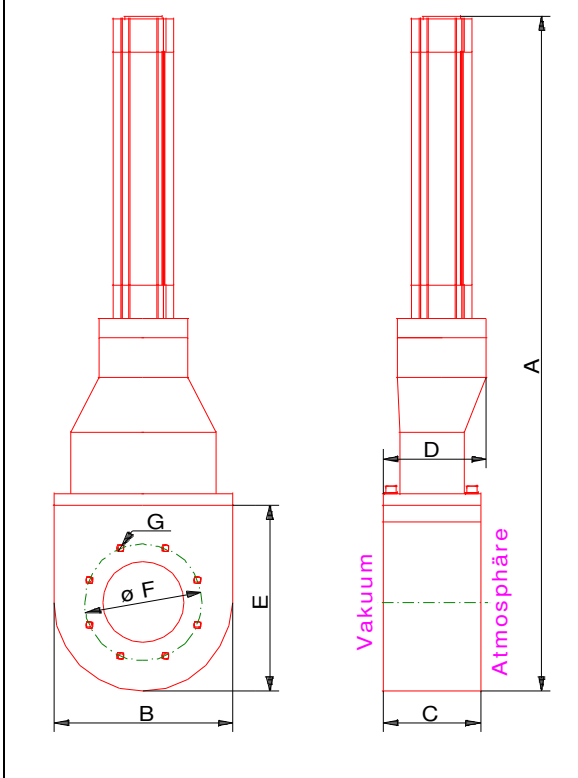
2. Description

These valves are very compact sealing units that leave the flow area free, when they are completely open. This gives particularly high flow values. An additional advantage of is the use of disks as seals. The specially designed sealing mechanism operates so that the disk is only pressed against the sealing surface, when it reaches its end-position in the direction of turning. Also the disk is first removed from its sealing position, before it is moved sideways.

The valves are actuated by a double operating pneumatic cylinder, controlled by a 5/2 way control valve (Impulse control). If there is a power failure, the valve disk stays where it is (If it has started moving, it completes the operation).

Applications: - Rough, fine and high Vacuum
- Vacuum pumping units and vacuum plants to build up material locks
- Sealing unit for the suction side of a diffusion pumps

3. Technical Data



Leak tightness - body: $< 1 \times 10^{-7}$ [mbar * l/s]
 Leak tightness - disk: $< 1 \times 10^{-5}$ [mbar * l/s]
 Max. Allowable differential pressure: 1000 mbar
 Max. Allowable Temperature:

- Housing ≤ 120 °C
- Drive ≤ 60 °C
- Control valve ≤ 50 °C

Material – valve disk : SS 304
 Material – valve disk seal : VITON

Surface outside:
 Stainless steel disks shot blasted; mild steel disks sand blasted, prepared and painted, RAL 7035 or colour to customer request.

| | | | | |
|---------------------------|-----------------|--------------|--------------|-----------------|
| Diameter DN | mm | 100 | 150 | 150 |
| Dimension A | mm | 840 | 920 | 920 |
| Dimension B | mm | 220 | 280 | 280 |
| Dimension C | mm | 120 | 120 | 145 |
| Dimension D | mm | 127 | 127 | 145 |
| Dimension E | mm | 230 | 310 | 310 |
| Dimension F | mm | 145 | 225 | 225 |
| Dimension G | mm | 8 x M8 | 8 x M16 | 8 x M16 |
| Weight | kg | 39 | 49 | 52 |
| Conductivity ¹ | L/s | ~ 700 | ~ 1770 | ~ 1770 |
| Part Number | Mild steel | WER 02050.ST | WER 02051.ST | WER 02051.ST.02 |
| Part Number | Stainless steel | WER 02050.VA | WER 02051.VA | WER 02051.VA.02 |

Options: O-Ring grooves in the connection flange und dimension G can be made to customer request

¹ molecular flow

4. Installation instructions

The installation position of the disk is very important and care should be taken to make sure that the vacuum area to be sealed lays over the valve disk. The installation should only be carried out under clean conditions of a level that is usual for vacuum technology.

If installation is carried out in an incorrect, dirty way and this causes unsatisfactory operation we will accept no responsibility under guarantee.

Torque for the flange screws

| Diameter DN | Torque |
|-------------|------------|
| 100 | ~ 5 - 6 Nm |
| 150 | ~ 6 - 8 Nm |

The flange screws must be tightened equally and in a crosswise manner. Higher torques can deform the housing so much that the valve can no longer be properly operated or the valve seat may leak.

Outside effects

Additional effects such as those caused by items attached to the valve are to be avoided. Connection by items such as bellows is to be avoided.

Max. Allowable effects

| Diameter DN | Axial pull-/pushing effect | Bending moment |
|-------------|----------------------------|----------------|
| 100 | ~ 1000 N | 80 Nm |
| 150 | ~ 1000 N | 80 Nm |

If both effects happen together, the values given are invalid

Compressed air

Only clean, dry and lightly oiled compressed air should be used !

Pressure range: 5 – 7 bar_ü / 72 – 101 psig



Compressed air should only be connected, when the valve is built into the vacuum system and when the valve disk or other moving parts can no longer be moved.

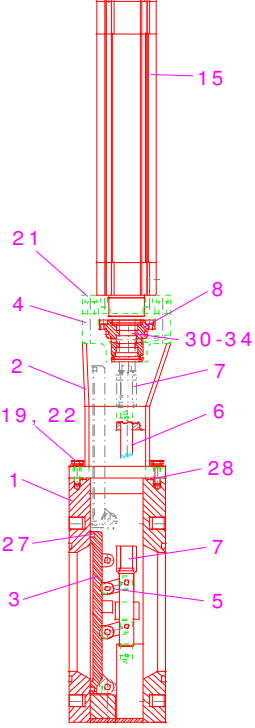
5. Operation

Item 15 (complete drive), Item Number WER 02050_02051.15

Maintenance free, double-operating, pneumatic standard cylinder manufactured by FESTO:

| | | |
|-------------------|--|-----------------------|
| Standard Cylinder | | WER 02050_02051.15.01 |
| Magnetic valve | | WER 02050_02051.15.02 |
| Magnet spool | | WER 02050_02051.15.03 |
| Noise damper | | WER 02050_02051.15.04 |
| Light seal | | WER 02050_02051.15.05 |
| Stuffing box | | WER 02050_02051.15.06 |
| Nut stone | | WER 02050_02051.15.07 |
| Proximity switch | | WER 02050_02051.15.08 |

6. Maintenance instructions

| | |
|--|---|
|  | <ol style="list-style-type: none"> 1. Changing the valve disk <ul style="list-style-type: none"> • Take apart the top and bottom parts (Item 1 and 2) by undoing item 19 (Cylinder screw) and item 22 (Cylinder rod) • Change the seals that make up the seal set (Item 27 and 28) • Assemble the top and bottom parts 2. Changing the seal in the pressure housing <ul style="list-style-type: none"> • Disassemble the adapter flange (Item 4) by undoing item 19 (Cylinder screw) • Disassemble pressure rod (Item 7) from piston rod of pneumatic cylinder (Item 15) • Disassemble pressure stage housing (Item 8) do by undoing item 21 (cylinder screw) • Change the sealing set (Items 30 – 34) • Reassemble in the opposite way |
|--|---|

Maintenance can also be carried out by WERNIG Maschinen- und Apparatebau GmbH & Co. KG. Please contact us.

7. Spare parts

| | Diameter DN 100 | Diameter DN 150 |
|---------------------------|-----------------|-----------------|
| Disk seal set | WER DS01.02050 | WER DS01.02051 |
| Pressure housing seal set | WER DS02.02050 | WER DS02.02051 |

Further spare parts on request.

8. Warranty conditions

1. The manufacturer assumes the guarantee for all manufacturing or assembly defects on the product for a period of 12 months after commissioning, maximum 15 months after delivery (delivery date is decisive).
2. Parts and assemblies that are not from the supplier are subject to the supplier's warranty
3. The warranty covers only defective parts. All other costs (travel, labor costs, transportation, loading and unloading, penalties, etc ...) shall be borne by the operator.
4. If the manufacturer considers this to be appropriate, the product must be transported to the company for the purpose of diagnosis and repair with the appropriate means
5. The manufacturer rejects any legal liability for damages or accidents that are directly or indirectly attributable to our materials, regardless of the guarantee period.
6. The warranty expires if:
 - The product is rebuilt in a manner not approved by the manufacturer, replacement parts not supplied by the manufacturer, or an unauthorized workshop on the product.
 - The product is used without having previously read the documentation
 - The product is operated outside the limits of use (temperature / pressure, etc.)
 - The product is damaged by excessive use.
 - The product is negatively affected by contamination
 - The copy of this warranty has not been duly completed and sent to WERNIG Maschinen- und Apparatebau GmbH & Co. KG
7. The operator declares that the documentation has been read and understood before commissioning.
8. Defective parts or spare parts covered by the warranty are made available to the customer. Free of charge will only take place if the faulty parts or spare parts have been received by the manufacturer for inspection.
9. Transport: Complaints of damages during transport are not accepted, these are to be addressed to the transport company.

ATTENTION. THIS WARRANTY APPLIES ONLY IF A COPY OF THIS DOCUMENT IS SIGNED TO THE MANUFACTURER.

Product: _____

Part number: _____

Serial number: _____

Operator: _____

Date: _____

Printed Name: _____

Signature: _____