

## Low Particle Gate Valve with pneumatic actuator

This manual is valid for the valve ordering numbers:

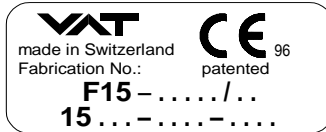
15136- .A14/24/34/44

15140- .A14/24/34/44

15144- .A14/24/34/44

15146- .A14/24/34/44

The respective product identification is given on each valve in the following or similar way:



### Explanation of symbols:



Read declaration carefully before you start any other action!



Keep body parts and objects away from the valve opening!



Attention!



Hot surfaces; do not touch!



Product is in conformity with EC guidelines, if applicable!



Loaded springs and/or air cushions are potential hazards!



Disconnect electrical power and compressed air lines. Do not touch parts under voltage!



Wear gloves!



Read these «**Installation, Operating & Maintenance Instructions**» and the enclosed «**General Safety Instructions**» carefully before you start any other action!



## Installation, Operating, and Maintenance Instructions Series 15.1, DN 63 - 200 (2½" - 8")

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### Imprint:

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## Intended use of product

Use product for vacuum applications under the conditions indicated in the chapter «Technical data» only! Other applications are only allowed with the written permission of VAT.

## Technical data

Pressure range	1 x 10 <sup>-8</sup> mbar to 1 bar (abs)
Differential pressure on the gate	1 bar in either direction
Max. differential pressure at opening	30 mbar
Admissible temperature: Valve	< 150°C
Pneumatic actuator	< 150°C
Position indicator	< 80°C
Solenoid	< 50°C
Position indicator: Contact rating	5 A / 250 V AC, 3 A / 50 V DC
Solenoid	see tag on solenoid

## Installation into the vacuum system

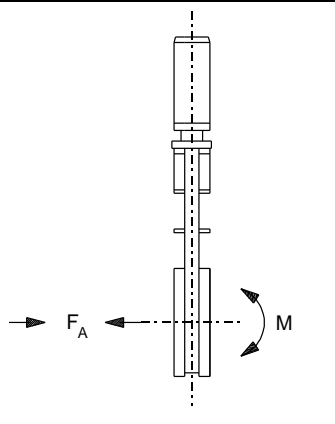
The valve seat side is indicated by the symbol "▽" on the connection flange.

### Admissible forces

Forces from evacuating the system, from the weight of other components, and from baking can lead to deformation of the valve body and to malfunction of the valve. The stress has to be relieved by suitable means, e.g. bellows sections. The following forces are admissible:

DN (nom. I.D.)		Axial tensile or compressive force «FA»		Bending moment «M»	
mm	inch	N	lbf	Nm	lbf • ft
63	2½	980	220	39	29
100	4	1080	242	49	36
160	6	1080	242	59	43
200	8	1180	265	69	50

If a combination of both forces («FA» and «M») occurs, the values mentioned above are invalid. Please contact VAT for more information.



### Compressed air connection



- Connect compressed air only if
- valve has been installed into the vacuum system
  - moving parts cannot be touched

With solenoid: Connect compressed air to **IN** (internal thread R 1/8", 1/8" NPT for USA)

Without solenoid: Connect compressed air to **OPEN** and **CLOSE** (internal thread M5)

Compressed air pressure (min. - max. overpressure): 4 - 7 bar / 55 - 100 psig

Use only clean, dry or slightly oiled air!

### Electrical connection



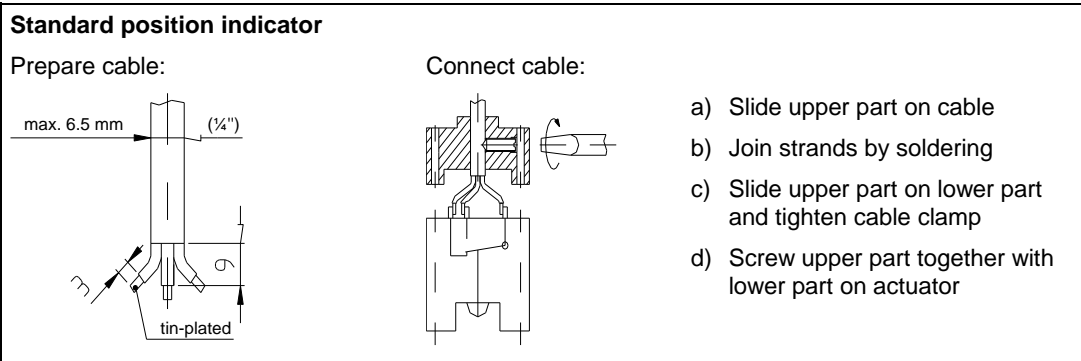
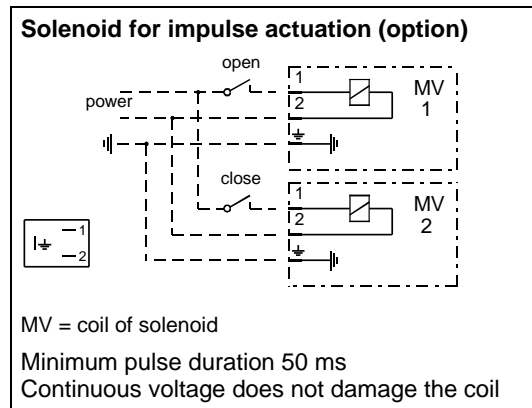
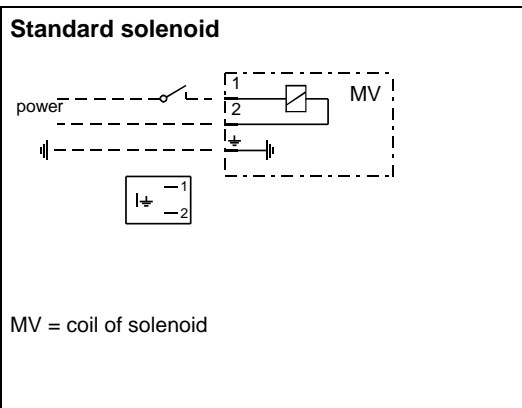
Do not touch electrical parts under voltage!



Connect electrical power only if  
 - valve has been installed into the vacuum system  
 - moving parts cannot be touched

Verify that mains voltage matches voltage stated on the solenoid! Sockets for position indicator and solenoid are supplied with the valve.

Wire solenoid and position indicator according to the following diagrams:



## Operation

### Normal operation

Valve is opened and closed by means of compressed air.

### Admissible temperature

See «Technical data»!

### Compressed air failure

Valve closed: valve position is undefined (not mechanically locked)

Valve open: valve position is undefined (not mechanically locked)

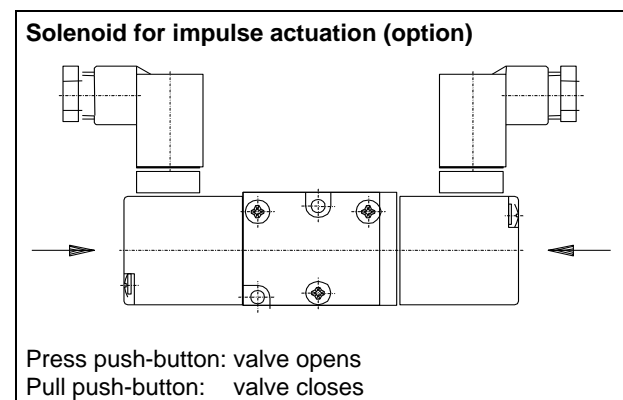
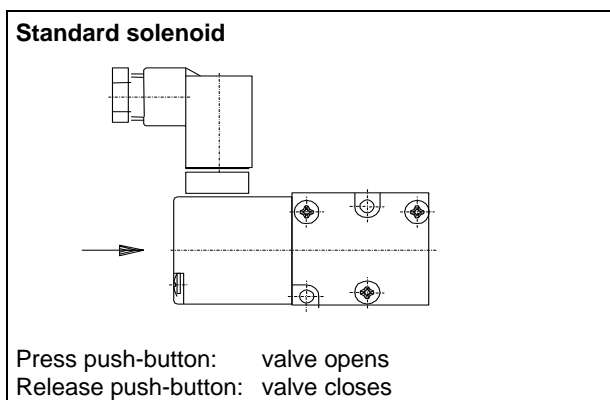
### Power failure

Standard solenoid: valve closes

Solenoid for impulse actuation (option): valve position does not change, but a started movement will be completed

### Emergency operation at power failure

In case of a power failure, the valve can be actuated manually if compressed air is available.





## Preventive maintenance

Under clean operating conditions, the valve does not require any maintenance during the specified cycle life.

## Maintenance

### Replacement of actuator/mechanism assembly

The figures in brackets refer to the drawing on page 8

- Vent chambers and open valve
- Disconnect compressed air and electrical power from valve
- Remove bonnet screws in crosswise order
- Withdraw actuator/mechanism assembly carefully from body
- Check and clean sealing surfaces of bonnet and valve seat
- Put new bonnet seal (60) on body or bonnet (depending on mounting position)
- Reassemble in reverse direction

**Note!** Tighten screws in crosswise order!  
Torque: 15 Nm / 11 lbf · ft

## Spare parts

Item	Description	DN	Part No.
	Seal kit, consisting of:	63	256368
	- gate (33)	100	
	- bonnet seal (60)	160	
		200	
33	Gate	63	84444-R1
		100	
		160	
		200	
42	Position indicator	63 - 200	
43	Solenoid kit (standard)	63 - 200	
43/1	Solenoid		
43/2	Screw (2 pcs)		
43/10	Plug		
43	Solenoid kit (impulse)	63 - 200	
43/1	Solenoid		
43/2	Screw (2 pcs)		
43/10	Plug (2 pcs)		
60	Bonnet seal	63	N-5100-155
		100	
		160	
		200	

.... \*) Specify voltage  
(e.g. N-7557-018-**220V 50Hz**)



## Trouble shooting

Valve does not close/open:	Power available? Compressed air available? Solenoid defective? Check voltage! Check air pressure!
Leak at gate:	Clean valve seat and gate! Replace gate, if damaged! Correct air pressure?
Leak at body:	Flanges leaktight? Replace bonnet seal!

## Repairs

Contact VAT for repairs or maintenance. The fabrication No. (F15- . . . . / . . ) marked on the valve body has always to be specified. It has to be individually decided whether the work can be performed by the customer or has to be carried out by VAT.

All supplies (e. g. compressed air, electrical power) have to be disconnected for removal/installation of the valve from/into the system.



Even with disconnected supply, loaded springs and/or air cushions in cylinders can be potential hazards.



Keep fingers and objects away from the valve opening!

Products returned to VAT for repair have to be free of harmful substances such as e.g. toxic, caustic or microbiological ones. For radioactively contaminated products the customer has to fill in the VAT form «Contamination and Radiation Report» and to send it with the product. The form is available at VAT. The maximum permissible values indicated in the form must not be exceeded.



## Warranty

Each product sold by VAT Vakuumventile AG (VAT) is warranted to be free from the manufacturing defects that adversely affect the normal functioning thereof during the one-year period immediately following delivery thereof by VAT, provided that the same is properly operated under conditions of normal use and that regular, periodic maintenance and service is performed or replacements made, in accordance with the instructions provided by VAT. The foregoing warranty shall not apply to any product or component that has been repaired or altered by anyone other than an authorized VAT representative or that has been subject to improper installation or abuse, misuse, negligence or accident. VAT shall not be liable for any damage, loss, or expense, whether consequential, special, incidental, direct or otherwise, caused by, arising out of or connected with the manufacture, delivery (including any delay in or failure to deliver), packaging, storage or use of any product sold or delivered by VAT shall fail to conform to the foregoing warranty or to the description thereof contained herein, the purchaser thereof, as its exclusive remedy, shall upon prompt notice to VAT of any such defect or failure and upon the return of the product, part or component in question to VAT at its factory, with transportation charges prepaid, and upon VAT's inspection confirming the existence of any defect inconsistent with said warranty or any such failure, be entitled to have such defect or failure cured at VAT's factory and at no charge therefor, by replacement or repair of said product, as VAT may elect. VAT MAKES NO WARRANTY OR REPRESENTATION OF ANY KIND, EXPRESS OR IMPLIED, (INCLUDING NO WARRANTY OR MERCHANTABILITY), EXCEPT FOR THE FOREGOING WARRANTY AND THE WARRANTY THAT EACH PRODUCT SHALL CONFORM TO THE DESCRIPTION THEREOF CONTAINED HEREIN, and no warranty shall be implied by law.

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