

Operating Instructions

TVV 001

Vacuum Safety Valve



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1. Safety Precautions

- ☞ Read and follow all the instructions in this manual.
- ☞ Inform yourself regarding:
 - Hazards which can be caused by the unit;
 - Hazards which can arise in your system.
- ☞ Observe all safety and accident prevention regulations.
- ☞ Check regularly that all safety requirements are being complied with.
- ☞ Do not carry out any unauthorised conversions or modifications on the unit.
- ☞ When returning the unit to us, please note the shipping instructions in the section "Service".

Pictogram definitions:



Danger of damage to the unit and/or system.



Danger of an electrical shock.

Modifications reserved.

2. Understanding The Vacuum Safety Valve

2.1. Main Features



The vacuum safety valve is fitted in the fore-vacuum line of pumping combinations between the turbomolecular pump and the diaphragm pump (for fitting position please see Section 3.). It is controlled with the backing pump and prevents unintentional venting of the turbomolecular pump via the fore-vacuum line when the backing pump is at rest.

When the backing pump starts, the vacuum safety valve opens delayed. The valve is a gate valve with electro-magnetic activation and Viton diaphragms. In addition, the valve can be operated manually via a pressure key.

The permissible pressure range is ≤ 1 bar absolute.

The complete vacuum safety valve comprises two parts,

- The gate valve and
- Plug with switching on delay.

The plug is connected to the gate valve.



No media must be pumped which attacks the materials used (please see Section 6. Technical Data).





2.2. Function

After the pumping station has been switched on, the vacuum safety valve opens once the set delay time has elapsed. Plug 2 contains the potentiometer "P".

In this way the delay time can be set (0 - 25 seconds).

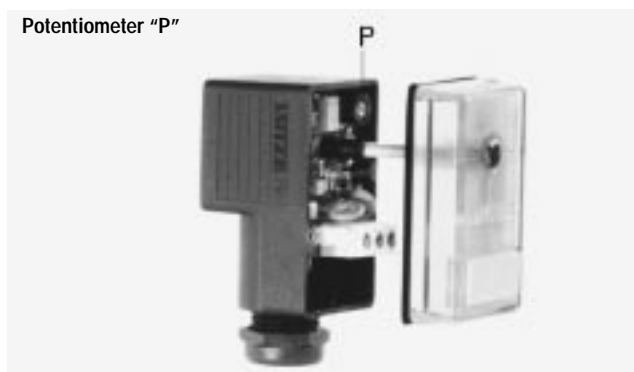
By turning in a clockwise direction, the delay time is shortened and in an anti-clockwise direction, lengthened.

Potentiometer "P"

Delay time: shorter 
longer 



Operate the valve with mains power. Disconnect mains power to the pumping station before opening the plug casing to alter the position of potentiometer "P".



Manual operation

The valve can also be opened manually. After pressing manual control 3, arrest by turning in a clockwise direction.



In the arrested position, the valve can no longer be switched electrically.

3. Installation



Do not carry out any unauthorised modifications or alterations to the vacuum safety valve.

Gate valve 1 is provided with a small flange connection DN 16 ISO-KF for fitting into the fore-vacuum line. By unscrewing the ISO-KF flange, a G1/4" screw connection is possible.

Installation position

The valve body is marked with an "A" on the high vacuum pump side and with a "P" on the fore-vacuum side of the pump. The valve should be fitted in accordance with these markings.

When the valve has been correctly fitted, the key for manual operation points to the backing pump.



The permissible pressure range must be observed (see Section 4. Technical Data) and uncontrolled over-pressure (for example by incorrect installation of the valve) must be prevented. There is a danger of bursting.

3.1. Electrical Connection



Electrical connections must be carried out in accordance with local regulations.

The vacuum safety valve is connected as per the wiring diagram of the electronic drive unit TCP which is being used or with the pumping station control unit TCS and is controlled simultaneously with the diaphragm pump. The valve opens once the set delay time has elapsed.

Please note:

When connecting the vacuum safety valve it is essential to take account of the connection voltage shown on the rating plate.

4. Maintenance

Under clean operating conditions, the vacuum safety valve needs no maintenance.

5. Service

Do Make Use Of Our Service Facilities

In the event that repairs are necessary to your vacuum safety valve, a number of options are available to you to ensure any system down time is kept to a minimum:

- Have the unit repaired on the spot by our PFEIFFER Service Engineers;
- Return the unit to the manufacturer for repairs;

Local PFEIFFER representatives can provide full details.

Please Note:

Repair orders are carried out according to our general conditions of sale and supply. If repairs are necessary, please send the pump to your nearest PFEIFFER Service Center.

Contact Addresses And Telephone Hotline

Contact addresses and service hotlines can be found on the back cover of these operating instructions.

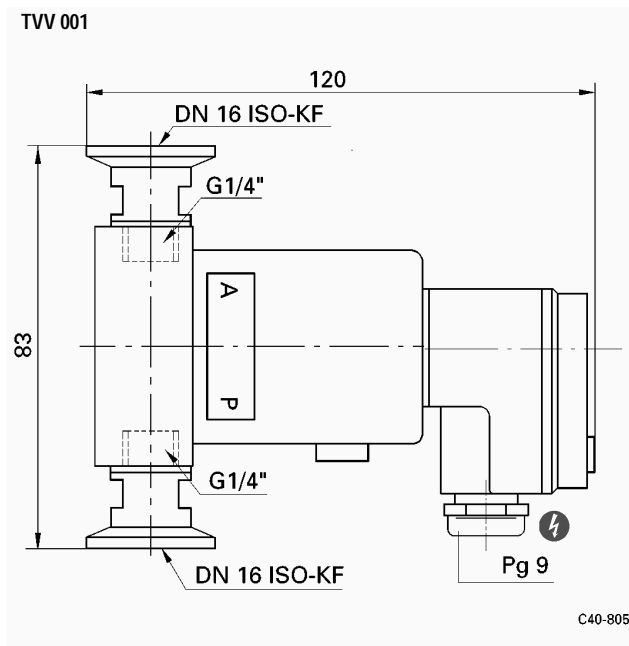
6. Technical Data

Feature	Unit	Plug (switching on delay)
Electrical connection		Terminal screw up to 1.5 mm ²
Screw connection		Pg 9
Operations voltage range	V AC	80 - 265
Maximum permanent current	A	0.4
Maximum switching on current	A/ms	2/50
Delay time	s	0-25
Recovery time	s	0.2
Repeat accuracy	%	15
Ambient temperature	°C	0 - 50
Weight ¹⁾		

Feature	Unit	Gate valve
Connection		DN 16 ISO-KF
Casing material		Polypropylene
Diaphragm material		Viton
Small flange material		Stainless steel
Permissible pressure range	bar	≤ 1 (absolute)
Leak rate	mbar l/s	1x10 ⁻²
Maximum gas temperature	°C	130
Connection voltage	V	115
Connection voltage	V	230
Type of current	Hz	50/60
Voltage tolerance	%	±10
Ambient temperature	°C	0 - 50
Weight ¹⁾		

¹⁾ Weight (gate valve with plug), 400g

6.1. Dimensions



 Electrical connection

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Turkey, United Arab Emirates, Yemen