

## LEAKVALVE: HIGHLIGHTS

- The core of this valve is a diaphragm in stainless steel 316L, gold plated.
- Robust, it cannot be damaged with any normal methods.
- The dead volume is kept as small as possible. There is no narrowing before or after the valve seat. Flow direction is free eligible.
- A direct actuator adjusts the sealing force in very high resolution. Quick, stable leak, reliable.
- While baking out, the stepper motor and the NC-actuator remain on the valve. Full control during bakeout periods.
- 10 seconds operating time (stepper motor driven) for the whole control range.
- A heating cartridge is available as an accessory. It heats where it is needed: Very close to the valve seat.
- A pneumatic actuator NC is responsible for fast actuation. The open position can be adjusted by hand over the whole range.



This product is available with CF16, CF40 (all rotatable), or with VCR female.

A full program of actuators is available: Manually operated, stepper motor driven including Controller (input 0-10V or RS-232), pneumatically operated NC with adjustable open position.

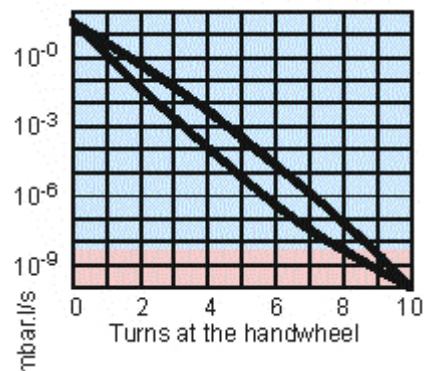
Custom configuration such as modified angle dimensions, other flange standards, 3-way function, alternative materials are available on request.

## TECHNICAL DATA

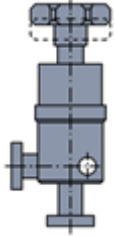
Material housing	316L
Material diaphragm	316L, gold plated
Material outside of vacuum	316L, protected steel
Lifetime	100,000 cycles until FIRST service
Mounting position	any
Weights:	
handoperated CF 16/16	1,6 kg
handoperated CF 40/16	2,2 kg
handoperated VCR	1,5 kg
motor driven	add 2,3 kg
pneumatically operated NC	add 8,6 kg
Internal pressure	vacuum to 10 bar
Pressure difference	10 bar from each side
Baking temperatures:	
Valve open	450°C
Valve closed or operable	300°C
Tightness housing	$1 \times 10^{-10}$ mbar l/s
Tightness valve seat	$1 \times 10^{-10}$ mbar l/s
Dead volumes:	
Main flange side	1,0 – 1,4 ccm
Side flange side	4,6 ccm
Turns of the handwheel	10
Operating time motor driven	10 seconds for the whole range
Compressed air pneumatic cylinder	4 – 9 bar overpressure

### Leak diagram:

In the range of turn 0 - 3 the diaphragm does not touch the valve seat. Due to physical reasons, control between  $10 \text{ E-9}$  und  $10 \text{ E-10}$  is not possible, if used at room temperature (red range in the diagram). In this case the valve is tight approx at turn 9 to 10. Control in this range is possible if the valve is heated. The throughput in the open position is at least 60 mbar.l/s



**LEAKVALVE: VERSIONS**

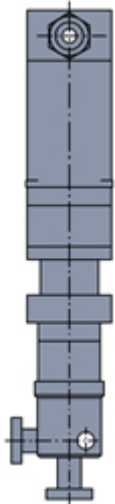


**Manually operated:**

Handwheel for 10 turns, 10mm stroke. Maximal closing torque: 5 Nm.

**Accessories:**

Heating cartridge, Bakeout Controller. Vernier for exactly monitoring of the position.



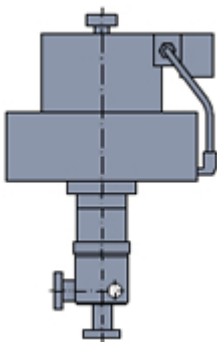
**Stepper motor driven:**

Stepper motor with planetary gear, designed for longtime work and for high temperatures. An electric switch reports the closed endposition. A thermal resistance ensures that the valve body stays at 300°C, while the actuator doesn't exceed the allowed 150°C. Thermal insulation of the valve body must be done after installation into the vacuum system. Included: Power cable, RS-cable (if applicable), all plugs, 5m motor cable.

10 seconds operating time for the whole control range.

**Accessories:**

Heating cartridge, Bakeout Controller.  
Extension cable in three lengths.  
Extends the possible distance between valve and Controller to 10, 15 or 20m.



**Pneumatic actuator NC:**

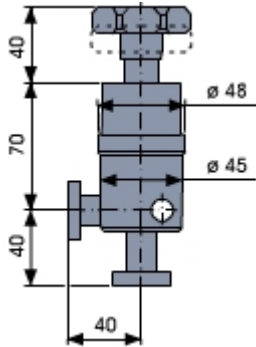
Pneumatic actuator NC. A screw with a hexagon 24mm on the top of the cylinder allows adjusting of the open position. This screw can be adjusted throughout the whole control range. The valve moves within less than one second from closed to the adjusted position.

Solenoid valve with emergency override is included (24VDC, 4,5W)

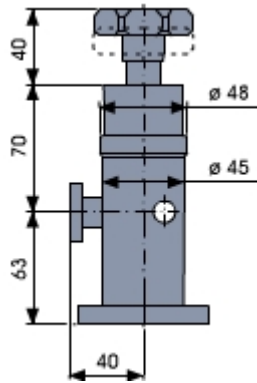
**Accessories:**

Heating cartridge, Bakeout Controller.

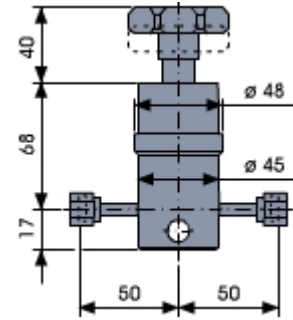
**LEAKVALVE: DIMENSIONS**



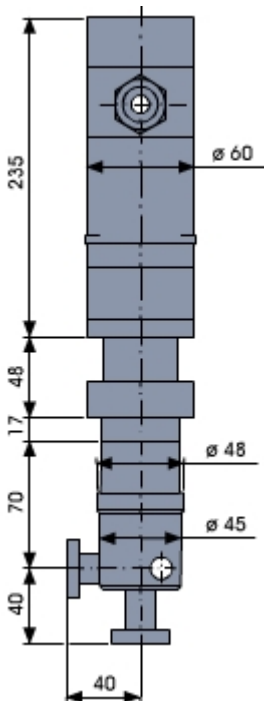
Leakvalve CF 16/16  
handoperated



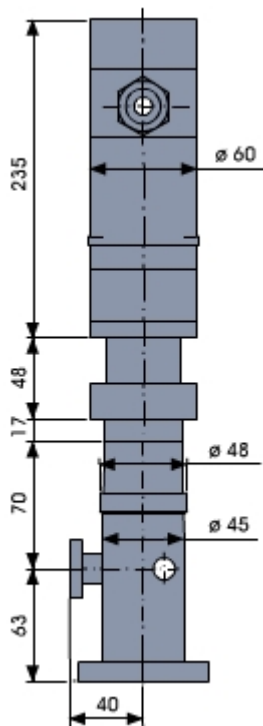
Leakvalve CF 40/16  
handoperated



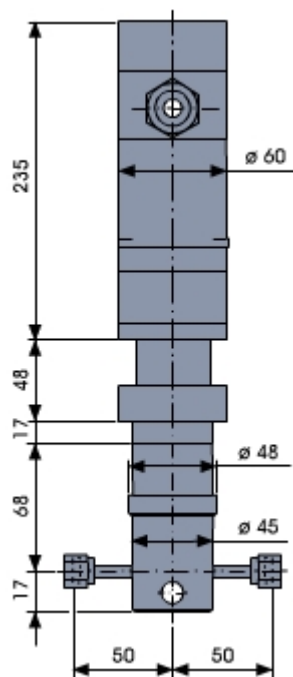
Leakvalve VCR  
handoperated



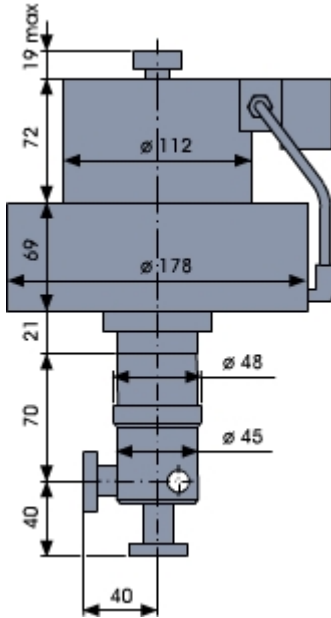
Leakvalve CF 16/16  
motor driven



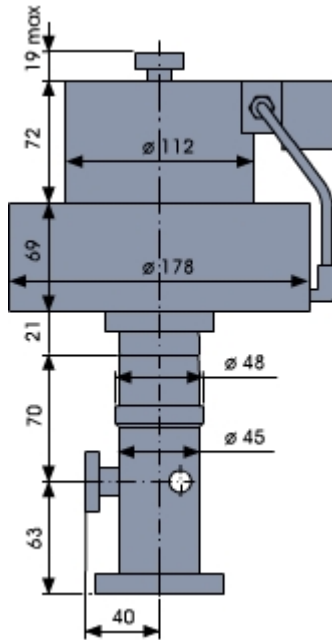
Leakvalve CF 40/16  
motor driven



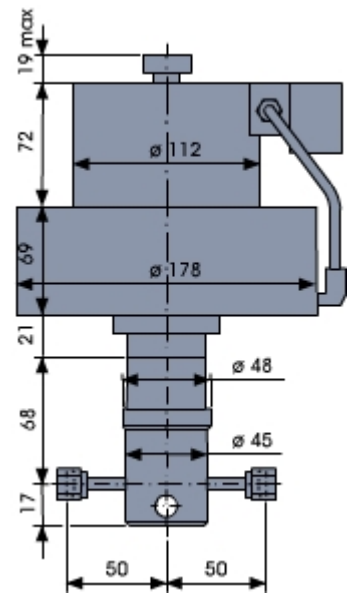
Leakvalve VCR  
motor driven



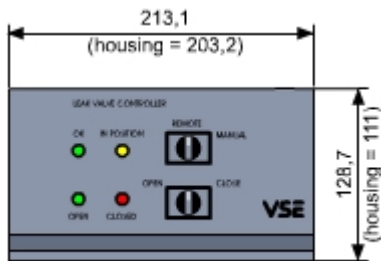
Leakvalve CF 16/16  
 pneumatically  
 operated NC



Leakvalve CF 40/16  
 pneumatically  
 operated NC



Leakvalve VCR  
 pneumatically  
 operated NC



Deep: 229 + frontplate + plugs

Controller for motor driven valve