

## Main applications

For pumping and venting of UHV systems when an extremely low out-gassing rate is important

Suitable for most corrosive gases



## Ordering information

**Valve with manual actuator**  
removable handwheel

DN		Ordering numbers
mm	inch	
16	5/8	CF-R 28424-GE01
40	1 1/2	28432-GE01
63	2 1/2	28436-GE01

**Valve with pneumatic actuator**  
single acting with closing spring (NC)  
without solenoid valve  
without position indicator

DN		Ordering numbers
mm	inch	
16	5/8	CF-R 28424-GE11
40	1 1/2	28432-GE11
63	2 1/2	28436-GE11

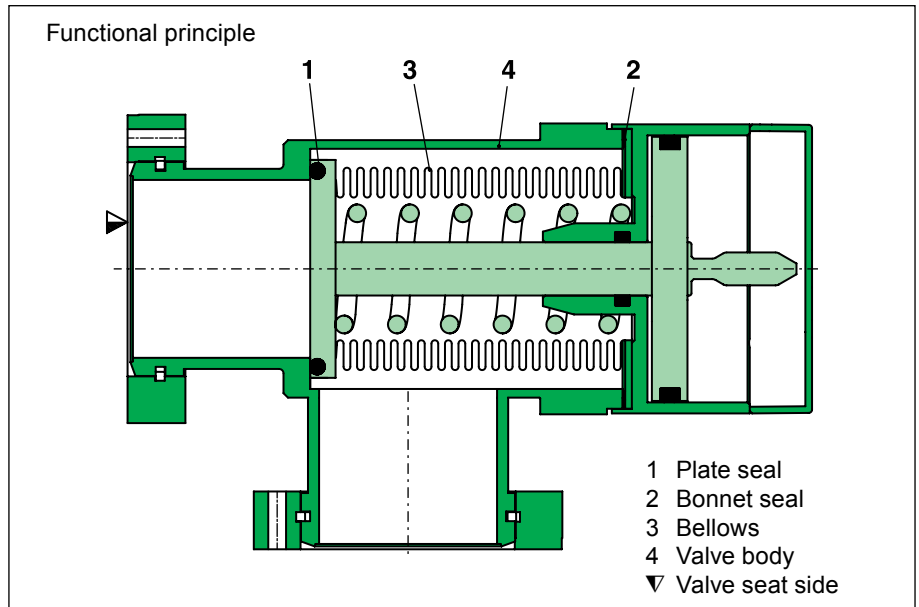
without solenoid valve, with position indicator: 284 . . -GE21

with solenoid valve, without position indicator: 284 . . -GE31 (specify control voltage)

with solenoid valve, with position indicator: 284 . . -GE41 (specify control voltage)

## Features

- Body material: stainless steel
- Extremely low outgassing rate
- Resistant against differential pressure
- Bellows
- Metal bonnet seal
- Rotatable CF flange



## Technical data

Leak rate	
– Valve body	$< 5 \cdot 10^{-10}$ mbar ls <sup>-1</sup>
– Valve seat	$< 1 \cdot 10^{-9}$ mbar ls <sup>-1</sup>
Pressure range	$5 \cdot 10^{-10}$ mbar to 5 bar (abs)
Differential pressure on the plate	
– In opening direction	$\leq 2$ bar
– In closing direction	$\leq 5$ bar
Differential pressure at opening	$\leq 1$ bar
Cycles until first service	3 million
Temperature <sup>1)</sup>	
– Valve body	$\leq 200$ °C open $\leq 150$ °C closed
– Manual actuator	$\leq 120$ °C (without handwheel 200 °C)
– Pneumatic actuator	$\leq 120$ °C
– Solenoid valve, position indicator	$\leq 80$ °C
Material	
– Valve body	AISI 304 (1.4301)
– Plate	AISI 316L (1.4404, 1.4435)
– Bellows	AISI 316L (1.4404, 1.4435)
Seal	
– Bonnet	metal
– Plate	FKM (Viton®)
Feedthrough	bellows
Mounting position	any
Solenoid valve	24 VDC (others on request)
Position indicator: contact rating	
– Voltage	5–50 VAC/DC
– Current	5–100 mA
Valve position indication	visual (mechanical)

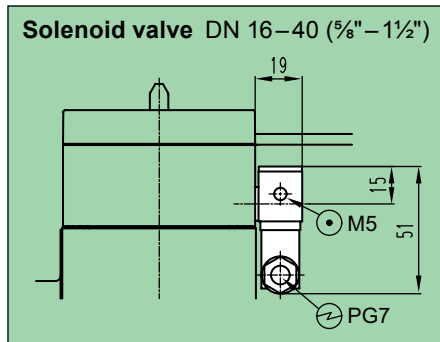
<sup>1)</sup> Maximum values: depending on operating conditions and sealing materials

Further technical data on next page →

Continued Technical data

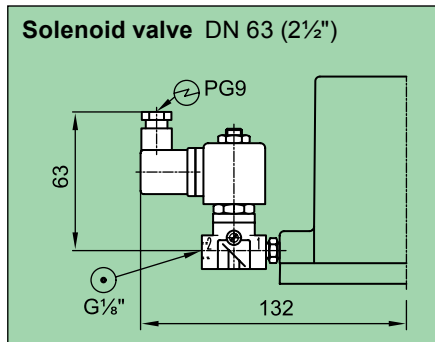
DN (nominal I.D.)		CF-R flange	Conductance (molecular flow)	Valve with manual actuator			Valve with pneumatic actuator, single acting with closing spring (NC)						
				Turns per stroke	Weight		Compressed air min. – max. overpressure		Volume of pneumatic actuator		Closing time	Weight	
mm	inch		ls <sup>-1</sup>	n	kg	lbs	bar	psi	l	ft <sup>3</sup>	s	kg	lbs
16	5/8	1 1/8	5	3.6	0.3	0.7	4–8	58–116	0.004	0.0001	0.10	0.4	0.9
40	1 1/2	2 3/4	45	4.5	1.5	3.3	4–8	58–116	0.035	0.0012	0.55	1.6	3.5
63	2 1/2	4 1/2	160	6.6	5.3	11.7	4–8	58–116	0.112	0.0040	0.70	6.0	13.2

## Solenoid valve



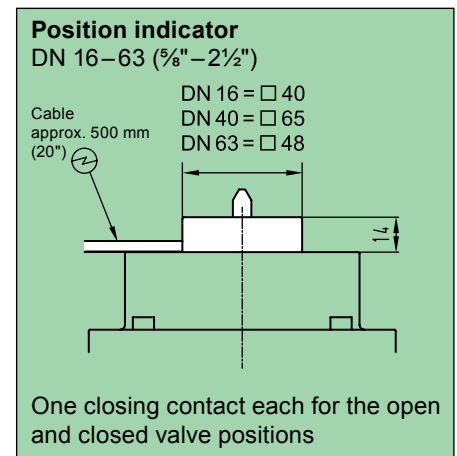
Ordering numbers: 284 . . -GE31/41

- ⊙ Compressed air connection
- ⊖ Electrical connection



Ordering numbers: 284 . . -GE31/41

## Position indicator



Ordering numbers: 284 . . -GE21/41

## Options



Pic. 1

### Actuator

- Other solenoid valve voltage (standard: 24 VDC)
- Position indicator bakeable to 120 °C or 200 °C (Pic. 1)
- Manual actuator bakeable to 200 °C
- Pneumatic actuator bakeable to 150 °C

### Valve

- Customer specified flanges
- ISO-KF, ISO-K flanges
- Other sealing materials
- Customer specified bodies

### Ordering information for options:

Ordering No. of valve-X (e. g. 28432-GE41-X, X = pos. indicator bakeable to 200 °C)

## Spare parts

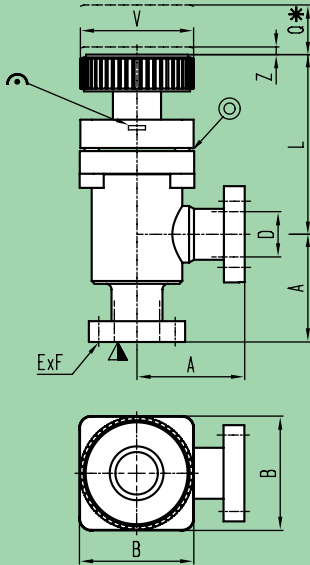
- **Seals**  
on request (specify fabrication number of valve)

## Accessories

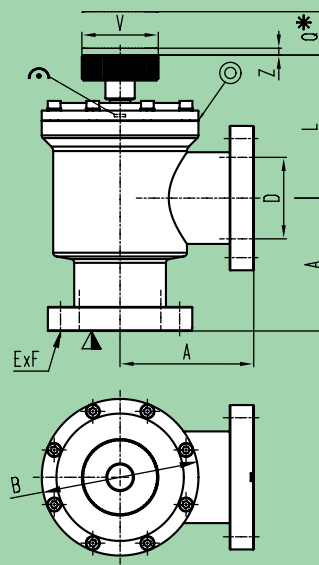
- **Flange connections**  
for installation of the valve: see series 33

## Dimensions

**Valve with manual actuator**  
DN 16–40 (5/8"–1½")

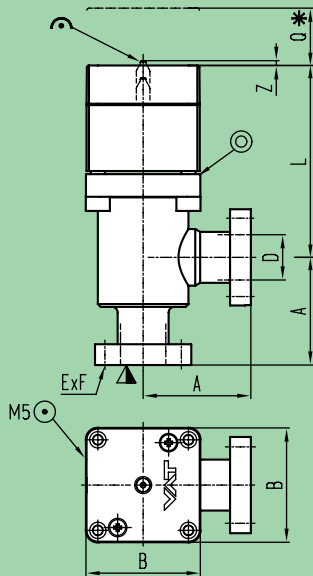


**Valve with manual actuator**  
DN 63 (2½")

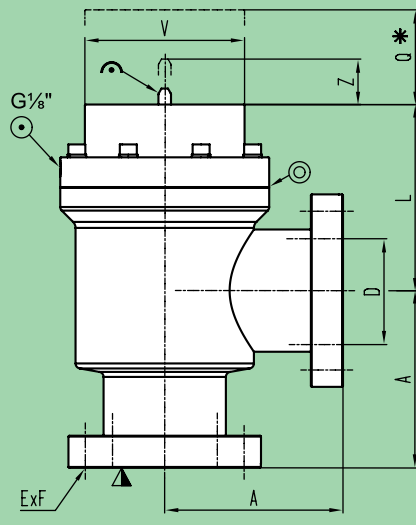


DN	mm	16	40	63
	inch	5/8	1½	2½
A	mm	38	63	105
	inch	1.50	2.48	4.13
B	mm	40	65	123
	inch	1.57	2.56	4.84
D	mm	16	40	64
	inch	0.63	1.57	2.52
E × F		6 × 4.30 6 × 0.17	6 × 6.60 6 × 0.26	8 × 8.40 8 × 0.33
L	mm	67.30	97.40	111.70
	inch	2.65	3.83	4.40
Q	mm	45	73.50	105
	inch	1.77	2.89	4.13
V	mm	40	60	60
	inch	1.57	2.36	2.36
Z	mm	3.60	7.90	13.40
	inch	0.14	0.31	0.53

**Valve with pneumatic actuator, single acting with closing spring**  
DN 16–40 (5/8"–1½")



**Valve with pneumatic actuator, single acting with closing spring**  
DN 63 (2½")



DN	mm	16	40	63
	inch	5/8	1½	2½
A	mm	38	63	105
	inch	1.50	2.48	4.13
B	mm	40	65	–
	inch	1.57	2.56	–
D	mm	16	40	64
	inch	0.63	1.57	2.52
E × F		6 × 4.30 6 × 0.17	6 × 6.60 6 × 0.26	8 × 8.40 8 × 0.33
L	mm	67.80	90.80	109.60
	inch	2.67	3.57	4.31
Q	mm	45	71	105
	inch	1.77	2.80	4.13
V	mm	–	–	94
	inch	–	–	3.70
Z	mm	2	9.50	31.40
	inch	0.08	0.37	1.24

- ▽ Valve seat side
- \* Required for dismantling
- ⊙ Compressed air connection
- ⊕ Mechanical position indication
- ⊙ Leak detection hole