

For accelerators and storage rings

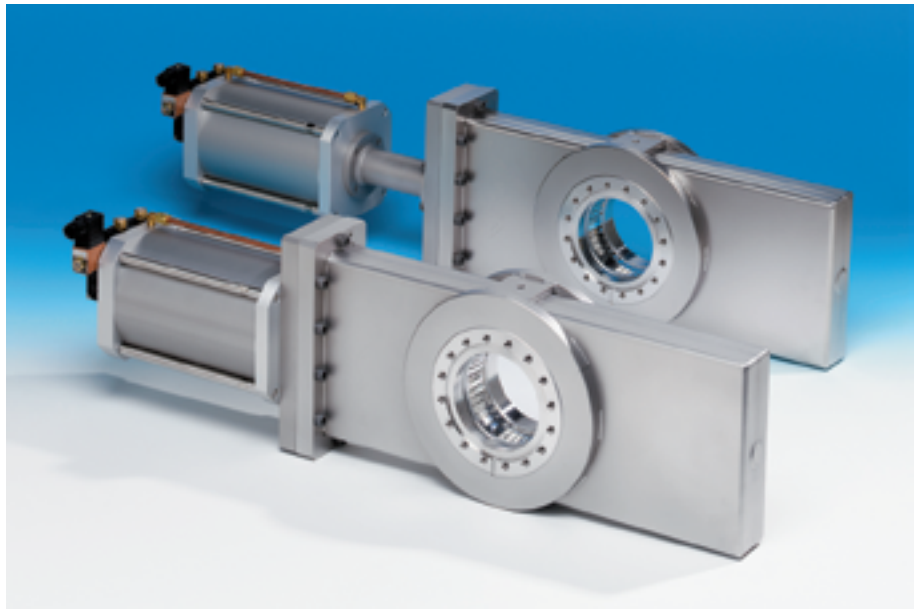
Low RF resistance

Customer specified RF aperture

Bakeable to 300°C in open and closed position

Radiation resistant

Opening also possible up to 1 bar differential pressure



Body material

stainless steel

Pneumatic actuator

double acting
with position indicator 80°C
with solenoid

DN		Ordering numbers (specify control voltage)		
mm	inch	compact actuator valve 200°C CF-F	extended actuator valve 300°C CF-F	actuator modules see page 182
63	2 ½	47236-CE74	47236-CE44	
100	4	47240-CE74	47240-CE44	
160	6	47244-CE74	47244-CE44	
200	8	47146-CE74	47146-CE44	

with position indicator 80°C, without solenoid: 47 . . . -CE72 (compact actuator)
47 . . . -CE24 (extended actuator)

further versions: see pages 182 and 183

Bake-out jacket

For bake-out we recommend commercial controllers with settable heating rate and temperature limiting device.

The bake-out jacket is without thermocouples and thermostats.

Details see page 216. Ordering number on request.

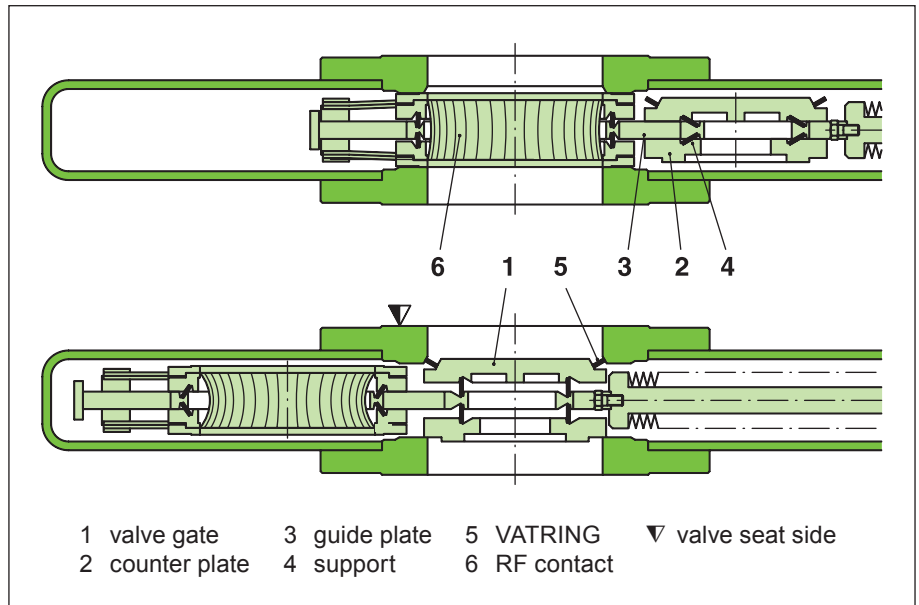
Sealing materials

Gate: metal

Bonnet: metal

Feedthrough

Bellows



Features

Reproducible RF contact due to mechanically loaded springs

VATRING configuration (see glossary)

Locks in open and closed position

Technical data

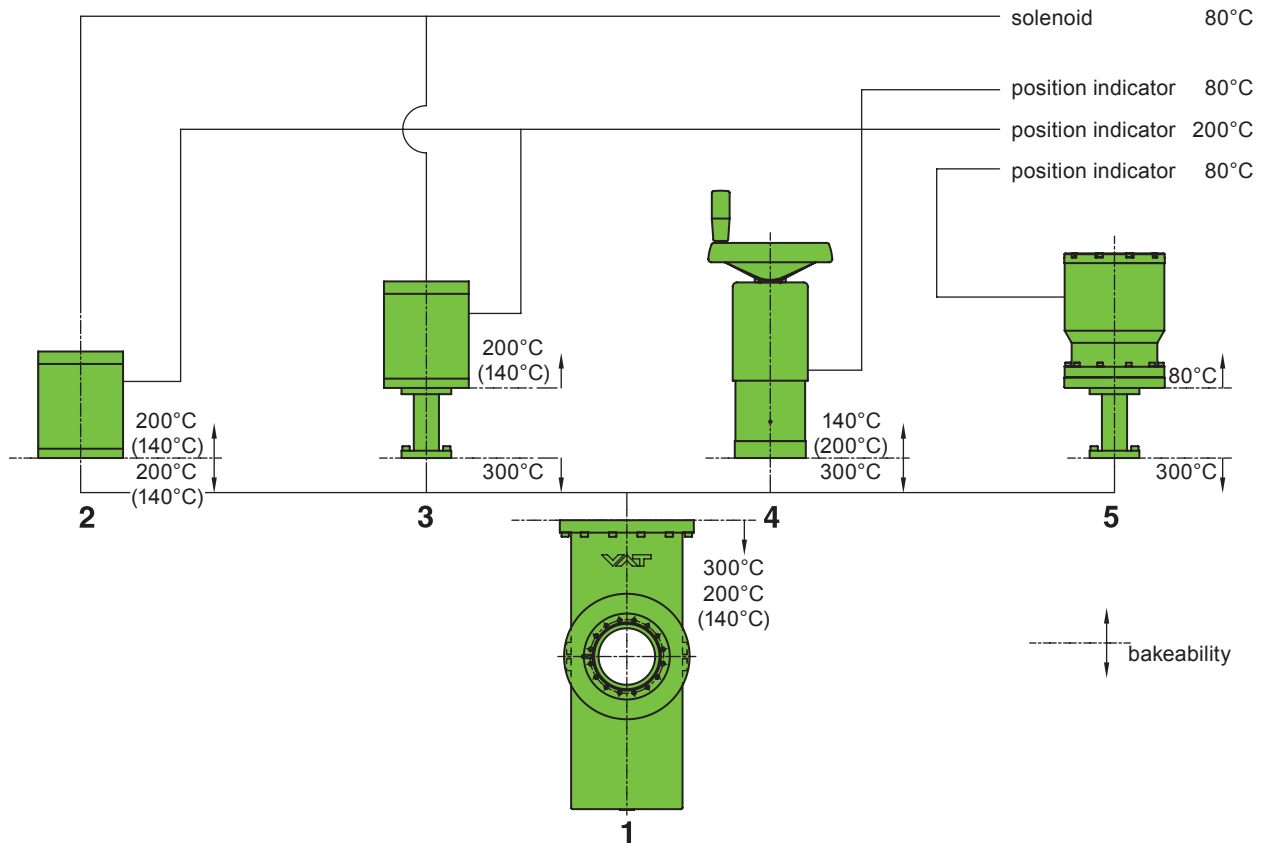
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Leak rate: body, valve seat	< 1 · 10 ⁻¹⁰ mbar ls ⁻¹
Pressure range	UHV to 2 bar (abs)
Differential pressure on the gate	1 bar in either direction
Differential pressure at opening	≤ 500 mbar (1 bar with reduced cycle life)
Cycles until first service	
- DN 63 - 160	10 000 (option: 20 000)
- DN 200	5 000 (option: 20 000)
Temperature ¹⁾	
- Valve body	≤ 300°C
- Pneumatic actuator	≤ 200°C
- Position indicator	≤ 80°C (option: 200°C)
- Solenoid	≤ 80°C
- Flexible bake-out jacket	≤ 300°C (valve), 115, 230 V, 50/60 Hz
Heating and cooling rate	
- DN 63 - 160	≤ 50°C h ⁻¹
- DN 200	≤ 25°C h ⁻¹
Material	
- Valve body, mechanism	AISI 316L (1.4435, 1.4404)
- Bellows	AISI 316L (1.4435)
- RF contact	AISI 301 (1.4310) (option: CuBe) thermorestant silver-coated
Seal: bonnet, gate	metal
Mounting position	beam line horizontal, otherwise any
Solenoid	24 VDC, 2.5 W (others see «Options»)
Position indicator: contact rating	<u>80°C</u> <u>200°C</u>
- Voltage	≤ 50 VAC / DC ≤ 50 VAC / DC
- Current	≤ 1.2 A ≤ 1 A
Valve position	visual (mechanical)

¹⁾ Maximum values: depending on operating conditions and sealing materials

Actuators – modular selection

- | | | | |
|---|--|--|---|
| 1 | Body, valve mechanism, bellows | : 10 ⁸ Gy, bakeable to 300°C | |
| 2 | Pneumatic actuator compact | : 10 ⁵ Gy, bakeable to 200°C | option: 10 ⁶ Gy, bakeable to 140°C |
| 3 | Pneumatic actuator extended | : 10 ⁵ Gy, bakeable to 200°C | option: 10 ⁶ Gy, bakeable to 140°C |
| 4 | Manual actuator (option) | : 10 ⁵ Gy, bakeable to 140°C or 200°C | |
| 5 | Special pneumatic actuator for hot zone: | 10 ⁸ Gy, bakeable to 80°C | |



Maximum values: depending on operating conditions and sealing materials

Technical data

DN (nominal I. D.)		CF-F flange	molecular flow conductance	compressed air pressure min. - max. overpressure		volume of air cylinder		closing or opening time	weight	
mm	inch	O.D.	ls ⁻¹	bar	psi	l	ft ³	s	kg	lbs
63	2½	4½	400	4 - 8	55 - 115	0.7	0.024	2	21	46
100	4	6	1400	4 - 8	55 - 115	1.7	0.06	4	36	80
160	6	8	4200	4 - 8	55 - 115	5	0.18	9	59	130
200	8	12	6900	4 - 8	55 - 115	9.7	0.34	18	148	326

Options

Actuator:

- Accessory for pneumatic actuator for faster closing
- Pneumatic actuator compact 10⁶ Gy, bakeable to 140°C ¹⁾
- Pneumatic actuator extended 10⁶ Gy, bakeable to 140°C ¹⁾
- Pneumatic actuator for hot zone:
radiation resistant to 10⁸ Gy, bakeable to 80°C
- Solenoid for impulse actuation:
actual valve position is maintained at power failure
- Solenoid for 12, 48 VDC
24, 48, 100, 115, 200, 230 V 50 Hz
24, 100, 115, 200, 230 V 60 Hz
- Solenoid radiation resistant to 10⁶ Gy (standard 10⁴ Gy)
- Position indicator for pneumatic actuator bakeable to 200°C
- Double position indicator
(2 switches each for the positions «open» and «closed»)
- Manual actuator bakeable to 140°C or 200°C
- Position indicator for manual actuator bakeable to 80°C or 200°C

Valve:

- Customer specified flanges
- Antimagnetic version with defined permeability: see page 220
- Customer specified RF aperture
- Cu Be material for RF contacts «finger type»
- RF contact «comb type»
- Waveguide
- Ports for roughing (by-pass), venting or for gauges

Ordering information for options:

Ordering No. of valve-X (e. g. 47240-CE44-X, X = impulse actuation 220 V / 50 Hz)

¹⁾ Maximum values: depending on operating conditions and sealing materials

Special version

with gate seal made of FKM (VITON): see page 184

Accessories

- Fittings for installation of the valve: series 33
- Flexible bake-out jacket: see page 216

Seal kit

Consisting of seals for gate (VATRING) and bonnet
Ordering No.: see operating manual or price list

Special version

RF UHV gate valve
with gate seal made of FKM (VITON)

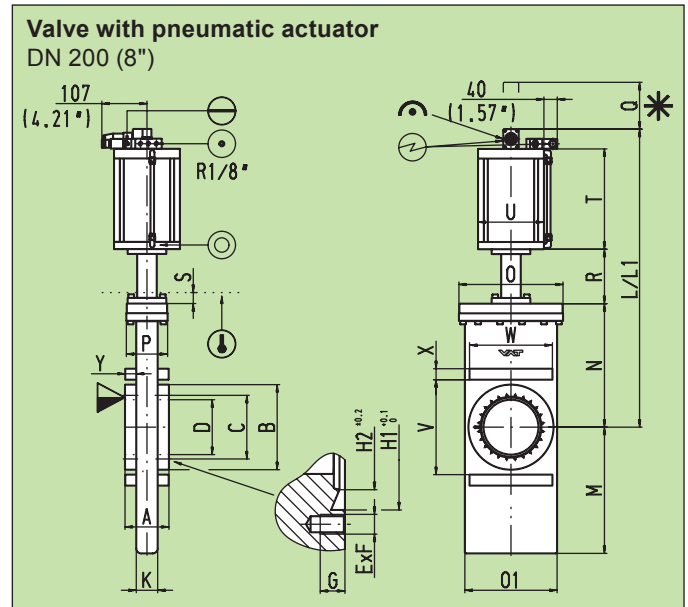
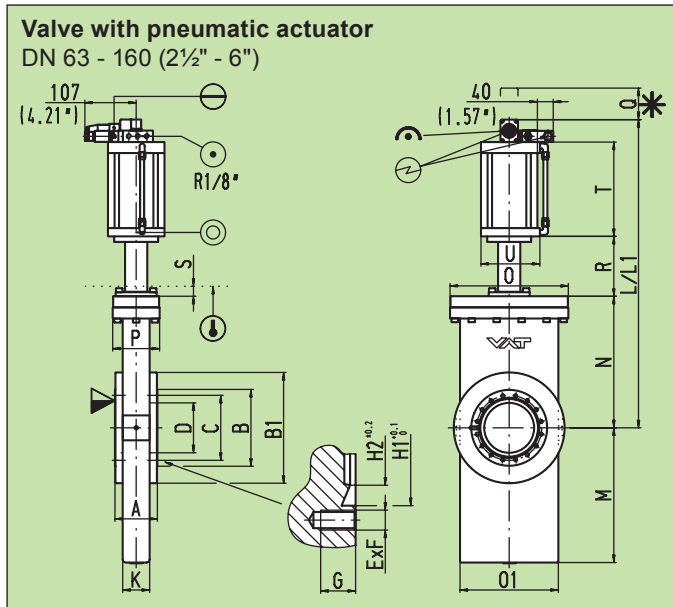


Technical data

Leak rate	
- Body	$< 5 \cdot 10^{-10}$ mbar ls ⁻¹
- Valve seat	$< 1 \cdot 10^{-9}$ mbar ls ⁻¹
Pressure range	UHV to 1 bar (abs)
Differential pressure on the gate	1 bar in either direction
Cycles until first service	10000
Temperature ¹⁾	
- Valve body	$\leq 200^{\circ}\text{C}$
- Actuator	$\leq 200^{\circ}\text{C}$
- Position indicator	$\leq 80^{\circ}\text{C}$ (option: 200°C)
- Solenoid	$\leq 80^{\circ}\text{C}$
Seal	
- Bonnet	metal
- Gate	FKM (VITON)
Further details	on request

¹⁾ Maximum values: depending on operating conditions and sealing materials

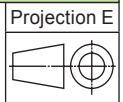
Main dimensions



L1, R for extended actuator

DN	mm	63	100	160	200
	inch	2 1/2	4	6	8
K	mm	46	54	70	78
	inch	1.81	2.13	2.76	3.07
L	mm	459	537	702	851
	inch	18.07	21.14	27.64	33.5
L1	mm	583	661	826	975
	inch	22.95	26.02	32.52	38.39
M	mm	215	272	356	460
	inch	8.46	10.7	14.02	18.11
N	mm	231	264	370	443
	inch	9.09	10.39	14.57	17.44
O	mm	189	237	287	372
	inch	7.44	9.33	11.3	14.65
O1	mm	156	197	253	336
	inch	6.14	7.76	9.96	13.23
P	mm	77	94	93	114
	inch	3.03	3.7	3.66	4.49
Q	mm	420	520	700	880
	inch	16.54	20.47	27.56	34.65
R	mm	124	124	124	124
	inch	4.88	4.88	4.88	4.88
S	mm	20	20	20	20
	inch	0.79	0.79	0.79	0.79
T	mm	183	228	287	363
	inch	7.2	8.98	11.3	14.29
U	mm	104	135	190	230
	inch	4.09	5.31	7.48	9.06
V	mm				346
	inch				10.24
W	mm				302
	inch				14.89
X	mm				40
	inch				1.57
Y	mm				40
	inch				1.57

- ▽ valve seat side
- * required for dismantling
- ⊙ compressed air connection
- ⊕ electrical connection
- ⊖ emergency operation
- ⊙ leak detection port
- ⊙ bake-out area
- ⊙ mechanical position indication



Flange dimensions CF-F

DN	mm	63	100	160	200
	inch	2 1/2	4	6	8
O.D.	mm	4 1/2	6	8	10
	inch				
A	mm	75	85	110	160
	inch	2.95	3.35	4.33	6.3
B	mm	113.5	152	202.5	310
	inch	4.47	5.98	7.97	12.2
B1	mm	180	222	288	
	inch	7.08	8.74	11.34	
C	mm	92.1	130.3	181	231.8
	inch	3.63	5.13	7.13	9.13
D	mm	63	100	150	200
	inch	2.48	3.94	5.91	7.87
E x F		8 x M8	16 x M8	20 x M8	24 x M8
G	mm	12	14	17	17
	inch	0.47	0.55	0.67	0.67
H1	mm	82.5	120.65	171.45	222.3
	inch	3.25	4.75	6.75	8.75
H2	mm	77.4	115.5	166	217
	inch	3.05	4.55	6.54	8.54