

Main applications

For vacuum processes with extreme UHV requirements and/or when using aggressive media



Ordering information

Valve with manual actuator
hexagon head

DN		Ordering numbers		
mm	inch	CF-R		
		without position indicator	with position indicator 80 °C	with position indicator 200 °C
16	5/8	57124-GE02	57124-GE08	57124-GE05
40	1 1/2	57132-GE02	57132-GE08	57132-GE05
63	2 1/2	57036-GE02	57036-GE08	57036-GE05
100	4	57040-GE02	57040-GE08	57040-GE05
160	6	57044-GE02	57044-GE08	57044-GE05

Valve with pneumatic actuator

single acting with closing spring (NC)

DN		Ordering numbers		
mm	inch	CF-R		
		without solenoid valve without position indicator	without solenoid valve with pos. indicator 80 °C	with solenoid valve with pos. indicator 80 °C
10	3/8	57120-XE11 ¹⁾	57120-XE21 ¹⁾	57120-XE41 ¹⁾
16	5/8	57124-GE11	57124-GE21	57124-GE41
40	1 1/2	57132-GE11	57132-GE21	57132-GE41
63	2 1/2	57036-GE11	57036-GE21	57036-GE41
100	4	57040-GE11	57040-GE21	57040-GE41
160	6	57044-GE11	57044-GE21	57044-GE41

double acting

16	5/8	57124-GE14	57124-GE24	57124-GE44
40	1 1/2	57132-GE14	57132-GE24	57132-GE44
63	2 1/2	57036-GE14	57036-GE24	57036-GE44
100	4	57040-GE14	57040-GE24	57040-GE44
160	6	57044-GE14	57044-GE24	57044-GE44

¹⁾CF-R 16 flanges (others on request)

Other versions: see pages 210 + 211

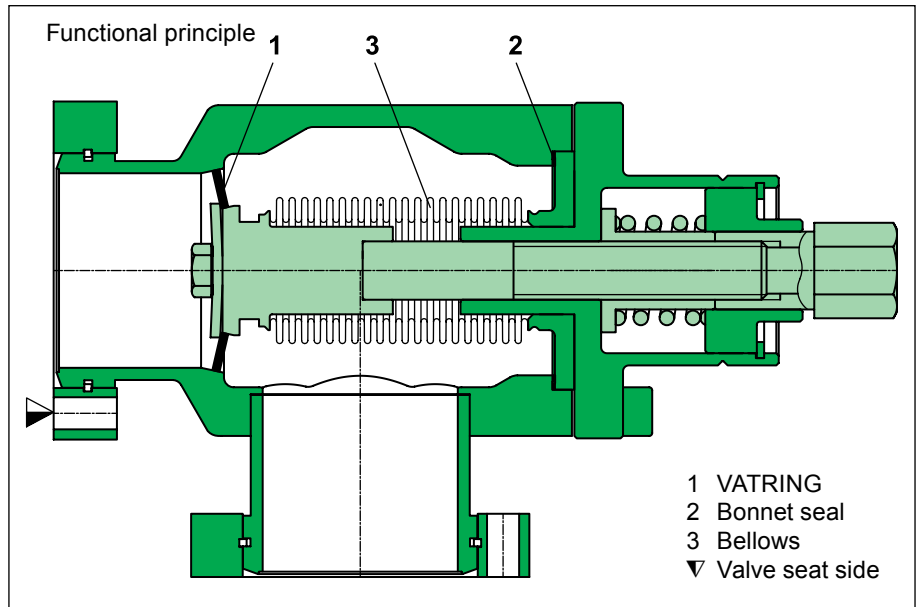
Bake-out jacket

See page 270: ordering information and technical data on request

To control the heating process we recommend using commercial controllers with settable heating rate and temperature limiting device. Our bake-out jackets are supplied without thermocouples and thermostats.

Features

- Body material: stainless steel
- VATRING configuration: see glossary
- Sealing surfaces are only elastically deformed
- Largest possible conductance for the nominal diameter
- Radiation resistant to 10^8 Gy
- DN 16–40 closes at a mechanical stop – no torque wrench required



Technical data

Leak rate: valve body, valve seat	$< 1 \cdot 10^{-10}$ mbar ls ⁻¹
Pressure range	XHV to 5 bar (abs)
Differential pressure on the gate	≤ 5 bar
Differential pressure at opening	≤ 1 bar ¹⁾
Cycles until first service	10000
Bake-out temperature ²⁾	
– Valve body	≤ 450 °C open ≤ 350 °C closed
– Manual actuator ³⁾ :	
- hexagon head DN 16– 40	≤ 450 °C open ≤ 350 °C closed
- DN 63–160	≤ 300 °C open and closed
– Pneumatic actuator ³⁾ :	
- single acting with closing spring	≤ 150 °C
- double acting	≤ 200 °C
– Solenoid valve ³⁾	≤ 80 °C
– Position indicator ³⁾	≤ 80 °C (option: 200 °C)
Heating and cooling rate	≤ 60 °C h ⁻¹
Material	
– Valve body, mechanism	AISI 316L (1.4404, 1.4435)
– Bellows	AISI 316L (1.4435)
Seal: bonnet, gate	metal
Feedthrough	bellows
Mounting position	any
Solenoid valve	24 VDC, 2.5 W (others on request)
Position indicator: contact rating	
– Voltage	≤ 50 VAC/DC
– Current	80 °C: ≤ 1.2 A 200 °C: ≤ 1 A
Valve position indication	visual (mechanical)

¹⁾ > 1 bar with reduced number of cycles

²⁾ Maximum values: depending on operating conditions and sealing materials

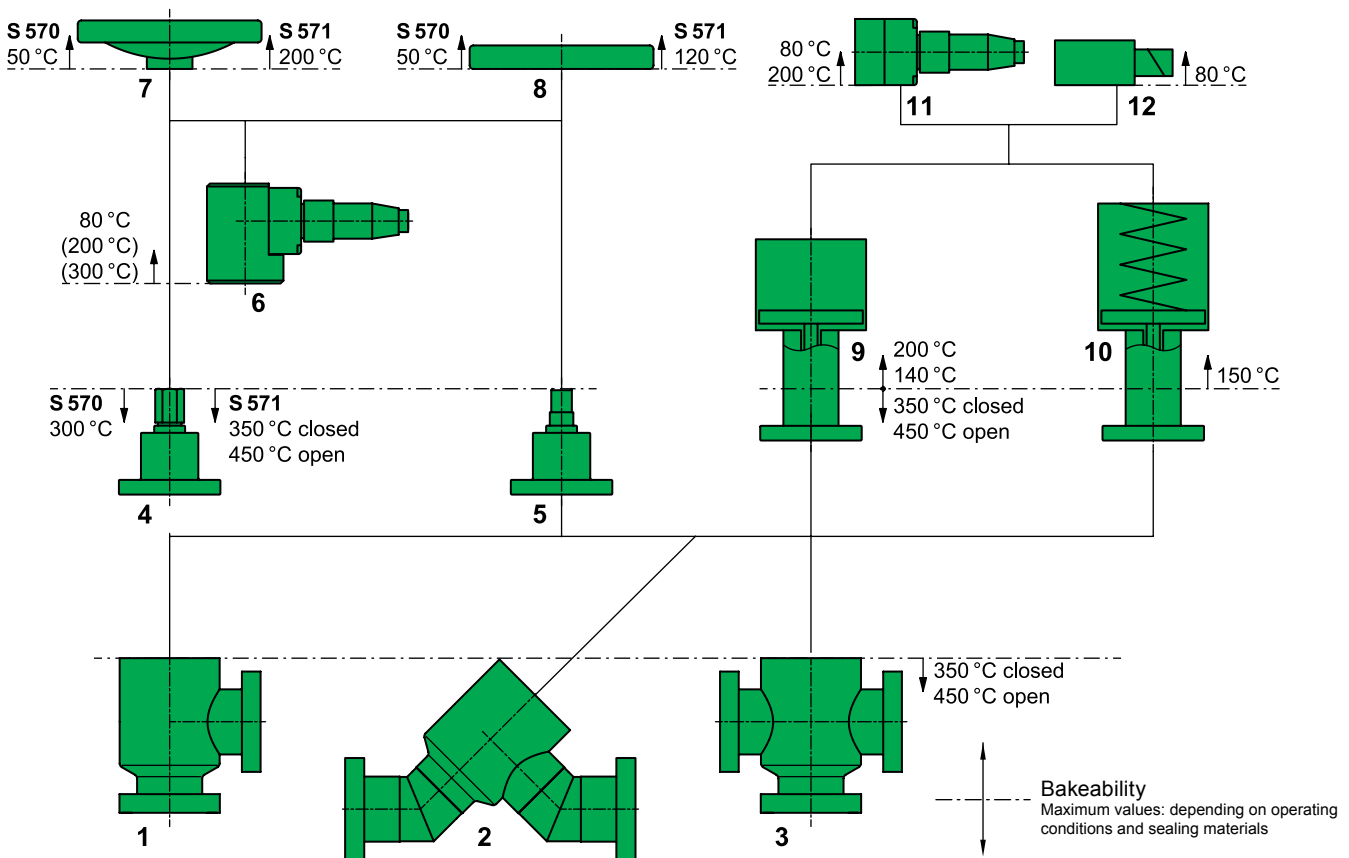
³⁾ Further details and options: see pages 210 + 211

Further technical data on next page →

Continued Technical data

		Valve with manual actuator							Valve with pneumatic actuator, single acting with closing spring							Valve with pneumatic actuator, double acting							
DN (nominal I. D.)	CF-F flange	Conductance (molecular flow)	Torque		Turns per stroke		Weight		Compressed air min. – max. overpressure		Closing or opening time	Volume of pneu- matic actuator		Weight		Compressed air min. – max. overpressure		Closing or opening time	Volume of pneu- matic actuator		Weight		
			Nm	ftlb	n	kg	lbs	bar	psi	s	l	ft ³	kg	lbs	bar	psi	s	l	ft ³	kg	lbs		
10	¾	1 ½	2	–	–	–	–	–	6–9	87–131	0.5	0.07	0.002	1.75	3.9	–	–	–	–	–	–	–	–
16	¾	1 ½	5	4	3	6	0.8	1.8	6–9	87–131	1	0.12	0.004	4.6	10.1	4–5	58–73	1	0.08	0.003	2.9	6.4	
40	1 ½	2 ¾	50	10	7.5	8	2.3	5	6–9	87–131	2	0.35	0.01	9	19.8	4–5	58–73	2	0.32	0.011	6	13	
63	2 ½	4 ½	125	45	33	4.5	8	17.8	6–9	87–131	4	0.8	0.028	26	57.3	4–5	58–73	2	0.55	0.02	17.2	37.3	
100	4	6	380	90	66	6.4	16	35.2	6–9	87–131	4	2.4	0.085	35	77.2	4–5	58–73	4	1.5	0.053	26	57.3	
160	6	8	940	125	92	8	36	79.2	6–9	87–131	7	4.8	0.17	136	299	4–5	58–73	7	3.3	0.116	65	143	

Bodies and actuators: modular selection



1–3 Valve body (angle, inline, T valve), plate, bellows

10⁸ Gy, bakeable to 450 °C open / 350 °C closed

4 Manual actuator with hexagonal head

DN 16– 40 10⁸ Gy, bakeable to 450 °C open / 350 °C closed
 DN 63–160 10⁷ Gy, bakeable to 300 °C open and closed

5 Manual actuator with cylindrical head

DN 16– 40 10⁸ Gy, bakeable to 450 °C open / 350 °C closed
 DN 63–160 10⁷ Gy, bakeable to 300 °C open and closed

6	Position indicator for manual actuator		10 ⁵ Gy, bakeable to 80 °C (options: 10 ⁶ Gy/200 °C, 10 ⁸ Gy/300 °C)
7	Handwheel for hexagon head	DN 16– 40	10 ⁸ Gy, bakeable to 200 °C
		DN 63– 100	10 ⁴ Gy, bakeable to 50 °C
8	Handwheel with free wheel for cylindrical head	DN 16– 40	10 ⁵ Gy, bakeable to 120 °C
		DN 63– 100	10 ⁴ Gy, bakeable to 50 °C
9	Pneumatic actuator, double acting		10 ⁵ Gy, bakeable to 200 °C (options: 10 ⁶ Gy/140 °C)
10	Pneumatic actuator, single acting with closing spring		10 ⁵ Gy, bakeable to 150 °C (options: 10 ⁶ Gy/140 °C)
11	Position indicator		10 ⁵ Gy, bakeable to 80 °C (option: 10 ⁶ Gy/200 °C)
12	Solenoid valve		10 ⁴ Gy, bakeable to 80 °C

Options

Actuator

- Solenoid valve for impulse actuation:
last valve position is maintained at power failure
- Other solenoid valve voltage (standard: 24 VDC)
- Position indicator for manual and pneumatic actuator bakeable to 200 °C¹⁾
(standard: 80 °C)
- Double position indicator
(2 switches each for the positions «open» and «closed»)
- Pneumatic actuator radiation resistant to 10⁶ Gy, bakeable to 140 °C¹⁾
- Manual actuator with cylindrical head

Valve

- Customer specified flanges
- Antimagnetic version with defined permeability:
see glossary
- CF-F flanges (fixed flanges), ISO-KF flanges, weld necks
- Valve with different flanges (e. g. CF/KF, CF/Cajon VCR)
- Valve without bonnet flange, welded (for tritium systems)
- Inline valve
- T valve

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

Ordering information for options:

Ordering No. of valve-X (e. g. 57132-GE02-X, X = T valve)

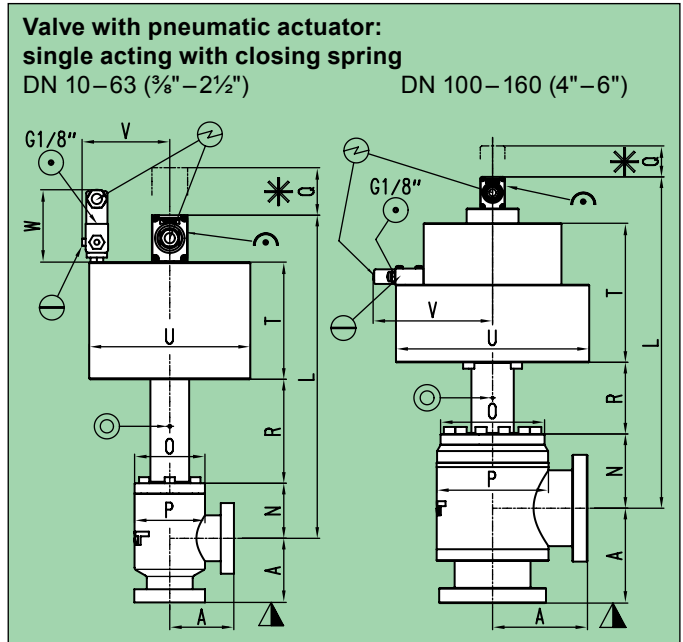
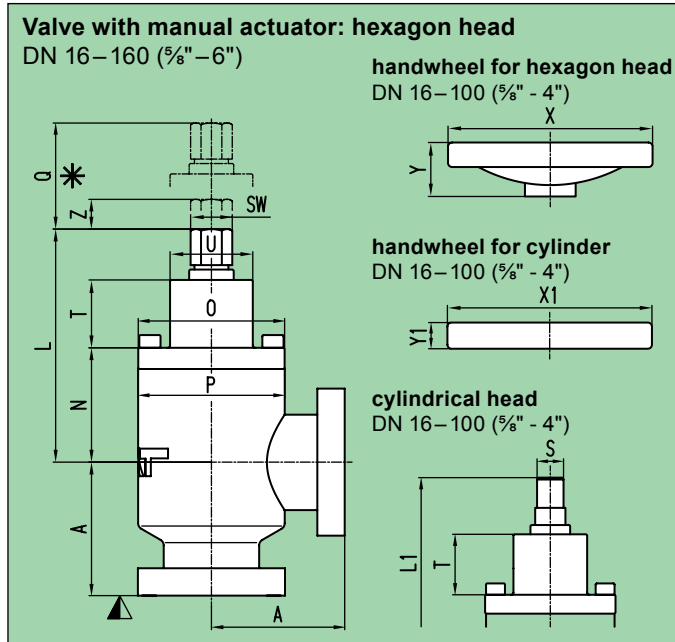
Spare parts

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

Accessories

- **Flexible bake-out jacket:** see page 270
- **Flange connections**
for installation of the valve: see series 33
- **Handwheel**
 - for hexagon head (DN 16–40)
 - with free wheel for cylindrical head (DN 16–40)
 - with sliding clutch for hexagon head (DN 63–100)
 - with sliding clutch and free wheel for cylindrical head (DN 63–100)

Main dimensions



Flange dimensions: see page 213

DN	mm	16	40	63	100	160
	inch	5/8	1 1/2	2 1/2	4	6
A	mm	38	63	105	135	167
	inch	1.50	2.48	4.13	5.31	6.57
L	mm	100.20	126	185.50	258.50	285.10
	inch	3.94	4.96	7.30	10.18	11.22
L1	mm	115.70	133.50	185.50	258.50	–
	inch	4.55	5.26	7.30	10.18	–
N	mm	52.60	54	88	106	134.60
	inch	2.07	2.13	3.46	4.17	5.30
O	mm	54	69	102	148	202
	inch	2.13	2.72	4.02	5.83	7.95
P	mm	52	69	102	159	206
	inch	2.05	2.72	4.02	6.26	8.11
Q	mm	60.80	78	134.50	163.50	264.90
	inch	2.39	3.07	5.29	6.44	10.43
S	mm	12	14	20	30	–
	inch	0.47	0.55	0.79	1.18	–
SW	mm	13	17	22	27	36
	inch	0.51	0.67	0.87	1.06	1.42
T	mm	33	34	68.50	87	112
	inch	1.77	1.34	2.70	3.43	4.41
U	mm	32	39	60	68	78
	inch	1.26	1.54	2.36	2.68	3.07
X	mm	62	125	250	500	–
	inch	2.44	4.92	9.84	19.69	–
X1	mm	62	125	250	500	–
	inch	2.44	4.92	9.84	19.69	–
Y	mm	23	33	72	80	–
	inch	0.91	1.30	2.83	3.25	–
Y1	mm	12	16	75	95	–
	inch	0.47	0.63	2.95	3.74	–
Z	mm	7.50	14	20	32	44
	inch	0.30	0.55	0.79	1.26	1.73

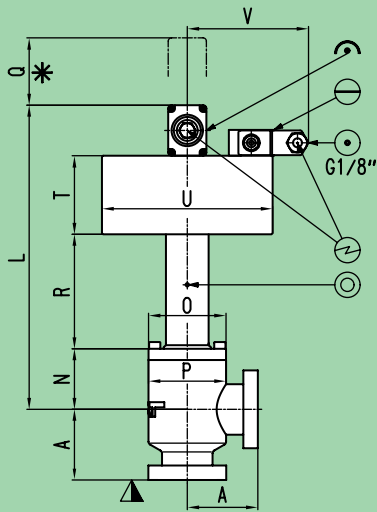
- ▽ Valve seat side
- * Required for dismantling
- ⊙ Compressed air connection
- ⊕ Electrical connection
- ⌚ Mechanical position indication
- ⊖ Emergency operation
- ⊙ Leak detection hole

Flange dimensions: see page 213

DN	mm	10	16	40	63	100	160
	inch	3/8	5/8	1 1/2	2 1/2	4	6
A	mm	38	38	63	105	135	167
	inch	1.50	1.50	2.48	4.13	5.31	6.57
L	mm	192.60	250.30	317	375	471.30	592
	inch	7.58	9.85	12.48	14.76	18.56	23.31
N	mm	35.90	52.60	54	88	105.70	135
	inch	1.41	2.07	2.13	3.46	4.16	5.31
O	mm	47	54	69	102	148	202
	inch	1.85	2.13	2.72	4.02	5.83	7.95
P	mm	28	36	69	102	159	206
	inch	1.10	1.42	2.72	4.02	6.26	8.11
Q	mm	41	83.70	93	115	138.70	183
	inch	1.61	3.30	3.66	4.53	5.46	7.20
R	mm	15.70	79.70	102	93	102	130
	inch	0.62	3.14	4.02	3.66	4.02	5.12
T	mm	57	72	115	148	198	250
	inch	2.24	2.83	4.53	5.83	7.80	9.84
U	mm	98	108	158	198	275	328
	inch	3.86	4.25	6.22	7.80	10.83	12.91
V	mm	84	61	86	131.5	170	196.5
	inch	3.31	2.40	3.39	5.18	6.69	7.74
W	mm	–	71	71	27	27	27
	inch	–	2.80	2.80	1.06	1.06	1.06

Main dimensions

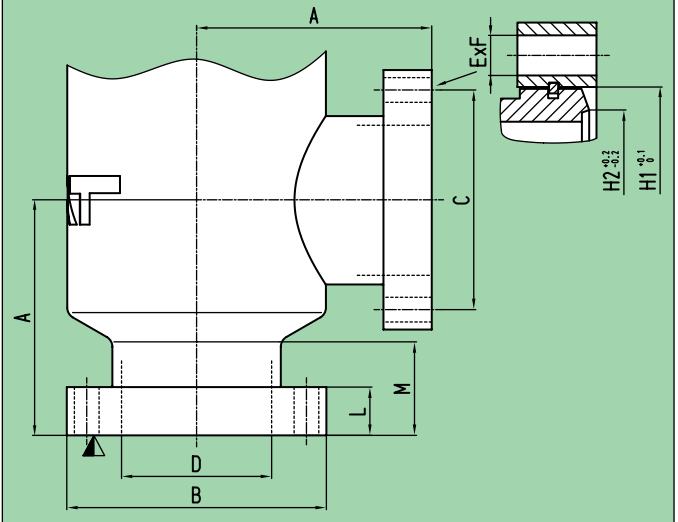
Valve with pneumatic actuator: double acting
DN 63–160 (2½"–6")



- ▼ Valve seat side
- * Required for dismantling
- ⊙ Compressed air connection
- ⊕ Electrical connection
- ⊖ Mechanical position indication
- ⊖ Emergency operation
- ⊙ Leak detection hole

Flange dimensions

CF-R
DN 16–160 (5/8"–6")



DN	mm inch	16 5/8	40 1½	63 2½	100 4	160 6
A	mm inch	38 1.50	63 2.48	105 4.13	135 5.31	167 6.57
L	mm inch	232.30 9.15	272 10.71	317 12.48	382.70 15.07	460 18.11
N	mm inch	52.60 2.07	54 2.13	88 3.46	105.70 4.16	135 5.31
O	mm inch	54 2.13	69 2.72	102 4.02	148 5.83	202 7.95
P	mm inch	36 1.42	69 2.72	102 4.02	159 6.26	220 8.66
Q	mm inch	60.70 2.39	68 2.68	113 4.45	142.30 5.60	185 7.28
R	mm inch	79.70 3.14	102 4.02	93 3.66	102 4.02	130 5.12
T	mm inch	54 2.13	70 2.76	90 3.54	130 5.12	150 5.91
U	mm inch	98 3.86	152 5.98	194 7.64	238 9.37	278 10.94
V	mm inch	94 3.70	108 4.25	130 5.12	151 5.94	171.5 6.75

DN	mm inch	10/16 3/8/5/8	40 1½	63 2½	100 4	160 6
O.D.	inch	1½/1½	2¾	4½	6	8
A	mm inch	38 1.50	63 2.48	105 4.13	135 5.31	167 6.57
B	mm inch	34 1.34	69.50 2.74	113.50 4.47	152 5.98	202.50 7.97
C	mm inch	27 1.06	58.70 2.31	92.10 3.62	130.30 5.13	181 7.12
D	mm inch	16 0.63	40 1.57	64 2.52	102 4.01	150 5.9
E×F	mm inch	6×4.30 6×0.17	6×6.60 6×0.26	8×8.40 8×0.33	16×8.40 16×0.33	20×8.40 20×0.33
H1	mm inch	21.40 0.84	48.30 1.90	82.50 3.25	120.65 4.75	171.45 6.75
H2	mm inch	18.50 0.73	42 1.62	77.40 3.05	115.50 4.55	166 6.53
L	mm inch	7.40 0.29	12 0.47	19 0.75	21.50 0.85	22 0.87
M	mm inch	22.60 0.89	25.60 1.01	46.60 1.83	60 2.36	62 2.44