

Low shock, damped opening and closing
 Differential pressure possible on either side

Proven design, used in large research and industrial systems as well as in space simulation



Series 190 HV gate valve



Series 192 UHV gate valve

Body material

stainless steel

Pneumatic actuator

double acting
 with position indicator
 with solenoid

DN		Ordering numbers (specify control voltage)	
mm	inch	Series 190 HV gate valve ISO-F	Series 192 UHV gate valve ISO-F
400	16	19052-PE44	19252-PE44
500	20	19054-PE44	19254-PE44
630	25	19056-PE44	19256-PE44
800	32	19058-PE44	19258-PE44
900	36	19059-PE44	19259-PE44
1000	40	19060-PE44	19260-PE44
1250	50	19062-PE44	19262-PE44

without position indicator, without solenoid: 19 . . . - . E14

with position indicator, without solenoid: 19 . . . - . E24

Other sizes

on request

Projects for special versions

Our product groups are experienced in developing special requirements concerning material, stability, heaters, etc. On customer request, we can perform special test programs, bakeout and provision of customer specific hand-over quality documentation.

Acceptance tests

are conducted for large special projects, and are prepared by our engineers.

References

Large VAT gate valves have proved their reliability in various large systems all over the world. Reference list available on request.

Sealing materials

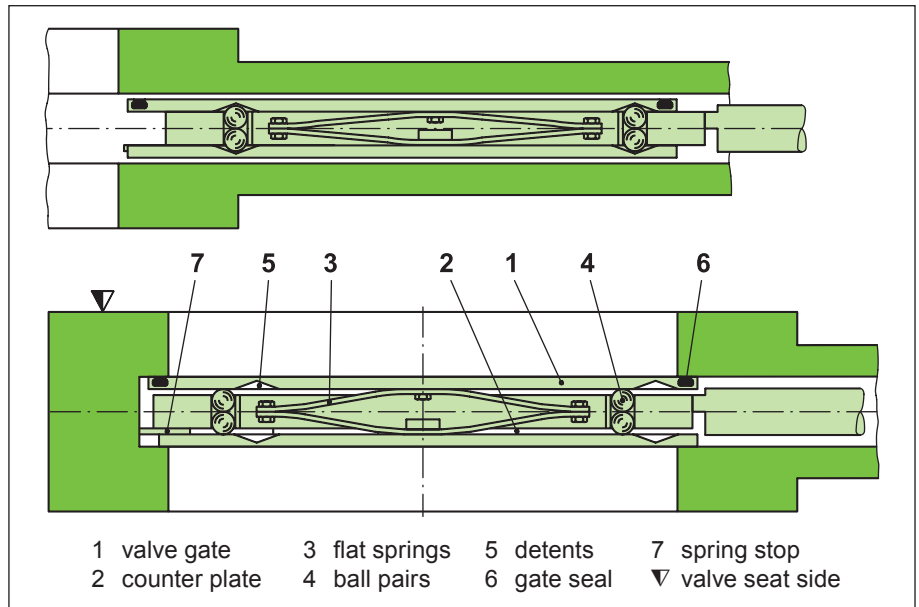
Gate: FKM (VITON)

Bonnet: FKM (VITON)

Feedthrough

HV gate valve: shaft feedthrough

UHV gate valve: bellows

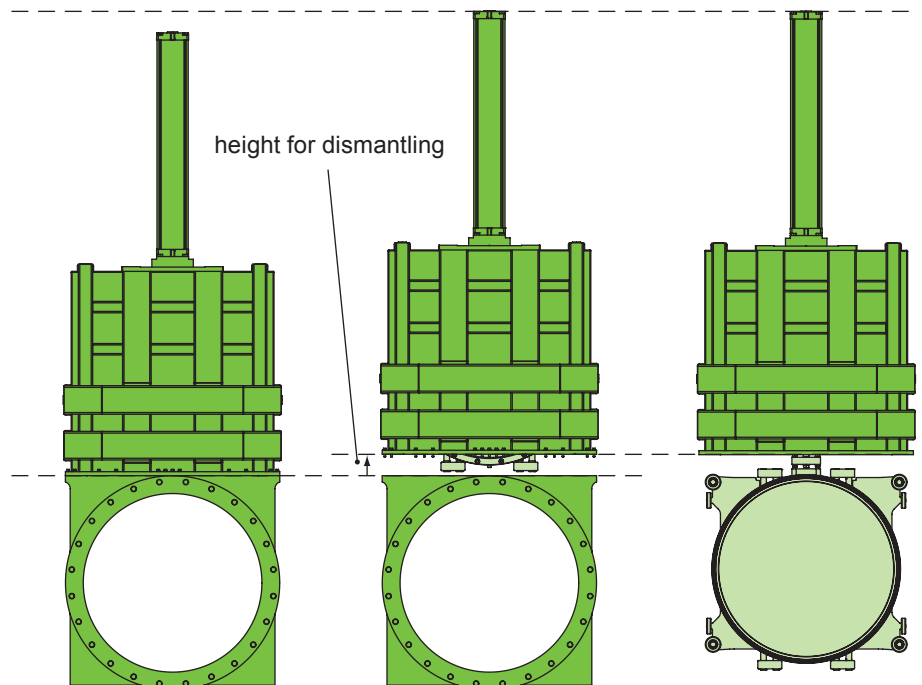


Features

Proved VATLOCK configuration (see glossary)

Assembly in cleanroom according to UHV quality standards

DN 900 - 1250 HV with split body: hence extremely short height for dismantling and convenient maintenance (see illustration below)



- Move valve gate to the position «open»

- Unscrew actuator part of body and lift it off from flange part (flange part remains in the system)

- Move valve gate to the position «closed» and carry out maintenance work

Technical data

Leak rate: body, valve seat	< 1 · 10 ⁻⁹ mbar ls ⁻¹
Pressure range	
- HV gate valve	1 · 10 ⁻⁷ mbar to 1 bar (abs)
- UHV gate valve	1 · 10 ⁻⁹ mbar to 1 bar (abs)
Differential pressure on the gate	≤ 1 bar in either direction
Differential pressure at opening	
- DN 400 - 500	≤ 20 mbar
- DN 630 - 1250	≤ 10 mbar
Cycles until first service	
- DN 400 - 500 HV	100 000
- DN 630 HV / 400 - 630 UHV	20 000
- DN 800 - 1250 HV + UHV	10 000
Temperature ¹⁾	
- Valve body	≤ 150°C
- Pneumatic actuator	≤ 50°C
- Solenoid	≤ 50°C
- Position indicator	≤ 80°C
Heating and cooling rate	
- 400 - 630	≤ 30°C h ⁻¹
- 800 - 1250	≤ 5°C h ⁻¹
Material	
- Valve body	AISI 304 (1.4301)
- Bellows (UHV gate valve only)	AISI 316L (1.4435) or AISI 304L (1.4306) EN AW-6060 (3.3206), AISI 304 (1.4301)
- Valve gate, counter-plate	EN AW-6060 (3.3206), AISI 304 (1.4301), Nimonic, AISI 420 (1.4034), AISI 301 (1.4310)
- Mechanism	
Seal: bonnet, gate	FKM (VITON)
Mounting position	actuator horizontal or vertical («actuator down» on request)
Solenoid	24 VDC, 8 W (others see «Options»)
Position indicator: contact rating	
- Voltage	<u>HV</u> ≥ 240 VAC ≥ 170 VDC <u>UHV</u> 250 VAC
- Current	≥ 0.18 A 10 A (3A) AC
- Power	max. 10 W -

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

DN (nominal I. D.)		molecular flow conductance	compressed air pressure min. - max. overpressure				volume of air cylinder				closing or opening time		weight			
mm	inch		HV		UHV		HV		UHV		HV	UHV	HV		UHV	
		ls ⁻¹	bar	psi	bar	psi	l	ft ³	l	ft ³	s	s	kg	lbs	kg	lbs
400	16	50 000	5 - 7	70 - 100	5 - 9	70 - 130	5.9	0.208	1.8	0.63	10	12	140	309	160	353
500	20	90 000	5 - 7	70 - 100	5 - 9	70 - 130	6.8	0.240	3	0.11	12	12	200	441	235	518
630	25	190 000	5 - 7	70 - 100	6 - 9	85 - 130	8.6	0.304	4.7	0.16	15	18	320	706	405	893
800	32	320 000	5 - 7	70 - 100	6 - 9	85 - 130	17.9	0.632	11	0.28	20	80	580	1279	710	1565
900	36	405 000	5 - 7	70 - 100	6 - 9	85 - 130	20.8	0.735	15	0.33	23	100	1000	2200	1400	3086
1000	40	550 000	5 - 7	70 - 100	6 - 9	85 - 130	21.9	0.773	18	0.38	25	110	1200	2645	1700	3748
1250	50	900 000	5 - 7	70 - 100	6 - 9	85 - 130	43	1.519	25.5	0.95	30	120	1900	4189	2500	5512

Options

Actuator:

- Solenoid for impulse actuation:
 - Power failure: last valve position is maintained
 - Compressed air failure: valve closed - valve remains closed
valve open - valve position is undefined
- Solenoid for impulse actuation and non-return valve:
 - valve position is undefined at power failure and compressed air failure
- Solenoid separate, for external mounting
- Solenoid for 12, 48 VDC
 - 24, 48, 100, 115, 200, 220 V / 50 Hz
 - 24, 100, 115, 200, 220 V / 60 Hz
- Mechanical position indicator (Series 190)
- Lockable actuator

Valve:

- All standard flanges available (ISO, ASA, ASA-LP, JIS)
- Customer specified flanges
- Water-cooled flanges
- Metal static seals
- Ports for roughing (by-pass), venting or for gauges
- Bake-out equipment
- 3-position actuator
- Protective ring
- Heat protection shield
- Other sizes

Ordering information for options:

Ordering No. of valve-X (e. g. 19254-PE44-X,
X = port as per enclosed dimensional drawing)

Accessories

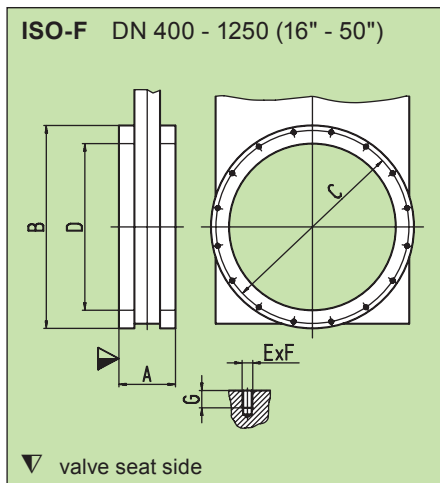
Blank flanges for testing and bake-out

Seal kit

Consisting of seals for bonnet, gate and actuator

Ordering No.: see operating manual

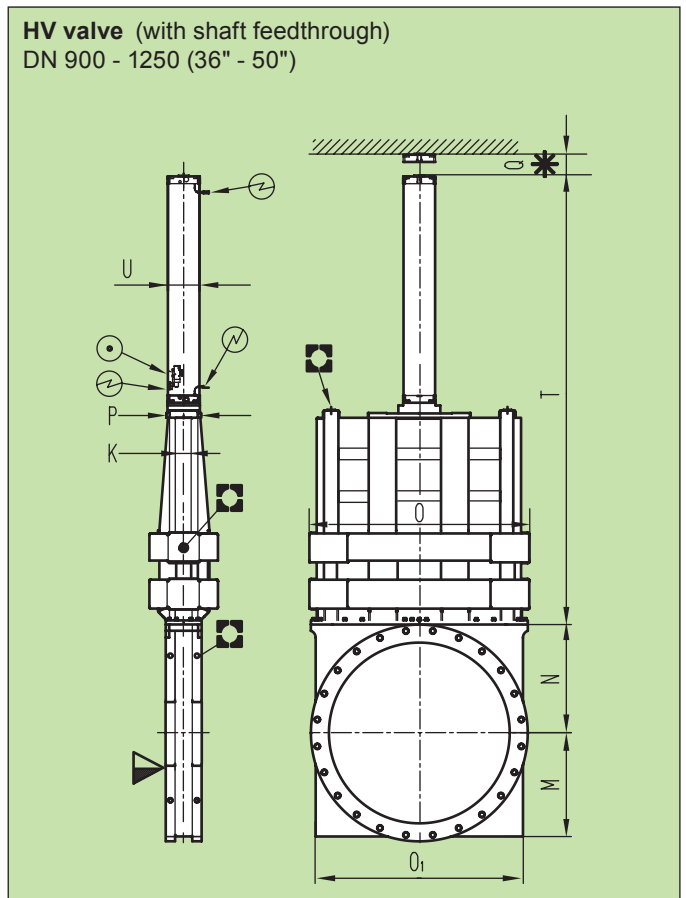
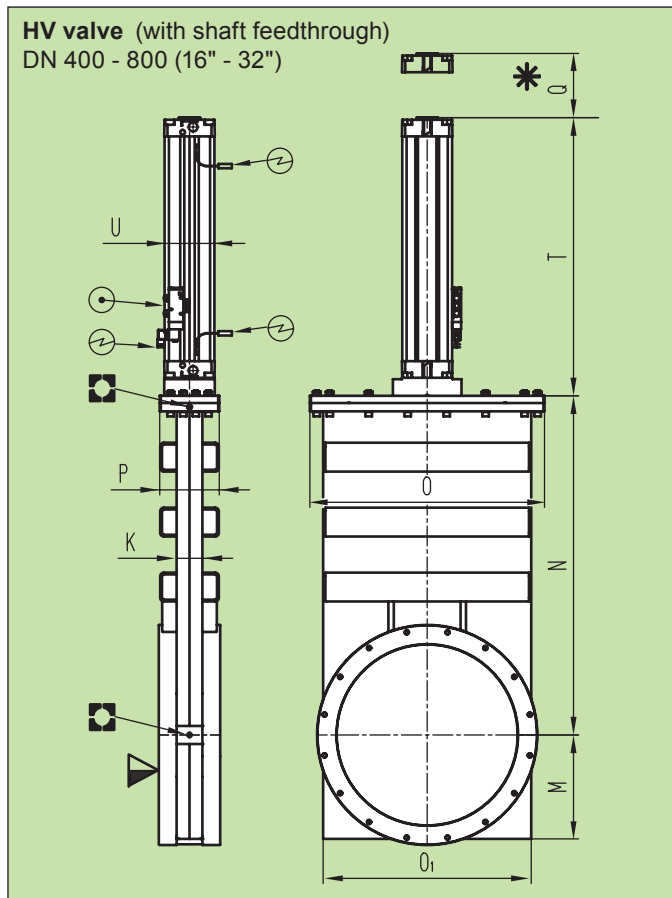
Flange dimensions



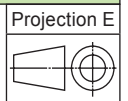
		HV and UHV valve						
DN	mm inch	400 16	500 20	630 25	800 32	900 36	1000 40	1250 50
A	mm inch	150 5.9	170 6.69	180 7.09	220 8.66	220 8.66	240 9.45	260 10.24
B	mm inch	510 20.08	610 24.02	780 30.71	960 37.8	–	1168 46	1500 59.05
C	mm inch	480 18.9	580 22.83	720 28.35	890 35.04	–	1090 42.91	1370 53.94
D	mm inch	400 15.75	501 19.72	651 25.63	800 31.5	900 35.4	1000 39.37	1250 49.21
E x F		16 x M12	16 x M12	20 x M12	24 x M12	–	32 x M12	32 x M16
G	mm inch	20 0.79	20 0.79	20 0.79	20 0.79	–	20 0.79	25 0.98

Dimensions for ASA and JIS flanges on request

Main dimensions



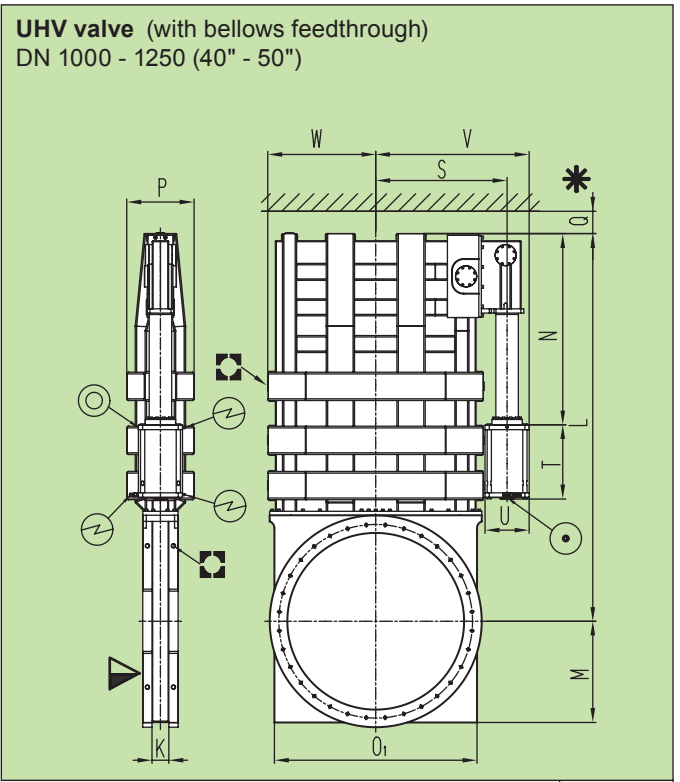
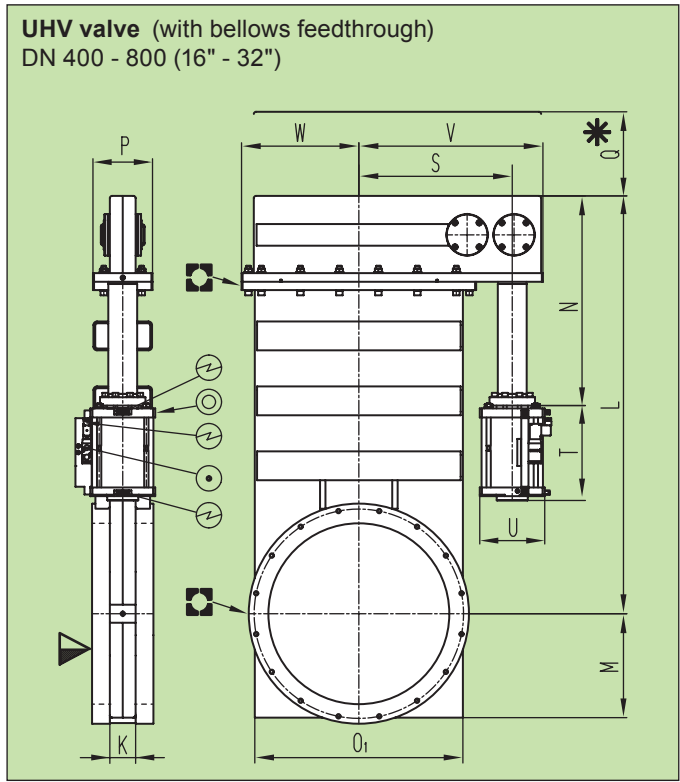
- ▽ valve seat side
- ⊠ for attachment
- * required for dismantling
- ⊙ leak detection hole
- ⊕ compressed air connection
- ⊖ electrical connection



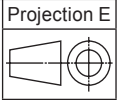
DN	mm	400	500	630	800
	inch	16	20	25	32
K	mm	67	77	80	98
	inch	2.64	3.03	3.15	3.85
M	mm	233	291	366	446
	inch	9.17	11.46	14.41	17.56
N	mm	794	940	1195	1440
	inch	31.26	37	47.05	56.69
O	mm	525	650	806	990
	inch	20.67	25.6	31.73	38.98
O1	mm	467	582	738	920
	inch	18.39	22.91	29.05	36.22
P	mm	148	165	240	340
	inch	5.83	6.5	9.45	13.39
Q	mm	600	700	850	1050
	inch	23.62	27.56	33.46	41.34
T	mm	670	773	930	1108
	inch	26.34	30.44	36.61	43.62
U	mm	115	115	115	150
	inch	4.53	4.53	4.53	5.9

DN	mm	900	1000	1250	
	inch	36	40	50	
K	mm	87	116	116	
	inch	3.43	4.57	4.57	
M	mm	512	562	716	
	inch	20.16	22.13	28.19	
N	mm	530	584	750	
	inch	20.87	22.99	29.50	
O	mm	1120	1209	1529	
	inch	44.09	47.60	60.20	
O1	mm	1024	1124	1433	
	inch	40.31	44.25	56.42	
P	mm	210	240	240	
	inch	8.27	9.45	9.45	
Q	mm	100	150	150	
	inch	3.94	5.91	5.91	
T	mm	2376	2497	3114	
	inch	93.54	98.31	122.60	
U	mm	184	218	218	
	inch	7.24	8.58	8.58	

Main dimensions



- ▼ valve seat side
- for attachment
- * required for dismantling
- ⊙ leak detection hole
- ⊕ compressed air connection
- ⊖ electrical connection



DN	mm	400	500	630	800
	inch	16	20	25	32
K	mm	70	77	80	96
	inch	2.76	3.03	3.15	3.78
L	mm	958	1160	1433	1750
	inch	37.72	45.67	56.41	68.89
M	mm	235	291	366	460
	inch	9.25	11.46	14.41	18.11
N	mm	490	591	682	1050
	inch	19.29	23.26	26.53	41.34
O1	mm	470	582	738	920
	inch	18.5	22.91	29.06	36.22
P	mm	150	165	240	340
	inch	5.91	6.5	9.45	13.39
Q	mm	600	1400	1600	1050
	inch	23.62	55.12	62.99	41.34
S	mm	340	425	503	626
	inch	13.39	16.73	19.8	24.64
T	mm	225	255	272	373
	inch	8.86	10.03	10.7	14.68
U	mm	180	180	220	262
	inch	7.09	7.09	8.66	10.31
V	mm	470	524	630	757
	inch	18.5	20.63	24.8	29.8
W	mm	263	325	417	505
	inch	10.35	12.79	16.41	19.88

DN	mm	1000	1250		
	inch	40	50		
K	mm	106	122		
	inch	4.17	4.8		
L	mm	2182	2712		
	inch	85.9	106.77		
M	mm	560	712		
	inch	22.05	28.03		
N	mm	1100	1322		
	inch	43.3	52.04		
O1	mm	1120	1424		
	inch	44.09	56.06		
P	mm	420	482		
	inch	16.53	18.97		
Q	mm	1250	1600		
	inch	49.21	62.99		
S	mm	800	932		
	inch	31.49	36.69		
T	mm	425	525		
	inch	16.73	20.66		
U	mm	324	312		
	inch	12.75	12.28		
V	mm	1021	1088		
	inch	40.19	42.83		
W	mm	610	760		
	inch	24.02	29.92		