

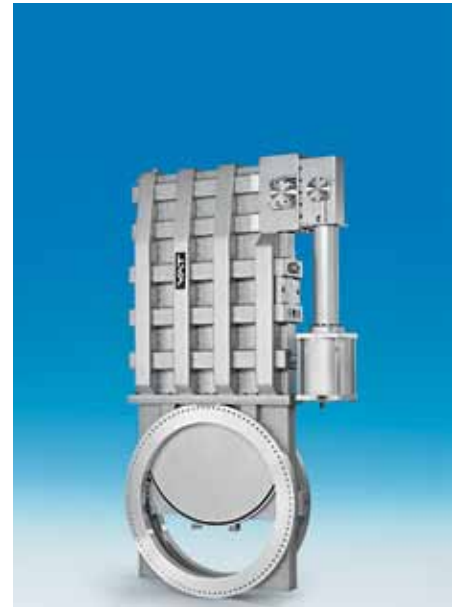
Main applications

Isolation valve for research and industrial applications requiring large DN sizes

Especially suited to space simulation systems



Series 19.0 Vacuum gate valve



Series 19.1 HV gate valve
Series 19.2 UHV gate valve

Ordering information

Valve with pneumatic actuator
double acting
with solenoid valve
with position indicator

DN		Ordering numbers (specify control voltage)		
mm	inch	Series 19.0: vacuum ISO-F	Series 19.1: HV ISO-F	Series 19.2: UHV ISO-F
400	16	19052-PE44	19152-PE44	19252-PE44
500	20	19054-PE44	19154-PE44	19254-PE44
630	25	19056-PE44	19156-PE44	19256-PE44
800	32	19058-PE44	19158-PE44	19258-PE44
900 ^{*)}	36	19059-PE44	19159-PE44	19259-PE44
1000	40	19060-PE44	19160-PE44	19260-PE44
1250 ^{*)}	50	19062-PE44	19162-PE44	19262-PE44
1600 ^{*)}	63	19064-PE44	19164-PE44	19264-PE44
2000 ^{*)}	78	19066-PE44	19166-PE44	19266-PE44
Other sizes on request				

^{*)} customer-specific without solenoid valve, without position indicator: 19 . . . - . E14
 without solenoid valve, with position indicator: 19 . . . - . E24
 with solenoid valve, without position indicator: 19 . . . - . E34
 (...34 specify control voltage)

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, bake-out 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.

Features

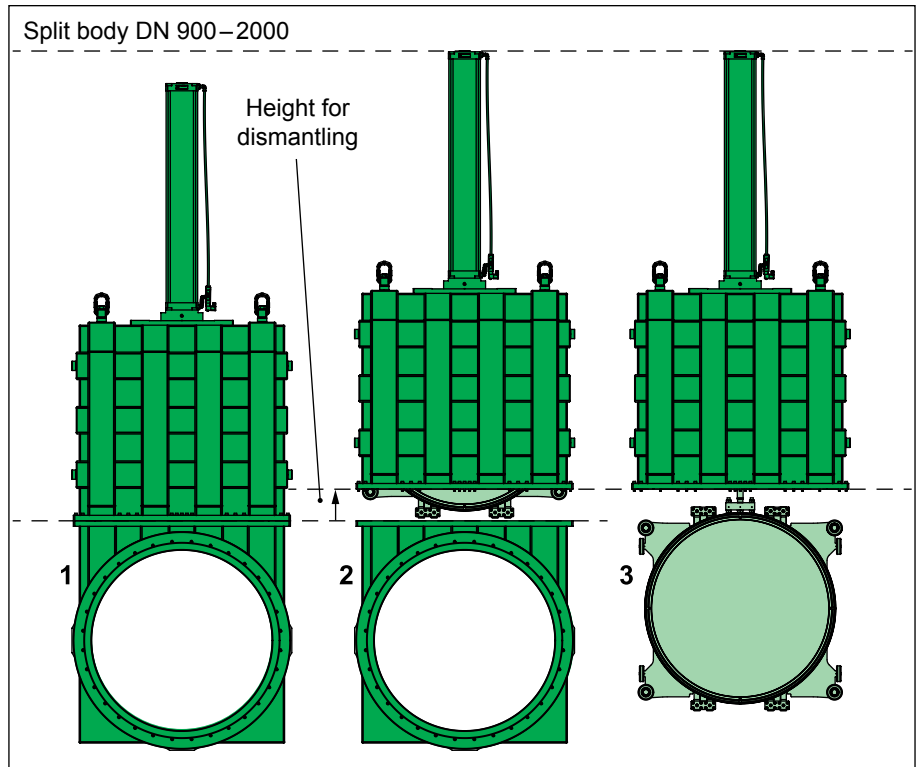
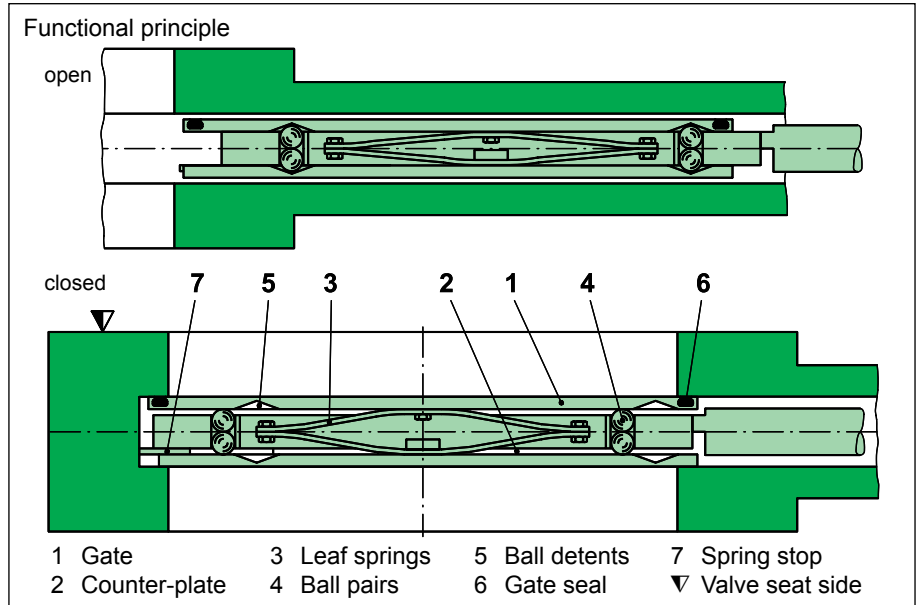
Body material: stainless steel

Damped opening and closing

Differential pressure possible on either side

VATLOCK configuration: see glossary

From DN 900 with split body
(see illustration below): short height for dismantling and convenient maintenance



Technical data

Leak rate

– Valve body	Series 19.0, 19.1	$< 1 \cdot 10^{-9}$ mbar ls ⁻¹
	Series 19.2	$< 5 \cdot 10^{-10}$ mbar ls ⁻¹
– Valve seat		$< 1 \cdot 10^{-9}$ mbar ls ⁻¹

Pressure range

– Series 19.0	$1 \cdot 10^{-7}$ mbar to 1 bar (abs)
– Series 19.1	$1 \cdot 10^{-8}$ mbar to 1 bar (abs)
– Series 19.2	$1 \cdot 10^{-10}$ mbar to 1 bar (abs)

Differential pressure on the gate ≤ 1 bar

Further technical data on next page →

Continued Technical data

Differential pressure at opening	
– DN 400– 500	≤ 20 mbar
– DN 630–2000	≤ 10 mbar
Cycles until first service	
– Series 19.0 DN 400–500	100 000
– Series 19.0 DN 630	20 000
– Series 19.1, 19.2 DN 400–630	20 000
– Series 19.0, 19.1, 19.2 DN 800–2000	10 000
Temperature ¹⁾	
– Valve body	≤ 150 °C
– Actuator	≤ 80 °C
– Solenoid valve	≤ 50 °C
– Position indicator	≤ 80 °C
Heating and cooling rate	
– DN 400– 630	≤ 30 °C h ⁻¹
– DN 800– 1250	≤ 5 °C h ⁻¹
Material	
– Valve body	AISI 304 (1.4301)
– Mechanism	EN AW-6082 (3.2315), AISI 304 (1.4301)
– Bellows (Series 19.1, 19.2 only)	AISI 316L (1.4435) or AISI 304L (1.4306)
Seal	
– Bonnet Series 19.0, 19.1	FKM (Viton®)
Series 19.2	metal
– Gate	FKM (Viton®)
Feedthrough	
– Series 19.0	shaft feedthrough
– Series 19.1, 19.2	bellows
Mounting position	
– DN 400– 800	any
– DN 900–2000	please define
Solenoid valve	24 VDC, max. 2W (others on request)
Position indicator: contact rating	Series 19.0 Series 19.1 and 19.2
– Voltage	≤ 50 VAC/DC ≤ 50 VDC ≤ 250 VAC
– Current	≤ 0.1 A ≤ 1.2 A ≤ 2 A
Valve position indication	
– Series 19.0	LED
– Series 19.1, 19.2	visual (mechanical)

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

DN (nominal I.D.)		Conductance (molecular flow)	Compressed air min. –max. overpressure				Volume of pneumatic actuator				Closing or opening time		Weight			
			19.0		19.1, 19.2		19.0		19.1, 19.2		19.0	19.1, 19.2	19.0		19.1, 19.2	
mm	inch	ls ⁻¹	bar	psi	bar	psi	l	ft ³	l	ft ³	s	s	kg	lbs	kg	lbs
400	16	50 000	5–7	73–102	5–9	73–131	5.9	0.208	2.1	0.074	8	10	140	309	160	353
500	20	90 000	5–7	73–102	5–9	73–131	6.9	0.244	2.7	0.095	8	10	200	441	235	518
630	25	186 000	5–7	73–102	6–9	87–131	8.8	0.311	4.8	0.170	10	14	350	772	385	849
800	32	280 000	5–7	73–102	6–9	87–131	17.9	0.632	11	0.388	21	35	580	1279	730	1610
900	36	430 000	5–7	73–102	6–9	87–131	20.8	0.735	)	)	23	)	760	1676))
1000	40	505 000	5–7	73–102	6–9	87–131	22.6	0.798	18.8	0.664	25	50	1000	2205	1300	2867
1250	50	950 000	5–7	73–102	6–9	87–131	43.6	1.540	25.9	0.915	30	70	1700	3749	2100	4631
1600	63	1 460 000	5–7	73–102	)	)	111.1	3.923	)	)	35	)	2800	6174))
2000	78	2 790 000	5–7	73–102	)	)	217.4	7.677	)	)	55	)	5050	11135))

) on request

Options

Actuator

- Solenoid valve for impulse actuation:
last valve position is maintained at power failure
- Solenoid for impulse actuation and nonreturn valve:
last valve position is maintained at power failure and compressed air failure
- Solenoid valve separate, for external mounting
- Other solenoid valve voltage (standard: 24 VDC)
- 3-position pneumatic actuator
- Mechanical position indicator for series 19.0

Valve

- ISO, ASA, ASA-LP, JIS flanges
- Customer specified flanges with/without watercooling
- Static seals made of metal
- Ports for roughing (by-pass), venting or for gauges
- Protective ring
- Heat protection shield
- Leaf springs made of Nimonic
- Other sizes

Ordering information for options:

Ordering No. of valve-X

(e. g. 19254-PE44-X, X = port as per enclosed dimensional drawing)

Spare parts

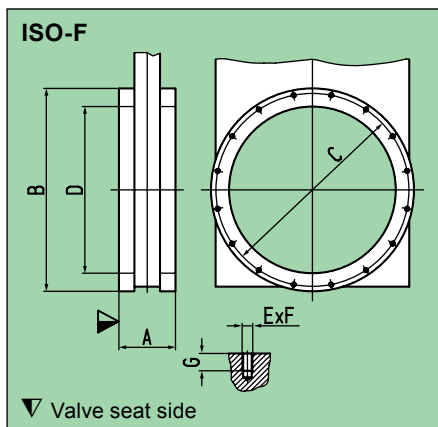
- **Seals**
on request (specify fabrication number of valve)

Accessories

- **Bake-out equipment**
- **Blank-off flanges**
for testing and bake-out

Flange dimensions

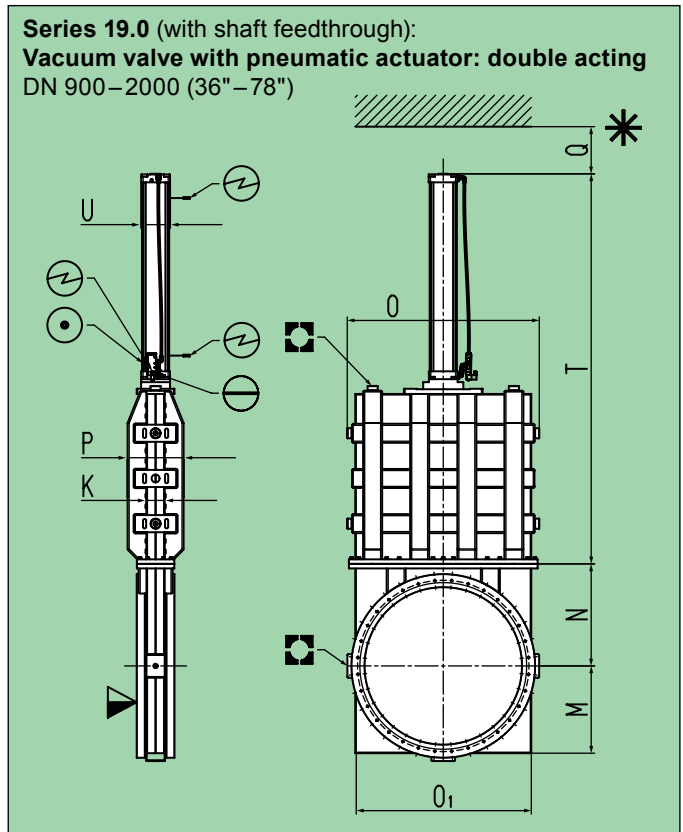
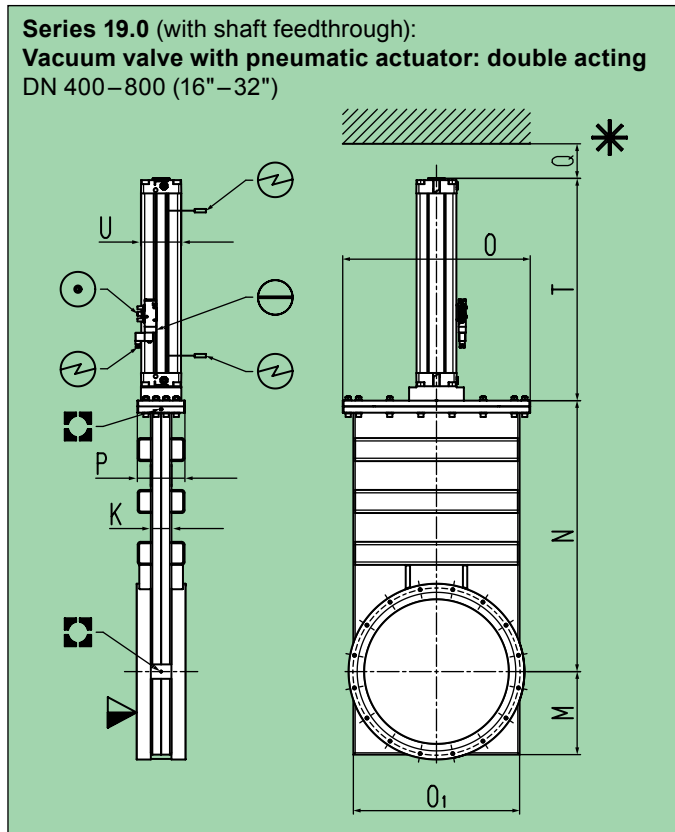
¹⁾ customer-specific



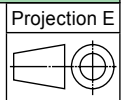
DN	mm	400	500	630	800	900 ¹⁾	1000	1250 ¹⁾	1600 ¹⁾	2000 ¹⁾
inch		16	20	25	32	36	40	50	63	78
A	mm	150	170	180	220.50	204	240	250	250	340
inch		5.90	6.69	7.09	8.66	8.03	9.45	9.84	9.84	13.40
B	mm	510	610	780	960	1060	1168	1500	1830	2232
inch		20.08	24.02	30.71	37.80	41.70	46	59.05	72.05	87.80
C	mm	480	580	720	890	990	1090	1370	1760	2121
inch		18.90	22.83	28.35	35.04	38.90	42.91	53.94	69.30	83.50
D	mm	400	501	651	800	900	1000.50	1250	1600	1982
inch		15.75	19.72	25.63	31.50	35.40	39.37	49.21	63	78
E x F		16 x M12	16 x M12	20 x M12	24 x M12	-	32 x M12	32 x M16	40 x M24	36 x 3/4"
G	mm	20	20	20	20	-	20	25	48	34
inch		0.79	0.79	0.79	0.79	-	0.79	0.98	1.89	1.33

Dimensions for other flanges on request

Main dimensions



- ▽ Valve seat side
- * Required for dismantling
- ⊙ Compressed air connection
- ⊖ Emergency operation
- ⊕ Electrical connection
- ◻ For attachment



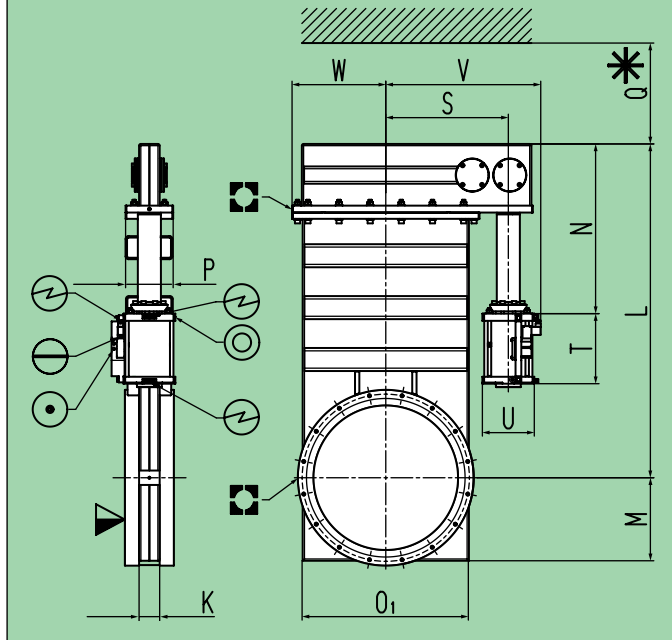
Flange dimensions: see page 101

¹⁾ customer-specific

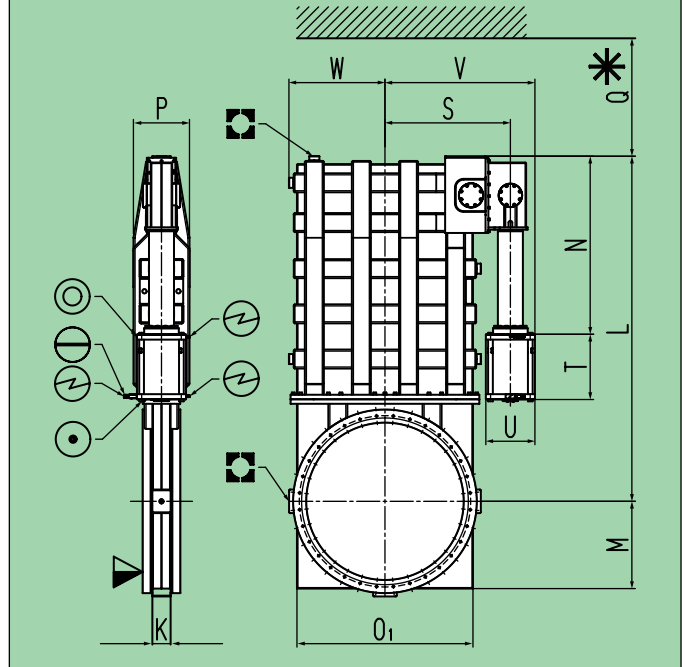
DN	mm	400	500	630	800	900 ¹⁾	1000	1250 ¹⁾	1600 ¹⁾	2000 ¹⁾
	inch	16	20	25	32	36	40	50	63	78
K	mm	67	72	74	87	87	116	116	125	145
	inch	2.64	2.83	2.91	3.43	3.43	4.57	4.57	4.92	5.71
M	mm	233	288	363	455	512	555	709	884	1134.50
	inch	9.17	11.34	14.29	17.91	20.16	21.85	27.91	34.80	44.67
N	mm	792	940	1195	1410	600	649	827	1017	1218
	inch	31.18	37.01	47.05	55.51	23.62	25.55	32.56	40.04	47.95
O	mm	525	650	806	1010	1091	1221	1521	1869	2349
	inch	20.67	25.59	31.73	39.76	42.95	48.07	59.88	73.58	92.48
O1	mm	467	577	732	911	1010	1119	1419	1769	2169
	inch	18.39	22.72	28.82	35.87	39.76	44.06	55.87	69.65	85.39
P	mm	147	165	240	336	212	356	356	365	553
	inch	5.79	6.50	9.45	13.23	8.35	14.02	14.02	14.37	21.77
Q	mm	620	700	845	1032	140	185	210	252	200
	inch	24.41	27.56	33.27	40.63	5.51	7.28	8.27	9.92	7.87
T	mm	690	771	926	1138	2308	2481	3028	3832	4751
	inch	27.17	30.35	36.46	44.80	90.87	97.68	119.21	150.87	187.05
U	mm	140	140	140	184	180	184	224	224	280
	inch	5.51	5.51	5.51	7.24	7.09	7.24	8.82	8.82	11.02

Main dimensions

Series 19.1, 19.2 (with bellows):
HV/UHV valve with pneumatic actuator: double acting
 DN 400–800 (16"–32")



Series 19.1, 19.2 (with bellows):
HV/UHV valve with pneumatic actuator: double acting
 DN 900–2000 (36"–78")



- ▽ Valve seat side
 - ⊙ Compressed air connection
 - ⊖ Emergency operation
 - ⊠ For attachment
 - * Required for dismantling
 - ⊕ Electrical connection
 - ⊙ Leak detection hole
- Projection E

Flange dimensions: see page 101

) customer-specific

DN	mm	400	500	630	800	900 ⁾	1000	1250 ⁾	1600 ⁾	2000 ⁾
inch		16	20	25	32	36	40	50	63	78
K	mm	67	72	74	87	on request	116	116	on request	on request
inch		2.64	2.83	2.91	3.43		4.57	4.57		
L	mm	957	1158	1434	1750		2196	2744		
inch		37.68	45.59	56.46	68.90		86.46	108.03		
M	mm	233	288	363	455		555	709		
inch		9.17	11.34	14.29	17.91		21.85	27.91		
N	mm	486	589	683	1047		1123	1353		
inch		19.13	23.19	26.89	41.22		44.21	53.27		
O1	mm	467	577	732	911		1119	1419		
inch		18.39	22.72	28.82	35.87		44.06	55.87		
P	mm	147	165	240	336		356	356		
inch		5.79	6.50	9.45	13.23		14.02	14.02		
Q	mm	605	700	896	1050		140	182		
inch		23.82	27.56	35.28	41.34	5.51	7.17			
S	mm	340	425	503	626	798	929			
inch		13.39	16.73	19.80	24.65	31.42	36.57			
T	mm	225	255	260	373	436	525			
inch		8.86	10.04	10.24	14.69	17.17	20.67			
U	mm	180	180	220	262	312	312			
inch		7.09	7.09	8.66	10.31	12.28	12.28			
V	mm	448	537	630	757	954	1085			
inch		17.64	21.14	24.80	29.80	37.56	42.72			
W	mm	263	325	403	505	611	760			
inch		10.35	12.80	15.87	19.88	24.06	29.92			