

## HV GATE VALVE, SERIES 09.1

For demanding pump isolation applications.  
Especially suited to applications with high levels of process byproduct in the gas stream.



Manual

Pneumatic

Reliable sealing in harsh processes

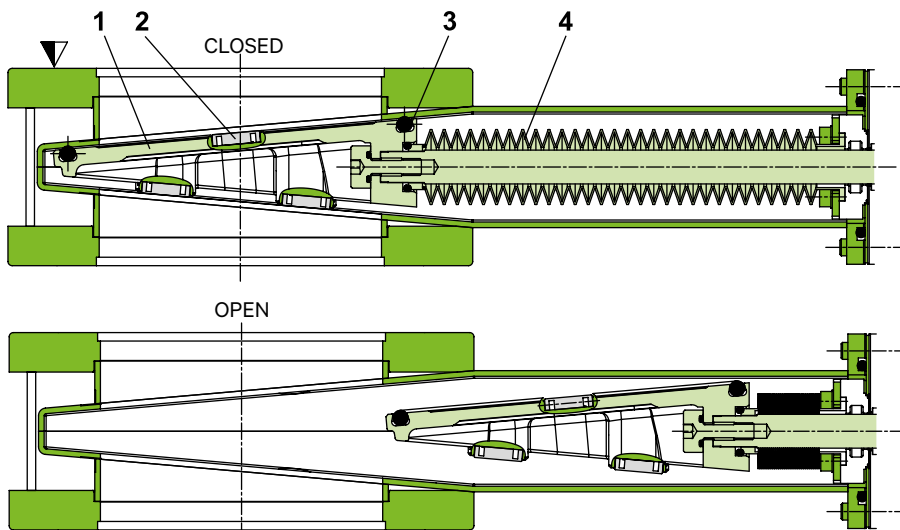
Robust and easy maintenance thanks to simple wedge design

Opening at 1 bar differential pressure possible

### MAIN FEATURES

Sizes	DN 50 – 160 mm (2" – 6")
Actuators	manual with crank handle pneumatic: double acting
Body material	stainless steel
Feedthrough	bellows
Standard flanges	ISO-KF, ISO-F, CF-F, ASA-LP, JIS
Sealing technology	WEDGE (see glossary)

### FUNCTIONAL PRINCIPLE



- 1 Gate
- 2 Sliding element
- 3 Gate seal
- 4 Bellows
- ▼ Valve seat side

## TECHNICAL DATA

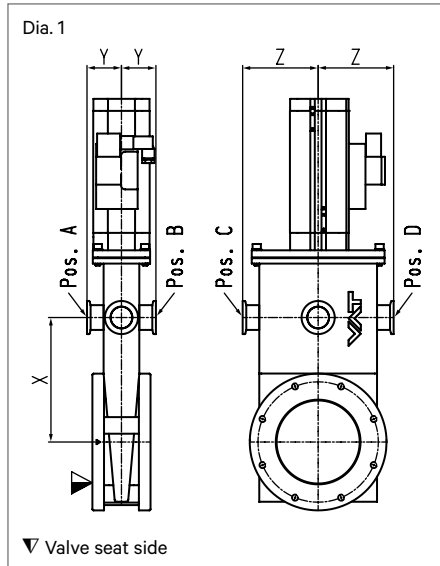
Leak rate	Valve body Valve seat	<1·10 <sup>-9</sup> mbar ls <sup>-1</sup> <1·10 <sup>-7</sup> mbar ls <sup>-1</sup>
Pressure range		1·10 <sup>-8</sup> mbar to 1.2 bar (abs)
Differential pressure on the gate		≤1.2 bar
Differential pressure at opening		≤1 bar
Cycles until first service <sup>1)</sup>		5 000
Bellows cycles <sup>1)</sup>		100 000
Temperature <sup>2)</sup>	Valve body Manual and pneumatic actuator Solenoid valve Position indicator	≤150 °C ≤100 °C ≤ 50 °C ≤ 60 °C
Material	Valve body Gate Bellows	AISI 304 (1.4301) AISI 304 (1.4301) AISI 633 (AM350)
Seal	Bonnet, gate	FKM (Viton®)
Feedthrough		bellows
Mounting position		any
Solenoid valve		24 V DC, 5.4 W (others on request)
Position indicator: contact rating	Voltage Current Power	10–30 V DC ≤0.5 A max. 10 W

DN (nominal I.D.)		Conductance (molecular flow) (depending on A-dimension and flange type)	Valve with manual actuator				Valve with pneumatic actuator <sup>2)</sup>					
			Turns per stroke	Weight		Compressed air min. – max. overpressure		Volume of pneumatic actuator		Closing or opening time	Weight	
mm	inch	ls <sup>-1</sup>		n	kg	lbs	bar	psi	l		ft <sup>3</sup>	s
50	2	250	22	3.4	6.8	4–7	58–102	0.08	0.003	<1.5	3.4	7.5
63	2½	600	27	5.6	12.4	4–7	58–102	0.16	0.005	<2	5.6	12.4
80	3	900	33	7	14	4–7	58–102	0.21	0.007	<2	7	15.4
100	4	1700	39	8.1	17.9	4–7	58–102	0.25	0.008	<2	7.8	17.2
160	6	5 000	41	15.1	33.3	4–7	58–102	0.53	0.017	<3	15.1	33.3

<sup>1)</sup> Depending on the process conditions, shorter service intervals may be required.

<sup>2)</sup> Maximum values: depending on operating conditions and sealing materials.

## OPTIONS, CUSTOMIZED SOLUTIONS



### ACTUATOR

- Solenoid valve for impulse actuation:  
last valve position is maintained at power failure
- Solenoid valve separate, for external mounting
- Other solenoid valve voltage (standard 24V DC)

### VALVE

- Shaft feedthrough
- PTFE bellows for shaft feedthrough
- Ports for roughing (by-pass), venting or for gauges (Dia. 1): possible positions A, B, C and D

DN valve	mm inch	50 2	63 2½	80 3	100 4	160 6
Recommended port	ISO-KF	25	25	25	25	25
X	mm inch	90 3.54	110 4.33	130 5.12	150 5.91	215 8.46
Y	mm inch	41.50 1.63	41.50 1.63	41.50 1.63	41.50 1.63	52 2.05
Z	mm inch	65 2.56	72.50 2.85	91 3.58	91 3.58	116 4.57
Other ports on request						

## SPARE PARTS

We can offer a wide variety of spare parts. Please contact us for details and an offer.

Thank you for specifying the fabrication number of the valve indicated on the identification tag when asking for spare parts.

## ACCESSORIES

- Flange connections for installation of the valve: see series 32 and 33
- Heater

## ORDERING INFORMATION FOR STANDARD VALVES

Valve with manual actuator  
crank handle

DN		Ordering numbers				
mm	inch	ISO-KF <sup>1)</sup> ISO-F <sup>2)</sup>	CF-F metric threads	CF-F UNF threads	ASA-LP	JIS
50	2	09134-KE01 <sup>1)</sup>	09134-CE01	09134-UE01	09134-TE01	09134-JE01
63	2½	09136-PE01 <sup>2)</sup>	09136-CE01	09136-UE01	09136-TE01	09136-JE01
80	3	09138-PE01 <sup>2)</sup>	09138-CE01	09138-UE01	09138-TE01	09138-JE01
100	4	09140-PE01 <sup>2)</sup>	09140-CE01	09140-UE01	09140-TE01	09140-JE01
160	6	09144-PE01 <sup>2)</sup>	09144-CE01	09144-UE01	09144-TE01	09144-JE01

with position indicator: 091 . . . E08

Valve with pneumatic actuator  
double acting  
without solenoid valve  
without position indicator

DN		Ordering numbers (specify control voltage)				
mm	inch	ISO-KF <sup>1)</sup> ISO-F <sup>2)</sup>	CF-F metric threads	CF-F UNF threads	ASA-LP	JIS
50	2	09134-KE14 <sup>1)</sup>	09134-CE14	09134-UE14	09134-TE14	09134-JE14
63	2½	09136-PE14 <sup>2)</sup>	09136-CE14	09136-UE14	09136-TE14	09136-JE14
80	3	09138-PE14 <sup>2)</sup>	09138-CE14	09138-UE14	09138-TE14	09138-JE14
100	4	09140-PE14 <sup>2)</sup>	09140-CE14	09140-UE14	09140-TE14	09140-JE14
160	6	09144-PE14 <sup>2)</sup>	09144-CE14	09144-UE14	09144-TE14	09144-JE14

without solenoid valve, with position indicator: 091 . . . E24

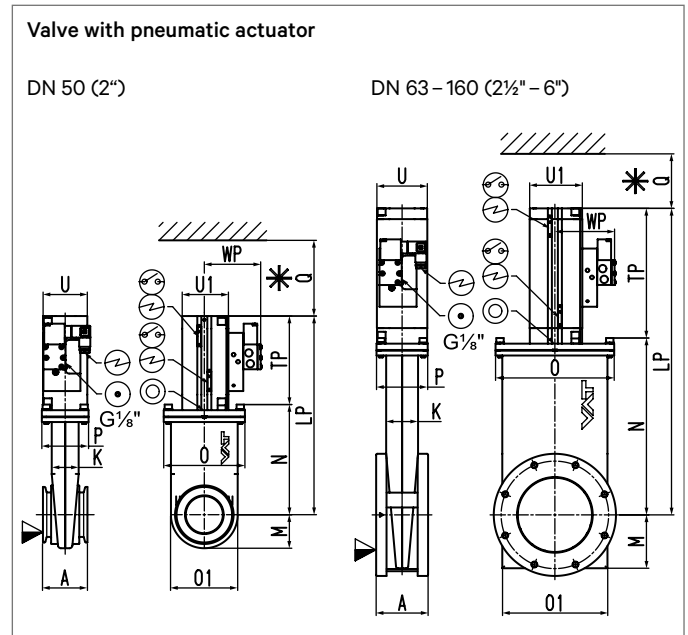
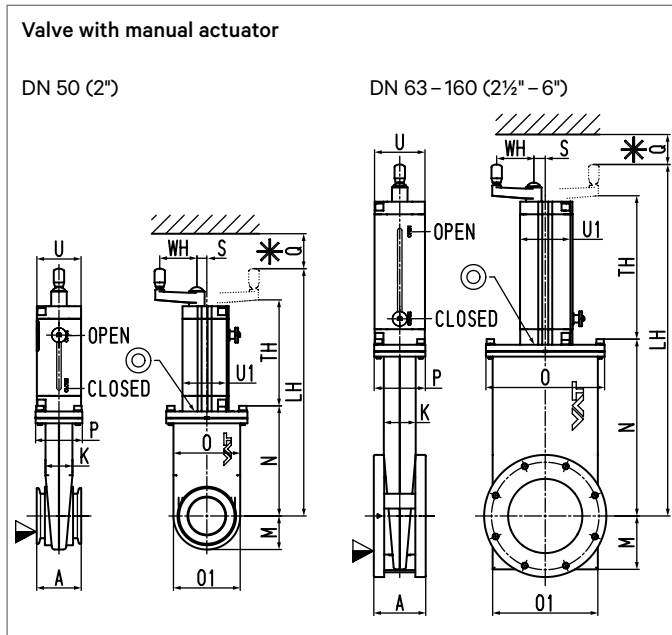
with solenoid valve, with position indicator: 091 . . . E44 (specify control voltage)

## ORDERING INFORMATION FOR VALVES WITH OPTIONS

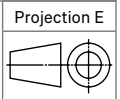
Basic ordering number plus «-X»: -X to be specified

Example: 09140-PE14-X, X = port ISO-KF 25 in position A

## MAIN DIMENSIONS



- ▼ Valve seat side
- \* Required for dismantling
- ⊙ Compressed air connection
- ⊕ Electrical connection
- ⊗ Position indicator
- ⊙ Leak detection hole



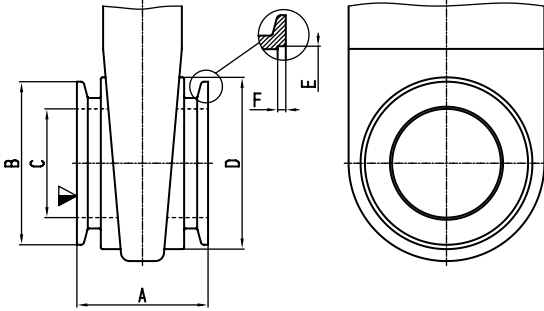
DN	mm inch	50 2	63 2½	80 3	100 4	160 6
A	mm inch	60 2.36	70 2.75	70 2.75	70 2.75	90 3.54
K	mm inch	36 1.42	43 1.69	43 1.69	43 1.69	52.50 2.06
LH	mm inch	320 12.60	375 14.76	424 16.69	474 18.66	651 25.62
M	mm inch	45 1.77	53.50 2.10	72.50 2.85	72 2.83	97 3.83
N	mm inch	149 5.87	176 6.92	209 8.29	239 9.40	337 13.27
O	mm inch	109.50 4.31	123 4.84	142 5.59	160 6.30	210 8.26
O1	mm inch	90 3.54	105 4.13	124 4.88	142 5.59	192 7.55
P	mm inch	63 2.48	69 2.71	69 2.71	69 2.71	87 3.42
Q	mm inch	120 4.72	160 6.30	200 7.87	200 7.87	260 10.23
S	mm inch	13 0.51	15.50 0.61	15.50 0.61	15.50 0.61	20.50 0.80
TH	mm inch	131 5.16	149 5.86	165 6.50	185 7.28	264 10.39
U	mm inch	60 2.36	68 2.67	68 2.67	68 2.67	87 3.42
U1	mm inch	62.50 2.46	71 2.79	71 2.79	71 2.79	91 3.58
WH	mm inch	21 0.83	57 2.24	57 2.24	57 2.24	73 2.87

DN	mm inch	50 2	63 2½	80 3	100 4	160 6
A	mm inch	60 2.36	70 2.75	70 2.75	70 2.75	90 3.54
K	mm inch	36 1.42	43 1.69	43 1.69	43 1.69	52.50 2.06
LP	mm inch	268 10.55	314 12.36	384 15.12	413.50 16.27	578 22.75
M	mm inch	45 1.77	53.50 2.10	72.50 2.85	72 2.83	97 3.83
N	mm inch	149 5.87	176 6.92	209 8.29	239 9.40	337 13.27
O	mm inch	109.50 4.31	123 4.84	142 5.59	160 6.30	210 8.26
O1	mm inch	90 3.54	105 4.13	124 4.88	142 5.59	192 7.55
P	mm inch	63 2.48	69 2.71	69 2.71	69 2.71	87 3.42
Q	mm inch	120 4.72	160 6.30	200 7.87	200 7.87	260 10.23
TP	mm inch	119 4.69	138 5.43	175 6.89	174.50 6.87	241 9.48
U	mm inch	60 2.36	68 2.67	68 2.67	68 2.67	87 3.42
U1	mm inch	62.50 2.46	71 2.79	71 2.79	71 2.79	91 3.58
WP	mm inch	77 3.03	82 3.22	82 3.22	82 3.22	92 3.62

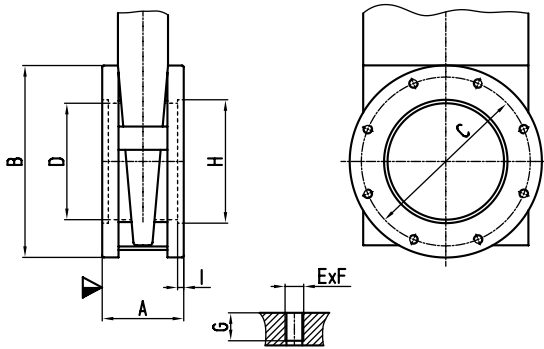
Flange dimensions: see pages 42 - 43

## FLANGE DIMENSIONS

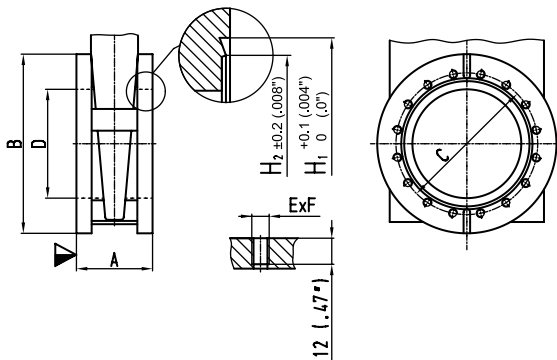
ISO-KF  
DN 50 (2")



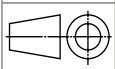
ISO-F  
DN 63 - 160 (2½" - 6")



CF-F  
DN 50 - 160 (2" - 6")



Projection E



▽ Valve seat side

	ISO-KF	ISO-F				
DN	mm inch	50 2	63 2½	80 3	100 4	160 6
A	mm inch	60 2.36	70 2.76	70 2.76	70 2.76	90 3.54
B	mm inch	75 2.95	136 5.35	145 5.70	165 6.50	225 8.86
C	mm inch	50 1.97	110 4.33	125 4.92	145 5.71	200 7.87
D	mm inch	79 3.11	63 2.48	80 3.15	100 3.94	150 5.91
E	mm inch	52.20 2.06	-	-	-	-
F	mm inch	3 0.19	-	-	-	-
E × F		-	4 × M8	8 × M8	8 × M8	8 × M10
G	mm inch	-	12 0.47	12 0.47	12 0.47	15 0.59
H	mm inch	-	70 2.76	83 3.27	102 4.02	153 6.02
I	mm inch	-	3 0.12	3 0.12	3 0.12	5 0.20

DN	mm inch	50 2	63 2½	80 3	100 4	160 6
O.D.	mm inch	3	4½	4¾	6	8
A	mm inch	60 2.36	70 2.76	70 2.76	70 2.76	90 3.54
B	mm inch	85.80 3.38	135.80 5.35	145 5.71	164.80 6.49	224.80 8.85
C	mm inch	72.40 2.85	92.10 3.63	102.40 4.03	130.30 5.13	181 7.13
D	mm inch	50 1.97	63 2.48	80 3.15	100 3.94	150 5.91
E × F <sup>1)</sup>		8 × M8	8 × M8	10 × M8	16 × M8	20 × M8
E × F <sup>2)</sup>		8 × 5/16" 24 UNF	8 × 5/16" 24 UNF	10 × 5/16" 24 UNF	16 × 5/16" 24 UNF	20 × 5/16" 24 UNF
H1	mm inch	61.80 2.43	82.50 3.25	91.50 3.60	120.65 4.75	171.45 6.75
H2	mm inch	56.40 2.22	77.40 3.05	86.30 3.40	115.50 4.55	166 6.54

<sup>1)</sup> Metric threads

<sup>2)</sup> UNF threads

## FLANGE DIMENSIONS

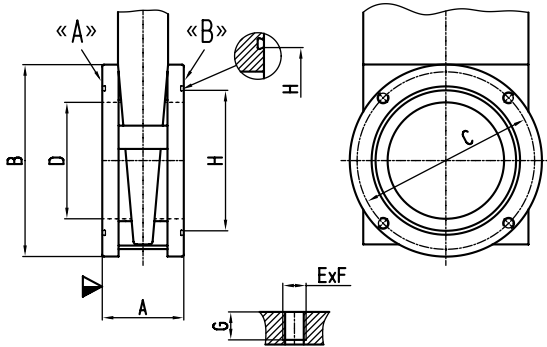
### ASA-LP

DN 63 – 160 (2½" – 6")

with or without O-ring groove

For orders with O-ring groove specify:

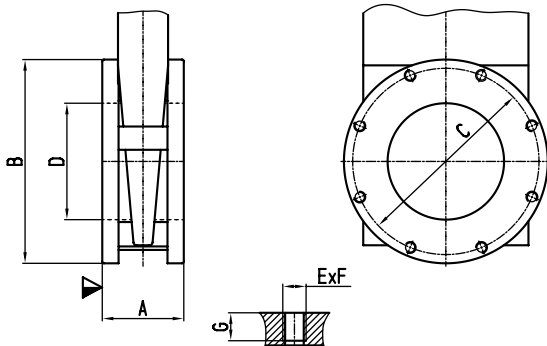
«A», «B» or «A + B»



DN	mm inch	63 2½	80 3	100 4	160 6
ASA-LP		2	–	3	4
A	mm inch	70 2.76	70 2.76	70 2.76	90 3.54
B	mm inch	152.40 6.00	177.80 7	190.50 7.50	225 8.86
C	mm inch	120.70 4.75	139.70 5.50	152.40 6	190.50 7.50
D	mm inch	70 2.76	76 2.99	100 3.94	150 5.91
E × F		4 × ⅜" 16 UNC	4 × ⅜" 16 UNC	4 × ⅜" 16 UNC	8 × ⅜" 16 UNC
G	mm inch	15 0.59	15 0.59	15 0.59	15 0.59
H	mm inch	88.90 3.50	88.90 3.50	120.65 4.75	158.75 6.25
O-Ring I.D. × D	mm inch	88.49 × 3.53 3.48 × 0.139	88.49 × 3.53 3.48 × 0.139	120.24 × 3.53 4.73 × 0.139	158.34 × 3.53 6.23 × 0.139

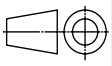
### JIS B 2290: 1998 / ISO 1609

DN 65 – 150 (2½" – 6")



DN	mm inch	65 2½	80 3	100 4	150 6
A	mm inch	70 2.76	70 2.76	70 2.76	90 3.54
B	mm inch	136 5.35	165 6.50	175 6.89	225 8.86
C	mm inch	120 4.72	135 5.31	160 6.30	210 8.27
D	mm inch	63 2.48	80 3.15	100 3.94	150 5.91
E × F		4 × M10	8 × M10	8 × M10	8 × M10
G	mm inch	12 0.47	12 0.47	12 0.47	15 0.59

Projection E



▼ Valve seat side