

BUTTERFLY VALVE, SERIES 21.0

Compact isolation valve for vacuum. Alternative to gate valves.



Manual

Pneumatic

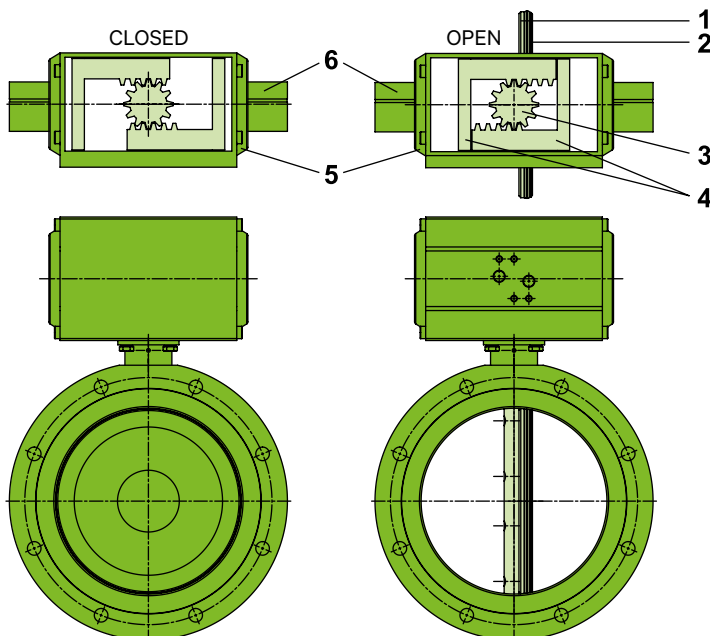
Robust and compact pump isolation valve

Operation under differential pressure possible

MAIN FEATURES

Sizes	DN 63 – 250 mm (2½" – 10")
Actuators	manual with turning lever pneumatic: double acting
Body material	stainless steel
Feedthrough	rotary feedthrough
Standard flanges	DN 63 – 160: ISO-F, DN 250: ISO-F, ISO-K

FUNCTIONAL PRINCIPLE



- 1 Plate
- 2 Plate seal
- 3 Shaft with pinion gear
- 4 Piston with rack gear
- 5 Actuator
- 6 Valve body

TECHNICAL DATA

Leak rate	Valve body Valve seat: valve with manual actuator valve with pneumatic actuator		$< 1 \cdot 10^{-9}$ mbar ls ⁻¹ $< 5 \cdot 10^{-9}$ mbar ls ⁻¹ $< 1 \cdot 10^{-9}$ mbar ls ⁻¹
Pressure range	Valve with manual actuator	DN 63 – 100 DN 160	1 · 10 ⁻⁸ mbar to 4 bar (abs) 1 · 10 ⁻⁸ mbar to 1.3 bar (abs)
	Valve with pneumatic actuator	DN 63 – 250	1 · 10 ⁻⁸ mbar to 1.3 bar (abs)
Differential pressure on the plate	Valve with manual actuator	DN 63 – 100 DN 160	≤ 4 bar ≤ 1.3 bar
	Valve with pneumatic actuator	DN 63 – 250	≤ 1.3 bar
Differential pressure at opening ¹⁾			≤ 1.3 bar
Cycles until first service ²⁾	Valve with manual actuator	DN 63 – 160	100 000
	Valve with pneumatic actuator	DN 63, 250	1 million
		DN 100, 160	1.5 million
Temperature ³⁾	Valve body		≤ 150 °C
	Actuator		≤ 80 °C
	Solenoid valve		≤ 50 °C
	Position indicator		≤ 80 °C
Material	Valve body, plate, shaft		AISI 304 (1.4301)
Seal	Bonnet, plate		FKM (Viton®)
Feedthrough			rotary feedthrough
Mounting position			any
Solenoid valve			24 VDC, 5.7 W, normally closed (NC) (others on request)
Position indicator: contact rating	Voltage		≤ 50 V AC / 5 – 30 V DC
	Current		0.1 A

		Valve with manual actuator			Valve with pneumatic actuator								
DN (nominal I.D.)		Conductance (molecular flow)	Weight		Conductance (molecular flow)	Compressed air min. – max. overpressure		Volume of pneumatic actuator		Closing time ⁴⁾	Opening time ⁴⁾	Weight	
mm	inch	ls ⁻¹	kg	lbs	ls ⁻¹	bar	psi	l	ft ³	s	s	kg	lbs
63	2½	350	3.20	7.10	400	4 – 6	58 – 87	0.25	0.009	≤ 0.15	≤ 0.20	3.80	8.40
100	4	1000	5.20	11.50	1400	4 – 6	58 – 87	0.60	0.021	≤ 0.32	≤ 0.52	6.50	14.30
160	6	3400	9.3	20.50	4000	4 – 6	58 – 87	0.60	0.021	≤ 0.32	≤ 0.55	10	22
250	10	–	–	–	8200	4 – 6	58 – 87	0.70	0.025	≤ 2	≤ 5	15.70	34.60

¹⁾ Maximum value; may reduce the specified cycle lifetime.

²⁾ Tested at room temperature and under clean and static conditions. Expandable parts are excluded.

³⁾ Maximum values; depending on operating conditions and sealing materials.

⁴⁾ Depending on pneumatic installation.

OPTIONS, CUSTOMIZED SOLUTIONS

Ports for roughing (by-pass), venting or for gauges: specification 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

ORDERING INFORMATION

FOR STANDARD VALVES

Valve with manual actuator
turning handle: ¼ turn

DN		Ordering numbers
mm	inch	
63	2 ½	21036-PE06
100	4	21040-PE06
160	6	21044-PE06

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

		ISO-F	ISO-K
63	2 ½	21036-PE14	-
100	4	21040-PE14	-
160	6	21044-PE14	-
250	10	21048-PE14	21048-QE14

without solenoid valve, with position indicator: 210 . . . E24

with solenoid valve, with position indicator: 210 . . . E44 (specify control voltage)

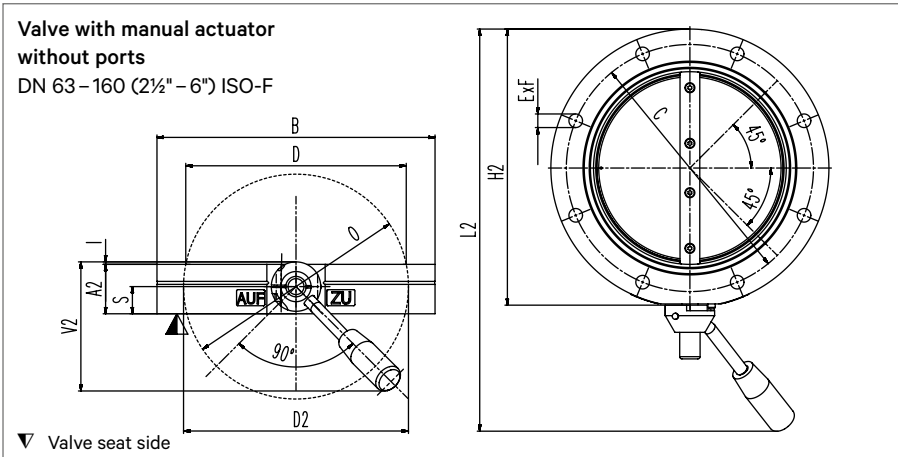
ORDERING INFORMATION

FOR VALVES WITH OPTIONS

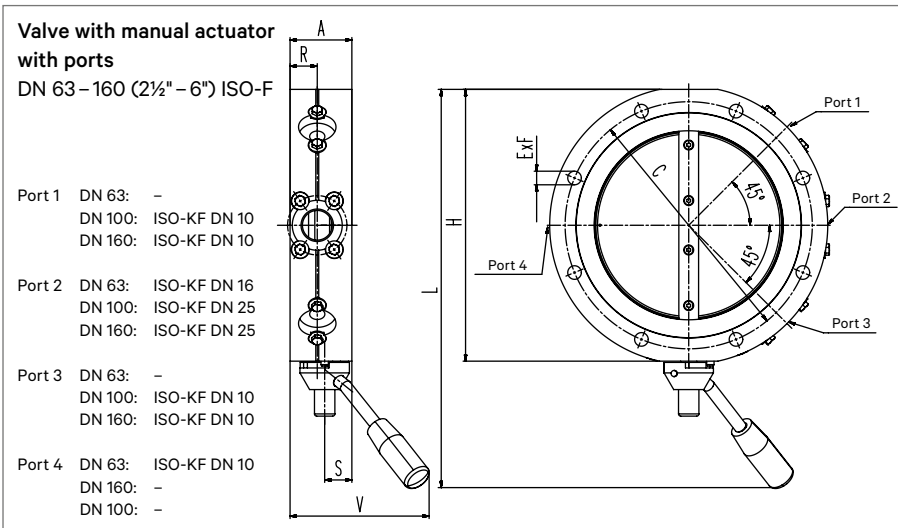
Basic ordering number plus «-X»: -X to be specified

Example: 21044-PE44-X, X = customer-specific valve body

DIMENSIONS

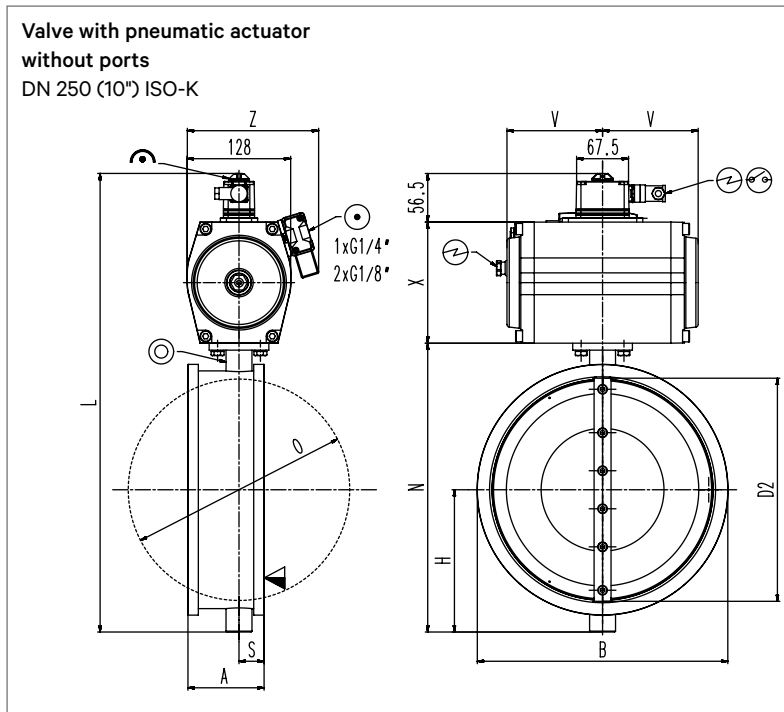
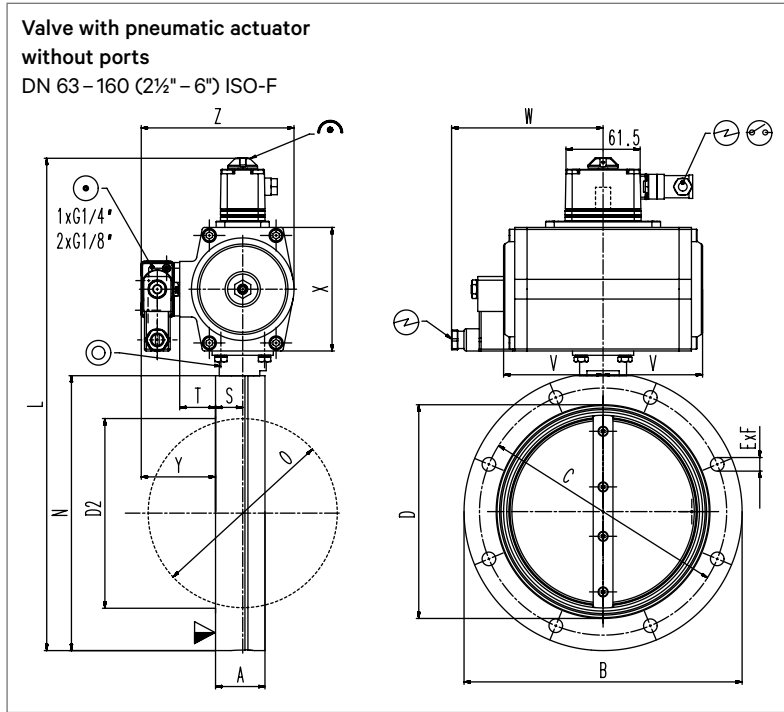


DN	mm inch	63 2 ½	100 4	160 6
A	mm inch	40 1.57	50 1.97	50 1.97
A2	mm inch	35 1.38	35 1.38	40 1.57
B	mm inch	130 5.12	165 6.50	225 8.86
C	mm inch	110 4.33	145 5.71	200 7.87
D ¹⁾	mm inch	97 3.82	132 5.20	182 7.17
D2 ²⁾	mm inch	91 3.58	124 4.88	182 7.17
E x F		4 x Ø9	8 x Ø9	8 x Ø11
H	mm inch	124 4.88	158 6.22	220 8.66
H2	mm inch	127 5	161.50 6.36	222.50 8.76
I	mm inch	5 0.20	6 0.24	2 0.08
L	mm inch	200 7.87	234 9.21	324 12.76
L2	mm inch	202 7.95	237 9.33	326 12.83
O	mm inch	70 2.76	101 3.98	150.60 5.93
R	mm inch	23 0.91	28 1.10	28 1.10
S	mm inch	20 0.79	21 0.83	22 0.87
V	mm inch	83.20 3.28	92.10 3.63	112.50 4.43
V2	mm inch	83.10 3.27	77.10 3.04	104.50 4.11

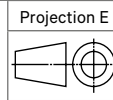


¹⁾ Sealing surface ²⁾ O-ring groove

DIMENSIONS



- ▼ Valve seat side
- ⊙ Compressed air connection
- ⊕ Electrical connection
- ⊖ Mechanical position indication
- ⊗ Position indicator
- ⊘ Leak detection hole



DN	mm	63	100	160	250
	inch	2½	4	6	10
A	mm	35	35	40	88
	inch	1.38	1.38	1.57	3.46
B	mm	130	165	225	290
	inch	5.12	6.50	8.86	11.42
C	mm	110	145	200	-
	inch	4.33	5.71	7.87	-
D	mm	97	132	166	-
	inch	3.82	5.20	6.54	-
D2	mm	91	124	153	261
	inch	3.58	4.88	6.02	10.28
E x F		4 x Ø9	8 x Ø9	8 x Ø11	-
H	mm	65	82.50	112.50	164.50
	inch	2.56	3.25	4.43	6.48
L	mm	183	337.80	398.80	530.20
	inch	7.20	13.30	15.70	20.87
N	mm	127	161.50	222.50	334
	inch	5	6.36	8.76	13.15
O	mm	72	102	153	256
	inch	2.83	4.02	6.02	10.08
S	mm	20	21	22	29
	inch	0.79	0.83	0.87	1.14
T	mm	19	30	29	31
	inch	0.75	1.18	1.14	1.22
V	mm	66	80.50	80.50	110.50
	inch	2.60	3.17	3.17	4.35
W	mm	122.60	122.60	122.60	-
	inch	4.83	4.83	4.83	-
X	mm	94	120	120	140
	inch	3.70	4.72	4.72	5.51
Y	mm	50.70	61.60	60.60	-
	inch	2	2.43	2.39	-
Z	mm	100.20	124.10	124.10	152
	inch	3.94	4.89	4.89	5.98

Dimensions for valves with ports on request