

PENDULUM VALVE, SERIES 16.2

For applications requiring a compact design.
Especially suited to demanding corrosive processes.



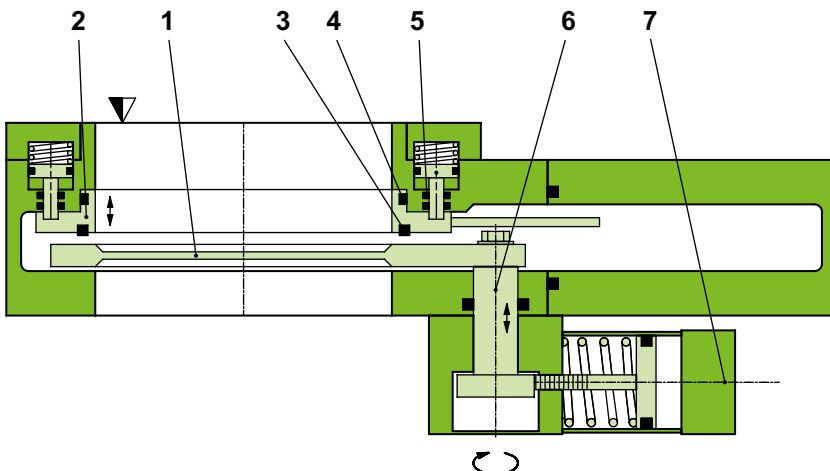
Low vibration level and
low particle count during
operation

Split body design for fast
and easy maintenance

MAIN FEATURES

Sizes	DN 200 – 550 mm (8" – 22")
Actuators	pneumatic: single acting with closing spring (NC) 3-position pneumatic: single acting with closing spring (NC)
Body material	aluminum
Feedthrough	rotary feedthrough
Standard flanges	ISO-F, ASA-LP, JIS

FUNCTIONAL PRINCIPLE



- 1 Plate
- 2 Sealing ring
- 3 Plate seal
- 4 Dynamic seal
- 5 Pneumatics seal
- 6 Actuator shaft
- 7 Pneumatic actuator
- ▼ Valve seat side

TECHNICAL DATA

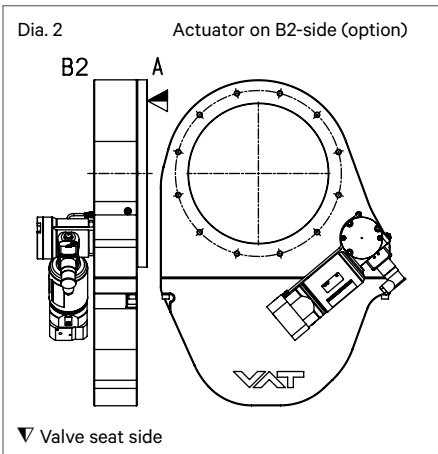
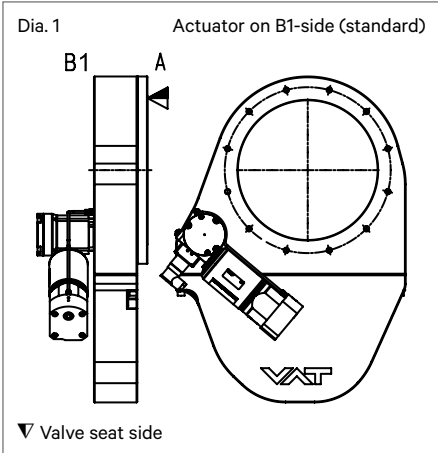
Leak rate	Valve body, valve seat	$< 1 \cdot 10^{-9}$ mbar ls ⁻¹
Pressure range		1 · 10 ⁻⁸ mbar to 1.2 bar (abs)
Differential pressure on the plate		≤ 1.2 bar
Differential pressure at opening	DN 200 DN 250 – 500	≤ 10 mbar ≤ 5 mbar
Cycles until first service		200 000
Temperature ¹⁾	Valve body Actuator Solenoid valve Position indicator	≤ 120 °C ≤ 80 °C ≤ 50 °C ≤ 80 °C
Heating and cooling rate		≤ 30 °C h ⁻¹
Material	Valve body, plate, sealing ring DN 200 – 400 DN 500 Feedthrough (parts in contact with media)	EN AW-5083 (3.3547), EN AW-6082 (3.2315) EN AC-42100 (3.2371) AISI 303 (1.4305), AISI 304 (1.4301)
Seal	Bonnet, plate, dynamic, feedthrough	FKM (Viton®)
Feedthrough		rotary feedthrough
Mounting position		any
Solenoid valve		24 V DC, 5.4 W (others on request)
Position indicator: contact rating	Voltage Current	≤ 50 V AC/DC ≤ 1.2 A
Valve position indication		visual (mechanical)

DN (nominal I.D.)		Conductance (molecular flow) (depending on A-dimension and flange type)	Minimum adjustable conductance with 3-position pneumatic actuator	Max. differential pressure in closed position	Compressed air			Volume of pneumatic actuator		Closing or opening time ²⁾	Weight	
mm	inch				min. – max. overpressure	l	ft ³	kg	lbs			
200	8	11000	15	1200	5 – 7	73 – 102	0.30	0.010	4	23	50.70	
250	10	21700	22	1200	5 – 7	73 – 102	0.35	0.012	4	30	66.10	
320	12	32600	54	1200	5 – 7	73 – 102	0.55	0.020	5	56	123.50	
350	14	41500	62	1200	5 – 7	73 – 102	0.60	0.021	5	65	143.30	
400	16	61000	69	1200	5 – 7	73 – 102	0.65	0.023	5.5	76	167.60	
500	20	101500	100	1200	5 – 7	73 – 102	1.40	0.047	10	120	264.60	

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

²⁾ Extended closing/opening time with 3-position pneumatic actuator.

OPTIONS, CUSTOMIZED SOLUTIONS



ACTUATOR

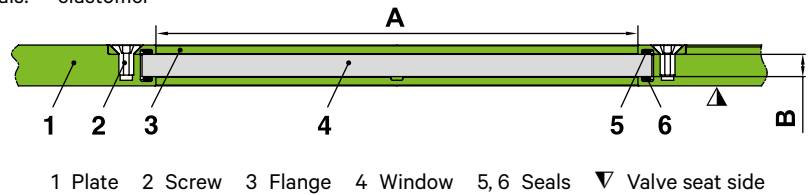
- Other solenoid valve voltage (standard 24VDC)
- Actuator on B2-side (Dia. 2). B1-side (Dia. 1) is standard.

VALVE

- Customer specified flanges
- Other sealing materials
- Heater with insulation and overtemperature switch (Pic. 3)
- Valve body hard anodized or nickel-plated
- Helicoils for valve flanges
- Ports for roughing (by-pass), venting or for gauges
- Window in plate (Pic. 4)

Window specification

Material: borosilicate or sapphire
Seals: elastomer



The window is put between two seals (5, 6) and clamped into the plate (1) by means of a flange (3).

	DN valve	mm	200	250	320	350	400	500	
		inch	8	10	12	14	16	20	
Borosilicate	Optically free diameter «A»	mm	130	130	150	150	150		on request
		inch	5.12	5.12	5.91	5.91	5.91		
	Thickness of glass «B»	mm	6	6	8	8	8		
		inch	0.24	0.24	0.31	0.31	0.31		
Sapphire	Optically free diameter «A»	mm	170	200	250	250	250		
		inch	6.69	7.87	9.84	9.84	9.84		
	Thickness of glass «B»	mm	5	6	6	6	6		
		inch	0.20	0.24	0.24	0.24	0.24		

Above specification includes the largest possible windows. Smaller windows on request. Due to the weight of the window, it is not possible to mount the valve in any position.

Pic. 3



Pic. 4



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

ORDERING INFORMATION FOR STANDARD VALVES

Valve with pneumatic actuator
single acting with closing spring (NC)
without solenoid valve
with position indicator

DN		Ordering numbers		
mm	inch	ISO-F	ASA-LP	JIS
200	8	16246-PA21	16246-TA21	16246-JA21
250	10	16248-PA21	16248-TA21	16248-JA21
320	12	16250-PA21	16250-TA21	16250-JA21
350	14	-	16251-TA21	16251-JA21
400	16	16252-PA21	16252-TA21	16252-JA21
500	20	16254-PA21	16254-TA21	16254-JA21
550	22	on request	on request	on request

without solenoid valve, without position indicator: 162 . . . A11
 with solenoid valve, without position indicator: 162 . . . A31 (specify control voltage)
 with solenoid valve, with position indicator: 162 . . . A41 (specify control voltage)

Valve with 3-position pneumatic actuator
single acting with closing spring (NC)
without solenoid valve
with position indicator

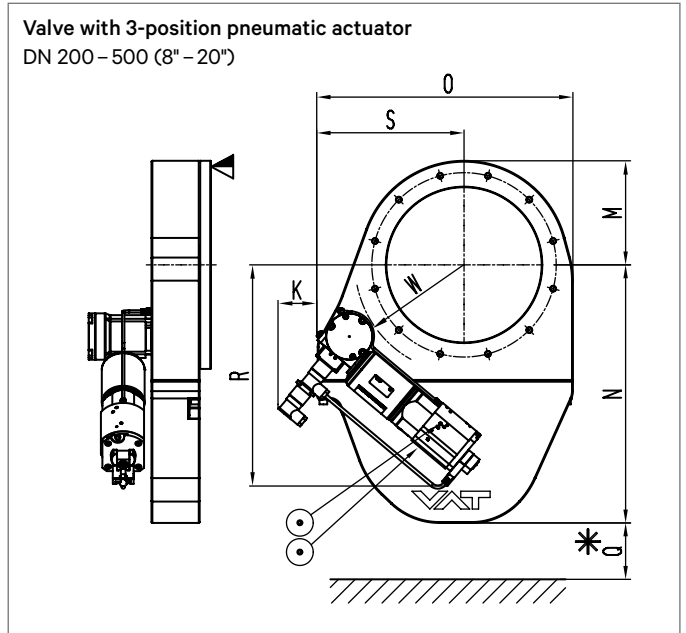
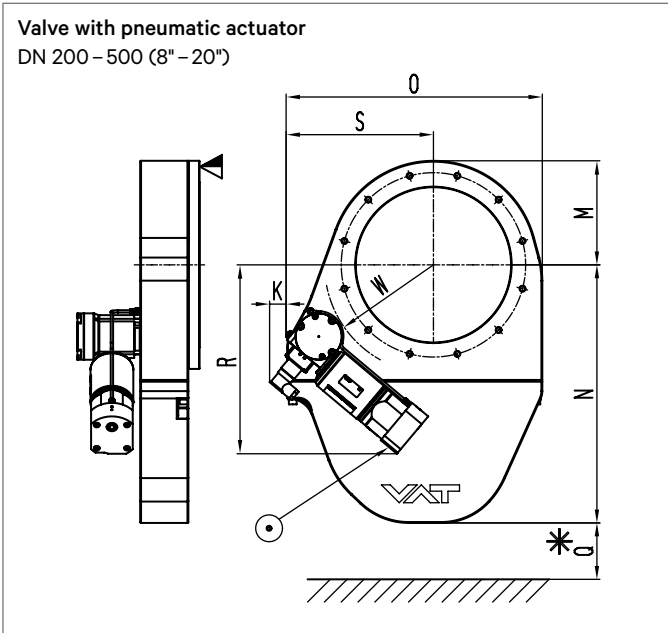
DN		Ordering numbers		
mm	inch	ISO-F	ASA-LP	JIS
200	8	16246-PA28	16246-TA28	16246-JA28
250	10	16248-PA28	16248-TA28	16248-JA28
320	12	16250-PA28	16250-TA28	16250-JA28
350	14	-	16251-TA28	16251-JA28
400	16	16252-PA28	16252-TA28	16252-JA28
500	20	16254-PA28	16254-TA28	16254-JA28
550	22	on request	on request	on request

with solenoid valve, with position indicator: 162 . . . A48 (specify control voltage)

ORDERING INFORMATION FOR VALVES WITH OPTIONS

Basic ordering number plus «-X»: -X to be specified
 Example: 16246-PA21-X, X = port CF-F 40 in position A

MAIN DIMENSIONS



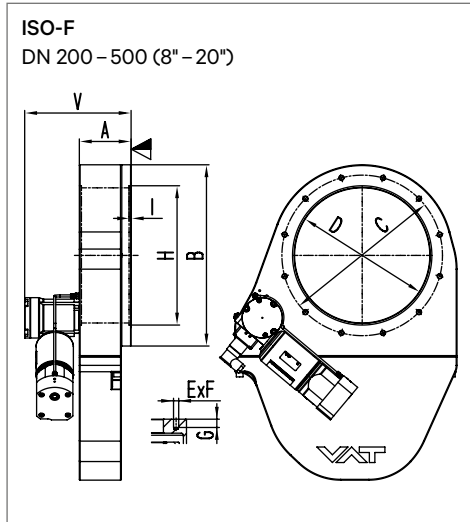
- ▼ Valve seat side
- * Required for dismantling
- ⊙ Compressed air connection

DN	mm inch	200 8	250 10	320 12	350 14	400 16	500 20
K	mm ¹⁾ inch ¹⁾	10 0.39	29 1.14	7 0.28	- -	6 0.24	60 2.36
	mm ²⁾ inch ²⁾	34 1.34	65 2.56	32 1.26	24 0.94	31 1.22	³⁾
M	mm inch	150 5.91	175 6.89	214 8.43	235 9.25	260 10.24	325 12.80
	N	mm inch	360 14.17	434 17.09	538 21.18	590 23.23	655 25.79
O		mm inch	367 14.45	429 16.89	533 20.98	579 22.80	630 24.80
	Q	mm inch	50 1.97	50 1.97	50 1.97	50 1.97	50 1.97
P		mm ¹⁾ inch ¹⁾	265 10.43	312 12.28	392 15.43	405 15.94	428 16.85
	mm ²⁾ inch ²⁾	318 12.52	363 14.29	424 16.69	438 17.24	460 18.11	³⁾
S	mm inch	210.50 8.29	246 9.69	276 10.87	300 11.81	320 12.60	401 15.79
	W	mm inch	152.50 6	185 7.28	233 9.17	253 9.96	285 11.22

- ¹⁾ Pneumatic actuator
- ²⁾ 3-position pneumatic actuator
- ³⁾ On request

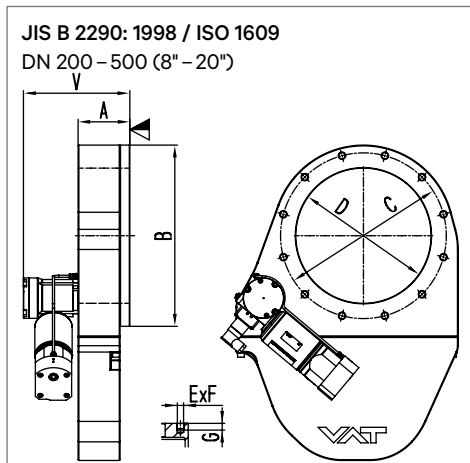
Flange dimensions: see page 87

FLANGE DIMENSIONS

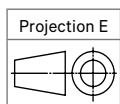
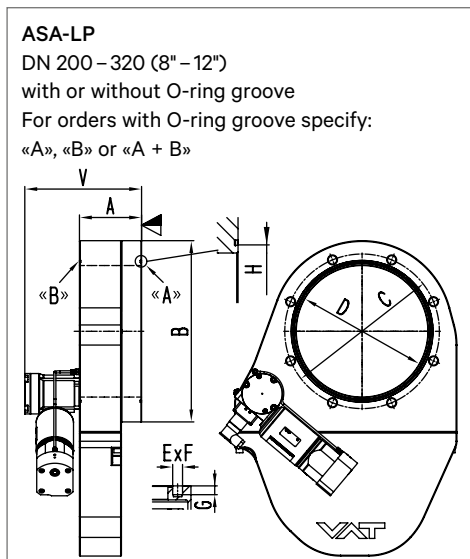


¹⁾ Not available

DN	mm inch	200 8	250 10	320 12	350 14	400 16	500 20
A	mm inch	88 3.46	100 3.94	120 4.72	¹⁾	128 5.04	150 5.91
B	mm inch	300 11.81	350 13.78	428 16.85		520 20.47	635 25
C	mm inch	260 10.24	310 12.20	395 15.55		480 18.90	580 22.83
D	mm inch	200 7.87	261 10.28	318 12.52		400 15.75	500 19.69
E × F		12 × M10	12 × M10	12 × M12		16 × M12	16 × M12
G	mm inch	15 0.59	16 0.63	18 0.71		20 0.79	20 0.79
H	mm inch	213 8.39	-	-		-	-
I	mm inch	5 0.20	-	-		-	-
V	mm inch	200 7.87	205 8.07	241 9.49	250 9.84	343 13.50	



DN	mm inch	200 8	250 10	300 12	350 14	400 16	500 20
A	mm inch	88 3.46	100 3.94	120 4.72	126 4.96	128 5.04	150 5.91
B	mm inch	300 11.81	350 13.78	428 16.85	470 18.50	520 20.47	635 25
C	mm inch	270 10.63	320 12.60	370 14.57	420 16.54	480 18.90	585 23.03
D	mm inch	200 7.87	261 10.28	318 12.52	350 13.78	400 15.75	500 19.69
E × F		8 × M12	12 × M12	12 × M12	12 × M12	12 × M16	16 × M16
G	mm inch	15 0.59	16 0.63	18 0.71	18 0.71	25 0.98	24 0.94
V	mm inch	200 7.87	205 8.07	241 9.49	247 9.72	250 9.84	343 13.50



▽ Valve seat side

DN	mm inch	200 8	250 10	320 12			
ASA-LP		6	8	10			
ANSI		6	8	10			
A	mm inch	88 3.46	120 4.72	120 4.72			
B	mm inch	300 11.81	350 13.78	428 16.85			
C	mm inch	241.30 9.50	298.50 11.75	362 14.25			
D	mm inch	200 7.87	254 10	300 11.81			
E × F		8 × ¾" 10 UNC	8 × ¾" 10 UNC	12 × ¾" 10 UNC			
G	mm inch	15 0.59	16 0.63	18 0.71			
H	mm inch	206.40 8.13	266.70 10.50	317.50 12.50			
V	mm inch	200 7.87	225 8.86	241 9.49			
O-ring I.D. × D	mm inch	202.79 × 3.53 7.98 × 0.139	266.29 × 3.53 10.48 × 0.139	304.17 × 5.33 11.98 × 0.210			