Series 16.2

Main applications

Applications requiring a compact design

Especially suited to demanding corrosive processes

Ordering information

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
63	2½	16236-PA21	16236-TA21	16236-JA21
100	4	16240-PA21	16240-TA21	16240-JA21
160	6	16244-PA21	16244-TA21	16244-JA21
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 . . - . A**1**1
with solenoid valve, without position indicator: 162 . . - . A**3**1 (specify control voltage)
with solenoid valve, with position indicator: 162 . . - . A**4**1 (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
63	2½	16236-PA28	16236-TA28	16236-JA28
100	4	16240-PA28	16240-TA28	16240-JA28
160	6	16244-PA28	16244-TA28	16244-JA28
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 . . - . A**4**8 (specify control voltage)

Features

Body material: aluminum

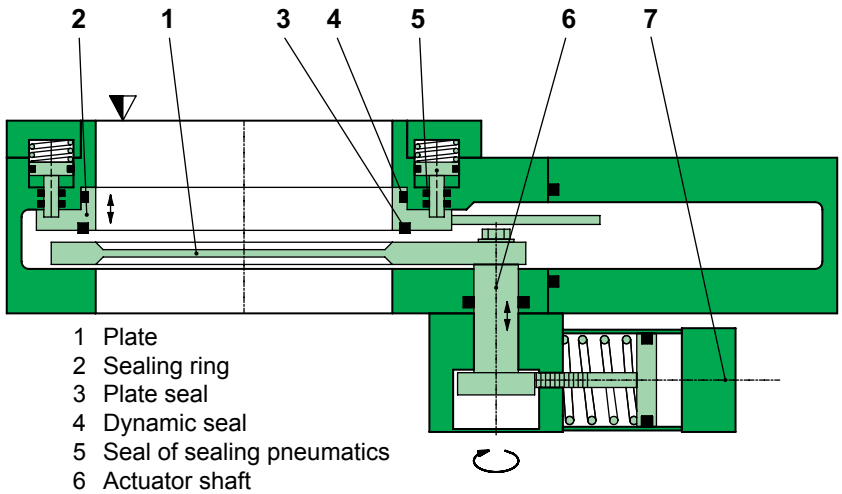
Compact

Low vibration level and low particle count during operation

Split body design for easy maintenance

No readjustment after cleaning

Functional principle



1 Plate
2 Sealing ring
3 Plate seal
4 Dynamic seal
5 Seal of sealing pneumatics
6 Actuator shaft
7 Pneumatic actuator
▽ Valve seat side

Technical data

Leak rate: valve body, valve seat	$< 1 \cdot 10^{-9}$ mbar l s^{-1}
Pressure range	$1 \cdot 10^{-8}$ mbar to 1.2 bar (abs)
Differential pressure on the plate	≤ 1.2 bar
Differential pressure at opening	
– DN 63–100	≤ 30 mbar
– DN 160–200	≤ 10 mbar
– DN 250–500	≤ 5 mbar
Cycles until first service	200 000
Temperature [1]	
– Valve body	≤ 120 °C
– Actuator	≤ 80 °C
– Solenoid valve	≤ 50 °C
– Position indicator	≤ 80 °C
Heating and cooling rate	≤ 30 °C h^{-1}
Material	
– Valve body, plate, sealing ring	
- DN 63–400	EN AW-5083 (3.3547), -6082 (3.2315)
- DN 500	EN AC-42100 (3.2371)
– Feedthrough (parts in contact with media)	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	≤ 50 V AC / DC
– Current	≤ 1.2 A
Valve position indication	visual (mechanical)

[1] Maximum values: depending on operating conditions and sealing materials

Further technical data on next page

Continued Technical data

DN (nominal I. D.)		Standard flanges	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 min. – max. overpressure		Volume of pneumatic actuator		Closing or opening time *)	Weight	
mm	inch		$l s^{-1}$	$l s^{-1}$	mbar	bar	psi	l	ft^3	s	kg	lbs
63	2½	See page 85	440	6.5	1200	5–7	73–102	0.20	0.007	3	13	28.7
100	4		1700	7.5	1200	5–7	73–102	0.20	0.007	3	13	28.7
160	6		4700	12.5	1200	5–7	73–102	0.25	0.009	3	20	44.1
200	8		11000	15	1200	5–7	73–102	0.30	0.010	4	23	50.7
250	10		21700	22	1200	5–7	73–102	0.35	0.012	4	30	66.1
320	12		32600	54	1200	5–7	73–102	0.55	0.020	5	56	123.5
350	14		41500	62	1200	5–7	73–102	0.60	0.021	5	65	143.3
400	16		61000	69	1200	5–7	73–102	0.65	0.023	5.5	76	167.6
500	20		101500	100	1200	5–7	73–102	1.40	0.047	10	120	264.6

*) extended closing / opening time with 3-position pneumatic actuator

Easy and fast maintenance

– Split body design
– Removable plate and sealing ring
– No readjustment after cleaning

Spare parts

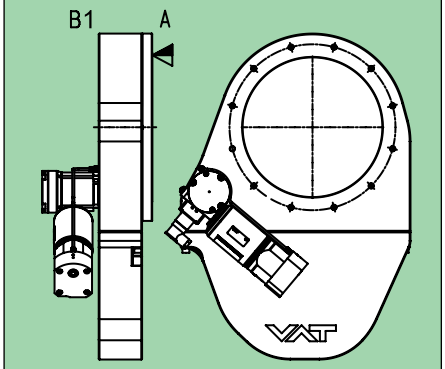
– **Seals**
on request (specify fabrication number of valve)

Accessories

– **Flange connections**
for installation of the valve: see series 32

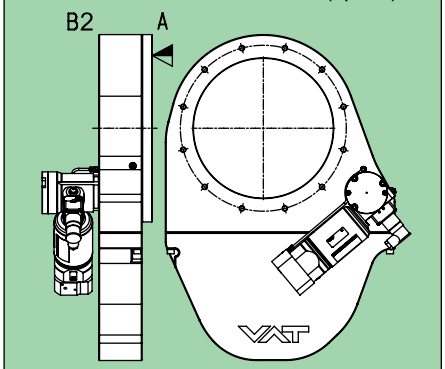
Options

Dia. 1 Actuator on B1-side (standard)



▼ Valve seat side

Dia. 2 Actuator on B2-side (option)



▼ Valve seat side

Pic. 3

Pic. 4

Actuator

– Other solenoid valve voltage (standard: 24 V DC)

– Actuator on B2-side (Dia. 2). B1-side is standard.

Valve

– Customer specified flanges

– Other sealing materials

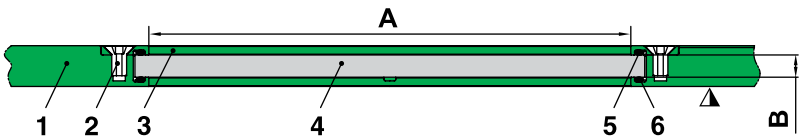
– Heater with insulation and overtemperature switch (Pic. 3)

– Valve body hard anodized or nickel-plated

– Helicoils for valve flanges

– Ports in valve body for roughing (by-pass), venting or for gauges

– Window in plate (Pic. 4):
window material: borosilicate or sapphire, elastomer seals



1 Plate
2 Screw
3 Flange
4 Window
5, 6 Seals
▼ Valve seat side

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

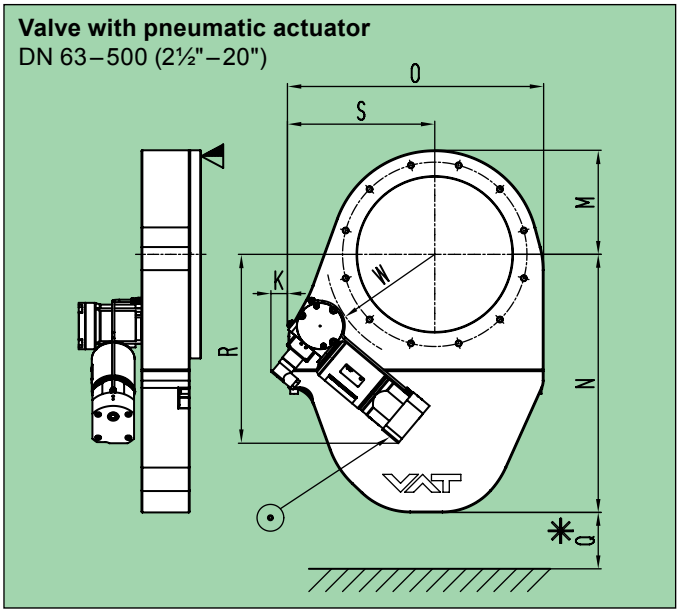
	DN valve		63	100	160	200	250	320	350	400	500
		mm	63	80	90	130	130	150	150	150	
Borosilicate	Optically free diameter «A»	inch	2 ½	4	6	8	10	12	14	16	20
		mm	2.48	3.15	3.54	5.12	5.12	5.91	5.91	5.91	
	Thickness of glass «B»	mm	5	5	6	6	6	8	8	8	on request
		inch	0.20	0.20	0.24	0.24	0.24	0.31	0.31	0.31	
		mm	63	80	112	170	200	250	250	250	
Sapphire	Optically free diameter «A»	inch	2.48	3.15	4.41	6.69	7.87	9.84	9.84	9.84	
		mm	4	4	4	5	6	6	6	6	
	Thickness of glass «B»	inch	0.16	0.16	0.16	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 any valve in any position.

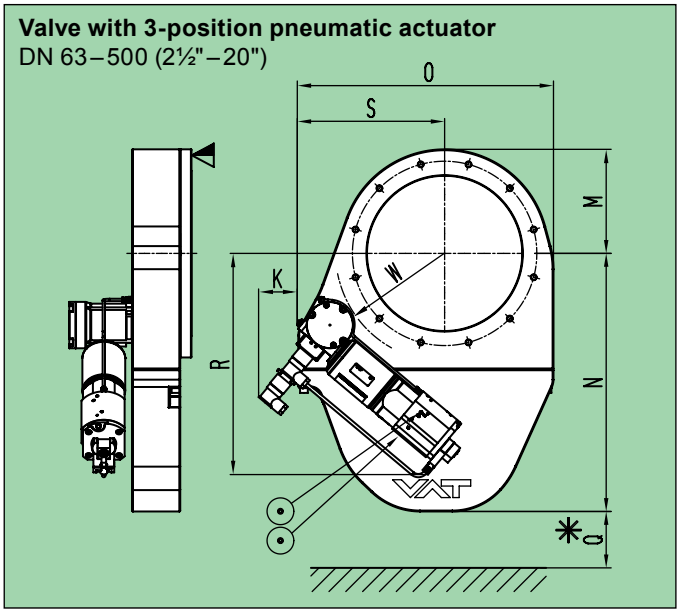
Ordering information for options:
Ordering No. of valve-X (e. g. 16246-PA21-X, X = window in plate)

Main dimensions

Valve with pneumatic actuator
DN 63–500 (2½"–20")



Valve with 3-position pneumatic actuator
DN 63–500 (2½"–20")

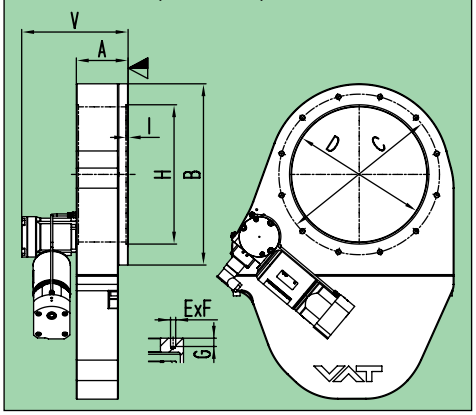


▼ Valve seat side
✳ Required for dismantling
⊙ Compressed air connection

DN	mm inch		63 2½	100 4	160 6	200 8	250 10	320 12	350 14	400 16	500 20
K	mm inch	Pneumatic actuator	10 0.39	10 0.39	10 0.39	10 0.39	29 1.14	7 0.28	– –	6 0.24	60 2.36
	mm inch	3-position pneumatic actuator	34 1.34	34 1.34	34 1.34	34 1.34	65 2.56	32 1.26	24 0.94	31 1.22	on request
M	mm inch		95 3.74	95 3.74	121.50 4.78	150 5.91	175 6.89	214 8.43	235 9.25	260 10.24	325 12.80
N	mm inch		200 7.87	200 7.87	300 11.81	360 14.17	434 17.09	538 21.18	590 23.23	655 25.79	871 34.29
O	mm inch		258 10.16	258 10.16	321 12.64	367 14.45	429 16.89	533 20.98	579 22.80	630 24.80	812 31.97
Q	mm inch		50 1.97	50 1.97	50 1.97	50 1.97	50 1.97	50 1.97	50 1.97	50 1.97	50 1.97
R	mm inch	Pneumatic actuator	235 9.25	235 9.25	251 9.88	265 10.43	312 12.28	392 15.43	405 15.94	428 16.85	609 23.98
	mm inch	3-position pneumatic actuator	282 11.10	282 11.10	304 11.97	318 12.52	363 14.29	424 16.69	438 17.24	460 18.11	on request
S	mm inch		163 6.42	163 6.42	188 7.40	210.50 8.29	246 9.69	276 10.87	300 11.81	320 12.60	401 15.79
W	mm inch		95 3.74	95 3.74	122 4.80	152.50 6	185 7.28	233 9.17	253 9.96	285 11.22	340 13.39

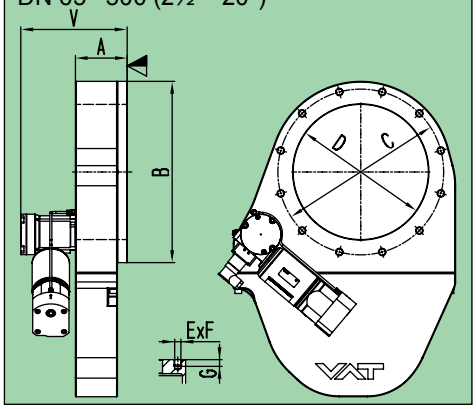
Flange dimensions

ISO-F
DN 63–500 (2½"–20")



DN		63	100	160	200	250	320	350	400	500
	inch	2½	4	6	8	10	12	14	16	20
A	mm	70	70	88	88	100	120	not available	128	150
	inch	2.76	2.76	3.46	3.46	3.94	4.72		5.04	5.91
B	mm	190	190	242	300	350	428		520	635
	inch	7.48	7.48	9.53	11.81	13.78	16.85		20.47	25
C	mm	110	145	200	260	310	395		480	580
	inch	4.33	5.71	7.87	10.24	12.20	15.55		18.90	22.83
D	mm	63	100	150	200	261	318		400	500
	inch	2.48	3.94	5.91	7.87	10.28	12.52		15.75	19.69
E×F		4×M8	8×M8	8×M10	12×M10	12×M10	12×M12		16×M12	16×M12
G	mm	12	12	14	15	16	18		20	20
	inch	0.47	0.47	0.55	0.59	0.63	0.71		0.79	0.79
H	mm	70	102	153	213	–	–		–	–
	inch	2.76	4.02	6.02	8.39					
I	mm	3	3	5	5	–	–		–	–
	inch	0.12	0.12	0.20	0.20					
V	mm	185	185	200	200	205	241		250	343
	inch	7.28	7.28	7.87	7.87	8.07	9.49		9.84	13.50

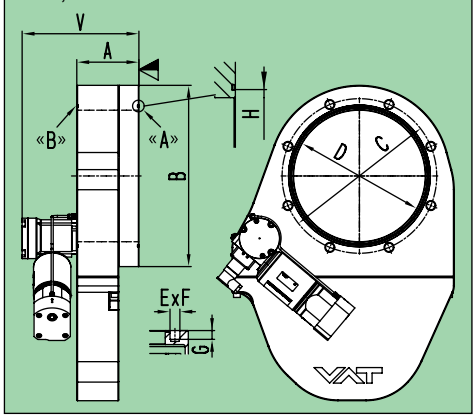
JIS B 2290: 1998 / ISO 1609
DN 65–500 (2½"–20")



DN		65	100	150	200	250	300	350	400	500
	inch	2½	4	6	8	10	12	14	16	20
A	mm	70	70	88	88	100	120	126	128	150
	inch	2.76	2.76	3.46	3.46	3.94	4.72	4.96	5.04	5.91
B	mm	190	190	242	300	350	428	470	520	635
	inch	7.48	7.48	9.53	11.81	13.78	16.85	18.50	20.47	25
C	mm	120	160	210	270	320	370	420	480	585
	inch	4.72	6.30	8.27	10.63	12.60	14.57	16.54	18.90	23.03
D	mm	76.30	100	150	200	261	318	350	400	500
	inch	3	3.94	5.91	7.87	10.28	12.52	13.78	15.75	19.69
E×F		4×M10	8×M10	8×M10	8×M12	12×M12	12×M12	12×M12	12×M16	16×M16
G	mm	12	12	14	15	16	18	16	25	24
	inch	0.47	0.47	0.55	0.59	0.63	0.71	0.63	0.98	0.94
V	mm	185	185	200	200	205	241	247	250	343
	inch	7.28	7.28	7.87	7.87	8.07	9.49	9.72	9.84	13.50

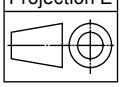
ASA-LP DN 63–320 (2½"–12")
with or without O-ring groove

For orders with O-ring groove specify:
«A», «B» or «A+B»



DN		63	100	160	200	250	320
	inch	2½	4	6	8	10	12
ASA-LP		2	3	4	6	8	10
ANSI		2	3	4	6	8	10
A	mm	70	70	88	88	120	120
	inch	2.76	2.76	3.46	3.46	4.72	4.72
B	mm	190	190	243	300	350	428
	inch	7.48	7.48	9.57	11.81	13.78	16.85
C	mm	120.70	152.40	190.50	241.30	298.50	362
	inch	4.75	6	7.50	9.50	11.75	14.25
D	mm	63	100	150	200	254	300
	inch	2.48	3.94	5.91	7.87	10	11.81
E×F		4×⅜" 16 UNC	4×⅜" 16 UNC	8×⅜" 16 UNC	8×¾" 10 UNC	8×¾" 10 UNC	12×¾" 10 UNC
G	mm	12	12	14	15	16	18
	inch	0.47	0.47	0.55	0.59	0.63	0.71
H	mm	88.90	120.65	158.75	206.40	266.70	317.50
	inch	3.50	4.75	6.25	8.13	10.50	12.50
V	mm	185	185	200	200	225	241
	inch	7.28	7.28	7.87	7.87	8.86	9.49
O-ring I.D.×d		88.49×3.53	120.24×3.53	158.34×3.53	202.79×3.53	266.29×3.53	304.17×5.33

Projection E



▼ Valve seat side

Larger sizes on request