Series 16.8

Main applications

Applications requiring a compact design in larger DN sizes

Especially suited to large coating and FPD production systems

Ordering information

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

DN		Ordering numbers		
mm	inch	ISO-F	ASA	JIS
400	16	16852-PA24	on request	16852-JA24
500	20	16854-PA24	16854-AA24	16854-JA24

without solenoid valve, without position indicator: 168 . . - . A**1**4
with solenoid valve, with position indicator: 168 . . - . A**4**4 (specify control voltage)

Valve with 3-position pneumatic actuator
double acting
without solenoid valve
with position indicator

DN		Ordering numbers		
mm	inch	ISO-F	ASA	JIS
400	16	16852-PA28	on request	16852-JA28
500	20	16854-PA28	16854-AA28	16854-JA28

with solenoid valve, with position indicator: 168 . . - . A**4**8 (specify control voltage)

Spare parts

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

Accessories

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

Features

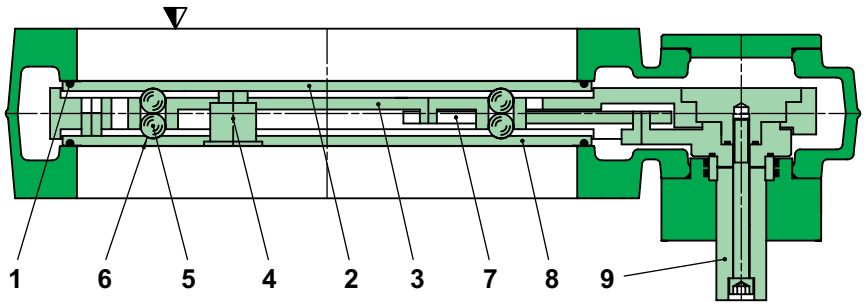
Body material: aluminum

Compact

Low vibration level during operation

Split body design for easy maintenance

Functional principle



1 Plate seal	4 Spring package	7 Actuating lever
2 Plate	5 Ball pairs	8 Counter-plate
3 Ball guidance	6 Ball tracks	9 Actuator shaft
		▼ Valve seat side

Technical data

Leak rate: valve body, valve seat	$< 1 \cdot 10^{-9}$ mbar ls^{-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	≤ 30 mbar
Cycles until first service	100 000
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	EN AC-42100 (3.2371)
– Plate	EN AW-6082 (3.2315)
– Feedthrough (parts in contact with media)	EN AW-6082 (3.2315), AISI 303 (1.4305)
Seal: Bonnet, plate, 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	≤ 3 A
Valve position indication	visual (mechanical)

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

Further technical data on next page

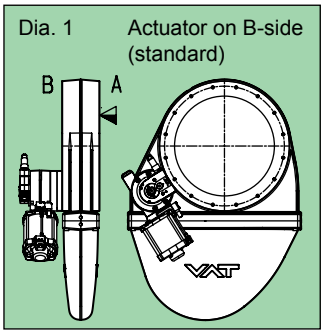
Continued Technical data

DN (nominal I. D.)		Standard flanges	Conductance (molecular flow) (depending on A-dimension and flange type)	Minimum adjustable conductance with 3-pos. 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
400	16	See page 89	50000	150	1200	5–7	73–102	2.0	0.071	12	85	187
457	16		68000	200	1200	5–7	73–102	3.3	0.116	14	125	358
500	20		90000	200	1200	5–7	73–102	3.3	0.116	14	115	330

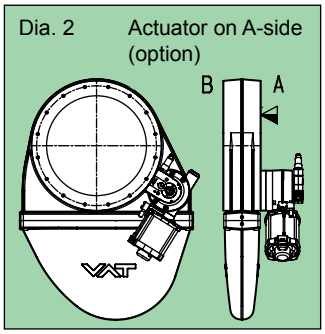
*) extended closing / opening time with 3-position pneumatic actuator

Options

Dia. 1 Actuator on B-side (standard)

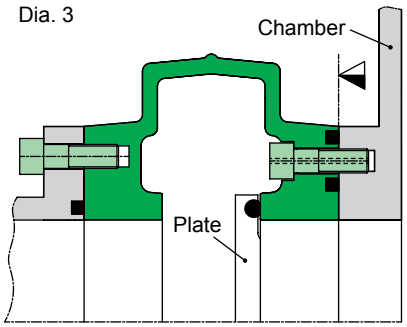


Dia. 2 Actuator on A-side (option)



▼ Valve seat side

Dia. 3



Actuator

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

– Actuator on A-side (Dia. 2). B-side is standard.

Valve

– Customer specified flanges

– Splinter shield grid for turbo pump

– For direct mounting to chamber (Dia. 3)

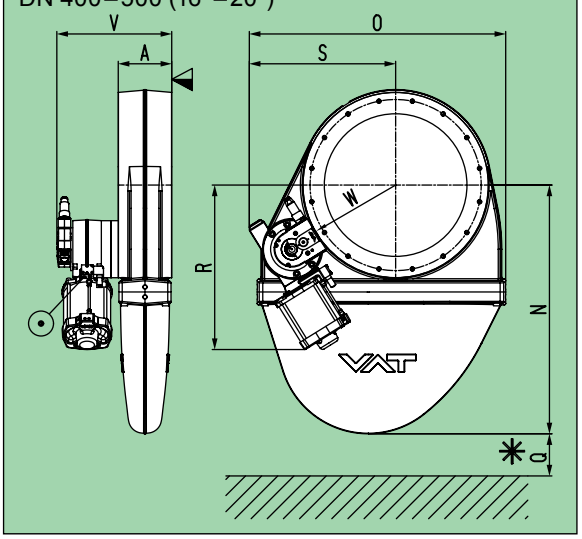
– Ports in valve body for roughing (by-pass), venting or for gauges

– Window in plate

Ordering information for options:
Ordering No. of valve-X
(e. g. (16852-PA24-X, X = window in plate)

Main dimensions

Valve with pneumatic actuator
DN 400–500 (16"–20")

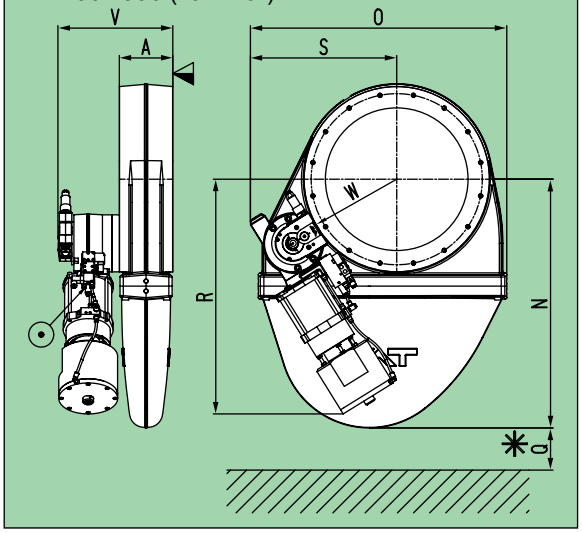


▼ Valve seat side
✳ Required for dismantling
⊙ Compressed air connection

DN	mm / inch	400 / 16	500 / 20
A	mm	150	170
	inch	5.91	6.69
N	mm	698	850
	inch	27.48	33.46
O	mm	716	854
	inch	28.19	33.62
Q	mm	200	230
	inch	7.87	9.06
R	mm	461	612
	inch	18.15	24.09
S	mm	410	466
	inch	16.14	18.35
V	mm	322	337
	inch	12.68	13.27
W	mm	260	320
	inch	10.24	12.60

Main dimensions

Valve with 3-position pneumatic actuator
DN 400–500 (16"–20")

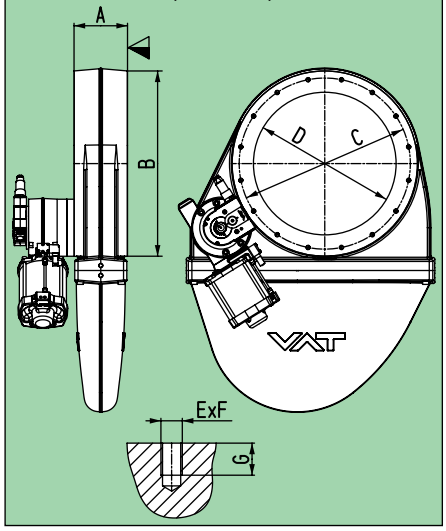


DN	mm / inch	400 / 16	500 / 20
A	mm	150	170
	inch	5.91	6.69
N	mm	698	850
	inch	27.48	33.46
O	mm	716	854
	inch	28.19	33.62
Q	mm	200	230
	inch	7.87	9.06
R	mm	659	805
	inch	25.94	31.69
S	mm	410	466
	inch	16.14	18.35
V	mm	322	337
	inch	12.68	13.27
W	mm	260	320
	inch	10.24	12.60

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

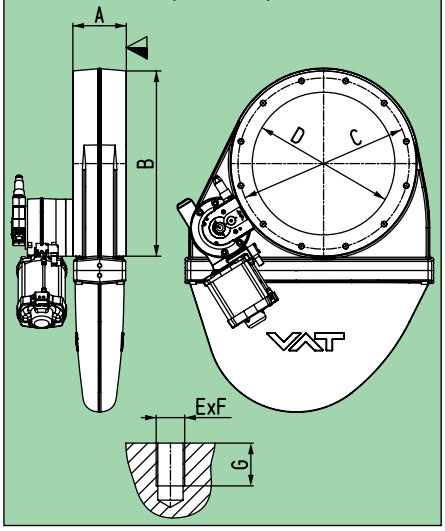
Flange dimensions

ISO-F
DN 400–500 (16"–20")



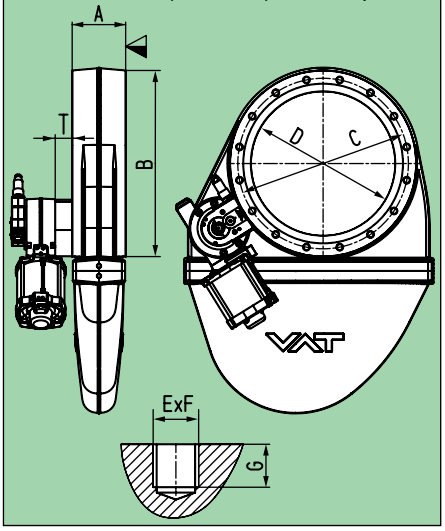
DN	mm / inch	400 / 16	500 / 20
A	mm	150	170
	inch	5.91	6.69
B	mm	520	625
	inch	20.47	24.61
C	mm	480	580
	inch	18.90	22.83
D	mm	400	501.20
	inch	15.75	19.73
E × F		16 × M12	16 × M12
G	mm	18	18
	inch	0.71	0.71

JIS B 2290: 1998 / ISO 1609
DN 400–500 (16"–20")



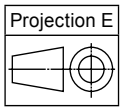
DN	mm / inch	400 / 16	500 / 20
A	mm	150	170
	inch	5.91	6.69
B	mm	520	625
	inch	20.47	24.61
C	mm	480	585
	inch	18.90	23.03
D	mm	400	500.20
	inch	15.75	19.69
E × F		12 × M16	16 × M16
G	mm	24	24
	inch	0.94	0.94

ASA
DN 400–500 (16"–20")
Other sizes on request



DN	mm / inch	400 / 16	500 / 20
ASA		16	20
ANSI		16	20
A	mm	170	170
	inch	6.69	6.69
B	mm	625	700
	inch	24.61	27.56
C	mm	540	635
	inch	21.25	25
D	mm	457.20	500.20
	inch	18	19.69
E × F		16 × 1" 8 UNC	20 × 1" 8 UNC
G	mm	20	24
	inch	0.79	0.94
T	mm	–	42
	inch		1.65

Projection E



▼ Valve seat side