

VXD & VXE: Through flanged valves (nominal pressure 6/10 bar)

For continuous control of hot/cold water or air.

Valve body and seat of grey cast iron (GG 25); valve spindle of stainless steel; valve plug of brass, metallic sealing; packing box of brass with double O-ring seal of EPDM. Valve curve is equal percentage. When the spindle is extracted, the control passage A-AB is closed.

Nominal width DN	k_{vs} value m ³ /h	Grey cast iron, PN 6		Grey cast iron, PN 10	
		Type	Weight kg	Type	Weight kg
15	1.6	VXD 015 F320	3.2	VXE 015 F320	4.0
15	2.5	VXD 015 F310	3.2	VXE 015 F310	4.0
15	4.0	VXD 015 F300	3.2	VXE 015 F300	4.0
25	6.3	VXD 025 F310	5.3	VXE 025 F310	6.2
25	10	VXD 025 F300	5.3	VXE 025 F300	6.2
32	16	VXD 032 F300	7.8	VXE 032 F300	9.6
40	25	VXD 040 F300	9.1	VXE 040 F300	11.0
50	40	VXD 050 F300	11.3	VXE 050 F300	14.6
65	63	VXD 065 F300	18.5	VXE 065 F300	21.8
80	100	VXD 080 F300	29.9	VXE 080 F300	29.3
100	160	—	—	VXE 100 F300	38.9
		Operating temperature: -10...130 °C Max. operating pressure: 6 bar		Operating temperature: -10..130 °C Max. operating pressure: 10 bar Test pressure ¹⁾ 16 bar	

Valve characteristic curve:

for control passage A-AB	equal-percentage
Control ratio:	50
leakage rate	0.05% of k_{vs} -value
Valve stroke (DN 15...50)	14 mm
Valve stroke (DN 65...100)	40 mm

Dimension drawings

Fitting instructions	7M101
valve	MV 505396
combinations	AV43, AV44
actuator complete	AVP142
	AV43, AV44
	MV 40.136
	MV 505766
	MV 43190

Accessories

0217268 001	Stuffing-box heating 24 V; 15 W, for media below 0 °C, DN 15...50, MV 505498
0217268 004	Stuffing-box heating 230 V; 15 W, for media below 0 °C, DN 15...50, MV 505498
0217639 001	Stuffing-box heating 24 V; 15 W, for media below 0 °C, DN 65...150, MV 505498
0217639 004	Stuffing-box heating 230 V; 15 W, for media below 0 °C, DN 65...150, MV 505498
0378034 001	Valve with packing box, silicon-free; synthetic lubricant; max. 130 °C

¹⁾ The VXE valve (test pressure 16 bar) can be fitted to weld flanges of either 10 or 16 bar, since the holes have the same spacing.

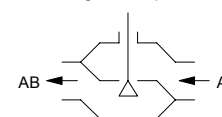


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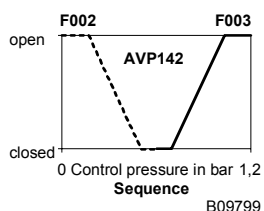
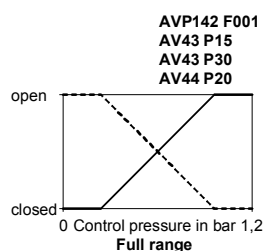
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Closure against the pressure



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Pressure–stroke characteristic
(with valve fitted)



— as ex works
- - - fitting variant A

VXD combined with a pneumatic drive AVP142, AV43, AV44

Drive Perm. pressure p_{stat} Running time ¹⁾	AVP142 F001 ≤ 6 bar 10 s		AVP142 F002, F003 ≤ 6 bar 10 s		AV43 P15 ≤ 6 bar 14 s	
	Δp_{max}	Δp_s	$\Delta p_{max}^{2)}$	Δp_s	Δp_{max}	Δp_s
Valve						
VXD 015 F3 . .	4.0	33.5	4.0	78.2	4.0	6
VXD 025 F3 . .	3.5	13.3	3.5	31.1	3.5	6
VXD 032 F300	3.0	7.4	2.5	17.3	3.0	6
VXD 040 F300	2.5	4.5	1.5	10.6	2.5	6
VXD 050 F300	2.0	2.8	0.9	6.6	2.0	4

Drive Perm. pressure p_{stat} Running time ¹⁾	AV43 P30 ≤ 6 bar 24 s		AV44 P20 ≤ 6 bar 40s	
	Δp_{max}	Δp_s	Δp_{max}	Δp_s
Valve				
VXD 065 F300	1.5	2.3	1.5	4.6
VXD 080 F300	1.0	1.5	1.0	3.0

VXE combined with a pneumatic drive AVP142, AV43, AV44

Drive Perm. pressure p_{stat} Running time ¹⁾	AVP142 F001 ≤ 10 bar 10 s		AVP142 F002, F003 ≤ 10 bar 10 s		AV43 P15 ≤ 10 bar 14 s	
	Δp_{max}	Δp_s	$\Delta p_{max}^{2)}$	Δp_s	Δp_{max}	Δp_s
Valve						
VXE 015 F3 . .	4.0	33.5	4.0	78.2	4.0	10
VXE 025 F3 . .	3.5	13.3	3.5	31.1	3.5	10
VXE 032 F300	3.0	7.4	2.5	17.3	3.0	10
VXE 040 F300	2.5	4.5	1.5	10.6	2.5	6
VXE 050 F300	2.0	2.8	0.9	6.6	2.0	4

Drive Perm. pressure p_{stat} Running time ¹⁾	AV43 P30 ≤ 10 bar 24 s		AV44 P20 ≤ 10 bar 40 s	
	Δp_{max}	Δp_s	Δp_{max}	Δp_s
Valve				
VXE 065 F300	1.5	2.3	1.5	4.6
VXE 080 F300	1.0	1.5	1.0	3.0
VXE 100 F300	0.9	0.9	1.0	1.8

1) Based on the *Centair* air capacity (400 l_n/h) and a line of 20 m in length and 4 mm in diameter.

2) When used with an XSP 31 or 31G positioner, the Δp_{max} values are seven times bigger; observe the Δp_v value (see additional technical details).

Complete type description: Valve and drive each with F-variant.

Valve: For F-variant, technical data and accessories, see table of valve types.

Drive: For F-variant, technical data, accessories and fitting position, see Section 71.

Example: VXD 25 F300/AVP142 F001

Δp_{max} [bar]= Maximum permissible pressure difference across the valve at which the drive can still firmly open and close the valve.

Δp_s [bar]= Maximum permissible pressure difference across the valve in the event of a malfunction (e.g. power failure) at which the drive can close the valve.

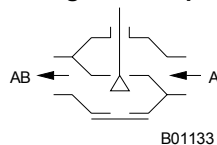
p_{stat} [bar]= Dead pressure when the pump is switched off. Observe the level of liquid in the plant, an increase in pressure via the pressure tank, steam pressure etc.

Operation

Using a pneumatic drive, the valve can be moved to any position.

When the spindle is extracted, the control passage A-AB is closed. In the case of pneumatic drives, the valve should not close with the pressure, since this causes pressure surges.

Closure against the pressure



Engineering and fitting notes

Can be fitted in any position except facing downwards.

Ensure that there is no ingress of condensate, dripping water etc. along the spindle and into the drive. When fitting the drive to the valve, care must be taken not to turn the valve plug on its seat (at the stop), otherwise the seal may be damaged.

The drive can be equipped with the XSP 31 or 31 G positioner if any of the following are needed (see Section 79): a split range; an improvement in the positional accuracy; an increase in the positioning speed and the air capacity; reversible direction of operation.

Additional technical details

Grey cast iron PN 6		Grey cast iron PN 10	
Type	Δp_v	Type	Δp_v
VXD 15 F320	4	VXE 15 F320	4
VXD 15 F310	4	VXE 15 F310	4
VXD 15 F300	4	VXE 15 F300	4
VXD 25 F310	3.5	VXE 25 F310	3.5
VXD 25 F300	3.5	VXE 25 F300	3.5
VXD 32 F300	3	VXE 32 F300	3
VXD 40 F300	2.5	VXE 40 F300	2.5
VXD 50 F300	2	VXE 50 F300	2
VXD 65 F300	1.5	VXE 65 F300	1.5
VXD 80 F300	1	VXE 80 F300	1
		VXE 100 F300	1

Δp_v in bar = Max. pressure difference across the valve in any stroke position, limited by the noise level and erosion (max. values without being limited by the force of the drive).

Additional details on model types (VXD and VXE)

Valve body of GG 25 grey cast iron with flat, drilled flanges as per DIN 2501, VSM 18643; fitting width is in accordance with DIN 3202 F1. Metallic seal of grey cast iron and brass; brass packing box with double O-ring of ethylene-propylene rubber; flat seal of copper; colour of valve body is black RAL 7021.

Material numbers in accordance with DIN

	Material no.	Code	DIN norm
Valve body	EN-JL1040	EN-GJL-250 (GG 25)	EN 1561
Valve seat	EN-JL1040	EN GJL-250 (GG 25)	EN 1561
Spindle	1.4305	X 8 CrNiS 18 9	EN 10088-3
Plug	2.0401.26	Cu Zn 39Pb3 F43	17 672
Packing box	2.0401.26	Cu Zn 39Pb3 F43	17 672

Explanation of terms used **Δp_v :**

Maximum permissible pressure difference across the valve in any stroke position, limited by the noise level and erosion.

The valve as a traversed element is defined by this parameter specifically in its hydraulic behaviour. By monitoring cavitation, erosion and the noise associated therewith, improvements can be achieved in both life expectancy and durability.

 Δp_{max} :

Maximum permissible pressure difference across the valve at which the drive (control pressure 0 or 1.2 bar) can firmly open and close the valve.

Static pressure and fluidic influences are taken into account. This value ensures that the stroke action is smooth and that the valve sits properly. Furthermore, the valve's Δp_v value is never exceeded.

 Δp_s :

Maximum permissible pressure difference across the valve in the event of a malfunction (e.g. power failure, excess temperature or pressure, burst pipe) at which the drive can firmly close the valve and, if necessary, hold the full operating pressure against atmospheric pressure. Since this is a safety function with 'fast' stroke action, Δp_s can be larger than Δp_{max} or, where applicable, Δp_v . The resultant fluidic disturbances are soon overcome and play a minor rôle in this case.

On the three-way valves, the values apply for the control passage only.

 Δp_{stat} :

Line pressure behind the valve. This corresponds largely to the dead pressure when the pump is switched off, e.g. due to the level of liquid in the plant, an increase in pressure via the pressure tank, steam pressure etc.

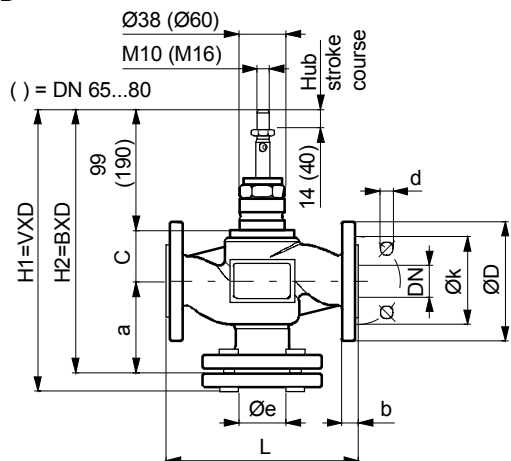
On valves that close with the pressure, the static pressure plus the pump pressure should be used.

Technical information

- Pressure and temperature specifications DIN 2401
- Flow parameters VDI/VDE 2173
- Sauter slide rule for valve sizing 7 090011 003
- Slide rule manual 7 000129 003
- PC program "Valvedim" for Sauter valve and drive sizing 7 000675 003
- Technical manual "Valves and drives": 7 000477 003
Parameters, Fitting notes, Control,
Pneumatic valves and drives, General information

Dimension drawings 7M101

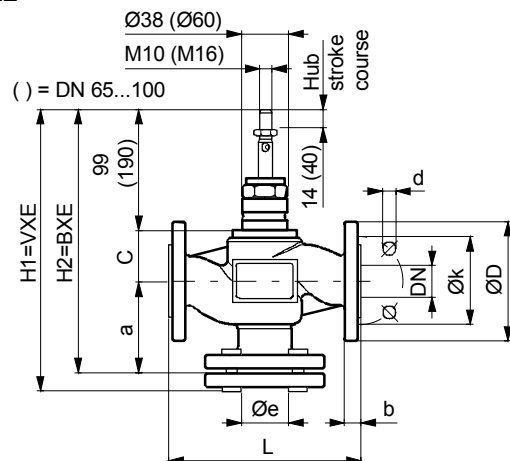
VXD



DN	a	c	e	H1	H2	L	D	k	d	b
15	65	33	21	217	197	130	80	55	11 (4×)	12
25	75	42	31	238	216	160	100	75	11 (4×)	14
32	80	51	38	253	230	180	120	90	14 (4×)	16
40	90	51	48	263	240	200	130	100	14 (4×)	16
50	100	51	58	273	250	230	140	110	14 (4×)	16
65	145	68	74	426	403	290	160	130	14 (4×)	16
80	155	75	88	447	420	310	190	150	19 (4×)	18

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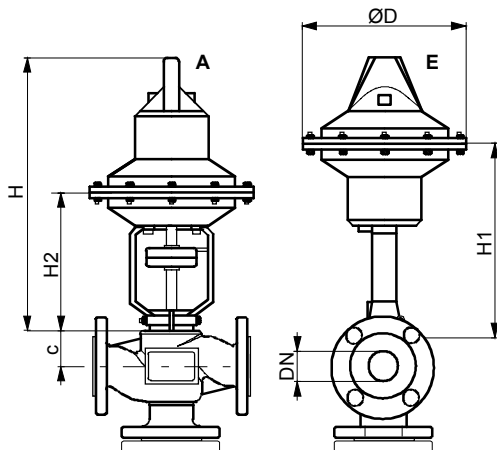
VXE



DN	a	c	e	H1	H2	L	D	k	d	b
15	70	33	21	225	202	130	95	65	14 (4×)	14
25	80	42	31	246	221	160	115	85	14 (4×)	16
32	95	51	38	272	245	180	140	100	19 (4×)	18
40	100	51	48	277	250	200	150	110	19 (4×)	18
50	115	51	58	293	265	230	165	125	19 (4×)	20
65	145	68	74	431	403	290	185	145	19 (4×)	20
80	155	75	88	451	420	310	200	160	19 (8×)	22
100	175	90	109	486	455	350	220	180	19 (8×)	24

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AV43, AV44



Type	H	H1	H2	D	Hub Course Stroke
AV43 P15	417	288	191	250	14
AV43 P30	507	378	281	250	40
AV44 P20	556	416	282	335	40

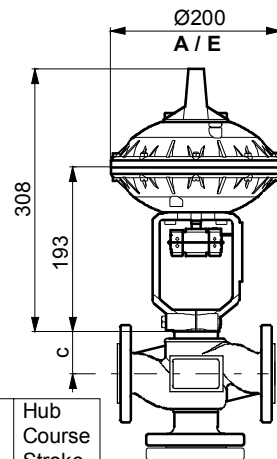
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A = normally open (fitting variant)

E = normally closed (as ex works)

For dimension 'c', refer to the valve's dimension drawing.

AVP142



Type	Hub Course Stroke
AVP142	14

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