

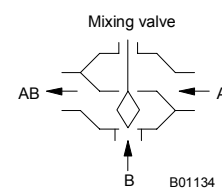
## BXD & BXE: Three-way flanged valves (nominal pressure 6/10 bar)

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.



Y07545



Nominal width DN	$k_{vs}$ value m <sup>3</sup> /h	Grey cast iron, PN 6		Grey cast iron, PN 10	
		Type	Weight kg	Type	Weight kg
15	1.6	BXD 015 F320	2.3	BXE 015 F320	3.0
15	2.5	BXD 015 F310	2.3	BXE 015 F310	3.0
15	4.0	BXD 015 F300	2.3	BXE 015 F300	3.0
25	6.3	BXD 025 F310	3.9	BXE 025 F310	4.7
25	10	BXD 025 F300	3.9	BXE 025 F300	4.7
32	16	BXD 032 F300	5.7	BXE 032 F300	7.2
40	25	BXD 040 F300	6.7	BXE 040 F300	8.3
50	40	BXD 050 F300	8.1	BXE 050 F300	11.1
65	63	BXD 065 F300	14.5	BXE 065 F300	17.5
80	100	BXD 080 F300	20.5	BXE 080 F300	23.3
100	160	—	—	BXE 100 F300	32.0
		Operating temperature: -10...130 °C Max. operating pressure: 6 bar		Operating temperature: -10...130 °C Max. operating pressure: 10 bar Test pressure <sup>1)</sup> : 16 bar	

Valve characteristic:

control passage A-AB equal-percentage  
mixing passage B-AB linear

Control ratio: 50

Leakage rate

control passage A-AB 0.05% of  $k_{vs}$ -value  
mixing passage B-AB 2% of  $k_{vs}$ -value

Valve stroke (DN 15...50) 14 mm

Valve stroke (DN 65...100) 40 mm

Dimension drawings

7M101

Fitting instructions

valve [MV 505396](#)

combinations AV43, AV44 [MV 40.136](#)

actuator complete AV43, AV44 [MV 43190](#)

AVP142 [MV 505766](#)

### Accessories

**0217268 001** Stuffing-box heating 24 V; 15 W, for media below 0 °C, DN 15...50, [MV 505498](#)

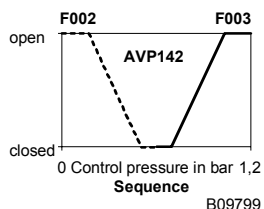
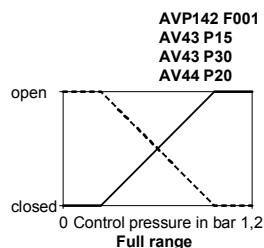
**0217268 004** Stuffing-box heating 230 V; 15 W, for media below 0 °C, DN 15...50, [MV 505498](#)

**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

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

Pressure–stroke characteristic  
(with valve fitted)

— as ex works  
- - - fitting variant A

## BXD combined with a pneumatic drive AVP142, AV43, AV44

Drive Perm. pressure $p_{stat}$ Running time <sup>1)</sup>	AVP142 F001 ≤ 6 bar 10 s		AVP142 F002, F003 ≤ 6 bar 10 s		AV43 P15 ≤ 6 bar 14 s	
	$\Delta p_{max}$	$\Delta p_s$	$\Delta p_{max}^{2)}$	$\Delta p_s$	$\Delta p_{max}$	$\Delta p_s$
Valve						
BXD 015 F3 . .	4.0	33.5	4.0	78.2	4.0	6.0
BXD 025 F3 . .	3.5	13.3	3.5	31.1	3.5	6.0
BXD 032 F300	3.0	7.4	2.5	17.3	3.0	6.0
BXD 040 F300	2.5	4.5	1.5	10.6	2.5	4.0
BXD 050 F300	2.0	2.8	0.9	6.6	2.0	2.5

Drive Perm. pressure $p_{stat}$ Running time <sup>1)</sup>	AV43 P30 ≤ 6 bar 24 s		AV44 P20 ≤ 6 bar 40s	
	$\Delta p_{max}$	$\Delta p_s$	$\Delta p_{max}$	$\Delta p_s$
Valve				
BXD 065 F300	1.5	1.5	1.5	3.0
BXD 080 F300	1.0	1.0	1.0	2.0

## BXE combined with a pneumatic drive AVP142, AV43, AV44

Drive Perm. pressure $p_{stat}$ Running time <sup>1)</sup>	AVP142 F001 ≤ 10 bar 10 s		AVP142 F002, F003 ≤ 10 bar 10 s		AV43 P15 ≤ 10 bar 14 s	
	$\Delta p_{max}$	$\Delta p_s$	$\Delta p_{max}^{2)}$	$\Delta p_s$	$\Delta p_{max}$	$\Delta p_s$
Valve						
BXE 015 F3 . .	4.0	33.5	4.0	78.2	4.0	10
BXE 025 F3 . .	3.5	13.3	3.5	31.1	3.5	10
BXE 032 F300	3.0	7.4	2.5	17.3	3.0	7.0
BXE 040 F300	2.5	4.5	1.5	10.6	2.5	4.0
BXE 050 F300	2.0	2.8	0.9	6.6	2.0	2.5

Drive Perm. pressure $p_{stat}$ Running time <sup>1)</sup>	AV43 P30 ≤ 10 bar 24 s		AV44 P20 ≤ 10 bar 40 s	
	$\Delta p_{max}$	$\Delta p_s$	$\Delta p_{max}$	$\Delta p_s$
Valve				
BXE 065 F300	1.5	2.3	1.5	3.0
BXE 080 F300	1.0	1.0	1.0	2.0
BXE 100 F300	0.9	0.9	1.0	1.8

<sup>1)</sup> Based on the Centair air capacity (400 l<sub>n</sub>/h) and a line of 20 m in length and 4 mm in diameter.

<sup>2)</sup> When used with an XSP 31 or 31G positioner, the  $\Delta p_{max}$  values are seven times bigger  
Observe the  $\Delta p_v$  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: BXD 25 F300/AVP142 F001

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

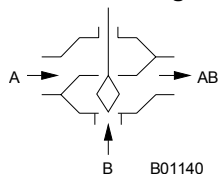
$\Delta p_s$  [bar]= Maximum permissible pressure difference across the valve in the event of a malfunction (e.g. power failure) at which the drive can close the valve.

$p_{stat}$  [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.

**Used as a mixing valve**



**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	$\Delta p_v$	Type	$\Delta p_v$
BXD 15 F320	4	BXE 15 F320	4
BXD 15 F310	4	BXE 15 F310	4
BXD 15 F300	4	BXE 15 F300	4
BXD 25 F310	3.5	BXE 25 F310	3.5
BXD 25 F300	3.5	BXE 25 F300	3.5
BXD 32 F300	3	BXE 32 F300	3
BXD 40 F300	2.5	BXE 40 F300	2.5
BXD 50 F300	2	BXE 50 F300	2
BXD 65 F300	1.5	BXE 65 F300	1.5
BXD 80 F300	1	BXE 80 F300	1
		BXE 100 F300	1

$\Delta p_v$  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 (BXD and BXE)**

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-JL 1040	EN-GJL-250 (GG 25)	EN 1561
Valve seat	EN-JL 1040	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** **$\Delta p_v$ :**

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.

 **$\Delta p_{max}$ :**

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  $\Delta p_v$  value is never exceeded.

 **$\Delta p_s$ :**

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,  $\Delta p_s$  can be larger than  $\Delta p_{max}$  or, where applicable,  $\Delta p_v$ . 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.

 **$\Delta p_{stat}$ :**

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.

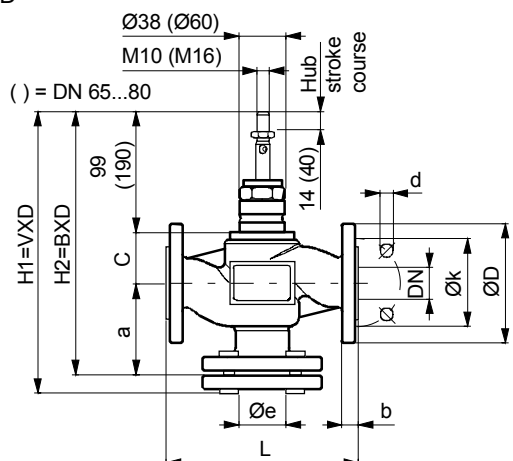
On valves that close with the pressure, the static pressure plus the pump pressure should be used.

**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

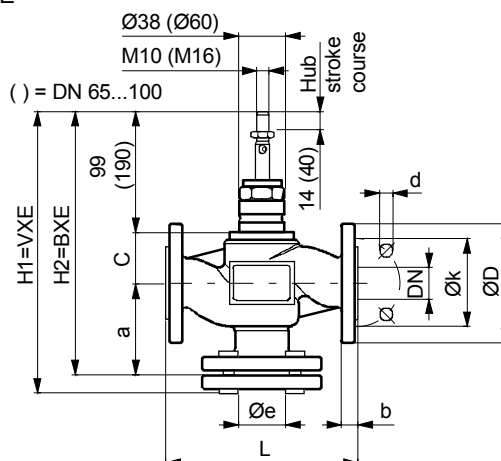
BXD



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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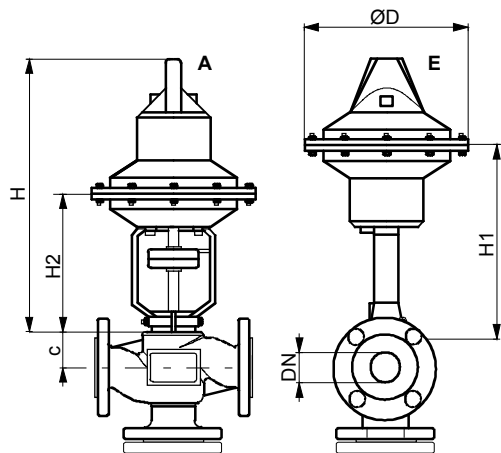
BXE



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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AV42, 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

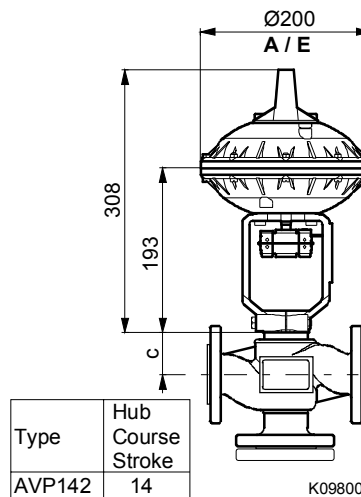
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A = normally open (fitting variant)

E = normally closed (as ex works)

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

AVP142



Type	Hub Course Stroke
AVP142	14

K09800

AVP142