

BXN: Three-way valve with male thread, PN 16

As a mixing valve or distribution valve, for continuous control of cold water, hot water or air. Condition of the water in accordance with VDI 2035. Together with the AVM 104, 114, 124 (S) and AVF 124 (S) valve drives as the regulating unit, and combined with AVM, AVF 124 (S) as the distribution valve. Variable characteristic (linear, equal percentage or quadratic) with SUT valve drives.

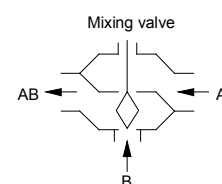
Valve body and seat are of cast brass; spindle of stainless steel; plug of brass with glass-fibre-reinforced PTFE sealing ring; packing box of brass with EPDM O-ring. When the spindle is extended, the control passage A-AB is closed.



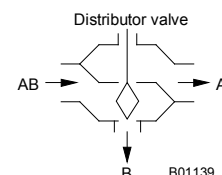
T07419



Y07544



Mixing valve



Distributor valve

B01139

Type	Nominal diameter DN	Connection	k_{VS} -value m ³ /h	Weight kg
BXN 015 F230	15	G 1B	1	0,75
BXN 015 F220	15	G 1B	1,6	0,75
BXN 015 F210	15	G 1B	2,5	0,75
BXN 015 F200	15	G 1B	4	0,75
BXN 020 F200	20	G 1½B	6,3	0,89
BXN 025 F200	25	G 1½B	10	1,12
BXN 032 F200	32	G 2B	16	1,49
BXN 040 F200	40	G 2½B	25	2,19
BXN 050 F200	50	G 2½B	40	2,94

Operating temperature ¹⁾	-15...130 °C	Dimension drawing	M07424
Operating pressure	up to 120 °C 16 bar up to 130 °C 13 bar	Installation Instructions	
Valve characteristic	linear	AVM 104S, 114S	MV 505790
Control ratio	50 (typical)	AVM 105, 115	MV 506065
Leakage rate for control passage	≤ 0,02% of k_{VS} -value	AVM 124, 124S	MV 505809
Mixing passage	1% of k_{VS} -value	AVF 124, 124S	MV 505851
Nominal stroke	8 mm		

Variants

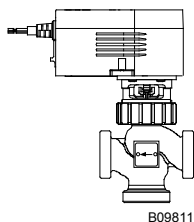
BXN . . F2 . . U Valve with NPT female thread, nominal pressure 232 psi and connection:
 DN 15: ½" NPT – DN 20: ¾" NPT – DN25: 1" NPT – DN 32: 1 ¼" NPT –
 DN 40: 1 ½" NPT - DN 50: 2" NPT

Accessories

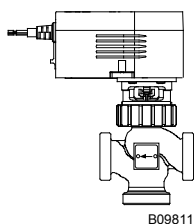
- 0361951 015*** 1 screw fitting for male thread with flat seal DN 15
- 0361951 020*** 1 screw fitting for male thread with flat seal DN 20
- 0361951 025*** 1 screw fitting for male thread with flat seal DN 25
- 0361951 032*** 1 screw fitting for male thread with flat seal DN 32
- 0361951 040*** 1 screw fitting for male thread with flat seal DN 40
- 0361951 050*** 1 screw fitting for male thread with flat seal DN 50
- 0361988 100** Heating for packing box for AVM / AVF 124(S): 230 V~; 15 W, MV 505498
- 0361988 102** Heating for packing box for AVM / AVF 124(S): 24 V~; 15 W, MV 505498
- 0372240 001*** Manual adjustment for VXN and BXN valves; MV 505813
- 0372249 001** Intermediate piece required for temperature > 100 °C (recommended for temperature < 10 °C); MV 505932
- 0378070 102** Heating for packing box for AVM 104(S) / 114(S); 24 V~, 15 W ²⁾

^{*)} Dimension drawing or wiring diagram are available under the same number

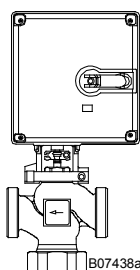
- ¹⁾ At temperatures under 0 °C, use stuffing-box heater; at temperatures above 100°C, use temperature adaptor (accessories).
- ²⁾ With a power supply of 230 V~, a safety transformer for 24 V~ should be employed.


Combined with electric drive with a pushing force of 250 N

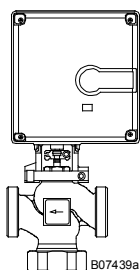
Drive	Used only as a control valve	Input Running time		AVM 105 2-/3- point 120 s	AVM 105 2-/3- point 30 s	AVM104S 2-/3- point, 0...10 V 35...130s
		Δp_s	close/off pressure			
Valve	Δp_{max}	Δp_s	close/off pressure			
BXN 015	4	–	6			
BXN 020	4	–	4,3			
BXN 025	3	–	3			
BXN 032	2	–	2			
BXN 040	1,2	–	1,2			
BXN 050	0,8	–	0,8			

Combined with electric drive with a pushing force of 500 N


Drive	Used only as a control valve	Input Running time		AVM 115 F12 . 2-/3- point 120 s	AVM 114S 2-/3- point, 0...10 V 60/120
		Δp_s	close/off pressure		
Valve	Δp_{max}	Δp_s	close/off pressure		
BXN 015	6	–	15	–	
BXN 020	5	–	9,4	–	
BXN 025	4	–	6,5	–	
BXN 032	3,7	–	4,3	–	
BXN 040	2,7	–	2,7	–	
BXN 050	1,8	–	1,8	–	

Combined with electric drive with a pushing force of 800 N


Drive	Used as a control valve	Used a diverting valve	Input Running time		AVM 124 3-point 30 / 60 / 120 s	AVM 124S 0...10 V 30 / 60 / 120 s
			Δp_s	close/off pressure		
Valve	Δp_{max}		Δp_s	close/off pressure		
BXN 015	8	6	–	15		
BXN 020	8	6	–	10		
BXN 025	8	5	–	9		
BXN 032	6	4	–	7		
BXN 040	4,4	2,5	–	4,4		
BXN 050	3	1,5	–	3		

Combined with electric drive with spring return with a pushing force of 500 N


Drive	Used as a control valve	Used a diverting valve	Input Running time		AVF 124 3-point 60 / 120 s	AVF 124S 0...10 V 60 / 120 s
			Δp_s	close/off pressure		
Valve	Δp_{max}		Δp_s	close/off pressure		
BXN 015	6	4	16	15		
BXN 020	5	2,8	9,4	9,4		
BXN 025	4	2,8	6,5	6,5		
BXN 032	3,7	2	4,3	4,3		
BXN 040	2,7	1,5	2,7	2,7		
BXN 050	1,8	0,8	1,8	1,8		

Complete type code: Valve and drive each with F-variant

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

Drive: For F-variant, technical details, accessories and fitting position, see Section 51

Example: BXN 015 F210 / AVM 114S F132

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

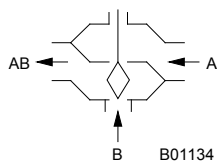
Δp_s [bar]= Max. permissible pressure difference across the valve at which, in the event of a malfunction, the drive can close the valve.

close/off pressure The pressure difference across the valve in control mode that can overcome the force of the drive. In this mode, a reduced serviceable life can be expected. Cavitation, erosion and pressure surges may damage the valve. The values stated apply only when the valve is fitted on the drive.

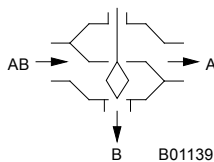
Operation

Using an electric drive, the valve can be moved to any position. The control passage A-AB closes when the valve spindle is extended. Using either the AVM 104(S), AVM 114(S) or AVM 124(S), the valve can be used as a mixing valve. For use as a diverting valve, use only the AVM 124(S) or AVF 124(S) drives.

Used as a mixing valve



Used as a distribution valve



The valve spindle is fixed to the drive spindle. This enables the valve to close when used as either a control valve or a diverting valve. It also stops the plug from flapping about in the end position and, at the same time, hinders cavitation and erosion. Because there is no opposing spring pressure when the valve closes, the full force of the drive is available for the permissible pressure difference.

Engineering and fitting notes

The manual adjuster (accessory) is fitted onto the valve like a drive. The connection to the valve spindle is effected automatically when the valve is opened with the button.

The control unit can be fitted in any position except facing downwards. The ingress of condensate, drops of water etc. into the drive should be prevented.

In order to restrain contaminants in the water (e.g. welding beads, rust particles etc.) and prevent the spindle seal from being damaged, we recommend the employment of collective filters, e.g. for each floor or feed pipe. The composition of the water should be in accordance with VDI 2035.

The valve and drive can be assembled without having to be set up; the drive adapts itself automatically to the valve stroke and to the stops as soon as power is applied.

To prevent the flow of the medium from being audible in quiet rooms, the pressure difference across the valve should not exceed 50% of the stated values.

Additional technical details

Technical information

- Pressure and temperature specifications DIN EN 764, 1333
- Flow parameters VDI/VDE 2173
- Sauter slide rule for valve sizing 7 090011 003
- Manual for slide rule 7 000129 003
- PC program for Sauter valve and drive sizing 7 000675 003
- Valvedim.exe 7 000477 003
- Technical manual: 'Valves and drives' 7 000477 003
- Parameters, Fitting Notes, Control, General Information 7 000477 003
- CE-conformity Pressure Equipment Directive 97/23/EG item 3.3

Additional specifications

Chill-cast valve body (EN 1982) with male thread cylindrical as per ISO 228/1 Class B, flat seal on body.

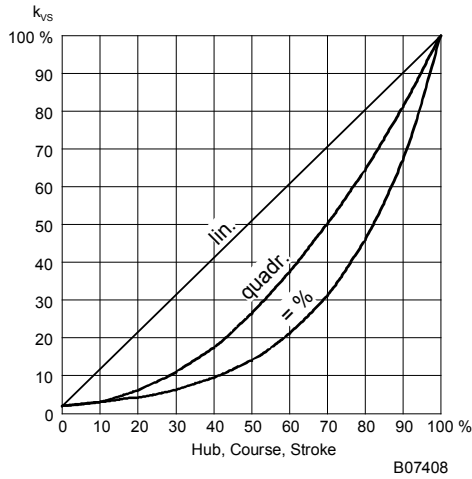
Packing box with O-ring of ethylene-propylene.

Material numbers as per DIN

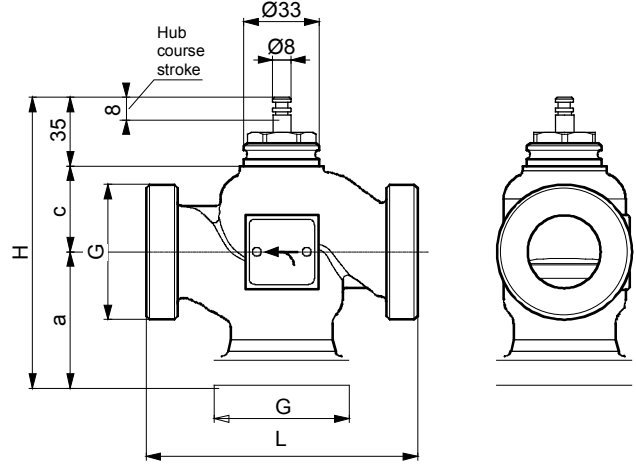
	DIN material no.	DIN code
Valve body	CC 754S-GM	Cu Zn 39 Pb 1 Al-C
Valve seat	CC 754S-GM	Cu Zn 39 Pb 1 Al-C
Spindle	1.4305	X 8 Cr Ni S 18-9 + 1G
Plug	2.0402.26	Cu Zn 40 Pb 2 F43
Packing box	2.0401.10	CU Zn 39 Pb 3 F36

Characteristic for drives with positioner

On AVM 124S or AVF 124S and AVM 104/114 drive (only lin and = %): settable with coding switch



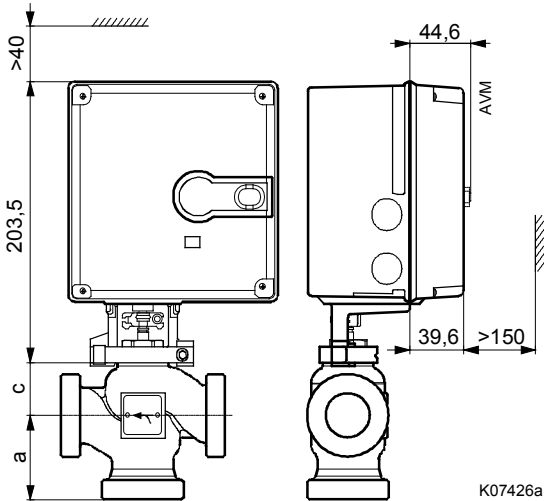
Dimension drawing



DIN	G	a	c	L	H
15	1/2"	G1B	50	32	100
20	3/4"	G1¼B	50	33	100
25	1"	G1½B	55	36	110
32	1 1/4"	G2B	60	38	120
40	1 1/2"	G2¼B	65	48	130
50	2"	G2¾B	75	54	150

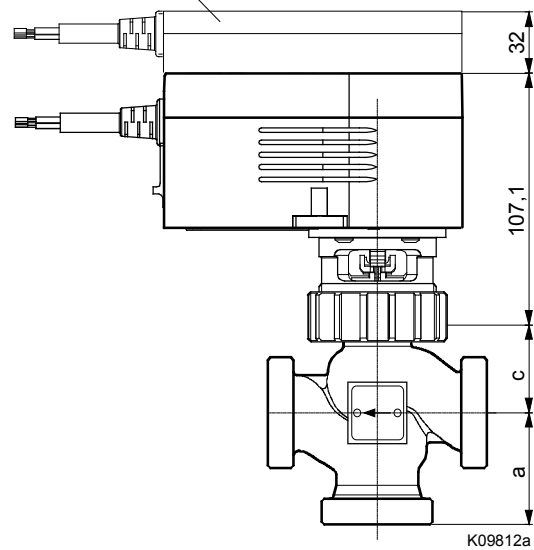
M07424a

AVF 124 and AVM 124



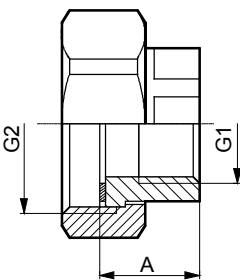
AVM 104 and AVM 114

372145, 372286



Accessories

361951



A	DN	G1	G2
32,3	50	Rp2	G2¾
33	40	Rp1½	G2¼
26,5	32	Rp1¼	G2
24,7	25	Rp1	G1½
20,8	20	Rp¾	G1¼
18,7	15	Rp½	G1

M08806

372240

