B6R: Three-way valve with female thread, nominal pressure 16 bar

For continuous control of hot and cold water or of air. Valve body of bronze (Rg 5). Valve seat of bronze, valve spindle of stainless steel, valve plug of either stainless steel or brass, metallic sealing. Stuffing box of brass with O-ring seal. Valve curve either equal percentage or linear. When spindle is extracted, passage A-AB is closed.

Type Curve = %	Nominal diameter DN	k_{VS}-value m^3/h	Valve plug material	Weight kg
B6R 15 F330	15	1	stainless steel	1.2
B6R 15 F320	15	1.6	stainless steel	1.2
B6R 15 F310	15	2.5	brass	1.2
B6R 15 F300	15	4	brass	1.2
B6R 25 F310	25	6.3	brass	1.6
B6R 25 F300	25	10	brass	1.6
B6R 40 F310	40	16	brass	3.4
B6R 40 F300	40	25	brass	3.4
B6R 50 F300	50	35	brass	4.6

Operating temperature [1]	–15...130 °C		Leakage rate flow A-AB	≤ 0.05 % of k_{VS}-value
Operating pressure	up to 120 °C	16 bar	Mixing flow B-AB	≤ 1 % of k_{VS}-value
	up to 130 °C	13 bar	Dimension drawings	5M100
Valve curve	equal-percentage or linear		Fitting instructions	MV 505146
Control ratio	50 (typical)		AVR / Assembly	MV 505438 / MV 505410
Valve stroke	14 mm		AVN / Assembly	MV 505416 / MV 505411

Model type

F2 . . Valve linear curve (available from DM 15, k_{VS} 4 m^3/h only)

Accessories

217268 . . . Stuffing-box heating 15 W; N.B. 24 V = /001, 230 V = /004, MV 505498

360429 000 Sticker for distributor valve (for hydraulic drive only)

360391 . . . Union piece incl. asbestos-free seal, 3 pieces required;
specify when ordering: DN 15 = /015, DN 25 = /025 etc.

DN	15	25	40	50

371120 001* Stroke reverser for inverse function (drive without power = valve open).
Only for mixing valves with hydraulic drive. Weight 1.5 kg. MV 43242

[1] At temperatures under 0 °C, use stuffing-box heating (accessory)

Combimnation with electric drive

Used as mixing valve

Drive		AVR32 . . . Input Operating time	W3R 3-point 12 s	W30 3-point 30 s	W32 3-point 120 s	W32S 0...10 V 120 s
Valve	Δp_{max}	Δp_s				
B6R 15 F300	4	–				
B6R 25 F300	4	–				
B6R 40 F300	3	–				
B6R 50 F300	2	–				

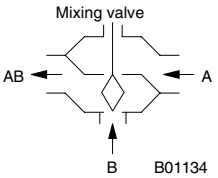
Combination with hydraulic drive

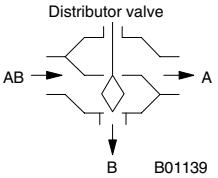
Drive		AVN3 . . . Input Operating time Safety function	H12 3-point 120 s 20 s	H12S 0...10 V 120 s 20 s		H12 3-point 120 s 20 s	H12S 0...10 V 120 s 20 s
	Used as a mixing valve				Used as distributor valve			
Valve	Δp_{max}	Δp_s			Δp_{max}	Δp_s		
B6R 15 F300	4	16			3	16		
B6R 25 F300	4	12			2	16		
B6R 40 F300	3	3			1.5	16		
B6R 50 F300	2	2			1	16		

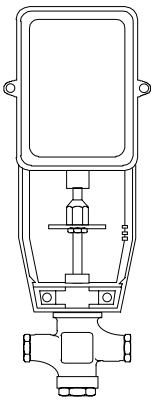
Complete type designation: Valve and drive each with F-variant
Valve: F-variant, technical data and accessories, see valve type table
Drive: F-variant, technical data, accessories and fitting position, see Section 51
Example: B6R 15 F300/AVN3 H12S F001

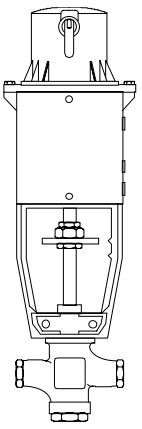
Δp_{max} in bar = Max. perm. pressure difference across the valve at which the drive can still safelyopen and close the valve.

Δp_s in bar = Max. perm. pressure difference across the valve during malfunction at which thedrive can close the valve.



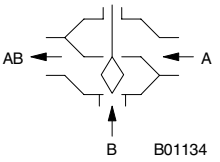




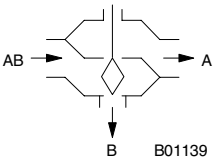


Operation
Using an electric or hydraulic drive, the valve can be moved to any position.

Used as a mixing valve
possible with electric or hydraulic drive



Used as a distributor valve
possible only with hydraulic drive



Engineering and installation notes
Can be fitted in any position except facing downwards (see relevant drive). When fitting the drive to the valve, care must be taken not to turn the valve plug on the two stops (seat), thus damaging the seal.

Additional technical details

Type	Δp_v	
B6R 15 F . 30	4	(3)
B6R 15 F . 20	4	(3)
B6R 15 F . 10	4	(3)
B6R 15 F . 00	4	(3)
B6R 25 F . 10	4	(2)
B6R 25 F . 00	4	(2)
B6R 40 F . 10	3	(1.5)
B6R 40 F . 00	3	(1.5)
B6R 50 F . 00	2	(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).
The values in brackets apply when used as a distributor valve.

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
- Technical manual 'Manipulating units' — 7 000477 003
  Parameters, Notes on installation, Control,
  Pneumatic manipulating units, General information

Additional details on accessories

217268/ . . . Heating for stuffing box 15 W; housing of light metal; degree of protection IP 54; connecting cable 3 × 0.75 mm², earth connection, 1 m in length, cable end sleeves.

360429 Sheet of 21 adhesive labels for flow change; for hydraulic drive only,see combinations.

Additional details on model types

Valve body with female thread; metallic seal; flat seal of copper at the body; stuffing-box with O-ring of ethylene-propylene.

Material numbers as per DIN

	DIN material no.	DIN description
Valve body	2.1096.01	G-Cu Sn 5 Zn Pb (Rg 5)
Valve seat	2.1096.01	G-Cu Sn 5 Zn Pb (Rg 5)
Spindle	1.4305	X 12 Cr Ni S 18 8
Plug	2.0402.26	Cu Zn 40 Pb 2 F43
Plug V6R 15 F.20...F.30	1.4305	X 12 Cr Ni S 18 8
Stuffing box	2.0401.10	Cu Zn 39 Pb 3 F36

Additional combinations

Drive	**AVN3 . . .**	**H10**	**H10S**
	Input	**3-point**	**0...10 V–**
	Running time	**30 s**	**30 s**
	Safety function H110	**8 s**	**8 s**
Valve	**Used as a mixing valve**		
	Δp_{max}	**Δp_s**	
B6R 15 F300	4	16	
B6R 25 F300	4	12	
B6R 40 F300	3	3	
B6R 50 F300	2	2	

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 thus produced, improvements can be achieved in both life expectancy and durability.

Δp_{max}:

Maximum permissible pressure difference across the valve at which the drive can firmly open and close the valve.

Static pressure and fluidic influences are taken into account. This value helps to maintain smooth stroke action and valve sealing. In doing so, the valve's Δp_v value is not 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, Δp_s can be larger than Δp_{max} or, respectively, Δp_v. The resultant fluidic disturbances are soon overcome and play a minor role here.

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

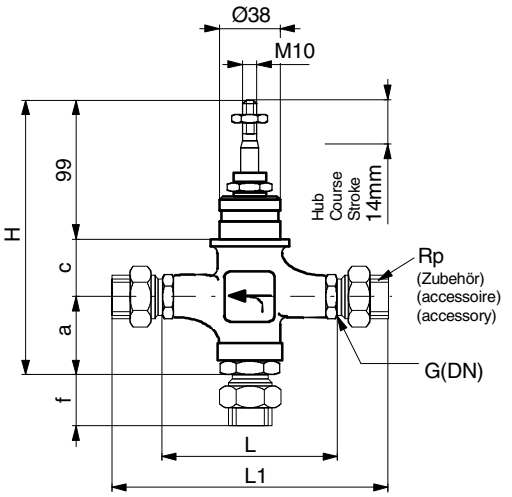
Δp_{stat}:

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 store, steam pressure etc.

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

Dimension drawings 5M100

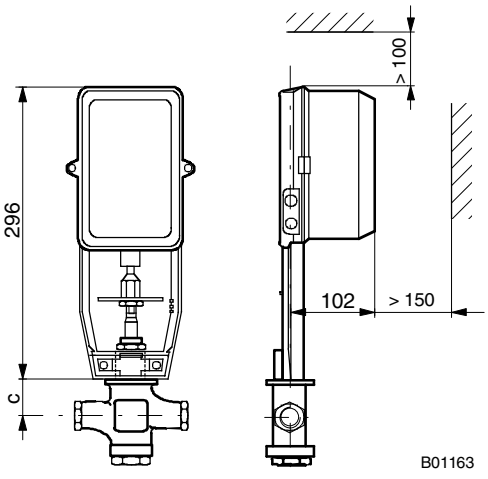
B6R



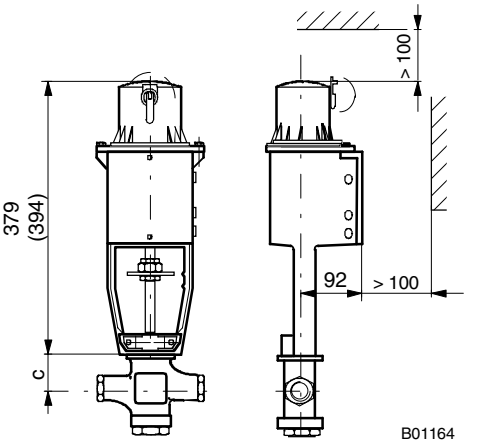
DN		a	c	f	H	L	L1	G	Rp
15	1/2"	59	29	37	187	85	159	1/2	1/2
25	1"	69	33	43	201	110	196	1	1
40	1 1/2"	76	47	53	222	150	256	1 1/2	1 1/2
50	2"	98	57	57	254	180	294	2	2

M361065a

AVR32 W3.



AVN3 H12, H112
(AVN3 H10, H110)

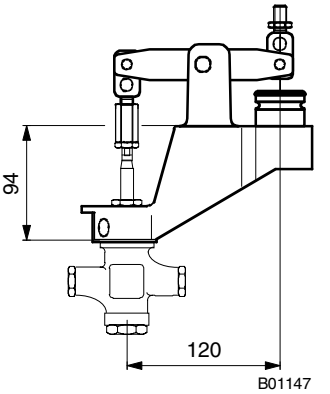


Fitting width:

Use measurement ‘c' from valve dimension drawing

Note increase in length of 94 mm due to stroke reverser
(Accessory no. 371120)

Stroke reverser



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