2-way flow control valve

RE 18351/04.11 1/8

Type MH2FR

Size 4
Component series 2X
Maximum operating pressure 420 bar
Maximum flow 1.2 l/min

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Features

- Cartridge valve
- Mounting cavity R/MH2FR04K
- Little start-up jump

Ordering code

MH2FR	4	K	A	–2X	/		*

2-way flow control valve

Size 4 **= 4**

Cartridge valve **= K**

Pump connection in channel A **= A**

Component series 20 to 29 **= 2X**
(20 to 29: Unchanged installation and connection dimensions)

Flow
up to 0.4 l/min **= 0.4**
up to 0.7 l/min **= 0.7**
up to 1.2 l/min **= 1.2**

Further details in the plain text

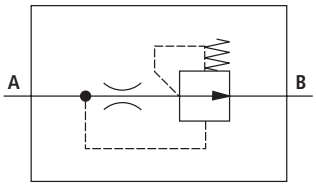
Seal material
no code = NBR seals
V = FKM seals
(other seals upon request)
Attention!
Observe compatibility of seals with hydraulic fluid used!

Standard types

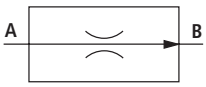
Type	Material number
MH2FR 04 KA2X/0,4V	R900753499
MH2FR 04 KA2X/0,7V	R901047887
MH2FR 04 KA2X/1,2V	R901137792

Symbols (detailed and simplified)

Detailed



Simple



Function, section

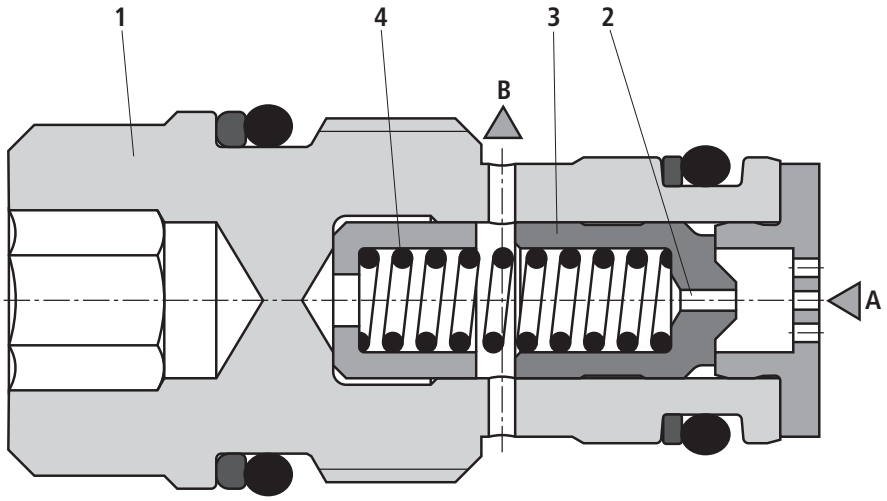
The valve type MH2FR is a 2-way flow control valve for installation in block constructions. It is used for keeping a flow constant, independent of pressure and temperature.

The valve basically comprises of a housing (1), a throttling point (2) and a pressure compensator (3) with compression spring (4).

In order to keep the flow in channel B constant, independent of the pressure, a pressure compensator (3) is fitted downstream of the throttling point (2).

When fluid flows through the valve in the flow direction from A to B, the pressure acting in port A applies a force to the pressure compensator (3). The pressure compensator moves into the control position until the forces balance. If the pressure in channel A or B changes, the pressure compensator (3) keeps on controlling and in this way keeps the pressure drop constant across the throttling point (2). The constant pressure drop and the fixed throttling point (2) cross-section result in a constant flow.

In the direction of flow from B to A, the return flow via the throttling point (2) is free.



Technical Data (For applications outside these parameters, please consult us!)

general

Weight	kg	0.30
Installation position		Any
Ambient temperature range	°C	–30 to +80 (NBR seals) –15 to +80 (FKM seals)
Surface protection		Without - surface protection has to be ensured by painting the components or the whole assembly (e.g. valve with housing).

hydraulic

Maximum operating pressure	bar	420
Maximum flow	l/min	1.2
Hydraulic fluid		See table below
Hydraulic fluid temperature range	°C	–30 to +80 (NBR seals) –15 to +80 (FKM seals)
Viscosity range	mm^2/s	10 to 800
Maximum permitted degree of contamination of the hydraulic fluid - cleanliness class according to ISO 4406 (c)		Class 20/18/15 [1]

Hydraulic fluid		Classification	Suitable sealing materials	Standards
Mineral oils and related hydrocarbons		HL, HLP, HLPD, HVLP, HVLPD	NBR, FKM	DIN 51524
Environmentally compatible	– Insoluble in water	HEES	NBR, FKM	ISO 15380
		HEPR	FKM	
	– Soluble in water	HEPG	FKM	ISO 15380
Flame-resistant	– Water-free	HFDU, HFDR	FKM	ISO 12922
	– Water-containing	HFAS	NBR, FKM	ISO 12922
		HFC	NBR	

☞ **Important information on hydraulic fluids!**

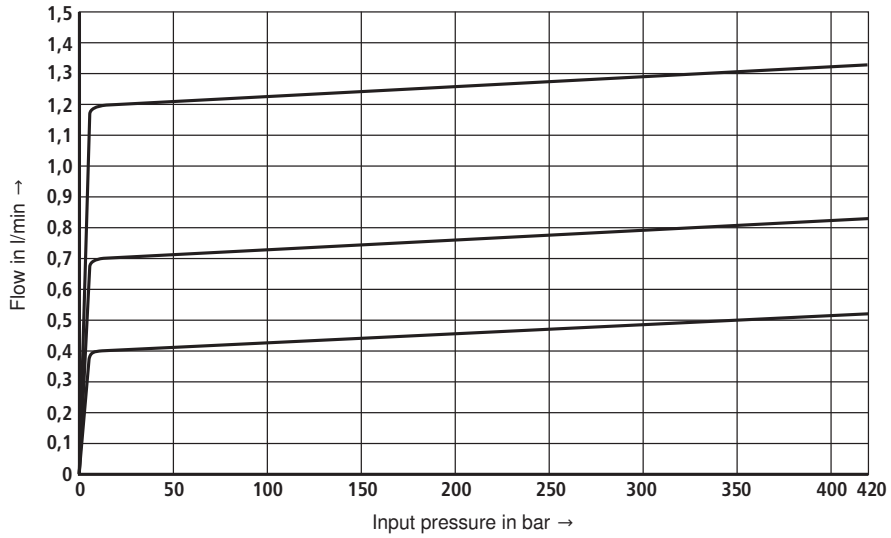
- Fore more information and data on the use of other hydraulic fluids refer to data sheet 90220 or contact us!
- There may be limitations regarding the technical valve data (temperature, pressure range, service life, maintenance intervals, etc.)!
- The flash point of the process and operating medium used must be 40 K higher than the maximum solenoid surface temperature.
- **Flame-resistant – water-containing**: Maximum pressure difference per control edge 175 bar, otherwise, increased cavitation erosion!
  Tank pre-loading < 1 bar or > 20 % of the pressure difference. The pressure peaks should not exceed the maximum operating pressures!

[1] The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the service life of the components.

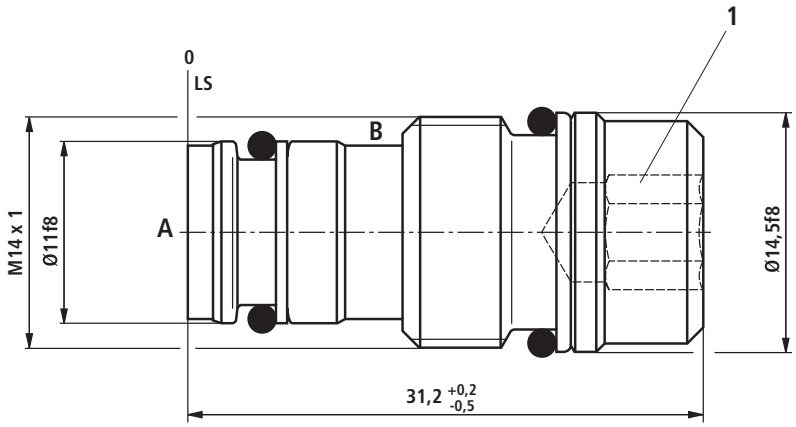
For the selection of the filters see www.boschrexroth.com/filter.

Characteristic curves (measured with HLP46, ϑ_{oil} = 40 ± 5 °C)

Flow q_V depending on the input pressure p

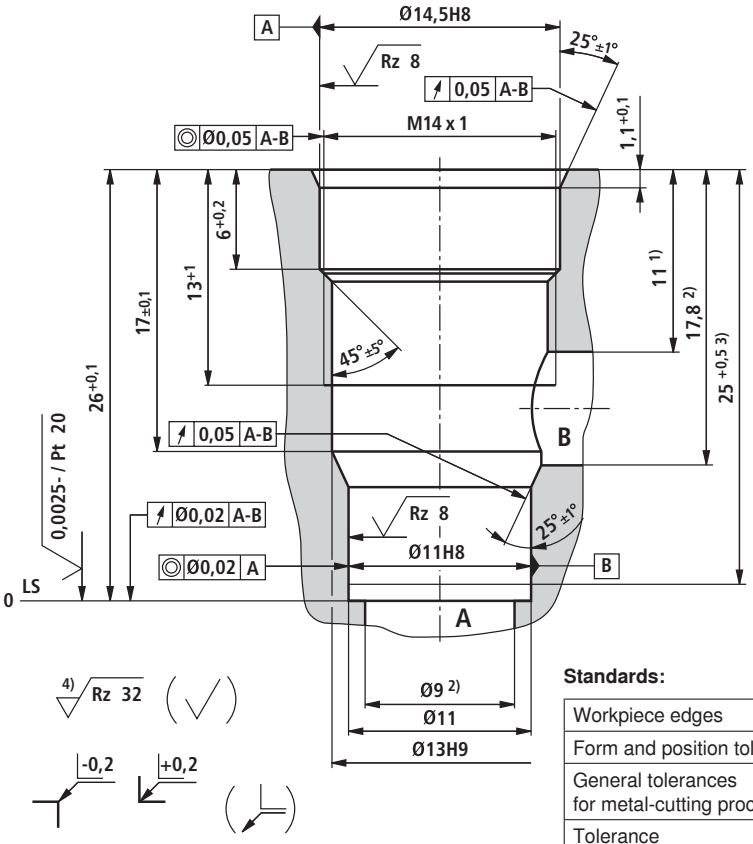


Unit dimensions (dimensions in mm)



1 Internal hexagon SW6; tightening torque $M_A = 20^{+5}$ Nm

Mounting cavity R/MH2FR (dimensions in mm)



1) Minimum dimension
2) Maximum dimension
3) Depth of fit
4) Visual inspection

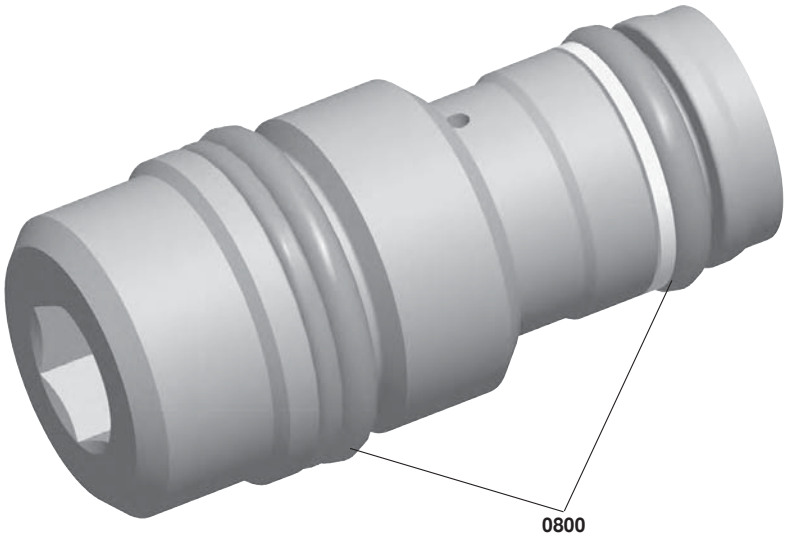
LS = Location shoulder

All seal ring insertion faces are rounded and free of burrs

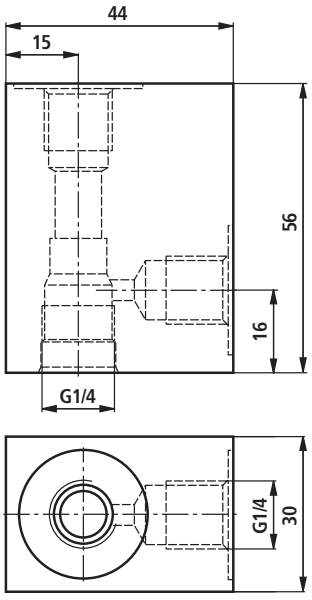
Standards:

Workpiece edges	DIN ISO 13715
Form and position tolerance	DIN EN ISO 1101
General tolerances for metal-cutting procedures	DIN ISO 2768-mK
Tolerance	DIN ISO 8015
Surface quality	DIN EN ISO 1302

Available individual components



Item	Denomination	Material no.
0800	DICHTUNGSSATZ MH2FR 04 K1X/2X/V	R900723359
	Housing MH1DBD 4 G10/EV01 G1/4, M14 x 1 (see below)	R900835780



Notes