Feed valve

Type MHSV

RE 64609
Edition: 2015-08
Replaces: 2015-01

HAD7986_12

- Frame sizes 16, 22, 32
- Component series 2X
- Maximum operating pressure 420 bar
- Maximum flow 400 l/min

Features

- Screw-in cartridge valve
- Available in 3 sizes (16, 22, 32)

Contents

Ordering code (valve without coil) [1)]

01	02	03	04	05	06	07		08		09	10	11
MH	**S**	**V**		**K**	**B**	**1**	**–**	**2X**	**/**			*****

01	Mobile hydraulics	**MH**
02	Feed valve	**S**
03	**Without** leakage port	**V**
04	Size 16	**16**
	Size 22	**22**
	Size 32	**32**
05	Screw-in cartridge valve	**K**
06	**Without** pilot poppet	**B**
07	Cracking pressure 0.5 bar	**1**
08	Component series 20 to 29 (20 to 29: Unchanged installation and connection dimensions)	**2X**

Seal material

09	NBR seals	**M**
	FKM seals	**V**
	(Other seals upon request) Attention! Compatibility of seals with hydraulic fluids used must be observed!	

Mounting cavity

10	M 24 x 1 (size 16)	**FB**
	M 28 x 1 (size 22)	**FC**
	M 33 x 1 (size 32)	**FK**
11	Further details in the plain text	

☞ **Notice:**
For other valve types than those listed in the data sheet, please consult us!

Valve types

Type	Material no.	Mounting cavity (see page 7)	Characteristic curves (see page 5)
MHSV 16 KB1-2X/VFB	R900936508	FB	N1
MHSV 22 KB1-2X/MFC	R900786222	FC	N2
MHSV 22 KB1-2X/VFC	R900936725	FC	N2
MHSV 32 KB1-2X/VFK	R900936726	FK	N3

Function, section, symbol

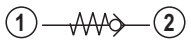
General

The type MHSV screw-in cartridge valve is a direct operated feed valve for installation in block designs. It is used for the leakage-free isolation of pressurized working circuits. Due to the relatively low closing force of the compression spring (2) at the main poppet it is particularly well suited for use as an anti-cavitation valve.

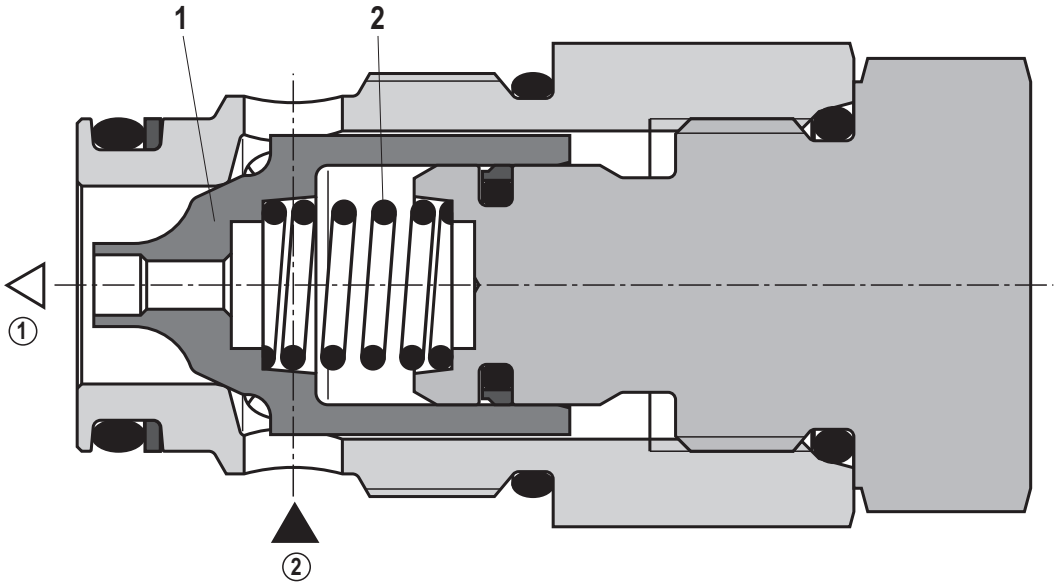
Function

The feed function replaces oil volumes lost by leakage or responding pressure valves. The cracking pressure is greater than 0.5 bar most of the time, which is why the supply pressure must be higher than the atmospheric pressure. If the pressure at main port ① is lower than the one at main port ②, the spool (1) will be lifted out of its seat. Now, hydraulic fluid flows from main port ② to main port ①. Tank preloading should be ≧ 4 bar.

Symbol



① = main port 1 (P)
② = main port 2 (T)



Type MHSV 22 KB1-2X...

Technical data

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

general			
Weight		kg	See page 6
Installation position			Any
Ambient temperature range		°C	–20 ... +80
Storage temperature range		°C	–20 ... +80
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	Main port ② (T)	bar	420
	Main port ① (P)	bar	420
Maximum flow	Main port ② (T) → ① (P)	l/min	See characteristic curve page 5
Hydraulic fluid			See table below
Hydraulic fluid temperature range		°C	–30 ... +80 (NBR seal) –20 ... +80 (FKM seal)
Viscosity range		mm^2/s	10 ... 380
Maximum admissible degree of contamination of the hydraulic fluid, cleanliness class according to ISO 4406 (c)			Class 20/18/15 [1]
Load cycles			2 million [2]

Hydraulic fluid		Classification	Suitable sealing materials	Standards	Data sheet
Mineral oils		HL, HLP	NBR, FKM	DIN 51524	90220
Bio-degradable	▶ insoluble in water	HEES	NBR, FKM	ISO 15380	90221
	▶ soluble in water	HEPG	FKM		

☞ **Important information on hydraulic fluids!**

- ▶ For 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, life cycle, maintenance intervals, etc.)!
- ▶ **Bio-degradable:** When using bio-degradable hydraulic fluids that are also zinc-solving, zinc may accumulate in the fluid.

[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 life cycle of the components.
For the selection of the filters, see www.boschrexroth.com/filter.
We recommend using a filter with a minimum retention rate of $\beta_{10} \geq 75$.

[2] Rexroth standard test condition (HLP46; ϑ_{oil} = 40 °C ± 5 °C)

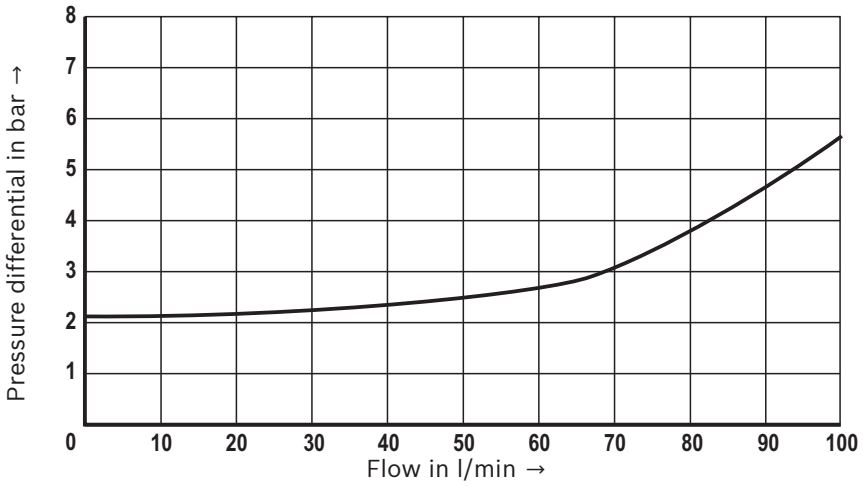
☞ **Notice:**

- ▶ The following documentation must be observed: 64020-B1 Hydraulic valves for mobile applications
- ▶ When exchanging screw-in cartridge valves, use the correct tightening torque!
- ▶ The minimum cracking pressure is greater than 0.5 bar. Therefore, a supply pressure ≧ 4 bar is recommended.

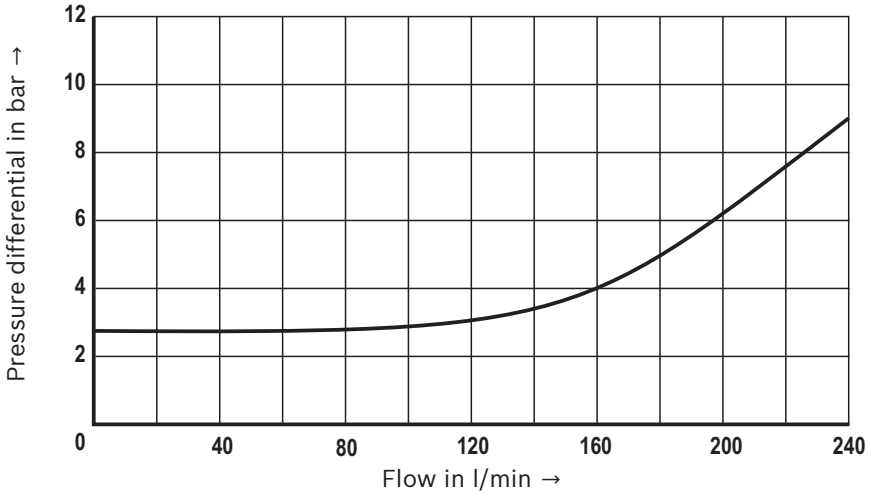
Characteristic curves

(measured with HLP46, ϑ_{oil} = 40 ± 5 °C and 24 V coil)

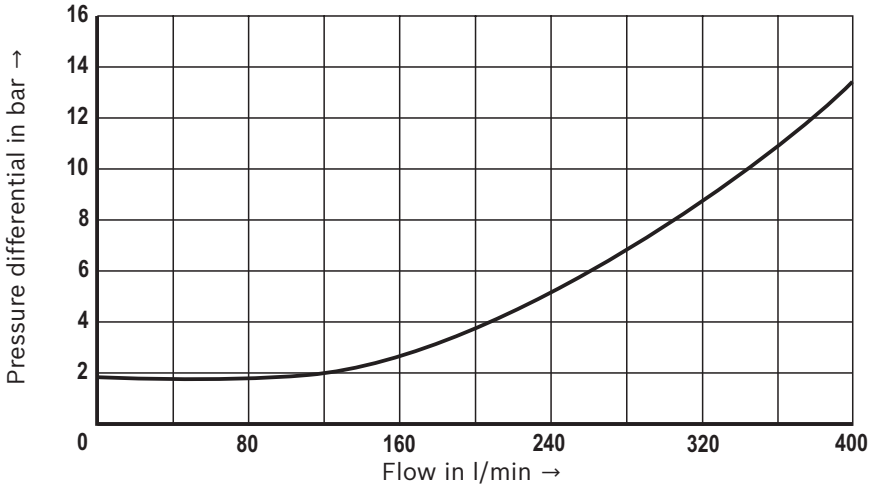
***Δp-q*$_V$ characteristic curves – "N1"**



***Δp-q*$_V$ characteristic curves – "N2"**

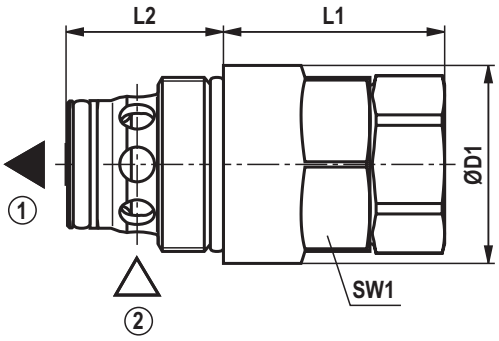


***Δp-q*$_V$ characteristic curves – "N3"**

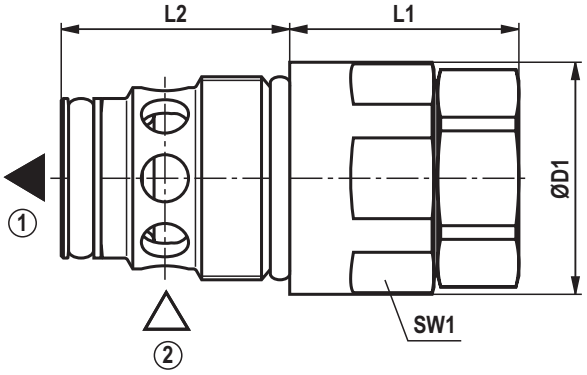


Notice:
The characteristic curves apply to an output pressure ***p*** at ① = 0 bar over the entire flow range and without housing resistance

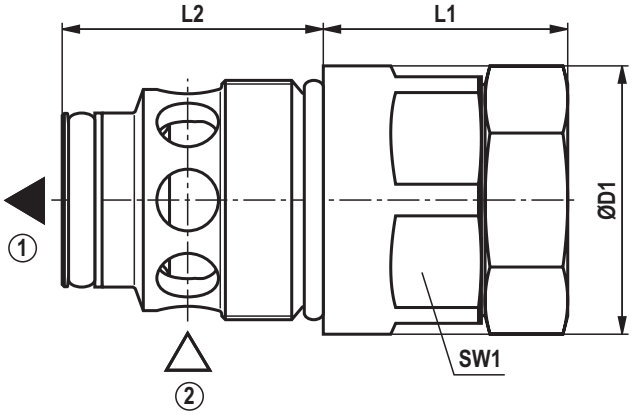
Dimensions
(dimensions in mm)



Type	ØD1	L1	L2	Wrench size SW1	Tightening torque in Nm [1] SW1	Weight in kg
MHSV 16 KB1-2X/...	27.3	30.5	21.5	24	90 ± 10	0.16



Type	ØD1	L1	L2	Wrench size SW1	Tightening torque in Nm [1] SW1	Weight in kg
MHSV 22 KB1-2X/...	32.0	31.5	31.6	30	100 ± 10	0.26



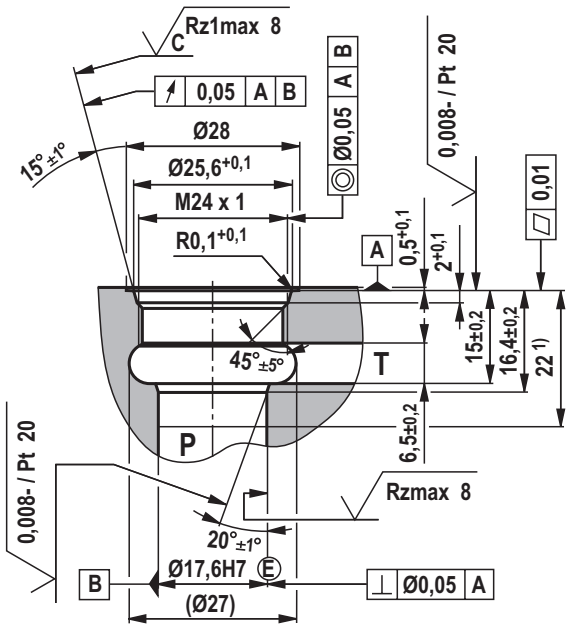
Type	ØD1	L1	L2	Wrench size SW1	Tightening torque in Nm [1] SW1	Weight in kg
MHSV 32 KB1-2X/...	37.0	33.7	36.0	34	150 ± 10	0.38

[1] Friction coefficients, tightening torques, and preload forces interact with each other. The friction coefficients are influenced by surface microstructure, material pairing etc. Thus, we recommend checking the mounting characteristics with genuine parts and boundary conditions.

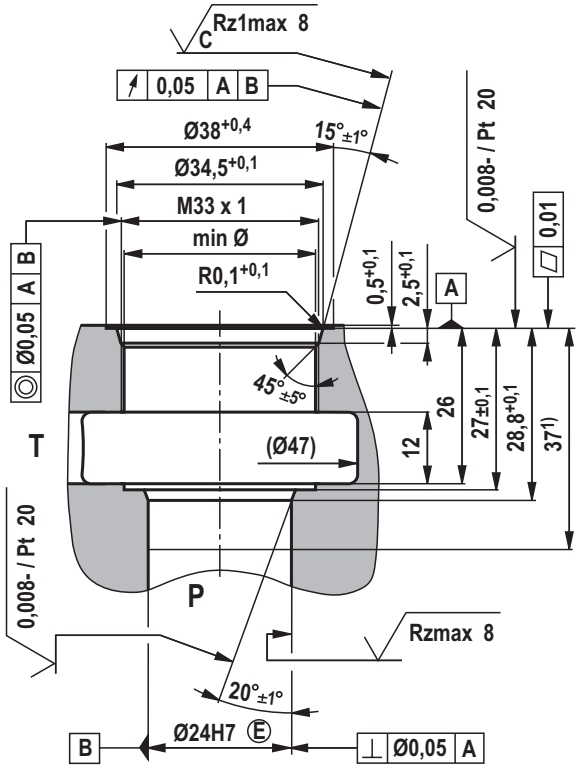
① = main port 1 (P)
② = main port 2 (T)

Mounting cavity
(dimensions in mm)

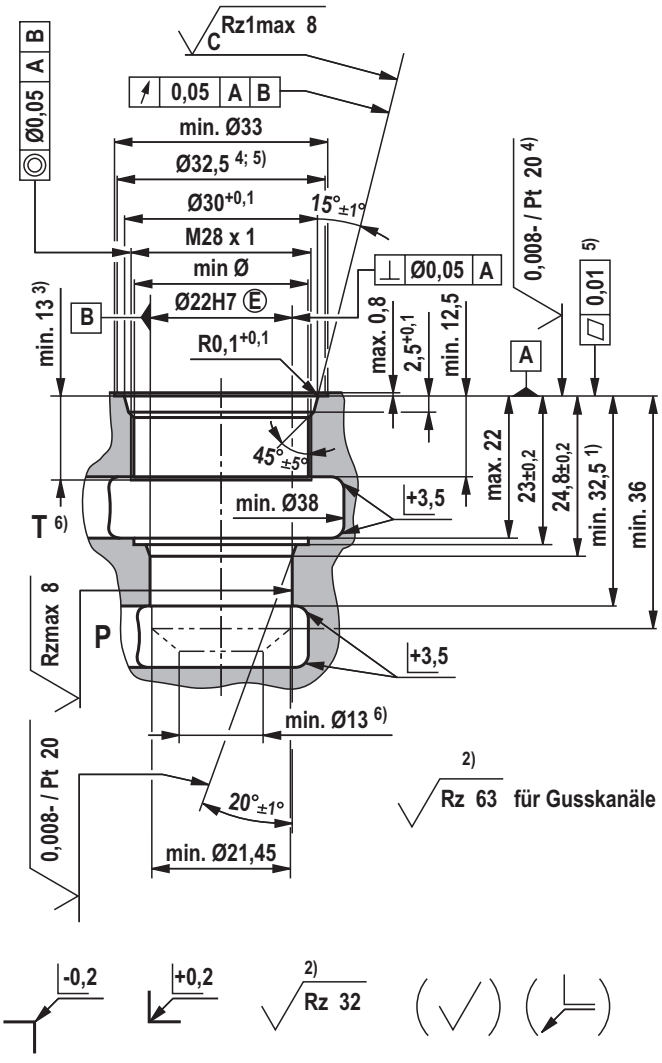
Version "FB" (M24x1)
(drawing no. R901063585)



Version "FK" (M33x1)
(drawing no. R901148145)



Version "FC" (M28x1)
(drawing no. RA50151421)



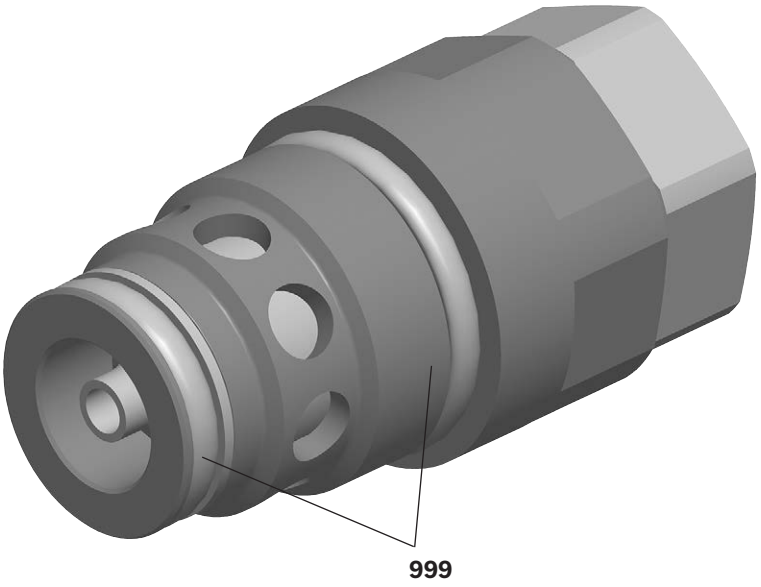
1) Depth of fit
2) Visual inspection
3) Thread depth
4) Roughness up to ø32.5 required
5) Levelness up to ø32.5 required
6) Required opening cross-section for pump connection (P) and tank port (T) > 132 mm²

All seal ring insertion faces are rounded and free of burrs.

Standards:

Workpiece edges	ISO 13715
Form and position tolerance	ISO 1101
General tolerances for metal-cutting procedures	ISO 2768 (mK)
Tolerance	ISO 8015
Surface condition	ISO 1302

Available individual components



Item	Denomination	Seal material	Material no.
999	Seal kit of the valve for mounting cavity "FB"	FKM	R961003378
999	Seal kit of the valve for mounting cavity "FC"	FKM	R961003380
999	Seal kit of the valve for mounting cavity "FC"	NBR	R961008541
999	Seal kit of the valve for mounting cavity "FK"	FKM	R961003389

Seal kits with other seals upon request.

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