Rexroth
Bosch Group

Shuttle valve

RE 18205/07.12 1/6
Replaces: 05.09

Type MHSU

Size 2 and 3
Component series 1X
Maximum operating pressure 420 bar

Table of contents

Features

- Cartridge valve
- For mobile applications
- Pressure rating 420 bar
- Available in 2 sizes (2 and 3)

Information on available spare parts:
www.boschrexroth.com/spc

Ordering code

MH	SU		K	A	1X/420		*

Mobile hydraulics

Shuttle valve

Size 2 **= 2**

Size 3 **= 3**

Cartridge valve **= K**

with ball **= A**

1X = Component series 10 to 19
(10 to 19: unchanged installation and connection dimensions)

420 = Pressure rating 420 bar

No code = without orifice

B08 =[1] Orifice Ø 0.8 mm

Further details in the plain text

[1] With size 2 available.

Standard types

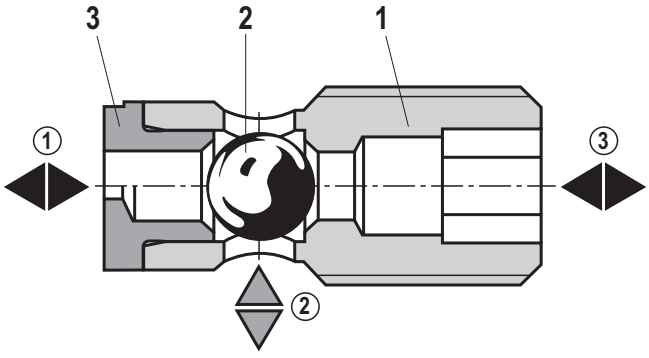
Type	Material number
MHSU 2 KA1X/420	R900541374
MHSU 2 KA1X/420 B08	R900545233
MHSU 3 KA1X/420	R901071225

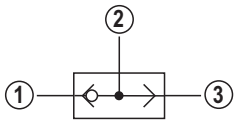
Function, section, symbol

The shuttle valve type MHSU is an isolator valve with two inputs ① and ③ as well as one output ②.

It basically comprises housing (1), ball (2) and pressed-in valve seat with/without orifice (3).

The input with the higher pressure is automatically connected with the joint output ② while the other input is blocked.





① = Input “A”
② = Output “B”
③ = Input “C”

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

general

Size	NG	2	3
Weight	g	approx. 5	approx. 9
Installation position		Any	
Ambient temperature range	°C	–20 to +80	
Surface protection		Without	

hydraulic

Maximum operating pressure	bar	420
Maximum flow	l/min	see characteristic curves page 4
Hydraulic fluid		see table below
Hydraulic fluid temperature range	°C	–30 to +80
Viscosity range	mm^2/s	10 to 380
Maximum permitted degree of contamination of the hydraulic fluid – cleanliness class according to ISO 4406 (c)		Class 20/18/15 [1]
Load cycles		2 Mio.
Leakage – Pressure drop from ① to ②		virtually leak-free
Leakage – over thread from ③ to ②		$Q_L \leqq 15\ cm^3/min$ (at 100 bar and $v=32\ mm^2/s \pm 5\ mm^2/s$)

Hydraulic fluid		Classification	Suitable sealing materials	Standards
Mineral oils		HL, HLP	FKM	DIN 51524
Bio-degradable	– Insoluble in water	HEES	FKM	VDMA 24568
	– 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, service life, maintenance intervals, etc.)!
- ► The flash point of the hydraulic fluids used must be 40 K higher than the maximum solenoid surface temperature.
- ► **Bio-degradable:** When using bio-degradable hydraulic fluids that are simultaneously zinc-solving, zinc may accumulate in the fluid.

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

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

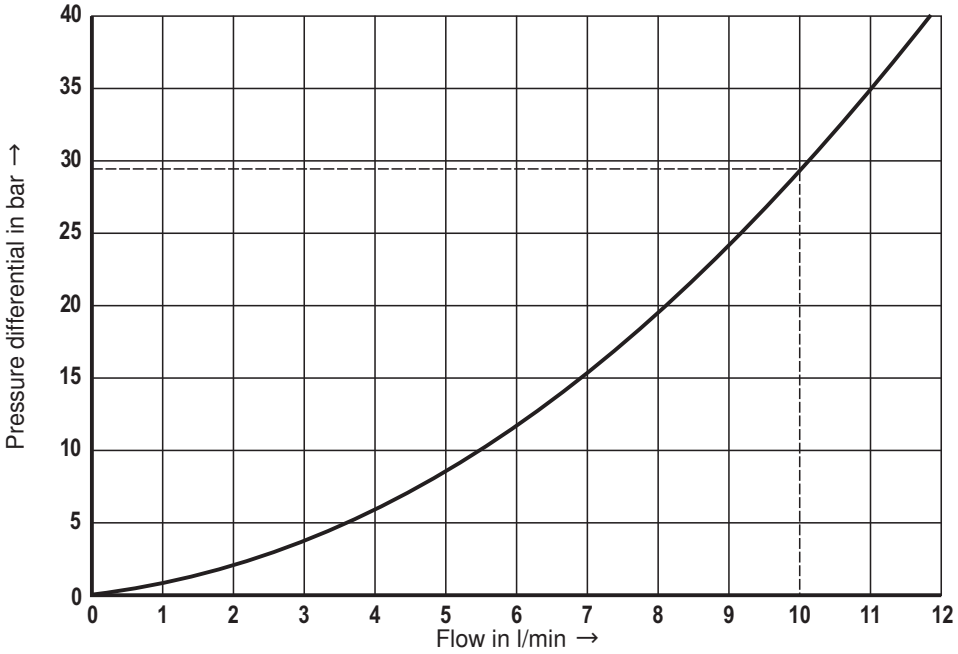
☞ **Note!**

The technical data was determined with a viscosity of $v = 41\ mm^2/s$ (HLP46, $\vartheta_{oil} = 40\ °C \pm 5\ °C$).

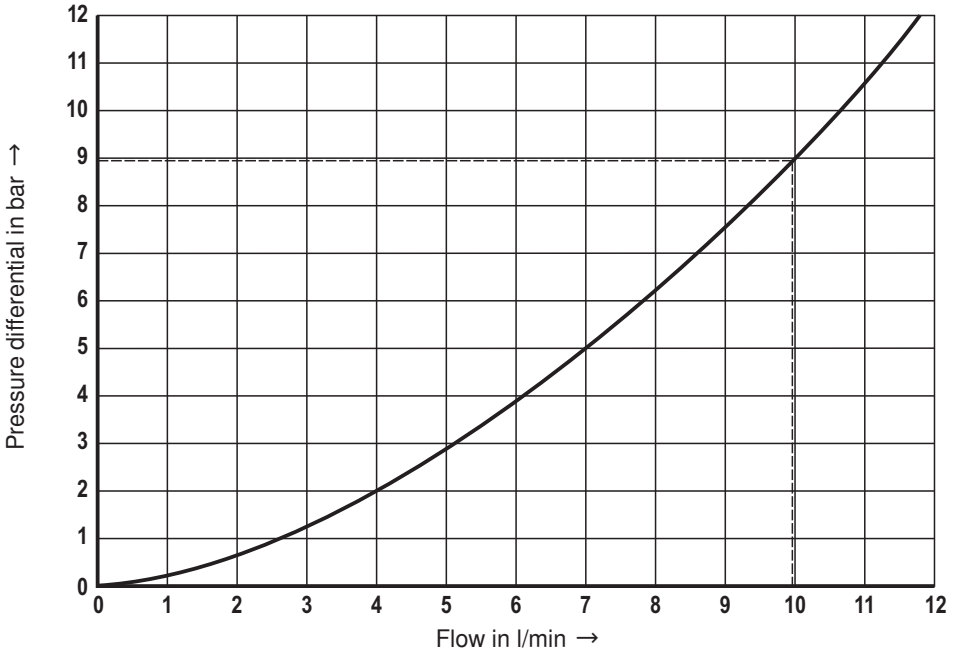
The following documentation must be observed:
64020-B1 “Hydraulic valves for mobile applications”

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

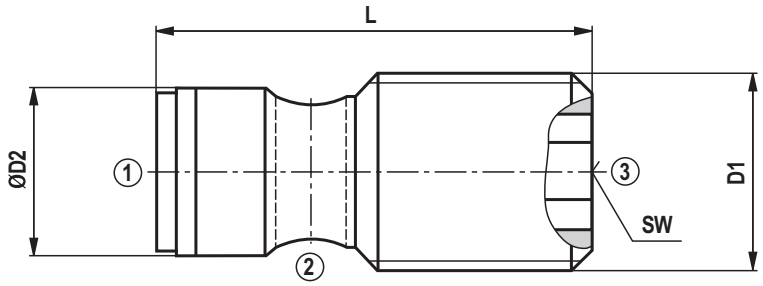
Δp-q_V characteristic curves – size 2



Δp-q_V characteristic curves – size 3



Unit dimensions (dimensions in mm)



Size	L	D1	ØD2	SW	Tightening torque in Nm [1]
2	20	M8 x 1	6,4	4	7
3	22	M10 x1	8	5	10

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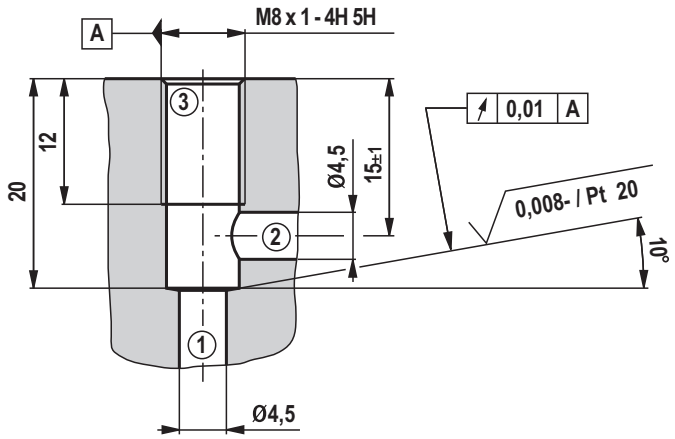
③ = Input “C”

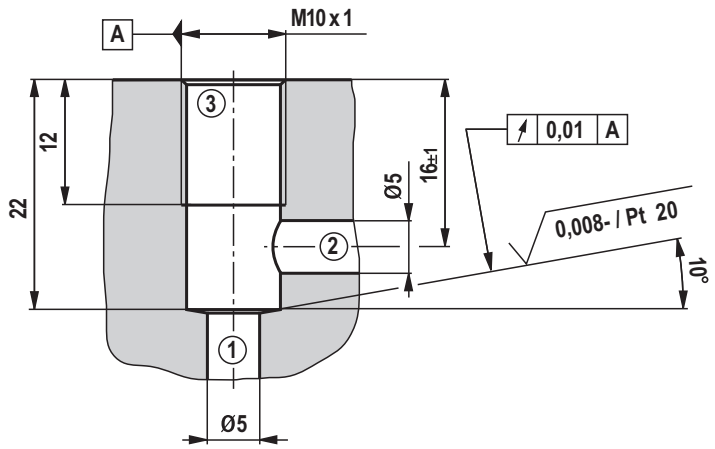
[1] The specified tightening torques are reference values. Friction coefficients, tightening torques, and preload forces interact with each other. The friction coefficients are influenced by the surface microstructure, material pairing, etc. Thus, we recommend checking the mounting characteristics with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

Mounting cavities (dimensions in mm)

Size 2

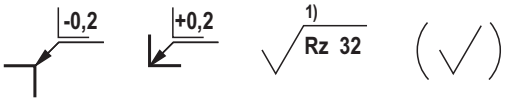


Size 3



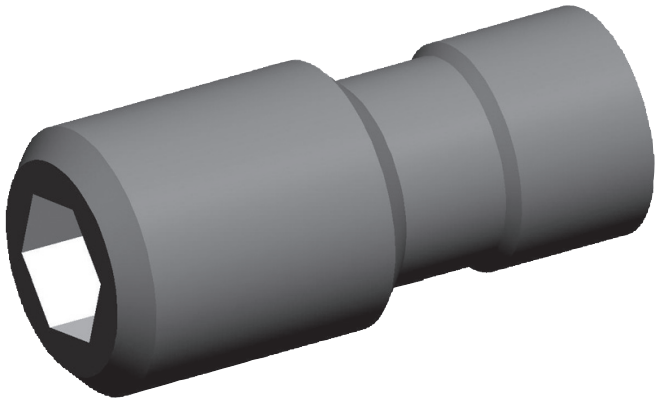
Standards:

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



[1] Visual inspection

Available individual components



Description	Unit size	Material number	Flow	Weight in g	M_A in Nm + 10 %
PLUG SCREW MHSU 2 A/B/C	2	R901221771	① / ② / ③	5,2	7
PLUG SCREW MHSU 3 A/B/C	3	R901149008		8,9	10
PLUG SCREW MHSU 2 A-B/C	2	R901221774	① – ② / ③	4,8	7
PLUG SCREW MHSU 3 A-B/C	3	R901081617		7,8	10
PLUG SCREW MHSU 2 A/B-C	2	R901221780	① / ② – ③	5,0	7
PLUG SCREW MHSU 3 A/B-C	3	R901081616		8,1	10

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③ = Input “C”

Bosch Rexroth AG
Hydraulics
Zum Eisengießer 1
97816 Lohr am Main, Germany
Phone +49 (0) 93 52 / 18-0
documentation@boschrexroth.de
www.boschrexroth.de

Notes

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