

APPLICATION

2/2 way cartridge valve type **URZS40...** can be used in hydraulic systems as a pilot operated check valve or by combination of several elements as a multiple directional control system.



DESCRIPTION OF OPERATION

2/2 way cartridge valves comprise the cartridge assembly and the cover (1) with control bores. The cartridge assembly is composed of the sleeve (3), the spring (4) and the poppet: with an optional dumping nose (5) or without it (6).

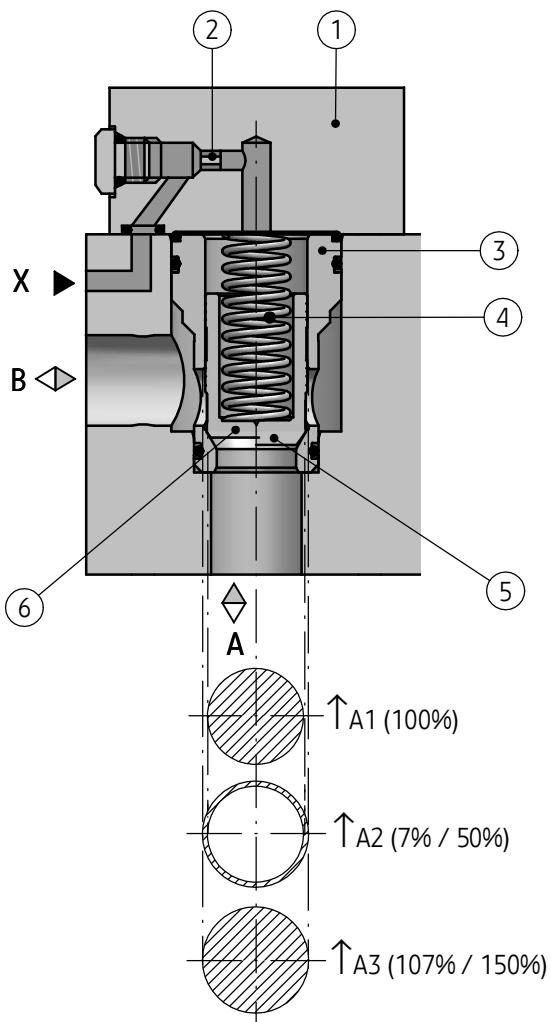
The valve poppet is held on its seat by means of the spring (4). The valve allows for free flow from **A** to **B** or reversely from **B** to **A**.

The valve poppet is graded. There are three important surfaces for its operation. The area seat A1 is assumed as 100%. The annulus area A2, resulting from the grading is 7% or 50% of area A1, depending on the version. The area ratio A1 : A2 is therefore either 14,3:1 or 2:1. The area A3 is A1 + A2 and can be either 107% or 150% of area A1. The area A3 remains unchanged. When the annulus area is changed, then the surface area A1, which is regarded as 100% also is changed. The valve opens in both flow directions if the surface A3 is not affected by pressure (the port **X** is without pressure) and pressure force acting on the adequate surfaces A1 or A2 exceeds the spring force (4).

If control pressure affects surface A3, then the poppet is pushed onto its seat irrespective of the spring force (4).

The valve may be opened by unloading surface A3 or by suitably high pressure in port **A** or **B**. The orifice insert (2) fitted in port **X** allows to select the opening curve and the valve opening time.

URZS 40 ...E 12... URZS 40 ...D 12...



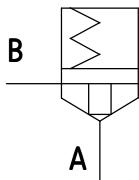
TECHNICAL DATA

Hydraulic fluid	mineral oil	
Required filtration	up to 16 μm	
Recommended filtration	up to 10 μm	
Nominal fluid viscosity	37 mm^2/s at temperature 55 $^{\circ}\text{C}$	
Viscosity range	2,8 up to 380 mm^2/s	
Fluid temperature range (in a tank)	recommended	40 $^{\circ}\text{C}$ up to 55 $^{\circ}\text{C}$
	max	-20 $^{\circ}\text{C}$ up to +70 $^{\circ}\text{C}$
Ambient temperature range	- 20 $^{\circ}\text{C}$ up to +70 $^{\circ}\text{C}$	
Maximum operating pressure in ports A, B, X	42 MPa	
Maximum flow rate	1500 dm^3/min	
Weight	1,6 kg	

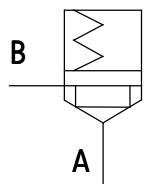
SCHEMES

Graphic symbols for the valve type URZS40...

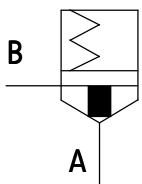
version URZS40 A...E...



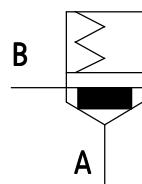
version URZS40 B...E...



version URZS40 A...D...

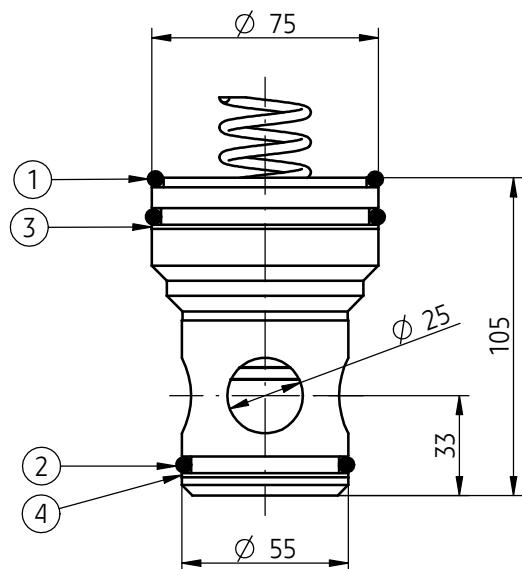


version URZS40 B...D...



OVERALL AND CONNECTION DIMENSIONS

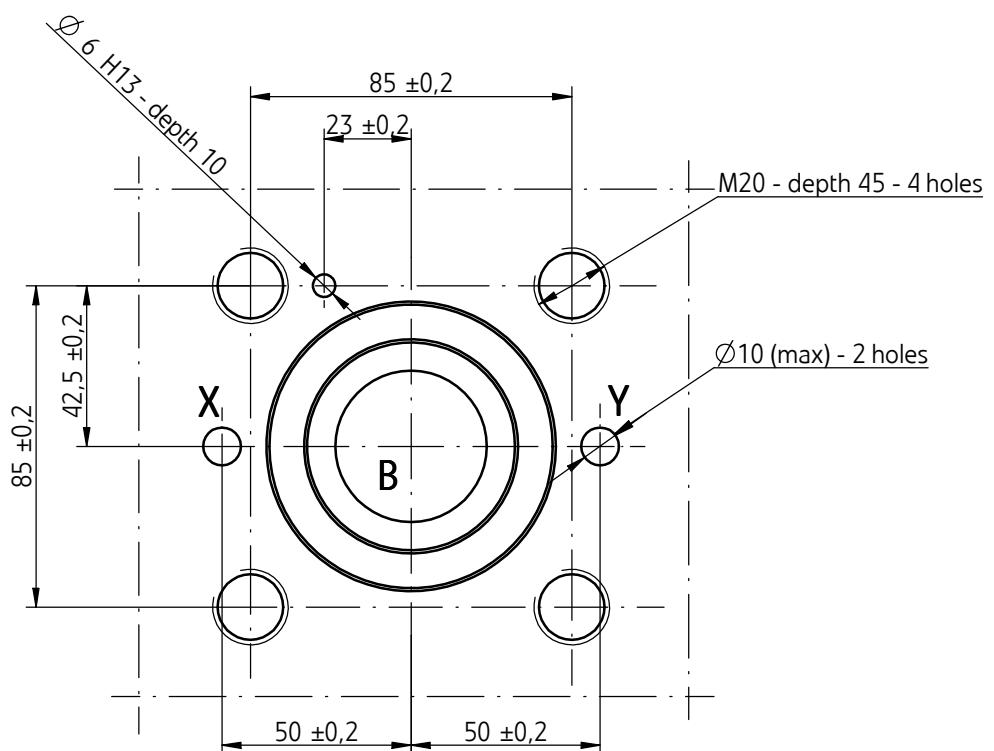
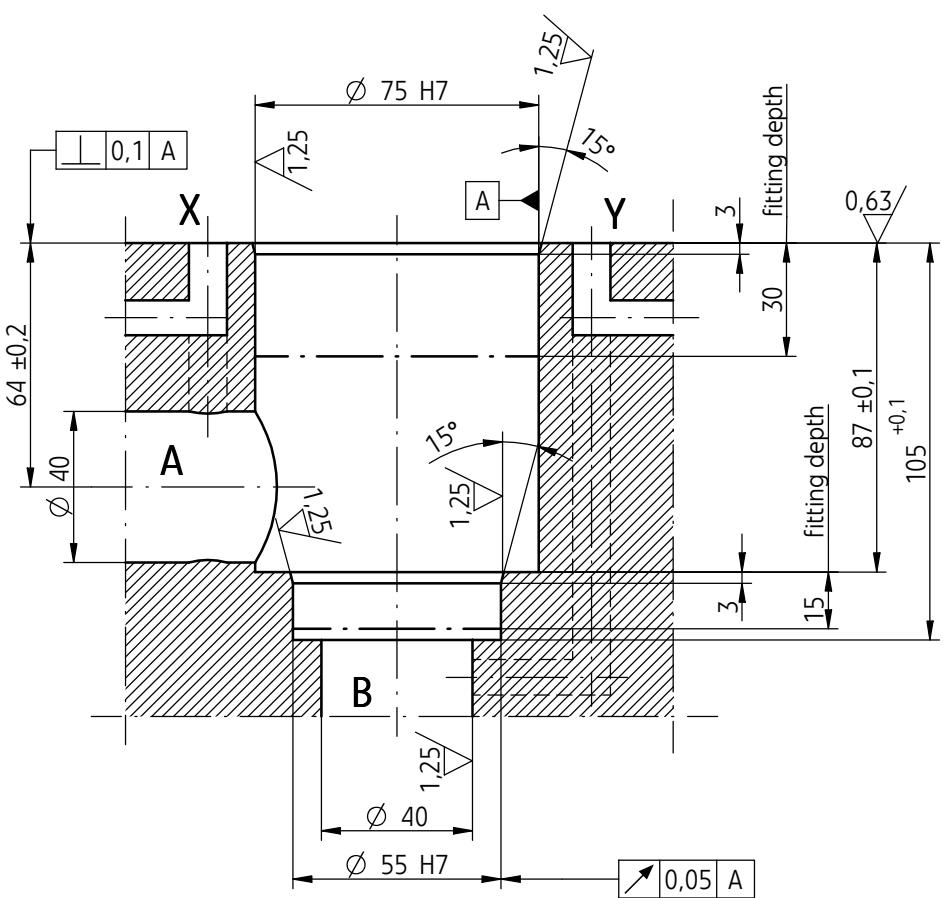
Valve type URZS40...



1 - O-ring 67 x 4	- 2 pcs/kit
2 - O-ring 47 x 4	- 1 pc/kit
3 - Back-up ring 75 x 68,8 x 1,4	- 1 pc/kit
4 - Back-up ring 55 x 48,8 x 1,4	- 1 pc/kit

OVERALL AND CONNECTION DIMENSIONS

Dimension of cavity

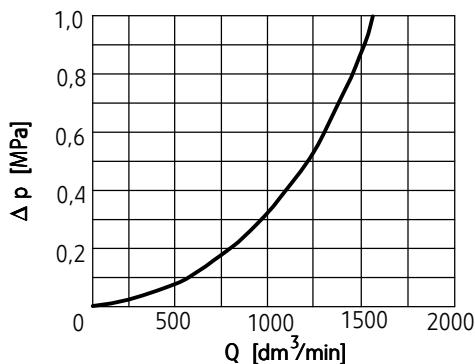


PERFORMANCE CURVES

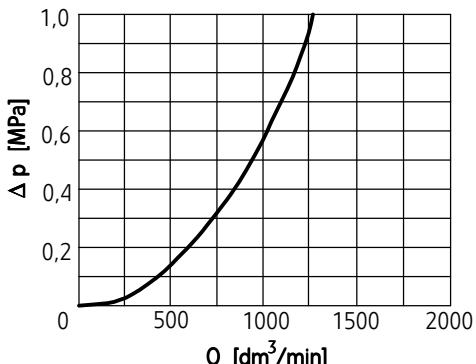
measured at viscosity $\nu = 41 \text{ mm}^2/\text{s}$ and temperature $t = 50^\circ\text{C}$

Flow resistance curves

version URZS40 B E...



version URZS40 B D...



HOW TO ORDER

URZS	40					/	*
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Nominal size (NS)
NS40

= 40

Area ratio (A1: A2 - according to page 1)
2 : 1 (50%)
14,3 : 1 (7%)

= A

= B

Cracking pressure

0,0 MPa (without spring)	= 00
0,05 MPa	= 05
0,10 MPa	= 10
0,15 MPa	= 15
0,2 MPa	= 20
0,40 MPa	= 40

Valve poppet

with dumping nose	= D
without dumping nose	= E

Series number

(10-19) - connection and installation dimensions unchanged	= 1X
series 12	= 12

Sealing

NBR (for fluids on mineral oil base)	= no designation
FPM (for fluids on phosphate ester base)	= V

Further requirements in clear text (to be agreed with the manufacturer)

NOTES:

The cartridge valve should be ordered according to the above coding.

The symbols in bold are preferred versions in short delivery time.

Coding example: URZS 40 B 20 E 12/V

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