

DATA SHEET - SERVICE MANUAL

APPLICATION

2/2 way cartridge valve type URZS...S 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 (5).

The valve poppet (5) 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**.

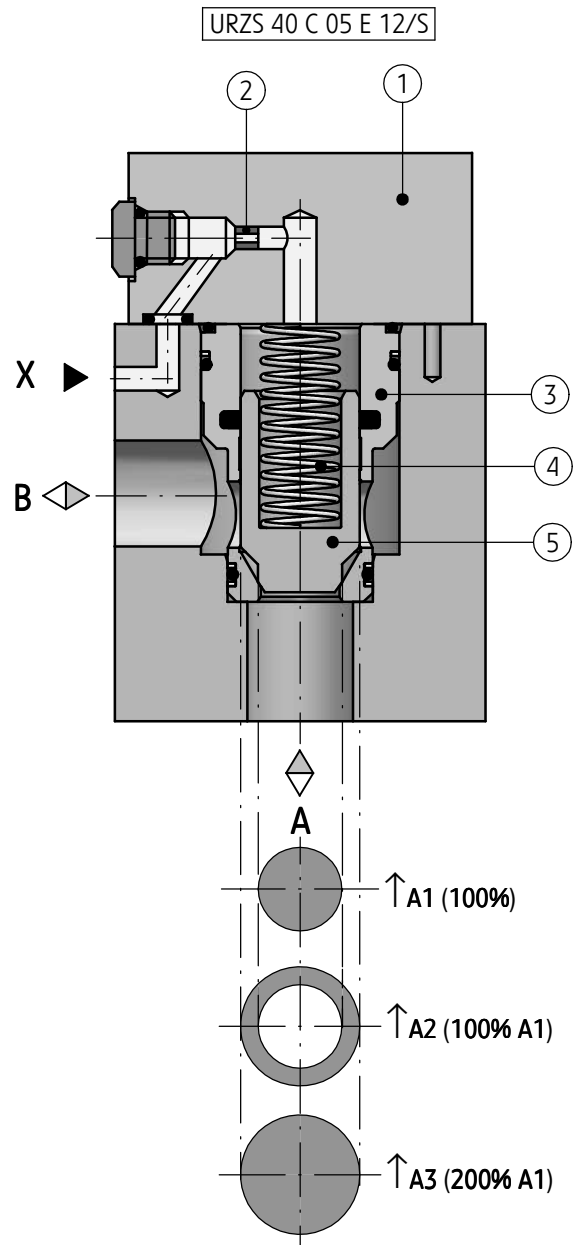
The valve poppet is graded. There are three important surfaces for its operation. The area seat **A1** is assumed as **100%**. The annulus area **A2**, resulting from the grading is **100%** of area **A1**, the area ratio **A1 : A2** is therefore **1:1**. The area **A3** is **A1 + A2** and is **200%** of area **A1**. 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.

NOTE:

The valve cover (1) must be ordered separately.

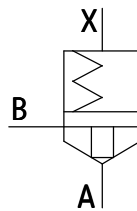


TECHNICAL DATA

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 °C		
Viscosity range	2,8 up to 380 mm^2/s		
Fluid temperature range (in a tank)	recommended	40 °C up to 55 °C	
	max	-20 °C up to +80 °C	
Ambient temperature range	- 20 °C up to +70 °C		
Maximum operating pressure in ports A, B, X	42 MPa		
Nominal flow rate	version URZS32...S	version URZS40...S	version URZS50...S
	900 dm^3/min	1300 dm^3/min	1800 dm^3/min
Area A1	5,09 cm^2	7,95 cm^2	12,315 cm^2
Area A2	5,09 cm^2	7,95 cm^2	12,315 cm^2
Area A3	10,18 cm^2	15,90 cm^2	24,630 cm^2
Stroke of the valve poppet	1,75 cm	2,53 cm	2,90 cm
Weight	0,97 kg	1,6 kg	2,95 kg

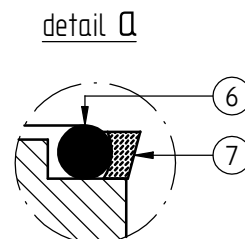
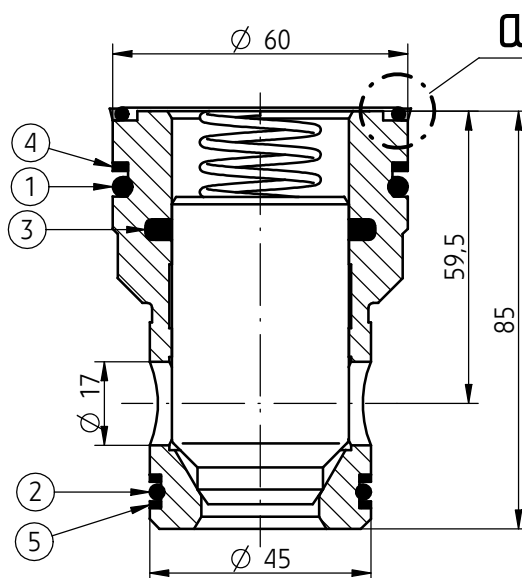
SCHEMES

Graphic symbols for the valve type URZS...S



OVERALL AND CONNECTION DIMENSIONS

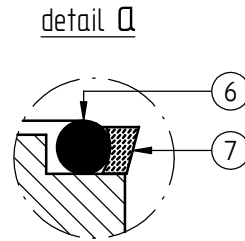
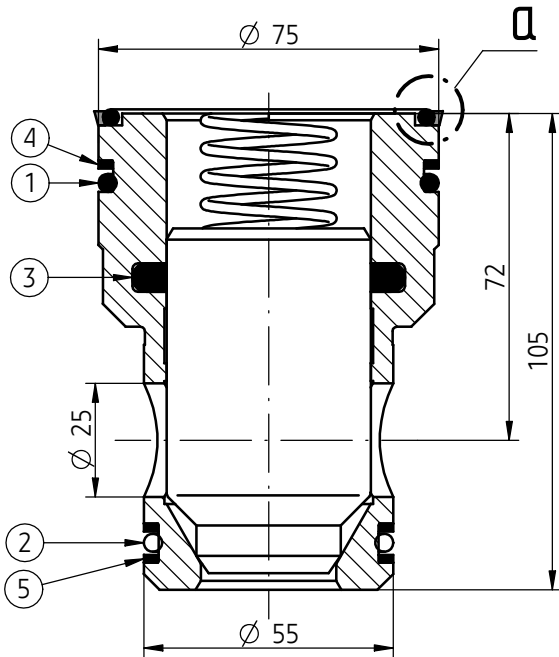
version URZS32...S



1 - O-ring 52 x 4	- 1 pc
2 - O-ring 39 x 3	- 2 pcs
3 - TurconGlydRing sealing ring RG4300360-M12-NBR	- 1 pc
4 - Back-up ring BH3100600 - 60 x 53,8 x 1,7	- 1 pc
5 - Back-up ring BH4000900 - 45 x 40,4 x 1,4	- 2 pcs
6 - O-ring 52 x 3	- 1 pc
7 - Back-up ring 1614-02204590	- 1 pc

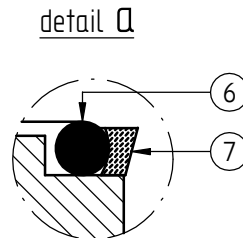
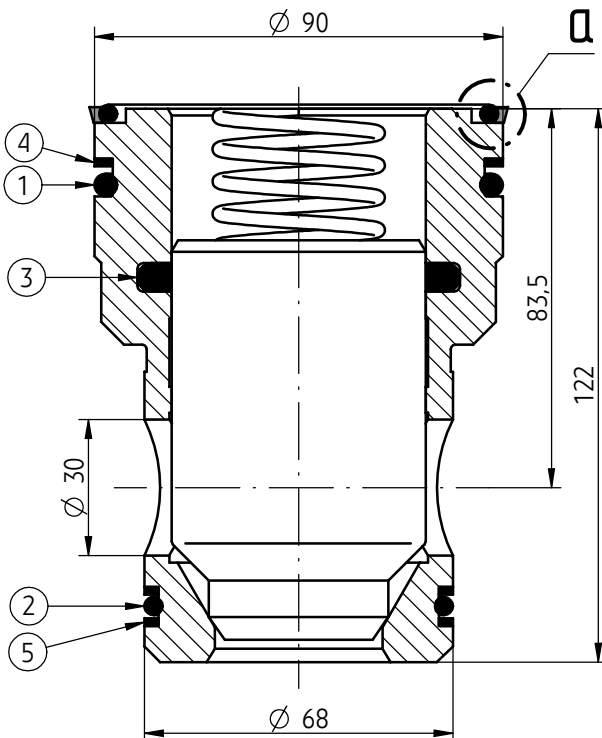
OVERALL AND CONNECTION DIMENSIONS

version URZS40...S



1 - O-ring 67 x 4	- 1 pc
2 - O-ring 47 x 4	- 1 pc
3 - TurconGlydRing sealing ring RG4300450-M12-NBR	- 1 pc
4 - Back-up ring BH3100750 - 75 x 68,8 x 1,7	- 1 pc
5 - Back-up ring BH3100550 - 55 x 48,8 x 1,7	- 2 pcs
6 - O-ring 66,27 x 3,53	- 1 pc
7 - Back-up ring 1614-02204130	- 1 pc

version URZS50...S

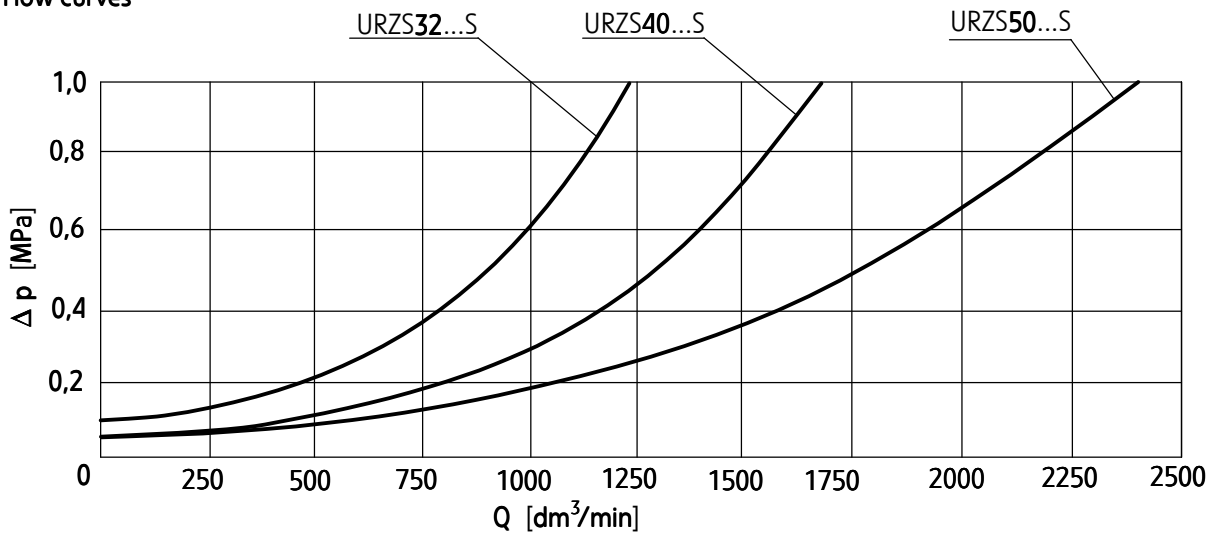


1 - O-ring 80 x 5	- 1 pc
2 - O-ring 60 x 4	- 2 pcs
3 - TurconGlydRing sealing ring RG4300560-M12-NBR	- 1 pc
4 - Back-up ring BH4000900 - 90 x 82 x 1,7	- 1 pc
5 - Back-up ring BH3100680 - 68 x 61,8 x 1,7	- 2 pcs
6 - O-ring 80 x 4	- 1 pc
7 - Back-up ring 1614-02204560	- 1 pc

PERFORMANCE CURVES

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

Flow curves



HOW TO ORDER

URZS		C		E	/	S	*
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Nominal size (NS)

NS32	= 32
NS40	= 40
NS50	= 50

Area ratio (A1: A2 - according to page 1)

1 : 1 (100%)	= C
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Cracking pressure

0,05 MPa - only for versions: URZS40...; URZS50...	= 05
0,1 MPa - only for version URZS32...	= 10
0,2 MPa - only for version URZS32...	= 20

Valve poppet

without dumping nose	= E
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Series number

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

Sealing

NBR (for fluids on mineral oil base)	= no code
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Additional sealing

between ports X, B	= S
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Further requirements in dear 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 C 05 E 12/ S

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