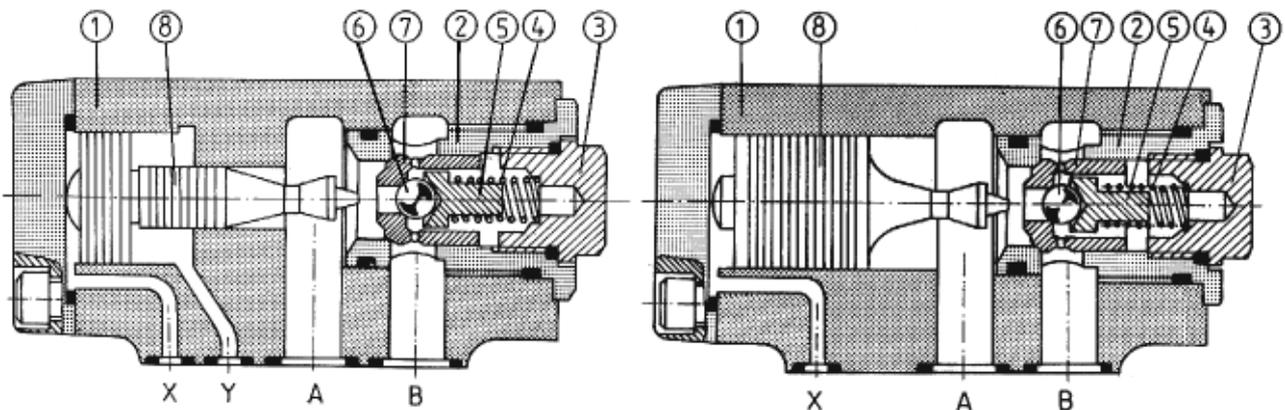


Pilot operated check valves for subplate mounting are used in the hydraulic systems when free flow in one direction and automatic closure in the opposite direction are required. There is a possibility of opening in the direction of closure. The valves can be mounted in any desired position together with a subplate. Sealing is achieved by fitting O-rings, which are included with the valve.



### DESCRIPTION OF FUNCTION



The sleeve 2 with the inserted plug 3 is fitted in the housing 1. The plug 3 is a seat for the spring 4. The spring via the dished disk 5 pushes the ball 6 to the internal edge of the poppet 7 and holds the poppet closed. When pressure difference in port A exceeds cracking pressure determined by the spring, the poppet moves along the cylindrical sleeve and the connection from A to B is then open.

When pressure is applied to port X oil can also flow through the valve from B to A. Pressure at port X affects the surface of the pilot spool 8, which moves pushing the ball 6. It results in opening the connection from B to A. Fluid can flow from B to A as long as pilot pressure affects port X. Port Y is an optional external drain connection..

## TECHNICAL DATA

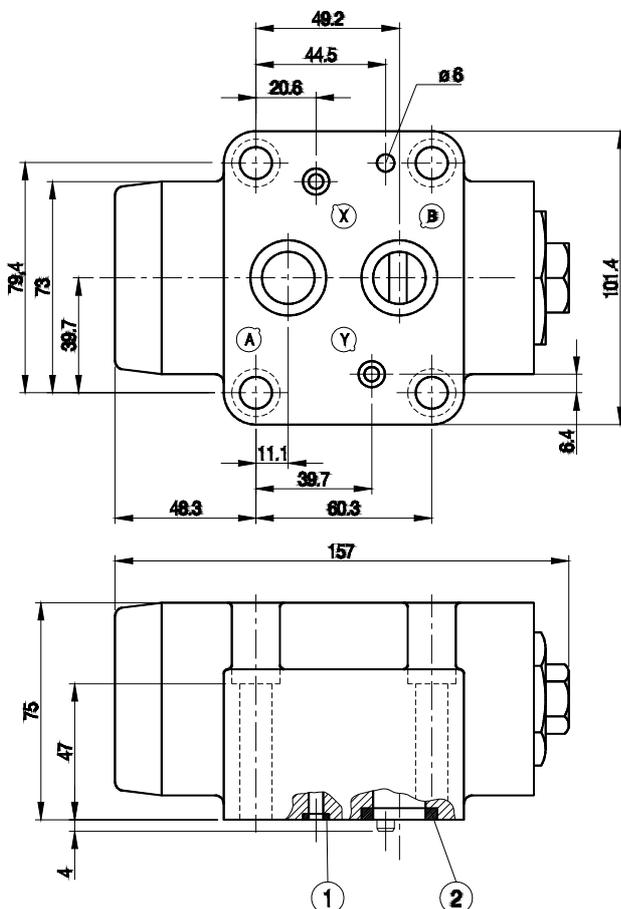
Hydraulic fluid	Mineral oil or phosphate ester
Nominal fluid viscosity	37 mm <sup>2</sup> /s at the temperature of 328 K
Viscosity range	2.8 to 380 mm <sup>2</sup> /s
Optimum working temperature( fluid in a tank )	313 - 328 K
Fluid temperature range	243 - 343 K
Required fluid filtration	16 μm
Recomended fluid filtration	10 μm
Maximum working pressure	32 MPa
Cracking pressure	0.05 MPa
Maximum pilot pressure	32 MPa
Weight	6 kg

## CONTROL AREAS

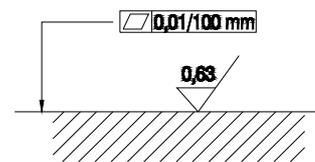
$F_1$  - surface area of the poppet 7  
 $F_2$  - surface area of the pilot ball 6  
 $F_3$  - surface area of the spool 8  
 $F_4$  - surface area of the rod of the spool 8 inverse to  $F_3$   
 $C$  - pressure affecting area  $F_3$  required for exceeding the spring 4 force

Valve version	$F_1$ (cm <sup>2</sup> )	$F_2$ (cm <sup>2</sup> )	$F_3$ (cm <sup>2</sup> )	$F_4$ (cm <sup>2</sup> )	C(MPa)
UZSB 20...X	3.73	0.76	9.61	---	0.087
UZSB 20...Z	3.73	0.76	9.61	2.0	0.087

## OVERALL DIMENSIONS

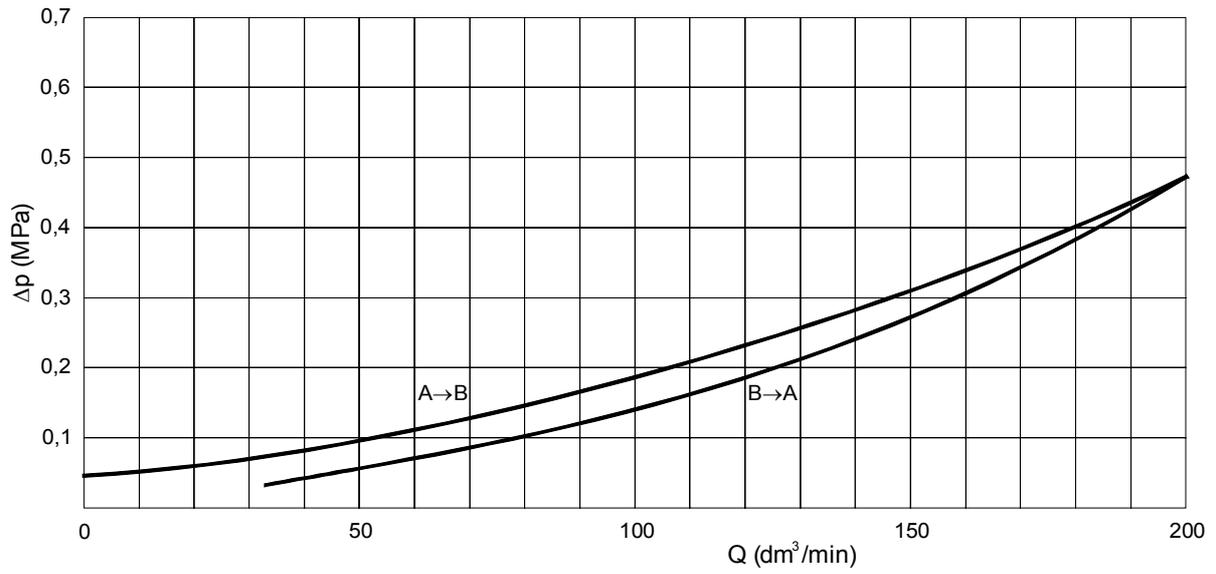


- item 1 - O-ring 8.3 × 2.4 - 1 piece for version X  
- 2 pieces for version Z
- item 2 - O-ring 22 × 3 - 2 pieces



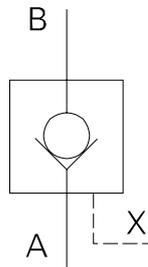
Admissible surface roughness and flatness deviation for a subplate face.

**PERFORMANCE CURVES**, measured at  $\nu = 41 \text{ mm}^2/\text{s}$  and  $T = 323 \text{ K}$

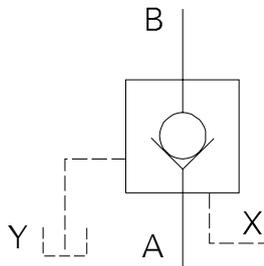


**SCHEMES**

Hydraulic scheme



for version X



for version Z

## HOW TO ORDER

Orders coded in the way showed below should be forwarded to the manufacturer.

**UZSB 20** - / \*

**Series number**  
 10 = 10  
 ( 10 - 19 ) - installation and connection  
 dimensions unchanged

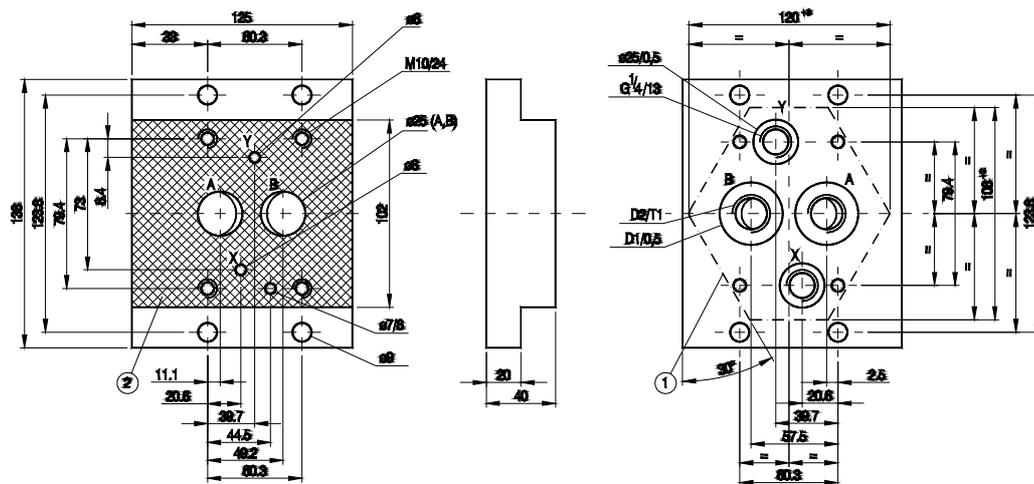
Additional requirements in clear text  
 ( to be agreed with the manufacturer )

**Draining of leakage**  
 Internally drained ( without drain port ) = X  
 Externally drained ( with drain port ) = Z

**Sealing**  
 Fluid on mineral oil base - no designation  
 Fluid on phosphate ester base - V

Coding example : UZSB 20 - 30/X

## CONNECTION DIMENSIONS FOR SUBPLATE



item 1 - recess in subplate  
 item 2 - interface

Valve	Subplate	D1	D2	T1	Bolts mounting the valve to subplate	Torque [Nm]	Weight [kg]
Size 20	G 412/01	42	G 3/4	17	4 x M10 x 60 - 10.9 PN - 87/M-82302 (DIN 912)	73	3.3
	G 413/01	47	G 1	20			

Note : Fixing bolts have to be ordered separately

PONAR WADOWICE S.A.  
ul. Wojska Polskiego 29  
34-100 Wadowice  
tel. 033/ 823 39 43, 823 30 41  
fax 033/ 873 48 80  
e-mail: ponar@ponar-wadowice.pl

