

### DATA SHEET - OPERATION MANUAL

#### APPLICATION

Pilot operated double check valve type Z2S6... serves to shut-off an oil flow in one direction and allow free flow in the opposite direction.

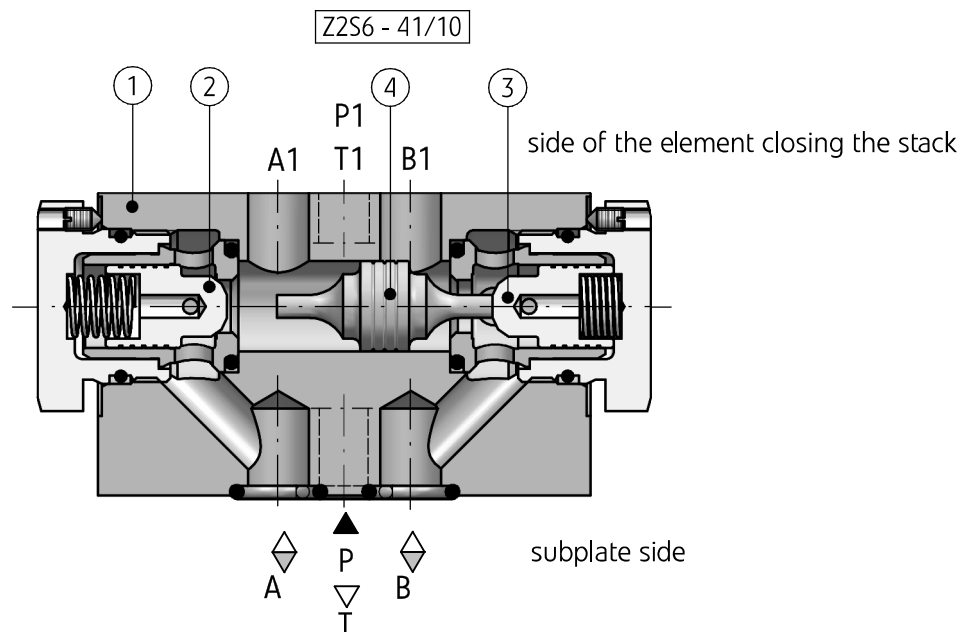
These valves are mostly used :

- to relieve a working circuit under pressure
- to prevent a load from falling in the case of a line rupture
- to prevent creep movements of hydraulically stressed users.

These valves are generally fitted as an intermediate element between the control valve and the subplate. The valve can be installed in any position.



#### DESCRIPTION OF OPERATION



Pilot operated double check valve type Z2S6 is made by fitting two pilot operated check valves (2) and (3) in one housing (1). There is a free flow from A1 to A or/and B1 to B while from A to A1 and/or B to B1 flow is blocked. When, for example fluid flows through the valve from A1 to A, the piston (4) is shifted to the right and pushes the poppet of the check valve (3).

The connection from B to B1 is then open. In the similar way the valve operates in the direction B1 to B. Pressure dissipation at ports A1 or B1 causes both valves to close. In order to ensure safe closing of valves both user ports A1 and B1 should be connected with a return line.

## TECHNICAL DATA

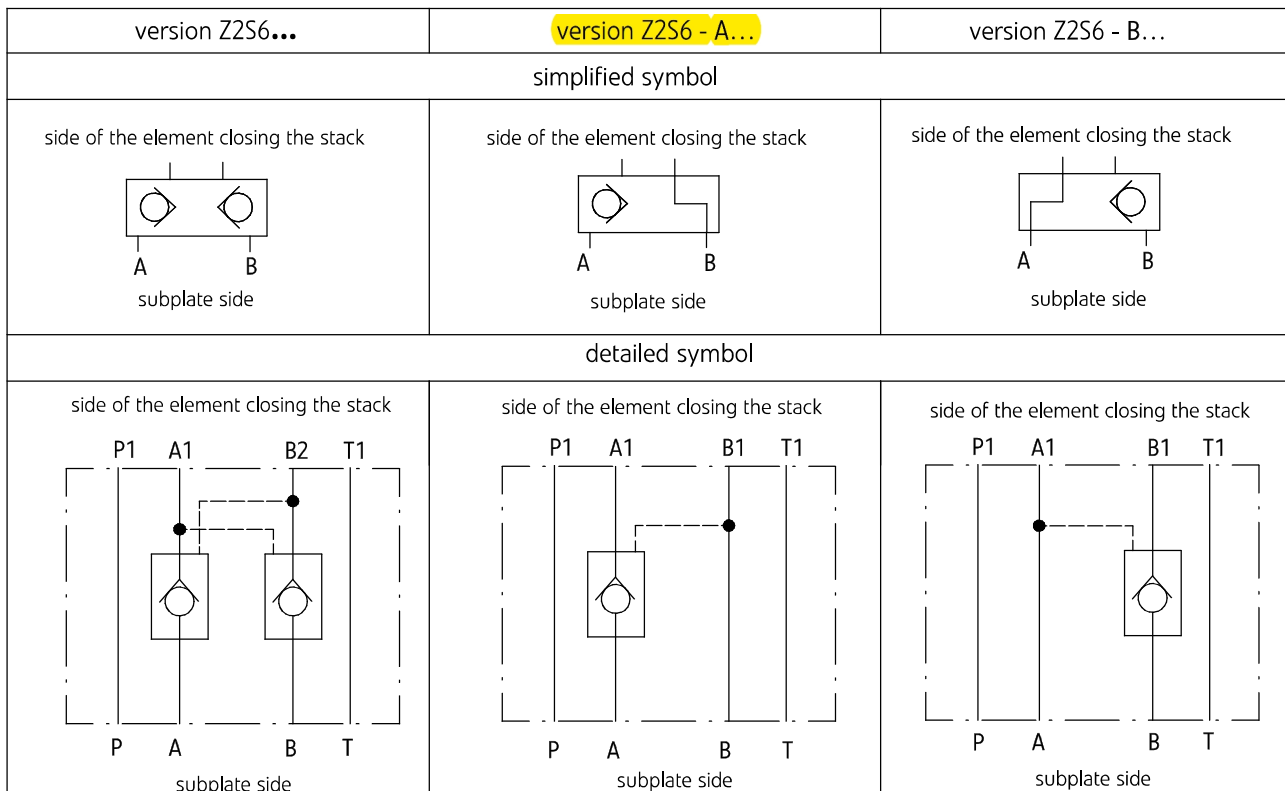
Hydraulic fluid	mineral oil		
Required fluid cleanliness class	ISO 4406; class 20/18/15		
Nominal fluid viscosity	37 mm <sup>2</sup> /s at temperature 55 °C		
Viscosity range	2,8 up to 380 mm <sup>2</sup> /s		
Fluid temperature range (in a tank)	recommended	40 °C up to 55 °C	
	max	-20 °C up to +70 °C	
Ambient temperature range	- 20 °C up to +70 °C		
Maximum operating pressure	31,5 MPa		
Maximum control pressure	31,5 MPa		
Cracking pressure	0,1 MPa	0,15 MPa	0,3 MPa
Weight	0,8 kg		

## INSTALLATION AND OPERATION REQUIREMENTS

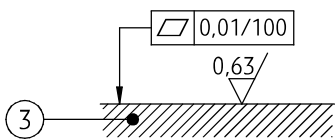
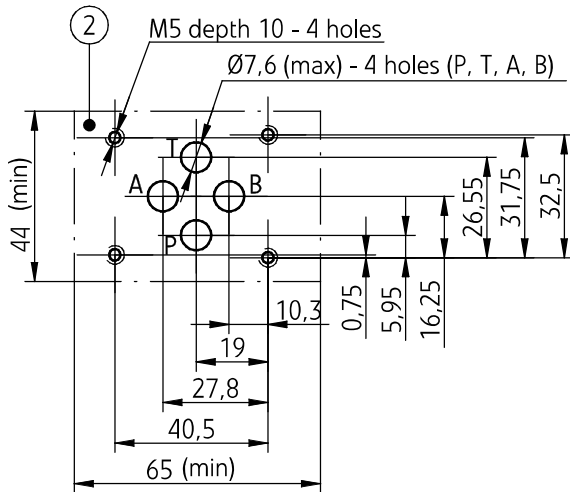
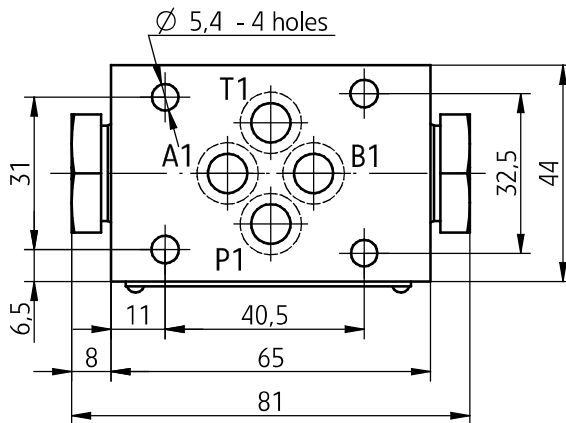
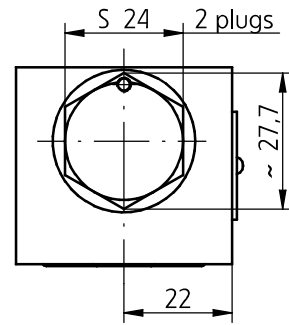
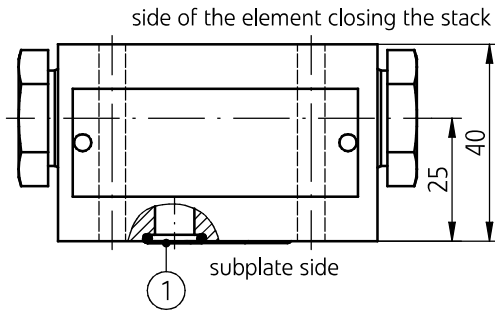
- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>Only fully functional and operational valve must be used.</li> <li>During the period of operation must be kept fluid viscosity acc. to requirements defined in this Data Sheet - Operation Manual</li> <li>In order to ensure failure free and safe operation the following must be checked: <ul style="list-style-type: none"> <li>proper working of the valve</li> <li>cleanliness of the hydraulic fluid</li> </ul> </li> <li>Due to heating of valve body to high temp., the valve shall be placed in such way to eliminate the risk of</li> </ol> | <ol style="list-style-type: none"> <li>accidental contact with the valve body during operation or to apply suitable covers acc. to PN-EN ISO 13732 - 1 and PN - EN 4413</li> <li>In order to ensure tightness of the directional valve block, one should take care of dimension of sealing rings, tightening torques and valve operation parameters given in this Data Sheet - Operation Manual</li> <li>A person that operates the valve must be thoroughly familiar with this Data Sheet - Operation Manual.</li> </ol> |
|---|---|

## DIAGRAMS

Graphic symbols for the valve type Z2S6...



# OVERALL AND CONNECTION DIMENSIONS



- 1 - Sealing o-ring 9,2 x 1,8 - 4 pcs/set (P, T, A, B.)
- 2 - Porting pattern - configuration of connection holes in subplate and surface of the valve body from the side of element closing the stack in accordance with the standard PN-ISO 4401 designation ISO 4401-03-02-0-94 (CETOP 03) fixing screws M5 x L\* -10.9 - in accordance with PN-EN ISO 4762 - 4 pcs/set; must be ordered separately; tightening torque  $M_d = 9 \text{ Nm}$
- 3 - Subplate surface required

**NOTE:**

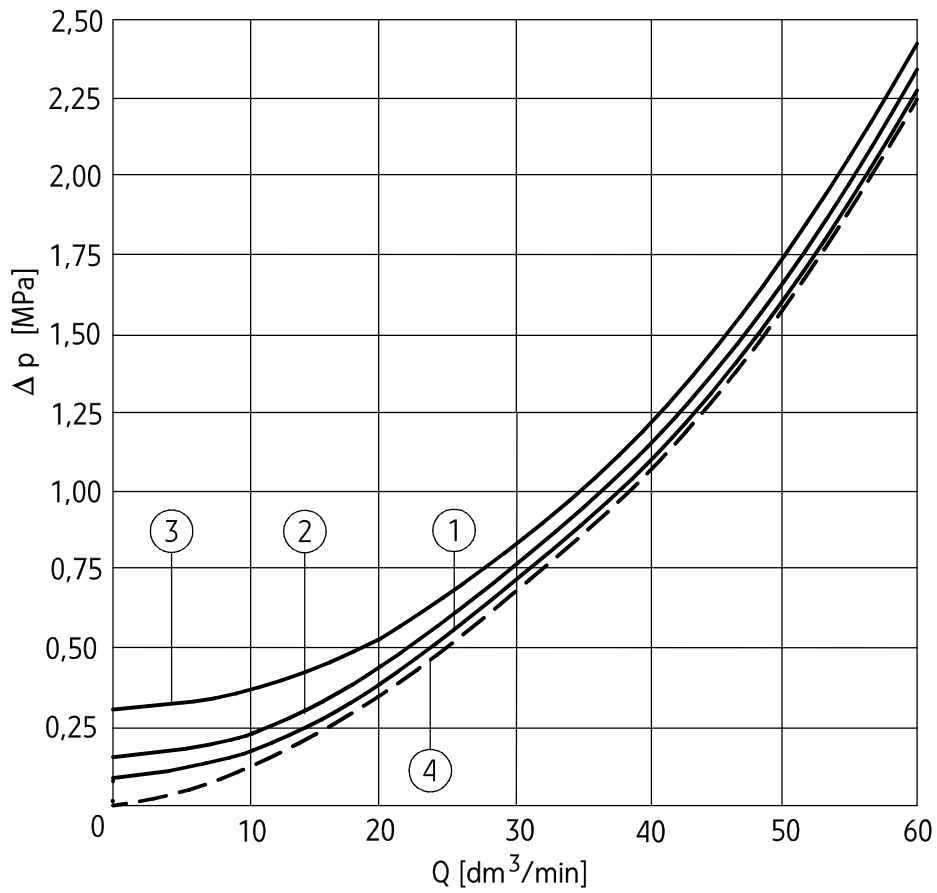
(\*) - Required length of the screws L is related to type and the number of hydraulic components sandwich fitted

## PERFORMANCE CURVES

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

Flow resistance curves

performance curves $\Delta p(Q)$ for check valve type Z2S6...			
flow direction	number of the diagram		
— A1 → A / B1 → B	cracking pressure		
	0,1 MPa	0,15 MPa	0,3 MPa
	1	2	3
— A → A1 / B → B1 (adjusted check valve)	4		



## HOW TO ORDER

➤ **Z2S** | **6** - **A** - **41** / **30** | | **\***

<b>Nominal size (NS)</b> <b>NS6</b>	= <b>6</b>
<b>Version</b> <b>with two valves</b>	= <b>no designation</b>
with one valve in line <b>A</b>	= <b>A</b>
with one valve in line <b>B</b>	= <b>B</b>
<b>Series number</b> (40 - 49) - connection and instalation dimensions unchanged	= <b>4X</b>
<b>series 41</b>	= <b>41</b>
<b>Cracking pressure</b> <b>0,1 MPa</b>	= <b>10</b>
0,15 MPa	= <b>15</b>
<b>0,3 MPa</b>	= <b>30</b>
<b>Sealing type</b> <b>NBR</b> (for fluids on mineral oil base)	= <b>no designation</b>
FKM (for fluids on phosphate ester base)	= <b>V</b>
Further requirements in clear text (to be agreed with the manufacturer)	

### NOTES:

The valve should be ordered according to the above coding.

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

Coding example: Z2S6 - 41/10

## SUBPLATES AND FIXING SCREWS

Subplates must be ordered according to the data sheet WK 496 480. Subplates:

G 341/01 - threaded connections G 1/4

**G 342/01** - threaded connections **G 3/8**

G 502/01 - threaded connections G 1/2

G 341/02 - threaded connections M14 x 1,5

G 342/02 - threaded connections M16 x 1,5

### NOTE:

The subplate symbol in bold is the preferred version available in short delivery time.

Subplates and fixing screws M5 x L\* - 10,9 - 4 pcs/set in accordance with PN - EN ISO 4762

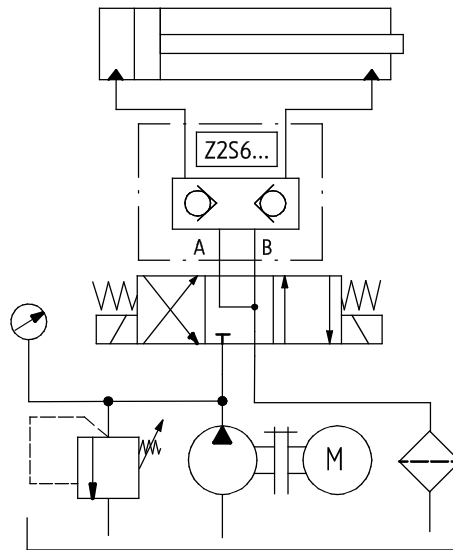
must be ordered separately.

Tightening torque  $M_d = 9 \text{ Nm}$

### NOTE:

(\*) - Required length of the screws L is related to type and the number of hydraulic components sandwich fitted.

## EXAMPLE OF APPLICATION IN HYDRAULIC SYSTEM



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