

# Double check valve pilot-operated, sandwich type Z2S16

NS 16 |  $p_{max}$  35 MPa |  $Q_{max}$  200 dm<sup>3</sup>/min | WK 450 310



## DATA SHEET - OPERATION MANUAL

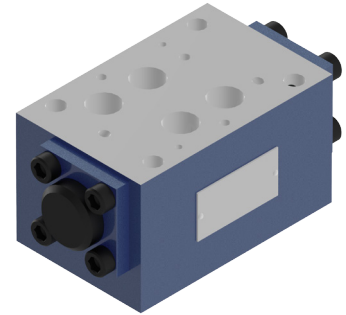
### APPLICATION

Double check valve, pilot operated, sandwich type **Z2S16....** is used for cutting off oil flow in one direction (with a possibility of controlling its opening) and opening free flow in the opposite direction.

The valve is usually used for:

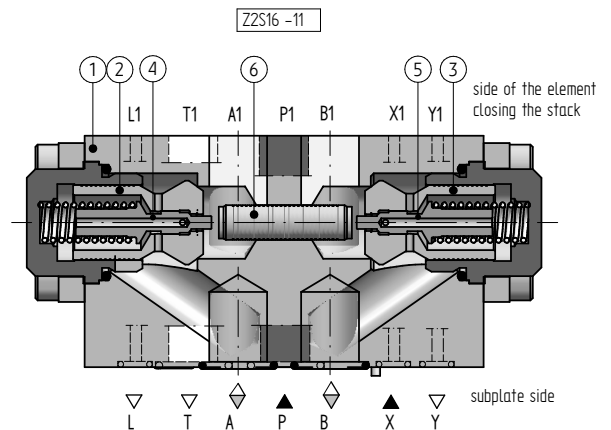
- unloading the valve that is under pressure
- preventing load drop in the event of a circuit break
- preventing creep movements of the blocked receivers.

The valve is used for sandwich mounting (inter-plate) in any working position.



### DESCRIPTION OF OPERATION

Double check valve, pilot-operated type **Z2S16...** was made by fitting into one body 1 two pilot-operated check valves 2 and 3 equipped with pre-opening ball valves 4 and 5. In the direction of flow from **A1** to **A** or **B1** to **B** there is a free flow, but from **A** to **A1** or **B** to **B1**, the flow is closed. If there is a flow in the valve e.g. from **A1** to **A**, the piston 6 is moved to the right and pushes the pre-opening ball 5 from its seat, and then the main poppet 3. The connection from **B** to **B1** is then open. The valve operates in a similar way at flow from **B1** to **B**. Application of pre-opening ball valve causes initial, throttled expansion of the pressurised fluid, which prevents the occurrence of strokes/shocks during control. Pressure loss in lines **A1** or **B1** causes both valves to close. In order to obtain a safe and tight closure of both valves, the **A1** and **B1** lines must be connected with the drain.

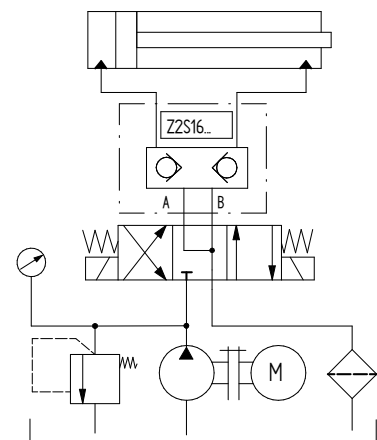


### TECHNICAL PARAMETERS

hydraulic fluid	mineral oil
required fluid cleanliness class	ISO 4406 class 20/18/15
nominal fluid viscosity	37 mm <sup>2</sup> /s at a temperature 55 °C
viscosity range	2,8 ÷ 380 mm <sup>2</sup> /s
fluid temperature range (in tank)	recommended 40 ÷ 55 °C; max. -20 ÷ 70 °C
ambient temperature range	-20 ÷ 70 °C
max. working pressure	35 MPa
cracking pressure	0,1 MPa
area ratio (valve surface / piston surface)	4 : 1
area ratio (ball seat surface / piston surface)	1 : 4
weight	6,8 kg

assembly and operation requirements at: [www.operating-conditions.ponar.pl](http://www.operating-conditions.ponar.pl)

### EXAMPLE OF APPLICATION

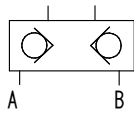


## OVERALL AND CONNECTION DIMENSIONS

version **Z2S16...**

simplified symbol

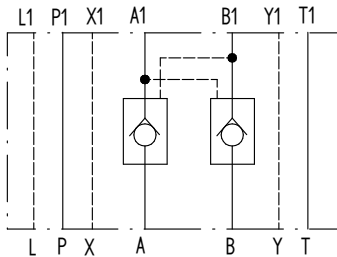
side of the element closing the stack



subplate side

detailed symbols

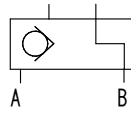
side of the element closing the stack



subplate side

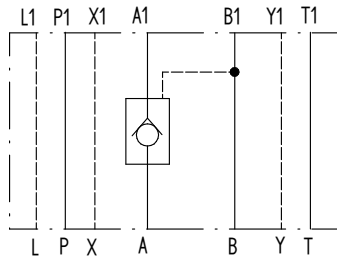
version **Z2S16A...**

side of the element closing the stack



subplate side

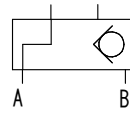
side of the element closing the stack



subplate side

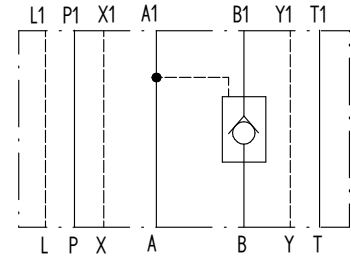
version **Z2S16B...**

side of the element closing the stack



subplate side

side of the element closing the stack

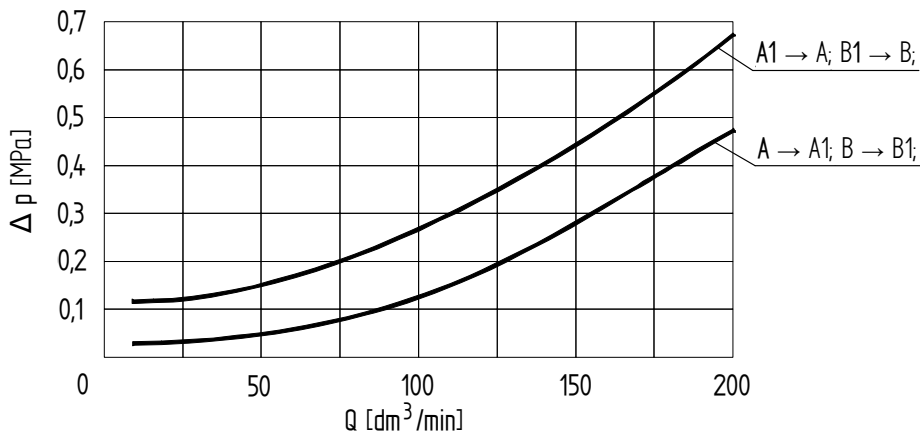


subplate side

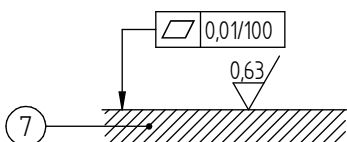
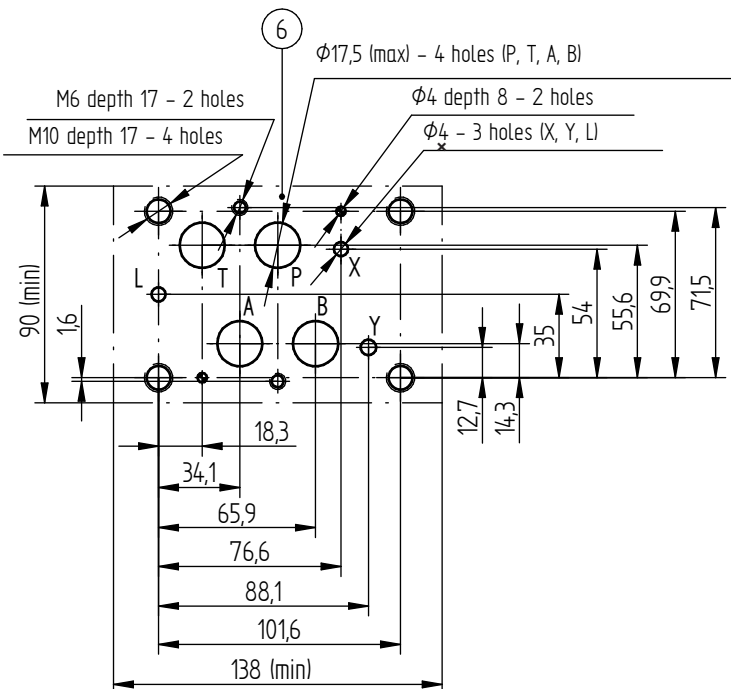
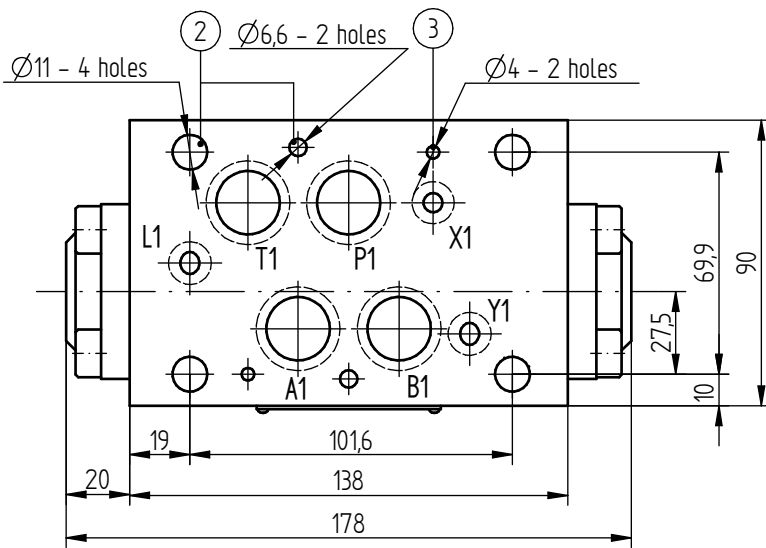
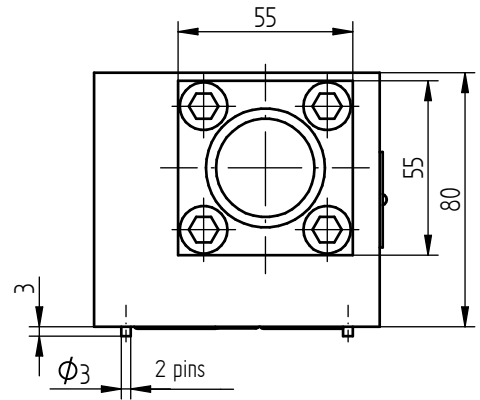
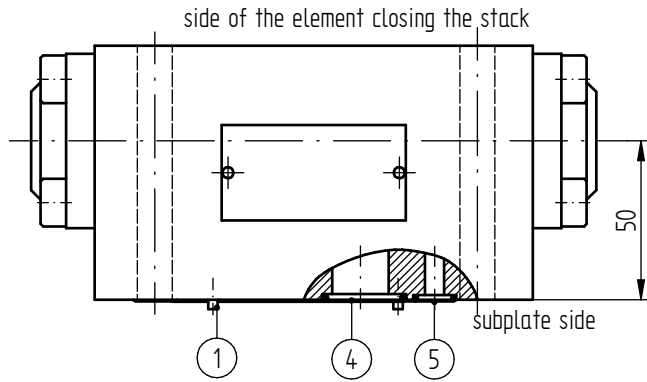
## PERFORMANCE CURVES

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

flow resistance curves

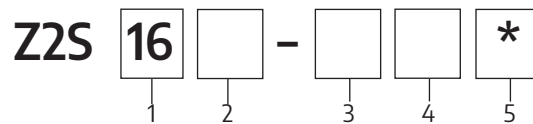


## OVERALL AND CONNECTION DIMENSIONS



1. positioning pin - 2 pcs
2. holes for screws fixing the valve
3. holes for positioning pin
4. o-ring  $22,3 \times 2,4$  - 4 pcs/set (P, T, A, B)
5. o-ring  $10 \times 2$  - 3 pcs/set (X, Y, L)
6. porting pattern of subplate compliant with ISO 4401; designation **ISO 4401-08-07-0-94 (CETOP08)**
7. required surface quality of the valve contact surface

## HOW TO ORDER



### 1 nominal size

NS16 = 16

### 2 design version

with two valves = ∅

with valve at A port = A

with valve at B port = B

### 3 series number

series 11 = 11

(10 ÷ 19) - connection and installation

dimensions unchanged

### 4 sealing

NBR (for fluids based on mineral oils) = ∅

FKM (for fluids based on phosphate esters) = V

### 5 further requirements = \*

(to be agreed upon with the Manufacturer)

∅ indicates that the box should be left blank.

The **symbols in bold** are the preferred versions available in short delivery time.

Coding example: **Z2S16-11**

## SUBPLATE AND MOUNTING SCREWS

Subplates must be ordered according to data sheet **WK 450 788**:

G174/01 – threaded connections P, T, A, B – G 1; X, Y, L – G ¼

Subplates and mounting screws for mounting the valve:

**M10 × L\*** – 10.9 – 4 pcs/set **M6 × L\*** – 10.9 – 2 pcs/set

acc. to **PN – EN ISO 4762** (PN/M – 82302) **delivered on separate order**

Tightening torque of the screws:

**M10 × L\*** –  $M_d = 62 \text{ Nm}$

**M6 × L\*** –  $M_d = 12,5 \text{ Nm}$

\* - required length of L screws depends on the type and number of elements in the stack.

## CONTACT

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