

|   |  |                |                |                  |
|---|--|----------------|----------------|------------------|
| BEIJING HUADE<br>HYDRAULIC INDUSTRIAL<br>GROUP CO.,LTD. | <b>Pilot operated Check valve sandwich<br/>plate Type Z2S (New Series)</b> |                |                | RE 21601/12.2004 |
|   | Size 6, 10<br>16, 22   | up to 31.5 MPa | up to 450L/min |                  |

**Features:**

- For use in vertical stacking assemblies
- For the leak free closure of one or two service ports
- Porting pattern to Din 24 340 form A, ISO 4401 and CETOP-RP 121H



**Functional, section**

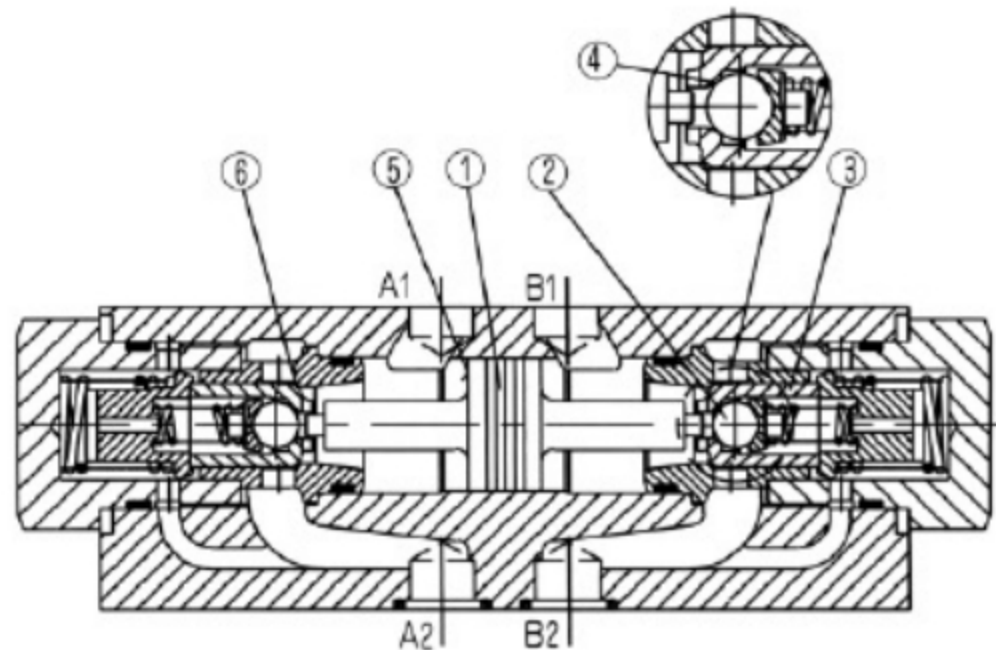
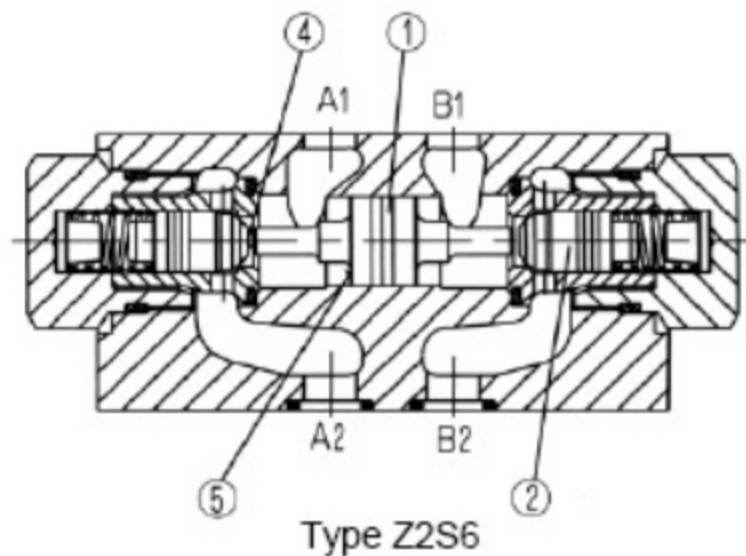
Hydraulic pilot operated check valves type Z2S are of sandwich plate design.

They are used for the leak-free closure of one or two service ports, even for long periods of time.

Free flow occurs from A1 to A2 or B1 to B2. Flow in the opposite direction is blocked.

When fluid flows from A1 to A2, the spool (1) is pressured and is pushed to the right, thereby opening the ball poppet valve (2) which then opens the poppet (3).

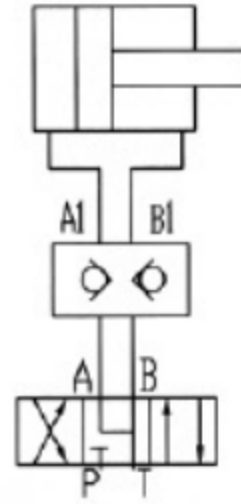
In order to ensure correct closing of the valve, the service ports of the directional valve must be connected to tank in the neutral position.



- 1 Spool
- 2 Ball poppet valve
- 3 Poppet
- 4 Area A1
- 5 Area A2
- 6 Area A3

Type Z2S10

# Typical circuit example

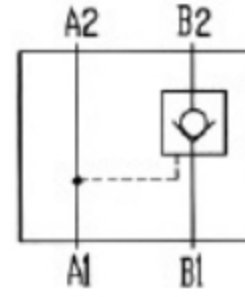
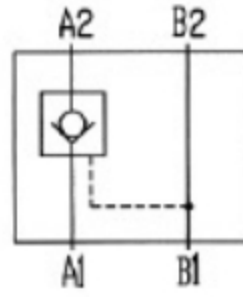
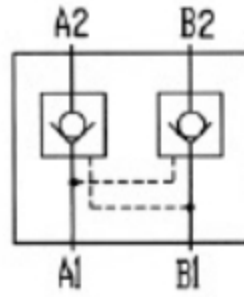


## Symbols

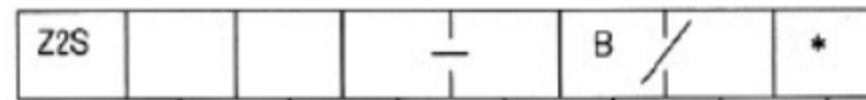
Z2S.../

Z2S...A.../

Z2S...B.../



## Ordering details




Size6 = 6  
 Size10 = 10  
 Size16 = 16  
 Size22 = 22

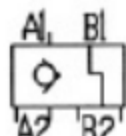
Further details in clear text

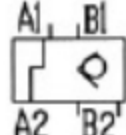
No code = Mineral oils  
 V = Phosphate ester

B =The technology of Beijing Huade Hydraulic

30 = Series 30 to 39 (Apply to size 10)  
 (30 to 39: unchanged installation and connection dimensions)  
 50 = Series 50 to 59 (Apply to size 16,22)  
 (50 to 59: unchanged installation and connection dimensions)  
 60 = Series 60 to 69 (Apply to size 6)  
 (60 to 69: unchanged installation and connection dimensions)

Leak free closure of ports A and B  = No code

Leak free closure of port A  = A

Leak free closure of port B  = B

1 = Cracking pressure 0.15MPa (only for size6, 10)  
 Cracking pressure 0.3MPa (only for size16, 22)

2 = Cracking pressure 0.3MPa  
 Cracking pressure 0.5MPa (only for size 16,22)

3 = Cracking pressure 0.6MPa (only for size10)  
 Cracking pressure 0.7MPa (only for 6)  
 Cracking pressure 0.75MPa (only for 16, 22)

4 = Cracking pressure 1.0MPa (only for 10, 16, 22)

## Technical data

|                                  |                      |   |               |              |              |
|----------------------------------|----------------------|---|---------------|--------------|--------------|
| Size                             |                      | 6   | 10            | 16           | 22           |
| Max. flow L/min                  | (L/min)              | to 60   | to 120        | to 300       | to 450       |
| Max. operating pressure          | (MPa)                | 31.5  |               |              |              |
| Cracking pressure                | (MPa)                | see curve   |               |              |              |
| Directions                       |                      | see symbols   |               |              |              |
| Area ratio                       |                      | A1/A2=1:3   | A1/A2=1:11.45 | A1/A2=1:11.8 | A1/A2=1:13.6 |
|                                  |                      |   | A3/A2=12.86   | A3/A2=12.8   | A3/A2=12.8   |
| Pressure fluid                   |                      | Mineral oils(for NBR seal) or phosphate ester(for FPM seal) |               |              |              |
| Pressure fluid temperature range | (°C)                 | -30 to +80  |               |              |              |
| Viscosity range                  | (mm <sup>2</sup> /s) | 2.8 to 500  |               |              |              |
| Weight                           | (kg)                 | approx. 0.8   | approx. 3     | approx. 6.5  | approx. 12   |

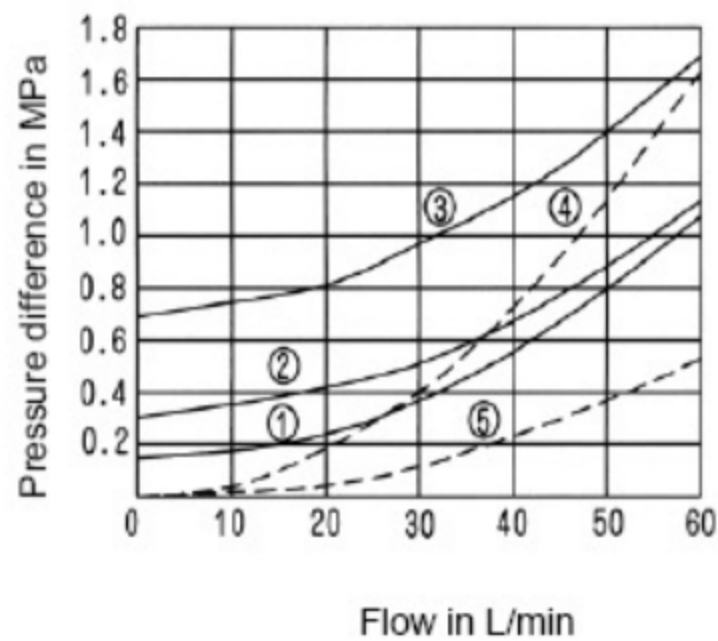
## Characteristic curves (measured at $\nu = 41 \text{ mm}^2/\text{s}$ and $t = 50 \text{ °C}$ )

### Type Z2S6

— = A1 → A2; B1 → B2

..... = A2 → A1; B2 → B1

- 1, Cracking pressure 1=0.15MPa
- 2, Cracking pressure 2=0.3MPa
- 3, Cracking pressure 3=0.7MPa
- 4, Through check valve cartridge
- 5, Flow freely  
(Without check valve cartridge type "A" and type "B")

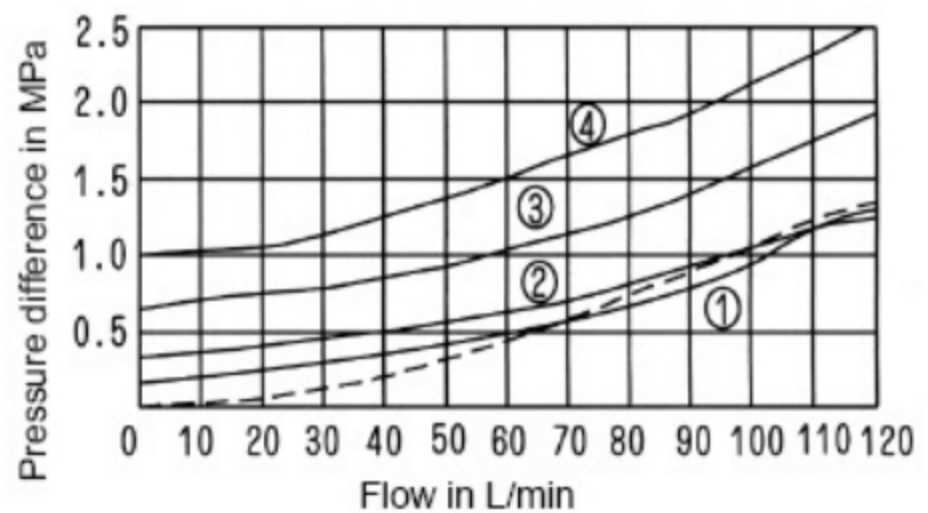


### Type Z2S10

— = A1 → A2; B1 → B2

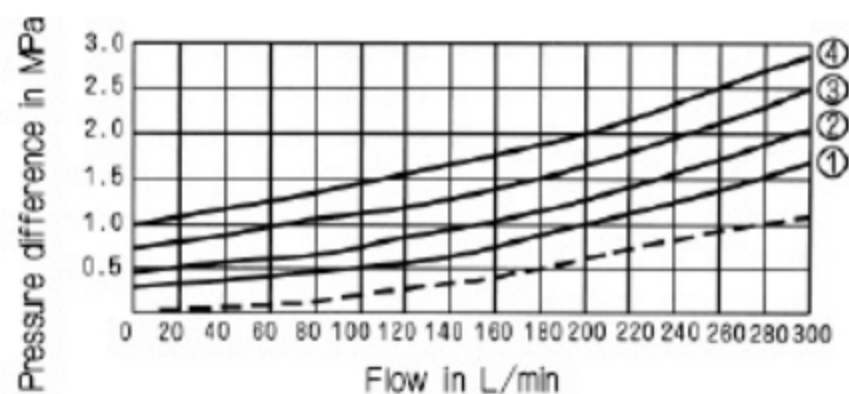
..... = A2 → A1; B2 → B1

- 1, Cracking pressure 1 =0.15MPa
- 2, Cracking pressure 2 =0.3MPa
- 3, Cracking pressure 3 =0.6MPa
- 4, Cracking pressure 4 =1.0MPa



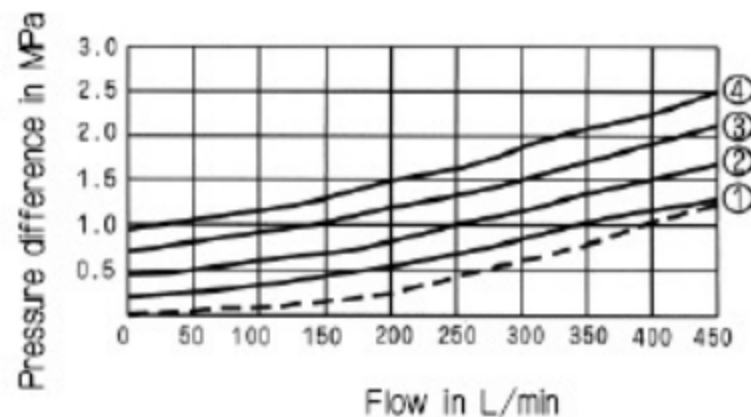
### Type Z2S16

— = A1 → A2, B1 → B2  
 - - - = A2 → A1, B2 → B1



### Type Z2S22

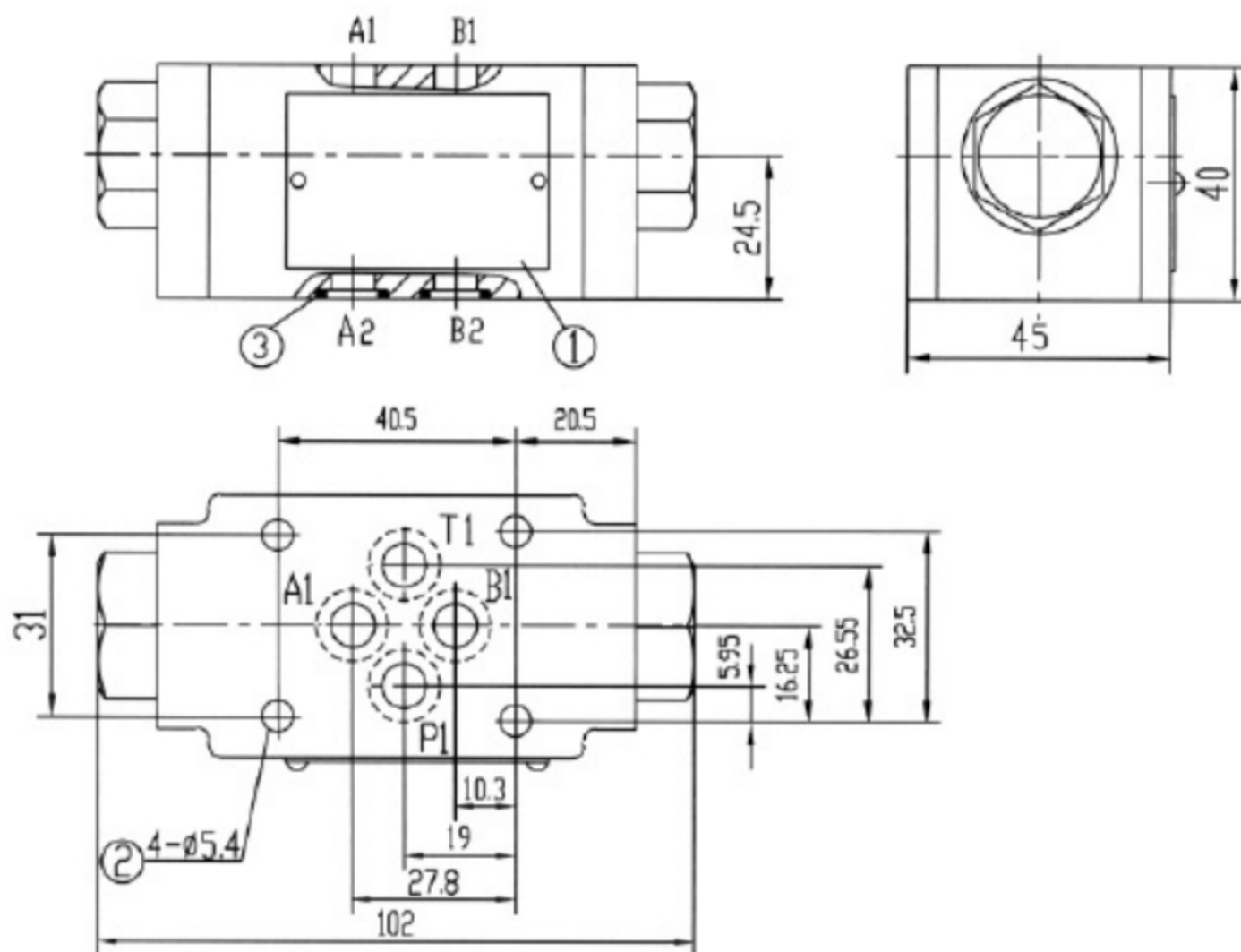
— = A1 → A2, B1 → B2  
 - - - = A2 → A1, B2 → B1



### Unit dimensions

(Dimensions in mm)

#### Size6

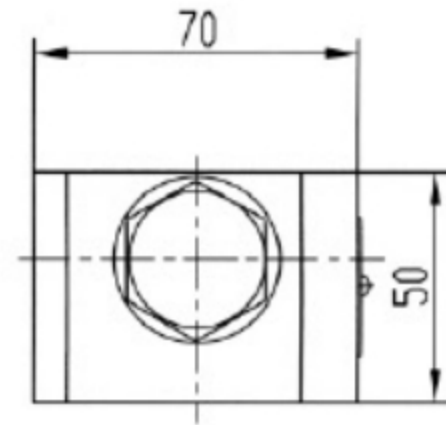
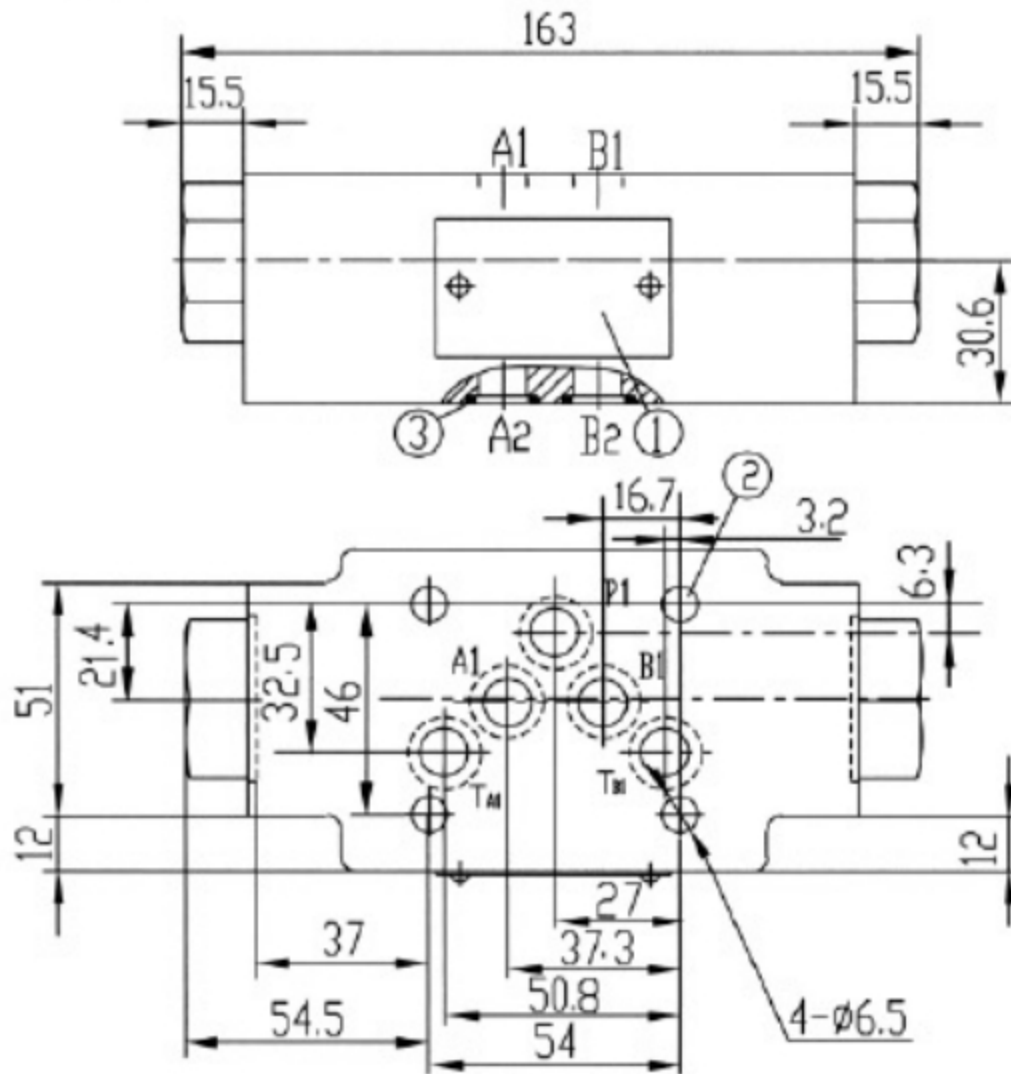


1. Name plate
2. Holes for mounting
3. O-rings 9.25 x 1.78 for four ports  
 Valve fixing screws 4 - M5 - 10.9  
 (GB/T70.1-2000)  
 Screw torque:  $M_A = 8.9 \text{ Nm}$

**Unit dimensions**

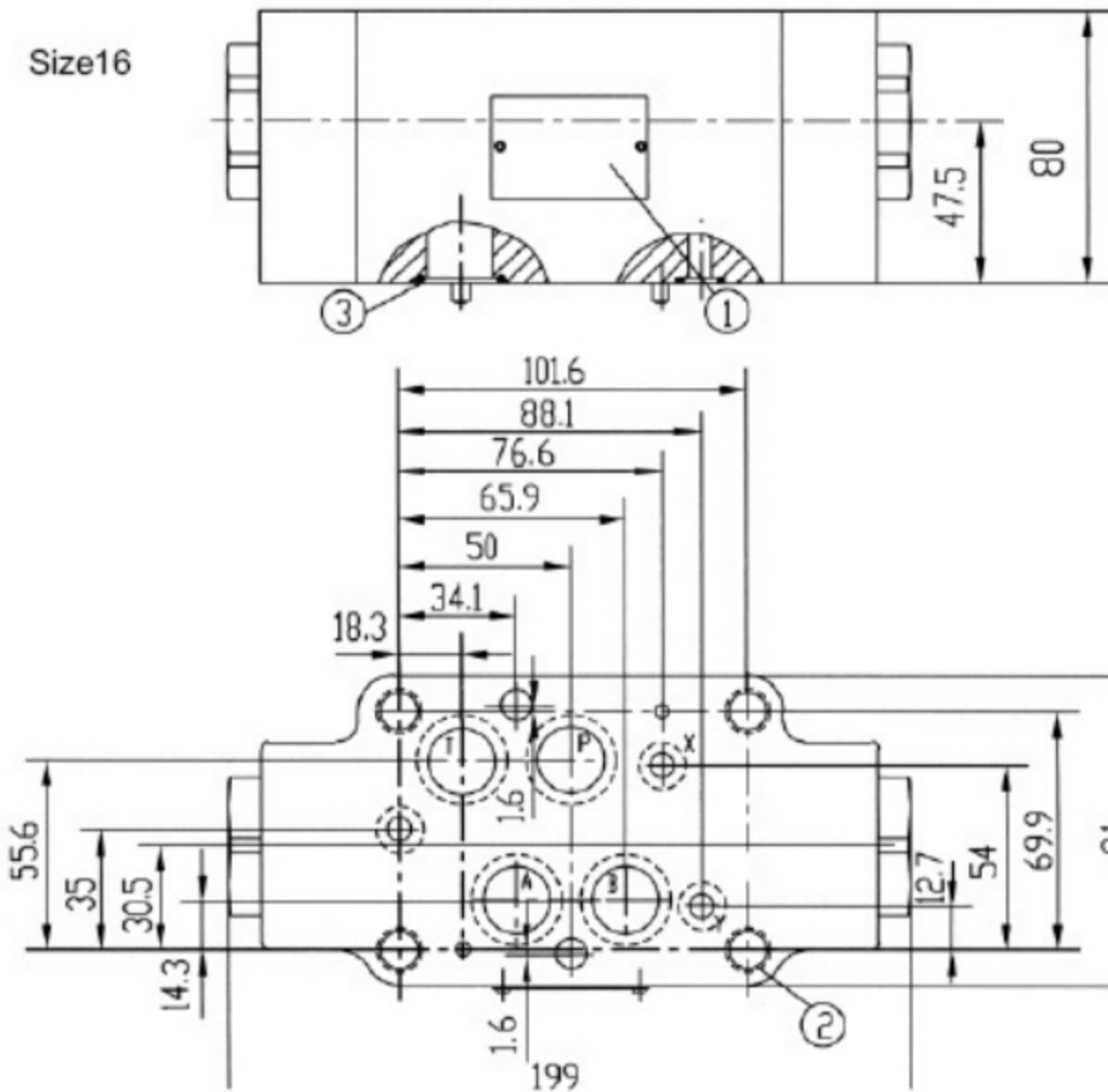
**(Dimensions in mm)**

Size10



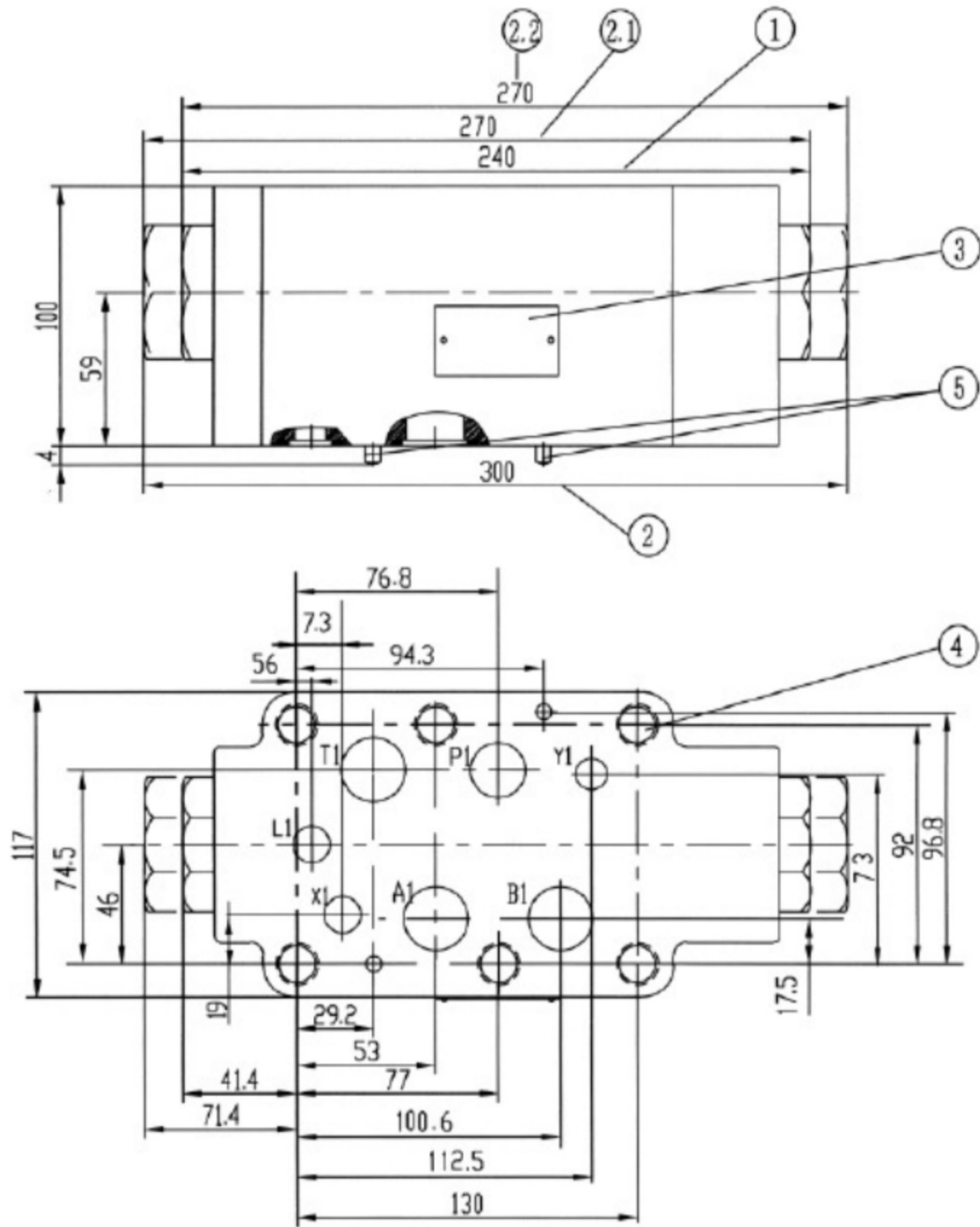
- 1. Nameplate
- 2. Holes for mounting  
4 -  $\phi 6.5$
- 3. O-rings 12x 2 for 5 ports  
P, A, B,  $T_{A1}$ ,  $T_{B1}$   
Valve fixing screws  
4-M6 -10.9  
(GB/T70.1-2000)  
Screw torque:  $M_A=15.5\text{Nm}$

Size16



- 1. Nameplate
- 2. Holes for mounting
- 3. O-rings 22x 2.5 for ports  
P, A, B, T  
10X2 for ports X, Y, L  
Valve fixing screws:  
① 4-M10 -10.9  
(GB/T70.1-2000)  
Screw torque:  $M_A=75\text{Nm}$   
② 2-M6 -10.9  
(GB/T70.1-2000)  
Screw torque:  $M_A=15.5\text{Nm}$

Size22



- 1 Cracking pressure 0.3MPa or 0.5MPa , Leak free closure of ports A and B
- 2 Cracking pressure 0.75MPa or 1.0MPa , Leak free closure of ports A and B
- 2.1 Cracking pressure 0.75MPa or 1.0MPa , Leak free closure of port A
- 2.2 Cracking pressure 0.75MPa or 1.0MPa , Leak free closure of port B
- 3 Label plate
- 4 Valve fixing screws:  
6- M14-10.9 (GB/T70.1-2000) ,  
Screw torque: $M_A=205\text{Nm}$
- 5 Fixing pin

Required surface finish of mating piece

