

# Modular Hydraulic Control Check Valve

Model: Z2S22...5X



- ◆ Size 22
- ◆ Maximum working pressure 315 bar
- ◆ Maximum working flow 450 L/min

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## Features

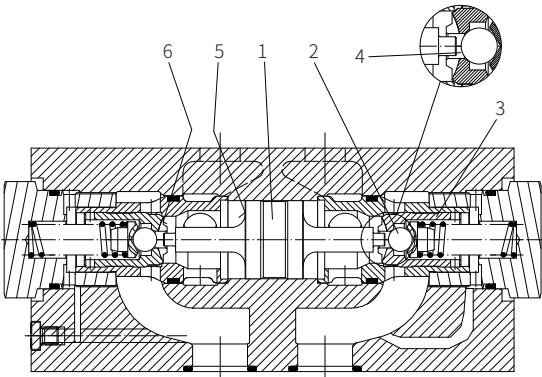
- Modular valve
- One or two working oil ports blocked for leakage-free as required
- For vertical stacking installation
- 4 cracking pressures, optional

Function description, sectional drawing

The Z2S type is a superimposed structure hydraulically controlled check valve. This type of valve can keep one or two working oil ports leakage-free even if it is shut down for a long time.

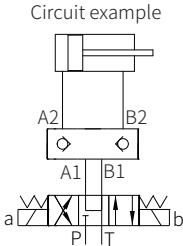
There is a free flow in the direction A1 to A2 or B1 to B2 but closed in the opposite direction. When the oil flows from A1 to A2, the spool (1) is pushed to the right under pressure, opens the ball valve core (2) and then opens the sleeve valve core (3).

In order to ensure that the valve is closed correctly in the center position, the working oil port of the directional valve must be connected to the tank when it is in the neutral position (see circuit example).



Model Z2S2...-5XJ/

4 ball, area A1  
5 control spool, area A2  
6 Valve spool, area A3



Models and specifications

Z2S

22

5X

\*

modular hydraulic control check valve

size 22

leakage-free blocking in oil ports A and B

oil port A

oil port B

cracking pressure 3 bar

cracking pressure 5bar

cracking pressure 7.5bar

cracking pressure 10bar

=22

=

=A

=B

=1

=2

=3

=4

more information in text

sealing material

No code=

V=

50 to 59 series

(50 to 59 series installation and connection size unchanged)

NBR seals

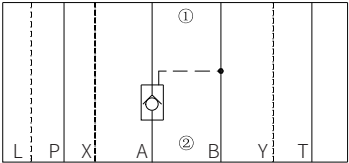
FKM seals

(consult for other seals)

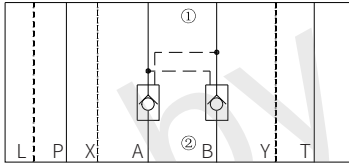
Functional symbols

(①= Valve side, ②= Subplate side)

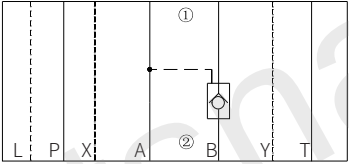
Model Z2S22A-...



Model Z2S22-...



Model Z2S22B-...



Technical parameters

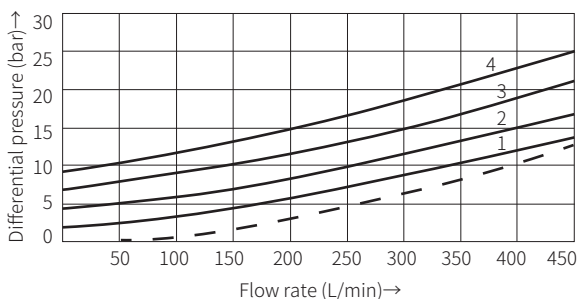
| Overview                                 |                    |                                                                                                                                                                                                                                                |
|------------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Installation position                    |                    | Optional                                                                                                                                                                                                                                       |
| Environmental temperature range          | °C                 | -30 to +80 (NBR seal)<br>-20 to +80 (FKM seal)                                                                                                                                                                                                 |
| weight                                   | kg                 | About 12                                                                                                                                                                                                                                       |
| Hydraulic                                |                    |                                                                                                                                                                                                                                                |
| Maximum working pressure                 | bar                | 315                                                                                                                                                                                                                                            |
| Maximum flow                             | L/min              | 450                                                                                                                                                                                                                                            |
| Flow direction                           |                    | See the symbol                                                                                                                                                                                                                                 |
| Cracking pressure in free flow direction |                    | See characteristic curve                                                                                                                                                                                                                       |
| Area ratio                               |                    | A1/A2=1/13.6; A3/A2=1/2.8; (See section view above)                                                                                                                                                                                            |
| Pressure medium                          |                    | Mineral oil (HL, HLP) <sup>1)</sup> in accordance with DIN 51524; Fast living organisms degraded oil according to VDMA 24568; HETG (Rapeseed oil) <sup>1)</sup> ; HEPG(Polyethyleneglycol) <sup>2)</sup> ; HEES (Synthetic Fats) <sup>2)</sup> |
| Viscosity range                          | mm <sup>2</sup> /s | 2.8 to 500                                                                                                                                                                                                                                     |
| Cleanliness of oil                       |                    | The maximum allowable pollution level of oil is ISO4406 level 20/18/15                                                                                                                                                                         |

1) For NBR seal and FKM seal.  
2) Only for FKM seal.  
3) The oil must meet the cleanliness degree requested by the components in the hydraulic system. Effective oil filtration can prevent failure and increase the service life of the components.

# Characteristic curve

(Measured when using HLP46,  $\vartheta_{oil}=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$ )

$\Delta p-q_v$  Characteristic curve



— A1 to A2  
B1 to B2

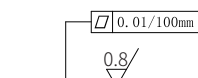
1 Cracking pressure 3 bar  
2 Cracking pressure 5 bar  
3 Cracking pressure 7.5 bar  
4 Cracking pressure 10 bar

----- A2 to A1  
B2 to B1

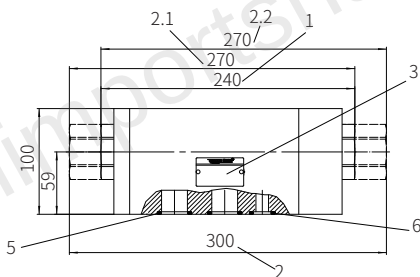
## Component size

Size unit: mm

Model Z2S22....-5XJ/...



Required surface finishing of mating components



1 Check valve in port A, B when cracking pressure is 3 or 5 bar

2 Check valve in port A, B when cracking pressure is 7.5 or 10 bar

2.1 Check valve in port A when cracking pressure is 7.5 or 10 bar

2.2 Check valve in port B when cracking pressure is 7.5 or 10 bar

3 Name plate

4 Mounting holes

5 O-ring 27X3 (for oil port A, B, P, T).

6 O-ring 19X3 (for oil port X, Y, L)

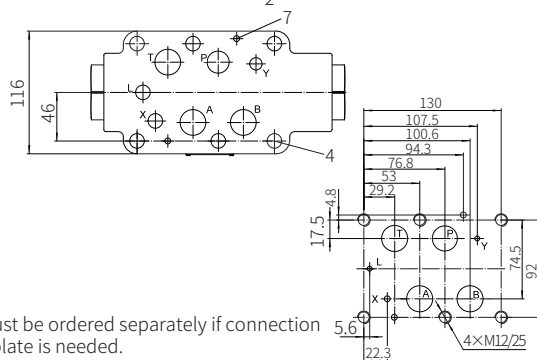
7 Valve fixing screw mounting holes

M12-10.9 grade

GB/T70.1-2000

Tightening torque  $M_A=95\text{Nm}$

Need to order separately



It must be ordered separately if connection subplate is needed.

Subplate model:

G153/01 (G1") ; G153/02 (M33x2)

G154/01 (G1-1/4"); G154/02 (M42x2)

G156/01 (G1-1/2"); G156/02 (M48x2)