4.5

Double throttle/ check valve

Type Z2FS6...L4X

Size 6
Up to 315 bar
Up to 80 L/min

Contents

Features

- Sandwich plate valve
- Porting pattern to DIN 24 340 form A and ISO4401
- 3 adjustment elements:
  - Screw with locknut and protective cap
  - Two insert pressure relief valve
  - Rotary knob with scale
- For limiting the main or pilot fluid flow of 2 actuator connections
- For meter-in or meter-out control

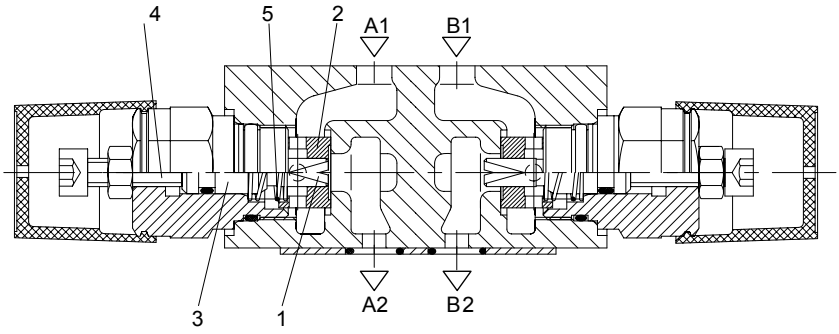
Function and configuration

Valve type Z2FS 6 is a double throttle/check valve with sandwich plate structure.
It is used to control the flow by changing the throttling. In the opposite direction, fluid flows freely through the check valve.
For meter-in control fluid passes from port A1 to port A2 via the throttling point (1), which is made up of the valve seat (2) and the throttling spool (3). The throttling spool (3) is axially adjustable through the adjustment screw (4).
Fluid flows from A2 to A1, valve seat (2) is opened against spring (5) and valve acts as check valve. Depending on the installation position, the throttling effect may be arranged as a meter-in or a meter-out control.

Standard version used for controlling main flow (Z2FS6.../2Q)
In order to change the velocity of an actuator (limiting of main flow),
the double throttle/check valve is installed between the directional valve and the sub-plate.

Fine control version used for controlling pilot flow(Z2FS6.../1Q)
In order to limit the pilot flow, the double throttle/check valve
is installed between the main valve and the pilot valve.

Type: Z2FS6-2-L4X/2Q



This installed position is for meter-in control

Ordering code

Z2FS	6		–	L4X	/		*

Double throttle/check valve

Nominal size 6 =6

Throttle/check valve ports A and B = -
Throttle/check valve port A = A
Throttle/check valve port B = B

Screw with locknut and protective cap = 2
Lockable rotary knob with scale = 3
Rotary knob with scale = 7

L4X [1] = Series L40 to L49 (L40 to L49: unchanged installation and connection dimensions)

1Q = With fine control
2Q = Standard version

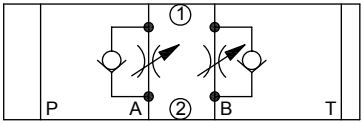
No code = NBR seals
V = FKM seals

Further details in clear text

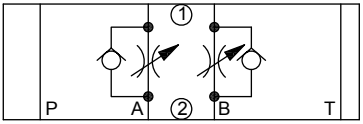
[1] Length of series L4X double throttle/check valve which are made by our company is 6 mm longer than that of Rexroth valve. Please pay attention when you order.

Symbols (① =valve side, ② = sub-plate side)

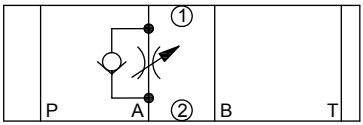
Type:Z2FS6-...-L4X/ (meter-in control)



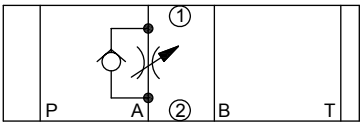
Type:Z2FS6-...-L4X/ (meter-out control)



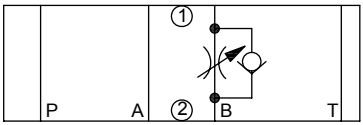
Type:Z2FS6A-...-L4X/ (meter-in control)



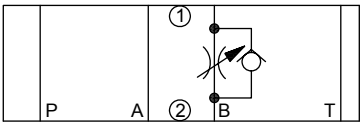
Type:Z2FS6A-...-L4X/ (meter-out control)



Type:Z2FS6B-...-L4X/ (meter-in control)



Type:Z2FS6B-...-L4X/ (meter-out control)



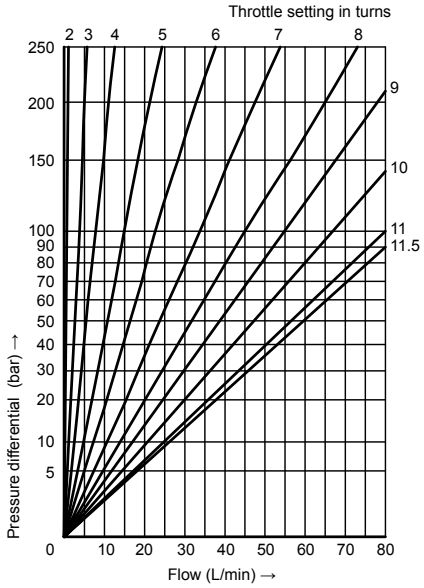
Technical data

Fluid		Mineral oil suitable for NBR and FKM seal
		Phosphate ester for FKM seal
Fluid temperature range	°C	-30 to +80 (NBR seal)
		-20 to +80(FKM seal)
Viscosity range	mm^2/s	10 to 800
Degree of contamination		Maximum permissible degree of fluid contamination: Class 9. NAS 1638 or 20/18/15, ISO4406
Max. working pressure	bar	315
Max. flow-rate	L/min	80
Weight	kg	Approx.1.0

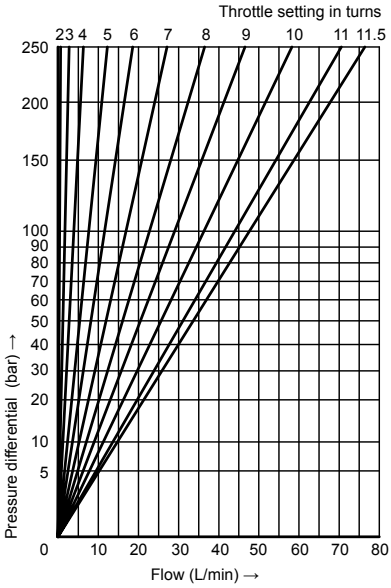
Characteristic curves

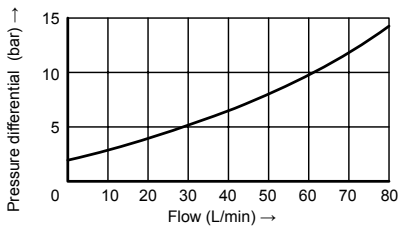
(Measured at ϑ_{oil}=40°C ±5°C , using HLP46)

ΔP-Q_v curve-Z2FS6-...-L4X/2QV



ΔP-Q_v curve-Z2FS6-...-L4X/1QV



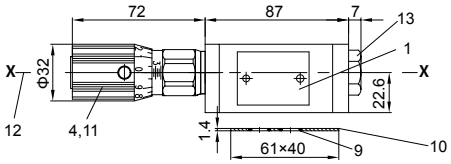


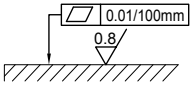
Through check valve (throttle closed)

Unit dimensions

(Dimensions in mm)

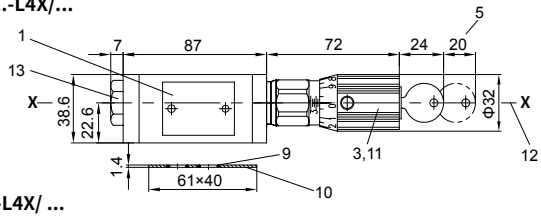
Type:Z2FS6A-...-L4X/ ...



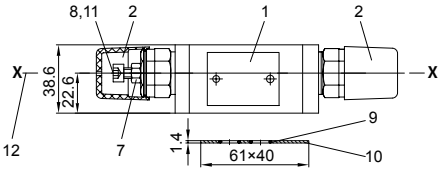


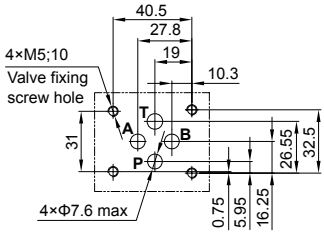
Requirement for mounting surface

Type:Z2FS6B-...-L4X/...

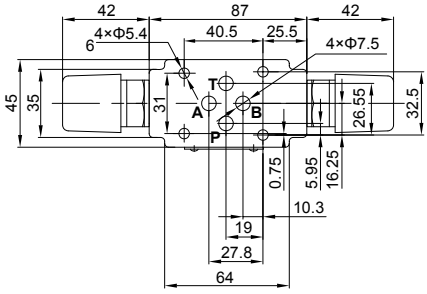


Type:Z2FS6-...-L4X/ ...





Dimensions of mounting surface



1 Nameplate
2 Adjustment element "2"
3 Adjustment element "3"
4 Adjustment element "7"
5 Space required to remove the key
6 Valve fixing holes
7 Lockable nut S=10
8 Internal hexagon screw S=5
9 O-rings 9.25×1.78 (Port A, B, P, T)
10 O-ring plate

Valve fixing screws:
M5 internal hexagon screw or
LT 30.02 double-screw bolt
with LT 30.01 nut GB/T 70.1-10.9,
the length according to sandwich,
Tightening torque M_A = 8.9Nm,
must be ordered separately.

11 For all adjustment elements:
turn anti-clockwise=increases flow
turn clockwise=decreases flow
12 To change from meter-in to meter-out,
rotate the unit around the 'X–X'axis
13 End cap S=22

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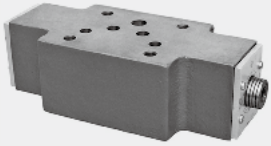
4.6

Double Throttle/ Check Valve

Type Z2FS6, 10, 16, 22...30

Sizes 6, 10, 16, 22
Up to 350bar
Up to 360 L/min



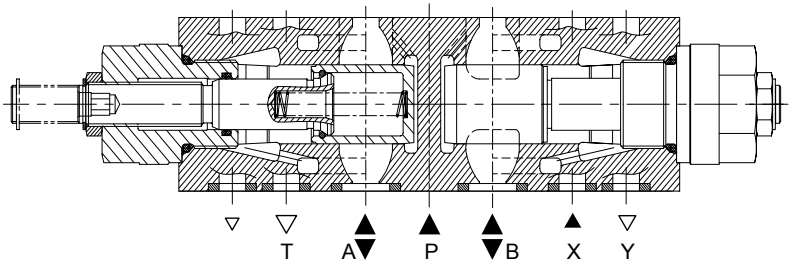
Contents

Features

- Sandwich plate valve
- Porting pattern to DIN 24 340 form A and ISO4401
  – For limiting the main or control fluid flow of 2 actuator connections
  – 3 adjustment elements:
  • Lockable rotary knob with scale
  • Spindle with internal hexagon and scale
  • Rotary knob with scale
  – For meter-in or meter-out control

Function and configuration

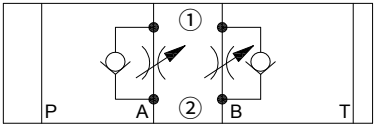
Valve type Z2FS is a double throttle/check valve with sandwich plate structure.
It is used to control the flow by changing the throttling. In the opposite direction, fluid flows freely through the check valve. For Z2FS10, depending on the installation position, the throttling effect may be arranged as a meter-in or a meter-out control. While for Z2FS16 and 22, depending on the model (S or S2) throttling may take place in either meter-in or meter-out, and at the same time the two operating oil chambers are connected.



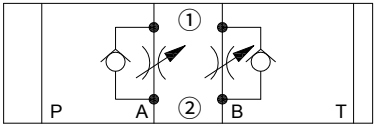
Structure chart of double throttle/Check Valve

Symbols (① =valve side, ② = sub-plate side) **size:6**

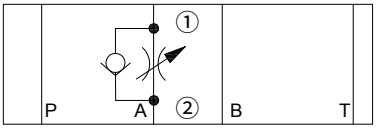
Type:Z2FS6-30/ (meter-in control)



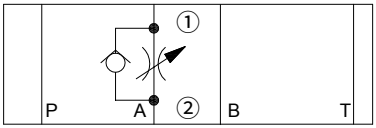
Type:Z2FS6-30/ (meter-out control)



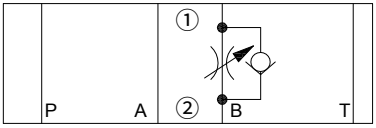
Type:Z2FS6A-30/ (meter-in control)



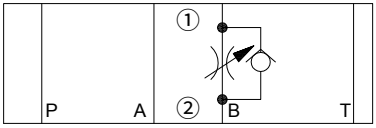
Type:Z2FS6A-30/ (meter-out control)



Type:Z2FS6B-30/ (meter-in control)

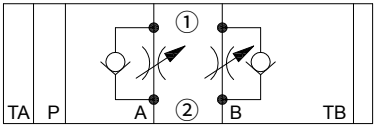


Type:Z2FS6B-30/ (meter-out control)

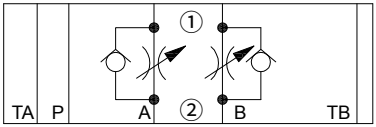


Symbols (① =valve side, ② = sub-plate side) **size:10**

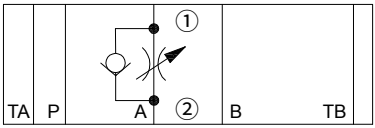
Type:Z2FS10-30/ (meter-in control)



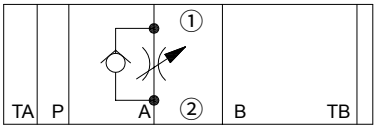
Type:Z2FS10-30/ (meter-out control)



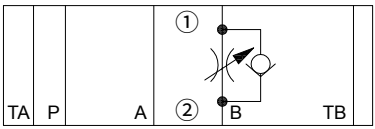
Type:Z2FS10A-30/ (meter-in control)



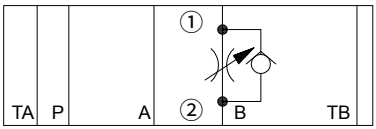
Type:Z2FS10A-30/ (meter-out control)



Type:Z2FS10B-30/ (meter-in control)



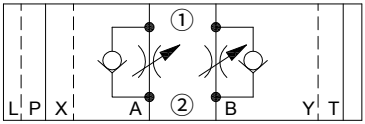
Type:Z2FS10B-30/ (meter-out control)



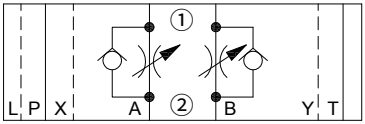
04

Symbols (① =valve side, ② = sub-plate side) **size:16, 22**

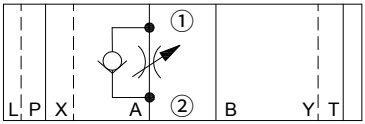
Type:Z2FS...-30/ (meter-in control)



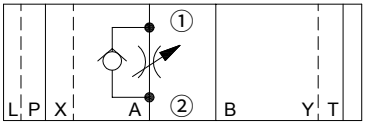
Type:Z2FS...-30/ (meter-out control)



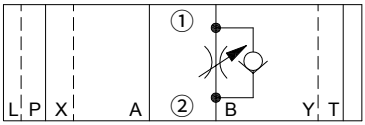
Type:Z2FS...A-30/ (meter-in control)



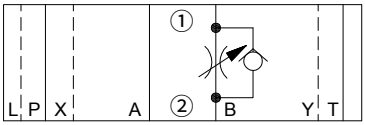
Type:Z2FS...A-30/ (meter-out control)



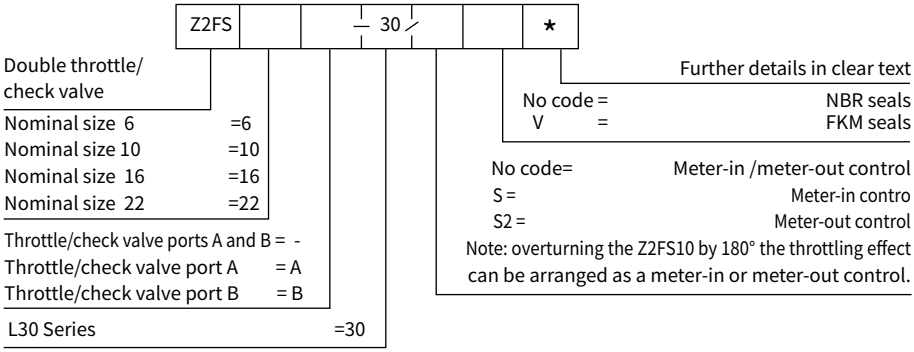
Type:Z2FS...B-30/ (meter-in control)



Type:Z2FS...B-30/ (meter-out control)



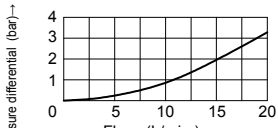
Ordering code



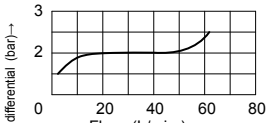
Technical data

Installation position		Optional			
Flow direction		One direction throttle, return through the check valve by another direction			
Fluid		Mineral oil suitable for NBR and FKM seal, Phosphate ester for FKM seal			
Fluid temperature range	°C	-20 to +80			
Degree of contamination		Maximum permissible degree of fluid contamination: Class 9. NAS 1638 or 20/18/15, ISO4406			
Viscosity range	mm^2/s	10 to 800			
Max.operating pressure	bar	to 350			
Nominal size		6	10	16	22
Weight	kg	0.9	3.1	4.7	8

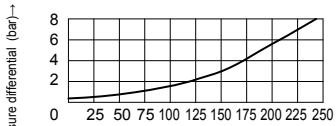
Characteristic curves (Measured at ϑ_{oil}=40°C ±5°C , using HLP46)



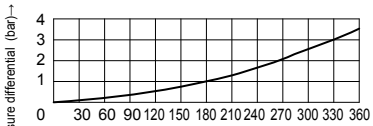
ΔP-Q curve through the check valve **(Z2FS6)**



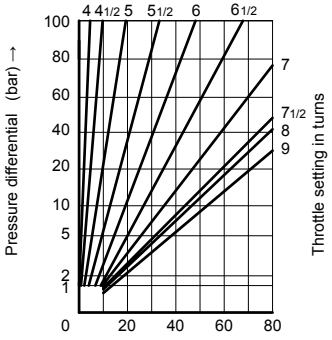
ΔP-Q curve through the check valve **(Z2FS10)**



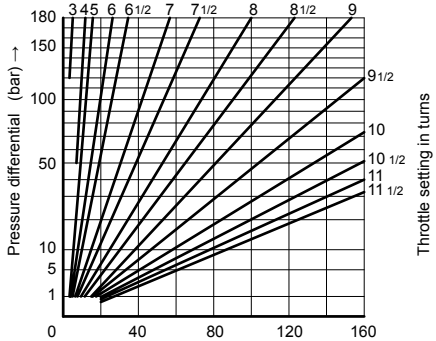
ΔP-Q curve through the check valve **(Z2FS16)**



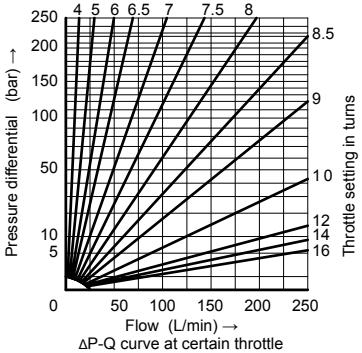
ΔP-Q curve through the check valve **(Z2FS22)**



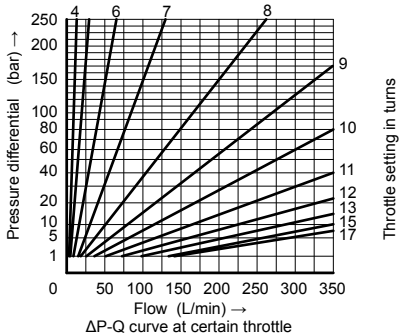
ΔP-Q curve at certain throttle position set **(Z2FS6)**



ΔP-Q curve at certain throttle position set **(Z2FS10)**



ΔP-Q curve at certain throttle position set **(Z2FS16)**

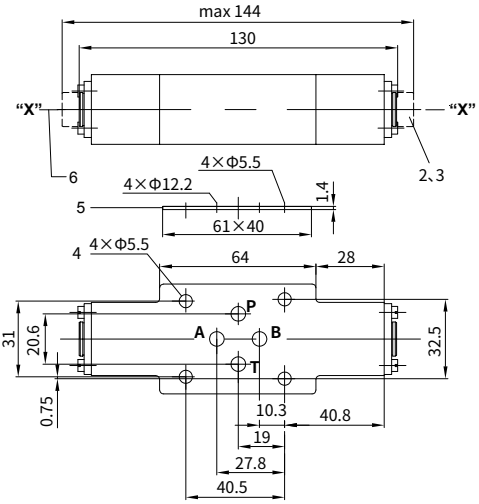


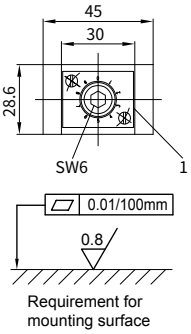
ΔP-Q curve at certain throttle position set **(Z2FS22)**

Unit dimensions:

(Dimensions in mm)

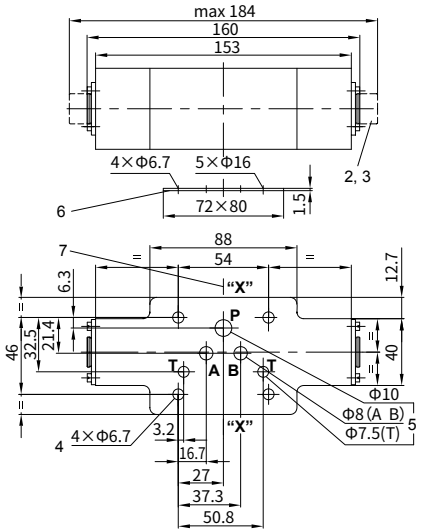
· Outline dimension of double throttle/Check Valve Type Z2FS6

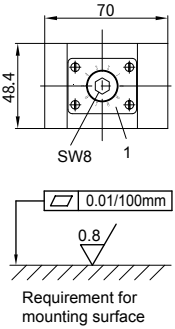




1 Nameplate
2 Adjustable bolt
3 Turn anti-clockwise=increases flow, turn clockwise=decreases flow
4 Valve fixing holes
5 O-ring plate
6 To change from meter-in to meter-out, rotate the unit around the"X – X"axis

· Outline dimension of double throttle/Check Valve Type Z2FS10



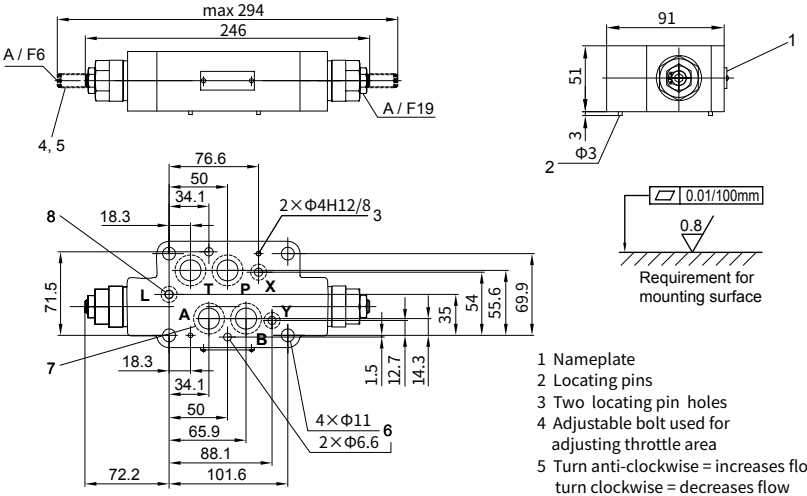


1 Nameplate
2 Adjustable bolt
3 Turn anti-clockwise = increases flow, turn clockwise = decreases flow
4 Valve fixing holes
5 Port (A, B, P, T)
6 O-ring plate
7 To change from meter-in to meter-out, rotate the unit around the "X – X" axis

Unit dimensions:

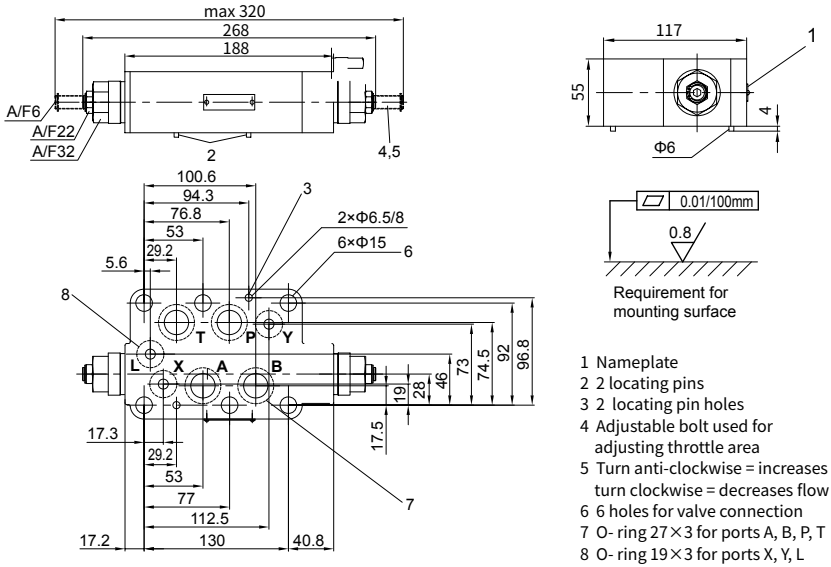
(Dimensions in mm)

· Outline dimension of double throttle/Check Valve Type Z2FS16



1 Nameplate
2 Locating pins
3 Two locating pin holes
4 Adjustable bolt used for adjusting throttle area
5 Turn anti-clockwise = increases flow, turn clockwise = decreases flow
6 6 through holes for valve connection
7 O- ring 22×2.5 for ports A, B, P, T
8 O- ring 10×2 for ports X, Y, L

· Outline dimension of double throttle/Check Valve Type Z2FS22



1 Nameplate
2 2 locating pins
3 2 locating pin holes
4 Adjustable bolt used for adjusting throttle area
5 Turn anti-clockwise = increases flow, turn clockwise = decreases flow
6 6 holes for valve connection
7 O- ring 27×3 for ports A, B, P, T
8 O- ring 19×3 for ports X, Y, L

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