

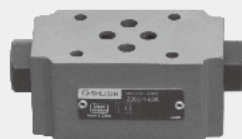


1.11

Check valve pilot operated

Type Z2S 6...L6X

Size 6
Up to 315 bar
Up to 60 L/min



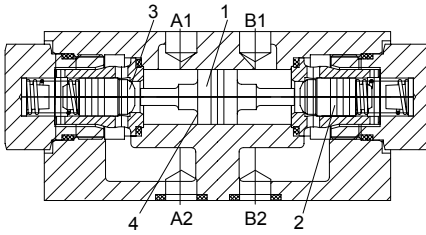
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Features

- Sandwich plate valve
- Porting pattern to DIN 24 340 Form A, ISO 4401 and CETOP -RP 121 H
- Leakage-free closure for one or two actuator ports
- For use in sandwich stacking systems
- 3 different opening pressures, optional

Function and configuration



- 1 Piston
- 2 Poppet
- 3 Area A1
- 4 Area A2

Type: Z2S6..-L6X/..

The check valve Z2S6 is a pilot operated check valve in sandwich plate design.

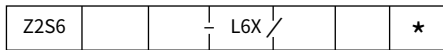
It is used for the leakage-free closure of one or two actuator ports even during long standstill periods.

Fluid flows freely in direction A1 to A2 or B1 to B2 and in the opposite direction the flow is blocked.

If fluid flows from A1 to A2, the piston (1) is moved to the right and pushes the poppet (2) off its seat, then the pressure fluid may flow from B2 to B1.

In order to make the reliable closure of the poppets (2) the ports must be connected to tank when the directional valve is in the central position (see circuit example).

Ordering code



Check valve, hydraulically pilot operated, Size 6

Leak-free closure in channels A and B = -
 Leak-free closure in channel A = A
 Leak-free closure in channel B = B

Opening pressure 1.5bar = 1
 Opening pressure 3bar = 2
 Opening pressure 7bar = 3

Further details in clear text

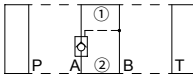
No code = Without pilot opening (Standard)
 S055 = With pilot opening

No code = NBR seals
 V = FKM seals

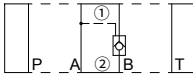
L6X= Series L60 to L69
 (L60 to L69: unchanged installation and connection dimensions)

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

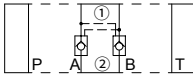
Type: Z2S6A-L6X/..



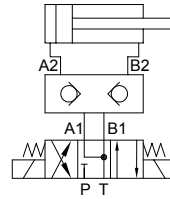
Type: Z2S6B-L6X/..



Type: Z2S6-L6X/..



Circuit example

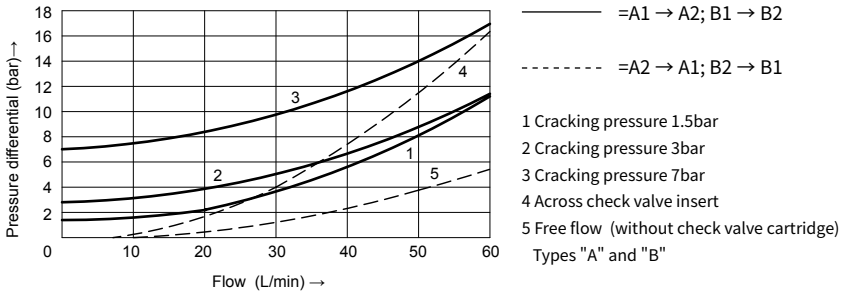


01

Technical data

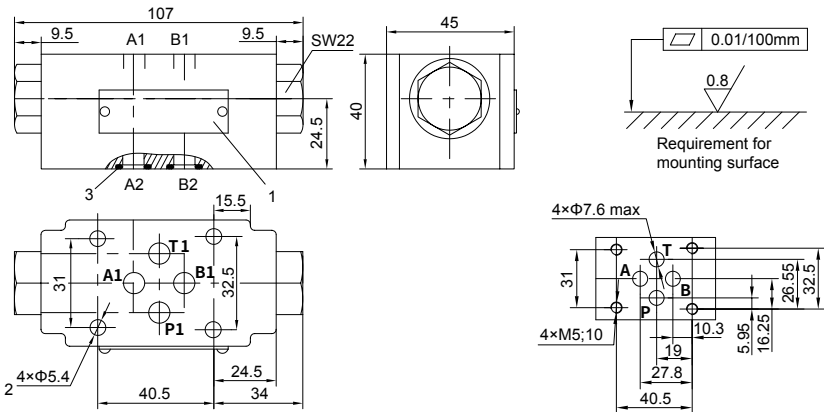
Fluid		Mineral oil suitable for NBR and FKM seal Phosphate ester for FKM seal
Degree of contamination		Maximum permissible degree of fluid contamination: Class 9. NAS 1638 or 20/18/15, ISO4406
Pressure fluid temperature range	°C	-30 to +80 (NBR seal) -20 to +80 (FKM seal)
Viscosity range	mm ² /s	2.8 to 500
Operating pressure	bar	315
Max. flow-rate	L/min	60
Flow direction		See symbols
Flow freely opening pressure	bar	See curves
Ratio of areas		A1/A2=1/3
Weight	kg	Approx. 1.0

Characteristic curves (Measured at $\theta_{oil}=40^{\circ}C \pm 5^{\circ}C$, using HLP46)



Unit dimensions

(Dimensions in mm)



It must be ordered separately, if connection plate is needed.

Type:

- G341/01(G1/4), G341/02 (M14×1.5)
- G342/01(G3/8), G342/02(M18×1.5)
- G502/01(G1/2), G502/02(M22×1.5)

- 1 Name plate
- 2 Valve fixing holes
- 3 O-rings 9.25×1.78 for ports A2, B2, P2, T2



1.12

Check valve pilot operated

Type Z2S 10...L3X

Size 10
Up to 315bar
Up to 120 L/min



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Unit dimensions	04

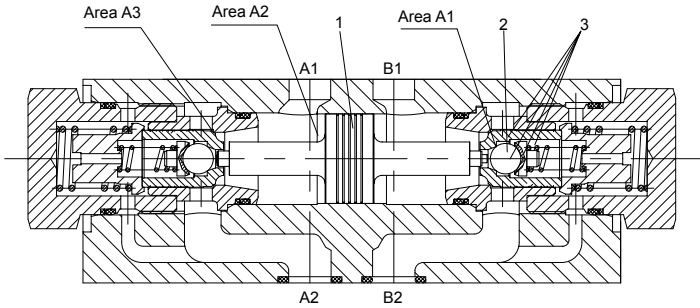
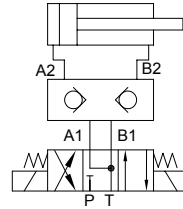
Features

- Porting pattern to DIN 24 340
- Leakage-free closure for one or two ports
- Sandwich plate valve, for use in vertical stacking assemblies
- 4 cracking pressures, optional

Function and configuration

Hydraulic pilot operated check valves type Z2S10 are sandwich plate design. They are used for the leakage-free closure of one or two ports, even for long periods of time. Fluid flows freely 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 pressurised and is pushed to the right, thereby opening the ball poppet valve (2) which then opens the check valve (3). In order to make the reliable closure of the two check valves in the neutral position, the service ports A1 and B1 must be connected to tank.

Circuit example

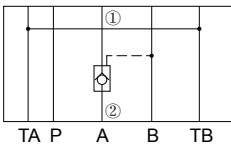


Z2S10..L3X/...check valve, hydraulic pilot operated

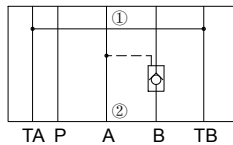
- 1 Spool 2 Ball poppet valve 3 Check valve

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

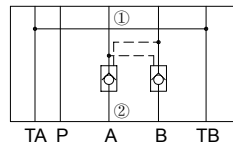
Z2S10A..L3X/...



Z2S10B..L3X/...



Z2S10..L3X/...



Ordering code

	Z2S	10		-	L3X	/		*
Check valve, hydraulic pilot operated								
Nominal size 10	=10							
Leak-free closure in channels A and B	= -							
Leak-free closure in channel A	= A							
Leak-free closure in channel B	= B							

Further details in clear text

No code =	NBR seals
V =	FKM seals

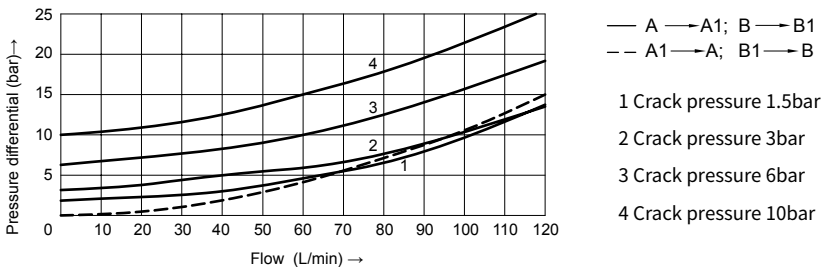
L3X= Series L30 to L39
(L30 to L39: unchanged installation and connection dimensions)

1 =	Crack pressure 1.5bar
2 =	Crack pressure 3bar
3 =	Crack pressure 6bar
4 =	Crack pressure 10bar

Technical data

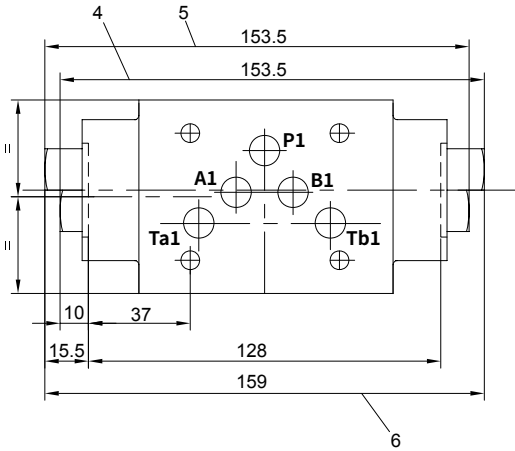
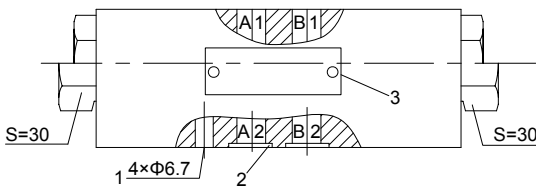
Fluid		Mineral oil suitable for NBR and FKM seal Phosphate ester for FKM seal
Degree of contamination		Maximum permissible degree of fluid contamination: Class 9. NAS 1638 or 20/18/15, ISO4406
Fluid temperature range	°C	-30 to +80 (NBR seal) -20 to +80 (FKM seal)
Viscosity range	mm ² /s	2.8 to 500
Operating pressure	bar	315
Max. flow-rate	L/min	120
Flow direction		See symbol
Crack pressure (free flow direction)	bar	1.5, 3, 6, 10
Area ratio		A1/A2=1/13.4 A3/A2=1/2.68 (Please refer to page "02/04" for section drawing)
Weight	kg	3

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



Unit dimensions

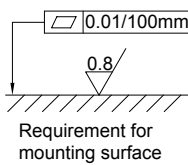
(Dimensions in mm)



- 1 4 through holes for valve mounting screws
- 2 O-rings 12×2 for ports A, B, T
- 3 Name plate
- 4 Check valve in port B
- 5 Check valve in port A
- 6 Check valve in both port A and B

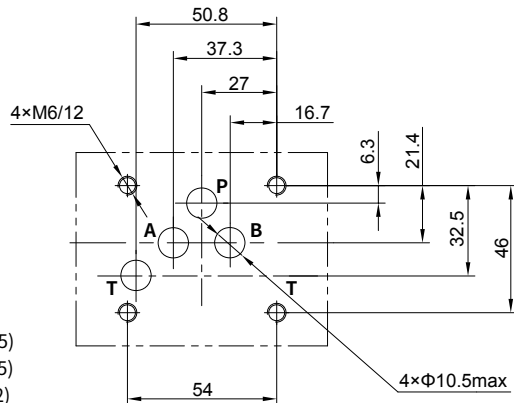
Valve mounting screws:

Internal hexagon screw
 Size 10: 4-M6 GB/T 70.1-2000
 Tightening torque $M_A=15.5$ Nm
 must be ordered separately



It must be ordered separately, if connection is needed.

Type: G66/01(G3/8), G66/02 (M18×1.5)
 G67/01(G1/2), G67/02(M22×1.5)
 G534/01(G3/4), G534/02(M27×2)





1.13

Check valve pilot operated

Type Z2S 16...L5X

Size 16
Up to 315 bar
Up to 300 L/min



Contents

Function and configuration	02
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Characteristic curves	03
Unit dimensions	04

Features

- Porting pattern to DIN 24 340
- Leakage-free closure for one or two ports
- Sandwich plate valve,
for use in vertical stacking assemblies
- 4 cracking pressures, optional

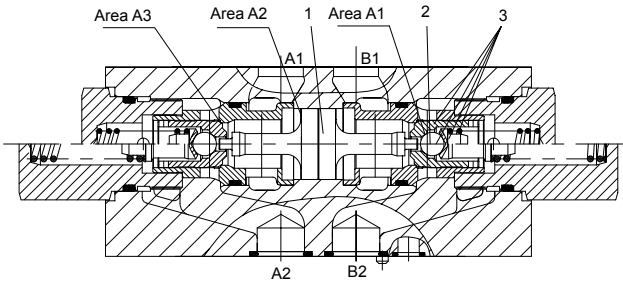
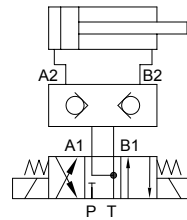
Function and configuration

Hydraulic pilot operated check valves type Z2S16 are sandwich plate design. They are used for the leakage-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 pressurised and is pushed to the right, thereby opening the ball poppet valve (2) which then opens the check valve (3).

In order to make reliable closure of the two check valves in the neutral position, the service ports A1 and B1 of the directional valve must be connected to returning line.

Circuit example

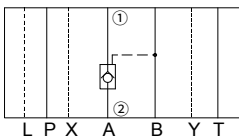


Z2S16..L5X/...check valve, hydraulic pilot operated

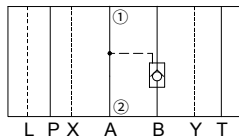
- 1 Spool
- 2 Ball poppet valve
- 3 Check valve

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

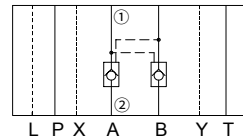
Z2S16A..L5X/...



Z2S16B..L5X/...



Z2S16..L5X/...



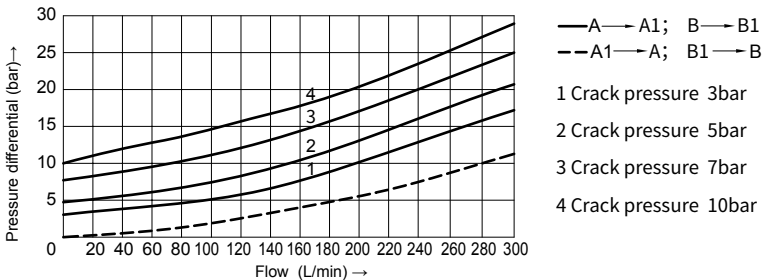
Ordering code

	Z2S	16		-	L5X	/	*
Check valve, hydraulic pilot operated	Further details in clear text						
Size 16	No code = NBR seals V = FKM seals						
Leak-free closure in channels A and B = -	L5X= Series L50 to L59 (L50 to L59: unchanged installation and connection dimensions)						
Leak-free closure in channel A = A	1 = Crack pressure 3bar						
Leak-free closure in channel B = B	2 = Crack pressure 5bar						
	3 = Crack pressure 7.5bar						
	4 = Crack pressure 10bar						

Technical data

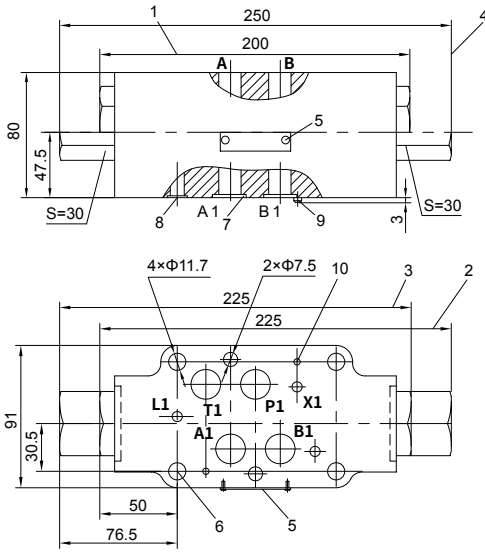
Fluid	Mineral oil suitable for NBR and FKM seal Phosphate ester for FKM seal	
Degree of contamination	Maximum permissible degree of fluid contamination: Class 9. NAS 1638 or 20/18/15, ISO4406	
Fluid temperature range	°C	-30 to +80 (NBR seal) -20 to +80 (FKM seal)
Viscosity range	mm ² /s	2.8 to 500
Operating pressure	bar	315
Max.flow-rate	L/min	300
Flow direction	See symbols	
Crack pressure(free flow direction)	bar	3, 5, 7.5, 10
Area ratio	A1/A2=1/11.8 A3/A2=1/2.8 (Please refer to page "02/04" for section drawing)	
Weight	kg	6.8

Characteristic curves (Measured at $\vartheta_{oil}=40^{\circ}C \pm 5^{\circ}C$, using HLP46)



Unit dimensions

(Dimensions in mm)



- 1 Valve with version 1 or 2 cracking pressure, check valve in port A and/or port B
- 2 Valve with version 3 or 4 cracking pressure, check valve in port B.
- 3 Valve with version 3 or 4 cracking pressure, check valve in port A.
- 4 Valve with version 3 or 4 cracking pressure, check valve in port A and B
- 5 Name plate
- 6 Mounting holes
- 7 O-rings
22×2.5 for ports A, B, P, T
- 8 O-rings
10×2 for ports X, Y, L
- 9 Locating pin
- 10 Locating holes

Valve mounting screws:

Internal hexagon screw

4-M10 GB/T 70.1-2000

Tightening torque

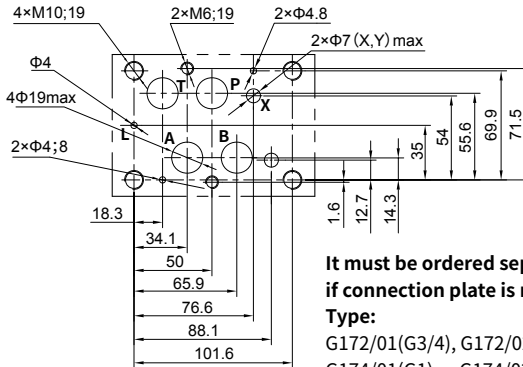
$M_t=75$ Nm

2-M6 GB/T 70.1-2000

Tightening torque

$M_t=15.5$ Nm

must be ordered separately

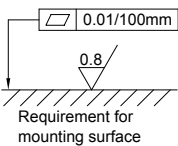


It must be ordered separately if connection plate is needed.

Type:

G172/01(G3/4), G172/02 (M27×2)

G174/01(G1), G174/02(M33×2)



1.14

Check valve pilot operated

Type Z2S 22...L5X

Size 22
Up to 315bar
Up to 450 L/min



Contents

Function and configurations	02
Symbols	02
Ordering code	03
Technical data	03
Characteristic curves	03
Unit dimensions	04

Features

- Porting pattern confirms to DIN 24 340
- Leakage-free closure for one or two ports
- Sandwich plate valve, for use in vertical stacking assemblies
- 4 cracking pressures, optional

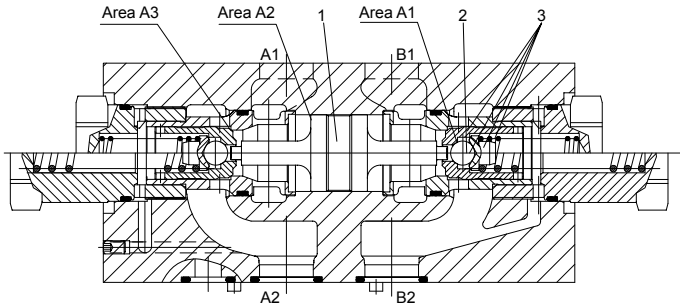
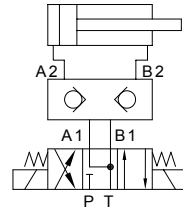
Function and configuration

Hydraulic pilot operated check valves type Z2S22 are sandwich plate design. They are used for the leakage-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 pressurised and is pushed to the right, thereby opening the ball poppet valve (2) which then opens the check valve(3).

In order to make reliable closure of the two check valves in the neutral position, the service ports A1 and B1 of the directional valve must be connected to returning line .

Circuit example

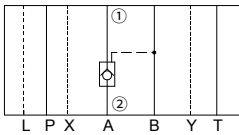


Z2S22..L5X/...check valve, hydraulic pilot operated

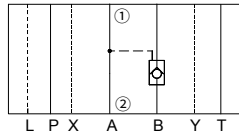
1 Spool 2 Ball poppet valve 3 Check valve

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

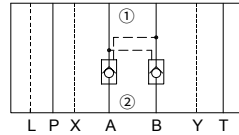
Z2S22A..L5X/...



Z2S22B..L5X/...



Z2S22..L5X/...



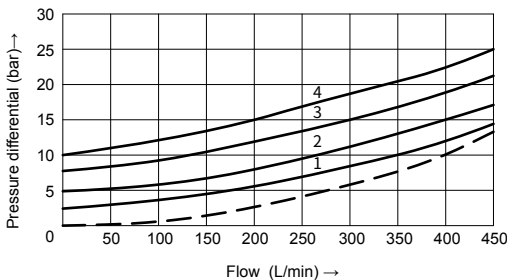
Ordering code

Z2S	22				L5X	/		*	
Check valve, hydraulic pilot operated								Further details in clear text	
Nominal size 22 = 22								No code = NBR seals V = FKM seals	
Check valve in channel A and B = -								L5X= Series L50 to L59 (L50 to L59: unchanged installation and connection dimensions)	
Check valve in channel A = A								1 = Cracking pressure 3bar	
Check valve in channel B = B								2 = Cracking pressure 5bar	
								3 = Cracking pressure 7.5bar	
								4 = Cracking pressure 10bar	

Technical data

Fluid	Mineral oil suitable for NBR and FKM seal Phosphate ester for FKM seal	
Degree of contamination	Maximum permissible degree of fluid contamination: Class 9. NAS 1638 or 20/18/15, ISO4406	
Fluid temperature rang	°C	-30 to +80 (NBR seal) -20 to +80 (FKM seal)
Viscosity range	mm ² /s	2.8 to 500
Operating pressure	bar	315
Max.flow-rate	L/min	450
Flow direction	See symbol	
Crack pressure(free flow direction)	bar	3, 5, 7.5, 10
Area ratio	A1/A2=1/13.6, A3/A2=1/2.8	
Weight	kg	12.8

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

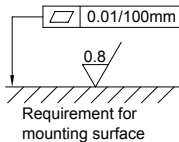
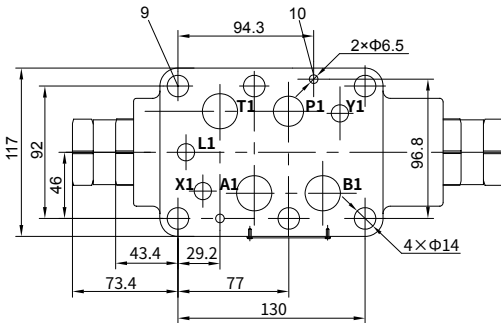
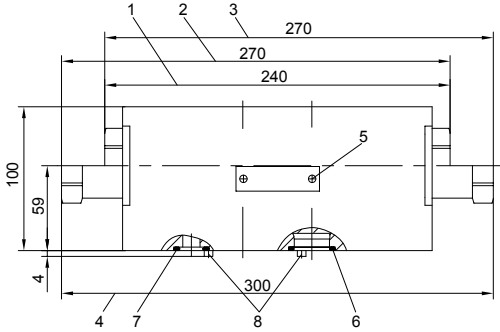


— A → A1; B → B1
 - - A1 → A; B1 → B

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

Unit dimensions

(Dimensions in mm)



It must be ordered separately if connection plate is needed.

Type:

G153/01(G1), G153/02(M33×2)
G154/01(G11/4), G154/02(M42×2)
G156/01(G11/2), G156/02(M48×2)

Valve fixing screws:

Internal hexagon screw
4-M6 GB/T 70.1-2000
Tightening torque $M_A=130\text{Nm}$
must be ordered separately

- 1 Valve with version 1 or 2 cracking pressure, check valve in port A and/or port B
- 2 Valve with version 3 or 4 cracking pressure, check valve in port B.
- 3 Valve with version 3 or 4 cracking pressure, check valve in port A.
- 4 Valve with version 3 or 4 cracking pressure, check valve in port A and B
- 5 Name plate
- 6 O-rings
27×3 for ports A, B, P, T
- 7 O-rings
19×3 for ports X, Y, L
- 8 Locating pin
- 9 Fixing holes
- 10 Locating holes

