

# Check valve

**RE 21536/07.05**  
Replaces: 05.02

1/6

## Type Z1S

Size 10  
 Component series 3X  
 Maximum operating pressure 315 bar  
 Maximum flow 100 l/min



H5856

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## Features

- Sandwich plate valve for use in vertical stacking assemblies
- Position of ports to ISO 4401-05-04-0-94
- 8 different closing functions, optional

Information on available spare parts:  
[www.boschrexroth.com/spc](http://www.boschrexroth.com/spc)

## Ordering code

Z1S 10 -3X/V \*

Check valve, sandwich plate

Further details in clear text

Size 10 = 10

No code =

Metal seal

Leak-free closure in channel A (A1 → A2) = A

W4 =

Soft seal

Leak-free closure in channel B (B1 → B2) = B

V =

**Seal material**

Leak-free closure in channel A (A2 → A1) = C

FKM seals

Leak-free closure in channel B (B2 → B1) = D

(other seals on enquiry)

Leak-free closure in channels A and B (A2 → A1) and (B2 → B1) = E

**⚠ Caution!**

Leak-free closure in channels P and T (P1 → P2) and (T2 → T1) = F

Observe compatibility of seals with hydraulic fluid used!

Leak-free closure in channel P (P1 → P2) = P

3X =

Component series 30 to 39

Leak-free closure in channel T (T2 → T1) = T

(30 to 39: unchanged installation and connection dimensions)

(for symbols, see page 3)

### Cracking pressure

0.5 bar = 1

3.0 bar = 2

5.0 bar = 3

(Versions 2 and 3 not with soft seal "W4")

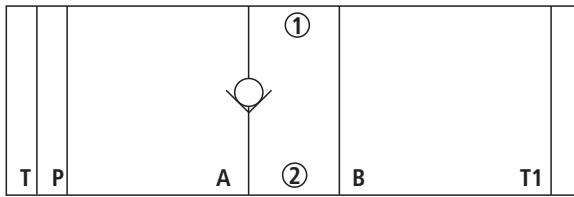
## Standard types

Type	Material number
Z1S 10 D1-3X/V	R900417595
Z1S 10 E1-3X/V	R900417596
Z1S 10 F1-3X/V	R900417597
Z1S 10 P1-3X/V	R900417590
Z1S 10 T1-3X/V	R900417591
Z1S 10 T2-3X/V	R900334980

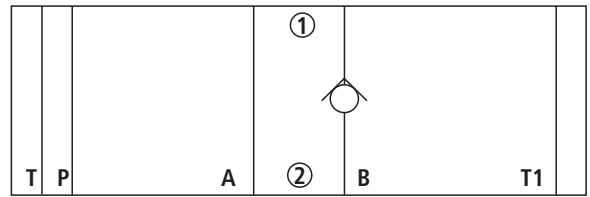
Further standard types and components can be found in the EPS (standard price list).

**Symbols** (1) = component side, (2) = plate side

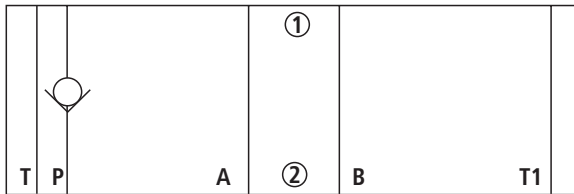
Type Z1S 10 A-../..



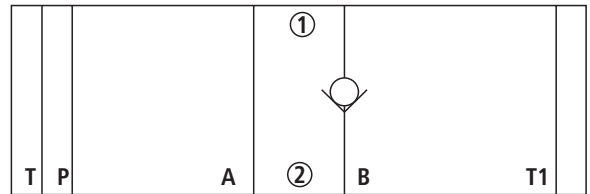
Type Z1S 10 D-../..



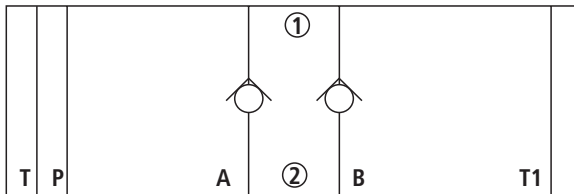
Type Z1S 10 P-../..



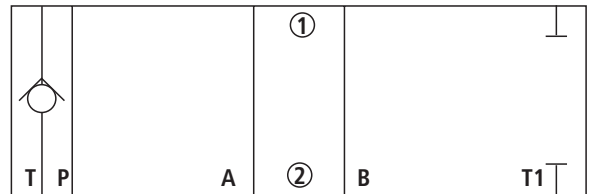
Type Z1S 10 B-../..



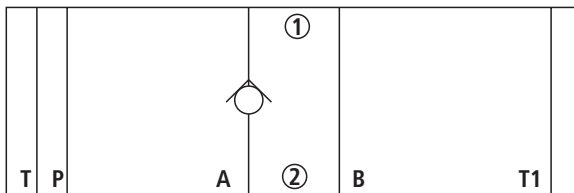
Type Z1S 10 E-../..



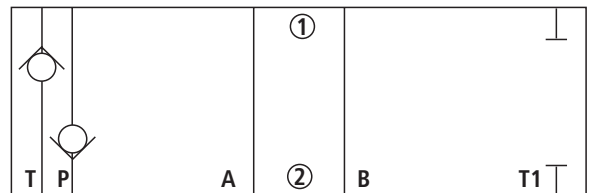
Type Z1S 10 T-../..



Type Z1S 10 C-../..



Type Z1S 10 F-../..



## Function, section

Valves of type Z1S are direct operated check valves of sandwich plate design.

They are used to check a flow leak-free in one direction and allow free flow in the opposite direction.

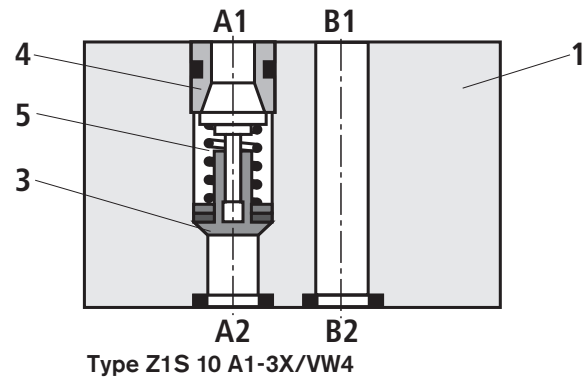
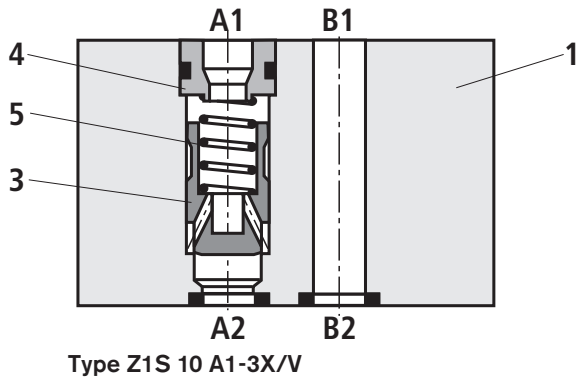
The stroke of poppet (3) is limited by spring plate (4). An integrated spring (5) supports the closing movement. When no fluid flows through the valve, spring (5) holds poppet (3) in the closed position.

### Type Z1S 10 ..-3X/V (with metal seal)

This valve version is provided with a metal seal between poppet (3) and housing (1). Valves of this version are particularly suitable for applications that involve operating pressures higher than 100 bar and flow velocities of more than 4 m/s.

### Type Z1S 10 ..1-3X/VW4 (with soft seal)

This valve version is fitted with a soft seal between poppet (3) and housing (1) and provides hermetic sealing. Valves of this version are particularly suitable for applications with flow velocities of up to 4 m/s and low operating pressures.



## Technical data (for applications outside these parameters, please consult us!)

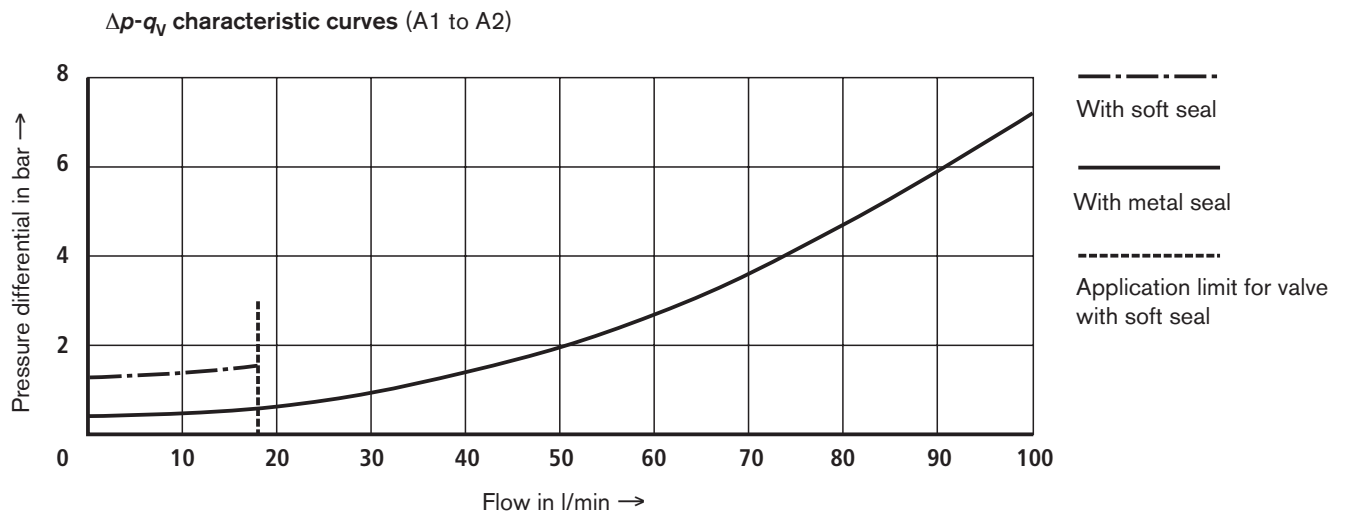
General			
Weight	kg	approx. 2.3	
Installation orientation	Optional		
Ambient temperature range	°C	-20 to +80	
Hydraulic			
Maximum operating pressure	bar	315	
Cracking pressure	- Metal seal	bar	0.5; 3; 5
	- Soft seal	bar	0.5
Maximum flow	l/min	100	
Flow velocity	- Metal seal	m/s	> 4
	- Soft seal	m/s	< 4
Hydraulic fluid	Mineral oil (HL, HLP) to DIN 51524; fast bio-degradable hydraulic fluids to VDMA 24568 (see also RE 90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids on enquiry		
Hydraulic fluid temperature range	°C	-20 to +80	
Viscosity range	mm <sup>2</sup> /s	2.8 to 500	
Max. permissible degree of contamination of the hydraulic fluid - cleanliness class to ISO 4406 (c)	Class 20/18/15 <sup>1)</sup>		

<sup>1)</sup> The cleanliness classes specified for components must be adhered to in hydraulic systems. Effective filtration prevents malfunction and, at the same time, prolongs the service life

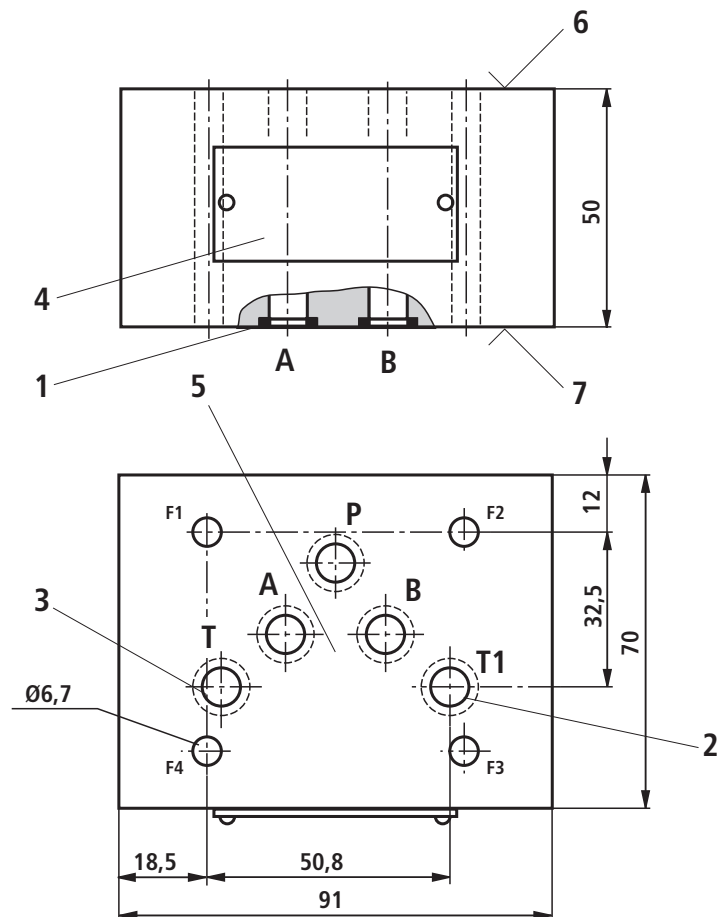
of components.

For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086 and RE 50088.

**Characteristic curves** (measured with HLP46,  $\vartheta_{oil} = 40\text{ °C} \pm 5\text{ °C}$ )



**Unit dimensions** (nominal dimensions in mm)

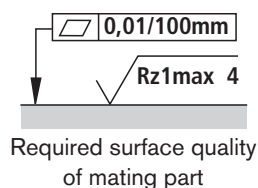


- 1 Identical seal rings for ports A, B, P, T and T1
- 2 This port is plugged in versions "F" and "T".
- 3 With versions "F" and "T", the check valve is installed in this channel.
- 4 Nameplate
- 5 Position of ports to ISO 4401-05-04-0-94; deviating from standard: Port T1 ( $\varnothing \triangleq \varnothing T$ )  
Ports X, Y as required:  
**⚠ Caution!**  
For drilled X and Y port (e.g. for pilot operated directional valve of size 10) version **SO30** is valid!
- 6 Component side
- 7 Plate side

**Valve fixing screws**  
(separate order)

**4 socket head cap screws**  
**ISO 4762 - M6 - 10.9**

(friction coefficient  $\mu_{total} = 0.14$ );  
tightening torque  $M_T = 15.5\text{ Nm} \pm 10\%$   
(please adapt in the case of changed surfaces)



## Notes

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