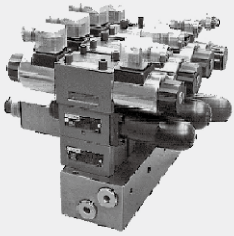
9.1

Multi-station manifold blocks

Type HSR 06

Size 6
up to 210bar (L2X series)
up to 315bar (L3X series)

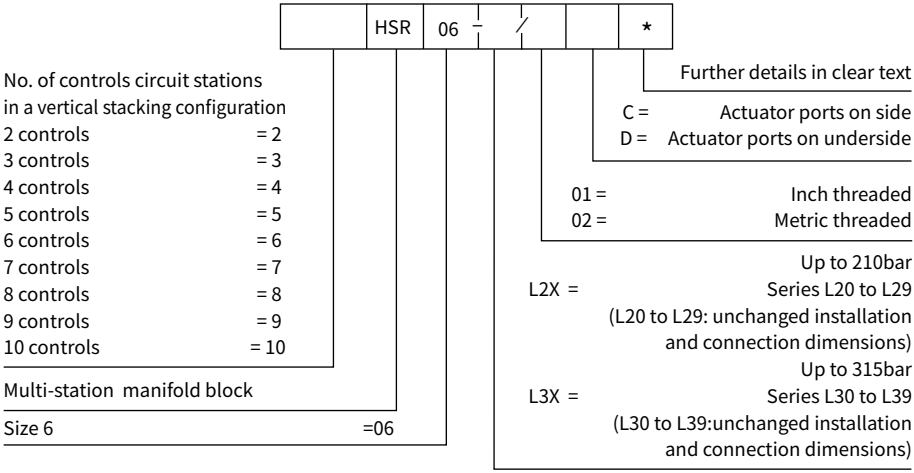


Contents

Function and configuration

Multi-station manifolds form the basis of complete control systems in a vertical stacking configuration.
Compact hydraulic circuits can be built-up by using vertically stacked sandwich plate valves in combination with size 6 directional control valves or proportional valves.
All circuits are positioned on each side of the manifold with a common pressure and tank port.
Each control station has separate actuator ports A and B, which can be on the side (model C) or on the underside (model D) as required.

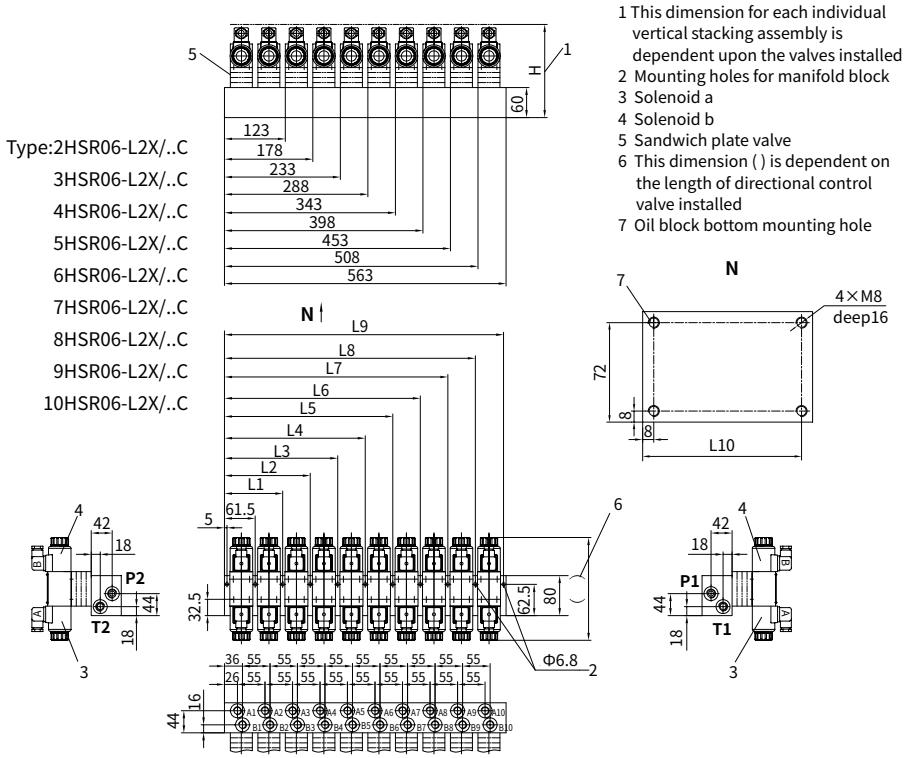
Specification (block without stack valve)



09

Unit dimensions (Actuator ports on side "C") (Dimensions in mm)

Series L2X (up to 210bar)



1 This dimension for each individual vertical stacking assembly is dependent upon the valves installed
2 Mounting holes for manifold block
3 Solenoid a
4 Solenoid b
5 Sandwich plate valve
6 This dimension ( ) is dependent on the length of directional control valve installed
7 Oil block bottom mounting hole

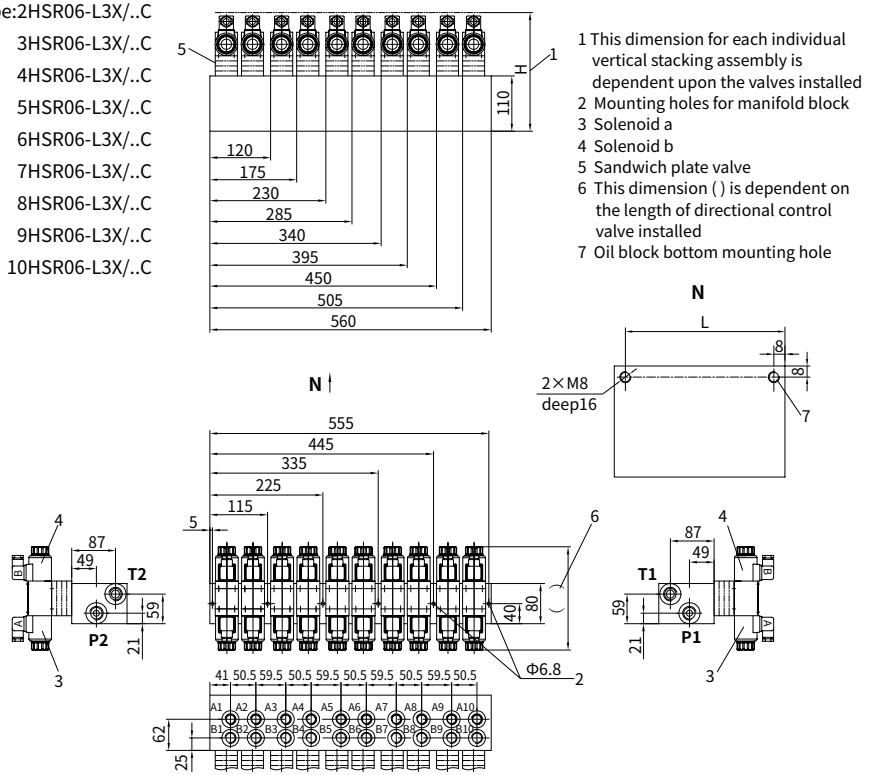
Block	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	Weight (kg)
2controls	118									115	4.5
3controls	116.5	173								170	6.6
4controls		171.5	228							225	8.6
5controls			226.5	283						280	10.7
6controls				281.5	338					335	12.8
7controls					336.5	393				390	14.9
8controls						391.5	448			445	16.9
9controls							446.5	503		500	19.2
10controls								501.5	558	555	21.3

Threaded type	Inch threaded		Metric threaded	
Port	A1..A10; B1..B10	P1, P2, T1, T2	A1..A10; B1..B10	P1, P2, T1, T2
Thread - Ø	G3/8	G1/2	M16×1.5	M18×1.5
Thread depth	12	14	12	12
Spot-facing - Ø	28	34	28	28
Spot-facing depth	0.5	0.5	0.5	0.5

Unit dimensions (Actuator ports on side "C") (Dimensions in mm)

Series L3X (up to 315bar)

Type:2HSR06-L3X/..C
3HSR06-L3X/..C
4HSR06-L3X/..C
5HSR06-L3X/..C
6HSR06-L3X/..C
7HSR06-L3X/..C
8HSR06-L3X/..C
9HSR06-L3X/..C
10HSR06-L3X/..C

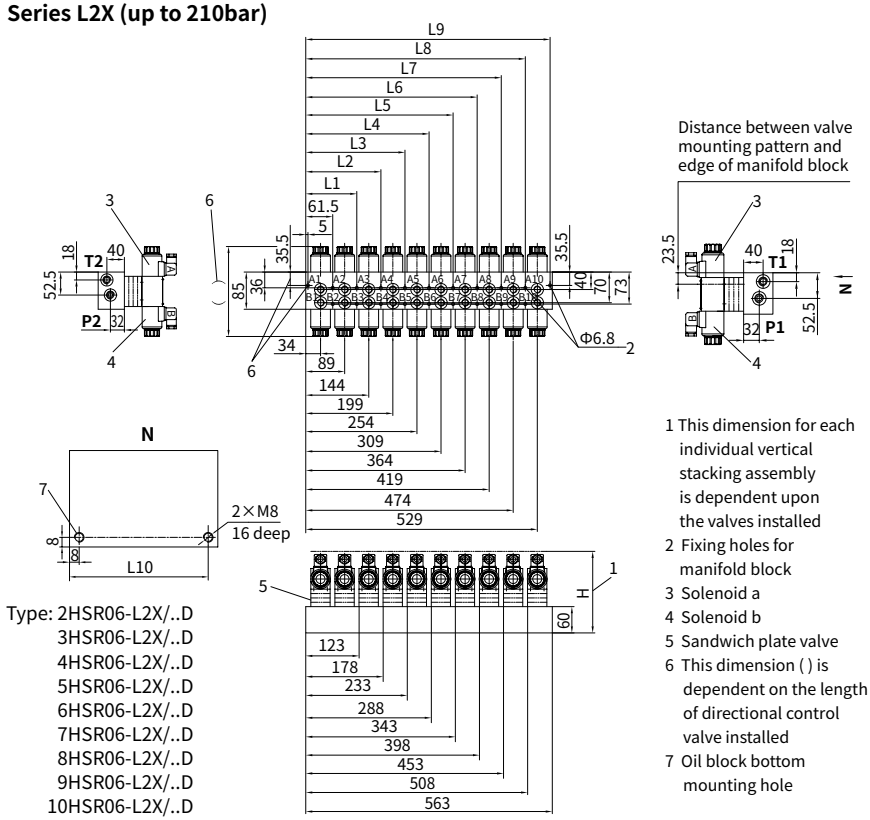


Block	2controls	3controls	4controls	5controls	6controls	7controls	8controls	9controls	10controls
Weight (kg)	8.3	12.1	15.9	19.7	23.5	27.3	31.1	34.9	39.7
L	112	167	222	277	332	387	442	497	552

Threaded type	Inch threaded		Metric threaded	
Port	A1..A10;B1..B10	P1,P2,T1,T2	A1..A10;B1..B10	P1,P2,T1,T2
Thread - Ø	G1/2	G3/4	M22×1.5	M27×2
Thread depth	14	16	14	16
Spot-facing - Ø	34	42	34	42
Spot-facing depth	0.5	0.5	0.5	0.5

Unit dimensions (Actuator ports on side "D") (Dimensions in mm)

Series L2X (up to 210bar)



Type: 2HSR06-L2X/..D
3HSR06-L2X/..D
4HSR06-L2X/..D
5HSR06-L2X/..D
6HSR06-L2X/..D
7HSR06-L2X/..D
8HSR06-L2X/..D
9HSR06-L2X/..D
10HSR06-L2X/..D

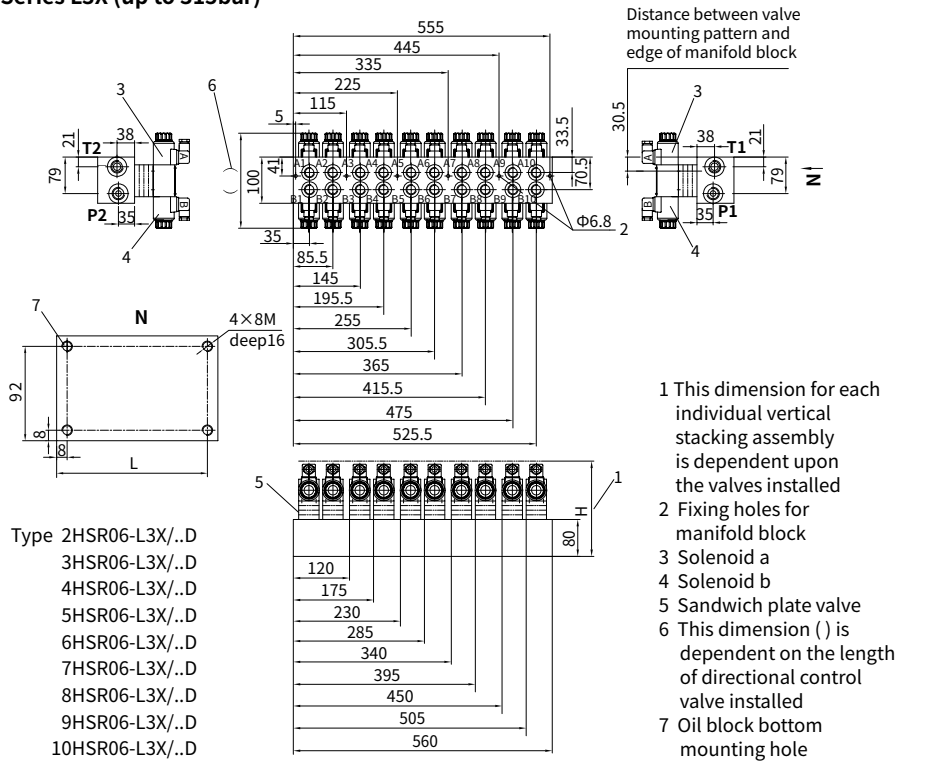
1 This dimension for each individual vertical stacking assembly is dependent upon the valves installed
2 Fixing holes for manifold block
3 Solenoid a
4 Solenoid b
5 Sandwich plate valve
6 This dimension ( ) is dependent on the length of directional control valve installed
7 Oil block bottom mounting hole

Block	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	Weight(kg)
2controls	118									115	4.8
3controls	116.5	173								170	7.0
4controls		171.5	228							225	9.3
5controls			226.5	283						280	11.5
6controls				281.5	338					335	13.6
7controls					336.5	393				390	15.8
8controls						391.5	448			445	18.0
9controls							446.5	503		500	20.4
10controls								501.5	558	555	22.6

Threaded type	Inch threaded		Metric threaded	
Port	A1..A10; B1..B10	P1,P2,T1,T2	A1..A10; B1..B10	P1,P2,T1,T2
Thread - Ø	G3/8	G1/2	M16×1.5	M18×1.5
Thread depth	12	14	12	12
Spot-facing - Ø	28	34	28	28
Spot-facing depth	0.5	0.5	0.5	0.5

Unit dimensions (Actuator ports on side "D") (Dimensions in mm)

Series L3X (up to 315bar)



Type 2HSR06-L3X/..D
3HSR06-L3X/..D
4HSR06-L3X/..D
5HSR06-L3X/..D
6HSR06-L3X/..D
7HSR06-L3X/..D
8HSR06-L3X/..D
9HSR06-L3X/..D
10HSR06-L3X/..D

1 This dimension for each individual vertical stacking assembly is dependent upon the valves installed
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5 Sandwich plate valve
6 This dimension ( ) is dependent on the length of directional control valve installed
7 Oil block bottom mounting hole

Block	2controls	3controls	4controls	5controls	6controls	7controls	8controls	9controls	10controls
Weight(kg)	7.6	11	14.5	17.9	21.4	24.9	28.3	31.8	35.2
L	112	167	222	277	332	387	442	497	552

Threaded type	Inch threaded		Metric threaded	
Port	A1..A10; B1..B10	P1,P2,T1,T2	A1..A10; B1..B10	P1,P2,T1,T2
Thread - Ø	G1/2	G3/4	M22×1.5	M27×2
Thread depth	14	16	14	16
Spot-facing - Ø	34	42	34	42
Spot-facing depth	0.5	0.5	0.5	0.5

Srew selection table for vertical stacking assembly in conjunction with directional valve WE 6

Mounting screws and permissible operating pressure related to the valves fitted.

Pressure reducing valve	Pressure relief valve	Double check valve	Check valve	Double throttle/ check valve	Pressure switch with sandwich plate	Screw GB/T70.1 double-screw bolt LT30.02		Tensile strength	Operating pressure
(clamp length 40 mm)						MA = 8.9 Nm			bar
ZDR6D..-30/..						M5×90	GB/T70.1	10.9	315
	Z..DB6V..-L4X/..					M5×90	GB/T70.1	10.9	315
		Z2S6..-L6X/..				M5×90	GB/T70.1	10.9	315
			Z1S6..-30/..			M5×90	GB/T70.1	10.9	315
				Z2FS6..-L4X/..		M5×90	GB/T70.1	10.9	315
					HED8OH-L1X/..	M5×90	GB/T70.1	10.9	315
ZDR6D..-30/..	Z..DB6V..-L4X/..					M5×135	LT30.02	10.9	315
ZDR6D..-30/..		Z2S6..-L6X/..				M5×135	LT30.02	10.9	315
ZDR6D..-30/..			Z1S6..-30/..			M5×135	LT30.02	10.9	315
ZDR6D..-30/..				Z2FS6..-L4X/..		M5×135	LT30.02	10.9	315
ZDR6D..-30/..					HED8OH-L1X/..	M5×135	LT30.02	10.9	315
	Z..DB6V..-L4X/..	Z2S6..-L6X/..				M5×135	LT30.02	10.9	315
	Z..DB6V..-L4X/..		Z1S6..-30/..			M5×135	LT30.02	10.9	315
	Z..DB6V..-L4X/..			Z2FS6..-L4X/..		M5×135	LT30.02	10.9	315
	Z..DB6V..-L4X/..				HED8OH-L1X/..	M5×135	LT30.02	10.9	315
		Z2S6..-L6X/..	Z1S6..-30/..			M5×135	LT30.02	10.9	315
		Z2S6..-L6X/..		Z2FS6..-L4X/..		M5×135	LT30.02	10.9	315
		Z2S6..-L6X/..			HED8OH-L1X/..	M5×135	LT30.02	10.9	315
			Z1S6..-30/..	Z2FS6..-L4X/..		M5×135	LT30.02	10.9	315
			Z1S6..-30/..		HED8OH-L1X/..	M5×135	LT30.02	10.9	315
				Z2FS6..-L4X/..	HED8OH-L1X/..	M5×135	LT30.02	10.9	315
ZDR6D..-30/..	Z..DB6V..-L4X/..	Z2S6..-L6X/..				M5×175	LT30.02	10.9	315
ZDR6D..-30/..	Z..DB6V..-L4X/..		Z1S6..-30/..			M5×175	LT30.02	10.9	315
ZDR6D..-30/..	Z..DB6V..-L4X/..			Z2FS6..-L4X/..		M5×175	LT30.02	10.9	315
ZDR6D..-30/..	Z..DB6V..-L4X/..				HED8OH-L1X/..	M5×175	LT30.02	10.9	315
ZDR6D..-30/..		Z2S6..-L6X/..	Z1S6..-30/..			M5×175	LT30.02	10.9	315
ZDR6D..-30/..		Z2S6..-L6X/..		Z2FS6..-L4X/..		M5×175	LT30.02	10.9	315
ZDR6D..-30/..		Z2S6..-L6X/..			HED8OH-L1X/..	M5×175	LT30.02	10.9	315
ZDR6D..-30/..			Z1S6..-30/..	Z2FS6..-L4X/..		M5×175	LT30.02	10.9	315
ZDR6D..-30/..			Z1S6..-30/..		HED8OH-L1X/..	M5×175	LT30.02	10.9	315
ZDR6D..-30/..				Z2FS6..-L4X/..	HED8OH-L1X/..	M5×175	LT30.02	10.9	315
	Z..DB6V..-L4X/..	Z2S6..-L6X/..	Z1S6..-30/..			M5×175	LT30.02	10.9	315
	Z..DB6V..-L4X/..	Z2S6..-L6X/..		Z2FS6..-L4X/..		M5×175	LT30.02	10.9	315
	Z..DB6V..-L4X/..	Z2S6..-L6X/..			HED8OH-L1X/..	M5×175	LT30.02	10.9	315
	Z..DB6V..-L4X/..		Z1S6..-30/..	Z2FS6..-L4X/..		M5×175	LT30.02	10.9	315
	Z..DB6V..-L4X/..		Z1S6..-30/..		HED8OH-L1X/..	M5×175	LT30.02	10.9	315
	Z..DB6V..-L4X/..			Z2FS6..-L4X/..	HED8OH-L1X/..	M5×175	LT30.02	10.9	315

Srew selection table for vertical stacking assembly in conjunction with directional valve WE 6

Mounting screws and permissible operating pressure related to the valves fitted.

Pressure reducing valve	Pressure relief valve	Double check valve	Check valve	Double throttle/ check valve	Pressure switch with sandwich plate	Screw GB/T70.1 double-screw bolt LT30.02		Tensile strength	Operating pressure
(clamp length 40 mm)						MA = 8.9 Nm			bar
		Z2S6..-L6X/..	Z1S6...-30/..	Z2FS6..-L4X/..		M5×175	LT30.02	10.9	315
		Z2S6..-L6X/..	Z1S6...-30/..		HED8OH-L1X/..	M5×175	LT30.02	10.9	315
			Z1S6...-30/..	Z2FS6..-L4X/..	HED8OH-L1X/..	M5×175	LT30.02	10.9	315
ZDR6D..-30/..	Z..DB6V..-L4X/..	Z2S6..-L6X/..	Z1S6...-30/..			M5×215	LT30.02	10.9	250
ZDR6D..-30/..	Z..DB6V..-L4X/..	Z2S6..-L6X/..		Z2FS6..-L4X/..		M5×215	LT30.02	10.9	250
ZDR6D..-30/..	Z..DB6V..-L4X/..	Z2S6..-L6X/..			HED8OH-L1X/..	M5×215	LT30.02	10.9	250
	Z..DB6V..-L4X/..	Z2S6..-L6X/..	Z1S6...-30/..	Z2FS6..-L4X/..		M5×215	LT30.02	10.9	250
	Z..DB6V..-L4X/..	Z2S6..-L6X/..	Z1S6...-30/..		HED8OH-L1X/..	M5×215	LT30.02	10.9	250
		Z2S6..-L6X/..	Z1S6...-30/..	Z2FS6..-L4X/..	HED8OH-L1X/..	M5×215	LT30.02	10.9	250
ZDR6D..-30/..	Z..DB6V..-L4X/..	Z2S6..-L6X/..	Z1S6...-30/..	Z2FS6..-L4X/..		M5×255	LT30.02	10.9	210
ZDR6D..-30/..		Z2S6..-L6X/..	Z1S6...-30/..	Z2FS6..-L4X/..	HED8OH-L1X/..	M5×255	LT30.02	10.9	210
ZDR6D..-30/..	Z..DB6V..-L4X/..		Z1S6...-30/..	Z2FS6..-L4X/..	HED8OH-L1X/..	M5×255	LT30.02	10.9	210
ZDR6D..-30/..	Z..DB6V..-L4X/..	Z2S6..-L6X/..		Z2FS6..-L4X/..	HED8OH-L1X/..	M5×255	LT30.02	10.9	210
ZDR6D..-30/..	Z..DB6V..-L4X/..	Z2S6..-L6X/..	Z1S6...-30/..		HED8OH-L1X/..	M5×255	LT30.02	10.9	210
	Z..DB6V..-L4X/..	Z2S6..-L6X/..	Z1S6...-30/..	Z2FS6..-L4X/..	HED8OH-L1X/..	M5×255	LT30.02	10.9	210
Directional control valve		WE6..-L6X/..	+multi-station manifold HSR06			M5×50	GB/T70.1	10.9	315
Proportional valve		WR..6..	+ multi-station manifold HSR06			M5×50	GB/T70.1	10.9	315

Illustration:

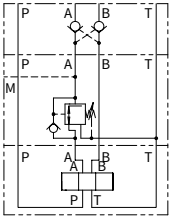
1. If the valve used is out of the above chart scope,
   the bolt length is dependent upon the stack height of valves installed actually .

2. The screw or double-screw bolt and nut mentioned in above chart,
   must be ordered separately, and the ordering code is as follows:

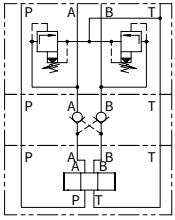
1) Nut (for double-screw bolt) ordering code: see page 964.
   e.g: Nut M5, tensile strength 10 (standard), the ordering cade is : LT30.01.005.
2) Double-screw bolt ordering code: see page 964.
   e.g: M5×255, tensile strength 10.9 (standard), the ordering cade is : LT30.02.05255.
3) screw ordering code: see page 964.
   e.g: M5×90 tensile strength 10.9 (standard), the ordering cade is : GB/T 70.1 M5×90-10.9.

Project design notes

Pressure reducing valve combined with double check valve.
The pressure reducing valve ZDR..DA (with pressure reduction in port A) must always be fitted between the directional valve and the double check valve Z2S..., otherwise leak-free closure of the system cannot be ensured.

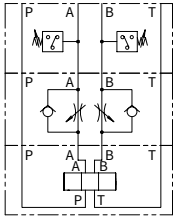


Pressure relief valve combined with double check valve Leak-free closure of theactuator is not possible, if a pressure relief valve type ZDB../Z2DB.. effective in port A and/or B is used with a double check valve.

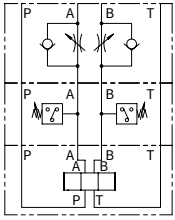


Caution: It is impossible to install sandwich plates with 2 pressure switches in the manifold blocks with actuator ports on side "C".

Pressure reducing valve combined with double check valve.
The pressure reducing valve HED8OH(with pressure reduction in port A) must always be fitted between the directional valve and the double check valve Z2FS..., otherwise leak-free closure of the system cannot be ensured.



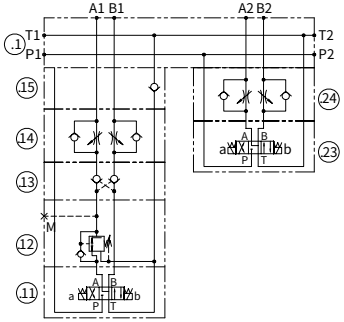
Pressure reducing valve combined with double check valve.
The pressure reducing valve HED8OH (with pressure reduction in port A) must always be fitted between the directional valve and the double check valve Z2FS..., otherwise leak-free closure of the system cannot be ensured.



The circuits shown are only examples.
These project design notes also apply to valves of similar design and function.

Example of the ordering code necessary for 2-station manifold block

Item	Qty.	Unit description	Type
.1	1	Manifold block	2HSR06-L2X/..
.11	1	Directional valve	4WE6J-L6X/...
.12	1	Pressure reducing valve	ZDR6DA..-30/..Y..
.13	1	Double check valve	Z2S6-..-L6X/..
.14	1	Double throttle/ check valve	Z2FS6-..-L4X/..
.15	1	Check valve	Z1S6T..-30/..
	4	Double-screw bolt	M5×215-LT30.02-10.9
	4	Nut	M5-LT30.01-10
.23	1	Directional valve	4WE6J-L6X/...
.24	1	Double throttle/ check valve	Z2FS6-..-L4X/..
	4	Screw	M5×90-GB/T70.1-10.9



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