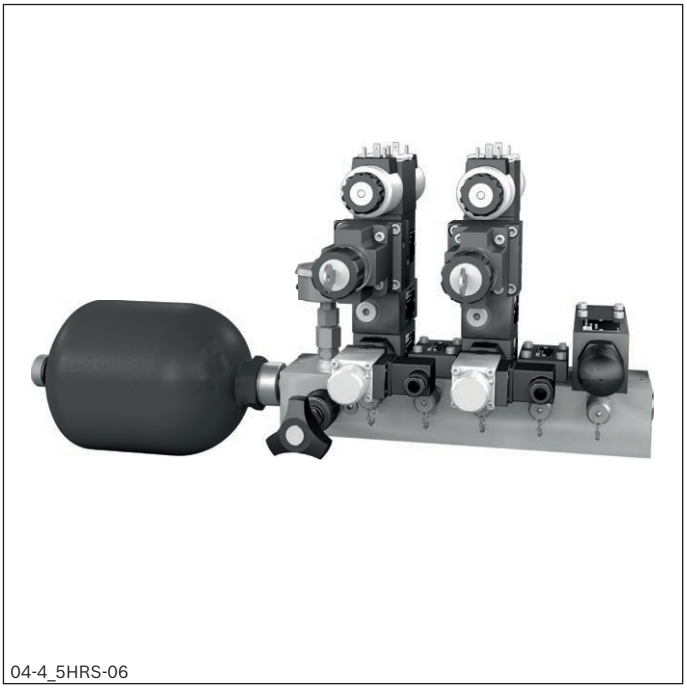
Manifolds with installation bore for a pressure relief valve

Type HSR 06 and 10

RE 48113
Edition: 2017-06



04-4_5HRS-06

- Sizes 6 and 10
- Component series 40
- Maximum operating pressure 315 bar
- 1 ... 8 stations

Features

- Base element for ready-for-connection controls in vertical stacking design
- Compact hydraulic controls
- Common pump and tankline
- Separate actuator ports of the stations
- Measuring ports in the actuator lines
- Mounting of NG6 or NG10 sandwich plates and valves
- Pressure relief valve type DBD in pressure line P
- Connection possibility of a pressure gauge in pressure line P

Contents

Ordering code

	01	02	03	04		05		06	07
Manifold		**HSR**		**M**	**-**	**40**	**/**	**01**	**D**

Number of ready-for-connection controls in vertical stacking design

01	1 control	**1**
	2 controls	**2**
	3 controls	**3**
	4 controls	**4**
	5 controls	**5**
	6 controls	**6**
	7 controls	**7**
	8 controls	**8**

02	Manifold	**HSR**

Size

03	Size 6	**06**
	Size 10	**10**

Measuring ports

04	With measuring ports in the actuator ports A and B	**M**

Component series

05	Manifold with installation possibility for a pressure relief valve type DBD 6 (with NG06) or DBD 10 (with NG10) and attachment possibility for a pressure gauge type ABZMM in pressure channel P	**40**

Connection thread

06	Pipe thread according to ISO 228 Part 1	**01**

Position of actuator ports

07	Bottom	**D**

Coating

08	Galvanic coating DIN 50979	**Fe//ZN8//CN/T0**
	Phosphate coating DIN EN 12476	**PHOSPHATED**[1)]

1) Manganese or zinc phosphate coating

Description

- Manifolds are the base element for ready for connection controls in vertical stacking design.
- On each station, highly compact hydraulic controls can be build using vertically stackable sandwich plate valves in connection with on/off and proportional servo valves.
- All stations have a common pump and tank port (P2 and T2).
- The pump line is lead out at both front sides of the manifold.
- Every station is equipped with separate actuator ports "A" and "B" and measuring ports “MA” and “MB”.
- The actuator ports are located at the bottom side of the plate.
- The manifolds are prepared for the installation of a pressure relief valve type DBD 6 or DBD 10 and a pressure gauge type ABZMM in channel P.

Standard program

NG	Number of stations	Port size A, B	Port size P, T	Type key Manifold...	Material number	**Weight** in kg	MKZ[1)]
6	1	G3/8	G1/2	1HSR06M-40/01D PHOSPHATED	R900731948	4.9	A3
6	2	G3/8	G1/2	2HSR06M-40/01D PHOSPHATED	R900731949	6.6	A3
6	3	G3/8	G1/2	3HSR06M-40/01D PHOSPHATED	R900731951	8.4	A3
6	4	G3/8	G1/2	4HSR06M-40/01D PHOSPHATED	R900731952	10.1	A3
6	5	G3/8	G1/2	5HSR06M-40/01D PHOSPHATED	R900731953	11.8	A3
6	6	G3/8	G1/2	6HSR06M-40/01D PHOSPHATED	R900731954	13.6	A3
6	7	G3/8	G1/2	7HSR06M-40/01D PHOSPHATED	upon request	15.3	A3
6	8	G3/8	G1/2	8HSR06M-40/01D PHOSPHATED	R900731956	17.1	A3
6	1	G3/8	G1/2	1HSR06M-40/01D FE//ZN8//CN/T0	R901447930	4.9	A3
6	2	G3/8	G1/2	2HSR06M-40/01D FE//ZN8//CN/T0	R901475552	6.6	A3
6	3	G3/8	G1/2	3HSR06M-40/01D FE//ZN8//CN/T0	R901473532	8.4	A3
6	4	G3/8	G1/2	4HSR06M-40/01D FE//ZN8//CN/T0	R901464548	10.1	A3
6	5	G3/8	G1/2	5HSR06M-40/01D FE//ZN8//CN/T0	R901475553	11.8	A3
6	6	G3/8	G1/2	6HSR06M-40/01D FE//ZN8//CN/T0	R901475554	13.6	A3
6	7	G3/8	G1/2	7HSR06M-40/01D FE//ZN8//CN/T0	R900731955	15.3	A3
6	8	G3/8	G1/2	8HSR06M-40/01D FE//ZN8//CN/T0	R901466553	17.1	A3
10	1	G3/4	G1	1HSR10M-40/01D FE//ZN8//CN/T0	R901280497	11.0	A3
10	2	G3/4	G1	2HSR10M-40/01D FE//ZN8//CN/T0	R901282333	17.0	A3
10	3	G3/4	G1	3HSR10M-40/01D FE//ZN8//CN/T0	R901283657	23.5	A3
10	4	G3/4	G1	4HSR10M-40/01D FE//ZN8//CN/T0	R901287176	29.0	A3
10	5	G3/4	G1	5HSR10M-40/01D FE//ZN8//CN/T0	R901287178	35.0	A3
10	6	G3/4	G1	6HSR10M-40/01D FE//ZN8//CN/T0	R901287180	41.0	A3
10	7	G3/4	G1	7HSR10M-40/01D FE//ZN8//CN/T0	R901287181	47.0	A3
10	8	G3/4	G1	8HSR10M-40/01D FE//ZN8//CN/T0	R901287182	53.0	A3

1) MKZ = material mark; A3 = standard delivery range

Order example for a manifold with phosphate coating:
Manifold with 5 stations of NG6, series 40, pipe thread and outlets at the bottom, with Minimess connections;
Manifold 5HSR06M-40/01D PHOSPHATED, material number: R900731953

Technical data
(For applications outside these values, please consult us!)

general		
Size		6, 10
Stations		From 1 ... 8
Material		GGG40
Surface coating		Galvanic coating according to DIN 50979 (FE//ZN8//CN//T0)
		Phosphate coating according to DIN EN 12476 with after-treatment (greases, oils, lubricants) (FE//ZNPH/R/5/T4 or FE//MNPH/R/5/T4)
Maximum operating pressure [1]	bar	315
Hydraulic fluid		See table below
Fixing holes		4 x M8 front threads for vertical attachment, 2 through holes ø9 for front attachment

Hydraulic fluid		Classification	Standards	Data sheet
Mineral oils		Mineral oil HLP	DIN 51524	90220
Bio-degradable	▶ Insoluble in water	Triglycerides (rape seed oil) HETG	ISO 15380	90221
		Synthetic esters HEES		
	▶ Soluble in water	Polyglycols HEPG	ISO 15380	
Flame-resistant	▶ Water-free	Organic esters HFDU, phosphoric acid esters HFDR	ISO 12922	90222
	▶ Containing water	Emulsions HFA-E, aqueous solution HFC	ISO 12922	90223

☞ **Important information on hydraulic fluids:**
- ▶ For further information and data on the use of other hydraulic fluids, please refer to the data sheets above or contact us.
- ▶ Some hydraulic fluids (HFC, HFD ...) may attack and destroy galvanized surfaces. Phosphatized plates (zinc phosphate coating, if applicable) are therefore not suitable.

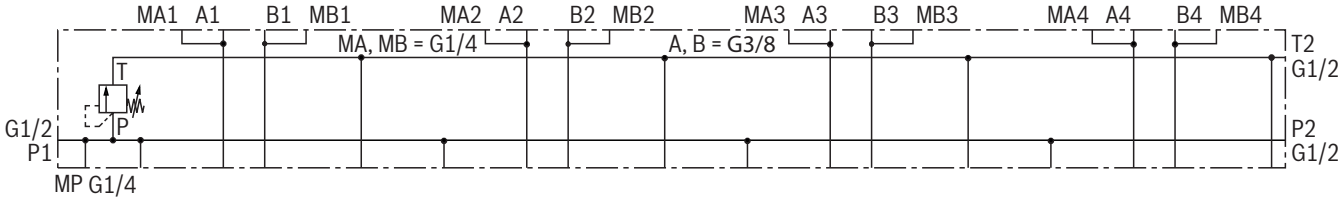
The zinc content of plates with galvanized insides, however, is very low. After a flushing procedure with subsequent filter exchange, the zinc is washed out.
Special caution is required regarding leaking hydraulic fluid, especially during maintenance and disassembly of the manifold.

[1] Manifold without valve fitting

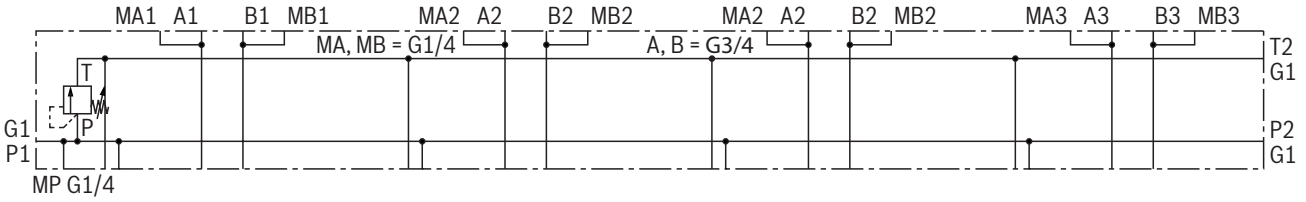
☞ **Notice:**
For the installation, commissioning and maintenance of oil hydraulic systems, please observe data sheet 07900.

Switching symbols: Manifolds with 4 stations

Manifold 4HSR06M-40/01D

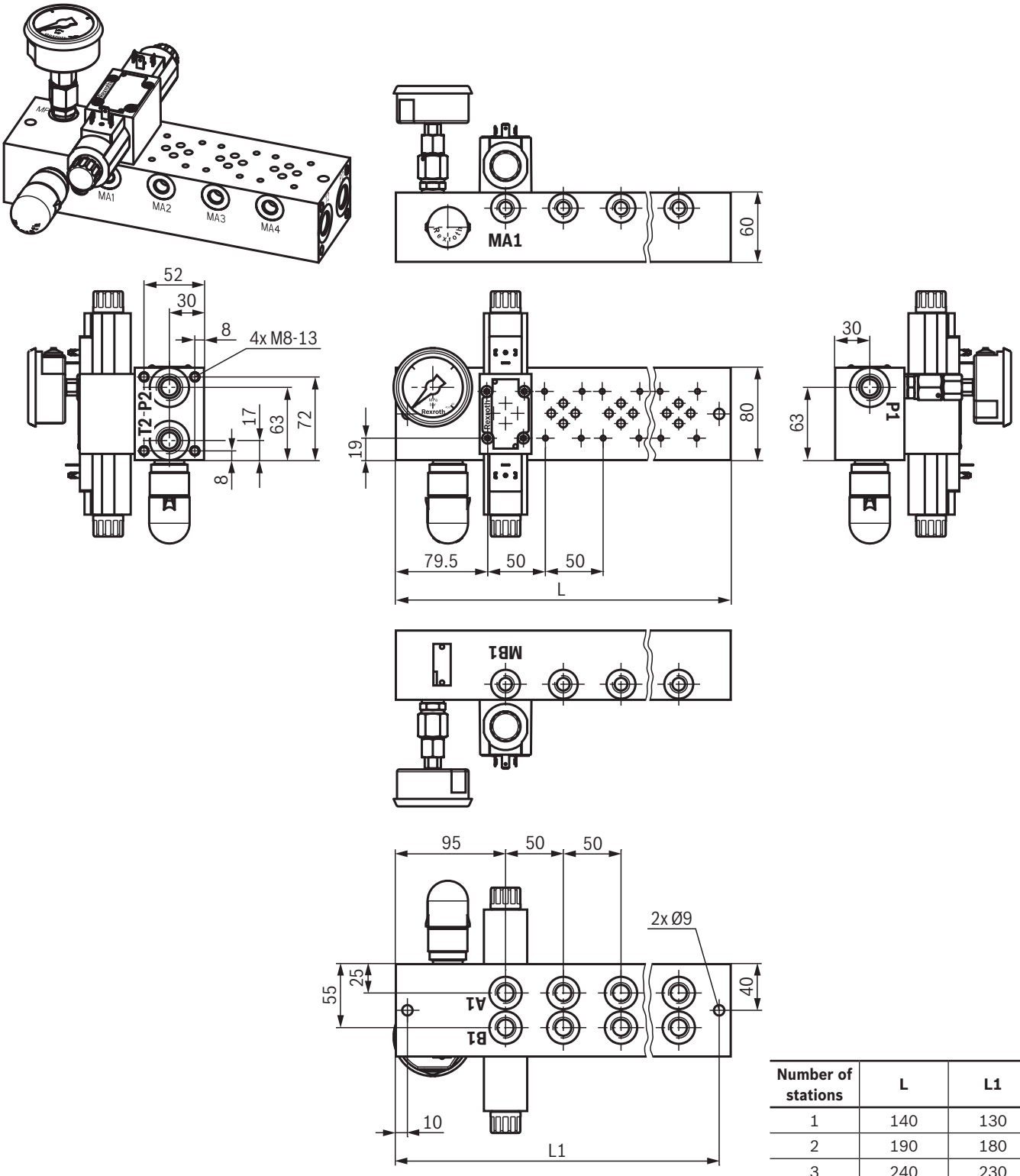


Manifold 4HSR10M-40/01D



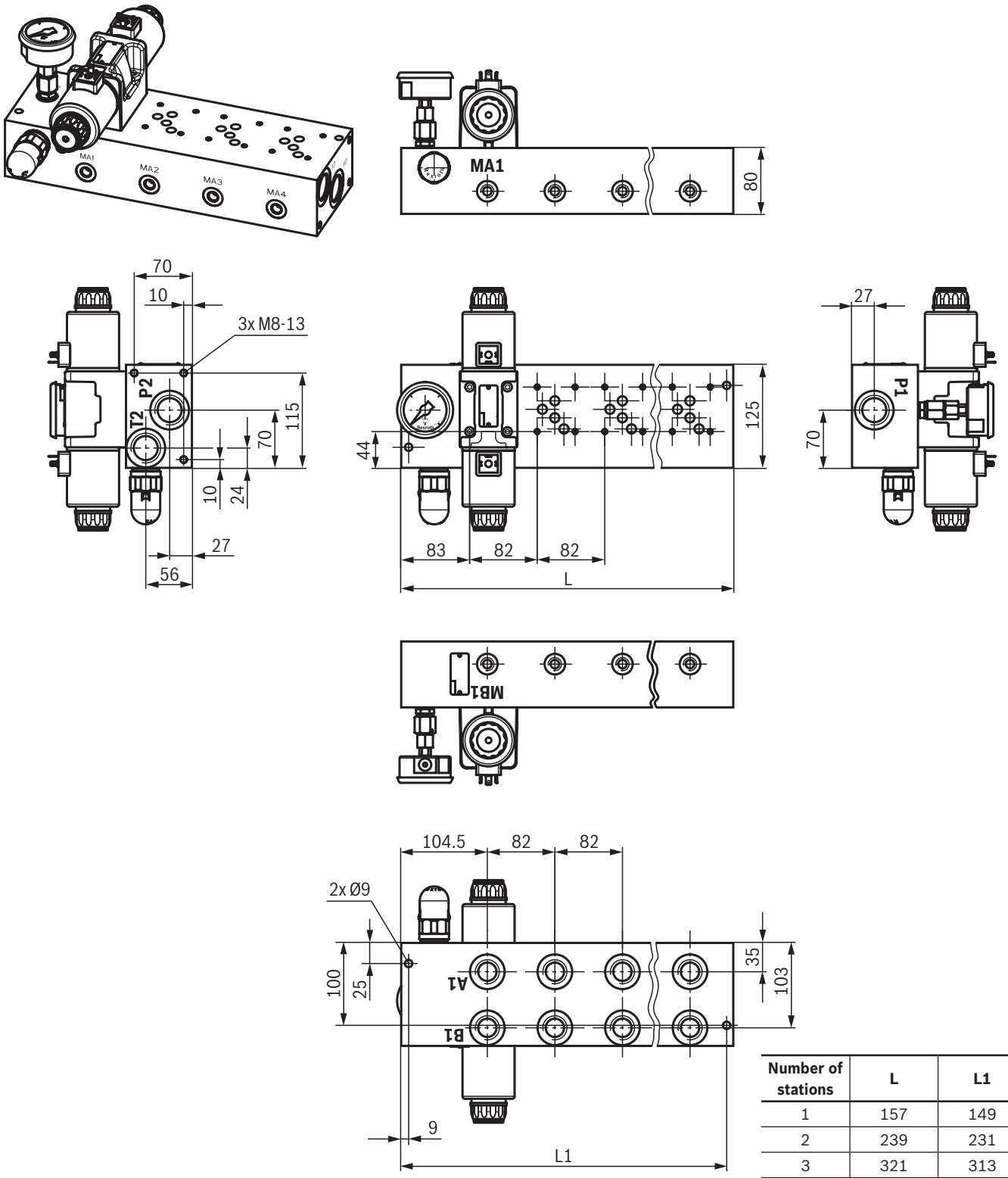
Notice:
The pressure relief valves are not included in the scope of delivery.

Dimensions: Manifold 1-8HSR06M-40/01
(dimensions in mm)



Number of stations	L	L1
1	140	130
2	190	180
3	240	230
4	290	280
5	340	330
6	390	380
7	440	430
8	490	480

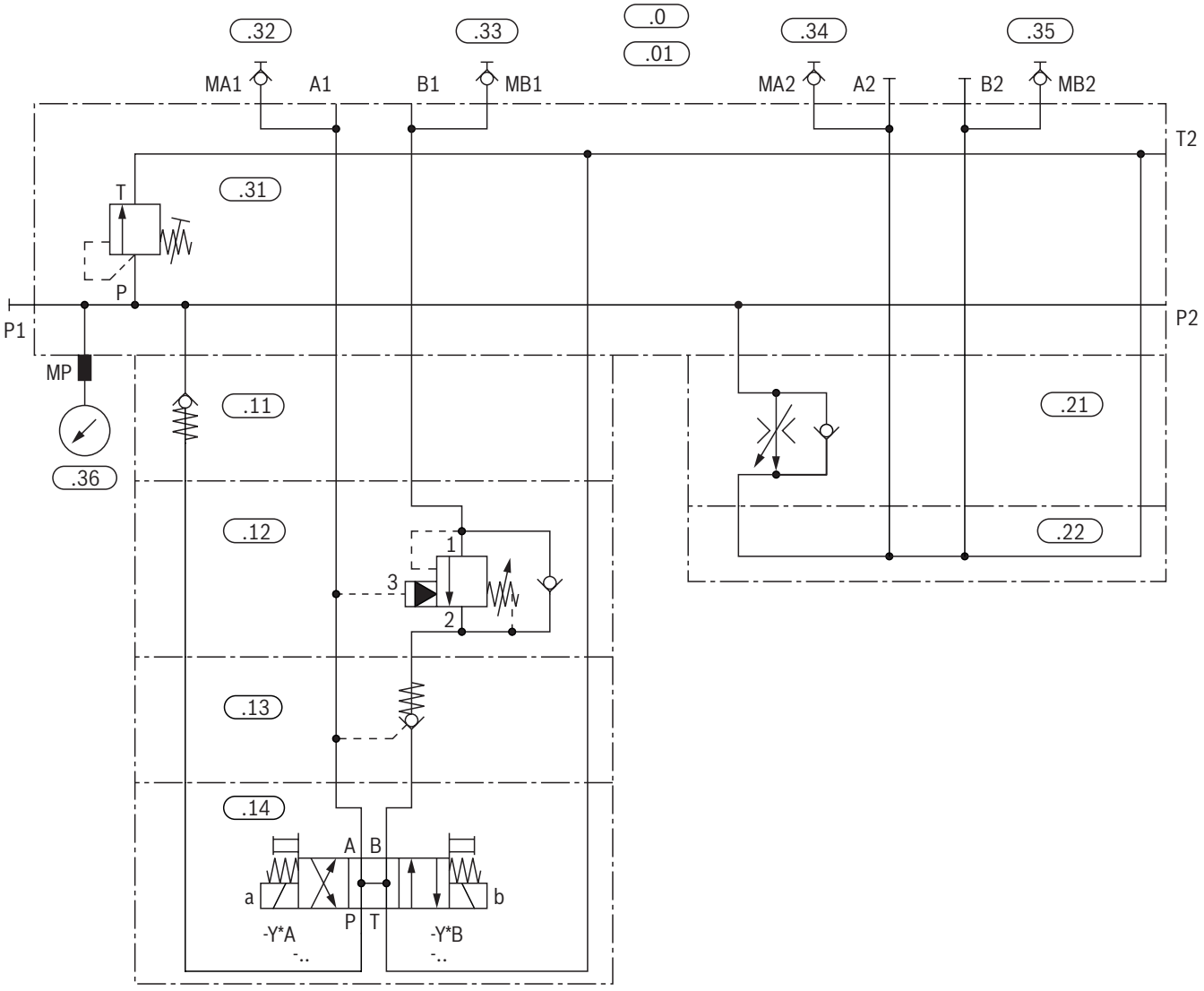
Dimensions: Manifold 1-8HSR10M-40/01C S08
(dimensions in mm)



Number of stations	L	L1
1	157	149
2	239	231
3	321	313
4	403	395
5	485	477
6	567	559
7	649	641
8	731	723

Required ordering code of a completely mounted manifold

Example:
2-fold manifold



Required ordering code of a completely mounted manifold

Example:
2-fold manifold

Item	Quantity	Device designation	Type designation	Material number
.0	1		2HSR06MD4X...C736A/G24N9K4M01[1)]	[1)]
.01	1	Manifold	2HSR06M-40/01D PHOSPHATED	R900731949
.11	1	Check valve	Z1S 6 P15-4X/N	R901219725
.12	1	Sandwich plate	HSZ 06 A431-1X/LJ4M00	R900971827
.13	1	Check valve	Z2S 6B1-6X/	R900347501
.14	1	Directional spool valve	4WE 6 H73-6X/EG24N9K4/A12	R900906660
	4	Stud screw	DIN939-M5X180-10.9	R900028125
	4	Round nut	ZN10035-M5-ST	R913020308
.21	1	Flow control valve	Z2FRM 6 TB2-2X/6QRV	R900910912
.22	1	Cover plate	HSA 06 A005-4X/M00	R901092289
	4	Hexagon socket head cap screw	ISO4762-M5X80-10.9-F&	R913000070
.31	1	Pressure relief valve	DBDS 6 K1X/315P220	R900773948
.32	1	Measuring coupling	MCS20-SDS-E-G1/4-ST3N00Z-M	R900009090
.33	1	Measuring coupling	MCS20-SDS-E-G1/4-ST3N00Z-M	R900009090
.34	1	Measuring coupling	MCS20-SDS-E-G1/4-ST3N00Z-M	R900009090
.35	1	Measuring coupling	MCS20-SDS-E-G1/4-ST3N00Z-M	R900009090
.36	1	Pressure gauge	ABZMM 63- 400BAR/MPA-R/B-G	R900022459
	1	Assembly kit	AB-G1/4-G-G1/4-NBR	R901126946
	2	Plug screw	ZN10001-G3/8A-N-ST	R913011602
			For port A2, B2:	
	1	Plug screw	ZN1001-G1/2A-N-ST	R913011603
			For port P1:	
	1	Name plate	RNI-17620-001-REXROTH	R900002783

[1)] Material number and short designation of the type are defined by Rexroth.

Selection of available subplate-mounted valves

Sandwich plate valves	Data sheet
Sandwich plates, type HSZ 06	48050
Sandwich plates, type HSZ 10	48052
Pressure reducing valves, type ZDR 6	26570
Pressure reducing valves, type ZDR 10	26585
Pressure relief valves, type ZDB 6 and Z2DB 6	25751
Pressure relief valves, type ZDB 10 and Z2DB 10	25761
Check valves,type Z2S 6	21548
Check valves, type Z2S 10	21553
Check valves, type Z1S 6	21534
Check valves, type Z1S 10	21537
Throttle check valves, type Z2FS 6	27506
Throttle check valves, type Z2FS 10	27518
Pressure switch, type HED 8	50061

Cover plates	Data sheet
Type HSA 06 and HSA 10	48042

Adapter plates	Data sheet
Type HSE	48045

Pressure gauge	Data sheet
Type ABZMM63	50205

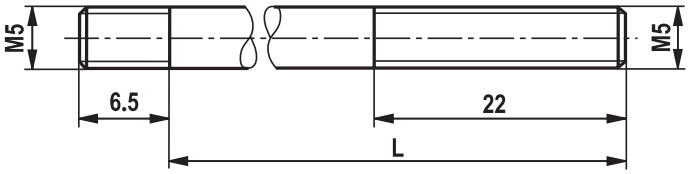
Directional valves	Data sheet
Type WE6 (electrically operated)	23178
Type WE10 (electrically operated)	23340
Type M-SED 6	22049
Type M-SEW 6	22058
Type M-SED 10	22045
Type M-SEW 10	22075
Type WP6 and WH6 (fluidicly operated)	22282
Type WM10, WP10 and WN10 (manually, fluidicly operated)	22334
Type WM6 (mechanically or manually operated)	22280
Type WEH10 (electro-hydraulic)	24751

Proportional directional valves	Data sheet
Type WRA6 and WRA10 (direct operated, without electrical position feedback)	29055
Type WRE6 and WRE10 (direct operated, with electrical position feedback)	29061
Type WRZ/WRH (pilot-operated, without position feedback)	29115

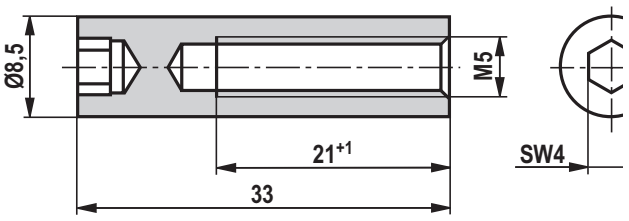
Cartridge valve	Data sheet
Pressure relief valve, type DBD 6 and DBD 10	25402

Accessories: Mounting screws dependent on the valve fitting

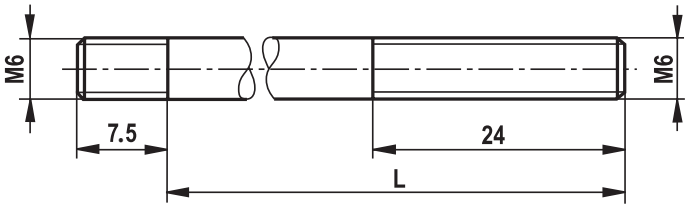
Stud screw M5 DIN 939, property class 10.9



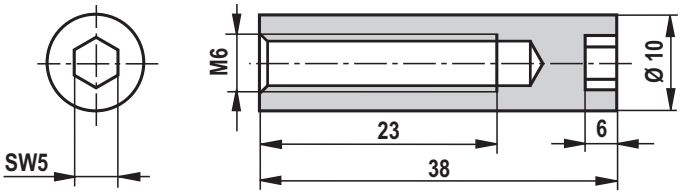
Round nut ZN10035-M5-ST, material no.: R913020308



Stud screw M6 DIN 939, property class 10.9



Round nut ZN10035-M6-ST, material no.: R913020310



L = length of the stud screws according to DIN 939

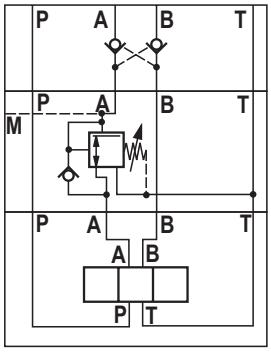
Notice:

- The length of the mounting screws of the attached vertical stackings have to be calculated individually.
- Up to 115 mm, hexagon socket head cap screw according to ISO 4762 with stability 10.9 may be used. From 120 mm, stud screws according to DIN 939 or threaded bolts with stability 10.9 and corresponding round nuts are to be used.
- For the tightening torques, please refer to the data sheets of the valves used.

Project planning information

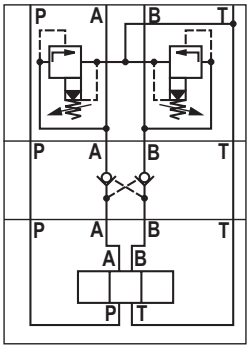
Pressure reducing valve in connection with check valve

The pressure reducing valve type ZDR..DA (pressure reduction in channel A) **must** always be installed between the directional valve and the check valve type Z2S... This ensures that the check valve can block in a leak-free manner.



Pressure relief valve in connection with check valve

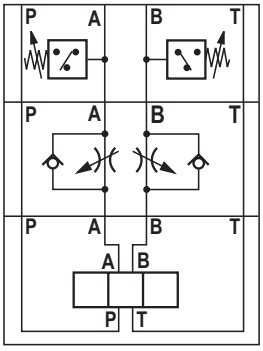
Leak-free blocking of the actuator is **not** possible if a pressure relief valve type ZDB../Z2DB.. is effective in channel A and/or B and a check valve is installed.



Pressure switch in connection with throttle check valve

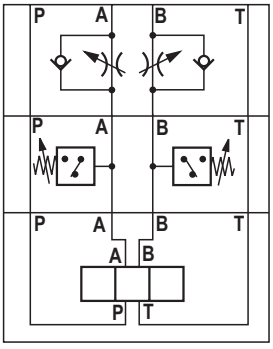
Supply control

The pressure switch type HED 8 OH, effective in channel A and/or B, is installed between the subplate and the throttle check valve type Z2FS.



Discharge control

The pressure switch type HED 8 OH, effective in channel A and/or B, is installed between the directional valve and the throttle check valve type Z2FS.



☞ **Notice:**
The illustrated sections of circuit diagrams are examples. The project planning information must also be observed for valves with a similar function.