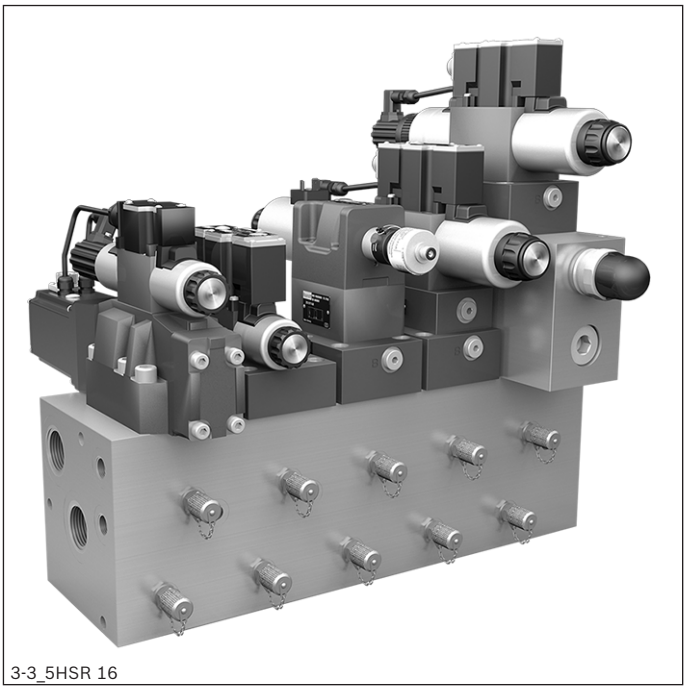
Manifolds

Type HSR 16

RE 48115
Edition: 2018-01



3-3_5HSR 16

- Size 16
- Component series 15
- Maximum operating pressure 315 bar
- 1 ... 6 stations

Features

- Base element for ready-for-connection controls in vertical stacking design
- Compact hydraulic controls
- Joint
  - Pump line
  - Tank line
  - Pilot oil line and
  - Drain line
- Separate actuator ports of the stations
- Measuring ports in the actuator lines
- Mounting of NG16 sandwich plates and valves
- Mounting of NG6 and NG10 sandwich plates and valves possible by means of an additional adapter plate

Contents

Ordering code

	01	02	03	04	05		06	07	08	09	10
Manifold		**HSR**	**16**	**M**	**15**	**/**	**315**		**01**	**XY**	

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**
02	Manifold	**HSR**
03	Size 16	**16**
04	With measuring ports in the actuator ports	**M**

Component series

05	Port sizes A, B = G1 1/4; P, T = G1 1/2; Y, X = G1/4	**15**
06	Maximum pressure 315 bar	**315**

Position of actuator ports

07	Lateral	**C**
	Bottom	**D**

Connection thread

08	Pipe thread according to ISO 228 Part 1	**01**
09	Channels for pilot and leakage oil available	**XY**

Coating

10	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.
- Manifolds of size 16 are available with 1 ... 6 stations.
- On each station, highly compact hydraulic controls can be built using vertically stackable sandwich plate valves in connection with on/off and proportional servo valves of sizes 16, 10 and 6 (with sizes 10 and 6, adapter plates are necessary).
- All stations have a joint pump, tank, pilot oil and leakage oil connection.
- The pump line P, the tank line T, the control line X and the drain line Y are led through the two front sides of the manifold.
- Lines P, T, X and Y can in each case be locked after the first and in front of the last place.
- Ports X and Y can in each case be locked at the valve connection pattern.
- Every station is equipped with separate actuator ports A and B and measuring ports in the actuator ports.
- Actuator ports are optionally either located at the bottom or laterally.

Standard program

Measuring port	Number of stations	Port size A, B	Porting pattern A, B	Port size P, T	Type key Manifold...	Material number	Weight in kg
with	1	G1 1/4	lateral	G1 1/2	1HSR16M15/315C01XY FE//ZN8//CN/T0	R900853322	24.3
			bottom		1HSR16M15/315D01XY FE//ZN8//CN/T0	R900853321	18.1
	2	G1 1/4	lateral	G1 1/2	2HSR16M15/315C01XY FE//ZN8//CN/T0	R900195604	41.5
			bottom		2HSR16M15/315D01XY FE//ZN8//CN/T0	R900195594	31.4
	3	G1 1/4	lateral	G1 1/2	3HSR16M15/315C01XY FE//ZN8//CN/T0	R900195605	57.7
			bottom		3HSR16M15/315D01XY FE//ZN8//CN/T0	R900195595	44.1
	4	G1 1/4	lateral	G1 1/2	4HSR16M15/315C01XY FE//ZN8//CN/T0	R900195606	76.0
			bottom		4HSR16M15/315D01XY FE//ZN8//CN/T0	R900195596	63.0
	5	G1 1/4	lateral	G1 1/2	5HSR16M15/315C01XY FE//ZN8//CN/T0	R900195607	114.0
			bottom		5HSR16M15/315D01XY FE//ZN8//CN/T0	R900195597	79.0
	6	G1 1/4	lateral	G1 1/2	6HSR16M15/315C01XY FE//ZN8//CN/T0	R900195608	120.0
			bottom		6HSR16M15/315D01XY FE//ZN8//CN/T0	R900195598	83.4

Order example for a manifold with phosphate coating:
Manifold with 5 stations, series 15, outlets at bottom, "Phosphated" coating:
Manifold 5HSR16M15/315D01XY PHOSPHATED, material number: R901406720

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

general	
Size	16
Stations	From 1 ...6
Material	5.3106/EN-GJS-400-15
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		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.

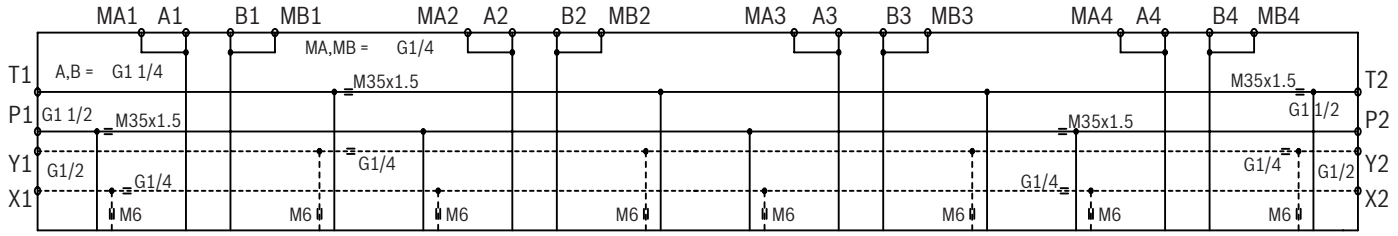
The zinc content of plates with galvanized insides, however, is very low. After a flushing procedure with subsequent filter exchange, the zinc is washed out.
Special caution is required regarding leaking hydraulic fluid, especially during maintenance and disassembly of the manifold.

[1] Manifold without valve fitting

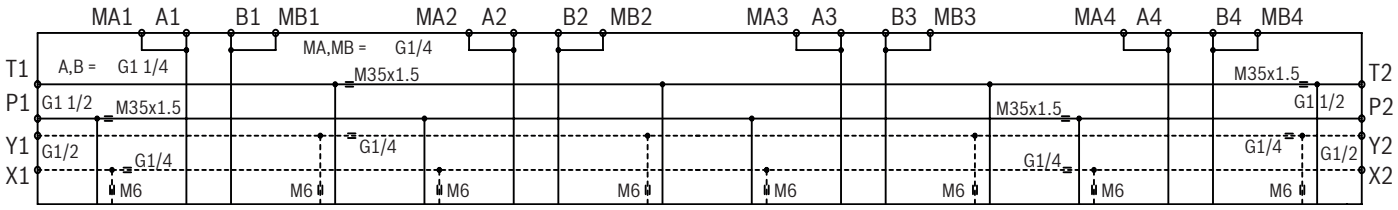
☞ **Notice:**
For the installation, commissioning and maintenance of oil hydraulic systems, please observe data sheet 07900.

Switching symbols: Manifolds with 4 stations

Manifold 4HSR16M15/315C01XY

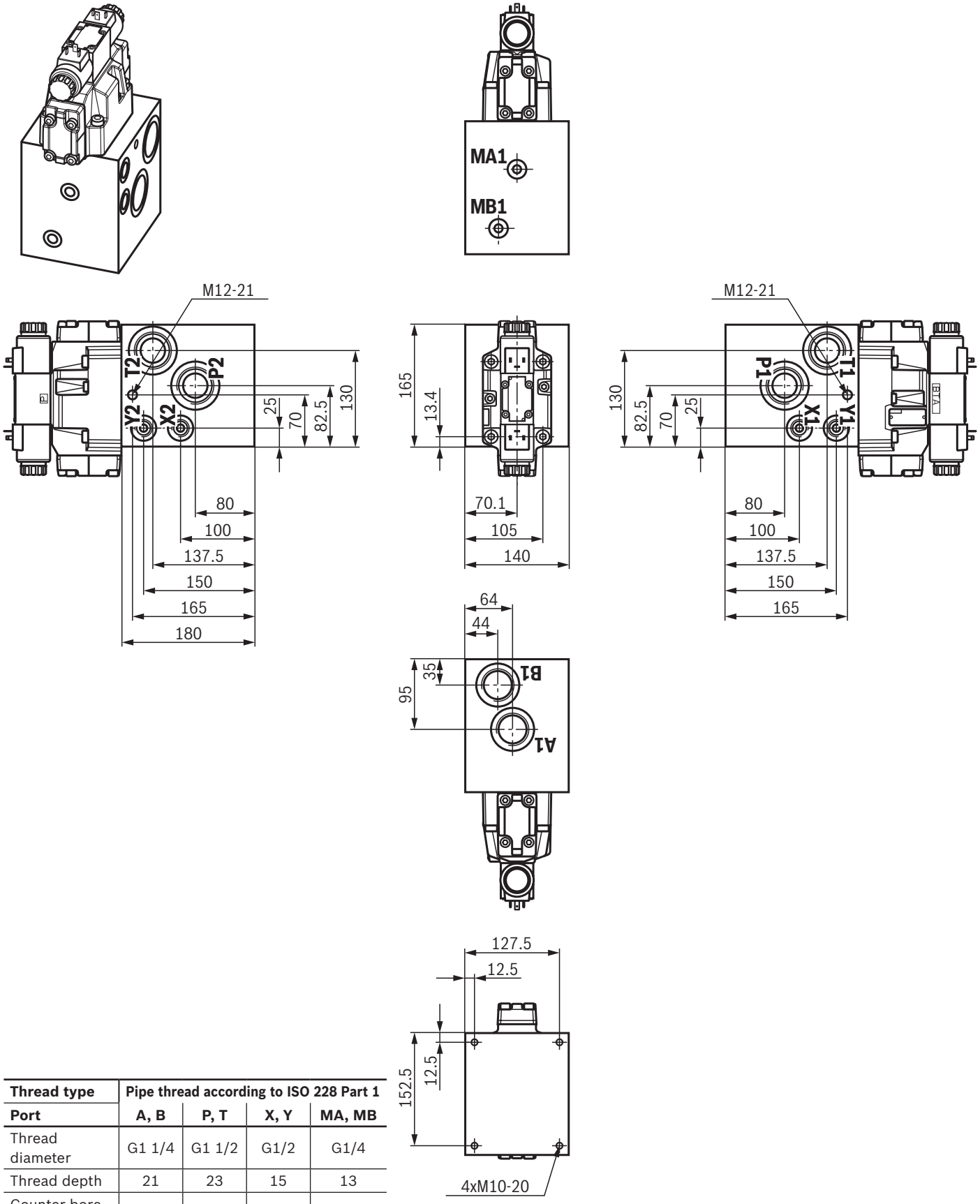


Manifold 4HSR16M15/315D01XY



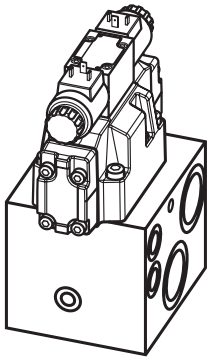
☞ **Notice:**
In a fitted manifold, the X and Y bores of the porting patterns are to be closed unless they are required and/or sealed by other sandwich plates or valves!
Non-compliance may cause malfunctions and leakage!

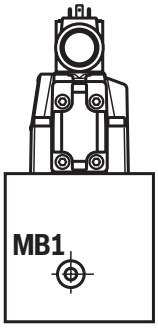
Dimensions: Manifold 1HSR16M15/315C01XY (dimensions in mm)

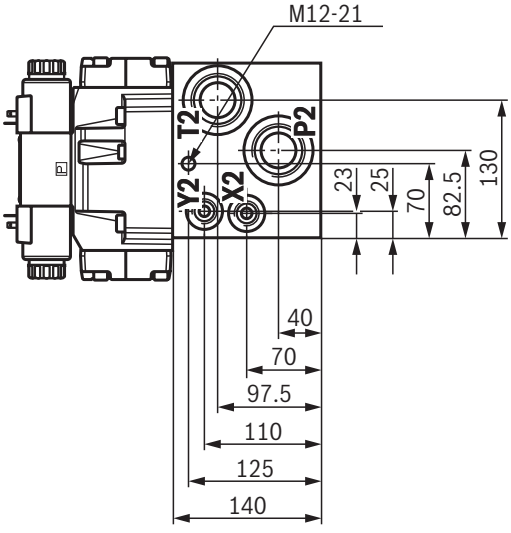


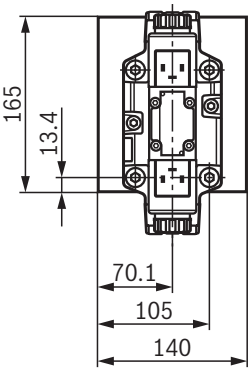
Thread type	Pipe thread according to ISO 228 Part 1			
Port	A, B	P, T	X, Y	MA, MB
Thread diameter	G1 1/4	G1 1/2	G1/2	G1/4
Thread depth	21	23	15	13
Counter bore diameter	42.5	48.5	21.4	13.6
Recess depth	0.2	0.2	0.2	0.2

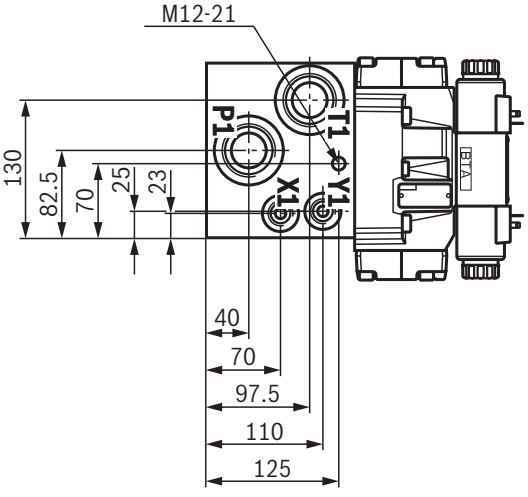
Dimensions: Manifold 1HSR16M15/315D01XY (dimensions in mm)

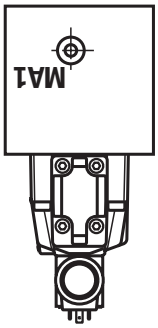


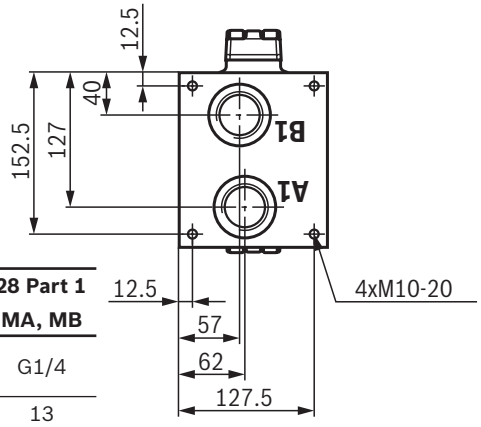












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Thread diameter	G1 1/4	G1 1/2	G1/2	G1/4
Thread depth	21	23	15	13
Counter bore diameter	42.5	48.5	21.4	13.6
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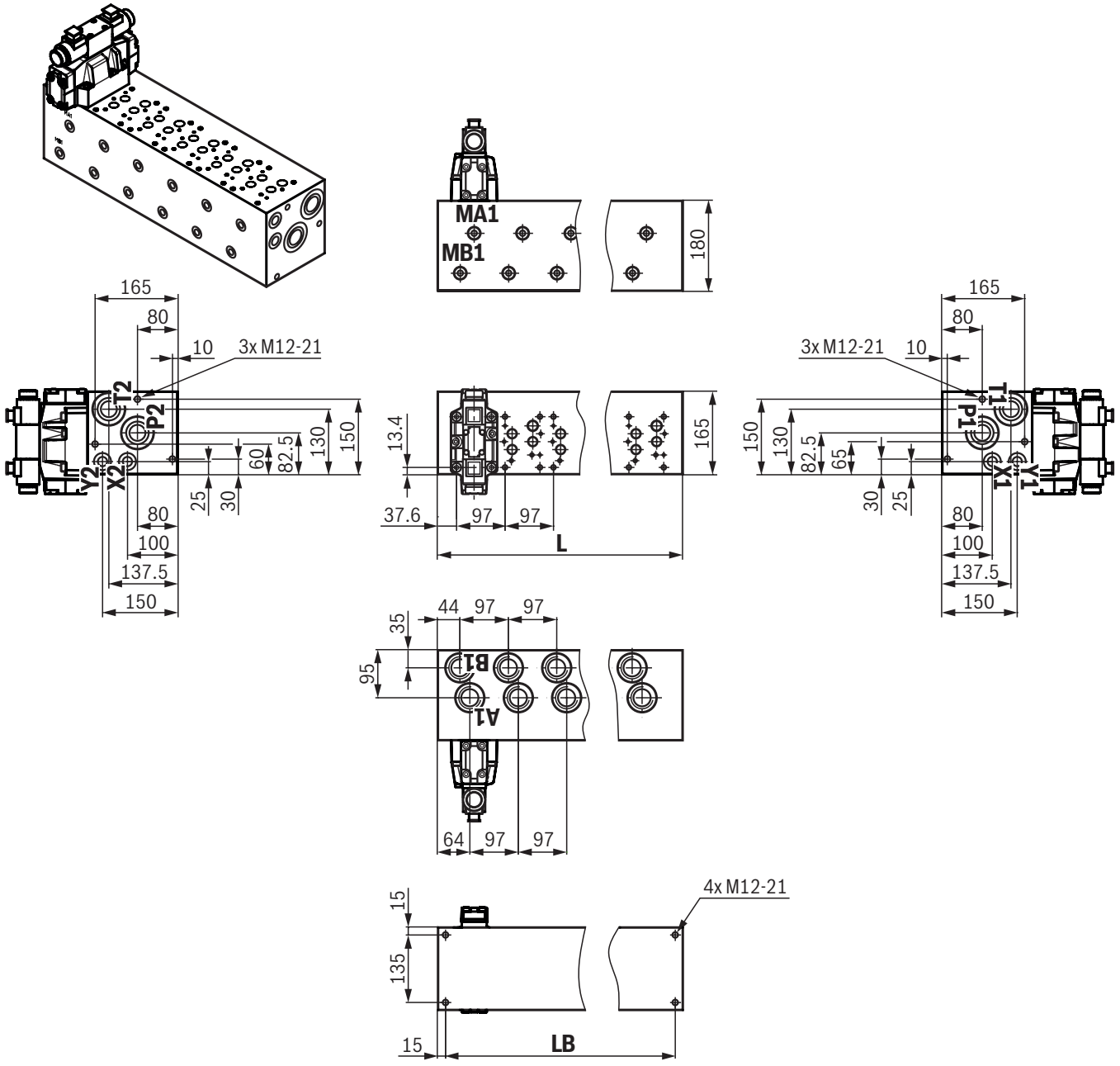
Dimensions: Manifold 2-6HSR16M15/315C01XY (dimensions in mm)



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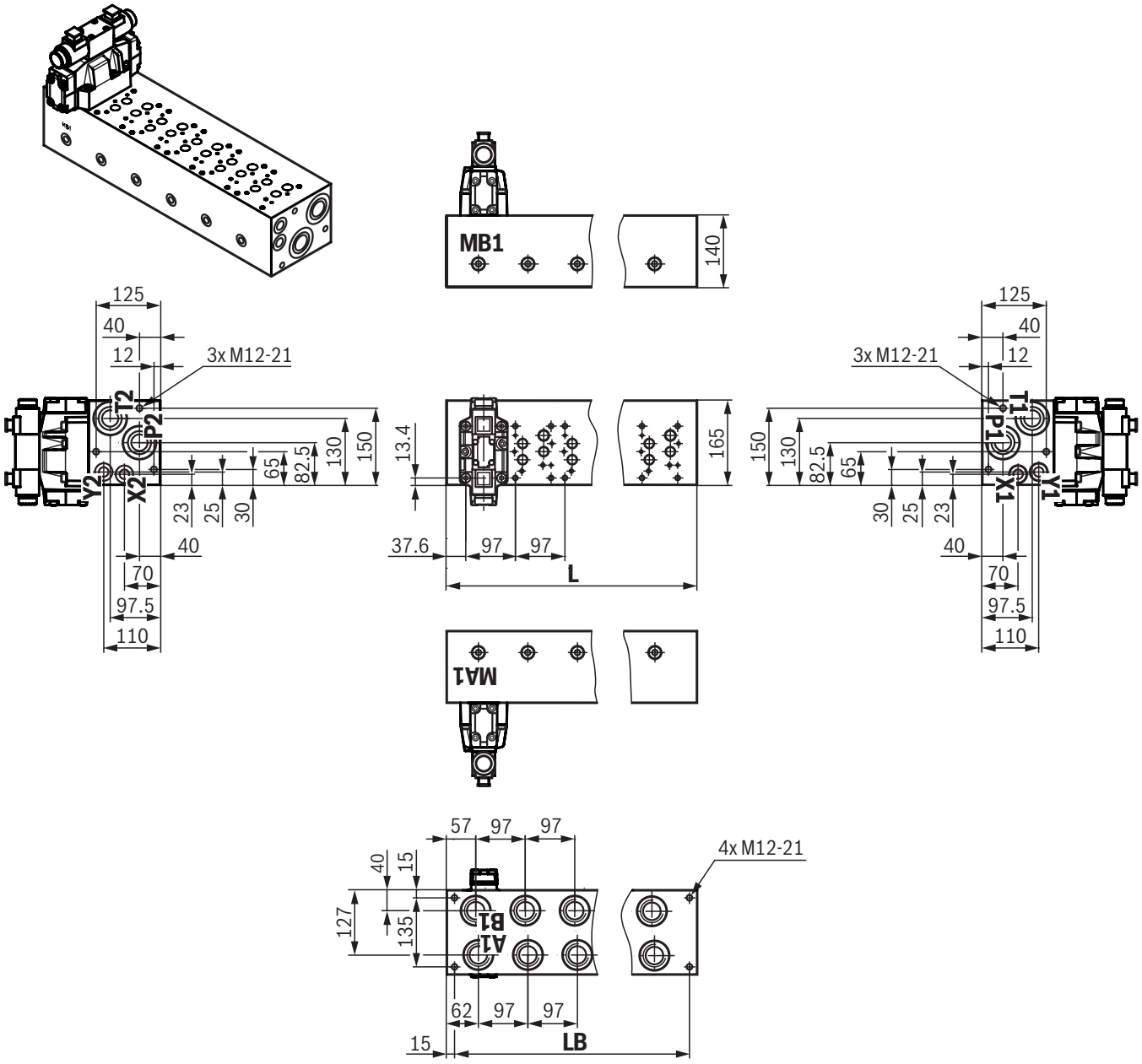
Recess depth	0.2	0.2	0.2	0.2

Number of stations	L	LB
2	242	212
3	339	309
4	436	406
5	533	503
6	630	600

Dimensions: Manifold 2-6HSR16M15/315D01XY (dimensions in mm)



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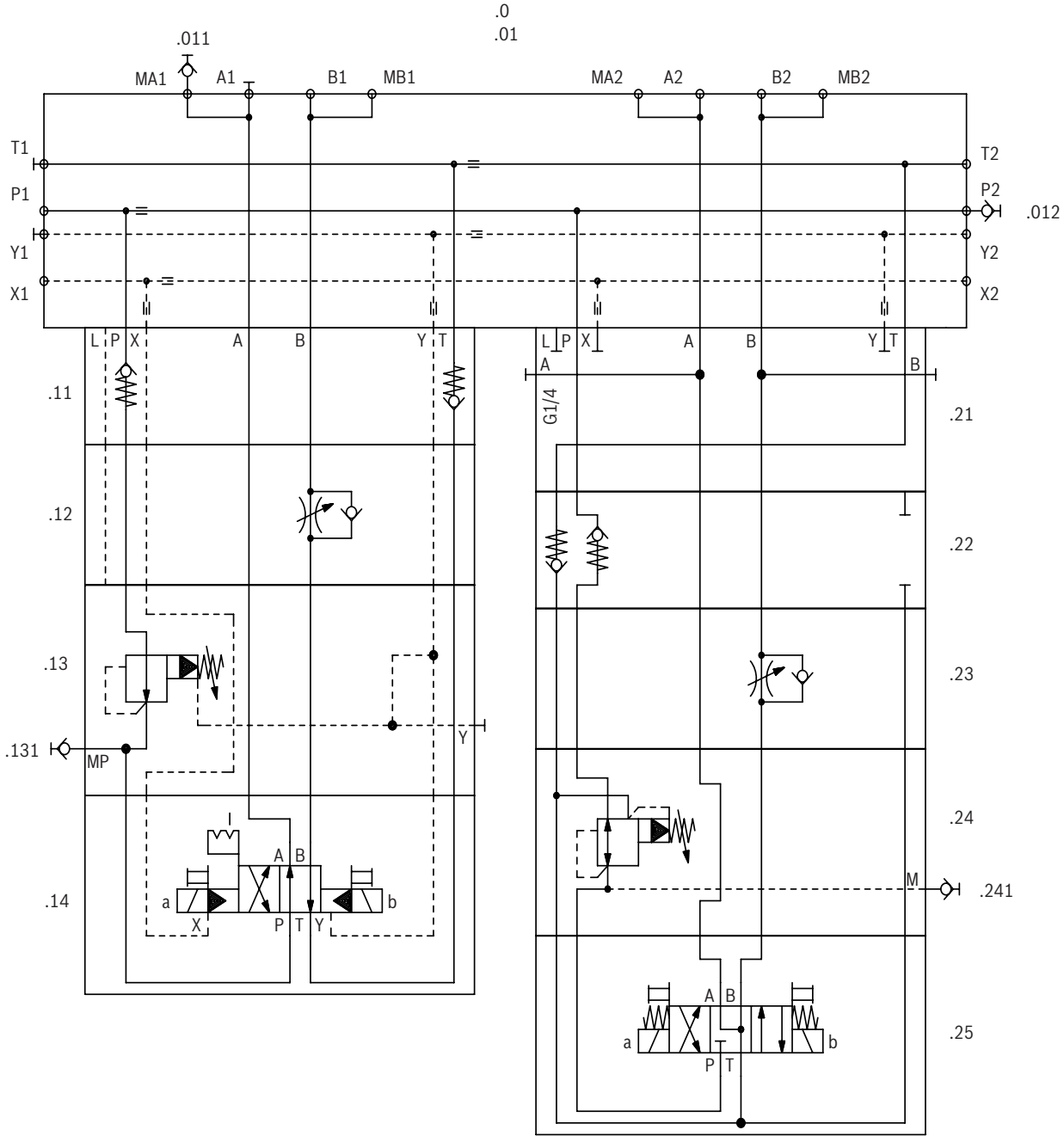
Number of stations	L	LB
2	242	212
3	339	309
4	436	406
5	533	503
6	630	600

Required ordering code of a completely mounted manifold

Example:
2-fold manifold



Required ordering code of a completely mounted manifold

Example:
2-fold manifold

Position	Quantity	Device designation	Type designation	Material no.
.0	1	Manifold	2HSR 16 MC1X/... [1]	[1]
.01	1	Manifold	2HSR16M15/315C01XY FE//ZN8//CN/T0	R900195604
.011	1	Measuring coupling	MCS20-SDS-E-G1/4-ST3N00Z-M	R900009090
.012	1	Measuring coupling		
.11	1	Check valve	Z1S 16 F1-1X/	R901153039
.12	1	Throttle check valve	Z2FS 16B8-3X/S2	R900498949
.13	1	Sandwich plate	HSZ 16 B550-3X/5-100M01	R900558726
.131	1	Measuring coupling	MCS20-SDS-E-G1/4-ST3N00Z-M	R900009090
.14	1	Directional spool valve	4WEH 16 HD7X/OF6EG24N9ES2K4/B10	R900971896
	2	Stud screw	DIN939-M6X270-10.9	R900012021
	4	Stud screw	DIN939-M10X260-10.9	R900025372
	2	Round nut	ZN10035-M6-ST	R913020310
	4	Round nut	ZN10035-M10-ST	R913020311
.21	1	Adapter plate	HSE 16B 10A 001-3X/M01	R900494609
.22	1	Check valve	Z1S 10 P05-1TA05-2TB9-4X/F	R901274768
.23	1	Throttle check valve	Z2FS 10B5-3X/S2	R900989106
.24	1	Pressure reducing valve	ZDR 10 VP5-3X/100YM	R900411309
.241	1	Measuring coupling	MCS20-SDS-E-G1/4-ST3N00Z-M	R900009090
.25	1	Directional spool valve	4WE10J73-5X/EG24N9K4/A12M	R901341855
	4	Stud screw	DIN939-M6X190-10.9	R900014968
	4	Round nut	ZN10035-M6-ST for port A1	R913020310
	1	Plug screw	G1 1/4-NBR *BG for port Y1 and Y2	R900838090
	2	Plug screw	ZN1001-G1/2A-N-ST for port T1	R913011603
	1	Plug screw	ZN10001-G1 1/2A-N-ST for port P1	R913011607
	1	Plug screw	G1 1/4-NBR *BG	R900838095
	1	Name plate	ZN20001-1-REXROTH	R900005158

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

Accessories: Plug screws

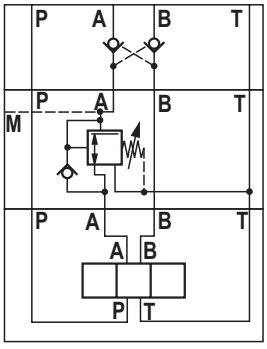
Channel	Thread	Material no.	Designation
X1, X2, Y1, Y2	G1/4	R913019136	ZN10027-R1/4-SV
P1, P2, T1, T2	M35x1.5	R900622789	M35X1.5X26-ST
X, Y in the porting pattern	M6	R913019128	ZN10027-M6-SV

☞ **Notice:**
Plug screws must be ordered separately!

Project planning information

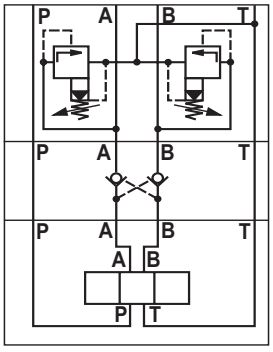
Pressure reducing valve in connection with check valve

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

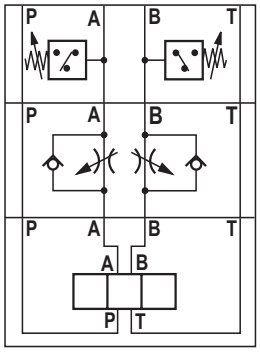
Leak-free blocking of the actuator is **not** possible if a pressure relief valve type ZDB../Z2DB.. is effective in channel A and/or B and a check valve is installed.



Pressure switch in connection with throttle check valve

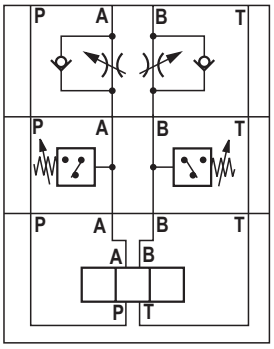
Supply control

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.

Notes

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