

# 2-way cartridge valves- directional function Cartridge valves type LC... Control covers type LFA...

Nominal sizes 16 to 160

Series 2X; 6X; 7X

Maximum operating pressure 420 bar

Maximum flow 25000 L/min

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H5591•

Control cover type LFA 25 WEA7X/...  
with directional valve 4WE 6 D6X/EG24N9K4 and plug-in connector



H5455•

Cartridge valve type LC 25 A40E7X/...

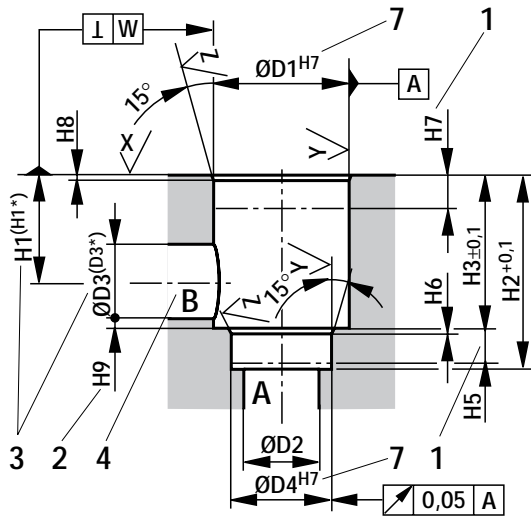
## Features

- Valve poppet with or without damping nose
- 2 area ratios
- 4 different springs
- 4 stroke limiters
- Control cover with built-in poppet valve
- Control cover with built-in shuttle valve
- Control cover for mounting directional spool valves with or without built-in shuttle valve
- Control cover for mounting directional poppet valves with or without built-in shuttle valve

### – Further information:

Pilot valves	Nom. size 6	Nom. size 10
Directional spool valve type WE	RE 23 178	RE 23 327
Directional poppet valve type SEW	RE 22 058	RE 22 075
Directional poppet valve type SED	RE 22 049	RE 22 045

Cavity and porting pattern to DIN ISO 7368 (with the exception of NS 125 and 160) (Dimensions in mm)



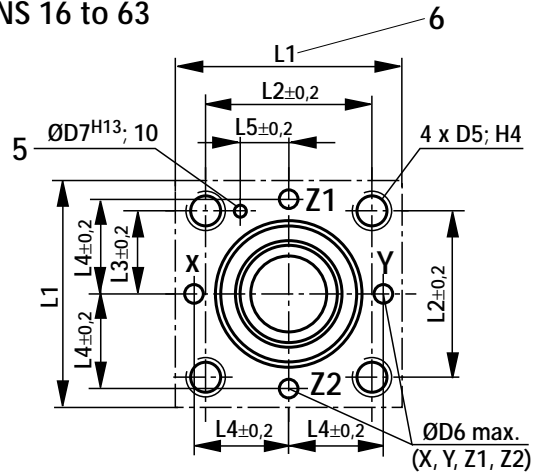
$$X/\sqrt{\quad} = \sqrt{R_{\max} 4}$$

$$Y/\sqrt{\quad} = \sqrt{R_{\max} 8}$$

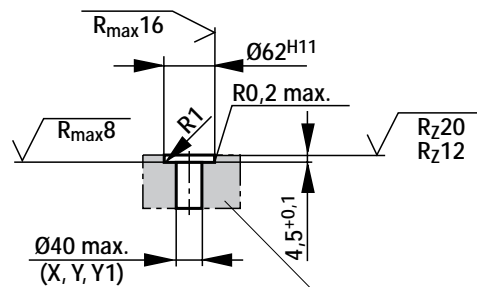
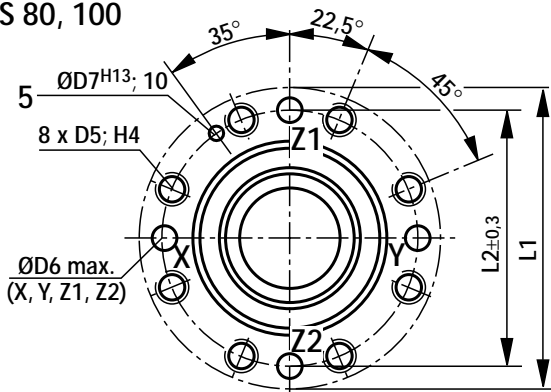
$$Z/\sqrt{\quad} = \sqrt{R_z 10}$$

For dimensional details and an item explanation, see page 3!

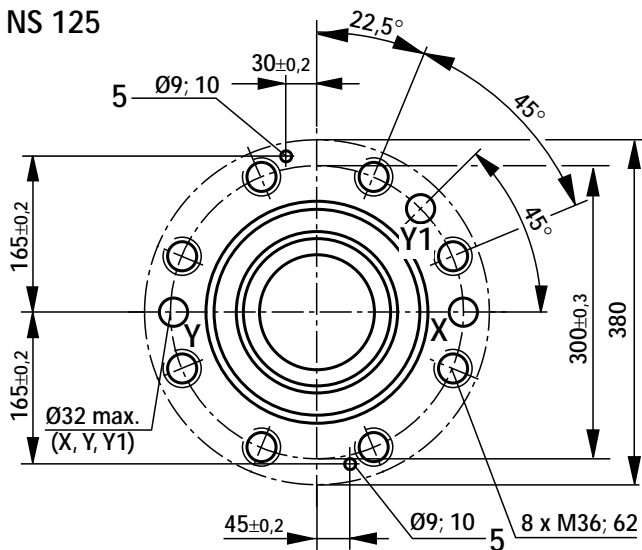
NS 16 to 63



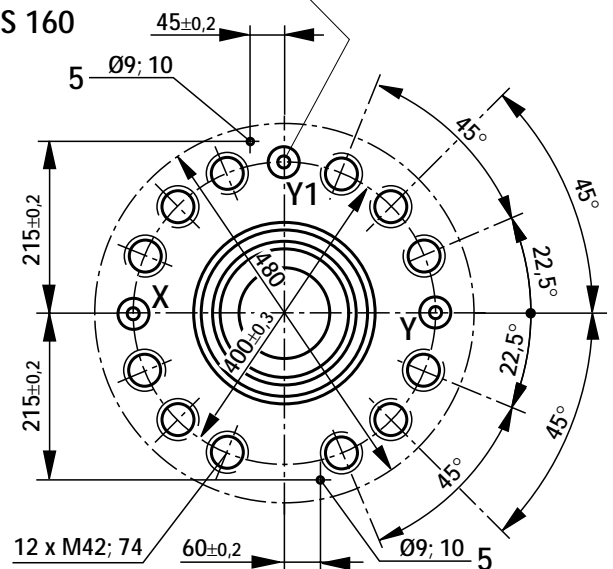
NS 80, 100



NS 125



NS 160



# Cavity and porting pattern to DIN ISO 7368 (with the exception of NS 125 and 160) (Dimensions in mm)

NS	16	25	32	40	50	63	80	100	125	160
ØD1	32	45	60	75	90	120	145	180	225	300
ØD2	16	25	32	40	50	63	80	100	150 <sup>1)</sup>	200 <sup>1)</sup>
ØD3	16	25	32	40	50	63	80	100	125	200
(ØD3*)	25	32	40	50	63	80	100	125	150	250 <sup>1)</sup>
ØD4	25	34	45	55	68	90	110	135	200	270
ØD5	M8	M12	M16	M20	M20	M30	M24	M30	–	–
ØD6 <sup>1)</sup>	4	6	8	10	10	12	16	20	–	–
ØD7	4	6	6	6	8	8	10	10	–	–
H1	34	44	52	64	72	95	130	155	192	268
(H1*)	29,5	40,5	48	59	65,5	86,5	120	142	180	243
H2	56	72	85	105	122	155	205	245	300 <sup>+0,15</sup>	425 <sup>+0,15</sup>
H3	43	58	70	87	100	130	175 <sup>±0,2</sup>	210 <sup>±0,2</sup>	257 <sup>±0,5</sup>	370 <sup>±0,5</sup>
H4	20	25	35	45	45	65	50	63	–	–
H5	11	12	13	15	17	20	25	29	31	45
H6	2	2,5	2,5	3	3	4	5	5	7 <sup>±0,5</sup>	8 <sup>±0,5</sup>
H7	20	30	30	30	35	40	40	50	40	50
H8	2	2,5	2,5	3	4	4	5	5	5,5 <sup>±0,2</sup>	5,5 <sup>±0,2</sup>
H9	0,5	1	1,5	2,5	2,5	3	4,5	4,5	2	2
L1	65/80	85	102	125	140	180	250	300	–	–
L2	46	58	70	85	100	125	200	245	–	–
L3	23	29	35	42,5	50	62,5	–	–	–	–
L4	25	33	41	50	58	75	–	–	–	–
L5	10,5	16	17	23	30	38	–	–	–	–
W	0,05	0,05	0,1	0,1	0,1	0,2	0,2	0,2	0,2	0,2

<sup>1)</sup> Maximum dimension

1 Depth of fit

2 Reference dimension

3 For diameters of port B other than ØD3 or (ØD3\*) the distance from the cover mounting surface to centre of the port must be calculated.

4 Port B may be moved about the central axis of port A. However, care must be taken that the fixing holes and control holes are not damaged.

5 Locating pin holes

6 **Note on porting pattern NS 16:** Length L1 (holes on x–y axis) is 80 mm in control covers with built-on directional valve.

7 With  $\varnothing \leq 45$  mm → fit H8 permissible!

## Function, section, symbol

2-way cartridge valves are designed as inserts for compact manifold control blocks. The main component with ports A and B fits into an installation cavity with dimensions to DIN ISO 7368 and is built into the control block and sealed with a cover. In most cases, the cover also acts as a connection between the control side of the main component and the pilot valves. By controlling the main valve with suitable pilot valves, the main component can assume pressure, directional or throttling functions, or a combination of these. Particularly economic designs can be achieved by matching the valve sizes to the varying flows required by the individual paths of an actuator. When the element on the main valve is able to assume more than one function, a particularly economic design can be achieved.

### Directional function

2-way cartridge valves basically comprise of control cover (1) and cartridge element (2). The control cover contains the control drillings, and depending on the function required optionally a stroke limiter, a hydraulically controlled directional poppet valve or a shuttle valve. In addition, directional spool valves or directional poppet valves may be mounted onto the control cover. The cartridge element basically comprises of a bush (3), a ring (4) (only up to NS 32), a valve poppet (5), optionally with damping nose (6), or without damping nose (7), and closing spring (8).

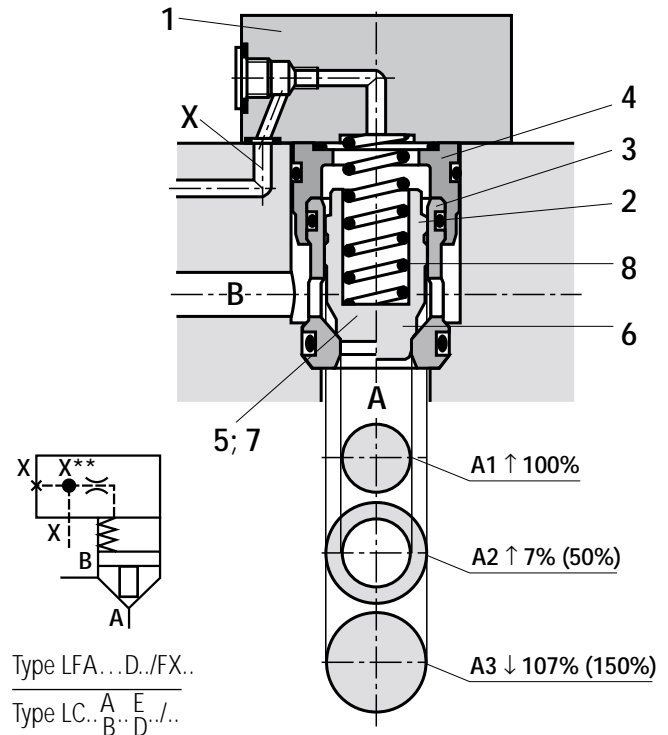
### Function

2-way cartridge valves operate dependent on pressure. Hence for operation, there are three important pressurised areas: A1, A2, A3. The area on valve seat A1 is taken as 100 %. The annular area A2 is 7% or 50% of area A1 depending on the model. The area ratio A1 : A2 is, therefore either 14,3 : 1 or 2 : 1. Area A3 is equal to sum of areas A1 + A2. Due to the different area ratios A1 : A2 and consequently the different annulus area (A2), area A3 may on one occasion be 107 % and another occasion 150 % of the 100 % area at seat A1.

### Basically the following applies:

Areas A1 and A2 operate to open the valve. Area A3 and the spring operates to close the valve. The effective direction of the resultant force (of opening and closing forces) determines the switched position of the 2-way cartridge valve.

2-way cartridge valves may have flow passed from A to B or from B to A. When area A3 is pressurised by obtaining pilot oil from port B or by an external pilot oil supply, port A is closed, leak-free.



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

Pressure fluid	Mineral oils (HL, HLP) to DIN 51 524 <sup>1)</sup> ; Fast bio-degradable pressure fluids to VDMA 24 568 (also see RE 90 221); HETG (rape seed oil) <sup>1)</sup> ; HEPG (polyglycole) <sup>2)</sup> ; HEES (synthetic ester) <sup>2)</sup> ; other fluids on request		
Pressure fluid temperature range	°C	- 20 to + 80	
Viscosity range	mm <sup>2</sup> /s	2.8 to 380	
Degree of contamination	Maximum permissible degree of contamination of the fluid is to NAS 1638 class 9. We, therefore, recommend a filter with a minimum retention rate of $\beta_{10} \geq 75$ .		
Max. operating pressure	- Without directional valve	bar	420
	- Ports A, B, X, Z1, Z2	bar	315; 350; 420 (dependent on the built-on valve)
	- Port Y	bar	Corresponds to the tank pressure of the built-on valve

<sup>1)</sup> Suitable for NBR and FKM seals

<sup>2)</sup> Only suitable for FKM seals

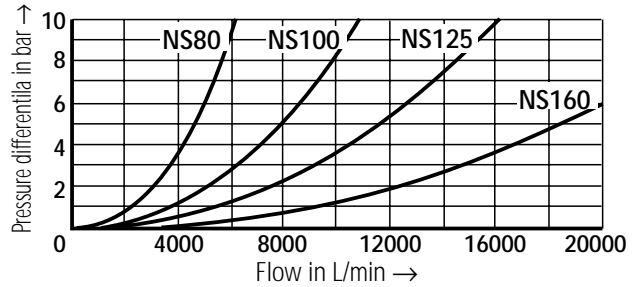
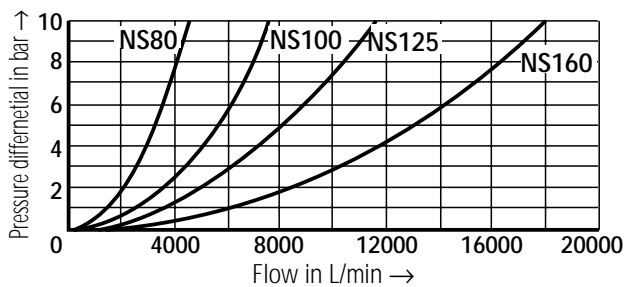
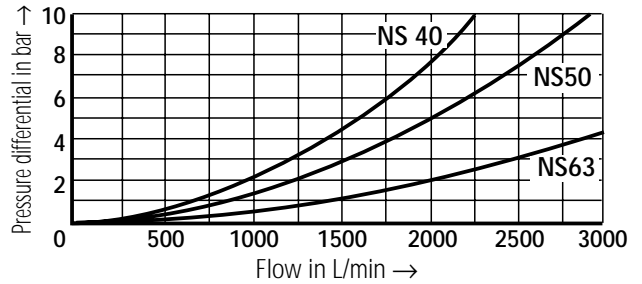
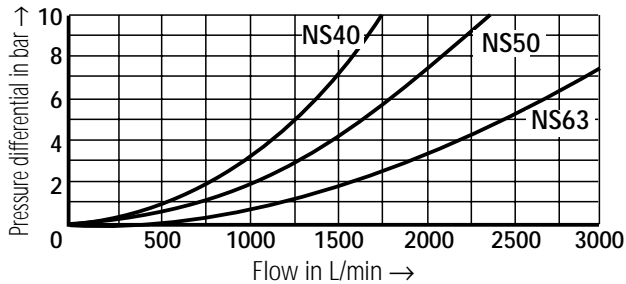
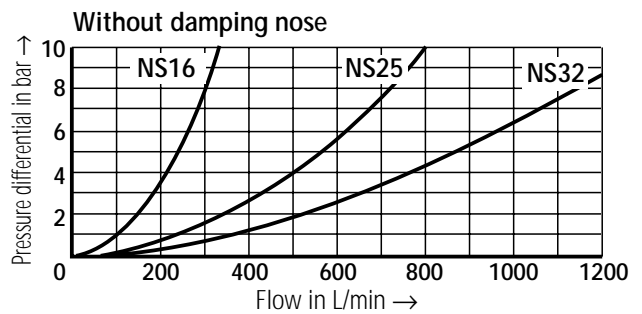
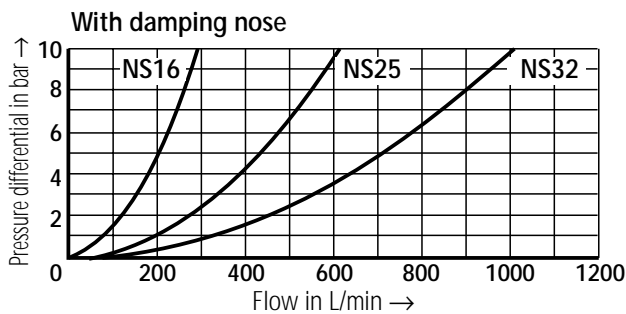


**Technical data** (for applications outside these parameters, please consult us!)

**2-way cartridge valve - directional function**

		Nominal size									
		16	25	32	40	50	63	80	100	125	160
Area A1 in cm <sup>2</sup>	LC..A..	1.89	4.26	6.79	11.1	19.63	30.2	37.9	63.6	95	160.6
	LC..B..	2.66	5.73	9.51	15.55	26.42	41.28	52.8	89.1	133.7	224.8
Area A2 in cm <sup>2</sup>	LC..A..	0.95	1.89	3.39	5.52	8.64	14.0	18.84	31.4	48	79.9
	LC..B..	0.18	0.43	0.67	1.07	1.85	2.90	3.94	5.9	9.3	15.7
Area A3 in cm <sup>2</sup>	LC..A..	2.84	6.16	10.18	16.62	28.27	44.2	56.74	95	143	240.5
	LC..B..	2.84	6.16	10.18	16.62	28.27	44.2	56.74	95	143	240.5
Stroke in cm	LC..E..	0.9	1.17	1.4	1.7	2.1	2.4	2.4	3.0	3.8	5.0
	LC..D..	0.9	1.17	1.4	1.9	2.3	2.8	3.0	3.8	4.8	6.5
Pilot volume in cm <sup>3</sup>	LC..E..	2.56	7.21	14.3	28.3	59.4	106	136	285	544	1203
	LC..D..	2.56	7.21	14.3	31.6	65.0	124	170	361	687	1563
Theoretical pilot flow at a switching time of 10 ms in L/min	LC..E..	15.4	43.3	86	170	356	636	816	1710	3264	7218
	LC..D..	15.4	43.3	86	190	390	744	1020	2166	4122	9378
Weight in kg	Cartridge valve	0.25	0.5	1.1	1.9	3.9	7.2	13.0	27.0	44.0	75.0
	Control cover	1.2	2.3	4.0	7.4	10.5	21.0	27.0	42.0	80.0	150.0
<b>Cracking pressure in bar</b>											
Direction of flow A to B	LC..A 00..	0.02	0.025	0.05	0.05	0.05	0.07	0.07	0.1	0.15	0.15
	LC..A 05..	0.35	0.35	0.36	0.35	0.37	0.31	0.44	0.43	0.43	0.45
	LC..A 10..	0.70	0.68	0.72	0.71	0.67	0.64	0.88	0.88	0.88	–
	LC..A 20..	2.03	2.18	2.12	2.02	2.01	2.0	1.75	1.75	1.76	1.94
	LC..A 30..	–	–	–	–	–	–	–	–	2.05	–
	LC..A 40..	3.50	3.90	3.80	4.0	4.11	3.8	3.13	3.04	–	–
	LC..B 00..	0.014	0.02	0.035	0.035	0.035	0.05	0.05	0.07	0.1	0.1
	LC..B 05..	0.25	0.26	0.26	0.25	0.28	0.23	0.31	0.31	0.31	0.32
	LC..B 10..	0.49	0.50	0.51	0.51	0.48	0.47	0.63	0.63	0.62	–
	LC..B 20..	1.44	1.62	1.52	1.44	1.5	1.5	1.26	1.25	1.25	1.4
	LC..B 30..	–	–	–	–	–	–	–	–	1.45	–
	LC..B 40..	2.48	2.90	2.70	2.86	3.05	2.8	2.25	2.17	–	–
Direction of flow B to A	LC..A 00..	0.04	0.05	0.1	0.1	0.1	0.14	0.14	0.2	0.30	0.33
	LC..A 05..	0.69	0.78	0.72	0.7	0.84	0.68	0.88	0.88	0.86	0.91
	LC..A 10..	1.38	1.53	1.42	1.43	1.47	1.37	1.77	1.78	1.73	–
	LC..A 20..	4.05	4.91	4.25	4.06	4.57	4.33	3.53	3.54	3.50	3.9
	LC..A 30..	–	–	–	–	–	–	–	–	4.0	–
	LC..A 40..	6.96	8.74	7.6	8.05	9.34	8.15	6.3	6.2	–	–
	LC..B 00..	0.24	0.25	0.5	0.5	0.5	0.8	0.7	1.0	1.5	1.5
	LC..B 05..	3.69	3.40	3.64	3.64	3.95	3.27	4.2	4.6	4.4	4.6
	LC..B 10..	7.43	6.69	7.24	7.37	6.88	6.62	8.4	9.4	8.9	–
	LC..B 20..	21.3	21.5	21.6	20.9	21.4	20.9	16.9	18.7	17.9	20
	LC..B 30..	–	–	–	–	–	–	–	–	20.7	–
	LC..B 40..	36.6	38.3	38.6	41.5	43.6	39.4	30.2	32.5	–	–

# Characteristic curves (measured at $v = 41 \text{ mm}^2/\text{s}$ and $\vartheta = 50 \text{ }^\circ\text{C}$ )



## Seal kits for cartridge valves type LC...

Nominal size	Material number	
	NBR seals	FKM seals
16	00313104	00313107
25	00313105	00313108
32	00313106	00313109
40	00873022	00873025
50	00873023	00873026

Nominal size	Material number	
	NBR seals	FKM seals
63	00873024	00873027
80	00314058	00314067
100	00314059	00314068
125	00314060	00314069
160	00314497	00314388

## Compression springs for cartridge valves type LC...

NS	Type	Spring dimensions in mm	Material no.
16	LC 16 * 05 ** 7X	10.5 / 0.8 x 42 / 7	00002110
	LC 16 * 10 ** 7X	10.5 / 1 x 42 / 8.5	00002111
	LC 16 * 20 ** 7X	10.2 / 1.3 x 40.5 / 8.0	00062747
	LC 16 * 40 ** 7X	10.0 / 1.6 x 38.2 / 9.0	00062753
25	LC 25 * 05 ** 7X	16 / 1.4 x 61 / 10.5	00002114
	LC 25 * 10 ** 7X	15.8 / 1.6 x 61 / 9.5	00002115
	LC 25 * 20 ** 7X	15.3 / 2.25 x 55.0 / 8.0	00062762
	LC 25 * 40 ** 7X	14.9 / 2.7 x 53.4 / 8.5	00062764
32	LC 32 * 05 ** 7X	20.5 / 1.8 x 79 / 11.5	00002116
	LC 32 * 10 ** 7X	20 / 2 x 79 / 9.5	00002117
	LC 32 * 20 ** 7X	19.6 / 2.8 x 69.5 / 7.5	00062813
	LC 32 * 40 ** 7X	19.2 / 3.2 x 71.0 / 8.5	00062783
40	LC 40 * 05 ** 7X	27.5 / 2.5 x 108 / 13.5	00002119
	LC 40 * 10 ** 7X	27.5 / 2.8 x 108 / 10.5	00002120
	LC 40 * 20 ** 7X	26.8 / 3.4 x 109 / 9	00206677
	LC 40 * 40 ** 7X	26 / 4.25 x 104 / 10	00206676
50	LC 50 * 05 ** 7X	36 / 3.2 x 130 / 10.5	00002123
	LC 50 * 10 ** 7X	35.5 / 3.6 x 130 / 9	00002124
	LC 50 * 20 ** 7X	34.7 / 4.5 x 138 / 10.5	00206688
	LC 50 * 40 ** 7X	33.6 / 5.6 x 124 / 9	00054908

NS	Type	Spring dimensions in mm	Material no.
63	LC 63 * 05 ** 7X	43.5 / 3.6 x 165 / 9	00002354
	LC 63 * 10 ** 7X	43 / 4 x 165 / 7	00002355
	LC 63 * 20 ** 7X	41.2 / 5.6 x 170.5 / 11	00206693
	LC 63 * 40 ** 7X	40.6 / 6.5 x 166 / 10	00206691
80	LC 80 * 05 ** 6X	57 / 5 x 200 / 10.5	00002357
	LC 80 * 10 ** 6X	56.5 / 5.6 x 200 / 8.5	00002359
	LC 80 * 20 ** 6X	55 / 7 x 201 / 11.5	00002362
	LC 80 * 40 ** 6X	53 / 9 x 176 / 10	00002365
100	LC 100 * 05 ** 6X	74 / 7 x 250 / 14	00002363
	LC 100 * 10 ** 6X	73 / 8 x 251 / 12.5	00002364
	LC 100 * 20 ** 6X	72 / 9 x 251 / 10.5	00002366
	LC 100 * 40 ** 6X	69 / 11.5 x 222 / 10	00002367
125	LC 125 * 05 ** 2X	86 / 8 x 308 / 12.5	00011090
	LC 125 * 10 ** 2X	85 / 9 x 310 / 10.5	00002649
	LC 125 * 20 ** 2X	83 / 11 x 310 / 12.5	00002454
	LC 125 * 30 ** 2X	80 / 14 x 255 / 10	00002650
160	LC 160 * 05 ** 2X	112.5 / 10 x 418 / 11.5	00011097
	LC 160 * 20 ** 2X	106 / 16 x 365 / 11	00011232

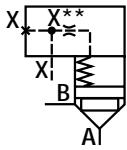
\* A or B; \*\* E or D





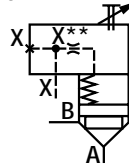
# Symbols (basic symbols)

**LFA . D-./F...**  
Control cover with remote control port  
**NS 16 to 160**



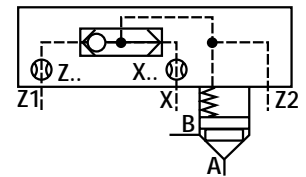
Page 13

**LFA . H2-./F...**  
Control cover with stroke limiter,  
with remote control port  
**NS 16 to 160**



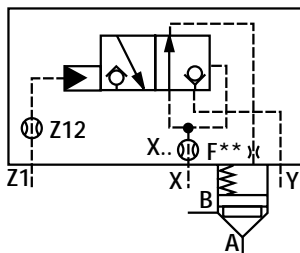
Pages 14 to 16

**LFA . G-./...**  
Control cover with built-in  
shuttle valve  
**NS 16 to 100**



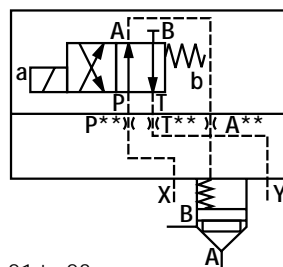
Pages 17 and 18

**LFA . R-./...**  
Control cover with built-in hydraulically  
actuated pilot valve (directional poppet  
valve)  
**NS 25 to 100**



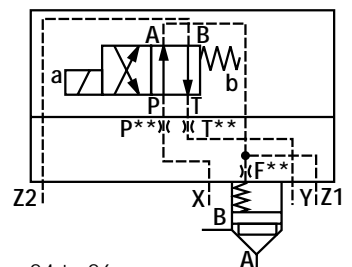
Pages 19 and 20

**LFA . WEA-./...**  
Control cover for mounting a  
directional spool or poppet valve  
**NS 16 to 160**



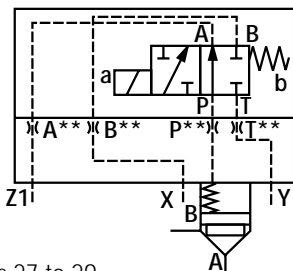
Pages 21 to 23

**LFA . WEMA-7X/...; LFA . WEA8-6X/...**  
Control cover for mounting a directional  
spool or poppet valve with control port for  
switching a 2nd valve  
**NS 16 to 100**



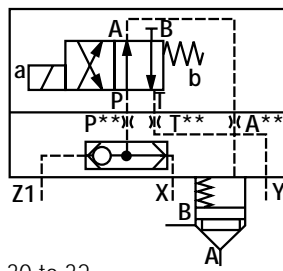
Pages 24 to 26

**LFA . WECA-7X/...; LFA . WEA9-6X/...**  
Control cover for mounting a directional  
spool valve as a check valve circuit  
**NS 16 to 100**



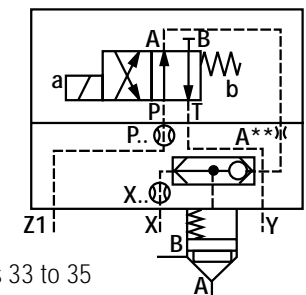
Pages 27 to 29

**LFA . GWA-./...**  
Control cover for mounting a directional  
spool or poppet valve, with built-in shuttle  
valve  
**NS 16 to 100**



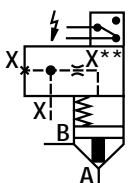
Pages 30 to 32

**LFA . KWA-./...**  
Control cover for mounting a directional  
spool or poppet valve, with built-in shuttle  
valve as a check valve circuit  
**NS 16 to 100**



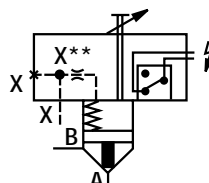
Pages 33 to 35

**LFA . E-7X/..DQMG24F...**  
Control cover with electrical monitoring of  
closed position including cartridge element  
**NS 16 to 160**



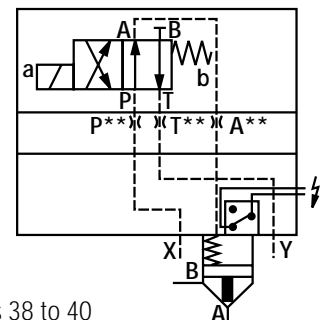
Page 36

**LFA . EH2-7X/..DQMG24F...**  
Control cover with electrical monitoring of  
closed position and stroke limiter including  
cartridge element  
**NS 16 to 100**



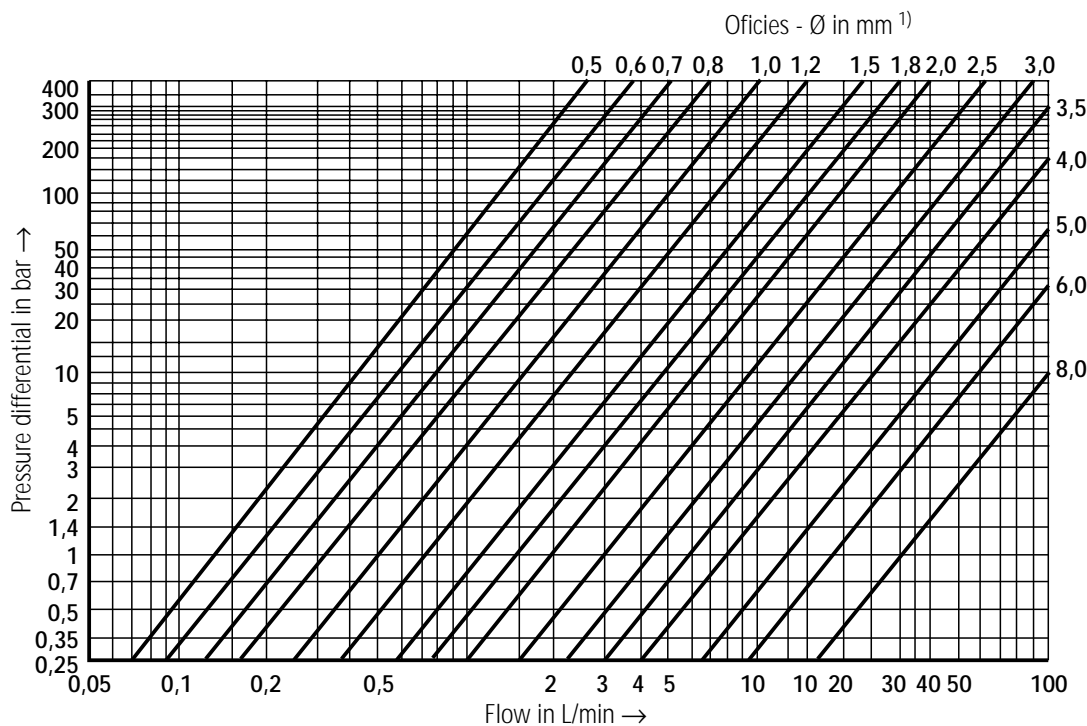
Page 37

**LFA . EWA-7X/..DQMG24...**  
Control cover with electrical monitoring of  
closed position, for mounting a directional  
spool valve including cartridge element  
**NS 16 to 63**



Pages 38 to 40

## Characteristic curves for the selection of orifices



<sup>1)</sup> Possible orifice - Ø in relation the the thread size

Thread	Orifice - Ø in mm
M6 taper	0.5 to 3.0
M8x1 taper	0.5 to 4.0
G 3/8	0.8 to 6.0
G 1/2	1.0 to 8.0

"G" pipe thread to ISO 228/1

## Material numbers for orifices and plugs

Standard orifice for nominal size	Thread Orifice Ø in mm	Material number			
		M6 taper	M8 x 1 taper	G 3/8	G 1/2
	0.5	00157933	00157930	-	-
	0.6	00157934	00149430	-	-
	0.7	00157931	00143957	-	-
<b>16</b>	0.8	00152276	00136843	00159043	-
<b>25</b>	1.0	00149335	00136842	00159033	00139115
<b>32</b>	1.2	00152286	00139101	00159032	00150714
<b>40</b>	1.5	00148823	00133712	00159031	00139117
<b>50</b>	1.8	00157932	00150953	00159030	00159026
<b>63 and 80</b>	2.0	00156650	00137299	00159029	00148352
<b>100</b>	2.5	00157929	00137445	00146259	00148353
	3.0	00181894	00144761	00149044	00148361
	3.5	-	00136079	00146258	00159027
	4.0	-	00802480	00149052	00149939
	5.0	-	-	00152287	00143775
	6.0	-	-	00135774	00147875
	8.0	-	-	-	00159028
Plug		00023986	00003443	00006325	00006445

**General notes on the ordering details for control covers (pilot valves)**

	Pilot valve Type	Nominal size	Catalogue sheet no.	Control cover Type	Nominal size (control cover)
Directional spool valve (wet pin)	4WE 6 D...6X/E	6	23 178	WEA, WEB, GWA, GWB, KWA, KWB, EWA, EWB, WEMA, WEMB	16 to 50
	3WE 6 A...6X/E	6	23 178	WECA	16 to 50
	4WE 10 D...3X/E	10	23 327	WEA, WEB, GWA, KWA, KWB, EWA, EWB	63 to 100
	4WE 10 A...3X/E	10	23 327	WEA 9, WECA	63 to 100
Directional poppet valve	M-3SED 6 UK../350 M-3SED 6 CK../350	6	22 049	WEMA, WEA, GWA, KWA	16 to 50
	M-3SEW 6 U../420 M-3SEW 6 C../420	6	22 058	WEA, GWA, KWA, EWA, WEMA	16 to 50
	M-3SED 10 UK../350 M-3SED 10 CK../350	10	22 045	WEA, GWA, KWA	63 to 100
	M-3SEW 10 U../420 M-3SEW 10 C../420	10	22 075	WEA, GWA, KWA, EWA	63 to 100

**Pilot valves must be ordered separately. For further details see relevant catalogue sheet.**

Valve fixing bolts are included within the control cover scope of supply.

**Note:**

By combining a 2-way cartridge valve with a pilot valve, various valve functions may be implemented. The following components, with porting pattern A6 (up to NS 50) and form A10 (NS 63 to 100) DIN 24 340 may be considered.

**Fixing screws: S.H.C.S. to DIN 912-10.9**

(Included within the scope of supply)

NS	Control cover Type	Qty.	Dimensions	Tightening torque $M_A$ in Nm
16	WE., GW.	4	M8 x 45	32
	WEM.		M8 x 70	
	E		M8 x 60	
	EH2		M8 x 80	
	EW. 1)		M8 x 85 M8 x 40	
25	E	4	M12 x 60	110
	EH2, EW. 1)		M12 x 90	
			M12 x 50	
32	H1, H2, E	4	M16 x 80	270
	H3, H4		M16 x 70	
	EH2, EW. 1)		M16 x 110	
			M16 x 60	
40	E, EW.	4	M20 x 120	520
	EH2		M20 x 200	
	H1, H2 1)		M20 x 110	
			M20 x 70	

NS	Control cover Type	Qty.	Dimensions	Tightening torque $M_A$ in Nm
50	H2, H4	4	M20 x 120	520
	E, EW.		M20 x 130	
	EH2 1)		M20 x 210	
			M20 x 80	
63	H2, H4	4	M30 x 150	1800
	E, EW.		M30 x 180	
	EH2 1)		M30 x 250	
			M30 x 100	
80	H2, H4 1)	8	M24 x 120 M24 x 100	900
100	D, WE. 1)	8	M30 x 120 M30 x 140	1800
125	all available control covers	8	M36 x 160	3100
160	all available control covers	12	M42 x 220	5000

1) Other available standard control covers

**Seal kits: control covers type LFA...**

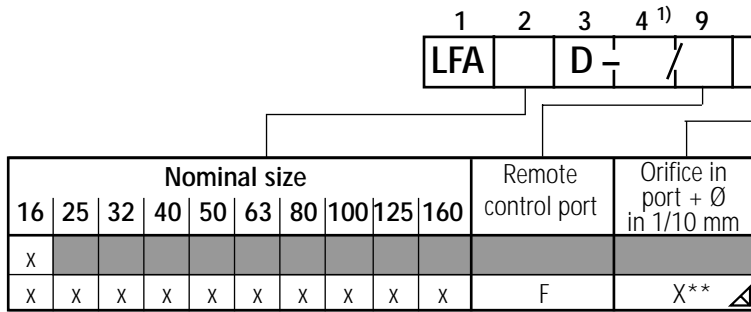
Type	Material number					
	NS16		NS25		NS32	
	NBR	FKM	NBR	FKM	NBR	FKM
D; WE.; WEM.; WECA	00313758	00313759	00313760	00313761	00313762	00313763
H.	00313951	00313952	00313953	00313954	00313800	00313801
G; GW.; KW.	00313961	00313962	00313804	00313805	00313808	00313809
R; RF			00313996	00313997	00313998	00313999
E-; EW.	00860412		008730890		00867088	
EW.; EH2	00876860		00876861		00876862	

Type	Material number					
	NS40		NS50		NS63	
	NBR	FKM	NBR	FKM	NBR	FKM
D; WE.; WEM.; WECA	00313863	00313864	00313863	00313864	00313865	00313866
H.	00313867	00313868	00876884	00876870	00876871	00876872
G; GW.; KW.	00313873	00313874	00313875	00313876	00313877	00313878
R; RF	00310836	00310837	00310836	00310837	00310840	00310841
E; .EW.	00873081		00873082		00873083	
EH2	00873084		00873085		00873086	

Type	Material number							
	NS80		NS100		NS125		NS160	
	NBR	FKM	NBR	FKM	NBR	FKM	NBR	FKM
D	00312785	00312814	00312786	00312815	00314074	00310850	00310868	00310869
WE.	00314824	00314825	00314836	00314837				
H1; H2	00314816	00314817	00314828	00313829	00314840	00314841	00314498	00314499
H3; H4	00314818	00314819	00314830	00314831				
G; GW.; KW.	00314826	00314827	00314838	00314839				
R; R2	00314822	00314823	00314834	00314835				

**Dimensions of R-rings (O-rings) for ports X, Y, Z1, Z2 (included within the scope of supply)**

Nominal size	R-ring Dimensions in mm	O-ring Dimensions in mm	Material number	
			NBR seals	FKM seals
16	8.41 x 1.4 x 1.78	–	00025407	00025408
25	9.81 x 1.5 x 1.78	–	00017453	00017610
32	11.18 x 1.6 x 1.78	–	00017455	00017611
40, 50	13 x 2.3 x 2.62	–	00017457	00017617
63	18.72 x 2.62 x 2.62	–	00024445	00024446
80	26.57 x 3.53 x 3.53	–	00017466	00017630
100	34.52 x 3.53 x 3.53	–	00017472	00017633
125	–	40.87 x 3.53	00009376	00009505
160	–	53.35 x 5.33	00009264	00009263



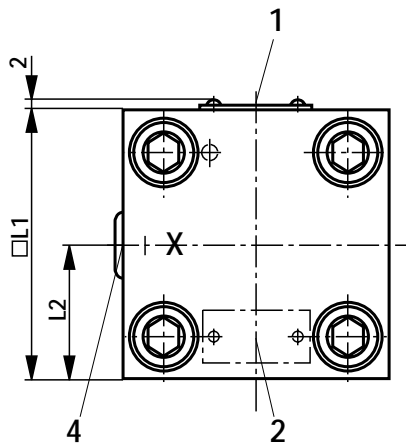
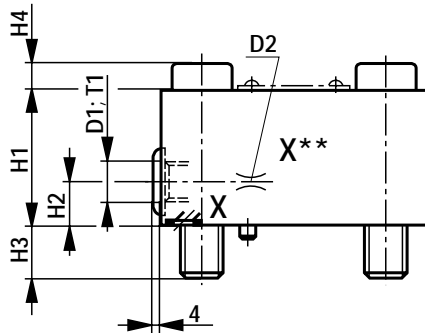
No code =  
V =

NBR seals  
FKM seals  
(other seals on request)

**Attention!**  
The compatibility of the seals and pressure fluid has to be taken into account!

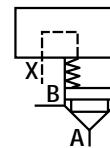
Orifice possible, if required state details

NS 16 to 63

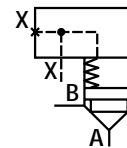


- 1) 7X = Series 7X (NS 16, 25, 32, 40, 50, 63)
- 6X = Series 6X (NS 80, 100)
- 2X = Series 2X (NS 125, 160)

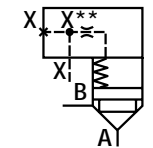
LFA 16 D...



LFA . D.../F

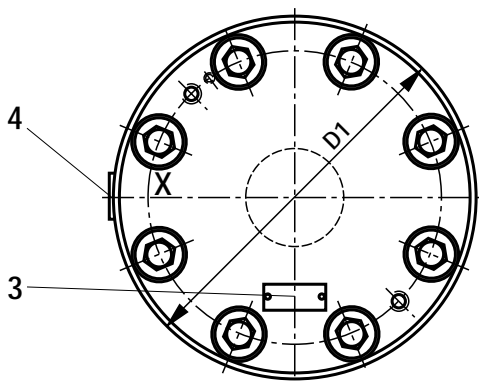
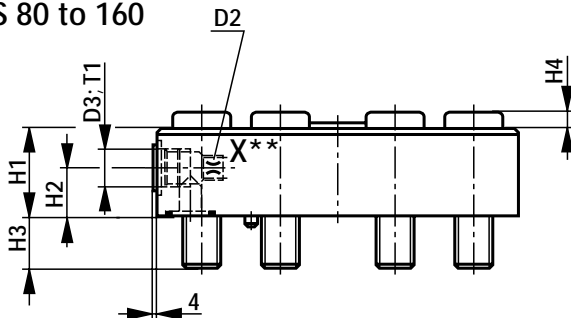


LFA . D.../FX\*\*



NS	16	25	32	40	50	63
D1	G 1/8	G 1/4	G 1/4	G 1/2	G 1/2	G 3/4
D2 <sup>2)</sup>	M6	M6	M6	M8x1	M8x1	G 3/8
H1	27	30	35	60	68	82
H2	12	16	16	30	32	40
H3	15	24	28	32	34	50
H4	8	12	16	-	-	-
□L1	65	85	100	125	140	180
L2	32.5	42.5	50	72	80	90
T1	8	12	12	14	14	16

NS 80 to 160

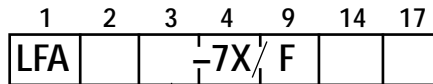


NS	80	100	125	160
D1	250	300	380	480
D2	G 3/8	G 1/2	G 1	G 1
D3 <sup>2)</sup>	G 3/4	G 1	G 1 1/4	G 1 1/4
H1	70	75	105	147
H2	35	40	50	70
H3	45	52.5	61	74
H4	-	24	31	42
T1	16	18	20	20

<sup>2)</sup> For orifice ordering details, see page 10.

- 1 Name plate for sizes 16, 25, 32
- 2 Name plate for sizes 40, 50, 63
- 3 Name plate for sizes 80, 100, 125, 160
- 4 Port X optionally as a threaded connection

NS 16 to 40



Nominal size				Adjustment	Remote control port	Orifice in port + Ø in 1/10 mm
16	25	32	40			
X	X	X	X	H1	F	X**
X	X	X	X	H2	F	X**
X	X	X	X	H3	F	X**
X	X	X	X	H4	F	X**

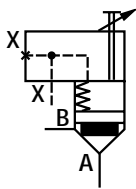
No code =  
V =

NBR seals  
FKM seals  
(other seals on request)

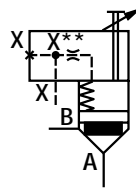
**⚠ Attention!**  
The compatibility of the seals and pressure fluid has to be taken into account!

⚠ Orifice possible, if required state details

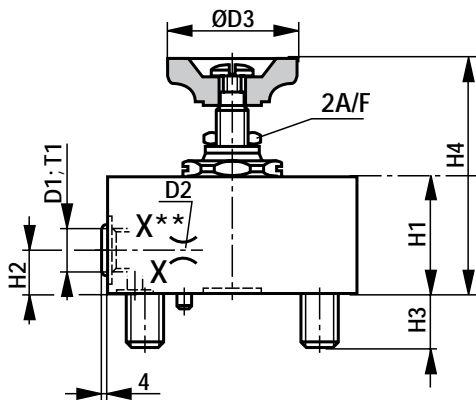
LFA . H.../F



LFA . H.../FX\*\*

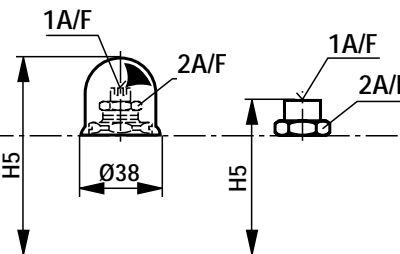


Adjustment "H1"

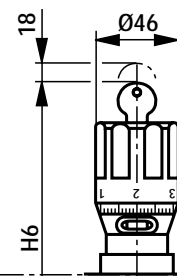


Adjustment "H2"

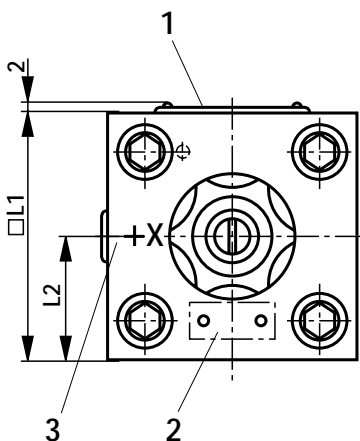
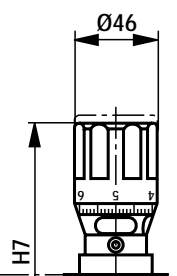
NS 16 and 25    NS 32 and 40



Adjustment "H3"



Adjustment "H4"



NS	16	25	32	40
D1	G 1/8	G 1/4	G 1/4	G 1/2
D2 <sup>1)</sup>	M6	M6	M6	M8x1
ØD3	52	80	80	100
H1	35	40	75 (60 <sup>2)</sup> )	95 (100 <sup>2)</sup> )
H2	12	16	16	30
H3	15	24	28	32
H4 max	90	95	120	160
H5 max	76	80	100	146
H6 max	155	160	180	210
H7 max	130	135	155	185
□L1	65	85	100	125
L2	32.5	42.5	50	72
T1	8	12	12	14
1A/F <sup>3)</sup>	6	6	10	14
2A/F	21	21	27	46

1 Name plate for sizes 16, 25, 32

2 Name plate for size 40

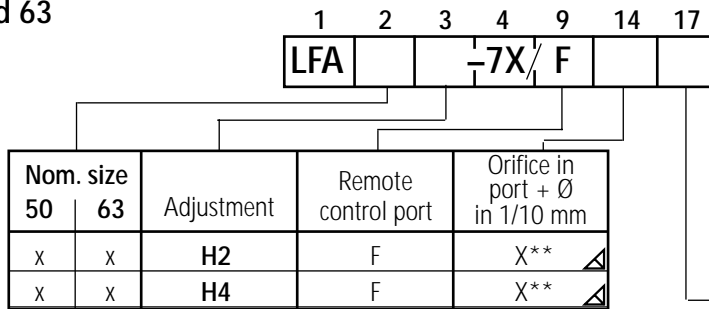
3 Port X optionally as a threaded connection

1) For orifice ordering details, see page 10.

2) Dimensions () are only applicable to adjustments "H3" and "H4"

3) Internal hexagon

NS 50 and 63



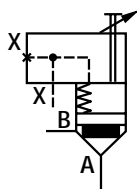
No code =  
V =

NBR seals  
FKM seals  
(other seals on request)

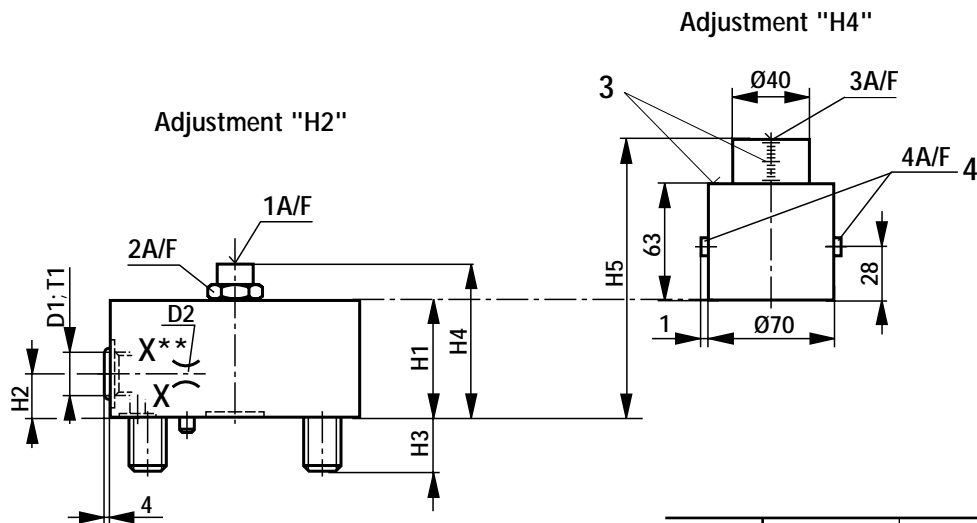
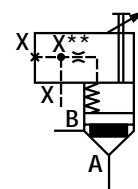
**⚠ Attention!**  
The compatibility of the seals and pressure fluid has to be taken into account!

⚠ Orifice possible, if required state details

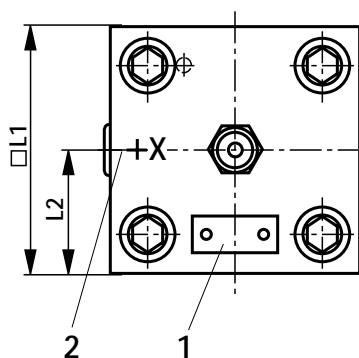
LFA . H.../F



LFA . H.../FX\*\*



Adjustment "H4"

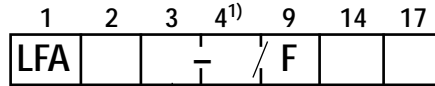


NS	50	63
D1	G 1/2	G 3/4
D2 <sup>1)</sup>	M8x1	G 3/8
H1	110	125
H2	32	40
H3	34	50
H4 max	156	175
H5 max	200	220
□L1	140	180
L2	80	90
T1	14	16
1A/F <sup>2)</sup>	17	24
2A/F	55	65
3A/F <sup>2)</sup>	19	19
4A/F	5	5

- 1 Name plate
- 2 Port X optionally as a threaded connection
- 3 Scale
- 4 Locked

1) For orifice ordering details, see page 10.  
2) Internal hexagon

NS 80 to 160



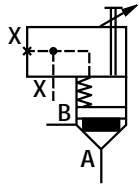
Nominal size				Adjustment	Remote control port	Orifice in port + Ø in 1/10 mm
80	100	125	160			
X	X	X	X	H2	F	X**
X	X			H4	F	X**

No code =  
V =

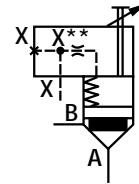
NBR seals  
FKM seals  
(other seals on request)

**⚠ Attention!**  
The compatibility of the seals and pressure fluid has to be taken into account!

LFA . H.../F



LFA . H.../FX\*\*

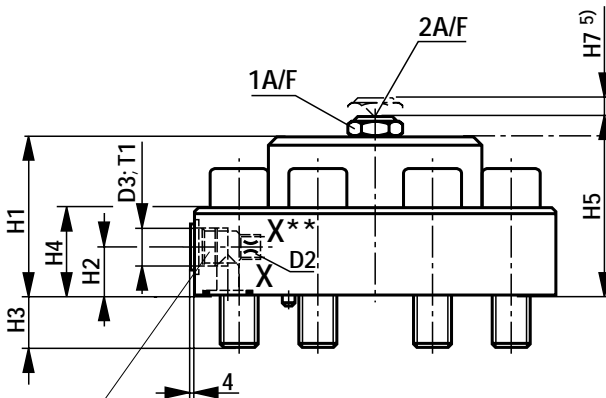


⚠ Orifice possible, if required state details

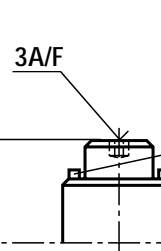
1) 6X = Series 6X (NS 80, 100)

2X = Series 2X (NS 125, 160)

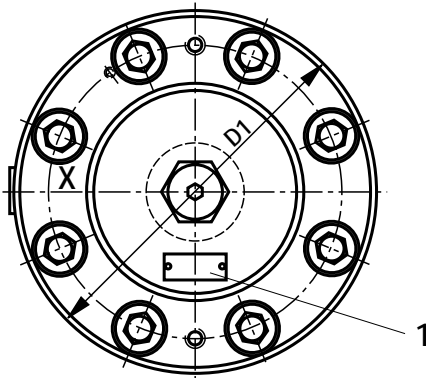
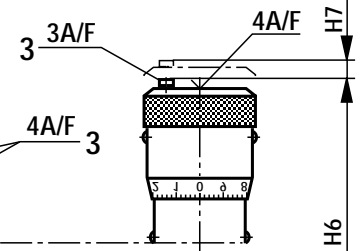
Adjustment "H2"  
NS 80 to 125



Adjustment "H2"  
NS 160



Adjustment "H4"  
NS 80 and 100



NS	80	100	125	160
D1	250	300	380	480
D2	G 3/8	G 1/2	G1	G1
D3 <sup>2)</sup>	G 3/4	G 1	G1 1/4	G1 1/4
H1	114	132	170	225
H2	35 (24 <sup>3)</sup> )	35	50	70
H3	45	52,5	61	74
H4	76	88,5	100	147
H5	137	157	195	340
H6	229	247	-	-
H7	30	38	48	-
T1	16	18	20	20
1A/F	75	75	95	-
2A/F <sup>4)</sup>	24	27	27	-
3A/F <sup>4)</sup>	-	-	-	32
4A/F <sup>4)</sup>	-	-	-	8
5A/F <sup>4)</sup>	5	5	-	-
6A/F <sup>4)</sup>	14	14	-	-

- 1 Name plate
- 2 Port X optionally as a threaded connection
- 3 Locked

2) For orifice ordering details, see page 10.

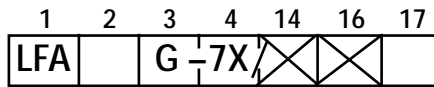
3) Dimensions () are only applicable to adjustment "H4"

4) Internal hexagon

5) Maximum dimension



NS 16 to 63



NS	Orifice in port	
	X	Z1
16	Ø 1.2	Ø 1.2
25	Ø 1.5	Ø 1.5
32	Ø 2.0	Ø 2.0
40	X15	Z15
50	X18	Z18
63	X20	Z20

No code =  
V =

NBR seals  
FKM seals  
(other seals on request)

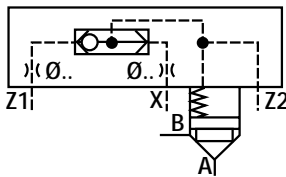
**Attention!**

The compatibility of the seals and pressure fluid has to be taken into account!

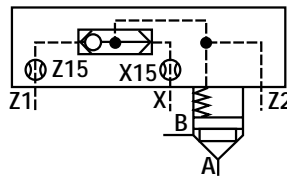
Drilled orifice (Ø in mm)  
 Standard orifice (Ø in 1/10 mm) ] does not appear in the type code

For orifice ordering details, see page 10.

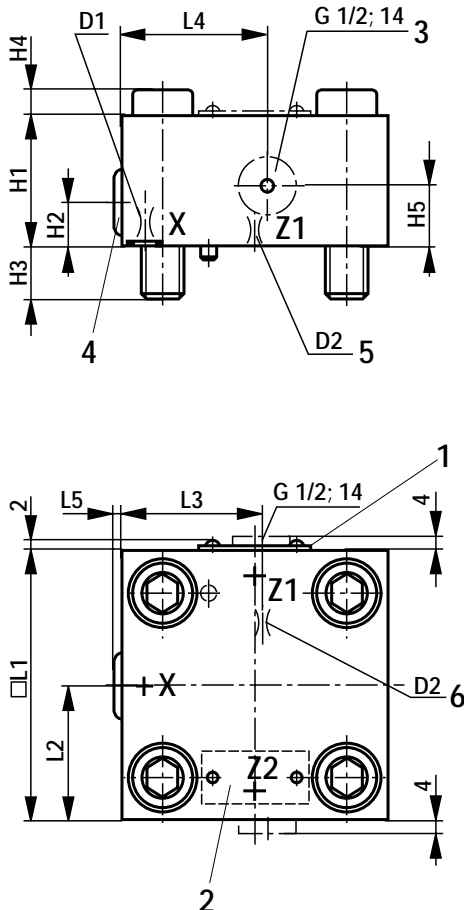
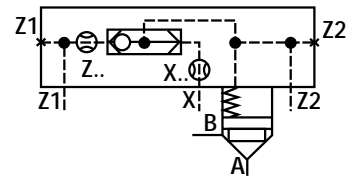
LFA . G...  
NS 16 to 32



LFA . G...  
NS 40



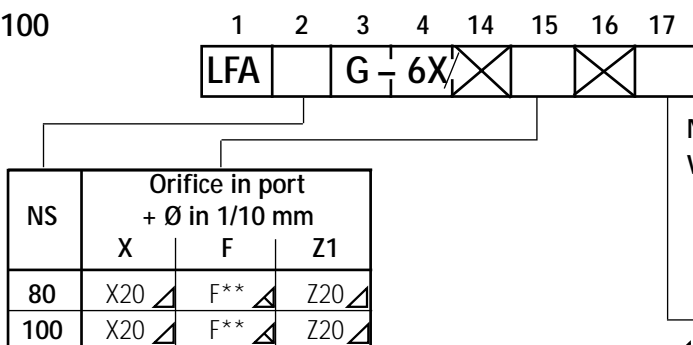
LFA . G...  
NS 50 and 63



NS	16	25	32	40	50	63
D1	Ø 1.2	Ø 1.5	Ø 2.0	M6	M8x1	M8x1
D2	Ø 1.2	Ø 1.5	Ø 2.0	M6	M8x1	M8x1
H1	35	30	35	60	68	82
H2	17	17	21.5	30	32	42
H3	15	24	28	32	34	50
H4	-	12	16	-	-	-
H5	-	-	-	-	32	40
□L1	65	85	100	125	140	180
L2	36.5	45.5	50	62.5	74	90
L3	-	-	-	-	72	81
L4	-	-	-	-	72	90
L5	2.5	2	-	-	6	4

- 1 Name plate for sizes 16, 25, 32
- 2 Name plate for sizes 40, 50, 63
- 3 Ports Z1 and Z2 optionally as a threaded connection for sizes 50 and 63
- 4 Shuttle valve
- 5 D2 for sizes 16 to 40
- 6 D2 for sizes 50 and 63

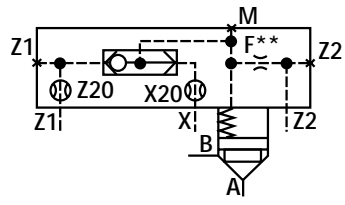
NS 80 and 100



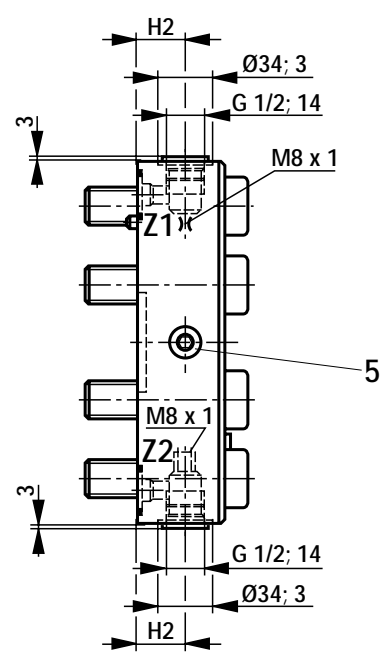
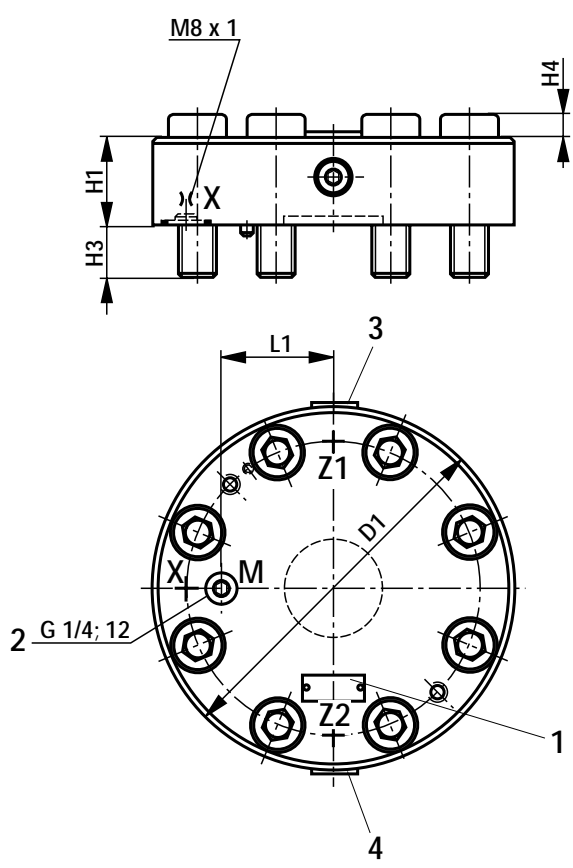
No code = NBR seals  
 V = FKM seals  
 (other seals on request)

**⚠ Attention!**  
 The compatibility of the seals and pressure fluid has to be taken into account!

LFA . G...



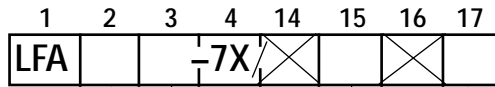
⚠ Standard orifice – does not appear in the type code  
 ⚠ Orifice possible, if required state details  
 For orifice ordering details, see page 10.



- 1 Name plate
- 2 Test point
- 3 Port Z1 optionally as a threaded connection
- 4 Port Z2 optionally as a threaded connection
- 5 Shuttle valve

NS	80	100
D1	250	300
H1	80	75
H2	45	43
H3	45	52.5
H4	4	23.5
L1	73	96.5

NS 25 to 63



NS	Type	Orifice in port + Ø in 1/10 mm		
		X	F	Z1
25	R	X10	F**	Z12
32	R	X12	F**	Z12
40	R	X15	F**	Z12
50	R	X15	F**	Z12
63	R	X18	F**	Z12
25	RF <sup>1)</sup>	X10	F**	Z12
32	RF <sup>1)</sup>	X12	F**	Z12
40	RF <sup>1)</sup>	X15	F**	Z12
50	RF <sup>1)</sup>	X15	F**	Z12
63	RF <sup>1)</sup>	X18	F**	Z12

No code =  
V =

NBR seals  
FKM seals  
(other seals in request)

**⚠ Attention!**  
The compatibility of the seals and pressure fluid has to be taken into account!

△ Standard orifice – does not appear in the type code

△ Orifice possible, if required state details

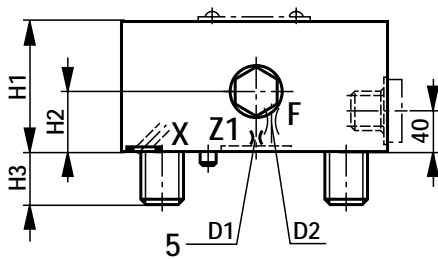
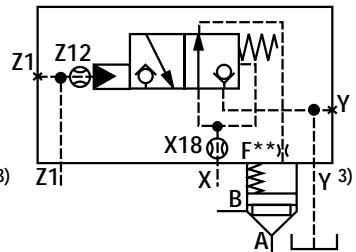
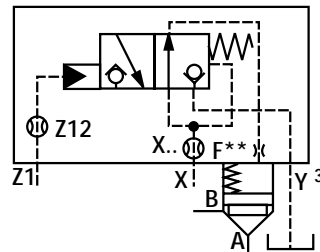
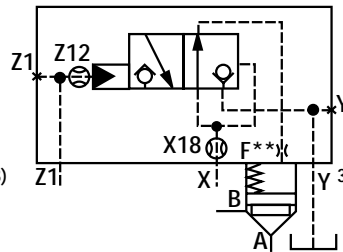
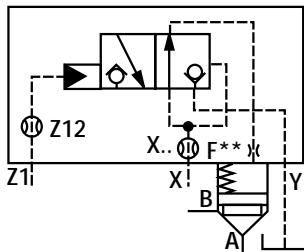
<sup>1)</sup> Directional poppet valve with spring return

LFA . R...  
NS 25 to 50

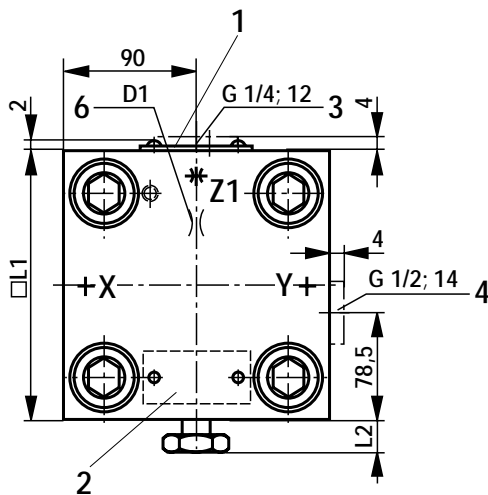
LFA 63 R...  
NS 63

LFA . RF...  
NS 25 to 50

LFA 63 RF...  
NS 63



Area relationship  $\frac{A_{Z1}}{A_X} = \frac{3}{1}$



NS	Type	25	32	40	50	63
D1 <sup>2)</sup>		M6	M6	M8x1	M8x1	M8x1
D2 <sup>2)</sup>		M6	M6	M8x1	M8x1	M8x1
H1		40	50	60	68	82
H2		20	26	33	32	40
H3		24	28	32	34	50
L1		85	100	125	140	180
L2	R	2	1	4	3	–
	RF	18.5	17.5	25	24	16

<sup>2)</sup> For orifice ordering details, see page 10.

<sup>3)</sup> Pressure in port X max. 5 bar

1 Name plate for sizes 16, 25, 32

2 Name plate for sizes 40, 50, 63

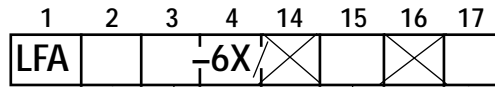
3 Port Z1 optionally as a threaded connection for size 63

4 Port Y optionally as a threaded connection for size 63

5 D1 for size 16 to 50

6 D1 for size 63

NS 80 and 100



NS	Type	Orifice in port + Ø in 1/10 mm		
		X	F	Z1
80	R	X20	F**	Z12
100	R	X25	F**	Z12
80	R2 <sup>1)</sup>	X20	F**	Z12
100	R2 <sup>1)</sup>	X25	F**	Z12

No code =

NBR seals

V =

FKM seals

(other seals on request)

**⚠ Attention!**

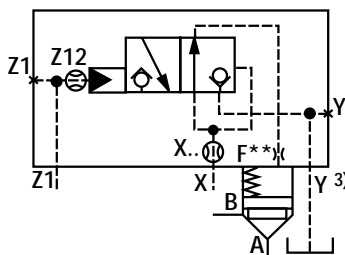
The compatibility of the seals and pressure fluid has to be taken into account!

△ Standard orifice – does not appear in the type code

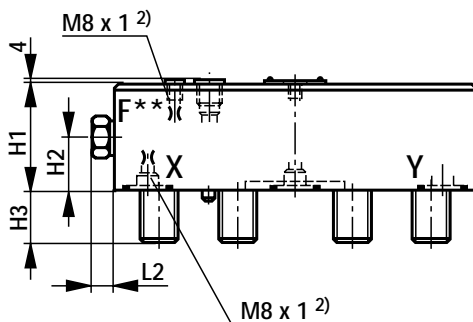
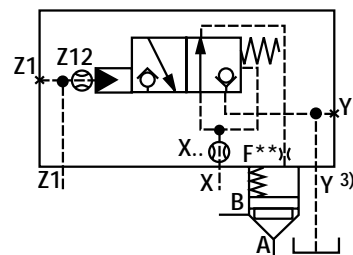
△ Orifice possible, if required state details

<sup>1)</sup> Directional poppet valve with spring return

LFA . R...



LFA . R2...



$$\text{Area relationship } \frac{A_{Z1}}{A_x} = \frac{3}{1}$$

NG	80	100
D1	250	300
D2	G1/4; 12	G1/2; 14
H1	80	100
H2	36	45
H3	45	52
L1	52	74
L2	21	18
L3	6	5

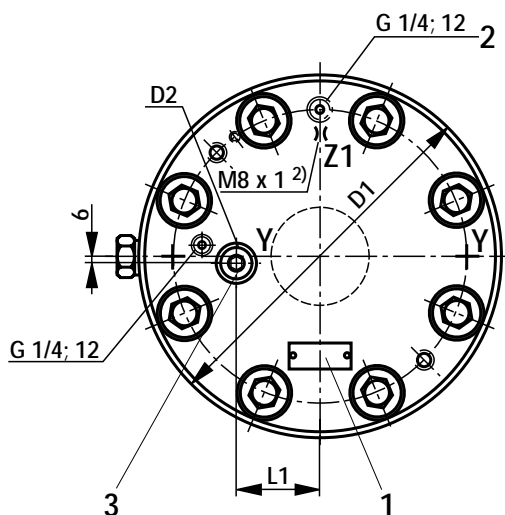
<sup>2)</sup> For orifice ordering details, see page 10.

<sup>3)</sup> Pressure in port Y max. 5 bar

1 Name plate

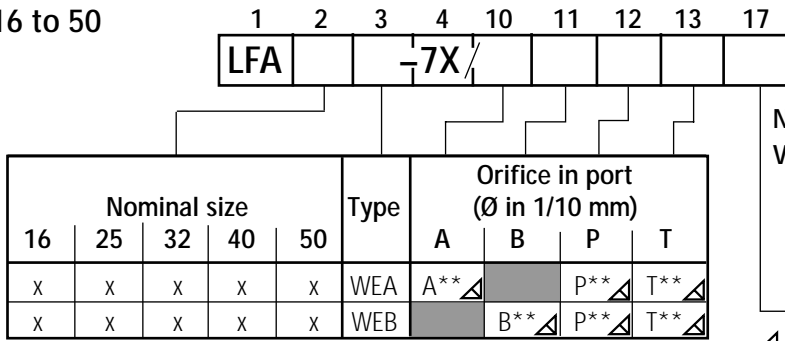
2 Port Z1 optionally as a threaded connection

3 Port Y optionally as a threaded connection



Control cover for mounting a directional spool or directional poppet valve: types ..WEA..., ..WEB... (Dimensions in mm)

NS 16 to 50



No code =  
V =

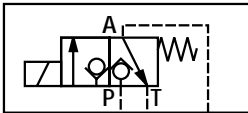
NBR seals  
FKM seals  
(other seals on request)

**⚠ Attention!**

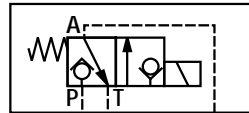
The compatibility of the seals and pressure fluid has to be taken into account!

⚠ Orifice possible, if required state details  
For orifice ordering details, see page 10.

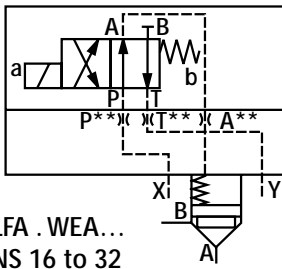
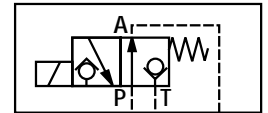
M-3SEW 6 C../420...



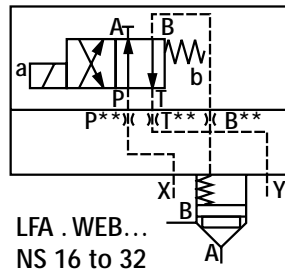
M-3SED 6 CK../350...



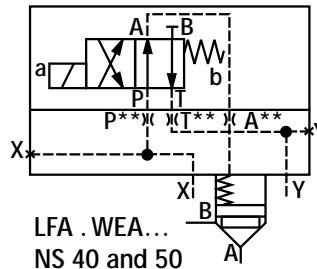
M-3SED 6 UK../350...  
M-3SEW 6 U../420...



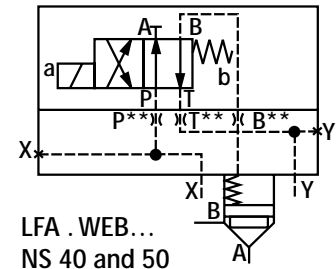
LFA . WEA...  
NS 16 to 32  
(with directional spool valve type 4WE 6 D...)



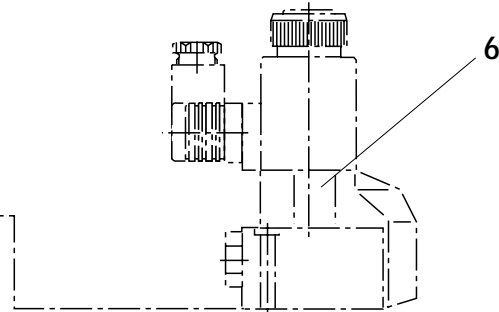
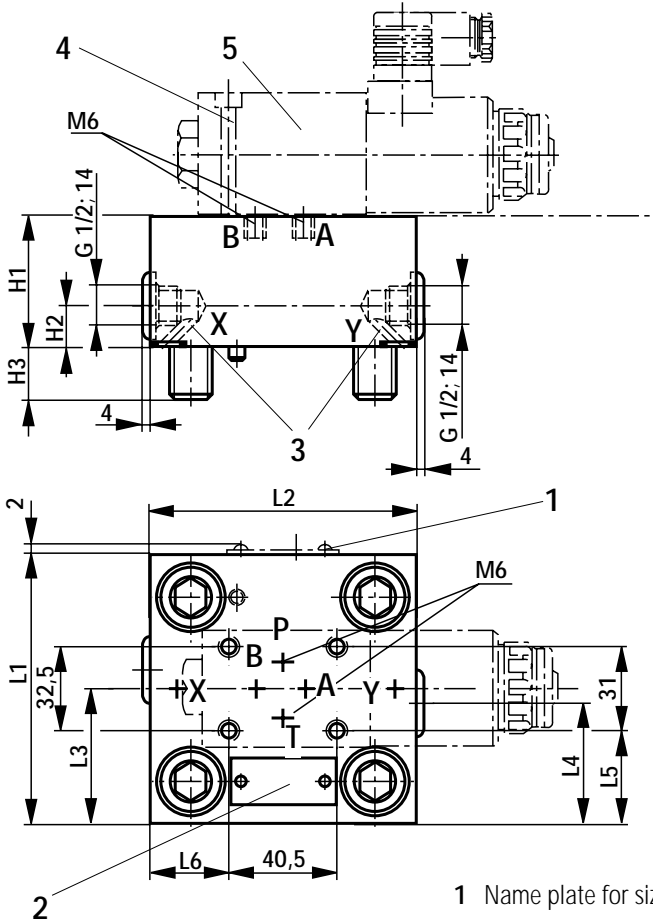
LFA . WEB...  
NS 16 to 32  
(with directional spool valve type 4WE 6 D...)



LFA . WEA...  
NS 40 and 50  
(with directional spool valve type 4WE 6 D...)



LFA . WEB...  
NS 40 and 50  
(with directional spool valve type 4WE 6 D...)

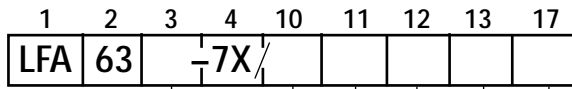


NS	16	25	32	40	50
H1	40	40	50	60	68
H2	-	-	-	30	32
H3	15	24	28	32	34
L1	65	85	100	125	140
L2	80	85	100	125	140
L3	-	-	-	72	80
L4	-	-	-	53	60
L5	17	27	34,5	47	54,5
L6	7	23,5	31	43,5	51

- 3 Ports X and Y optionally as a threaded connection for sizes 40 and 50
- 4 Valve fixing screws are included within the scope of the control cover supply
- 5 Directional spool valve type 4WE 6 D...
- 6 Directional poppet valve type M-3SEW 6 ...

- 1 Name plate for sizes 16, 25, 32
- 2 Name plate for sizes 40 und 50

NS 63



Type	Orifice in port (Ø in 1/10 mm)			
	A	B	P	T
WEA	A**		P**	T**
WEB		B**	P**	T**

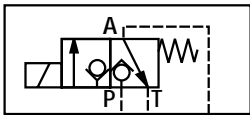
No code =  
V =

NBR seals  
FKM seals  
(other seals on request)

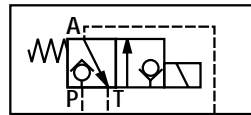
**⚠ Attention!**  
The compatibility of the seals and pressure fluid has to be taken into account!

△ Orifice possible, if required state details  
For orifice ordering details, see page 10.

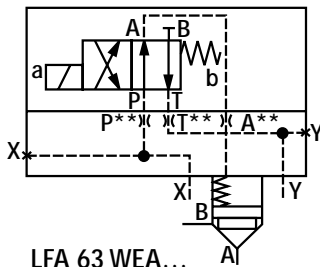
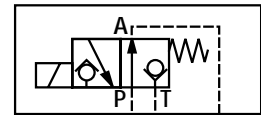
M-3SEW 10 C../420...



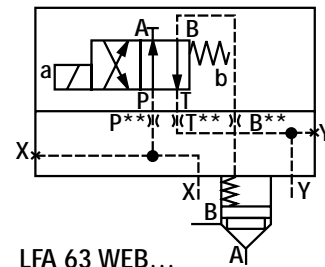
M-3SED 10 CK../350...



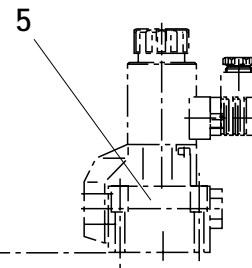
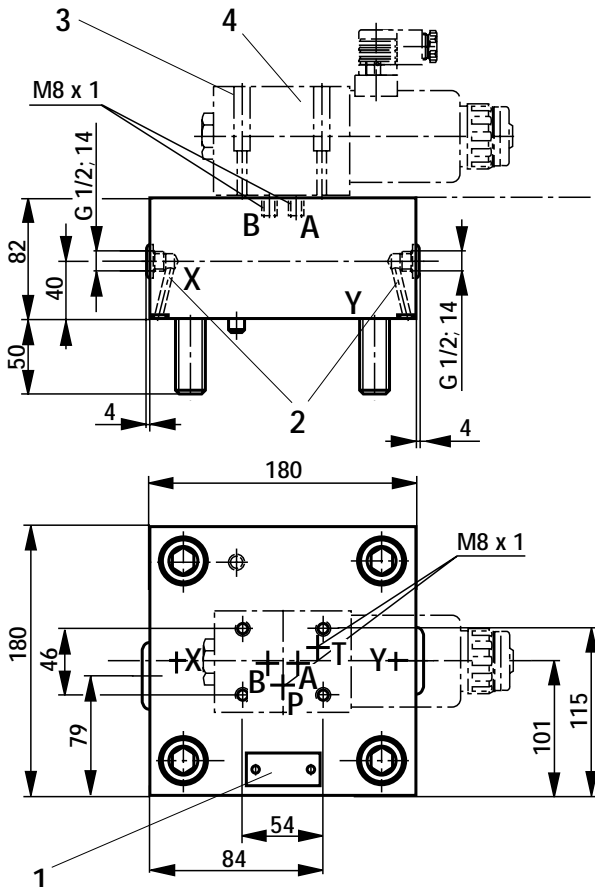
M-3SED 10 UK../350...  
M-3SEW 10 U../420...



LFA 63 WEA...  
(with directional spool valve type 4WE 10 D...)

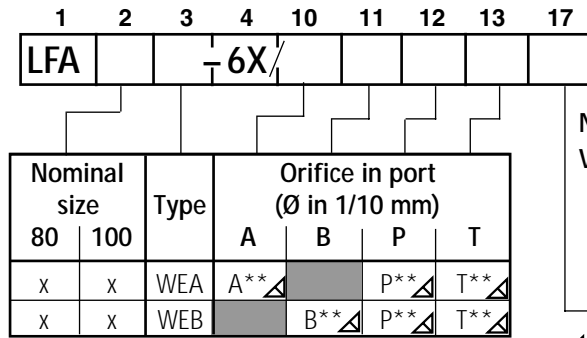


LFA 63 WEB...  
(with directional spool valve type 4WE 10 D...)



- 1 Name plate
- 2 Ports X and Y optionally as a threaded connection
- 3 Valve fixing screws are included within the scope of the control cover supply
- 4 Directional spool valve type 4WE 10 D...
- 5 Directional poppet valve type M-3SEW 10 ...

NS 80 and 100



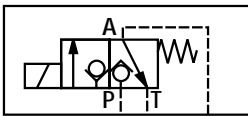
No code =  
V =

NBR seals  
FKM seals  
(other seals on request)

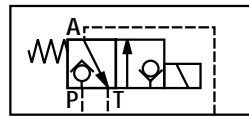
**⚠ Attention!**  
The compatibility of the seals and pressure fluid has to be taken into account!

⚠ Orifice possible, if required state details  
For orifice ordering details, see page 10.

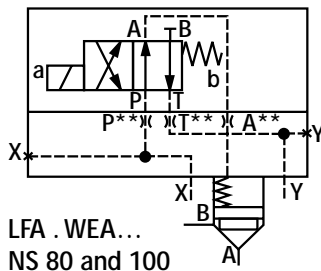
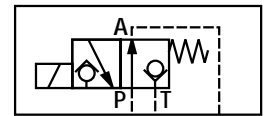
M-3SEW 10 C../420...



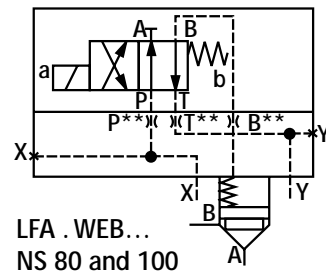
M-3SED 10 CK../350...



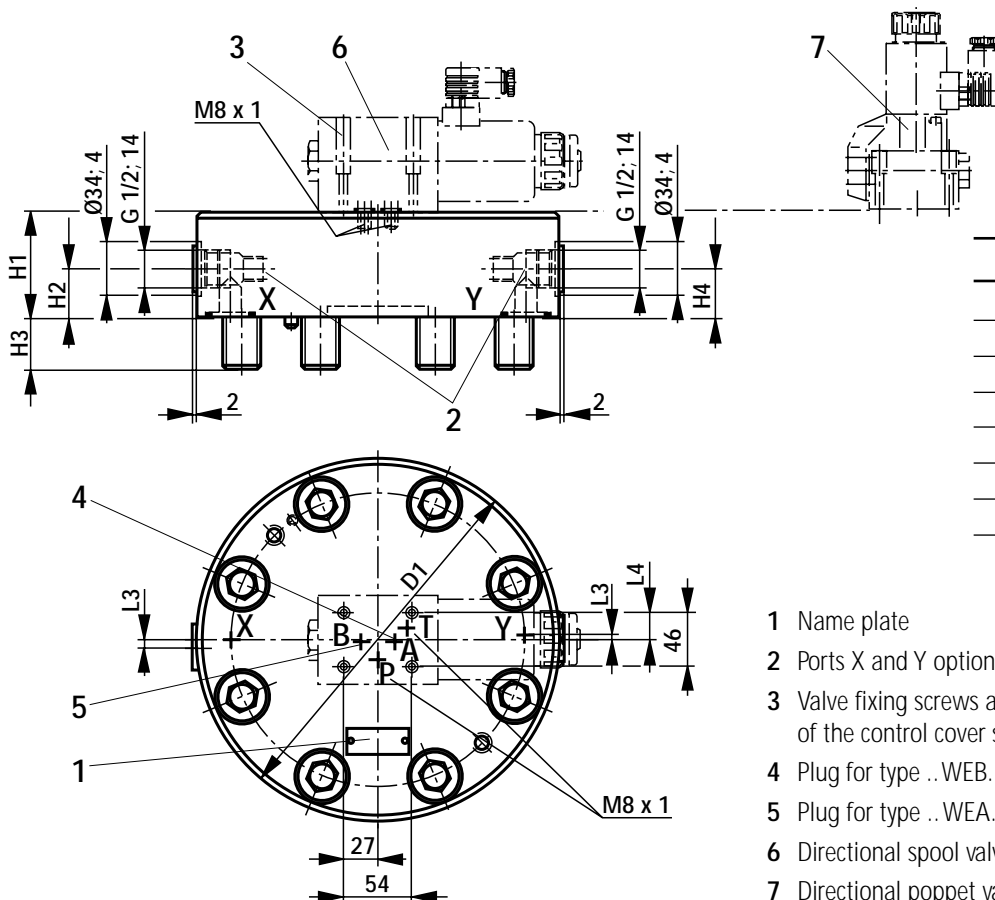
M-3SED 10 UK../350...  
M-3SEW 10 U../420...



LFA . WEA...  
NS 80 and 100  
(with directional spool valve type 4WE 10 D...)



LFA . WEB...  
NS 80 and 100  
(with directional spool valve type 4WE 10 D...)

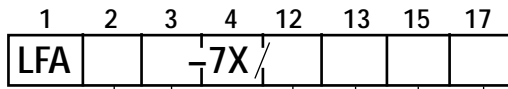


NS	80	100
D1	250	300
H1	80	100
H2	30	24
H3	45	52.5
H4	45	55
L3	10	13
L4	30	28

- 1 Name plate
- 2 Ports X and Y optionally as a threaded connection
- 3 Valve fixing screws are within the scope of the control cover supply
- 4 Plug for type ..WEB..
- 5 Plug for type ..WEA..
- 6 Directional spool valve type 4WE 10 D...
- 7 Directional poppet valve type M-3SEW 10 ...

Control cover for mounting a directional spool or poppet valve: types ..WEMA..., ..WEMB... (Dimensions in mm)

NS 16 to 50



Nominal size					Type	Orifice in port (Ø in 1/10 mm)		
16	25	32	40	50		P	T	F
X	X	X	X	X	WEMA	P**	T**	F**
X	X	X	X	X	WEMB	P**	T**	F**

No code =  
V =

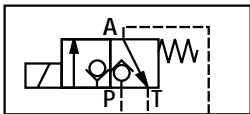
NBR seals  
FKM seals  
(other seals on request)

**Attention!**

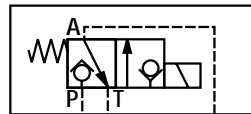
The compatibility of the seals and pressure fluid has to be taken into account!

△ Orifice possible, if required state details  
For orifice ordering details, see page 10.

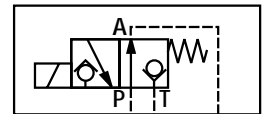
M-3SEW 6 C../420...



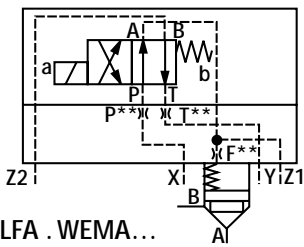
M-3SED 6 CK../350...



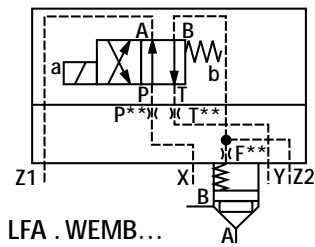
M-3SED 6 UK../350...



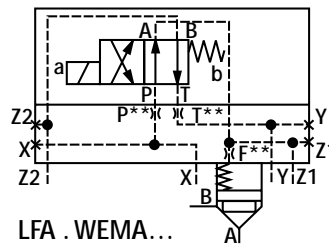
M-3SEW 6 U../420...



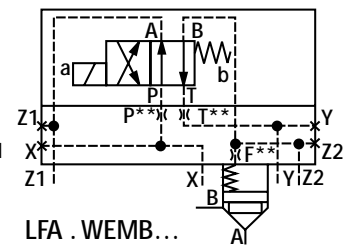
LFA . WEMA...  
NS 16 to 32  
(with directional spool valve  
type 4WE 6 D...)



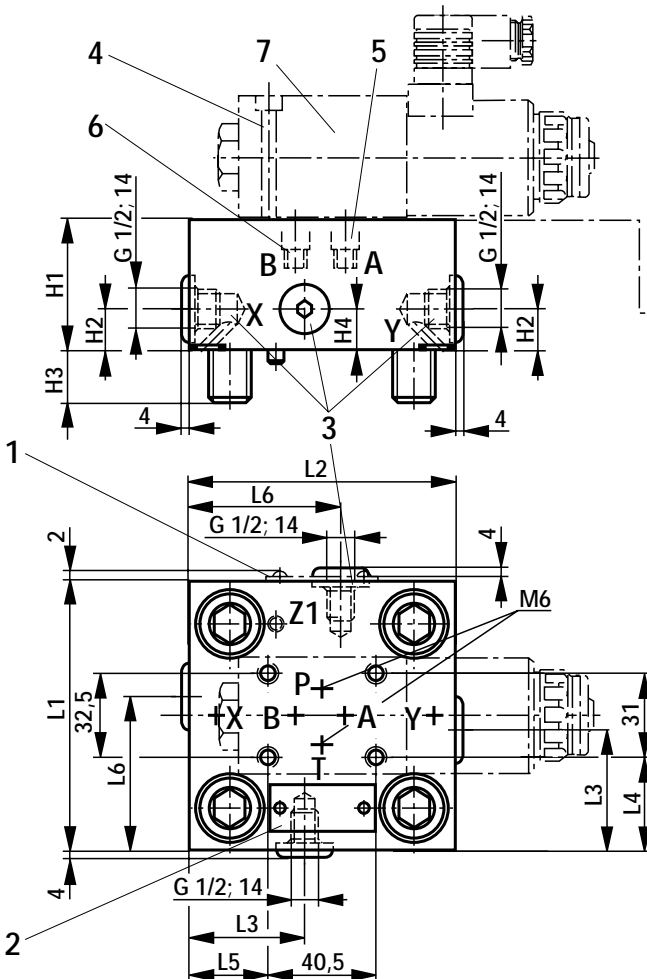
LFA . WEMB...  
NS 16 to 32  
(with directional spool valve  
type 4WE 6 D...)



LFA . WEMA...  
NS 40 and 50  
(with directional spool valve  
type 4WE 6 D...)



LFA . WEMB...  
NS 40 and 50  
(with directional spool valve  
type 4WE 6 D...)



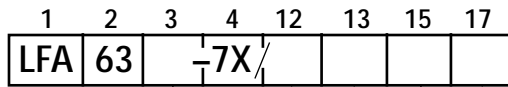
- 4 Valve fixing screws are within the scope of the control cover supply
  - 5 Plug M6 for type ..WEMB...
  - 6 Plug M6 for type ..WEMA....
  - 7 Directional spool valve type 4WE 6 D...
  - 8 Directional poppet valve type M-3SEW 6 ...
- 1 Name plate for sizes 16, 25, 32
  - 2 Name plate for sizes 40 and 50
  - 3 Ports X, Y, Z1 and Z2 optionally as a threaded connection for sizes 40 and 50

NS	16	25	32	40	50
H1	65	40	50	60	68
H2	-	-	-	30	32
H3	15	24	28	32	34
H4	-	-	-	30	32
L1	65	85	100	125	140
L2	80	85	100	125	140
L3	-	-	-	53	60
L4	17	27	34.5	47	54.5
L5	7	23.5	31	43.5	51
L6	-	-	-	72	80



Control cover for mounting a directional spool or directional poppet valve: types ..WEMA..., ..WEMB... (Dimensions in mm)

NS 63



Type	Orifice in port (Ø in 1/10 mm)		
	P	T	F
WEMA	P**	T**	F**
WEMB	P**	T**	F**

No code =  
V =

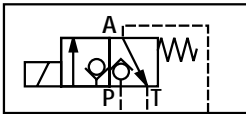
NBR seals  
FKM seals  
(other seal on request)

**⚠ Attention!**

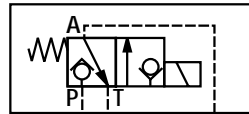
The compatibility of the seals and pressure fluid has to be taken into account!

△ Orifice possible, if required state details  
For orifice ordering details, see page 10.

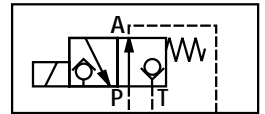
M-3SEW 10 C../420...



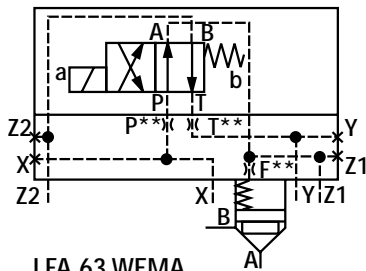
M-3SED 10 CK../350...



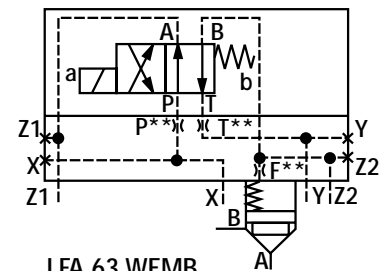
M-3SED 10 UK../350...



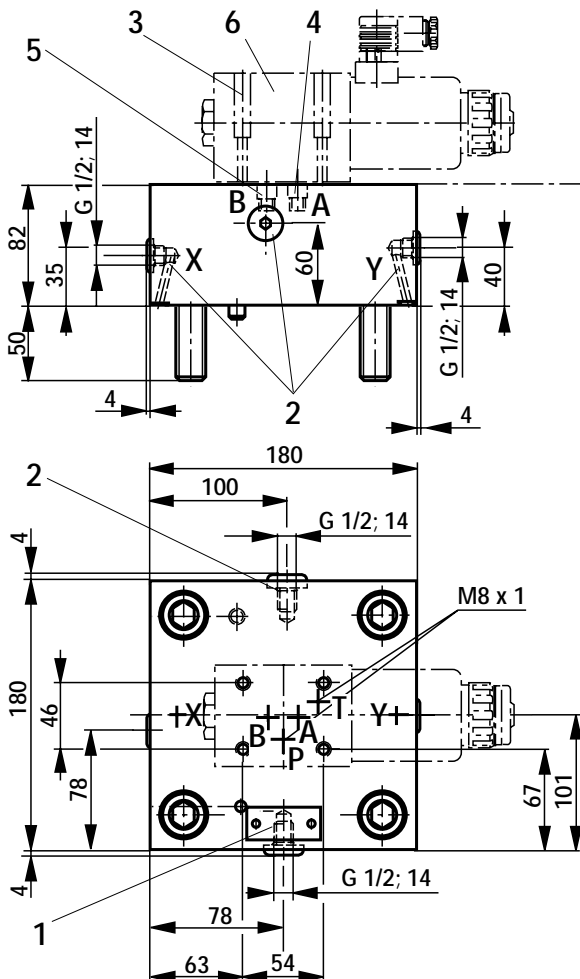
M-3SEW 10 U../420...



LFA 63 WEMA...  
(with directional spool valve  
type 4WE 10 D...)

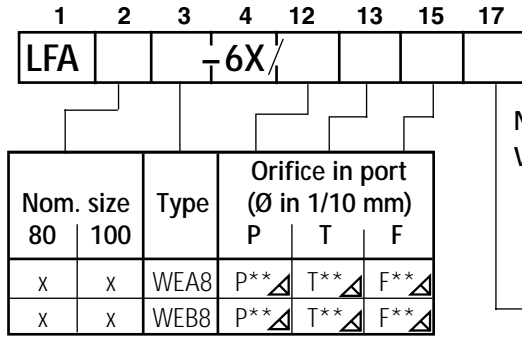


LFA 63 WEMB...  
(with directional spool valve  
type 4WE 10 D...)



- 1 Name plate
- 2 Ports X, Y, Z1 and Z2 optionally as a threaded connection
- 3 Valve fixing screws are included within the scope of the control cover supply
- 4 Plug M8 x 1 for type ..WEMB...
- 5 Plug M8 x 1 for type ..WEMA...
- 6 Directional spool valve type 4WE 10 D...
- 7 Directional poppet valve type M-3SEW 10 ...

NS 80 and 100



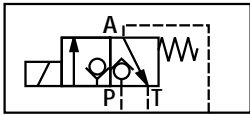
No code =  
V =

NBR seals  
FKM seals  
(other seals on request)

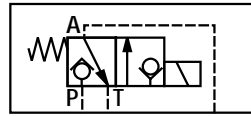
**⚠ Attention!**  
The compatibility of the seals and pressure fluid has to be taken into account!

△ Orifice possible, if required state details  
For orifice ordering details, see page 10.

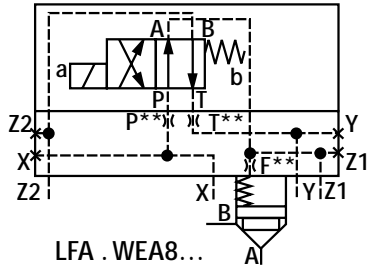
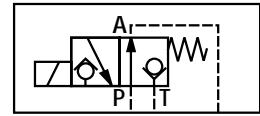
M-3SEW 10 C../420...



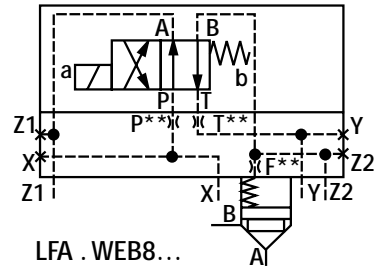
M-3SED 10 CK../350...



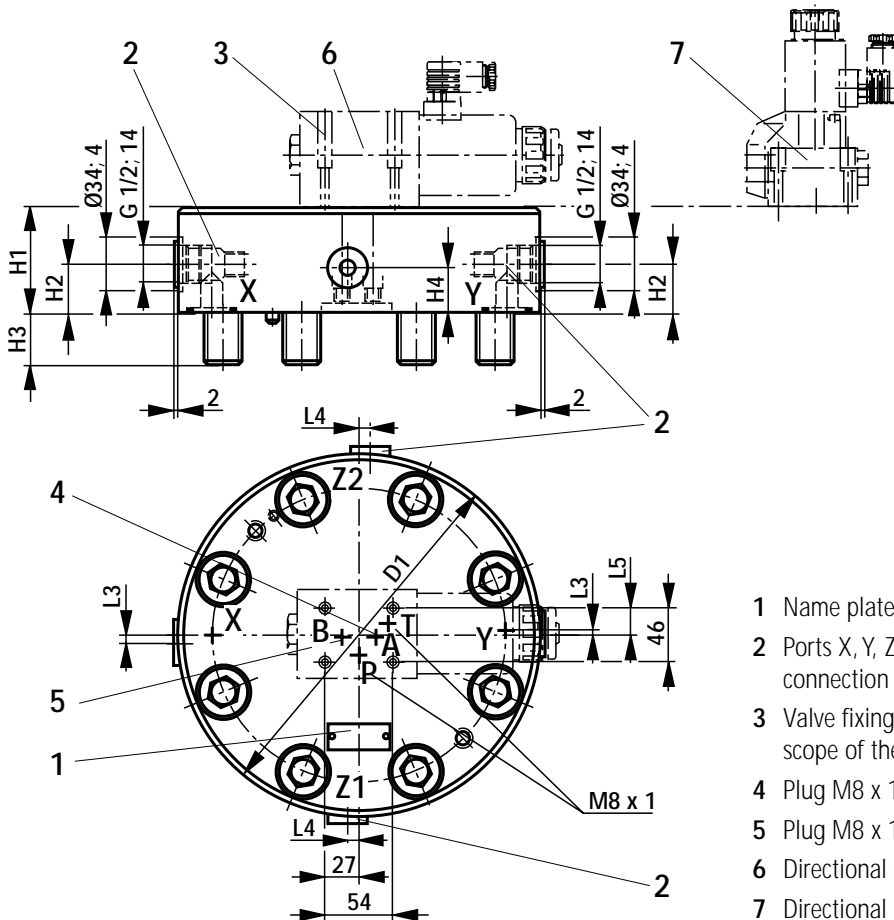
M-3SED 10 UK../350...  
M-3SEW 10 U../420...



LFA . WEA8...  
NS 80 and 100  
(with directional spool valve type 4WE 10 D...)



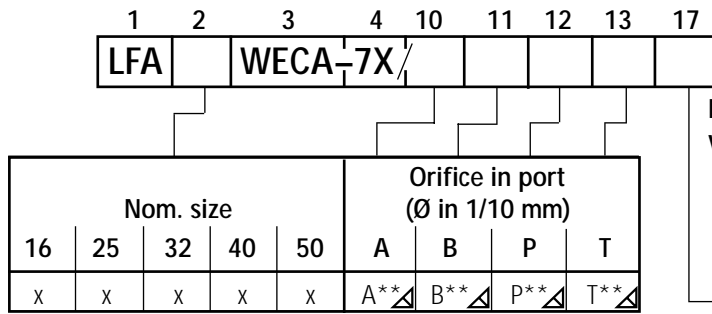
LFA . WEB8...  
NS 80 and 100  
(with directional spool valve type 4WE 10 D...)



NS	80	100
D1	250	300
H1	80	100
H2	42	55
H3	45	52.5
H4	26	35
L3	10	13
L4	10	9.5
L5	30	27

- 1 Name plate
- 2 Ports X, Y, Z1 and Z2 optionally as a threaded connection
- 3 Valve fixing screws are included within the scope of the control cover supply
- 4 Plug M8 x 1 for type .. WEB8..
- 5 Plug M8 x 1 for type .. WEA8..
- 6 Directional spool valve type 4WE 10 D...
- 7 Directional poppet valve type M-3SEW 10 ...

NS 16 to 50



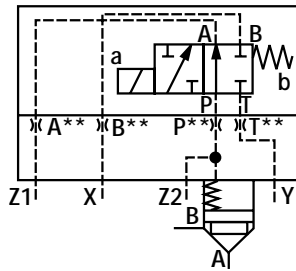
No code =  
V =

NBR seals  
FKM seals  
(other seals on request)

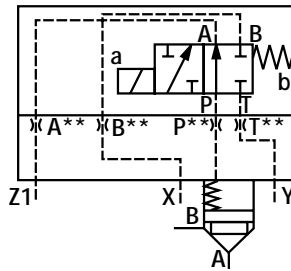
**⚠ Attention!**

The compatibility of the seals and pressure fluid has to be taken into account!

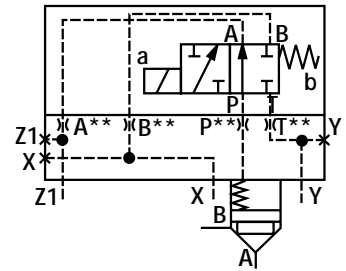
⚠ Orifice possible, if required state details  
For orifice ordering details, see page 10.



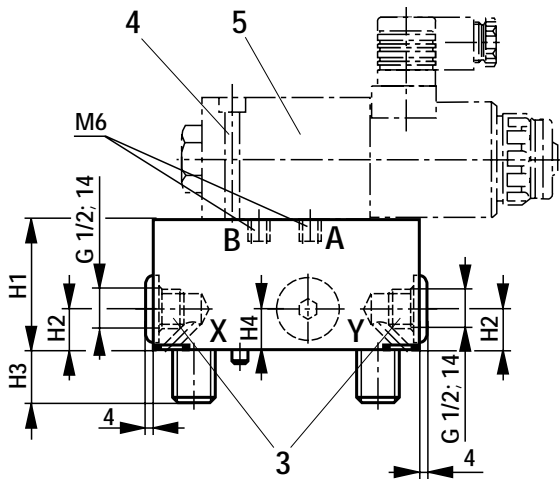
LFA 16 WECA...  
(with directional spool valve type 3WE 6 A...)



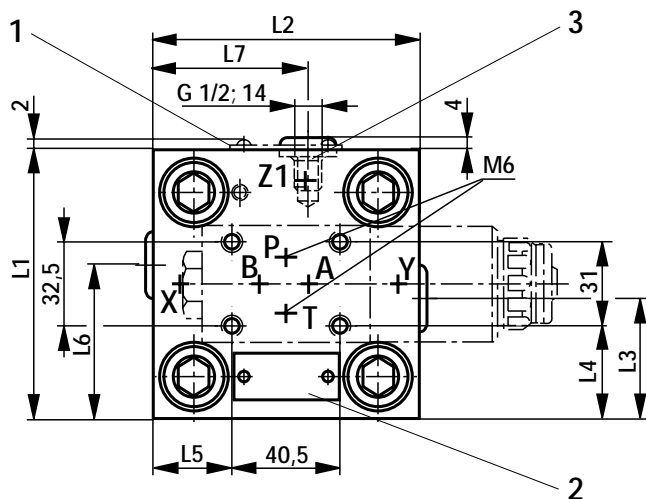
LFA . WECA...  
NS 25 and 32  
(with directional spool valve type 3WE 6 A...)



LFA . WECA...  
NS 40 and 50  
(with directional spool valve type 3WE 6 A...)



NS	16	25	32	40	50
H1	40	40	50	60	68
H2	-	-	-	30	32
H3	15	24	28	32	34
H4	-	-	-	30	32
L1	65	85	100	125	140
L2	80	85	100	125	140
L3	-	-	-	53	60
L4	17	27	34.5	47	54.5
L5	7	23.5	31	43.5	51
L6	-	-	-	62.5	70
L7	-	-	-	72	80



- 1 Name plate for sizes 16, 25, 32
- 2 Name plate for sizes 40 und 50
- 3 Ports X, Y and Z1 optionally as a threaded connection for sizes 40 and 50
- 4 Valve fixing screws are included within the scope of the control cover supply
- 5 Directional spool valve type 3WE 6 A...

NS 63

1	2	3	4	10	11	12	13	17
LFA	63	WECA-7X						

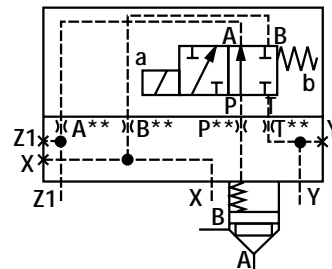
Orifice in port Ø in 1/10 mm			
A	B	P	T
A**	B**	P**	T**

No code =  
V =

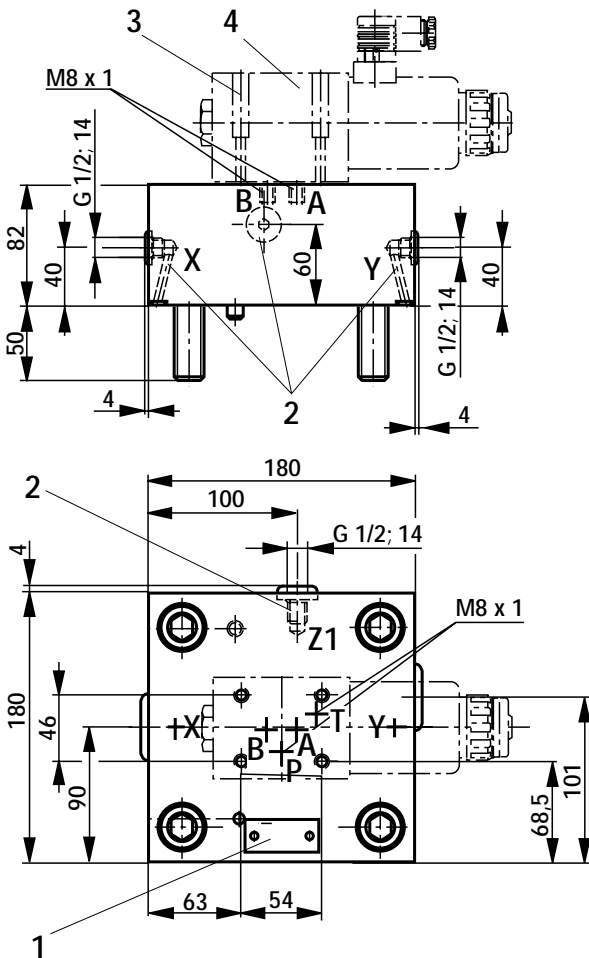
NBR seals  
FKM seals  
(other seals on request)

**⚠ Attention!**  
The compatibility of the seals and pressure fluid has to be taken into account!

⚠ Orifice possible, if required state details  
For orifice ordering details, see page 10.

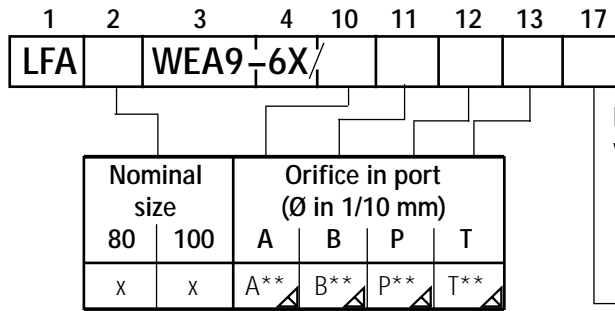


LFA 63 WECA...  
(with directional spool valve type 3WE 10 A...)



- 1 Name plate
- 2 Ports X, Y and Z1 optionally as a threaded connection
- 3 Valve fixing screws are included within the scope of the control cover supply
- 4 Directional spool valve type 3WE 6 A...

NS 80 and 100



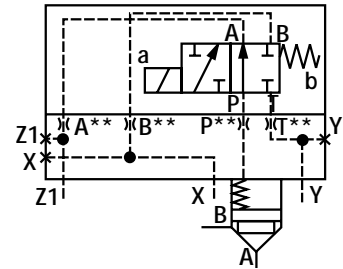
No code =  
V =

NBR seals  
FKM seals  
(other seals on request)

**⚠ Attention!**

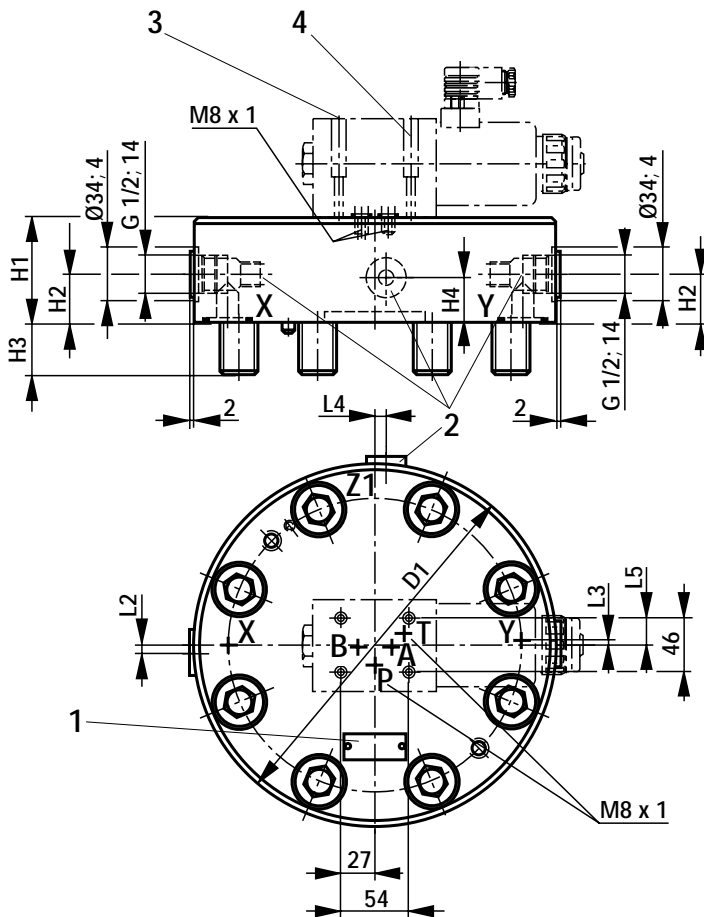
The compatibility of the seals and pressure fluid has to be taken into account!

⚠ Orifice possible, if required state details  
For orifice ordering details, see page 10.



LFA . WEA9...  
NS 80 and 100

(with directional spool valve type 3WE 10 A...)

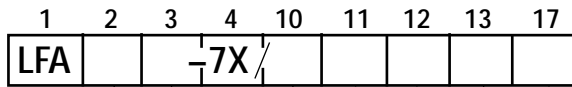


NS	80	100
D1	250	300
H1	80	100
H2	30	40
H3	45	52.5
H4	30	70
L2	0	6
L3	6	6
L4	6	6
L5	23	19

- 1 Name plate
- 2 Ports X, Y, Z1 and Z2 optionally as a threaded connection
- 3 Valve fixing screws are included within the scope of the control cover supply
- 4 directional spool valve type 3WE 10 A...

Control cover for mounting a directional spool or directional poppet valve: types ..GWA..., ..GWB... (Dimensions in mm)

NS 16 to 50



Nominal size					Type	Orifice in port (Ø in 1/10 mm)			
16	25	32	40	50		A	B	P	T
X	X	X	X	X	GWA	A**		P**	T**
X	X	X	X	X	GWB		B**	P**	T**

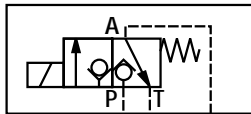
No code =  
V =

NBR seals  
FKM seals  
(other seals on request)

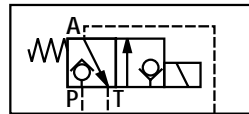
**⚠ Attention!**  
The compatibility of the seals and pressure fluid has to be taken into account!

△ Orifice possible, if required state details  
For orifice ordering details, see page 10.

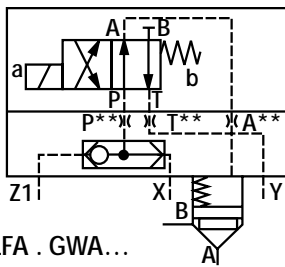
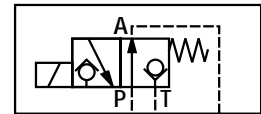
M-3SEW 6 C../420...



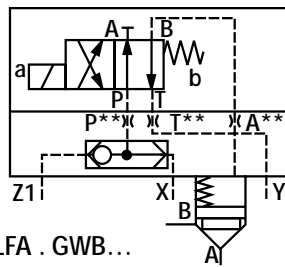
M-3SED 6 CK../350...



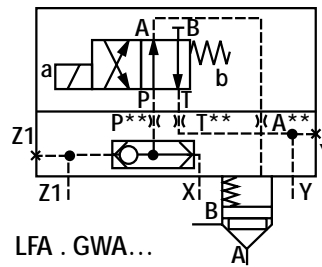
M-3SED 6 UK../350...  
M-3SEW 6 U../420...



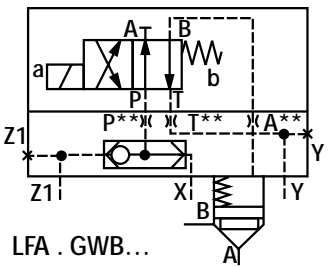
LFA . GWA...  
NS 16 to 32  
(with directional spool valve type 4WE 6 D...)



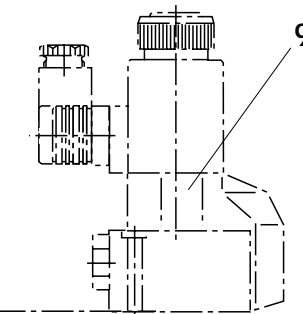
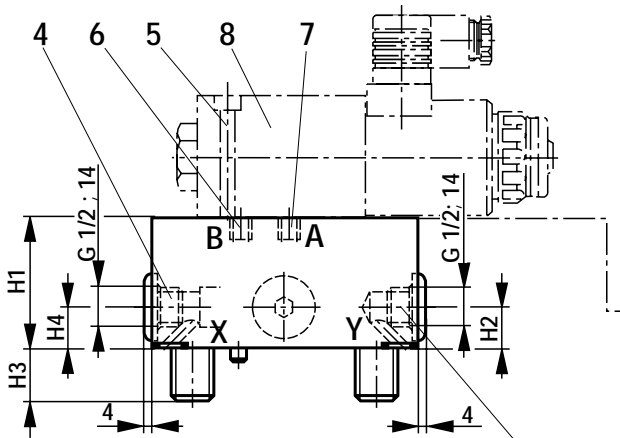
LFA . GWB...  
NS 16 to 32  
(with directional spool valve type 4WE 6 D...)



LFA . GWA...  
NS 40 and 50  
(with directional spool valve type 4WE 6 D...)

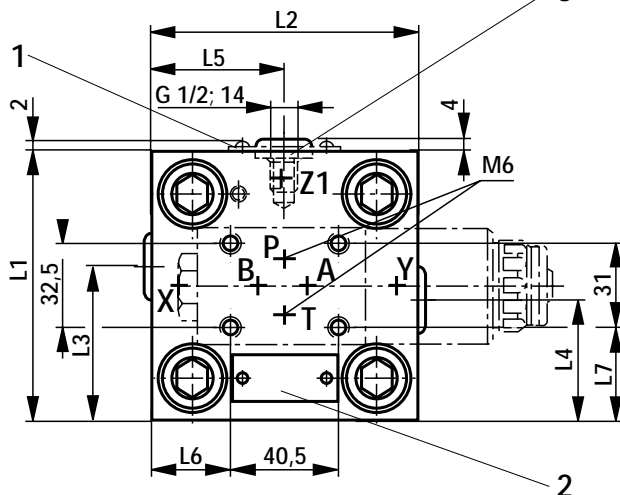


LFA . GWB...  
NS 40 and 50  
(with directional spool valve type 4WE 6 D...)



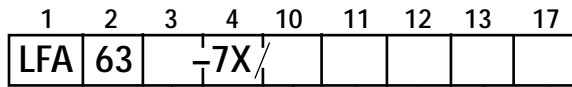
- 4 Shuttle valve
- 5 Valve fixing screws are included within the scope of the control cover supply
- 6 Plug M6 for type ..GWA...
- 7 Plug M6 for type ..GWB...
- 8 Directional spool valve type 4WE 6 D...
- 9 Directional poppet valve type M-3SEW 6 ...

- 1 Name plate for sizes 16, 25, 32
- 2 Name plate for sizes 40 and 50
- 3 Ports Y and Z1 optionally as a threaded connection for sizes 40 and 50



NS	16	25	32	40	50
H1	40	40	50	60	68
H2	-	-	-	30	32
H3	15	24	28	32	34
H4	17	17	21.5	30	32
L1	65	85	100	125	140
L2	80	85	100	125	140
L3	36.5	45.5	50	62.5	72
L4	-	-	-	53	60
L5	-	-	-	62.5	70
L6	7	23.5	31	43.5	51
L7	17	27	34.5	47	54.5

NS 63



Type	Orifice in port (Ø in 1/10 mm)			
	A	B	P	T
GWA	A**		P**	T**
GWB		B**	P**	T**

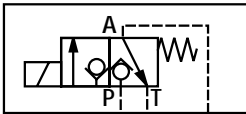
No code =  
V =

NBR seals  
FKM seals  
(other seals on request)

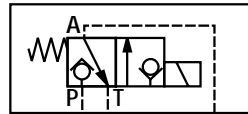
**⚠ Attention!**  
The compatibility of the seals and pressure fluid has to be taken into account!

⚠ Orifice possible, if required state details  
For orifice ordering details, see page 10.

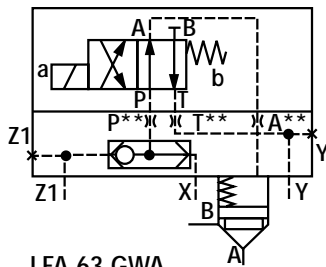
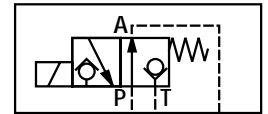
M-3SEW 10 C../420...



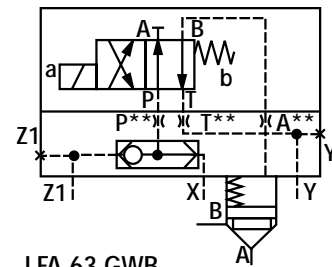
M-3SED 10 CK../350...



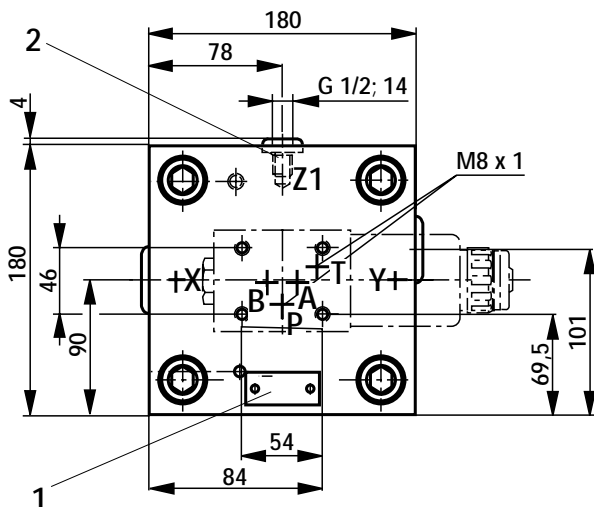
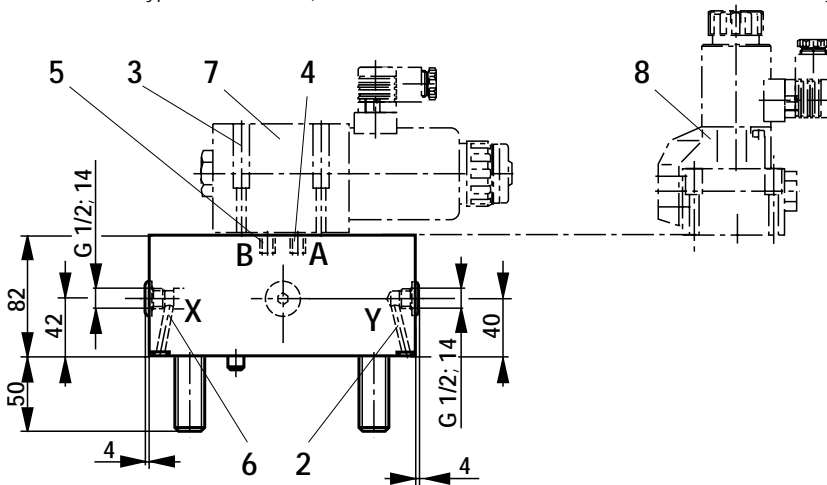
M-3SED 10 UK../350...  
M-3SEW 10 U../420...



LFA 63 GWA...  
(with directional spool valve type 4WE 10 D...)

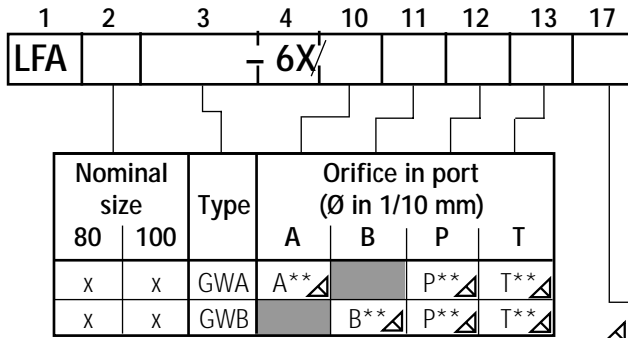


LFA 63 GWB...  
(with directional spool valve type 4WE 10 D...)



- 1 Name plate
- 2 Ports Y and Z1 optionally as a threaded connection
- 3 Valve fixing screws are included within the scope of the control cover supply
- 4 Plug M8 x 1 for type ..GWB...
- 5 Plug M8 x 1 for type ..GWA...
- 6 Shuttle valve
- 7 Directional spool valve type 4WE 10 D...
- 8 Directional poppet valve type M-3SEW 10 ...

NS 80 and 100



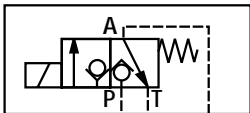
No code =  
V =

NBR seals  
FKM seals  
(other seals on request)

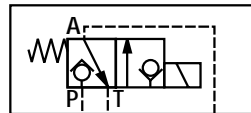
**Attention!**  
The compatibility of the seals and pressure fluid has to be taken into account!

△ Orifice possible, if required state details  
For orifice ordering details, see page 10.

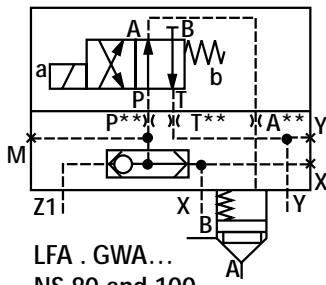
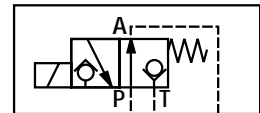
M-3SEW 10 C../420...



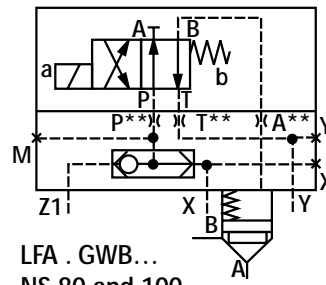
M-3SED 10 CK../350...



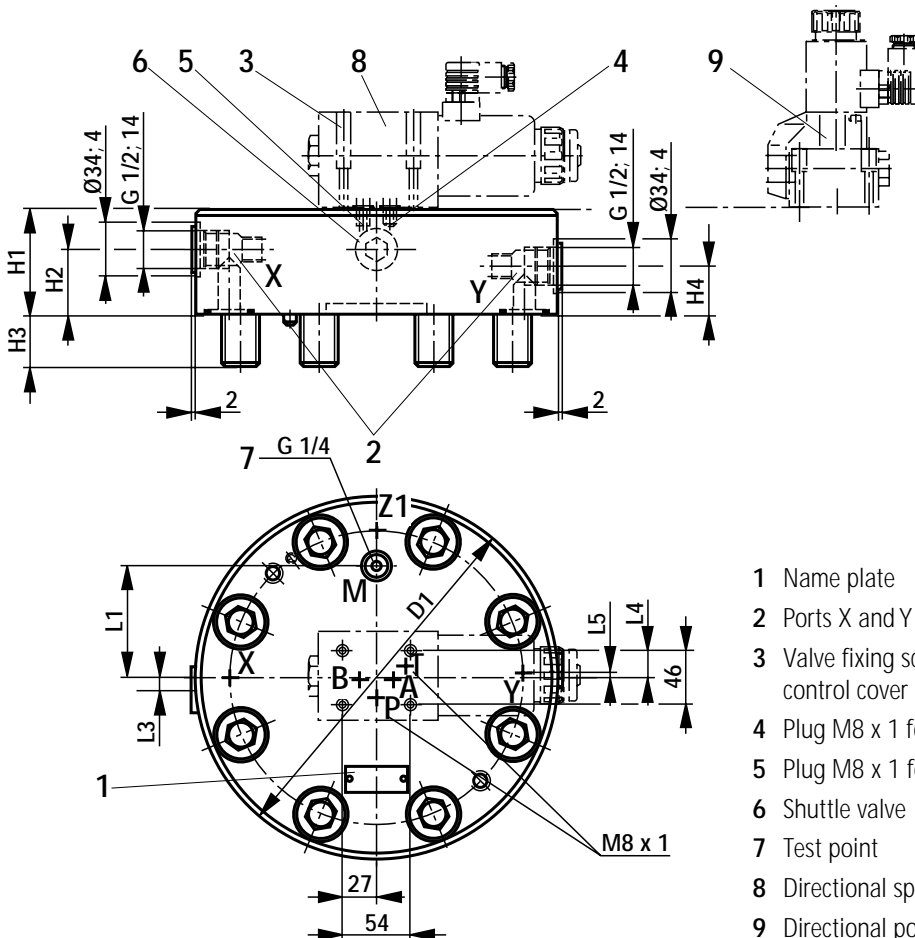
M-3SED 10 UK../350...  
M-3SEW 10 U../420...



LFA . GWA...  
NS 80 and 100  
(with directional spool valve type 4WE 10 D...)



LFA . GWB...  
NS 80 and 100  
(with directional spool valve type 4WE 10 D...)



NS	80	100
D1	250	300
H1	80	100
H2	26	40
H3	45	52.5
H4	26	55
L1	74	96.5
L3	9.5	13
L4	29	28
L5	10.5	13

- 1 Name plate
- 2 Ports X and Y optionally as a threaded connection
- 3 Valve fixing screws are included within the scope of the control cover supply
- 4 Plug M8 x 1 for type ..GWB..
- 5 Plug M8 x 1 for type ..GWA..
- 6 Shuttle valve
- 7 Test point
- 8 Directional spool valve type 4WE 10 D...
- 9 Directional poppet valve type M-3SEW 10 ...



Control cover for mounting a directional spool or directional poppet valve: type ..KWA..., ..KWB... (Dimensions in mm)

NS 16 to 50

1	2	3	4	10	11	12	14	17
LFA			-7X/					
NS	Type	Orifice in port (Ø in 1/10 mm)						
		A	B	P	X			
16	KWA	A**		P15	X15			
25	KWA	A**		P15	Ø2,0			
32	KWA	A**		P20	Ø2,5			
40	KWA	A**		P20	X30			
50	KWA	A**		P20	X30			
16	KWB		B**	P15	X15			
25	KWB		B**	P15	Ø2,0			
32	KWB		B**	P20	Ø2,5			
40	KWB		B**	P20	X30			
50	KWB		B**	P20	X30			

No code = NBR seals  
 V = FKM seals  
 (other seals on request)

**⚠ Attention!**  
 The compatibility of the seals and pressure fluid has to be taken into account!

▲ Orifice drilled (Ø in mm) – Does not appear in the type code  
 △ Standard orifice (Ø in 1/10 mm) – Does not appear in the type code  
 ▽ Orifice possible, if required state details (Ø in 1/10 mm)  
 For orifice ordering details, see page 10.

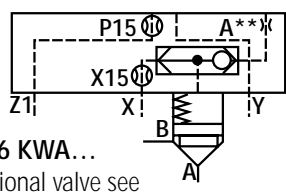
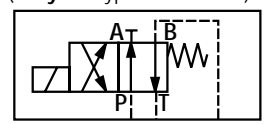
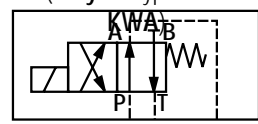
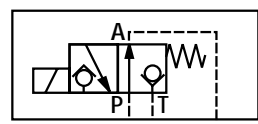
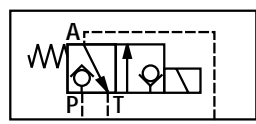
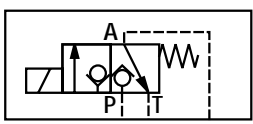
M-3SEW 6 C../420...

M-3SED 6 CK../350...

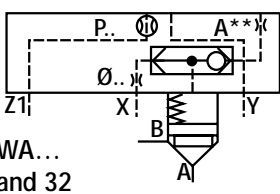
M-3SED 6 UK../350...  
 M-3SEW 6 U../420...

4WE 6 D...  
 (only for type LFA .)

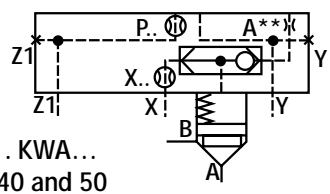
4WE 6 D...  
 (only for type LFA . KWB)



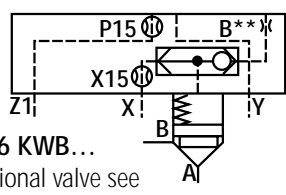
LFA 16 KWA...  
 (directional valve see above)



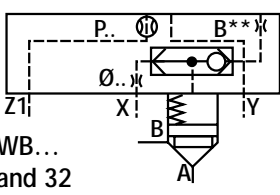
LFA . KWA...  
 NS 25 and 32  
 (directional valve see above)



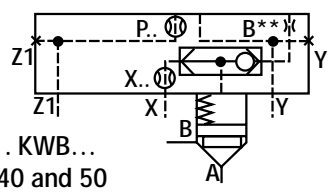
LFA . KWA...  
 NS 40 and 50  
 (directional valve see above)



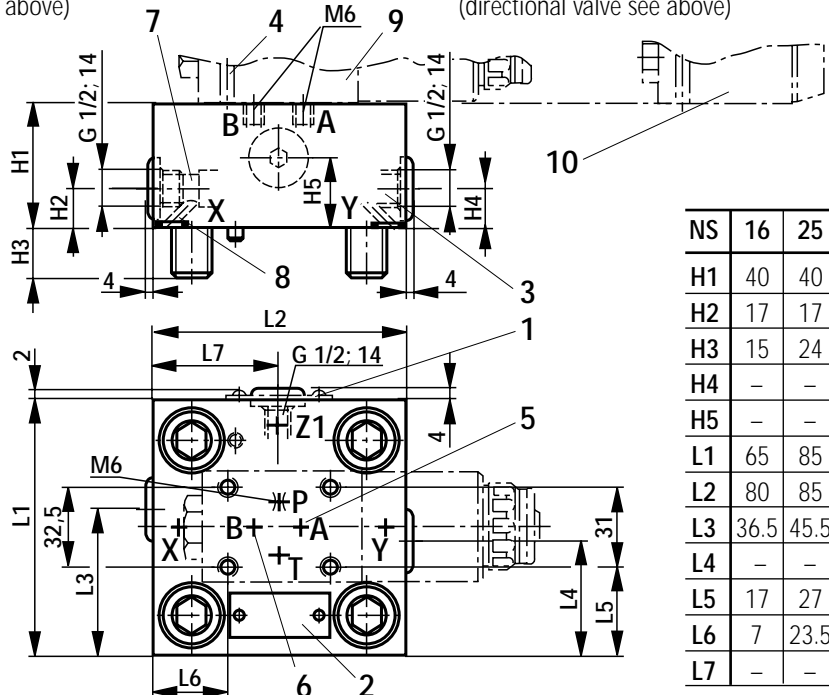
LFA 16 KWB...  
 (directional valve see above)



LFA . KWB...  
 NS 25 and 32  
 (directional valve see above)



LFA . KWB...  
 NS 40 and 50  
 (directional valve see above)

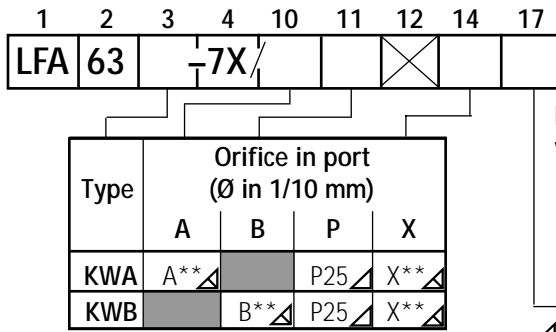


- Name plate for sizes 16, 25 and 32
- Name plate for sizes 40 and 50
- Ports Y and Z1 optionally as a threaded connection for sizes 40 and 50
- Valve fixing screws are included within the scope of the control cover supply
- Plug for type ..KWB...
- Plug for type ..KWA...
- Shuttle valve
- M6 for sizes 16 and 40, M8 x 1 for size 50
- Directional spool valve type 4WE 6 D...
- Directional poppet valve type M-3SEW 6 ...

NS	16	25	32	40	50
H1	40	40	50	60	68
H2	17	17	21.5	30	32
H3	15	24	28	32	34
H4	-	-	-	30	32
H5	-	-	-	30	50
L1	65	85	100	125	140
L2	80	85	100	125	140
L3	36.5	45.5	50	62.5	72
L4	-	-	-	53	60
L5	17	27	34.5	47	54.5
L6	7	23.5	31	43.5	51
L7	-	-	-	62.5	70

Control cover for mounting a directional spool or directional poppet valve: types ..KWA..., ..KWB... (Dimensions in mm)

NS 63



For orifice ordering details, see page 10.

No code =  
V =

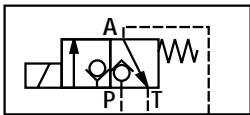
NBR seals  
FKM seals  
(other seals on request)

**⚠ Attention!**  
The compatibility of the seals and pressure fluid has to be taken into account!

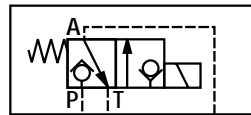
△ Standard orifice (Ø in 1/10 mm) – does not appear in the type code

△ Orifice possible, if required state details (Ø in 1/10 mm)

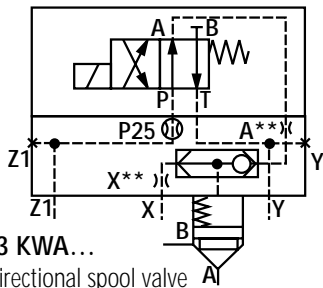
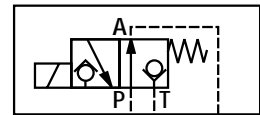
M-3SEW 10 C../420...



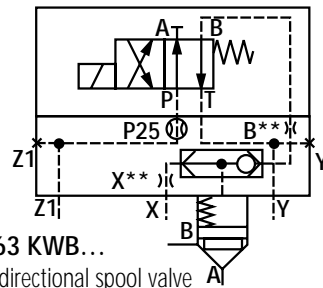
M-3SED 10 CK../350...



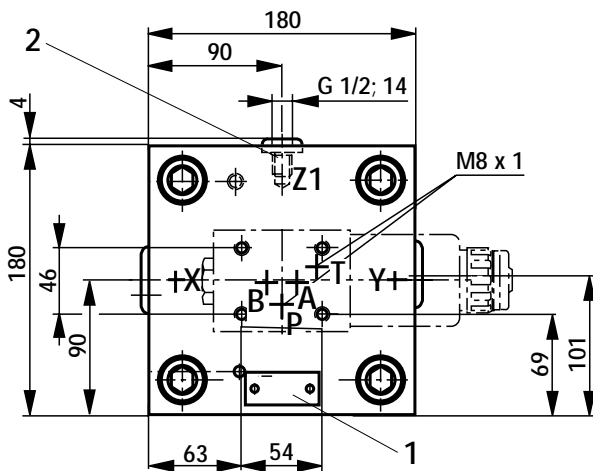
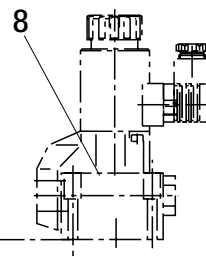
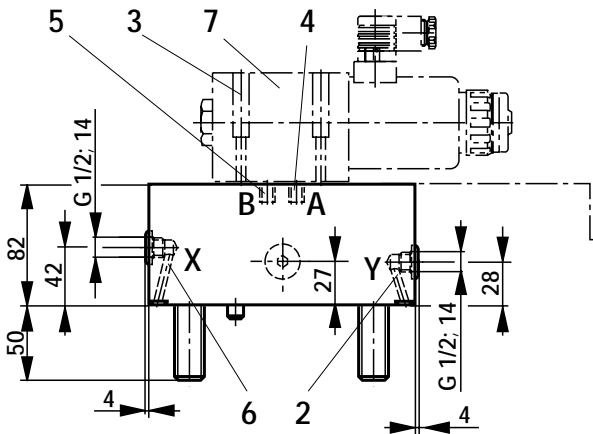
M-3SED 10 UK../350...  
M-3SEW 10 U../420...



LFA 63 KWA...  
(with directional spool valve type 4WE 10 D...)



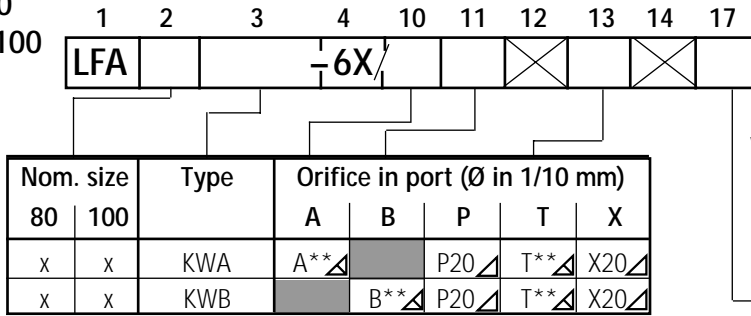
LFA 63 KWB...  
(with directional spool valve type 4WE 10 D...)



- 1 Name plate
- 2 Ports Y and Z1 optionally as a threaded connection
- 3 Valve fixing screws are included within the scope of the control cover supply
- 4 Plug M8 x 1 for type ..KWB...
- 5 Plug M8 x 1 for type ..KWA...
- 6 Shuttle valve
- 7 Directional spool valve type 4WE 10 D...
- 8 Directional poppet valve type M-3SEW 10 ...

Control cover for mounting a directional spool or directional poppet valve: types ..KWA..., ..KWB... (Dimensions in mm)

NS 80  
and 100



No code =  
V =

NBR seals  
FKM seals  
(other seals on request)

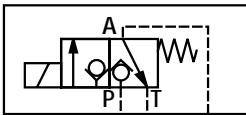
**⚠ Attention!**  
The compatibility of the seals and pressure fluid has to be taken into account!

For orifice ordering details, see page 10.

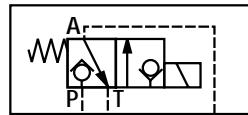
△ Standard orifice – does not appear in the type code

◁ Orifice possible, if required state details

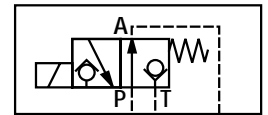
M-3SEW 10 C../420...



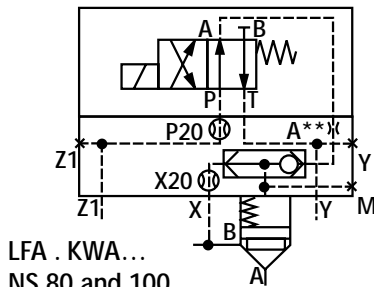
M-3SED 10 CK../350...



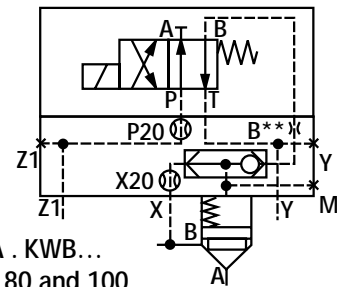
M-3SED 10 UK../350...



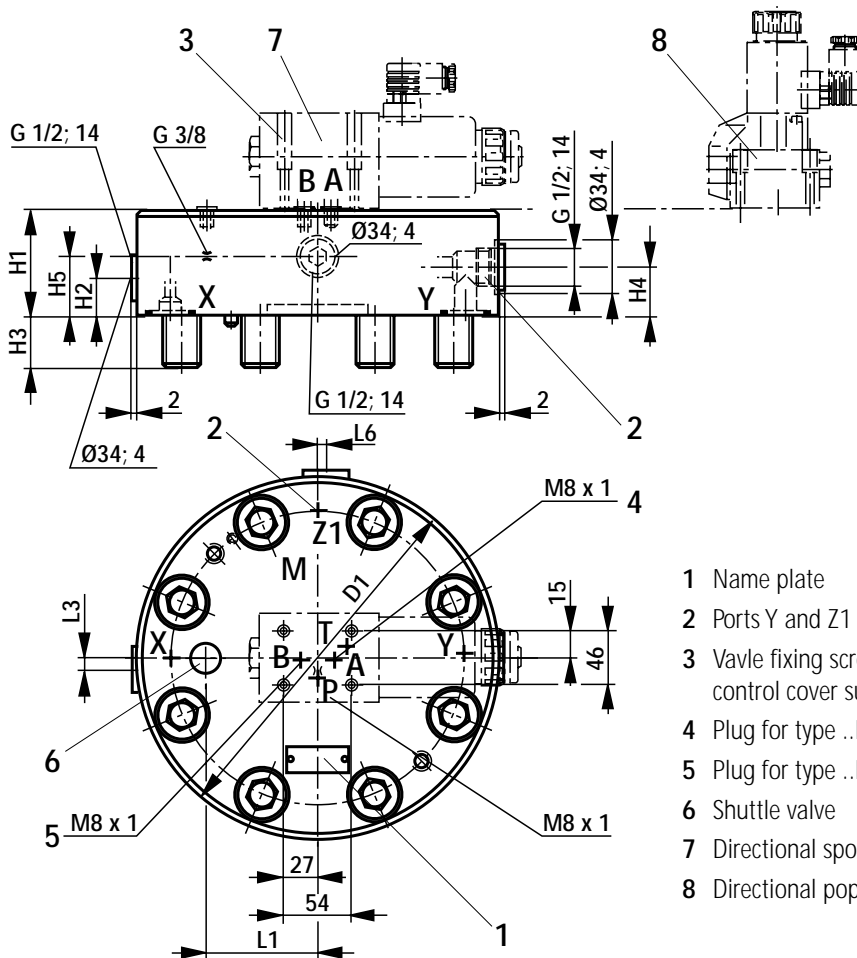
M-3SEW 10 U../420...



LFA . KWA...  
NS 80 and 100  
(with directional spool valve type 4WE 10 D...)



LFA . KWB...  
NS 80 and 100  
(with directional spool valve type 4WE 10 D...)



NS	80	100
D1	250	300
H1	100	110
H2	19.5	27
H3	45	52.5
H4	60	70
H5	52	62
L1	55	62
L3	6.5	5
L6	6.5	2

- 1 Name plate
- 2 Ports Y and Z1 optionally as a threaded connection
- 3 Valve fixing screws are included within the scope of the control cover supply
- 4 Plug for type ..KWB...
- 5 Plug for type ..KWA...
- 6 Shuttle valve
- 7 Directional spool valve type 4WE 10 D...
- 8 Directional poppet valve type M-3SEW 10 ...

# Control cover with electrical monitoring of the closed position: type ..E...

(monitoring of closed spool position)

(Dimensions in mm)

Technical data and notes are valid for all control covers with electrical monitoring (E, EH2, EWA und EWB).

The solid state limit switch with integral amplifier switches when the closed position is reached. This limit switch has the following advantages:

- No dynamic seals
- Direct monitoring of the closed switched position of the valve
- Long service life
- Control cover and cartridge valve completely included in the type code
- $p_{max} = 400$  bar.

## Limit switch

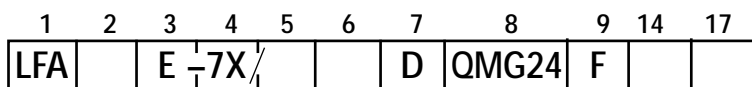
Connection, function, pin allocation see page 41.

### ⚠ Attention!

The limit switch outputs are only protected against load short circuits.

The +24 V outlets are to be protected against short circuits.

NS 16 to 63



Nominal size					
16	25	32	40	50	63
X	X	X	X	X	X

Area ratio A1:A2		Cracking pressure $p_0$
CA = 2:1 <sup>1)</sup>		
CB = 14.3:1 <sup>2)</sup>		
		10 = 1.0 bar
		20 = 2.0 bar
		40 = 4.0 bar

Orifice in port ( $\varnothing$ in 1/10 mm)
X**

No code = NBR seals  
V = FKM seals  
(other seals on request)

### ⚠ Attention!

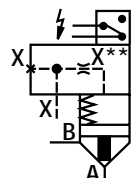
The compatibility of the seals and pressure fluid has to be taken into account!

⚠ Orifice possible, if required state details ( $\varnothing$  in 1/10 mm)

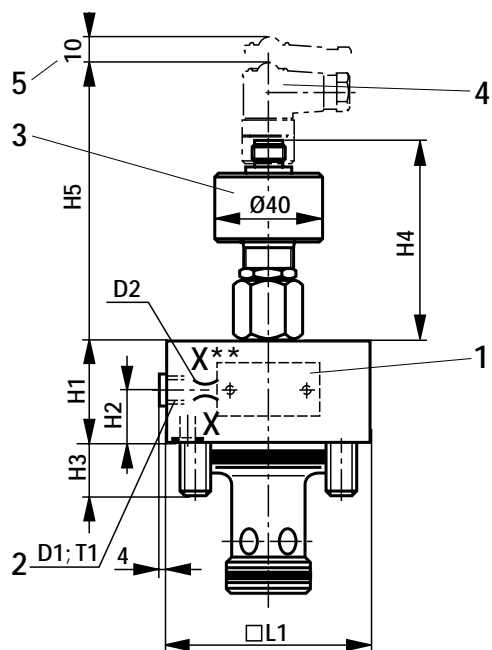
For orifice ordering details, see page 10.

<sup>1)</sup> Annulus area = 50% (standard version)

<sup>2)</sup> Annulus area = 7%



LFA . E...



NS	16	25	32	40	50	63
D1	G 1/8	G 1/4	G 1/4	G 1/2	G 1/2	G 3/4
D2	M6	M6	M6	M8 x 1	M8 x 1	M8 x 1
H1	50	50	70	110	120	150
H2	12	16	16	83	93	113
H3	15	24	28	32	34	50
H4	75	75	75	93	93	93
H5	105	105	105	123	123	123
□ L1	65	85	100	125	140	180
T1	8	12	12	14	14	16

- 1 Name plate
- 2 Port X optionally as a threaded connection
- 3 Limit switch type QM (included within the type code, see page 41)
- 4 Plug-in connector K24 (separate order, see page 41)
- 5 Space required to remove plug-in connector

**Control cover with electrical monitoring of the closed position and stroke limiter: type ..EH2...**  
 (monitoring of closed spool position) (Dimensions in mm)

NS 16 to 63      1    2    3    4    5    6    7    8    9    14    17

LFA    EH2-7X/    D    QMG24    F

**Nominal size**

16	25	32	40	50	63
X	X	X	X	X	X

**Area ratio A1:A2**

CA = 2:1 <sup>1)</sup>

CB = 14.3:1 <sup>2)</sup>

**Cracking pressure  $p_0$**

10 = 1.0 bar

20 = 2.0 bar

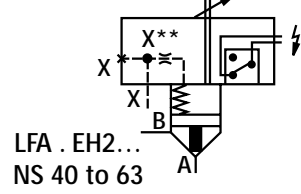
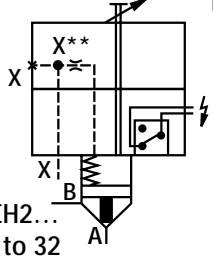
40 = 4.0 bar

**Orifice in port ( $\varnothing$  in 1/10 mm)**

X\*\*

No code = NBR seals  
 V = FKM seals  
 (other seals on request)

**⚠ Attention!**  
 The compatibility of the seals and pressure fluid has to be taken into account!



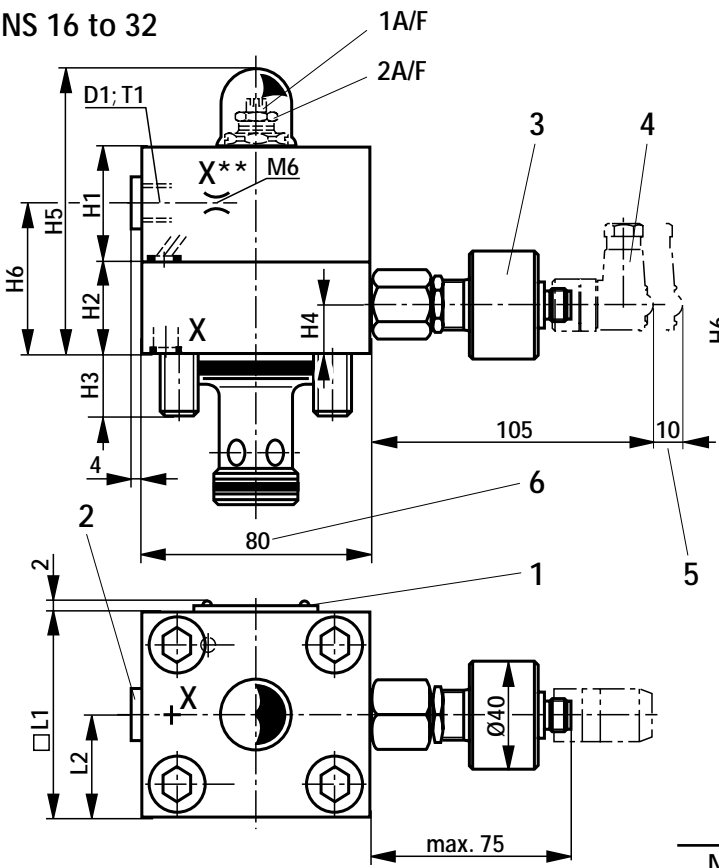
⚠ Orifice possible, if required state details ( $\varnothing$  in 1/10 mm)

For orifice ordering details, see page 10.

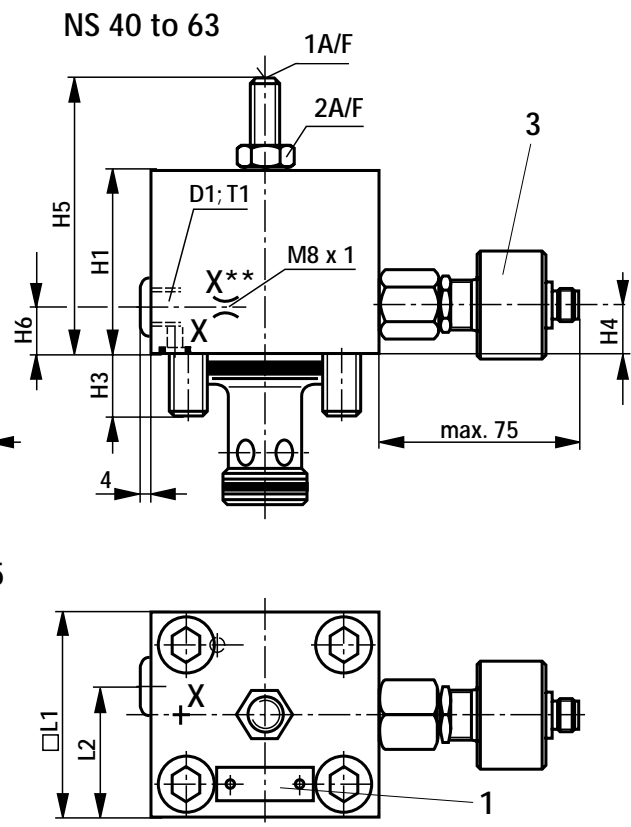
<sup>1)</sup> Annulus area = 50% (standard version)

<sup>2)</sup> Annulus area = 7%

**NS 16 to 32**



**NS 40 to 63**



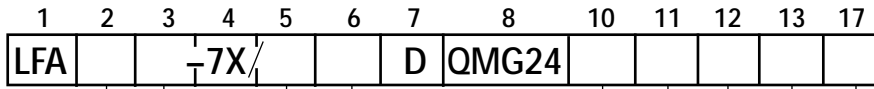
- 1 Name plate
- 2 Port X optionally as a threaded connection
- 3 Limit switch type QM (included within the type code, see page 41)
- 4 Plug-in connector K24 (separate order, see page 41)
- 5 Space required to remove plug-in connector
- 6 For size 16 (only lower cover)

NS	16	25	32	40	50	63
D1	G 1/8	G 1/4	G 1/4	G 1/2	G 1/2	G 3/4
H1	35	40	50	182	207	242
H2	50	50	50	-	-	-
H3	15	24	28	32	34	50
H4	25	25	25	25	25	30
H5	126	130	150 <sup>3)</sup>	233 <sup>3)</sup>	253 <sup>3)</sup>	292 <sup>3)</sup>
H6	62	66	66	88	96	118
□L1	65	85	100	125	140	180
L2	32.5	42.5	50	62.5	80	90
T1	8	12	12	14	14	16
1A/F	6	6	10	14	17	24
2A/F	21	21	27	46	55	65

<sup>3)</sup> Max. dim.

**Control cover with electrical monitoring of the closed position for mounting a directional spool or poppet valve: types ..EWA..., ..EWB...** (monitoring of closed spool position) (Dimensions in mm)

NS 16 to 32



Nominal size			Type
16	25	32	
x	x	x	EWA
x	x	x	EWB

Area ratio A1:A2
CA = 2:1 <sup>1)</sup>
CB = 14.3:1 <sup>2)</sup>

Cracking pressure $p_0$
10 = 1.0 bar
20 = 2.0 bar
40 = 4.0 bar

Orifice in port ( $\varnothing$ in 1/10 mm)			
A	B	P	T
A**		P**	T**
	B**	P**	T**

No code =  
V =

NBR seals  
FKM seals  
(other seals on request)

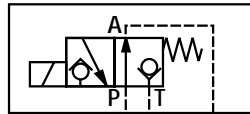
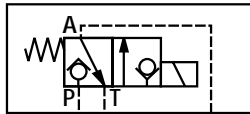
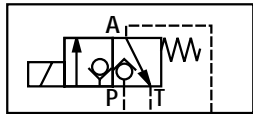
**⚠ Attention!**

The compatibility of the seals and pressure fluid has to be taken into account!

M-3SEW 6 C../420...

M-3SED 6 CK../350...

M-3SED 6 UK../350...  
M-3SEW 6 U../420...

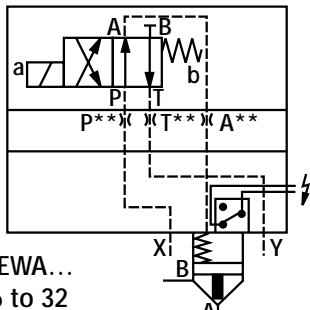


⚠ Orifice possible, if required state details ( $\varnothing$  in 1/10 mm)

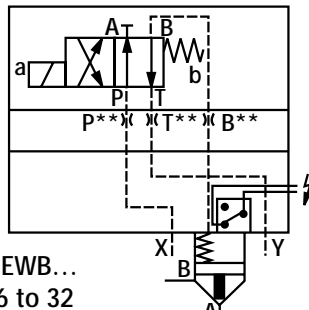
For orifice ordering details, see page 10.

1) Annulus area = 50% (standard version)

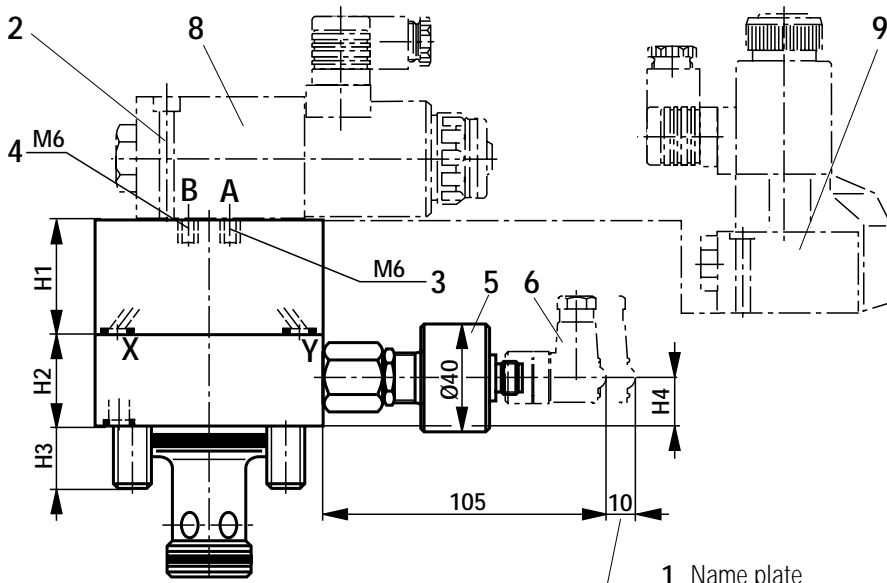
2) Annulus area = 7%



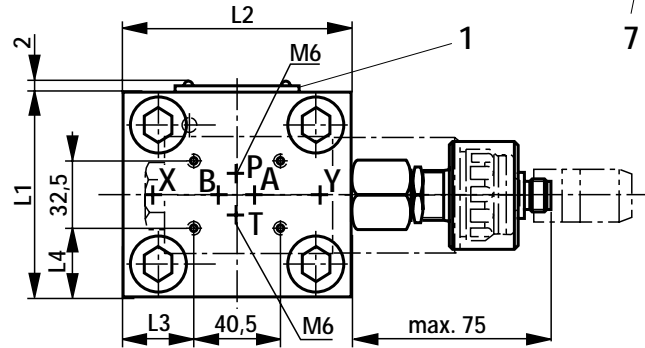
LFA . EWA...  
NS 16 to 32  
(with directional spool valve type 4WE 6 D...)



LFA . EWB...  
NS 16 to 32  
(with directional spool valve type 4WE 6 D...)



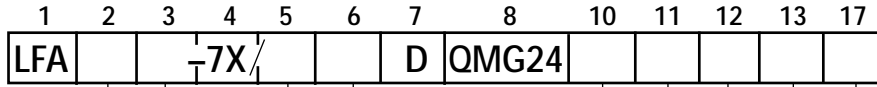
NS	16	25	32
H1	40	40	50
H2	50	50	50
H3	15	24	28
H4	25	25	25
L1	65	85	100
L2	80	85	100
L3	7	23.5	31
L4	16.5	26.5	34



- 1 Name plate
- 2 Valve fixing screws are included within the scope of the control cover supply
- 3 Plug M6 for type ..EWB...
- 4 Plug M6 for type ..EWA...
- 5 Limit switch type QM (included within the type code, see page 41)
- 6 Plug-in connector K24 (separate order, see page 41)
- 7 Space required to rremove plug-in connector
- 8 Directional spool valve type 4WE 6 D...
- 9 Directional poppet valve type M-3SEW 6 ...

**Control cover with electrical monitoring of the closed position for mounting a directional spool or poppet valve: types ..EWA..., ..EWB...** (monitoring of closed spool position) (Dimensions in mm)

NS 40 and 50



Nominal size		Type
40	50	
x	x	EWA
x	x	EWB

Area ratio A1:A2
CA = 2:1 <sup>1)</sup>
CB = 14.3:1 <sup>2)</sup>

Cracking pressure $p_0$
10 = 1.0 bar
20 = 2.0 bar
40 = 4.0 bar

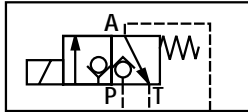
Orifice in port ( $\varnothing$ in 1/10 mm)			
A	B	P	T
A**		P**	T**
	B**	P**	T**

No code = NBR seals  
 V = FKM seals  
 (other seals on request)

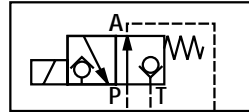
**⚠ Attention!**

The compatibility of the seals and pressure fluid has to be taken into account!

M-3SEW 6 C../420...



M-3SED 6 UK../350...  
 M-3SEW 6 U../420...

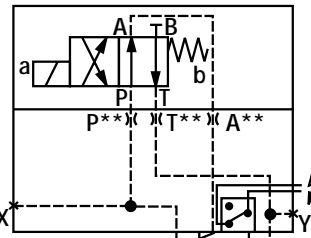


⚠ Orifice possible, if required state details ( $\varnothing$  in 1/10 mm)

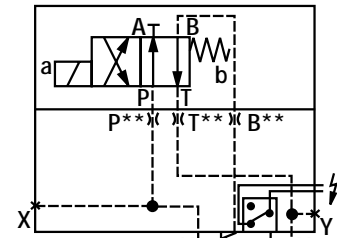
For orifice ordering details, see page 10.

1) Annulus area = 50% (standard version)

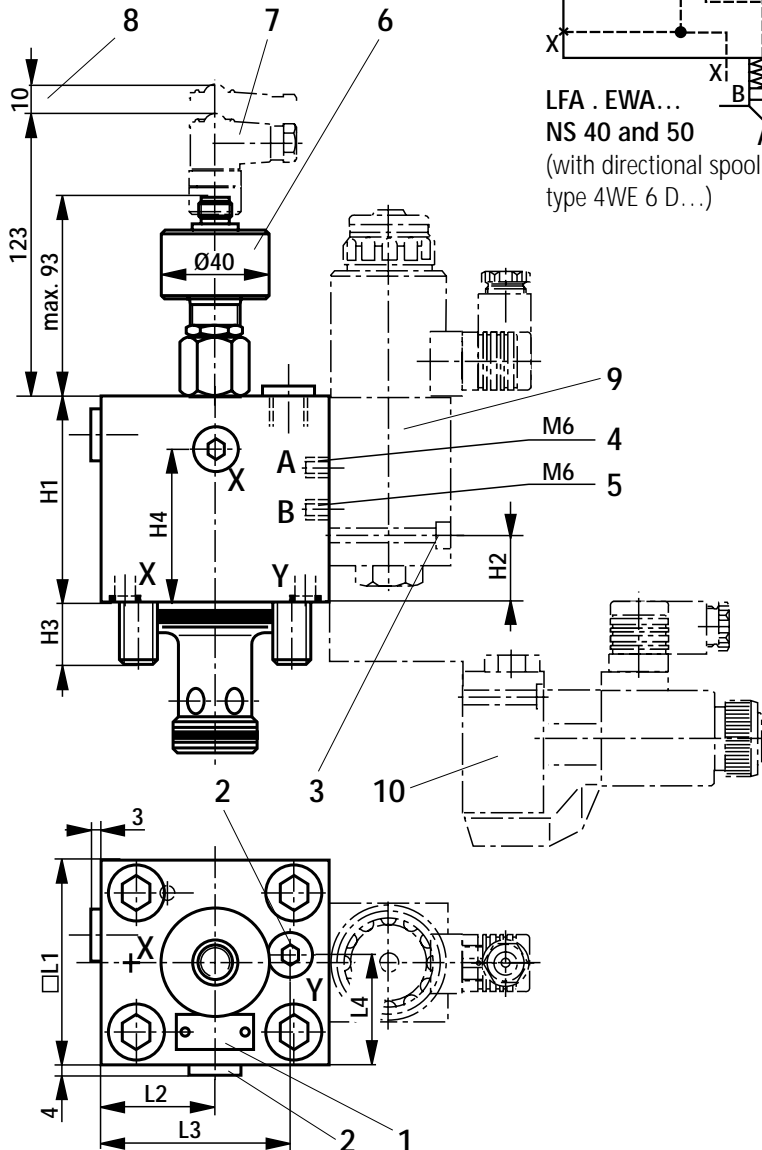
2) Annulus area = 7%



LFA . EWA...  
 NS 40 and 50  
 (with directional spool valve type 4WE 6 D...)



LFA . EWB...  
 NS 40 and 50  
 (with directional spool valve type 4WE 6 D...)

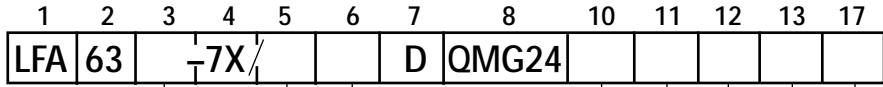


NS	40	50
H1	110	120
H2	58.5	68
H3	32	34
H4	77.5	87
□ L1	125	140
L2	62.5	70
L3	98.5	113
L4	66.5	70

- 1 Name plate
- 2 Ports X and Y optionally as a threaded connection G 1/4
- 3 Valve fixing screws are included within the scope of the control cover supply
- 4 Plug M6 for type ..EWB...
- 5 Plug M6 for type ..EWA...
- 6 Limit switch type QM (included within the type code, see page 41)
- 7 Plug-in connector K24 (separate order, see page 41)
- 8 Space required to to remove plug-in connector
- 9 Directional spool valve type 4WE 6 D...
- 10 Directional poppet valve type M-3SEW 6 ...

**Control cover with electrical monitoring of the closed position for mounting a directional spool or poppet valve: types ..EWA..., ..EWB...** (monitoring of closed spool position) (Dimensions in mm)

NS 63

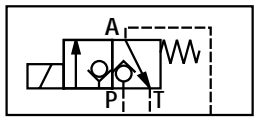


<b>Type</b>	<b>Area ratio A1:A2</b>	<b>Cracking pressure <math>p_0</math></b>	<b>Orifice in port (<math>\varnothing</math> in 1/10 mm)</b>			
EWA	CA = 2:1 <sup>1)</sup>	10 = 1.0 bar	A	B	P	T
EWB	CB = 14.3:1 <sup>2)</sup>	20 = 2.0 bar	A**		P**	T**
		40 = 4.0 bar		B**	P**	T**

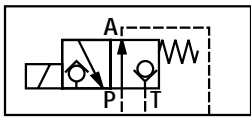
No code = NBR seals  
 V = FKM seals  
 (other seals on request)

**⚠ Attention!**  
 The compatibility of the seals and pressure fluid has to be taken into account!

M-3SEW 10 C../420...



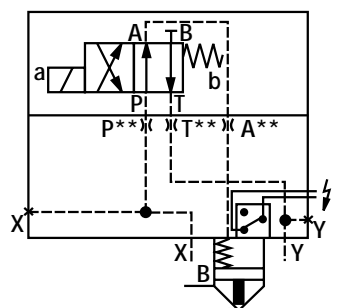
M-3SED 10 UK../350...  
 M-3SEW 10 U../420...



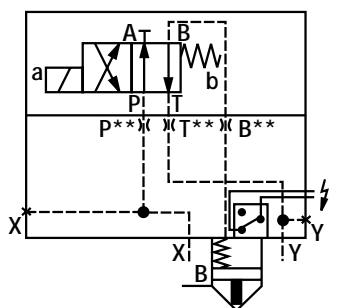
⚠ Orifice possible, if required state details ( $\varnothing$  in 1/10 mm)

For orifice ordering details, see page 10.

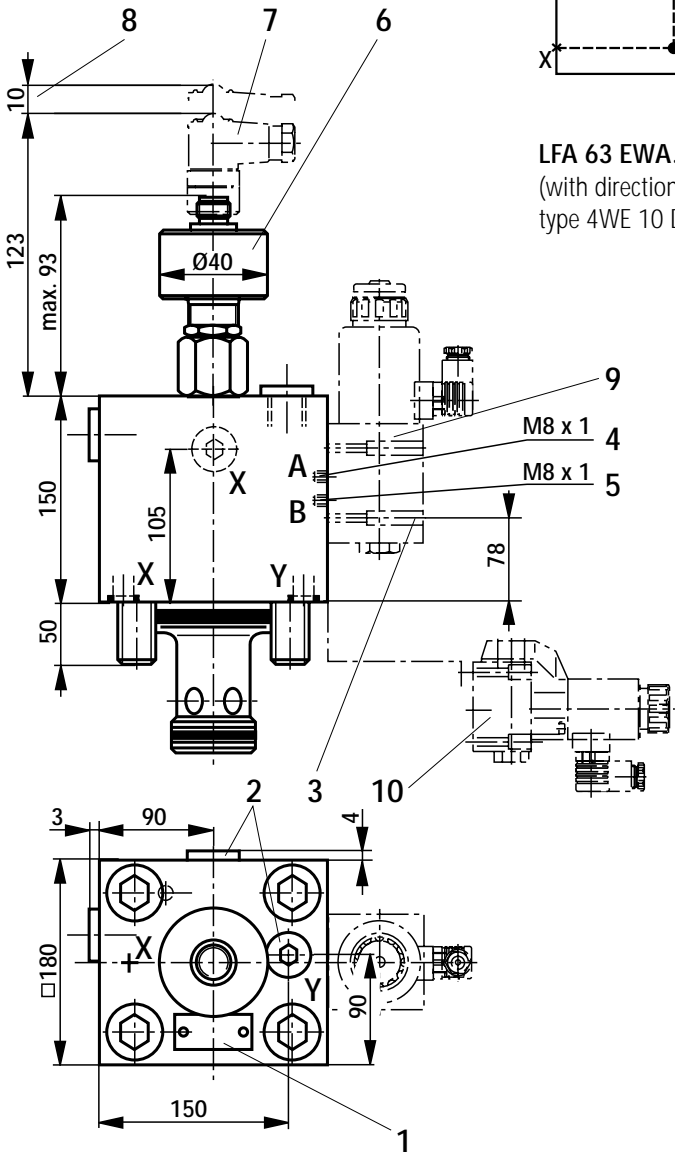
1) Annulus area = 50% (standard version)  
 2) Annulus area = 7%



LFA 63 EWA...  
 (with directional spool valve type 4WE 10 D...)



LFA 63 EWB...  
 (with directional spool valve type 4WE 10 D...)



- 1 Name plate
- 2 Ports X and Y optionally as a threaded connection G 1/2
- 3 Valve fixing screws are included within the scope of the control cover supply
- 4 Plug M8 x 1 for type ..EWB...
- 5 Plug M8 x 1 for type ..EWA...
- 6 Limit switch type QM (included within the type code, see page 41)
- 7 Plug-in connector K24 (separate order, see page 41)
- 8 Space required to remove plug-in connector
- 9 Directional spool valve type 4WE 10 D...
- 10 Directional poppet valve type M-3SEW 10 ...



# Inductive limit switch type QM, electrical connections

The electrical connection is via a 4-pin plug-in connector which has a M12 x 1 connection thread.

The plug-in connector has to be separately ordered (see below).

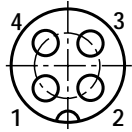
**Operating voltage:** 24 V DC + 20 %  
- 10 %  
 (residual ripple < 10%)

**Current consumption:** max. 40 mA

**Loadability of the outputs:** 400 mA (output to PNP 24 V =)

**Temperature range:** -20° C to +80° C

**Pin allocation:** 1: +24V

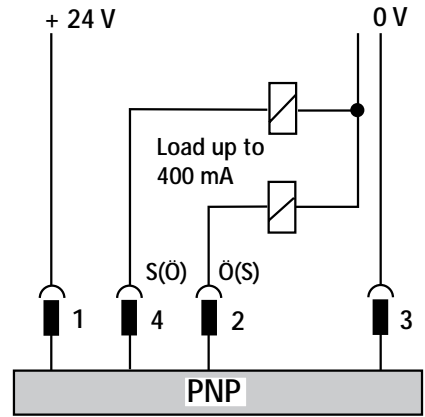


Plug-in contacts on the limit switch

2: Normally closed (low resistance – high resistance)

3: 0 V

4: Normally open (high resistance – low resistance)



The inductive limit switch type QM can be connected either as normally closed or normally open.

**⚠ Attention!**

The limit switch does not have an earth connection!

## Plug-in connector for type QM inductive limit switch, separate order

(Dimensions in mm)

Plug-in connector suits a K24 4-pin, M12 x 1 with threaded connection, cable fitting Pg 9.

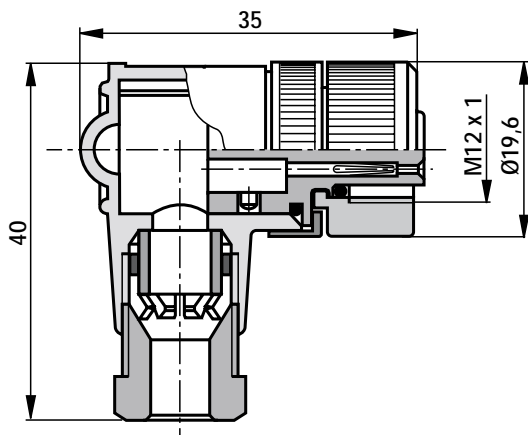
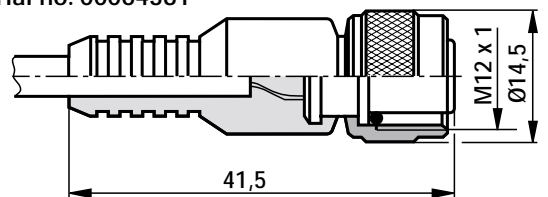
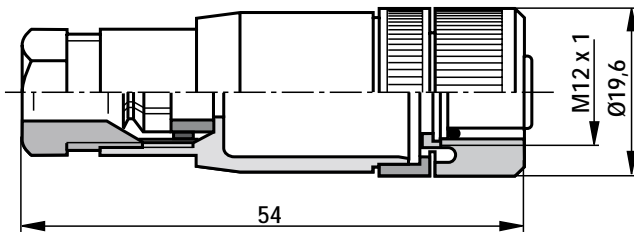
Plug-in connector suits a K24-3m 4-pin, M12 x 1 with moulded on PVC cable, 3m long.

**Cable cross section:** 4 x 0.34 mm<sup>2</sup>

- Core identification:**
- 1: Brown
  - 2: White
  - 3: Blue
  - 4: Black

Material no. 00031155

Material no. 00064381



Plug-in connector suits a K24 4-pin, M12 x 1 with threaded connection, cable fitting Pg 9, angled.

Housing can be rotated about the contact insert 4 x 90°.

Material no. 00082899

