

2-way cartridge valves

Directional functions

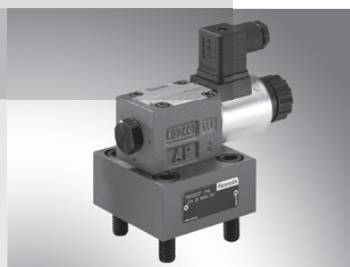
Cartridge valves and control covers

RA 21010/03.05
Replaces 06.98

1/68

Models LC; LFA

Sizes 16 to 160
Component series 2X; 6X; 7X
Maximum operating pressure 420 bar (6092 PSI)
Maximum flow 25000 L/min (6604 GPM)



Control cover type LFA 25 WEA-7X/...
with directional valve type 4WE 6
D6X/EG24N9K4 and cable socket



Cartridge valve type LC 25
A40E7X/...

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Features

- Valve poppet with or without damping nose
- 2 area ratios
- 4 different springs
- 4 stroke limiters
- Control cover with integrated poppet valve
- Control cover with integrated shuttle valve
- Control cover for mounting directional spool valves with or without integrated shuttle valve
- Control cover with or without limit switch monitoring
- Further information:

Pilot control valves	Size 6	Size 10
Directional spool valve type WE	RE 23178	RE 23327
Directional poppet valve type SEW	RE 22058	RE 22075
Directional poppet valve type SED	RE 22049	RE 22045

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		Inductive position switch type QM	66
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Function, sections, symbol

2-way cartridge valves are designed as elements for insertion into compact blocks. The power part with ports A and B is installed in a mounting cavity, which is standardised according to DIN ISO 7368, in the block and sealed by means of a cover. In most cases, the cover forms at the same time the connection between the control section of the power part and the pilot control valves. By controlling the power part with appropriate pilot control valves, it can perform pressure control, directional and throttling functions or a combination of these. Particularly economic solutions can be achieved by adapting the sizes to the different flows in the individual channels of an actuator. A very cost-efficient solution can be obtained, if several functions are assigned to the power part of an element.

Directional function

2-way cartridge valves mainly consist of a control cover (1) and a cartridge element (2). The control cover is provided with pilot bores and, depending on the required overall function, optionally a stroke limiter, a hydraulically controlled directional poppet valve or a shuttle valve. Moreover, electrically operated directional spool valves or directional poppet valves can be mounted onto the control cover. The cartridge consists of a bushing (3), a ring (4) (up to size 32 only), a valve poppet (5), optionally with damping nose (6) or without damping nose (7) and a closing spring (8).

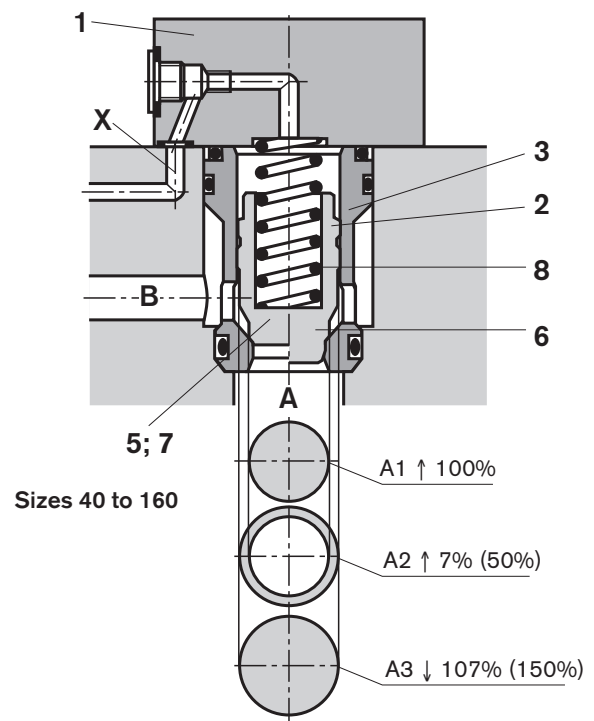
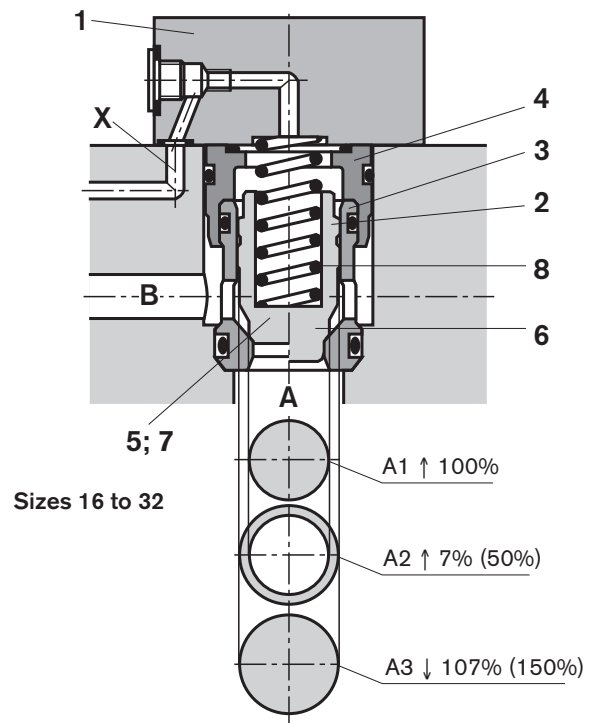
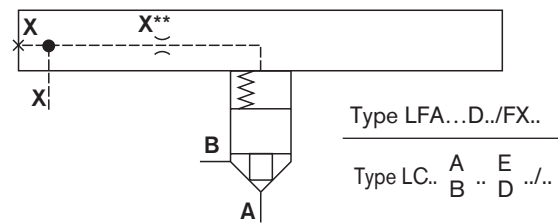
Function

2-way cartridge valve operate in dependence upon pressure. Three pressurised areas are essential for the function: A1, A2, A3. The area of the valve seat is always taken as 100%. As a result of the stepping, the annulus area A2 is 7% or 50% of area A2, depending on the version. Consequently, the area ratio A1: A2 is either 14.3:1 or 2:1. Area A3 is equal to the sum of areas A1 + A2. Due to the different area ratios A1: A2 and the resulting different annulus areas (A2), area A3 is either 107% or 150% of area A1 on the seat that is assumed to be 100%.

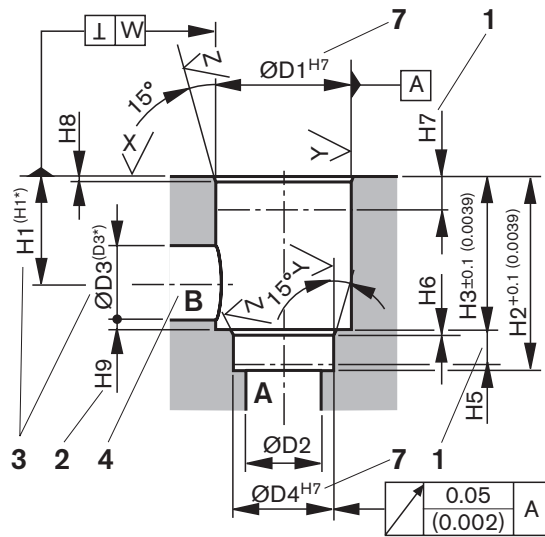
The following is generally valid:

Areas A1 and A2 act in the direction of opening. Area A3 and the spring act in the direction of closing. The effective direction of the force resulting from the opening and closing forces determines the spool position of the 2-way cartridge valve.

The medium can flow through 2-way cartridge valves from A to B or from B to A. When area A3 is pressurised due to the pilot oil flow from channel B or external pilot oil supply, channel A is leak-free closed.

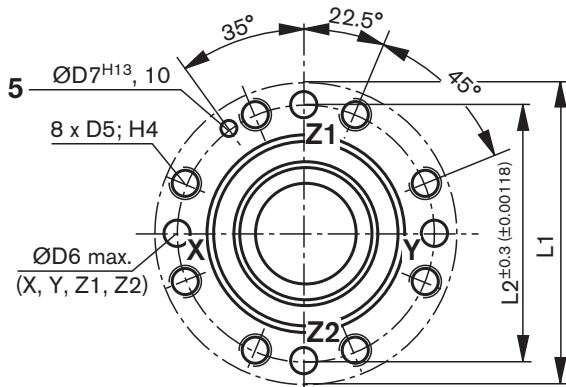


Mounting cavity and connection dimensions to DIN ISO 7368: except for sizes 125 and 160 – nominal dimensions in millimeters (inches)

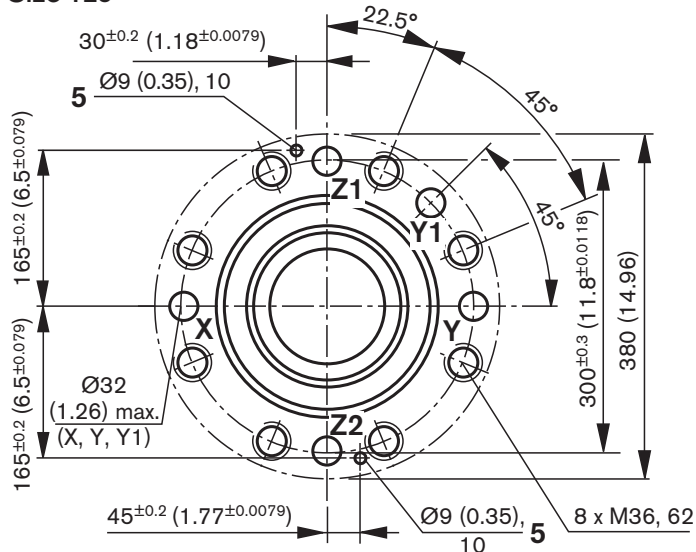


For indication of dimensions and explanation of positions, see page 9!

Sizes 80 and 100



Size 125

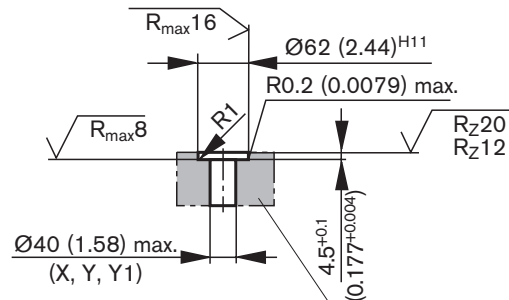
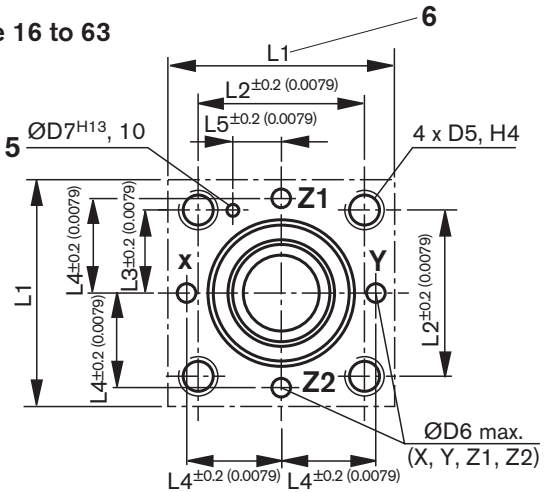


$$\sqrt{X} = \sqrt{Rz1_{\max} 4}$$

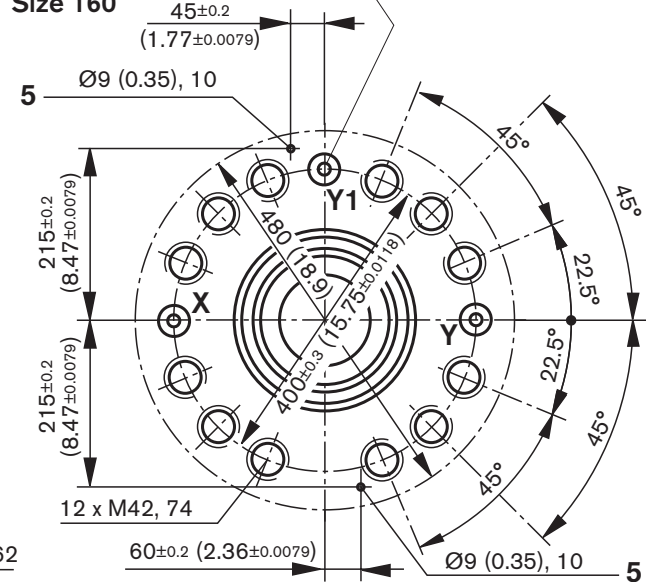
$$\sqrt{Y} = \sqrt{Rz1_{\max} 8}$$

$$\sqrt{Z} = \sqrt{Rz1_{\max} 10}$$

Size 16 to 63



Size 160



Mounting cavity and connection dimensions to DIN ISO 7368: except for sizes 125 and 160 – nominal dimensions in millimeters (inches)

Size	16	25	32	40	50	63	80	100	125	160
ØD1	32 (1.260)	45 (1.771)	60 (2.362)	75 (2.953)	90 (3.543)	120 (4.724)	145 (5.709)	180 (7.087)	225 (8.858)	300 (11.811)
ØD2	16 (0.630)	25 (0.984)	32 (1.260)	40 (1.575)	50 (1.969)	63 (2.480)	80 (3.150)	100 (3.937)	150 ¹⁾ (5.906)	200 ¹⁾ (7.874)
ØD3	16 (0.630)	25 (0.984)	32 (1.260)	40 (1.575)	50 (1.969)	63 (2.480)	80 (3.150)	100 (3.937)	125 (4.921)	200 (7.874)
(ØD3*)	25 (0.984)	32 (1.260)	40 (1.575)	50 (1.969)	63 (2.480)	80 (3.150)	100 (3.937)	125 (4.921)	150 (5.906)	250 ¹⁾ (9.843)
ØD4	25 (0.984)	34 (1.339)	45 (1.772)	55 (2.165)	68 (2.677)	90 (3.543)	110 (4.331)	135 (5.315)	200 (7.874)	270 (10.630)
ØD5	M8 (5/16")	M12 (1/2")	M16 (5/8")	M20 (3/4")	M20 (7/8")	M30 (1-1/4")	M24 (1")	M30 (1-1/4")	—	—
ØD6 ¹⁾	4 (0.157)	6 (0.236)	8 (0.315)	10 (0.394)	10 (0.394)	12 (0.472)	16 (0.630)	20 (0.787)	—	—
ØD7	4 (0.157)	6 (0.236)	6 (0.236)	6 (0.236)	8 (0.315)	8 (0.315)	10 (0.394)	10 (0.394)	—	—
H1	34 (1.34)	44 (1.73)	52 (2.05)	64 (2.52)	72 (2.84)	95 (3.74)	130 (5.12)	155 (6.10)	192 (7.56)	268 (10.55)
(H1*)	29.5 (1.16)	40.5 (1.59)	48 (1.89)	59 (2.32)	65.5 (2.58)	86.5 (3.41)	120 (4.72)	142 (5.59)	180 (7.09)	243 (9.57)
H2	56 (2.21)	72 (2.84)	85 (3.35)	105 (4.13)	122 (4.80)	155 (6.10)	205 (8.07)	245 (9.65)	300 ^{+0.15} (11.8 ^{+0.006})	425 ^{+0.15} (16.7 ^{+0.006})
H3	43 (1.69)	58 (2.28)	70 (2.76)	87 (3.43)	100 (3.94)	130 (5.12)	175 ^{±0.2} (6.89 ^{±0.008})	210 ^{±0.2} (8.27 ^{±0.008})	257 ^{±0.5} (10.12 ^{±0.02})	370 ^{±0.5} (14.57 ^{±0.02})
H4	20 (0.79)	25 (0.98)	35 (1.38)	45 (1.77)	45 (1.77)	65 (2.56)	50 (1.97)	63 (2.48)	—	—
H5	11 (0.43)	12 (0.47)	13 (0.51)	15 (0.59)	17 (0.67)	20 (0.79)	25 (0.98)	29 (1.14)	31 (1.22)	45 (1.77)
H6	2 (0.079)	2.5 (0.098)	2.5 (0.098)	3 (0.118)	3 (0.118)	4 (0.158)	5 (0.197)	5 (0.197)	7 ^{±0.5} (0.28 ^{±0.02})	8 ^{±0.5} (0.32 ^{±0.02})
H7	20 (0.79)	30 (1.18)	30 (1.18)	30 (1.18)	35 (1.38)	40 (1.58)	40 (1.58)	50 (1.97)	40 (1.58)	50 (1.97)
H8	2 (0.079)	2.5 (0.098)	2.5 (0.098)	3 (0.118)	4 (0.158)	4 (0.158)	5 (0.197)	5 (0.197)	5.5 ^{±0.2} (0.22 ^{±0.008})	5.5 ^{±0.2} (0.22 ^{±0.008})
H9	0.5 (0.019)	1 (0.039)	1.5 (0.059)	2.5 (0.098)	2.5 (0.098)	3 (0.118)	4.5 (0.118)	4.5 (0.118)	2 (0.079)	2 (0.079)
L1	65/80 (2.6/3.2)	85 (3.35)	102 (4.02)	125 (4.92)	140 (5.51)	180 (7.09)	250 (9.84)	300 (11.81)	—	—
L2	46 (1.81)	58 (2.28)	70 (2.76)	85 (3.35)	100 (3.94)	125 (4.92)	200 (7.87)	245 (9.65)	—	—
L3	23 (0.91)	29 (1.14)	35 (1.38)	42.5 (1.67)	50 (1.97)	62.5 (2.46)	—	—	—	—
L4	25 (0.98)	33 (1.30)	41 (1.61)	50 (1.97)	58 (2.28)	75 (2.95)	—	—	—	—
L5	10.5 (0.41)	16 (0.63)	17 (0.67)	23 (0.91)	30 (1.18)	38 (1.50)	—	—	—	—
W	0.05 (0.002)	0.05 (0.002)	0.1 (0.004)	0.1 (0.004)	0.1 (0.004)	0.2 (0.008)	0.2 (0.008)	0.2 (0.008)	0.2 (0.008)	0.2 (0.008)

¹⁾ Maximum dimension

- Depth of fit
- Reference dimension
- For diameters other than ØD3 or (ØD3*) for port B, the distance from the cover support surface to the center of the bore must be calculated.
- Port B can be arranged around the central axis of port A. However, care must be taken to ensure that the mounting cavities and the pilot bores are not damaged.
- Drilling for locating pin
- Note on porting pattern for size 16: Length L1 (x-y axis of bores) for control cover with built-on directional valve is 80 mm (3.15 in.).
- For Ø ≤ 45 mm (1.77 in.) → fit H8 permitted!

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

Ambient temperature range		°C (°F)	–20 to +70 (–4 to +158)
Maximum operating pressure	– Without directional valve	bar (PSI)	420 (6090)
	– Ports A, B, X, Z1, Z2	bar (PSI)	315 (4568); 350 (5076): 420 (6090) (according to the maximum operating pressure of built-on valves)
	– Port Y	bar (PSI)	corresponds to maximum tank pressure of built-on valves
	– With monitored spool position	bar (PSI)	400 (5800)
Maximum flow		L/min (GPM)	25000 (6604) (size-dependent; see characteristic curves on page 9)
Hydraulic fluid		Mineral oil (HL, HLP) to DIN 51524 ¹⁾ ; fast bio-degradable hydraulic fluids to VDMA 24568 (see also RE 90221); HETG (rape seed oil) ¹⁾ ; HEPG (polyglycols) ²⁾ ; HEES (synthetic esters) ²⁾ ; other hydraulic fluids on enquiry	
Hydraulic fluid temperature range		°C (°F)	–20 to +80 (–4 to +176)
Viscosity range		mm²/s (SUS)	2.8 to 500 (35 to 2320)
Max. permissible degree of contamination of the hydraulic fluid - cleanliness class to ISO 4406 (c)		Class 20/18/15 ³⁾	

¹⁾ Suitable for NBR and FKM seals
²⁾ Suitable for FKM seals only
³⁾ The cleanliness classes specified for components must be adhered to in hydraulic systems. Effective filtration prevents malfunction and, at the same time, increases the service life of components.

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

Ordering code: Cartridge valve (without control cover)

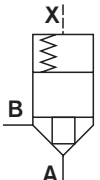
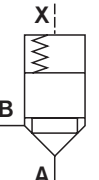
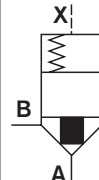
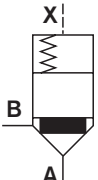
		LC														/		
Size 16 (series 7X)	= 16																	NBR seals
Size 25 (series 7X)	= 25																	FKM seals
Size 32 (series 7X)	= 32																	(Other seals on enquiry)
Size 40 (series 7X)	= 40																	⚠ Caution!
Size 50 (series 7X)	= 50																	Observe compatibility of seals with hydraulic fluid used!
Size 63 (series 7X)	= 63																	
Size 80 (series 6X)	= 80																	
Size 100 (series 6X)	= 100																	
Size 125 (series 2X)	= 125																	
Size 160 (series 2X)	= 160																	
Area ratio 2:1	(annulus area = 50%)	= A																
Area ratio 14x3:1	(annulus area = 7%)	= B																
Cracking pressure approx. 0 bar (without spring)	= 00																	
Cracking pressure approx. 0.5 bar (7.25 PSI)	= 05																	
Cracking pressure approx. 1.0 bar (14.5 PSI)	= 10																	
Cracking pressure approx. 2 bar (29 PSI)	= 20																	
Cracking pressure approx. 3 bar (43.5 PSI)	= 30																	
(size 125 only)																		
Cracking pressure approx. 4 bar (58 PSI)	= 40																	
(not with sizes 125 and 160)																		
For exact values, see page 8.																		

Standard types

Type LC (cartridge valve)	Material number
LC 16 A20D7X/	R900912572
LC 16 A20E7X/	R900910269
LC 16 A40D7X/	R900912573
LC 16 A40E7X/	R900912568
LC 16 B20E7X/	R900912595
LC 25 A20D7X/	R900912580
LC 25 A20E7X/	R900910270
LC 25 A40D7X/	R900912581
LC 25 A40E7X/	R900912574
LC 25 B20E7X/	R900912604
LC 25 B40D7X/	R900912609
LC 25 B40E7X/	R900912601
LC 32 A20D7X/	R900912589
LC 32 A20E7X/	R900906337
LC 32 A40D7X/	R900909665
LC 32 A40E7X/	R900909662
LC 32 B20E7X/	R900912613
LC 32 B40D7X/	R900912617
LC 32 B40E7X/	R900912610

Type LC (cartridge valve)	Material number
LC 40 A20D7X/	R900937999
LC 40 A20E7X/	R900938000
LC 40 A40D7X/	R900935732
LC 40 A40E7X/	R900927973
LC 40 B20E7X/	R900938007
LC 50 A20D7X/	R900938026
LC 50 A20E7X/	R900920273
LC 50 A40D7X/	R900938027
LC 50 A40E7X/	R900929935
LC 50 B20E7X/	R900929665
LC 63 A20D7X/	R900938058
LC 63 A20E7X/	R900928826
LC 63 A40D7X/	R900938059
LC 63 A40E7X/	R900933230
LC 63 B20E7X/	R900938064

Symbols: Cartridge valve (for versions, see ordering code)

Without damping nose		With damping nose	
 Area ratio A1 : A2 = 2 : 1 Version ...A..E../...	 Area ratio A1 : A2 = 14.3 : 1 Version ...B..E../...	 Area ratio A1 : A2 = 2 : 1 Version ...A..D../...	 Area ratio A1 : A2 = 14.3 : 1 Version ...B..D../...

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

2-way cartridge valves for directional function

Nominal size		16	25	32	40	50	63	80	100	125	160
Area A1 in cm ² (in ²)	LC..A..	1.89 (0.29)	4.26 (0.66)	6.79 (1.05)	11.10 (1.72)	19.63 (3.04)	30.20 (4.68)	37.90 (5.87)	63.60 (9.86)	95.00 (14.73)	160.60 (24.89)
	LC..B..	2.66 (0.41)	5.73 (0.89)	9.51 (1.47)	15.55 (2.41)	26.42 (4.10)	41.28 (6.40)	52.8 (8.18)	89.10 (13.81)	133.70 (20.72)	224.80 (34.84)
Area A2 in cm ² (in ²)	LC..A..	0.95 (0.15)	1.89 (0.29)	3.39 (0.53)	5.52 (0.86)	8.64 (1.34)	14.00 (2.17)	18.84 (2.92)	31.40 (4.87)	48.00 (7.44)	79.90 (12.38)
	LC..B..	0.18 (0.028)	0.43 (0.067)	0.67 (0.104)	1.07 (0.17)	1.85 (0.29)	2.90 (0.45)	3.94 (0.61)	5.90 (0.91)	9.30 (1.44)	15.70 (2.43)
Area A3 in cm ² (in ²)	LC..A..	2.84 (0.44)	6.16 (0.95)	10.18 (1.58)	16.62 (2.58)	28.27 (4.38)	44.20 (6.85)	56.74 (8.79)	95.00 (14.73)	143.00 (22.17)	240.50 (32.28)
	LC..B..	2.84 (0.44)	6.16 (0.95)	10.18 (1.58)	16.62 (2.58)	28.27 (4.38)	44.20 (6.85)	56.74 (8.79)	95.00 (14.73)	143.00 (22.17)	240.50 (32.28)
Stroke in cm (in.)	LC..E..	0.90 (0.35)	1.17 (0.46)	1.40 (0.55)	1.70 (0.67)	2.10 (0.83)	2.30 (0.91)	2.40 (0.94)	3.00 (1.18)	3.80 (1.50)	5.00 (1.97)
	LC..D..	0.9 (0.35)	1.17 (0.46)	1.40 (0.55)	1.90 (0.75)	2.30 (0.91)	2.80 (1.10)	3.00 (1.18)	3.80 (1.50)	4.80 (1.89)	6.50 (2.56)
Pilot oil volume in cm ³ (in ³)	LC..E..	2.56 (0.16)	7.21 (0.44)	14.30 (0.87)	28.30 (1.73)	59.40 (3.62)	102.00 (6.22)	136.00 (8.30)	285.00 (17.39)	544.00 (33.19)	1203.0 (73.41)
	LC..D..	2.56 (0.16)	7.21 (0.44)	14.30 (0.87)	31.60 (1.93)	65.00 (3.97)	124.00 (7.57)	170.00 (10.37)	361.00 (22.03)	687.00 (41.92)	1563.0 (95.37)
Theoretical pilot flow in L/min (GPM) ¹⁾	LC..E..	15.4 (4.1)	43.3 (11.4)	86.0 (22.7)	170.0 (44.9)	356.0 (94.1)	612.0 (161.7)	816.0 (215.6)	1710.0 (451.7)	3264.0 (862.3)	7218.0 (1906.8)
	LC..D..	15.4 (4.1)	43.3 (11.4)	86.0 (22.7)	190.0 (50.2)	390.0 (103.0)	744.0 (196.5)	1020.0 (269.5)	2166.0 (572.2)	4122.0 (1088.9)	9378 (2477.4)
Weight in kg (lbs.)	Cartridge valve	0.25 (0.55)	0.5 (1.10)	1.1 (2.42)	1.9 (4.19)	3.9 (8.60)	7.2 (15.87)	13.0 (28.65)	27.0 (59.51)	44.0 (96.98)	75.0 (165.30)
	Control cover	1.2 (2.64)	2.3 (5.07)	4.0 (8.82)	7.4 (16.31)	10.5 (23.14)	21.0 (46.28)	27.0 (59.51)	42.0 (92.57)	80.0 (176.32)	150.0 (330.60)

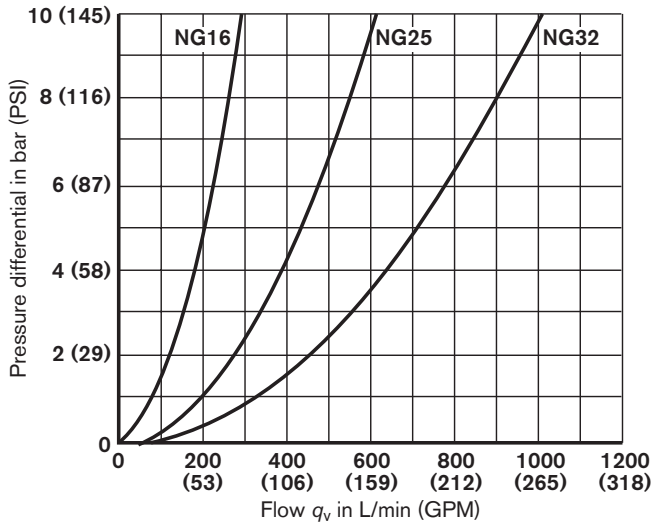
¹⁾ with a switching time of 10 ms

Technical data (for applications outside these parameters, please consult us!)**Cracking pressure in bar (PSI)**

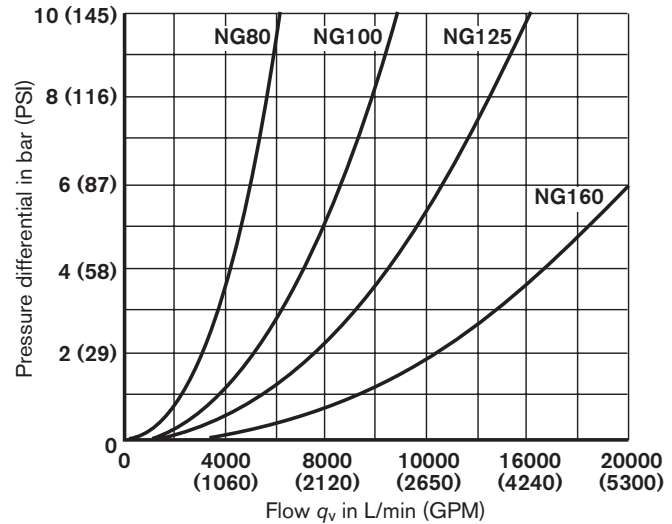
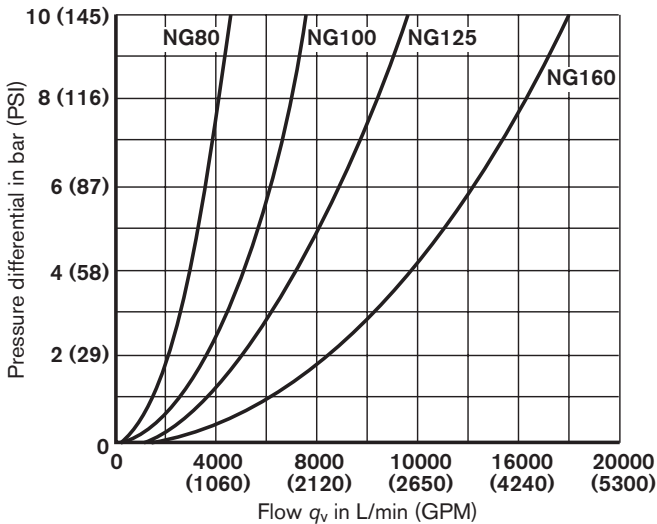
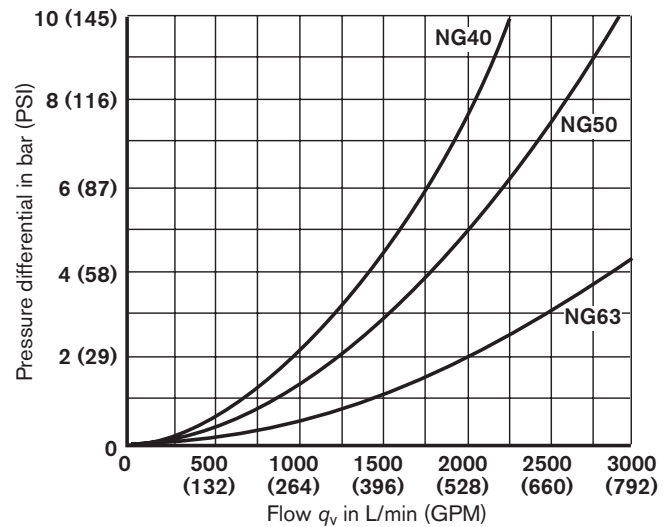
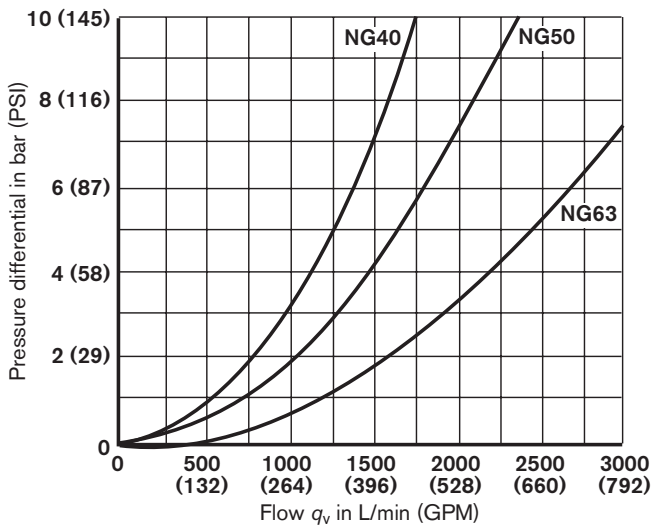
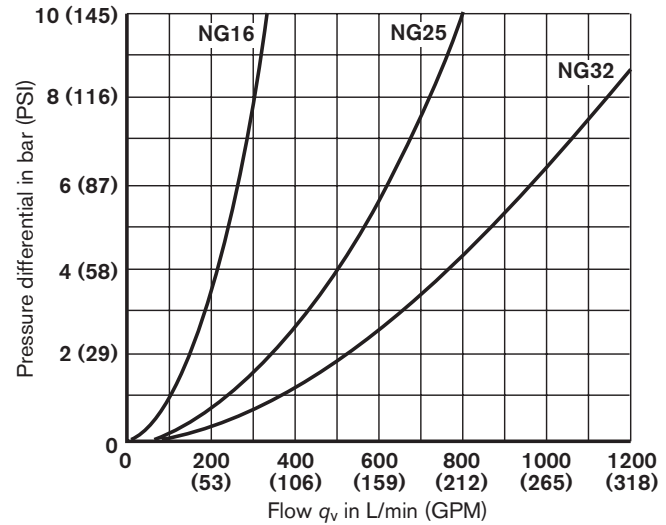
Nominal size		16	25	32	40	50	63	80	100	125	160
Direction of flow from A to B	LC..A 00..	0.02 (0.290)	0.025 (0.363)	0.05 (0.725)	0.05 (0.725)	0.05 (0.725)	0.07 (1.015)	0.07 (1.015)	0.10 (1.450)	0.15 (2.176)	0.15 (2.176)
	LC..A 05..	0.35 (5.076)	0.35 (5.076)	0.36 (5.221)	0.35 (5.076)	0.37 (5.336)	0.31 (4.496)	0.44 (6.382)	0.43 (6.238)	0.43 (6.238)	0.45 (6.528)
	LC..A 10..	0.70 (10.15)	0.68 (9.863)	0.72 (10.44)	0.71 (10.30)	0.67 (9.718)	0.64 (9.283)	0.88 (12.76)	0.88 (12.76)	0.88 (12.76)	—
	LC..A 20..	2.03 (29.44)	2.18 (31.62)	2.12 (30.75)	2.02 (29.30)	2.01 (29.15)	2.00 (29.01)	1.75 (25.38)	1.75 (25.38)	1.76 (25.53)	1.94 (28.14)
	LC..A 30..	—	—	—	—	—	—	—	—	2.05 (29.73)	—
	LC..A 40..	3.50 (50.76)	3.90 (56.67)	3.80 (55.12)	4.00 (58.02)	4.11 (59.61)	3.80 (55.12)	3.13 (45.40)	3.04 (44.09)	—	—
	LC..B 00..	0.014 (0.203)	0.02 (0.290)	0.035 (0.508)	0.035 (0.508)	0.035 (0.508)	0.05 (0.725)	0.05 (0.725)	0.07 (1.015)	0.10 (1.450)	0.10 (1.450)
	LC..B 05..	0.25 (3.64)	0.26 (3.77)	0.26 (3.77)	0.25 (3.64)	0.28 (4.06)	0.23 (3.34)	0.31 (4.496)	0.31 (4.496)	0.31 (4.496)	0.32 (4.640)
	LC..B 10..	0.49 (7.11)	0.50 (7.25)	0.51 (7.40)	0.51 (7.40)	0.48 (6.96)	0.47 (6.82)	0.63 (9.14)	0.63 (9.14)	0.62 (8.99)	—
	LC..B 20..	1.44 (20.89)	1.62 (23.50)	1.52 (22.05)	1.44 (20.89)	1.50 (21.76)	1.50 (21.76)	1.26 (18.28)	1.25 (18.13)	1.25 (18.13)	1.40 (20.31)
	LC..B 30..	—	—	—	—	—	—	—	—	1.45 (21.03)	—
	LC..B 40..	2.48 (35.97)	2.90 (42.06)	2.70 (39.16)	2.86 (41.48)	3.05 (44.24)	2.80 (40.61)	2.25 (32.63)	2.17 (31.47)	—	—
Direction of flow from B to A	LC..A 00..	0.04 (0.580)	0.05 (0.725)	0.10 (1.450)	0.10 (1.450)	0.10 (1.450)	0.14 (2.031)	0.14 (2.031)	0.20 (2.901)	0.30 (4.351)	0.33 (4.786)
	LC..A 05..	0.69 (10.01)	0.78 (11.31)	0.72 (10.44)	0.70 (10.15)	0.84 (12.18)	0.68 (9.86)	0.88 (12.76)	0.88 (12.76)	0.86 (12.47)	0.91 (13.20)
	LC..A 10..	1.38 (20.02)	1.53 (22.19)	1.42 (20.60)	1.43 (20.74)	1.47 (21.32)	1.37 (19.87)	1.77 (25.67)	1.78 (25.82)	1.73 (25.10)	—
	LC..A 20..	4.05 (58.74)	4.91 (71.22)	4.25 (61.64)	4.06 (58.89)	4.57 (66.28)	4.33 (62.80)	3.53 (51.20)	3.54 (51.34)	3.50 (50.76)	3.90 (56.57)
	LC..A 30..	—	—	—	—	—	—	—	—	4.0 (58.02)	—
	LC..A 40..	6.96 (101.9)	8.74 (126.8)	7.60 (110.2)	8.05 (116.8)	9.34 (135.5)	8.15 (118.2)	6.30 (91.38)	6.20 (89.93)	—	—
	LC..B 00..	0.24 (3.48)	0.25 (3.63)	0.50 (7.25)	0.50 (7.25)	0.50 (7.25)	0.80 (11.60)	0.70 (10.15)	1.00 (14.50)	1.50 (21.76)	1.50 (21.76)
	LC..B 05..	3.69 (53.52)	3.40 (49.30)	3.64 (52.80)	3.64 (52.79)	3.95 (57.29)	3.27 (47.43)	4.20 (60.92)	4.60 (66.72)	4.40 (63.82)	4.60 (66.72)
	LC..B 10..	7.43 (107.8)	6.69 (97.03)	7.24 (105.0)	7.37 (106.9)	6.88 (99.79)	6.62 (96.02)	8.40 (121.8)	9.40 (136.3)	8.90 (129.1)	—
	LC..B 20..	21.3 (308.9)	21.5 (311.8)	21.6 (313.3)	20.9 (303.1)	21.4 (310.4)	20.9 (303.1)	16.9 (245.1)	18.7 (271.2)	17.9 (259.6)	20.0 (290.1)
	LC..B 30..	—	—	—	—	—	—	—	—	20.7 (300.2)	—
	LC..B 40..	36.6 (530.9)	38.3 (555.5)	38.6 (559.9)	41.5 (601.9)	43.6 (632.4)	39.4 (571.5)	30.2 (438.0)	32.5 (471.4)	—	—

Characteristic curves – measured with HLP46, $\vartheta_{oil} = 40\text{ °C} \pm 5\text{ °C}$ (104 °F $\pm$ 41 °F)

With damping nose



Without damping nose



General notes on the ordering code for control covers

x = available
• = on inquiry

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17																
LFA																
Size										Type	Component series	Area ratio	Cracking pressure	Damping	El. monitor for closed position	Remote control port
16	25	32	40	50	63	80	100	125	160							
x	x	x	x	x	x						7X					
						x	x				6X					
								x	x		2X					
x	x	x	x	x	x	x	x	x	x	D						F
x	x	x	x							H1						F
x	x	x	x	x	x	x	x	x	x	H2						F
x	x	x	x							H3						F
x	x	x	x	x	x	x	x			H4						F
x	x	x	x	x	x	x	x			G						
	x	x	x	x	x	x	x			R						
	x	x	x	x	x					RF						
						x	x			R2						
x	x	x	x	x	x	x	x	•	•	WEA						x
x	x	x	x	x	x	x	x	•	•	WEB						x
x	x	x	x	x	x					WEMA						x
						x	x			WEA8						x
x	x	x	x	x	x					WEMB						x
						x	x			WEB8						x
x	x	x	x	x	x					WECA						x
						x	x			WEA9						x
x	x	x	x	x	x	x	x			GWA						x
x	x	x	x	x	x	x	x			GWB						x
x	x	x	x	x	x	x	x			KWA						x
x	x	x	x	x	x	x	x			KWB						x
x	x	x	x	x	x	•	•	•	•	E		x	x	D	QMG24	F
x	x	x	x	x	x	•	•			EH2		x	x	D	QMG24	F
x	x	x	x	x	x					EWA		x	x	D	QMG24	
x	x	x	x	x	x					EWB		x	x	D	QMG24	

The ordering code can be found on the relevant pages of the individual control cover variants

1) **7X** = component series 70 to 79,
6X = component series 60 to 69 and
2X = component series 20 to 29: (unchanged installation and connection dimensions)

2) **CA** = 2 : 1 (area ratio A1:A2)
CB = 14.3 : 1 (area ratio A1:A2)
CD = 0 %

For the control cover with electrical monitor of the closed position (including position switch), the type designation includes the version of the control cover and the cartridge valve).

3) **10** = 1.0 bar cracking pressure
20 = 2.0 bar cracking pressure
40 = 4.0 bar cracking pressure

4) **D** = valve poppet of the cartridge with damping nose

5) Order of nozzles and their representation in symbols and circuit diagrams.

Further details can be found on the relevant pages of the individual control cover variants and on page 14 (nozzle characteristic curves).

Standard types, see page 12.

General notes on the ordering code for control covers

Nozzle symbol		Symbol in the ordering code	
A**		A**	

This nozzle is designed as screw-in nozzle. If a nozzle is to be installed, the relevant code letter must be entered in the type designation together with the nozzle Ø in 1/10 mm (0.004 in.).

Example: **A12** = nozzle with Ø1.2 mm (0.047 in.) in channel A.

For pilot control valves, see page 16!

Nozzle symbol		Symbol in the ordering code	
Ø1.2 (0.047)			

This nozzle is designed as a drilling; no entries are required in the type designation. [Nozzle Ø in mm (in)]

Nozzle symbol		Symbol in the ordering code	
Z12			

This nozzle is designed as threaded nozzle. It is a standard nozzle, for which no entries are required in the type designation. [Nozzle Ø in 1/10 mm (0.004 in.)]

Standard types

Type LFA (control cover)	Material number
LFA 16 D-7X/F	R900912625
LFA 16 H2-7X/F	R900912655
LFA 16 WEA-7X/	R900910271
LFA 16 GWA-7X/	R900912636
LFA 16 E-7X/CA40DQMG24F	R900912619
LFA 25 D-7X/F	R900905302
LFA 25 H2-7X/F	R900912694
LFA 25 WEA-7X/	R900910273
LFA 25 GWA-7X/	R900912675
LFA 25 E-7X/CA40DQMG24F	R900912670
LFA 32 D-7X/F	R900905303
LFA 32 H2-7X/F	R900912728
LFA 32 WEA-7X/	R900912712
LFA 32 GWA-7X/	R900912708
LFA 32 E-7X/CA40DQMG24F	R900912703

Type LFA (control cover)	Material number
LFA 40 D-7X/F	R900938073
LFA 40 H2-7X/F	R900938122
LFA 40 WEA-7X/	R900931581
LFA 40 GWA-7X/	R900938114
LFA 40 E-7X/CA40DQMG24F	R900938107
LFA 50 D-7X/F	R900938150
LFA 50 H2-7X/F	R900938205
LFA 50 WEA-7X/	R900938215
LFA 50 GWA-7X/	R900938200
LFA 50 E-7X/CA40DQMG24F	R900938197
LFA 63 D-7X/F	R900938225
LFA 63 H2-7X/F	R900938250
LFA 63 WEA-7X/	R900938257
LFA 63 GWA-7X/	R900938245
LFA 63 E-7X/CA40DQMG24F	R900938242

Symbols (basic symbols)

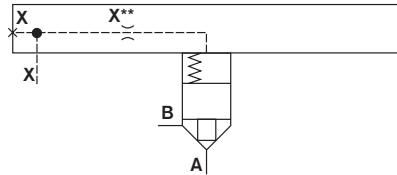
The symbols used in the description of types below are binding!

LFA . D-../F...

Control cover with remote control port

Sizes 16 to 160

Pages 17 and 18

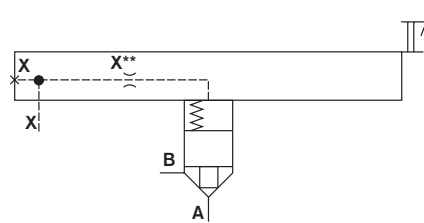


LFA . H-../F...

Control cover with stroke limiter, with remote control port

Sizes 16 to 160

Pages 19 to 21

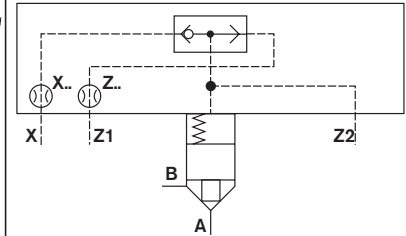


LFA . G-../...

Control cover with integrated shuttle valve

Sizes 16 to 100

Pages 22 and 23

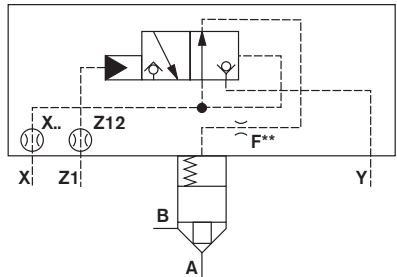


LFA . R-../...

Control cover with integrated pilot operated pilot control valve (directional poppet valve)

Sizes 25 to 100

Pages 24 to 27

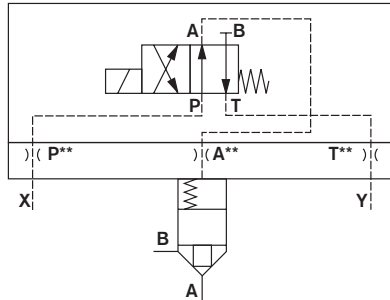


LFA . WEA-../...

Control cover for mounting a directional spool or poppet valve

Sizes 16 to 160

Pages 28 to 33

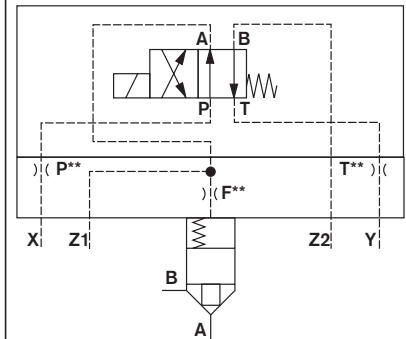


LFA . WEMA-../...; LFA . WEA8-../...

Control cover for mounting a directional spool or poppet valve with pilot ports for operating a 2nd valve

Sizes 16 to 100

Pages 34 to 39

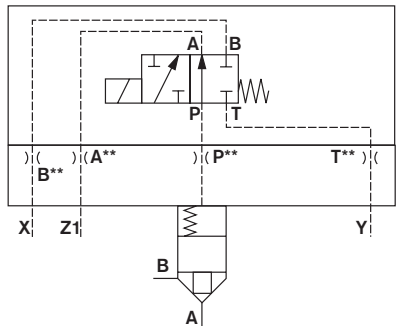


LFA . WECA-../...; LFA . WEA9-../...

Control cover for mounting a directional spool valve as check valve circuit

Sizes 16 to 100

Pages 40 to 43

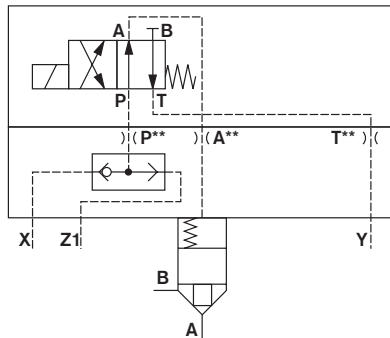


LFA . GWA-../...

Control cover for mounting a directional spool or poppet valve, with integrated shuttle valve

Sizes 16 to 100

Pages 44 to 49

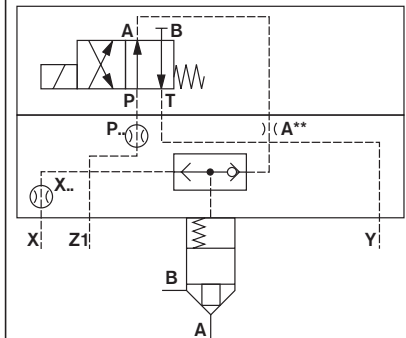


LFA . KWA-../...

Control cover for mounting a directional spool or poppet valve, with integrated shuttle valve as check valve circuit

Sizes 16 to 100

Pages 50 to 55



Material numbers of nozzles and plug screws

Standard nozzle for size	Nozzle Ø in mm (in.)	Material number			
		M6 tap.	M8 x 1 tap.	G3/8	G1/2
	0.5 (0.020)	R900157933	R900157930	—	—
	0.6 (0.023)	R900157934	R900149430	—	—
	0.7 (0.028)	R900157931	R900143957	—	—
16	0.8 (0.032)	R900152276	R900136843	R900159043	—
25	1.0 (0.039)	R900149335	R900136842	R900159033	R900139115
32	1.2 (0.047)	R900152286	R900139101	R900159032	R900150714
40	1.5 (0.059)	R900148823	R900133712	R900159031	R900139117
50	1.8 (0.071)	R900157932	R900150953	R900159030	R900159026
63 and 80	2.0 (0.079)	R900156650	R900137299	R900159029	R900148352
100	2.5 (0.098)	R900157929	R900137445	R900146259	R900148353
	3.0 (0.118)	R900181894	R900144761	R900149044	R900148361
	3.5 (0.138)	—	R900136079	R900146258	R900159027
	4.0 (0.158)	—	R900802480	R900149052	R900149939
	5.0 (0.197)	—	—	R900152287	R900143775
	6.0 (0.236)	—	—	R900135774	R900147875
	8.0 (0.315)	—	—	—	R900159028
Plug screw		R900023986	R900003443	R900006325	R900006445

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

Pilot control valve		Size	Data sheet no.	Control cover type	Size (control cover)
	Type				
Directional spool valve (wet pin)	4WE 6 D...6X/E	6	23178	WEA, WEB, GWA, GWB, KWA, KWB, EWA, EWB, WEMA, WEMB	16 to 50
	3WE 6 A...6X/E	6	23178	WECA	16 to 50
	4WE 10 D...3X/E	10	23327	WEA, WEB, GWA, KWA, KWB, EWA, EWB	63 to 100
	4WE 10 A...3X/E	10	23327	WEA 9, WECA	63 to 100
Directional poppet valve	M-3SED 6 UK../350 M-3SED 6 CK../350	6	22049	WEMA, WEA, GWA, KWA	16 to 50
	M-3SEW 6 U../420 M-3SEW 6 C../420	6	22058	WEA, GWA, KWA, EWA, WEMA	16 to 50
	M-3SED 10 UK../350 M-3SED 10 CK../350	10	22045	WEA, GWA, KWA	63 to 100
	M-3SEW 10 U../420 M-3SEW 10 C../420	10	22075	WEA, GWA, KWA, EWA	63 to 100

Pilot control valves must be ordered separately.
For more details, see data sheet.

Valve fixing screws are included in the scope of supply of the control cover.

Note!

By combining a 2-way cartridge valve with a pilot control valve, various valve functions can be realized. In particular, the following components with porting pattern to ISO 4401-03-02-0-94 (up to size 50) and ISO 4401-05-04-0-94 (sizes 63 to 100) are suitable for this purpose.

Fixing screws ¹⁾ (included in the scope of supply)

Size	Control cover type	Qty	UNC	Dimensions	Tightening torque M_T in Nm (lb-ft) ³⁾
16	WE., GW.	4	5/16 - 18 x 1-3/4"	M8 x 45	32 (25)
	WEM.		5/16 - 18 x 2-3/4"	M8 x 70	
	E		—	M8 x 60	
	EH2		—	M8 x 80	
	EW.		—	M8 x 85	
	²⁾		5/16 - 18 x 1-1/2"	M8 x 40	
25	E	4	—	M12 x 60	110 (80)
	EH2, EW.		—	M12 x 90	
	²⁾		1/2 - 13" x 2"	M12 x 50	
32	H1, H2, E	4	—	M16 x 80	270 (200)
	H3, H4		—	M16 x 70	
	EH2, EW.		—	M16 x 110	
	²⁾		5/8 - 11" x 2-1/2"	M16 x 60	
40	E, EW.	4	—	M20 x 120	520 (385)
	EH2		—	M20 x 200	
	H1, H2		3/4 - 10" x 4-1/4"	M20 x 110	
	²⁾		3/4 - 10" x 2-3/4"	M20 x 70	
50	H2, H4	4	3/4 - 10" x 4-1/2"	M20 x 120	520
	E, EW.		—	M20 x 130	
	EH2		—	M20 x 210	
	²⁾		3/4 - 10" x 3-1/4"	M20 x 80	
63	H2, H4	4	—	M30 x 150	1800
	E, EW.		—	M30 x 180	
	EH2		—	M30 x 250	
80	²⁾	8	1-1/4 - 7" x 4"	M30 x 100	900
			—	M24 x 120	
100	H2, H4	8	—	M24 x 100	1800
	²⁾		—	M24 x 100	
125	D, WE.	8	1-1/4 - 7" x 4-1/2"	M30 x 120	3100
	²⁾		1-1/4 - 7" x 5-1/2"	M30 x 140	
160	All control covers available	12	—	M36 x 160	5000

¹⁾ Hexagon socket head cap screws to ISO 4762 - 10.9

²⁾ Other available standard control covers

³⁾ Calculated with a total coefficient of friction $\mu = 0.14$; must be adjusted for other surfaces

Control cover with or without remote control port: Type ..D... – nominal dimensions in mm (inches)

Sizes 16 to 63

12 =

– =

SAE threaded external connections
and UNC mounting bolts
Metric threaded connections

No code =

V =

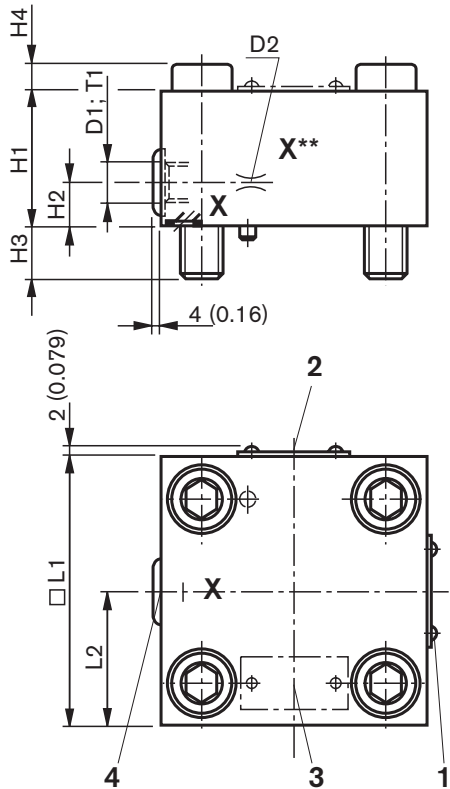
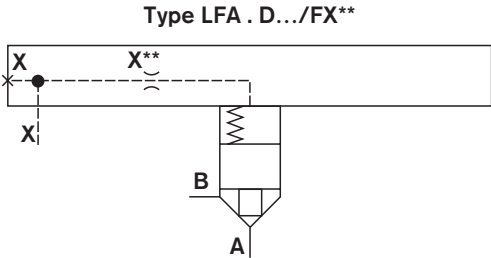
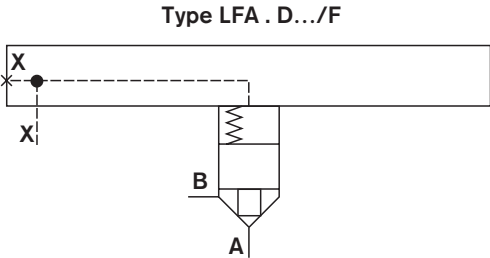
NBR seals
FKM seals
(other seals on enquiry)

⚠ Caution!

Observe compatibility of seals with the hydraulic
fluid used!

Size						Remote control port	Nozzle in channel (Ø in 1/10 mm [0.004 in.])
16	25	32	40	50	63		
x	x	x	x	x	x	F	X**

⚠ Nozzle possible; indicate, if required



Size	16	25	32	40	50	63
D1	G1/8 (SAE-4; 7/16-20)	G1/4 (SAE-6; 9/16-18)	G1/4 (SAE-6; 9/16-18)	G1/2 (SAE-8; 3/4-16)	G1/2 (SAE-8; 3/4-16)	G3/4 (SAE-12; 1-1/6-12)
D2 ¹⁾	M6	M6	M6	M8 x 1	M8 x 1	G3/8
H1	27 (1.06)	30 (1.18)	35 (1.38)	60 (2.36)	68 (2.68)	82 (3.23)
H2	12 (0.47)	16 (0.63)	16 (0.63)	30 (1.18)	32 (1.26)	40 (1.58)
H3	15 (0.59)	24 (0.95)	28 (1.10)	32 (1.26)	34 (1.34)	50 (1.97)
H4	8 (0.32)	12 (0.47)	16 (0.63)	–	–	–
□ L1	65 (2.56)	85 (3.35)	100 (3.94)	125 (4.92)	140 (5.51)	180 (7.09)
L2	32.5 (1.28)	42.5 (1.67)	50 (1.97)	72 (2.84)	80 (3.15)	90 (3.54)
T1	8 (0.32)	12 (0.47)	12 (0.47)	14 (0.55)	14 (0.55)	16 (0.63)

¹⁾ For ordering codes for nozzles, see pages 14 and 15.

* SAE dimensions for LFA.../.../12 covers.

- 1 Nameplate for sizes 16, 25
- 2 Nameplate for size 32
- 3 Nameplate for sizes 40, 50, 63
- 4 Port X optionally as threaded connection

Control cover with or without remote control port: Type ..D... – nominal dimensions in mm (inches)

Sizes 80 to 160

12 = SAE threaded external connections and UNC mounting bolts

- = Metric threaded connections

No code = NBR seals

V = FKM seals (other seals on enquiry)

⚠ Caution!
Observe compatibility of seals with the hydraulic fluid used!

1

2

3

4

9

14

17

LFA

D - ¹⁾

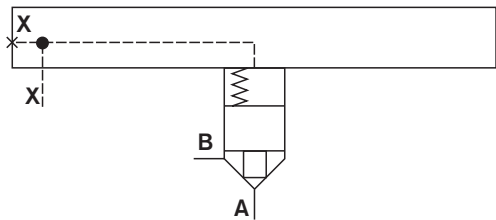
/ F

Size				Remote control port	Nozzle in channel (Ø in 1/10 mm [0.004 in.])
80	100	125	160		
x	x	x	x	F	X**

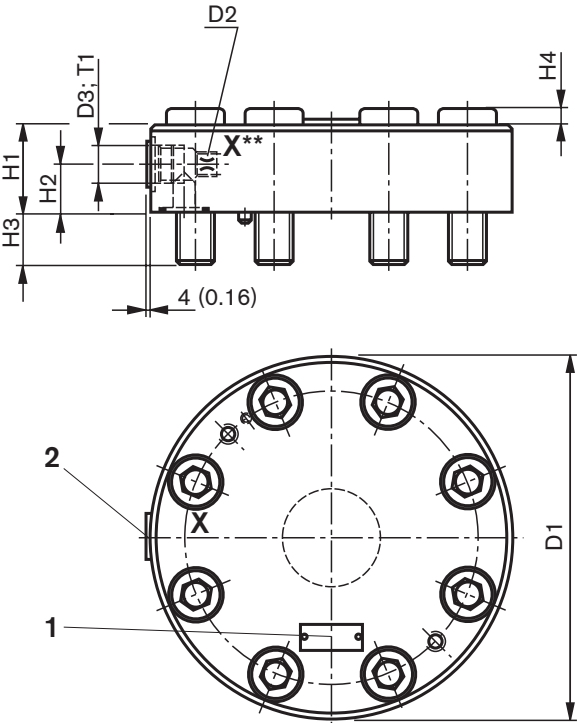
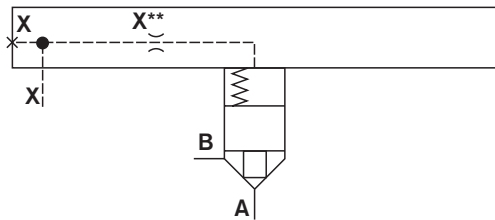
△ Nozzle possible; indicate, if required

¹⁾ 6X = series 6X (sizes 80, 100)
2X = series 2X (sizes 125, 160)

Type LFA . D.../F



Type LFA . D.../FX**



Size	80	100	125	160
D1	250 (9.84)	300 (11.81)	380 (14.96)	480 (18.90)
D2*	G3/8	G1/2	G1	G1
D3 ²⁾	G3/4 (SAE-12; 1-1/16-12)	G1 (SAE-16; 1-5/16-12)	G1 1/4 (SAE-20; 1-5/8-12)	G1 1/4 (SAE-20; 1-5/8-12)
H1	70 (2.76)	75 (2.95)	105 (4.13)	147 (5.79)
H2	35 (1.38)	40 (1.58)	50 (1.97)	70 (2.76)
H3	45 (1.77)	52.5 (2.07)	61 (2.40)	74 (2.91)
H4	—	24 (0.95)	31 (1.22)	42 (1.65)
T1	16 (0.63)	18 (0.71)	20 (0.79)	20 (0.79)

²⁾ For ordering codes for nozzles, see page 14 and 15.
* SAE dimensions for LFA.../.../12 covers.

- 1 Nameplate
- 2 Port X optionally as threaded connection

Control cover with stroke limiter and remote control port: Type ..H... – dimensions in mm (inches)

Size 16 to 40

Size				Control	Remote control port	Nozzle in channel ($\varnothing$ in 1/10 mm [0.004"])
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**

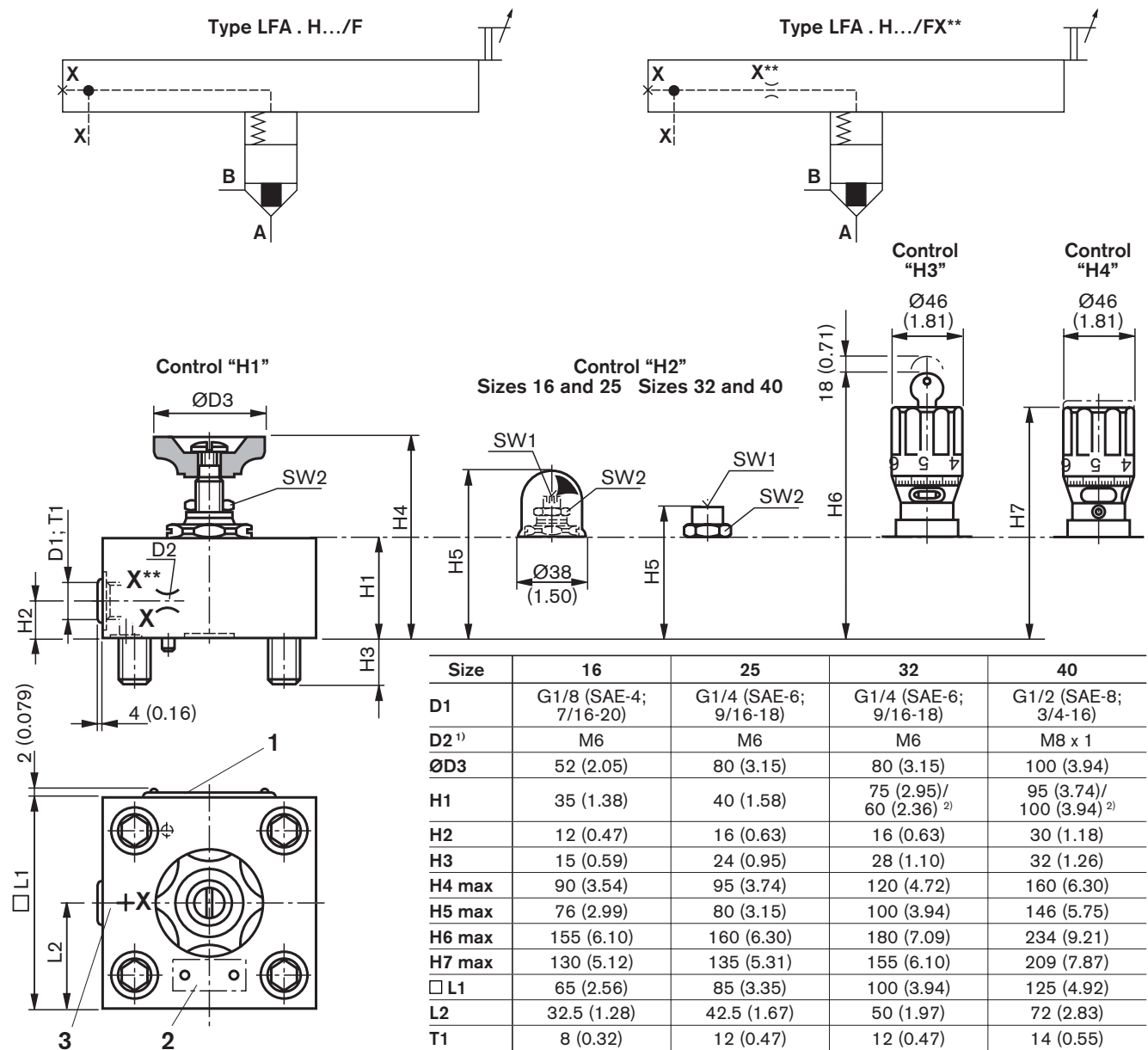
12 = SAE threaded external connections
and UNC mounting bolts
- = Metric threaded connections

No code = NBR seals
V = FKM seals
(Other seals on enquiry)

Caution!

Observe compatibility of seals with hydraulic fluid used!

▲ Nozzle possible; indicate, if required



1 Nameplate for sizes 16, 25, 32

2 Nameplate for size 40

3 Port X optionally as threaded connection

¹⁾ For ordering codes for nozzles, see page 14 and 15.

²⁾ Dimensions () valid only for controls "H3" and "H4"

³⁾ Hexagon socket

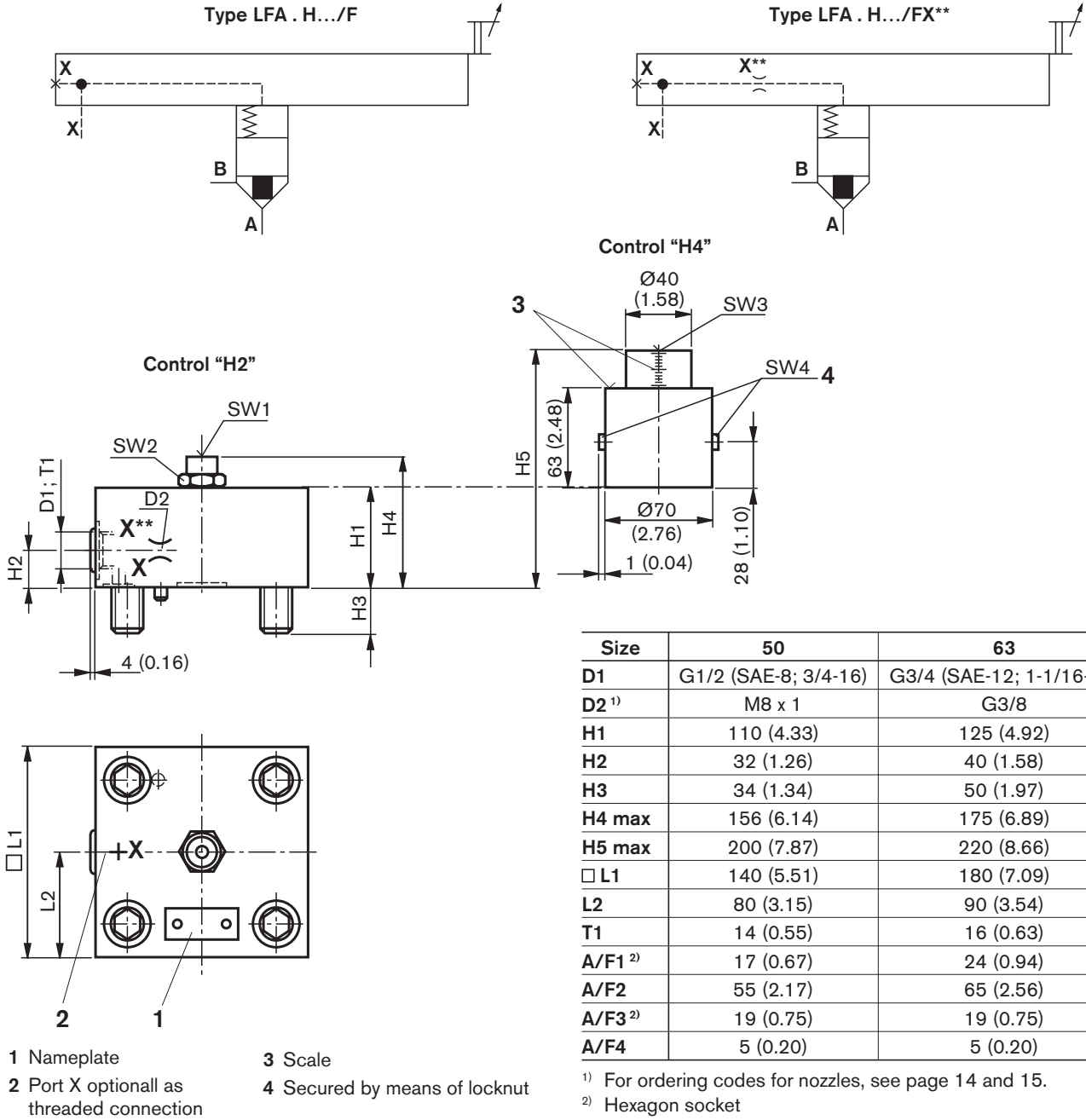
Control cover with stroke limiter and remote control port: Type ..H... –
nominal dimensions in mm (inches)

Sizes 50 and 63

Size		Control	Remote control port	Nozzle in channel (Ø in 1/10 mm [0.004 in.])
50	63	H2	F	X**
x	x	H4	F	X**

△ Nozzle possible; indicate, if required

12 = SAE threaded external connections
and UNC mounting bolts
- = Metric threaded connections
No code = NBR seals
V = FKM seals
(Other seals on enquiry)
⚠ Caution!
Observe compatibility of seals with
hydraulic fluid used!



Size	50	63
D1	G1/2 (SAE-8; 3/4-16)	G3/4 (SAE-12; 1-1/16-12)
D2 ¹⁾	M8 x 1	G3/8
H1	110 (4.33)	125 (4.92)
H2	32 (1.26)	40 (1.58)
H3	34 (1.34)	50 (1.97)
H4 max	156 (6.14)	175 (6.89)
H5 max	200 (7.87)	220 (8.66)
□ L1	140 (5.51)	180 (7.09)
L2	80 (3.15)	90 (3.54)
T1	14 (0.55)	16 (0.63)
A/F1 ²⁾	17 (0.67)	24 (0.94)
A/F2	55 (2.17)	65 (2.56)
A/F3 ²⁾	19 (0.75)	19 (0.75)
A/F4	5 (0.20)	5 (0.20)

¹⁾ For ordering codes for nozzles, see page 14 and 15.
²⁾ Hexagon socket

Control cover with stroke limiter and remote control port: Type ..H... – dimensions in mm (inches)

Sizes 80 to 160

1 2 3 4 9 14 17

LFA [] - ¹⁾ / F [] [] []

Size				Control	Remote control port	Nozzle in channel (Ø in 1/10 mm [0.004"])
80	100	125	160			
x	x	x	x	H2	F	X**
x	x			H4	F	X**

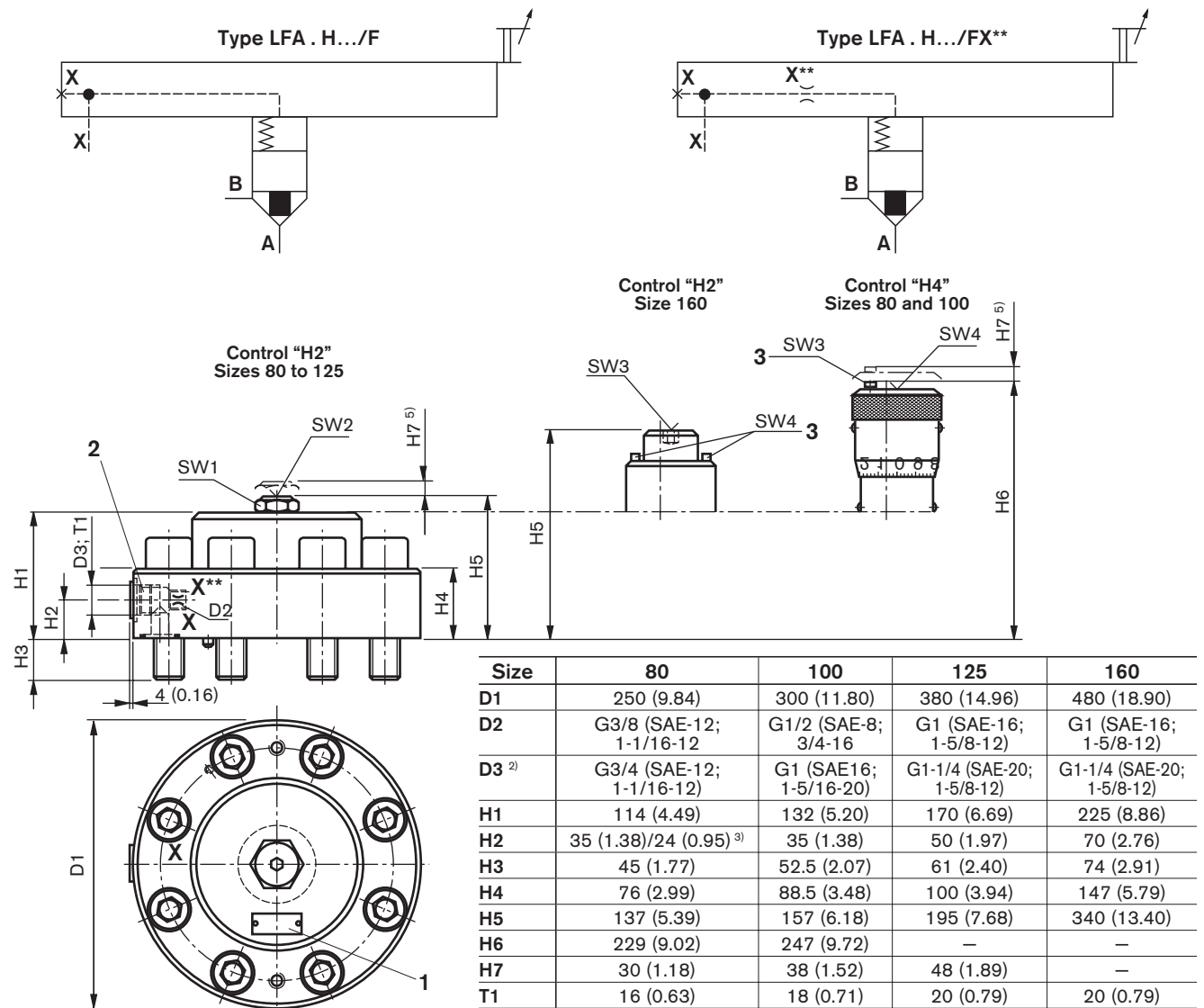
12 = SAE threaded external connections and UNC mounting bolts
- = Metric threaded connections

No code = NBR seals
V = FKM seals
(Other seals on enquiry)

⚠ **Caution!**
Observe compatibility of seals with hydraulic fluid used!

△ Nozzle possible; indicate, if required

¹⁾ 6X = series 6X (sizes 80, 100)
2X = series 2X (sizes 125, 160)



- 1 Nameplate
2 Port X optionally as threaded connection
3 Secured by means of locknut

Size	80	100	125	160
D1	250 (9.84)	300 (11.80)	380 (14.96)	480 (18.90)
D2	G3/8 (SAE-12; 1-1/16-12)	G1/2 (SAE-8; 3/4-16)	G1 (SAE-16; 1-5/8-12)	G1 (SAE-16; 1-5/8-12)
D3 ²⁾	G3/4 (SAE-12; 1-1/16-12)	G1 (SAE16; 1-5/16-20)	G1-1/4 (SAE-20; 1-5/8-12)	G1-1/4 (SAE-20; 1-5/8-12)
H1	114 (4.49)	132 (5.20)	170 (6.69)	225 (8.86)
H2	35 (1.38)/24 (0.95) ³⁾	35 (1.38)	50 (1.97)	70 (2.76)
H3	45 (1.77)	52.5 (2.07)	61 (2.40)	74 (2.91)
H4	76 (2.99)	88.5 (3.48)	100 (3.94)	147 (5.79)
H5	137 (5.39)	157 (6.18)	195 (7.68)	340 (13.40)
H6	229 (9.02)	247 (9.72)	—	—
H7	30 (1.18)	38 (1.52)	48 (1.89)	—
T1	16 (0.63)	18 (0.71)	20 (0.79)	20 (0.79)
A/F1	75 (2.95)	75 (2.95)	95 (3.74)	—
A/F2 ⁴⁾	24 (0.95)	27 (1.06)	27 (1.06)	—
A/F3 ⁴⁾	—	—	—	32 (1.26)
A/F4 ⁴⁾	—	—	—	8 (0.31)
A/F5 ⁴⁾	5 (0.20)	5 (0.20)	—	—
A/F6 ⁴⁾	14 (0.55)	14 (0.55)	—	—

²⁾ For ordering codes for nozzles, see page 14 and 15.

³⁾ Dimension () valid only for control "H4"

⁴⁾ Hexagon socket

⁵⁾ Maximum dimension

Control cover with integrated shuttle valve: Type ..G... – nominal dimensions in mm (inches)

Sizes 16 to 63

1

2

3

4

9

14

17

LFA

G - 7X

12 =

SAE threaded external connections
and UNC mounting bolts

- =

Metric threaded connections

No code =

NBR seals

V =

FKM seals
(Other seals on enquiry)

⚠ Caution!

Observe compatibility of seals with hydraulic fluid used!

Size	Nozzle in channel	
	X	Z1
16	Ø1.2 (0.047)	Ø1.2 (0.047)
25	Ø1.5 (0.059)	Ø1.5 (0.059)
32	Ø2.0 (0.079)	Ø2.0 (0.079)
40	X15 (0.591)	Z15 (0.591)
50	X18 (0.709)	Z18 (0.709)
63	X20 (0.787)	Z20 (0.787)

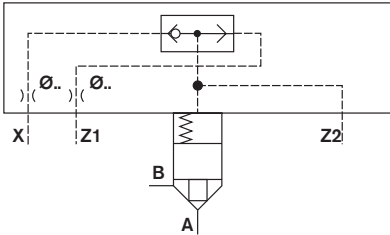
Nozzle drilled (Ø in mm) ¹⁾

Standard nozzle (Ø in 1/10 mm[0.004in.]) ¹⁾

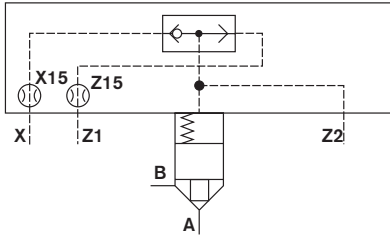
¹⁾ Not shown in the type designation

For ordering codes for nozzles, see page 14 and 15.

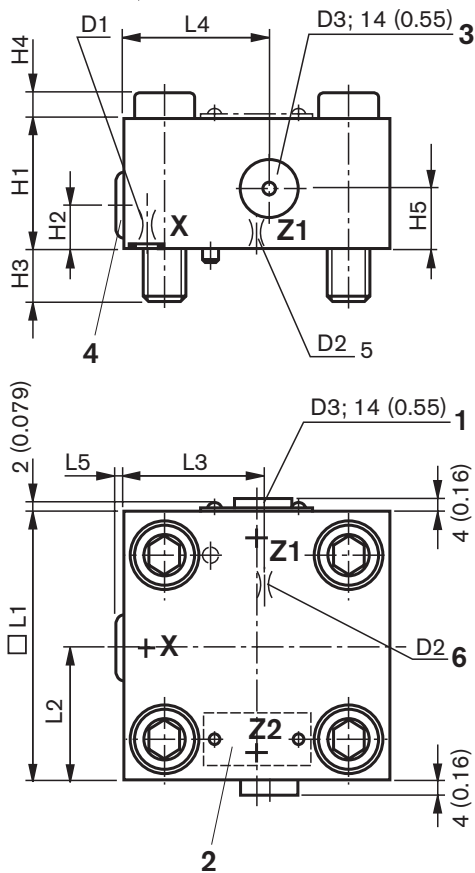
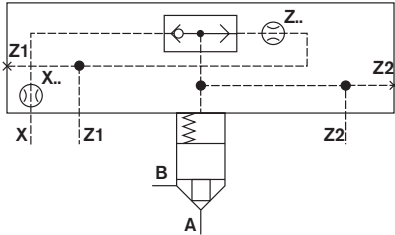
LFA . G...
sizes 16 to 32



LFA . G...
size 40



LFA . G...
sizes 50 and 63



Size	16	25	32	40	50	63
D1	Ø1.2 (0.047)	Ø1.5 (0.059)	Ø2.0 (0.079)	M6	M8 x 1	M8 x 1
D2	Ø1.2 (0.047)	Ø1.5 (0.059)	Ø2.0 (0.079)	M6	M8 x 1	M8 x 1
D3	—	—	—	—	G1/2	G1/2
H1	35 (1.38)	30 (1.18)	35 (1.38)	60 (2.36)	68 (2.68)	82 (3.23)
H2	17 (0.67)	17 (0.67)	21.5 (0.85)	30 (1.18)	32 (1.26)	42 (1.65)
H3	15 (0.59)	24 (0.95)	28 (1.10)	32 (1.26)	34 (1.34)	50 (1.97)
H4	—	12 (0.47)	16 (0.63)	—	—	—
H5	—	—	—	—	32 (1.26)	40 (1.58)
□ L1	65 (2.56)	85 (3.35)	100 (3.94)	125 (4.92)	140 (5.51)	180 (7.09)
L2	36.5 (1.44)	45.5 (1.79)	50 (1.97)	62.5 (2.46)	74 (2.91)	90 (3.54)
L3	—	—	—	—	72 (2.84)	81 (3.19)
L4	—	—	—	—	72 (2.84)	90 (3.54)
L5	4.5 (0.18)	4 (0.16)	1 (0.039)	—	6 (0.24)	4 (0.16)

- 1 Nameplate for sizes 16, 25, 32

2 Nameplate for sizes 40, 50, 63

3 Ports Z1 and Z2 optionally as threaded connection for sizes 50 and 63
- 4 Shuttle valve

5 D2 for sizes 16 to 40

6 D2 for sizes 50 and 63

Control cover with integrated shuttle valve: Type ..G... – nominal dimensions in mm (inches)

Sizes 80 to 100

1

2

3

4

14

15

16

17

LFA

G – 6X /

	Nozzle in channel (Ø in 1/10 mm [0.004in.])		
Size	X	F	Z1
80	X20 (0.79)	F**	Z20 (0.79)
100	X20 (0.79)	F**	Z20 (0.79)

Standard nozzle – not shown in the type designation

Nozzle possible; indicate, if required

For ordering codes for nozzles, see page 14 and 15.

12 = SAE threaded external connections and UNC mounting bolts

- = Metric threaded connections

No code = NBR seals

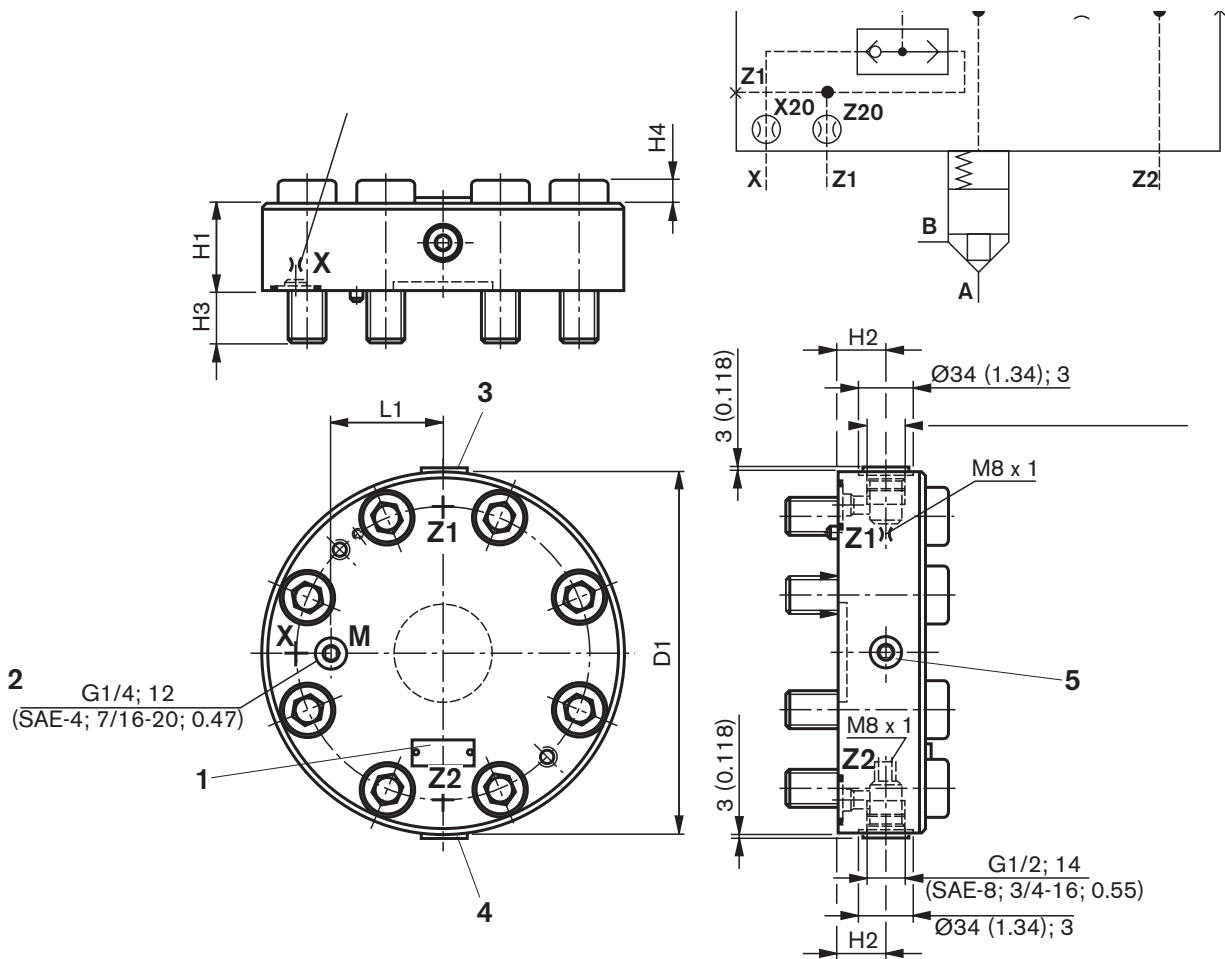
V = FKM seals

(Other seals on enquiry)

Caution!

Observe compatibility of seals with hydraulic fluid used!

LFA . G...



- 1 Nameplate
- 2 Measuring port
- 3 Port Z1 optionally as threaded connection
- 4 Port Z2 optionally as threaded connection
- 5 Shuttle valve

Size	80	100
D1	250 (9.84)	300 (11.80)
H1	80 (3.15)	75 (2.95)
H2	45 (1.77)	43 (1.69)
H3	45 (1.77)	52.5 (2.07)
H4	4 (0.16)	23.5 (0.93)
L1	73 (2.87)	96.5 (3.80)

Control cover with integrated directional poppet valve: Type ..R...; ..RF... – nominal dimensions in mm (inches)

Sizes 25 to 63

					1	2	3	4	14	15	16	17
					LFA			- 7X /				
Size	Type	Nozzle in channel (Ø in 1/10 mm [0.004 in.])			X	F	Z1					
25	R	X10 (0.39)	△	F**	△	Z12 (0.47)	△					
32	R	X12 (0.47)	△	F**	△	Z12 (0.47)	△					
40	R	X15 (0.59)	△	F**	△	Z12 (0.47)	△					
50	R	X15 (0.59)	△	F**	△	Z12 (0.47)	△					
63	R	X18 (0.71)	△	F**	△	Z12 (0.47)	△					
25	RF ¹⁾	X10 (0.39)	△	F**	△	Z12 (0.47)	△					
32	RF ¹⁾	X12 (0.47)	△	F**	△	Z12 (0.47)	△					
40	RF ¹⁾	X15 (0.59)	△	F**	△	Z12 (0.47)	△					
50	RF ¹⁾	X15 (0.59)	△	F**	△	Z12 (0.47)	△					
63	RF ¹⁾	X18 (0.71)	△	F**	△	Z12 (0.47)	△					

12 = SAE threaded external connections and UNC mounting bolts

- = Metric threaded connections

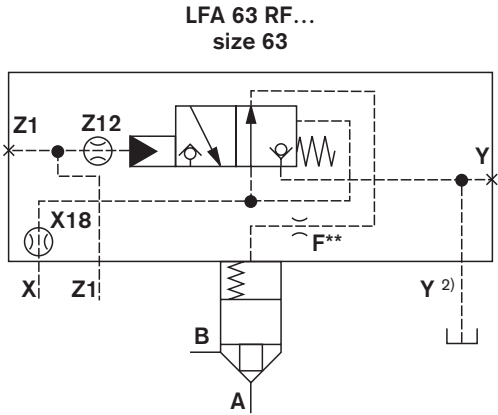
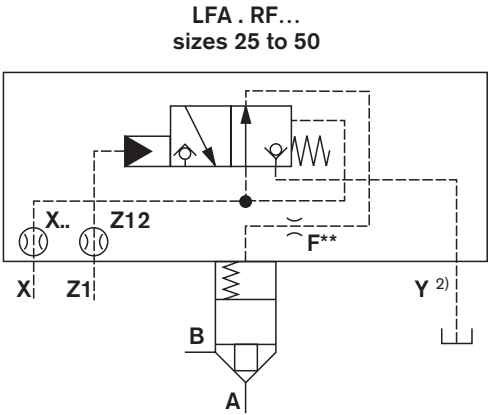
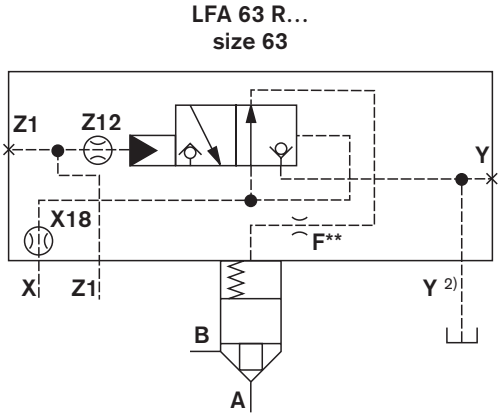
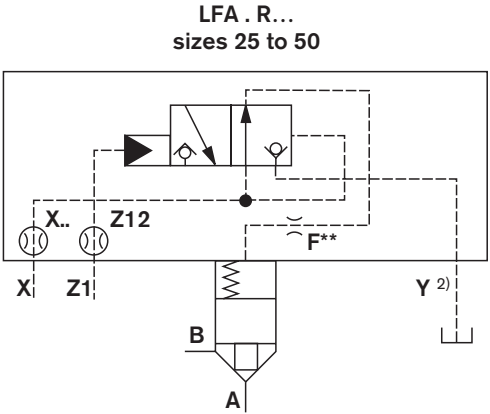
No code = NBR seals

V = FKM seals (Other seals on enquiry)

⚠ Caution!
Observe compatibility of seals with hydraulic fluid used!

△ Standard nozzle – not shown in the type designation
△ Nozzle possible; indicate, if required

¹⁾ Directional poppet valve with spring return

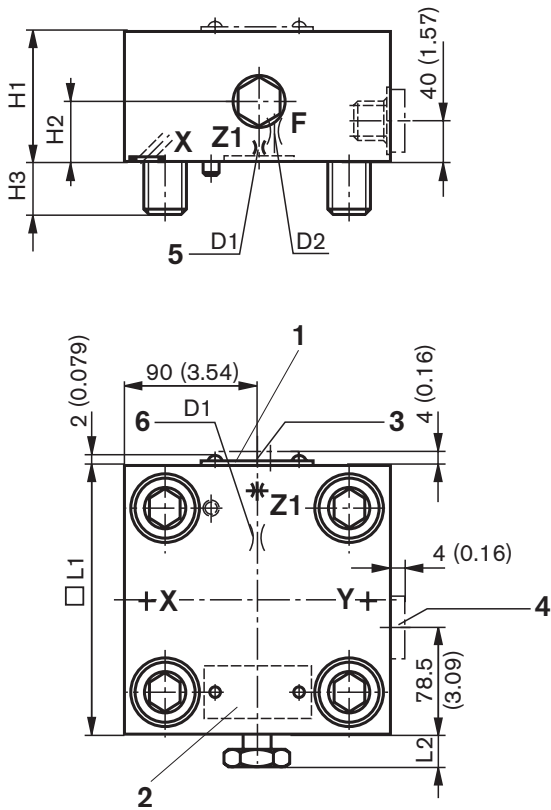


²⁾ Max. pressure in port Y 5 bar (72.5 PSI)

Control cover with integrated directional poppet valve: Type ..R...; ..RF... –
nominal dimensions in mm (inches)

Sizes 25 to 63

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



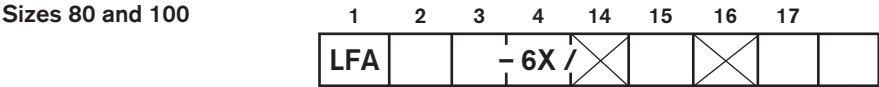
Size	Type	25	32	40	50	63
D1 ³⁾		M6	M6	M8 x 1	M8 x 1	M8 x 1
D2 ³⁾		M6	M6	M8 x 1	M8 x 1	M8 x 1
H1		40 (1.58)	50 (1.97)	60 (2.36)	68 (2.68)	82 (3.23)
H2		20 (0.79)	26 (1.02)	33 (1.30)	32 (1.26)	40 (1.58)
H3		24 (0.95)	28 (1.10)	32 (1.26)	34 (1.34)	50 (1.97)
□ L1		85 (3.35)	100 (3.94)	125 (4.92)	140 (5.51)	180 (7.09)
L2	R	2 (0.079)	1 (0.039)	4 (0.157)	3 (0.118)	—
	RF	18.5 (0.73)	17.5 (0.69)	25 (0.98)	24 (0.95)	16 (0.63)

³⁾ For ordering codes for nozzles, see page 14 and 15.

- 1 Nameplate for sizes 16, 25, 32
- 2 Nameplate for sizes 40, 50, 63
- 3 Port Z1 optionally as threaded connection for size 63 – G1/4; 12
- 4 Port Y optionally as threaded connection for size 63 – G1/2; 14
- 5 D1 for sizes 16 to 50
- 6 D1 for size 63

Control cover with integrated directional poppet valve: Type ..R...; ..R2... – nominal dimensions in mm (inches)

Sizes 80 and 100



Size	Type	Nozzle in channel (Ø in 1/10 mm [0.004 in.])		
		X	F	Z1
80	R	X20 (0.79)	F**	Z12 (0.47)
100	R	X25 (0.98)	F**	Z12 (0.47)
80	R2 ¹⁾	X20 (0.79)	F**	Z12 (0.47)
100	R2 ¹⁾	X25 (0.98)	F**	Z12 (0.47)

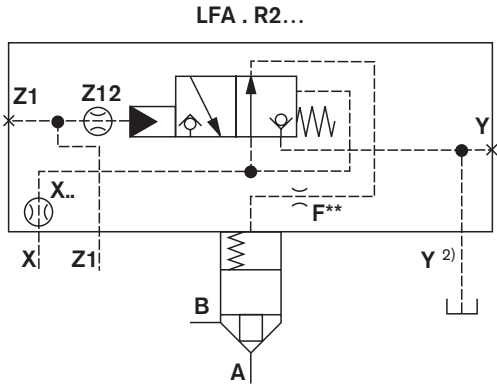
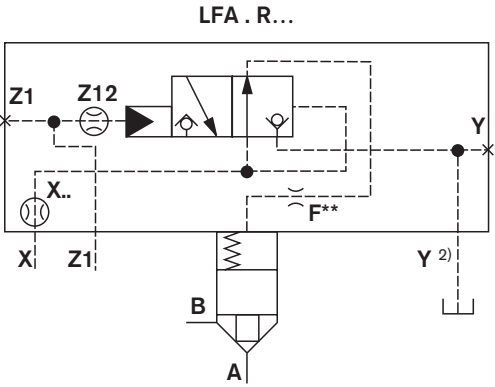
Standard nozzle – not shown in the type designation
Nozzle possible; indicate, if required

¹⁾ Directional poppet valve with spring return

12 = SAE threaded external connections and UNC mounting bolts
- = Metric threaded connections

No code = NBR seals
V = FKM seals
(Other seals on enquiry)

Caution!
Observe compatibility of seals with hydraulic fluid used!



²⁾ Max. pressure in port Y 5 bar (72.5 PSI)

Control cover for mounting a directional spool or poppet valve: Type ..WEA..., ..WEB... –
nominal dimensions in mm (inches)

Sizes 16 to 50

1

2

3

4

10

11

12

13

17

LFA

- 7X /

Size					Type	Nozzle in channel ($\varnothing$ in 1/10 mm [0.004 in])			
16	25	32	40	50		A	B	P	T
x	x	x	x	x	WEA	A**		P**	T**
x	x	x	x	x	WEB		B**	P**	T**

△ Nozzle possible; indicate, if required

For ordering codes for nozzles, see page 14 and 15.

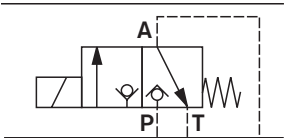
12 = SAE threaded external connections
and UNC mounting bolts

- = Metric threaded connections

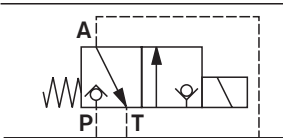
No code = NBR seals
V = FKM seals
(Other seals on enquiry)

⚠ Caution!
Observe compatibility of seals with
hydraulic fluid used!

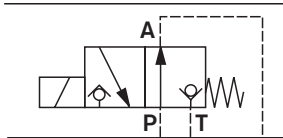
M-3SEW 6 C../420...



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

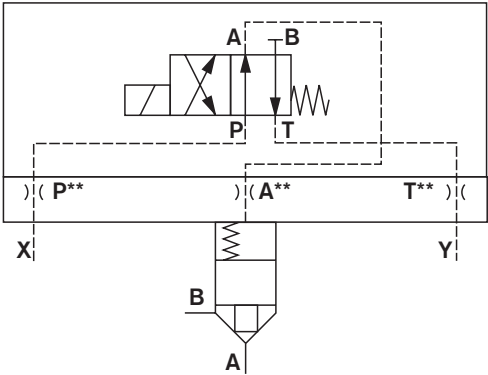


**M-3SED 6 UK../350...
M-3SEW 6 U../420...**



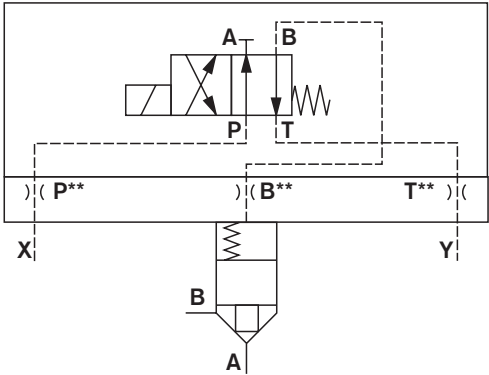
**LFA . WEA...
sizes 16 to 32**

(with directional spool valve type 4WE 6 D...)



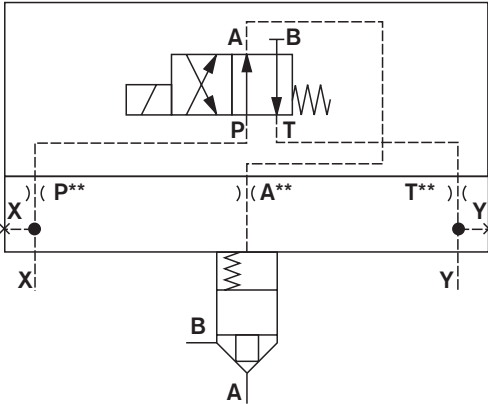
**LFA . WEB...
sizes 16 to 32**

(with directional spool valve type 4WE 6 D...)



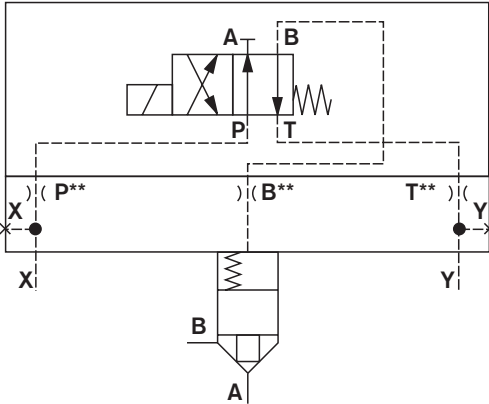
**LFA . WEA...
sizes 40 and 50**

(with directional spool valve type 4WE 6 D...)



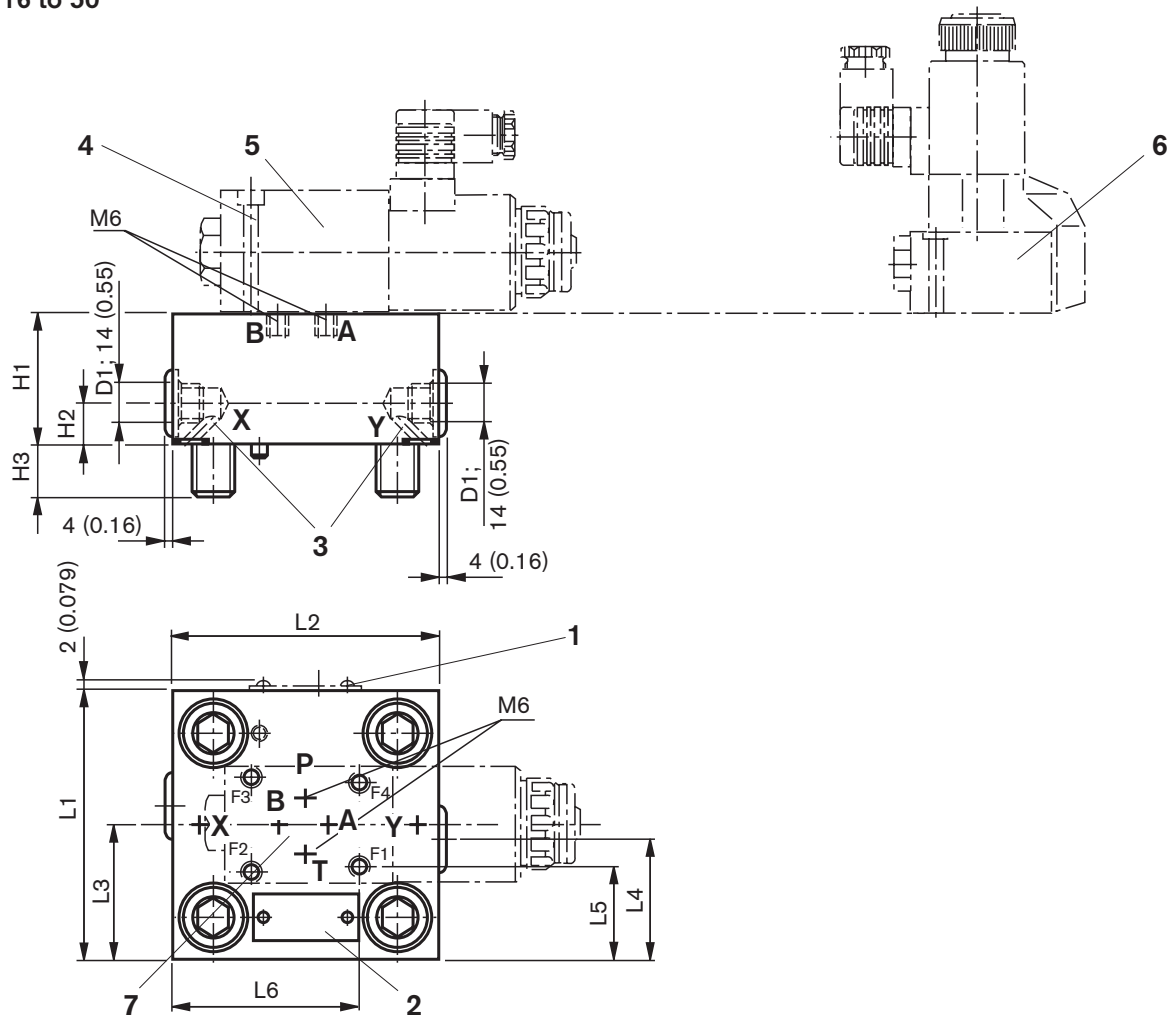
**LFA . WEB...
sizes 40 and 50**

(with directional spool valve type 4WE 6 D...)



Control cover for mounting a directional spool or poppet valve: Type ..WEA..., ..WEB... – nominal dimensions in mm (inches)

Sizes 16 to 50



- 1 Nameplate for sizes 16, 25, 32
- 2 Nameplate for sizes 40 and 50
- 3 Ports X and Y optionally as threaded connection for sizes 40 and 50
- 4 Valve fixing screws included in the control cover's scope of supply
- 5 Directional spool valve type 4WE 6 D...
- 6 Directional poppet valve type M-3SEW 6 ...
- 7 Position of ports according to ISO 4401-03-02-0-94

Size	16	25	32	40	50
D1	—	—	—	G1/2 (SAE-8; 3/4-16)	G1/2 (SAE-8; 3/4-16)
H1	40 (1.58)	40 (1.58)	50 (1.97)	60 (2.36)	68 (2.68)
H2	—	—	—	30 (1.18)	32 (1.26)
H3	15 (0.59)	24 (0.95)	28 (1.10)	32 (1.26)	34 (1.34)
L1	65 (2.59)	85 (3.35)	100 (3.94)	125 (4.92)	140 (5.51)
L2	80 (3.15)	85 (3.35)	100 (3.94)	125 (4.92)	140 (5.51)
L3	—	—	—	72 (2.84)	80 (3.15)
L4	—	—	—	53 (2.09)	60 (2.36)
L5	17 (0.67)	27 (1.06)	34.5 (1.36)	47 (1.85)	54.5 (2.15)
L6	47.5 (1.87)	64 (2.52)	71.5 (2.81)	84 (3.31)	91.5 (3.60)

Control cover for mounting a directional spool or poppet valve: Type ..WEA..., ..WEB... –
nominal dimensions in mm (inches)

Size 63

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

Nozzle in channel (Ø in 1/10 mm [0.004 in.])				
Type	A	B	P	T
WEA	A**		P**	T**
WEB		B**	P**	T**

△ Nozzle possible; indicate, if required

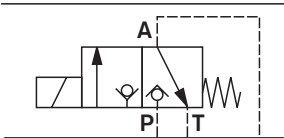
For ordering codes for nozzles, see page 14 and 15.

12 = SAE threaded external connections
and UNC mounting bolts
- = Metric threaded connections

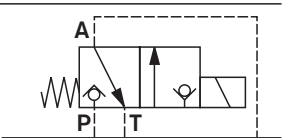
No code = NBR seals
V = FKM seals
(Other seals on enquiry)

⚠ Caution!
Observe compatibility of seals with
hydraulic fluid used!

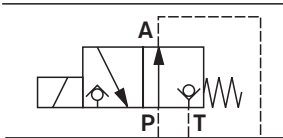
M-3SEW 10 C../420...



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

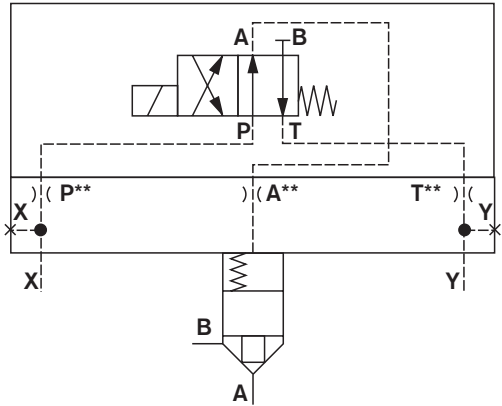


**M-3SED 10 UK../350...
M-3SEW 10 U../420...**



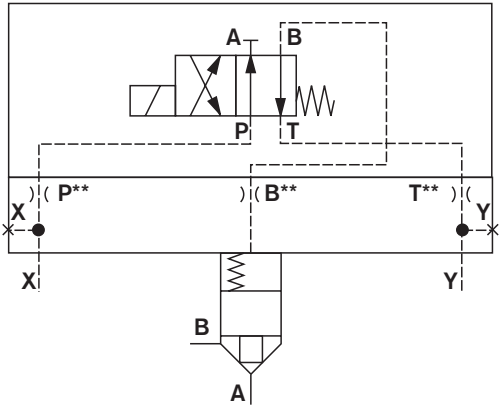
LFA 63 WEA...

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



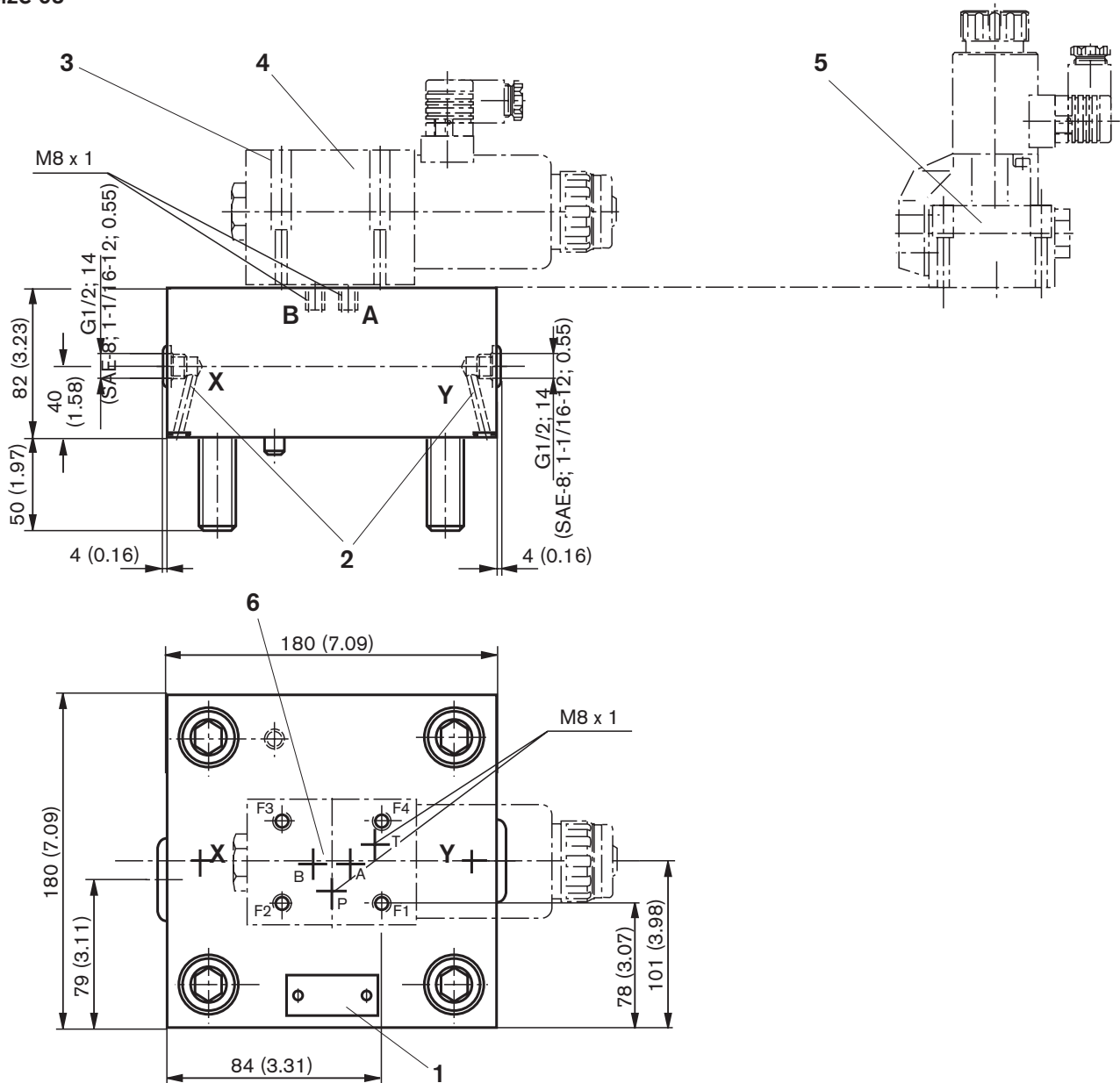
LFA 63 WEB...

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



Control cover for mounting a directional spool or poppet valve: Type ..WEA..., ..WEB... – nominal dimensions in mm (inches)

Size 63



- 1 Nameplate
- 2 Ports X and Y optionally as threaded connection
- 3 Valve fixing screws are included in the control cover's scope of supply
- 4 Directional spool valve type 4WE 10 D...
- 5 Directional poppet valve type M-3SEW 10 ...
- 6 Position of ports to ISO 4401-05-04-0-94

Control cover for mounting a directional spool or poppet valve: Type ..WEA..., ..WEB... –
nominal dimensions in mm (inches)

Sizes 80 and 100

1

2

3

4

10

11

12

13

17

LFA

- 6X /

Size		Type	Nozzle in channel (Ø in 1/10 mm [0.004 in.])			
80	100		A	B	P	T
x	x	WEA	A**		P**	T**
x	x	WEB		B**	P**	T**

△ Nozzle possible; indicate, if required

12 = SAE threaded external connections
and UNC mounting bolts

- = Metric threaded connections

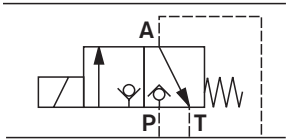
No code = NBR seals

V = FKM seals
(Other seals on enquiry)

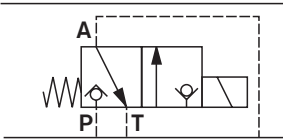
⚠ Caution!
Observe compatibility of seals with
hydraulic fluid used!

For ordering codes for nozzles, see page 14 and 15.

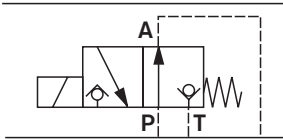
M-3SEW 10 C../420...



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

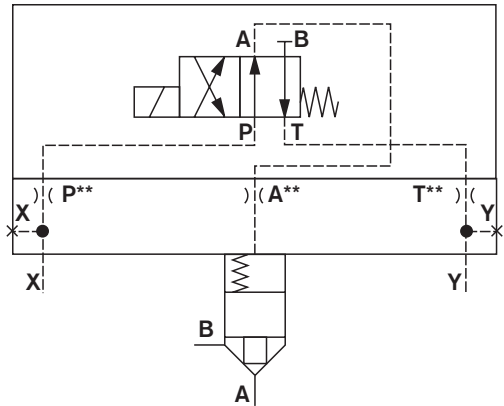


M-3SED 10 UK../350...
M-3SEW 10 U../420...



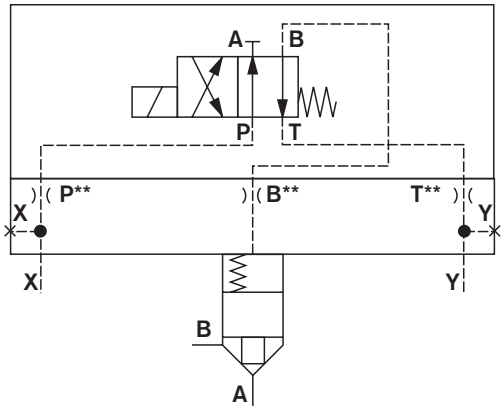
LFA . WEA...
sizes 80 and 100

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



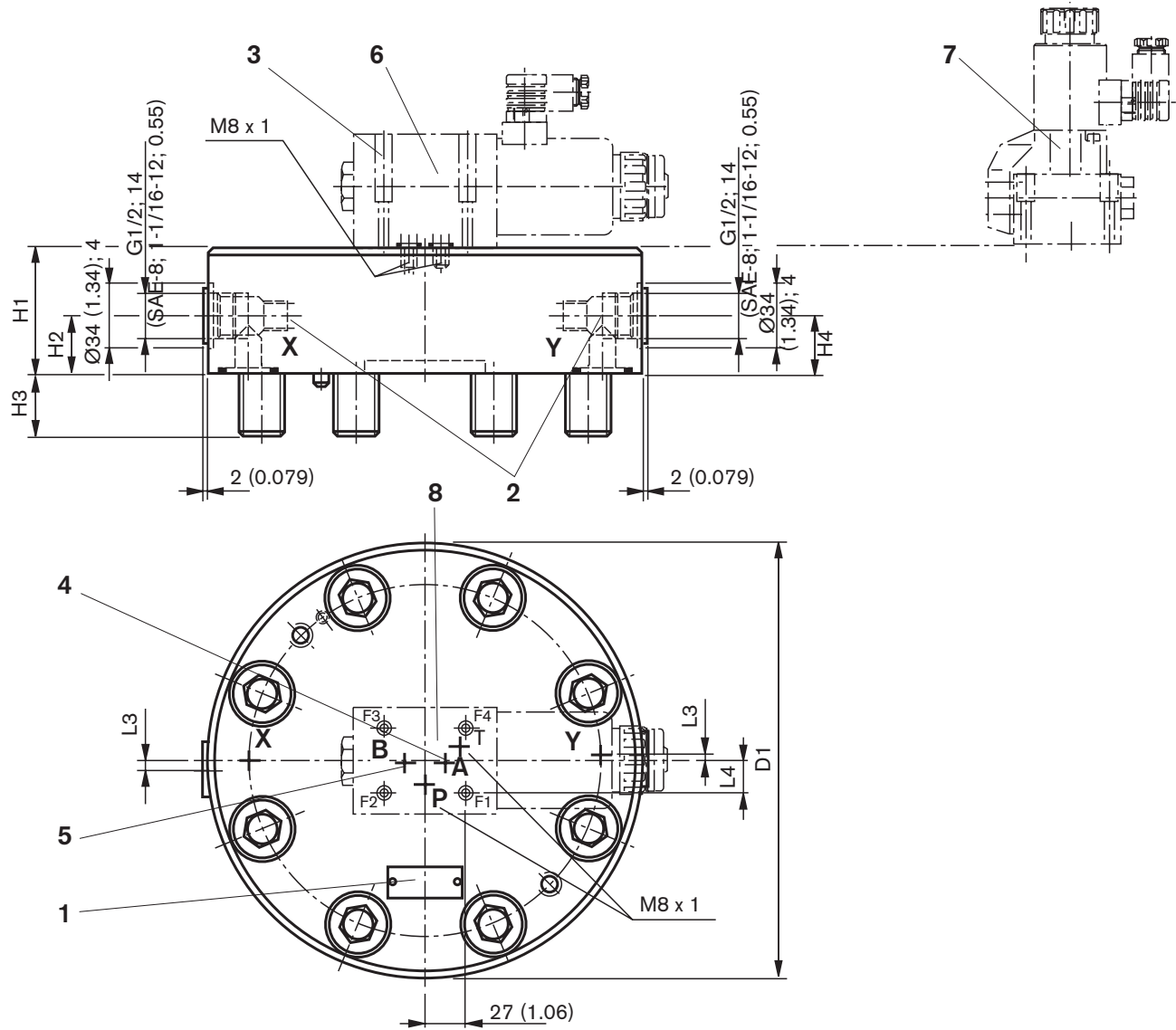
LFA . WEB...
sizes 80 and 100

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



Control cover for mounting a directional spool or poppet valve: Type ..WEA..., ..WEB... – nominal dimensions in mm (inches)

Sizes 80 and 100



- 1 Nameplate
- 2 Ports X and Y optionally as threaded connection
- 3 Valve fixing screws are included in the control cover's scope of supply
- 4 Plug screw for type .. WEB..
- 5 Plug screw for type .. WEA..
- 6 Directional spool valve type 4WE 10 D...
- 7 Directional poppet valve type M-3SEW 10 ...
- 8 Position of ports to ISO 4401-05-04-0-94

Size	80	100
D1	250 (9.84)	300 (11.80)
H1	80 (3.15)	100 (3.94)
H2	30 (1.18)	24 (0.95)
H3	45 (1.77)	52.5 (2.07)
H4	45 (1.77)	55 (2.17)
L3	10 (0.39)	13 (0.51)
L4	16 (0.63)	18 (0.71)

Control cover for mounting a directional spool or poppet valve: Type ..WEMA..., ..WEMB... – nominal dimensions in mm (inches)

Sizes 16 to 50

1

2

3

4

12

13

15

17

LFA

- 7X /

Size					Type	Nozzle in channel (Ø in 1/10 mm [0.004 in.])		
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**

Nozzle possible; indicate, if required

For ordering codes for nozzles, see page 14 and 15.

12 = SAE threaded external connections and UNC mounting bolts

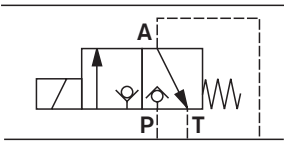
- = Metric threaded connections

No code = NBR seals

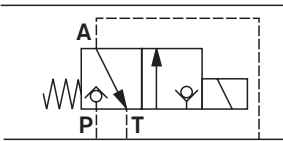
V = FKM seals
(Other seals on enquiry)

Caution!
Observe compatibility of seals with hydraulic fluid used!

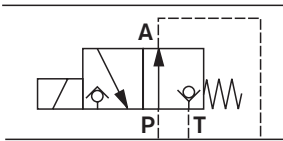
M-3SEW 6 C../420...



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

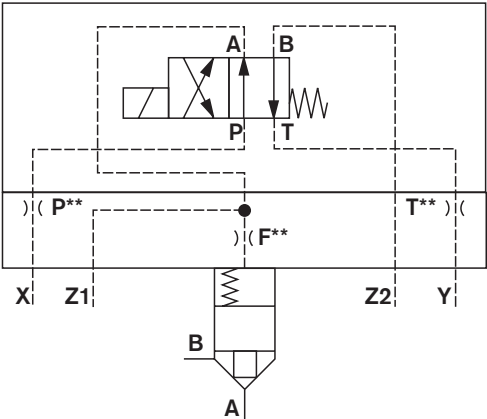


M-3SED 6 UK../350...
M-3SEW 6 U../420...



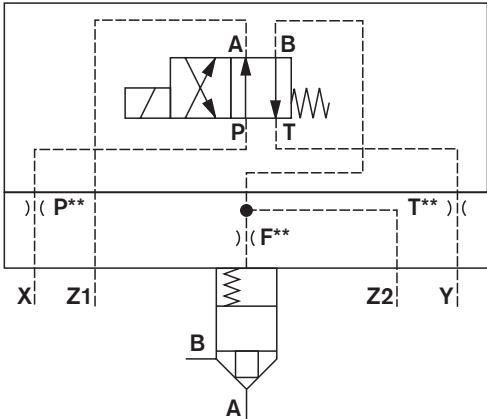
LFA . WEMA...
sizes 16 to 32

(with directional spool valve type 4WE 6 D...)



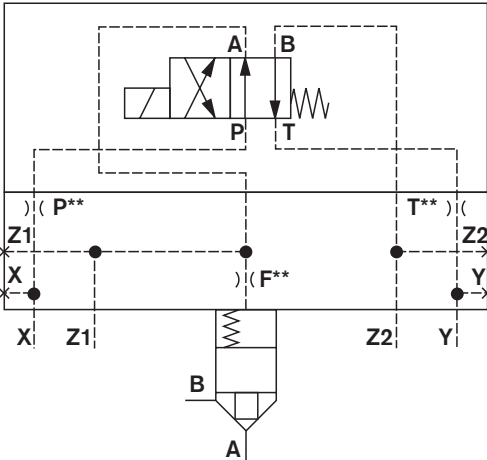
LFA . WEMB...
sizes 16 to 32

(with directional spool valve type 4WE 6 D...)



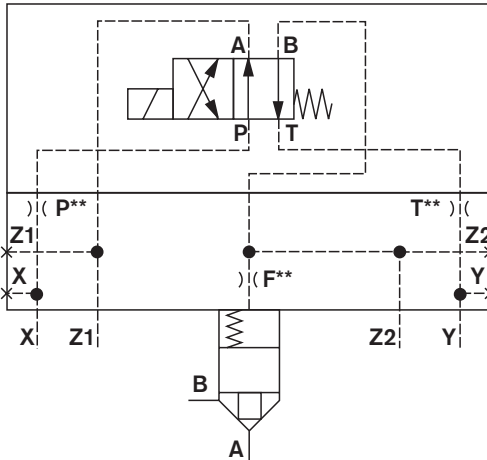
LFA . WEMA...
sizes 40 and 50

(with directional spool valve type 4WE 6 D...)



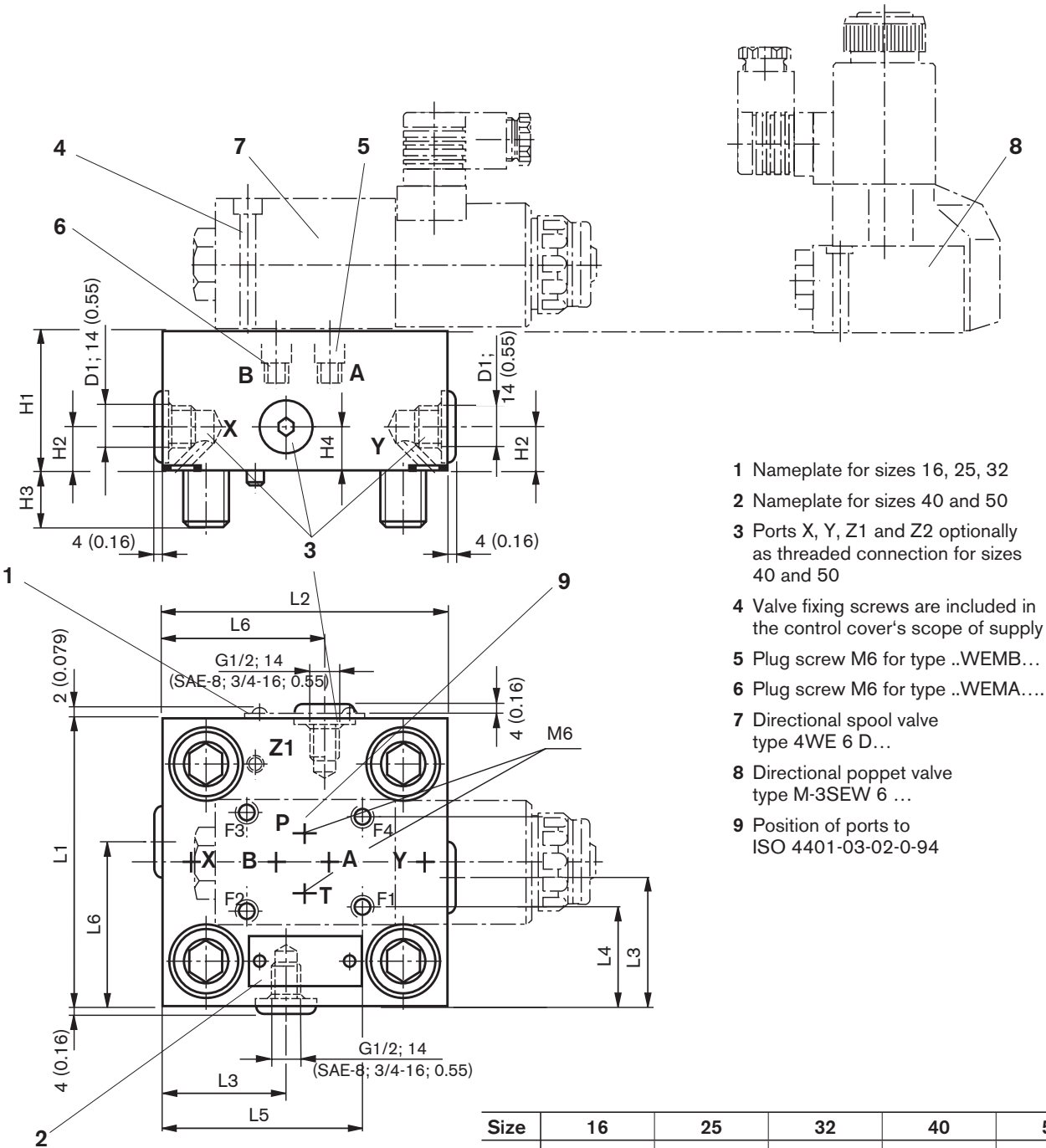
LFA . WEMB...
sizes 40 and 50

(with directional spool valve type 4WE 6 D...)



Control cover for mounting a directional spool or poppet valve: Type ..WEMA..., ..WEMB... – nominal dimensions in mm (inches)

Sizes 16 to 50



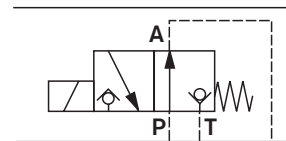
Size	16	25	32	40	50
D1	—	—	—	G1/2	G1/2
H1	65 (2.56)	40 (1.58)	50 (1.97)	60 (2.36)	68 (2.68)
H2	—	—	—	30 (1.18)	32 (1.26)
H3	15 (0.59)	24 (0.95)	28 (1.10)	32 (1.26)	34 (1.34)
H4	—	—	—	30 (1.18)	32 (1.26)
L1	65 (2.56)	85 (3.35)	100 (3.94)	125 (4.90)	140 (5.51)
L2	80 (3.15)	85 (3.35)	100 (3.94)	125 (4.90)	140 (5.51)
L3	—	—	—	53 (2.09)	60 (2.36)
L4	17 (0.67)	27 (1.06)	34.5 (1.36)	47 (1.85)	54.5 (2.15)
L5	47.5 (1.87)	64 (2.52)	71.5 (2.81)	84 (3.31)	91.5 (3.60)
L6	—	—	—	72 (2.83)	80 (3.15)

1	2	3	4	12	13	15	17
LFA			- 7X /				

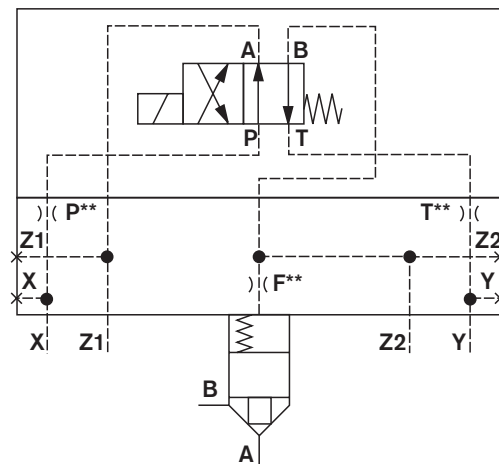
For ordering codes for nozzles, see page 14 and 15.

⚠ Caution!
Observe compatibility of seals with
hydraulic fluid used!

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

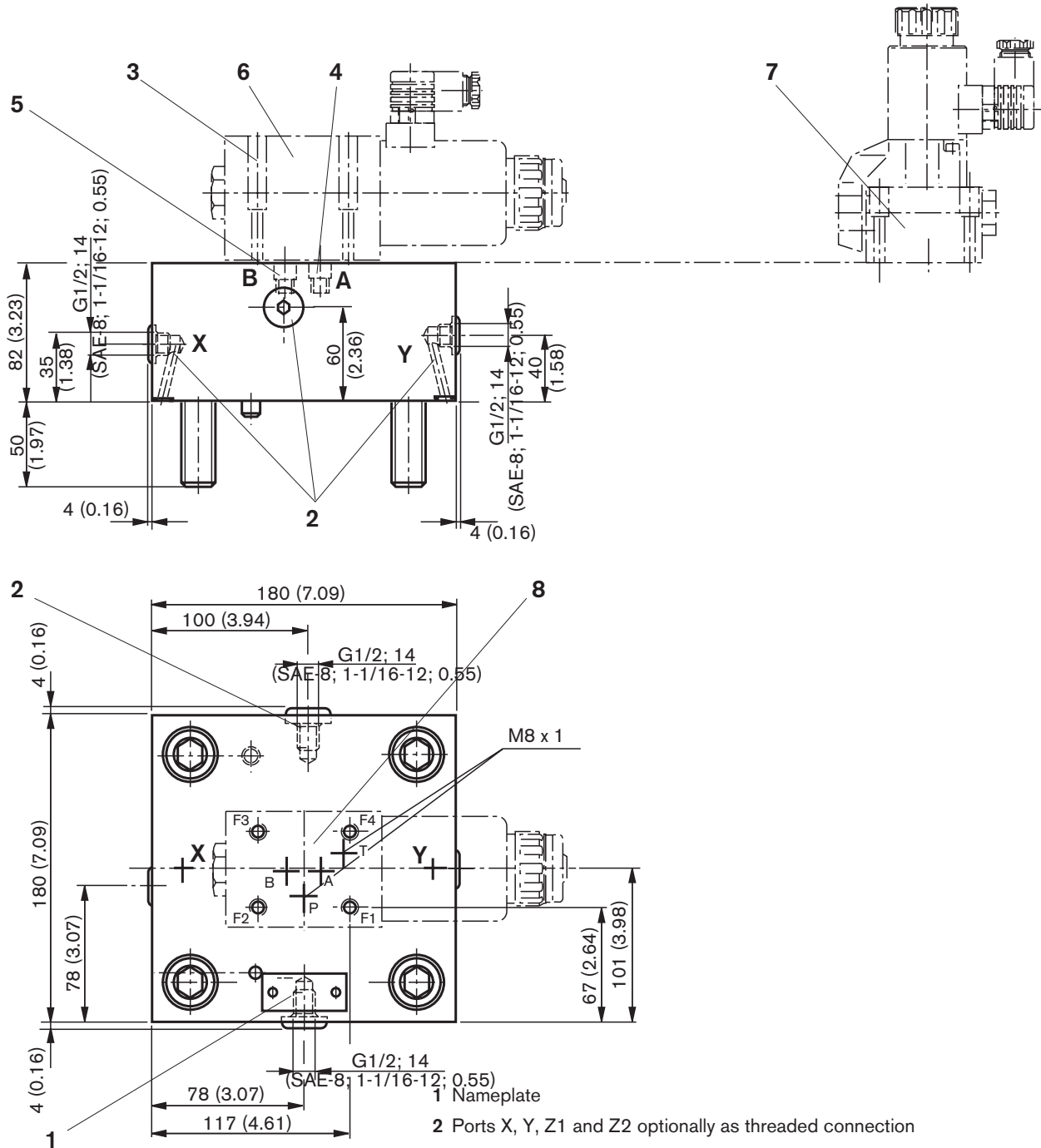


(with directional spool valve type 4WE 10 D...)



Control cover for mounting a directional spool or poppet valve: Type ..WEMA..., ..WEMB... – nominal dimensions in mm (inches)

Size 63



- 1 Nameplate
- 2 Ports X, Y, Z1 and Z2 optionally as threaded connection
- 3 Valve fixing screws are included in the control cover's scope of supply
- 4 Plug screw M8 x 1 for type ..WEMB...
- 5 Plug screw M8 x 1 for type ..WEMA....
- 6 Directional spool valve type 4WE 10 D...
- 7 Directional poppet valve type M-3SEW 10 ...
- 8 Position of ports to ISO 4401-05-04-0-94

Control cover for mounting a directional spool or poppet valve: Type ..WEA8..., ..WEB8... – nominal dimensions in mm (inches)

Sizes 80 and 100

12 = SAE threaded external connections and UNC mounting bolts

- = Metric threaded connections

No code = NBR seals

V = FKM seals (Other seals on enquiry)

⚠ Caution!
Observe compatibility of seals with hydraulic fluid used!

12 = SAE threaded external connections and UNC mounting bolts

- = Metric threaded connections

No code = NBR seals

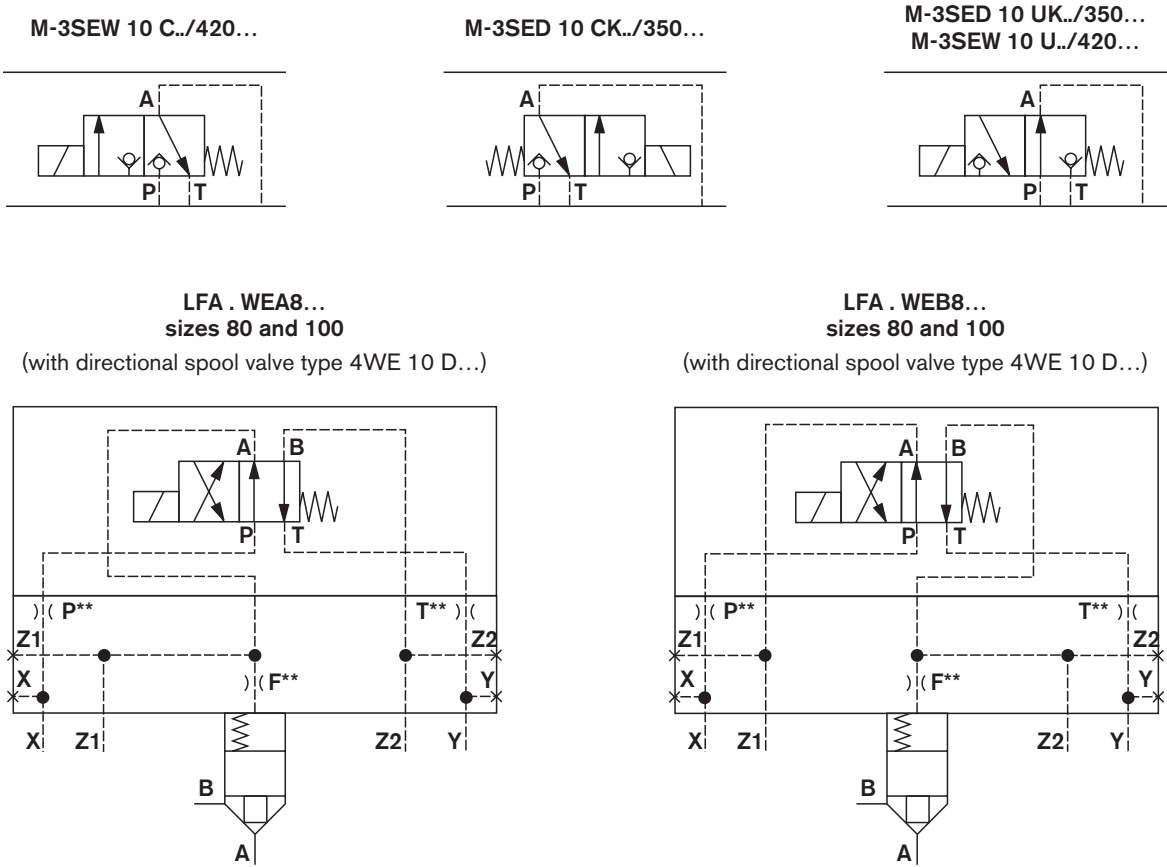
V = FKM seals (Other seals on enquiry)

⚠ Caution!
Observe compatibility of seals with hydraulic fluid used!

Size		Type	Nozzle in channel (Ø in 1/10 mm [0.004 in.])		
80	100		P	T	F
x	x	WEA8	P**	T**	F**
x	x	WEB8	P**	T**	F**

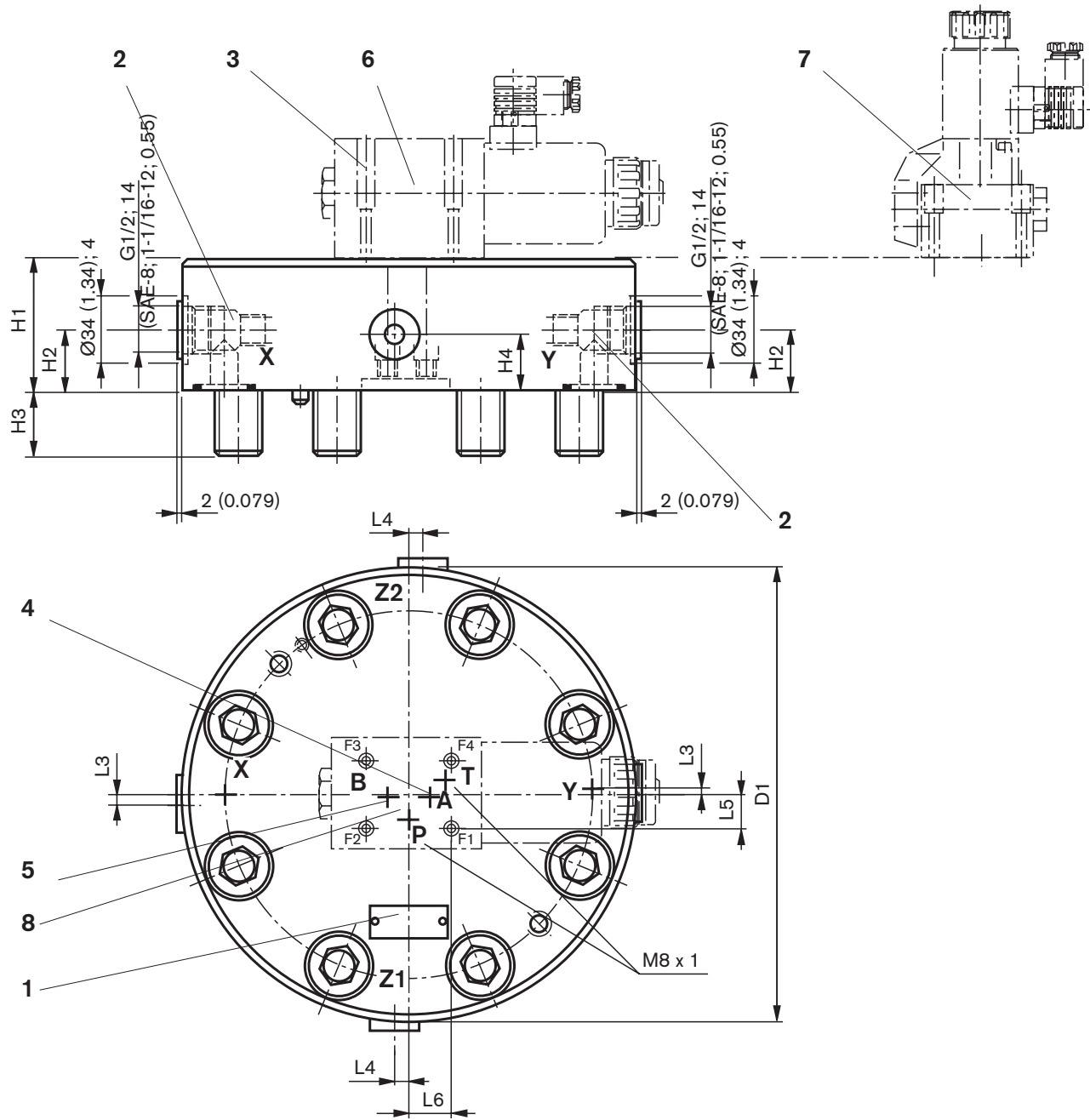
△ Nozzle possible; indicate, if required

For ordering codes for nozzles, see page 14 and 15.



Control cover for mounting a directional spool or poppet valve: Type ..WEA8..., ..WEB8... – nominal dimensions in mm (inches)

Sizes 80 and 100



- 1 Nameplate
- 2 Ports X, Y, Z1 and Z2 optionally as threaded connection
- 3 Valve fixing screws are included in the control cover's scope of supply
- 4 Plug screw M8 x 1 for type .. WEB8..
- 5 Plug screw M8 x 1 for type .. WEA8..
- 6 Directional spool valve type 4WE 10 D...
- 7 Directional poppet valve type M-3SEW 10 ...
- 8 Position of ports to ISO 4401-05-04-0-94

Size	80	100
D1	250 (9.84)	300 (11.80)
H1	80 (3.15)	100 (3.94)
H2	42 (1.65)	55 (2.17)
H3	45 (1.77)	52.5 (2.07)
H4	26 (1.02)	35 (1.38)
L3	10 (0.39)	13 (0.51)
L4	10 (0.39)	9.5 (0.37)
L5	16 (0.63)	27 (1.06)
L6	27 (1.06)	26 (1.02)

Control cover for mounting a directional spool valve: Type ..WECA... – nominal dimensions in (mm (inches))

Sizes 16 to 50

1

2

3

4

10

11

12

13

17

LFA

WECA – 7X /

Size					Nozzle in channel (Ø in 1/10 mm [0.004 in.])			
16	25	32	40	50	A	B	P	T
x	x	x	x	x	A**	B**	P**	T**

△ Nozzle possible; indicate, if required

For ordering codes for nozzles, see page 14 and 15.

12 = SAE threaded external connections and UNC mounting bolts

- = Metric threaded connections

No code = NBR seals

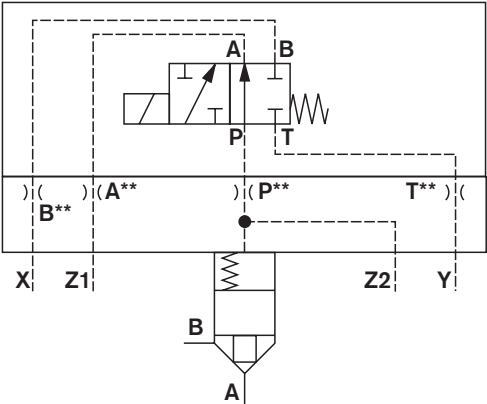
V = FKM seals

(Other seals on enquiry)

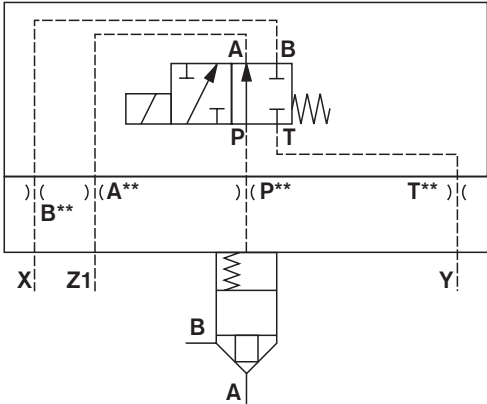
⚠ Caution!

Observe compatibility of seals with hydraulic fluid used!

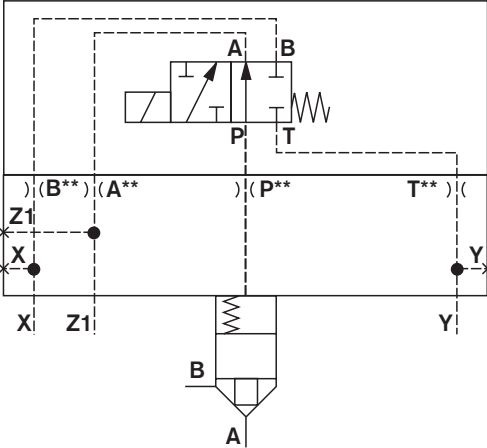
LFA . WECA...
size 16
(with directional spool valve type 3WE 6 A...)



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

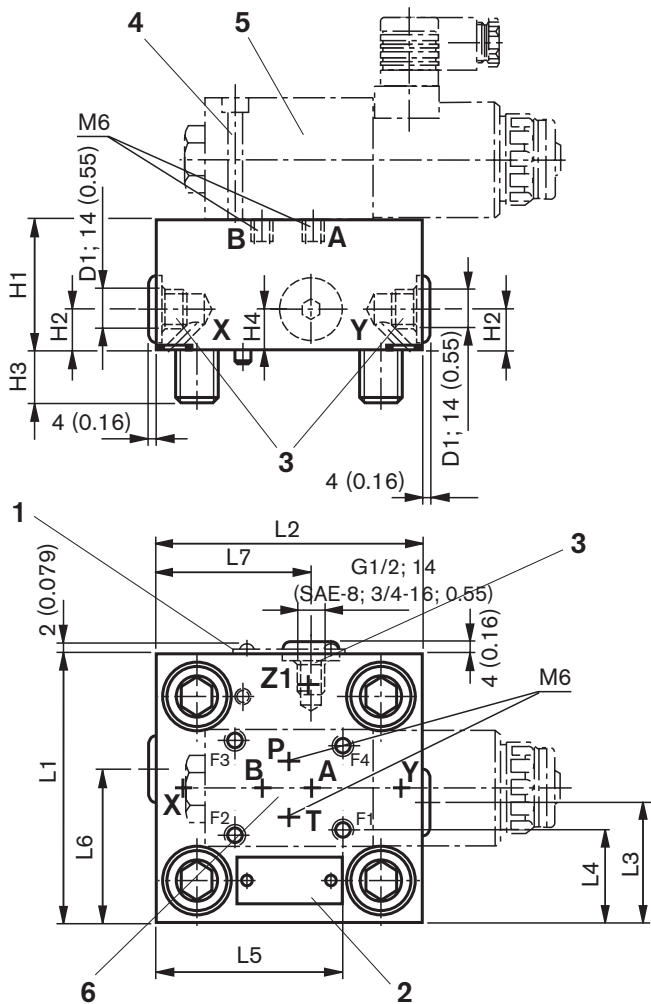


LFA . WECA...
sizes 40 and 50
(with directional spool valve type 3WE 6 A...)



Control cover for mounting a directional spool valve: Type ..WECA... –
nominal dimensions in (mm (inches))

Sizes 16 to 50



- 1 Nameplate for sizes 16, 25, 32
- 2 Nameplate for sizes 40 and 50
- 3 Ports X, Y and Z1 optionally as threaded connection for sizes 40 and 50
- 4 Valve fixing screws are included in the control cover's scope of supply
- 5 Directional spool valve type 3WE 6 A...
- 6 Position of ports to ISO 4401-03-02-0-94

Size	16	25	32	40	50
D1	—	—	—	G1/2 (SAE-8; 3/4-16)	G1/2 (SAE-8; 3/4-16)
H1	40 (1.58)	40 (1.58)	50 (1.97)	60 (2.36)	68 (2.68)
H2	—	—	—	30 (1.18)	32 (1.26)
H3	15 (0.59)	24 (0.95)	28 (1.10)	32 (1.26)	34 (1.34)
H4	—	—	—	30 (1.18)	32 (1.26)
L1	65 (2.56)	85 (3.35)	100 (3.94)	125 (4.92)	140 (5.51)
L2	80 (3.15)	85 (3.35)	100 (3.94)	125 (4.92)	140 (5.51)
L3	—	—	—	53 (2.09)	60 (2.36)
L4	17 (0.28)	27 (1.06)	34.5 (1.36)	47 (1.85)	54.5 (2.15)
L5	47.5 (1.87)	64 (2.52)	71.5 (2.81)	84 (3.31)	91.5 (3.60)
L6	—	—	—	62.5 (2.46)	70 (2.76)
L7	—	—	—	72 (2.83)	80 (3.15)

Control cover for mounting a directional spool valve: Type ..WECA... – nominal dimensions in mm (inches)

Size 63

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

Nozzle in channel (Ø in 1/10 mm [0.004 in.])			
A	B	P	T
A**	B**	P**	T**

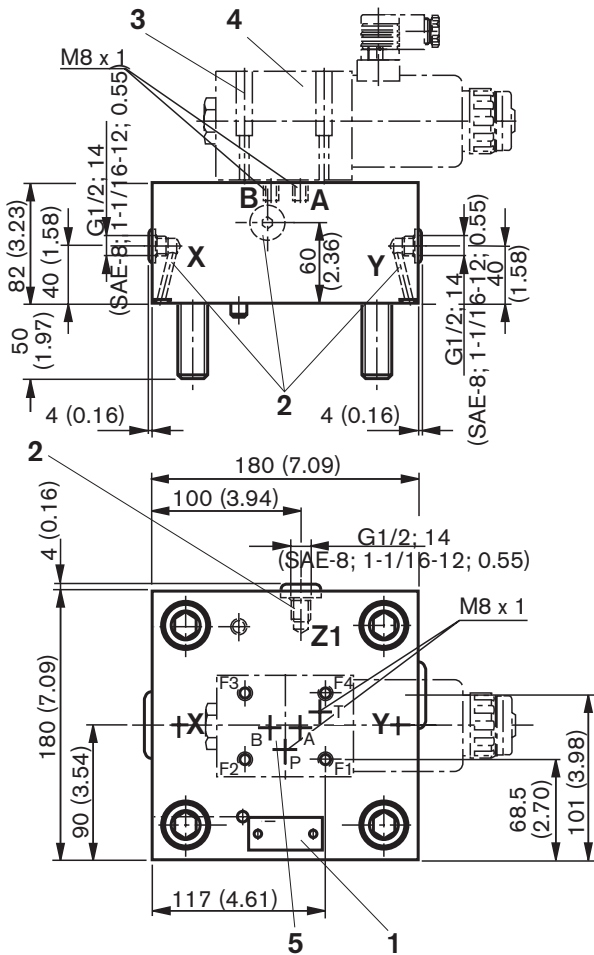
△ Nozzle possible; indicate, if required

For ordering codes for nozzles, see
page 14 and 15.

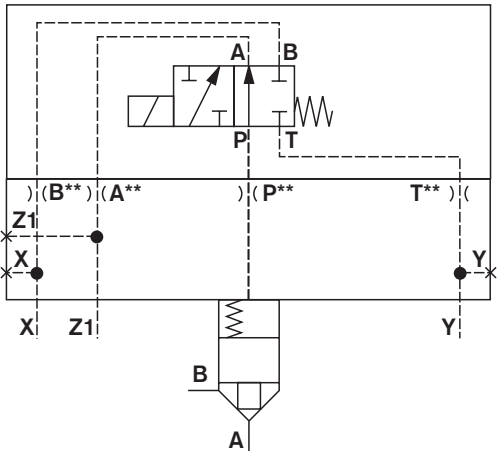
12 = SAE threaded external connections
and UNC mounting bolts
- = Metric threaded connections

No code = NBR seals
V = FKM seals
(Other seals on enquiry)

Caution!
Observe compatibility of seals with
hydraulic fluid used!



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



- 1 Nameplate
- 2 Ports X, Y and Z1 optionally as threaded connection
- 3 Valve fixing screws are included in the control cover's scope of supply
- 4 Directional spool valve type 3WE 6 A...
- 5 Position of ports to ISO 4401-05-04-0-94

Control cover for mounting a directional spool valve: Type ..WEA9... – nominal dimensions in mm (inches)

Sizes 80 and 100

1

2

3

4

10

11

12

13

17

LFAWEA9 – 6X /

Size		Nozzle in channel (Ø in 1/10 mm [0.004 in.])			
80	100	A	B	P	T
x	x	A**	B**	P**	T**

△ Nozzle possible; indicate, if required

For ordering codes for nozzles, see page 14 and 15.

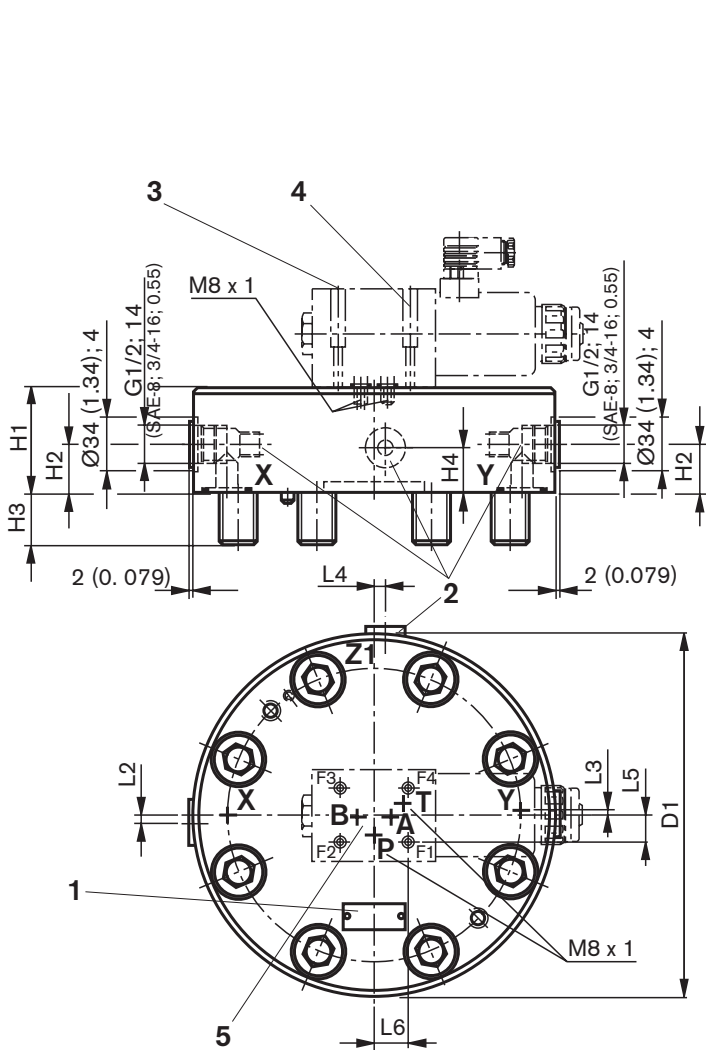
12 = SAE threaded external connections and UNC mounting bolts

– = Metric threaded connections

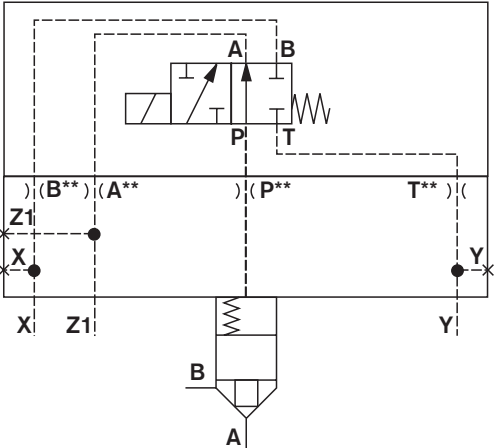
No code = NBR seals

V = FKM seals (Other seals on enquiry)

⚠ Caution!
Observe compatibility of seals with hydraulic fluid used!



LFA . WEA9...
sizes 80 and 100
(with directional spool valve type 3WE 10 A...)



Size	80	100
D1	250 (9.84)	300 (11.80)
H1	80 (3.15)	100 (3.94)
H2	30 (1.18)	40 (1.58)
H3	45 (1.77)	52.5 (2.07)
H4	30 (1.18)	70 (2.76)
L2	0	6 (0.24)
L3	6 (0.24)	6 (0.24)
L4	6 (0.24)	6 (0.24)
L5	23 (0.91)	19 (0.75)
L6	27 (1.06)	26 (1.02)

- 1 Nameplate
- 2 Ports X, Y, Z1 and Z2 optionally as threaded connection
- 3 Valve fixing screws included in the control cover's scope of supply
- 4 Directional spool valve type 3WE 10 A...
- 5 Position of ports to ISO 4401-05-04-0-94

Control cover for mounting a directional spool valve: Type ..GWA..., ..GWB... –
nominal dimensions in mm (inches)

Sizes 16 to 50

1

2

3

4

10

11

12

13

17

LFA

- 7X /

Size					Type	Nozzle in channel (Ø in 1/10 mm [0.004 in.])			
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**

△ Nozzle possible; indicate, if required

For ordering codes for nozzles, see page 14 and 15.

12 = SAE threaded external connections
and UNC mounting bolts

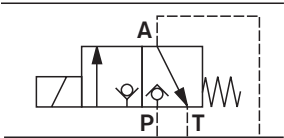
- = Metric threaded connections

No code = NBR seals

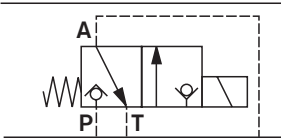
V = FKM seals
(Other seals on enquiry)

⚠ Caution!
Observe compatibility of seals with
hydraulic fluid used!

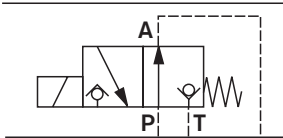
M-3SEW 6 C../420...



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

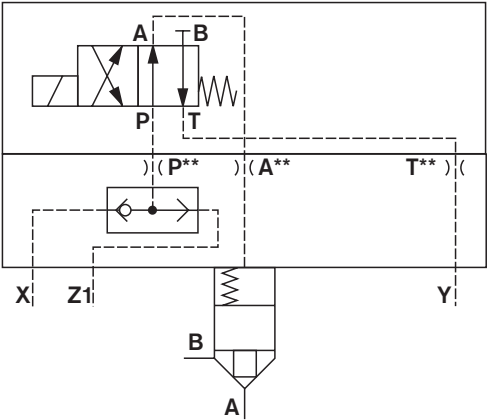


**M-3SED 6 UK../350...
M-3SEW 6 U../420...**



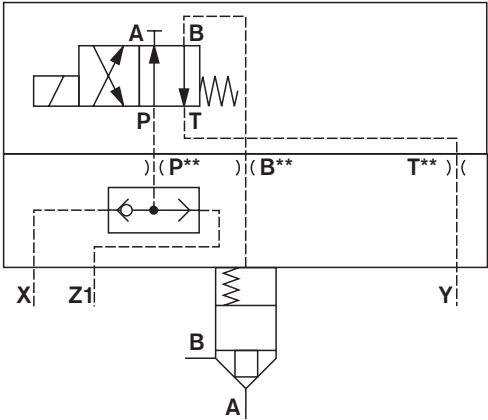
**LFA . GWA...
sizes 16 to 32**

(with directional spool valve type 4WE 6 D...)



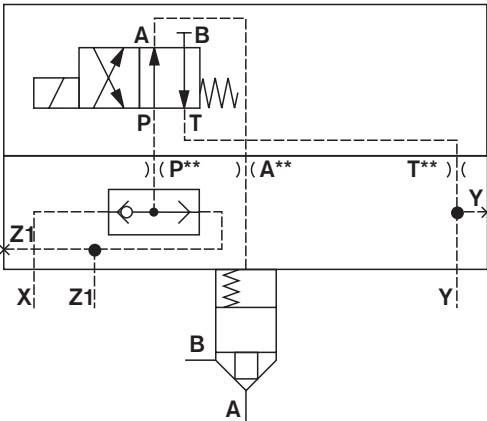
**LFA . GWB...
sizes 16 to 32**

(with directional spool valve type 4WE 6 D...)



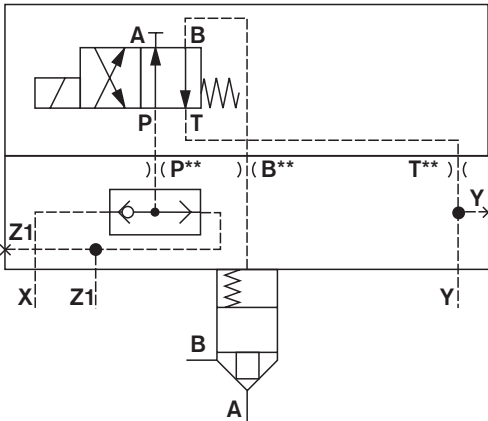
**LFA . GWA...
sizes 40 and 50**

(with directional spool valve type 4WE 6 D...)



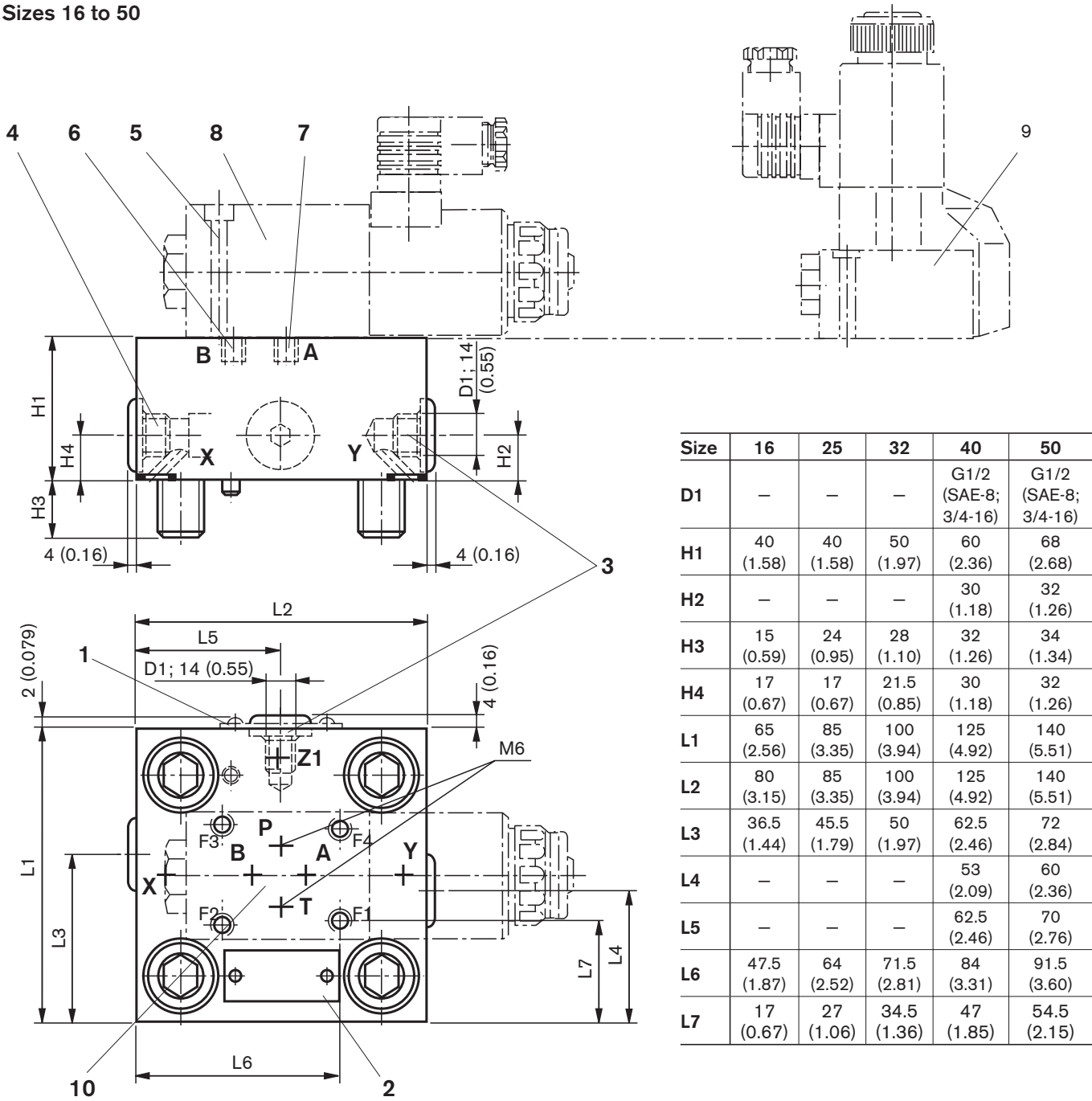
**LFA . GWB...
sizes 40 and 50**

(with directional spool valve type 4WE 6 D...)



Control cover for mounting a directional spool valve: Type ..GWA..., ..GWB... –
nominal dimensions in mm (inches)

Sizes 16 to 50



- 1 Nameplate for sizes 16, 25, 32
- 2 Nameplate for sizes 40 and 50
- 3 Ports Y and Z1 optionally as threaded connection for sizes 40 and 50
- 4 Shuttle valve
- 5 Valve fixing screws are included in the control cover's scope of supply
- 6 Plug screw M6 for ..GWA...
- 7 Plug screw M6 for ..GWB...
- 8 Directional spool valve type 4WE 6 D...
- 9 Directional poppet valve type M-3SEW 6 ...
- 10 Position of ports to ISO 4401-03-02-0-94

Control cover for mounting a directional spool or poppet valve: Type ..GWA..., ..GWB... –
nominal dimensions in mm (inches)

Size 63

1

2

3

4

10

11

12

13

17

LFA63-7X/

Type	Nozzle in channel (Ø in 1/10 mm [0.004 in.])			
	A	B	P	T
GWA	A**		P**	T**
GWB		B**	P**	T**

△ Nozzle possible; indicate, if required

For ordering codes for nozzles, see page 14 and 15.

12 = SAE threaded external connections and UNC mounting bolts

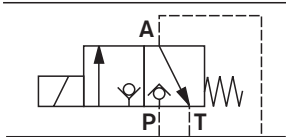
- = Metric threaded connections

No code = NBR seals

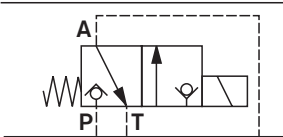
V = FKM seals
(Other seals on enquiry)

⚠ **Caution!**
Observe compatibility of seals with hydraulic fluid used!

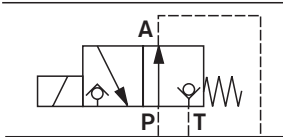
M-3SEW 10 C../420...



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

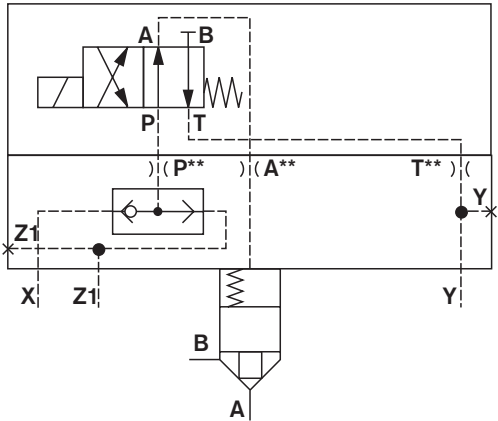


M-3SED 10 UK../350...
M-3SEW 10 U../420...



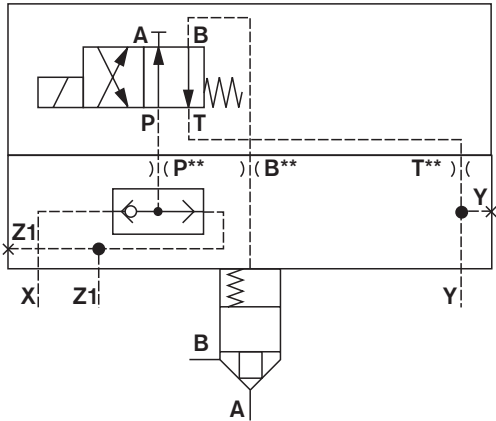
LFA 63 GWA...

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



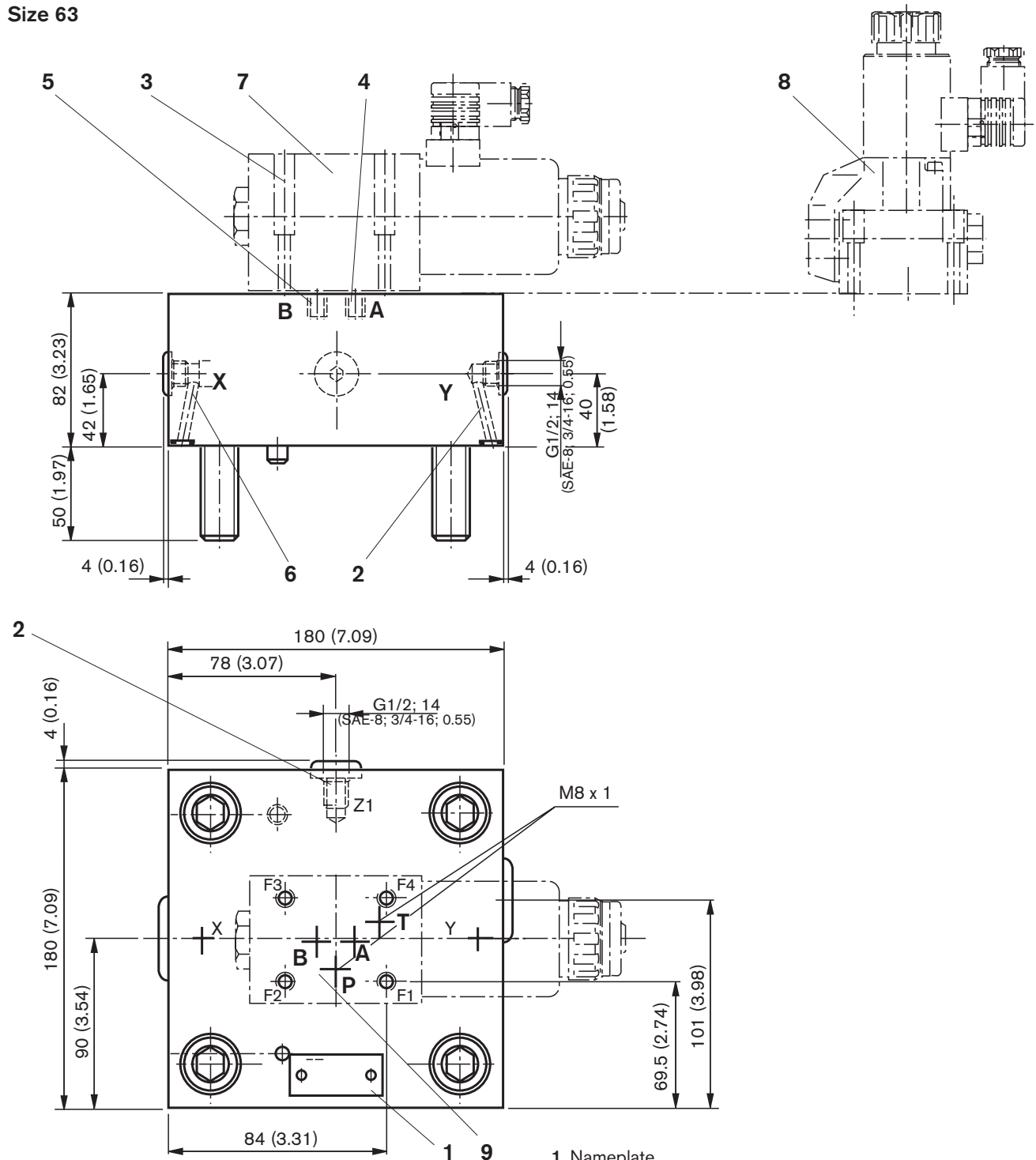
LFA 63 GWB...

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



Control cover for mounting a directional spool or poppet valve: Type ..GWA..., ..GWB... (nominal dimensions in mm)

Size 63



- 1 Nameplate
- 2 Ports Y and Z1 optionally as threaded connection
- 3 Valve fixing screws are included in the control cover's scope of supply
- 4 Plug screw M8 x 1 for type ..GWB...
- 5 Plug screw 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 ...
- 9 Position of ports to ISO 4401-05-04-0-94

Control cover for mounting a directional spool or poppet valve: Type ..GWA..., ..GWB... –
nominal dimensions in mm (inches)

Sizes 80 and 100

1

2

3

4

10

11

12

13

17

LFA

- 6X /

Size		Type	Nozzle in channel (Ø in 1/10 mm [0.004 in.])			
80	100		A	B	P	T
x	x	GWA	A**		P**	T**
x	x	GWB		B**	P**	T**

△ Nozzle possible; indicate, if required

12 = SAE threaded external connections
and UNC mounting bolts

- = Metric threaded connections

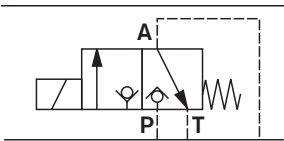
No code = NBR seals

V = FKM seals
(Other seals on enquiry)

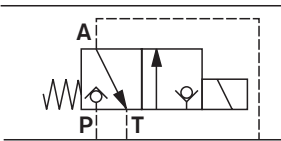
⚠ Caution!
Observe compatibility of seals with
hydraulic fluid used!

For ordering codes for nozzles, see page 14 and 15.

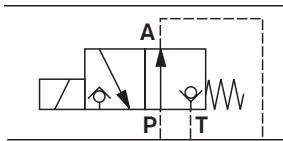
M-3SEW 10 C../420...



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

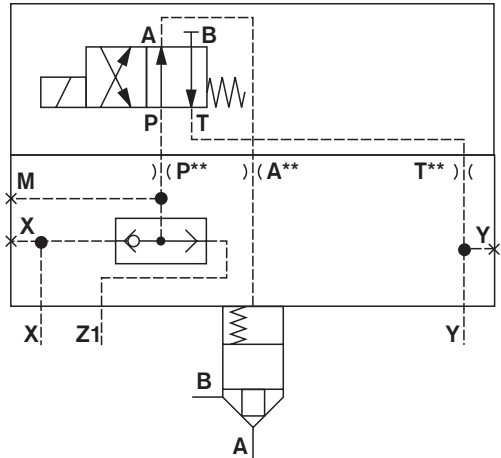


M-3SED 10 UK../350...
M-3SEW 10 U../420...



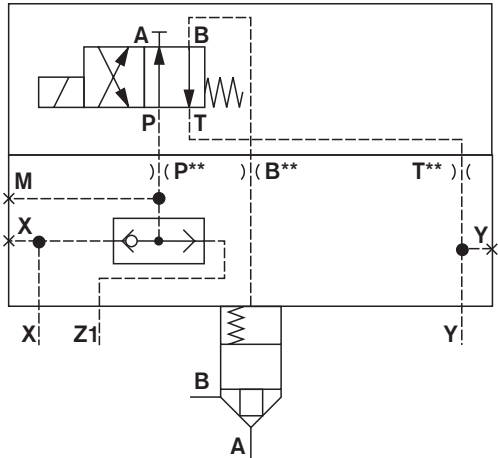
LFA . GWA...
sizes 80 and 100

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



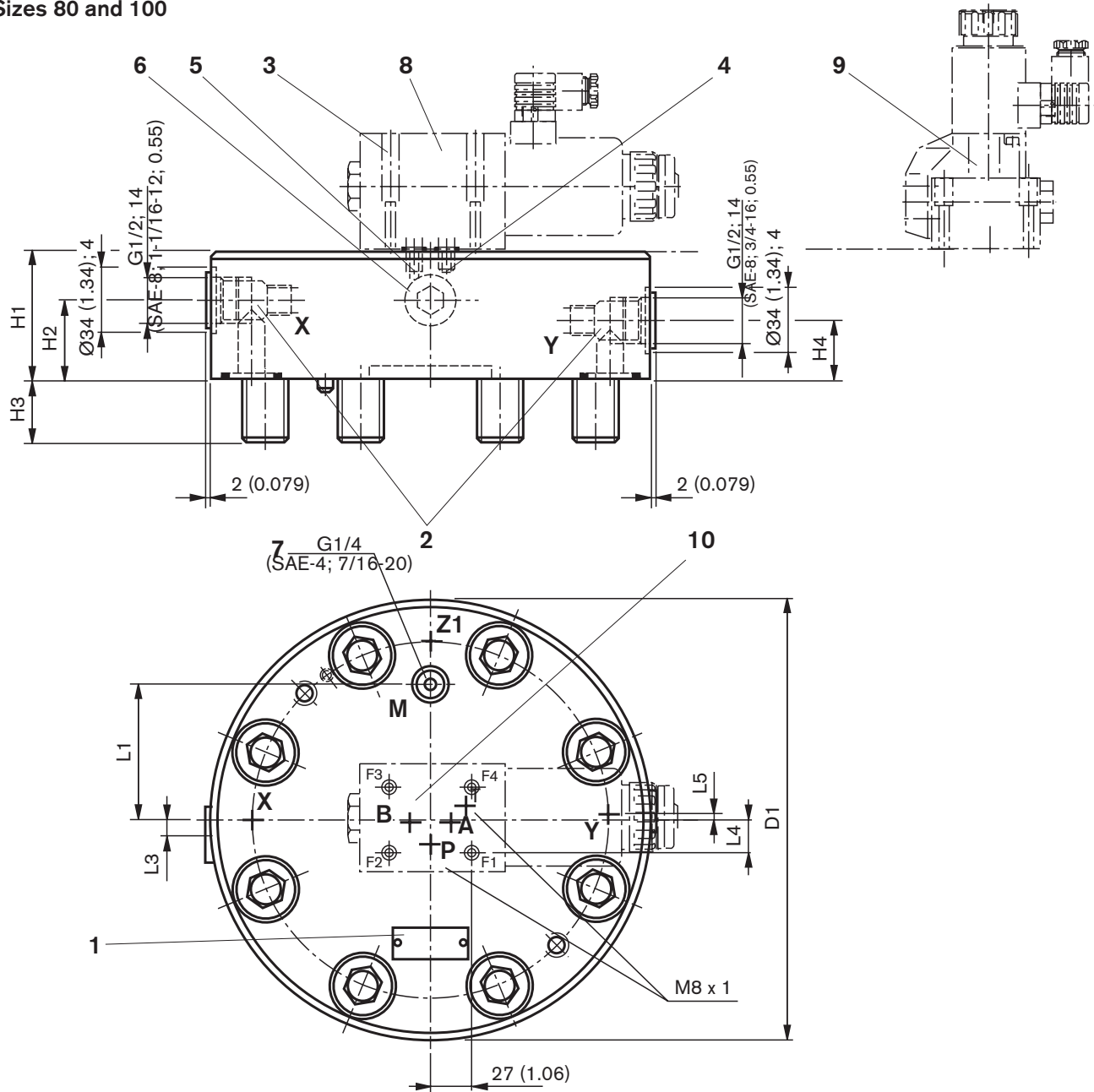
LFA . GWB...
sizes 80 and 100

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



Control cover for mounting a directional spool or poppet valve: Type ..GWA..., ..GWB... – nominal dimensions in mm (inches)

Sizes 80 and 100



- 1 Nameplate
- 2 Ports X and Y optionally as threaded connection
- 3 Valve fixing screws are included in the control cover's scope of supply
- 4 Plug screw M8 x 1 for type ..GWB..
- 5 Plug screw M8 x 1 for type ..GWA..
- 6 Shuttle valve
- 7 Measuring port
- 8 Directional spool valve type 4WE 10 D...
- 9 Directional poppet valve type M-3SEW 10 ...
- 10 Position of ports to ISO 4401-05-04-0-94

Size	80	100
D1	250 (9.84)	300 (11.80)
H1	80 (3.15)	100 (3.94)
H2	26 (1.02)	40 (1.58)
H3	45 (1.77)	52.5 (2.07)
H4	26 (1.02)	55 (2.17)
L1	74 (2.91)	96.5 (3.80)
L3	9.5 (0.37)	13 (0.51)
L4	17 (0.67)	18 (0.71)
L5	10.5 (0.41)	13 (0.51)

Control cover for mounting a directional spool or poppet valve: Type ..KWA..., ..KWB... –
nominal dimensions in mm (inches)

Sizes 16 to 50

						1	2	3	4	10	11	12	14	17
						LFA			- 7X /					
Size	Type	Nozzle in channel (Ø in 1/10 mm [0.004 in.])												
		A	B	P	X									
16	KWA	A**		P15 (0.59)	X15 (0.59)									
25	KWA	A**		P15 (0.59)	Ø2.0 (0.079)									
32	KWA	A**		P20 (0.79)	Ø2.5 (0.098)									
40	KWA	A**		P20 (0.79)	X30 (1.18)									
50	KWA	A**		P20 (0.79)	X30 (1.18)									
16	KWB		B**	P15 (0.59)	X15 (0.59)									
25	KWB		B**	P15 (0.59)	Ø2.0 (0.079)									
32	KWB		B**	P20 (0.79)	Ø2.5 (0.098)									
40	KWB		B**	P20 (0.79)	X30 (1.18)									
50	KWB		B**	P20 (0.79)	X30 (1.18)									

12 = SAE threaded external connections and UNC mounting bolts

- = Metric threaded connections

No code = NBR seals

V = FKM seals (Other seals on enquiry)

⚠ Caution!
Observe compatibility of seals with hydraulic fluid used!

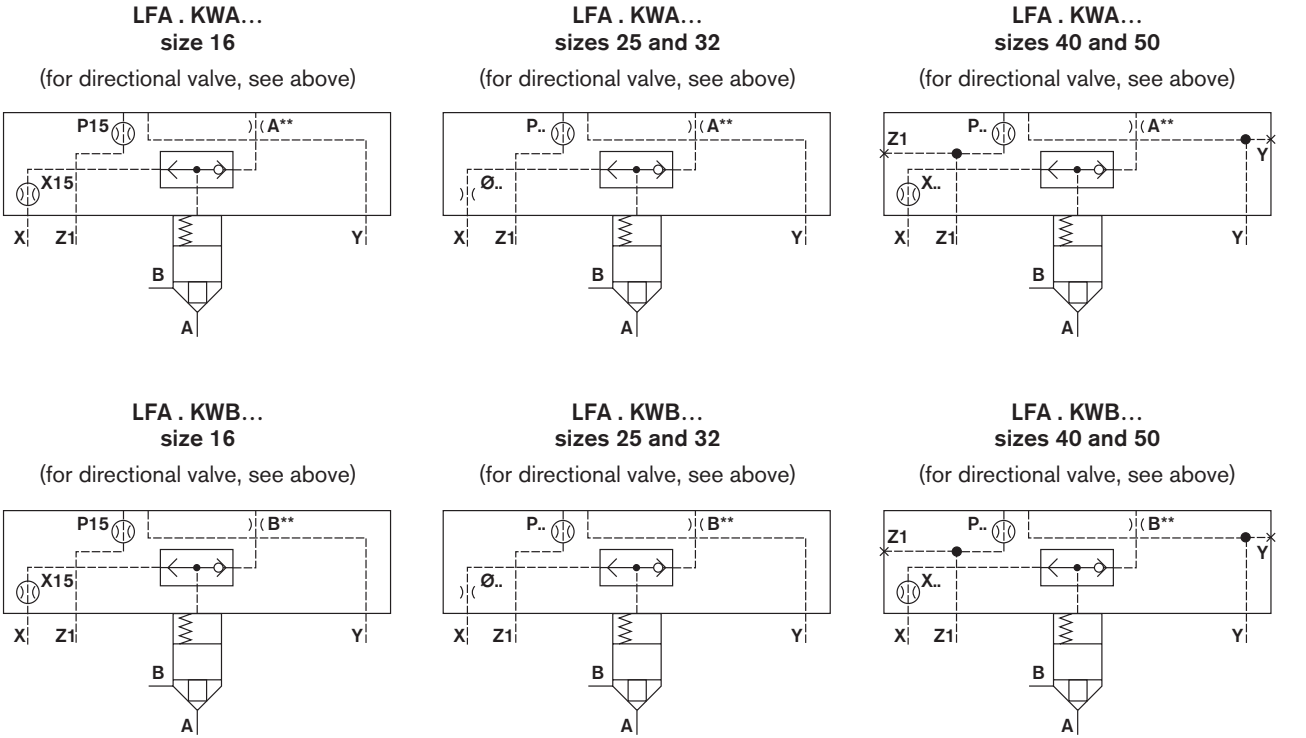
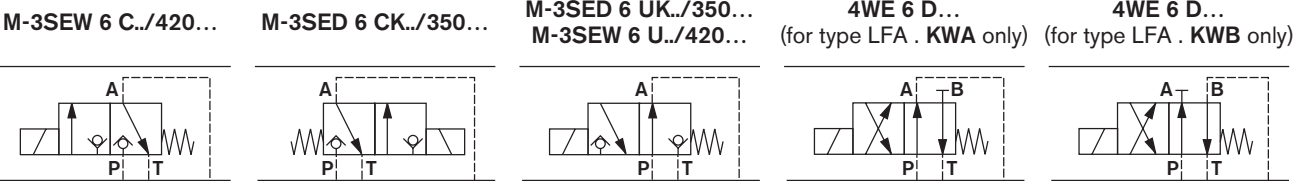
▲ Nozzle drilled (Ø in mm [0.004 in.]) ¹⁾

△ Standard nozzle (Ø in 1/10 mm [0.004 in.]) ¹⁾

△ Nozzle possible; indicate, if required (Ø in 1/10 mm [0.004 in.])

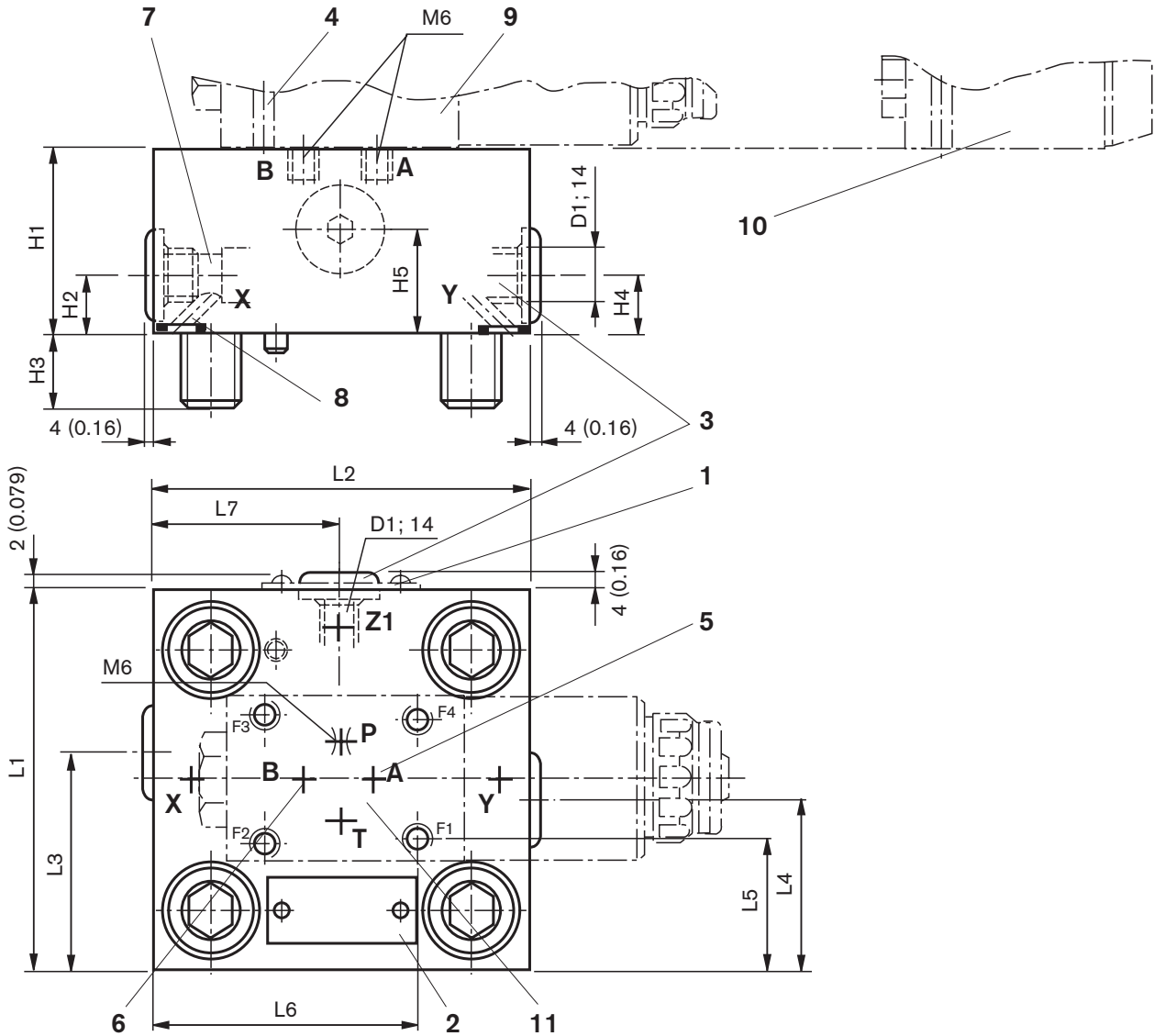
¹⁾ Not shown in the type designation

For ordering codes for nozzles, see page 14 and 15.



Control cover for mounting a directional spool or poppet valve: Type ..KWA..., ..KWB... – nominal dimensions in mm (inches)

Sizes 16 to 50



- 1 Nameplate for sizes 16, 25 and 32
- 2 Nameplate for sizes 40 and 50
- 3 Ports Y and Z1 optionally as threaded connection for sizes 40 and 50
- 4 Valve fixing screws are included in the control cover's scope of supply
- 5 Plug screw ..KWB...
- 6 Plug screw ..KWA...
- 7 Shuttle valve
- 8 M6 for sizes 16 and 40, M8 x 1 for size 50
- 9 Directional spool valve type 4WE 6 D...
- 10 Directional poppet valve type M-3SEW 6 ...
- 11 Position of ports to ISO 4401-03-02-0-94

Size	16	25	32	40	50
D1	—	—	—	G1/2 (SAE-8; 3/4-16)	G1/2 (SAE-8; 3/4-16)
H1	40 (1.57)	40 (1.57)	50 (1.97)	60 (2.36)	68 (2.68)
H2	17 (0.67)	17 (0.67)	21.5 (0.85)	30 (1.18)	32 (1.26)
H3	15 (0.59)	24 (0.95)	28 (1.10)	32 (1.26)	34 (1.34)
H4	—	—	—	30 (1.18)	32 (1.26)
H5	—	—	—	30 (1.18)	50 (1.97)
L1	65 (2.56)	85 (3.35)	100 (3.94)	125 (4.92)	140 (5.51)
L2	80 (3.15)	85 (3.35)	100 (3.94)	125 (4.92)	140 (5.51)
L3	36.5 (1.44)	45.5 (1.79)	50 (1.97)	62.5 (2.46)	72 (2.83)
L4	—	—	—	53 (2.09)	60 (2.36)
L5	17 (0.67)	27 (1.06)	34.5 (1.36)	47 (1.85)	54.5 (2.15)
L6	47.5 (1.87)	64 (2.52)	71.5 (2.81)	84 (3.31)	91.5 (3.60)
L7	—	—	—	62.5 (2.46)	70 (2.76)

Control cover for mounting a directional spool or poppet valve: Type ..KWA..., ..KWB... –
nominal dimensions in mm (inches)

Size 63

1

2

3

4

10

11

12

14

17

LFA63-7X/

Type	Nozzle in channel ($\varnothing$ in 1/10 mm [0.004 in.])			
	A	B	P	X
KWA	A**		P25	X**
KWB		B**	P25	X**

Standard nozzle ($\varnothing$ in 1/10 mm [0.004 in.]) – is not shown in the type designation

Nozzle possible; indicate, if required ($\varnothing$ in 1/10 mm [0.04 in.])

For ordering codes for nozzles, see pages 14 and 15.

12 = SAE threaded external connections and UNC mounting bolts

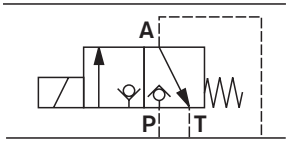
- = Metric threaded connections

No code = NBR seals

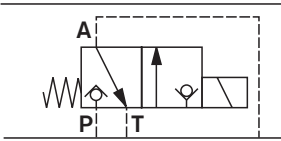
V = FKM seals
(Other seals on enquiry)

⚠ Caution!
Observe compatibility of seals with hydraulic fluid used!

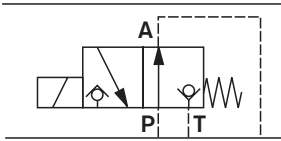
M-3SEW 10 C../420...



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

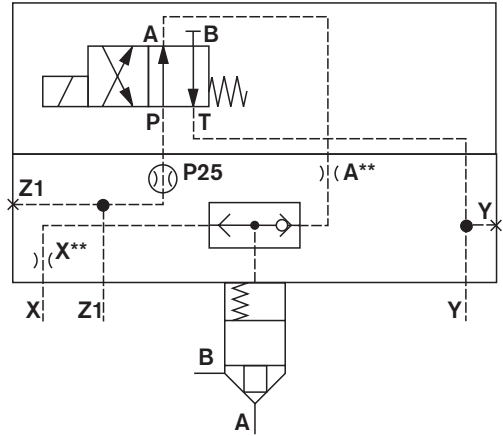


M-3SED 10 UK../350...
M-3SEW 10 U../420...



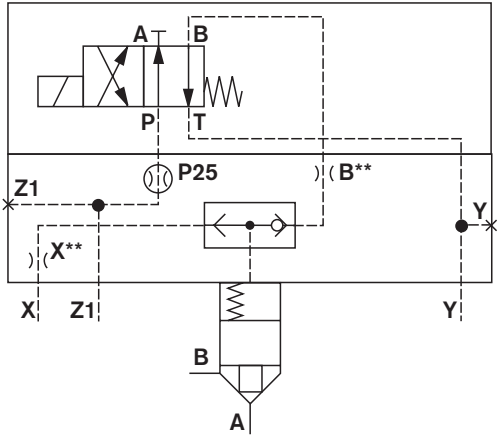
LFA 63 KWA...

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



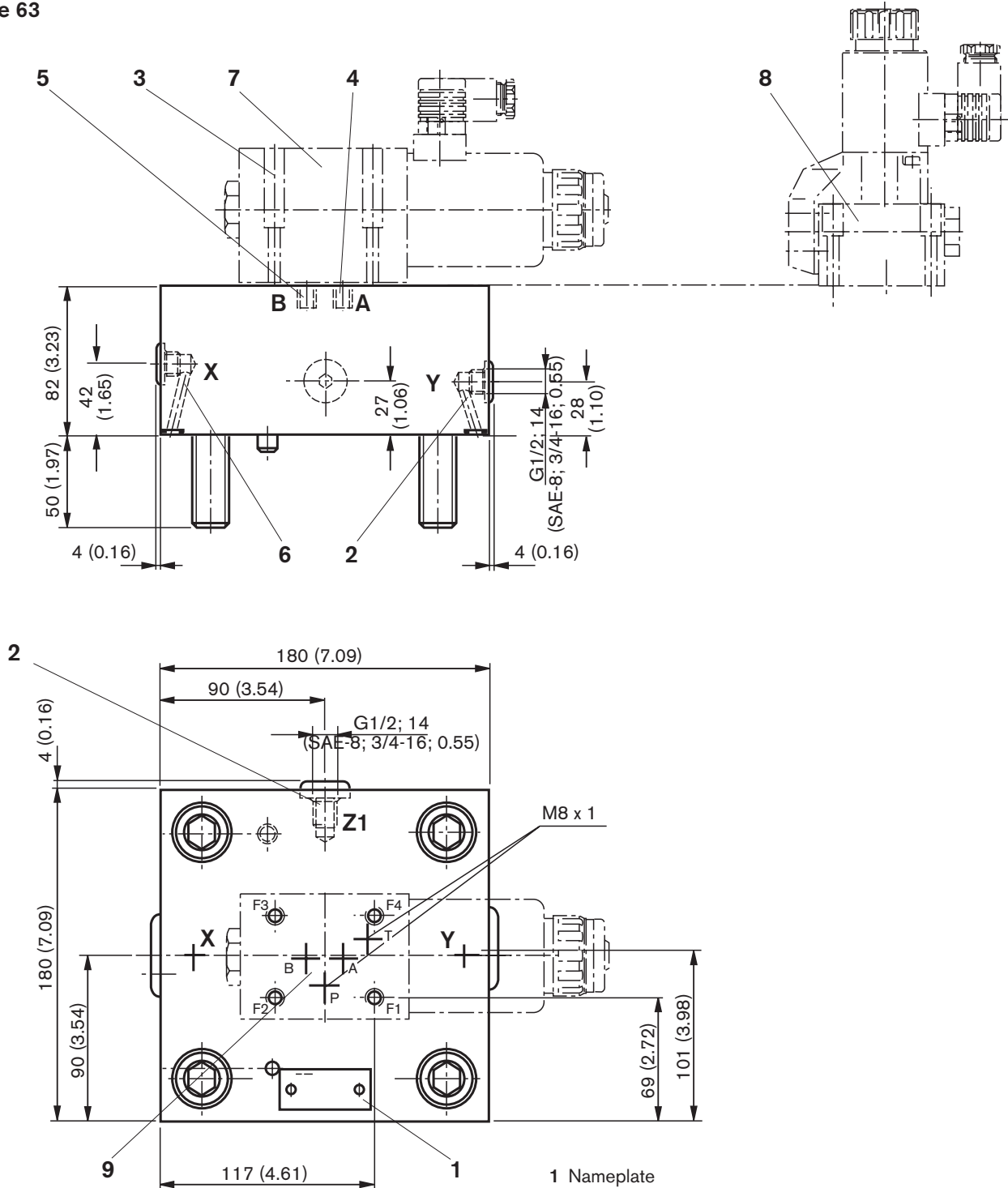
LFA 63 KWB...

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



Control cover for mounting a directional spool or poppet valve: Type ..KWA..., ..KWB... – nominal dimensions in mm (inches)

Size 63



Control cover for mounting a directional spool or poppet valve: Type ..KWA..., ..KWB... – nominal dimensions in mm (inches)

Sizes 80 and 100

Size		Type	Nozzle in channel (Ø in 1/10 mm [0.004 in.])				
80	100		A	B	P	T	X
x	x	KWA	A**		P25	T**	X20
x	x	KWB		B**	P25	T**	X20

- △ Standard nozzle – is not shown in the type designation
△ Nozzle possible; indicate, if required

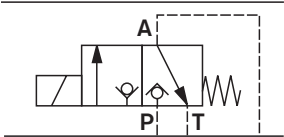
For ordering codes for nozzles, see page 14 and 15.

12 = SAE threaded external connections
and UNC mounting bolts
- = Metric threaded connections

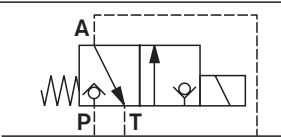
No code = NBR seals
V = FKM seals
(Other seals on enquiry)

⚠ Caution!
Observe compatibility of seals with
hydraulic fluid used!

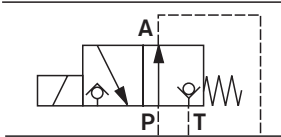
M-3SEW 10 C../420...



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

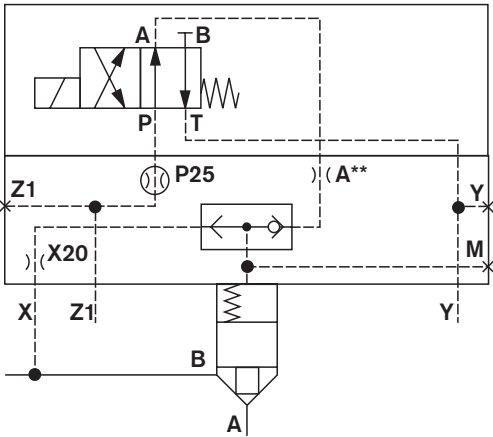


**M-3SED 10 UK../350...
M-3SEW 10 U../420...**



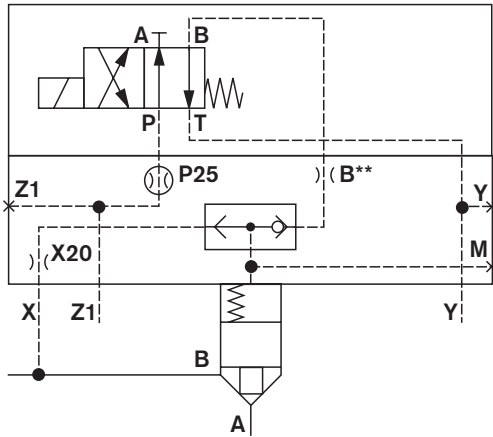
**LFA . KWA...
sizes 80 and 100**

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



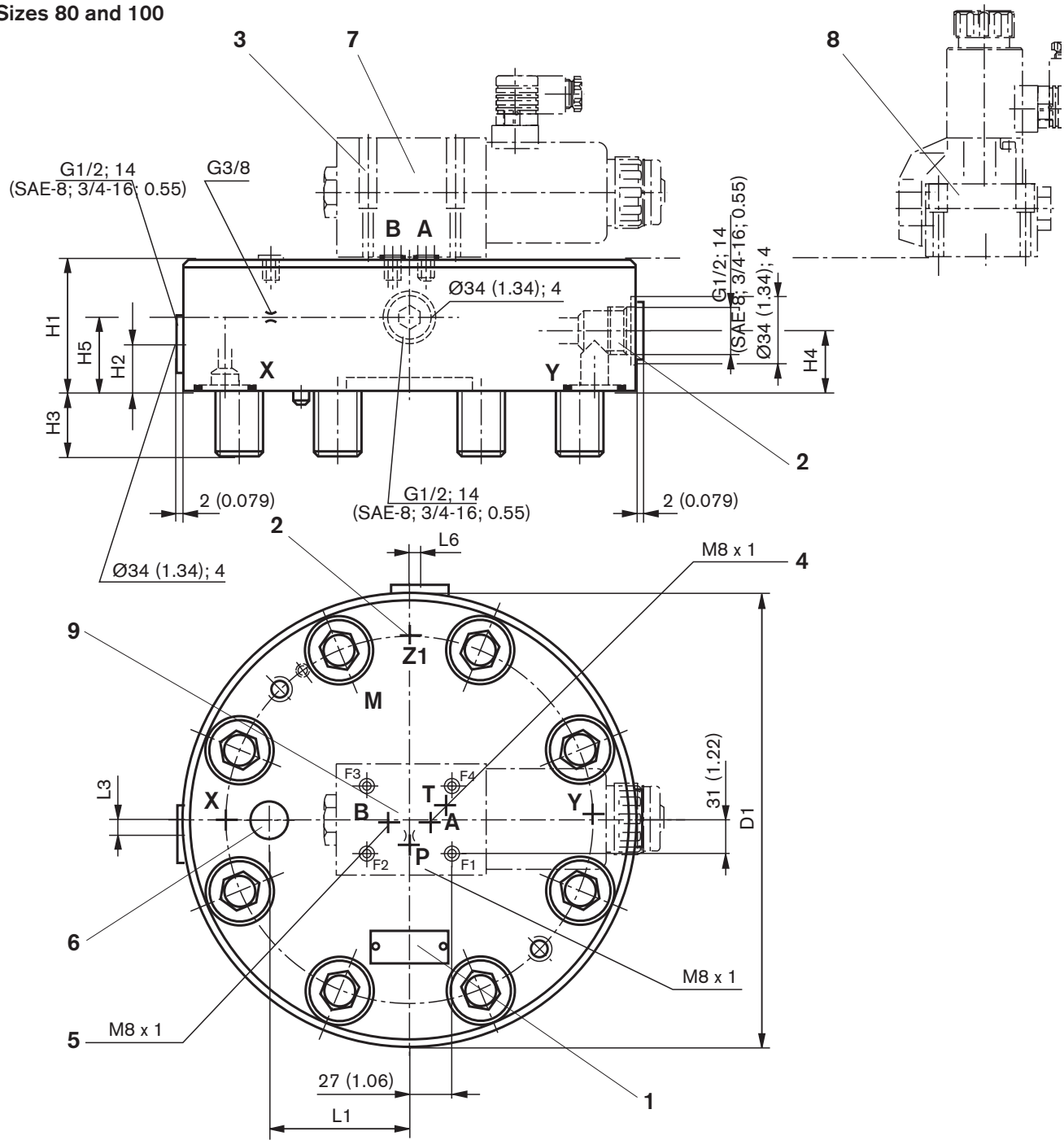
**LFA . KWB...
sizes 80 and 100**

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



Control cover for mounting a directional spool or poppet valve: Type ..KWA..., ..KWB... – nominal dimensions in mm (inches)

Sizes 80 and 100



- 1 Nameplate
- 2 Ports Y and Z1 optionally as threaded connection
- 3 Valve fixing screws are included in the control cover's scope of supply
- 4 Plug screw ..KWB...
- 5 Plug screw ..KWA...
- 6 Shuttle valve
- 7 Directional spool valve type 4WE 10 D...
- 8 Directional poppet valve type M-3SEW 10 ...
- 9 Position of ports to ISO 4401-05-04-0-94

Size	80	100
D1	250 (9.84)	300 (11.80)
H1	100 (3.94)	110 (4.33)
H2	19.5 (0.77)	27 (1.06)
H3	45 (1.77)	52.5 (2.07)
H4	60 (2.36)	70 (2.76)
H5	52 (2.05)	62 (2.17)
L1	55 (2.17)	62 (2.17)
L3	6.5 (0.26)	5 (0.20)
L6	6.5 (0.26)	2 (0.079)

Control cover with electrical monitor of the closed position: Type ..E... (monitoring of the closed position)– nominal dimensions in mm (inches)

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

The contact-free position switch with integrated amplifier switches after having reached the switching position. This position switch offers the following advantages:

- No dynamic seals
- Direct monitoring of the closed position of the valve
- Long service life
- **Control cover and cartridge valve included completely in this type**
- p_{max} = 400 bar (5800 PSI)

Position switch
For connection, functions, pin assignment, see page 66.

⚠ Caution!
Outputs of the position switch protected only from load short-circuit.
Prevent short-circuit of the outputs against +24 V.

Sizes 16 to 63

1

2

3

4

5

6

7

8

9

14

17

LFA

E - 7X /

D

QMG24

F

Size

16

25

32

40

50

63

x

x

x

x

x

x

Area ratio A1: A2

CA = 2:1 ¹⁾

CB = 14.3:1 ²⁾

Cracking pressure p₀

10 = 1.0 bar (0.039 PSI)

20 = 2.0 bar (0.079 PSI)

40 = 4.0 bar (0.157 PSI)

Nozzle in channel (Ø in 1/10 mm [0.004 in.])

X**

No code = V =

NBR seals

FKM seals

(Other seals on enquiry)

⚠ **Caution!**

Observe compatibility of seals with hydraulic fluid used!

⚠ Nozzle possible; indicate, if required

QM = Inductive position switch, see page 66

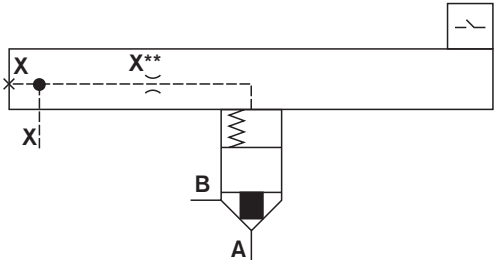
G24 = 24 V DC voltage

For ordering codes for nozzles, see page 14 and 15.

¹⁾ Annulus area = 50% (standard version)

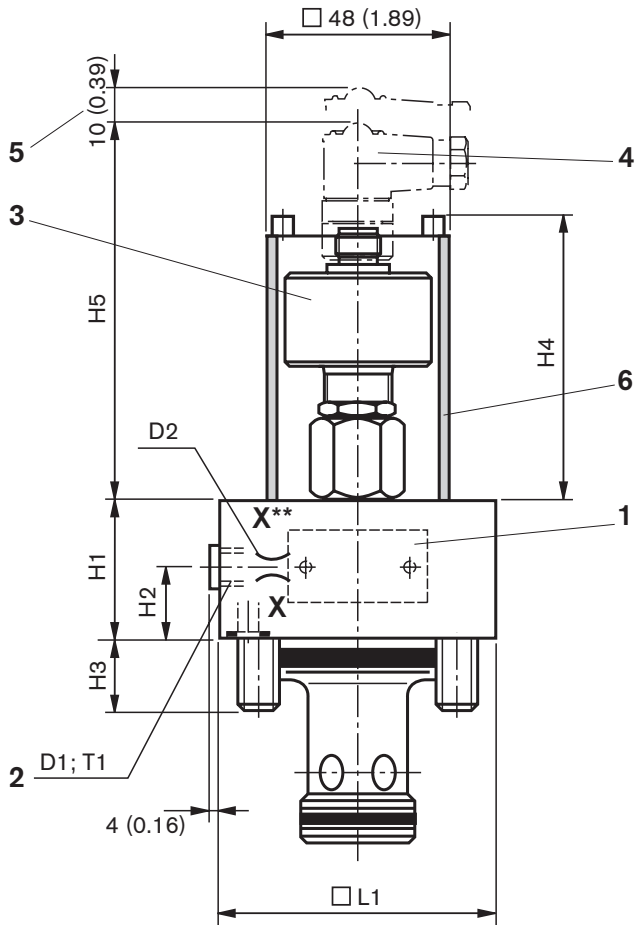
²⁾ Annulus area = 7%

LFA . E...
sizes 16 to 63



Control cover with electrical monitor of the closed position: Type ..E... (monitoring of the closed position) – nominal dimensions in mm (inches)

Sizes 16 to 63



Size	16	25	32	40	50	63
D1	G1/8 (SAE-2)	G1/4 (SAE-4; 7/16-20)	G1/4 (SAE-4; 7/16-20)	G1/2 (SAE-8; 3/4-16)	G1/2 (SAE-8; 3/4-16)	G3/4 (SAE-12; 1-1/16-12)
D2	M6	M6	M6	M8 x 1	M8 x 1	M8 x 1
H1	50 (1.97)	50 (1.97)	70 (2.76)	110 (4.33)	120 (4.72)	150 (5.91)
H2	12 (0.47)	16 (0.63)	16 (0.63)	83 (3.27)	93 (3.66)	113 (4.45)
H3	15 (0.59)	24 (0.95)	28 (1.10)	32 (1.26)	34 (1.34)	50 (1.97)
H4	78 (3.07)	78 (3.07)	78 (3.07)	98 (3.86)	98 (3.86)	98 (3.86)
H5	105 (4.13)	105 (4.13)	105 (4.13)	123 (4.84)	123 (4.84)	123 (4.84)
□ L1	65 (2.56)	85 (3.35)	100 (3.94)	125 (4.92)	140 (5.51)	180 (7.09)
T1	8 (0.32)	12 (0.47)	12 (0.47)	14 (0.55)	14 (0.55)	16 (0.63)

- 1 Nameplate
- 2 Port X optionally as threaded connection
- 3 Position switch type QM (included in the type, see page 66)
- 4 Cable socket Z24 (separate order, see page 66)
- 5 Space required to remove cable socket
- 6 Protective cap

Control cover with electrical monitor of the closed position and stroke limiter: Type ..EH2...
(monitoring of the closed position) – nominal dimensions in mm (inches)

Sizes 16 to 40

1	2	3	4	5	6	7	8	9	14	17
LFA		EH2 – 7X /			D	QMG24	F			
Size				Area ratio A1: A2		Cracking pressure p ₀		Nozzle in channel (Ø in 1/10 mm [0.004 in.])		
16	25	32	40	CA = 2:1 ¹⁾		10 = 1.0 bar (0.039 PSI)		X**		
x	x	x	x	CB = 14.3:1 ²⁾		20 = 2.0 bar (0.079 PSI)				
						40 = 4.0 bar (0.157 PSI)				

No code =
V =

NBR seals
FKM seals
(Other seals on enquiry)

⚠ Caution!
Observe compatibility of seals with hydraulic fluid used!

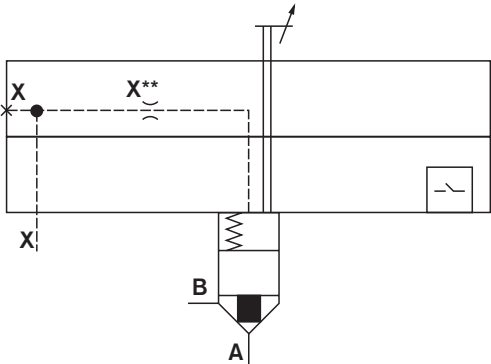
⚠ Nozzle possible; indicate, if required

QM = Inductive position switch, see page 66
G24 = 24 V DC voltage

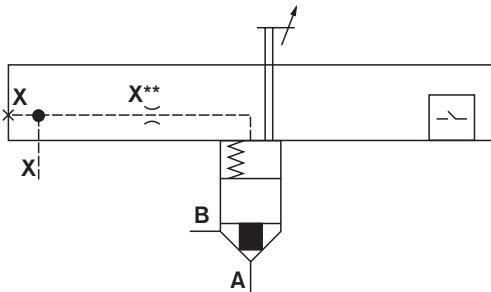
For ordering codes for nozzles, see page 14 and 15.

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

LFA . EH2...
sizes 16 and 32

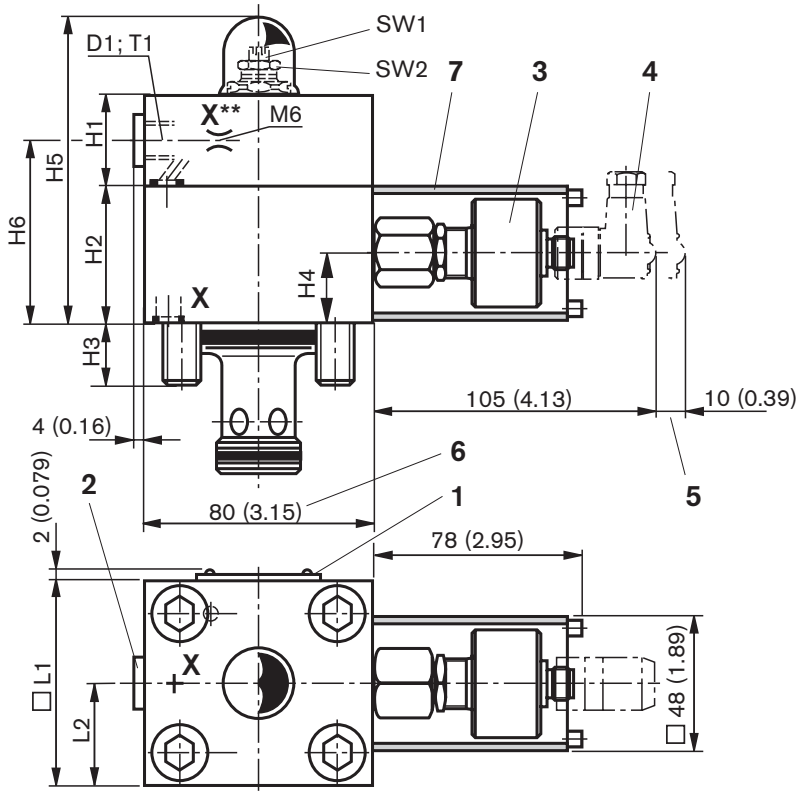


LFA . EH2...
size 40

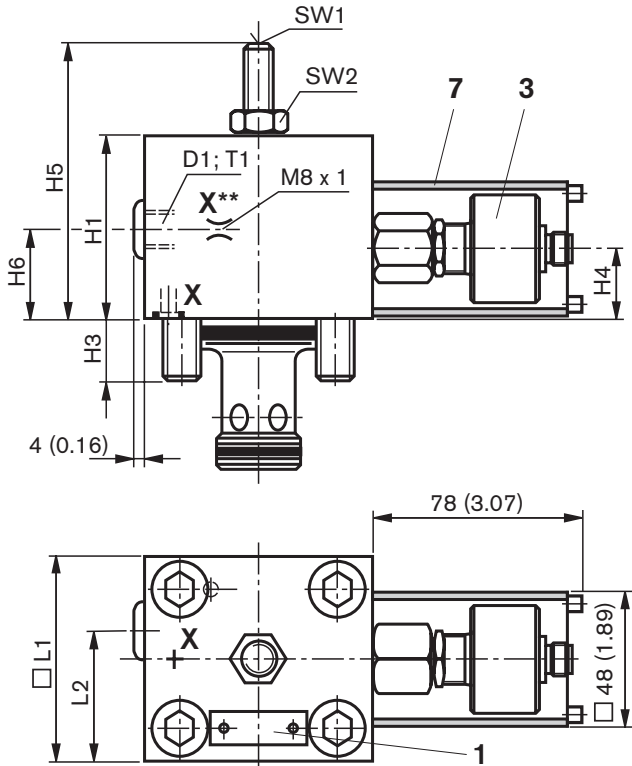


Control cover with electrical monitor of the closed position and stroke limiter: Type ..EH2...
(monitoring of the closed position) – nominal dimensions in mm (inches)

Sizes 16 to 32



Size 40



Size	16	25	32	40
D1	G1/8 (SAE-2)	G1/4 (SAE-4; 7/16-20)	G1/4 (SAE-4; 7/16-20)	G1/2 (SAE-8; 3/4-16)
H1	35 (1.38)	40 (1.58)	50 (1.97)	182 (7.17)
H2	50 (1.97)	50 (1.97)	50 (1.97)	—
H3	15 (0.59)	24 (0.95)	28 (1.10)	32 (1.26)
H4	25 (0.98)	25 (0.98)	25 (0.98)	25 (0.98)
H5	126 (4.96)	130 (5.12)	150 (5.91) ³⁾	233 (9.17) ³⁾
H6	62 (2.44)	66 (2.60)	66 (2.60)	88 (3.46)
□ L1	65 (2.56)	85 (3.35)	100 (3.94)	125 (4.92)
L2	32.5 (1.28)	42.5 (1.67)	50 (1.97)	62.5 (2.46)
T1	8 (0.32)	12 (0.47)	12 (0.47)	14 (0.55)
A/F1	6 (0.24)	6 (0.24)	10 (0.39)	14 (0.55)
A/F2	21 (0.83)	21 (0.83)	27 (1.06)	46 (1.81)

³⁾ Maximum dimension

- 1 Nameplate
- 2 Port X optionally as threaded connection
- 3 Position switch type QM
(included in type, see page 66)
- 4 Cable socket Z24
(separate order, see page 66)
- 5 Space required to remove cable socket
- 6 For size 16 (lower cover only)
- 7 Protective cap

Control cover with electrical monitor of the closed position for mounting a directional spool or poppet valve: Type ..EWA..., ..EWB... (monitoring of the closed position) – dimensions in mm (inches)

Sizes 16 to 32

1

2

3

4

5

6

7

8

10

11

12

13

17

LFA

- 7X /

DQMG24

Size			Type
16	25	32	
x	x	x	EWA
x	x	x	EWB

Area ratio A1: A2	
CA = 2:1 ¹⁾	
CB = 14.3:1 ²⁾	

Cracking pressure p ₀	
10 = 1.0 bar (0.039 PSI)	
20 = 2.0 bar (0.079 PSI)	
40 = 4.0 bar (0.157 PSI)	

Nozzle in channel (Ø in 1/10 mm [0.004 in.])			
A	B	P	T
A**		P**	T**
	B**	P**	T**

No code = V =

NBR seals
FKM seals
(Other seals on enquiry)

⚠ Caution!
Observe compatibility of seals with hydraulic fluid used!

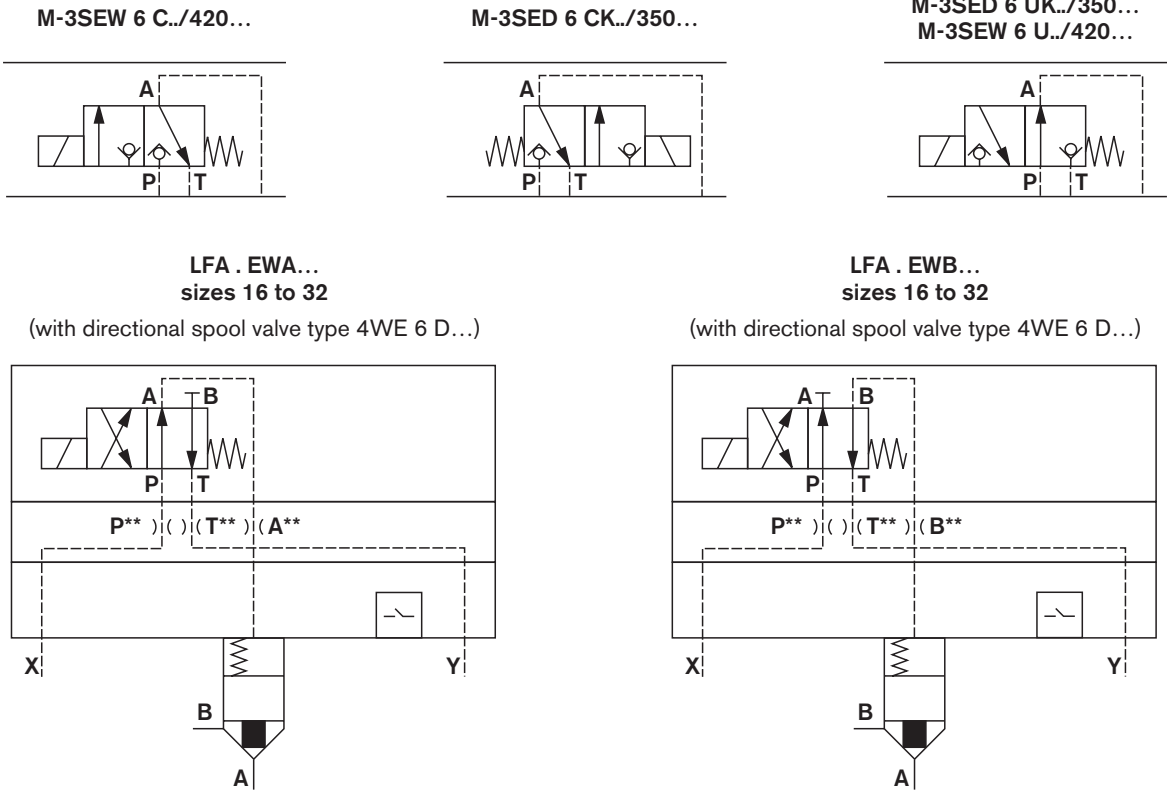
⚠ Nozzle possible; indicate, if required

QM = Inductive position switch, see page 66

G24 = 24 V DC voltage

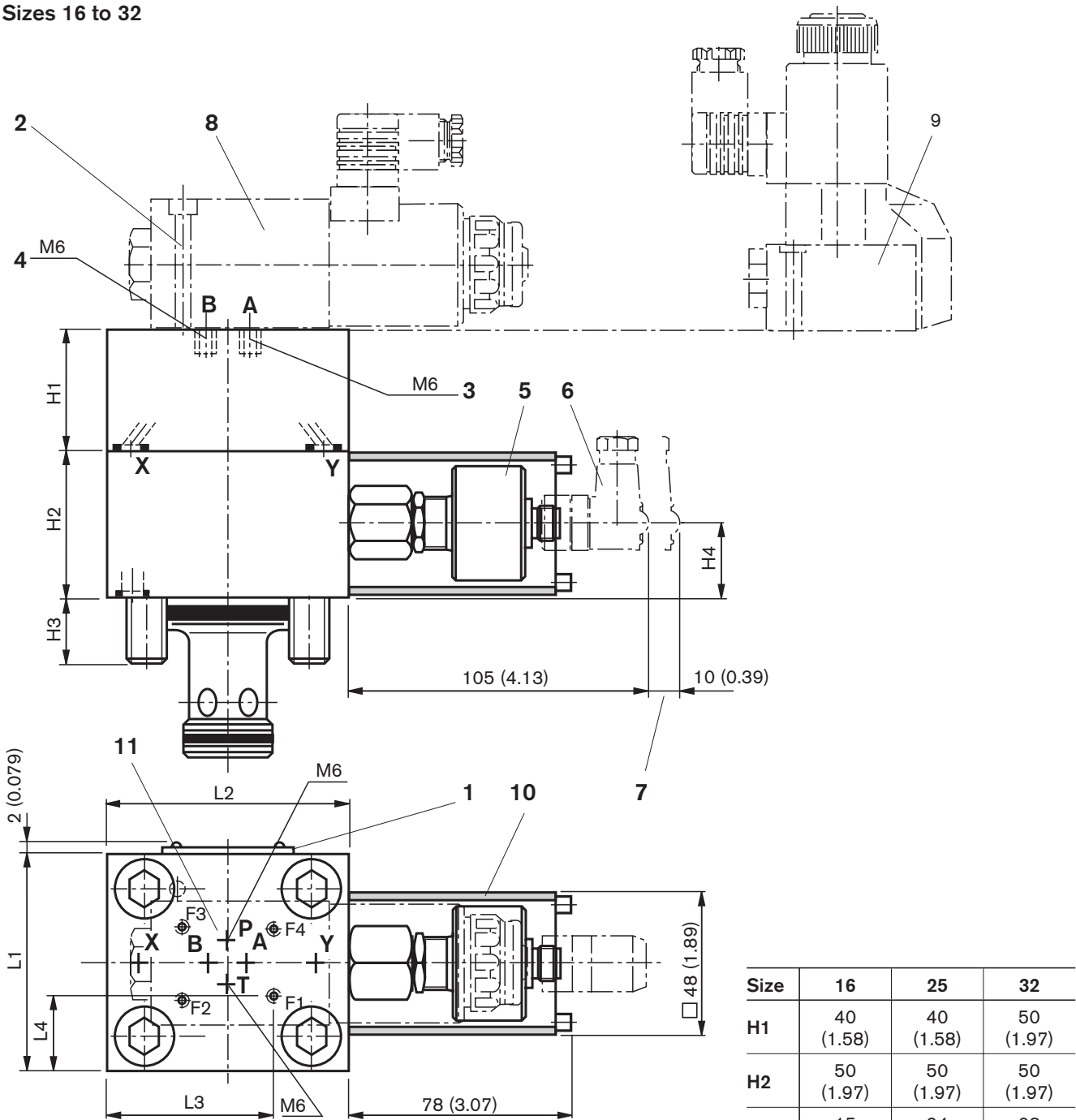
For ordering codes for nozzles, see page 14 and 15.

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



Control cover with electrical monitor of the closed position for mounting a directional spool or poppet valve: Type ..EWA..., ..EWB... (monitoring of the closed position): dimensions in mm (inches)

Sizes 16 to 32



- 1 Nameplate

2 Valve fixing screws are included in the control cover's scope of supply

3 Plug screw M6 for type ..EWB...

4 Plug screw M6 for type ..EWA...

5 Position switch type QM (included in type, see page 66)
- 6 Cable socket Z24 (separate order, see page 66)

7 Space required to remove cable socket

8 Directional spool valve type 4WE 6 D...

9 Directional poppet valve type M-3SEW 6 ...

10 Protective cap

11 Position of ports to ISO 4401-03-02-0-94

Size	16	25	32
H1	40 (1.58)	40 (1.58)	50 (1.97)
H2	50 (1.97)	50 (1.97)	50 (1.97)
H3	15 (0.59)	24 (0.95)	28 (1.10)
H4	25 (0.98)	25 (0.98)	25 (0.98)
L1	65 (2.56)	85 (3.35)	100 (3.94)
L2	80 (3.15)	85 (3.35)	100 (3.94)
L3	47.5 (1.87)	64 (2.52)	71.5 (2.81)
L4	17.25 (0.68)	27.25 (1.08)	34.75 (1.37)

Control cover with electrical monitor of the closed position for mounting a directional spool or poppet valve: Type ..EWA..., ..EWB... (monitoring of the closed position) – dimensions in mm (inches)

Sizes 40 and 50

1

2

3

4

5

6

7

8

10

11

12

13

17

LFA

- 7X /

DQMG24

Size		Type
40	50	
x	x	EWA
x	x	EWB

Area ratio A1: A2	
CA = 2:1 ¹⁾	
CB = 14.3:1 ²⁾	

Cracking pressure p ₀	
10 = 1.0 bar (0.039 PSI)	
20 = 2.0 bar (0.079 PSI)	
40 = 4.0 bar (0.157 PSI)	

Nozzle in channel
(Ø in 1/10 mm [0.004 in.])

A	B	P	T
A**		P**	T**
	B**	P**	T**

No code =
V =

NBR seals
FKM seals
(Other seals on enquiry)

⚠ Caution!
Observe compatibility of seals with hydraulic fluid used!

⚠ Nozzle possible; indicate, if required

QM = Inductive position switch, see page 66

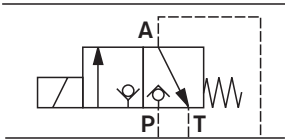
G24 = 24 V DC voltage

For ordering codes for nozzles, see page 14 and 15.

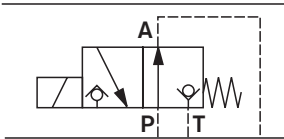
¹⁾ Annulus area = 50% (standard version)

²⁾ Annulus area = 7%

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

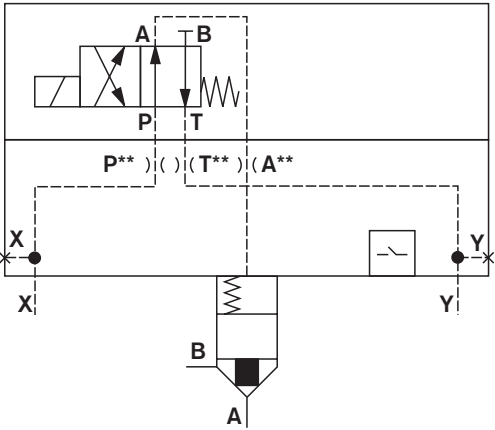


M-3SED 6 UK../350...
M-3SEW 6 U../420...



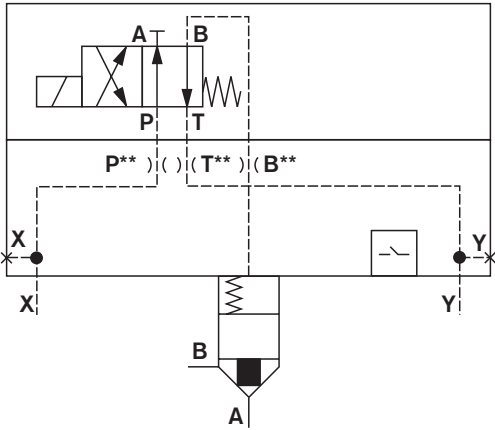
LFA . EWA...
sizes 40 and 50

(with directional spool valve type 4WE 6 D...)



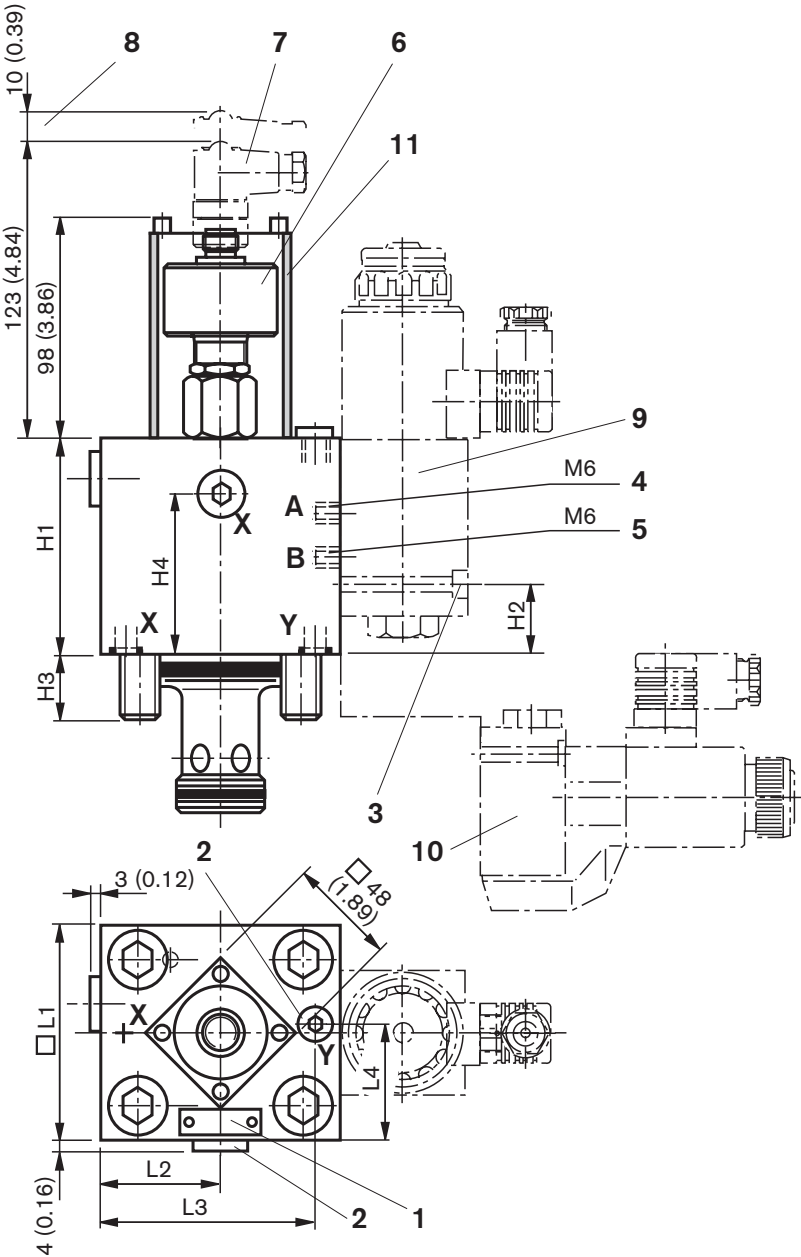
LFA . EWB...
sizes 40 and 50

(with directional spool valve type 4WE 6 D...)



Control cover with electrical monitor of the closed position for mounting a directional spool or poppet valve: Type ..EWA..., ..EWB... (monitoring of the closed position) – dimensions in mm (inches)

Sizes 40 and 50



- 1 Nameplate
- 2 Ports X and Y optionally as threaded connection G1/4
- 3 Valve fixing screws are included in the control cover's scope of supply
- 4 Plug screw M6 for ..EWB...
- 5 Plug screw M6 for ..EWA...
- 6 Position switch type QM (included in type, see page 66)
- 7 Cable socket Z24 (separate order, see page 66)
- 8 Space required to remove cable socket
- 9 Directional spool valve type 4WE 6 D...
- 10 Directional poppet valve type M-3SEW 6 ...
- 11 Protective cap

Size	40	50
H1	110 (4.33)	120 (4.72)
H2	58.5 (2.30)	68 (2.68)
H3	32 (1.26)	34 (1.34)
H4	77.5 (3.06)	87 (3.43)
□ L1	125 (4.92)	140 (5.51)
L2	62.5 (2.46)	70 (2.76)
L3	98.5 (3.88)	113 (4.45)
L4	66.5 (2.62)	70 (2.76)

Control cover with electrical monitor of the closed position for mounting a directional spool or poppet valve: Type ..EWA..., ..EWB... (monitoring of the closed position) – dimension in mm (inches)

Size 63

1

2

3

4

5

6

7

8

10

11

12

13

17

LFA

- 7X /

DQMG24

Type

EWA

EWB

Area ratio A1: A2

CA = 2:1 ¹⁾

CB = 14.3:1 ²⁾

Cracking pressure p₀

10 = 1.0 bar (0.039 PSI)

20 = 2.0 bar (0.079 PSI)

40 = 4.0 bar (0.157 PSI)

Nozzle in channel (Ø in 1/10 mm [0.004 in.])

A	B	P	T
A**		P**	T**
	B**	P**	T**

No code =
V =

NBR seals
FKM seals
(Other seals on enquiry)

⚠ Caution!
Observe compatibility of seals with hydraulic fluid used!

⚠ Nozzle possible; indicate, if required

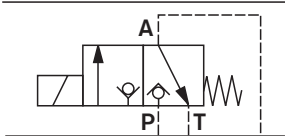
QM = Inductive position switch, see page 66

G24 = 24 V DC voltage

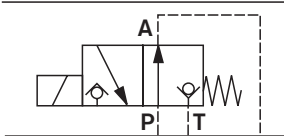
For ordering codes for nozzles, see page 14 and 15.

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

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

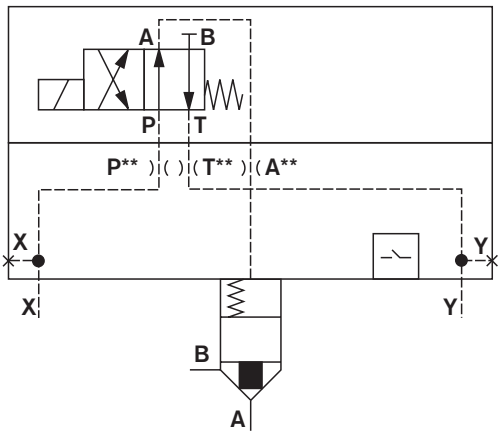


M-3SED 10 UK../350...
M-3SEW 10 U../420...



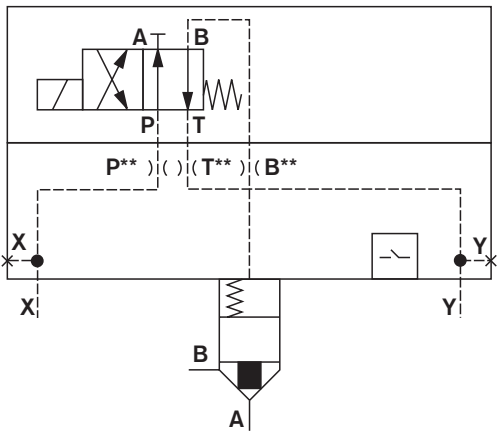
LFA 63 EWA...

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



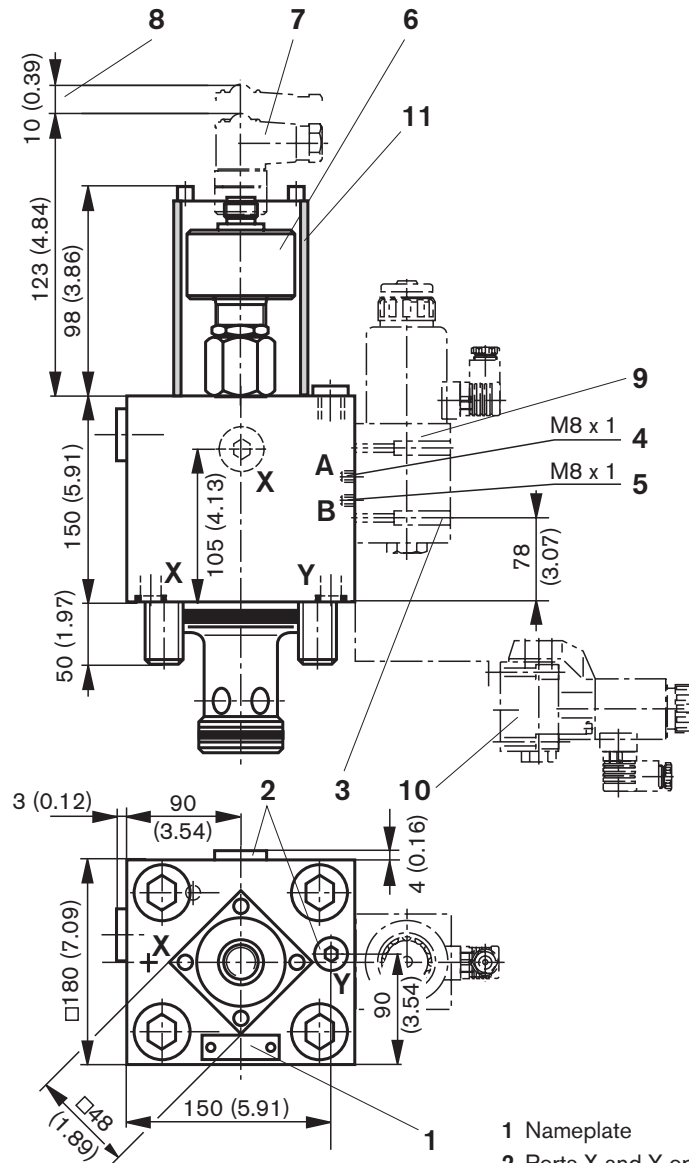
LFA 63 EWB...

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



Control cover with electrical monitor of the closed position for mounting a directional spool or poppet valve: Type ..EWA..., ..EWB... (monitoring of the closed position): dimensions in mm (inches)

Size 63



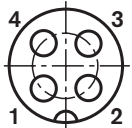
- 1 Nameplate
- 2 Ports X and Y optionally as threaded connection G1/2
- 3 Valve fixing screws are included in the control cover's scope of supply
- 4 Plug screw M8 x 1 for ..EWB...
- 5 Plug screw M8 x 1 for ..EWA...
- 6 Position switch type QM (included in type, see page 66)
- 7 Cable socket Z24 (separate order, see page 66)
- 8 Space required to remove cable socket
- 9 Directional spool valve type 4WE 10 D...
- 10 Directional poppet valve type M-3SEW 10 ...
- 11 Protective cap

Inductive position switch type QM, electrical connection

The electrical connection is made by means of a 4-pin cable socket with threaded connection M12 x 1.

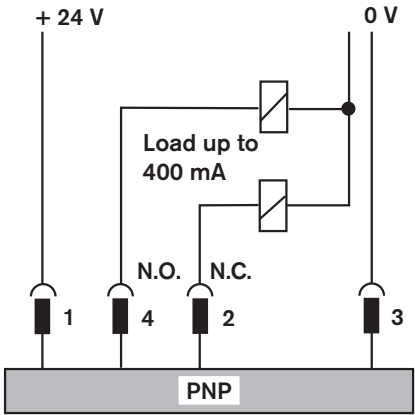
The cable socket must be ordered separately (see below).

Operating voltage	24 V DC voltage $\begin{matrix} + 20 \% \\ - 10 \% \end{matrix}$ (Residual ripple content < 10%)
Current consumption:	Maximum 40 mA
Load-carrying capacity of outputs :	400 mA (output to PNP 24 V $\Rightarrow$)
Temperature range:	-20° C to +80° C (-4 to +176 °C)
Pin assignment:	1: +24V



Plug-in contacts on position switch

- 2: Normally-closed (low-resistance—high-resistance)
- 3: 0 V
- 4: Normally-open (high-resistance—low-resistance)



Inductive position switch type QM can be a normally-closed or normally-open contact.

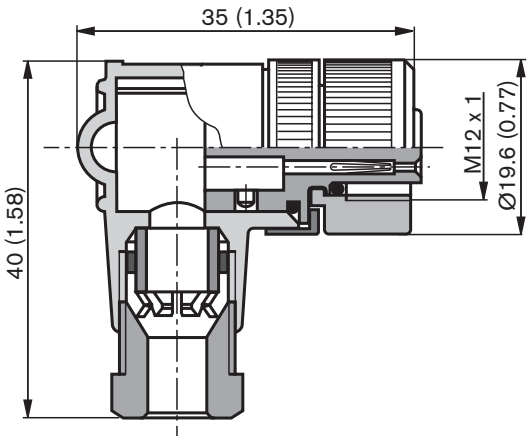
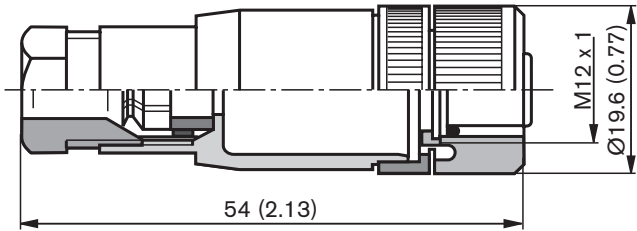
Caution!

The position switch is not provided with a protective conductor connection!

Cable socket for inductive position switch type QM, separate order – nominal dimensions in mm (in.)

Cable socket Z24, 4-pin, M12 x 1 with threaded connection, cable gland Pg 9.

Material no. **R900031155**

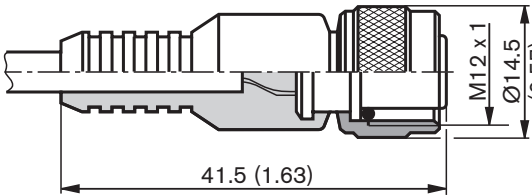


Cable socket Z24-3m, 4-pin, M12 x 1 with moulded-on PVC cable, 3m (9.8 ft.) long.

Cable cross-section: 4 x 0.34 mm² (0.013 in²)

- Wire identification:
- 1: brown
 - 2: white
 - 3: blue
 - 4: black

Material no. **R900064381**



Cable socket Z24 – angled, 4-pin, M12 x 1 with threaded connection, cable gland Pg 9, angled.

Housing can be rotated through 4 x 90° in relation to the contact insert.

Material no. **R900082899**

Notes

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