

# 2-way cartridge valves-pressure functions

## Cartridge valves type LC...

### Control covers type LFA...

Nominal size 16 to 100

Series 6X; 7X

Maximum operating pressure 420 bar

Maximum flow 7000 L/min



H/A/D 5593

Cartridge valve type LC 25 DB40E-7X  
Control cover with manual pressure adjustment, electrical unloading type LFA 25 DBW2-7X/315 with built-on directional valve.

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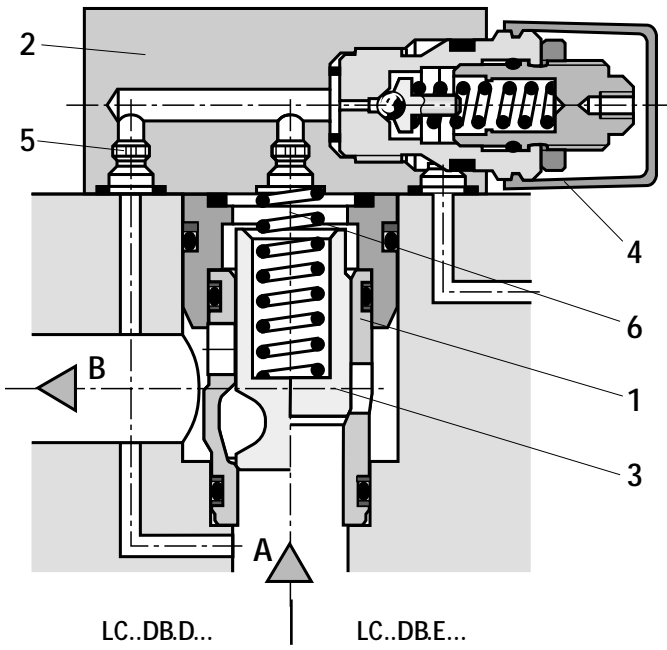
# Function, section, symbols

## General

The 2-way cartridge valves for pressure control functions are pilot operated poppet or spool valves. The main component designed as a cartridge valve (1) is inserted in a cavity bore standardised to DIN ISO 7368 and is sealed by control cover (2).

The pilot valve (4) for either manual or electrical proportional pressure control is integrated into the control cover (2) or mounted onto the control cover as a pilot valve with interface connections to DIN 24 340 (2).

By combining the cartridge valve with the control covers different pressure functions can be realised.

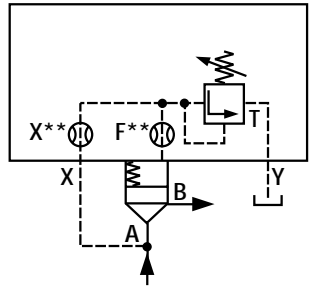


## Pressure relief function

**Control cover type LFA..DB..**

**Cartridge valve type LC..DB..**

The cartridge valve (1) for the pressure relief function (type LC . DB . . .) is a poppet valve without an area differential (no effective area at port B). The pressure acting at port A is fed via the pilot oil supply orifice (5) to the spring side (6) of the element. At pressures below the setting of pilot valve (4) the forces on spool (3) are balanced and the spool remains closed due to the spring force. On reaching the set pressure, spool (3) opens and limits the pressure at port A in line with the pressure-flow characteristics.



Type LFA..DB...  
Type LC..DB...

## Pressure reducing function

**a) Normally open: Control cover type LFA..DB..**

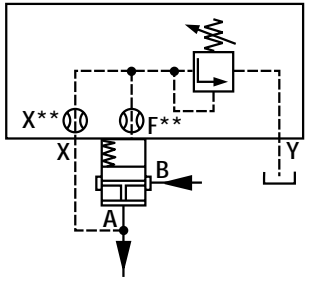
**Cartridge valve type LC..DR...**

The cartridge valve for the pressure reducing function is a spool valve without an area differential (no effective area at port B).

The same types of cover are used as pilot valves as are used for the pressure relief functions (type LFA..D...).

The pressure acting at port A is fed to the spring side of the spool via the pilot oil supply orifice. Below the performance limit and pressure set at the pilot valve, the spool is pressure balanced and is held open by the spring force, so that oil is free to flow from port B to port A.

On reaching the set pressure, the spool closes and reduces the pressure at port a in line with the pressure-flow characteristics.



e.g.  
Type LFA..DB...  
Type LC..DR40...

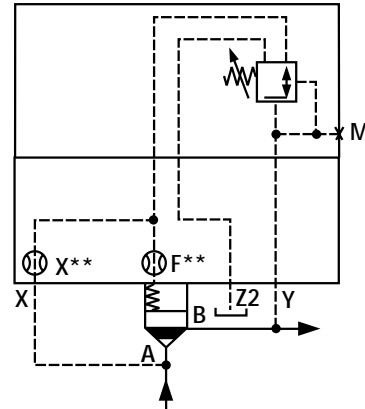
## Function, symbols

### b) Normally closed: Control cover type LFA..DR... Cartridge valve type LC..DB40D...

For the pressure reducing function with opening characteristics a pressure relief valve cartridge (type LC..DB40D...) and a control cover with a pressure reducing valve (type LFA..DR...) as the pilot valve are used. The pilot oil is fed from port A via the pilot supply orifice and the open pressure reducing pilot valve to side B.

The main spool opens and allows free flow from port A to port B.

On reaching the set pressure, the spool closes and reduces the pressure at port B in line with the pressure-flow characteristics. Possible excess pressures occurring on the secondary side are led away to tank via the third port of the pilot valve. By fitting a directional valve, an additional isolating function can also be attained (type LFA..DRW...).



e.g.  
Type LFA..DR...  
Type LC..DB40D...

## Pressure sequencing function

### Control cover type LFA..DZ... Cartridge valve type LC..DB...

This function enables a pressure-dependent sequencing of a second system.

The required sequencing pressure is set by the pilot valve which is integrated into the control cover.

The pilot oil supply may be either external (pilot oil port X) or internal (from port A via pilot oil port X or Z2).

The spring chamber of the pilot control is drained at zero pressure via ports Y or Z1 to tank.

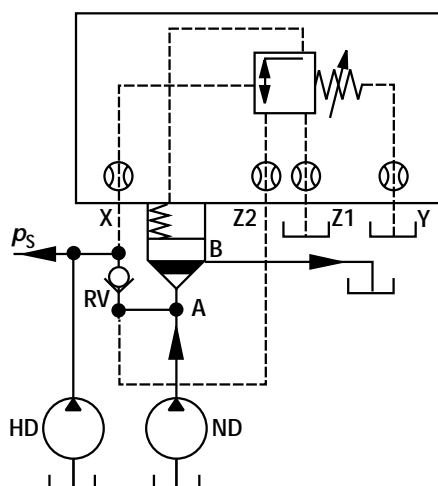
When the pressure set at the pilot control spring is reached, the pilot valve switches and unloads the spring chamber of the main valve to tank. The main spool opens and makes the connection from port A to B possible.

In model LFA..DZW..., the required spool position may be selected by means of an electrically operated pilot valve (not included within the supply of control cover LFA..DZW...) in addition to the normal hydraulic control.

### Typical circuits

**Example 1:** (Circuit for the pressure dependent unloading of the low pressure system)

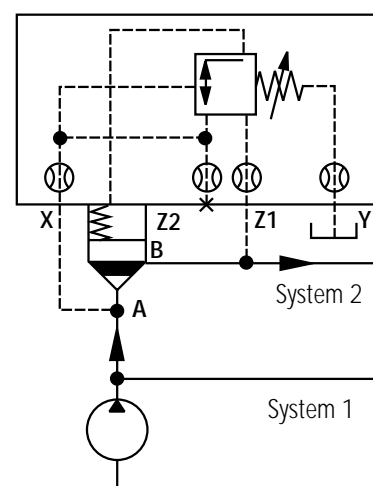
In the circuit shown, the system is fed by a high pressure pump and a low pressure pump. The system pressure  $p_s$  acts externally from the high pressure side via the pilot oil port X on the pilot valve which, on reaching the set pressure, switches the low pressure side to give zero pressure circulation. The check valve RV (not included within the scope of supply) prevents the high pressure system from flowing into the low pressure system which is now at zero pressure.



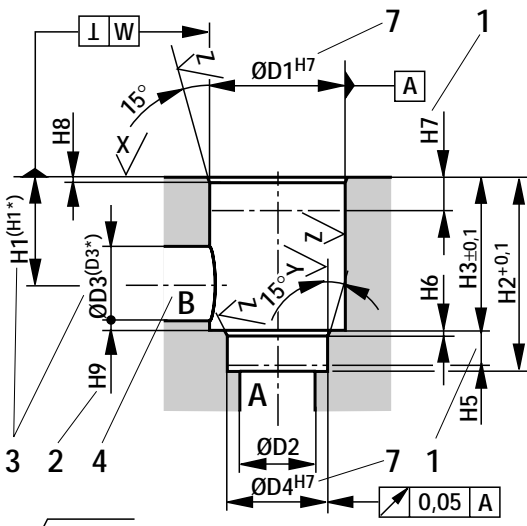
e.g.  
Type LFA..DZ...XY  
Type LC..DB20D...

**Example 2:** (circuit for the pressure dependent sequencing of a 2nd system)

With this circuit, oil is allowed to flow into system 2 when the pressure in system 1 has reached a pre-set value. The pilot oil supply is internal from port A of the main valve.



e.g.  
Type LFA..DZ...Y  
Type LC..DB20D...



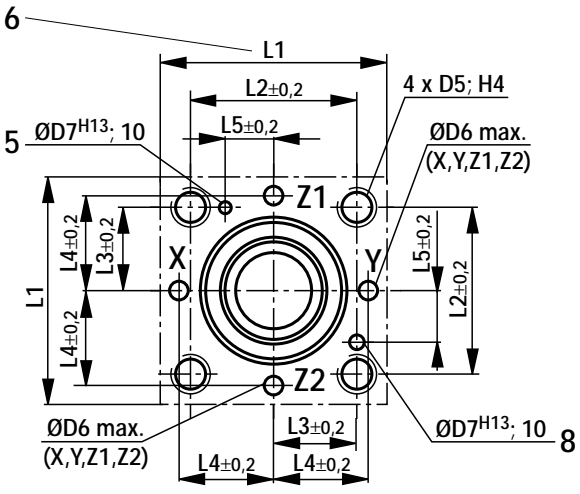
$$X/\sqrt{\quad} = \sqrt{R_{\max} 4}$$

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

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

NS	16	25	32	40	50	63	80	100
$\text{ØD1}^{H7}$	32	45	60	75	90	120	145	180
$\text{ØD2}$	16	25	32	40	50	63	80	100
$\text{ØD3}$	16	25	32	40	50	63	80	100
$(\text{ØD3}^*)$	25	32	40	50	63	80	100	125
$\text{ØD4}^{H7}$	25	34	45	55	68	90	110	135
$\text{ØD5}$	M8	M12	M16	M20	M20	M30	M24	M30
$\text{ØD6}^{1)}$	4	6	8	10	10	12	16	20
$\text{ØD7}^{H13}$	4	6	6	6	8	8	10	10
H1	34	44	52	64	72	95	130	155
$(H1^*)$	29.5	40.5	48	59	65.5	86.5	120	142
H2	56	72	85	105	122	155	205	245
H3	43	58	70	87	100	130	$175^{\pm 0,2}$	$210^{\pm 0,2}$
H4	20	25	35	45	45	65	50	63
H5	11	12	13	15	17	20	25	29
H6	2	2.5	2.5	3	3	4	5	5
H7	20	30	30	30	35	40	40	50
H8	2	2.5	2.5	3	4	4	5	5
H9	0.5	1	1.5	2.5	2.5	3	4.5	4.5
L1	65/80	85	102	125	140	180	$\text{Ø250}$	$\text{Ø300}$
L2	46	58	70	85	100	125	$\text{Ø200}$	$\text{Ø245}$
L3	23	29	35	42.5	50	62.5	–	–
L4	25	33	41	50	58	75	–	–
L5	10.5	16	17	23	30	38	–	–
W	0.05	0.05	0.1	0.1	0.1	0.2	0.2	0.2

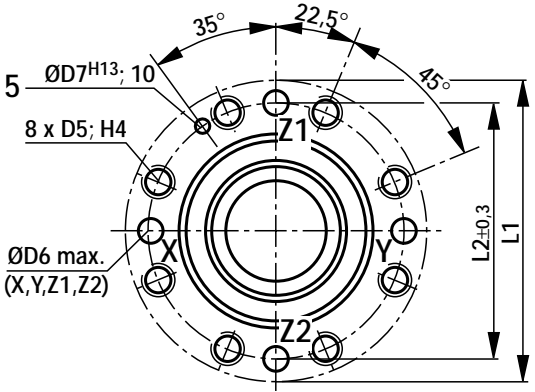
NS 16 to 63



<sup>1)</sup> max. dim.

- 1 Depth of fit
- 2 Reference dimension
- 3 For diameters of port B other than  $\text{ØD3}$  or  $(\text{ØD3}^*)$ , the distance from the cover mounting surface to the centre of this hole must be calculated.
- 4 Port B may be moved about the central axis of port A. Care must however be taken to ensure that the fixing holes and control holes are not damaged.
- 5 Drilling for location pin (cover location pin fitted to DIN 24 342)
- 6 **Note on NS 16 porting pattern:**  
Length  $L1$  (axis x–y drilling) is 80 mm.
- 7 For  $\text{Ø} \leq 45 \text{ mm}$  → fit H8 is permitted!
- 8 Drilling for locating pin with functions as a main pressure relief valve (cover locating pin has to be appropriately relocated during assembly)

NS 80, 100



## Pressure relief function

### Ordering details: pressure relief cartridge valves (without control cover)

	LC	DB							
Nominal size 16	(Series 7X)	= 16	= 25	= 32	= 40	= 50	= 63		
Nominal size 25									
Nominal size 32									
Nominal size 40									
Nominal size 50									
Nominal size 63									
Nominal size 80									
Nominal size 100	(Series 6X)	= 80	= 100	= 00	= 20	= 30 <sup>1)</sup>	= 40	= 50 <sup>2)</sup>	= 80 <sup>3)</sup>
Cracking pressure approx. 0 bar (without spring)									
Cracking pressure approx. 2 bar									
Cracking pressure approx. 3 bar									
Cracking pressure approx. 4 bar									
Cracking pressure approx. 5 bar									
Cracking pressure approx. 8 bar									

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

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

**7X =** (NS 16 to 63) Series 70 to 79  
 (70 to 79: unchanged installation and connection dimensions)

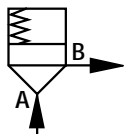
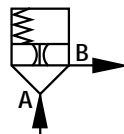
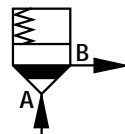
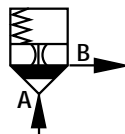
**6X =** (NS 80 and 100) Series 60 to 69  
 (60 to 69: unchanged installation and connection dimensions)

**E =** Poppet valve **without** orifice (standard)  
**D =** Spool poppet valve **without** orifice (standard)  
**A =** Poppet valve **with** orifice  
**B =** Spool poppet valve **with** orifice

- <sup>1)</sup> Cracking pressure 3.0 bar only with NS16 for fitting a pilot operated pressure relief valve type DBC . -5X/...SO187 (see catalogue sheet RE 25 802)
- <sup>2)</sup> Only with NS 16, 25 and 32
- <sup>3)</sup> Special installation area required (see page 12)

**Preferred types and standard components are highlighted in the RPS (Rexroth Price list Standard).**

### Symbols: cartridge valves (for versions see ordering details)

Poppet valve <b>without</b> orifice Version „E“	Spool poppet valve <b>with</b> orifice Version „A“	Spool poppet valve <b>without</b> orifice Version „D“	Spool poppet valve <b>with</b> orifice Version „B“
			

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

Pressure fluid	mineral oil (HL, HLP) to DIN 51 524 <sup>1)</sup> ; fast bio-degradable pressure fluids to VDMA 24 568 (also see RE 90 221); HETG (rape seed oil) <sup>1)</sup> ; HEPG (polyglycole) <sup>2)</sup> ; HEES (synthetic ester) <sup>2)</sup> ; other pressure fluids on request
<sup>1)</sup> suitable for NBR <b>and</b> FKM seals <sup>2)</sup> <b>only</b> suitable for FKM seals	
Pressure fluid temperature range	°C – 30 to + 80 for NBR seals – 20 to + 80 for FKM seals
Viscosity range	mm <sup>2</sup> /s 2.8 to 380
Degree of contamination	Maximum permissible degree of contamination of the pressure fluid is to NAS 1638 class 9. We, therefore, recommend a filter with a minimum retention rate of $\beta_{10} \geq 75$ .

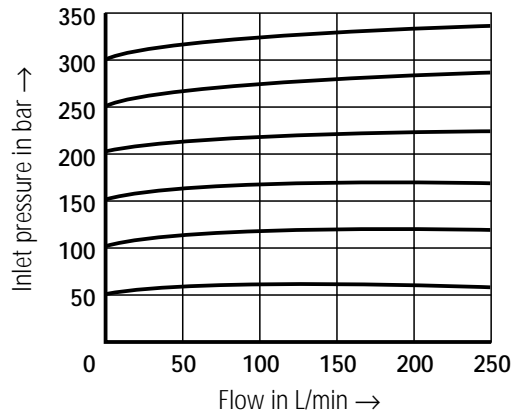
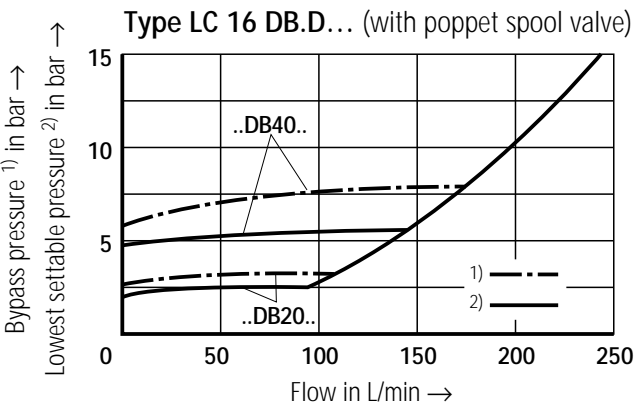
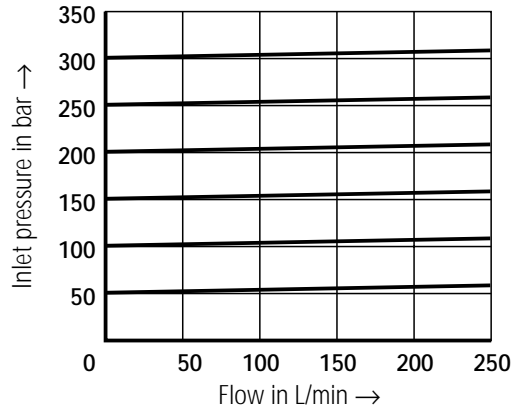
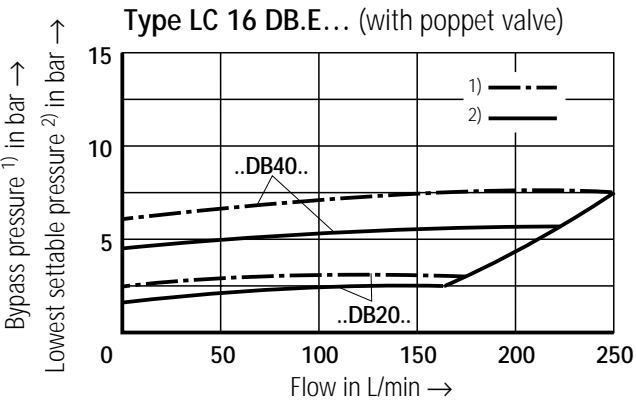
### 2-way cartridge valve

Max. operating pressure	– Ports A and B	bar	420							
Max. flow (recommendation)			NS16	NS25	NS32	NS40	NS50	NS63	NS80	NS100
	– Poppet valve cartridge „E“ and „A“	L/min	300	450	600	1000	1600	2500	4500	7000
	– Spool valve cartridge „D“ and „B“	L/min	175	300	450	700	1400	1750	3200	4900

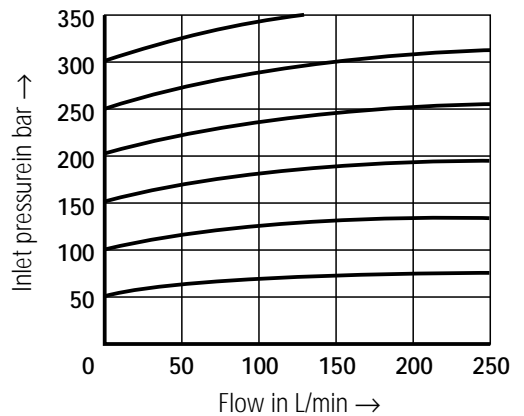
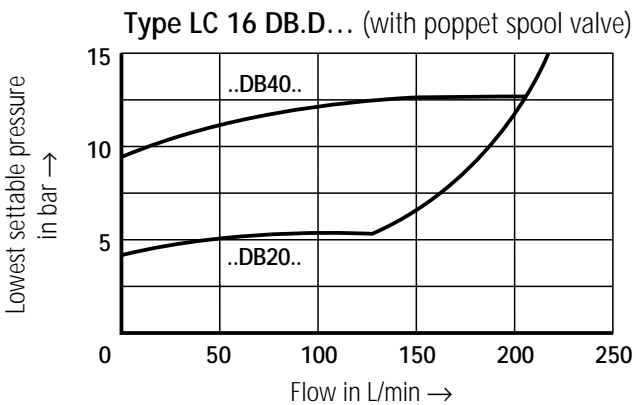
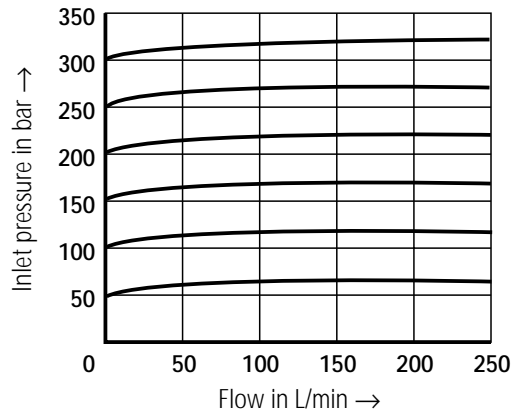
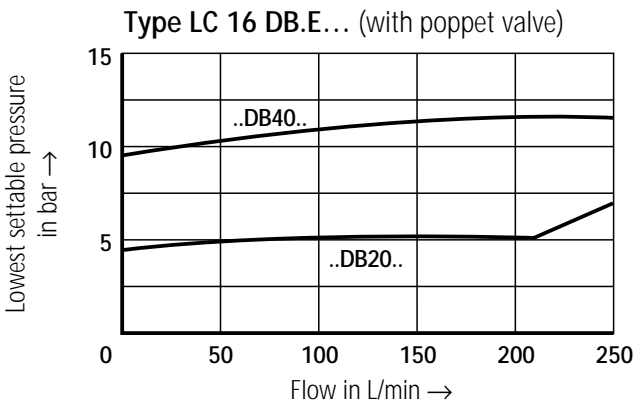
**Characteristic curves: nominal size 16 (measured at  $v = 41 \text{ mm}^2/\text{s}$  and  $\vartheta = 50 \text{ }^\circ\text{C}$ )**

The characteristic curves were measured with an external pilot oil drain at zero pressure. With an internal pilot oil drain the inlet pressure is increased to the pressure being applied at port B.

**Manual pressure adjustment, type LFA 16 DB... and type LFA 16 DBW...**



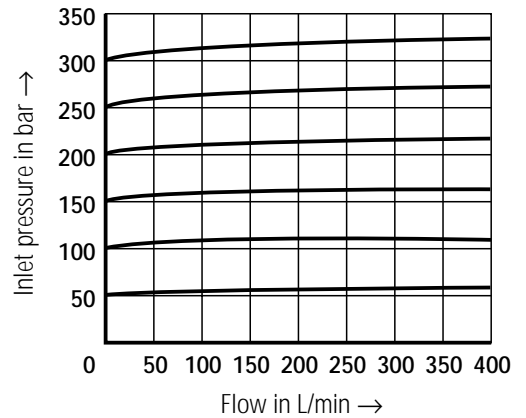
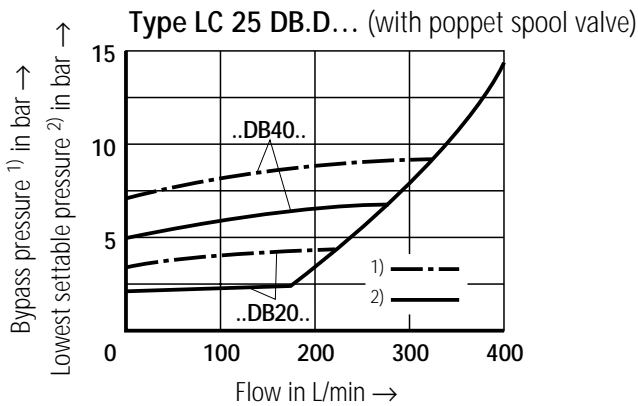
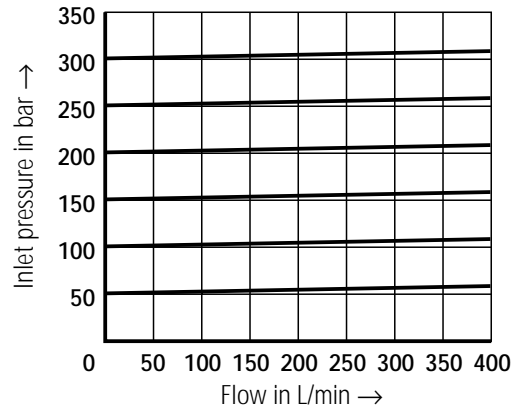
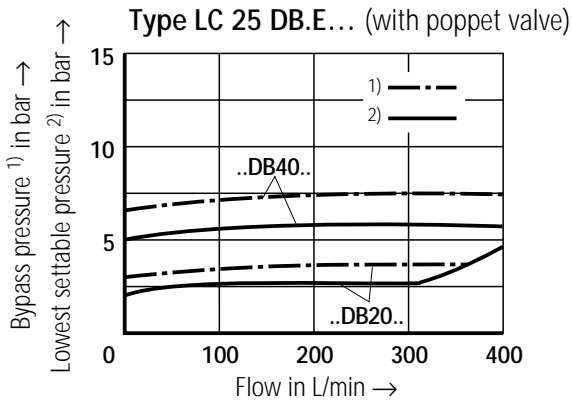
**Electrical proportional pressure adjustment, type LFA 16 DBE...**



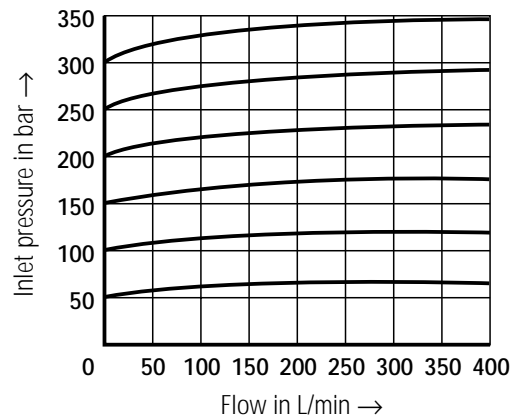
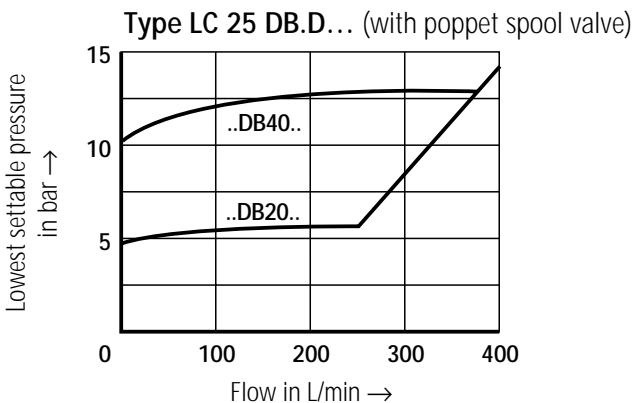
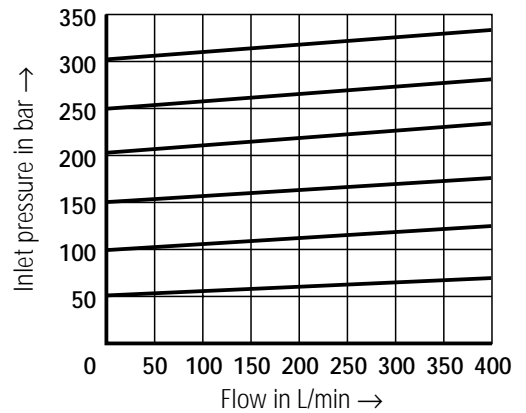
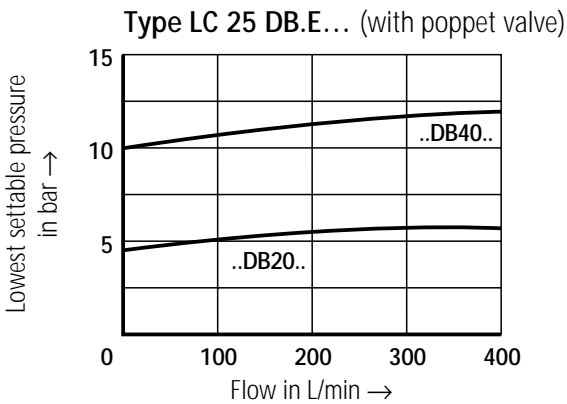
**Characteristic curves:** nominal size 25 (measured at  $v = 41 \text{ mm}^2/\text{s}$  and  $\vartheta = 50 \text{ }^\circ\text{C}$ )

The characteristic curves were measured with an external pilot oil drain at zero pressure. With an internal pilot oil drain the inlet pressure is increased to the pressure being applied at port.

**Manual pressure adjustment, type LFA 25 DB... and type LFA 25 DBW...**



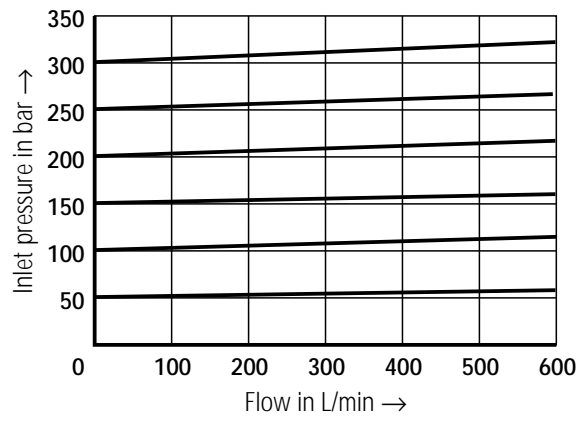
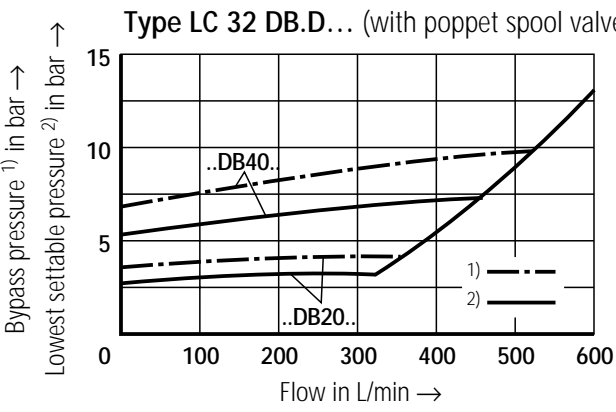
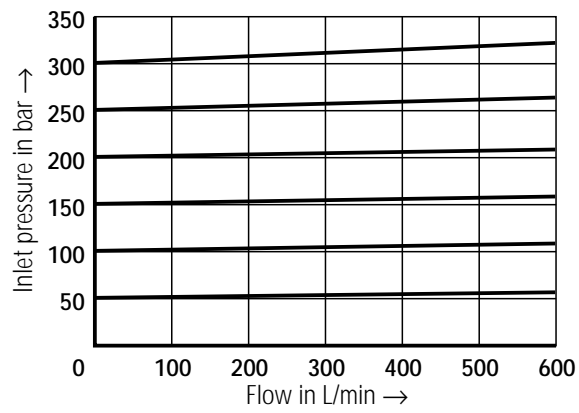
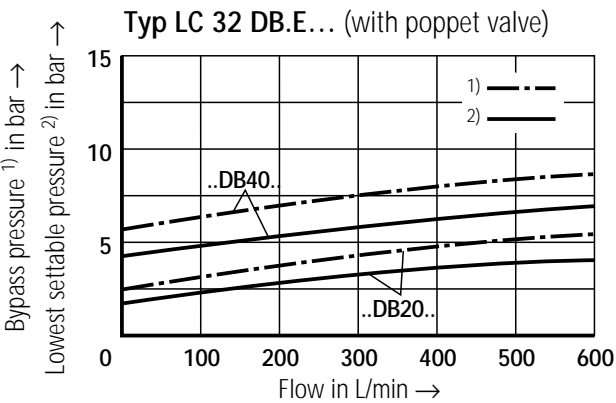
**Electrical proportional pressure adjustment, type LFA 25 DBE...**



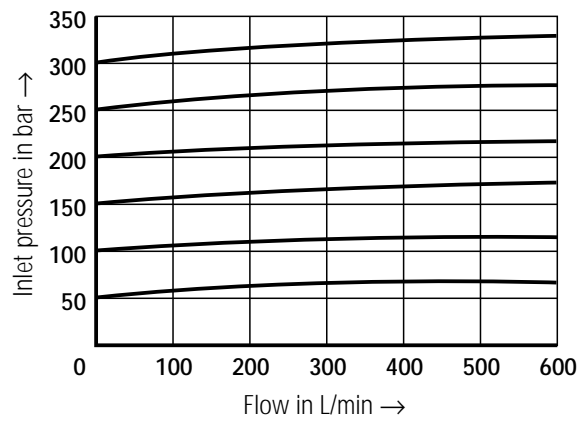
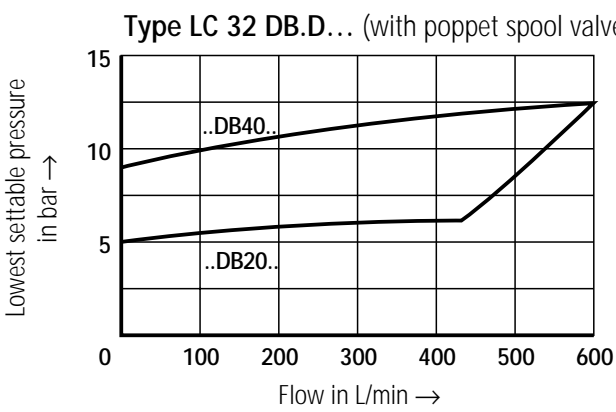
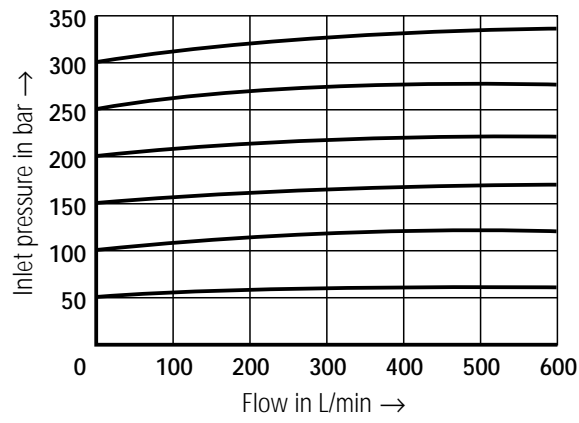
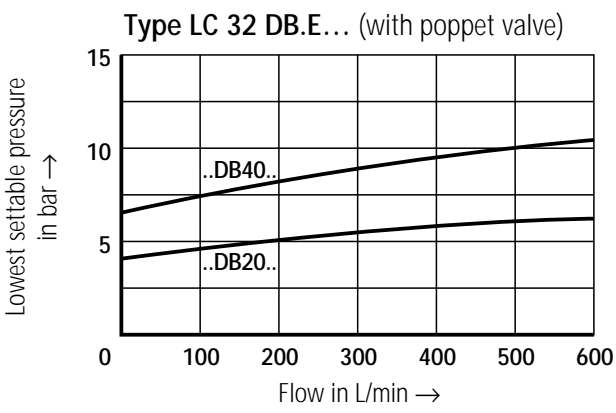
**Characteristic curves: nominal size 32 (measured at  $v = 41 \text{ mm}^2/\text{s}$  and  $\vartheta = 50 \text{ }^\circ\text{C}$ )**

The characteristic curves were measured with an external pilot oil drain at zero pressure. With an internal pilot oil drain the inlet pressure is increased to the pressure being applied at port B.

**Manual pressure adjustment, type LFA 32 DB... and type LFA 32 DBW...**



**Electrical proportional pressure adjustment, type LFA 32 DBE...**

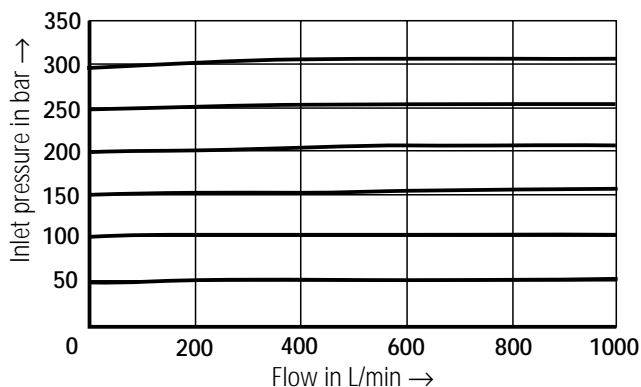
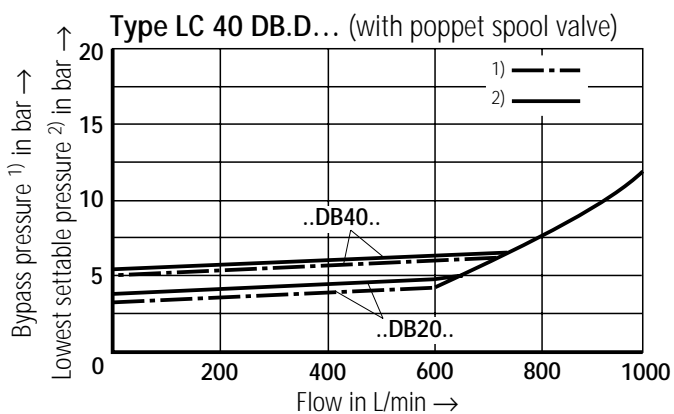
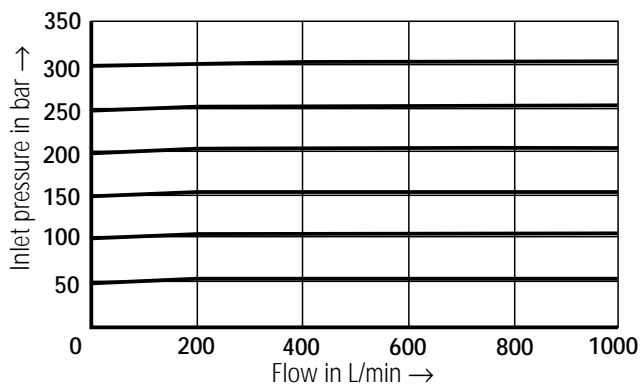
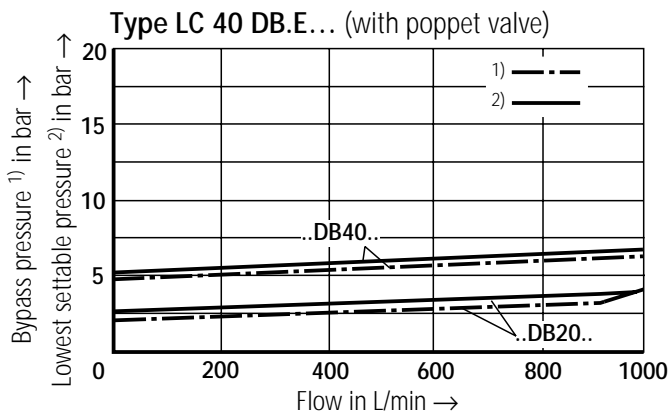




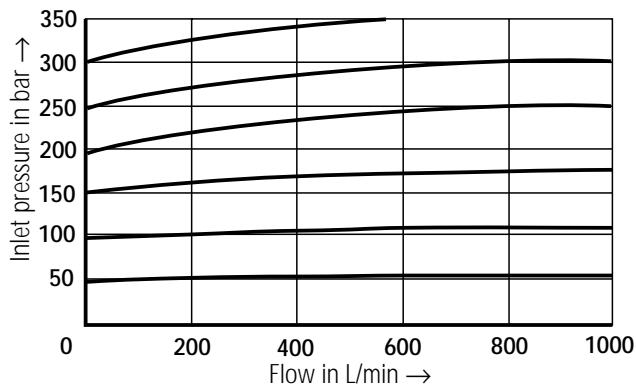
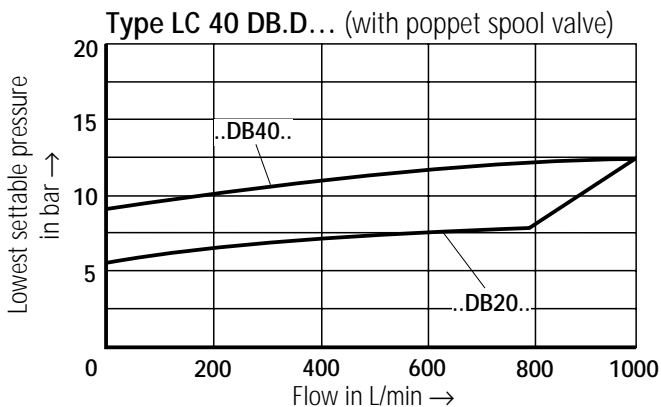
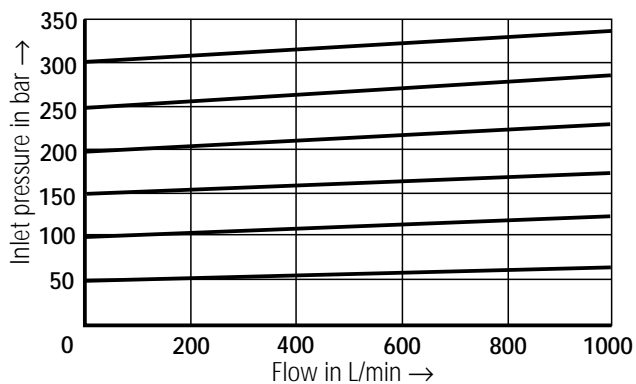
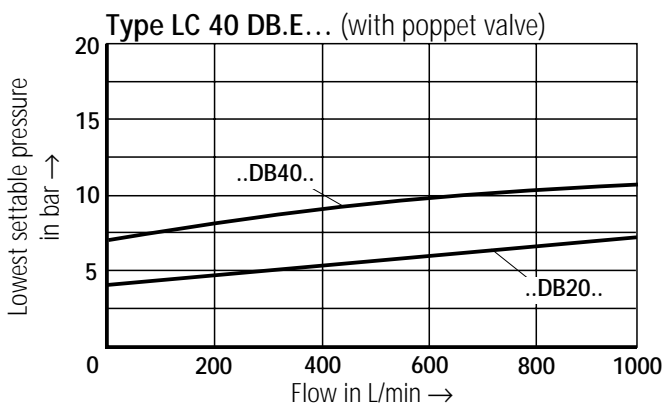
## Characteristic curves: nominal size 40 (measured at $v = 41 \text{ mm}^2/\text{s}$ and $\vartheta = 50 \text{ }^\circ\text{C}$ )

The characteristic curves were measured with an external pilot oil drain at zero pressure. With an internal pilot oil drain the inlet pressure is increased to the pressure being applied at port.

### Manual pressure adjustment, type LFA 40 DB... and type LFA 40 DBW...



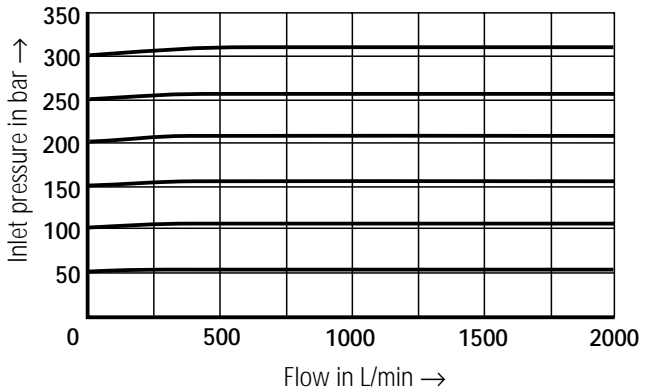
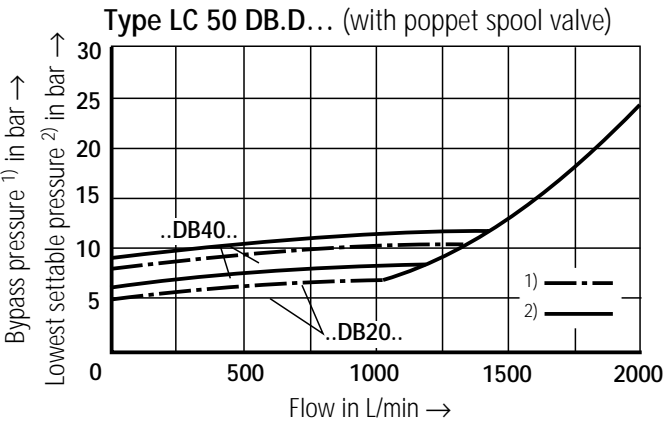
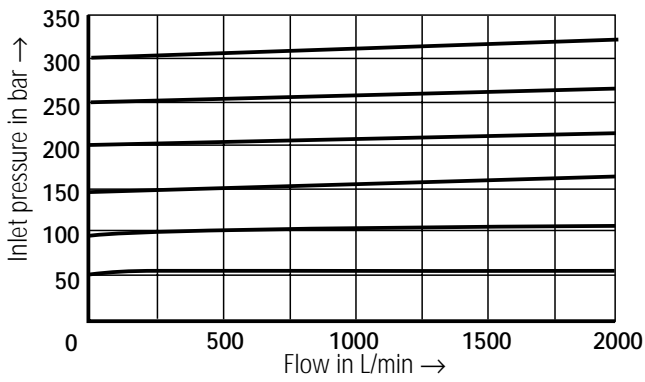
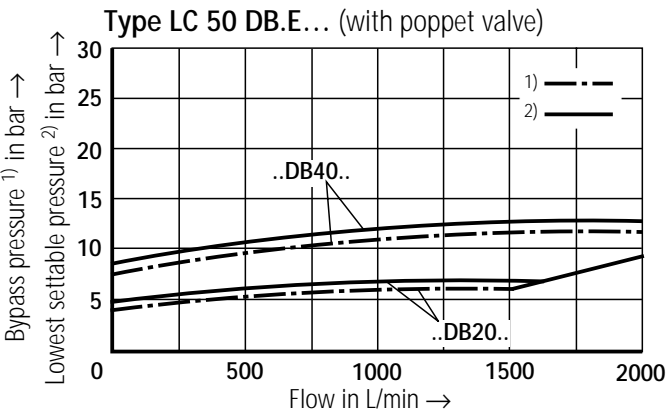
### Electrical proportional pressure adjustment, type LFA 40 DBE...



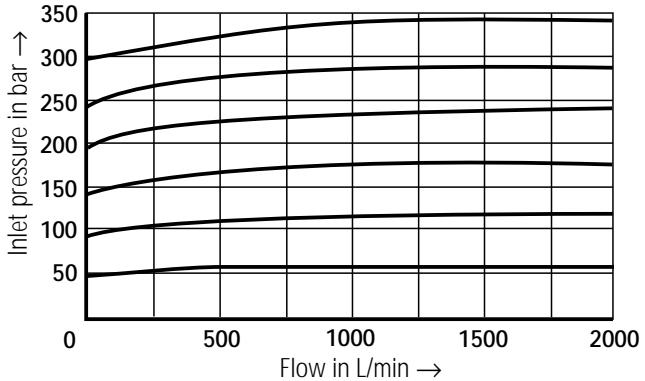
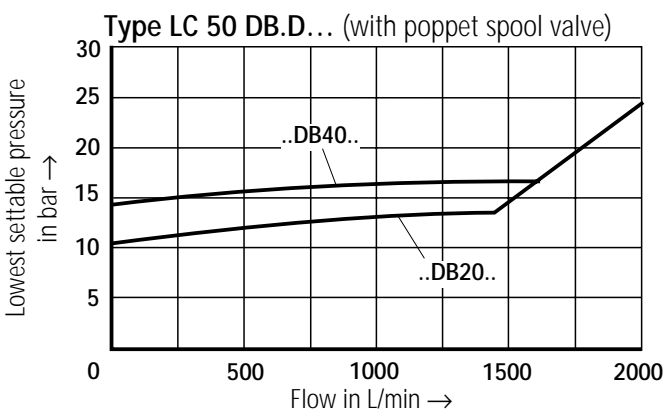
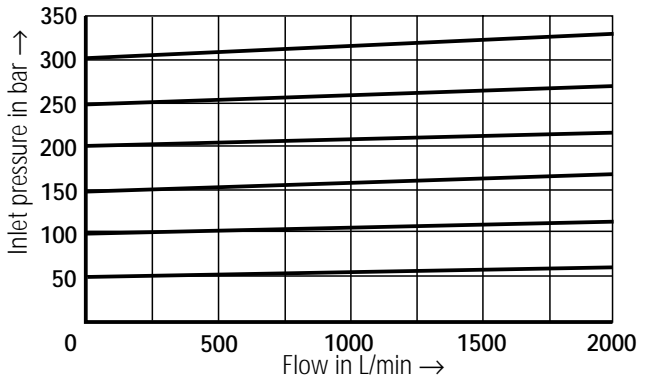
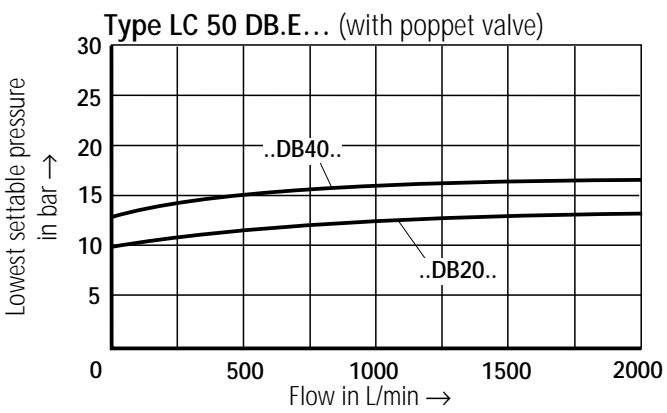
**Characteristic curves: nominal size 50 (measured at  $v = 41 \text{ mm}^2/\text{s}$  and  $\vartheta = 50 \text{ }^\circ\text{C}$ )**

The characteristic curves were measured with an external pilot oil drain at zero pressure. With an internal pilot oil drain the inlet pressure is increased to the pressure being applied at port B.

**Manual pressure adjustment, type LFA 50 DB... and type LFA 50 DBW...**



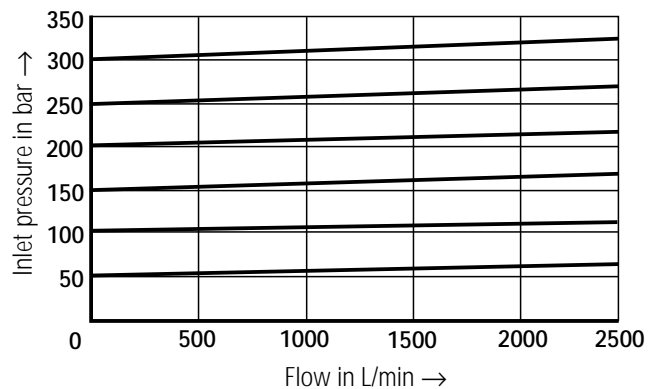
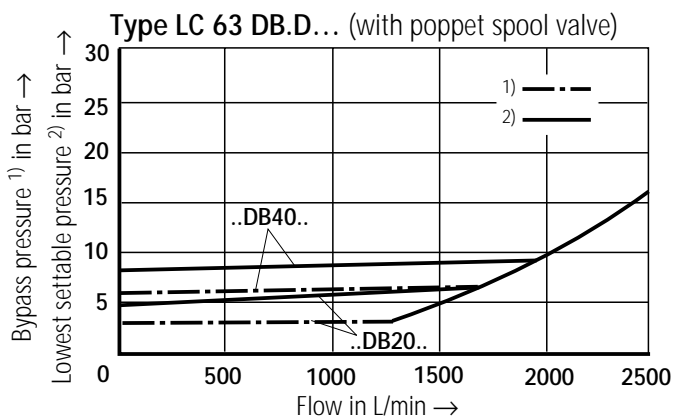
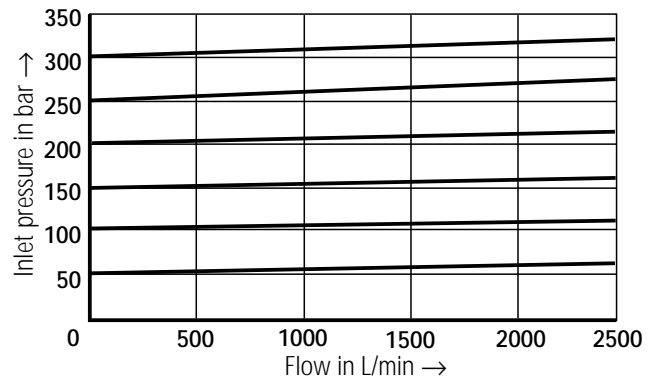
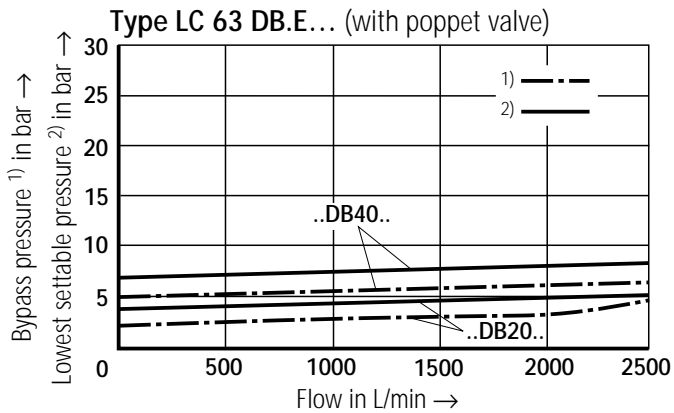
**Electrical proportional pressure adjustment, type LFA 50 DBE...**



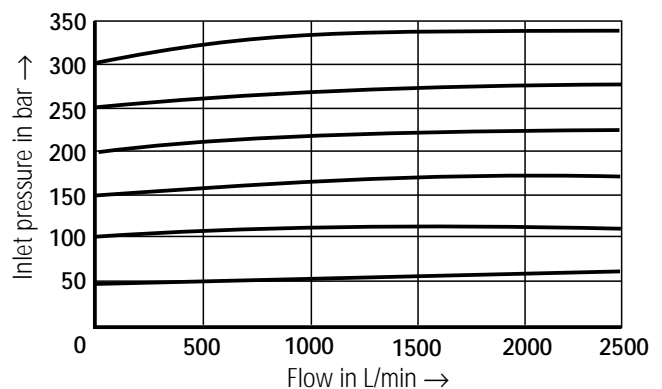
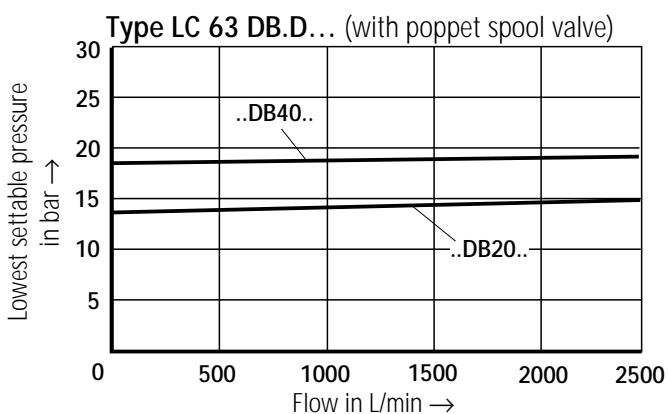
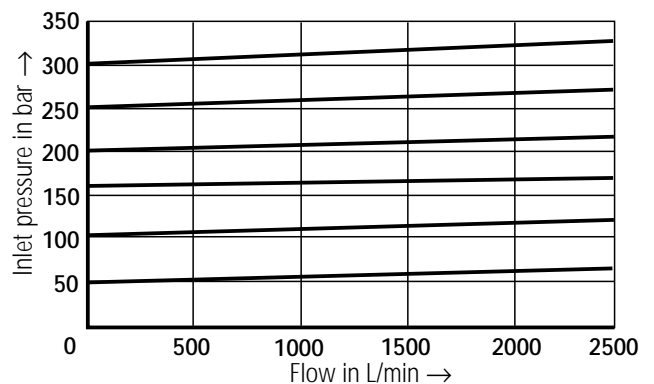
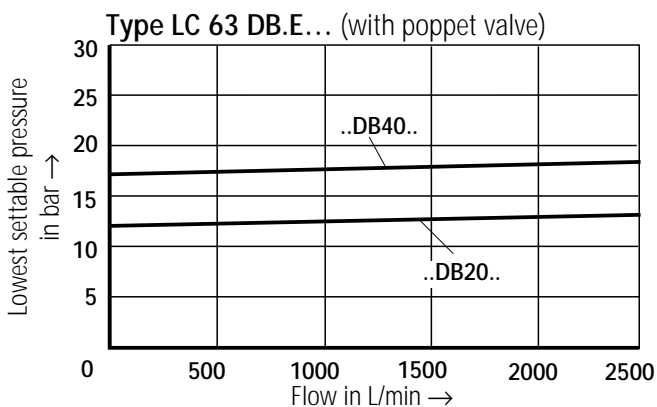
**Characteristic curves:** nominal size 63 (measured at  $v = 41 \text{ mm}^2/\text{s}$  and  $\vartheta = 50 \text{ }^\circ\text{C}$ )

The characteristic curves were measured with an external pilot oil drain at zero pressure. With an internal pilot oil drain the inlet pressure is increased to the pressure being applied at port B.

**Manual pressure adjustment, type LFA 63 DB... and type LFA 63 DBW...**



**Electrical proportional pressure adjustment, type LFA 63 DBE...**



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

Nominal size	Material no.		Nominal size	Material no.	
	NBR seals	FKM seals		NBR seals	FKM seals
16	00313104	00313107	50	00873023	00873026
25	00313105	00313108	63	00873024	00873027
32	00313106	00313109	80	00314058	00314067
40	00873022	00873025	100	00314059	00314068

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

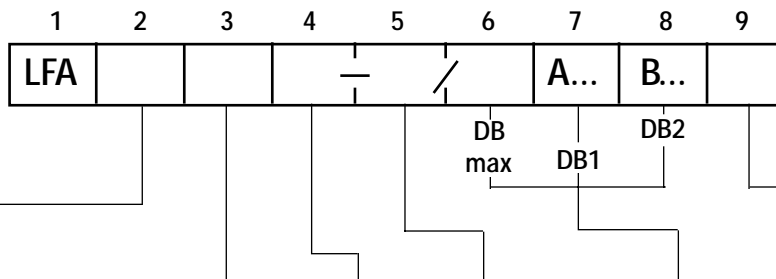
NS	Spring dimensions in mm	Cracking pressure in bar	Material no.	NS	Spring dimensions in mm	Cracking pressure in bar	Material no.	
16	10.2/1.3 x 40.5/8.0	2.0	00062747	40	25.9/4.25 x 63.0/6.0	2.0	00206675	
	10.0/1.6 x 38.2/9.0	3.0	00062753		25.7/4.5 x 68.5/6.0	4.0	00206673	
	9.8/1.7 x 38.0/9.0	4.0	00062754		24.8/5.3 x 105.0/10.0	8.0 <sup>1)</sup>	00206671	
	9.7/1.9 x 35.7/8.5	5.0	00062757	50	33.2/5.0 x 82.0/5.5	2.0	00206684	
	9.2/2.4 x 60.5/14.5	8.0 <sup>1)</sup>	00082073		32.8/5.3 x 92.0/6.5	4.0	00206681	
25	15.3/2.25 x 55.0/8.0	2.0	00062762		31.7/6.5 x 137.0/10.5	8.0 <sup>1)</sup>	00206680	
	14.9/2.7 x 53.4/8.5	3.0	00062764	63	40.6/6.5 x 108.0/7.0	2.0	00206690	
	14.7/2.8 x 53.5/8.5	4.0	00062820		40.7/6.5 x 127.5/7.5	4.0	00206692	
	14.6/3.0 x 52.5/8.5	5.0	00062819		38.6/8.5 x 183.5/11.5	8.0 <sup>1)</sup>	00206689	
	14.1/3.5 x 78.5/12.0	8.0 <sup>1)</sup>	00082072	80	48.5/8 x 138/7.5	2.0	00012353	
32	19.6/2.8 x 69.5/7.5	2.0	00062813			49/8 x 152.5/7.5	4.0	00024113
	19.2/3.2 x 71.0/8.5	3.0	00062783	100	52.3/9.5 x 176/9.5	2.0	00012385	
	19.1/3.4 x 72.0/9.5	4.0	00062810			52.3/9.5 x 195.5/9.5	4.0	00024483
	19.1/3.5 x 72.8/9.0	5.0	00062805					
	18.5/4.0 x 109/14.5	8.0 <sup>1)</sup>	00082071					

<sup>1)</sup> These springs require an additional installation length. When using standard control covers an additional sandwich plate type LFA..D22... must be used.

### **⚠ Exception:**

Control cover type "D" can be replaced by type LFA..D8-../F (no sandwich plate required).

# General notes on the ordering details for control covers



• = available

Nominal size								Type <sup>1)</sup>	Control type	Series	Pressure rating in bar for nominal sizes		Seal material	Page
16	25	32	40	50	63	80	100				16 to 32	40 to 100		
•	•	•	•	•	•	•	•			7X				
						•	•			6X				
•	•	•	•	•	•	•	•	DB			025 050 100 200 315 420	025 050 100 200 315 400	For ordering details, see pages giving details of the individual cover variations	18 to 20
•	•	•	•	•	•	•	•	DBW			200 315 420	200 315 400		21 to 25
			•	•	•	•	•	DBS				025; 050; 100; 200; 315; 400		21 to 25
•	•	•	•	•	•	•	•	DBWD			025 050	025 050		26 to 28
•	•	•	•	•	•	•	•	DBU2A			100	100		29 to 32
•	•	•	•	•	•	•	•	DBU2B			200	200		29 to 32
•	•	•	•	•	•	•	•	DBU3D			315 420	315 400		33 to 37
•	•	•	•	•	•	•	•	DBE						38
•	•	•	•	•	•	•	•	DBEM			025; 050; 100; 200; 315; 420	025; 050; 100; 200; 315; 400		39 to 42

<sup>1)</sup> For functions, see selection table on page 15

## 4 Types of adjuster for pressure relief valves

- 1 = Rotary knob
- 2 = Hexagon with protective cap
- 3 = Locable rotary knob with scale (H-lock to automotive industry standards)
- 4 = Rotary knob with scale, not lockable

## 5 Series

- 7X = Series 70 to 79 and
  - 6X = Series 60 to 69
- (unchanged installation and connection dimensions)

## 6 Pressure ratings

Dependent on size and permissible working pressure of the pilot valve. For further details see ordering details for the control cover.

**Preferred types and standard components are highlighted in the RPS (Rexroth Price list Standard).**

**7**  
**A...** Pressure data for DB1, only required for types DBU2 and DBU3D

**8**  
**B...** Pressure data for DB2, only required for types DBU3D  
**Ordering example** for type DBU3D  
.../315\* A 100 B 200 (DB max. /DB1/DB2)  
\*DB max. always first

The control covers are always fitted with a, optimised on our test rig, standard orifice. Orifice details are therefore not required in the type code. Deviating operating conditions could make it necessary to match the orifice size. The orifices are of the threaded type.

Orifice as shown within the main symbol



## General notes on the ordering details for control covers: pilot control valve (max. operating pressure)

Pilot control valve		Control cover		Max. operating pressure in bar			Included in type code	Has to be specially ordered
Type	Catalogue sheet no.	NS	Type	X	Y, T For pressure control	Static		
DBD. 2 K2X/... <sup>1)</sup>	on request	16 to 32	DB, DBW, DBWD,	420	Zero pressure (up to ≈ 2 bar)	315	•	
DBD. 6 K1X/... <sup>2)</sup>	25 402	40 to 63	DBU2., DBU3D,	400		315	•	
DBD. 10 K1X/... <sup>2)</sup>	25 402	80, 100	DBEM, DBS	400		315	•	
.WE 6 ...	23 178	16 to 63	DBW, DBWD,	350		210 (=); 160 (-)		•
.WE 10 ...	23 327	80, 100	DBU2., DBU3D	315		210 (=); 160 (-)		•
M-3SEW 6 ...	22 058	16 to 63	DBW, DBS	420		100		•
M-3SED 6 ...	22 049	16 to 63	DBW, DBS	315		X-40		•
M-3SEW 10 ...	22 075	80, 100	DBW, DBS	420		100		•
M-3SED 10 ...	22 045	80, 100	DBW, DBS	315		X-40		•
DBET-5X/.G24-1 <sup>3)</sup>	29 165	16 to 32	DBE, DBEM	350		100		•
DBET-5X/.G24...	29 165	40	DBE, DBEM	350		100		•
DBET-5X/.YG24-1 <sup>3)</sup>	on request	50 to 100	DBE, DBEM	350		100		•
DBETR...	on request	16 to 100	on request					

<sup>1)</sup> Possible pressure stages: 25, 50, 100, 200, 315, 420

<sup>2)</sup> Possible pressure stages: 25, 50, 100, 200, 315, 400

<sup>3)</sup> Possible pressure stages: 50, 100, 200, 315, 350

1 = G 1/4 threaded connection T; special poppet



### Note:

By combining a 2-way cartridge valve with a pilot valve, various valve functions may be implemented.

The following components may be considered with porting pattern form A6 (up to NS63) and form A10 (NS 80 to 100) to DIN 24 340.

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

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

Pilot control valve Type	Dimensions	Tightening torque in Nm	Pilot control valve Type	Dimensions	Tightening torque in Nm
M-3SEW 6 ...	M5 x 45	8.9	.WE 6 ...	M5 x 50	8.9
M-3SEW 10 ...	M6 x 40	15.5	.WE 10 ...	M6 x 40	15.5
M-3SED 6 ...	M5 x 50	8.9	DBET ...	M5 x 30	8.9
M-3SED 10 ...	M6 x 40	15.5			

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

Pressure fluid		mineral oil (HL, HLP) to DIN 51 524 <sup>1)</sup> ; fast bio-degradable pressure fluids to VDMA 24 568 (also see RE 90 221); HETG (rape seed oil) <sup>1)</sup> ; HEPG (polyglycole) <sup>2)</sup> ; HEES (synthetic ester) <sup>2)</sup> ; other pressure fluids on request
<sup>1)</sup> suitable for NBR <b>and</b> FKM seals <sup>2)</sup> <b>only</b> suitable for FKM seals		
Pressure fluid temperature range	°C	- 30 to + 80 for NBR seals - 20 to + 80 for FKM seals
Viscosity range	mm <sup>2</sup> /s	2.8 to 380
Degree of contamination		Maximum permissible degree of contamination of the pressure fluid is to NAS 1638 class 9. We, therefore recommend a filter with a minimum retention rate of $\beta_{10} \geq 75$ .
Max. operating pressure	bar	420 <b>⚠ Attention:</b> $p_{max}$ of the pilot control valve is to be taken into account!

# Pilot control valves (selection table)

	Nom. size			Type	Pilot control valve	Manual pressure setting			Symbols (see page 16)	
	16 to 32	40 to 63	80 and 100							
	•	•	•	DB		Without directional valve			①	
• = available						With directional valve				
				Position "a"	Position "b"					
Directional valve unloading	•	•		DBW	3WE6B9-...	open	DB function		② ③	
	•				M-3SE.6C...					
	•	•			4WE6D...	DB function	open			
					M-3SE.6U...					
			•		3WE10B9-...	open	DB function			③
			•		4WE10D...	DB function	open			
	Directional valve unloading		•		DBS		open	DB function	④	
			•			M-3SE.6C...	DB function	open		
			•			M-3SE.6U...				
				•		M-3SE.10C./...	open	DB function		
				•		M-3SE.10U./...	DB function	open		
				•						
Isolating function	•	•		DBWD	3WE6B9-...	DB function	closed	⑤		
		•			3WE10B9-...	closed	DB function		open	
	•	•			3WE6A-...				open	
	•	•			4WE6M...				open	
			•		3WE10A...					
			•		4WE10M...					
2 pressure stages	•	•		DBU2A	4WE6H...	DB max. function	open	DB1 function	⑥	
			•		4WE10H...		DB1 function	DB max. function		
	•	•			4WE6D...					
			•		4WE10D...					
	•	•				4WE6D...	DB1 function	DB max. function		
			•			4WE10D...				
3 pressure stages	•	•		DBU2B	4WE6H...	DB2 function	open	DB1 function	⑦	
			•		4WE10H...		DB max. function			
	•	•			4WE6E...					
			•	4WE10E...						
	•	•		DBU3D	4WE6D...	DB1 function				
			•		4WE10D...					
						Proportional pressure setting version				
Proportional valves	•	•		DBE	DBET-5X/...	without max. pressure safety limitation			⑧	
	•	•		DBEM	DBET-5X/...	with max. pressure safety limitation			⑨	

Open = bypass circuit

Closed = cartridge valve is hydraulically blocked

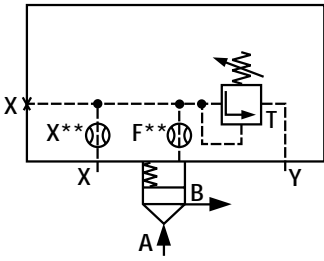
DB function = pressure relief function

**Symbol overview (basic symbols), pressure relief function**

Valid symbols are shown in the following type descriptions!

①

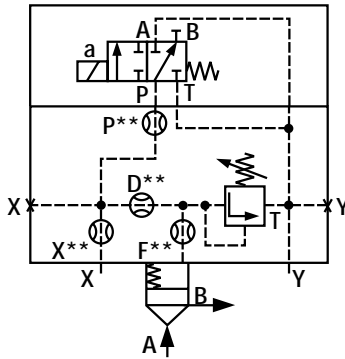
LFA..DB-../..NS16 to 100



see pages 18 to 20

②

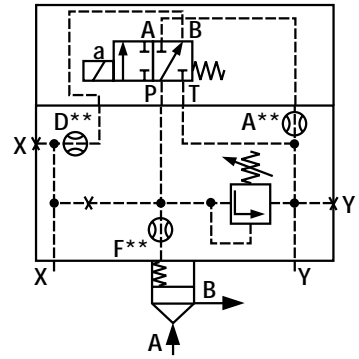
LFA..DBW-../..NS16 to 32



see pages 21, 22

③

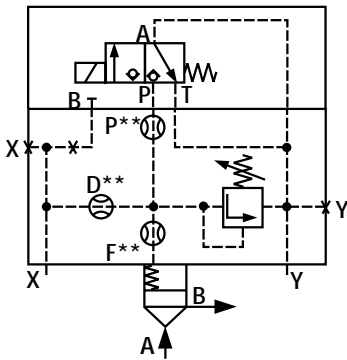
LFA..DBW-../..NS40 to 100



see pages 21 to 25

④

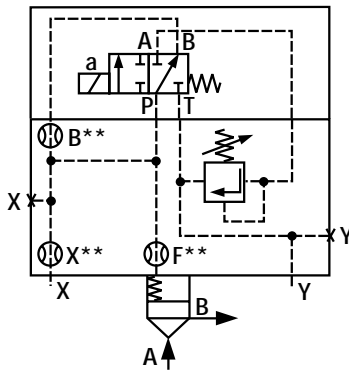
LFA..DBS-../..NS40 to 100



see pages 21 to 25

⑤

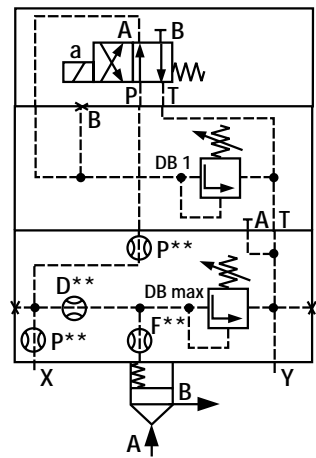
LFA..DBWD-../..NS16 to 100



see pages 26 to 28

⑥

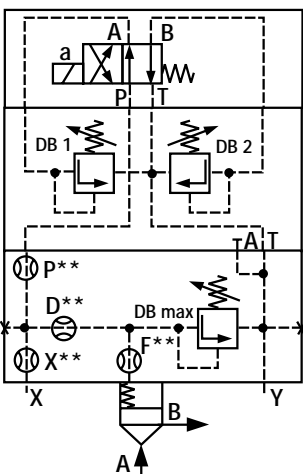
LFA..DBU2A-../..NS16 to 100



see pages 29 to 32

⑦

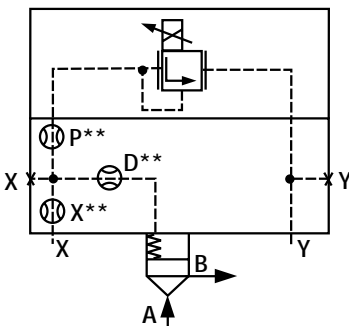
LFA..DBU3D-../..NS16 to 100



see pages 33 to 37

⑧

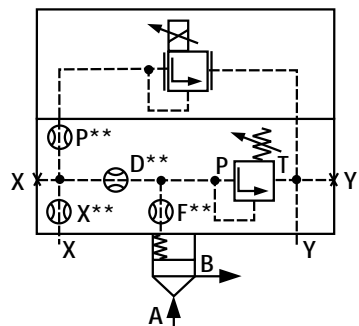
LFA..DBE-../..NS16 to 63



see page 38

⑨

LFA..DBEM-../..NS16 to 100



see pages 39 to 42



## R-rings dimensions for ports X, Y (included within the scope of supply)

NS	Dimensions mm	Material no.	
		NBR	FKM
16	8.41 x 1.40 x 1.78	00025407	00025408
25	9.81 x 1.50 x 1.78	00017453	00017610
32	11.18 x 1.60 x 1.78	00017455	00017611
40, 50	13.00 x 2.30 x 2.62	00017457	00017617
63	18.72 x 2.62 x 2.62	00024445	00024446
80	26.57 x 3.53 x 3.53	00017466	00017630
100	34.52 x 3.53 x 3.53	00017472	00017633

## Seal kits for control cover type LFA..

Seal kit for LFA...	Material no.							
	NS 16		NS 25		NS 32		NS 40	
	NBR	FKM	NBR	FKM	NBR	FKM	NBR	FKM
..DB..; DBW..; ..DBS.. ..DBWD..; ..DBEM..	00313955	00313956	00313957	00313958	00313802	00313803	00313722	00313723
..DBU2..; ..DBU3..	00313709	00313710	00313711	00313712	00313713	00313714	00313715	00313716
DBE..	00313701	00313702	00313703	00313704	00313705	00313706	00313707	00313708

Seal kit for LFA...	Material no.							
	NS 50		NS 63		NS 80		NS 100	
	NBR	FKM	NBR	FKM	NBR	FKM	NBR	FKM
..DB..; DBW..; ..DBS.. ..DBWD..;	00313724	00313725	00313726	00313727	00310533		00313054	
..DBU2..; ..DBU3..	00313717	00313718	00313719	00313720	00312090			
..DBE..	00313897	00313898	00313899	00313700				
..DBEM..	00313893	00313894	00313895	00313896	00311930		00312219	

## Fixing screws (included within the scope of supply)

S.H.C.S. to DIN 912-10.9

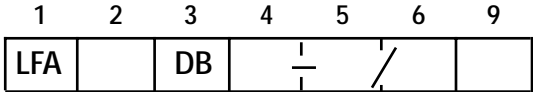
NS	Qty.	Dimensions	Tightening torque in Nm
16	4	M 8 x 45	32
25	4	M 12 x 50	110
32	4	M 16 x 60	270
40	4	M 20 x 70	520
50	4	M 20 x 80	520
63	4	M 30 x 100	1800
80	8	M 24 x 120	900
100	8	M 30 x 120	1800

## Orifice thread size

D-orifices for type ..DBE.. NS 25 to 63 M8 x 1 tapered  
 Orifices for NS 80, 100 M8 x 1 tapered (A\*\*, B\*\*, P\*\*, D\*\*) or G 1/4 (X\*\*, F\*\*)  
 Other built-in orifices M6 tapered

# Control cover with manual pressure adjustment

## NS 16 to 100



Nominal size 16	Series 7X	= 16
Nominal size 25		= 25
Nominal size 32		= 32
Nominal size 40		= 40
Nominal size 50		= 50
Nominal size 63	Series 6X	= 63
Nominal size 80		= 80
Nominal size 100		= 100

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

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

### Pressure ratings

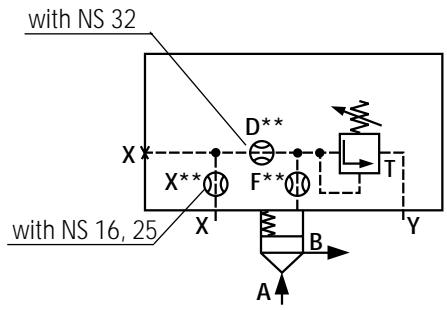
NS 16, 25, 32	NS 40, 50, 63, 80, 100
025 = 25 bar	025 = 25 bar
050 = 50 bar	050 = 50 bar
100 = 100 bar	100 = 100 bar
200 = 200 bar	200 = 200 bar
315 = 315 bar	315 = 315 bar
420 = 420 bar	400 = 400 bar

### Adjuster type

Rotary knob	= 1
Hexagon with protective cap	= 2
Lockable rotary knob with scale (H-lock to automotive industry standards)	= 3
Rotary knob with scale <b>not</b> lockable	= 4

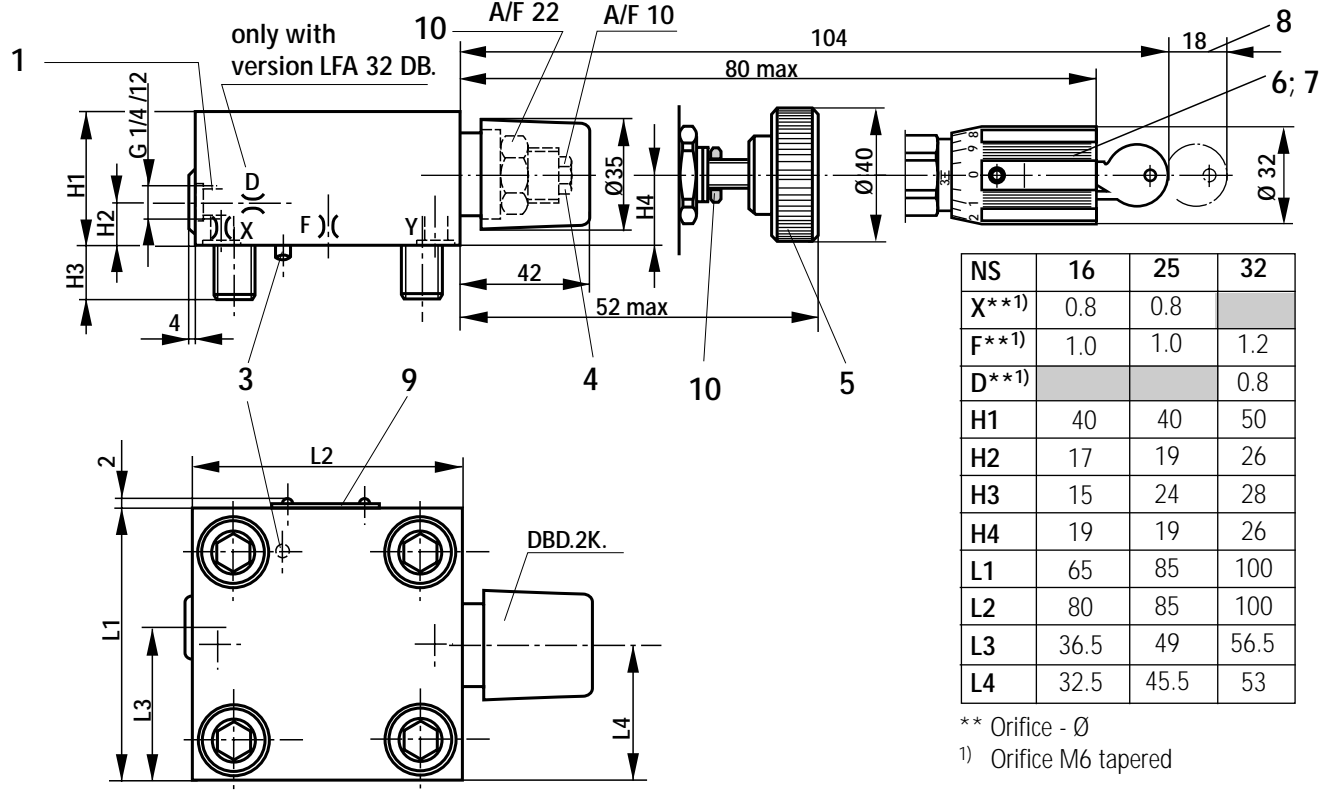
6X = Series 6X (NS 80 and 100)  
 7X = Series 7X (NS 16 to 63)

## NS 16, 25, 32



LFA..DB.-7X/..  
 NS 16, 25, 32

Dimensions in mm

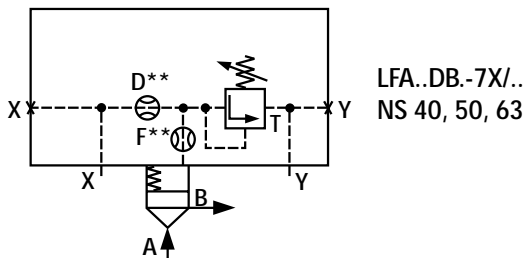


NS	16	25	32
X** <sup>1)</sup>	0.8	0.8	
F** <sup>1)</sup>	1.0	1.0	1.2
D** <sup>1)</sup>			0.8
H1	40	40	50
H2	17	19	26
H3	15	24	28
H4	19	19	26
L1	65	85	100
L2	80	85	100
L3	36.5	49	56.5
L4	32.5	45.5	53

\*\* Orifice - Ø  
 1) Orifice M6 tapered

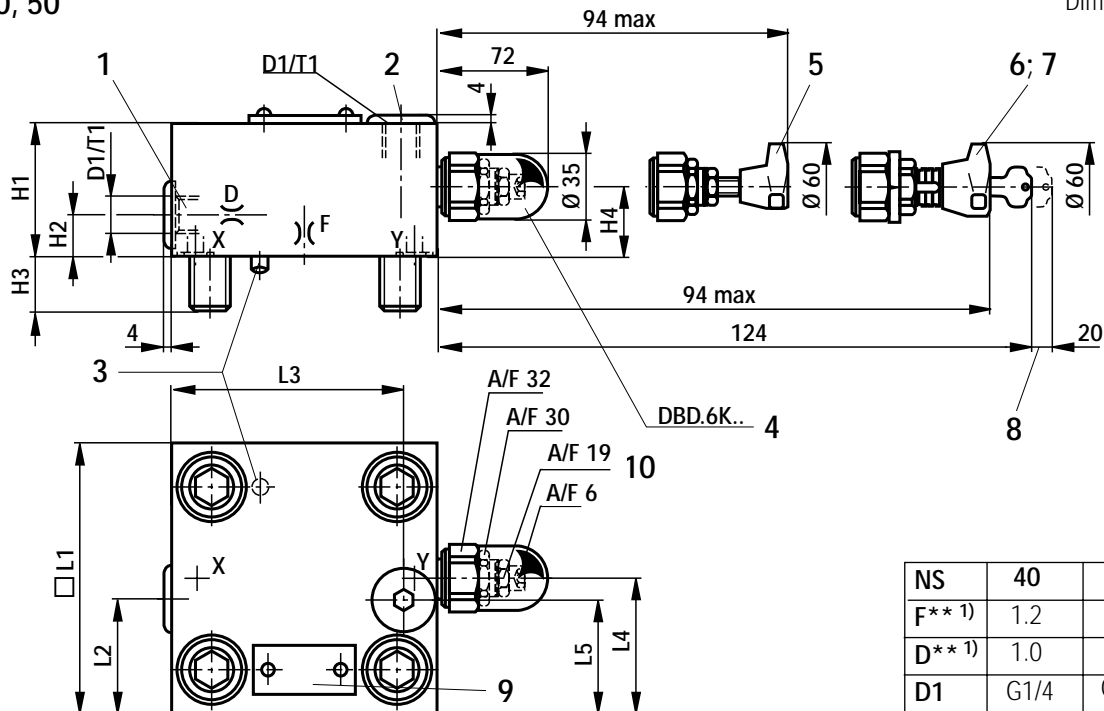
- 1 Port X optionally as threaded port
- 6 Adjuster type "3"
- 9 Name plate
- 3 Locating pin
- 7 Adjuster type "4"
- 10 Lock nut
- 4 Adjuster type "2"
- 8 Space require to remove the key

# Control cover with manual pressure adjustment

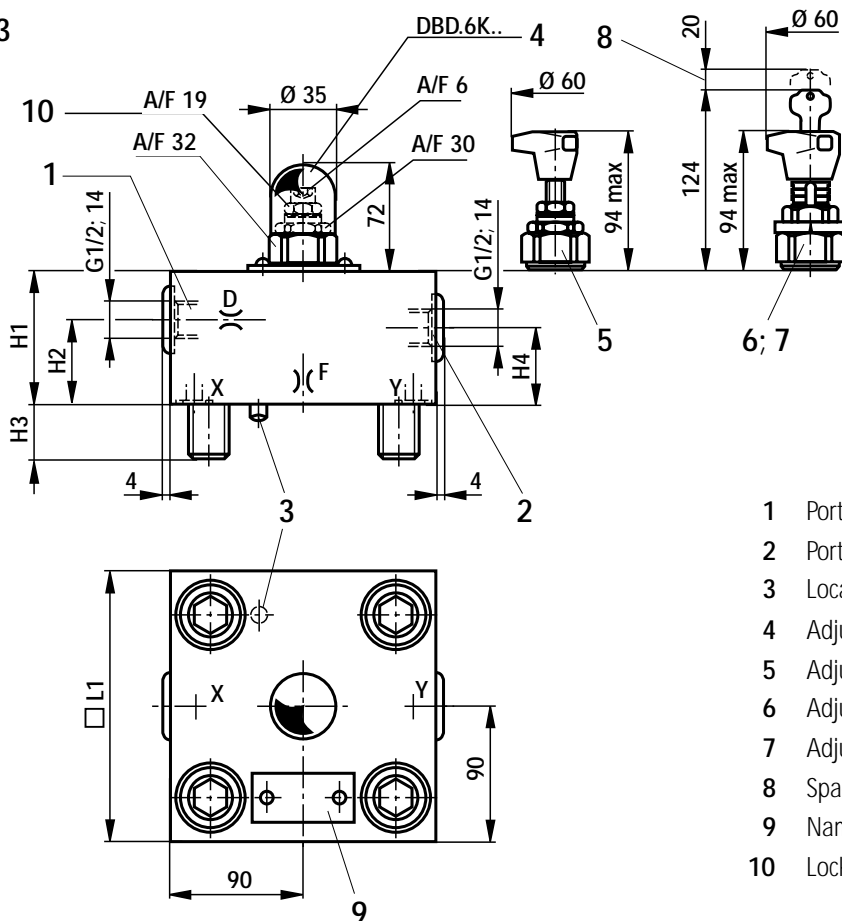


NS 40, 50

Dimensions in mm



NS 63



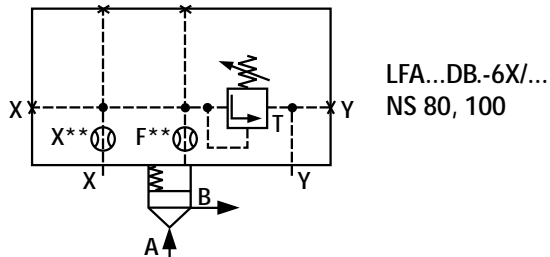
NS	40	50	63
F** 1)	1.2	1.5	2.0
D** 1)	1.0	2.0	2.5
D1	G1/4	G1/2	
H1	60	68	82
H2	28	19,5	30
H3	32	34	50
H4	27	35	45.5
□ L1	125	140	180
L2	69	80	
L3	89	105	
L4	76	84	
L5	60	70	
T1	12	14	

\*\* Orifice - Ø

1) Orifice M6 tapered

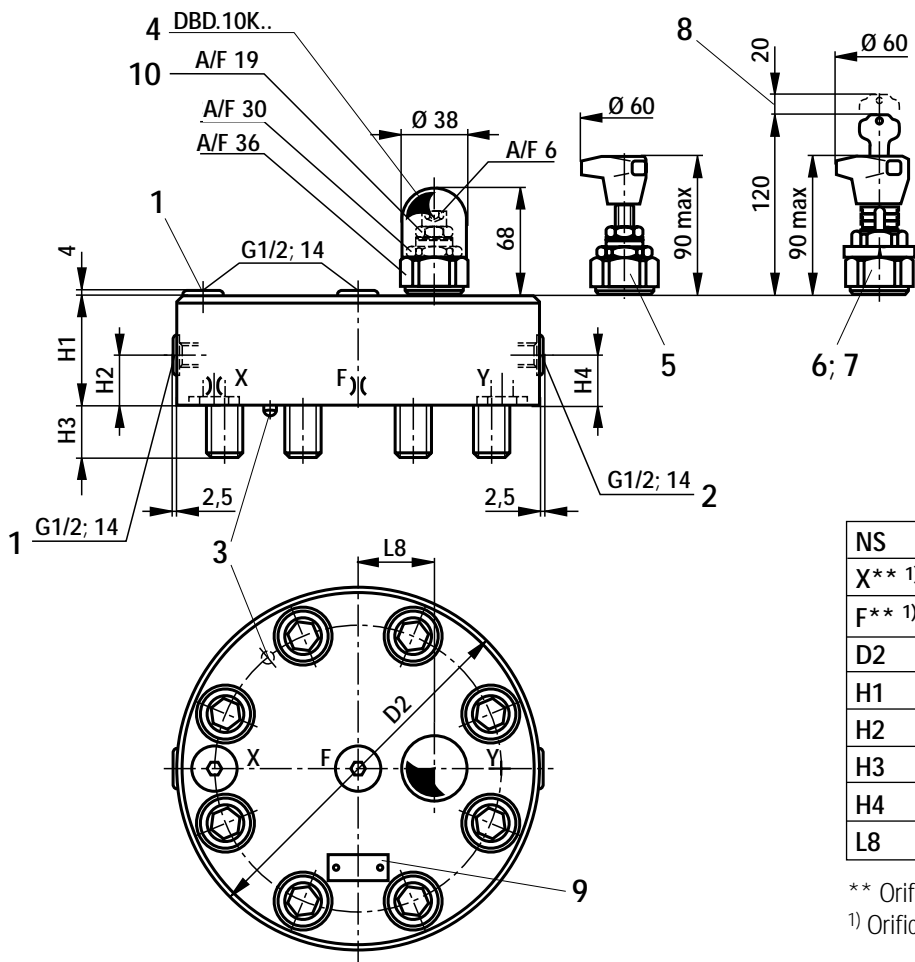
- 1 Port X optionally as threaded port
- 2 Port Y optionally as threaded port
- 3 Locating pin
- 4 Adjuster type "2"
- 5 Adjuster type "1"
- 6 Adjuster type "3"
- 7 Adjuster type "4"
- 8 Space required to remove key
- 9 Name plate
- 10 Lock nut

# Control cover with manual pressure adjustment



NS 80, 100

Dimensions in mm



NS	80	100
X** 1)	3.0	3.0
F** 1)	2.5	2.5
D2	250	300
H1	100	100
H2	38	38
H3	45	51
H4	58	58
L8	50	50

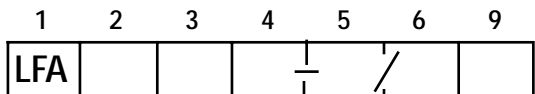
\*\* Orifice - Ø  
1) Orifice G 1/4 tapered

- 1 Port X optionally as threaded port
- 2 Port Y optionally as threaded port
- 3 Locating pin
- 4 Adjuster type "2"
- 5 Adjuster type "1"
- 6 Adjuster type "3"
- 7 Adjuster type "4"
- 8 Space required to remove key
- 9 Name plate
- 10 Lock nut

# Control cover with manual pressure adjustment, with electrical unloading

## NS 16 to 100

NS 16	= 16		
NS 25	= 25		
NS 32	Series = 32	NS 80	Series = 80
NS 40	7X = 40	NS 100	6X = 100
NS 50	= 50		
NS 63	= 63		



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

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

**Control cover type**

For mounting a directional spool (NS 16 to 100) or directional poppet valve (for NS 16, 25, 32) = **DBW**

For mounting a directional poppet valve (for NS 40, 50, 63, 80, 100) = **DBS**

**Adjuster type**

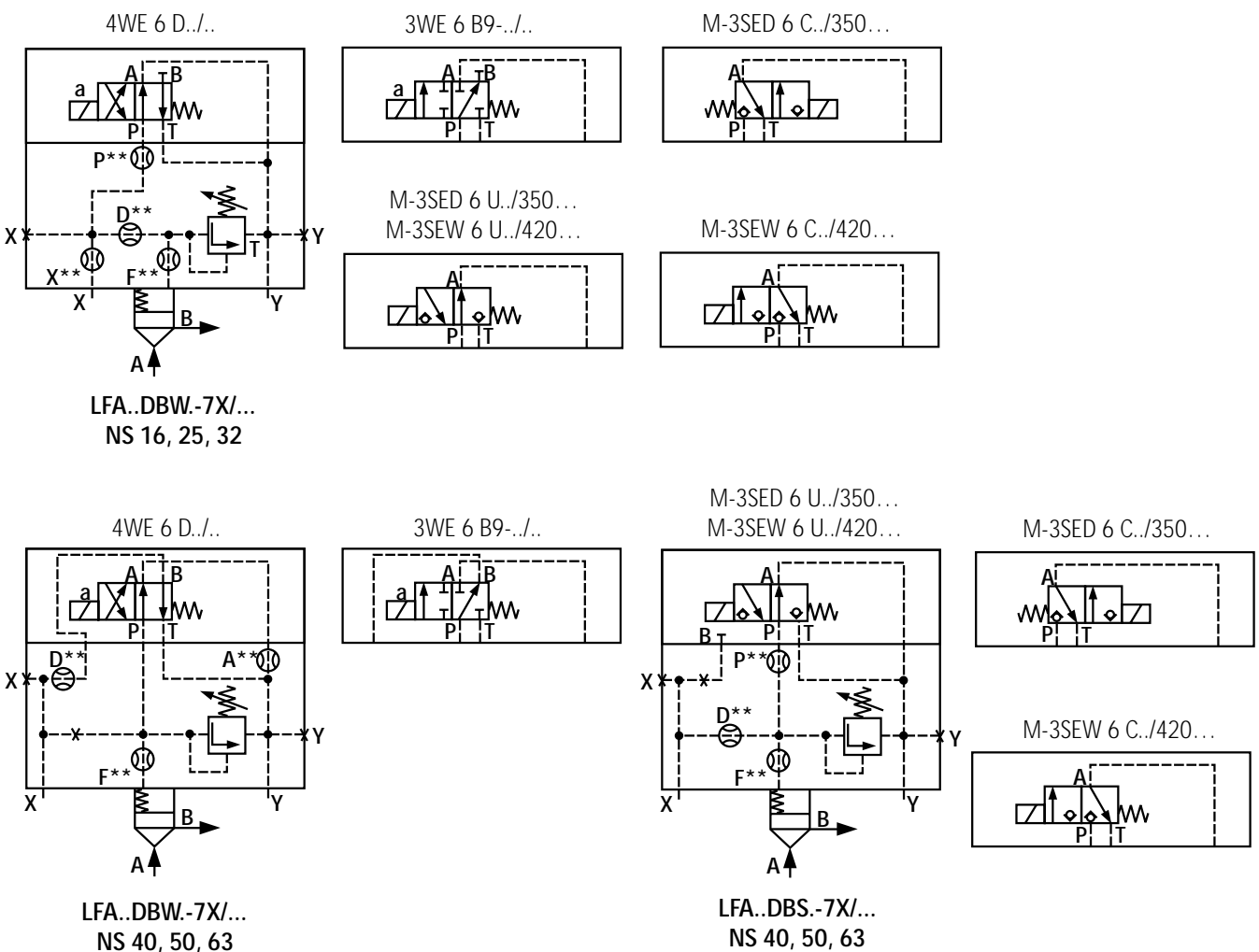
Rotary = 1  
 Hexagon with protective cap = 2  
 Lockable rotary knob with scale (H-lock to automotive industry standards) = 3  
 Rotary knob with scale **not** lockable = 4

**Pressure ratings**  
 (take max. perm. pressure of pilot valve into account)

NS 16, 25, 32	NS 40, 50, 63, 80, 100
025 = 25 bar	025 = 25 bar
050 = 50 bar	050 = 50 bar
100 = 100 bar	100 = 100 bar
200 = 200 bar	200 = 200 bar
315 = 315 bar	315 = 315 bar
420 = 420 bar	400 = 400 bar

6X = Series 6X (NS 80 and 100)  
 7X = Series 7X (NS 16 to 63)

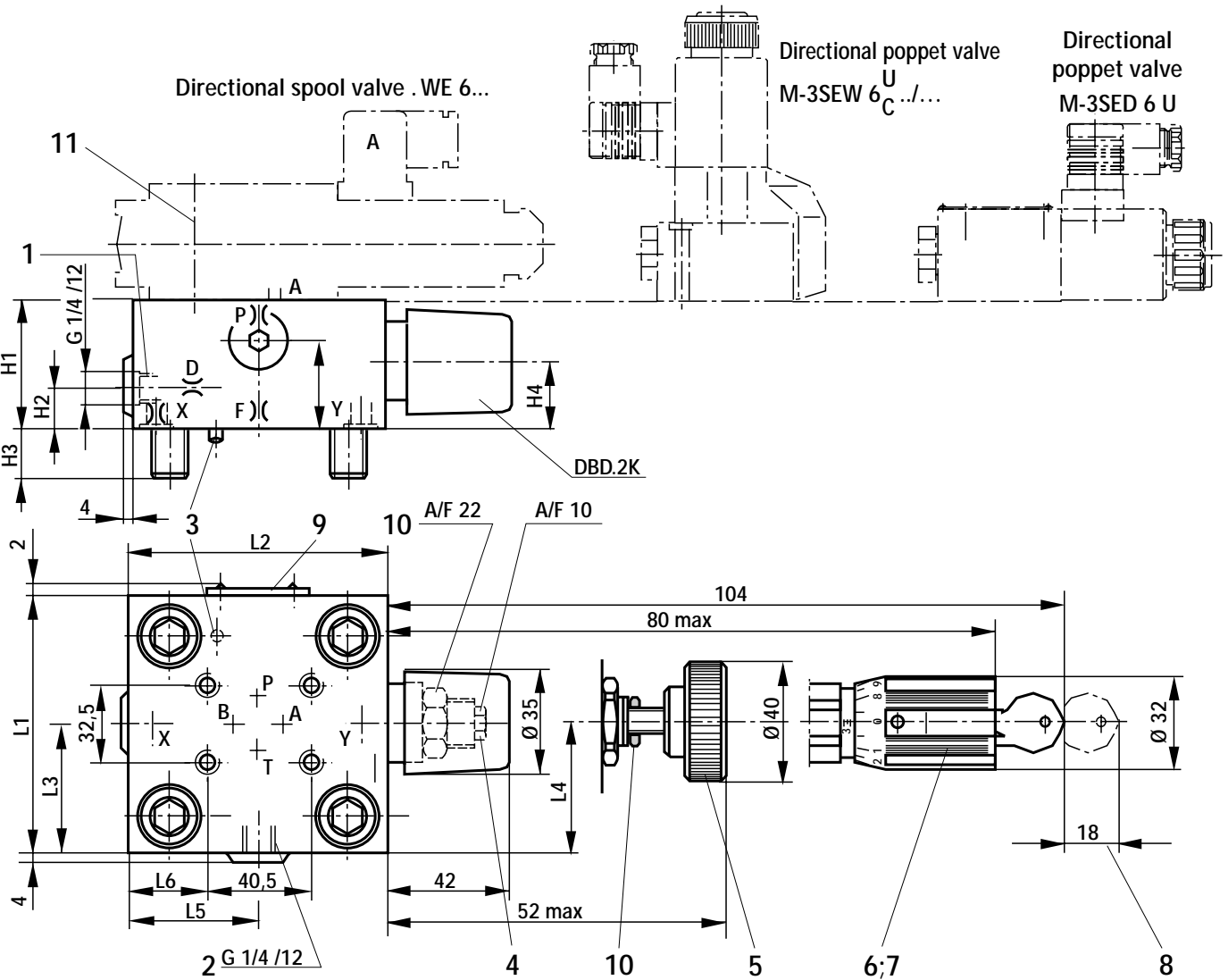
## NS 16 to 63



# Control cover with manual pressure adjustment, for electrical unloading

NS 16, 25, 32

Dimensions in mm



NS	P**1)	X**1)	F**1)	D**1)	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6	L7
16	1.0	0.8	1.0	0.8	40	17	15	19	28	65	80	36.5	32.5	35	7	17
25	1.0	0.8	1.0	0.8	40	19	24	19	28	85	85	49	45.5	36	8	27
32	1.0	1.0	1.2	1.0	50	26	28	26	37	100	100	56.5	53	57	31	34.5

\*\* Orifice - Ø

1) Orifice M6 tapered

- 1 Port X optionally as threaded port
- 2 Port Y optionally as threaded port
- 3 Locating pin
- 4 Adjuster type "2"
- 5 Adjuster type "1"
- 6 Adjuster type "3"
- 7 Adjuster type "4"
- 8 Space required to remove key
- 9 Name plate
- 10 Lock nut
- 11 Valve fixing screws are included within the control cover scope of supply

# Control cover with manual pressure adjustment, for electrical unloading

NS 40, 50

Dimensions in mm

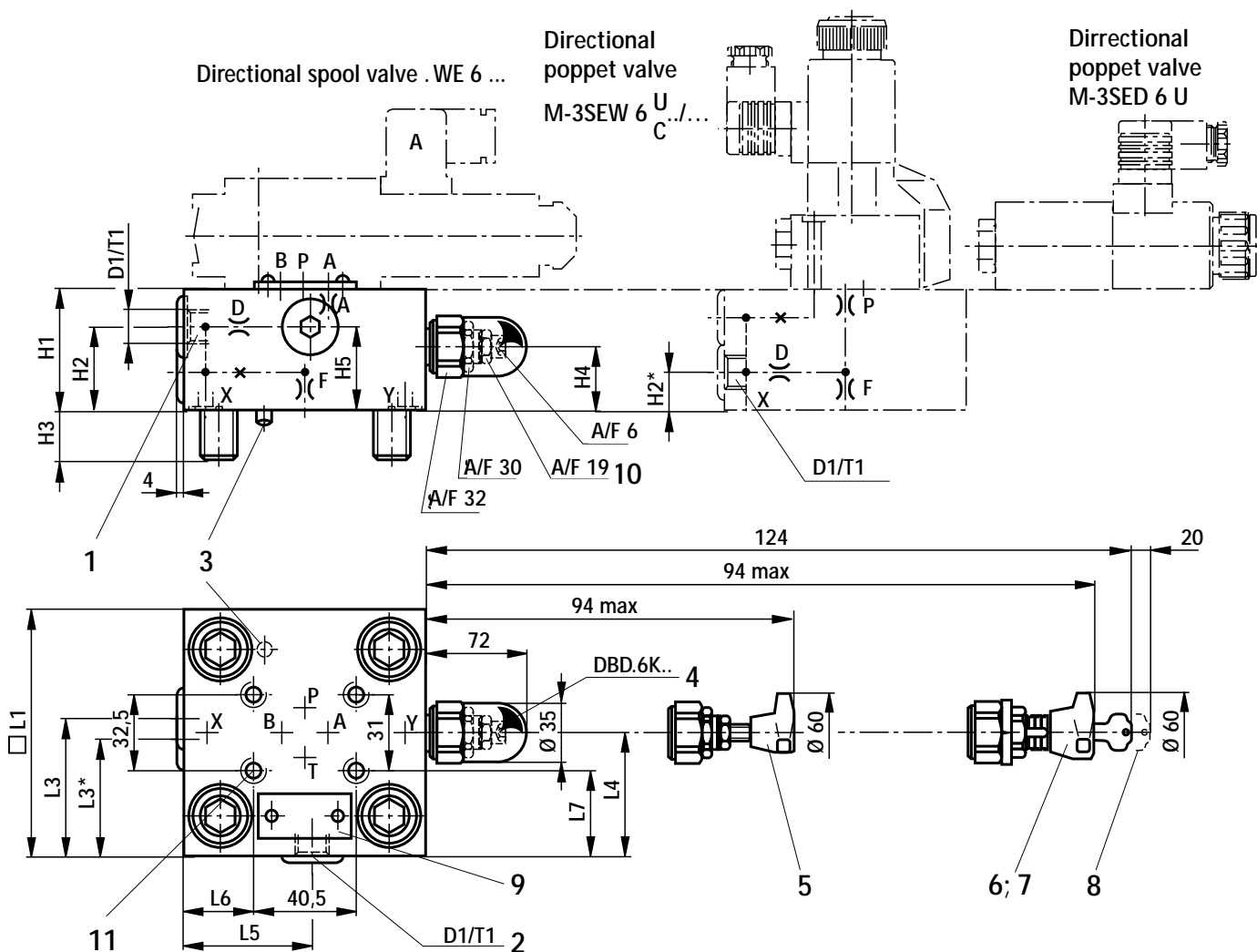
LFA..DBW..7X/...

LFA..DBS..../...

Directional spool valve . WE 6 ...

Directional poppet valve  
M-3SEW 6 U  
C../...

Directional poppet valve  
M-3SED 6 U



NS	A**1)	P**1)	F**1)	D**1)	D1	T1	H1	H2	H2*	H3	H4	H5	□L1	L3	L3*	L4	L5	L6	L7
40	0.8	1.2	1.2	1.0	G1/4	12	60	46	17	32	27	40	125	62.5	69	76	68	43.5	47
50	0.8	1.5	1.5	2.0	G1/2	14	68	51	19.5	34	35	50	140	67.5	80	84	74.5	51	54.5

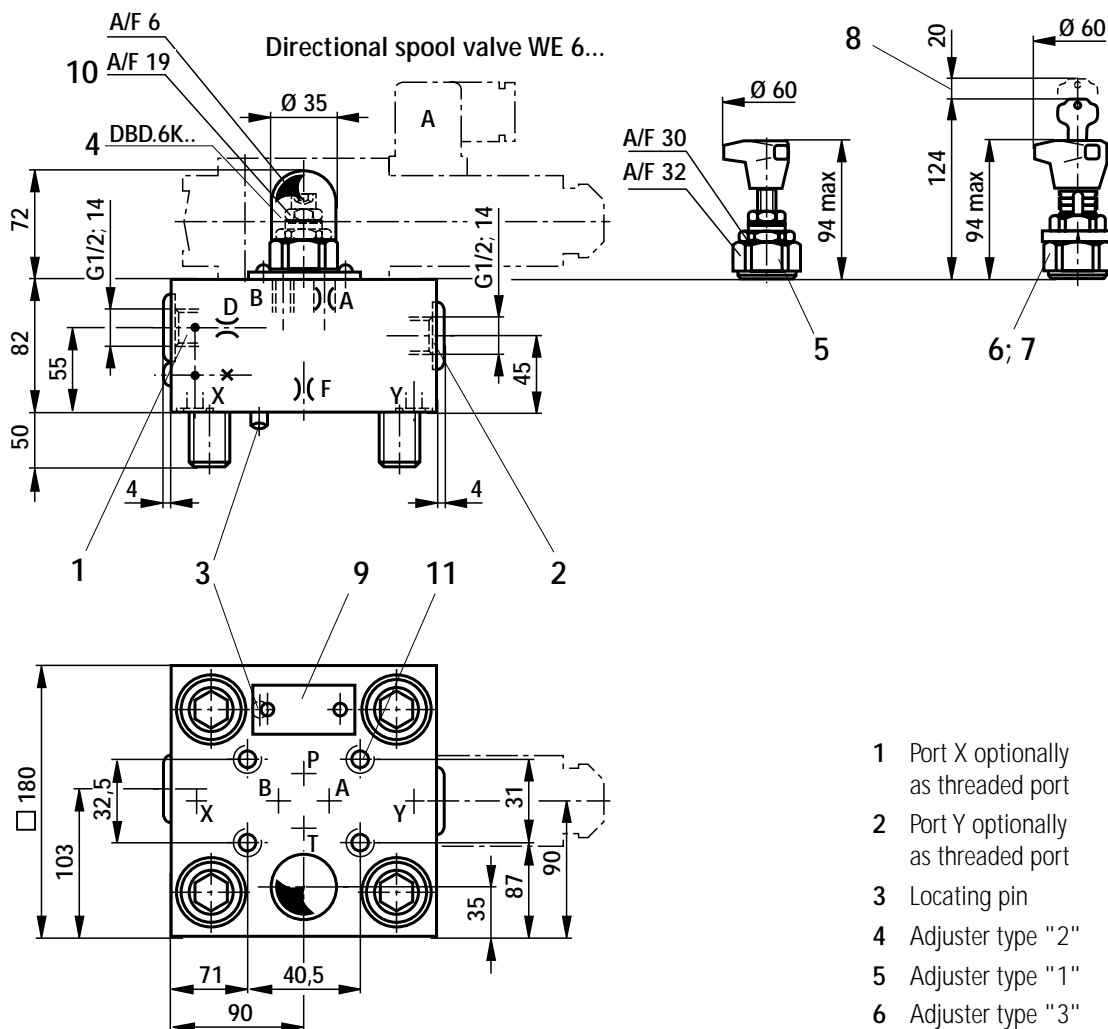
\* Dimensions for control cover LFA..DBS..

\*\* Orifice - Ø

1) Orifice M6 tapered

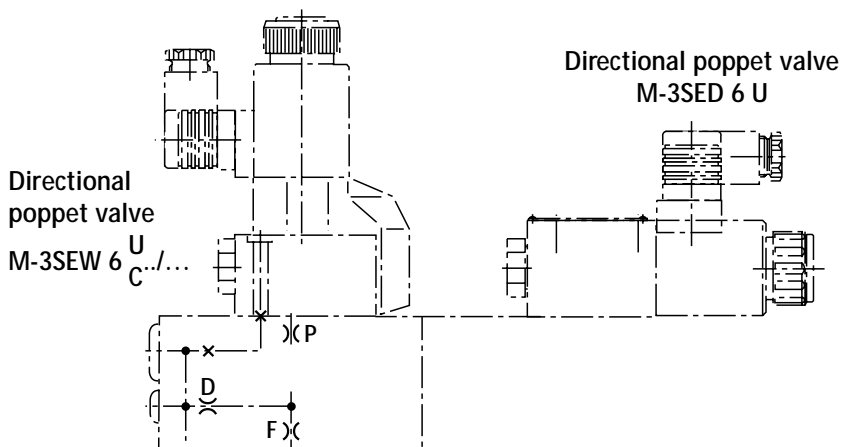
- 1 Port X optionally as threaded port
- 2 Port Y optionally as threaded port
- 3 Locating pin
- 4 Adjuster type "2"
- 5 Adjuster type "1"
- 6 Adjuster type "3"
- 7 Adjuster type "4"
- 8 Space required to remove key
- 9 Name plate
- 10 Lock nut
- 11 Valve fixing screws are included within the control cover scope of supply

LFA..DBW.-7X/...



- 1 Port X optionally as threaded port
- 2 Port Y optionally as threaded port
- 3 Locating pin
- 4 Adjuster type "2"
- 5 Adjuster type "1"
- 6 Adjuster type "3"
- 7 Adjuster type "4"
- 8 Space required to remove key
- 9 Name plate
- 10 Lock nut
- 11 Valve fixing screws are included within the control cover scope of supply

LFA..DBS.-.../...



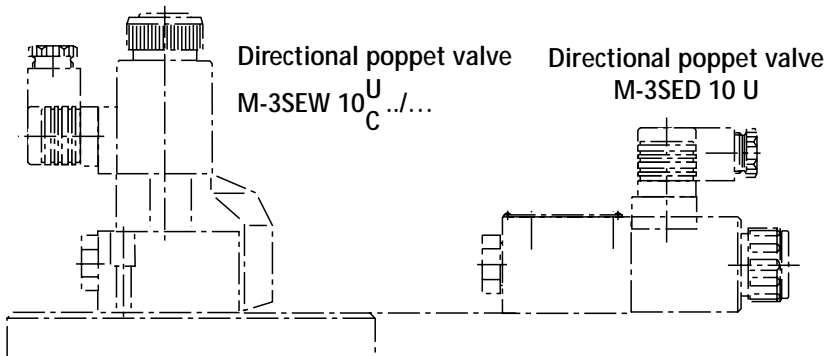
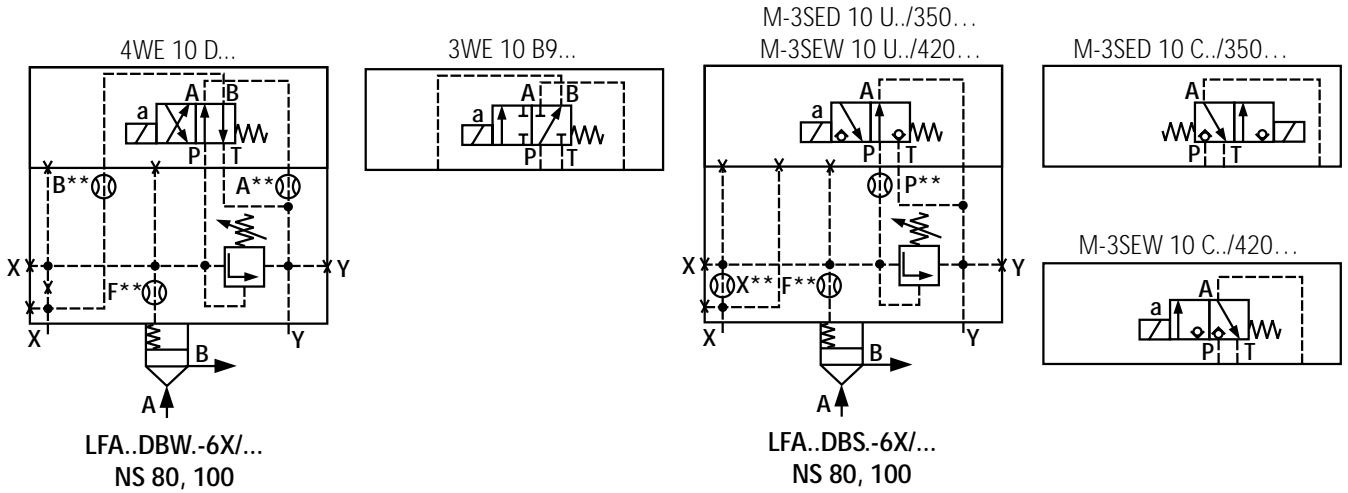
	A**1)	P**1)	F**1)	D**1)
DBW	1.0		2.0	2.5
DBS		1.8	2.0	2.0

\*\* Orifice - Ø  
 1) Orifice M6 tapered

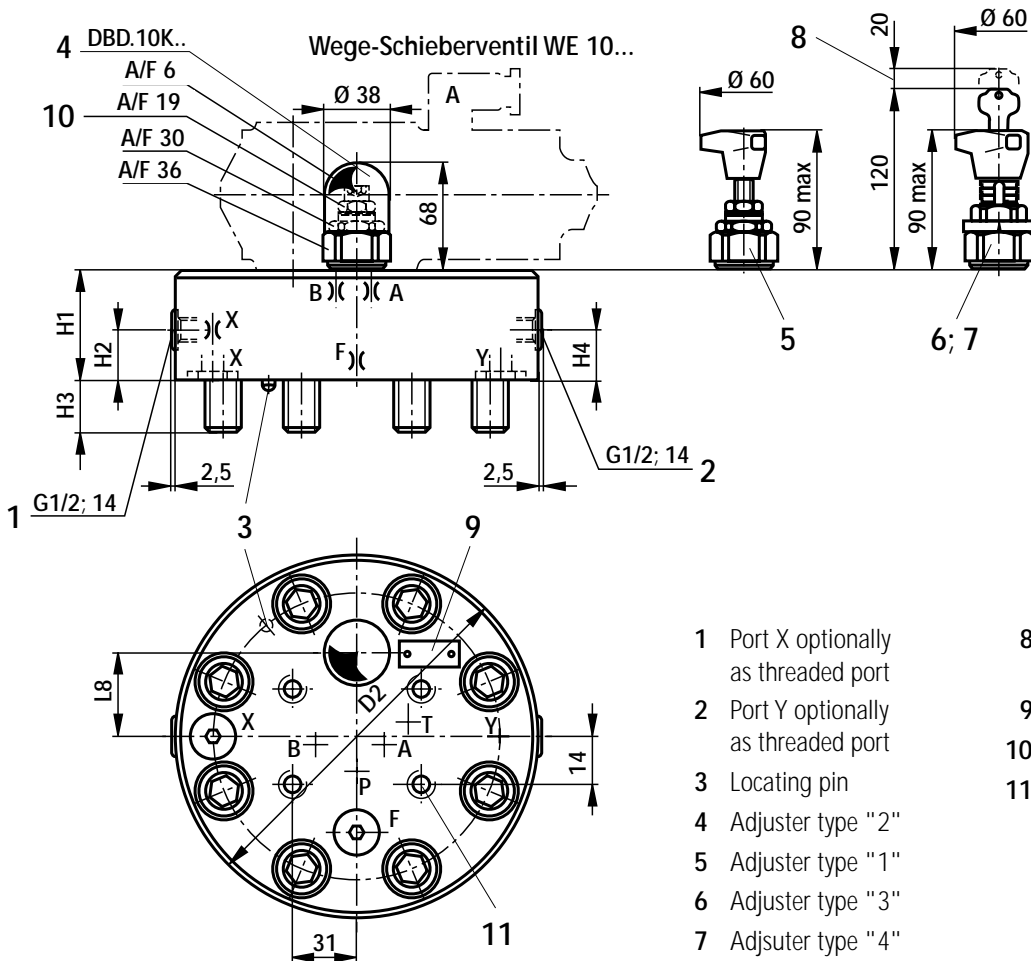


# Control cover with manual pressure adjustment, for electrical unloading

NS 80, 100



Dimensions in mm



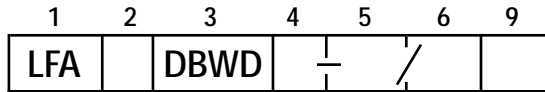
NS	80	100
A**1)	1.2	1.5
B**1)	3.0	3.0
P**1)	3.5	3.5
X**2)	3.0	3.0
F**2)	2.5	2.5
D2	250	300
H1	100	100
H2	30	30
H3	45	51
H4	52	52
L8	75	85

\*\* Orifice - Ø  
1) Orifice M8 x 1 tapered  
2) Orifice G 1/4 tapered

- 1 Port X optionally as threaded port
- 2 Port Y optionally as threaded port
- 3 Locating pin
- 4 Adjuster type "2"
- 5 Adjuster type "1"
- 6 Adjuster type "3"
- 7 Adjuster type "4"
- 8 Space required to remove key
- 9 Name plate
- 10 Lock nut
- 11 Valve fixing screws are included within the control cover scope of supply

# Control cover with manual pressure adjustment, for isolation functions

## NS 16 to 100



NS 16	= 16		
NS 25	= 25		
NS 32	Series = 32	NS 80	Series = 80
NS 40	7X = 40	NS 100	6X = 100
NS 50	= 50		
NS 63	= 63		

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

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

**Adjuster type**

Rotary knob	= 1
Hexagon with protective cap	= 2
Lockable rotary knob with scale (H-lock to automotive industry standards)	= 3
Rotary knob with scale <b>not</b> lockable	= 4

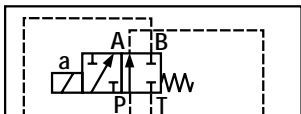
  

Series 6X (NS 80 and 100)	= 6X
Series 7X (NS 16 to 63)	= 7X

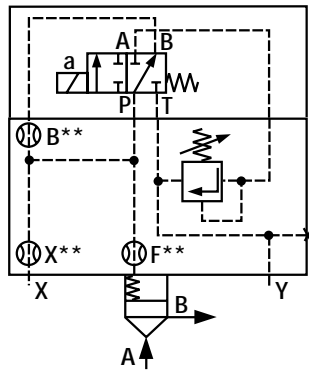
**Pressure ratings**  
 (take max. perm. pressure of pilot valve into account)

NS 16, 25, 32	NS 40, 50, 63, 80, 100
<b>025</b> = 25 bar	<b>025</b> = 25 bar
<b>050</b> = 50 bar	<b>050</b> = 50 bar
<b>100</b> = 100 bar	<b>100</b> = 100 bar
<b>200</b> = 200 bar	<b>200</b> = 200 bar
<b>315</b> = 315 bar	<b>315</b> = 315 bar
<b>420</b> = 420 bar	<b>400</b> = 400 bar

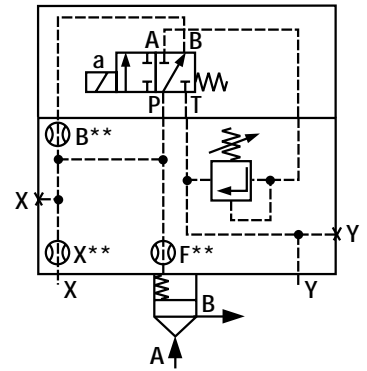
3 WE 6 A../...



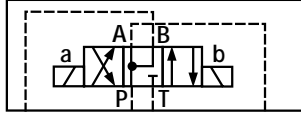
3 WE 6 B9../...



3 WE 6 B9../...



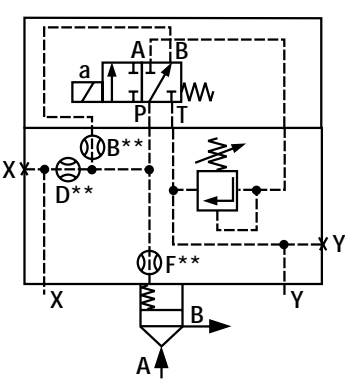
4 WE 6 M../...



LFA..DBWD.-7X/...  
NS 16

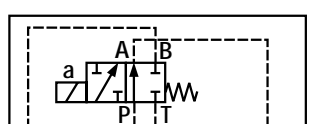
LFA..DBWD.-7X/...  
NS 25, 32

3 WE 6 B9../...

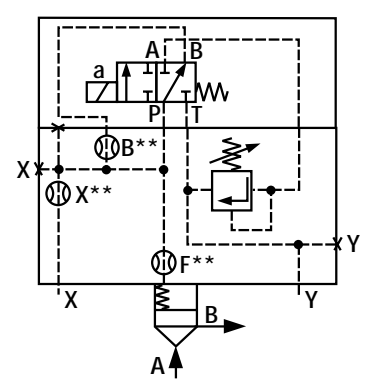


LFA..DBWD.-7X/...  
NS 40, 50, 63

3 WE 10 A../...

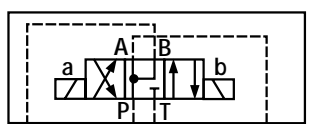


3 WE 10 B9../...



LFA..DBWD.-6X/...  
NS 80, 100

4 WE 10 M../...





# Control cover with manual pressure adjustment, for isolation functions

NS 63

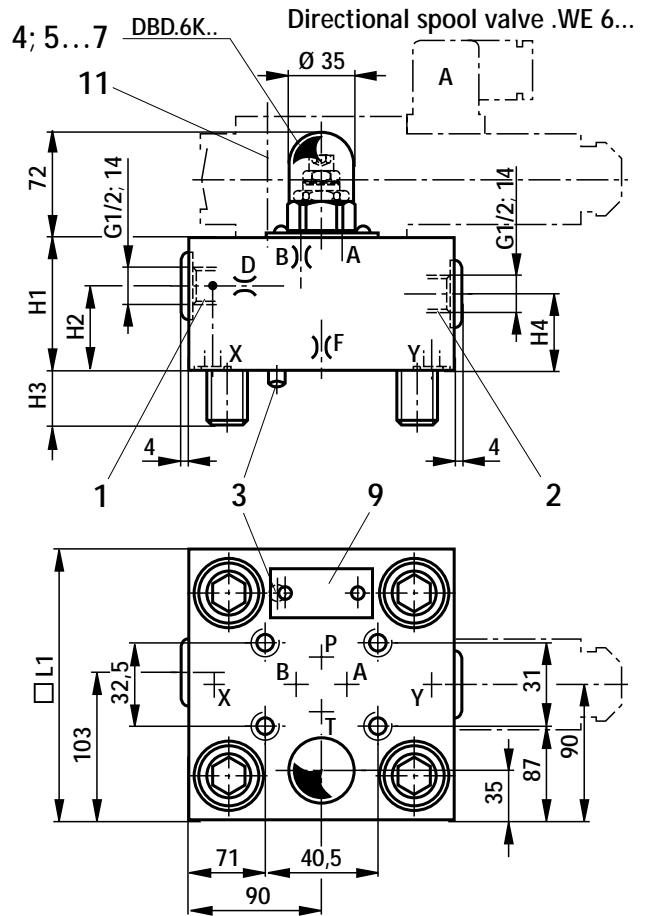
Dimensions in mm

NS	16	25	32	40	50	63	80	100
B**1)	1.0	1.0	1.0	1.2	1.5	1.8	3.5	3.5
X**2)	0.8	0.8	1.0				3.0	3.0
F**2)	1.0	1.0	1.2	1.2	1.5	2.0	2.5	2.5
D**1)				1.0	2.0	2.5		
D1				G 1/4	G 1/2			
D2							250	300
H1	40	40	50	60	68	82	100	100
H2		19	26	46	50	55	67	67
H3	15	24	28	32	34	50	45	51
H4	19	19	26	27	35	45	58	58
H5	28	28	37	16	20			
L1	65	85	100					
□L1				125	140	180		
L2	80	85	100					
L3		49	56.5	62.5	70			
L4	32.5	45.5	53	76	84			
L5	35	36	57	68	75			
L6	7	8	31	43.5	51			
L7	17	27	34.5	47	54.5			
L8							75	85
T1				12	14			

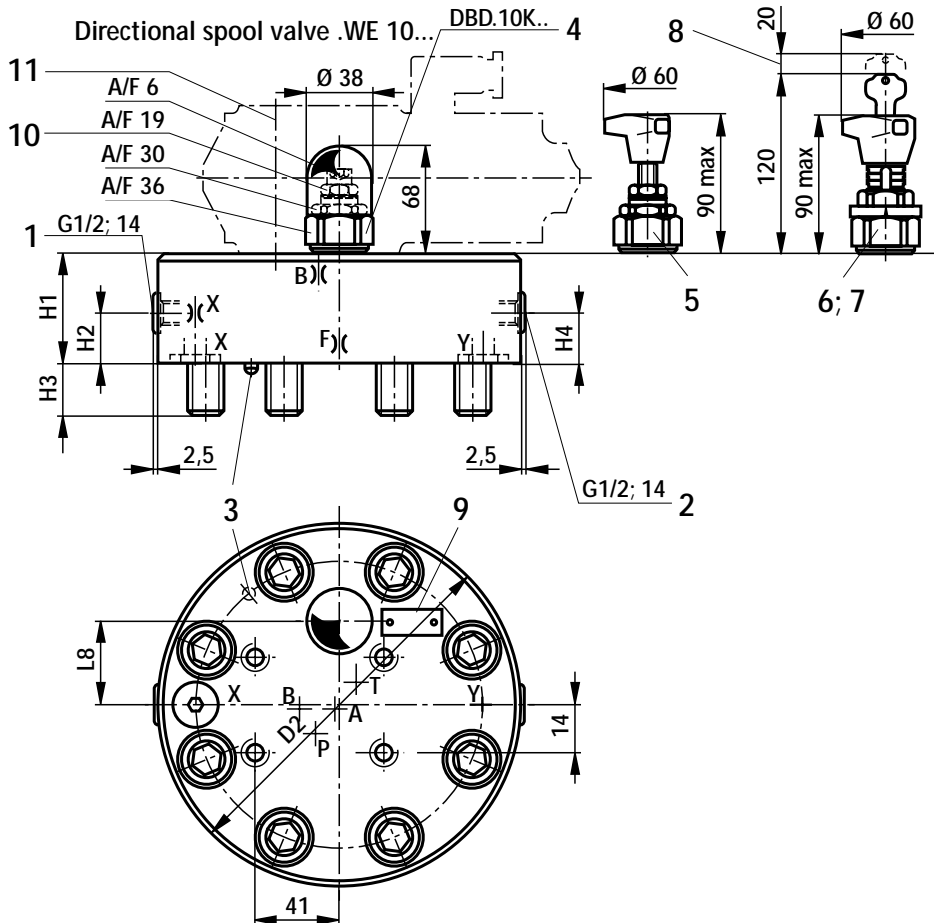
\*\* Orifice - Ø

1) Orifice M6 tapered (NS 16...63) or M8 x 1 tapered (NS 80 and 100)

2) Orifice M6 tapered (NS 16...63) or G 1/4 tapered (NS 80 and 100)



NS 80, 100



- 1 Port X optionally as threaded port
- 2 Port Y optionally as threaded port
- 3 Locating pin
- 4 Adjuster type "2"
- 5 Adjuster type "1"
- 6 Adjuster type "3"
- 7 Adjuster type "4"
- 8 Space required to remove key
- 9 Name plate
- 10 Lock nut
- 11 Valve fixing screws are included within the control cover scope of supply

# Control cover with 2 manual pressure adjustments, electrically selectable

## NS 16 to 100

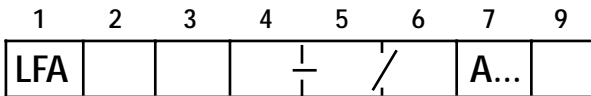
NS 16	= 16							
NS 25	= 25							
NS 32	Series = 32	NS 80	Series = 80					
NS 40	7X = 40	NS 100	6X = 100					
NS 50	= 50							
NS 63	= 63							

### Control cover type

De-energised - DB1 (4 WE.. D)	= DBU2A
De-energised - open (4 WE.. H)	
De-energised - DB max. (4 WE.. D)	= DBU2B
(see symbols)	

### Adjuster type (details only required for DB1)

Rotary knob	= 1
Hexagon with protective cap	= 2
Lockable rotary knob with scale	= 3
(H-lock to automotive industry standards)	
Rotary knob with scale <b>not</b> lockable	= 4



DB max. DB1

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

### ⚠ Attention!

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

### Pressure ratings

(take max. perm. pressure of pilot valve into account)

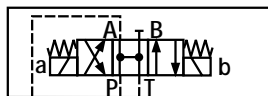
NS 16, 25, 32	NS 40, 50, 63, 80, 100
025 = 25 bar	025 = 25 bar
050 = 50 bar	050 = 50 bar
100 = 100 bar	100 = 100 bar
200 = 200 bar	200 = 200 bar
315 = 315 bar	315 = 315 bar
420 = 420 bar	400 = 400 bar

6X = Series 6X (NS 80 and 100)  
 7X = Series 7X (NS 16 to 63)

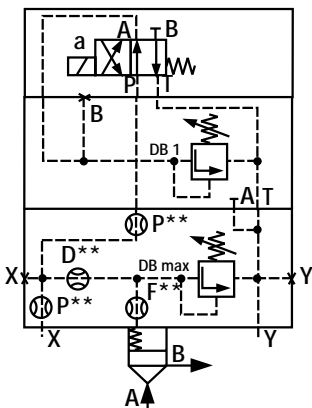
4 WE 6 H../...



4 WE 6 H../...

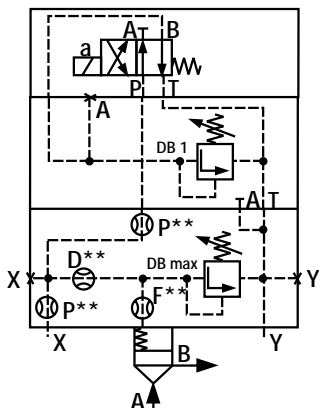


4 WE 6 D../...



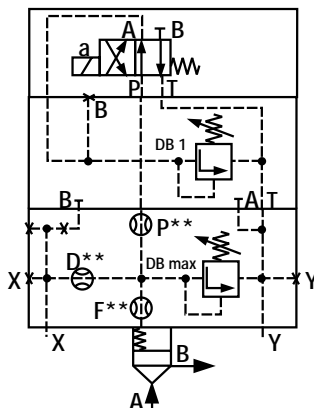
LFA..DBU2A.-7X...  
NS 16, 25, 32

4 WE 6 D../...



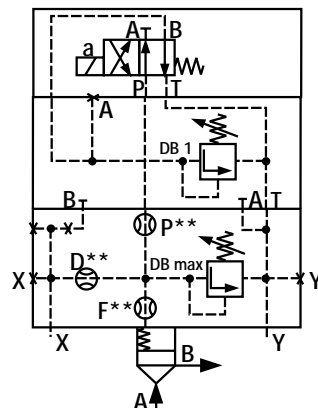
LFA..DBU2B.-7X/...  
NS 16, 25, 32

4 WE 6 D../...



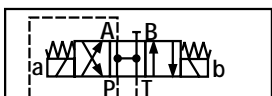
LFA..DBU2A.-7X/...  
NS 40, 50, 63

4 WE 6 D../...

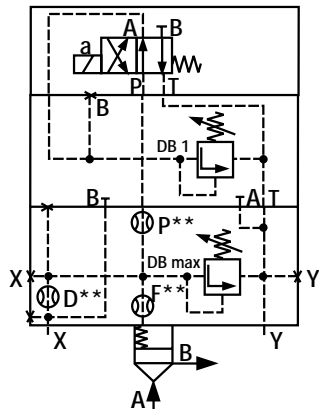


LFA..DBU2B.-7X/...  
NS 40, 50, 63

4 WE 10 H../...

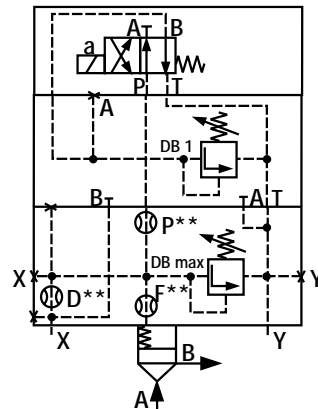


4 WE 10 D../...



LFA...DBU2A.-6X/...  
NS 80, 100

4 WE 10 D../...

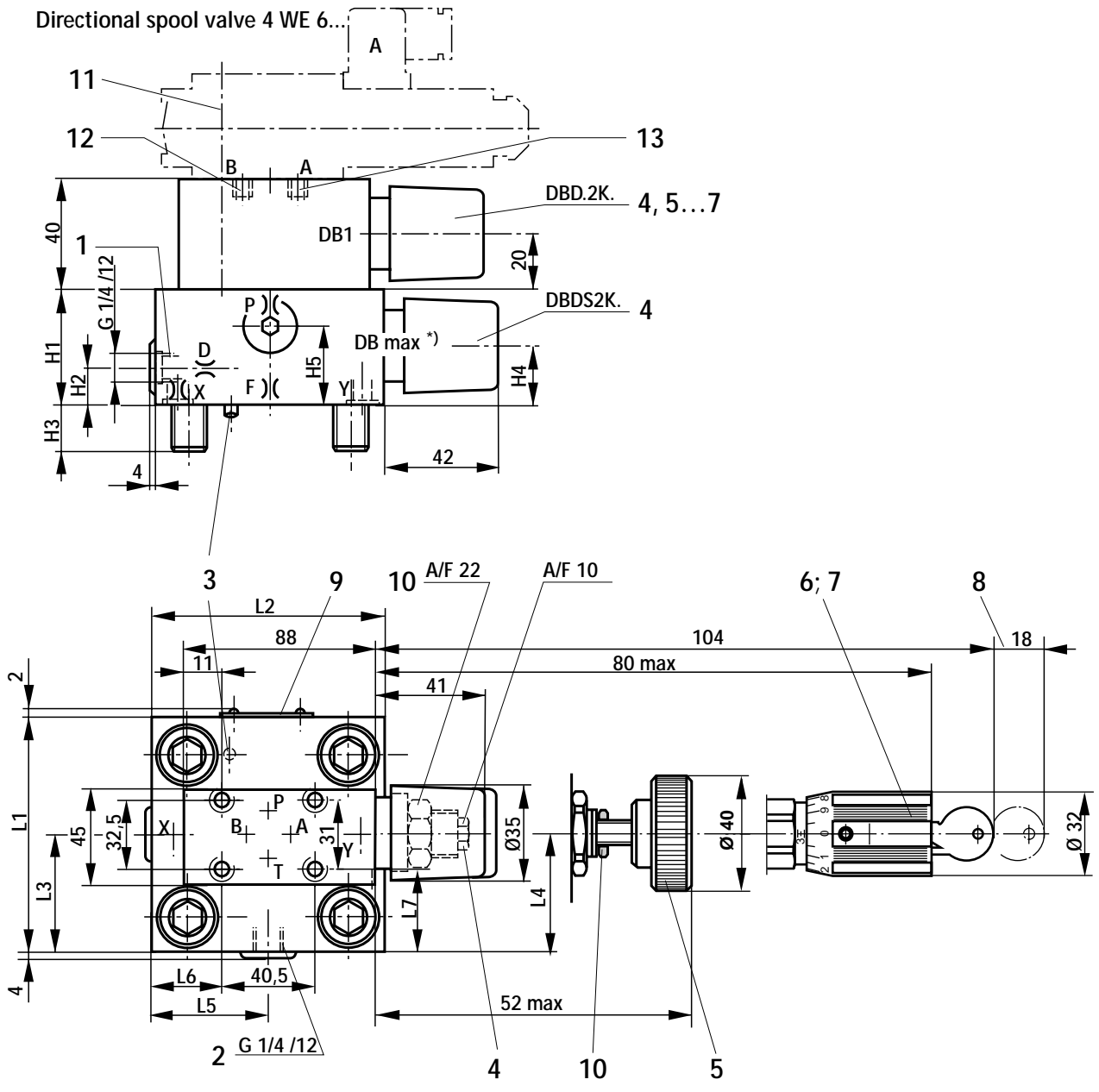


LFA...DBU2B.-6X/...  
NS 80, 100

Control cover with 2 manual pressure adjustments, electrically selectable

NS 16, 25, 32

Dimensions in mm



NS	P**1)	X**1)	F**1)	D**1)	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6	L7
16	1.0	0.8	1.0	0.8	40	17	15	19	28	65	80	36.5	32.5	35	7	17
25	1.0	0.8	1.0	0.8	40	19	24	19	28	85	85	49	45.5	36	8	27
32	1.0	1.0	1.2	1.0	50	26	28	26	37	100	100	56.5	53	57	31	34.5

\*\* Orifice - Ø

1) Orifice M6 tapered

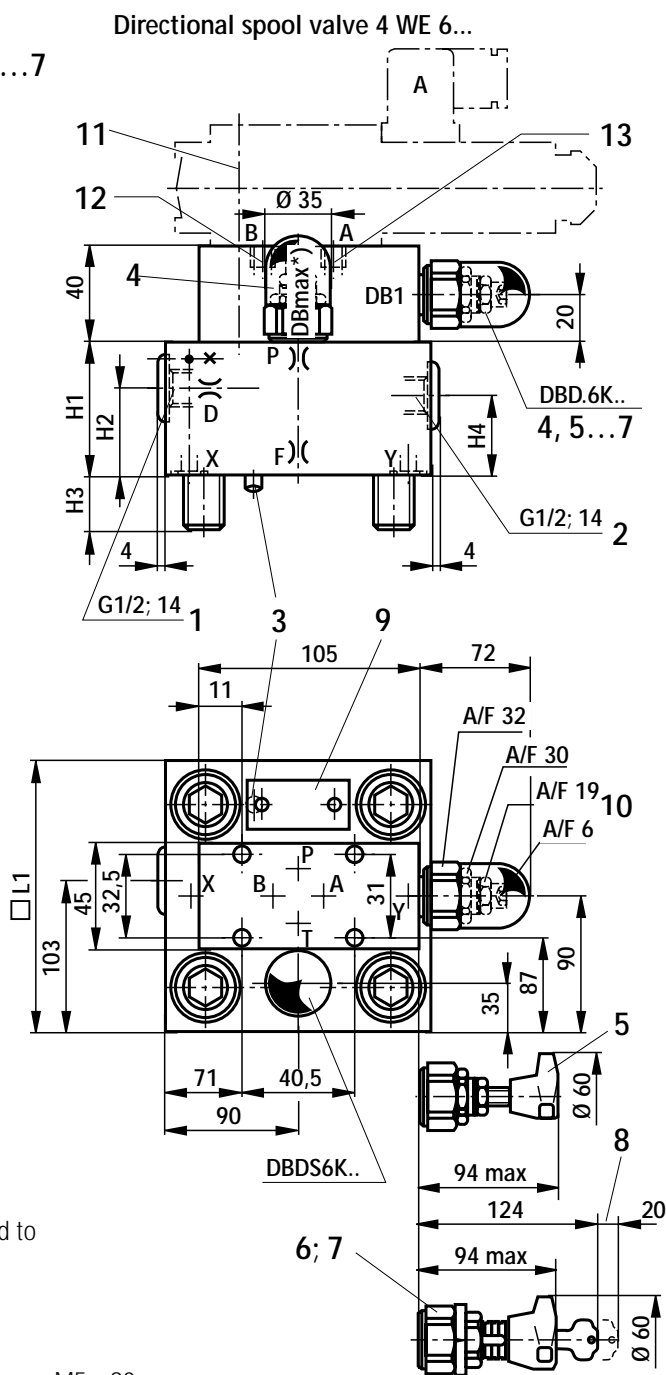
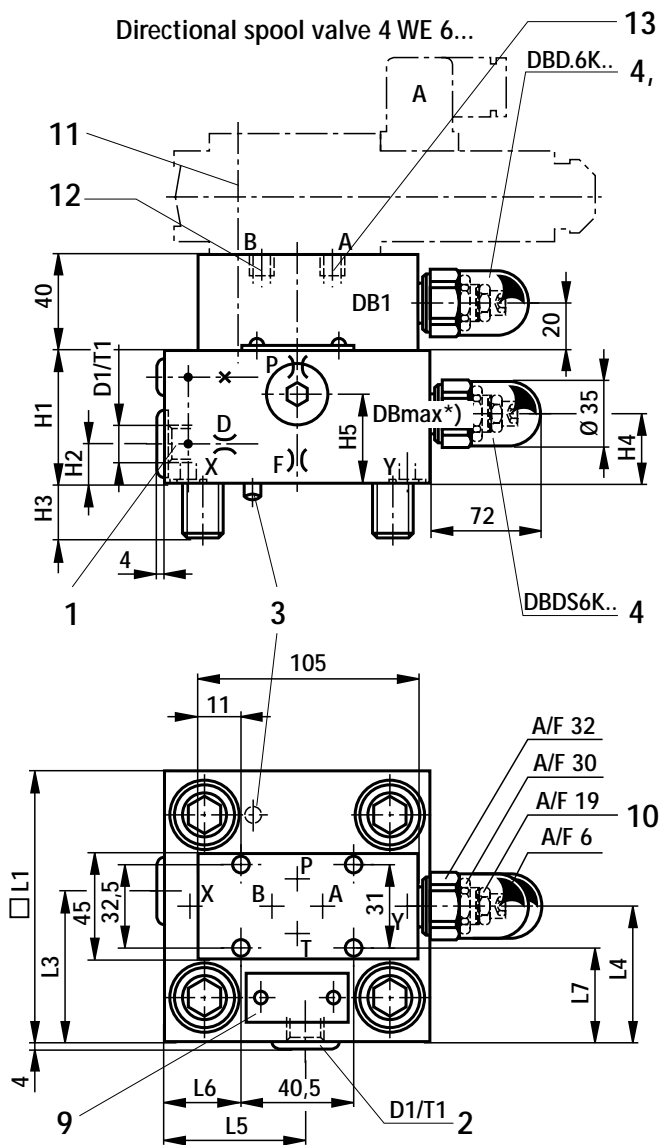
- 1 Port X optionally as threaded port
  - 2 Port Y optionally as threaded port
  - 3 Locating pin
  - 4 Adjuster type "2"
  - 5 Adjuster type "1"
  - 6 Adjuster type "3"
  - 7 Adjuster type "4"
  - 8 Space required to remove key
  - 9 Name plate
  - 10 Lock nut
  - 11 Valve fixing screws M5 x 90 are included within the scope of the control cover supply
  - 12 Plug M6 tapered for ..DBU 2A..
  - 13 Plug M6 tapered for ..DBU 2B..
- \*) For DB max. only adjuster type "2" is possible

# Control cover with 2 manual pressure adjustments, electrically selectable

NS 40, 50

NS 63

Dimensions in mm



- 1 Port X optionally as threaded port
- 2 Port Y optionally as threaded port
- 3 Locating pin
- 4 Adjuster type "2"
- 5 Adjuster type "1"
- 6 Adjuster type "3"
- 7 Adjuster type "4"
- 8 Space required to remove key
- 9 Name plate
- 10 Lock nut
- 11 Valve fixing screws M5 x 90 are included within the control cover scope of supply
- 12 Plug M6 tapered for ..DBU 2A..
- 13 Plug M6 tapered for ..DBU 2B..

\*) For DB max. only adjuster type "2" is possible

NS	P**1)	F**1)	D**1)	D1	H1	H2	H3	H4	H5	□ L1	L3	L4	L5	L6	L7	T1
40	1.2	1.2	1.0	G1/4	60	17	32	27	40	125	69	76	68	43.5	47	12
50	1.5	1.5	2.0	G1/2	68	19.5	34	35	50	140	80	84	74.5	51	54.5	14
63	2.5	2.0	2.5		82	55	50	45		180						

\*\* Orifice - Ø

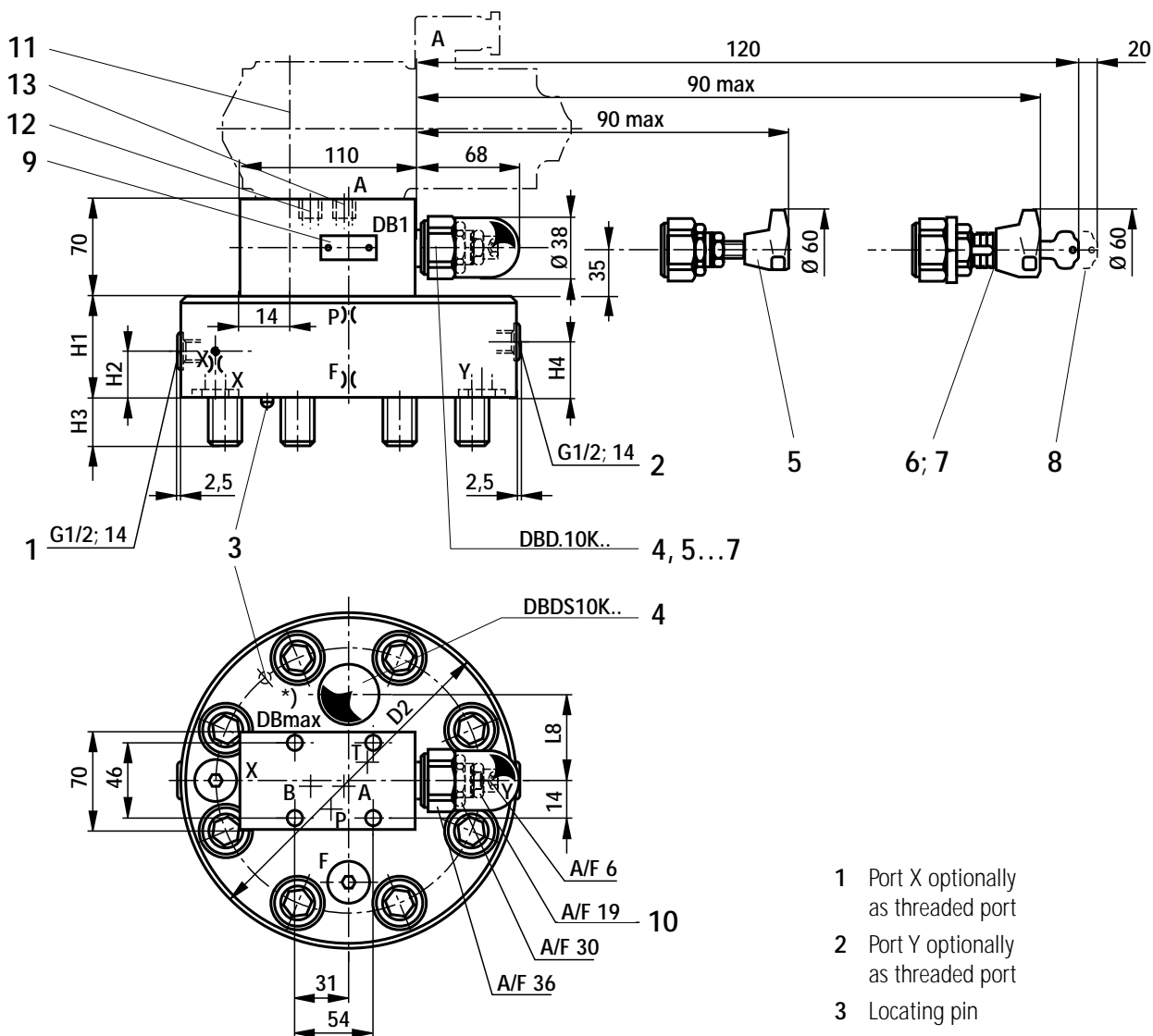
1) Orifice M6 tapered

Control cover with 2 manual pressure adjustments, electrically selectable

NS 80, 100

Dimensions in mm

Directional spool valve 4 WE 10...



- 1 Port X optionally as threaded port
  - 2 Port Y optionally as threaded port
  - 3 Locating pin
  - 4 Adjuster type "2"
  - 5 Adjuster type "1"
  - 6 Adjuster type "3"
  - 7 Adjuster type "4"
  - 8 Space required to remove key
  - 9 Name plate
  - 10 Lock nut
  - 11 Valve fixing screws are included within the control cover scope of supply
  - 12 Plug M8 x 1 tapered for ...DBU2A...
  - 13 Plug M8 x 1 tapered for ...DBU2B...
- \*) For DB max. only adjuster type "2" is possible

NS	P**1)	X**2)	F**2)	D2	H1	H2	H3	H4	L8
80	3.5	3.0	2.5	250	100	30	45	52	75
100	3.5	3.0	2.5	300	100	30	51	52	85

\*\* Orifice - Ø  
 1) Orifice M8 x1 tapered  
 2) Orifice G 1/4 tapered



# Control cover with 3 manual pressure adjustments, electrically selectable

## NS 16 to 100

	1	2	3	4	5	6	7	8	9
	<b>LFA</b>		<b>DBU3D</b>				<b>A...</b>	<b>B...</b>	

Nom. size 16	Series 7X =	= 16							No code = NBR seals V = FKM seals (other seals on request)
Nom. size 25		= 25							
Nom. size 32		= 32							
Nom. size 40		= 40							
Nom. size 50		= 50							
Nom. size 63	Series 6X =	= 63						<b>⚠ Attention!</b> The compatibility of the seals and pressure fluid has to be taken into account!	
Nom. size 80		= 80							
Nom. size 100		= 100							

**Adjuster type** (details only for DB1 or DB2)\*

Rotary knob	= 1
Hexagon with protective cap	= 2
Lockable rotary knob with scale (H-lock to automotive industry standards)	= 3
Rotary knob with scale <b>not</b> lockable	= 4

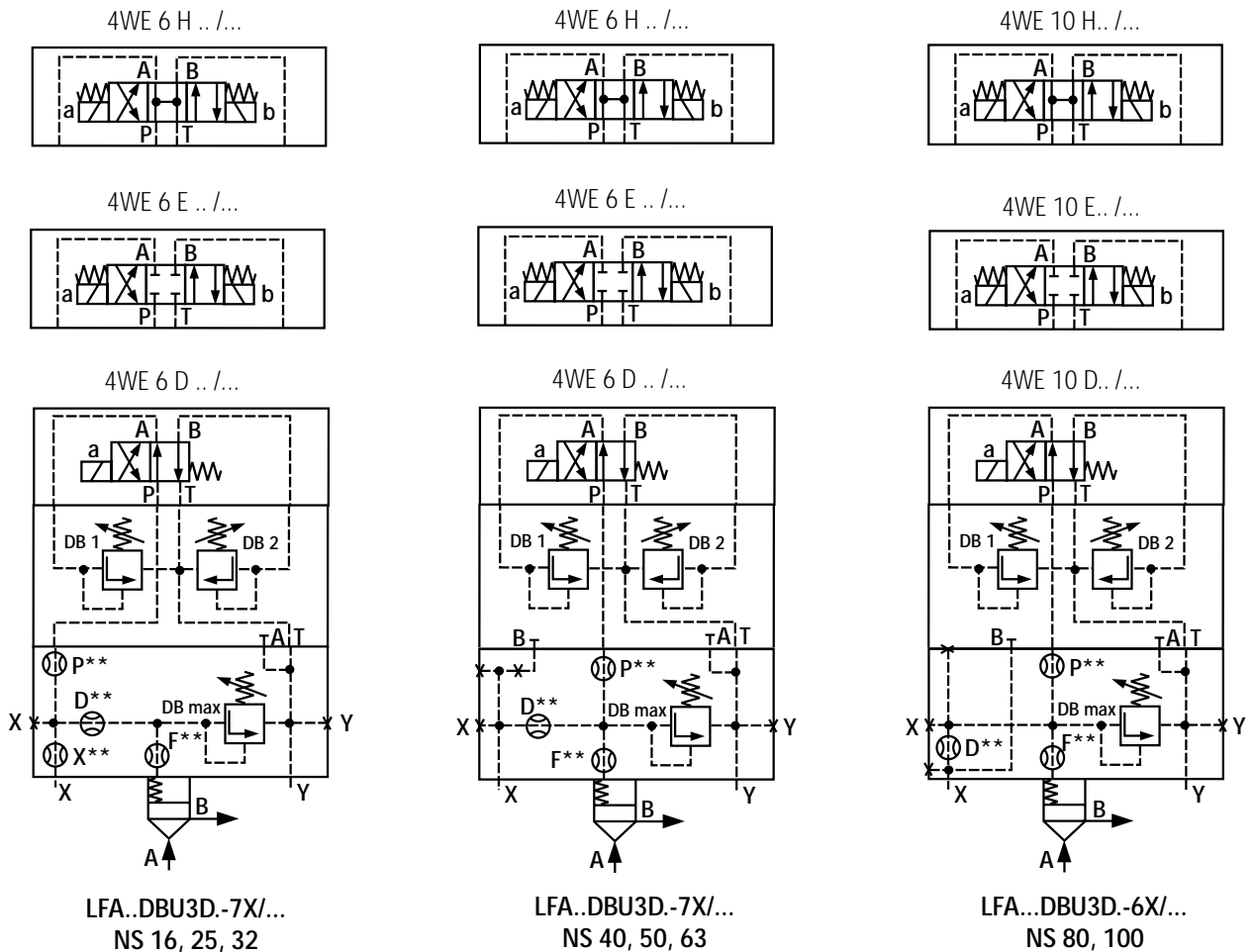
  

Series 6X (NS 80 and 100)	= 6X
Series 7X (NS 16 to 63)	= 7X

NS 16, 25, 32	NS 40, 50, 63, 80, 100
<b>025</b> = 25 bar	<b>025</b> = 25 bar
<b>050</b> = 50 bar	<b>050</b> = 50 bar
<b>100</b> = 100 bar	<b>100</b> = 100 bar
<b>200</b> = 200 bar	<b>200</b> = 200 bar
<b>315</b> = 315 bar	<b>315</b> = 315 bar
<b>420</b> = 420 bar	<b>400</b> = 400 bar

\*) For DB1 and DB2 select the same adjuster type

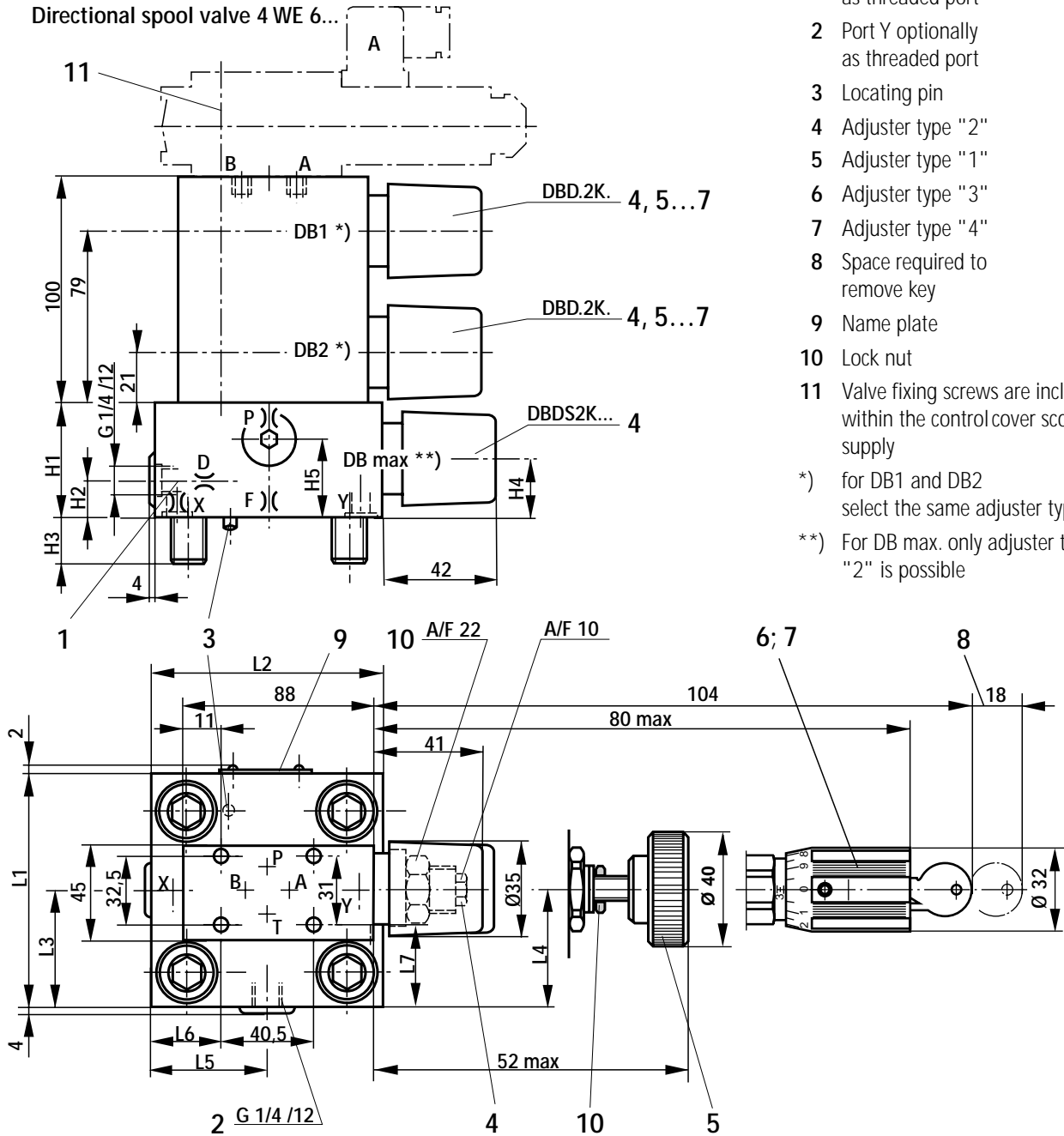


# Control cover with 3 manual pressure adjustments, electrically selectable

NS 16, 25, 32

Dimensions in mm

Directional spool valve 4 WE 6...



- 1 Port X optionally as threaded port
- 2 Port Y optionally as threaded port
- 3 Locating pin
- 4 Adjuster type "2"
- 5 Adjuster type "1"
- 6 Adjuster type "3"
- 7 Adjuster type "4"
- 8 Space required to remove key
- 9 Name plate
- 10 Lock nut
- 11 Valve fixing screws are included within the control cover scope of supply

\*) for DB1 and DB2 select the same adjuster type

\*\*\*) For DB max. only adjuster type "2" is possible

NS	P**1)	X**1)	F**1)	D**1)	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6	L7
16	1.0	0.8	1.0	0.8	40	17	15	19	28	65	80	36.5	32.5	35	7	17
25	1.0	0.8	1.0	0.8	40	19	24	19	28	85	85	49	45.5	36	8	27
32	1.0	1.0	1.2	1.0	50	26	28	26	37	100	100	56.5	53	57	31	34.5

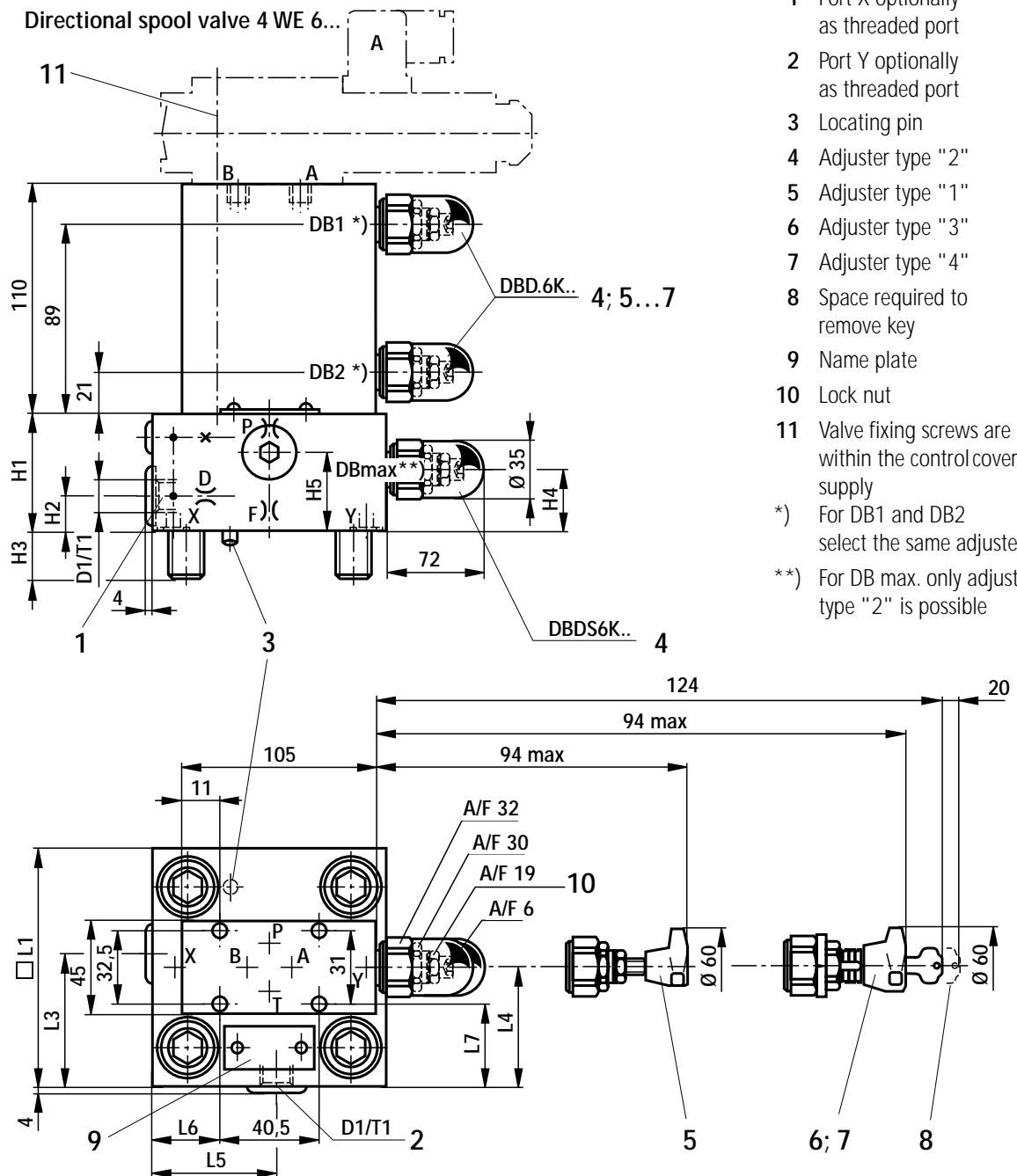
\*\* Orifice - Ø

1) Orifice M6 tapered

# Control cover with 3 manual pressure adjustments, electrically selectable

NS 40, 50

Dimensions in mm



- 1 Port X optionally as threaded port
  - 2 Port Y optionally as threaded port
  - 3 Locating pin
  - 4 Adjuster type "2"
  - 5 Adjuster type "1"
  - 6 Adjuster type "3"
  - 7 Adjuster type "4"
  - 8 Space required to remove key
  - 9 Name plate
  - 10 Lock nut
  - 11 Valve fixing screws are included within the control cover scope supply
- \*) For DB1 and DB2 select the same adjuster type
- \*\*\*) For DB max. only adjuster type "2" is possible

NS	P**1)	F**1)	D**1)	D1	H1	H2	H3	H4	H5	□ L1	L3	L4	L5	L6	L7	T1
40	1.2	1.2	1.0	G1/4	60	17	32	27	40	125	69	76	68	43.5	47	12
50	1.5	1.5	2.0	G1/2	68	19.5	34	35	50	140	80	84	74.5	51	54.5	14

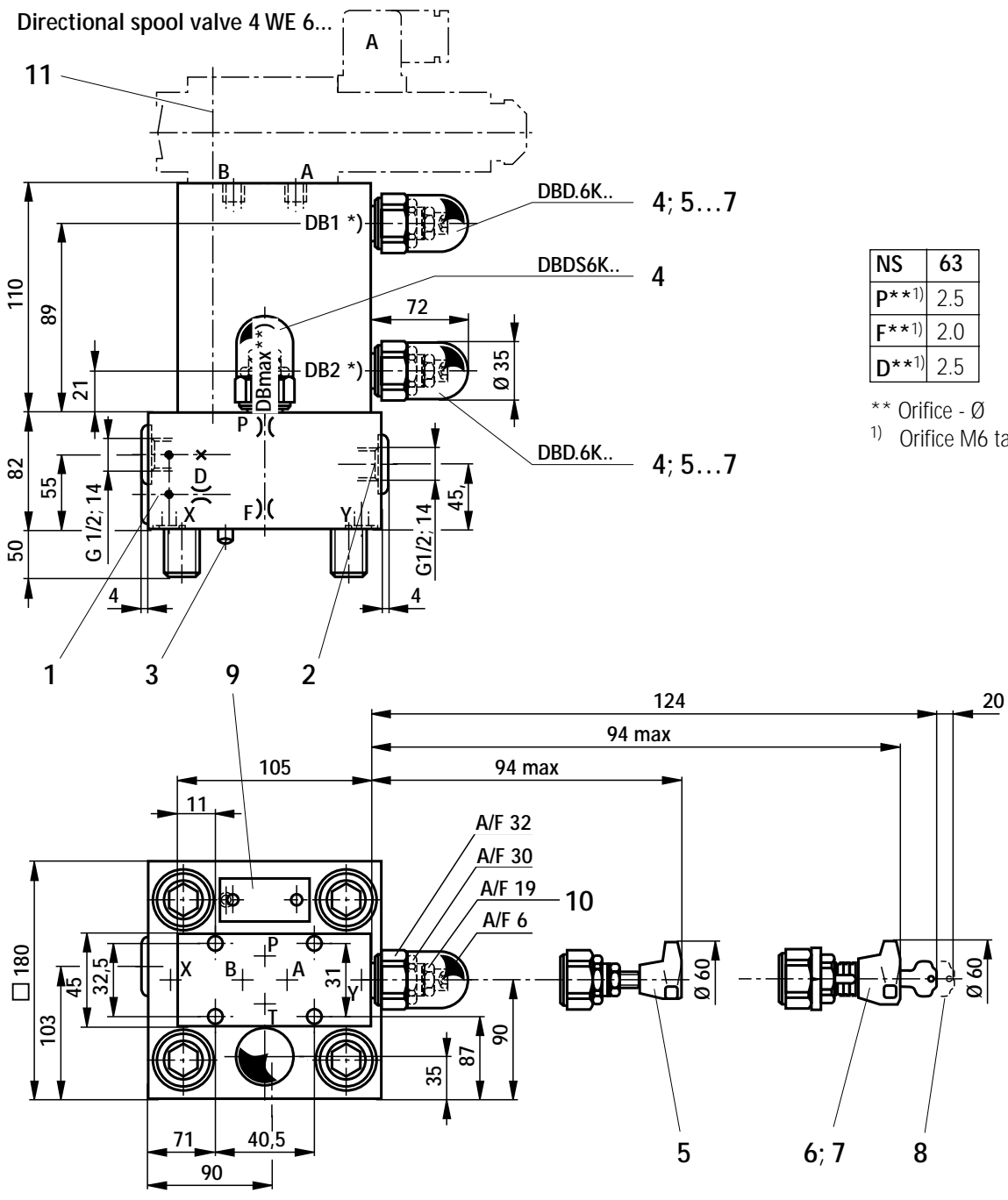
\*\* Orifice - Ø

1) Orifice M6 tapered

Control cover with 3 manual pressure adjustments, electrically selectable

NS 63

Dimensions in mm



NS	63
P**1)	2.5
F**1)	2.0
D**1)	2.5

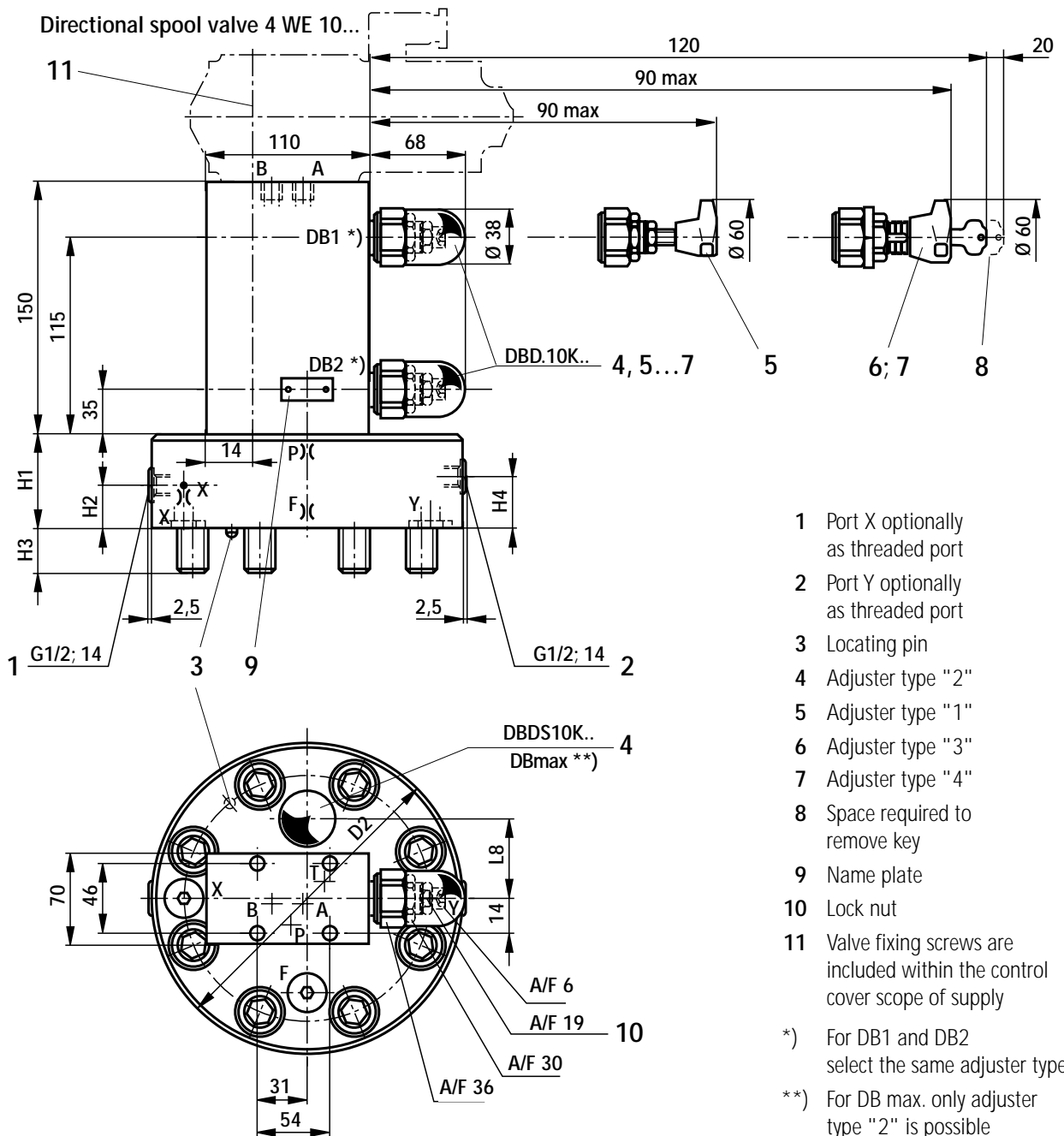
\*\* Orifice - Ø  
 1) Orifice M6 tapered

- 1 Port X optionally as threaded port
  - 2 Port Y optionally as threaded port
  - 3 Locating pin
  - 4 Adjuster type "2"
  - 5 Adjuster type "1"
  - 6 Adjuster type "3"
  - 7 Adjuster type "4"
  - 8 Space required to remove key
  - 9 Name plate
  - 10 Lock nut
  - 11 Valve fixing screws are included within the control cover scope of supply
- \*) For DB1 and DB2 select the same adjuster type
- \*\*\*) For DB max. only adjuster type "2" is possible

# Control cover with 3 manual pressure adjustments, electrically selectable

NS 80, 100

Dimensions in mm



- 1 Port X optionally as threaded port
  - 2 Port Y optionally as threaded port
  - 3 Locating pin
  - 4 Adjuster type "2"
  - 5 Adjuster type "1"
  - 6 Adjuster type "3"
  - 7 Adjuster type "4"
  - 8 Space required to remove key
  - 9 Name plate
  - 10 Lock nut
  - 11 Valve fixing screws are included within the control cover scope of supply
- \*) For DB1 and DB2 select the same adjuster type  
 \*\*) For DB max. only adjuster type "2" is possible

NS	P**1)	X**2)	F**2)	D2	H1	H2	H3	H4	L8
80	3.5	3.0	2.5	250	100	30	45	52	75
100	3.5	3.0	2.5	300	100	30	51	52	85

\*\* Orifice - Ø  
 1) Orifice M8 x1 tapered  
 2) Orifice G 1/4 tapered

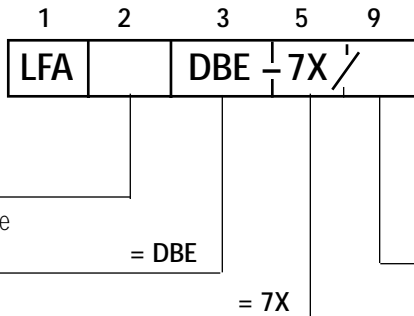
# Control cover for electrical-proportional pressure adjustment, without maximum pressure limitation

NS 16 to 63

Dimensions in mm

NS 16 = 16      NS 40 = 40  
 NS 25 = 25      NS 50 = 50  
 NS 32 = 32      NS 63 = 63

For mounting a proportional pressure relief valve **without** electrical feedback



No code =  
 V =

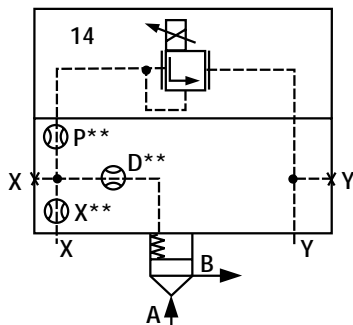
NBR seals  
 FKM seals  
 (other seals on request)

**⚠ Attention!**

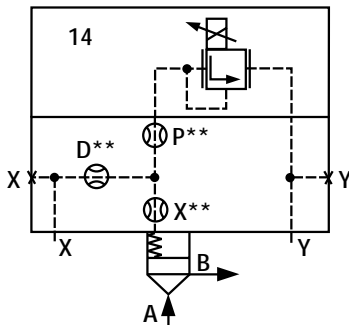
The compatibility of the seals and pressure fluid has to be taken into account!

Series 7X (NS 16 to 63)

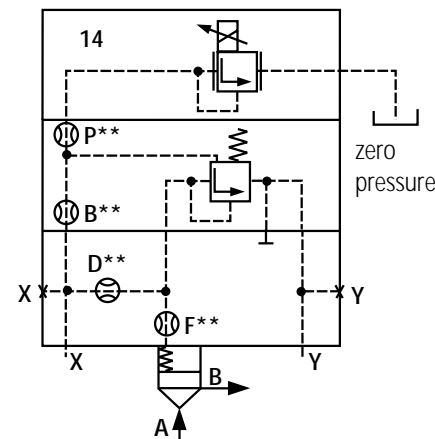
= 7X



LFA...DBE-7X/ NG 16



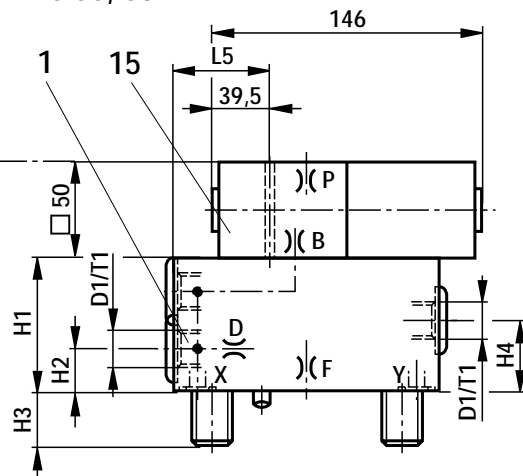
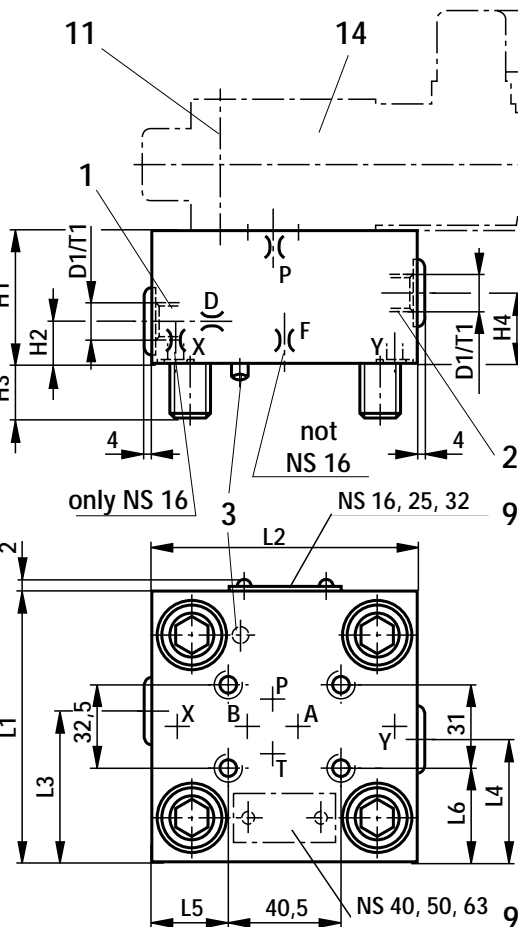
LFA...DBE-7X/ NG 25, 32, 40



LFA...DBE-7X/ NG 50, 63

NS 16 to 40

NS 50, 63



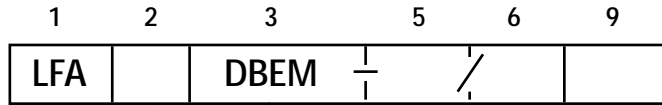
NS	16	25	32	40	50	63
B** <sup>(1)</sup>					0.8	0.8
P** <sup>(1)</sup>	1.0	1.0	1.0	1.5	1.0	1.0
X** <sup>(1)</sup>	0.8					
F** <sup>(1)</sup>		0.8	1.0	1.2	1.5	2.0
D** <sup>(2)</sup>	0.8	0.8	0.8	1.0	2.0	2.5
D1	G1/4	G1/4	G1/4	G1/2	G1/2	G1/2
H1	40	40	50	60	68	82
H2	17	19	26	30	32	30
H3	15	24	28	32	34	50
H4	20	19	26	30	32	40
L1	65	85	100	125	140	180
L2	80	85	100	125	140	180
L3	36.5	49	56.5	72	80	100
L4	23.5	36	43.5	53	50	80
L5	7	23.5	31	43.5	51	71
L6	17	27	34.5	47	54.5	74.5
T1	12	12	12	14	14	14

- 1 Port X optionally as threaded port
- 2 Port Y optionally as threaded port
- 3 Locating pin
- 9 Name plate
- 11 Valve fixing screws are included within the control cover scope of supply
- 14 Prop. pressure relief valve type DBET-5X/... (see summary on page 14, and catalogue sheet RE 29 165)
- 15 Pressure relief valve NS 6 (is included within the scope of supply)

\*\* Orifice - Ø  
 1) Orifice M6 tapered  
 2) Orifice M6 tapered (NS16), M8 x 1 tapered (NS25 ... 63)

# Control cover for electrical-proportional pressure adjustment, with maximum pressure limitation

## NS 16 to 100



Nom. size 16	= 16
Nom. size 25	= 25
Nom. size 32	= 32
Nom. size 40	= 40
Nom. size 50	= 50
Nom. size 63	= 63
Series 7X	
Nom. size 80	= 80
Nom. size 100	= 100
Series 6X	

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

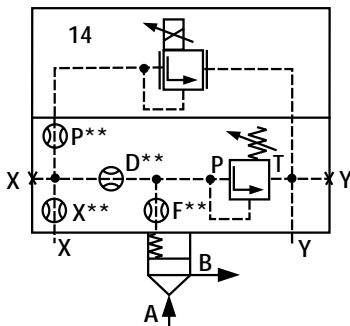
**⚠ Attention!**  
 The compatibility of the seals and pressure fluid has to be taken into account!

**Pressure ratings**  
 (take max. perm. pressure of pilot valve into account)

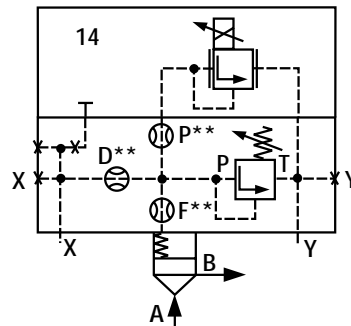
NS 16, 25, 32	NS 40, 50, 63, 80, 100
025 = 25 bar	025 = 25 bar
050 = 50 bar	050 = 50 bar
100 = 100 bar	100 = 100 bar
200 = 200 bar	200 = 200 bar
315 = 315 bar	315 = 315 bar
420 = 420 bar	400 = 400 bar

For mounting a proportional pressure relief valve  
**Without** electrical feedback and  
**With** maximum pressure safety = DBEM

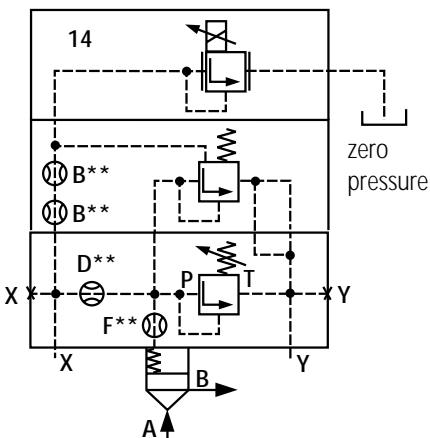
Series 6X (NS 80 to 100) = 6X  
 Series 7X (NS 16 to 63) = 7X



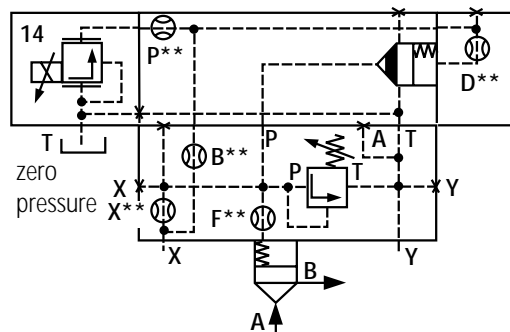
LFA..DBEM-7X/...  
 NS 16, 25, 32



LFA..DBEM-7X/...  
 NS 40



LFA..DBEM-7X/...  
 NS 50, 63

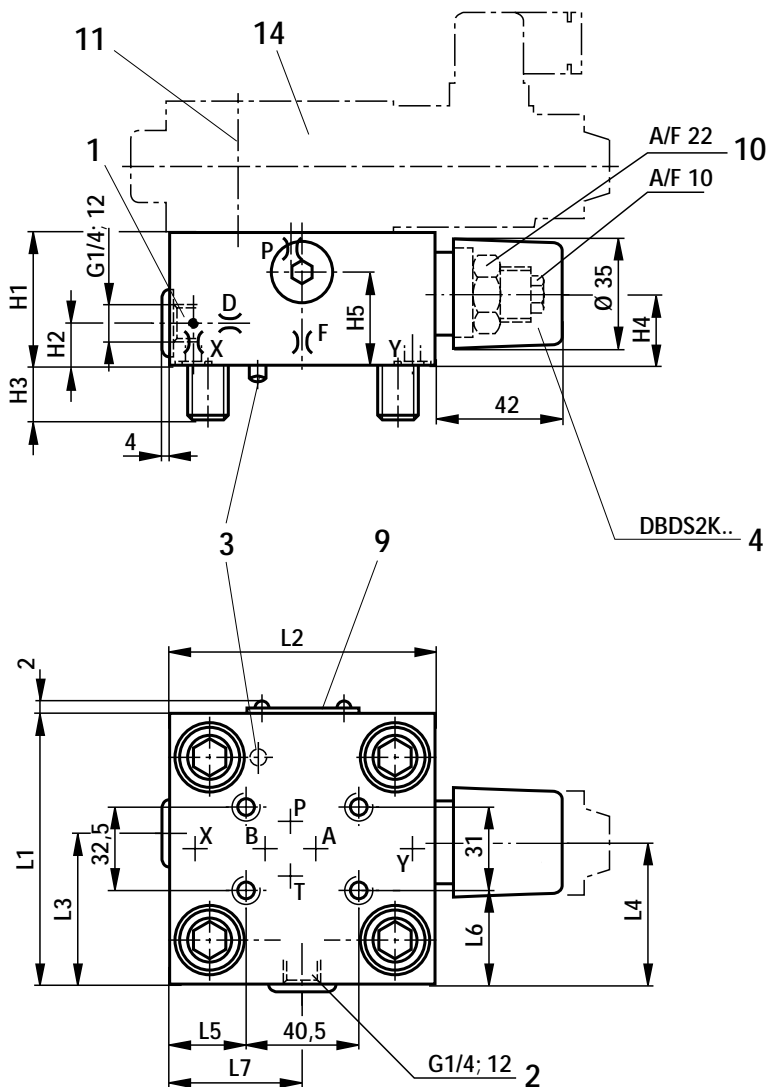


LFA..DBEM-6X/...  
 NS 80, 100

Control cover for electrical-proportional pressure adjustment, with maximum pressure limitation

NS 16, 25, 32

Dimensions in mm



- Ports T and Y - zero pressure
  - 1 Port X optionally as threaded port
  - 2 Port Y optionally as threaded port
  - 3 Locating pin
  - 4 Adjuster type "2"
  - 9 Name plate
  - 10 Lock nut
  - 11 Valve fixing screws are included within the control cover scope of supply
  - 14 Proportional pressure relief valve type DBET-5X/...-1<sup>3)</sup> (see summary on page 14, also catalogue sheet RE 29 165)
- <sup>3)</sup> 1 = G 1/4 threaded port T, special poppet

NS	P**1)	X**1)	F**1)	D**1)	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6	L7
16	1.0	0.8	1.0	0.8	40	17	15	19	28	65	80	36.5	32.5	7	17	35
25	1.0	0.8	1.0	0.8	40	19	24	19	28	85	85	49	45.5	8	27	36
32	1.0	1.0	1.2	1.0	50	26	28	26	37	100	100	56.5	53	31	34.5	57

\*\* Orifice - Ø

1) Orifice M6 typered

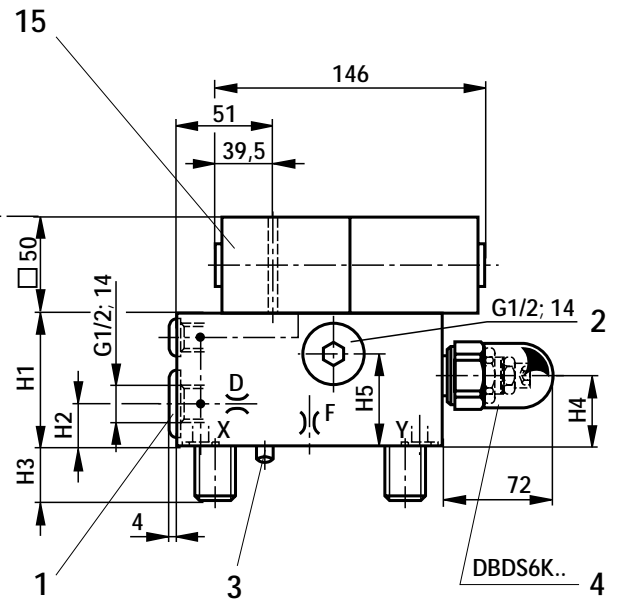
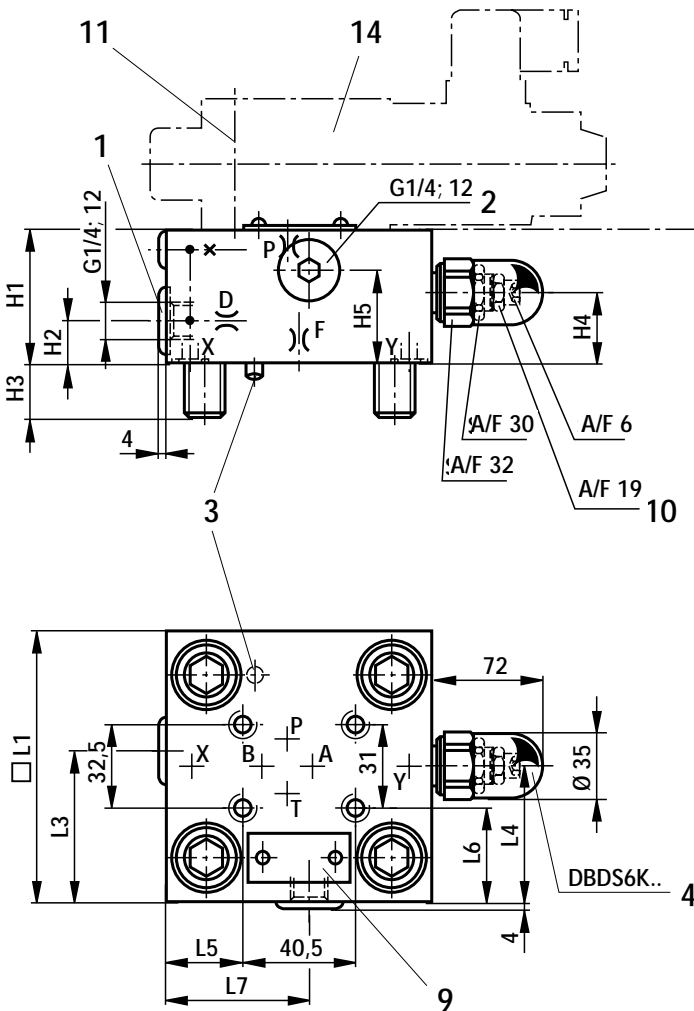


# Control cover for electrical-proportional pressure adjustment, with maximum pressure limitation

NS 40

NS 50

Dimensions in mm



- 1 Port X optionally as threaded port
  - 2 Port Y optionally as threaded port
  - 3 Locating pin
  - 4 Adjustment type "2"
  - 9 Name plate
  - 10 Lock nut
  - 11 Valve fixing screws are included within the control cover scope of supply
  - 14 Proportional pressure relief valve type DBET-5X/...G24 (NS 40) type DBET-5X/...Y G24-1<sup>3)</sup> (NS 50) (see summary on page 14, and catalogue sheet RE 29 165)
  - 15 Pressure relief valve NS 6 (is included within the scope of supply)
- <sup>3)</sup> 1 = G 1/4 threaded port T, special poppet

NS	B**1)	P**1)	F**1)	D**1)	H1	H2	H3	H4	H5	□ L1	L3	L4	L5	L6	L7
40		1.5	1.2	1.0	60	20	32	27	40	125	69	76	43.5	47	68
50	0.8		1.5	2.0	68	19.5	34	35	50	140	80	84	51	54.5	74.5

\*\* Orifice - Ø

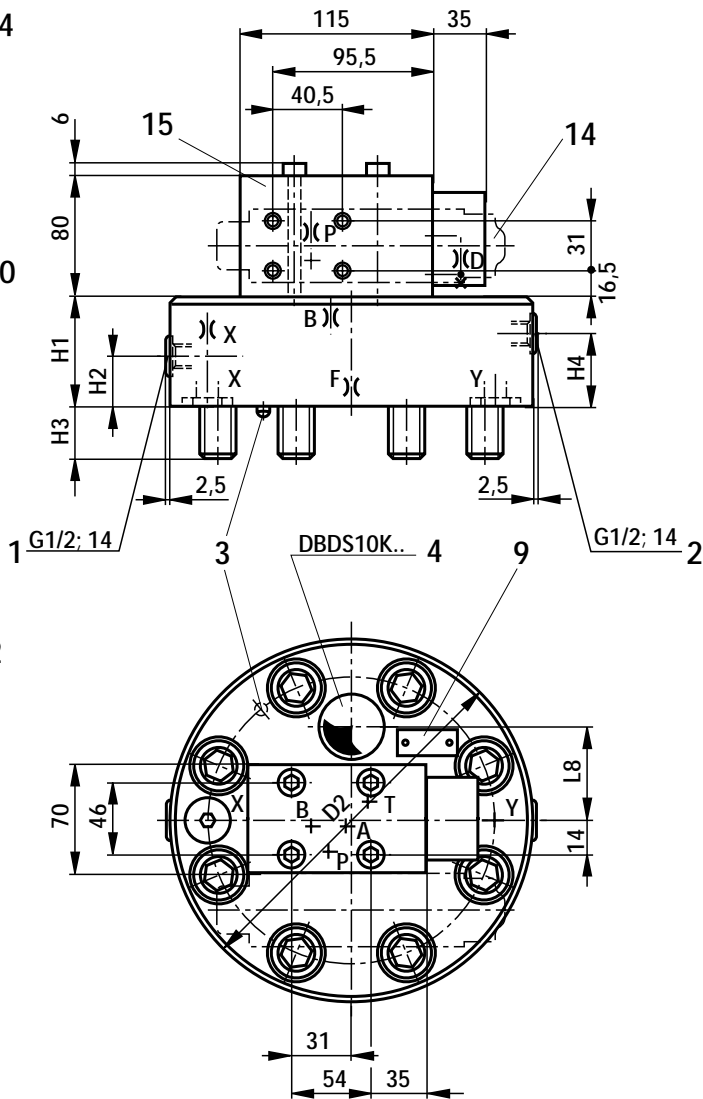
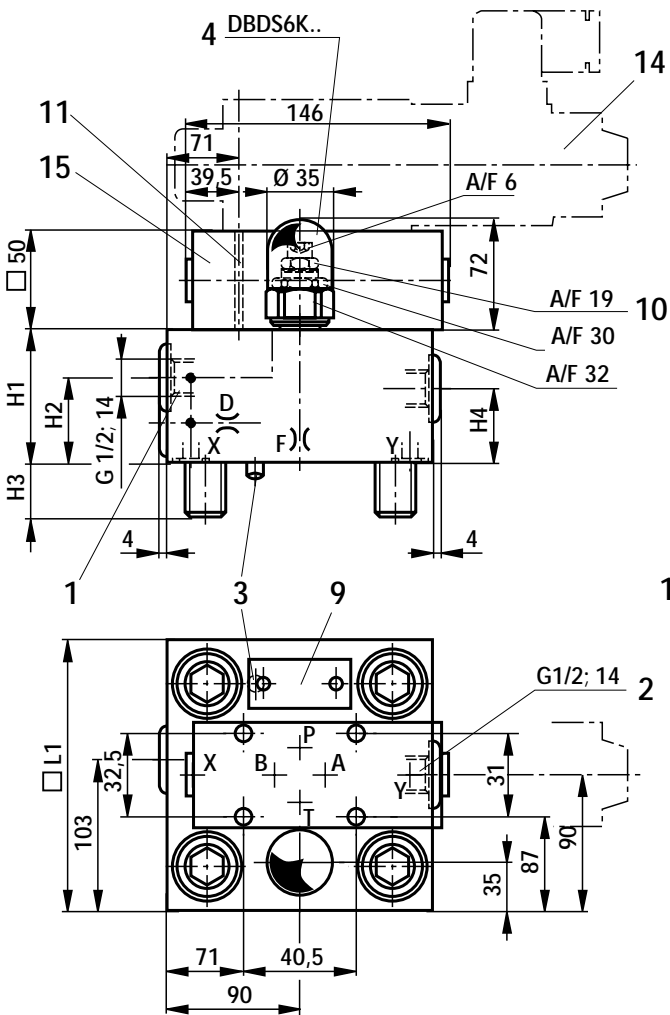
1) Orifice M6 tapered

# Control cover for electrical-proportional pressure adjustment, with maximum pressure limitation

NS 63

NS 80, 100

Dimensions in mm



- 1 Port X optionally as threaded port
  - 2 Port Y optionally as threaded port
  - 3 Locating pin
  - 4 Adjuster type "2"
  - 9 Name plate
  - 10 Lock nut
  - 11 Valve fixing screws are included within the control cover scope of supply
  - 14 Proportional pressure relief valve type DBET-5X/...Y G24-1<sup>3)</sup> (see summary on page 14, and catalogue sheet RE 29 165)
  - 15 Pressure relief valve NS 6 (is included within the scope of supply)
- <sup>3)</sup> 1 = G 1/4 threaded port T, special poppet

NS	B**1)	P**1)	X**2)	F**2)	D**1)	H1	H2	H3	H4	D2	□ L1	L8
63	0.8			2.0	2.5	82	55	50	45		180	
80	0.8	1.0	3.0	2.5		100	30	45	52	250		75
100	0.8	1.0	3.5	3.0		100	30	51	52	300		85

\*\* Orifice - Ø

1) Orifice M6 tapered (NS63) orifice M8 x 1 tapered (NS80, 100)

2) Orifice M6 tapered (NS63) orifice G 1/4 tapered (NS80, 100)

## Pressure reducing function

**Ordering details:** pressure reducing cartridge valve (without associated control cover LFA..DB..)

<b>LC</b>		<b>DR</b>		<b>E</b>	<b>7X</b> / <sub>4</sub>
-----------	--	-----------	--	----------	--------------------------

Nominal size 16	= <b>16</b>
Nominal size 25	= <b>25</b>
Nominal size 32	= <b>32</b>
Nominal size 40	= <b>40</b>
Nominal size 50	= <b>50</b>
Nominal size 63	= <b>63</b>
Closing pressure approx. 0 bar (without spring)	= <b>00</b>
Closing pressure approx. 2 bar	= <b>20</b>
Closing pressure approx. 3 bar	= <b>30</b> <sup>1)</sup>
Closing pressure approx. 4 bar (standard spring)	= <b>40</b>
Closing pressure approx. 5 bar	= <b>50</b> <sup>2)</sup>
Closing pressure approx. 8 bar	= <b>80</b> <sup>3)</sup>

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

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

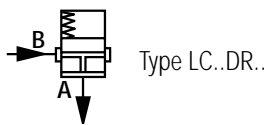
**7X** = (NS 16 to 63) Series 70 to 79  
(70 to 79: unchanged installation and connection dimensions)

**E** = Spool without fine control grooves

**Preferred types and standard components are highlighted in the RPS (Rexroth Price list Standard).**

- 1) Closing pressure 3.0 bar only for NS16 for mounting a pilot operated pressure relief valve type DBC . -5X/...S0187 (see catalogue sheet RE 25 802)
- 2) Only for NS 16, 25 and 32
- 3) Special installation room required (see page 47)

**Symbol:** cartridge valves

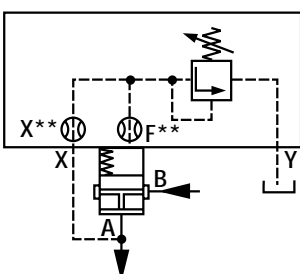


**Technical data** (for applications outside these parameters, please consult us!)

Pressure fluid <sup>1)</sup> suitable for NBR <b>and</b> FKM seals <sup>2)</sup> <b>only</b> suitable FKM seals	mineral oil (HL, HLP) to DIN 51 524 <sup>1)</sup> ; fast bio-degradable pressure fluids to VDMA 24 568 (see also RE 90 221); HETG (rape seed oil) <sup>1)</sup> ; HEPG (polyglycole) <sup>2)</sup> ; HEES (synthetic ester) <sup>2)</sup> ; other pressure fluids on request																							
Pressure fluid temperature range	°C – 30 to + 80 for NBR seals – 20 bis + 80 for FKM seals																							
Viscosity range	mm <sup>2</sup> /s 2.8 to 380																							
Degree of contamination	maximum permissible degree of contamination of the pressure fluid is to NAS 1638 class 9. We, therefore recommend a filter with a minimum retention rate of $\beta_{10} \geq 75$ .																							
Max. operating pressure – Ports A and B	bar 315																							
Max. flow (recommended)	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td></td> <td>NS 16</td> <td>NS 25</td> <td>NS 32</td> <td>NS 40</td> <td>NS 50</td> <td>NS 63</td> </tr> <tr> <td>– LC..DR20.../..</td> <td>L/min</td> <td>100</td> <td>200</td> <td>300</td> <td>750</td> <td>1000</td> <td>1600</td> </tr> <tr> <td>– LC..DR40.../..</td> <td>L/min</td> <td>150</td> <td>300</td> <td>450</td> <td>1000</td> <td>1300</td> <td>2000</td> </tr> </table>		NS 16	NS 25	NS 32	NS 40	NS 50	NS 63	– LC..DR20.../..	L/min	100	200	300	750	1000	1600	– LC..DR40.../..	L/min	150	300	450	1000	1300	2000
	NS 16	NS 25	NS 32	NS 40	NS 50	NS 63																		
– LC..DR20.../..	L/min	100	200	300	750	1000	1600																	
– LC..DR40.../..	L/min	150	300	450	1000	1300	2000																	

Preferably use 5 and 8 bar springs for flow control. The usable  $\Delta p$  is available on request.

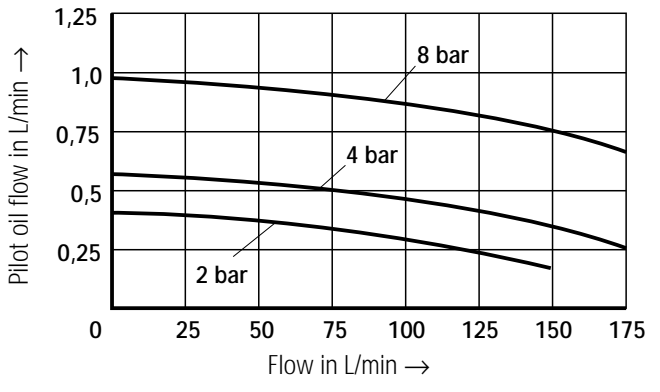
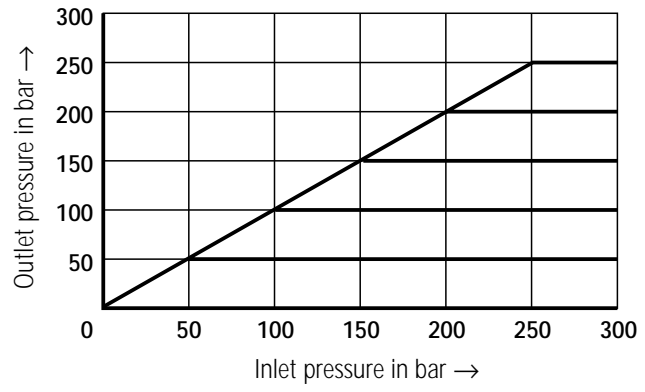
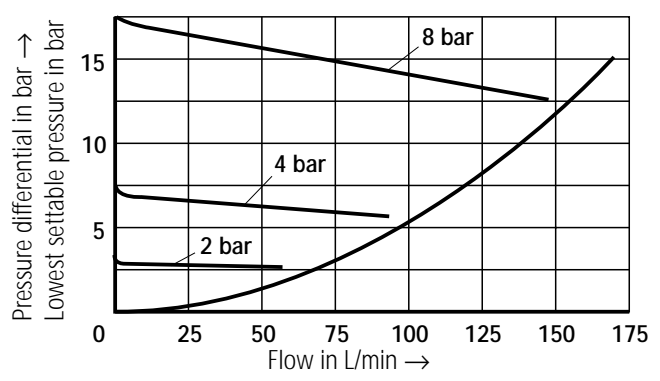
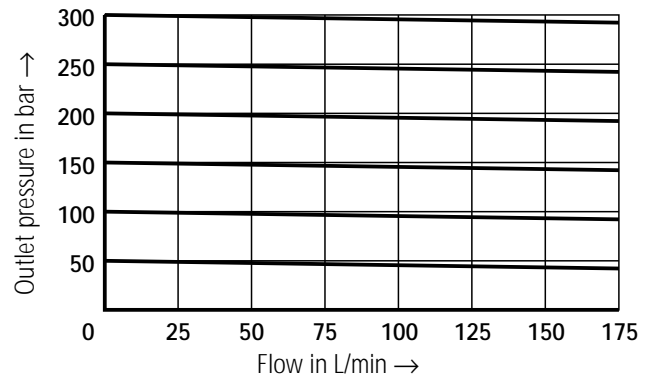
**⚠ Attention!**  
 2-way cartridge valves LC..DR... are combined with control covers type LFA..DB... (for ordering details see page 13).



**Pressure reducing function**  
 Normally open  
 e.g.  
 Type LFA...DB...  
 Type LC..DR 40...

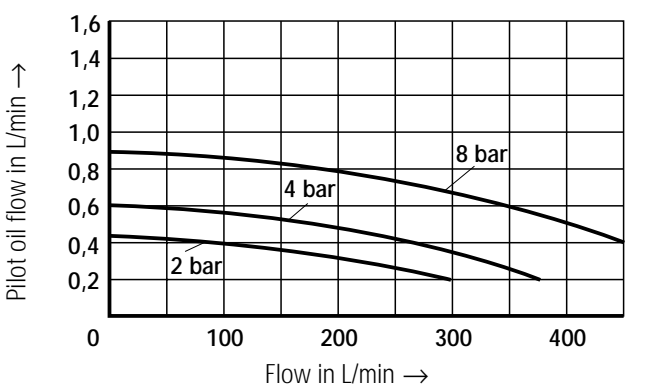
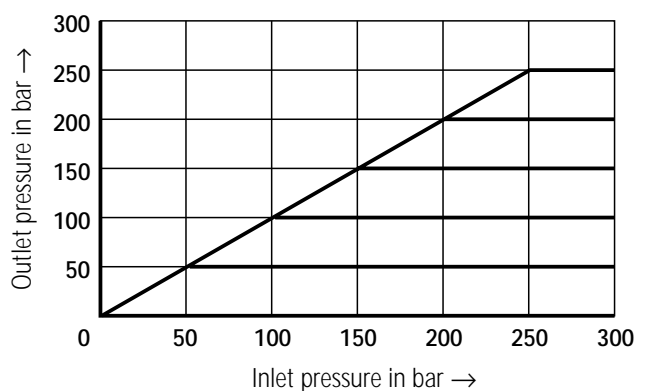
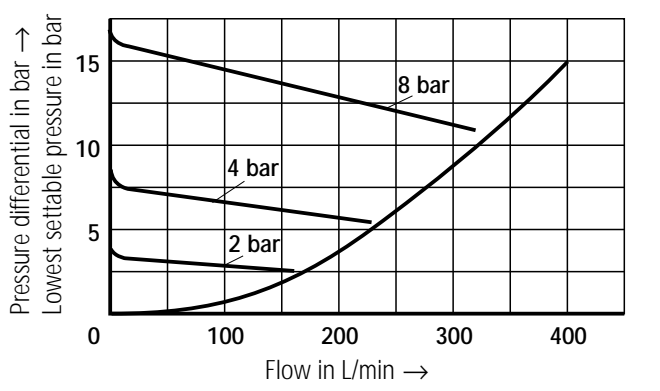
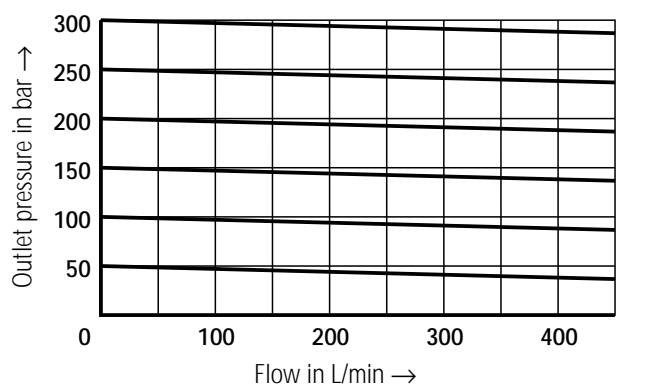
Characteristic curves (measured at  $v = 41 \text{ mm}^2/\text{s}$  and  $\vartheta = 50 \text{ }^\circ\text{C}$ )

LC 16 DR...



Measured at:  $p_a = 50 \text{ bar}$

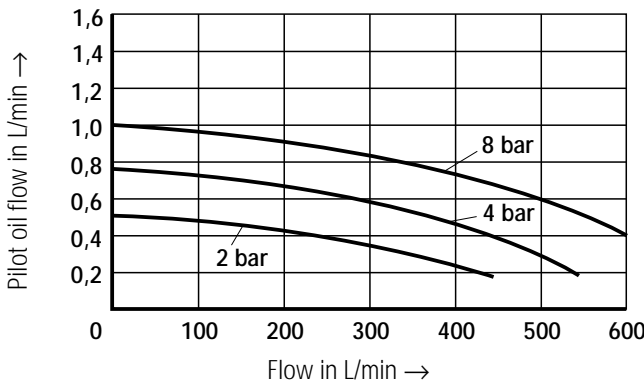
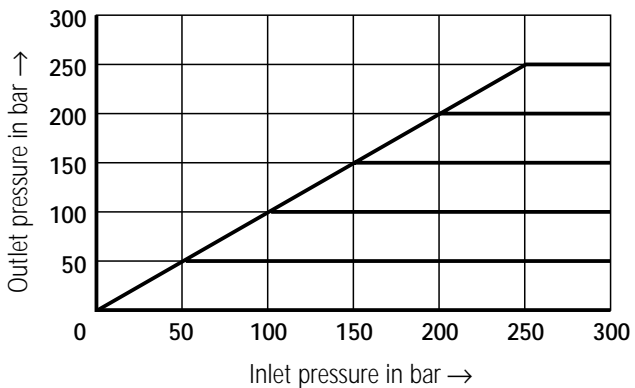
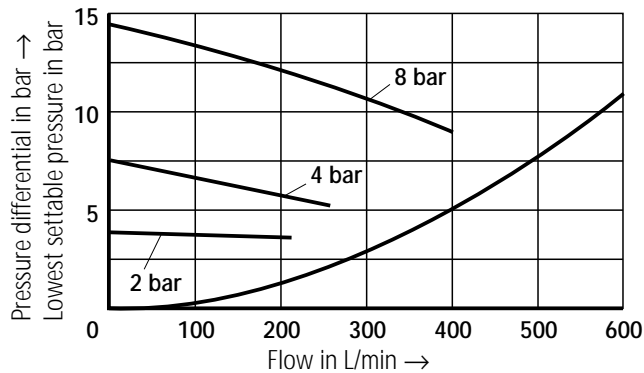
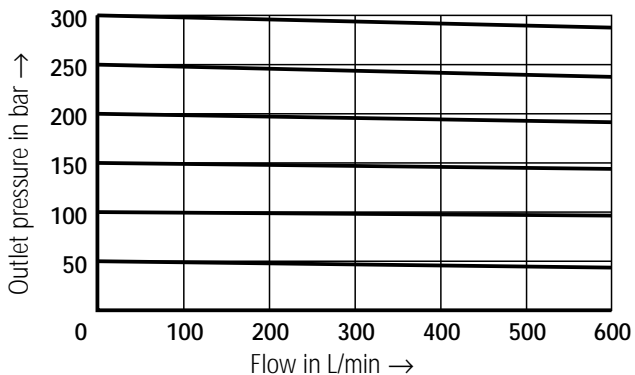
LC 25 DR...



Measured at:  $p_a = 50 \text{ bar}$

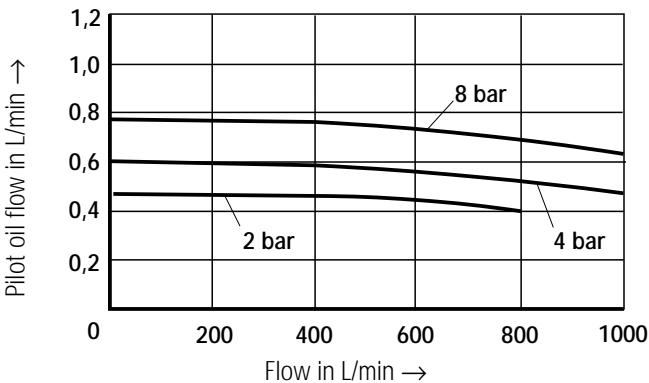
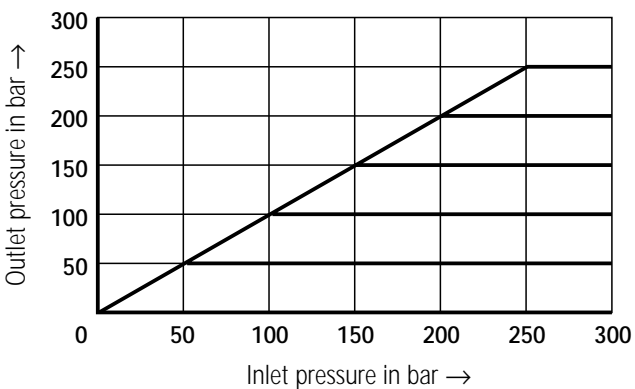
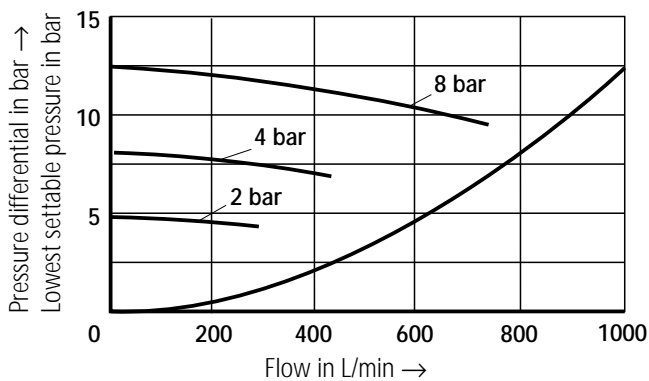
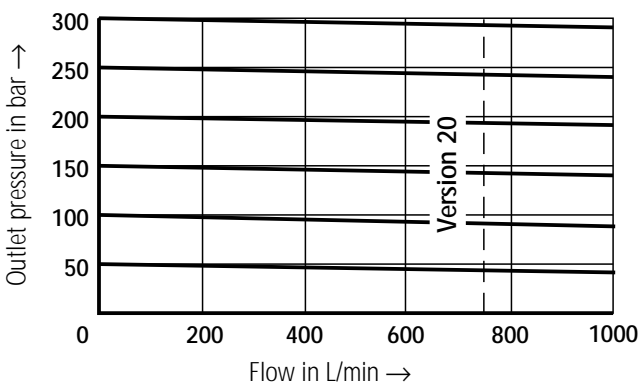
Characteristic curves (measured at  $\nu = 41 \text{ mm}^2/\text{s}$  and  $\vartheta = 50 \text{ }^\circ\text{C}$ )

LC 32 DR...



Measured at:  $p_a = 50 \text{ bar}$

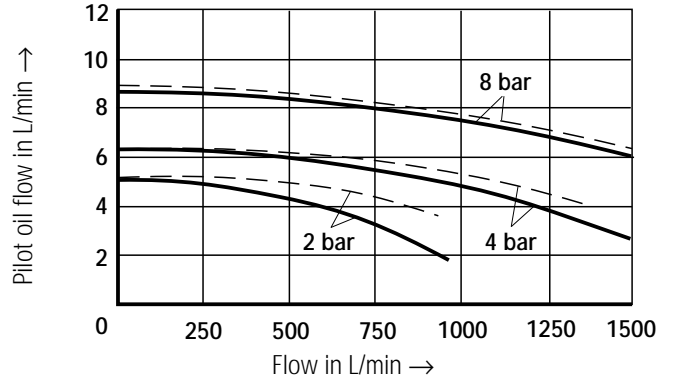
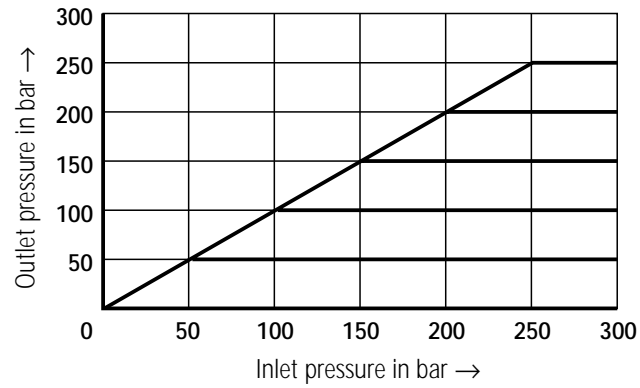
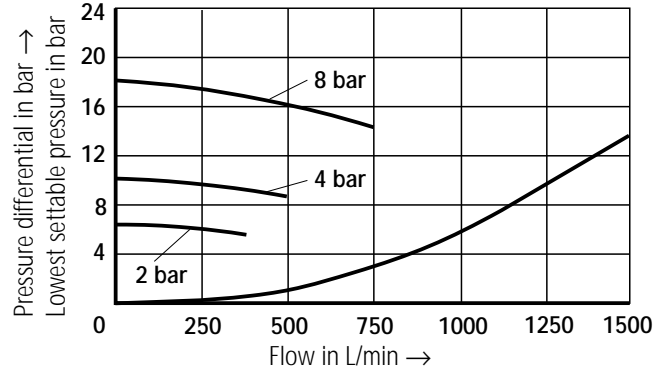
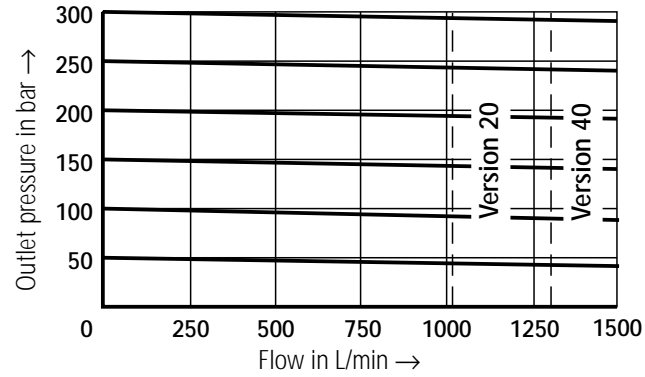
LC 40 DR...



Measured at:  $p_a = 50 \text{ bar}$

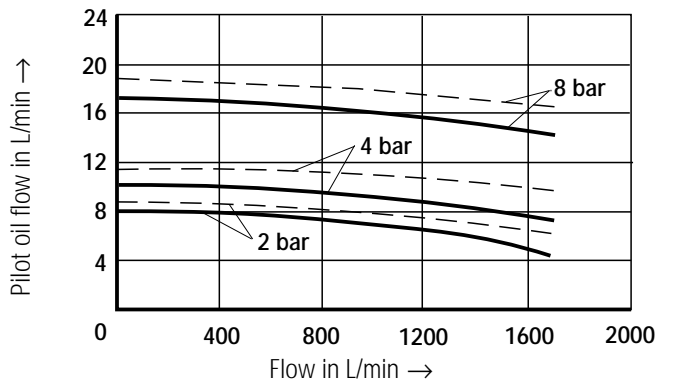
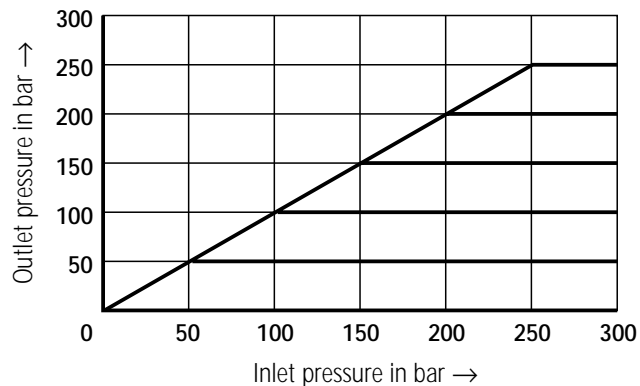
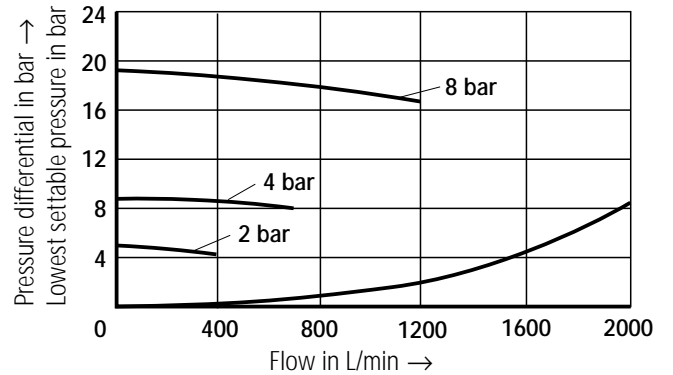
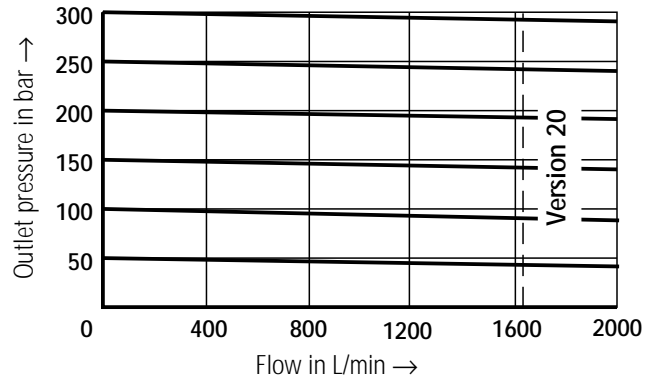
Characteristic curves (measured at  $v = 41 \text{ mm}^2/\text{s}$  and  $\vartheta = 50 \text{ }^\circ\text{C}$ )

LC 50 DR...



Measured at:  $p_a = 50 \text{ bar}$   
 —  $p_e = 100 \text{ bar}$   
 - - -  $p_e = 350 \text{ bar}$

LC 63 DR...



Measured at:  $p_a = 50 \text{ bar}$   
 —  $p_e = 100 \text{ bar}$   
 - - -  $p_e = 350 \text{ bar}$

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

Nominal size	Material no.		Nominal size	Material no.	
	NBR seals	FKM seals		NBR seals	FKM seals
16	00313104	00313107	40	00873022	00873025
25	00313105	00313108	50	00873023	00873026
32	00313106	00313109	63	00873024	00873027

## Compression springs type LC...

NS	Spring dimensions in mm	Opening pressure in bar	Material no.	NS	Spring dimensions in mm	Cracking pressure in bar	Material no.
16	10.2/1.3 x 40.5/8.0	2.0	00062747	40	25.9/4.25 x 63/6	2.0	00206675
	10.0/1.6 x 38.2/9.0	3.0	00062753		25.7/4.5 x 68.5/6	4.0	00206673
	9.8/1.7 x 38.0/9.0	4.0	00062754		24.8/5.3 x 105/10	8.0 <sup>1)</sup>	00206671
	9.7/1.9 x 35.7/8.5	5.0	00062757	50	33.2/5 x 82/5.5	2.0	00206684
	9.2/2.4 x 60.5/14.5	8.0 <sup>1)</sup>	00082073		32.8/5.3 x 92/6.5	4.0	00206681
25	15.3/2.25 x 55.0/8.0	2.0	00062762	31.7/6.5 x 137/10.5	8.0 <sup>1)</sup>	00206680	
	14.9/2.7 x 53.4/8.5	3.0	00062764	63	40.6/6.5 x 108/7	2.0	00206690
	14.7/2.8 x 53.5/8.5	4.0	00062820		40.7/6.5 x 127.5/7.5	4.0	00206692
	14.6/3.0 x 52.5/8.5	5.0	00062819		38.6/8.5 x 183.5/11.5	8.0 <sup>1)</sup>	00206689
	14.1/3.5 x 78.5/12.0	8.0 <sup>1)</sup>	00082072				
32	19.6/2.8 x 69.5/7.5	2.0	00062813				
	19.2/3.2 x 71.0/8.5	3.0	00062783				
	19.1/3.4 x 72.0/9.5	4.0	00062810				
	19.1/3.5 x 72.8/9.0	5.0	00062805				
	18.5/4.0 x 109/14.5	8.0 <sup>1)</sup>	00082071				

<sup>1)</sup> These springs require an additional installation length. When using standard control covers an additional sandwich plate type LFA . D22... must be used.

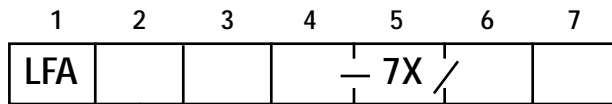
### Exception:

Control cover type "D" can be replaced by type LFA . D8-../F (no sandwich plate required).

# Control cover for pressure reducing function

Main spool normally closed - LC..DB 40 D.. – separate order

## General notes



• = available

Nominal size						Type	Adjuster type	Series	Pressure ratings in bar for nominal size		Seal material	Page
16	25	32	40	50	63				...DR... ..DRW.	..DRE..		
•	•	•	•	•	•	DR			025		For ordering details see pages for the individual control cover variants	53, 54
•	•	•	•	•	•	DRW			075			55, 56
	•	•	•	•	•	DREV			150	006		57, 58
	•	•	•	•	•	DREZ			210	014		57, 58
	•	•	•	•	•	DREWV			315	006		59, 60
	•	•	•	•	•	DREWZ			350	014		59, 60

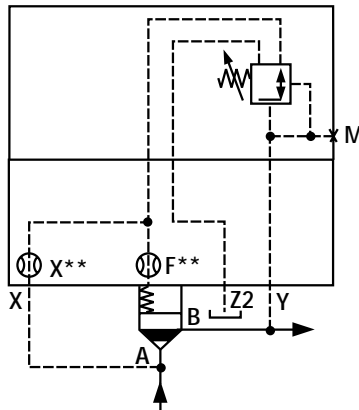
Preferred types and standard components are highlighted in the RPS (Rexroth Price list Standard).

- 4**
- 
- Adjustment elements for pressure reducing valves**
- 1 = Rotary knob
  - 2 = Hexagon with protective cap
  - 3 = Lockable rotary knob with scale (H-lock to automotive industry standards)
  - 4 = Rotary knob with scale

- 5**
- 
- Series**
- 7X = Series 70 to 79  
(unchanged installation and connection dimensions)

### ⚠ Attention!

Control covers type LFA..DR... are combined with 2-way cartridge valves type LC..DB 40 D... (for ordering details see page 5)



### Pressure reducing function

Normally closed

e.g.  
Type LFA...DR...  
Type LC..DB 40 D..



## Control cover for pressure reducing function

Main spool normally closed - LC..DB 40 D.. – separate order

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

Pressure fluid		mineral oil (HL, HLP) to DIN 51 524 <sup>1)</sup> ; fast bio-degradable pressure fluids to VDMA 24 568 (also see RE 90 221); HETG (rape seed oil) <sup>1)</sup> ; HEPG (polyglycole) <sup>2)</sup> ; HEES (synthetic ester) <sup>2)</sup> ; other pressure fluids on request
<sup>1)</sup> suitable for NBR <b>and</b> FKM seals <sup>2)</sup> <b>not</b> suitable for FKM seals		
Pressure fluid temperature range	°C	– 30 to + 80 for NBR seals – 20 to + 80 for FKM seals
Viscosity range	mm <sup>2</sup> /s	2.8 to 380
Degree of contamination		Maximum permissible degree of contamination of the fluid is to NAS 1638 class 9. We, therefore recommend a filter with a minimum retention rate of $\beta_{10} \geq 75$ .

### Control cover

Max. perm. operating pressure at port ...	Control cover type	
	LFA..DR.-../... LFA..DRW.-../...	LFA..DRE...../...
...X (primary pressure)	315 bar	350 bar
...Y (secondary pressure = max. settable pressure)	315 bar	350 bar
...Z2	When controlling pressure	zero pressure (up to $\approx$ 2 bar)
	Static	60 bar
...T	When controlling pressure	zero pressure (up to $\approx$ 2 bar)
	Static (corresponds to the permissible tank pressure of the pilot valves)	

### Notes on pilot control valves (not included within the scope of supply, must be ordered separately!)

#### Directional spool valve (porting pattern form A 6 to DIN 24 340)

Directional spool valve	Nominal size	Catalogue sheet no.	Control cover
3WE 6 A-../...	6	23 178	DREWV, DREWZ
3WE 6 B9-../...	6	23 178	DRW

#### Proportional pressure relief valve

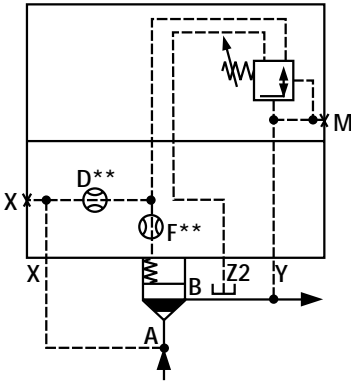
Proportional pressure valve	Nominal size	Catalogue sheet no.	Control cover
DBET-5X/... <sup>1)</sup> Y G24-1	6	29 165	DREV, DREWV
DBETR-1X/...	on request	on request	DREZ, DREWZ

<sup>1)</sup> Possible pressure ratings 50, 100, 200, 315, 350

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

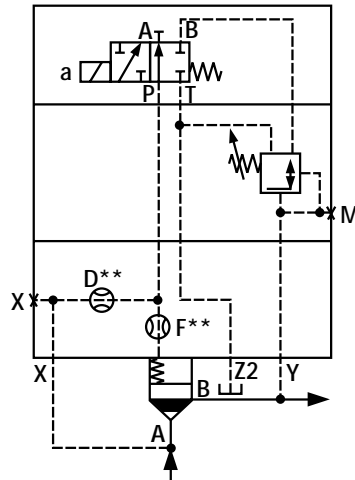
# Overview of symbols (basic symbols) - pressure reducing function

Valid symbols are shown in the following type descriptions !



**LFA..DR-.../...**  
**NS 16 to 63**  
 Control cover with manual pressure adjustment  
 Port T - zero pressure

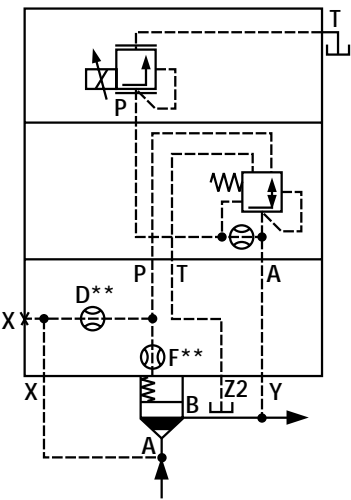
see pages 53; 54



**LFA..DRW-.../...**  
**NS 16 to 63**  
 Control cover with manual pressure adjustment and isolating function  
 Port T - zero pressure

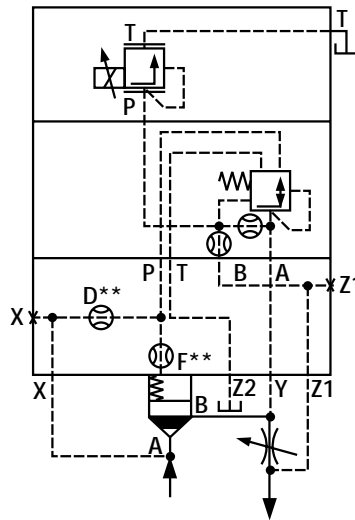
**3WE 6 B9-.../...**  
 Solenoid de-energised → closed  
 Solenoid de-energised → pressure reducing function

see pages 55; 56



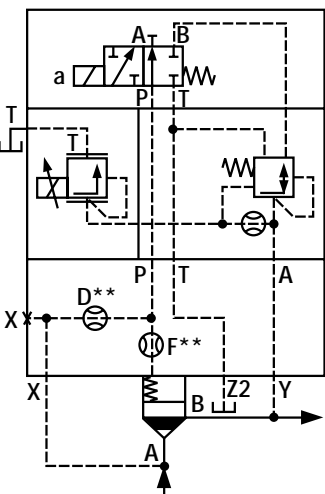
**LFA..DREV-.../...**  
**NS 25 to 63**  
 Control cover for electrical-proportional pressure adjustment  
 Port T - zero pressure

see pages 57; 58



**LFA..DREZ-.../...**  
**NS 25 to 63**  
 Control cover for electrical-proportional pressure adjustment  
 Port T - zero pressure

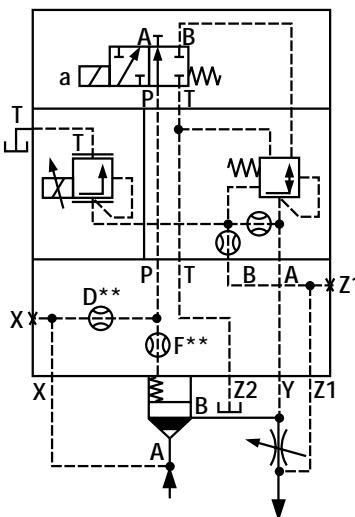
see pages 57; 58



**LFA..DREWV-.../...**  
**NS 25 to 63**  
 Control cover for electrical-proportional pressure adjustment and isolating function  
 Port T - zero pressure

**3WE 6 A-.../...**  
 Solenoid de-energised → closed  
 Solenoid de-energised → pressure reducing function

see pages 59; 60



**LFA..DREWZ-.../...**  
**NS 25 to 63**  
 Control cover for electrical-proportional pressure adjustment and isolating function  
 Port T - zero pressure

**3WE 6 A-.../...**  
 Solenoid de-energised → closed  
 Solenoid de-energised → pressure reducing function

see pages 59; 60

The orifices built into the control covers are screwed type orifices. These are standard orifices. **No** type is entered in the ordering detail.

Orifice as shown within the main symbol



## R-rings dimensions for ports X, Y, Z1, Z2 (are included within the scope of supply)

NS	Dimensions in mm	Material no.	
		NBR	FPM
16	8.41 x 1.40 x 1.78	00025407	00025408
25	9.81 x 1.50 x 1.78	00017453	00017610
32	11.18 x 1.60 x 1.78	00017455	00017611
40, 50	13.00 x 2.30 x 2.62	00017457	00017617
63	18.72 x 2.62 x 2.62	00024445	00024446
80	26.57 x 3.53 x 3.53	00017466	00017630
100	34.52 x 3.53 x 3.53	00017472	00017633

## Seal kits for control cover type LFA../.. (NS 16 to 63)

Seal kit for LFA...			Material no.					
			NS 16		NS 25		NS 32	
			NBR	FKM	NBR	FKM	NBR	FKM
..DR.. <sup>1)</sup>	Pilot ..DR6..		00311273	00311276	00311273	00311276	00311273	00311276
	Control cover LFA..DRW..		00313701	00313702	00313703	00313704	00313705	00313706
..DRW.. <sup>1)</sup>	Pilot ..ZDR6..		00314298	00314299	00314298	00314299	00314298	00314299
DREV.; ..DREWW.. ..DREZ.; ..DREWZ..					00313885	00313886	00313887	00313888

Seal kit for LFA...			Material no.					
			NS 40		NS 50		NS 63	
			NBR	FKM	NBR	FKM	NBR	FKM
..DR.. <sup>1)</sup>	Pilot ..DR6..		00311273	00311276	00311273	00311276	00311273	00311276
	Control cover LFA..DRW..		00313889	00313890	00313889	00313890	00313891	00313892
..DRW.. <sup>1)</sup>	Pilot ..ZDR6..		00314298	00314299	00314298	00314299	00314298	00314299
DREV.; ..DREWW.. <sup>2)</sup> ..DREZ.; ..DREWZ.. <sup>2)</sup>			00313881	00313882	00313881	00313882	00313883	00313884

<sup>1)</sup> The seals for the pilot valves (DR6..., ZDR...) are **not** included within the scope of supply.

<sup>2)</sup> For pilot valve seal kits see relevant catalogue sheet.

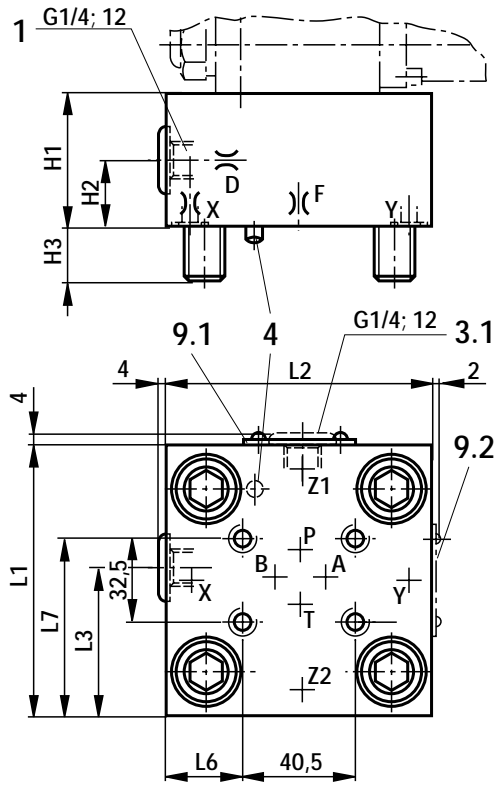
## Fixing screws (are included within the scope of supply)

S.H.C.S. to DIN 912-10.9

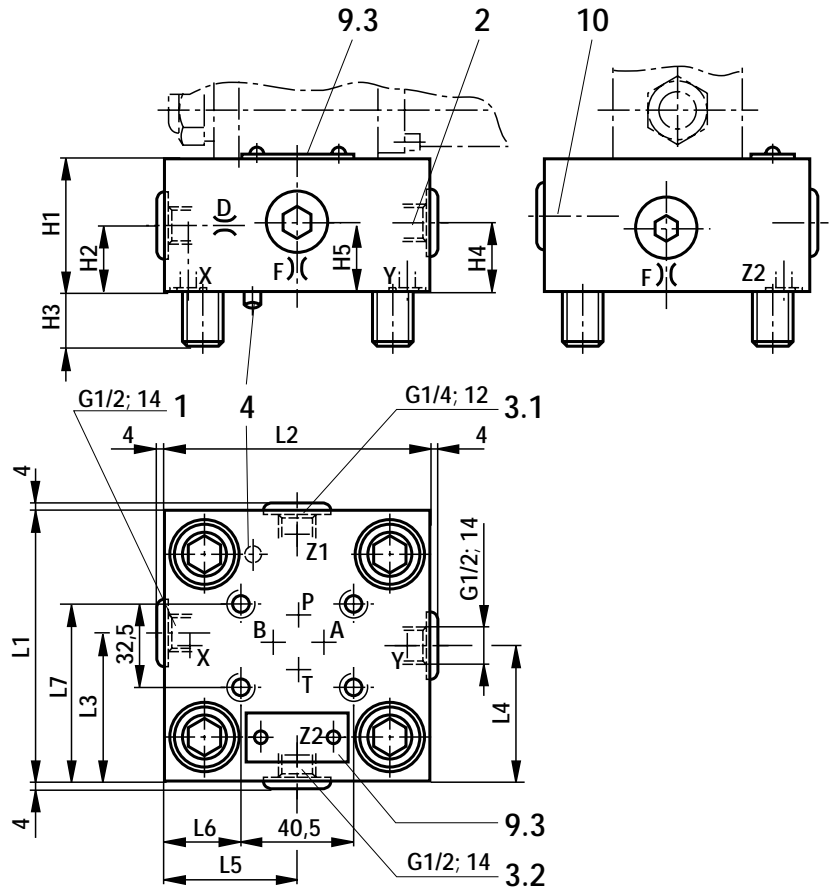
NS	Qty.	Dimensions	Tightening torque in Nm
16	4	M 8 x 45	32
25	4	M 12 x 50	110
32	4	M 16 x 60	270
40	4	M 20 x 70	520
50	4	M 20 x 80	520
63	4	M 30 x 100	1800

# Control covers for versions DR, DRW, DREV, DREZ, DREWV and DREWZ

## NS 16, 25, 32

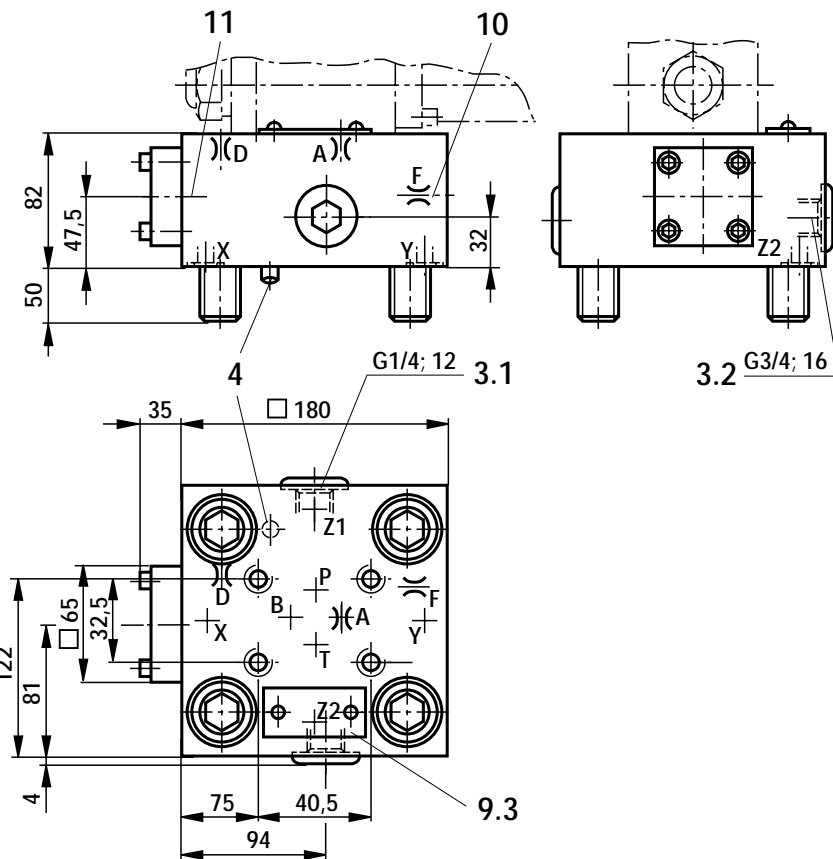


## NS 40, 50



Dimensions in mm

## NS 63



NS	16	25	32	40	50
H1	40	40	50	60	68
H2	17	19	26	30	32
H3	15	24	28	32	34
H4				40	32
H5				40	32
L1	65	85	100	125	140
L2	80	85	100	125	140
L3	36.5	49	56.5	72	80
L4				62.5	70
L5				62.5	70
L6	7	23.5	31	43.5	51
L7	49	59	66.5	79	86.5

- 1 Port X optionally as threaded port (for NS 16...50)
- 2 Port Y optionally as threaded port (for NS 40, 50)
- 3.1 Port Z1 optionally as threaded port (for LFA..DREZ., LFA..DREWZ..., NS 25..63)
- 3.2 Port Z2 optionally as threaded port (for NS 40, 50, 63)
- 4 Locating pin
- 9.1 Name plate (NS 16)
- 9.2 Name plate (NS 25, 32)
- 9.3 Name plate (NS 40, 50, 63)
- 10 Check valve (for NS 63 orifice F in poppet)
- 11 For control cover NS 63 logic element NS 16

# Control cover for pressure reducing function

Main spool normally closed - LC..DB 40 D.. – separate order

## NS 16 to 63

1	2	3	4	5	6	7
LFA		DR		7X	/	

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

### Adjuster type

Rotary knob	= 1
Set screw with hexagon and protective cap	= 2
Lockable rotary knob with scale	= 3 <sup>1)</sup>
Rotary knob with scale	= 4

<sup>1)</sup> H-key to part no. 00008158 is included within the scope of supply

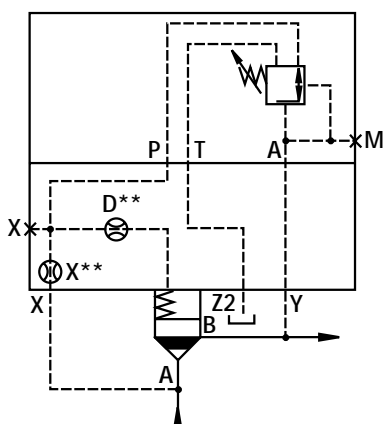
No code = NBR seals  
 V = FKM seals  
 (other seals on request)

### ⚠ Attention!

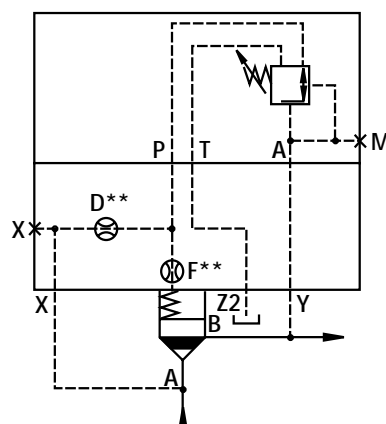
The compatibility of the seals and pressure fluid has to be taken into account!

025	=	Max. secondary pressure 25 bar
075	=	Max. secondary pressure 75 bar
150	=	Max. secondary pressure 150 bar
210	=	Max. secondary pressure 210 bar
315	=	Max. secondary pressure 315 bar

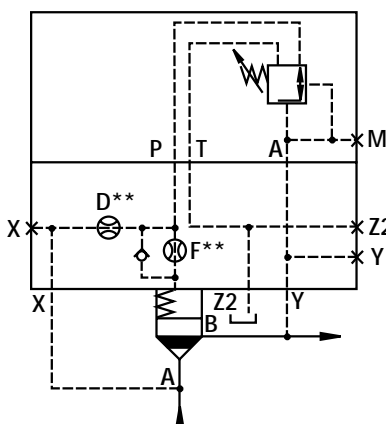
7X = Series 7X (NS 16 to 63)



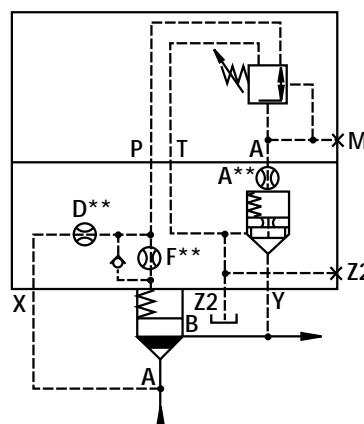
LFA..DR.-7X/...  
NS 16



LFA..DR.-7X/...  
NS 25, 32



LFA..DR.-7X/...  
NS 40, 50



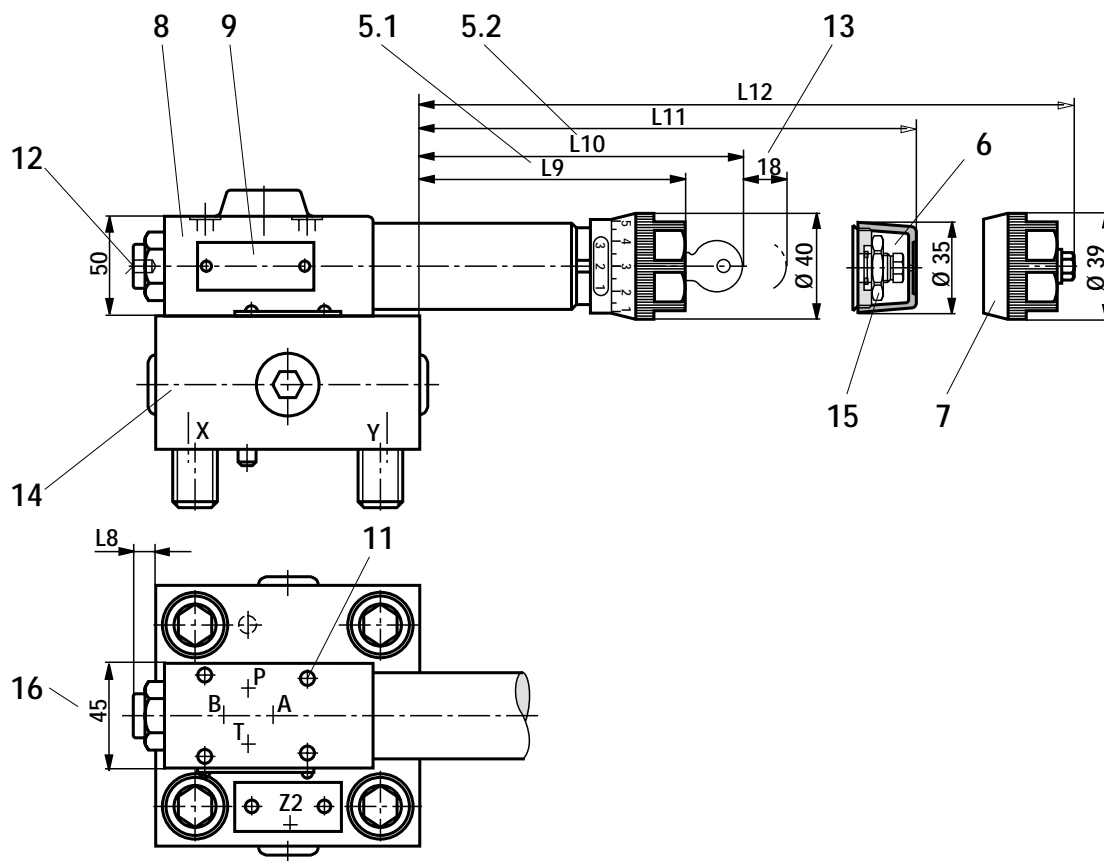
LFA..DR.-7X/...  
NS 63

# Control cover for pressure reducing function

Main spool normally closed - LC..DB 40 D.. – separate order

NS 16 to 63

Dimensions in mm



- 5.1 Adjustment element "4"
- 5.2 Adjustment element "3"
- 6 Adjustment element "2"
- 7 Adjustment element "1"
- 8 Direct operated pressure reducing valve (is included within the scope of supply)
- 9 Name plate for pressure reducing valves
- 11 Valve fixing screws  
M5x50 DIN 912-10.9  $M_A = 8.9 \text{ Nm}$   
are within the control cover scope of supply
- 12 Pressure gauge port G 1/4, 12 deep; socket screw A/F 6
- 13 Space required to remove key
- 14 Control cover, see page 52
- 15 Lock nut A/F 24
- 16 For type .../315 → 50 mm

NS	16	25	32	40	50	63
A**1)						2.0
F**1)		0.8	1.0	1.2	1.5	1.5
X**1)	2.5					
D**2)	0.8	3.0	3.0	3.0	3.0	3.0
.../315	0.8	1.8	1.8	1.8	1.8	1.8
L8	22	5.5				
.../315	30.5	14	6			
L9	119.5	131	123.5	111	103.5	87.5
.../315	116.5	128	120.5	108	100.5	84.5
L10	143.5	155	148.5	135	128.5	111.5
.../315	140.5	152	145.5	132	125.5	108.5
L11	99.5	111	103.5	91	83.5	67.5
.../315	96.5	108	100.5	88	80.5	64.5
L12	99.5	111	103.5	91	83.5	67.5
.../315	96.5	108	100.5	88	80.5	64.5
Special Dim.	see page 52					

\*\* Orifice - Ø

1) Orifice M6 tapered

2) Orifice M6 tapered (NS16, 63) orifice M8 x 1 tapered (NS25...50)

# Control cover for pressure reducing and isolating functions

Main spool normally closed - LC..DB 40 D.. – separate order

## NS 16 to 63

1	2	3	4	5	6	7
LFA		DRW		7X		

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

### Adjustment element

Rotary knob	= 1
Set screw with hexagon and protective cap	= 2
Lockable rotary knob with scale	= 3 <sup>1)</sup>
Rotary knob with scale	= 4

<sup>1)</sup> H-key to part no. 008158 is included within the scope of supply

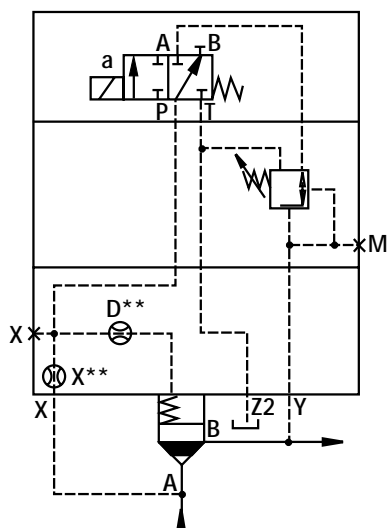
No code = NBR seals  
 V = FKM seals  
 (other seals on request)

### ⚠ Attention!

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

025	=	Max. secondary pressure 25 bar
075	=	Max. secondary pressure 75 bar
150	=	Max. secondary pressure 150 bar
210	=	Max. secondary pressure 210 bar
315	=	Max. secondary pressure 315 bar

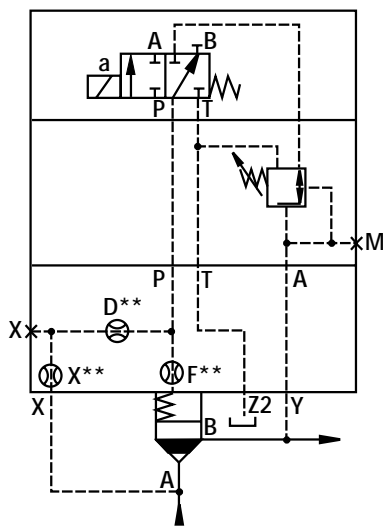
7X = Series 7X (NS 16 to 63)



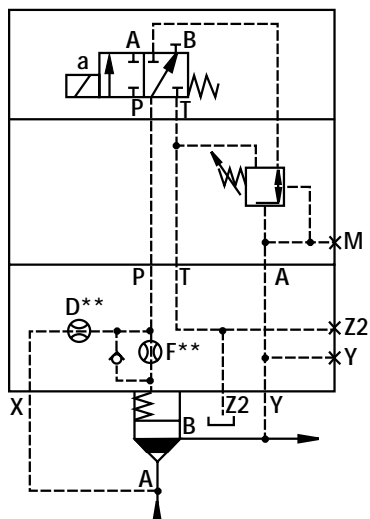
LFA..DRW.-7X/...  
NS 16

### 3WE 6 B9-../..

Solenoid de-energised → closed  
 Solenoid de-energised → pressure reducing function



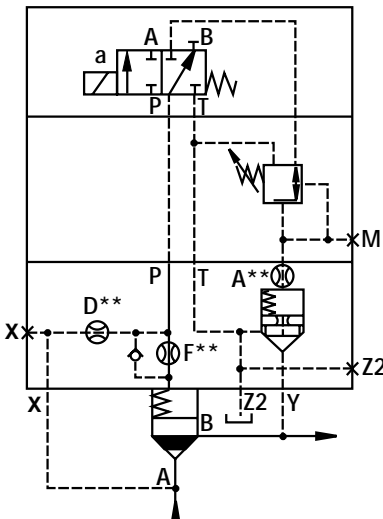
LFA..DRW.-7X/...  
NS 25, 32



LFA..DRW.-7X/...  
NS 40, 50

### 3WE 6 B9-../..

Solenoid de-energised → closed  
 Solenoid de-energised → pressure reducing function



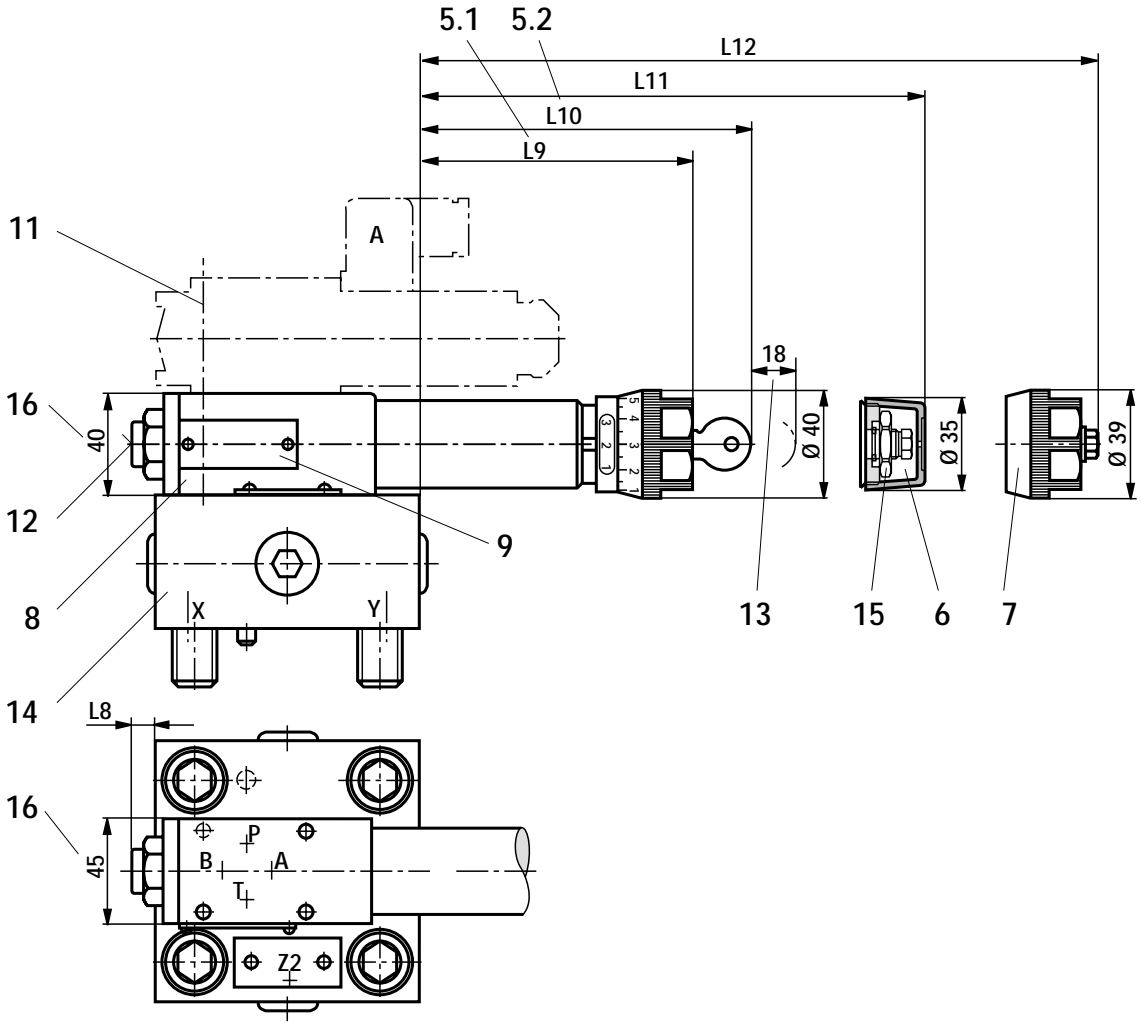
LFA..DRW.-7X/...  
NS 63

# Control cover for pressure reducing and isolating functions

Main spool normally closed - LC..DB 40 D.. – separate order

NS 16 to 63

Dimensions in mm



- 5.1 Adjustment element "4"
- 5.2 Adjustment element "3"
- 6 Adjustment element "2"
- 7 Adjustment element "1"
- 8 Direct operated pressure reducing valve (is included within the scope of supply)
- 9 Name plate for pressure reducing valve
- 11 Valve fixing screws  
M5x50 DIN 912-10.9  $M_A = 8.9 \text{ Nm}$   
are included within the scope of the control cover supply
- 12 Pressure gauge port G 1/4, 12 deep;  
Socket screw A/F 6
- 13 Space required to remove key
- 14 Control cover, see page 52
- 15 Lock nut A/F 24
- 16 For type .../315 → □50 mm

NS	16	25	32	40	50	63
A**1)						2.0
X**1)	2.5					
F**1)		0.8	1.0	1.2	1.5	1.5
D**2)	0.8	3.0	3.0	3.0	3.0	3.0
.../315	0.8	1.8	1.8	1.8	1.8	1.8
L8	18	2				
.../315	30.5	14	6			
L9	123.5	135	127.5	115	107.5	91.5
.../315	116.5	128	120.5	108	100.5	84.5
L10	147.5	159	152.5	139	129.5	112.5
.../315	140.5	152	145.5	132	125.5	108.5
L11	103.5	115	107.5	95	87.5	71.5
.../315	96.5	108	100.5	88	80.5	64.5
L12	103.5	115	107.5	95	87.5	71.5
.../315	96.5	108	100.5	88	80.5	64.5
Other dim.	see page 52					

\*\* Orifice - Ø  
 1) Orifice M6 tapered  
 2) Orifice M6 tapered (NS16, 63) orifice M8 x 1 tapered (NS25...50)



# Control cover for pressure reducing functions – electrical-proportional

Main spool normally closed - LC..DB 40 D.. – separate order

## NS 25 to 63

1	2	3	5	6	7
LFA			7X	/	

Nominal size 25  
 Nominal size 32  
 Nominal size 40  
 Nominal size 50  
 Nominal size 63

= 25  
 = 32  
 = 40  
 = 50  
 = 63

Pressure reducing function, electrical-proportional = **DREV**

Pressure reducing function, electrical-proportional and possibility for 2-way flow control function = **DREZ**

Series 7X (NS 25 to 63)

= 7X

No code =  
 V =

NBR seals  
 FKM seals  
 (other seals on request)

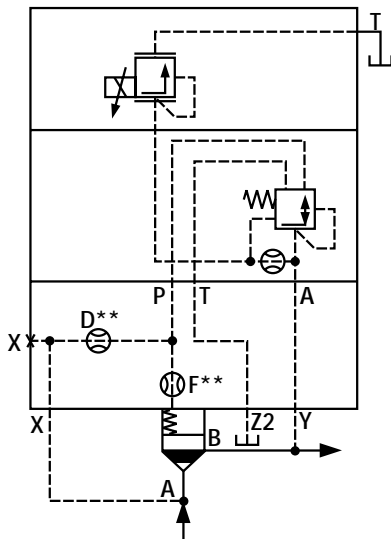
### ⚠ Attention!

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

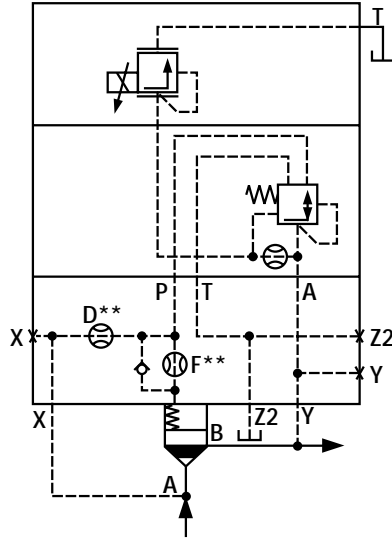
**Pressure ratings** (pressure reducing valve)

006 = 7.0 bar (only for DREV)

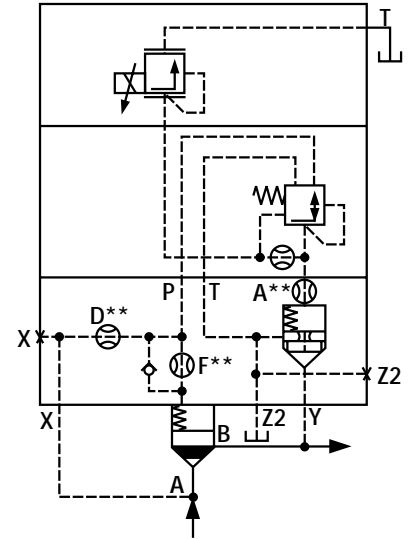
014 = 16.0 bar (only for DREZ)



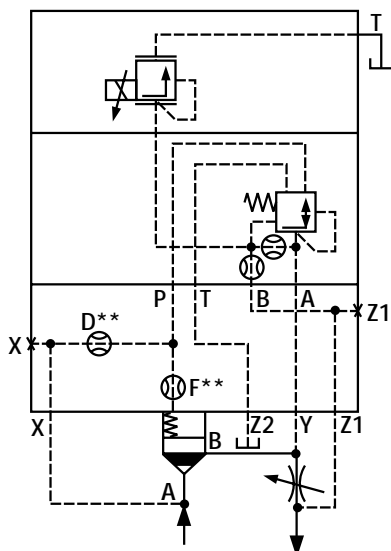
LFA..DREV-7X/006  
 NS 25, 32



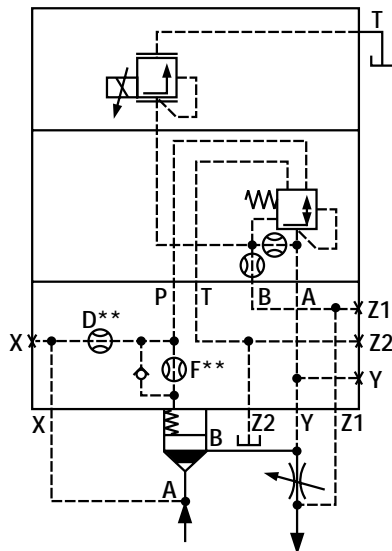
LFA..DREV-7X/006  
 NS 40, 50



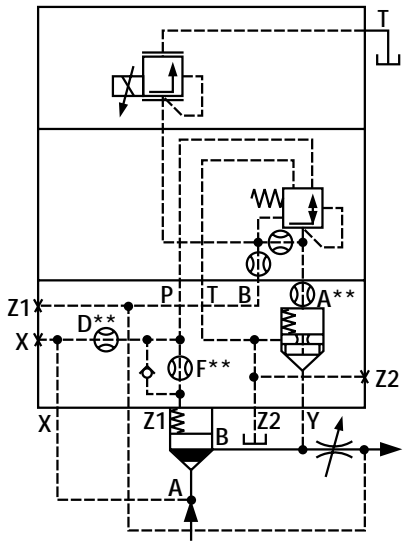
LFA..DREV-7X/006  
 NS 63



LFA..DREZ-7X/014  
 NS 25, 32



LFA..DREZ-7X/014  
 NS 40, 50



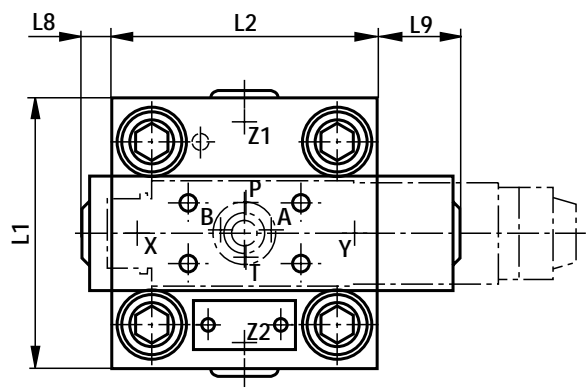
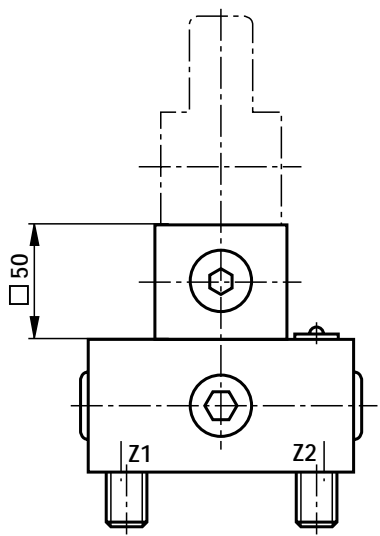
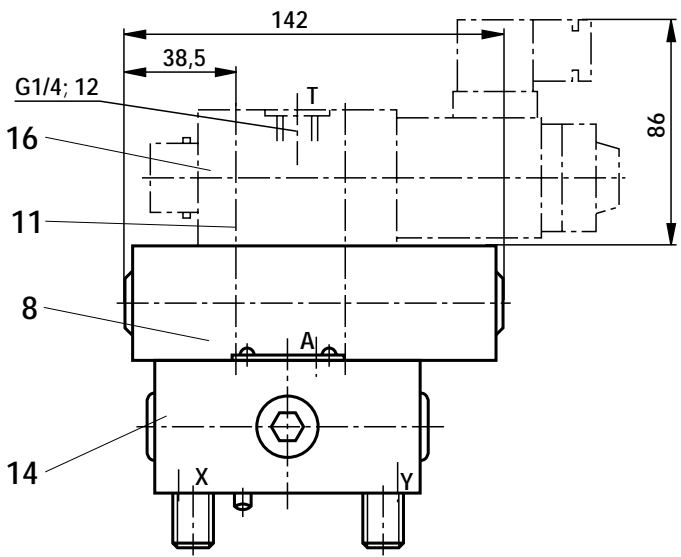
LFA..DREZ-7X/014  
 NS 63

# Control cover for pressure reducing function – electrical-proportional

Main spool normally closed - LC..DB 40 D.. – separate order

NS 25 to 63

Dimensions in mm



NS	A** <sup>1)</sup>	F** <sup>1)</sup>	D** <sup>2)</sup>	L1	L2	L8	L9	Special dim.
25		0.8	1.5	85	85	15	42	see page 52
32		1.0	1.5	100	100	7.5	35	
40		1.2	1.8	125	125		22	
50		1.5	1.8	140	140		15	
63	2.0	1.5	1.8	180	180			

\*\* Orifice - Ø

<sup>1)</sup> Orifice M6 tapered

<sup>2)</sup> Orifice M8 x 1 tapered (NS25...50) orifice M6 tapered (NS63)

- 8** Pressure reducing valve (is included within the scope of supply)
- 11** Valve fixing screws  
M5 DIN 912-10.9  $M_A = 8.9 \text{ Nm}$   
are included within the scope of supply
- 14** Control cover, see page 52
- 16** Proportional pressure relief valve  
DBET-5X/...<sup>3)</sup>Y G24-1<sup>4)</sup>  
(must be ordered separately)

<sup>3)</sup> Pressure ratings for valve types:  
DBET-5X/... 50, 100, 200, 315  
and 350 bar

<sup>4)</sup> 1 = G 1/4 threaded port T,  
special poppet

# Control cover for pressure reducing function and isolating function – electrical-proportional

Main spool normally closed - LC..DB 40 D.. – separate order

## NS 25 to 63

Nominal size 25  
 Nominal size 32  
 Nominal size 40  
 Nominal size 50  
 Nominal size 63

Pressure reducing function,  
 electrical-proportional and isolating function

Pressure reducing function, electr.-prop. and  
 isolating function, including possibility for  
 2-way flow control function

1	2	3	5	6	7
LFA			7X	/	

= 25  
 = 32  
 = 40  
 = 50  
 = 63

= DREVV

= DREWZ

006 =  
 014 =

= 7X

No code =  
 V =

NBR seals  
 FKM seals  
 (other seals on request)

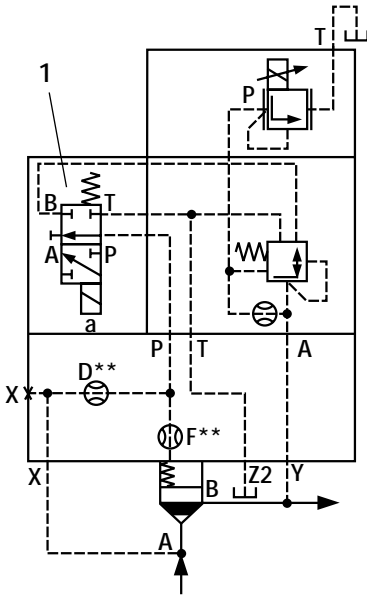
**Attention!**

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

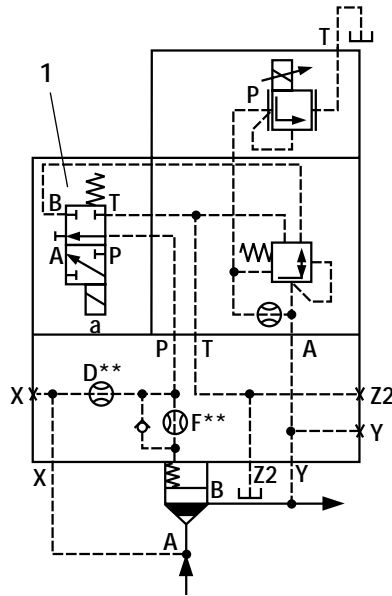
**Pressure ratings**

7.0 bar (only for DREVV)  
 16.0 bar (only for DREWZ)

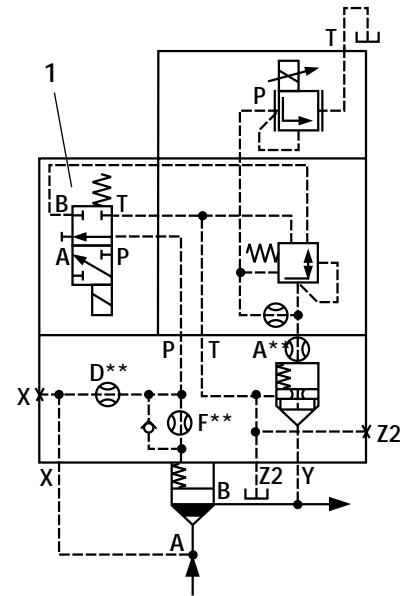
Series 7X (NS 25 to 63)



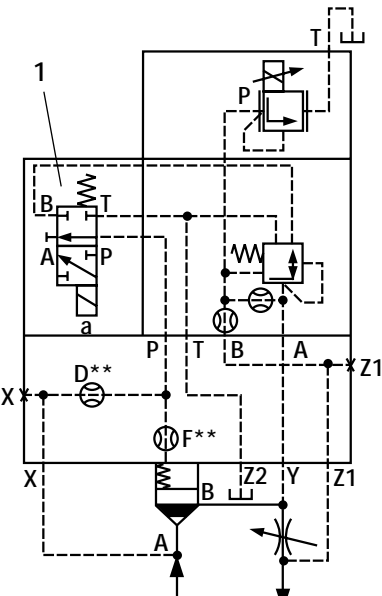
LFA..DREVV-7X/006  
 NS 25, 32



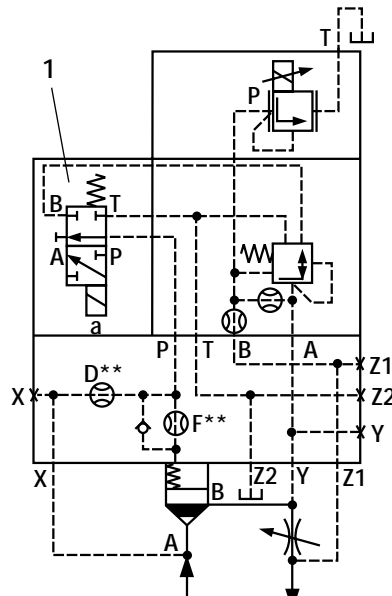
LFA..DREVV-7X/006  
 NS 40, 50



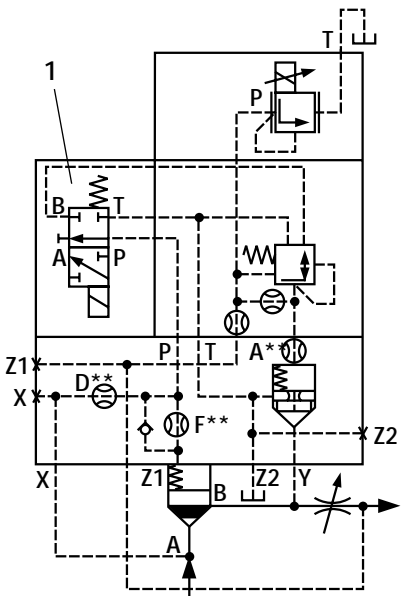
LFA..DREVV-7X/006  
 NS 63



LFA..DREWZ-7X/014  
 NS 25, 32



LFA..DREWZ-7X/014  
 NS 40, 50



LFA..DREWZ-7X/014  
 NS 63

1 3WE 6 A-../.. Solenoid de-energised → closed

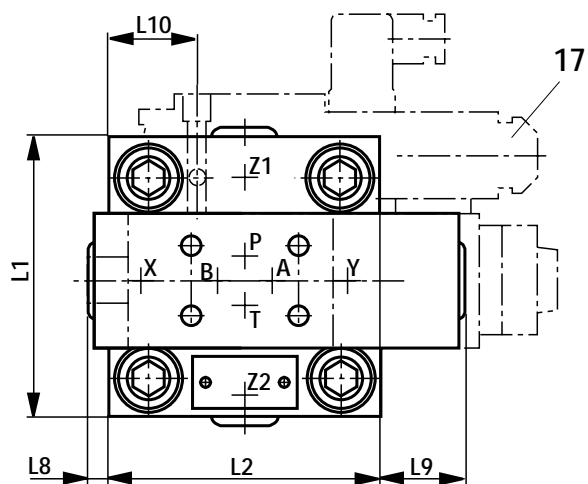
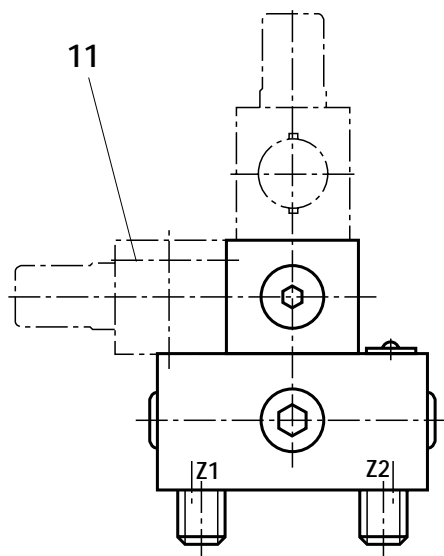
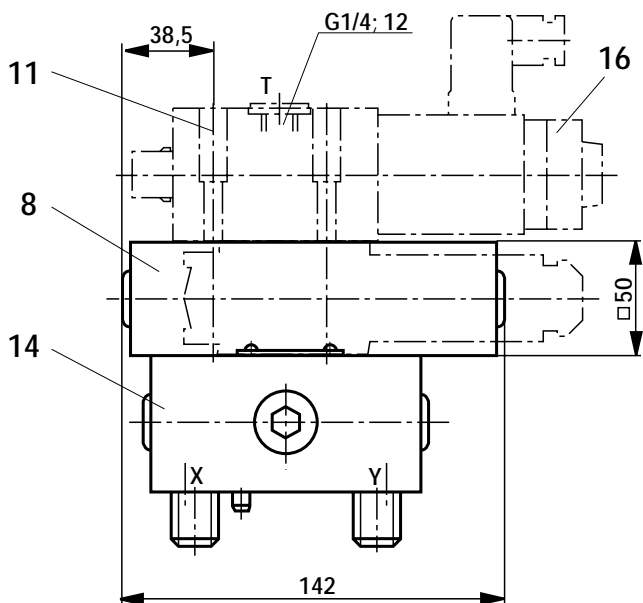
Solenoid de-energised → pressure reducing function

# Control cover for pressure reducing function and isolating function – electrical-proportional

Main spool normally closed - LC..DB 40 D.. – separate order

NS 25 to 63

Dimensions in mm



- 8 Pressure reducing valve (is included within the scope of supply)
- 11 Valve fixing screws  
M5 DIN 912-10.9  $M_A = 8.9 \text{ Nm}$   
are included within the scope of supply
- 14 Control cover, see page 52
- 16 Proportional pressure relief valve  
DBET-5X/...<sup>3)</sup>Y G24-1<sup>4)</sup>  
(must be ordered separately,  
see page 49)
- 17 Directional spool valve 3WE 6 A...  
(must be ordered separately,  
see page 49)

<sup>3)</sup> Pressure ratings for valve type:  
DBET-5X/... 50, 100, 200, 315  
and 350 bar

<sup>4)</sup> 1 = G 1/4 threaded port T,  
special poppet

NS	A**1)	F**1)	D**2)	L1	L2	L8	L9	L10	Special dim.
25		0.8	1.5	85	85	15	42	30	see page 52
32		1.0	1.5	100	100	7.5	35	37.5	
40		1.2	1.8	125	125		22	50	
50		1.5	1.8	140	140		15	57.5	
63	2.0	1.5	1.8	180	180			81.5	

\*\* Orifice - Ø

1) Orifice M6 tapered

2) Orifice M8 x 1 tapered (NS25...50) orifice M6 tapered (NS63)

# Pressure sequencing functions

## General information regarding control cover for pressure sequencing functions

					1	2	3	4	5	6	7	8
					LFA      — 7X /							
• = available												
Nominal size					Type	Adjuster type	Series	Max. settable sequencing pressure in bar	Pilot oil supply	Seal material	Page	
•	•	•	•	•	DZ			210		ordering details	63, 64	
•	•	•	•	•	DZWA			315	see pages		65, 66	
•	•	•	•	•	DZWB			350	63 and 65		65, 66	

Preferred types and standard components are highlighted in the RPS (Rexroth Price list Standard).

- 4** Adjustment type for pressure sequence valves
- 1 = Rotary knob
  - 2 = Hexagon with protective cap
  - 3 = Lockable rotary knob with scale (H-lock to automotive industry standards)
  - 4 = Rotary knob with scale not lockable

- 5** Series
- 7X = Series 70 to 79  
(unchanged installation and connection dimensions)

- 7** Pilot oil supply
- No code =  
 X =  
 Y =  
 XY =
- ordering details according to symbol (see pages 63 and 65)

For seal kits see page 62

**⚠ Attention!**

Control cover type LFA..DZ...are combined with 2-way cartridge valves type LC..DB... (for ordering details see page 5)

The orifices built into the control cover are screwed type orifices. These are standard orifices. **No** type is entered in the ordering code.

Orifice as shown within the main symbol

**Directional spool valve (porting pattern to DIN 24 340 form A6)**

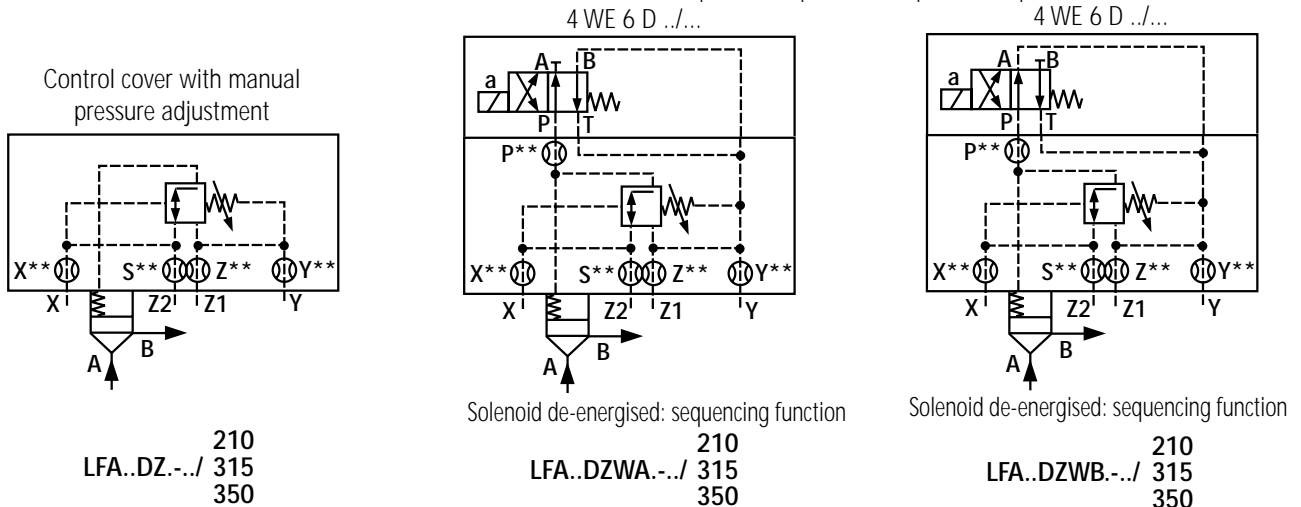
Directional spool valve Type	NS	Catalogue sheet RE no.	Control cover Type
4WE 6 D../..	6	23 178	DZWA, DZWB

**⚠ Attention!** Pilot valves (electrical directional spool valves type 4WE 6 D..) must be ordered separately, for further details see catalogue sheet RE 23 178. Valve fixing screws M5 x 50 DIN 912-10.9,  $M_A = 8.9 \text{ Nm}$  are included within the control cover scope of supply.

## Overview of symbols (basic symbols), pressure sequencing functions

Valid symbols are shown in the following type descriptions !

Control cover with manual pressure adjustment and pressure-dependent or pressure independent sequence function



## Control cover for pressure sequencing functions

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

Pressure fluid		mineral oil (HL, HLP) to DIN 51 524 <sup>1)</sup> ; fast bio-degradable pressure fluids to VDMA 24 568 (see also RE 90 221); HETG (rape seed oil) <sup>1)</sup> ; HEPG (polyglycole) <sup>2)</sup> ; HEES (synthetic ester) <sup>2)</sup> ; other pressure fluids on request
<sup>1)</sup> suitable for NBR <b>and</b> FKM seals <sup>2)</sup> <b>only</b> suitable for FKM seals		
Pressure fluid temperature range	°C	– 30 to + 80 for NBR seals – 20 to + 80 to FKM seals
Viscosity range	mm <sup>2</sup> /s	2.8 to 380
Degree of contamination		Maximum permissible degree of contamination of the pressure fluid is to NAS 1638 class 9. We, therefore commend a filter with a minimum retention rate of $\beta_{10} \geq 75$ .

### Control cover

Max. perm. operating pressure at port ...	Control cover type		
	LFA..DZ.-./...	LFA..DZW.-./...	
		/... /...X	/...Y /...XY
...X; ...Z2	315 bar		
...Y	When controlling pressure	zero pressure (up to $\approx$ 2 bar)	
	Static	315 bar	210 bar (=) <sup>1)</sup> 160 bar (~) <sup>1)</sup>
...Z1	When controlling pressure	zero pressure (up to $\approx$ 2 bar)	
	Static	315 bar	210 bar (=) <sup>1)</sup> 160 bar (~) <sup>1)</sup>   315 bar
Settable sequencing pressure		210 315 350	

<sup>1)</sup> max. perm. values 4WE 6 D

### R-rings dimensions for ports X, Y, Z1, Z2 (are included within the scope of supply)

NS	Dimensions in mm	Material no.	
		NBR	FPM
16	8.41 x 1.40 x 1.78	00025407	00025408
25	9.81 x 1.50 x 1.78	00017453	00017610
32	11.18 x 1.60 x 1.78	00017455	00017611
40, 50	13.00 x 2.30 x 2.62	00017457	00017617

## Seal kits for cartridge valves and control covers

---

### Seal kits for cartridge valves

Type LC.. DB../... (NS 16 ... 50)

Seal kit for	Material no.	
	NBR	FKM
LC 16 DB..7X/..	00313104	00313107
LC 25 DB..7X/..	00313105	00313108
LC 32 DB..7X/..	00313106	00313109
LC 40 DB..7X/..	00873022	00873025
LC 50 DB..7X/..	00873023	00873026

### Seal kit for control covers

Type LFA../... (NS 16 ... 50)

Seal kit for LFA...	Material no.									
	16		25		32		40		50	
	NBR	FKM	NBR	FKM	NBR	FKM	NBR	FKM	NBR	FKM
...DZ... ...DZW...	00860006		00311540		00311541		00311542		00311542	

### Fixing screws (are included within the scope of supply)

---

S.H.C.S. to DIN 912-10.9

NS	Qty.	Dimensions	Tightening torque in Nm
16	4	M 8 x 115	32
25	4	M 12 x 120	110
32	4	M 16 x 120	270
40	4	M 20 x 70	520
50	4	M 20 x 80	520

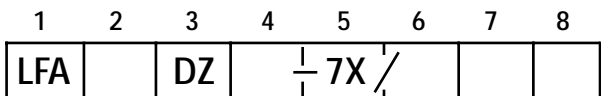
### Orifice thread size

---

All built-in orifices: M6 tapered

# Control cover for pressure sequencing functions

## NS 16 to 50



Nominal size 16	= 16
Nominal size 25	= 25
Nominal size 32	= 32
Nominal size 40	= 40
Nominal size 50	= 50

**Adjuster type**

Rotary knob	= 1
Hexagon with protective cap	= 2
Lockable rotary knob with scale (H-lock to automotive industry standards)	= 3
Rotary knob with scale <b>not</b> lockable	= 4

Series 7X (NS 16 to 50) = 7X

**Pressure stages (max. settable sequencing pressure)**

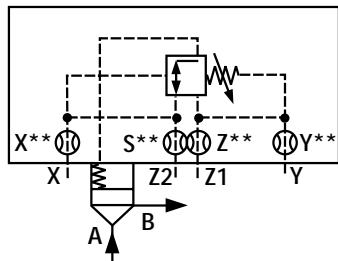
210 bar	= 210
315 bar	= 315
350 bar	= 350

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

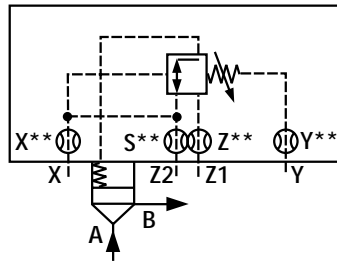
**⚠ Attention!**  
 The compatibility of the seals and pressure fluid has to be taken into account!

**Pilot oil supply**

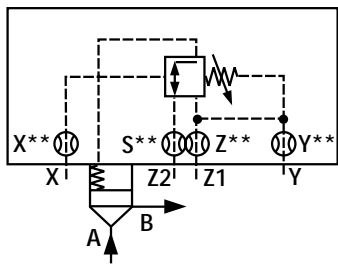
	Pilot oil supply	Pilot oil supply
No code =	internal	internal
X =	external	internal
Y =	internal	external
XY =	external	external



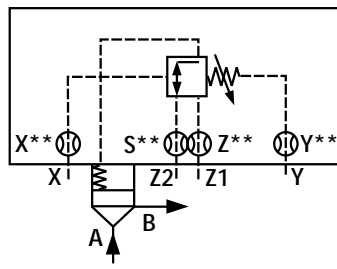
LFA..DZ.-../  
 210 315  
 350



LFA..DZ.-../  
 210 315 Y  
 350



LFA..DZ.-../  
 210 315 X  
 350



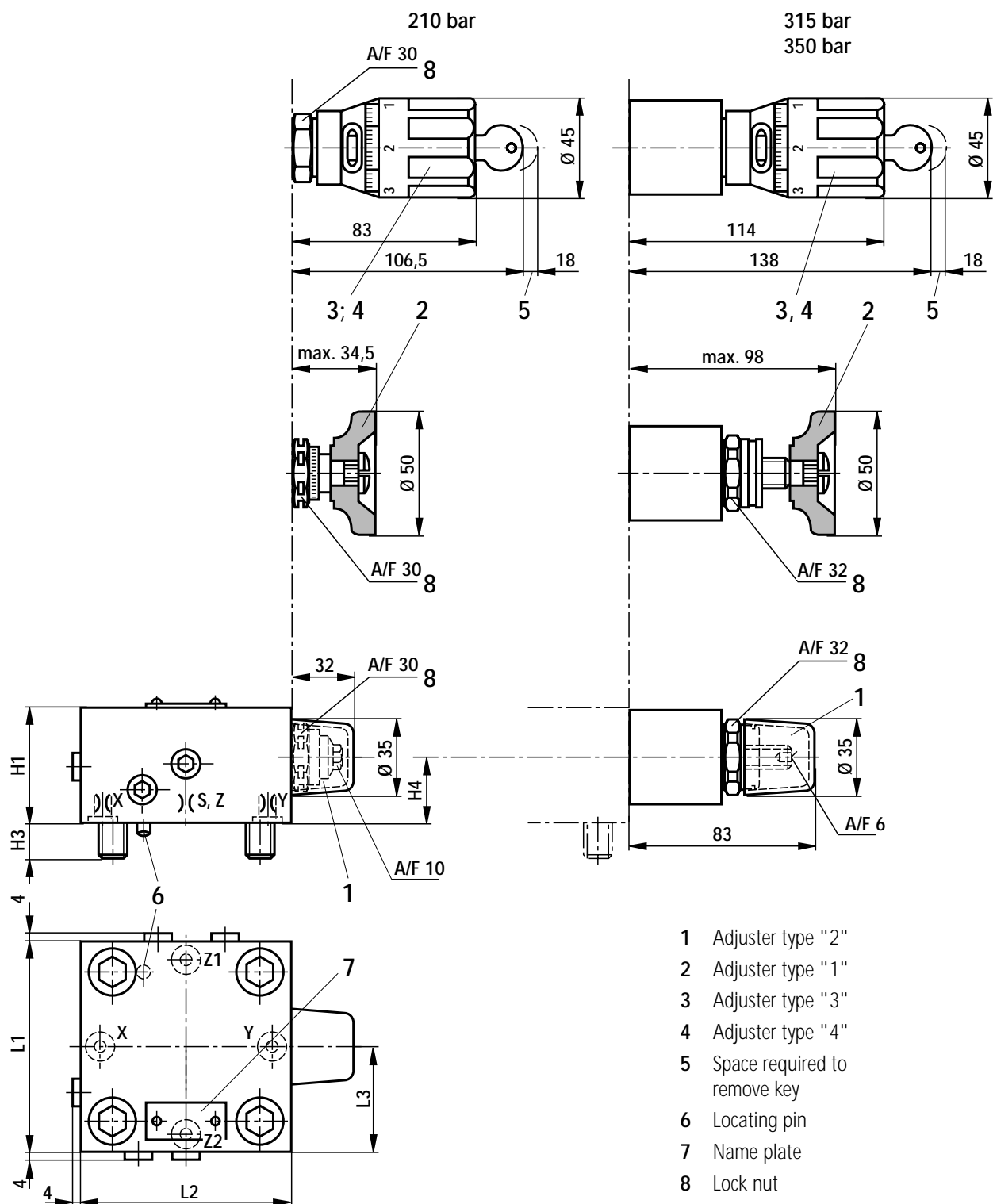
LFA..DZ.-../  
 210 315 XY  
 350



# Control cover for pressure sequencing functions

NS 16 to 50

Dimensions in mm



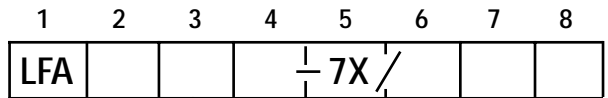
NS	S**1)	X**1)	Y**1)	Z**1)	H1	H3	H4	L1	L2	L3
16	0.8	0.8	1.0	1.0	40	16	20	65	105	39.5
25	0.8	0.8	1.0	1.0	40	24	20	85	110	53
32	1.0	1.0	1.2	1.2	50	28	25	100	115	60.5
40	1.0	1.0	1.2	1.2	60	32	36	125	125	62.5
50	1.0	1.0	1.2	1.2	68	34	36	140	140	70

\*\* Orifice -  $\varnothing$

1) all orifices M6 tapered

# Control cover for pressure-dependent and independent sequencing functions

## NS 16 to 50



Nominal size 16	= 16
Nominal size 25	= 25
Nominal size 32	= 32
Nominal size 40	= 40
Nominal size 50	= 50

Solenoid de-energised: pressure sequence function	= <b>DZWA</b>
Solenoid energised: open	
Solenoid de-energised: open	= <b>DZWB</b>
solenoid energised: pressure sequence function	

**Adjuster type**

Rotary knob	= 1
Lockable rotary knob with scale	= 2
Lockable rotary knob with scale (H-lock to automotive industry standards)	= 3
Rotary knob with scale <b>not</b> lockable	= 4

Series 7X (NS 16 to 50) = **7X**

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

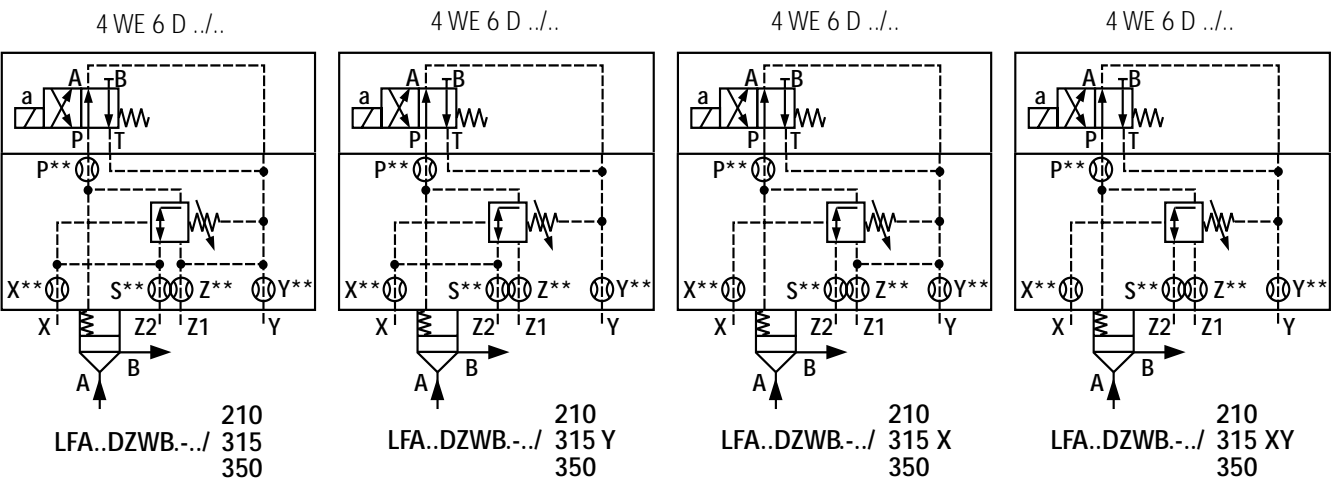
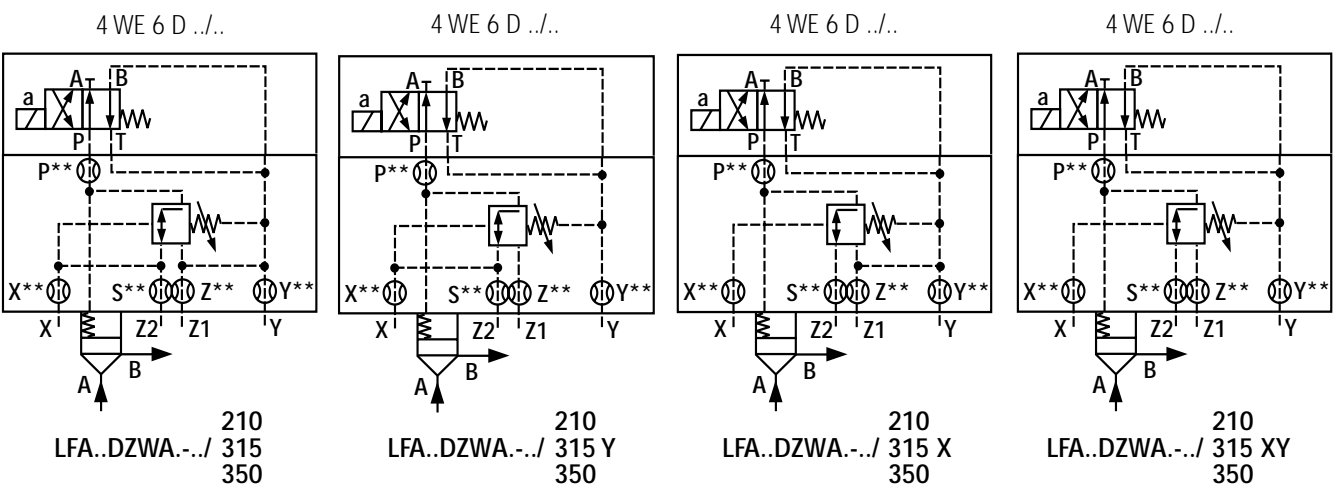
**⚠ Attention!**  
 The compatibility of the seals and pressure fluid has to be taken into account!

**Pilot oil supply**

	Pilot oil supply	Pilot oil drain
No code	= internal	internal
X	= external	internal
Y	= internal	external
XY	= external	external

**Pressure stages (max. settable sequencing pressure)**

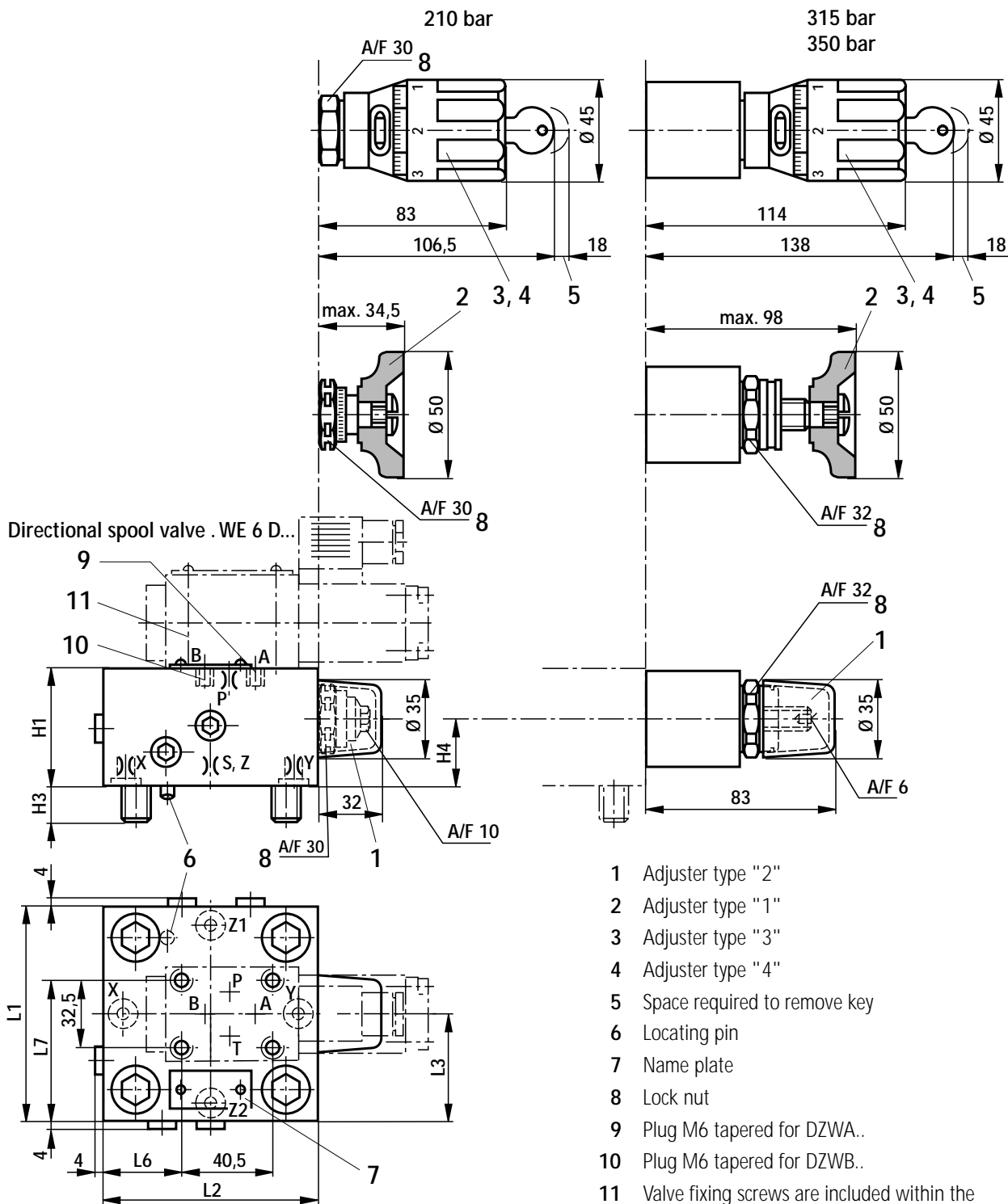
210	= 210 bar
315	= 315 bar
350	= 350 bar



# Control cover for pressure-dependent and independent sequencing functions

NS 16 to 50

Dimensions in mm



NS	S** <sup>1)</sup>	X** <sup>1)</sup>	Y** <sup>1)</sup>	Z** <sup>1)</sup>	P** <sup>1)</sup>	H1	H3	H4	L1	L2	L3	L6	L7
16	0.8	0.8	1.0	1.0	1.0	40	16	20	65	105	39.5	16	49
25	0.8	0.8	1.0	1.0	1.0	40	24	20	85	110	53	21	59
32	1.0	1.0	1.2	1.2	1.2	50	28	25	100	115	60.5	26.5	66.5
40	1.0	1.0	1.2	1.2	1.2	60	32	36	125	125	62.5	55	76.5
50	1.0	1.0	1.2	1.2	1.2	68	34	36	140	140	70	70	84

\*\* Orifice - Ø

<sup>1)</sup> all orifices M6 tapered

