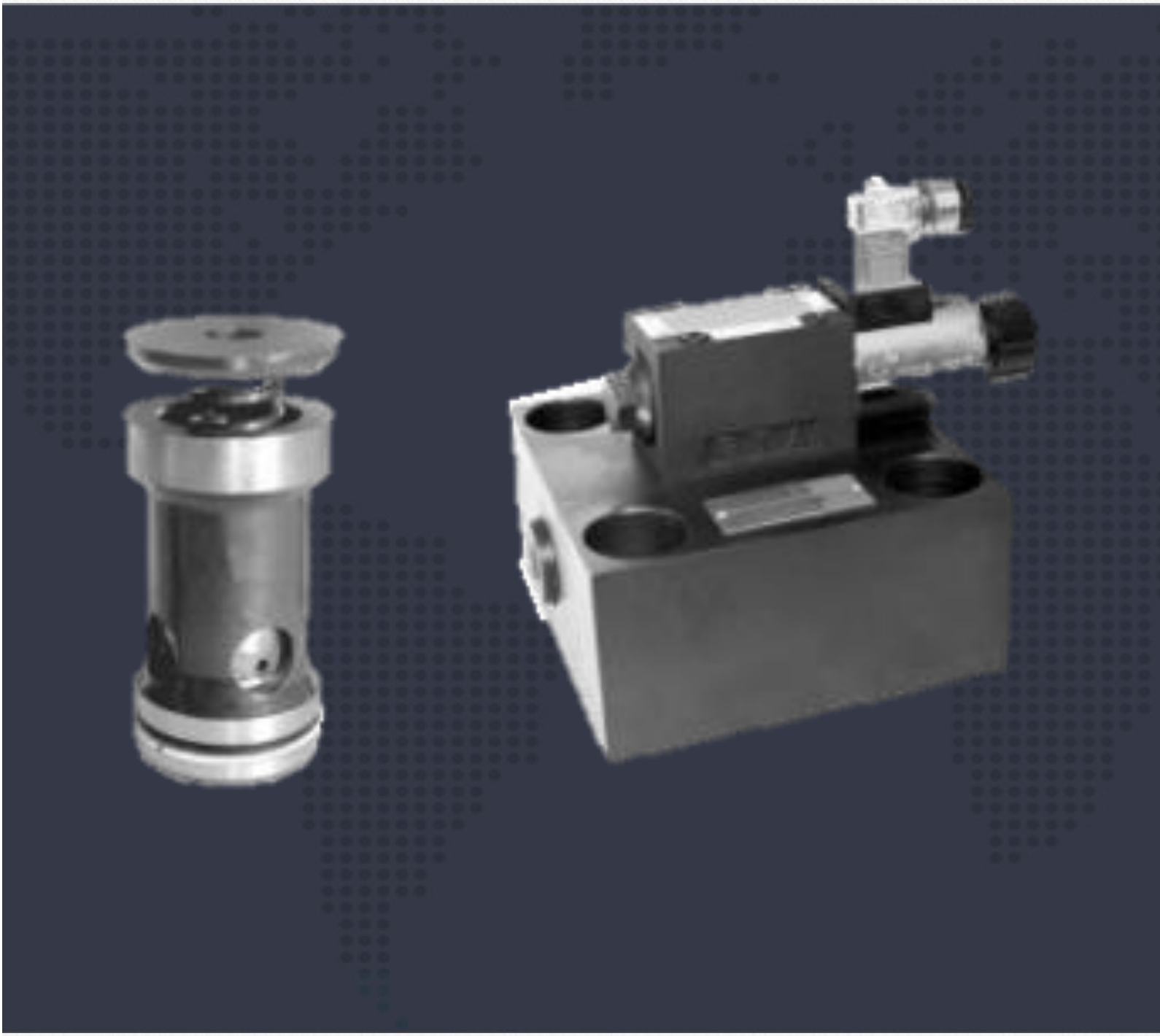
HUADE AMÉRICA

Catálogo de Produtos



2-Way Cartridge Valves-Pressure Functions LC - LFA

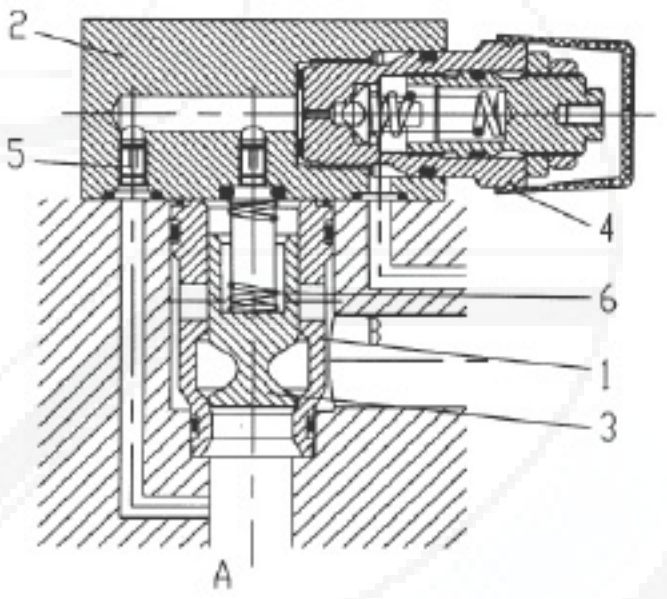
BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.LTD.	**2-way cartridge valves-pressure functions Cartridge valves type LC... Control covers type LFA...**			RE 81078/12.99
	Size 16 to 100	up to 40 MPa	up to 7000L/min	Replaces：

K3786/6
Control cover with manual pressure adjustment,
type LFA ..DBW..

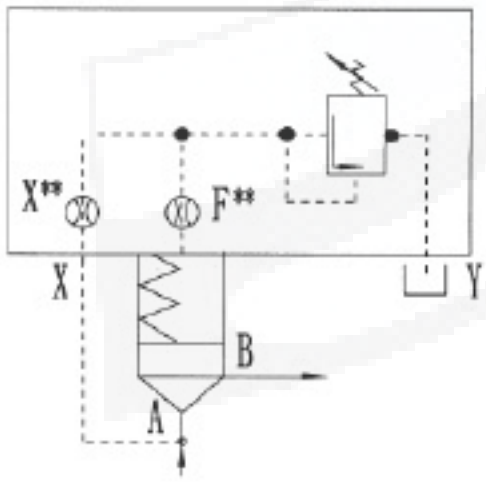
K3787/6
Cartridge valve type LC .. DB

Function ,section,symbols

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 24342 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 .

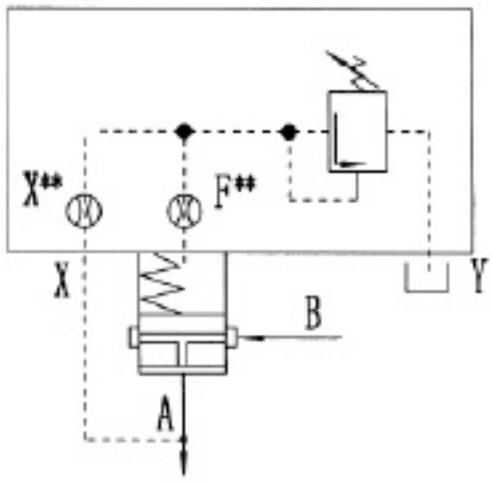


Pressure relief function (Pages 32 to 71)
The cartridge valve (1) for the pressure relief function (type LC .DB.. is a poppet valve without an area differential (no effective area at port B). The pressure acting at port A is fed via the pilot oil supply orifice (5) to the spring side (6) of the element. 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 (Pages 69 to 84)
a) Normally open:
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.

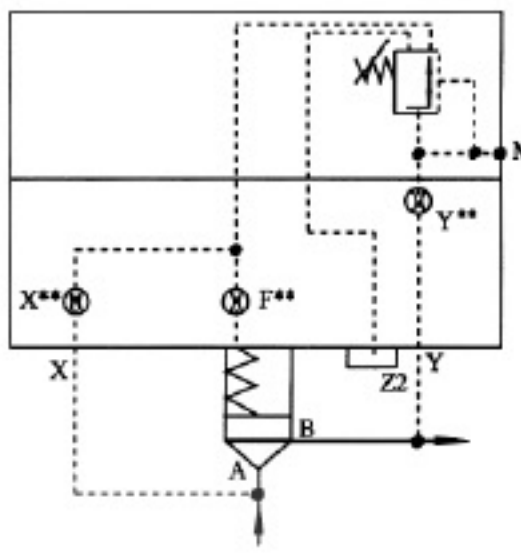


Pressure Reducing Valve
Normally open
eg.
type LFA..DB...
type LC..DR40...

Function, description

b) Normally closed:

For the pressure reducing function 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.



Pressure reducing valve
Normlly closed

e.g.
Type LFA..DB..
Type LC..DB 40D6XB

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 addi-tional isolating function can also be attained (type LFA..DRW...).

Pressure sequencing function

Control cover type LFA...DZ...
Control cover 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.

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 spools opens and makes the connection from port A to B possible.

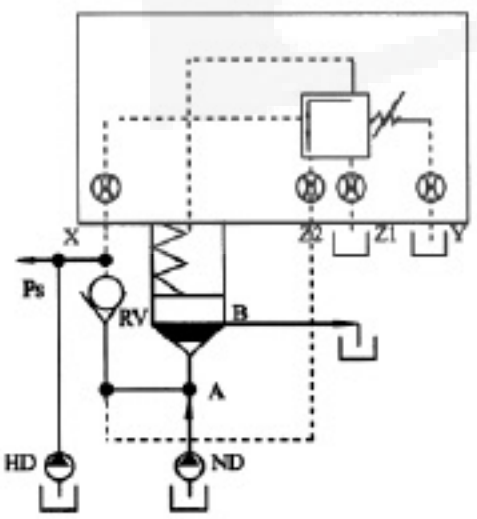
The pilot oil supply may be either external (pilot oil port X) or internal(from port A via pilot oil port X or Z2).
The spring chamber of the pilot control is drained at zero pressure via ports Y or Z1 to tank.

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:

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.

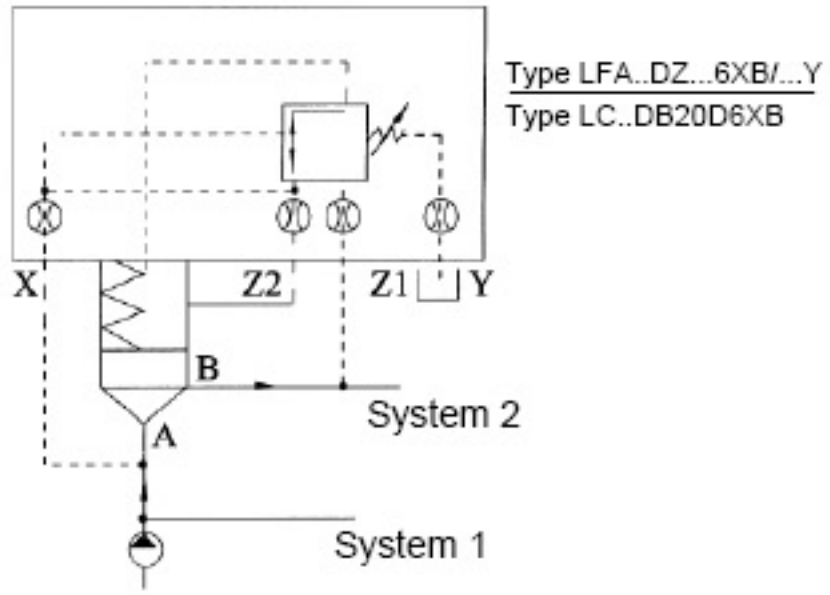


e.g
Type LFA..DZ...6XB/...XY
Type LC..DB20D6XB

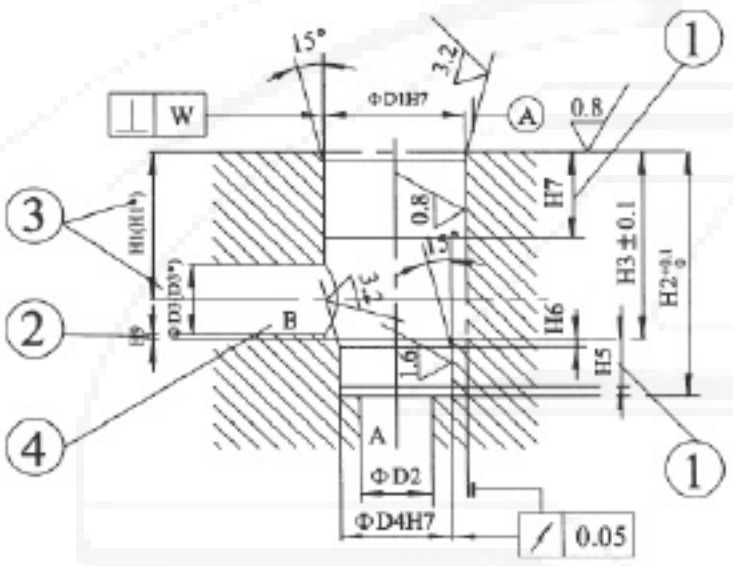
Example 1:
Circuit for the pressure dependent unloading of the low pressure system

Example 2:
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.

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

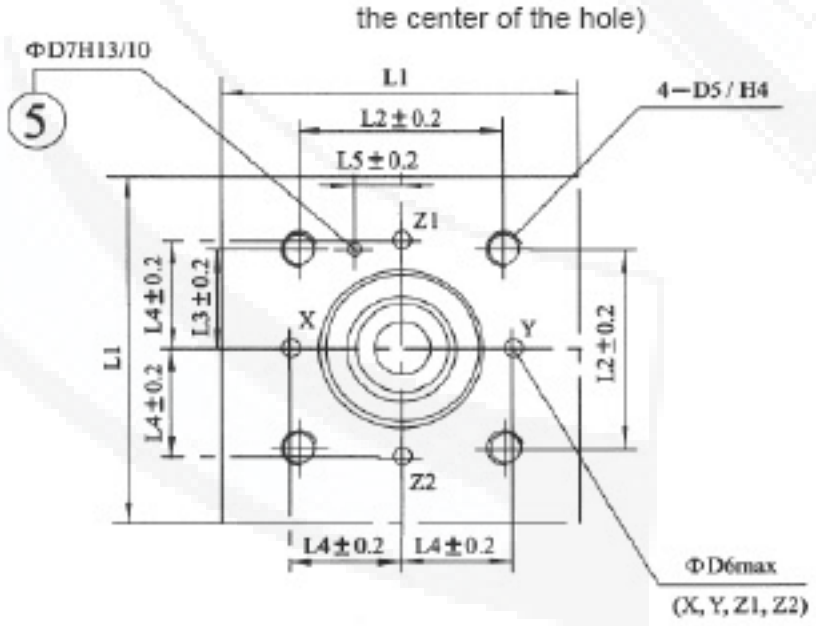


Installation cavity and porting pattern to DIN 24342 (Dimensions in mm)

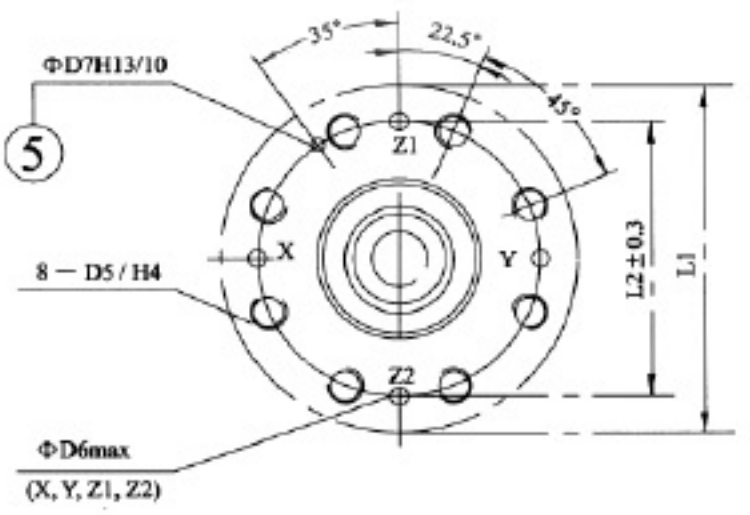


NS16...63

NS16 Note
Length L1(It is 80mm from X to Y via the center of the hole)



NS80,100



Size	16	25	32	40	50	63	80	100
øD1	32	45	60	75	90	120	145	180
øD2	16	25	32	40	50	63	80	100
øD3	16	25	32	40	50	63	80	100
(øD3)*	25	32	40	50	63	80	100	125
øD4	25	34	45	55	68	90	110	135
øD5	M8	M12	M16	M20	M20	M30	M24	M30
øD6[1)]	4	6	8	10	10	12	16	20
øD7	4	6	6	6	8	8	10	10
H1	34	44	52	64	72	95	130	155
(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 ± 0.2	210 ± 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	250	300
L2	46	58	70	85	100	125	200	245
L3	23	29	35	42.5	50	62.5	-	-
L4	25	33	41	50	58	75	-	-
L5	10.5	16	17	23	30	38	-	-
W	0.05	0.05	0.1	0.1	0.1	0.2	0.2	0.2

1)Max. dim.
1 Depth of fit
2 Reference dimension
3 For diameters of port B other than Φ D3 or (Φ D3*), the distance from the cover mounting surface to the centre of this hole must be calculated.
4 Port B may be moved about the cental 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

Pressure relief function

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

LC		DB			6X	B	/	*

Nominal size 16 = 16
Nominal size 25 = 25
Nominal size 32 = 32
Nominal size 40 = 40
Nominal size 50 = 50
Nominal size 63 = 63
Nominal size 80 = 80
Nominal size 100 = 100

Cracking pressure approx. 0 MPa (without spring) =00
Cracking pressure approx. 0.2 MPa =20 } **
Cracking pressure approx. 0.4 MPa =40
**Cracking pressure 0.3 MPa only with NS16 for fitting a pilot operated pressure relief valve type DBC . -5X/

Further detials in clear text

No code = Mineral oils
V = Phosphate ester

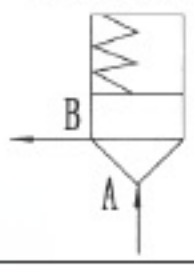
B= Technology of Beijing Huade Hydraulic

6X= Series 60 to 69 (60 to 69: unchanged installation and connection dimensions)

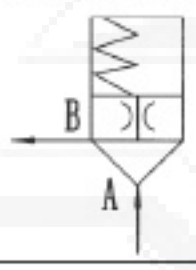
E = Poppet valve without orifice (standard) } Standard
D = Spool poppet valve without orifice (standard)
A = Poppet valve with orifice
B = Spool poppet valve with orifice

Symbols: cartridge valves (for versions see ordering details)

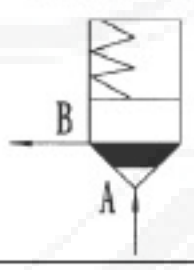
Poppet valve
LC...DB...E6X



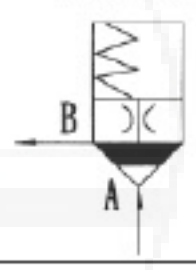
Spool poppet valve with orifice
LC...DB...A6X



Spool poppet valve
LC...DB...D6X



Spool poppet valve with orifice
LC...DB...B6X



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

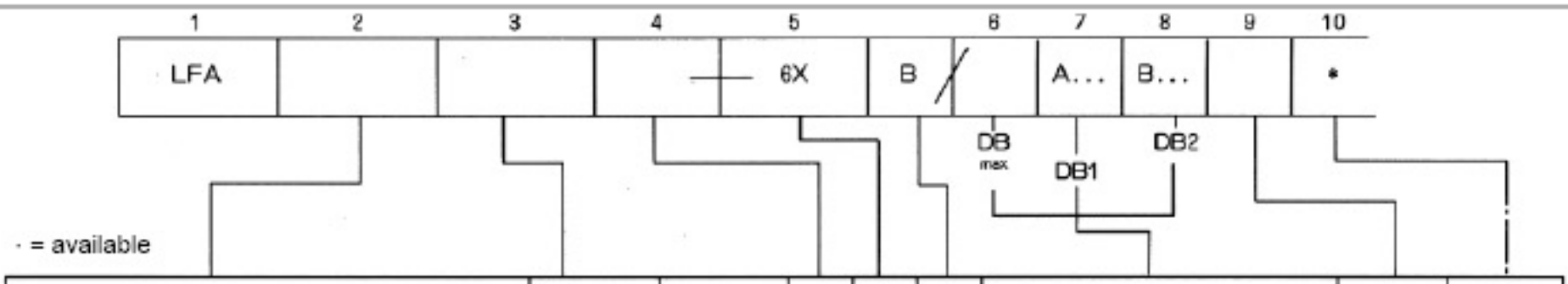
Pressure fluid		Mineral oil for NBR seals or Phosphate ester for FPM seals							
Pressure fluid temperature range	˚C	-20 to +80							
Viscosity range	mm²/s	2.8 to 380							
2-way cartridge valves									
Operating pressure at port A and B		up to 42MPa							
Size		16	25	32	40	50	63	80	100
Max. Flow (recommend)		L/min							
Poppet valve cartridge	LC...DB..E 6X/.. LC..DB..A 6X/..	250	400	600	1000	1600	2500	4500	7000
Spool valve cartridge	LC...DB..D 6X/.. LC..DB..B 6X/..	175	300	450	700	1400	1750	3200	4900
Control Cover									
Max. operating pressure									

Type LFA / NS / Port	..DB.. 16..100	..DBW..			..DBS..		..DBU..		..DBE.. ..DBM..	..DBETR.. ..DBEMTR..
		16 ...32		40...63	80,100	40...63	80,100	16..63	80,100	16...100	16...100
...X	40.0	40.0	31.5	31.5		40		31.5		35.0	

X, Y	When controlling pressure	zero pressure (up to 0.2 MPa)										
	Static state	31.5	10.0	16.0(DC) 10.0(AC)	16.0(DC) 10.0(AC)	16.0	10.0	5.0	16.0(=) 10.0(≈)	16.0	10.0	31.5

Corresponds to the permissible tank pressure of the pilot valves	DBD...	Poppet valves, NS6	Spool valves, NS6	Spool valves, NS6	Spool valves, NS 10	Poppet valves, NS6	Poppet valves, NS6	Spool valves, NS6	Spool valves, NS 10	DBET	DBETR

General notes on the ordering details for control covers



Nominal size								Type	Page	Con-trol type	Se-ries	Note	Pressure rating for nominal sizes		Fulid	others
16	25	32	40	50	63	80	100						16...32	40...100		
•	•	•	•	•	•	•	•	DB	47...49		6X= Series 60 to 69	Technology of Beijing Huade Hydraulic	050 100 200 315 420	025,050 100,200 315,400	For ordering details, see pages giving details of the individual cover variations	
•	•	•	•	•	•	•	•	DBW	50...54					025,050 100,200 315		
			•	•	•	•	•	DBS	50...54					025,050 100,200 315,400		
•	•	•	•	•	•	•	•	DBWD	55...57				050 100 200 315 420	025 050 100 200 315 400		
•	•	•	•	•	•	•	•	DBU2A	58...61							
•	•	•	•	•	•	•	•	DBU2B								
•	•	•	•	•	•	•	•	DBU3D	62...66							
•	•	•	•	•	•			DBE	67							
•	•	•	•	•	•			DBETR								
•	•	•	•	•	•	•	•	DBEM	68...71				050,100 200,315 420	025,050 100,200 315,400		
•	•	•	•	•	•	•	•	DBEMTR								

4

Function see P38 Pressure relief valve control mode

1=Rotary knob

2= Hex. head screw with protective cap

3= Lockable rotary knob with scale

4=Rotary knob with scale(Lock not included)

5

Series code Size 16...100

6X=60-69 Series(Dimension size unchanged with 60-69 series)

6

Nominal Pressure

Depends on size and pilot valve permissible pressure

025=2.5Mp

050=5.0Mp

100=10.0Mp

200=20.0Mp

315=31.5Mp

400=40.0Mp

420=42.0Mp

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 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

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.

Directional spool valve

Directional spool valve	NS	Catalogue sheet no.	Control cover
3WE6 B9-5XB/...	6		DBW,DBWD
4WE6 D 5XB/...	6		DBW,DBU2^DBU3D
4WE6 M 5XB/...	6		
4WE6 H 5XB/...	6		DBU2A,DBU3D
4WE6 E 5XB/...	6		DBU3D
4WE10 D...	10		DBW,DBU3D,DBU2^
3WE10 B9...	10		DBW,DBWD
3WE10 A...	10		DBWD
4WE10 M...	10		
4WE10 H...	10		DBU2A,DBU3D
4WE10 E...	10		DBU3D

Directional poppet valve

Directional poppet valve	NS	Catalogue sheet no.	Control cover
M-3SEW6 C 2XB/...	6		DBW,DBS
M-3SEW6 U 2XB/...	6		DBW,DBS
M-3SE10 C 2XB/315...	10		DBS
M-3SE10 U 2XB/315...	10		DBS
M-3SE10 C 2XB/630...	10		DBS.../400
M-3SE10 U 2XB/630...	10		DBS.../400

Note:The pilot valve must be ordered separately,other details see relevent catalogue sheet.But valve fixing screws are included in supply.

Manual adjustment pressure relief cartridge valve

(Included within the scope of supply ,need't to be orderd separately！)

pressure relief valve, direct operated	NS	Control cover
DBD.2K 1XB/...	2	16 to 32
DBD.6K 1XB/...	6	40 to 63
DBD.10K 1XB/...	10	80 to 00

Proportional pressure relself valve.

Proportional pressure relief valve				Control cover	
Type	NS	possible pressure grades (MPa)	Catalogue sheet no.	Type	NS
DBET-5XB/...G24-1	6	5.0 10.0 20.0 31.5 35.0		DBE*** DBEM	16 to 32
DBET-5XB/...G24					40
DBET-5XB/...YG24-1					50 to 100
DBET-1XB/...	6	2.5 8.0 18.0 31.5 35.0		DBETR***	16 to 40
DBET-1XB/...Y409					50 to 100
DBET-1XB/...					16 to 40
DBETR-1XB/...Y409					50 to 100

＊＊＊ Control cover of type DBE,DBETR only uesd in Nominal size max. to 63.

1 = G1/4" threaded port T, special spool

409 = G1/4" threaded port T.

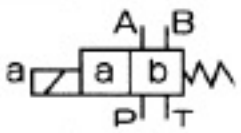
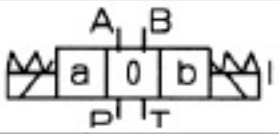
Instead of type LFA16DB...and L FA16DBW control cover,may chose pressure relief valve in table.	Nominal Size
Polit control accoring to sheet RC 25802 (not follow DIN port dimension)	16
DBC.-5X...SO187	
DBWC.-5X/...SO 187 (Used in direction valve unloading)	

Compression springs Note

Nominal size and Material no. of Compression springs ,

see sheet Page 73

Pilot control valves (selection table)

	Nom. size 16to 32	Nom. size 40to 63	Nom. size 80to 100	Type	Pilot control valve	Manual pressure setting			Symbols
	●	●	●	DB		Without directional valve			
						With directional valve			1
						Position "a"	Position "b"		
						Position "a"	Position "o"	Position "b"	
	●=available								
Directional valve unloading	●	●		DBW	3WE6B9–...	open	DB function		2, 3
	●				M–3SEW6C...				
	●	●			4WE6D...	DB function	open		
	●				M–3SEW6U...				
			●		3WE10B9...	open	DB function		3
			●		4WE10D...	DB function	open		
				DBS		open	DB function		4
		●			M–3SEW6C...				
						DB function	open		
		●			M–3SEW6U...				
			●		M–3SE10C./..	open	DB function		
			●		M–3SE10U./..	DB function	open		
Isolating function	●	●		DBWD	3WE6B9–...	DB function	closed		5
			●		3WE10B9–...				
	●	●			3WE6A–...	closed	DB function		
	●	●			4WE6M...			open	
			●		3WE10A–...				
			●		4WE10M...			open	
2 pressure stages	●	●		DBU2A	4WE6H...	DB_{max} function	open	DB1 Proportional	6
			●		4WE10H...				
	●	●			4WF6D		DB1 function		
			●		4WE10D...				
	●	●		DBU2B	4WE6D...	DB1 function	DB_{max} function		–
			●		4WE10D...				
3 pressure stages	●	●		DBU3D	4WE6H...	DB2 function	open	DB1 Proportional	7
			●		4WE10H...				
	●	●			4WE6E...		DB_{max} function		
			●		4WE10E...				
	●	●			4WE6D...		DB1 function		
			●		4WE10D...				
						Proportional pressure setting			
Proportional valves	●	●		DBE	DBET–5XB/...	Without max. pressure safety limitation			8
	●	●		DBETR	DBETR–1XB/...				
	●	●	●	DBEM	DBET–5XB/...	With max. pressure safety limitation			9
	●	●	●	DBEMTR	DBETR–1XB/...				

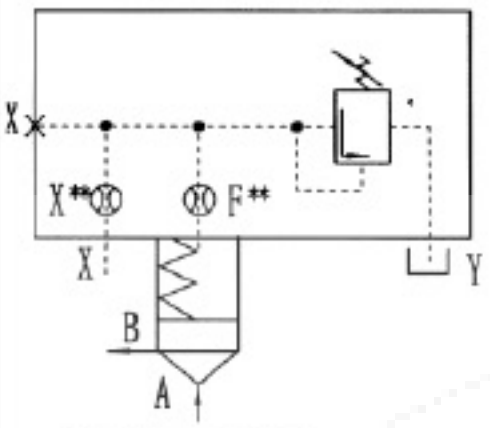
Open = bypass circuit
Closed = cartridge valve is hydraulically blocked
DB function = pressure relief function

Symbol overview (basic symbols), pressure relief function

Valid symboles are shown in the following type descriptions!

1

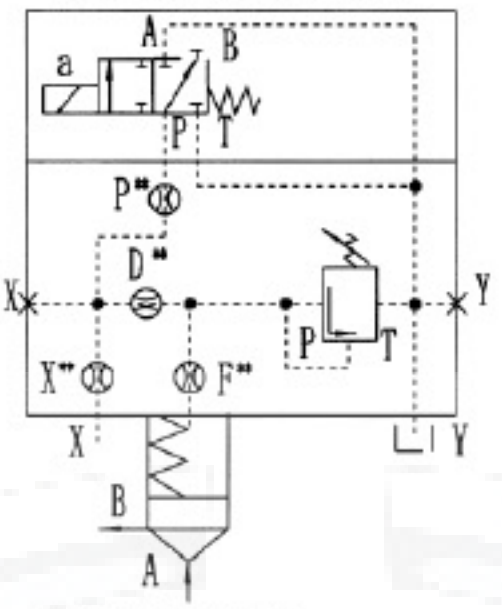
LFA...DBW.-/.. NS 16 to 100



see pages 47 to 49

2

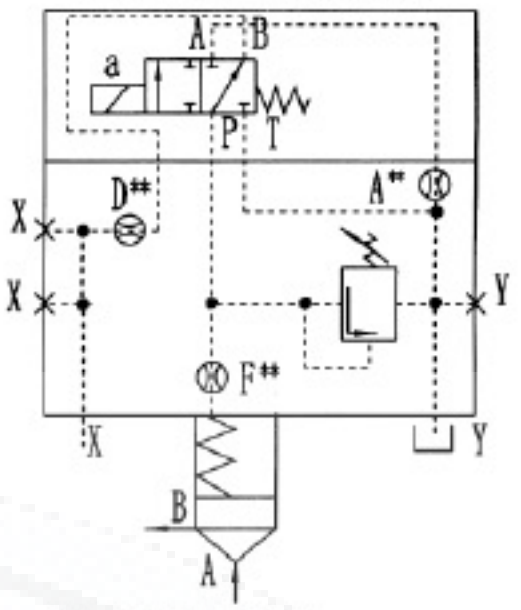
LFA...DBW.-/.. NS 16 to 32



see pages 50 to 51

3

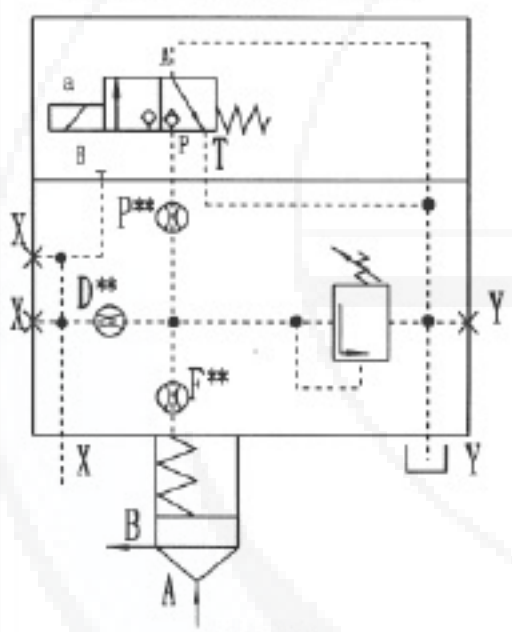
LFA...DB.-/.. NS 10 to 100



see pages 50 to 54

4

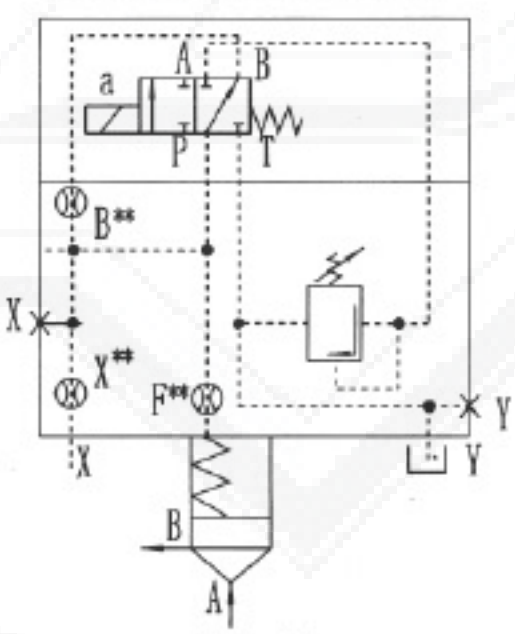
LFA...DBS.-/..NS 40 to 100



see pages 50 to 54

5

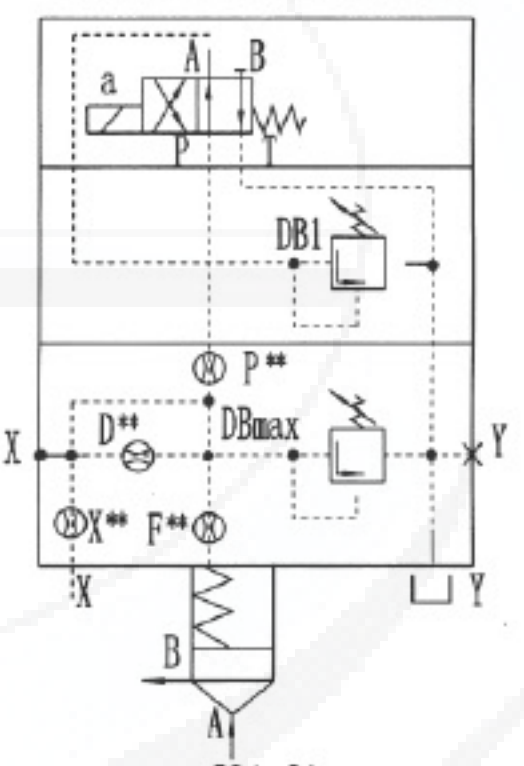
LFA...DBWD.-/..NS 16 to 100



see pages 55 to 57

6

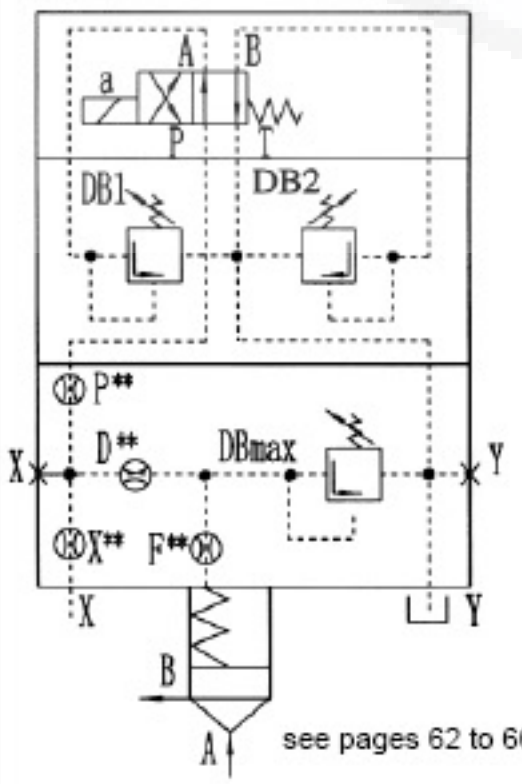
LFA...DBU 2A.-/..NS 16 to 100



see pages 58 to 61

7

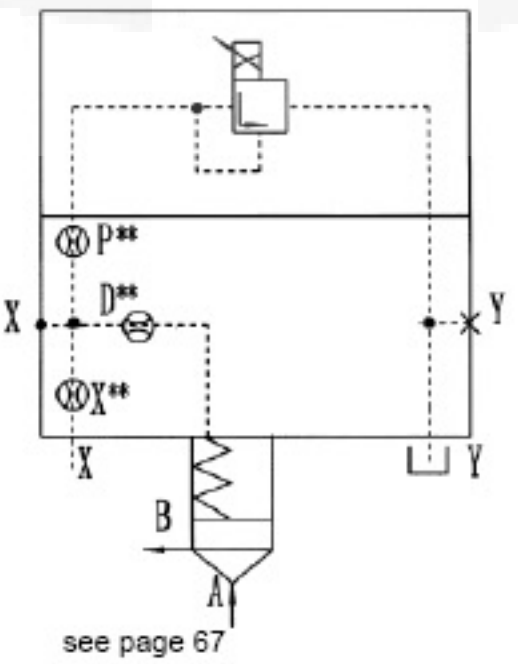
LFA...DBU 3D.-/..NS 16 to 100



see pages 62 to 66

8

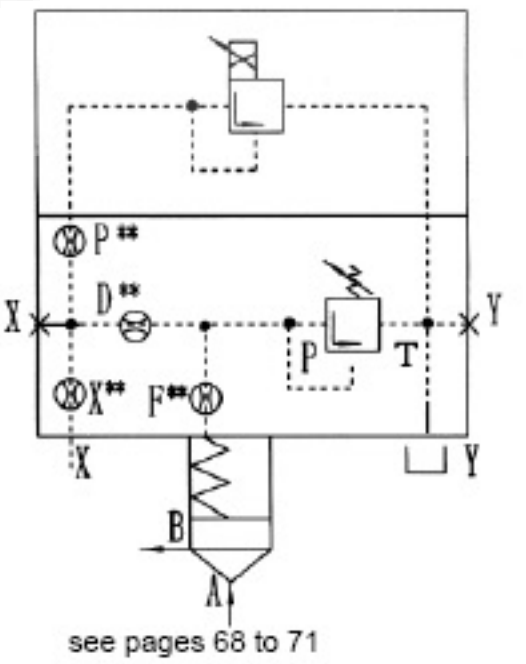
LFA...DBE(TR).-/..NS 16 to 63



see page 67

9

LFA...DBEM(TR).-/..NS 16 to 100

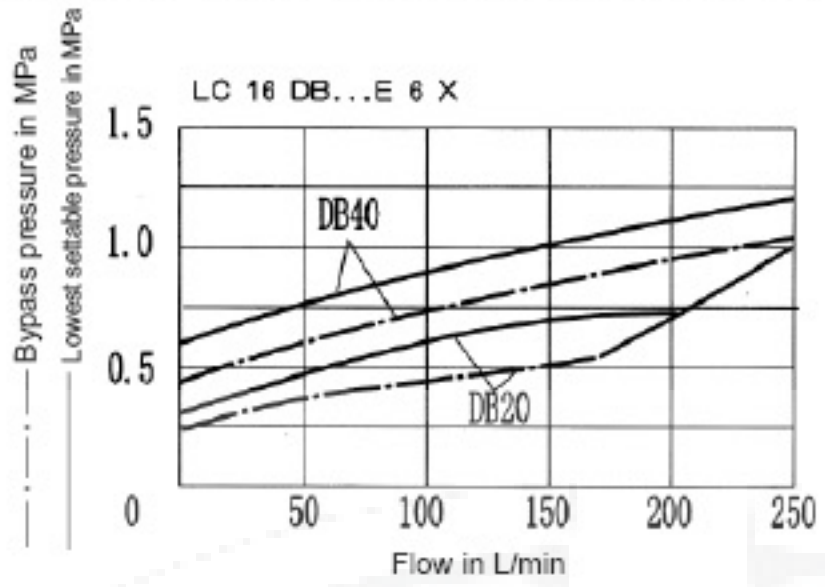


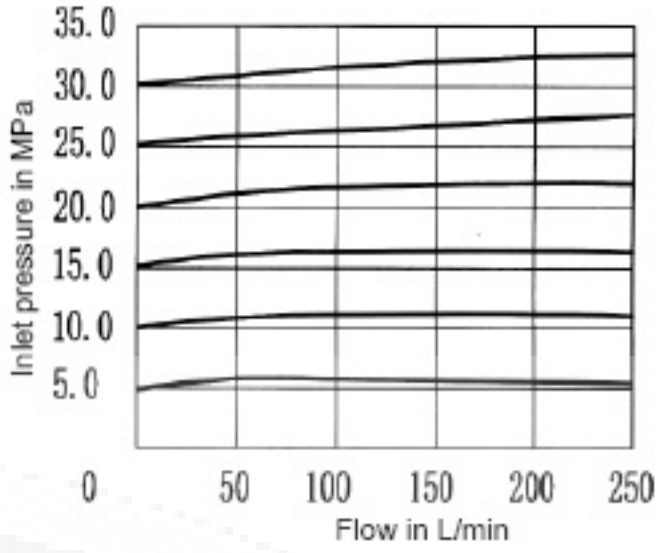
see pages 68 to 71

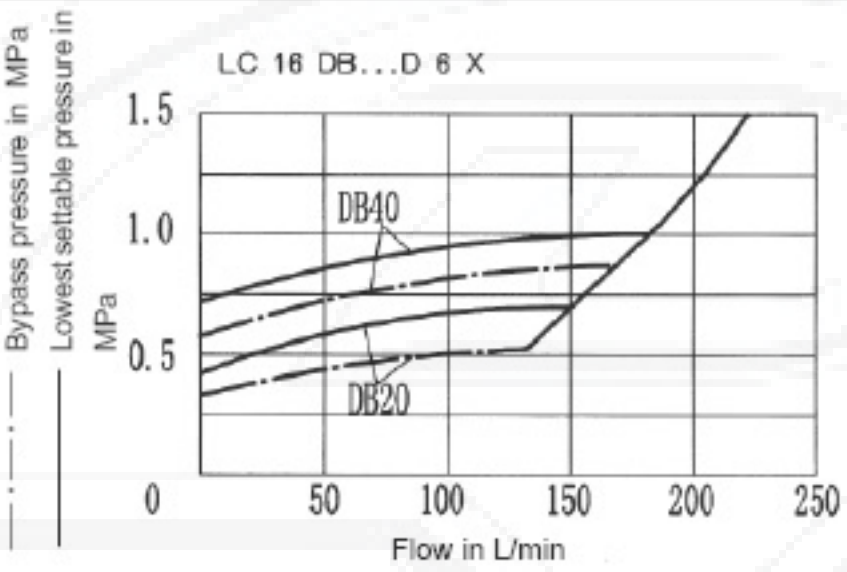
Characteristic curves: (measured at v =41mm ² /s and t = 50 ° C)

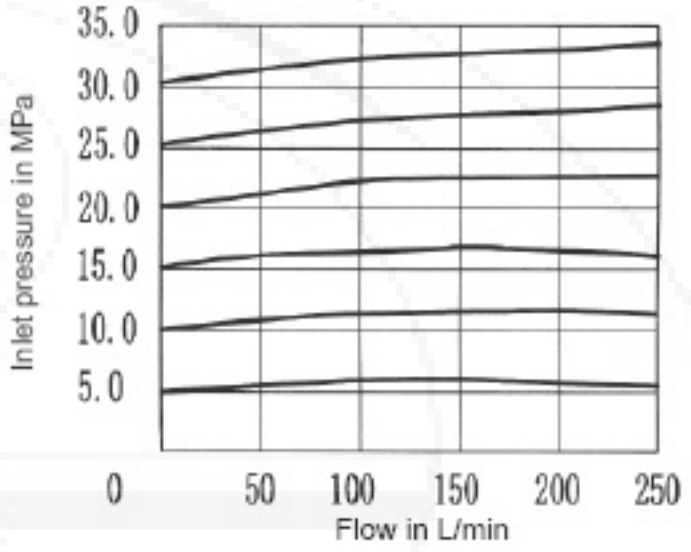
NS 16 The characteristic curves were measured with an external pilot oil drain at zero pressure. With an internal pilot oil drain the inlet pressure is increased to the pressure being applied at port B.

Manual pressure adjustment, type LFA16 DB DBW...6XB/...

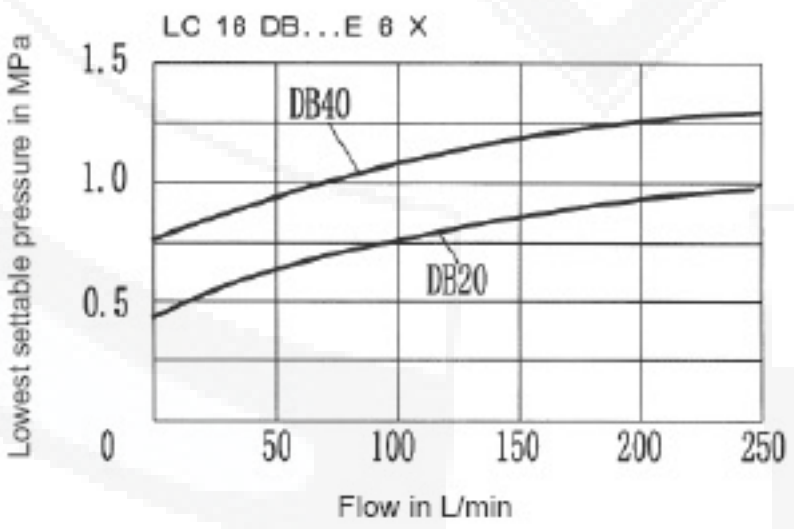


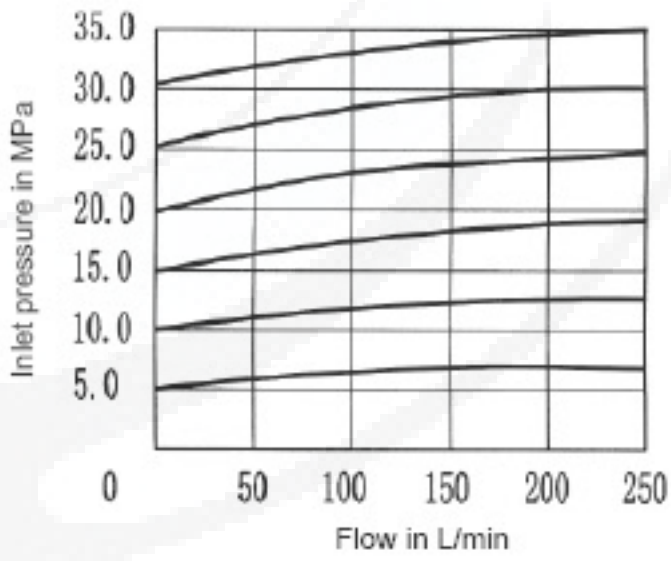


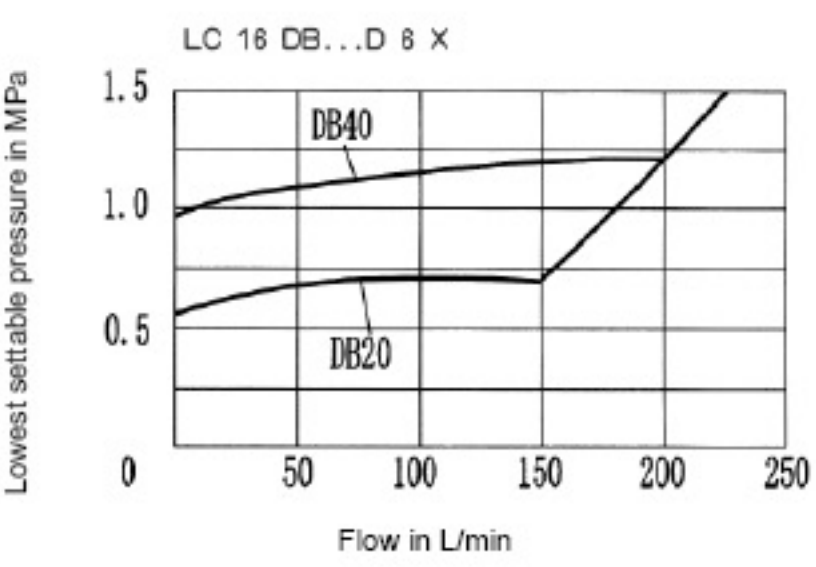


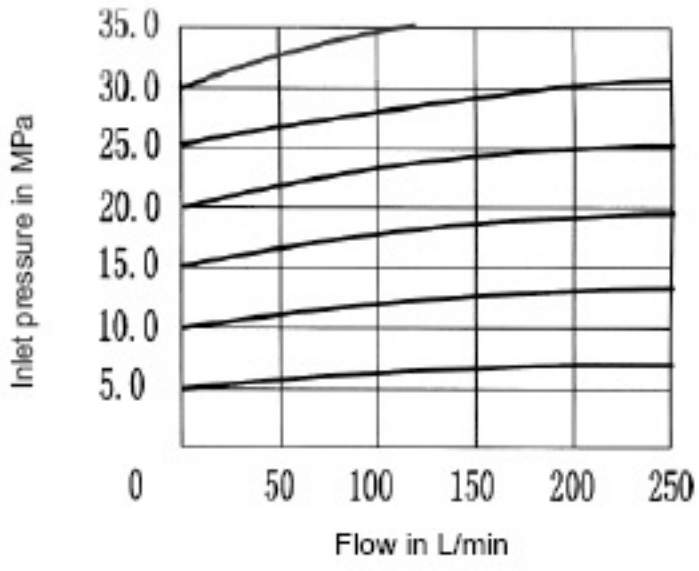


Electrical proportional pressure adjustment, type LFA16DBE...6XB/...







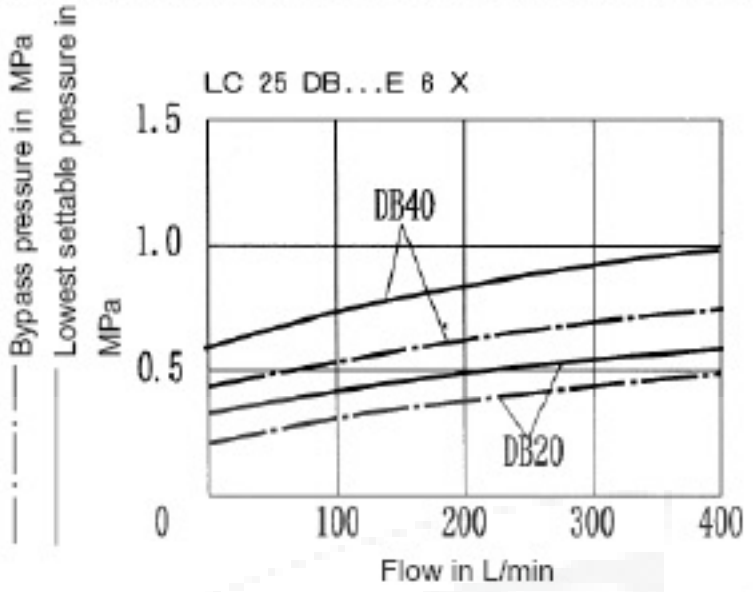


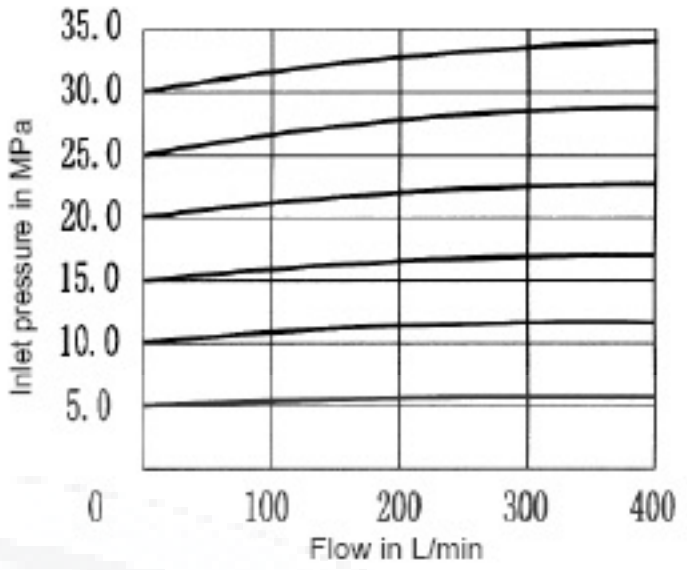
Characteristic curves: (measured at v =41mm ² /s and t = 50 ° C)

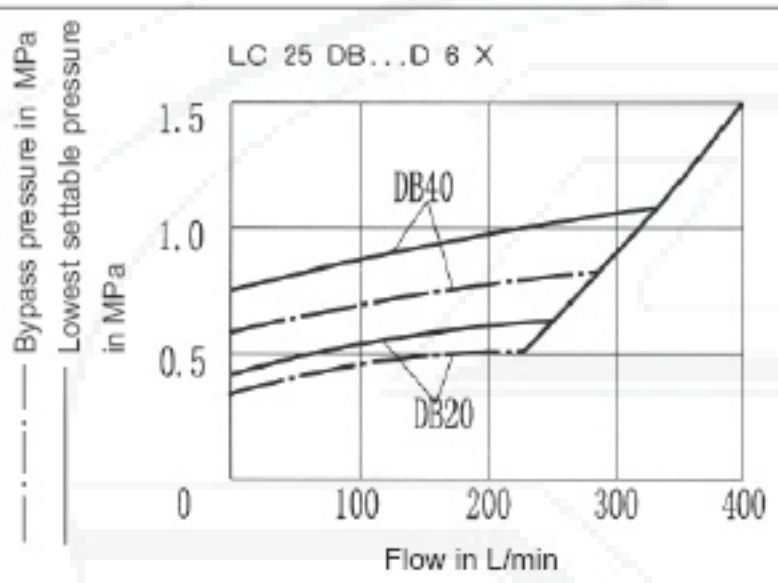
NS 25

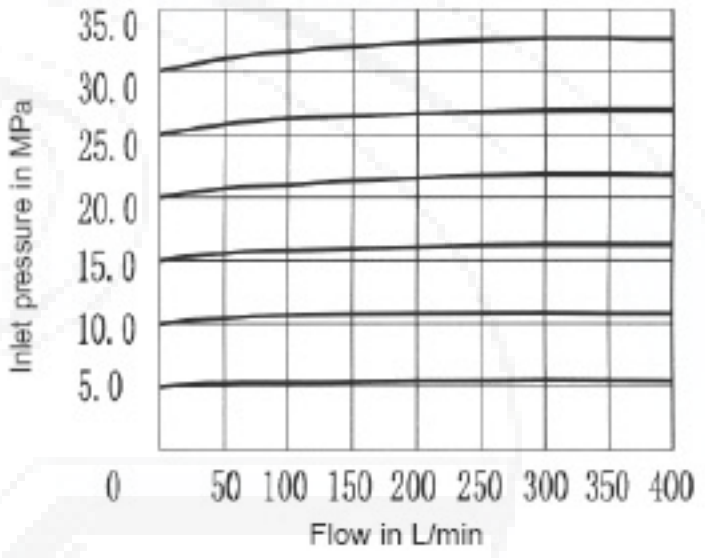
The characteristic curves were measured with an external pilot oil drain at zero pressure. With an internal pilot oil drain the inlet pressure is increased to the pressure being applied at port B.

Manual pressure adjustment, LFA 25 DB DBW...6XB/...

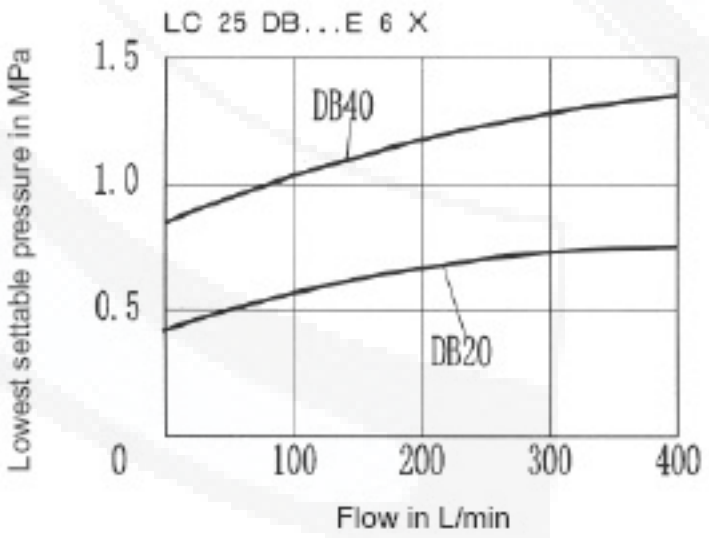


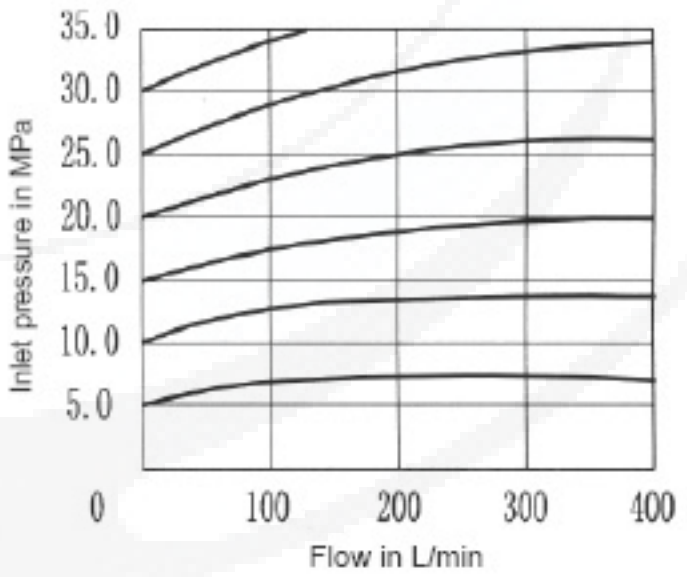


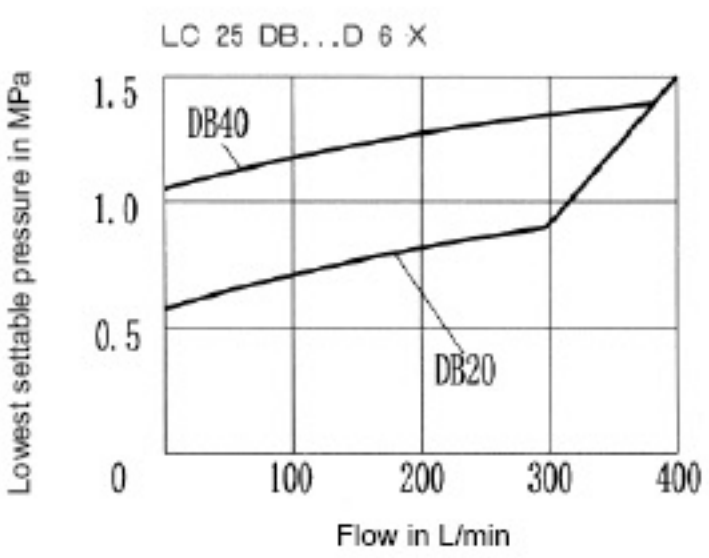


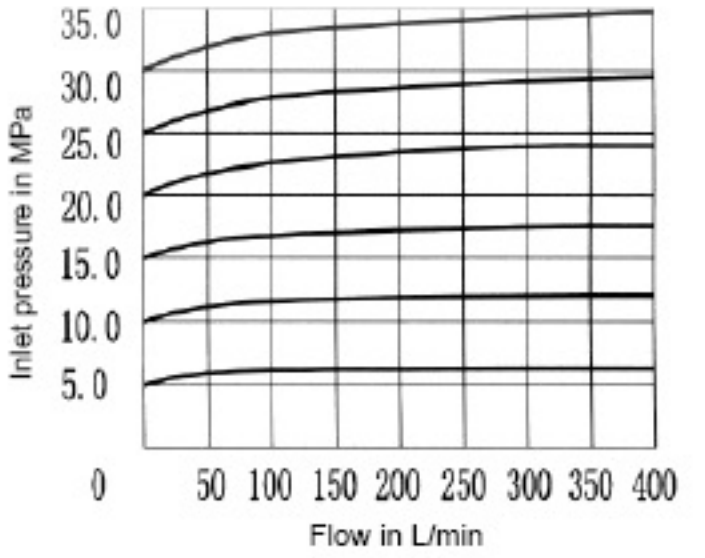


Electrical proportional pressure adjustment, type LFA25DBE...6XB/...







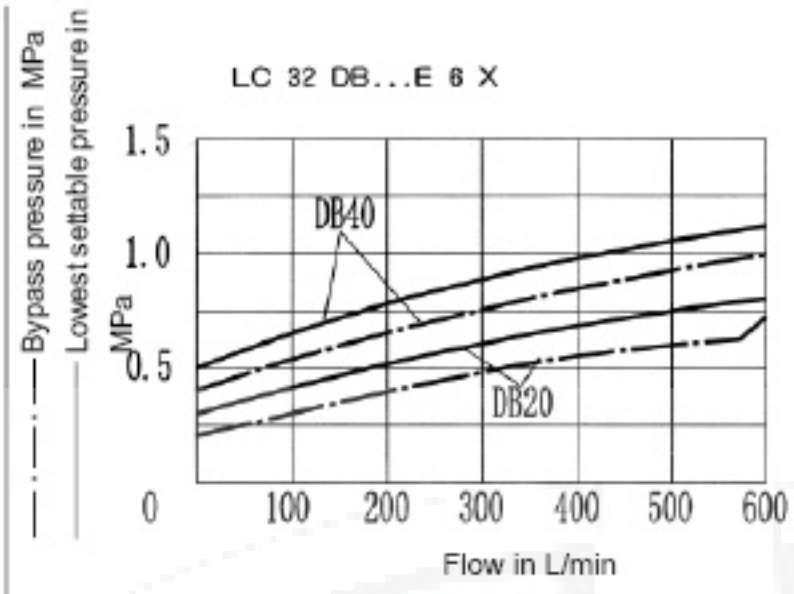


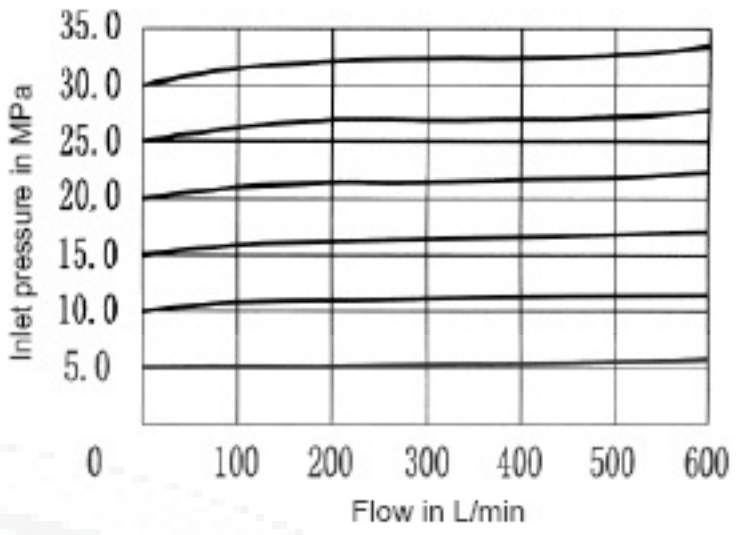
Characteristic curves: (measured at v =41mm ² /s and t = 50 ° C)

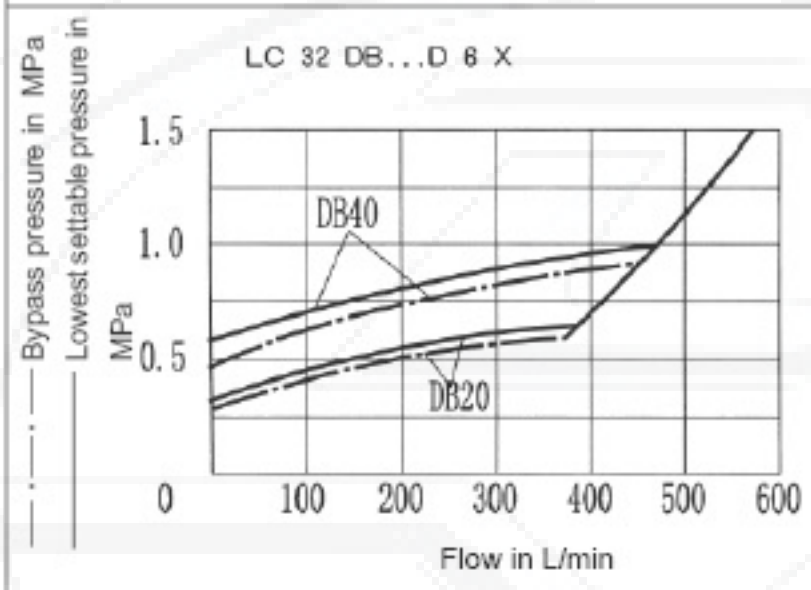
NS 32

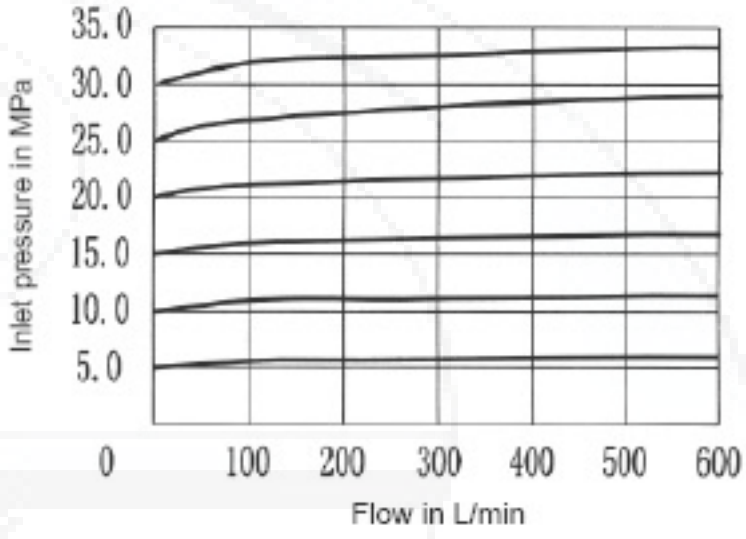
The characteristic curves were measured with an external pilot oil drain at zero pressure. With an internal pilot oil drain the inlet pressure is increased to the pressure being applied at port B.

Manual pressure adjustment, type LFA 32 DB DBW...6XB/...

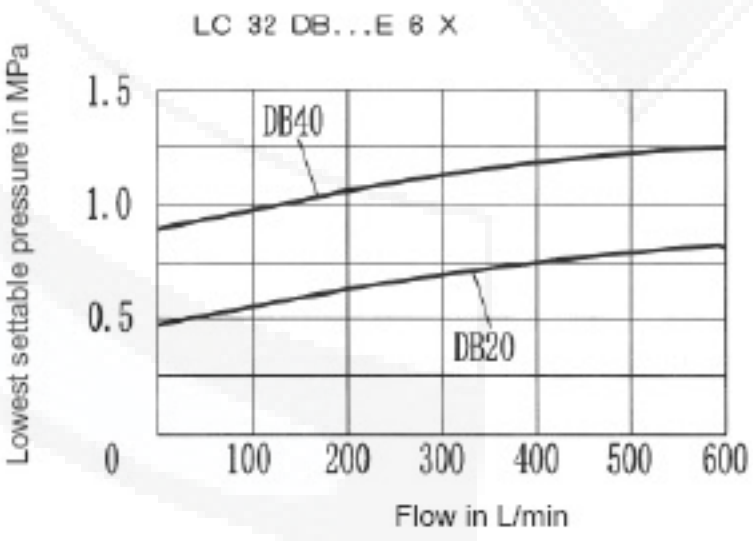


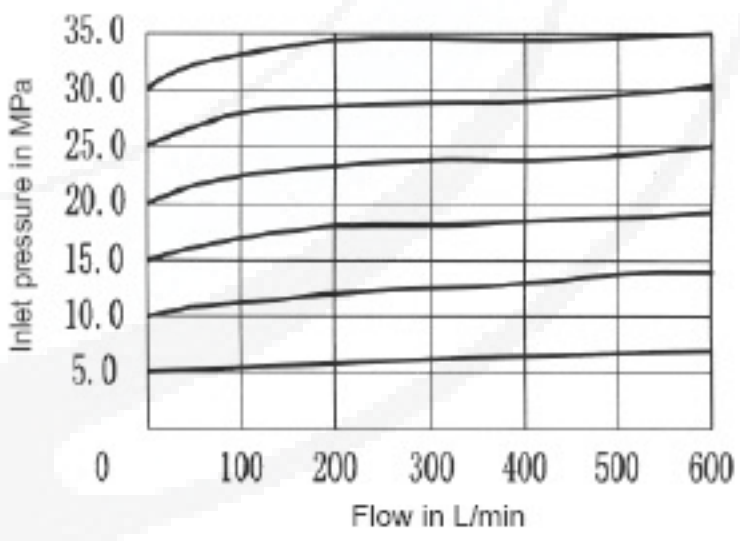


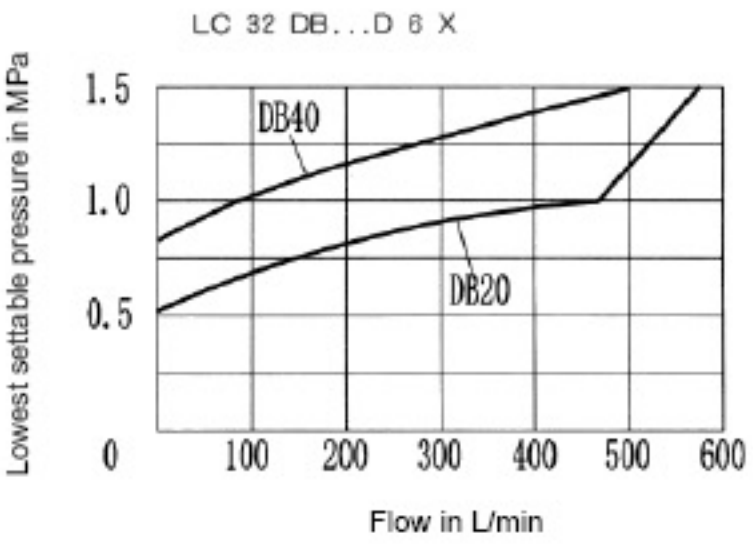


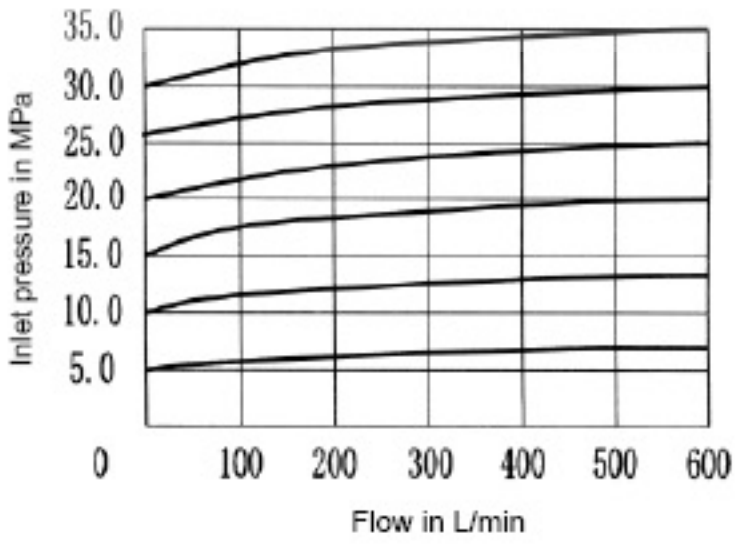


Electrical proportional pressure adjustment, type LFA16DBE...6XB/...





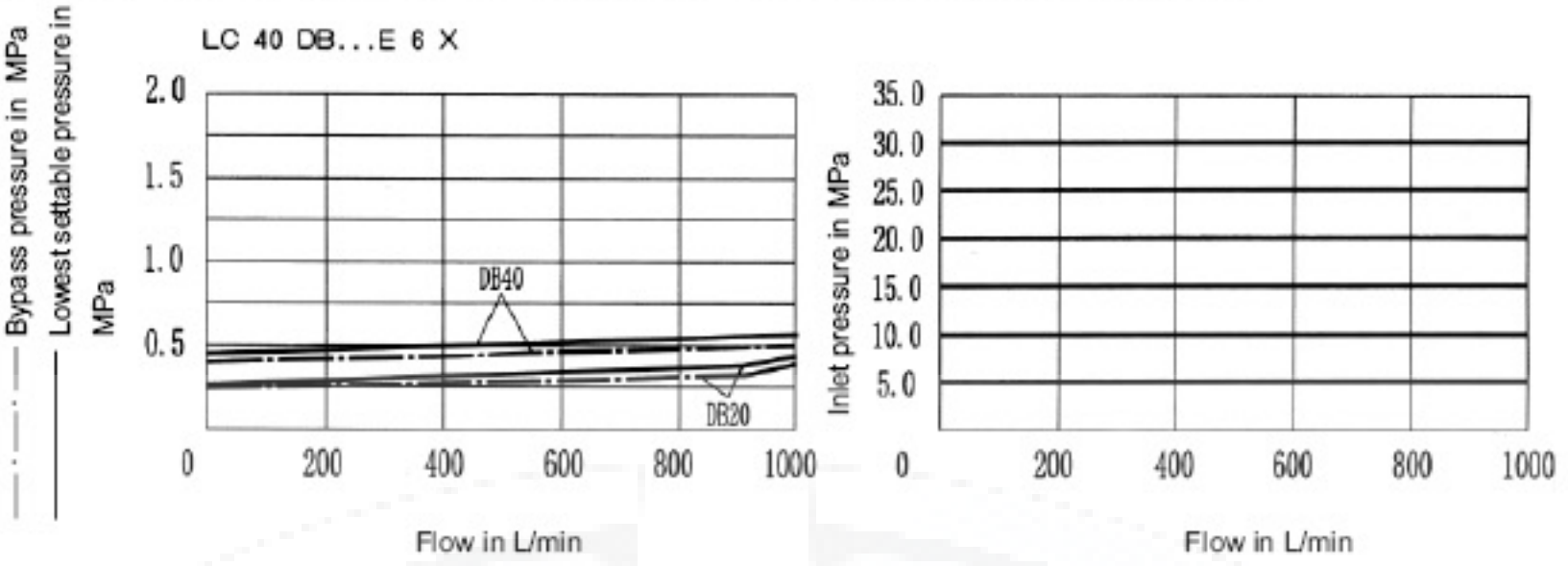


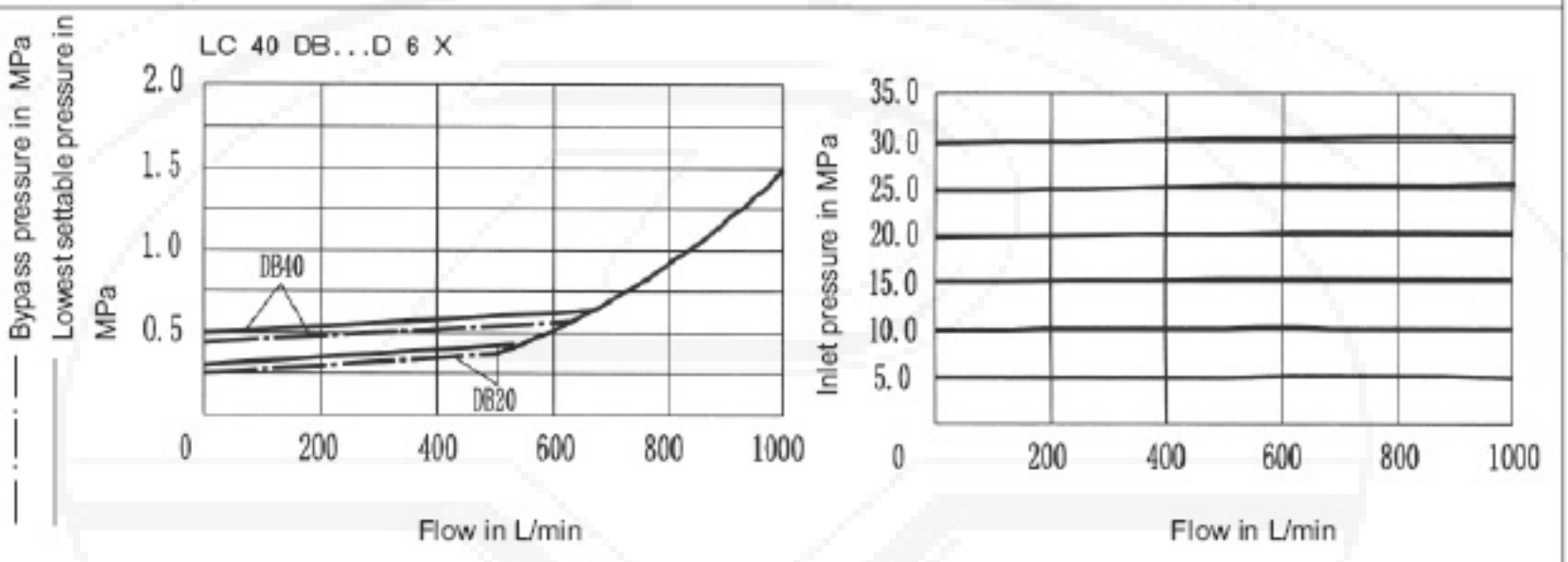


Characteristic curves: (measured at v =41mm ² /s and t = 50 ° C)

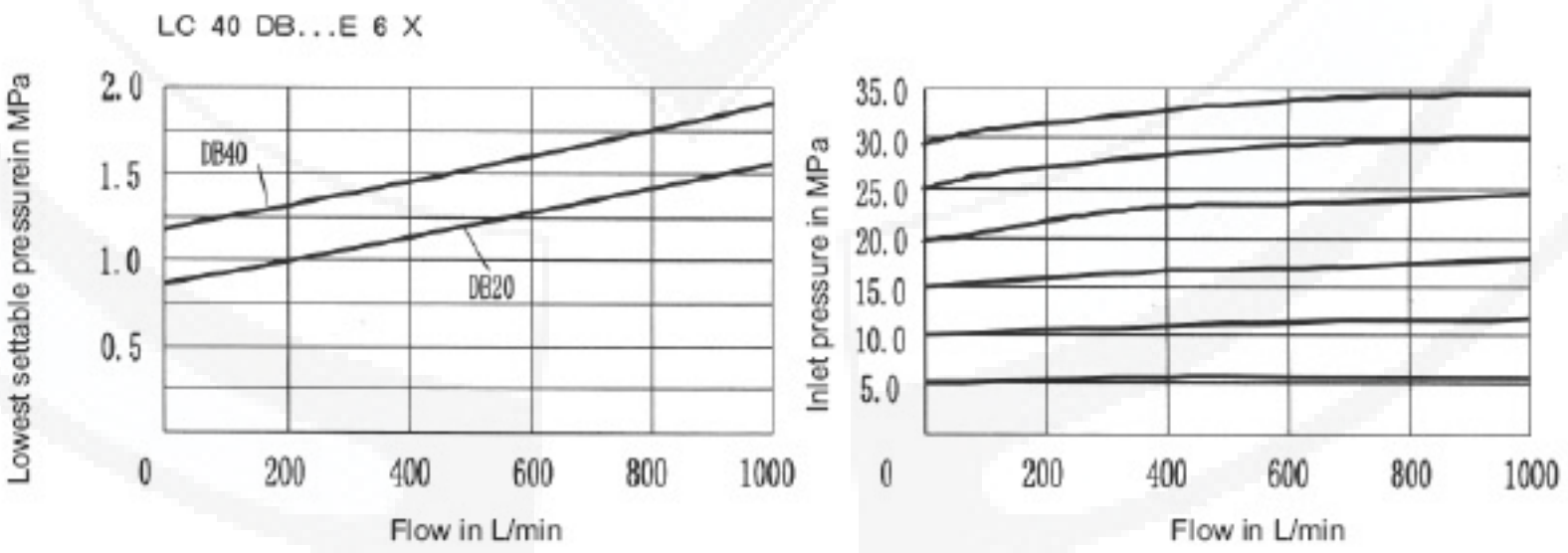
NS 40 The characteristic curves were measured with an external pilot oil drain at zero pressure. With an internal pilot oil drain the inlet pressure is increased to the pressure being applied at port B.

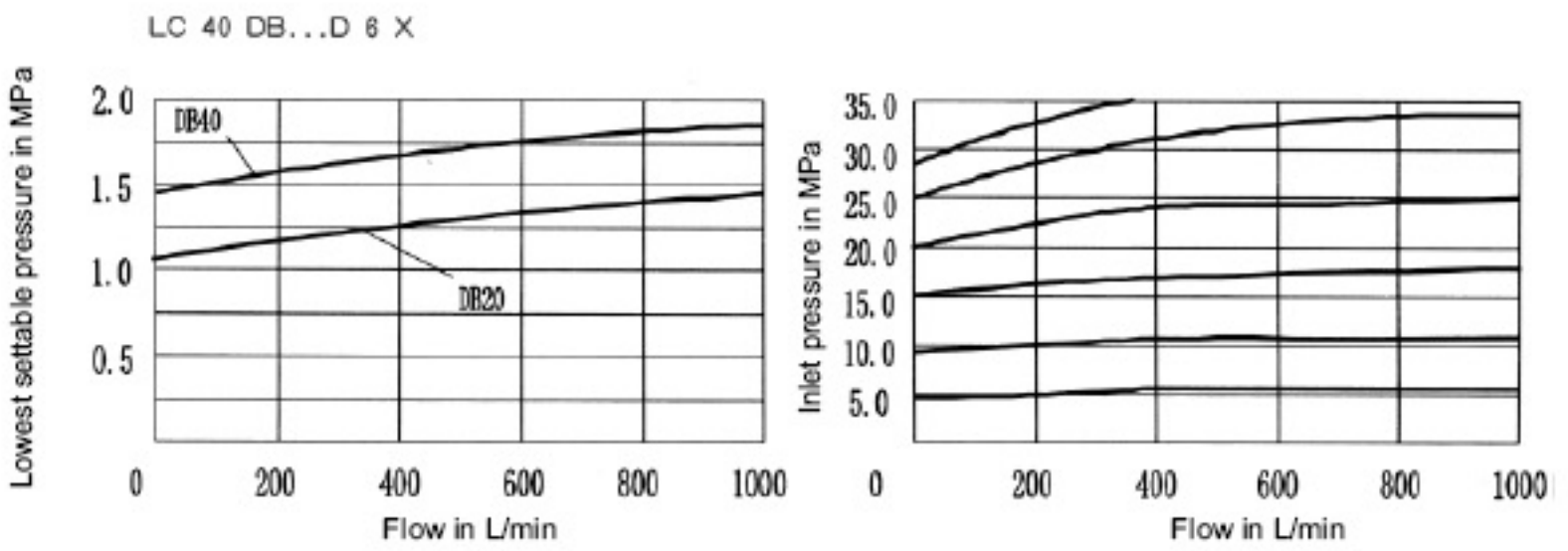
Manual pressure adjustment, type LFA 40 DB DBW...6XB/...





Electrical proportional pressure adjustment, type LFA40DBE...6XB/...

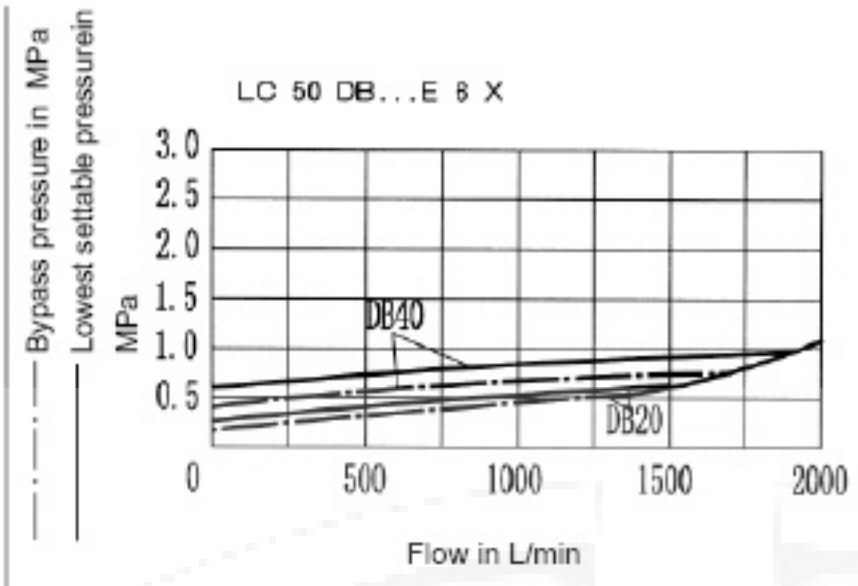


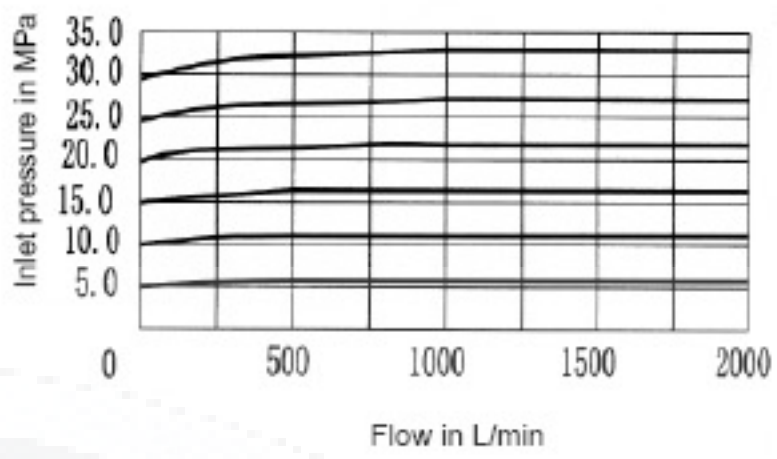


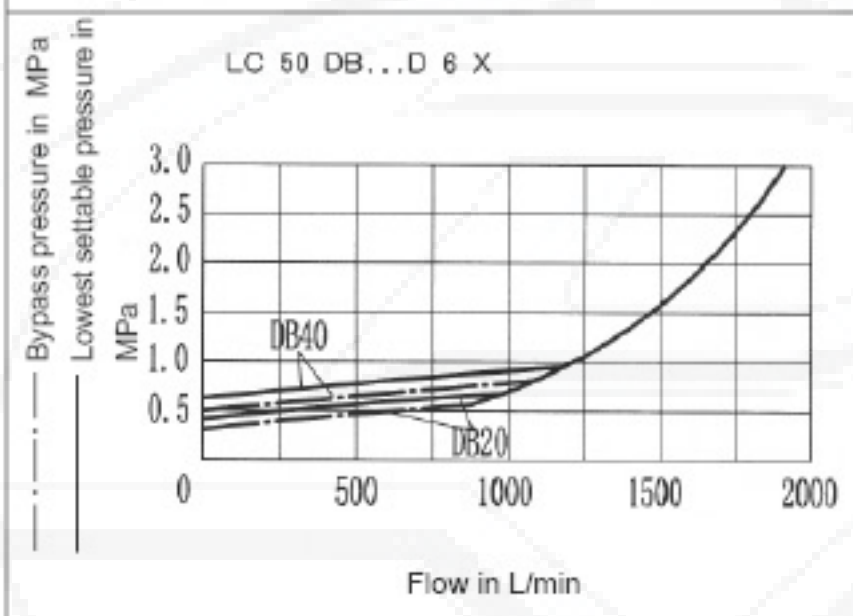
Characteristic curves: (measured at v =41mm ² /s and t = 50 ° C)

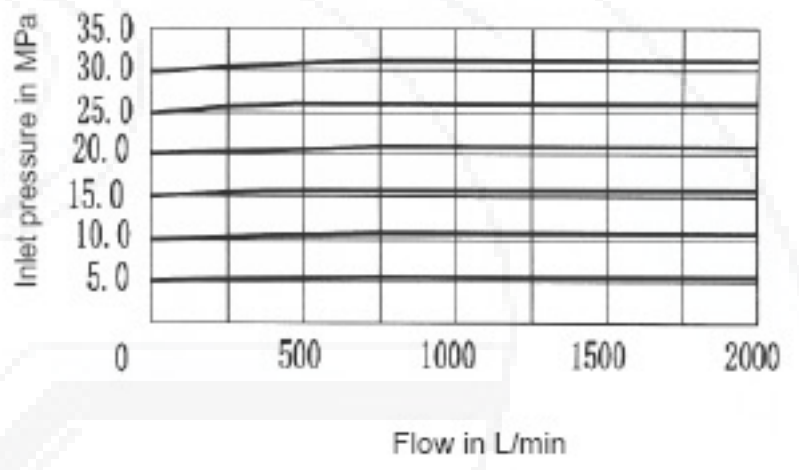
NS 50 The characteristic curves were measured with an external pilot oil drain at zero pressure. With an internal pilot oil drain the inlet pressure is increased to the pressure being applied at port B.

Manual pressure adjustment, typeLFA 50 DB DBW ...6XB/...

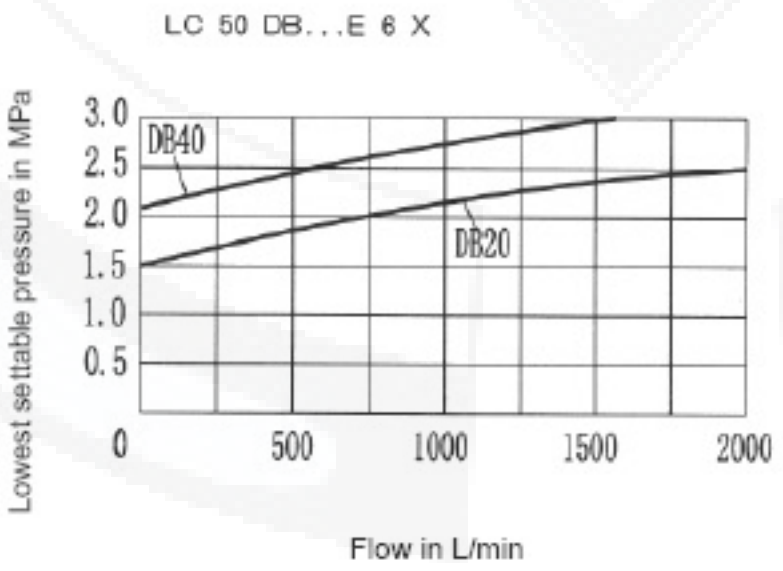


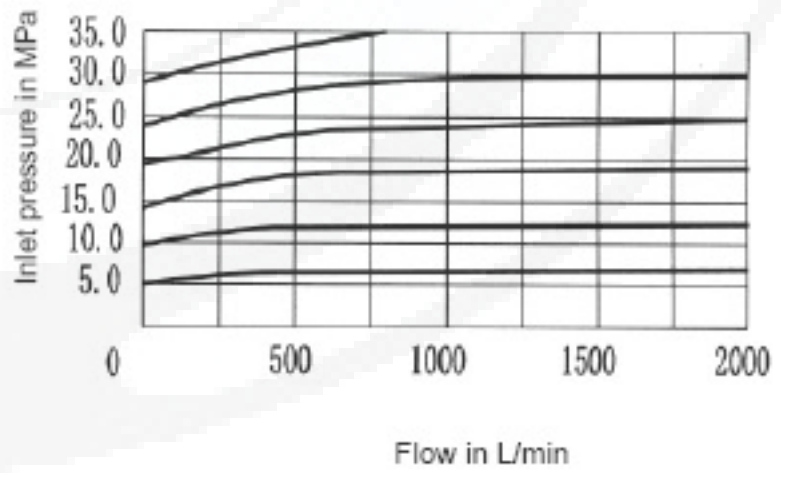


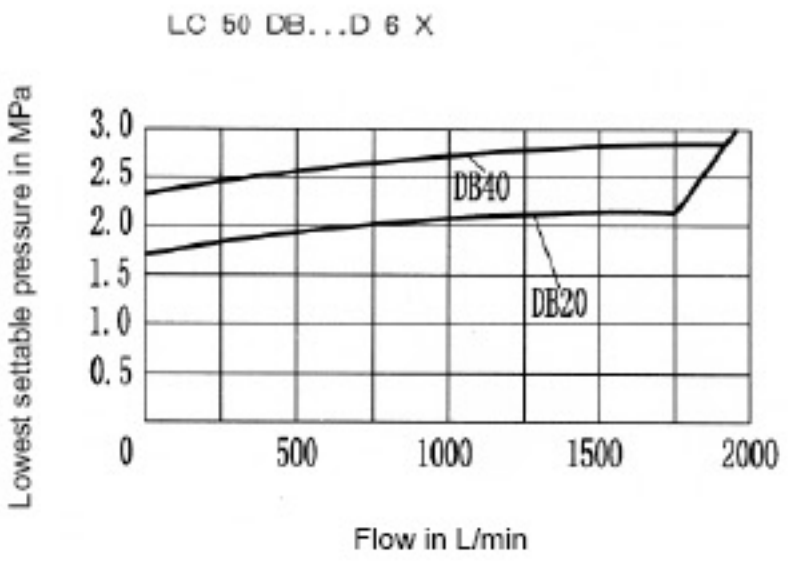


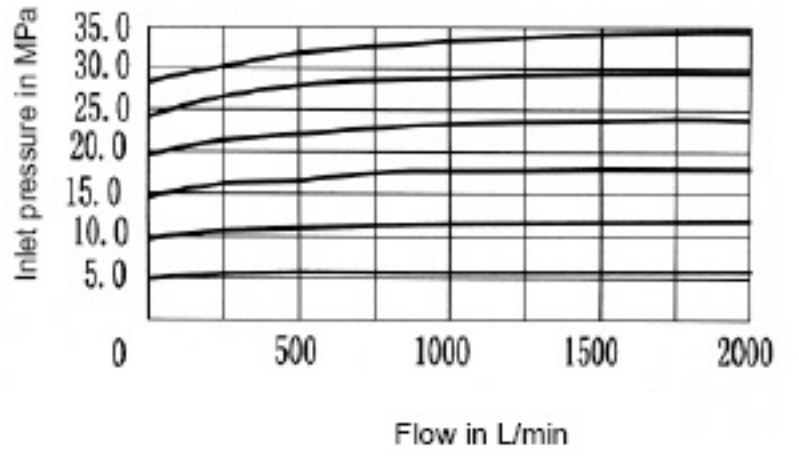


Electrical proportional pressure adjustment, type LFA50DBE...6XB/...







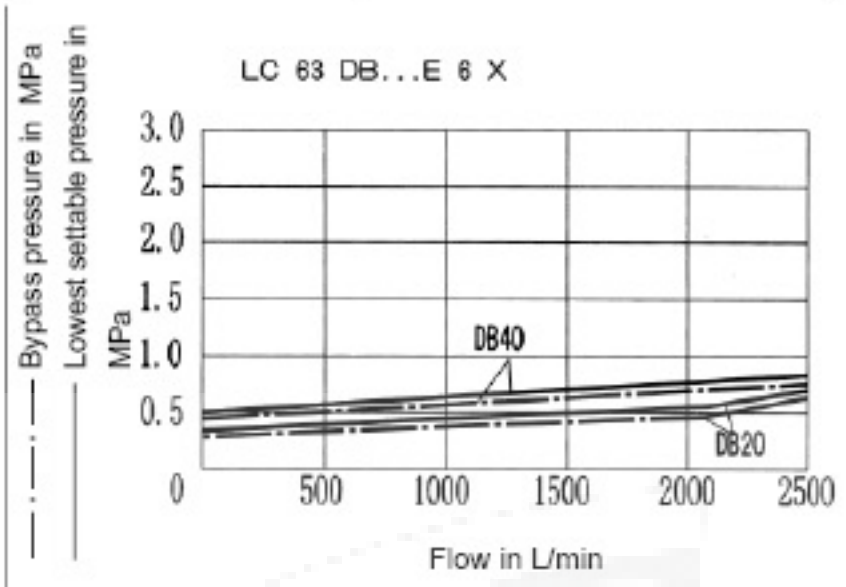


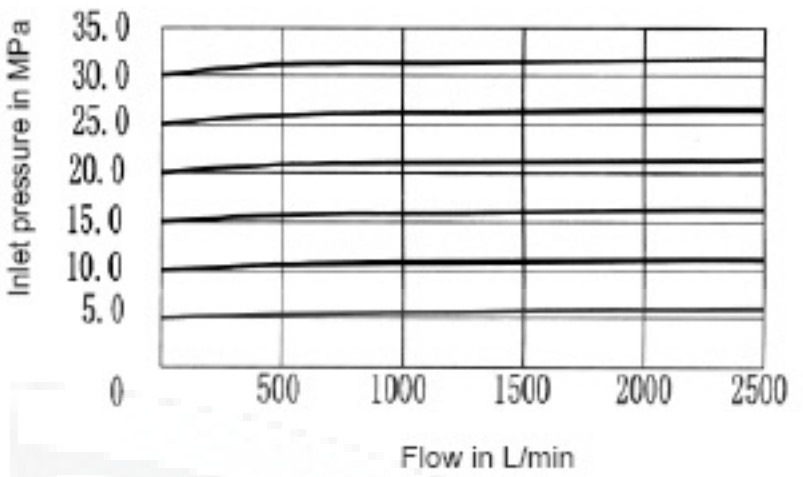
Characteristic curves: (measured at v =41mm²/s and t = 50 ° C)

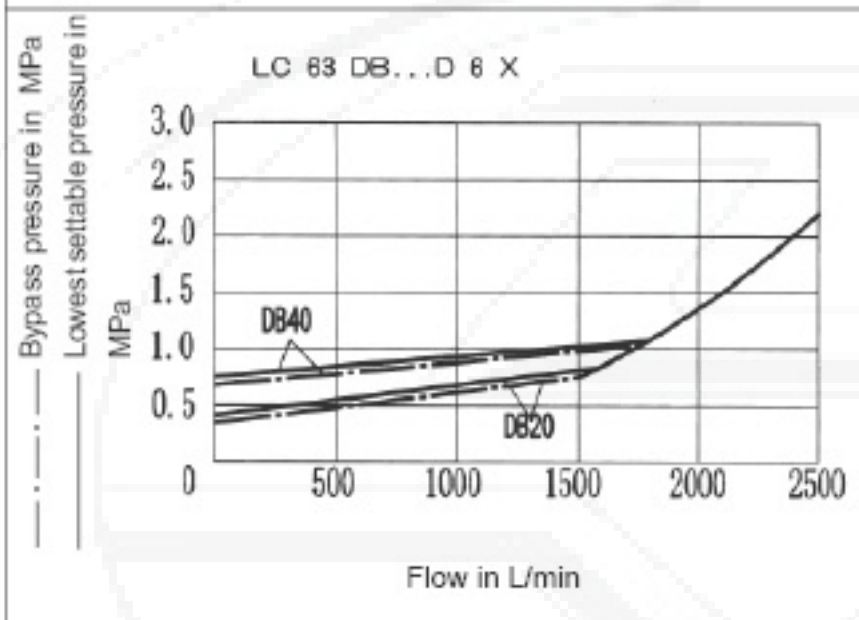
NS 63

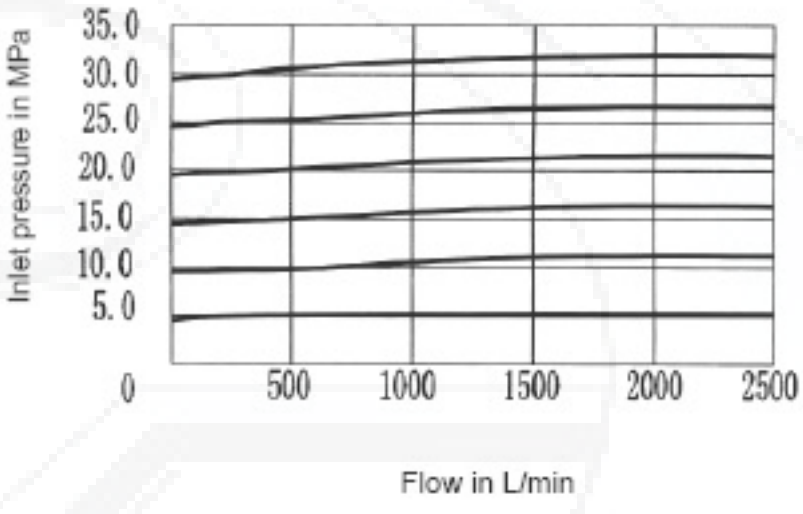
The characteristic curves were measured with an external pilot oil drain at zero pressure. With an internal pilot oil drain the inlet pressure is increased to the pressure being applied at port B.

Manual pressure adjustment, type LFA 63 DB DBW ...6XB/...

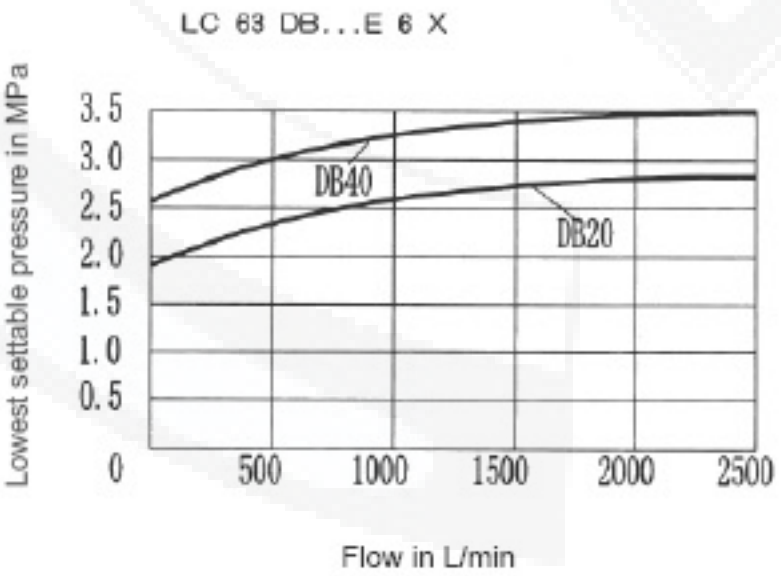


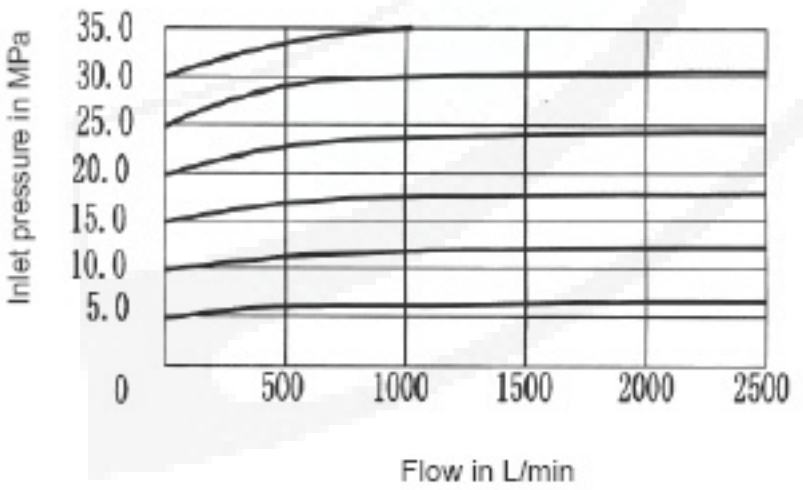


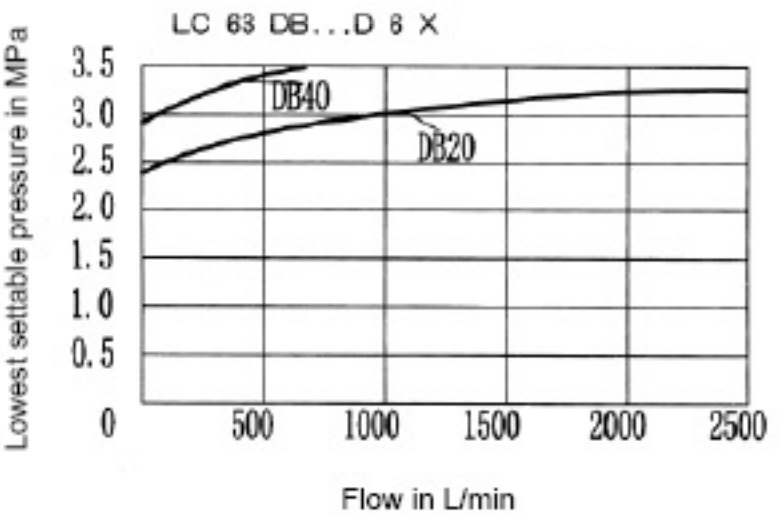


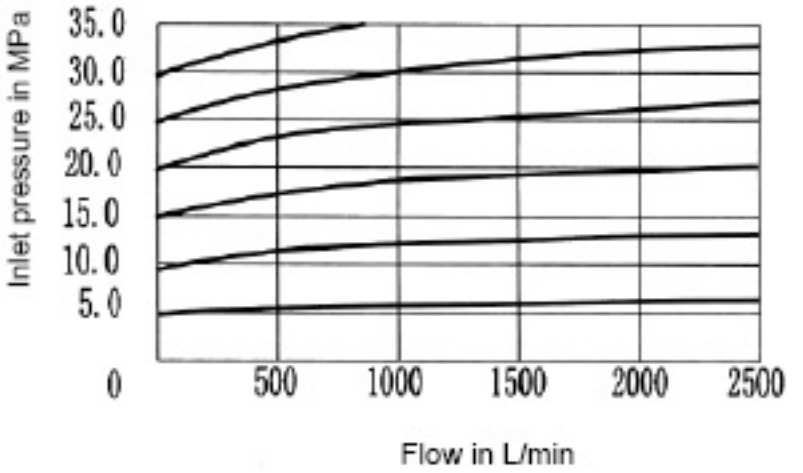


Electrical proportional pressure adjustment, type LFA63DBE...6XB/...









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

NS	Dimensions (mm)	Material no.	
		NBR	FPM
16	7.65 × 1.78	004 491	006 585
25	9.25 × 1.78	007 111	009 097
32	10.82 × 1.78	008 937	008 941
40,50	12.37 × 2.62	004 489	008 949
63	18.72 × 2.62	009 245	002 045
80	26.58 × 3.53	004 490	008 944
100	34.52 × 3.53	009 354	009 191

Seal kits for control cover type LFA..

Seal kits for cartridge valves typeLC...DB../ (NS 16 to 100)

Seal kit for	Material no.	
	NBR	FPM
LC16DB..6XB/..	314352	314353
LC25DB..6XB/..	314354	314355
LC32DB..6XB/..	314356	314357
LC40DB..6XB/..	314055	314064

Seal kit for	Ordering code	
	NBR	FPM
LC50DB..6XB/..	314056	314065
LC63DB..6XB/..	314057	314066
LC80DB..6XB/..	314058	314067
LC100DB..6XB/..	314059	314068

Seal kits for control cover typeLF... (NS 16 t0 100)

Material no. / Seal kit for	Ordering no.							
	16		25		32		40	
	NBR	FPM	NBR	FPM	NBR	FPM	NBR	FPM
..DB..;..DBW..;..DBS.. ..DBWD..;DBWEM(TR)..	313955	313956	313957	313958	313802	313803	313722	313723
..DB..U2..;..DBU3..	313709	313710	313711	313712	313713	313714	313715	313716
DBE(TR)	313701	313702	313703	313704	313705	313706	313707	313708

Material no. / Seal kit for	Ordering no.							
	50		63		80		100	
	NBR	FPM	NBR	FPM	NBR	FPM	NBR	FPM
..DB..;..DBW..;..DBS.. ..DBWD..;DBWEM(TR)..	313724	313725	313726	313727	310533			
..DB..U2..;..DBU3..	313717	313718	313719	313720				
DBE(TR)	313897	313898	313899	313700				
DBEM(TR)	313893	313894	313895	313896	311930			

Fixing screws (included within the scope of supply)

NS	Qty	Dimensions	Tightening torque in Nm
16	4	M8 × 45	32
25	4	M12 × 50	110
32	4	M16 × 60	270

NS	Qty	Dimensions	Tightening torque in Nm
40	4	M20 × 70	520
50	4	M30 × 80	520
63	4	M30 × 100	1800

NS	Qty	Dimensions	Tightening torque in Nm
80	8	M24 × 120	900
100	8	M30 × 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 or G 1/4"
Other built-in orifices	M6 tapered

Compression springs Note

Nominal size and Material no. of Compression springs, see sheet Page 73

Control cover with manual pressure adjustment

NS 16 to 100

1	2	3	4	5	6	9	10
LFA		DB		6X	B		•

Further details in clear text

Nominal size 16	= 16
Nominal size 25	= 25
Nominal size 32	= 32
Nominal size 40	= 40
Nominal size 50	= 50
Nominal size 63	= 63
Nominal size 80	= 80
Nominal size 100	= 100

No code = Mineral oils
V = Phosphate ester

Pressure ratings

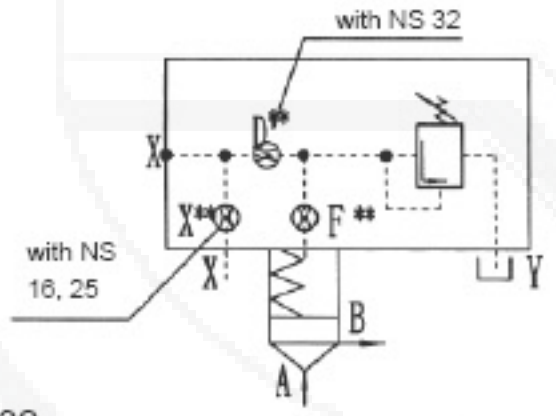
NS 16, 25 ,32	NS 40, 50, 63, 80, 100
050 = 5.0 MPa	025 = 2.5 MPa
100 = 10.0MPa	050 = 5.0 MPa
200 = 20.0 MPa	100 = 10.0 MPa
315 = 31.5 MPa	200 = 20.0 MPa
420 = 42.0 MPa	315 = 31.5 MPa
	400 = 40.0 MPa

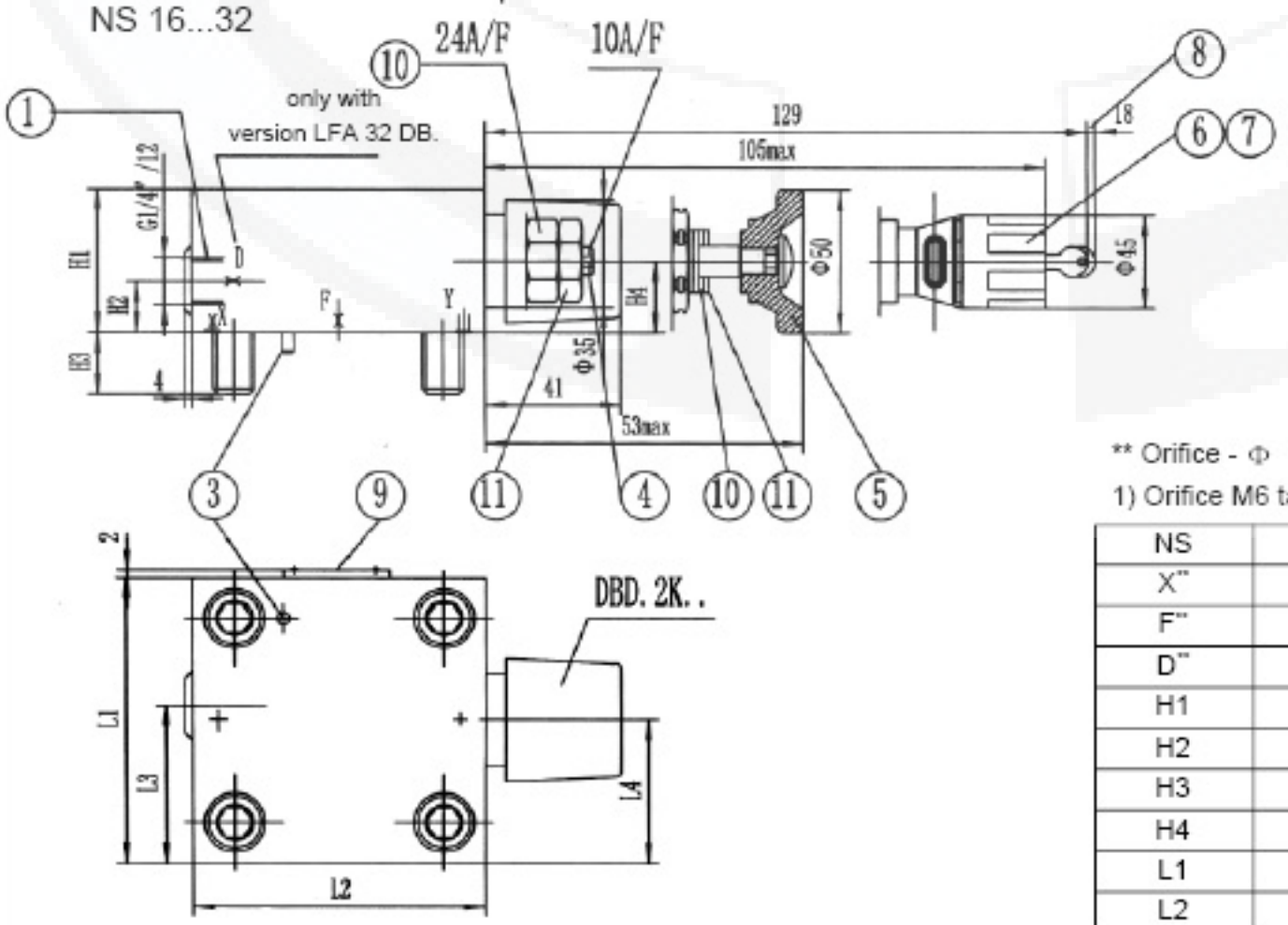
Adjuster type

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

B = Technology of Beijing Huade Hydraulic

6X= Series 60 to 69 (60 to 69: unchanged installation and connection dimensions)





1 Port X 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 require to remove the key
9 Nameplate
10 Lock nut
11 Setting nut for max. pressure

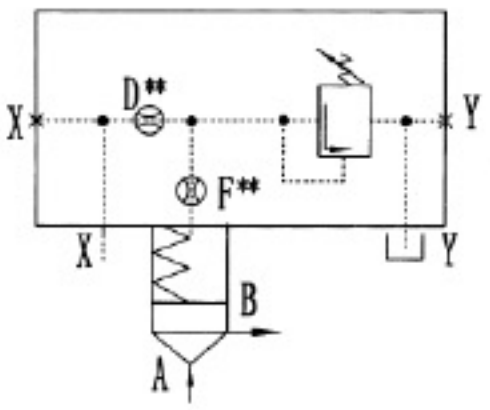
** Orifice - Φ

1) Orifice M6 tapered

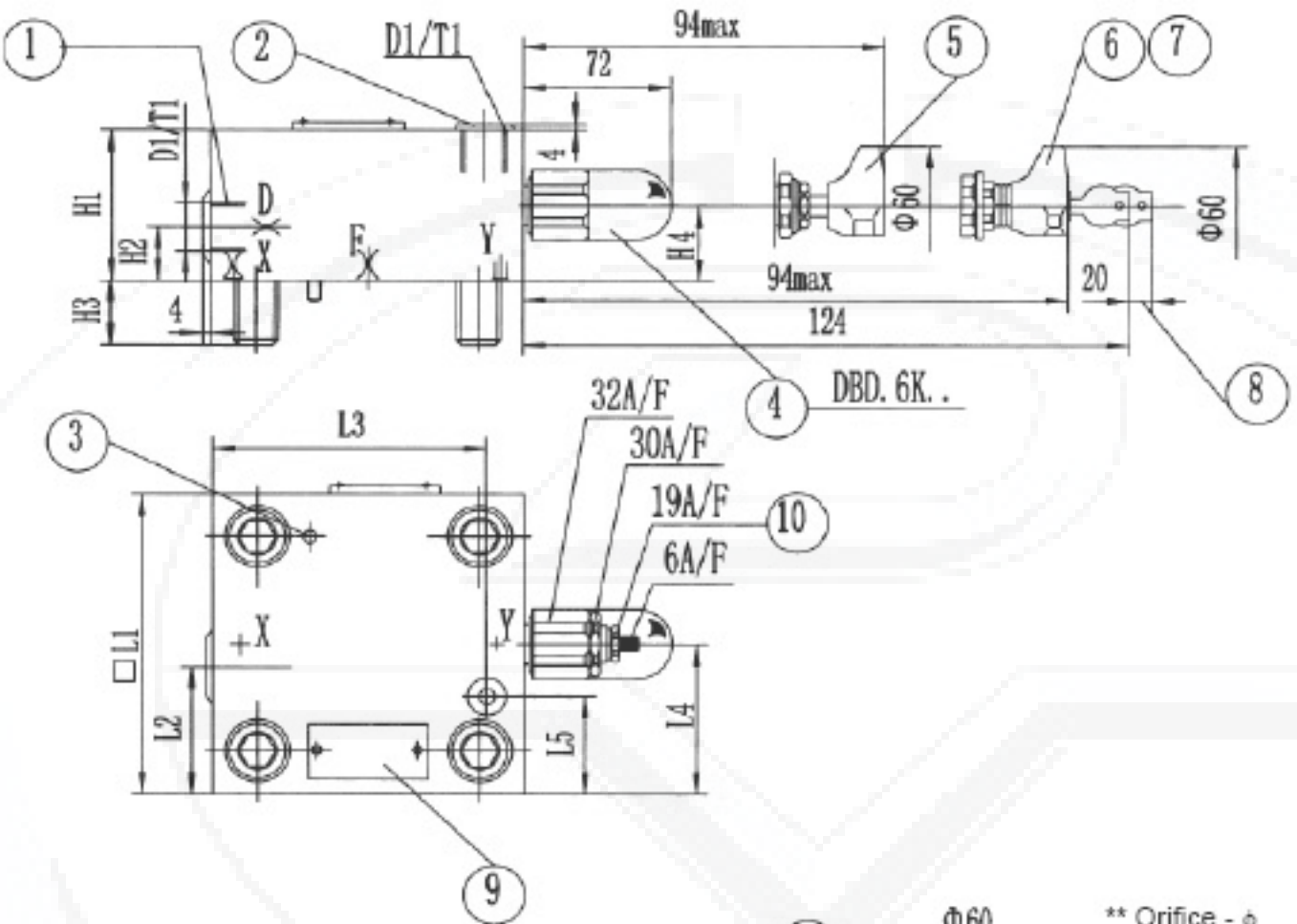
NS	16	25	32
X"	0.8	0.8	-
F"	1.0	1.0	1.2
D"	-	-	0.8
H1	40	40	50
H2	17	19	26
H3	15	24	28
H4	19	19	26
L1	65	85	100
L2	80	85	100
L3	36.5	49	56.5
L4	32.5	45.5	53

Control cover with manual pressure adjustment (Dimensions in mm)

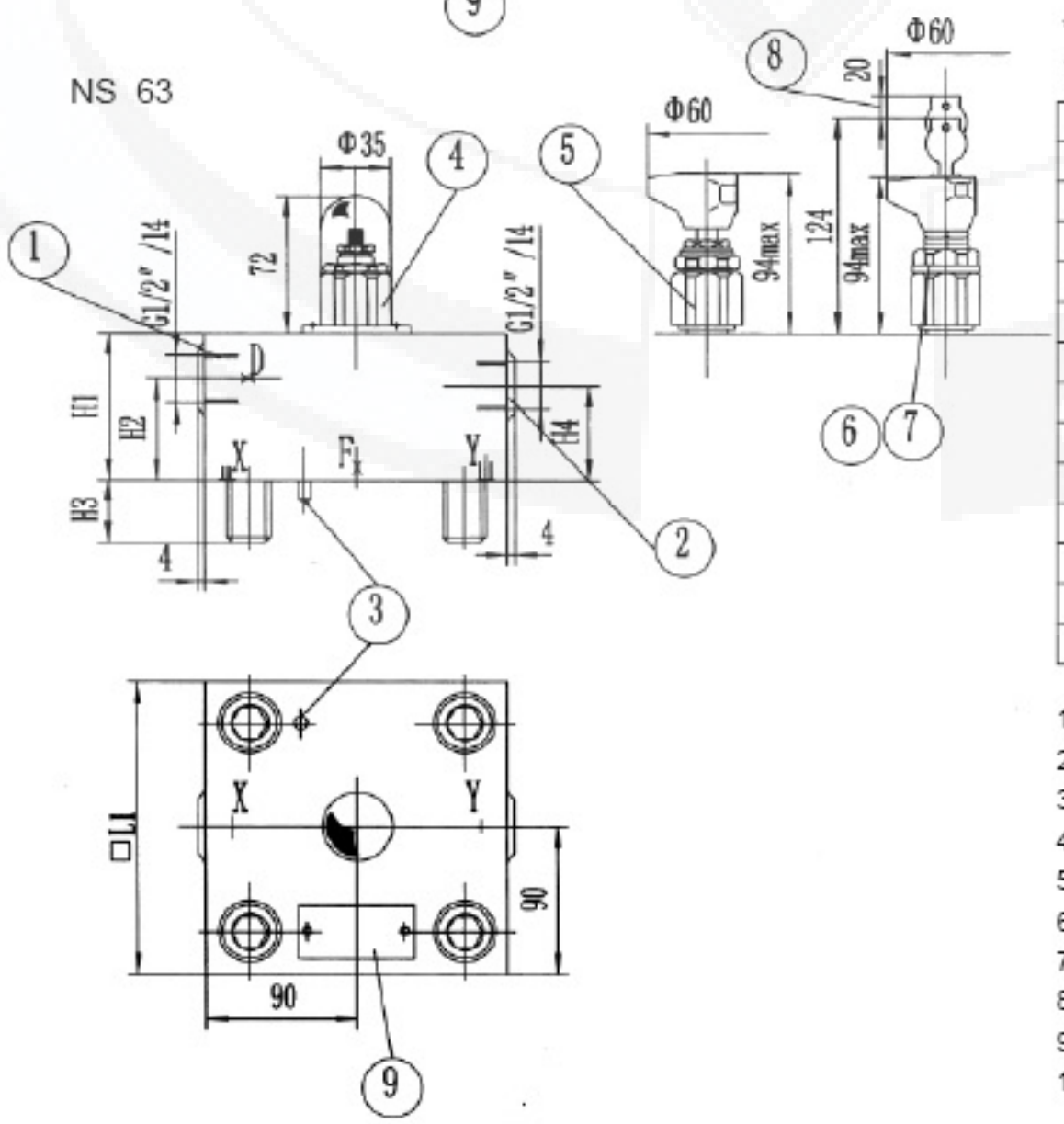
LFA..DB.-../...
NS 40, 50, 63



NS 40, 50



NS 63



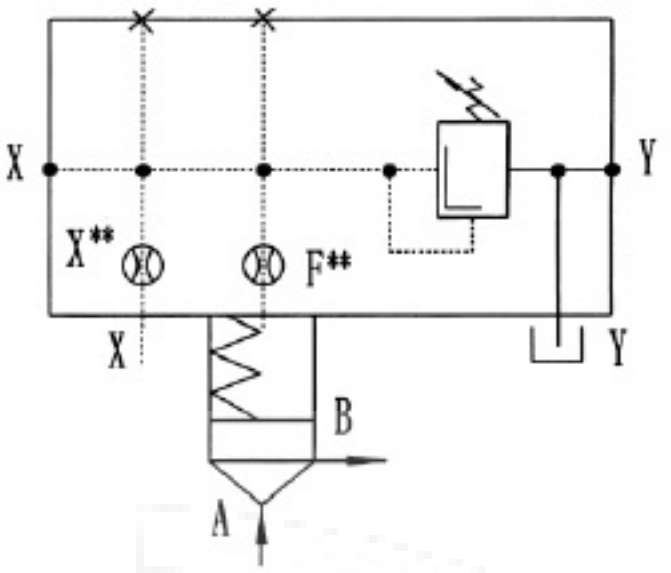
** Orifice - ϕ
1) Orifice M6 tapered

NS	40	50	63
F"	1.2	1.2	1.5
D"	1.0	1.2	1.5
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	-

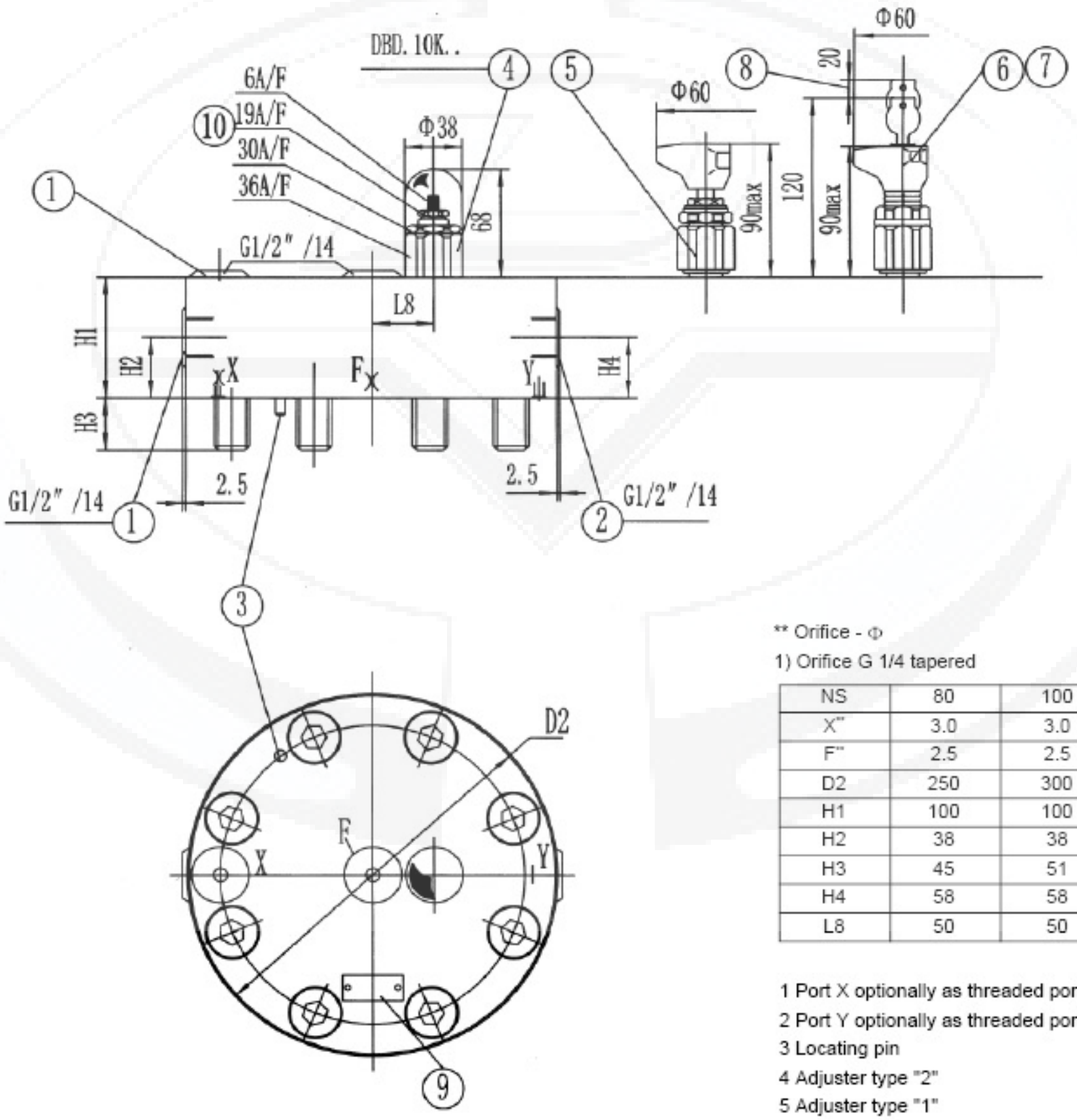
1 Port X optionally as threaded port
2 Port Y optionally as threaded port
3 Locating pin
4 Adjuster type "2"
5 Adjuster type "1"
6 Adjuster type "3"
7 Adjuster type "4"
8 Space required to remove key
9 Nameplate
10 Lock nut

Control cover with manual pressure adjustment (Dimensions in mm)

LFA..DB.-../...
NS 80, 100



NS 80, 100



** Orifice - Φ

1) Orifice G 1/4 tapered

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

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 Nameplate
10 Lock nut

Control cover with manual pressure adjustment, for electrical unloading

NS 16 to100

1	2	3	4	5	6	9	10
LFA		DB		6X	B		*

Further details in clear text

NS 16 =16 NS 50 =50
NS 25 =25 NS 63 =63
NS 32 =32 NS 80 =80
NS 40 =40 NS 100 =100

No code = Mineral oils
V = Phosphate ester

Control cover type
For mounting a directional spool
or directional poppet valve (NS 16, 25, 32) =DBW
For mounting a directional poppet valve
(for NS 40, 50,63, 80, 100) =DBS

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

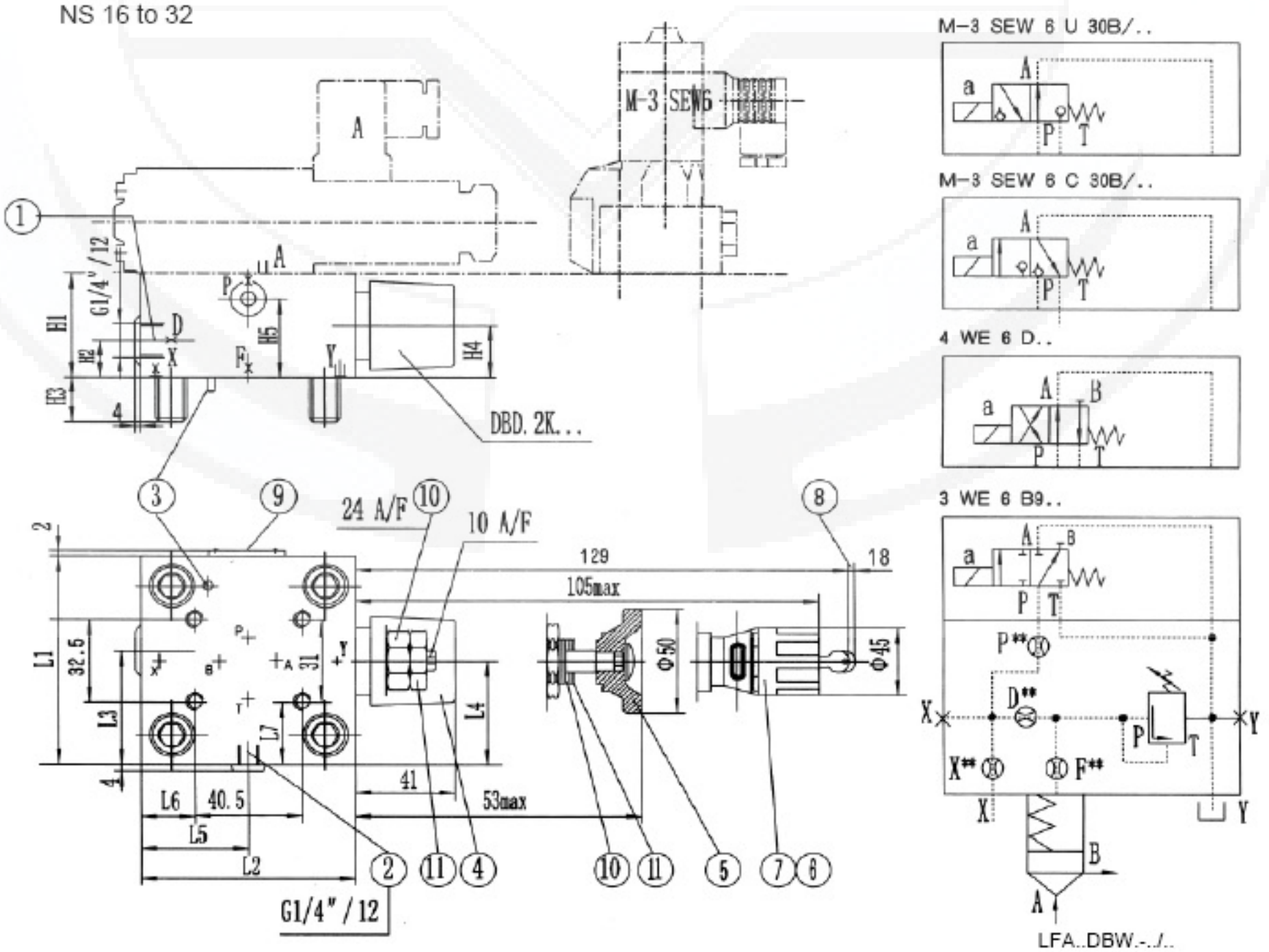
size 16, 25, 32	size 40, 50, 63, 80, 100
050=5.0MPa	025=2.5MPa
100=10.0MPa	050=5.0MPa
200=20.0MPa	100=10.0MPa
315=31.5MPa	200=20.0MPa
420=42.0MPa	315=31.5MPa
	400=40.0MPa

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

B = Technology of Beijing Huade Hydraulic

6X = Series 60 to 69(60 to 69 unchanged installation and connection dimentions)

NS 16 to 32



Parts and dimensions see page 48

Control cover with manual pressure adjustment, for electrical unloading **(Dimensions in mm)**

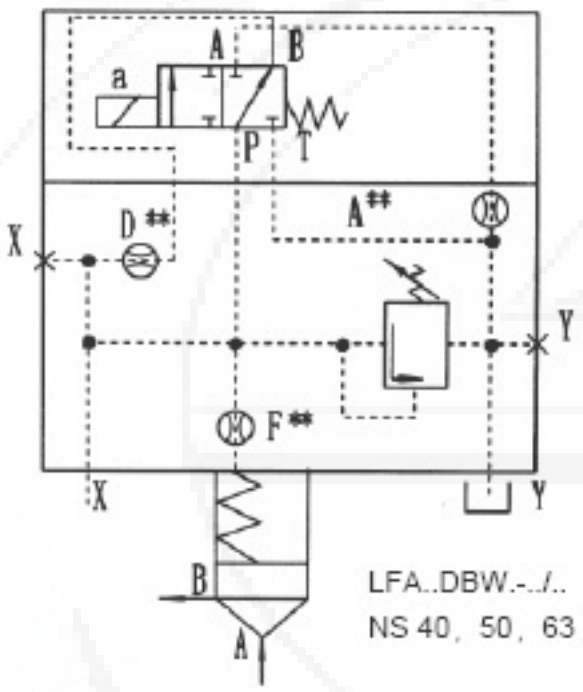
1 Port X optionally as threaded port
2 Port Y optionally as threaded port
3 Locating pin
4 Adjuster type "2"
5 Adjuster type "1"
6 Adjuster type "3"
7 Adjuster type "4"
8 Space required to remove key
9 Nameplate
10 Lock nut
11 Setting nut for max. pressure

** Orifice-ø

NS	X**	F**	D**	P**	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6	L7
16	0.8	1.0	0.8	1.0	40	17	15	19	28	65	80	36.5	32.5	35	7	17
25	0.8	1.0	0.8	1.0	40	19	24	19	28	85	85	49	45.5	36	8	27
32	0.8	1.2	1.0	1.0	50	26	28	26	37	100	100	56.5	53	57	30	34.5

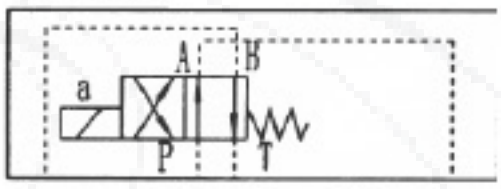
NS 40, 50, 63

3 WE 6 B9..

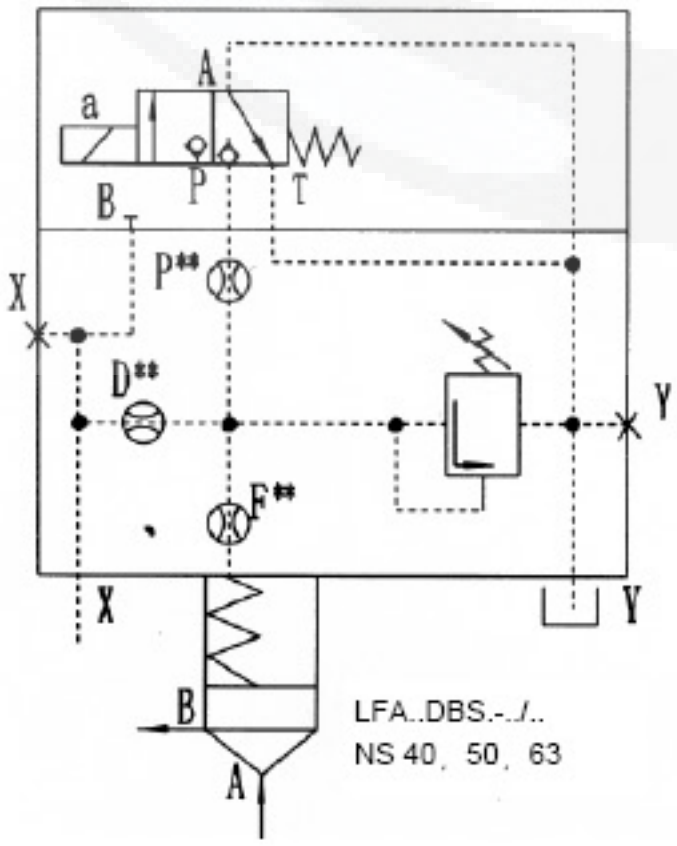


LFA..DBW.-../..
NS 40, 50, 63

4WE 6 D..

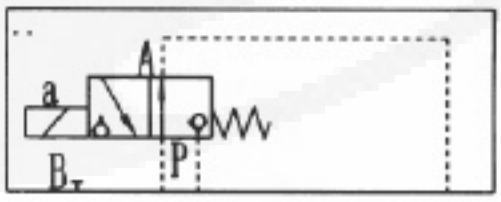


M-3 SEW 6 C 30B/..



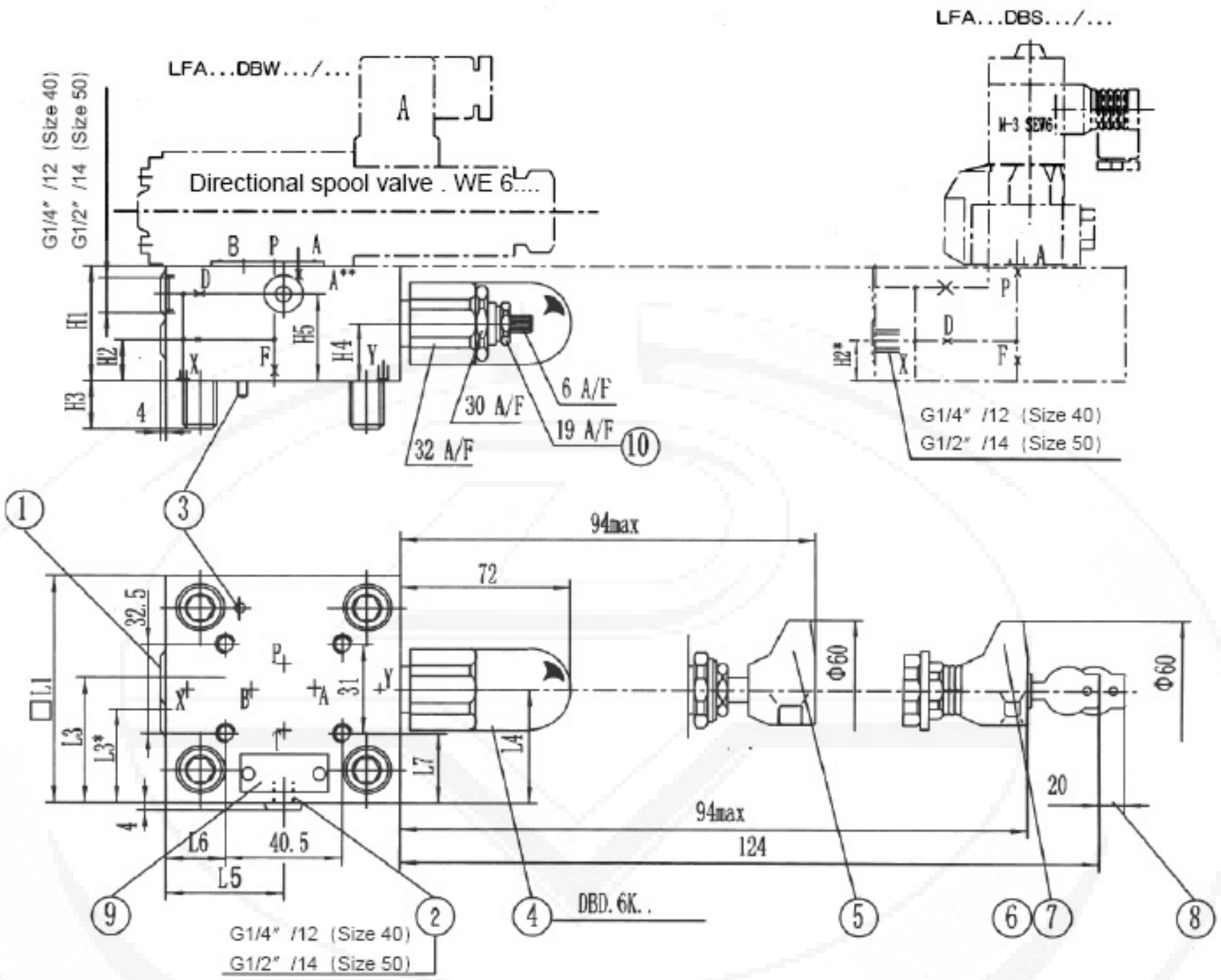
LFA..DBS.-../..
NS 40, 50, 63

M-3 SEW 6 U 30B/



Control cover with manual pressure adjustment, for electrical unloading (Dimensions in mm)

NS 40, 50



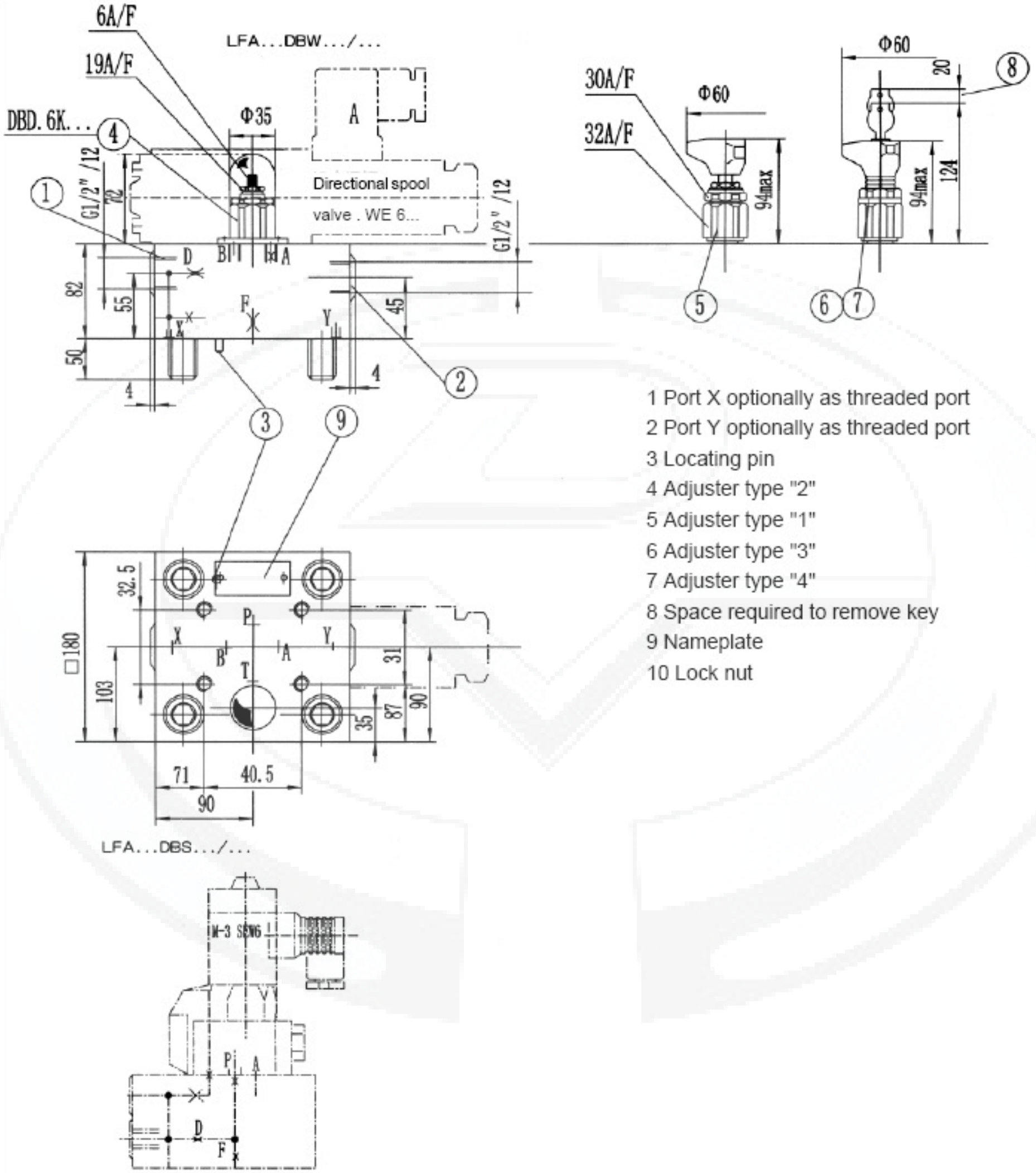
1 Port X optionally as threaded port
2 Port Y optionally as threaded port
3 Locating pin
4 Adjuster type "2"
5 Adjuster type "1"
6 Adjuster type "3"
7 Adjuster type "4"
8 Space required to remove key
9 Nameplate
10 Lock nut

*LFA...DBS control cover dimensions ** Orifice-ϕ

NS	X**	F**	D**	P**	H1	H2	H2*	H3	H4	H5	L1	L2	L3	L4	L5	L6	L7
40	0.8	1.2	1.0	1.2	60	46	17	32	27	40	125	62.5	69	76	68	43.5	47
50	0.8	1.2	1.2	1.5	68	51	19.5	34	35	50	140	67.5	80	84	74.5	51	54.5

Control cover with manual pressure adjustment, for electrical unloading **(Dimensions in mm)**

NS 63

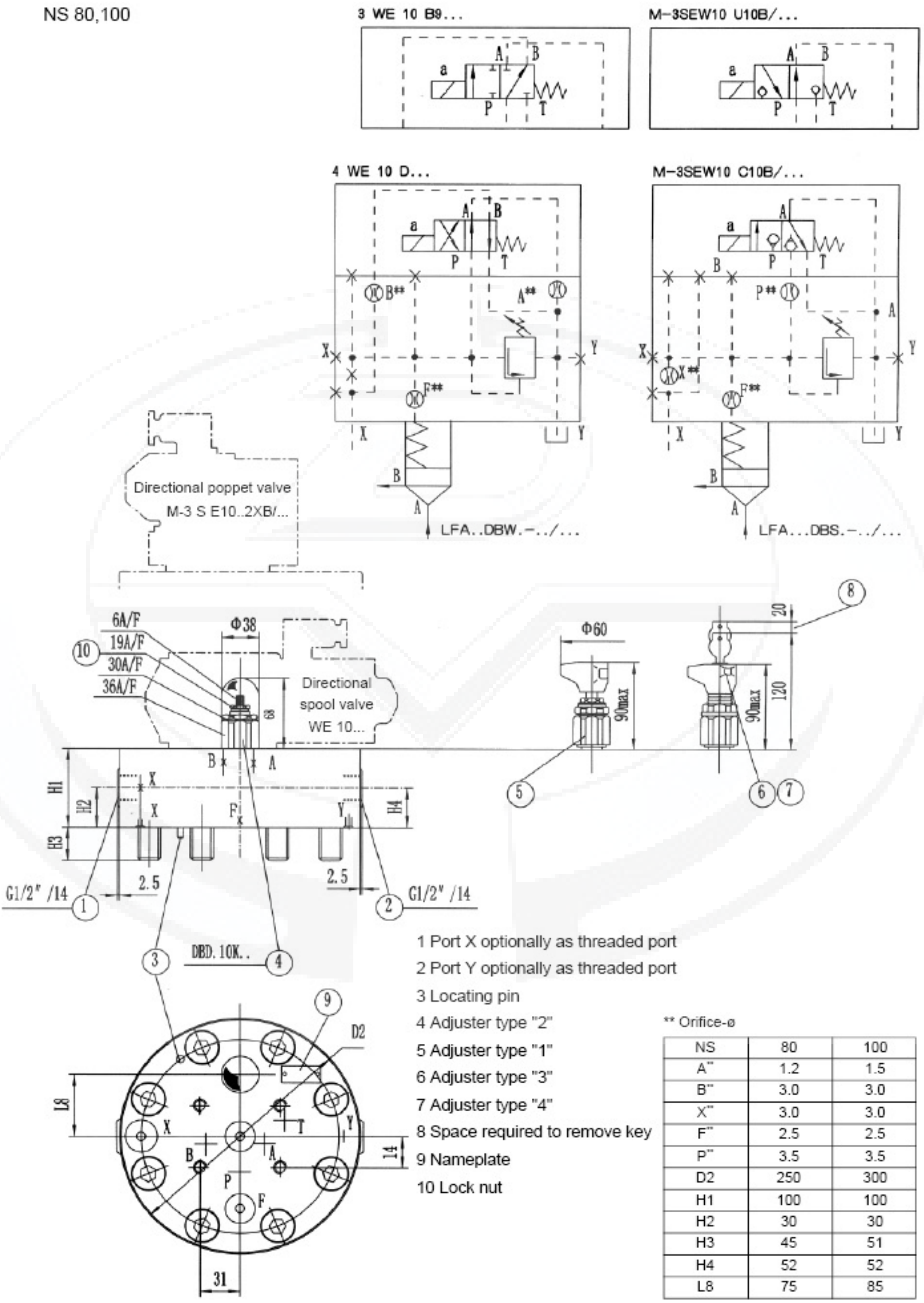


** Orifice-ϕ

NS	A"	F"	D"	P"
63	1.0	1.5	1.5	1.8

Control cover with manual pressure adjustment, for electrical unloading (Dimensions in mm)

NS 80,100



** Orifice-ø

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

Control cover with manual pressure adjustment, for isolation functions (Dimensions in mm)

NS 16 to 100

1	2	3	4	5	6	9	10
LFA		DBWD		6X	B		*

Further details in clear text

NS 16 =16 NS 50 =50
NS 25 =25 NS 63 =63
NS 32 =32 NS 80 =80
NS 40 =40 NS 100=100

No code = Mineral oils
V = Phosphate ester

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 not lockable	= 4

Series 60 to 69 = 6X(60 to 69 unchanged installation and connection dimentions)

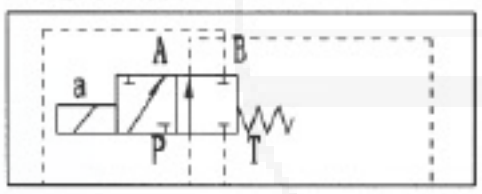
Technology of Beijing Huade Hydraulic = B

Pressure ratings

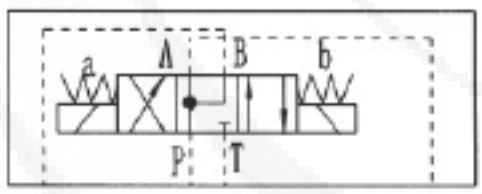
(take max. perm. pressure of pilot valve into account)

NS 16, 25, 32	NS 40, 50, 63, 80, 100
050=5.0MPa	025=2.5MPa
100=10.0MPa	050=5.0MPa
200=20.0MPa	100=10.0MPa
315=31.5MPa	200=20.0MPa
420=42.0MPa	315=31.5MPa
	400=40.0MPa

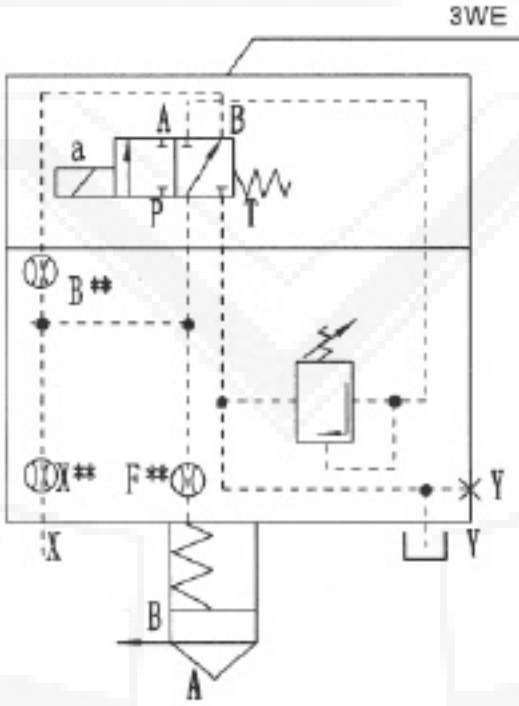
3 WE 6 A...



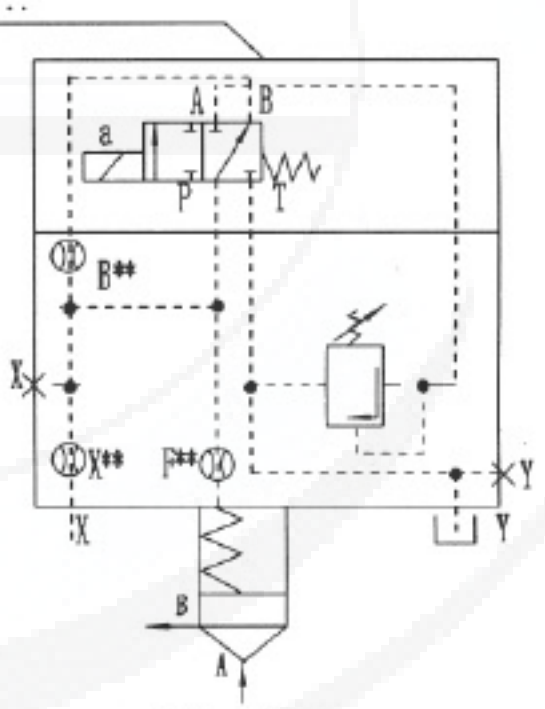
4WE 6 M...



3WE 6 B9/...

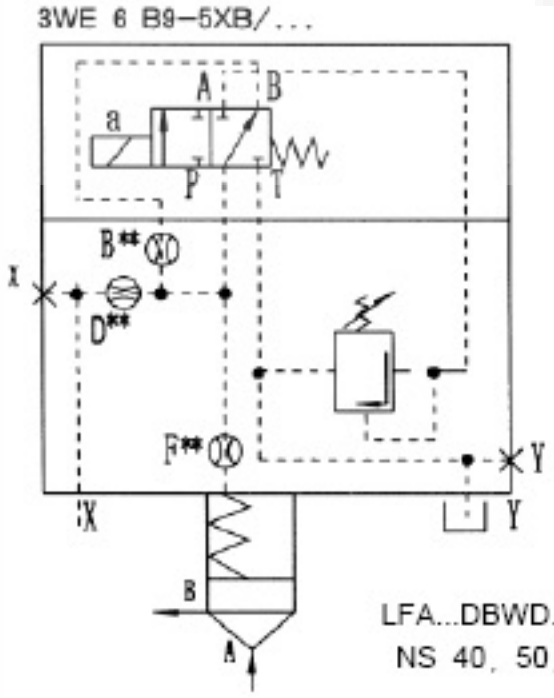


LFA...DBWD.-...
NS 16



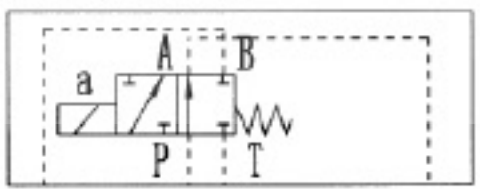
LFA...DBWD.-...
NS 25,32

3WE 6 B9–5XB/...

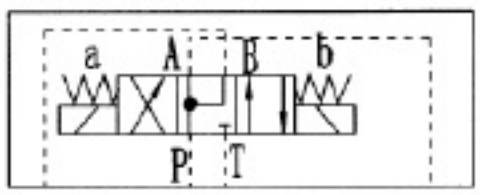


LFA...DBWD.-.../...
NS 40, 50, 63

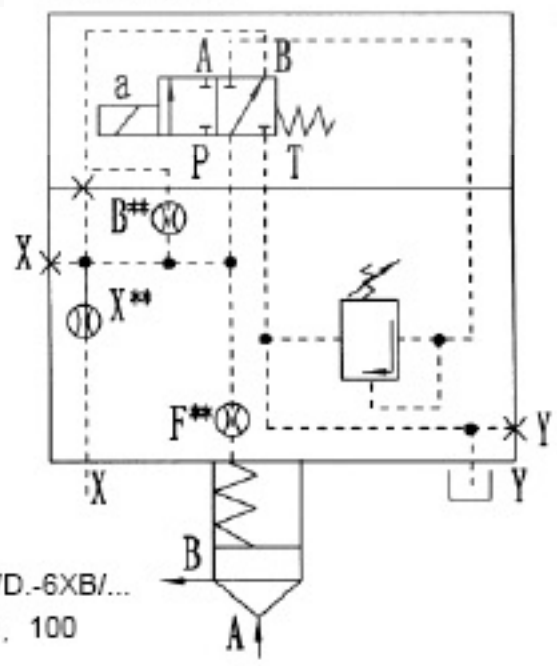
3 WE 10 A...



4 WE 10M....



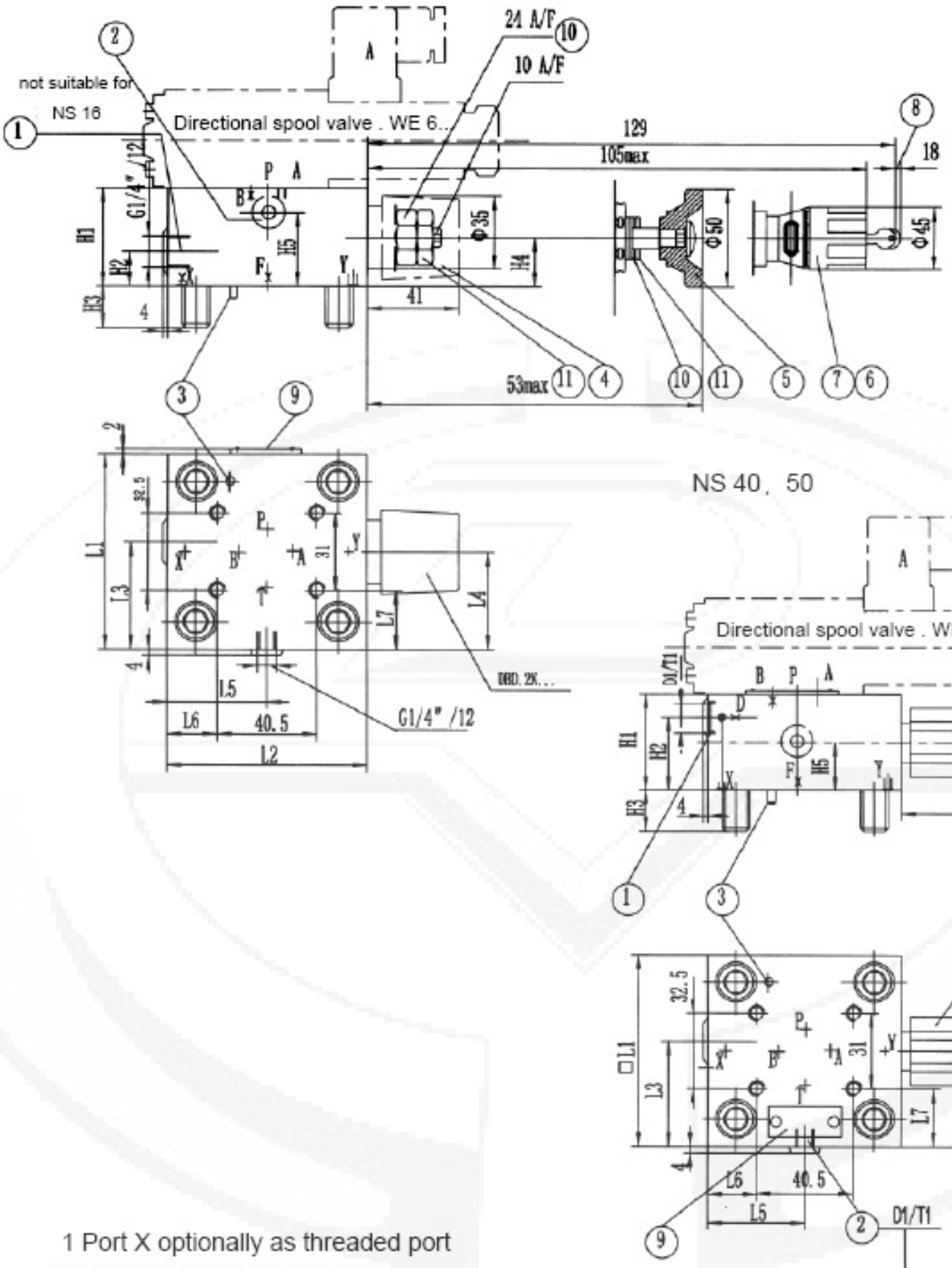
3 WE 10 B9...



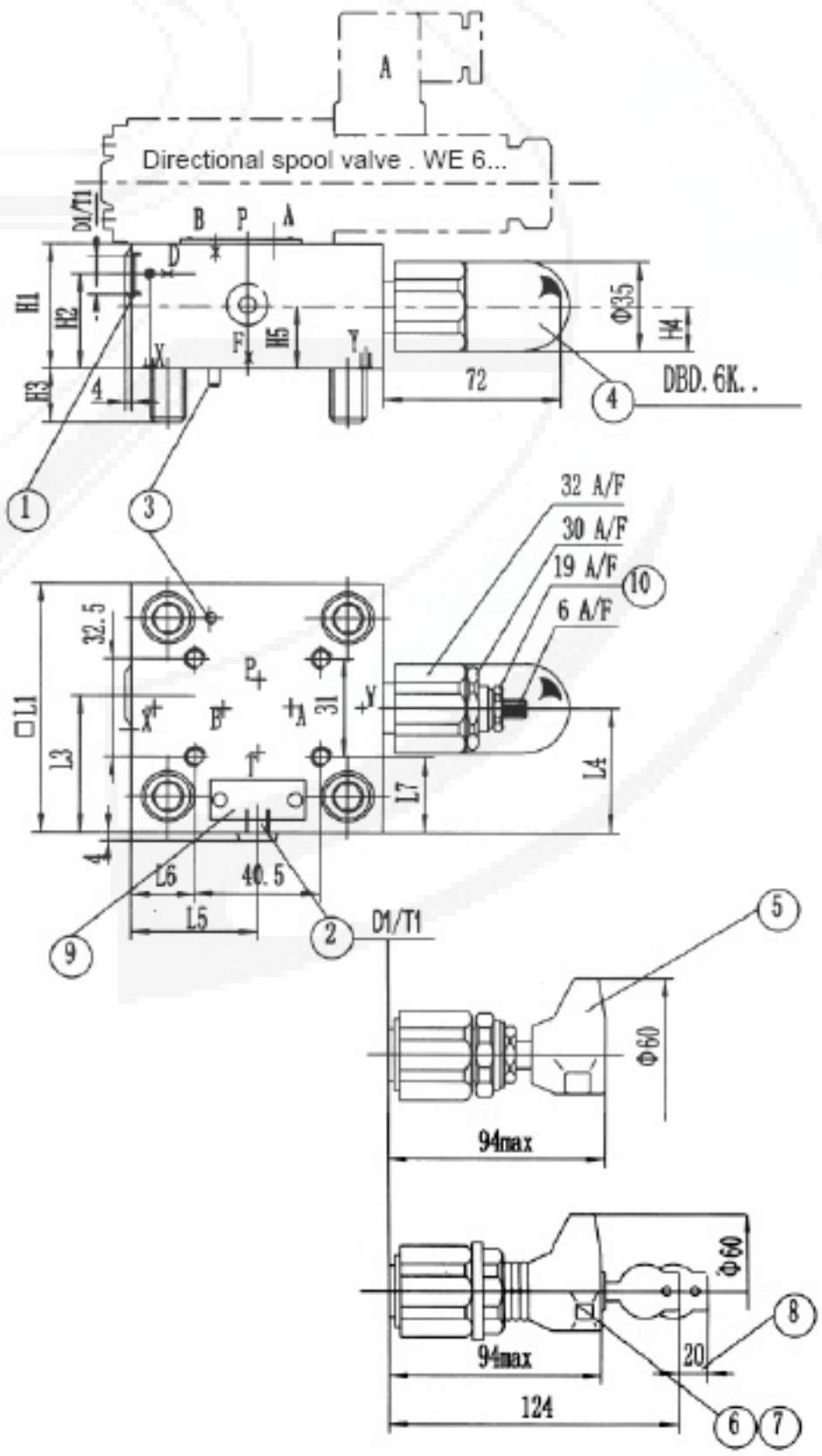
LFA...DBWD.-6XB/...
NS 80, 100

Control cover with manual pressure adjustment, for isolation functions **(Dimensions in mm)**

NS 16 to 32



NS 40, 50



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 Nameplate
10 Lock nut
11 Setting nut for max. pressure

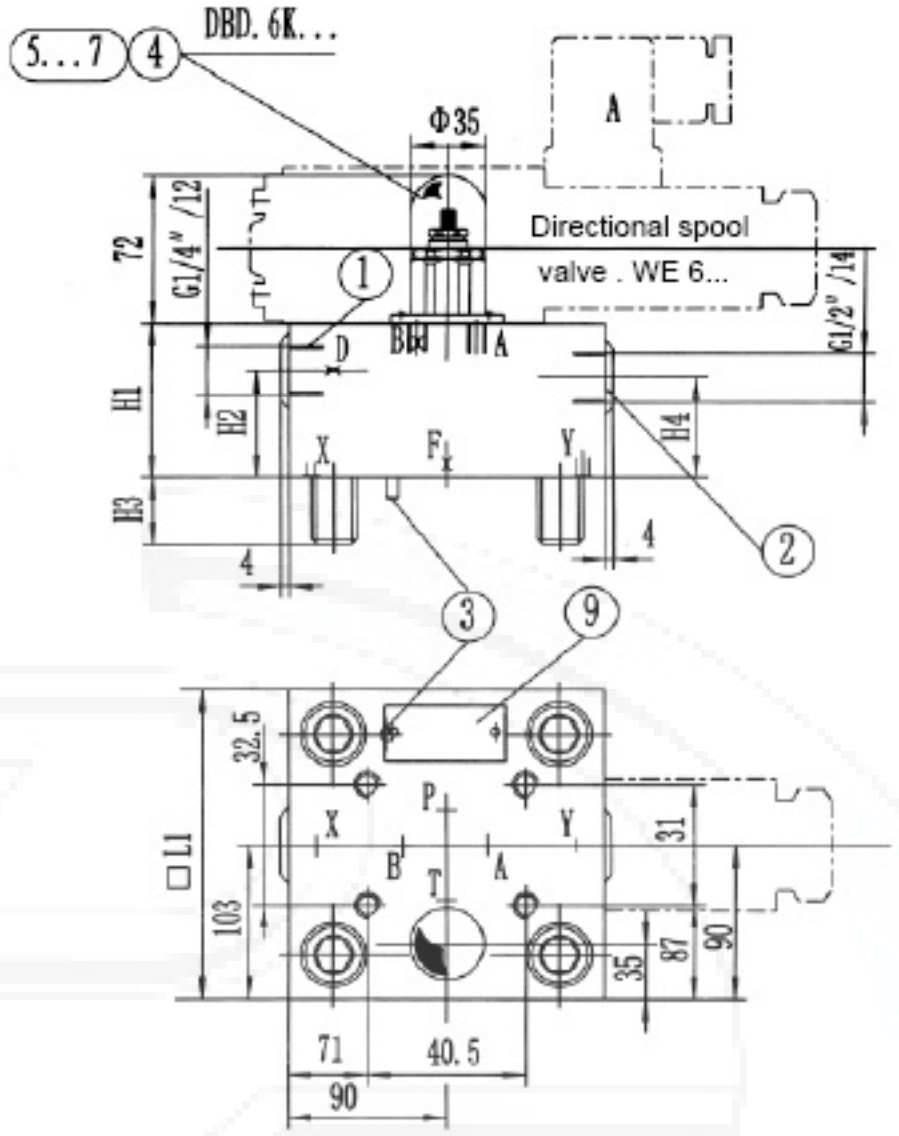
Dimensions see page 54

Control cover with manual pressure adjustment , for isolation functions (Dimensions in mm)

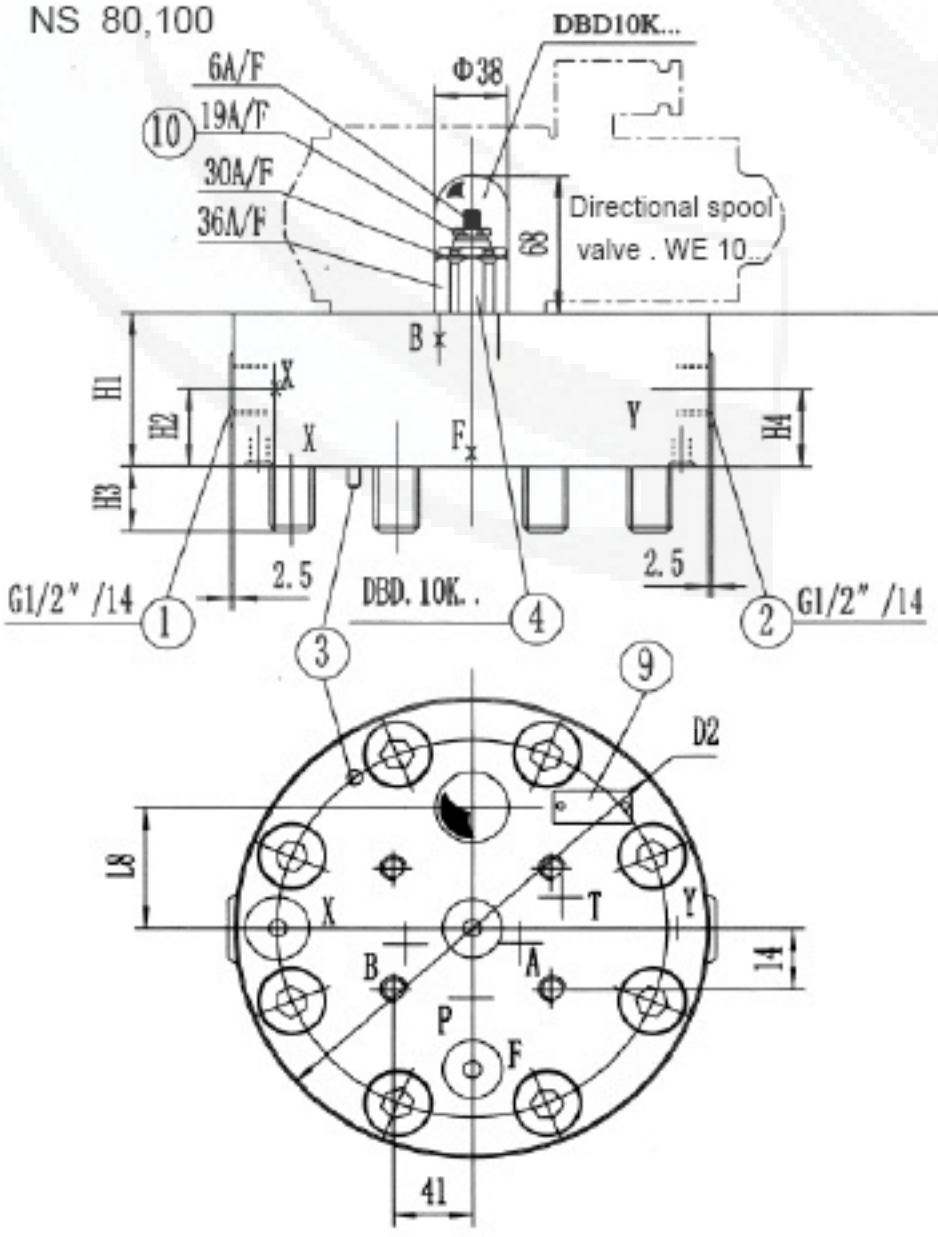
** Orifice-ϕ

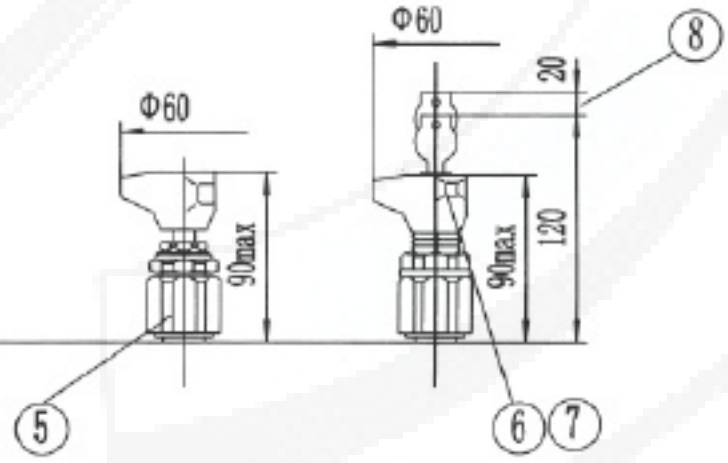
NS	16	25	32	40	50	63	80	100
B**	1.0	1.0	1.0	1.2	1.5	1.8	3.5	3.5
X**	0.8	0.8	0.8	-	-	-	3.0	3.0
F**	1.0	1.0	1.2	1.2	1.2	1.5	2.5	2.5
D**	-	-	-	1.0	1.2	1.5	-	-
D1	-	-	-	G1/4"	G1/2"	-	-	-
D2	-	-	-	-	-	-	250	300
H1	40	40	50	60	68	82	100	100
H2	-	19	26	46	50	55	67	67
H3	15	24	28	32	34	50	45	51
H4	19	19	26	27	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	30	43.5	51	-	-	-
L7	17	27	34.5	47	54.5	-	-	-
L8	-	-	-	-	-	-	75	85
T1	-	-	-	12	14	-	-	-

NS 63



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 Nameplate
10 Lock nut

Control cover with 2 manual pressure adjustments, electrically selectable

NS 16 to 100

1	2	3	4		5	6	9	10	
LFA				— 6X	B	A...			*

NS 16 =16 NS 50 =50
NS 25 =25 NS 63 =63
NS 32 =32 NS 80 =80
NS 40 =40 NS 100=100

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

6X = Series 60 to 69 (60 to 69 unchanged installation and connection dimentions)

B = Technology of Beijing Huade Hydraulic

$D6_{max}$ DB1

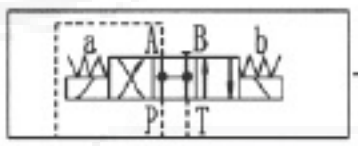
Pressure ratings
(take max. perm. pressure of pilot valve into account)

Size 16, 25, 32	Size 40, 50, 63, 80, 100
050=5.0MPa	025=2.5MPa
100=10.0MPa	050=5.0MPa
200=20.0MPa	100=10.0MPa
315=31.5MPa	200=20.0MPa
420=42.0MPa	315=31.5MPa
	400=40.0MPa

No code = Mineral oils
V = Phosphate ester

Further details in clear text

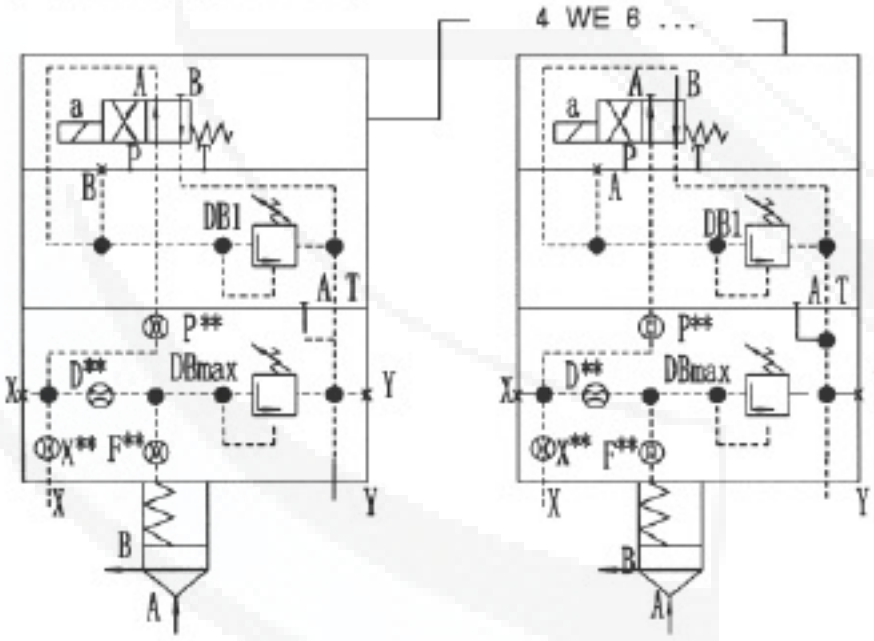
4 WE 6 H...



4 WE 6 H...

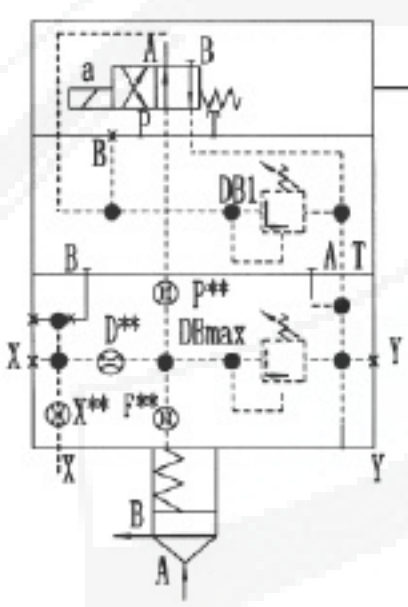
4 WE 6 D...

4 WE 6 ...

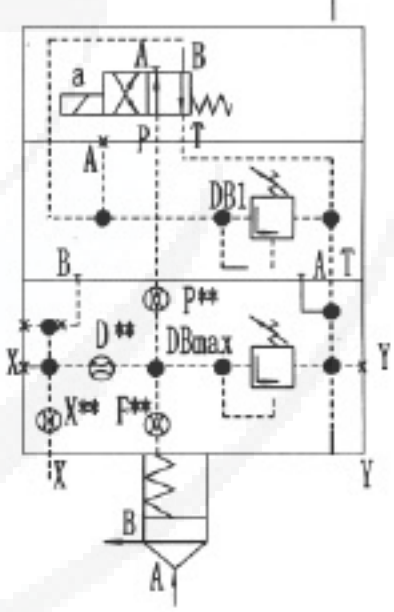


LFA..DBU 2A.-../...
Size 16 to 32

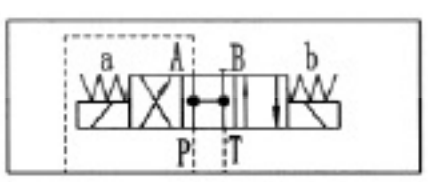
LFA..DBU 2B.-../...
Size 16 to 32



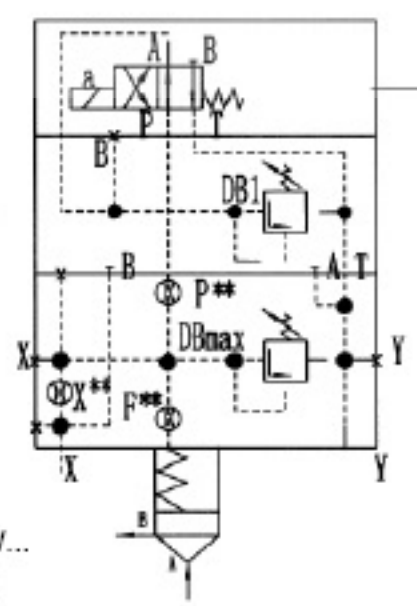
LFA..DBU 2A.-../...
Size 40 to 63



LFA..DBU 2B.-../...
Size 40 to 63

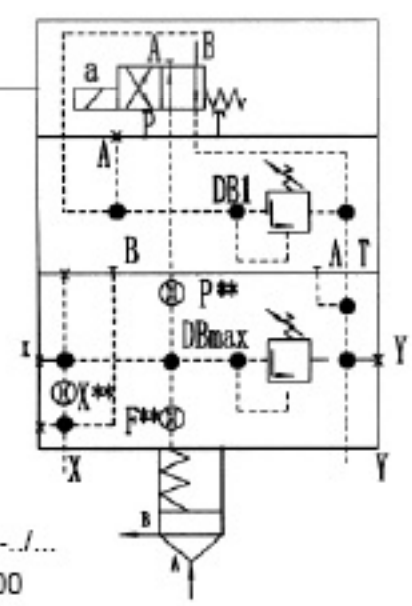


4 WE 10H../....



LFA..DBU 2A.-../...
Size 80, 100

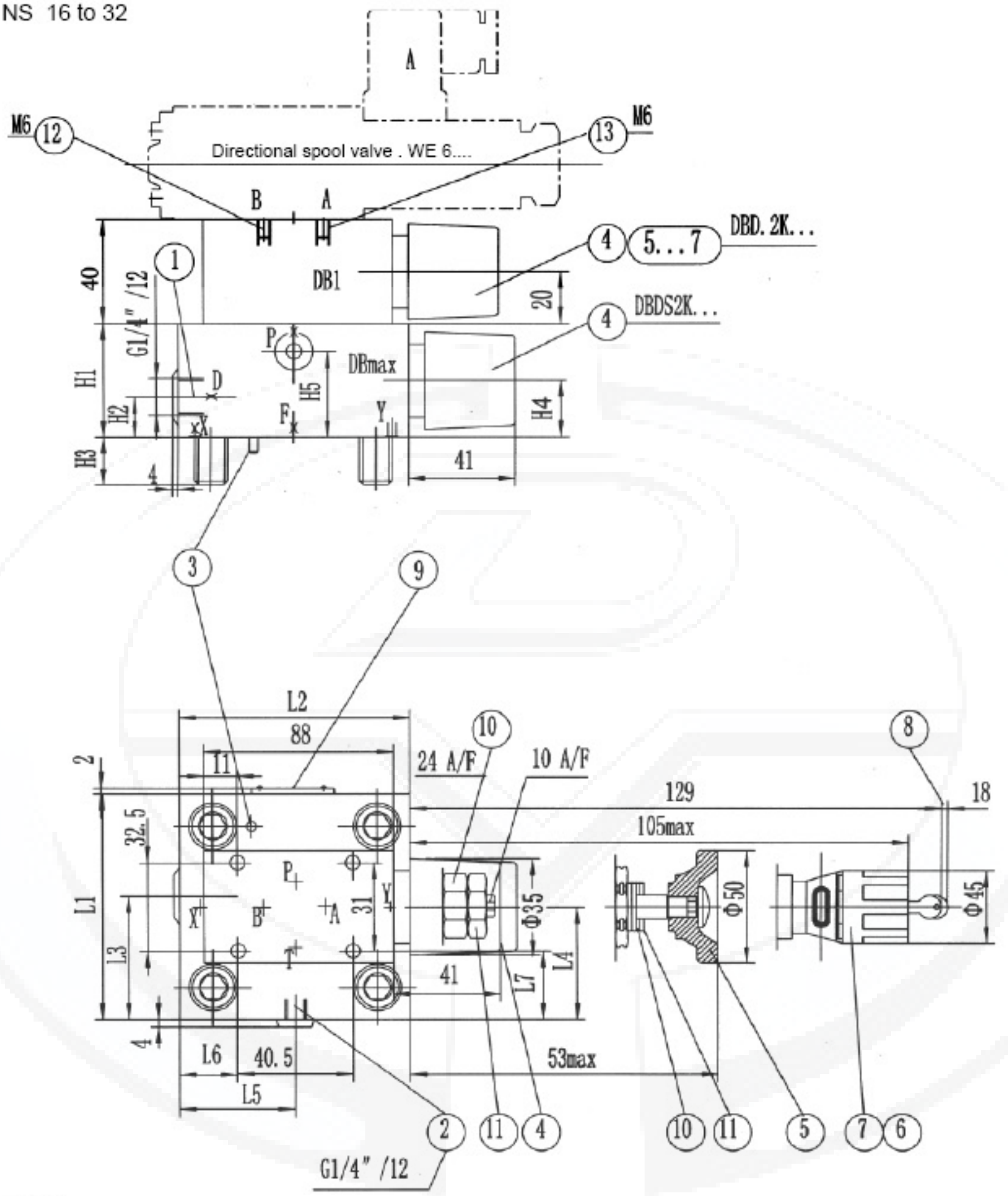
4 WE 10D../....



LFA..DBU 2A.-../...
Size 80, 100

Control cover with 2 manual pressure adjustment, electrical selectable **(Dimensions in mm)**

NS 16 to 32



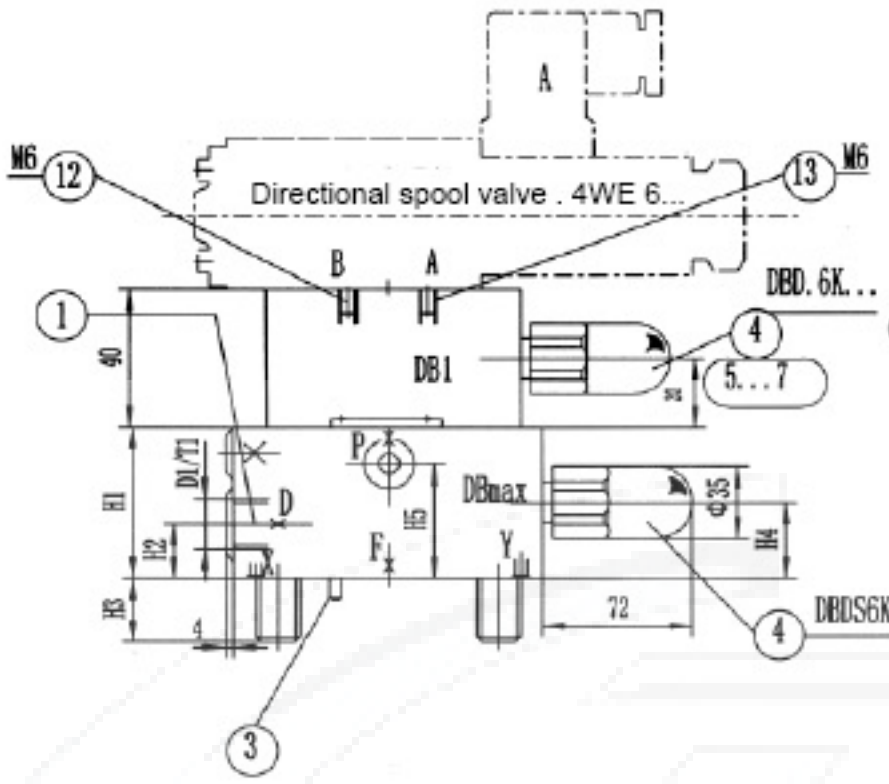
** Orifice-ϕ

NS	X"	F"	D"	P"	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6	L7
16	0.8	1.0	0.8	1.0	40	17	15	19	28	65	80	36.5	32.5	35	7	17
25	0.8	1.0	0.8	1.0	40	19	24	19	28	85	85	49	45.5	36	8	27
32	0.8	1.2	1.0	1.0	50	26	28	26	37	100	100	56.5	53	57	30	34.5

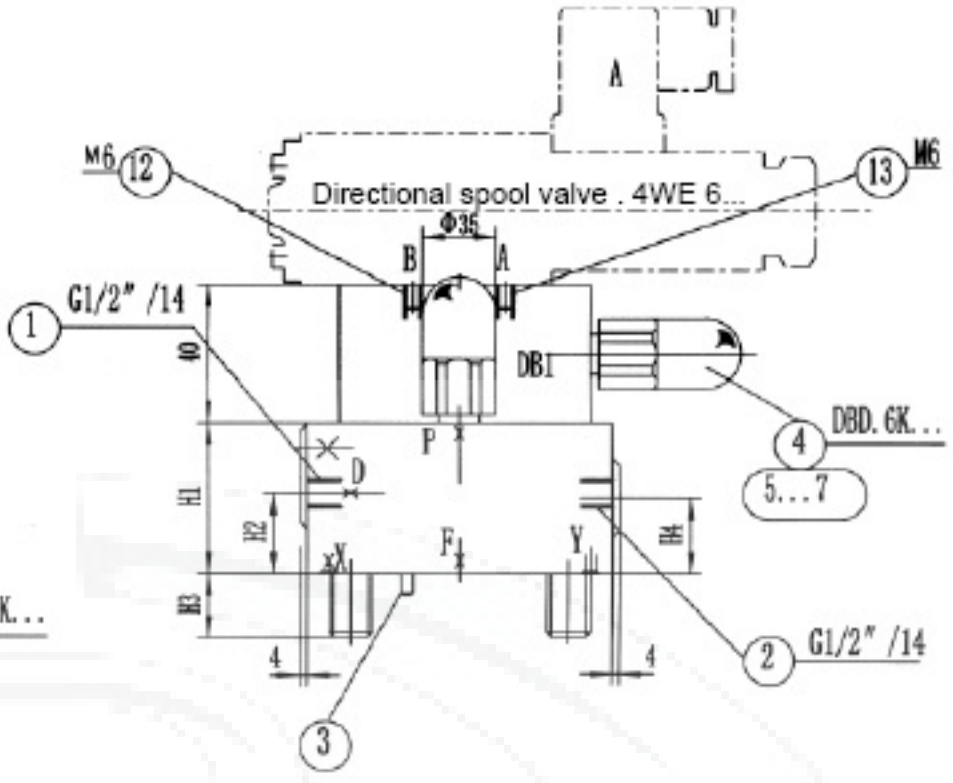
1 Port X optionally as threaded port
2 Port Y optionally as threaded port
3 Locating pin
4 Adjuster type "2"
5 Adjuster type "1"
6 Adjuster type "3"
7 Adjuster type "4"
8 Space required to remove key
9 Nameplate
10 Lock nut
11 Setting nut for max. pressure
12 Plug M6 tapered for ..DBU 2A..
13 Plug M6 tapered for ..DBU 2B..

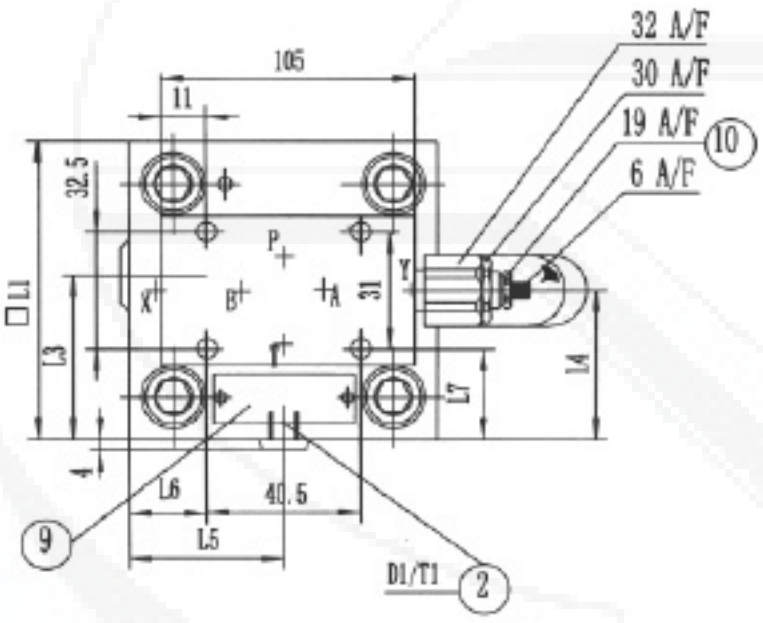
Control cover with 2 manual pressure adjustments, electrically selectable (Dimensions in mm)

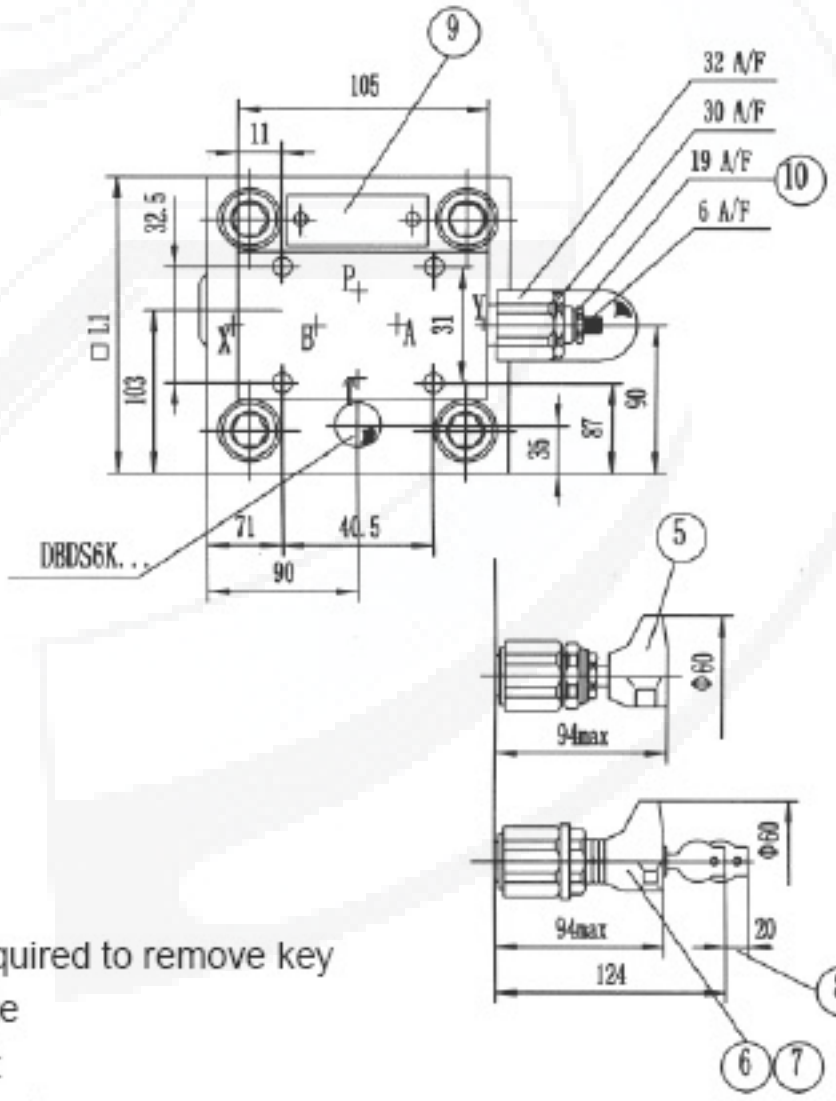
NS 40, 50



NS 63







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"

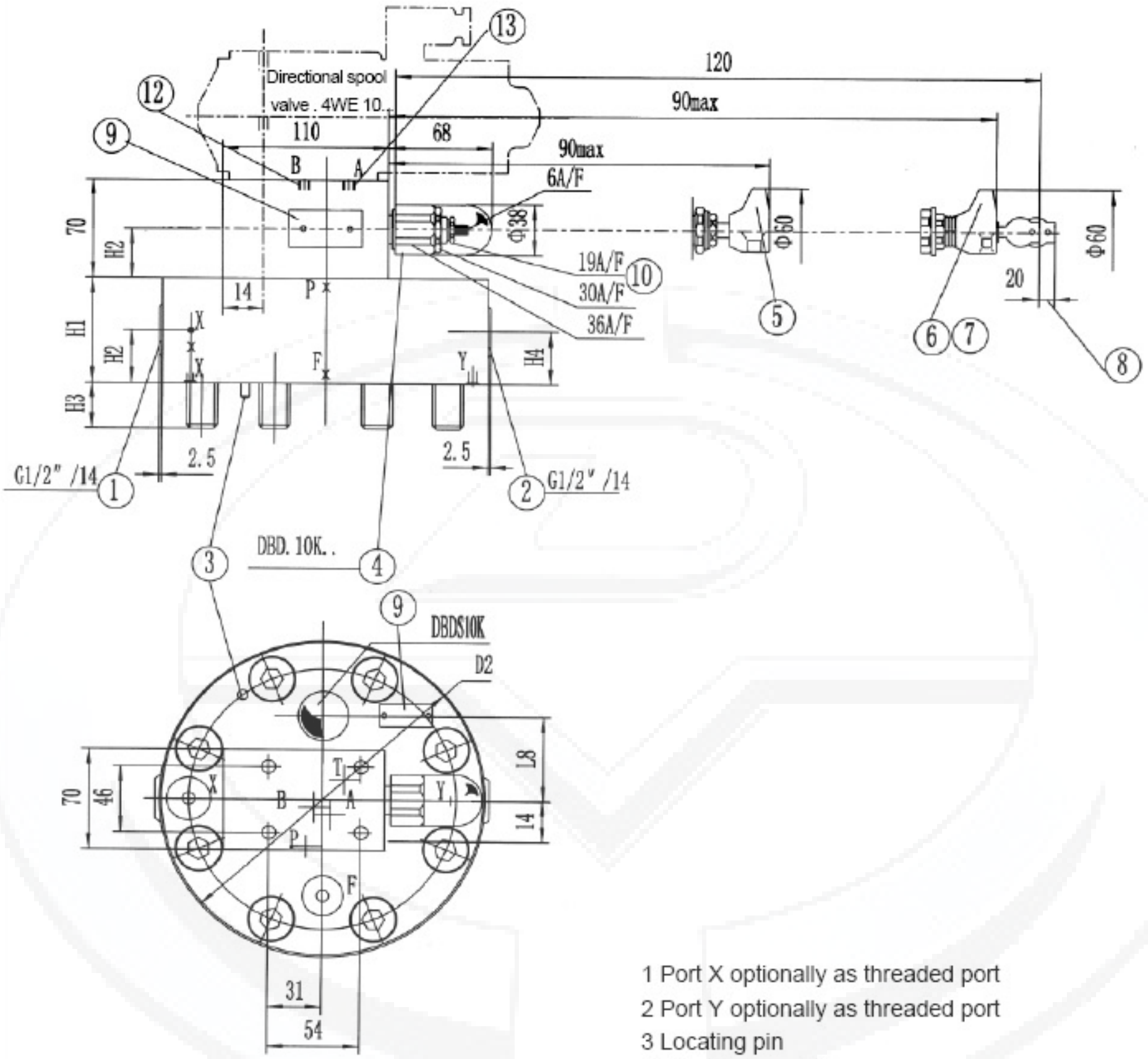
8 Space required to remove key
9 Nameplate
10 Lock nut
11 Setting nut for max. pressure
12 Plug M6 tapered for ..DBU 2A..
13 Plug M6 tapered for ..DBU 2B..

** Orifice-ϕ

NS	F**	D**	P**	D1	H1	H2	H3	H4	H5	□L1	L3	L4	L5	L6	L7	T1
40	1.2	1.0	1.2	G1/4"	60	17	32	27	40	125	69	76	68	43.5	47	12
50	1.2	1.2	1.5	G1/2"	68	19.5	34	35	50	140	80	84	74.5	51	54.5	14
63	1.5	1.5	1.8	-	82	55	50	45	-	180	-	-	-	-	-	-

Control cover with manual pressure adjustment (Dimensions in mm)

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 Nameplate
10 Lock nut
12 Plug M6 tapered for ..DBU 2A..
13 Plug M6 tapered for ..DBU 2B..

** Orifice-ϕ

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

Control cover with 3 manual pressure adjustments, electrically selectable

NS 16 to 100

1	2	3	4	5	6	7	8	9	10
LFA		DBU3D	—	6X	B	/	A...	B...		*

DB max, DB1, DB2

Further details in clear text

NS 16 =16 NS 50 =50
NS 25 =25 NS 63 =63
NS 32 =32 NS 80 =80
NS 40 =40 NS 100 =100

No code = Mineral oils
V = Phosphate ester

Adjuster type(detail only for DB1 or DB2)*

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

Pressure ratings

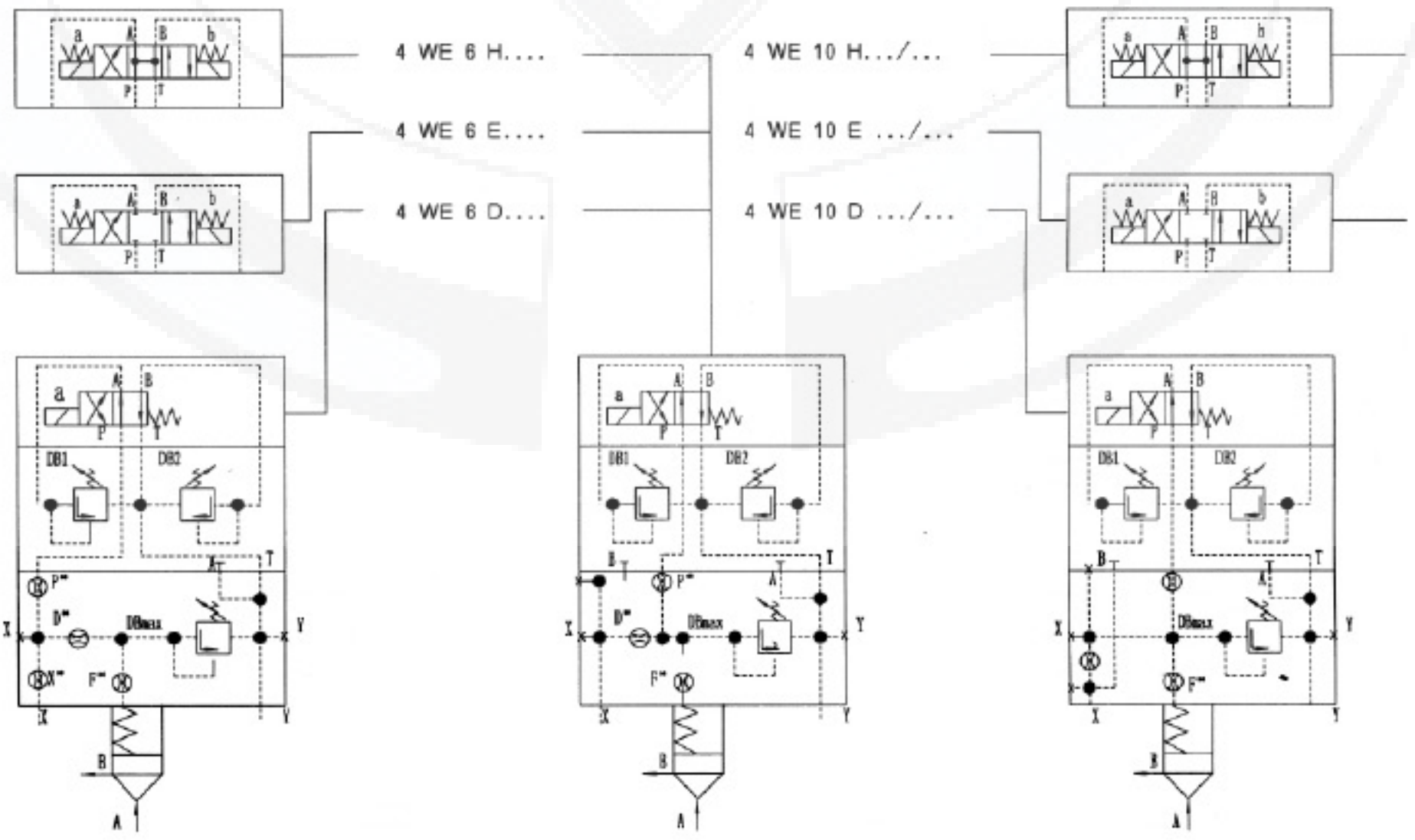
(take max. perm. pressure of pilot valveinto account)

NS 16, 25, 32	NS 40, 50, 63, 80, 100
050=5.0MPa	025=2.5MPa
100=10.0MPa	050=5.0MPa
200=20.0MPa	100=10.0MPa
315=31.5MPa	200=20.0MPa
420=42.0MPa	315=31.5MPa
	400=40.0MPa

Series 60 to 69 = 6X
(60 to 69 unchanged installation and connection dimentions)

Technology of Beijing Huade Hydraulic = B

*) For DB1 and DB2 select the same adjuster type

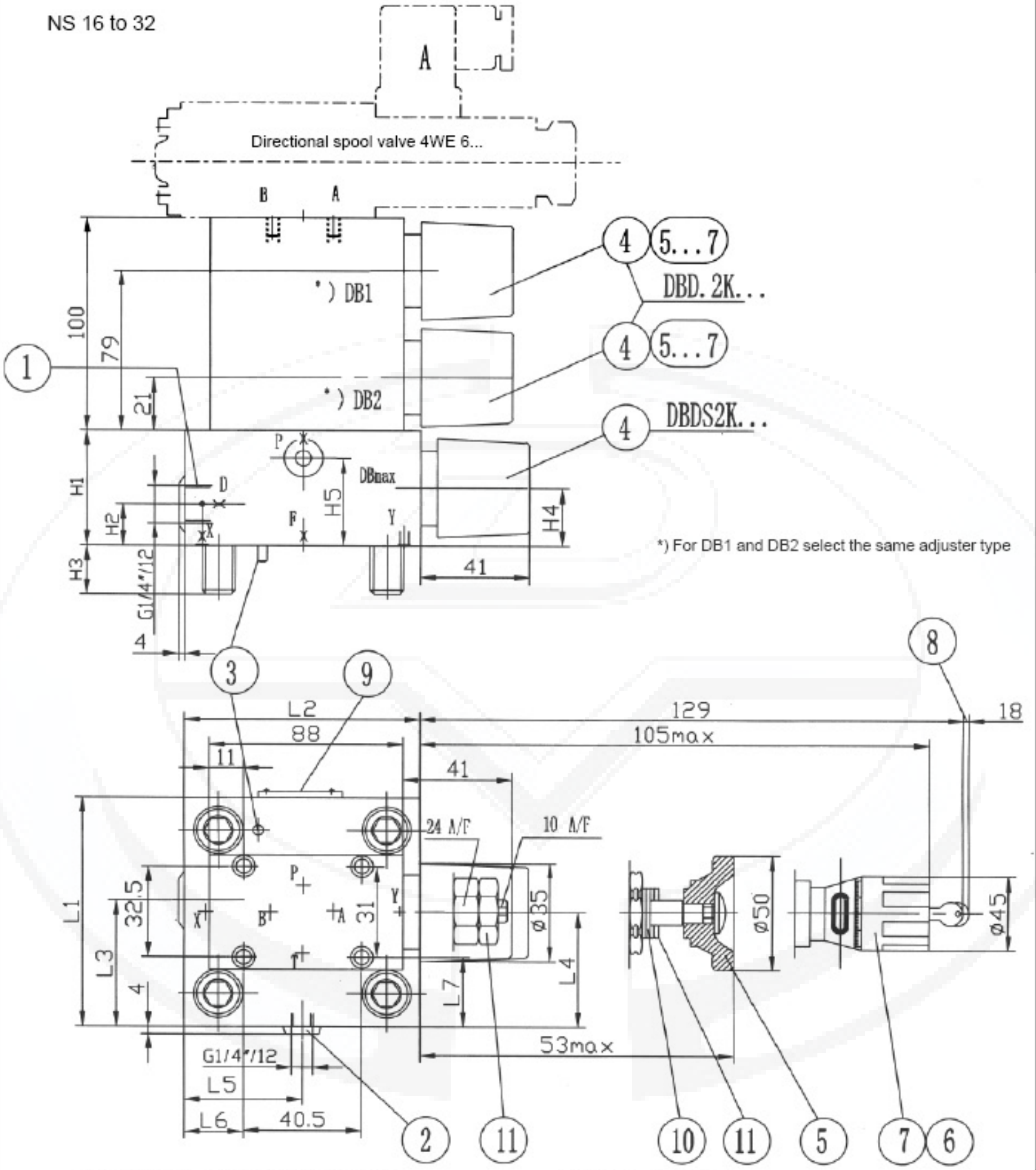


LFA..DBU 3D.-../...
Size 16, 25, 32

LFA..DBU 3D.-../...
Size 40, 50, 63

LFA..DBU 3D.-../...
Size 80, 100

Control cover with 3 manual pressure adjustments, electrically selectable **(Dimensions in mm)**

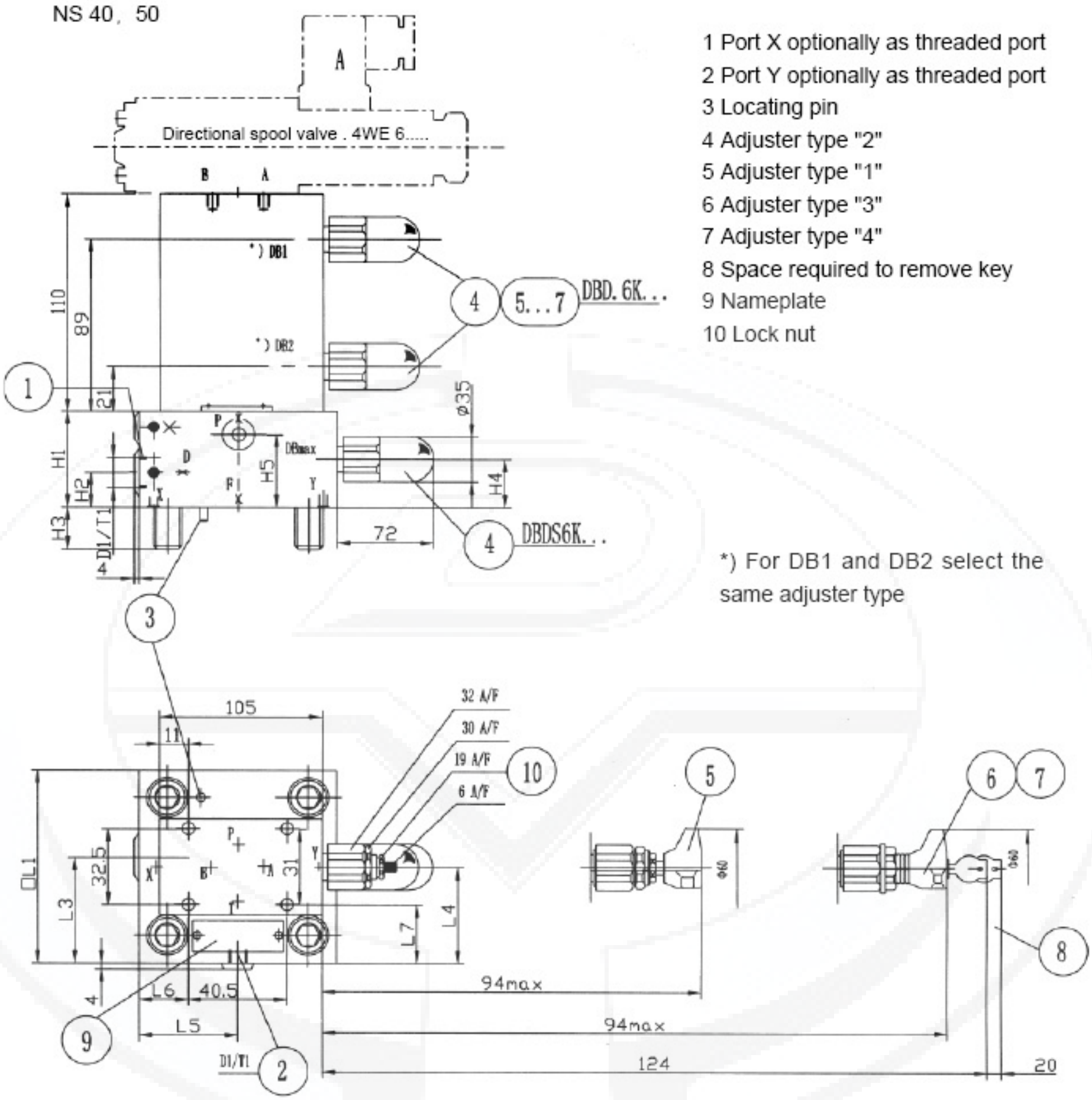


1 Port X optionally as threaded port
2 Port Y optionally as threaded port
3 Locating pin
4 Adjuster type "2"
5 Adjuster type "1"
6 Adjuster type "3"
7 Adjuster type "4"
8 Space required to remove key
9 Nameplate
10 Lock nut
11 Setting nut for max. pressure

** Orifice-ϕ

NS	X**	F**	D**	P**	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6	L7
16	0.8	1.0	0.8	1.0	40	17	15	19	28	65	80	36.5	32.5	35	7	17
25	0.8	1.0	0.8	1.0	40	19	24	19	28	85	85	49	45.5	36	8	27
32	0.8	1.2	1.0	1.0	50	26	28	26	37	100	100	56.5	53	57	30	34.5

Control cover with 3 manual pressure adjustments, electrically selectable



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 Nameplate
10 Lock nut

*) For DB1 and DB2 select the same adjuster type

** Orifice-ϕ

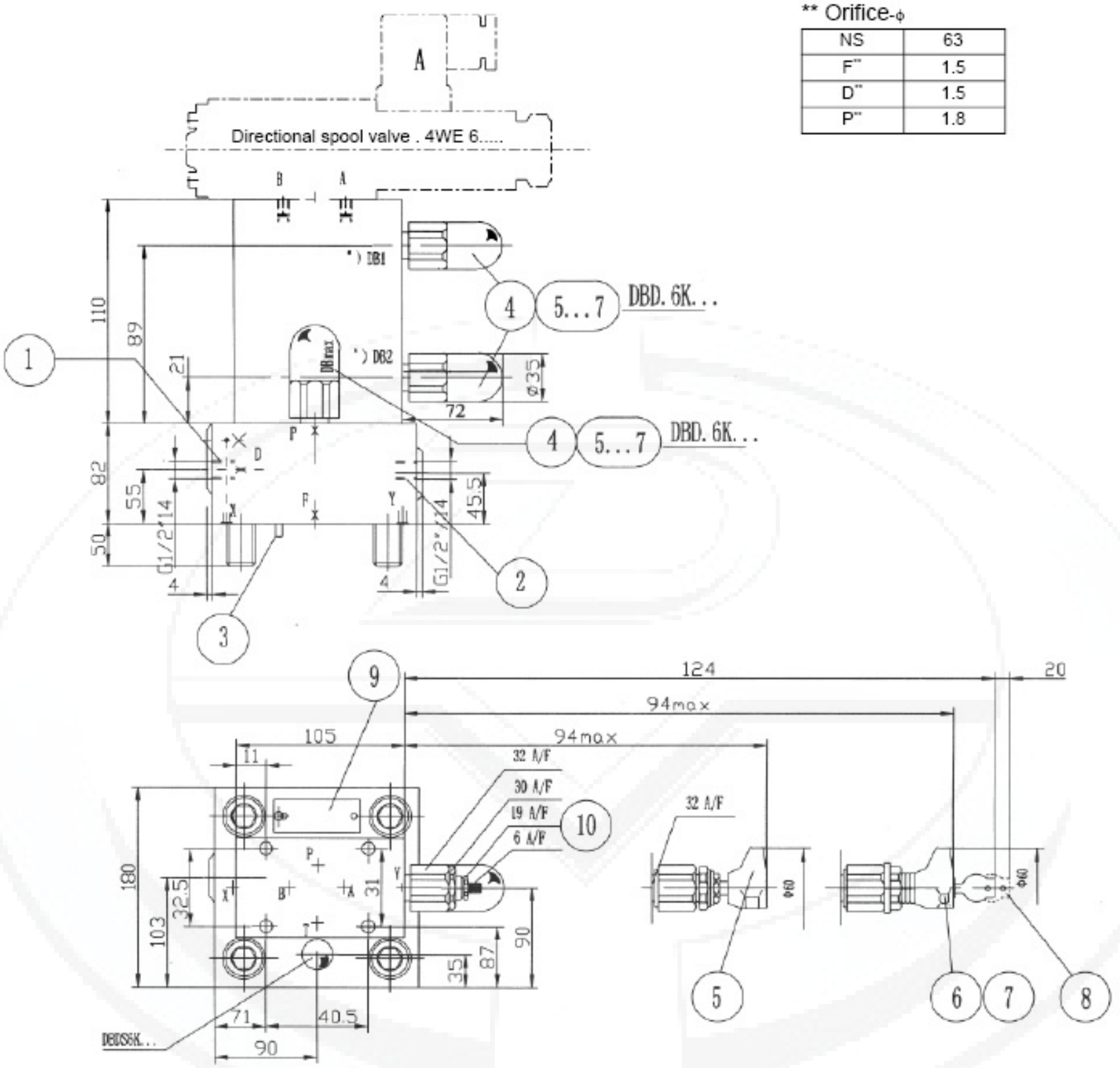
NS	F**	D**	P**	D1	H1	H2	H3	H4	H5	□L1	L3	L4	L5	L6	L7	T1
40	1.2	1.0	1.2	G1/4"	60	17	32	27	40	125	69	76	68	43.5	47	12
50	1.2	1.2	1.5	G1/2"	68	19.5	34	35	50	140	80	84	74.5	51	54.5	14

Control cover with 3 manual pressure adjustments, electrically selectable **(Dimensions in mm)**

NS 63

** Orifice-ϕ

NS	63
F**	1.5
D**	1.5
P**	1.8

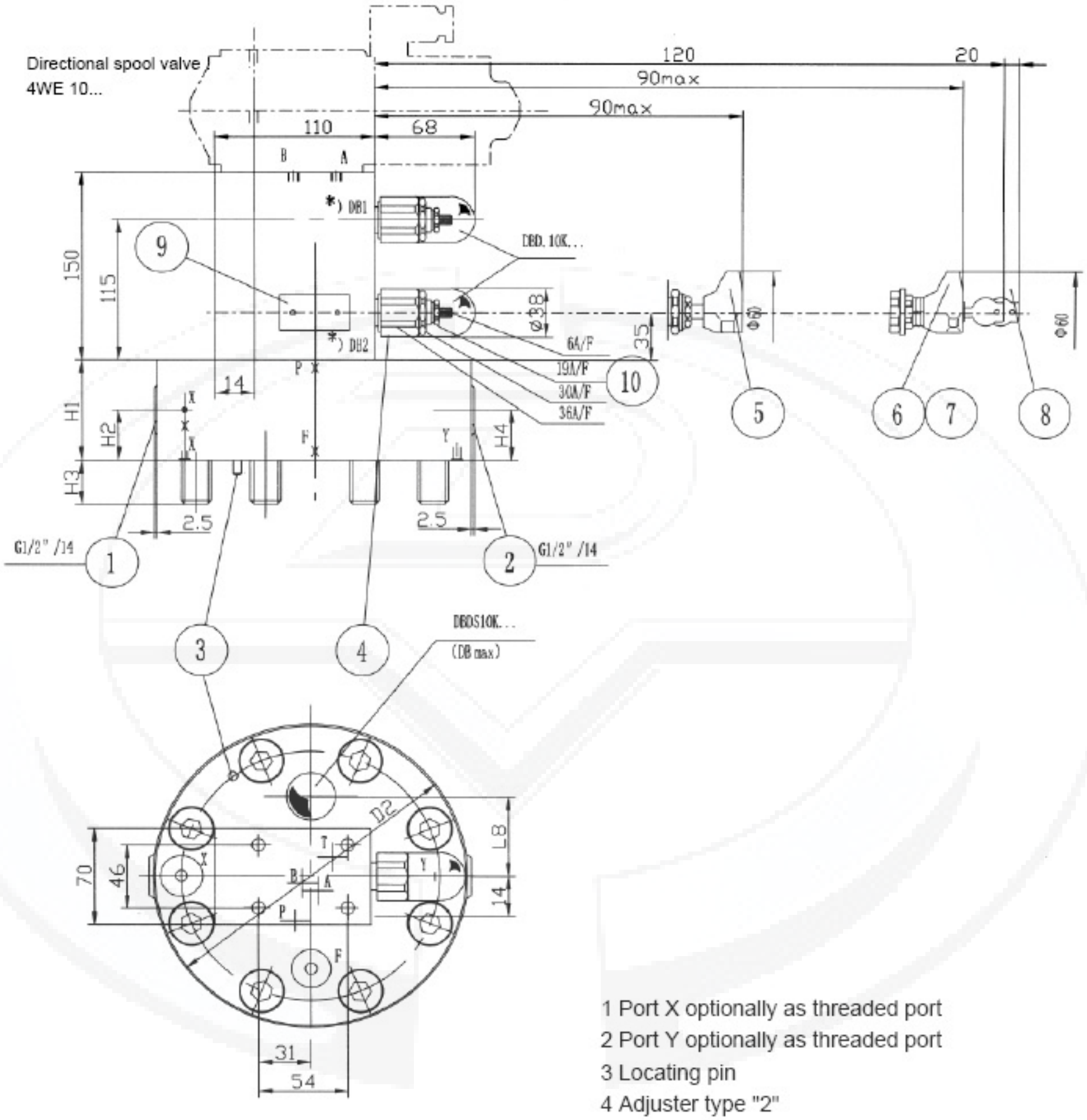


*) For DB1 and DB2 select the same adjuster type

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 Nameplate
10 Lock nut

Control cover with 3 manual pressure adjustments, electrically selectable (Dimensions in mm)

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 Nameplate
10 Lock nut

** Orifice-ϕ

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

*) For DB1 and DB2 select the same adjuster type

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

NS16 to 63

1 | 2 | 3 | 5 | 9 | 10

LFA | | — | 6X | B | /

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

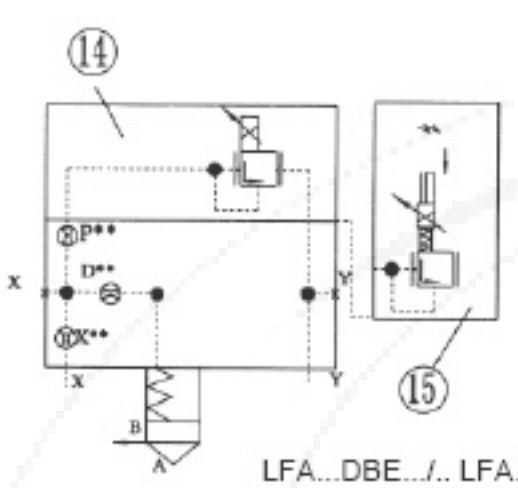
For mounting a proportional pressure relief valve
without electrical feedback = DBE
with electrical feedback = DBETR

Further details in clear text

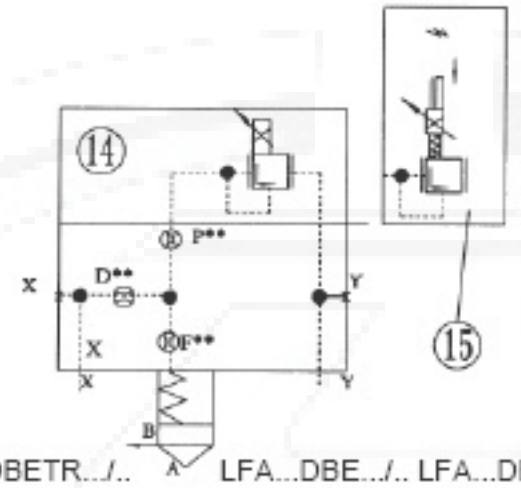
No code = Mineral oils
V = Phosphate ester

B = Technology of Beijing Huade Hydraulic

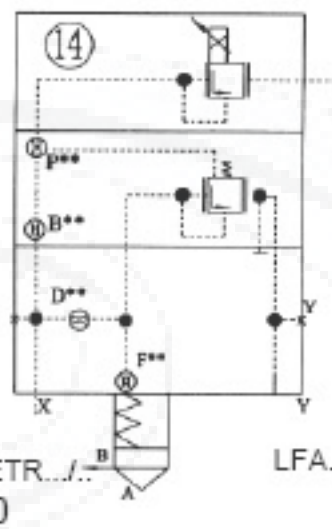
6X= Series 60 to 69
(60 to 69 unchanged installation and connection dimentions)



LFA...DBE.../.. LFA...DBETR.../..
NS 16



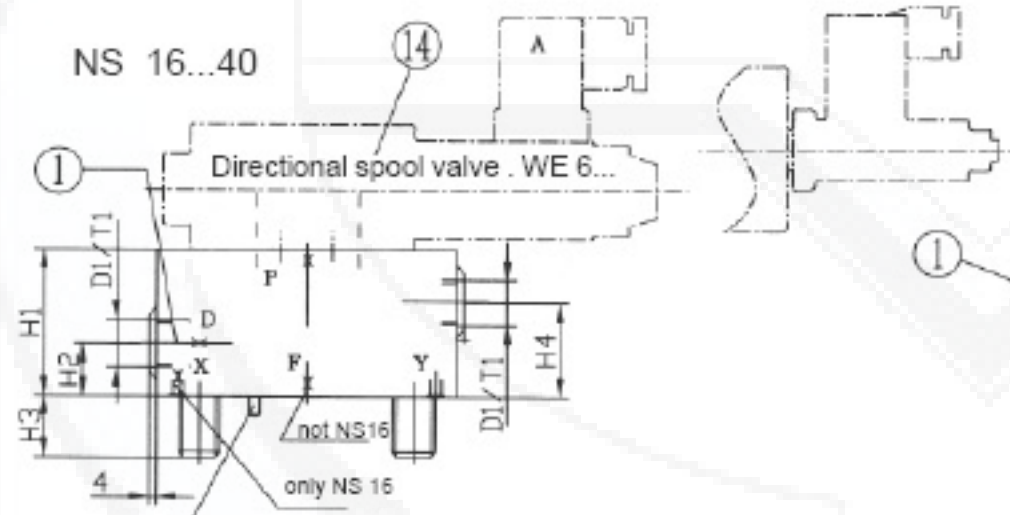
LFA...DBE.../.. LFA...DBETR.../..
NS 25, 32, 40

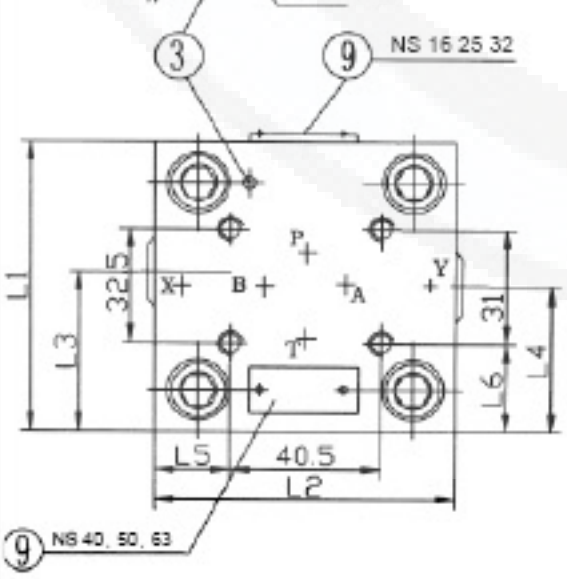


zero pressure

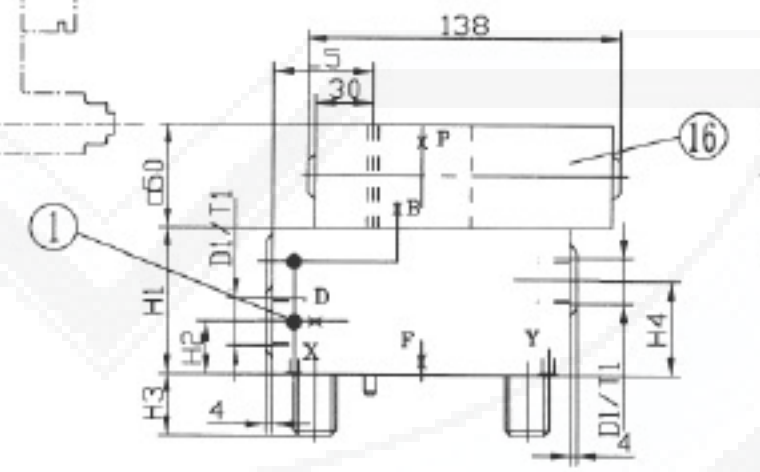
LFA...DBE.../.. LFA...DBETR.../..
NS 50, 63

NS 16...40





NS 50, 63



1 Port X optionally as threaded port
2 Port Y optionally as threaded port
3 Locating pin
9 Nameplate
14 Proportional pressure relief valve
type DBET-5XB/...see page 35
15 Proportional pressure relief valve
with feedback
type DBETR-1XB/...(see page 35)
16 Pressure relief valve NS 6
(is included within the scope of
supply)

** Orifice-ϕ

NS	16	25	32	40	50	63
B"	-	-	-	-	0.8	0.8
D"	0.8	0.8	0.8	1.0	2.0	2.0
X"	0.8	-	-	-	-	-
F"	-	0.8	1.0	1.2	1.2	1.5
P"	1.0	1.0	1.0	1.5	1.0	1.0
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	22.5	30	43.5	51	71
L6	17	27	34.5	47	54.5	74.5
T1	12	12	12	14	14	14

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

NS 16 to 100

1	2	3	5	6	9	10
LFA			6X	B		*

Further details in clear text

No code = Mineral oils
V = Phosphate ester

NS 16=16 NS 50 =50
NS 25=25 NS 63 =63
NS 32=32 NS 80 =80
NS 40=40 NS 100=100

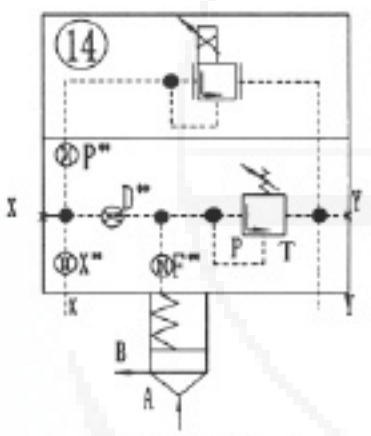
For mounting a proportional pressure relief valve
without electrical feedback = DBE
with electrical feedback = DBETR

Series 60 to 69 = 6X
(60 to 69 unchanged installation and connection dimentions)

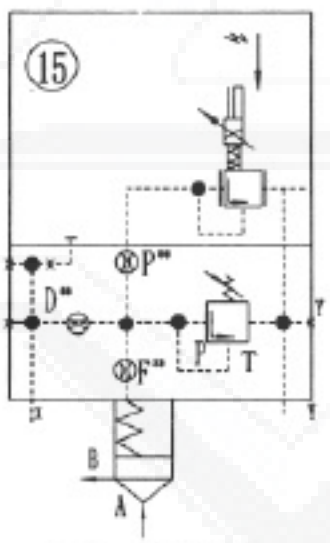
Technology of Beijing Huade Hydraulic = B

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

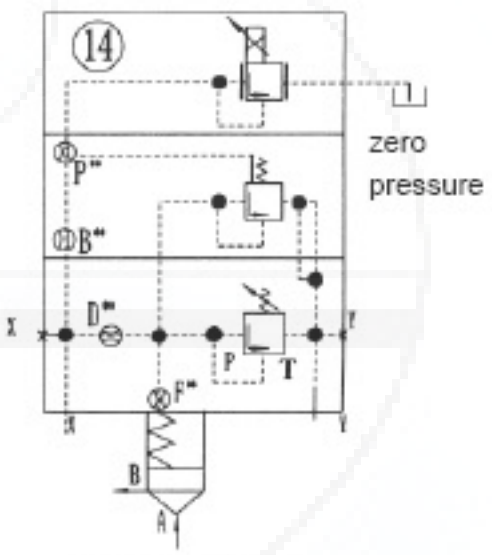
NS 16, 25, 32	NS 40, 50, 63, 80, 100
050=5.0MPa	025=2.5MPa
100=10.0MPa	050=5.0MPa
200=20.0MPa	100=10.0MPa
315=31.5MPa	200=20.0MPa
420=42.0MPa	315=31.5MPa
	400=40.0MPa



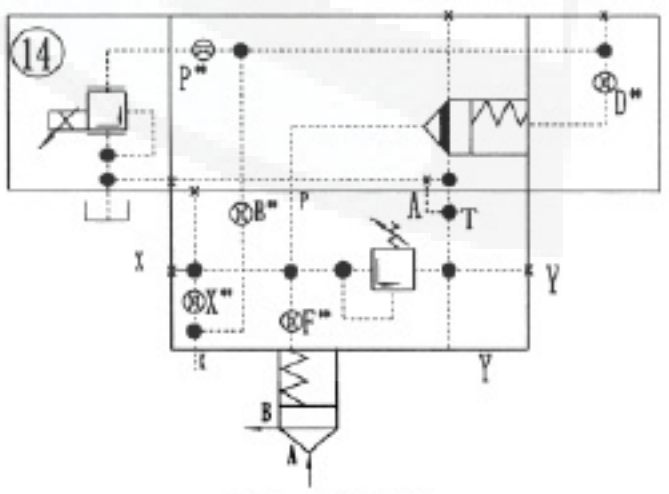
LFA...DBEM.../..
LFA...DBEMTR.../..
NS 16, 25, 32



LFA...DBEM.../..
LFA...DBEMTR.../..
NS 40



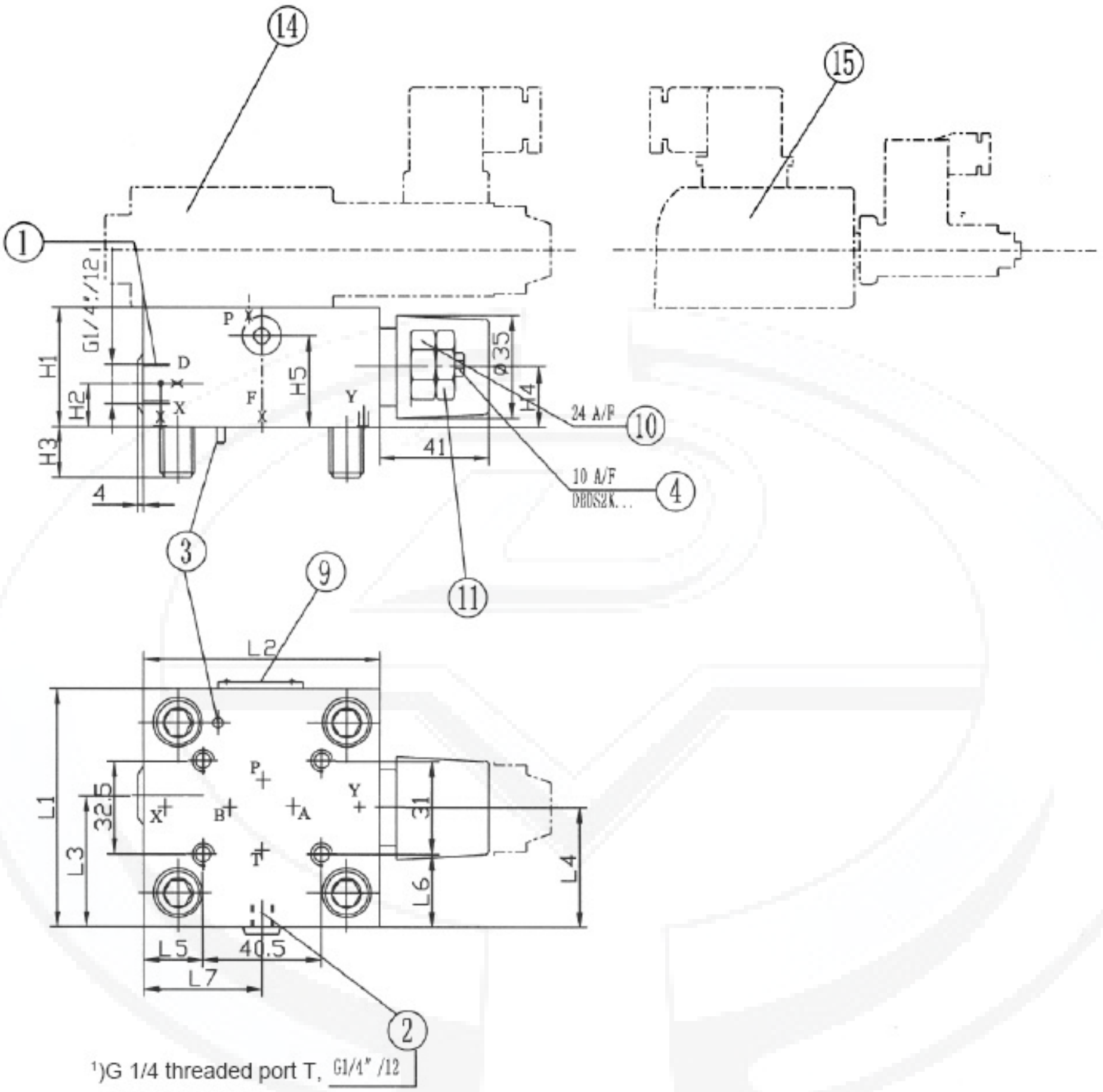
LFA...DBEM.../..
LFA...DBEMTR.../..
NS 50, 63



LFA...DBEM.../..
LFA...DBEMTR.../..
NS 80,100

Control cover with 3 manual pressure adjustments, electrically selectable **(Dimensions in mm)**

NS 16 to 32



[1])G 1/4 threaded port T, G1/4" /12
special poppet
Ports T and Y - zero pressure

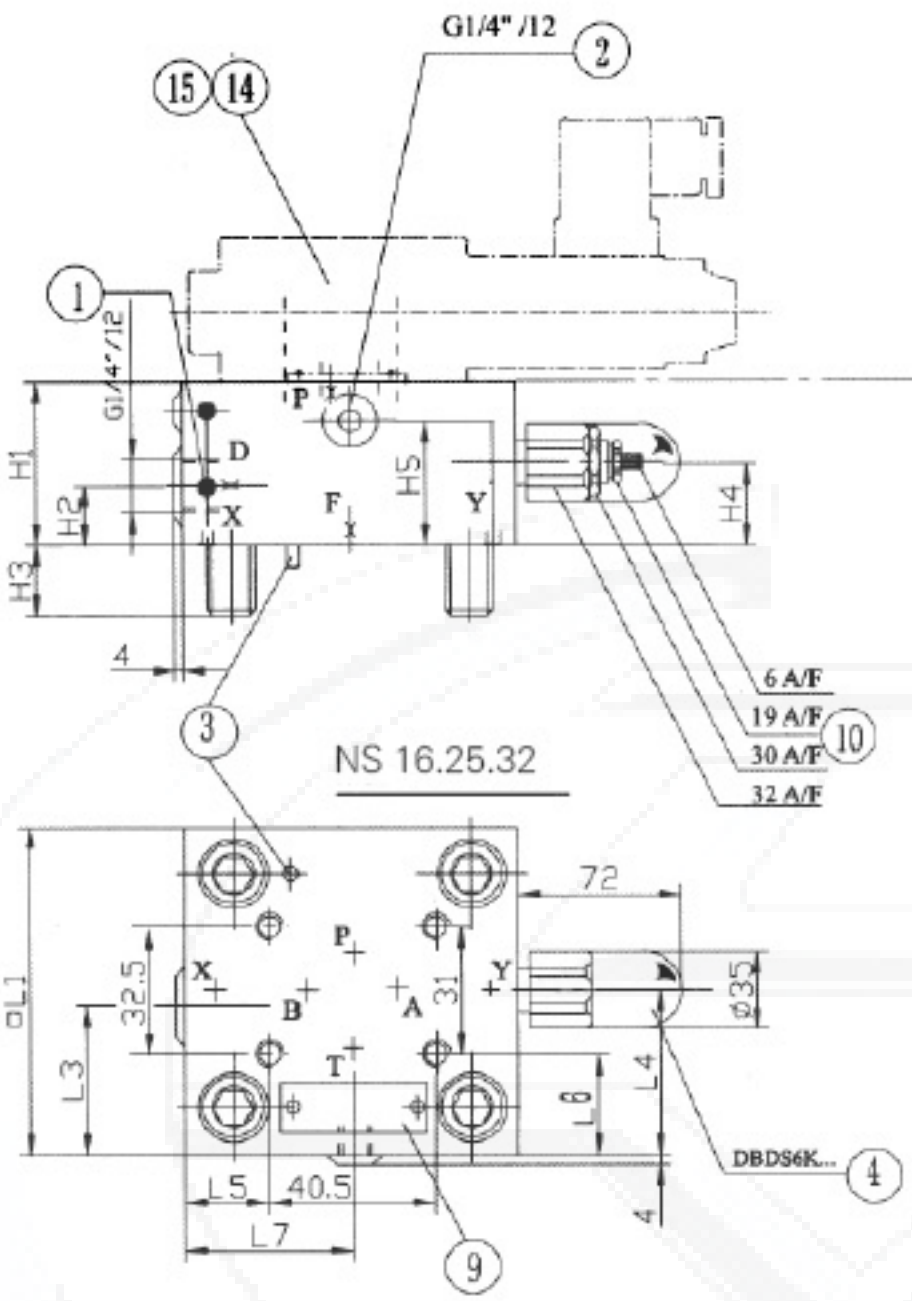
1 Port X optionally as threaded port
2 Port Y optionally as threaded port
3 Locating pin
4 Adjuster type "2"
9 Nameplate
10 Lock nut
11 The Max.settable pressure
14 Proportional pressure relief valve type DBET-5XB/...see page 34
15 Proportional pressure relief valve with feed-back type DBETR-1XB/...(see page 34)

** Orifice-ϕ

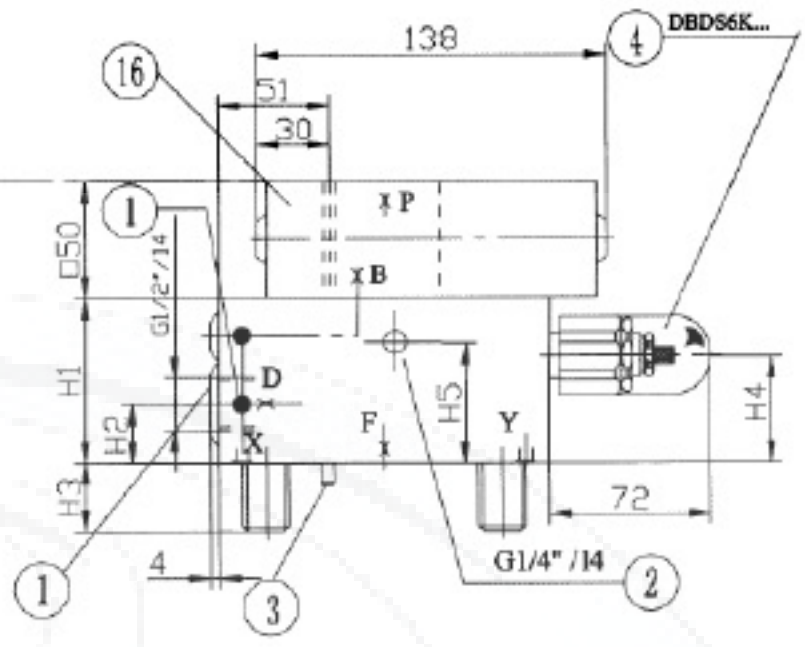
NS	X**	F**	D**	P**	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6	L7
16	0.8	1.0	0.8	1.0	40	17	15	19	28	65	80	36.5	32.5	7	17	35
25	0.8	1.0	0.8	1.0	40	19	24	19	28	85	85	49	45.5	8	27	36
32	0.8	1.2	1.0	1.0	50	26	28	26	37	100	100	56.5	53	30	34.5	57

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

NS 40



NS 50



1 Port X optionally as threaded port
2 Port Y optionally as threaded port
3 Locating pin
4 Adjuster type "2"
9 Nameplate
10 Lock nut
14 Proportional pressure relief valve
type DBET-5XB/G24 (NS 40)
type DBET-5XB/Y G24-1 [1] (NS 50)
(see page 34)
15 Proportional pressure relief valve with feedback
type DBETR-1XB/... (see page 34)
type DBETR-1XB/...409 [2] (NS 50)
16 Pressure relief valve NS 6
(is included within the scope of supply)

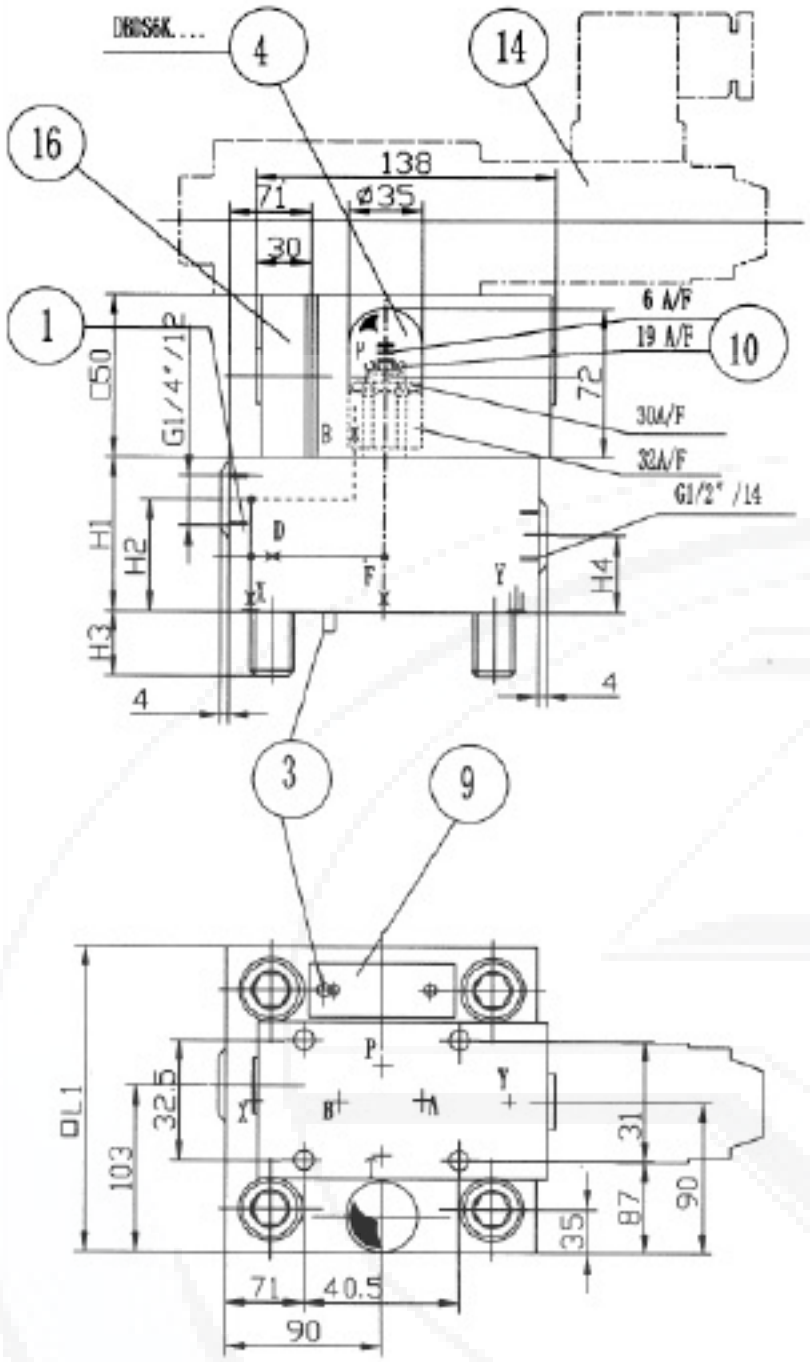
[1] G 1/4" threaded port T, special poppet
[2] 409 = G 1/4" threaded port T,

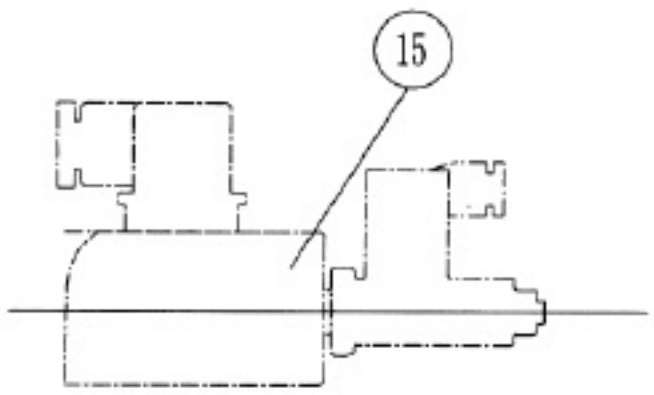
** Orifice-ϕ

NS	40	50
B**	-	0.8
F**	1.2	1.2
D**	1.0	2.0
P**	1.5	1.0
H1	60	68
H2	20	19.5
H3	32	34
H4	27	35
H5	40	50
□L1	125	140
L3	68	90
L4	76	84
L5	43.5	51
L6	47	54.5
L7	68	74.5

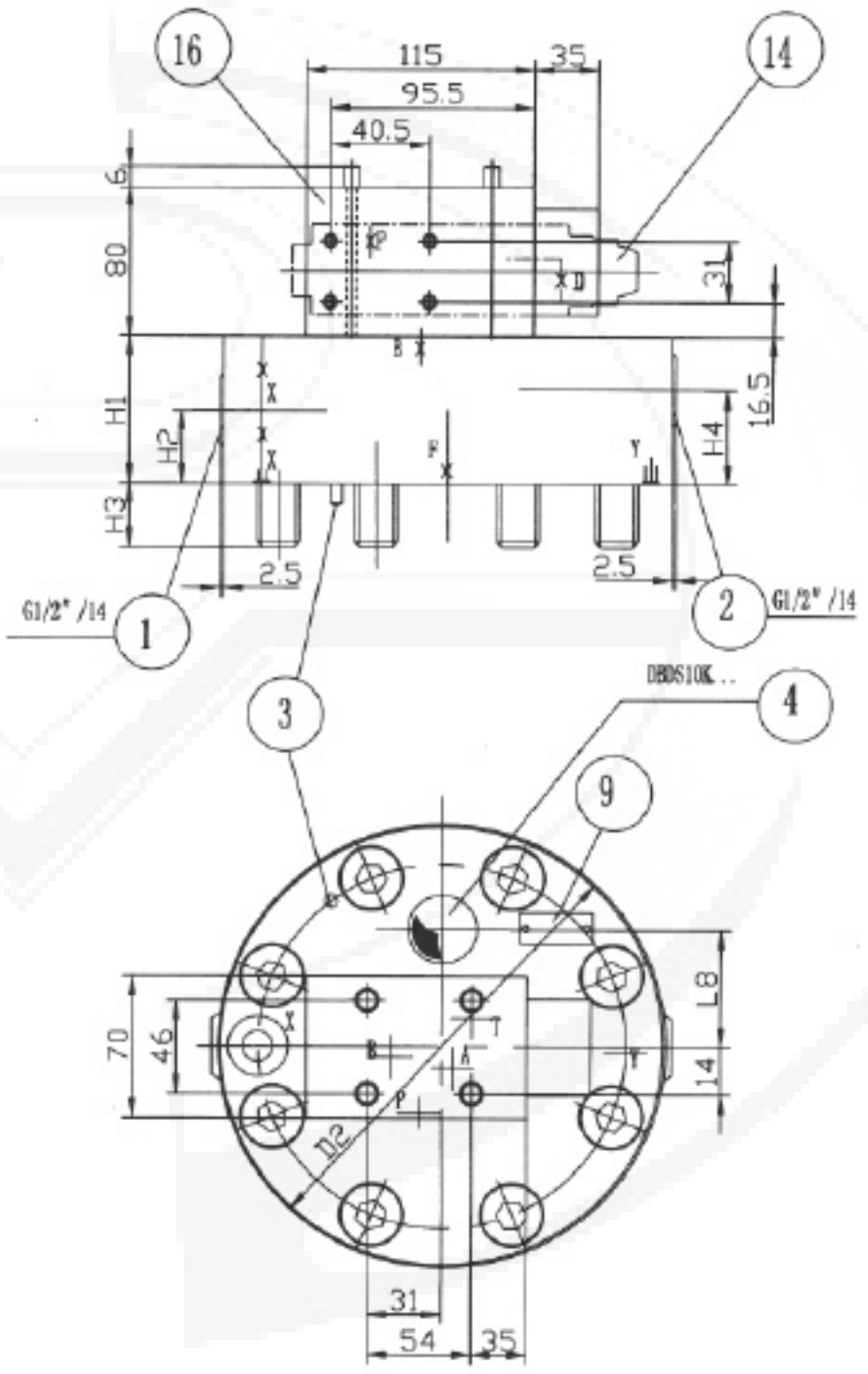
Control cover with 3 manual pressure adjustments, electrically selectable **(Dimensions in mm)**

NS 63





NS 80,100



1 Port X optionally as threaded port
2 Port Y optionally as threaded port
3 Locating pin
4 Adjuster type "2"
9 Nameplate
10 Lock nut
14 Proportional pressure relief valve
type DBET-5XB/G24 (NS 40)
type DBET-5XB/Y G24-1 3) (NS 50)
(see page 34)
15 Proportional pressure relief valve with feedback
type DBETR-1XB/...(NS 40)(see page 34)
type DBETR-1XB/...409 [2] (NS 50)
16 Pressure relief valve NS 6
(included within the scope of supply)

** Orifice-ø

NS	B**	X**	F**	D**	P**	H1	H2	H3	H4	D2	□L1	L8
63	0.8	-	1.5	2.0	1.0	82	55	50	45	-	180	-
80	0.8	3.0	2.5	0.8	1.0	100	30	45	52	250	-	75
100	0.8	3.5	3.0	0.8	1.0	100	30	51	52	300	-	85

[1] G 1/4" threaded port T, special poppet
[2] 409 = G 1/4" threaded port T

Pressure reducing function

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

NS 16 to 63

LC		DR			6X	B		*

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

Cracking pressure approx. 0 MPa (without spring) = 00
Cracking pressure approx. 0.2 MPa = 20
Cracking pressure approx. 0.3 MPa = 30
Cracking pressure approx. 0.4 MPa (standard spring) = 40
Cracking pressure approx. 0.5 MPa = 50
Cracking pressure approx. 0.8 MPa = 80

E = Spool without fine control grooves(only for size 16~40)
D = Spool with fine control grooves

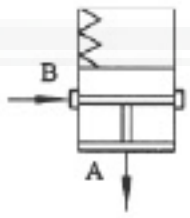
6X = Series 60 to 69
(60 to 69: unchanged installation and connection dimensions)

B = Technology of Beijing Huade Hydraulic

No code = Mineral oils
V = Phosphate ester

Further details in clear text

Symbol: cartridge valves

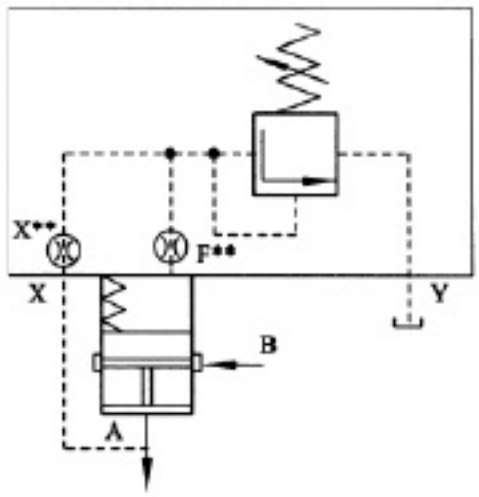


Type LC..DR..

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

Pressure fluid		Mineral oil for NBR seals or phosphate ester for FPM sesls					
Viscosity range (mm²/s)		2.8 to 380					
Pressure fluid temperature range (°C)		-20 to +80					
Max. operating pressure for Ports A and B (MPa)		up to 31.5					
Size		16	25	32	40	50	63
Max. flow L/min	LC...DR20.6XB/..	40	80	120	250	400	800
(recommeded)	LC...DR40.6XB/..	60	120	180	400	600	1000
Sandwich plate is reguired (for big	LC...DR50.6XB/..	100	200	300	650	800	1300
compression spings) see page 76	LC...DR80.6XB/..	150	270	450	900	1100	1700

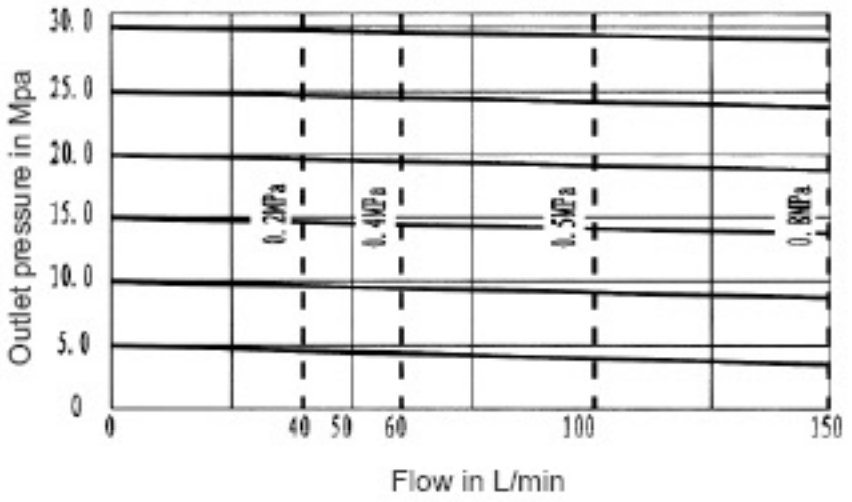
Attention!
2-way cartridge valves
LC..DR... are combined with control covers.

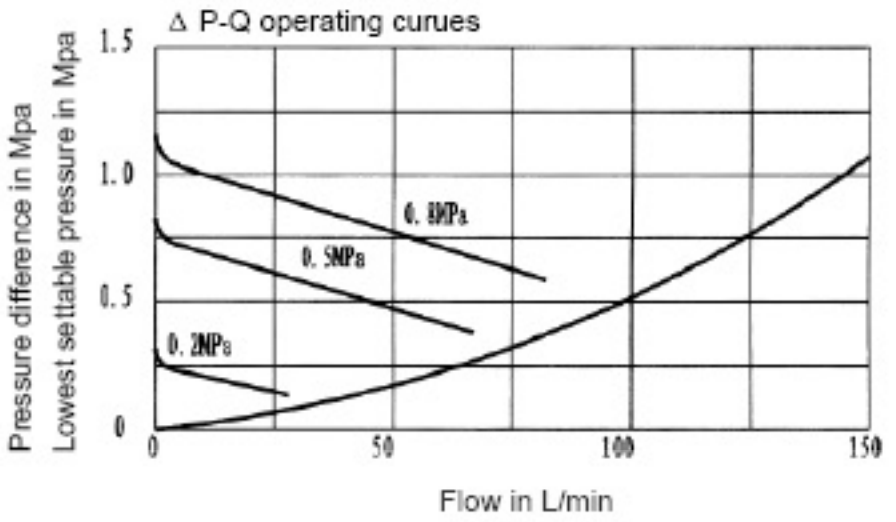


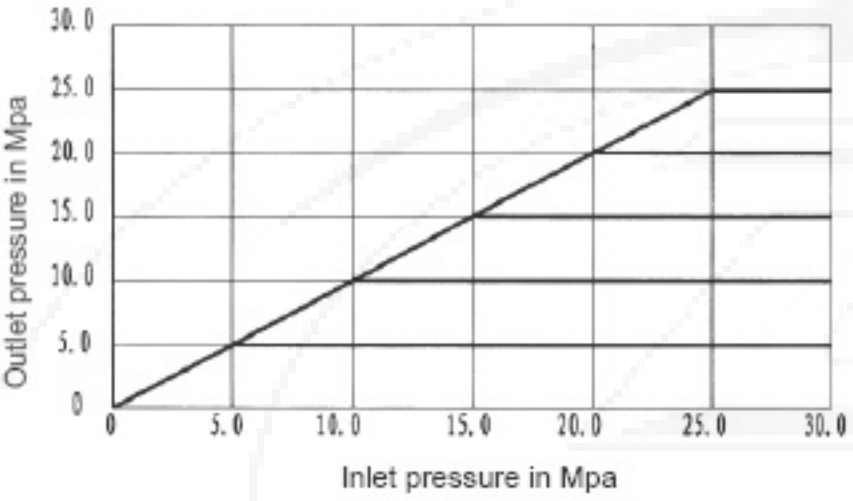
Pressure reducing function
Normally open
e.g.
Type LFA...DB...
Type LC..DR40...

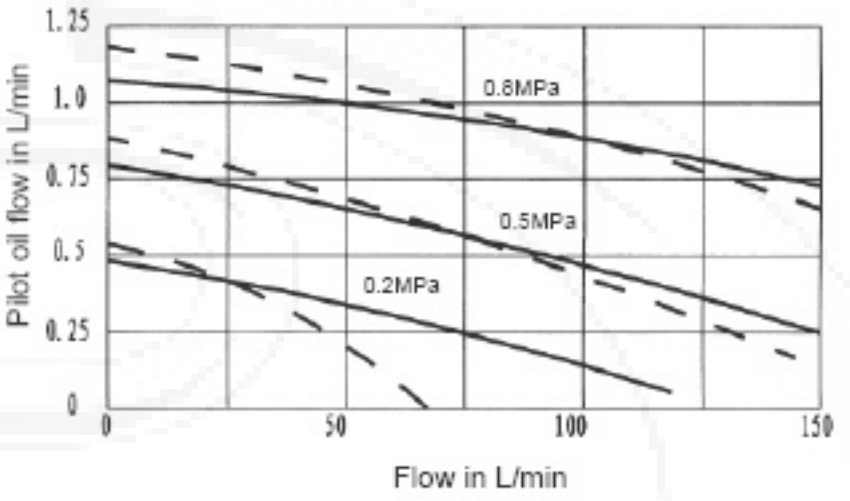
Characteristic curves (measured at v = 41 ²mm /s and t = 50 ° C)

LC16DR...6X



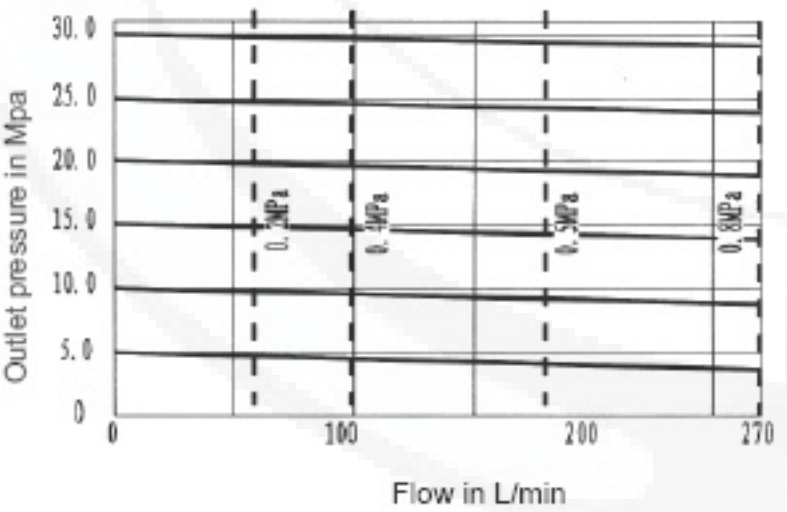


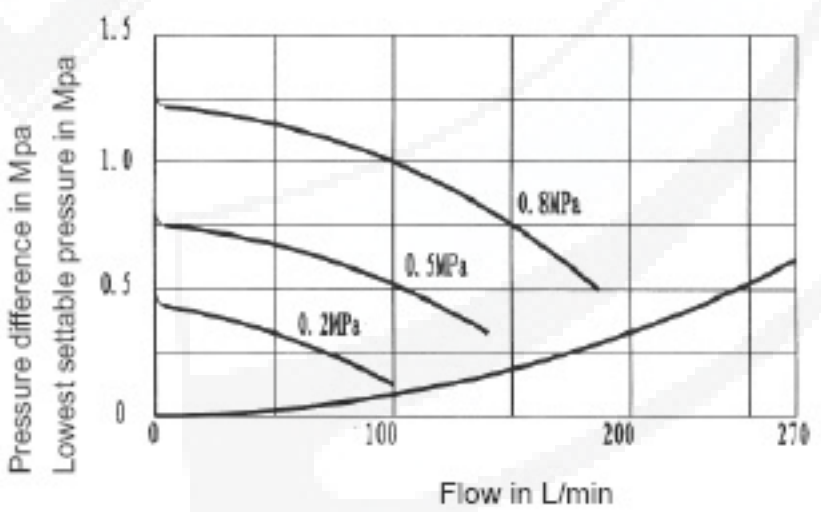


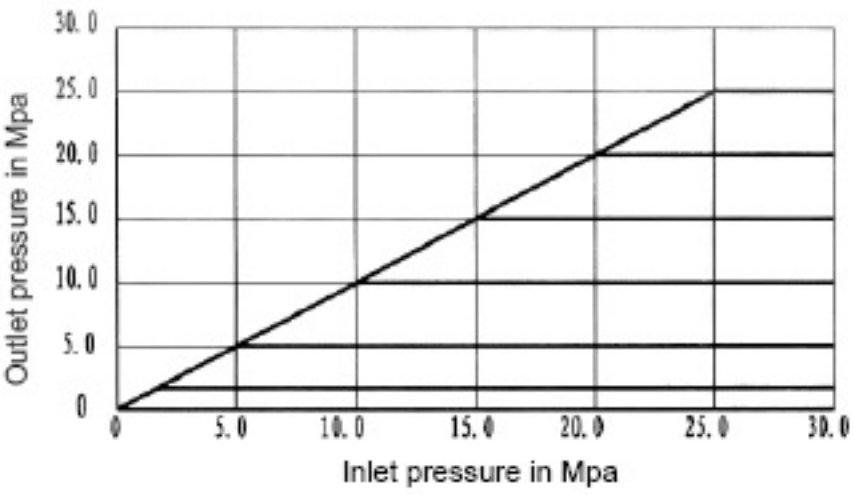


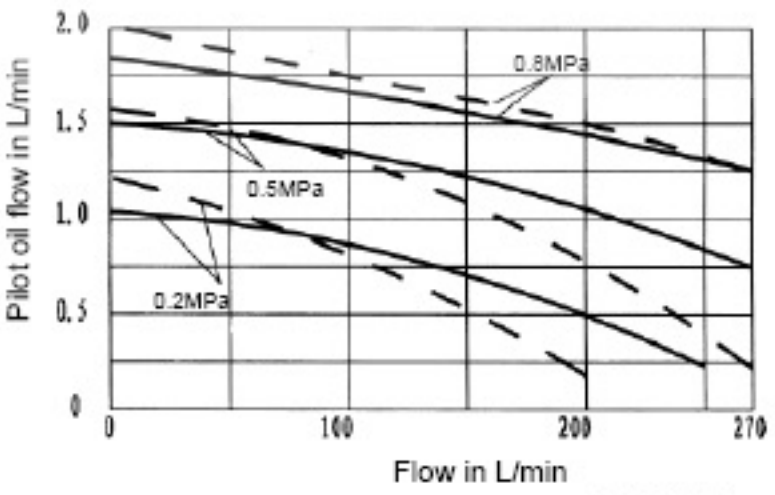
Measured at: P_A=3.0MPa
—— P_E=5.0MPa
------ P_E=13.0MPa

LC25DR...6X





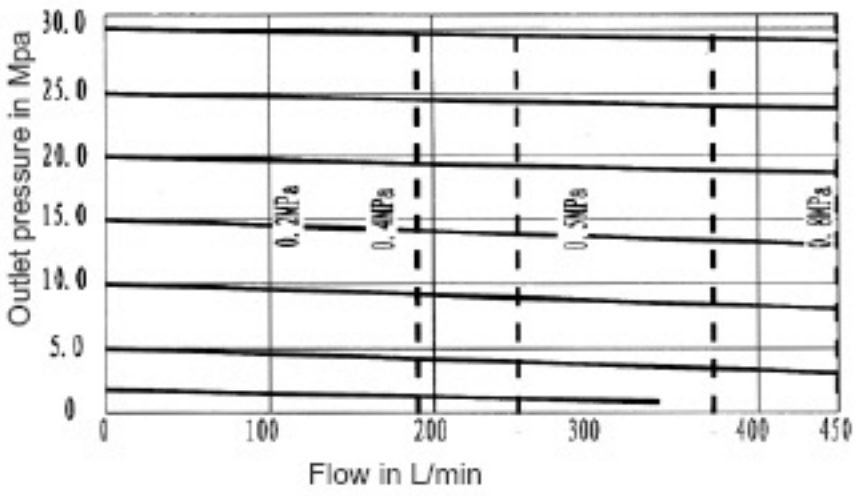


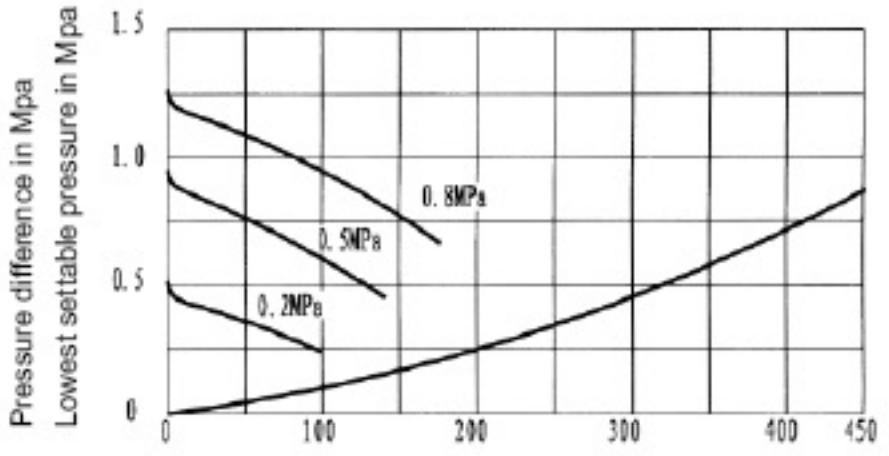


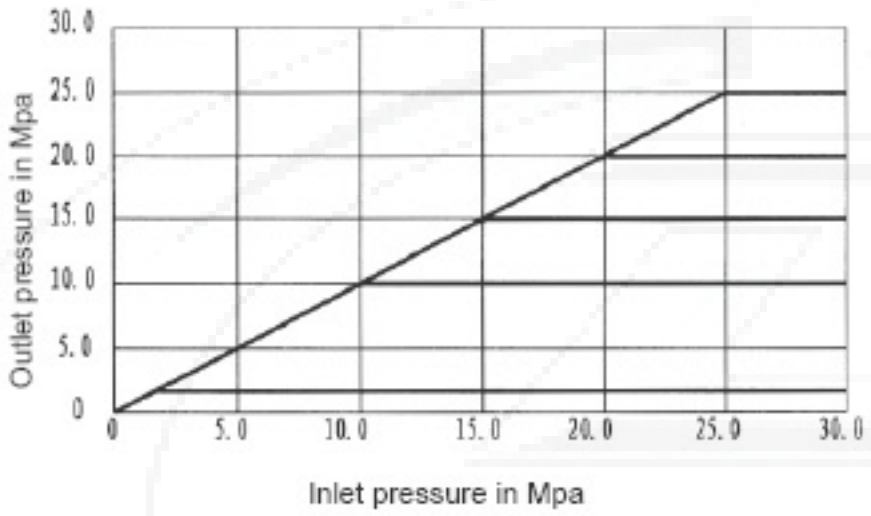
Measured at: P_A=3.0MPa
—— P_E=5.0MPa
------ P_E=13.0MPa

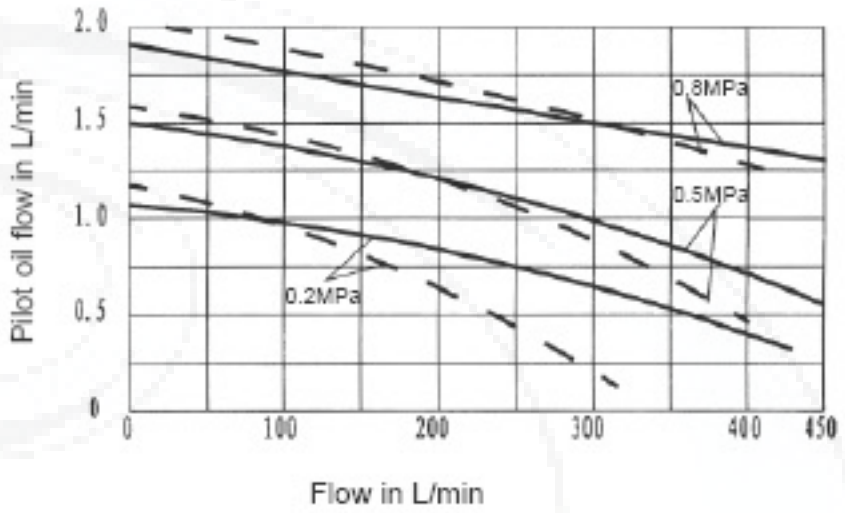
Characteristic curves (measured at v = 41 mm ² /s and t = 50 ° C)

LC32DR...6X



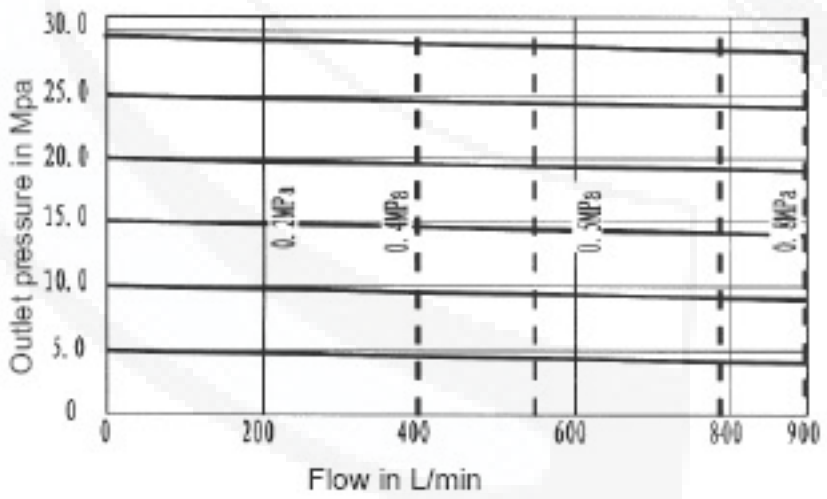


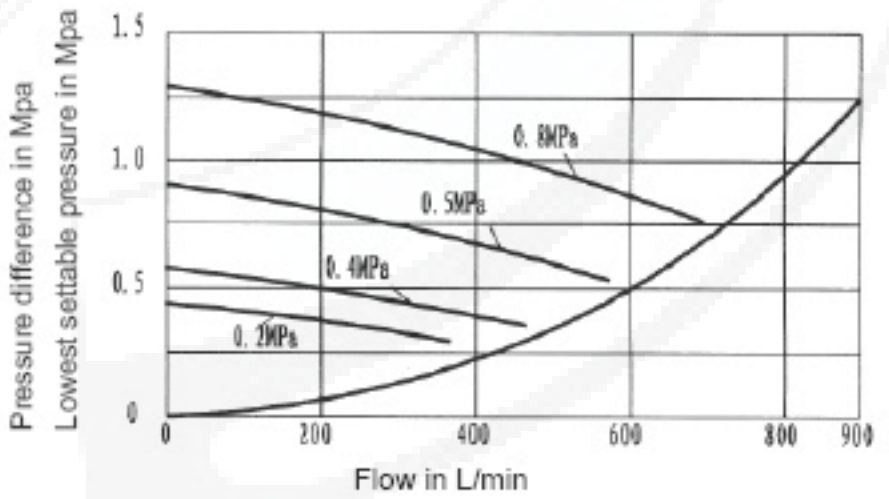


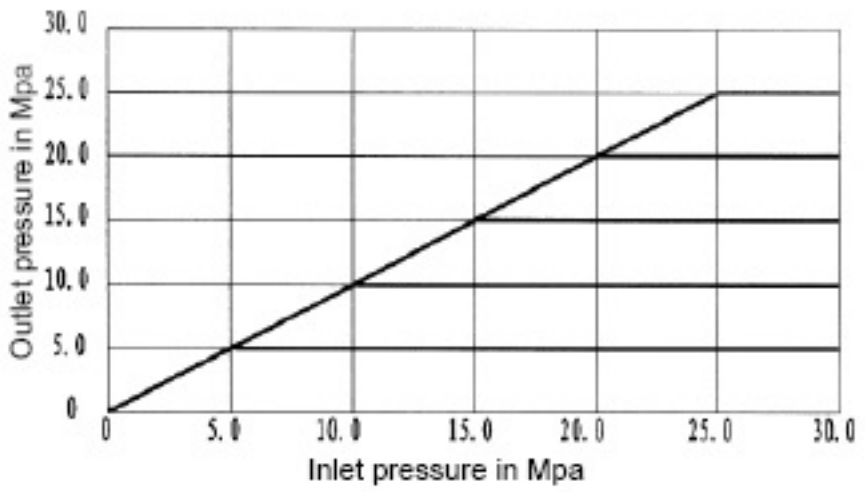


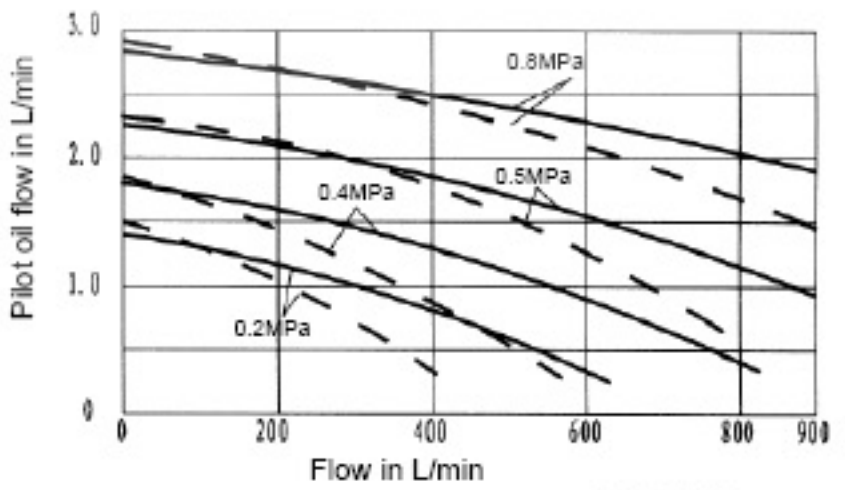
Measured at: —— P_A=3.0MPa, P_E=5.0MPa; ------ P_E=13.0MPa

LC40DR...6X





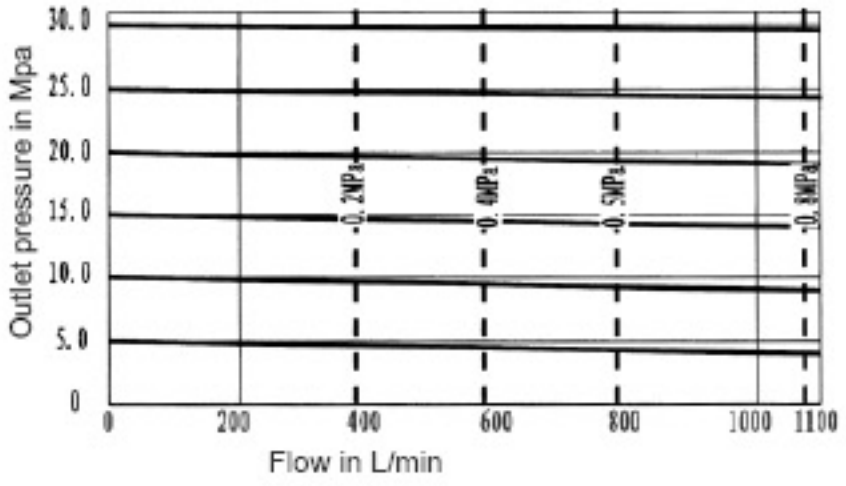


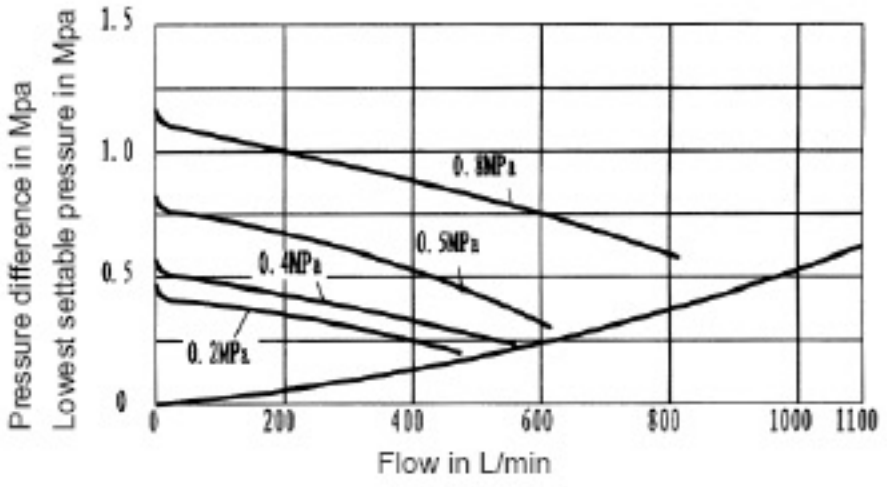


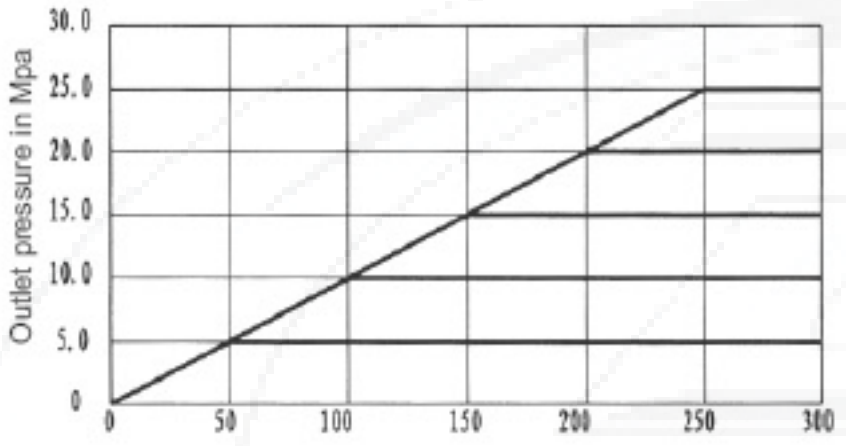
Measured at: —— P_A=3.0MPa, P_E=5.0MPa; ------ P_E=13.0MPa

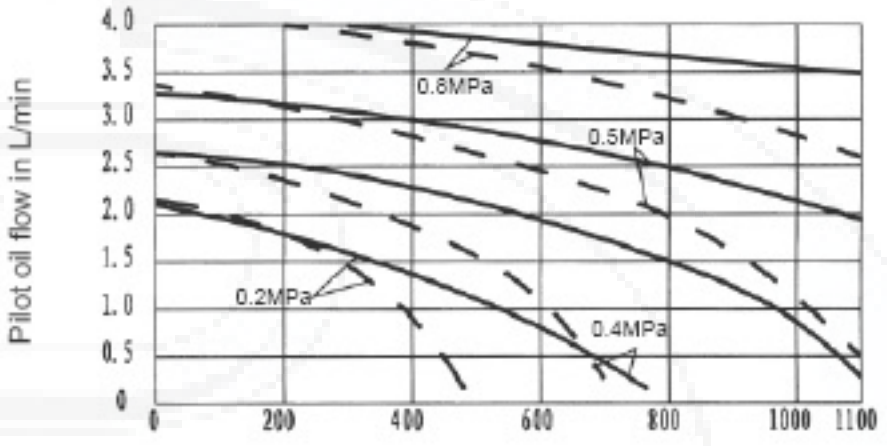
Characteristic curves (measured at v = 41 mm² /s and t = 50 ° C)

LC50DR...6X



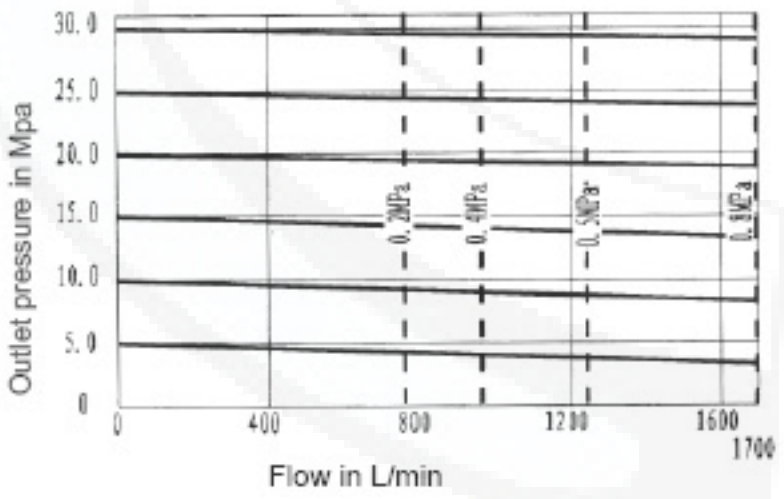


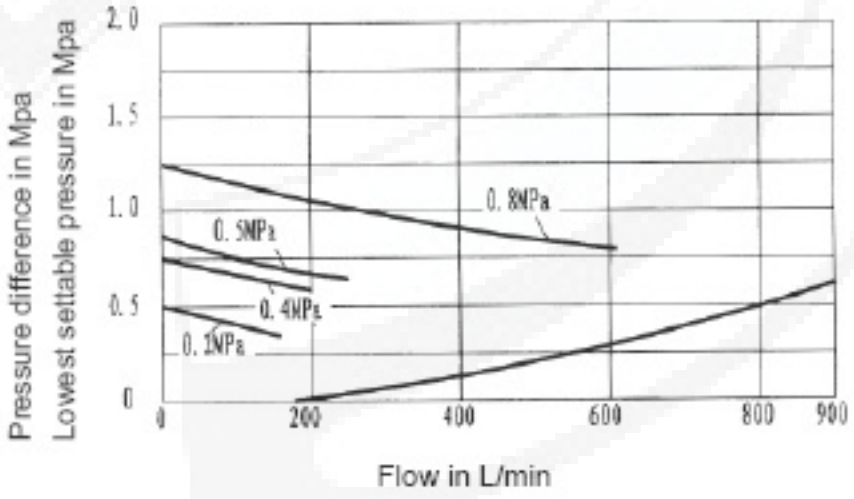


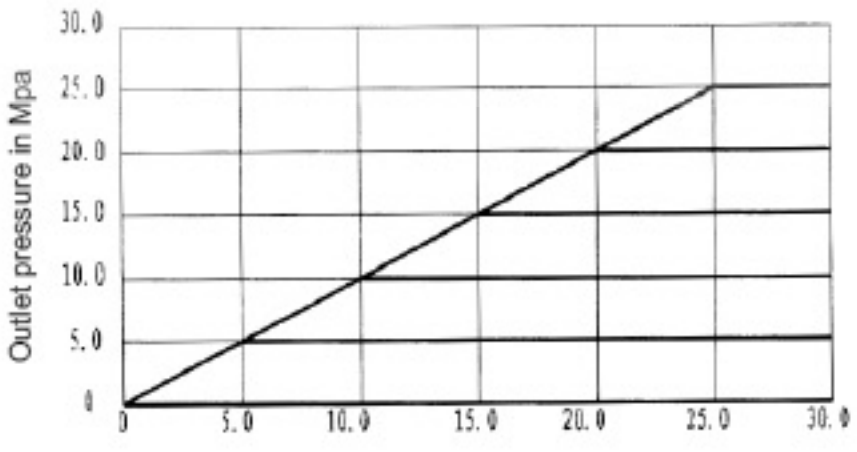


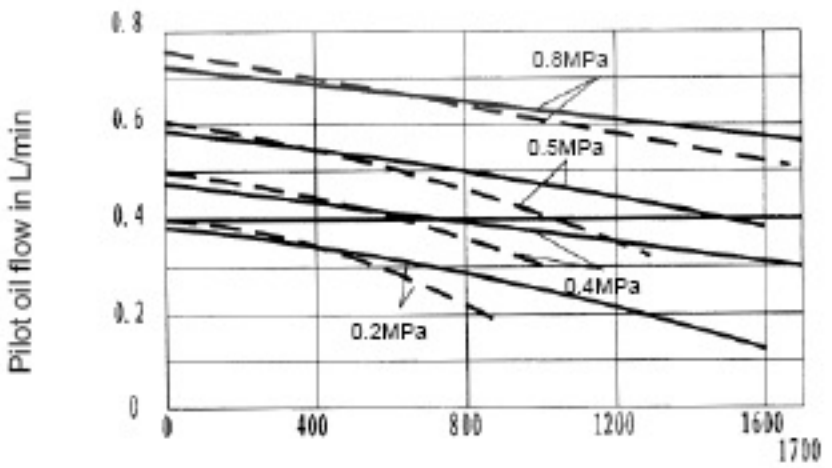
Measured at: P_A=3.0MPa, P_E=5.0MPa, P_E=13.0MPa

LC63DR...6X









Measured at: P_A=3.0MPa, P_E=5.0MPa, P_E=13.0MPa

Compression springs type LC...16...100(series 6XB),for DB and DR

Ns	Material no.	Spring dimensions in mm	Type symbol
16	097 174	9.8/1.8 × 32/9	20
	097 175	9.9/1.7 × 34/9	30
	097 176	9.8/1.8 × 35/9	40
	012 871	9.2/2.1 × 60.5/15.5	50*
	012 871	9.2/2.1 × 60.5/15.5 (with washer 4.5)	80*
25	097 164	14.1/2.4 × 38.5/7	20
	097 165	14.1/2.4 × 45/8	40
	097 166	13.6/3 × 75.5/14.5	50*
	001 277	13.6/3 × 75.5/14.5 (with washer 6)	80*
32	097 177	17.4/3 × 45/7	20
	097 178	17.5/3 × 50/7	40
	001 455	16.5/4 × 98/15	50*
	001 455	16.5/4 × 98/15 (with washer 6)	80*
40	097 179	24.2/4 × 62.5/6.5	20
	097 180	24.1/4.25 × 68/7.5	40
	011 199	22.8/5.6 × 140/15.5	50*
	011 199	22.8/5.6 × 140/15.5 (with washer 7.5)	80*
50	097 181	29.2/5 × 76.5/7.5	20
	097 182	29.2/5 × 86.5/7.5	40
	015 962	28/3 × 200/16.5	50*
	015 962	28/3 × 200/16.5 (with washer 14)	80*
63	097 177	37.6/6.5 × 102.5/8	20
	097 178	37.6/6.5 × 115/8	40
	001 455	35.5/8.5 × 257/19.5	50*
	001 455	35.5/8.5 × 257/19.5 (with washer 14)	80*
80	012 353	48.5/8 × 138/7.5	20
100	012 385	52.3/9.5 × 176/9.5	20

1) These springs require an additional installation length. When using standard control covers an additional sandwich plate type LFAS...D22-6XB must be used.

Exception:

Control cover type "D" can be replaced by type LFA . D8-6XB/F (no sandwich plate required).

O-rings dimensions for ports X, Y, Z2 (included within the scope of supply)

Nominal size	Dimensions in mm	Mineral oils(NBR)	Phospate ester(FPM)
16	7.65 × 1.78	004 491	006 585
25	9.25 × 1.78	007 111	009 097
32	10.82 × 1.78	008 937	008 941
40、50	12.37 × 2.62	004 489	008 949
63	18.72 × 2.62	009 245	002 045

Seal kits for cartridge and control cover

Seal kits for control cover type LC...DR.../.. (NS 16 to 63)

Seal kit for	Material no.		Seal kit for	Material no.	
	NBR	FPM		NBR	FPM
LC16DR..6XB/..	314 352	314 353	LC40DR..6X/..	314 055	314 064
LC25DR..6XB/..	314 354	314 355	LC50DR..6X/..	314 056	314 065
LC32DR..6XB/..	314 356	314 357	LC63DR..6X/..	314 057	314 066

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

Seal kit for \ NS		Material no.					
		16		25		32	
		NBR	FPM	NBR	FPM	NBR	FPM
..DR..*	Pilot ..DR6..	311273 (NBR) 311276 (FPM)					
..DRW..*	Control ..DR.. cover LFA..DRW..	313 701	313 702	313 703	313 704	313 705	313 706
	Pilot ..ZDR6..	314298 (NBR) 314299 (FPM)					
DREV., ..DREWV..;..DREZ., ..DREWZ..				313 885	313 886	313 887	313 888

Seal kit for \ NS		Material no.					
		40		50		63	
		NBR	FPM	NBR	FPM	NBR	FPM
..DR..*	Pilot ..DR6..	311273 (NBR) 311276 (FPM)					
..DRW..*	Control ..DR.. cover LFA..DRW..	313 889	313 890	313 889	313 890	313 891	313 892
	Pilot .ZDR6..	314298 (NBR) 314299 (FPM)					
DREV., ..DREWV..;..DREZ., ..DREWZ..		313 881	313 882	313 881	313 882	313 883	313 884

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

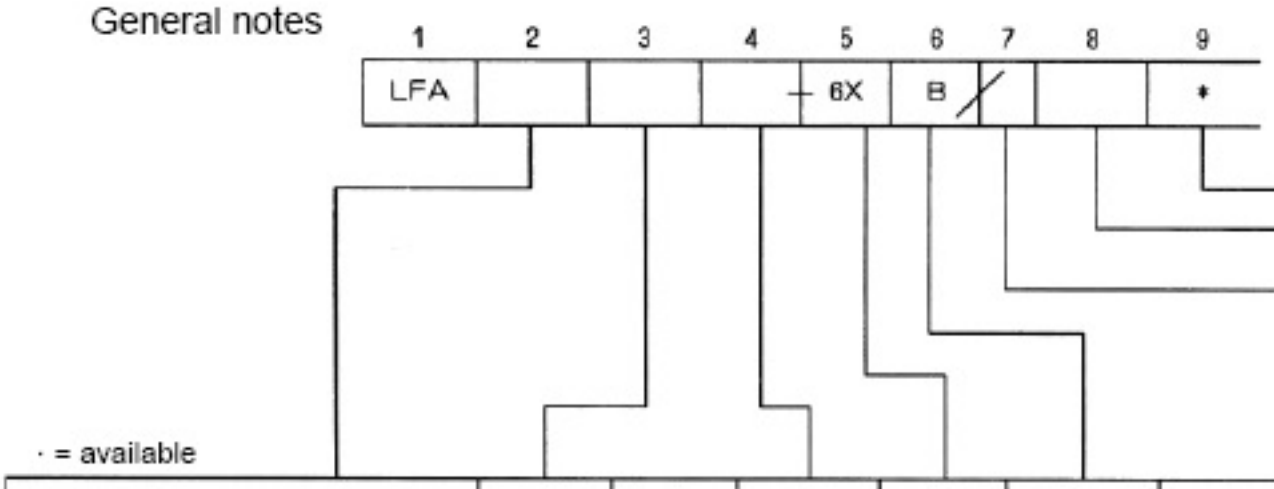
**For pilot valve seal kits see relevant catalogue sheet.

Fixing screws (Included within the scope of supply)

NS	Qty.	Dimensions	Tightening torque in Nm
16	4	M8 × 45	32
25		M12 × 50	110
32		M16 × 60	270
40		M20 × 70	520
50		M20 × 80	520
63		M30 × 100	1800

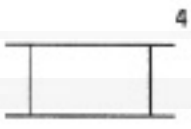
Control cover for pressure reducing function (Main spool normally closed - LC..DB 40 D.. - separate order)

General notes



· = available

Nominal size						Type	Page	Adjuster type	Series	Note	Pressure ratings in bar for nominal size Fluid other		Fluid	Other details
16	25	32	40	50	63						...DR... ...DRW...	...DRE...		
•	•	•	•	•	•	DR	79		6X		025	006	See page 80 to 84	
•	•	•	•	•	•	DRW	80				075			
—	•	•	•	•	•	DREV	81–82				150			
—	•	•	•	•	•	DREZ	81–82				210	014		
—	•	•	•	•	•	DREWV	83–84				315			
—	•	•	•	•	•	DREWZ	83–84				350			



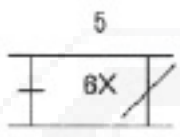
Adjustment elements for pressure reducing valves

1 = Rotary knob

2 = Hexagon with protective cap

3 = Lockable rotary knob with scale (H-lock to automotive industry standard

7 = Rotary knob with scale

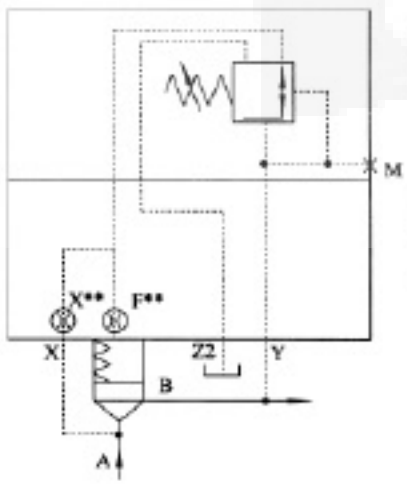


Series

6X = Series 60 to69 (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 32)



Pressure reducing function

Normally closed

e.g.

Type LFA...DR...

Type LC...DB40D-6XB/...

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 for NBR seals or phosphate ester for FPM sesls
Viscosity range	(mm^2/s)	2.8 to 380
Pressure fluid temperature range	(°C)	-20 to +80

Control cover

Type / Max. perm. operating pressure at port ...		LFA..DR.-6XB/... LFA..DRW.-6XB/...	LFA..DRE.-6XB/...
...X (primary pressure)		31.5MPa	31.5/35.0MPa
...Y (secondary pressure = max. settable pressure)		31.5MPa	31.5/35.0MPa
...Z_2	When controlling pressure	zero pressure (up to 0.2 Mpa)	
	Static	6.0MPa	31.5MPa
...T	When controlling pressure		zero pressure (up to 0.2 Mpa)
	Static (corresponds to the permissible tank pressure of the pilot valves)		10.0MPa（DBET）;31.5MPa（DBETR）

Notes on pilot control valves

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

Directional spool valve	Nominal size	Catalogue sheet no.	Control cover
3WE6A-5XB/...	6		DREWV,DREWZ
3WE6 B9-5XB/...	6		DRW

Proportional pressure relief valve

Directional spool valve	Nominal size	Catalogue sheet no.	Control cover
DBET-5XB/...*YG24-1	6		DREV,DREWV
DBETR-1XB/...*Y409	6		DREZ,DREWZ

* Possible pressure ratings 50, 100, 200, 315, 350

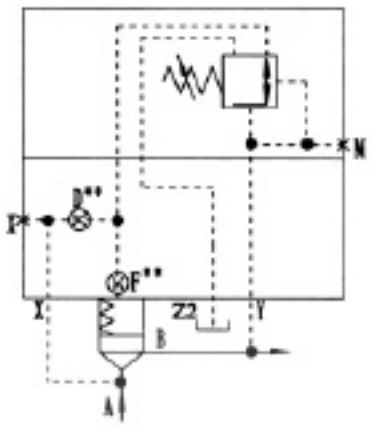
** Possible pressure ratings 25,80,180,315,350

Attention!

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

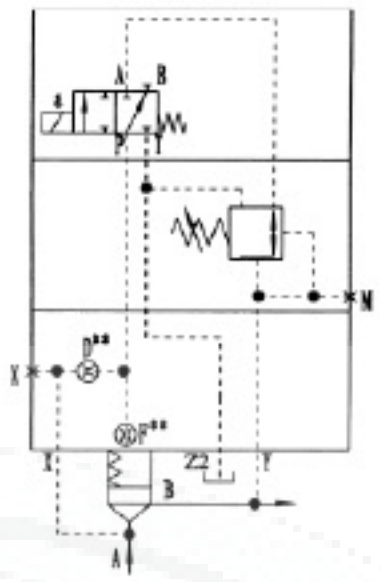
Overview of symbols (basic symbols) - pressure reducing function

Valid symbols are shown in the following type descriptions !



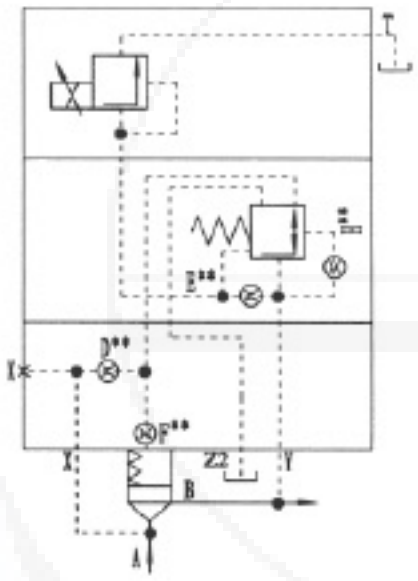
LFA..DR.-.../...
NS 16 to 63
Control cover with manual pressure adjustment
Port T - zero pressure

See page 79



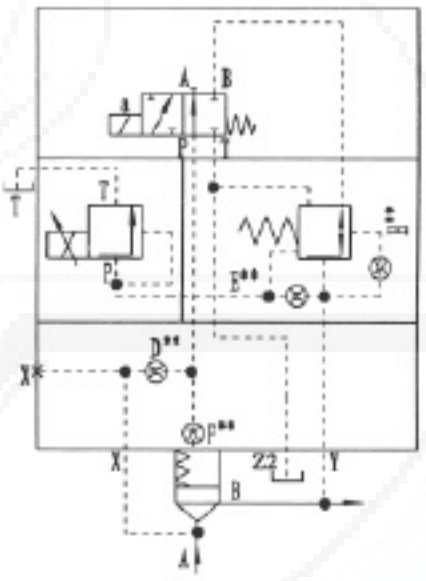
LFA..DRW.-.../...
NS 16 to 63
Control cover with manual pressure adjustment and isolating function
Port T - zero pressure
3WE 6 B9-../..
Solenoid de-energised -closed
Solenoid de-energised -pressure reducing function

See page 80



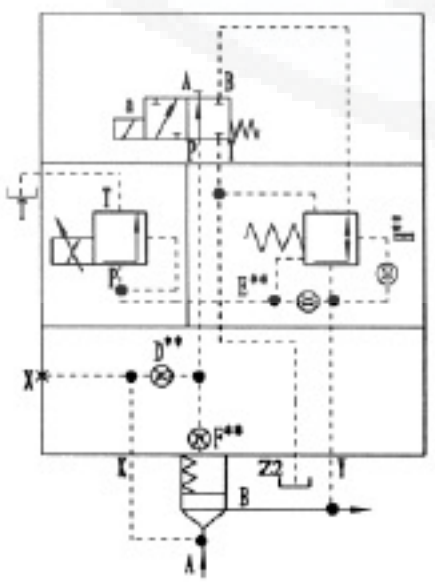
LFA..DREV-.../...
NS 25 to 63
Control cover for electrical-proportional pressure adjustment
Port T - zero pressure

See page 81,82



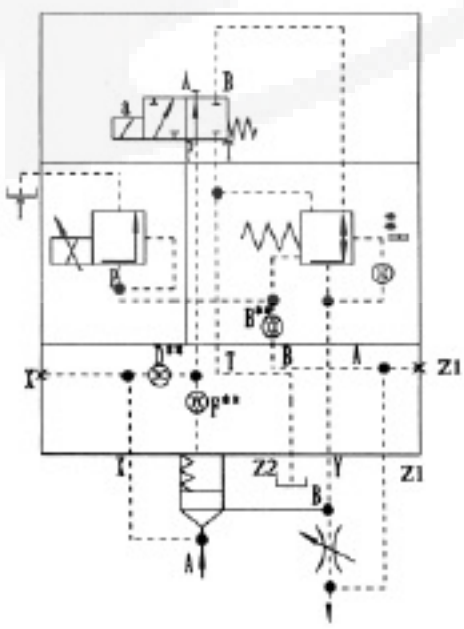
LFA..DREZ-.../...
NS 25 to 63
Control cover for electrical-proportional pressure adjustment
Port T - zero pressure

See page 81,82



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 page 83,84



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

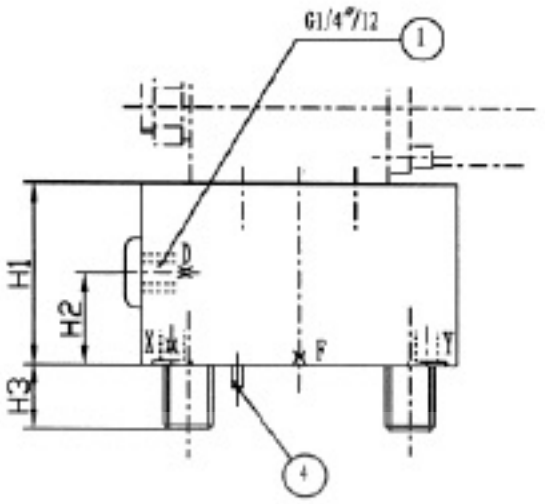
See page 83,84

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

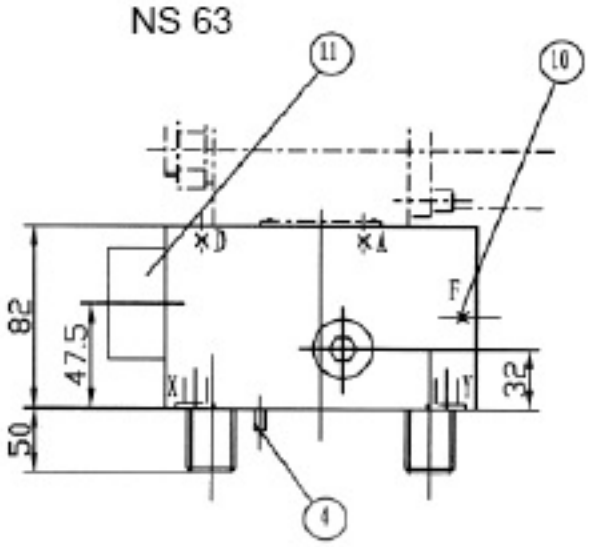
Symbol: 

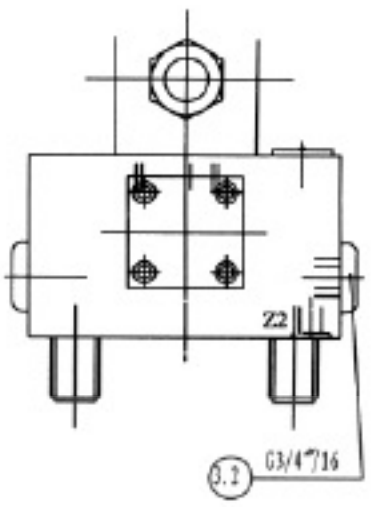
Control covers for versions DR, DRW, DREV, DREZ, DREWV and DREWZ

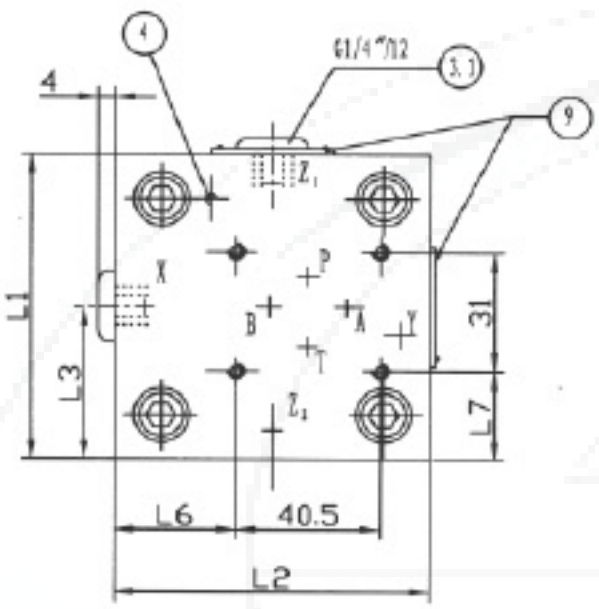
NS 16 to 32

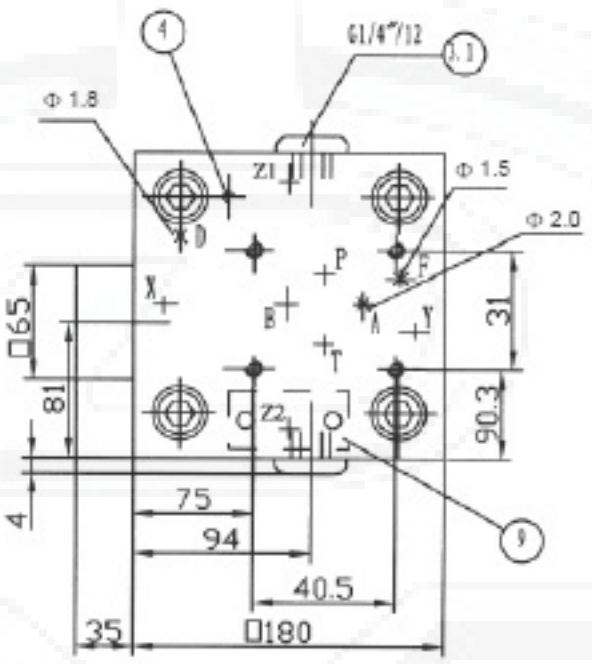


NS 63

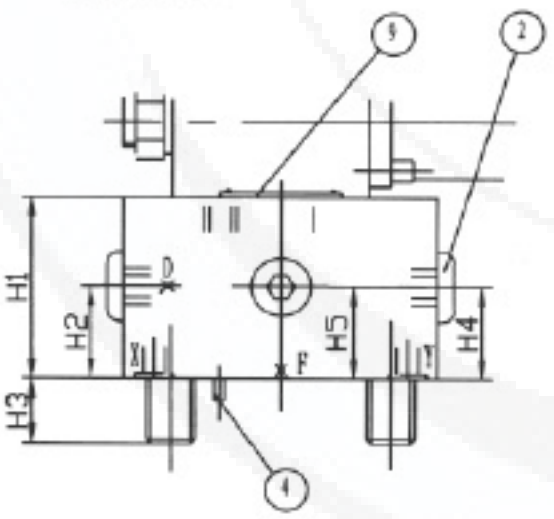


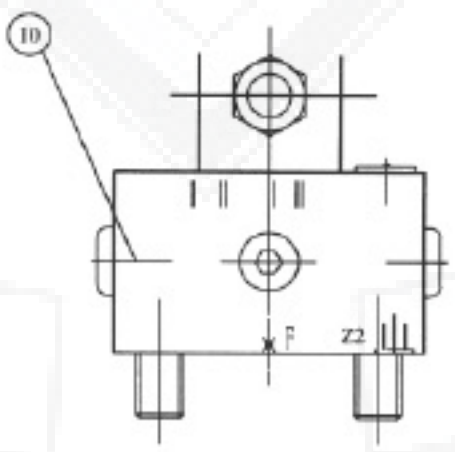


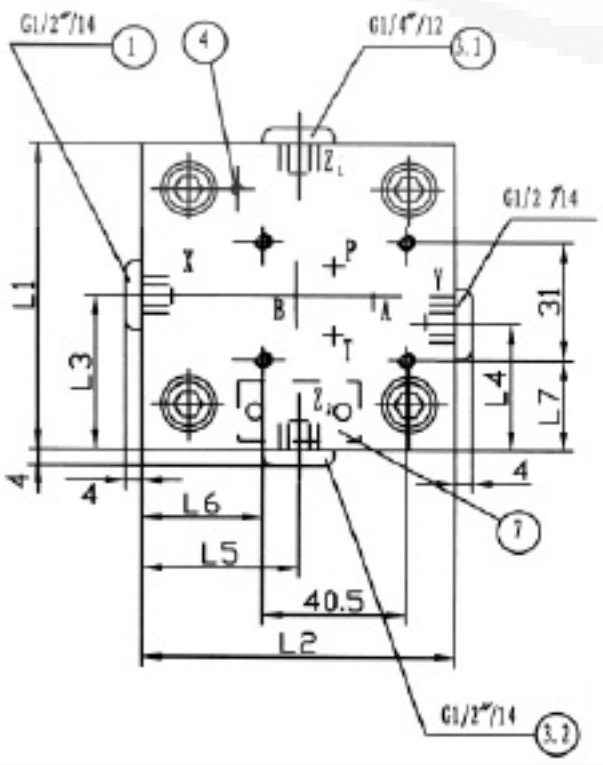




NS 40,50







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 Nameplate
10 Check valve (for NS 63 orifice F in poppet)
11 For control cover NS 63 logic element NS 16

"Orifice -ϕ

NS	16	25	32	40	50
F"	-	0.8	1.0	1.2	1.5
X"	1.2	-	-	-	-
D"	0.8	1.5	1.5	1.8	1.8
H1	40	40	50	60	68
H2	17	19	26	30	32
H3	15	24	28	32	34
H4	-	-	-	30	32
H5	-	-	-	40	40
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	22.5	30	43.5	51
L7	17	27	34.5	47	54.5

Control cover for pressure reducing function,Main spool normally closed - LC..DB Main spool normally closed - LC..DB 40 D.. - separate order

NS 16 to 63

1	2	3	4	5	6	7	8	9
LFA		DR		–	6X	B	/	*

Further details in clear text

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

No code =	Mineral oils
V =	Phosphate ester

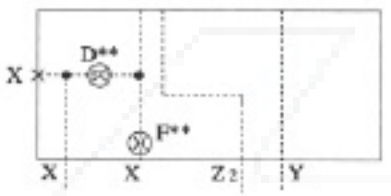
Adjuster type

Rotary knob	= 1
Set screw with hexagon and protective cap	= 2
Lockable rotary knob with scale	= 3 1)
Rotary knot with scale	= 4

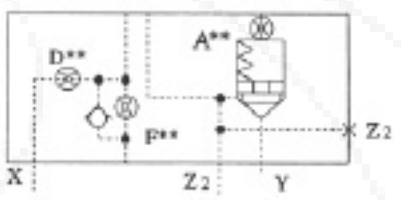
025 =	Max. secondary pressure 2.5 MPa
075 =	Max. secondary pressure 7.5 MPa
150 =	Max. secondary pressure 15.0 MPa
210 =	Max. secondary pressure 21.0 MPa

Series 6X (NS 16 to 63) = 6X

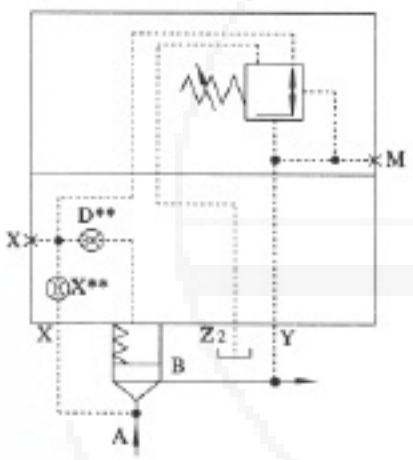
B = Technology of Beijing Huade Hydraulic



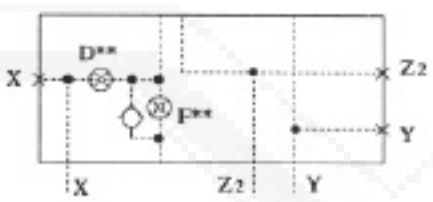
LFA···DR,-6XB/···
NS 25,32



LFA···DR,-6XB/···
NS 63

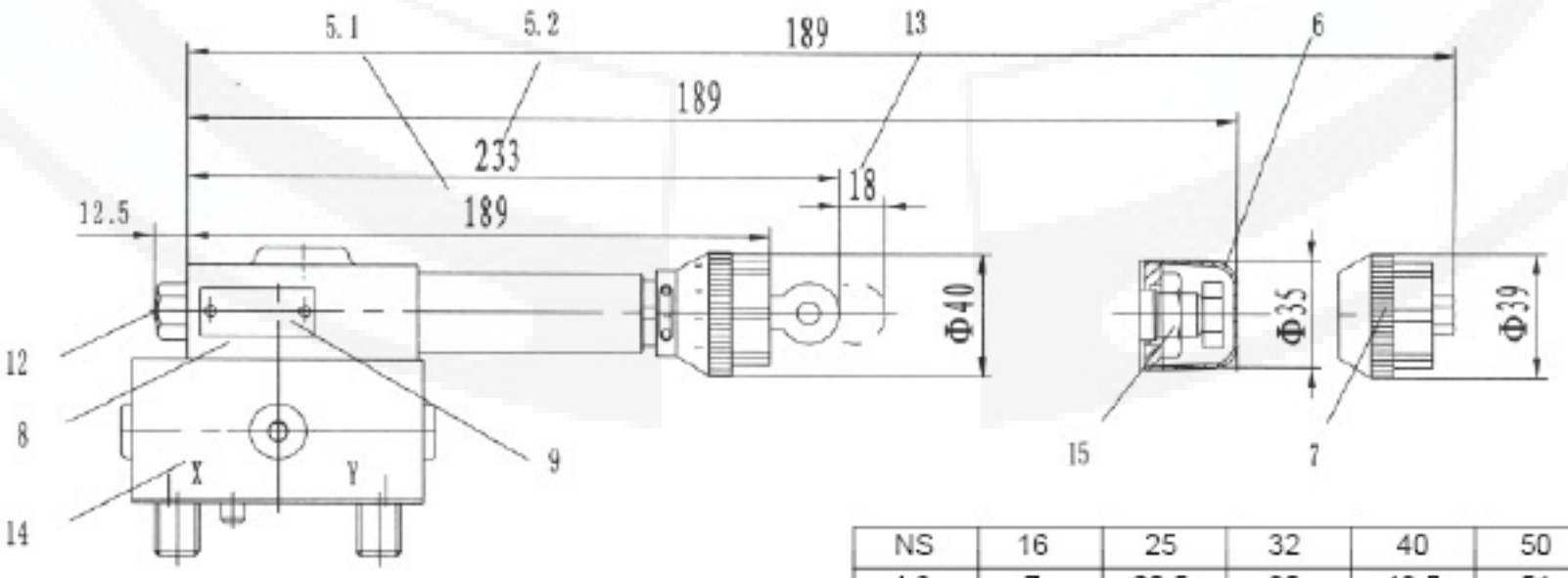


LFA···DR,-6XB/···
NS 16

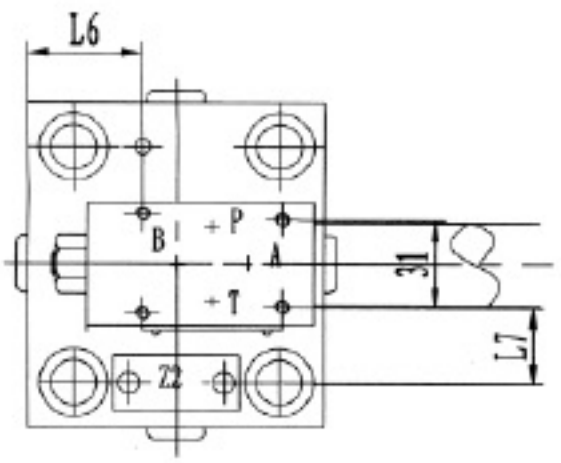


LFA···DR,-6XB/···
NS 40, 50

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



NS	16	25	32	40	50	63
L6	7	22.5	30	43.5	51	75
L7	17	27	34.5	47	54.5	90.3



5.1 Adjustment element "7"
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 Nameplate for pressure reducing valves
11 Valve fixing screws M5x50 DIN 912-10.9 M_A = 8.9 Nm are within the control cover scope of supply
12 Pressure gauge port G 1/4˝, deepth12; socket screw A/F 6
13 Space required to remove key
14 Control cover, see page 78
15 Lock nut A/F 24

Control cover for pressure reducing and isolating function

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

NS 16 to 63

1	2	3	4	5	6	7	8	9
LFA		DRW		6X	B	/		*

Further details in clear text

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

No code = Mineral oils
V = Phosphate ester

Adjuster type
Rotary knob = 1
Set screw with hexagon and protective cap = 2
Lockable rotary knob with scale = 3 1)
Rotary knot with scale = 4

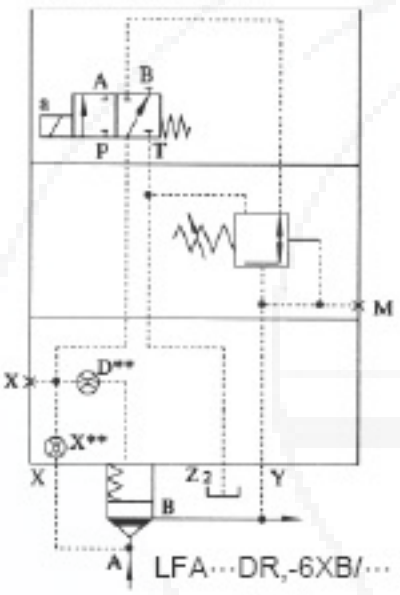
025 = Max. secondary pressure 2.5 MPa
075 = Max. secondary pressure 7.5 MPa
150 = Max. secondary pressure 15.0 MPa
210 = Max. secondary pressure 21.0 MPa

Series 6X (NS 16 to 63) = 6X

B = Technology of Beijing Huade Hydraulic

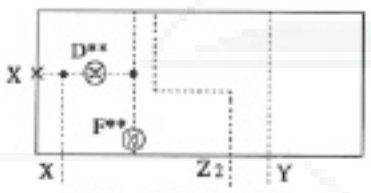
1) H-key to part no. 00008158 is included within the scope of supply

3WE 6 B9-5XB/...

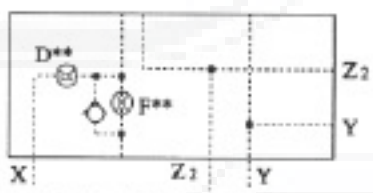


LFA···DR,-6XB/···
NS 16

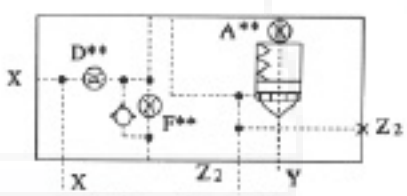
Solenoid de-energised -closed
Solenoid de-energised -pressure reducing function



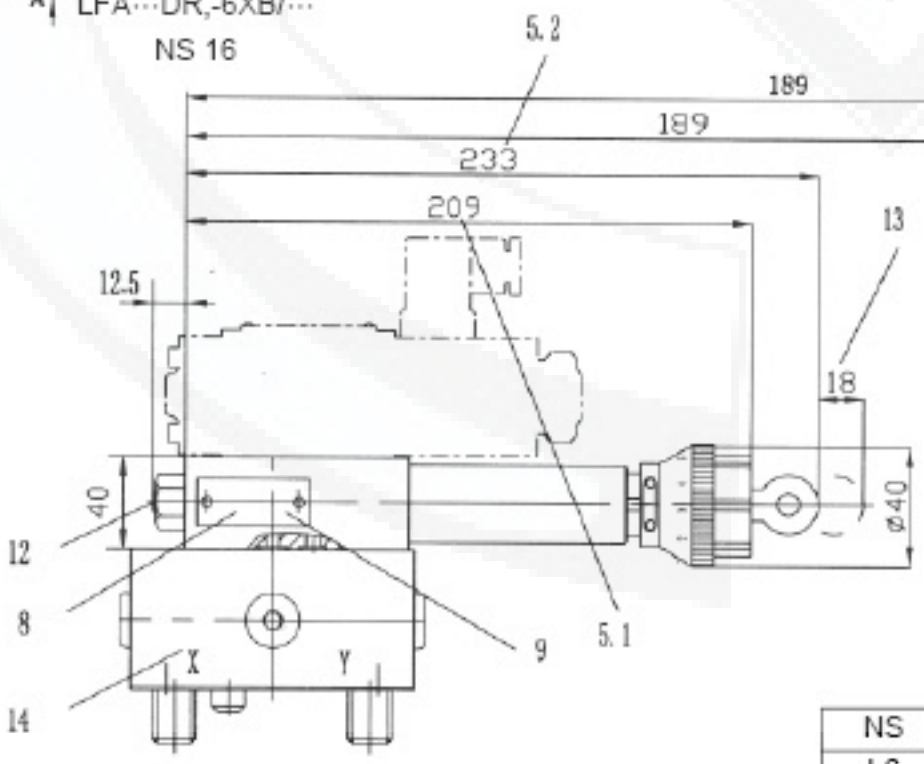
LFA···DR,-6XB/···
NS 25, 32

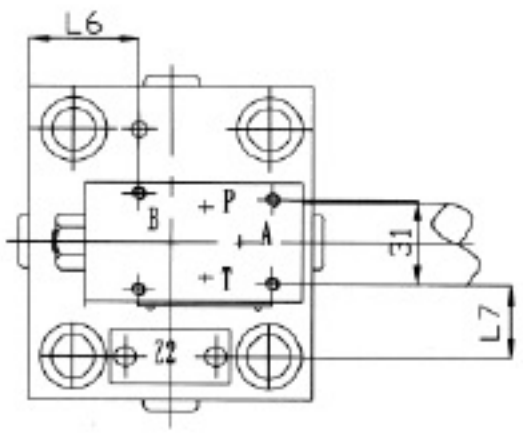


LFA···DR,-6XB/···
NS 40, 50



LFA···DR,-6XB/···
NS 63





NS	16	25	32	40	50	63
L6	7	22.5	30	43.5	51	75
L7	17	27	34.5	47	54.5	90.3

5.1 Adjustment element "7"
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 Nameplate for pressure reducing valves
11 Valve fixing screws M5x50 DIN 912-10.9 M_A = 8.9 Nm are within the control cover scope of supply
12 Pressure gauge port G 1/4", deepth12 ; socket screw A/F 6
13 Space required to remove key
14 Control cover, see page 78
15 Lock nut A/F 24

Control cover for pressure reducing function-electrical-proportional

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

NS 25 to 63

1	2	3	5	6	7	8	9
LFA		—	6X	B	/		*

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

Pressure reducing function, electrical-proportional = DREV
Pressure reducing function, electrical-proportional and possiblilty for 2-way flow control function = DREZ

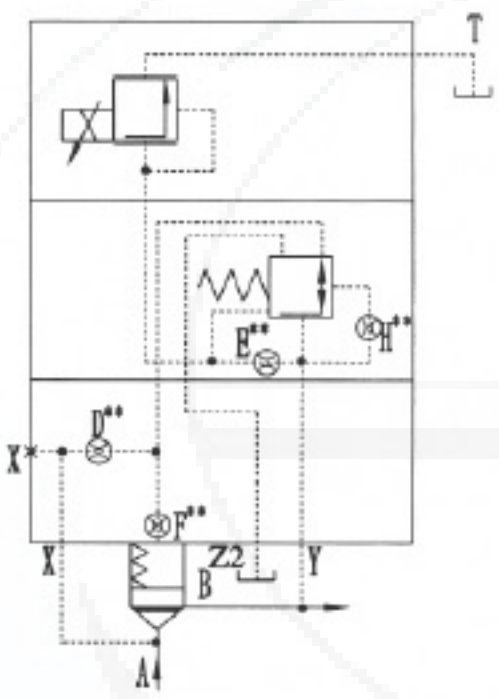
Series 6X (NS 25 to 63) = 6X

Technology of Beijing Huade Hydraulic = B

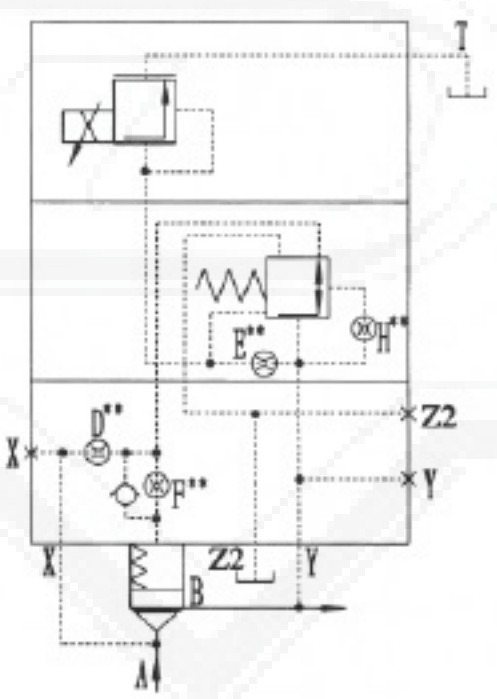
Further details in clear text

No code = Mineral oils
V = Phosphate ester

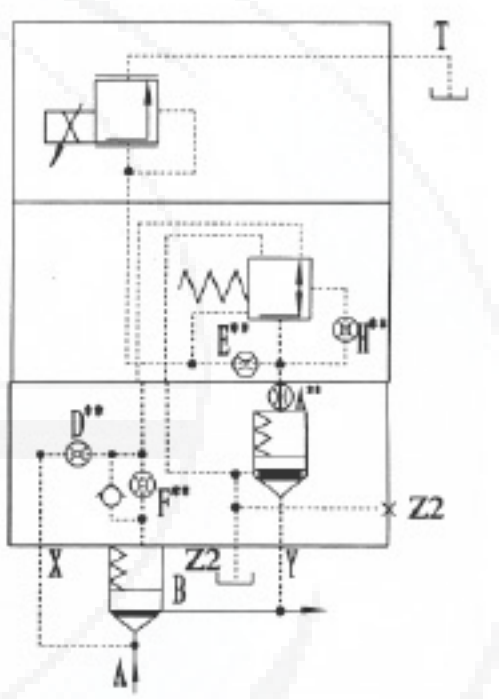
Pressure ratings (pressure reducing valve)
006 = 0.7 MPa (only for DREV)
014 = 1.6 MPa (only for DREZ)



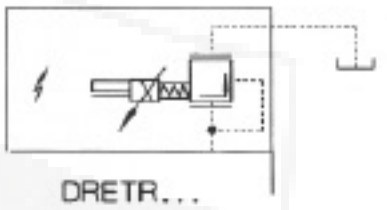
LFA···DREV-6XB/···
NS 25, 32



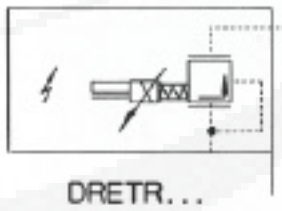
LFA···DREV-6XB/···
NS 40, 50



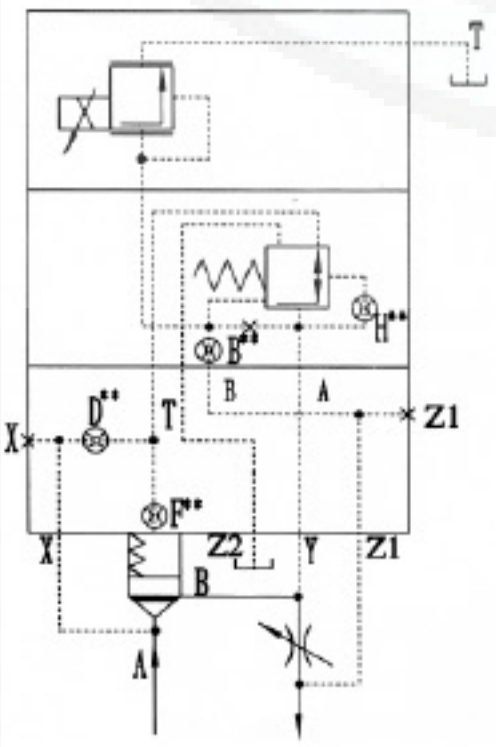
LFA···DREV-6XB/···
NS 63



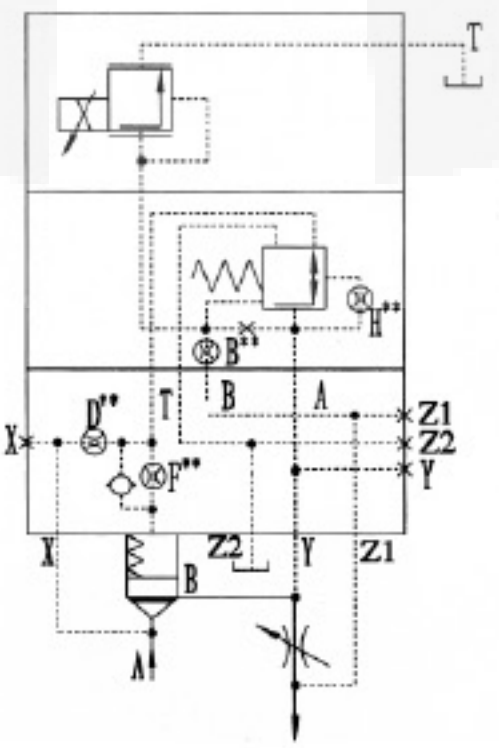
DRETR...



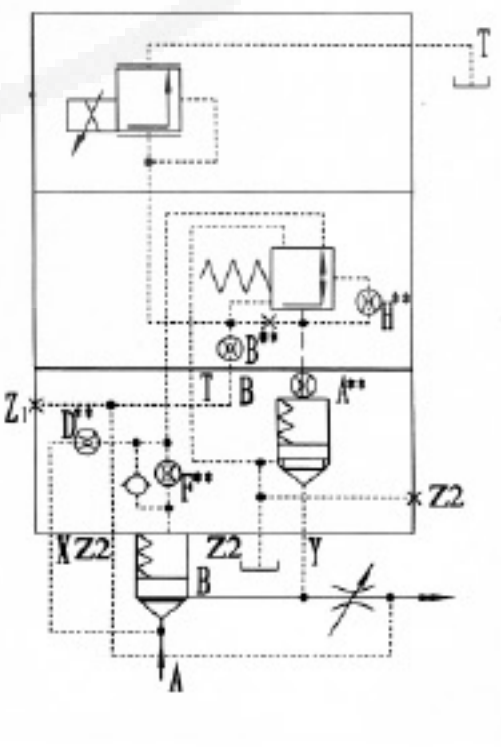
DRETR...



LFA···DREZ-6XB/···
NS 25, 32



LFA···DREZ-6XB/···
NS 40, 50

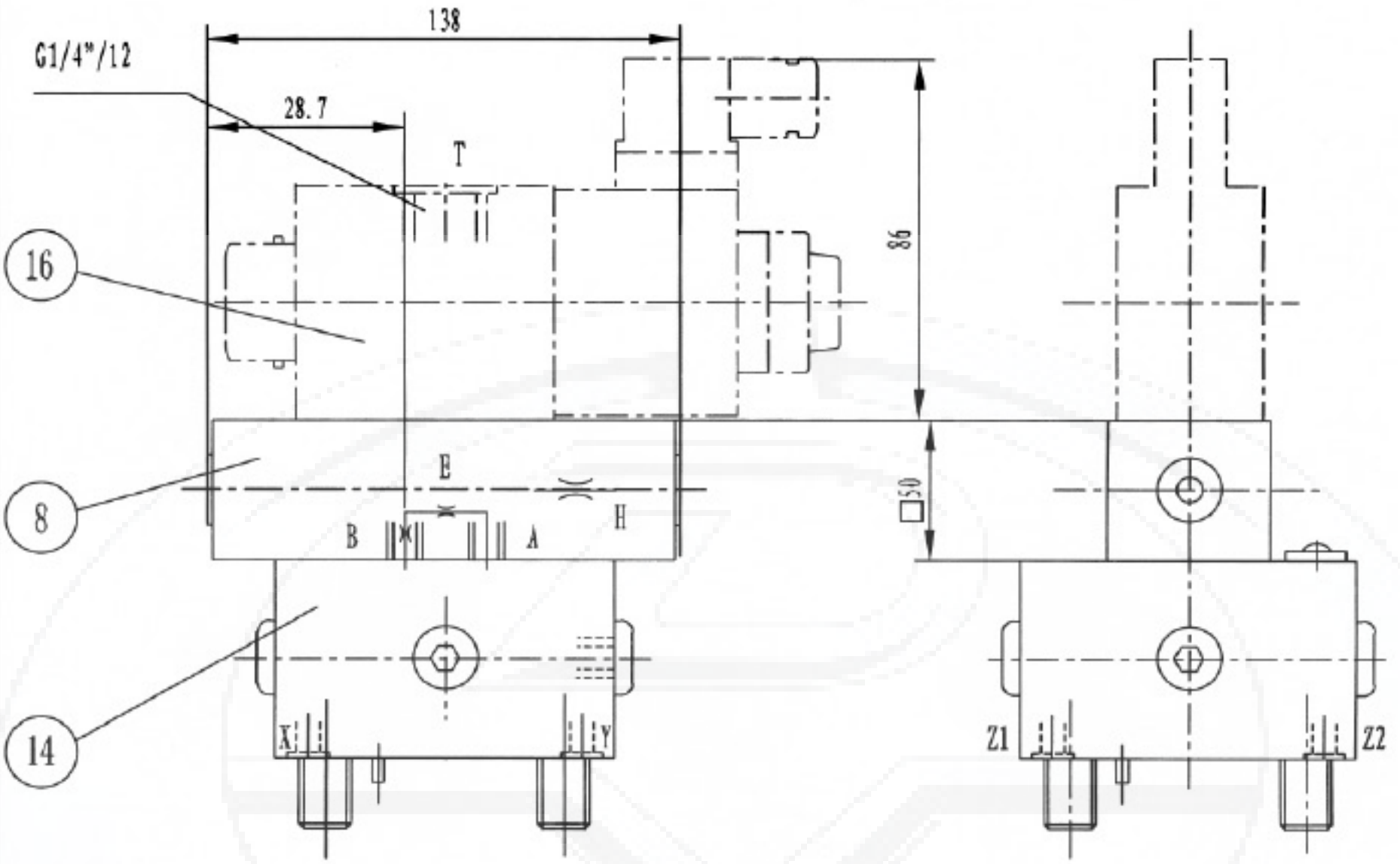


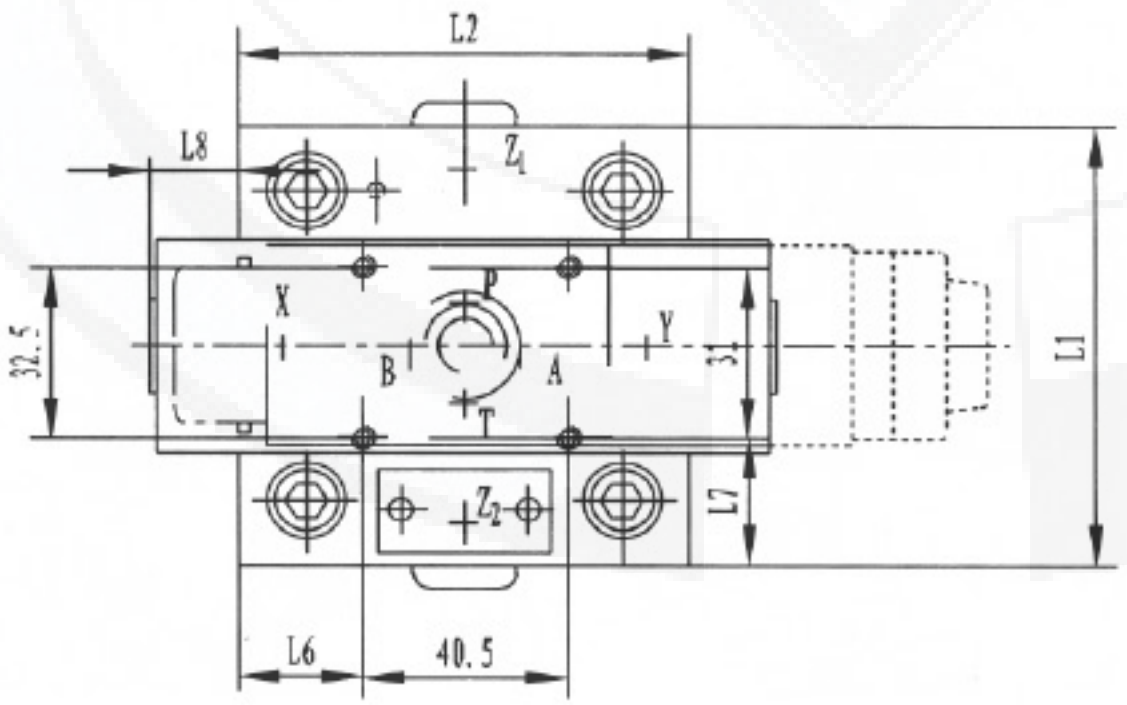
LFA···DREZ-6XB/···
NS 63

Control cover for pressure reducing function-electrical-proportional

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

NS 25 to 63





8 Pressure reducing valve (is included within the scope of supply)
14 Control cover, see page 78
16 Proportional pressure relief valve
DBET-5XB/...* Y G24-1***
DBETR-1XB/...* Y 409***
(must be ordered separately)
* Pressure ratings for valve types:
DBET-5XB/... 5.0, 10.0, 20.0, 31.5 and 35 MPa
DBETR-1XB/...2.5,8,18.0,31.5 and 35 MPa
*** = G 1/4˝ threaded port T

for type ···-6XB/006
for type ···-6XB/014

* * Orifice - Φ

NS	H**	E/B**	E/B**	D**	P**	A**	L1	L2	L6	L7	L8
25	0.8	0.8	0.6	1.2	0.8	-	85	85	22.5	27	6.5
32	0.8	0.8	0.6	1.2	1.0	-	100	100	30	34.5	-
40	0.8	0.8	0.6	1.5	1.2	-	125	125	43.5	47	-
50	0.8	0.8	0.6	1.5	1.5	-	140	140	51	54.5	-
63	0.8	0.8	0.6	1.8	1.5	2.0	180	180	75	90.3	-

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

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

NS 25 to 63

1	2	3	5	6	7	8
LFA		— 6X	B	/		*

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

Pressure reducing function, electrical-proportional = DREWV
Pressure reducing function, electrical-proportional and possiblilty for 2-way flow control function = DREWZ

Series 60 to 69(60 to 69: unchanged installation and connection dimensions) = 6X

Technology of Beijing Huade Hydraulic = B

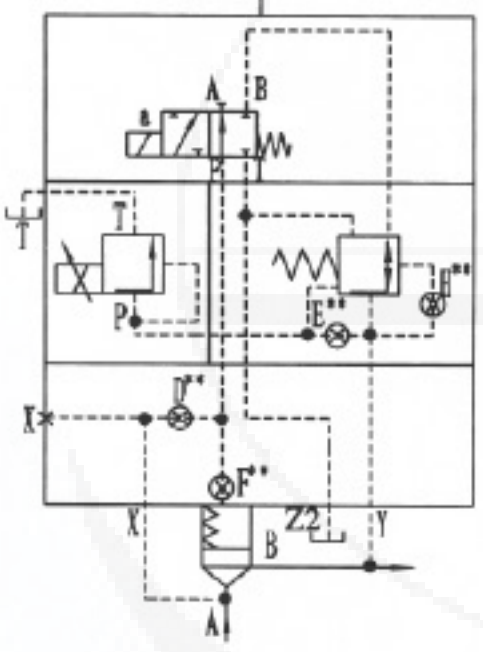
Solenoid de-energised-closed
Solenoid de-energised-pressure reducing funtion

Pressure ratings (pressure reducing valve)
006 = 0.7 MPa (only for DREWV)
014 = 1.6 MPa (only for DREWZ)

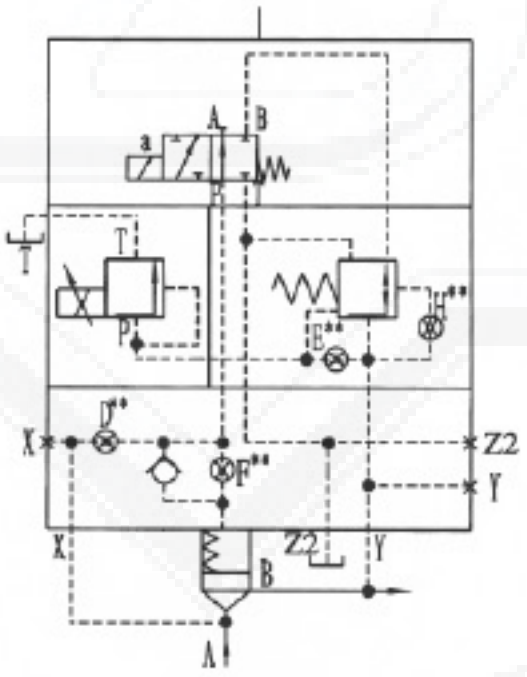
No code = Mineral oils
V = Phosphate ester

Further details in clear text

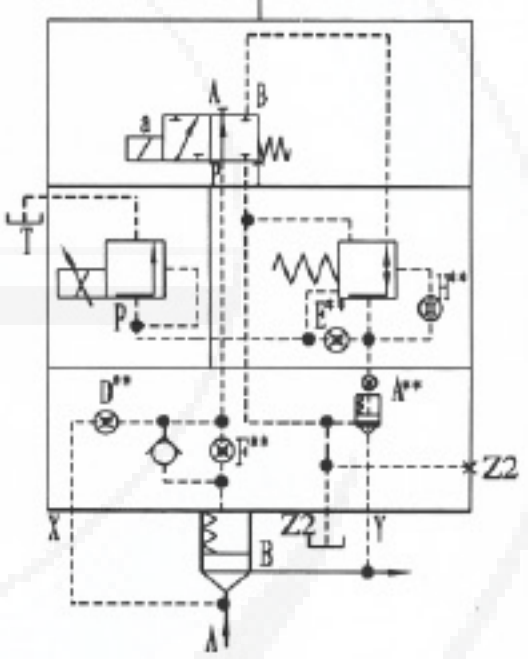
3 WE 6 A5...



LFA···DREWZ-6XB/···
NS 25, 32

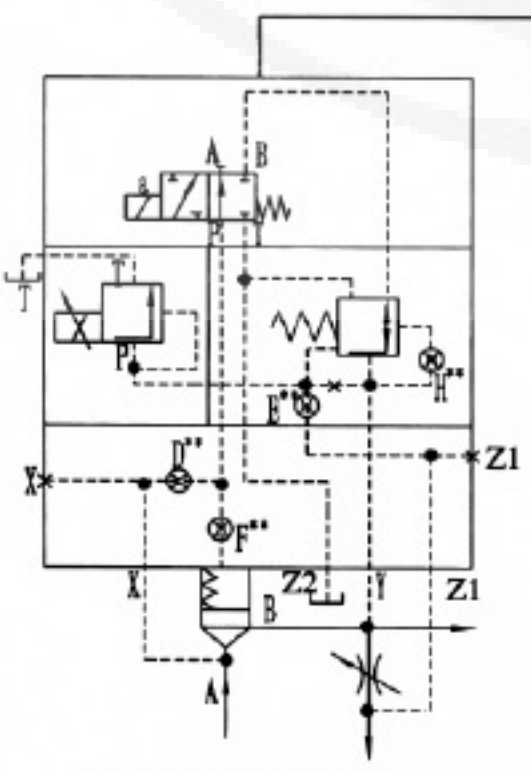


LFA···DREWZ-6XB/···
NS 40, 50

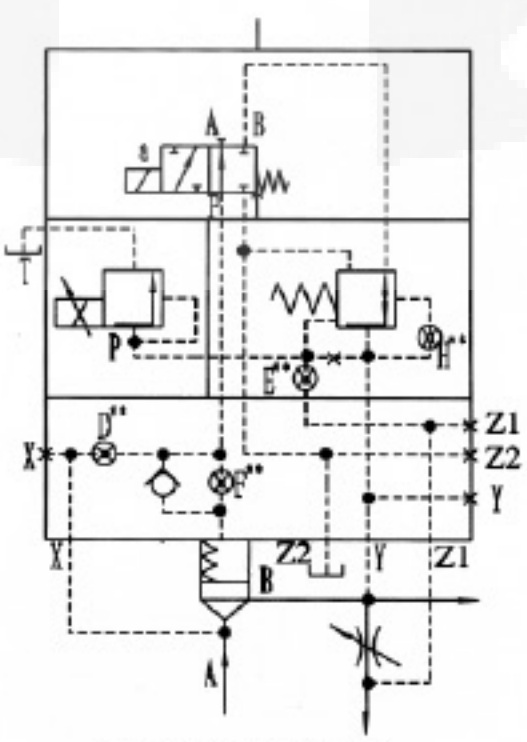


LFA···DREWZ-6XB/···
NS 63

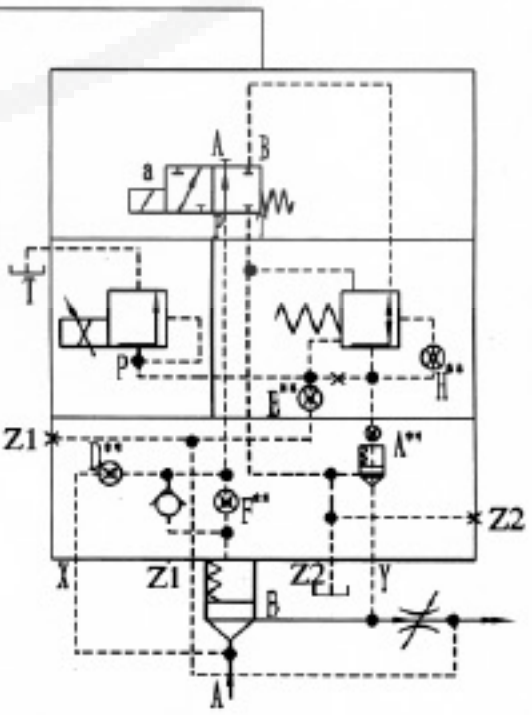
3 WE 6 A5...



LFA···DREWZ-6XB/···
NS 25, 32



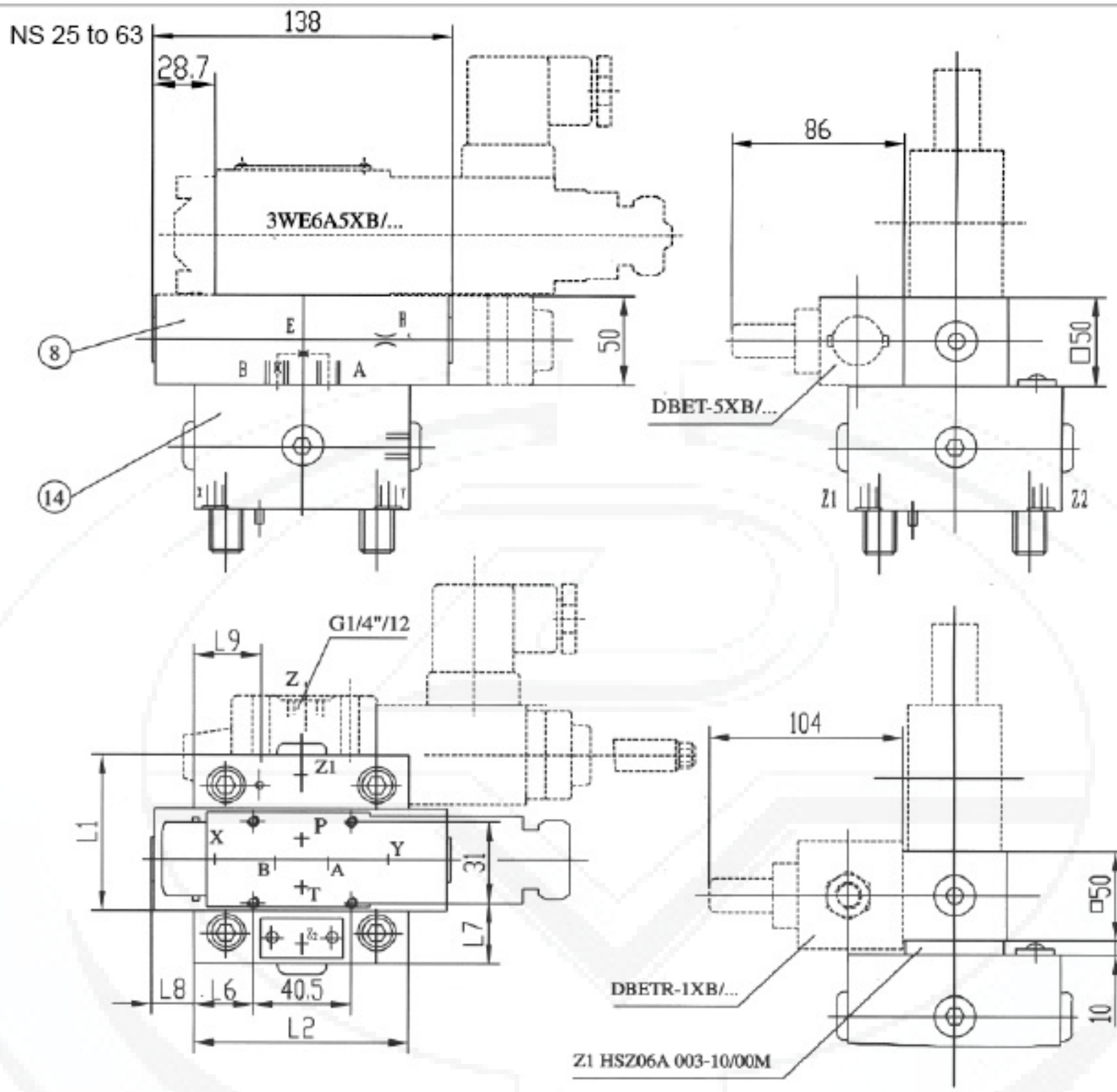
LFA···DREWZ-6XB/···
NS 40, 50



LFA···DREWZ-6XB/···
NS 63

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

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



8 Pressure reducing valve (is included within the scope of supply)

14 Control cover, see page 78

16 Proportional pressure relief valve

DBET-5XB/...* Y G24-1***

DBETR-1XB/...* Y 409***

(must be ordered separately)

* Pressure ratings for valve types:

DBET-5XB/... 5.0, 10.0, 20.0, 31.5 and 35.0 MPa

DBETR-1XB/...2.5,8.0,18.0,31.5 and 35.0 MPa

*** G 1/4˝ threaded port T, special poppet

for type ···-6XB/006

for type ···-6XB/014

* * Orifice-ø

NS	H**	E/B**	E/B**	D**	F**	A**	L1	L2	L6	L7	L8	L9
25	0.8	0.8	0.6	1.5	0.8	-	85	85	22.5	27	6.5	13
32	0.8	0.8	0.6	1.5	1.0	-	100	100	30	34.5	-	20.5
40	0.8	0.8	0.6	1.8	1.2	-	125	125	43.5	47	-	34
50	0.8	0.8	0.6	1.5	1.5	-	140	140	51	54.5	-	41.5
63	0.8	0.8	0.6	1.8	1.5	2.0	180	180	75	90.3	-	65.5

Pressure sequencing functions

General information regarding control cover for pressure sequencing functions

Normally notes

1	2	3	4	5	6	7	8	9
LFA				6X	B			*

● = available

Nominal size					Type	Page	Adjuster type	Series	Note	Max. settable seqencing pressure in MPa	Pilot oil supply	Fluid	Further details in clear text
16	25	32	40	50									
●	●	●	●	●	DZ	87...91		6X	Technology of Beijing Huade Hydraulic	210		ordering details see pages 87 and 90	
●	●	●	●	●	DZWA	90...92				315			
●	●	●	●	●	DZWB					350			

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

For seal kits see page 89Attention!
Control cover type LFA..DZ...are combined with
2-way cartridge valves type LC..DB...
(for ordering details see page 32)

5

6X B

Series
6X = Series 60 to 69
(unchanged installation and connection dimensions)
Pressure:

8

210 = Max. seqencing pressure is 21.0Mpa
315 = Max. seqencing pressure is 31.5Mpa
350 = Max. seqencing pressure is 35.0Mpa

7

Pilot oil supply
No code =
X = G ~ ordering details according to symbol
Y = ⊖ (see pages 87 and 90)
XY =

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

Symbol 

Attention! Pilot valves (electrical directional spool valves type 4WE 6 D...) must be ordered separately, for further details see catalogue sheet RE 23 178.

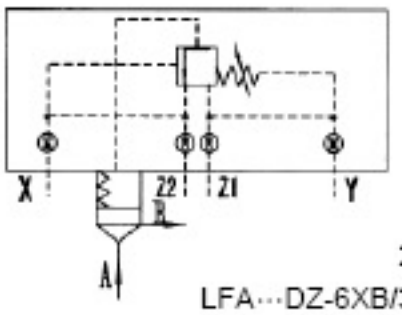
Directional spool valve
(porting pattern to DIN 24 340 form A6)

Directional spool valve Type	NS	Catalogue sheet RE no.	Control cover Type
4WE 6 D5XB/···	6		DZWA,DZWB

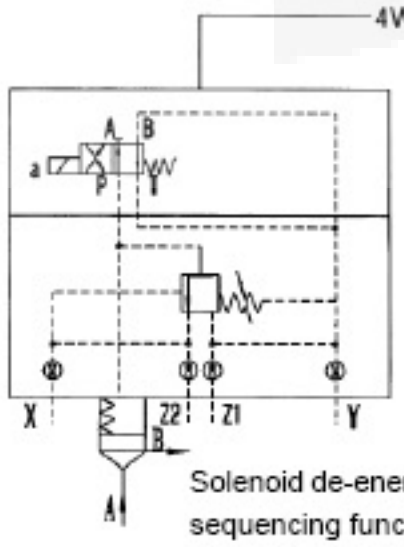
Overview of symbols (basic symbols), pressure sequencing functions

Valid symbols are shown in the following type descriptions !

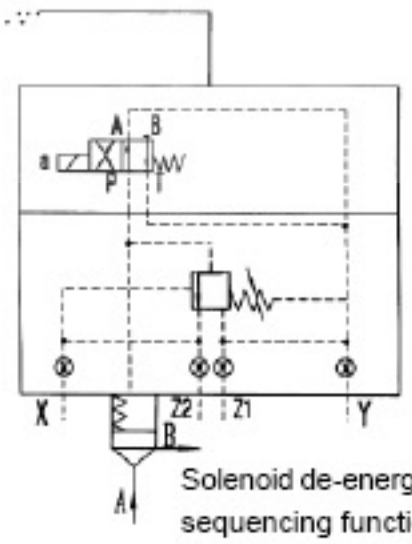
Control cover with manual pressure adjustment
and pressuredependent
or pressure independent sequence function



210
LFA···DZ-6XB/315
350
Control cover with manual pressure adjustment



Solenoid de-energised:
sequencing function
210
LFA···DZWA-6XB/315
350



Solenoid de-energised:
sequencing function
210
LFA···DZWB-6XB/315
350

Control cover for pressure sequencing functions

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

Pressue fluid		Mineral oil for NBR seals or phosphate ester for FPM sesls		
Pressue fluid temperature range	(°C)	-20 to+80		
Viscosity range	(mm^2/s)	2.8 to 380		
Control cover				
Max.operating pressure at port... \ Control cover type		LFA..DZ -6XB/...	LFA..DZW.-6XB/... /··· /···X	/···Y /···XY
···X;···Z2		31.5MPa		
···Y	When controlling pressure	zero pressure (up to 0.2 Mpa)		
	Static	31.5MPa	16.0MPa(=) * 10.0MPa(~) *	
···Z1	When controlling pressure	zero pressure (up to 0.2 Mpa)		
	Static	31.5MPa	16.0MPa(=) * 10.0MPa(~) *	31.5MPa
Settable sequencing pressure 21.0MPa		21.0MPa 31.5MPa 35.0MPa		
Directional spool valve (porting patten on A6 to DIN24340)				

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

NS	Dimensions in mm	Material no. NBR	FPM
16	7.65 × 1.78	004 491	006 585
25	9.25 × 1.78	007 111	009 097
32	10.82 × 1.78	008 937	008 941
40,50	12.37 × 2.62	004 489	008 949

Seal kits for cartridge valves and control covers

Seal kits for cartridge valves
Type LC.. DB../... (NS 25 to 50)

Seal kit for...	Material no. NBR	FPM
LC25DB···6XB/···	314 354	314 355
LC32DB···6XB/···	314 356	314 357
LC40DB···6XB/···	314 055	314 046
LC50DB···6XB/···	314 056	314 065

Seal kit for control covers
Type LFA.. /... (NS 25 to 50)

Seal kit for...	Material no. 25 NBR	25 FPM	32 NBR	32 FPM	40 NBR	40 FPM	50 NBR	50 FPM
DZ... ADZW...	311 540		311 541		311 542		311 542	

Fixing screws

(are included within the scope of supply)

NS	Qty.	Dimensions	Tightening torque in mm
16	4	M8 × 115	32
25		M12 × 120	110
32		M16 × 120	270
40		M20 × 70	520
50		M20 × 80	520

Orifice thread size

All built-in orifices: M6 tapered

Control cover for pressure sequencing functions

NS 16 to 50

1	2	3	4	5	6	7	8	9
LFA		DZ	— 6X	B /				*

Further details in clear text

No code =	Mineral oils
V =	Phosphate ester

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 knot with scale not lockable	= 4

Series 6X (60 to 69: unchanged installation and connection dimensions) = 6X

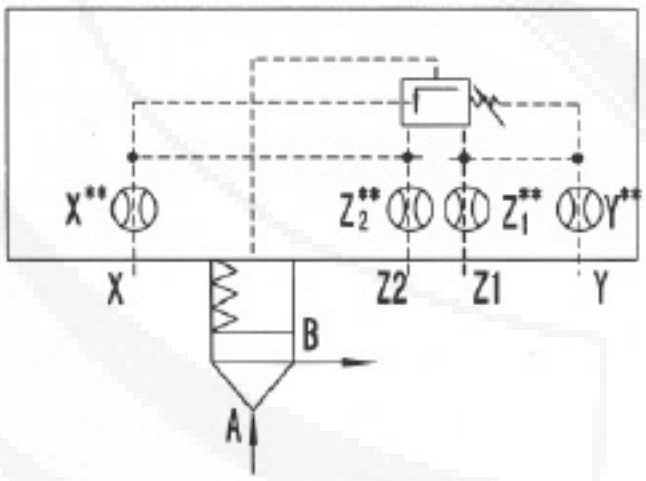
Technology of Beijing Huade Hydraulic = B

Pilot oil supply

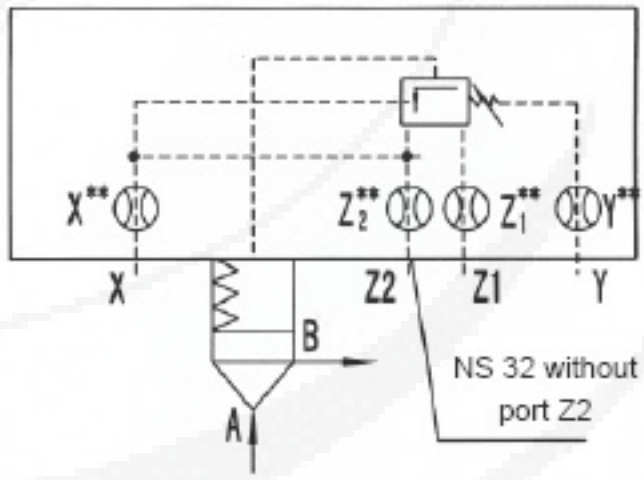
	Pilot oil supply	Pilot oil supply
No code =	internal	internal
X =	external	internal
Y =	internal	external
XY =	external	external

Pressure stages (max. settable sequencing pressure)

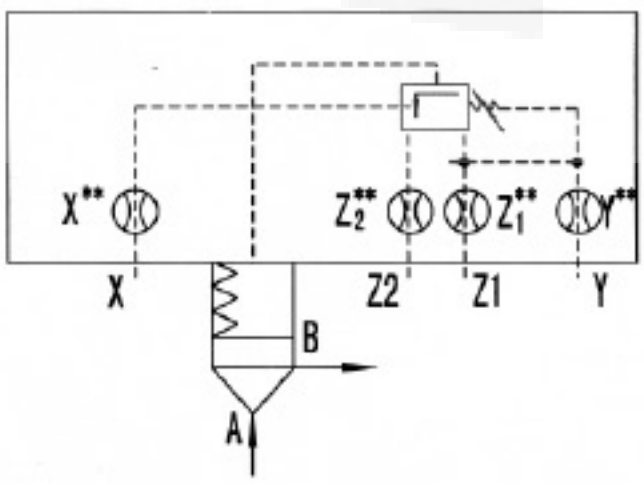
210 =	21.0 MPa
315 =	31.5 MPa
350=	35.0 MPa



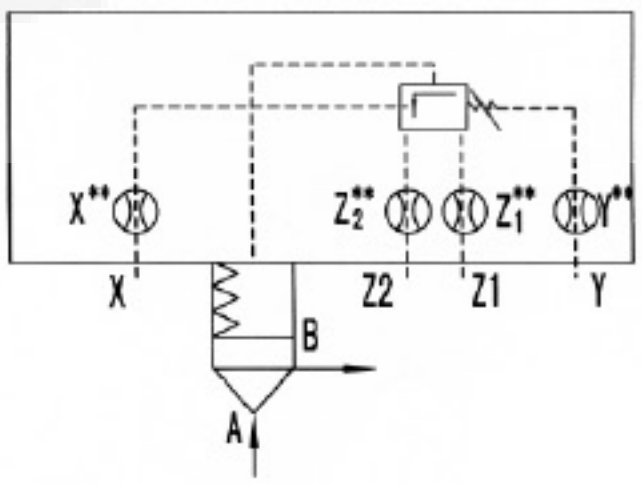
LFA...DZ.-6XB/ 210 / 315 / 350



LFA...DZ.-6XB/ 210 / 315 Y / 350



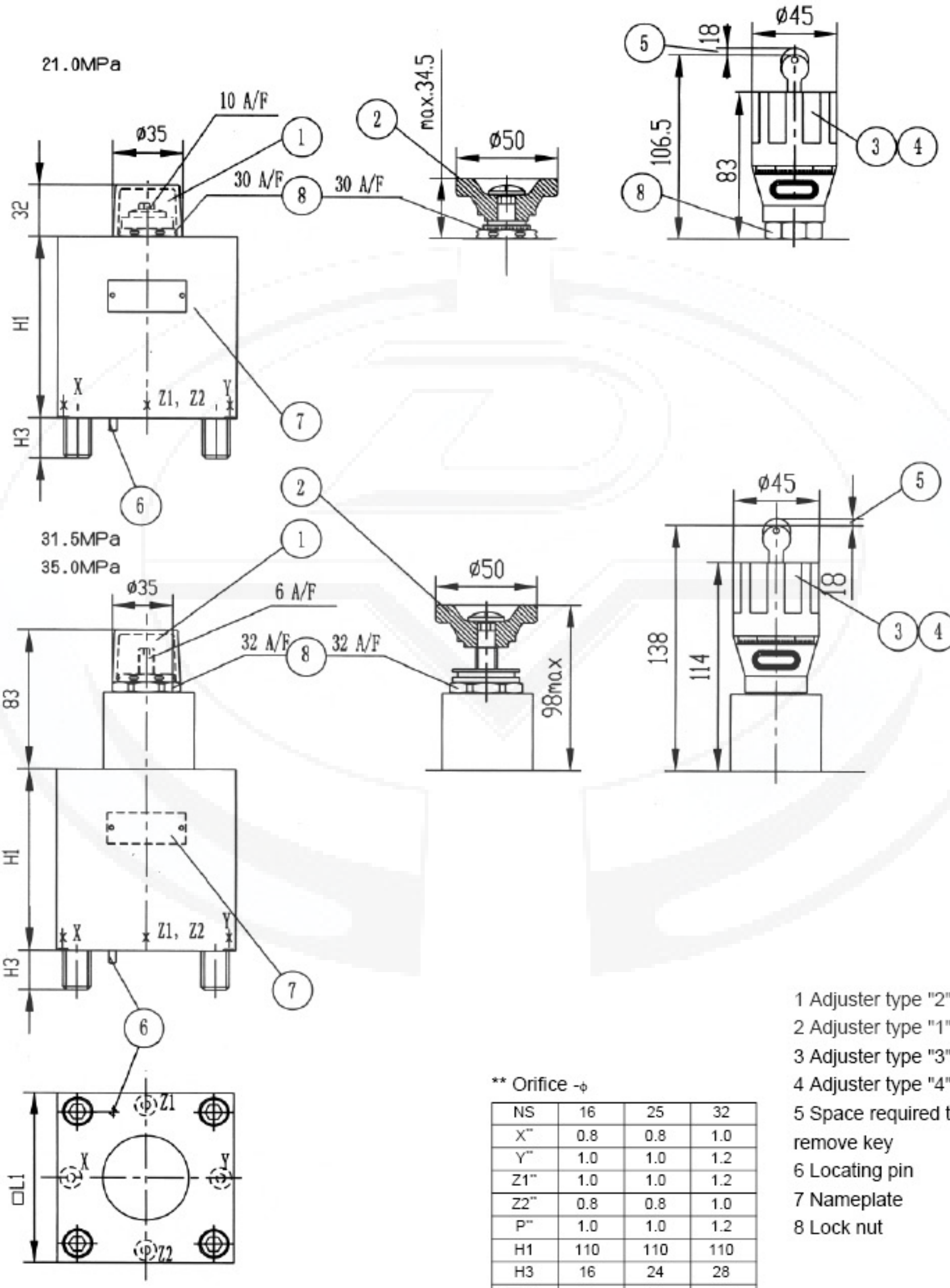
LFA...DZ.-6XB/ 210 / 315 X / 350



LFA...DZ.-6XB/ 210 / 315 XY / 350

Control cover for pressure sequencing functions

NS 16, 25, 32



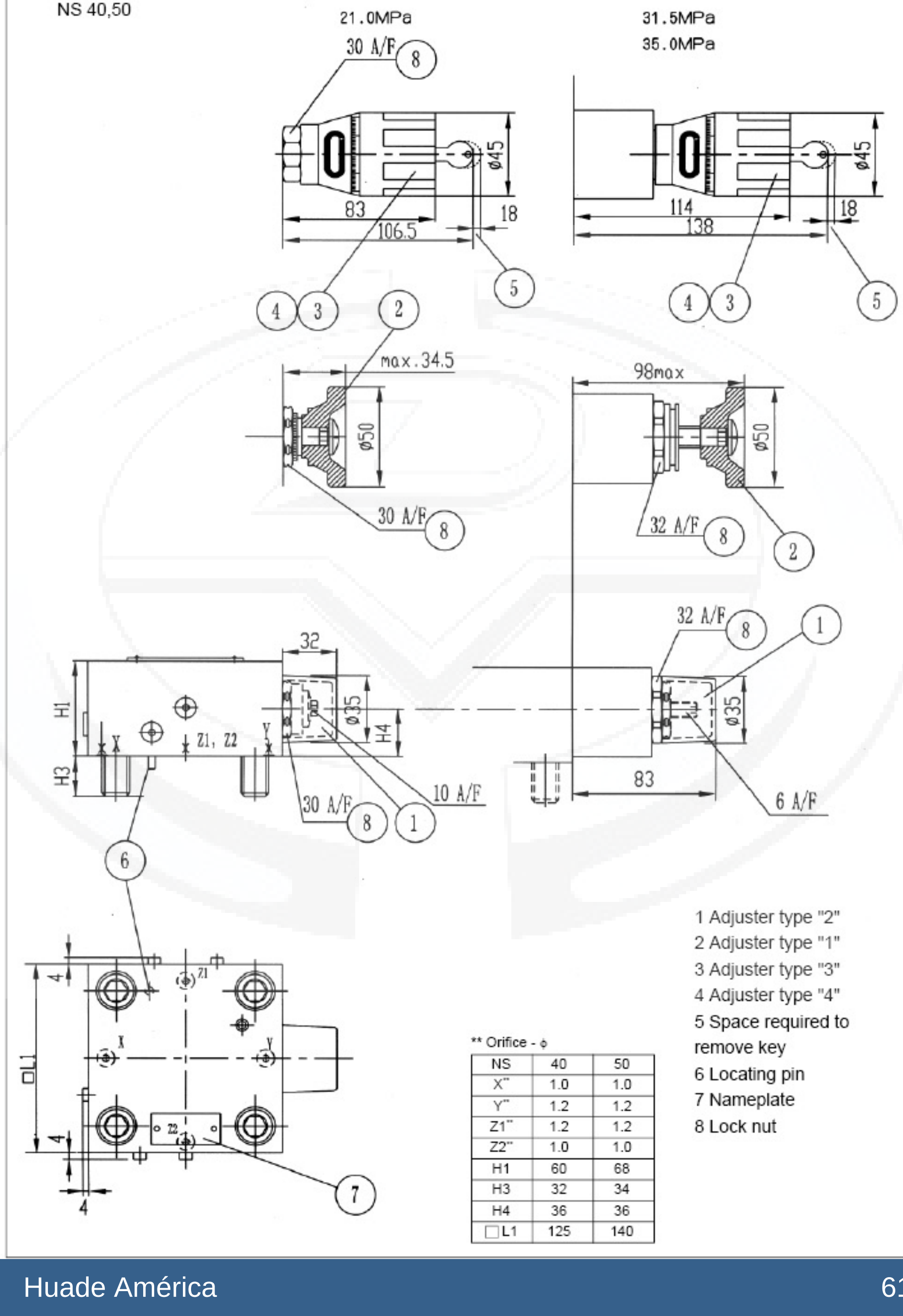
** Orifice -ϕ

NS	16	25	32
X**	0.8	0.8	1.0
Y**	1.0	1.0	1.2
Z1**	1.0	1.0	1.2
Z2**	0.8	0.8	1.0
P**	1.0	1.0	1.2
H1	110	110	110
H3	16	24	28
□L1	65	85	100

1 Adjuster type "2"
2 Adjuster type "1"
3 Adjuster type "3"
4 Adjuster type "4"
5 Space required to remove key
6 Locating pin
7 Nameplate
8 Lock nut

Control cover for pressure sequencing functions

NS 40,50



1 Adjuster type "2"
2 Adjuster type "1"
3 Adjuster type "3"
4 Adjuster type "4"
5 Space required to remove key
6 Locating pin
7 Nameplate
8 Lock nut

** Orifice - ϕ

NS	40	50
X**	1.0	1.0
Y**	1.2	1.2
Z1**	1.2	1.2
Z2**	1.0	1.0
H1	60	68
H3	32	34
H4	36	36
□L1	125	140

Control cover for pressure-dependent and independent sequencing functions

NS 25 to 50

1	2	3	4	5	6	7	8	9	10
LFA				— 6X	B	/			•

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

Solenoid de-energised:pressure sequence runction =DZWA
Solenoid energised:open
Solenoid de-energised:open =DZWB
Solenoid energised:pressure sequence function

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

Series 6X (60 to 69: unchanged installation and connection dimensions) = 6X

Technology of Beijing Huade Hydraulic = B

Further detail in clear text

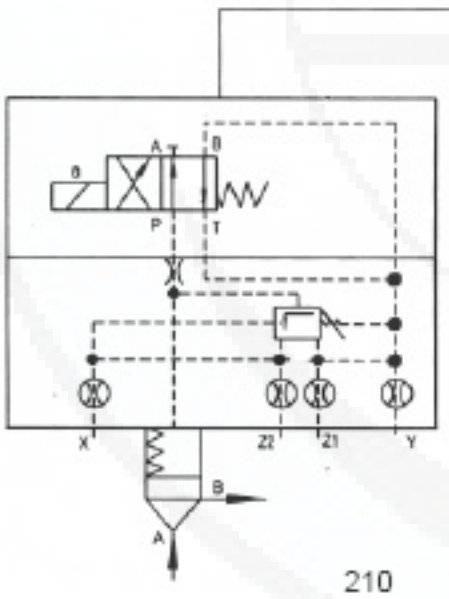
No code = Mineral oils
V = Phosphate ester

Pilot oil supply

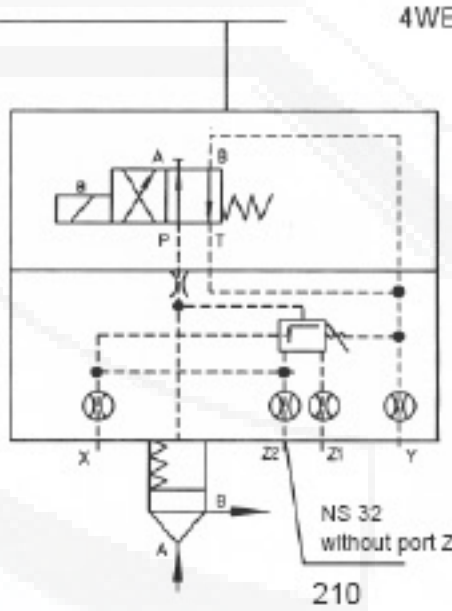
	Pilot oil supply	Pilot oil supply
No code =	internal	internal
X =	external	internal
Y =	internal	external
XY =	external	external

Pressure stages
(max. settable sequencing pressure)
210 = 21.0 MPa
315 = 31.5 MPa
350 = 35.0 MPa

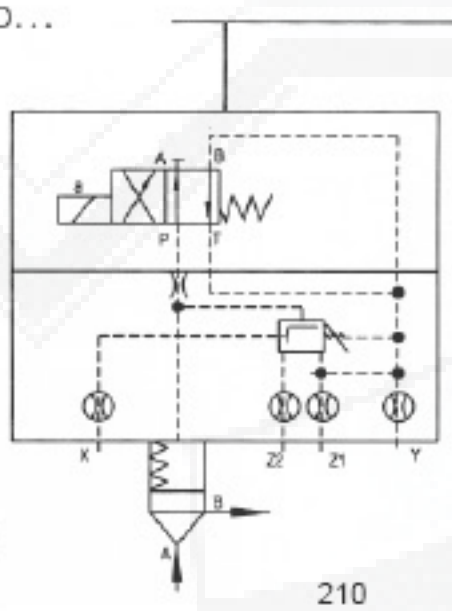
4WE6D...



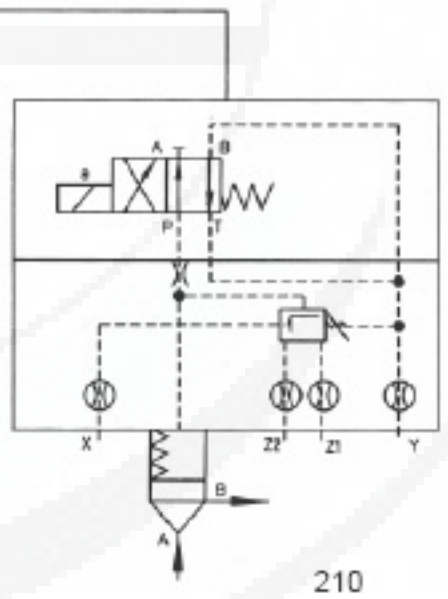
LFA...DZWA.-6XB/ 210 315 350



LFA...DZWA.-6XB/ 210 315 Y 350

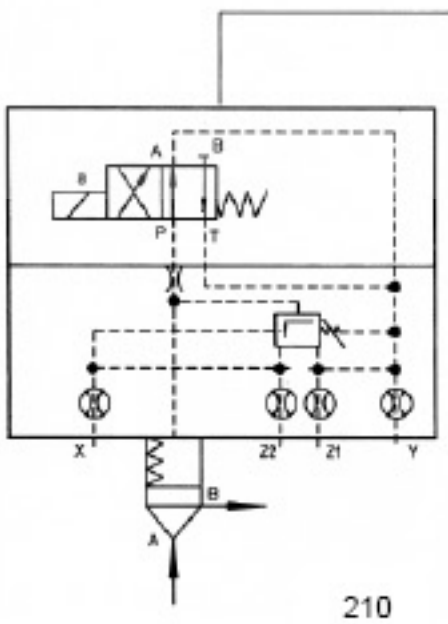


LFA...DZWA.-6XB/ 210 315 X 350

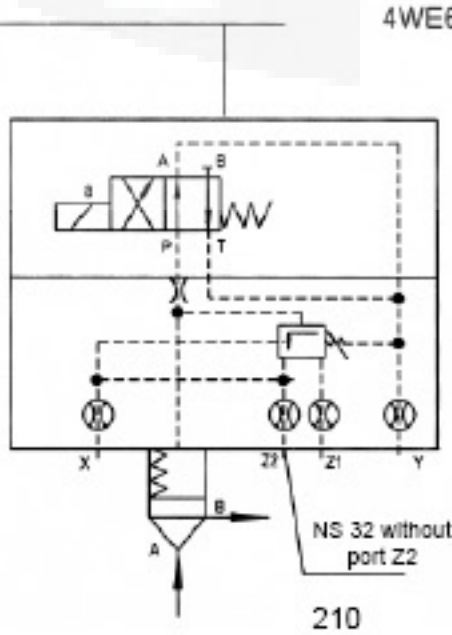


LFA...DZWA.-6XB/ 210 315 XY 350

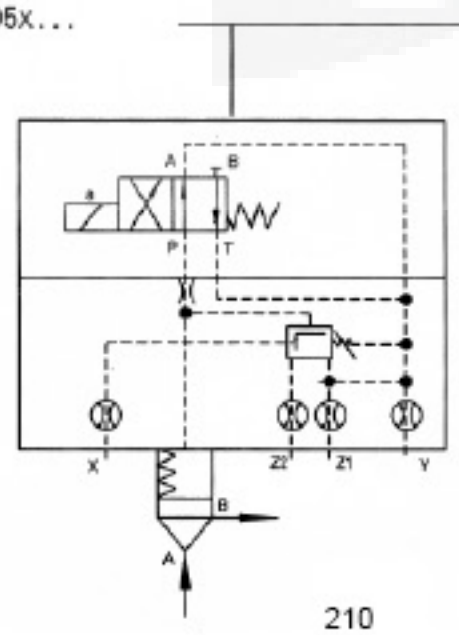
4WE6D5x...



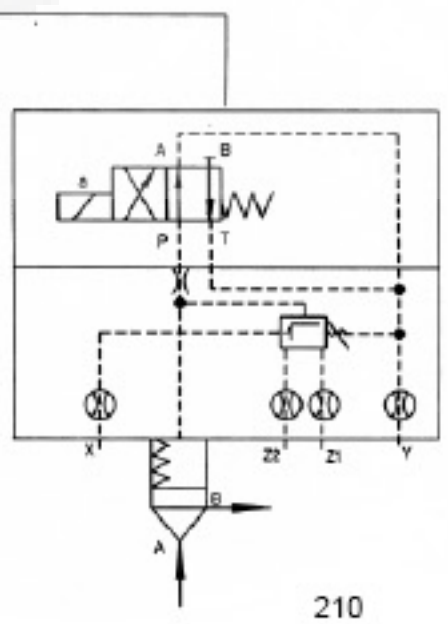
LFA...DZWA.-6XB/ 210 315 350



LFA...DZWA.-6XB/ 210 315 Y 350



LFA...DZWA.-6XB/ 210 315 X 350

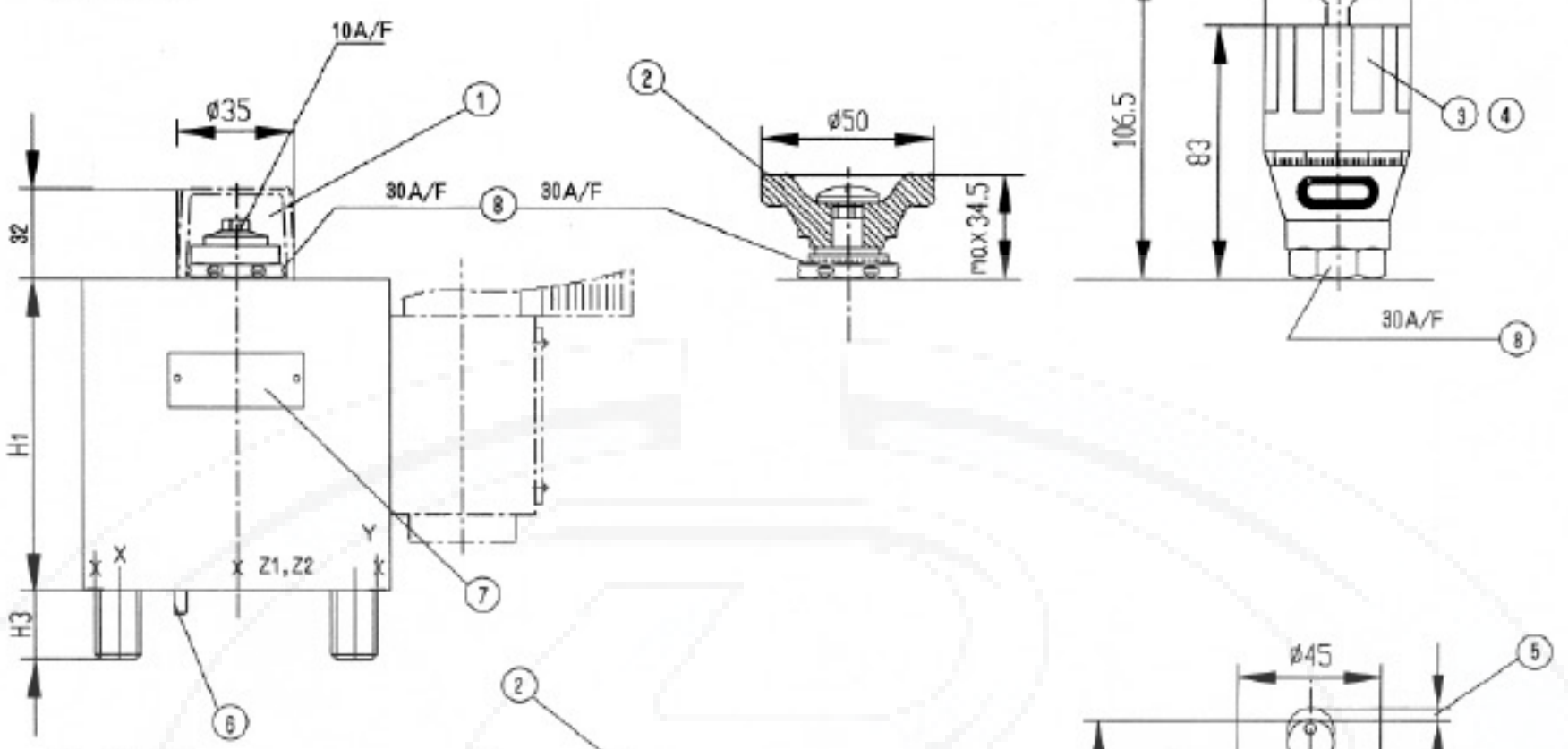


LFA...DZWA.-6XB/ 210 315 XY 350

Control cover for pressure-dependent and independent sequencing functions

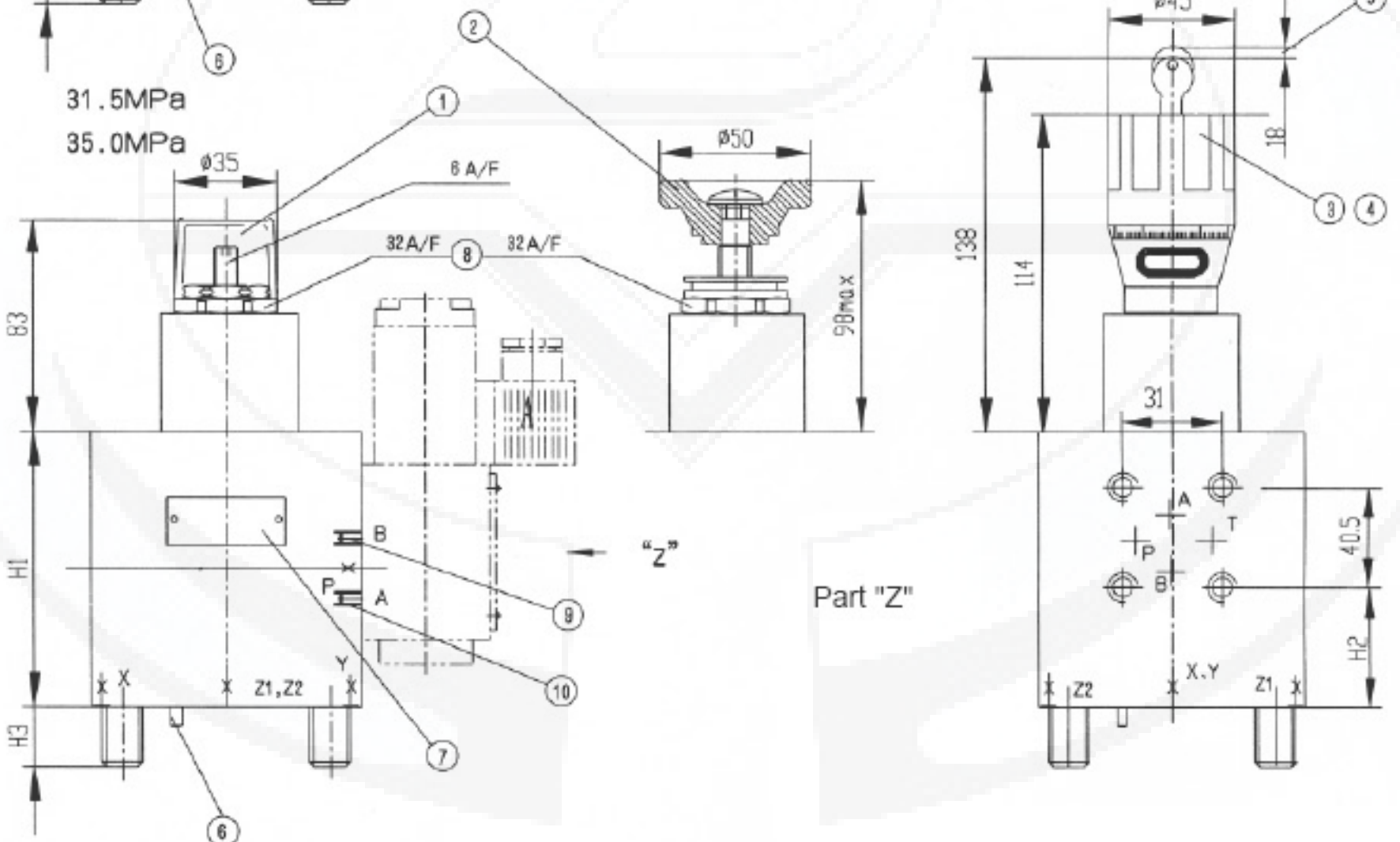
NS 16,25,32

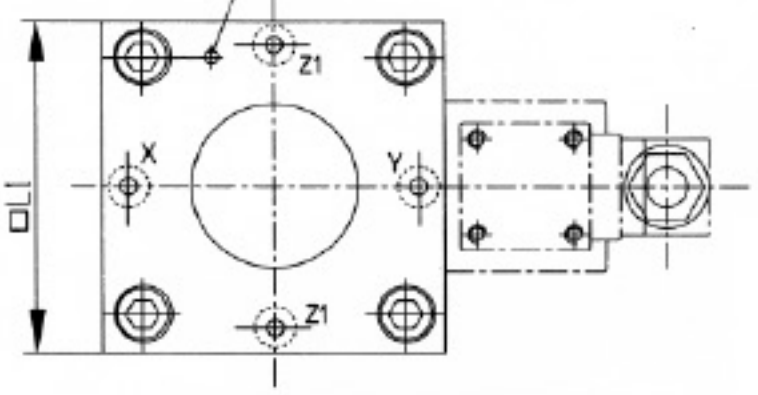
21.0MPa



31.5MPa

35.0MPa





** Orifice - ϕ

NS	16	25	32
X**	0.8	0.8	1.0
Y**	1.0	1.0	1.2
Z1**	1.0	1.0	1.2
Z2**	0.8	0.8	1.0
P**	1.0	1.0	1.2
H1	110	110	110
H2	40	40	40
H3	16	24	28
□L1	65	85	100

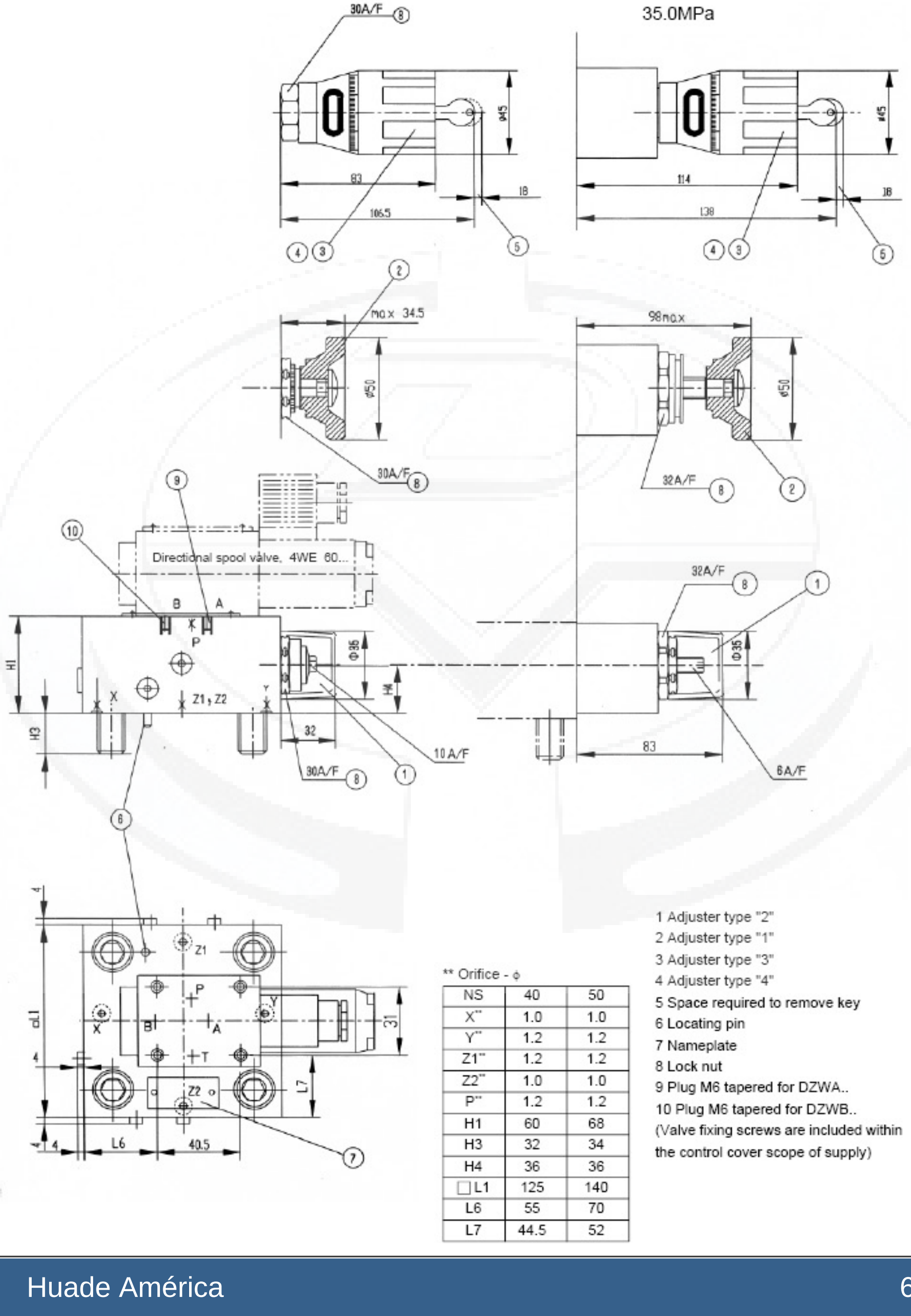
1 Adjuster type "2"
2 Adjuster type "1"
3 Adjuster type "3"
4 Adjuster type "4"
5 Space required to remove key
6 Locating pin
7 Nameplate
8 Lock nut
9 Plug M6 tapered for DZWA..
10 Plug M6 tapered for DZWB..
(Valve fixing screws are included within the control cover scope of supply)

Control cover for pressure-dependent and independent sequencing functions

NS 40,50

21.0MPa

31.5MPa
35.0MPa



** Orifice - ϕ

NS	40	50
X**	1.0	1.0
Y**	1.2	1.2
Z1**	1.2	1.2
Z2**	1.0	1.0
P**	1.2	1.2
H1	60	68
H3	32	34
H4	36	36
□L1	125	140
L6	55	70
L7	44.5	52

1 Adjuster type "2"
2 Adjuster type "1"
3 Adjuster type "3"
4 Adjuster type "4"
5 Space required to remove key
6 Locating pin
7 Nameplate
8 Lock nut
9 Plug M6 tapered for DZWA..
10 Plug M6 tapered for DZWB..
(Valve fixing screws are included within the control cover scope of supply)

Annotations:

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