

2-way Logic Cartridge Valves Pressure Function

Model: LC...7XJ(logic cartridge valves)
LFA...7XJ(control cover)



- ◆ Size 16/63
- ◆ Maximum working pressure 420 bar
- ◆ Maximum working flow 2500 L/min

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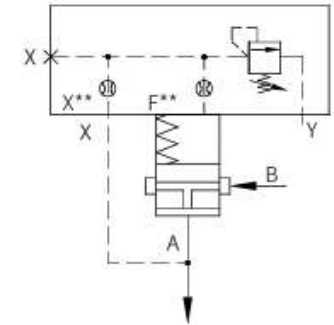
Features

- Cartridge spool and various sleeves to meet relief and reducing function
- One sleeve with multi-spool in cartridge structure
- Area ratio 1:1 and 1.07:1
- Optional throttle
- Different cracking pressures

Pressure reducing function

a) Normally open: Control cover LFA...DB...
Logic cartridge valve LC...DR...

The logic cartridge valve with pressure reducing function is seat valve with an area ratio of 1:1 (no effective area at port B). It adopts the control cover (model LFA...DB...) which has same function with the relief valve as pilot valve.

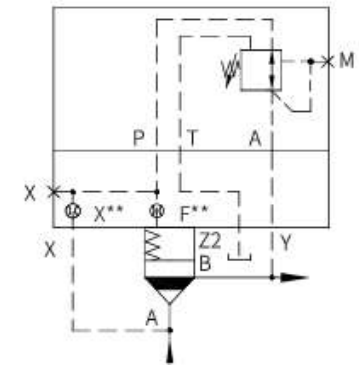


e.g. $\frac{\text{Model LFA..DB..}}{\text{Model LC..DR..}}$

The pressure acting at port A is fed to the spring cavity of the main valve through the pilot oil supply orifice. When the pressure is lower than the setting pressure of the pilot valve, the hydraulic force on the main spool is balanced and the spring force keeps the main valve spool opens. The fluid can flow freely from B to A. When the pressure reaches the set value, the main spool closes and reducing the pressure at port A according to the pressure-flow characteristics.

b) Normally closed: Control cover LFA...DR...
Logic cartridge valve LC...DB..D...

For the pressure reducing function with opening characteristics, a logic cartridge pressure relief valve (model LC...DB...D...) and a control cover (model LFA...DR) with a pressure reducing valve as the pilot valve are used. The pilot control oil supplied from port A flows into port B through the pilot oil supply orifice and the opened pilot reducing valve. The main spool is opened to allow freely flow from A to B. When the set pressure is reached, the main spool closes and reduces the pressure at port B according to the pressure-flow characteristics.



e.g. $\frac{\text{Model LFA.DR..}}{\text{Model LC..DB40D..}}$

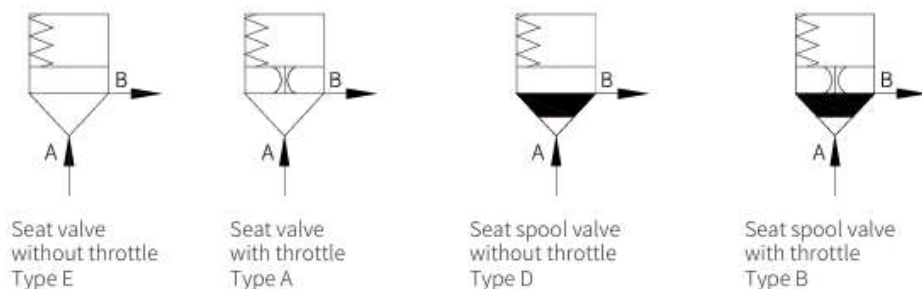
If the unexpected pressure increases on the pressure reducing side (port B), pressure relief via the third port of the pilot valve. By installing a directional valve, an additional isolating function can also be attained (model LFA...DRW...).

Logic cartridge valves models and specifications

LC		DB		7X		J	
logic cartridge valve							
size 16	=16						
size 25	=25						
size 32	=32						
size 40	=40						
size 50	=50						
size 63	=63						
relief function							
						sealing material	
						No code= NBR seals	
						V= FKM seals	
						(consult for other seals)	
						J= Rekith	
				7X=		70 to 79 series	
				(70 to 79 series installation and connection size unchanged)			
				E=		seat valve without throttle (standard)	
				D=		seat spool valve without throttle	
				A=		seat valve with throttle	
				B=		seat spool valve with throttle	
				00=		cracking pressure about 0MPa (without spring)	
				20=		cracking pressure about 0.2MPa	
				30=		cracking pressure about 0.3MPa	
				40=		cracking pressure about 0.4MPa	
				50=		cracking pressure about 0.5 MPa	

1) Only for size 16, 25, 32

Logic cartridge valves functional symbols



Technical parameters

Working medium		Mineral oil - for NBR seal or FKM seal Phosphate ester - for FKM seal						
Working medium temperature range		°C	30 to +80 (NBR seal) 20 to +80 (FKM seal)					
Viscosity range		mm²/s	2.8 to 380					
Cleanliness of oil		The maximum allowable pollution level of oil is NAS1638 Class 9 and ISO4406 Class 20 / 18 / 15						
2-way logic cartridge valve								
Maximum working pressure-oil port A and B		bar	420					
Maximum flow (Recommended)	Size		16	25	32	40	50	63
	Logic cartridge seat valves "E" and "A"	L/min	300	450	600	1000	1600	2500
	Logic cartridge spool valves "D" and "B"	L/min	175	300	450	700	1400	1750

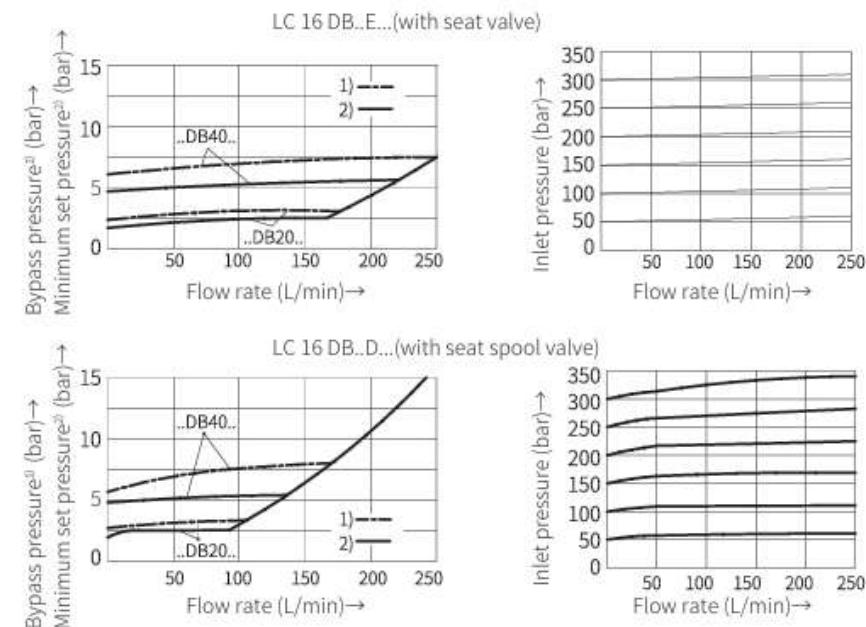
1) The oil must meet the cleanliness degree requested by the components in the hydraulic system.
Effective oil filtration can prevent failure and increase the service life of the components.

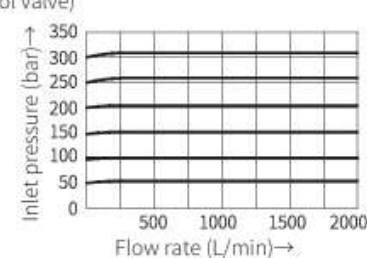
Characteristic curve

(Measured when using HLP46, $\vartheta_{oil} = 40^\circ\text{C} \pm 5^\circ\text{C}$)

Size 16

The characteristic curve is measured when the external pilot oil drains at zero pressure.
When the internal pilot oil drains, the inlet pressure increases along with the pressure at port B.





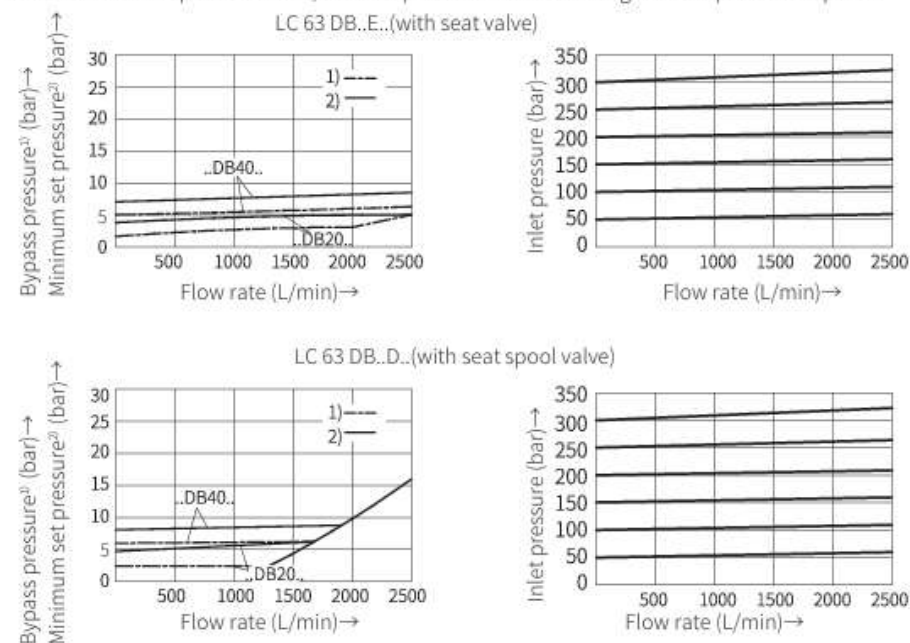
Characteristic curve

(Measured when using HLP46, $\vartheta_{oil}=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$)

Size 63

The characteristic curve is measured when the external pilot oil drains at zero pressure.

When the internal pilot oil drains, the inlet pressure increases along with the pressure at port B.



Technical parameters (model L F A... D B...)

Maximum working pressure	bar	420 Note: The maximum working pressure of the pilot valve must be considered!
Working medium		Mineral oil - for NBR seal or FKM seal Phosphate ester - for FKM seal
Working medium temperature range	$^{\circ}\text{C}$	-30 to +80 (NBR seal) -20 to +80 (FKM seal)
Viscosity range	mm^2/s	2.8 to 380
Cleanliness of oil		The maximum allowable pollution level of oil is NAS1638 class 9 and ISO4406 class 20 / 18 / 15

1) The oil must meet the cleanliness degree requested by the components in the hydraulic system.
Effective oil filtration can prevent failure and increase the service life of the components.

Valve fixing screw (included in the supply list)

GB/T70.1 10.9 grade				GB/T70.1 10.9 grade			
Size	Quantity	Dimension	Tightening torque (Nm)	Size	Quantity	Dimension	Tightening torque (Nm)
16	4	M8×45	32	50	4	M20×80	520
25		M12×50	110	63		M30×100	1800
32		M16×60	270	80		M24×120	900
40		M20×70	520	100		M30×120	1800

Technical parameters (Max. working pressure of pilot valve)

	Control cover		Maximum working pressure Y, T bar			Remark
	Size	Model	x	Pressure limitation	Static	
DBD.2K-20/... ¹⁾	16 to 32	DB, DBW, DBWD	420	Zero pressure (up to about 2 bar)	315	Supply included
DBD.6K10/... ²⁾	40 to 63	DBU2, DBBU3D, DBS	400		315	
.WE6...			350		21(=); 16(~)	Order separately

1) Possible pressure: 25, 50, 100, 200, 315, 400

2) Possible pressure: 25, 50, 100, 200, 315, 400