

## FREWAY CARTRIDGE VALVE SERIES

### Cartridge Valve



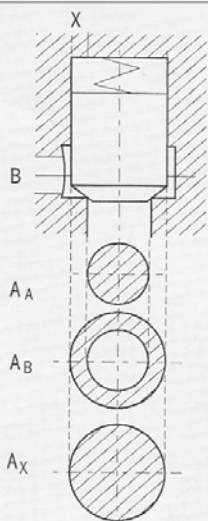
A cartridge valve inserts the active element into the standard cavity of the manifold block and the cartridge is held in place by the passive block and the cartridge is held in place by the passive block (the cover). It avoids the great deal of piping between the elements and actually eliminates any potential leakages and the consequential fluid waste.

#### Cartridge valve merits

Flexible system desing; Low-cost installation; Small size; Improved performance, control and reliability; Higher pressure capacity; Better efficiency; Eliminated external leakage, reduced internal leakage; Better contaminant resistance; Faster cycles.

#### Structure

A cartridge valve is very much like a seated check valve and includes a plug assembly (cartridge) that slips into the cavity of the manifold block. The cavity is built per ISO7380. The plug is held in the cavity by cover that is bolted onto the manifold block. The cartridge is composed of the casing, the core, the spring and the seal. The cavity block holes connect the main passages A and B of the cartridge to order cartridges or working hydraulic systems. In the same principle, the cavity block holes connects the control passages X, Z1 and Z2 as necessary in accordance with arrangements in ISO7368. The control cover can also include a manual controller to limit core travel and flow rate. Various damping holes are provided so as to assist overall hydraulic system optimization or adjust the response of the cartridge valve. Some covers may also have an ISO4401 03 or 05 mounting face to make it possible to install the pilot-operated directional (or pressure) control valve as a whole piece. Adding control modules between pilot valves and the cover will extend control functions.



### Technical specification

Size	16	25	32	40	50	63
Maximum flow (l/min)	200	400	750	1000	2000	3000
Maximum pressure (MPa)	35					
Hydraulic fluid	Mineral oil, phosphate - ester					
Fluid temp. (°C)	-25~80					
Fluid viscosity (mm <sup>2</sup> /s)	2.8~100					
Working viscosity	35					

#### Valve core area raito

A cartridge valve is just a 2-way valve that closes flow, allows free flow, or control flow or pressure. Basically the cartridge includes a casing, a spring and a core and has 3 cross section areas marked as AA, AB, and AX which affect the core's opening or closing against the seat. The area for Passage A is the area of the circle determined by seat diameter, while for B it is the circumferential area between the seat and core and AX is the area of the circle with the core's diameter. Pressure on AX and the spring holds the core against the seat.

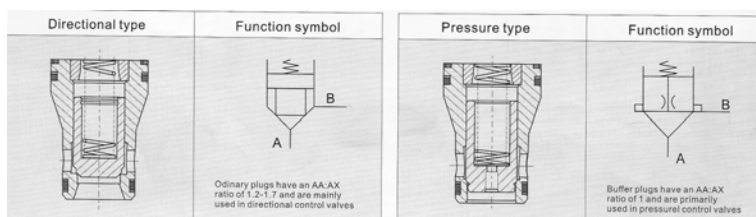
### Model instruction

LG	D	40	-B	*
Series	Valve core	DN	Buffer function	Cover board
LG 2-Way cartridge valve	P: Pressure model D: Direction model	16	B: Normal D: Buffer	Customization see E2
		25		
		32		
		40		
		50		
		63		

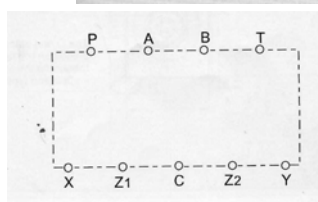
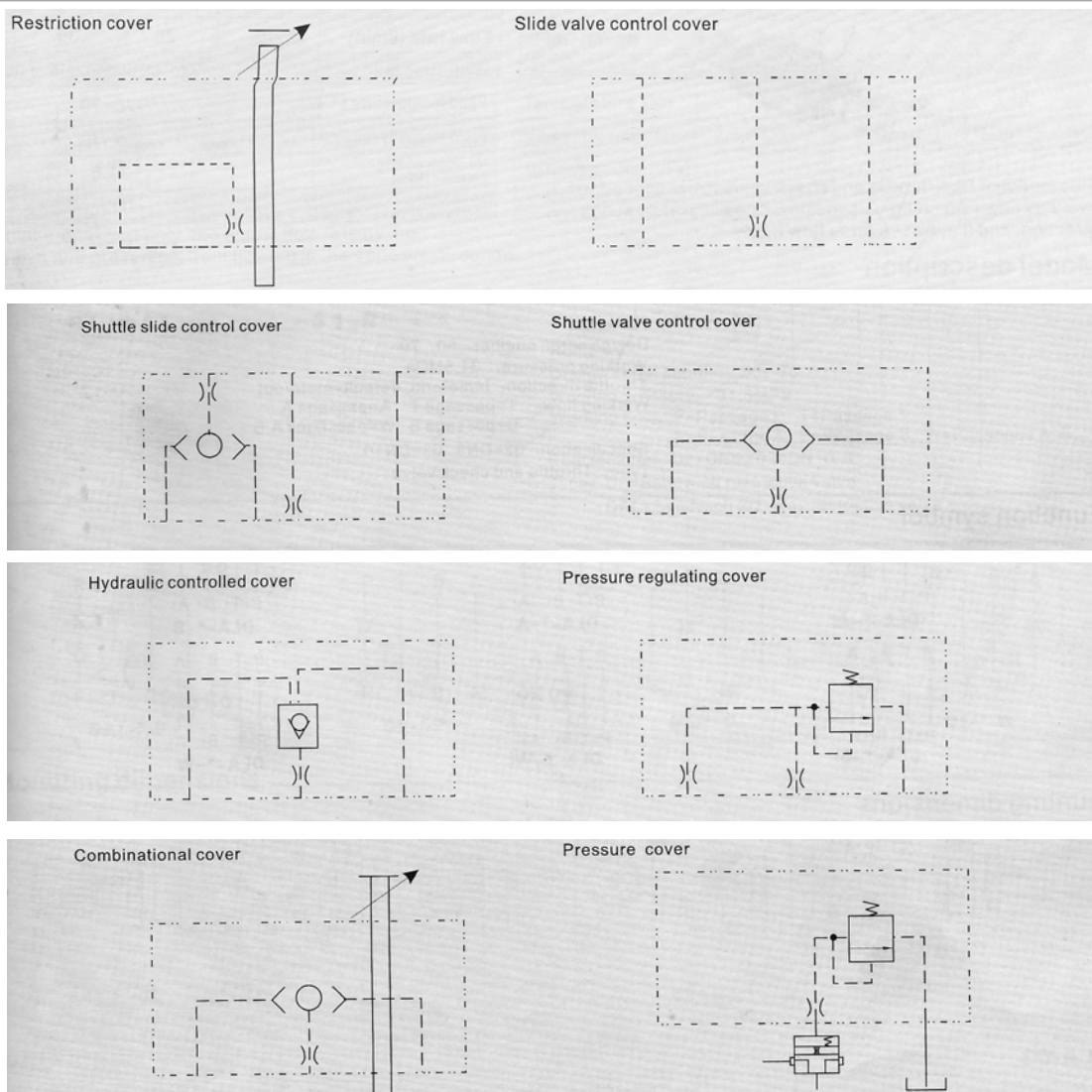
## FREEWAY CARTRIDGE VALVE SERIES

### AA as reference area

Size	16	25	32	40	50	63
Cartridge	Directional type					
AA	1	1	1	1	1	1
AB	0.3	0.3	0.4	0.4	0.5	0.5
Ax	1.3	1.3	1.4	1.4	1.5	1.5
Cartridge	Pressure type					
AA	1	1	1	1	1	1
AB	0	0	0	0	0	0
Ax	1	1	1	1	1	1



### Cover symbols



The users provide the function of the cover board and the position of the port(Please consult sketch map on the left side to complete the elements),then appoint the installing direction and the elements), then appoint the installing direction and the booster range of the pilot control valve.