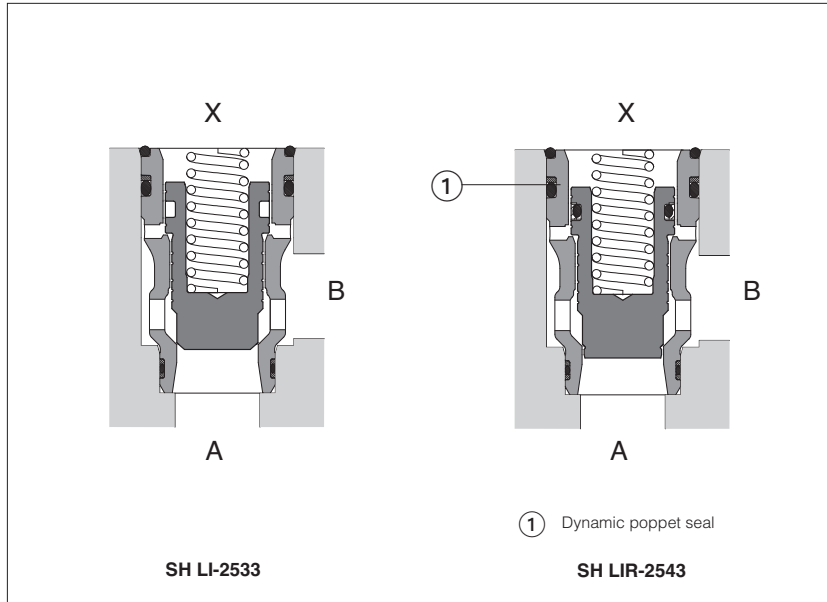


High flow cartridge valves type SH LI, SH LIR

Directional control, optional poppet seal, ISO 7368 sizes 16÷50



SH LI* are 2 way cartridge valves with high flow performances and low pressure drops.

They can be housed into ISO7368 standard cavity and coupled with all standard Atos covers performing directional controls, see technical tables H030 and H040.

Two different execution are available:

- **SH LI**, high flow cartridges without poppet seal.
- **SH LIR**, as SH LI, but with special LAP dynamic poppet seal to avoid internal leakages from B to X piloting line, for applications requiring improved leak-free feature.

Technical characteristics

- Size 16 to 100 (ISO 7368)
- type of poppet: 33 and 43 (with damping nose);
- area ratio (A/AP), see section 2;
- max flow up to **4000 l/min**, see section 2;
- max pressure: **350 bar**;
- spring cracking pressure: 1, 3 and 6 bar (only 3 and 6 bar for SH LIR).

Applications

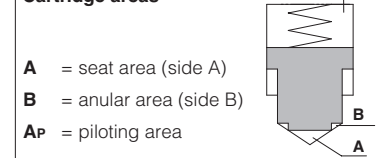
Manifolds with high flow performances and reduced dimensions

SH LIR: circuits with accumulators, safety valve for vertical loads.

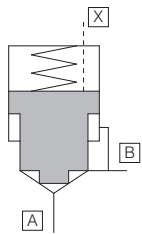
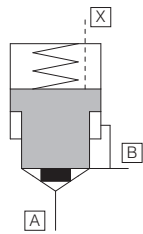
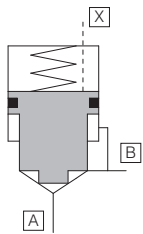
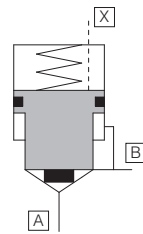
1 MODEL CODE

SH LI	R	-	16	43	1	**	/*
High flow cartridges according to ISO 7368						Seals material: - = NBR PE = FKM BT = HNBR	
Optional poppet seal (omit if not required)						Series number	
Size: 16 25 32 40 50				Spring cracking pressure: 1 = 1 bar (not for SH LIR) 3 = 3 bar 6 = 6 bar			
				Type of poppet, see section 2 33 = without damping nose 43 = with damping nose			

Cartridge areas



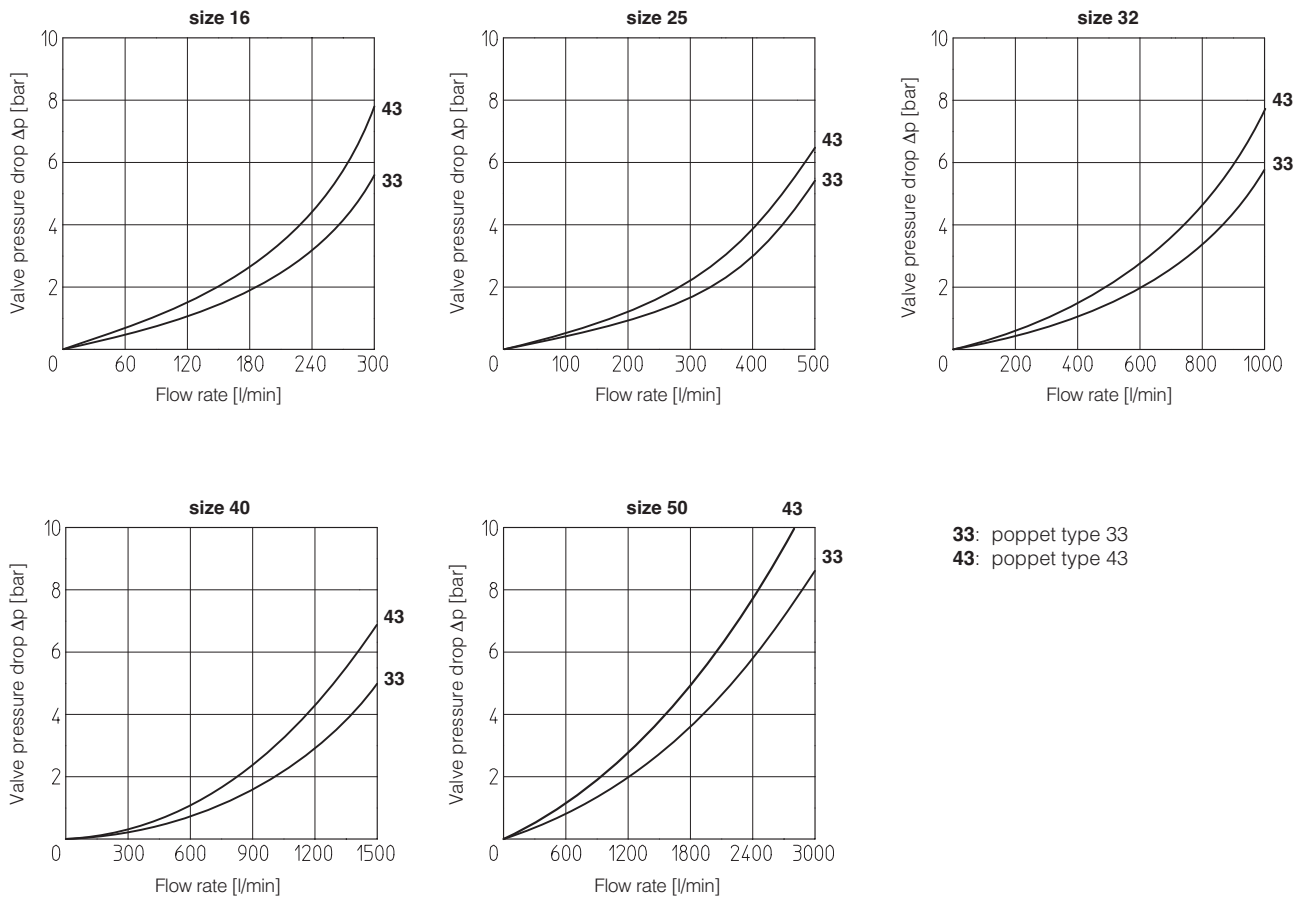
2 HYDRAULIC CHARACTERISTICS (based on mineral oil ISO VG 46 at 50 °C)

Hydraulic symbols	16		25		32		40		50	
										
SH LI-33	SH LI-43		SH LIR-33		SH LIR-43					
Size										
Poppet type										
Max flow [l/min]	33	43	33	43	33	43	33	43	33	43
at Δp = 5 bar	280	250	480	450	950	830	1500	1300	3000	2750
Maximum flow	550	550	1000	1000	1400	1400	2700	2700	4000	4000
Max pressure (ports A, B, X) [bar]	350									
A [cm ²]	2,14		4,91		8,04		12,57		19,63	
B (% of A)	78		64		72		89		69	
AP (% of A)	178		164		172		189		169	
Pilot volume [cm ³]	2,59	2,97	8,05	8,85	16,6	17,98	38	40,37	66,37	69,68

3 MAIN CHARACTERISTICS OF HIGH FLOW CARTRIDGES VALVES TYPE SH LI AND SH LIR

Assembly position / location	Any position
Surface finishing	Roughness index Ra 0,4 - flatness ratio 0,01/100 (ISO 1101)
Ambient temperature	Standard execution = -30°C ÷ +70°C; /PE option = -20°C ÷ +70°C; /BT option = -40°C ÷ +70°C
Fluid	Hydraulic oil as per DIN 51524 535; for other fluids see section I
Recommended viscosity	15 ÷ 100 mm ² /s at 40°C (ISO VG 15 ÷ 100)
Fluid contamination class	ISO 4406 class 21/19/16 NAS 1638 class 10, in line filters of 25 µm (β ₂₅ ≥ 75 recommended)
Seals, recommended fluid temperature	NBR seals (standard) = -20°C ÷ +60°C, with HFC hydraulic fluids = -20°C ÷ +50°C FKM seals (/PE option) = -20°C ÷ +80°C HNBR seals (/BT option) = -40°C ÷ +60°C, with HFC hydraulic fluids = -40°C ÷ +50°C
Flow direction	B → A or A → B

4 Q/Δp DIAGRAMS based on mineral oil ISO VG 46 at 50 °C



For cavity dimensions see tech. table P006