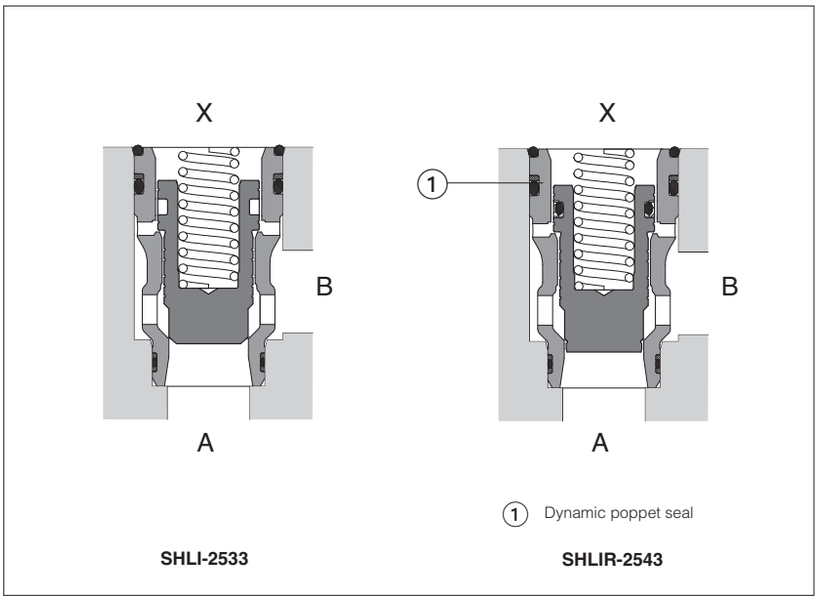
High flow cartridge valves type SHLI, SHLIR

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



SHLI-2533 **SHLIR-2543**

SHLI* 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:
- **SHLI**, high flow cartridges without poppet seal.
- **SHLIR**, as SHLI, 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 SHLIR).

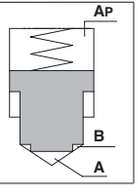
Applications
Manifolds with high flow performances and reduced dimensions
SHLIR: circuits with accumulators, safety valve for vertical loads.

1 MODEL CODE

SHLI	R	-	16	43	1	**	/*

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

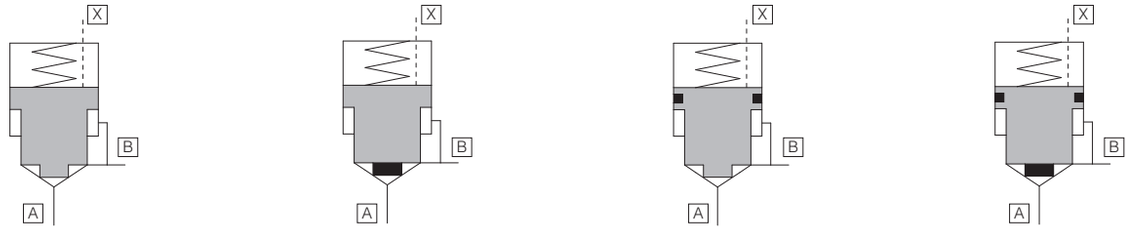
Cartridge areas



A = seat area (side A)
B = anular area (side B)
AP = piloting area

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

Hydraulic symbols



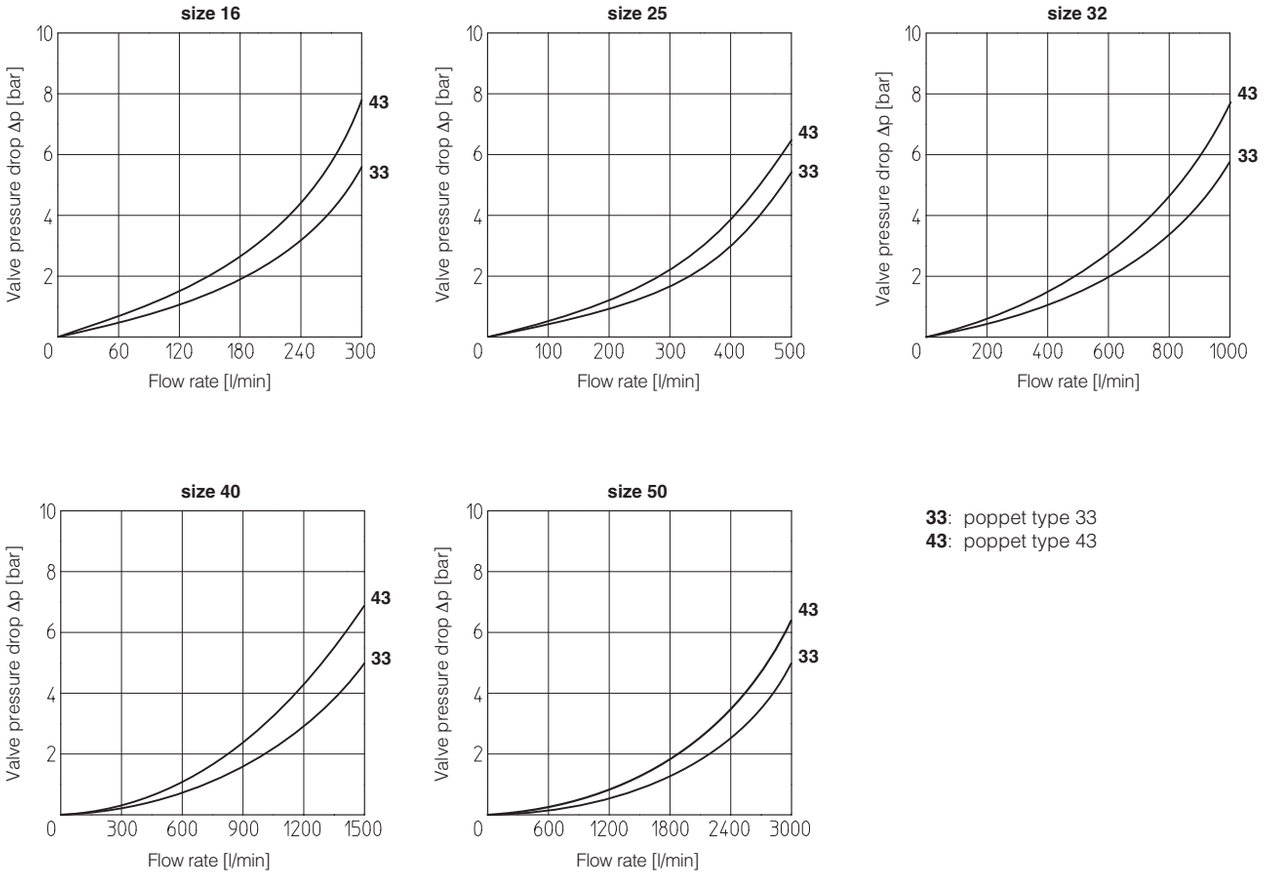
SHLI-*33 **SHLI-*43** **SHLIR-*33** **SHLIR-*43**

Size		16		25		32		40		50	
Poppet type		**33**	**43**	**33**	**43**	**33**	**43**	**33**	**43**	**33**	**43**
Max flow	[l/min]										
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	[cm²]	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	[cm³]	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 SHLI AND SHLIR

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 1
Recommended viscosity	15 ÷ 100 mm²/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 (β25 ≥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



33: poppet type 33
43: poppet type 43

For cavity dimensions see tech. table P006