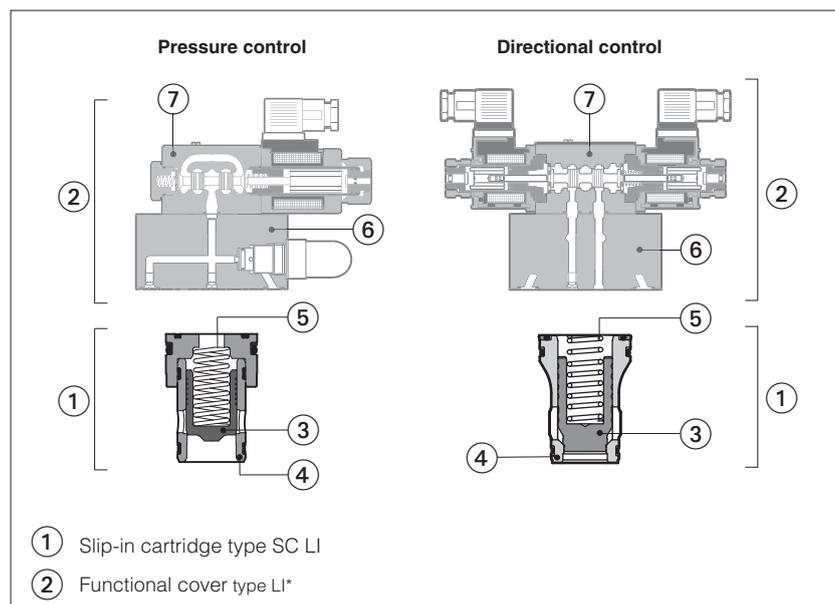




Table **H003-19/E**

## ISO cartridges type SC LI

2 way slip-in directional, pressure, flow, check controls



2way slip-in cartridges are designed in conformity with ISO 7368 standard cavities for installation in compact manifolds. They are available in several versions to perform directional, pressure, flow and check controls in combination with relevant functional covers.

They permit to control very high flow rates at low pressure drops, reducing the manifold dimensions respect to subplate valves.

The slip-in cartridge ① is made by a poppet ③ sliding into a sleeve ④ and kept in closed position by a spring ⑤ available with different cracking pressure valves.

The functional covers ② are made by a closing element with ISO mounting surface ⑥ provided with internal piloting lines for the cartridge operation. They can be equipped with pilot valves ⑦ and devices performing the specific control (pressure relief, flow metering, directional, check)

Sizes: **16 to 100** ISO 7368

Max flow up to **9000 l/min** at  $\Delta p$  5 bar

Max pressure **420 bar**

### 1 MODEL CODE

<b>SC LI</b>	-	<b>16</b>	<b>43</b>	<b>1</b>	*	/	*
Cartridge according to ISO 7368							
Size - see section 5							
<b>16</b>	<b>25</b>	<b>32</b>	<b>40</b>	<b>50</b>	<b>63</b>	<b>80</b>	<b>100</b>
Type of poppet (1) - see section 5							
Seals material: - = NBR <b>PE</b> = FKM <b>BT</b> = HNBR							
Series number							
Spring cracking pressure (1)							

(1) See technical table:

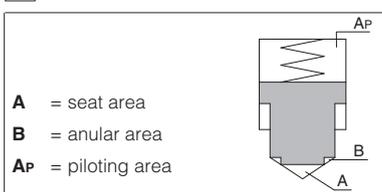
**H030** for directional controls  
**H020** for flow controls

**H010** for pressure controls  
**H040** for check controls

### 2 MAIN CHARACTERISTICS

Assembly position / location	Any position
Cavity dimensions	ISO 7368, see technical table P006
Compliance	RoHS Directive 2011/65/EU as last update by 2015/65/EU REACH Regulation (EC) n°1907/2006
Ambient temperature	<b>Standard</b> execution = -30°C ÷ +70°C <b>/PE</b> option = -20°C ÷ +70°C <b>/BT</b> option = -40°C ÷ +70°C
<b>Operating pressure</b>	<b>420 bar</b> , see technical table of specific valve
<b>Maximum flow</b>	see section 5

### 3 SC LI CARTRIDGE AREAS



Pressure applied to areas A and B acts to open the poppet.

Pressure applied to area Ap plus the spring force act to close the poppet

### 4 SEALS AND HYDRAULIC FLUID - for other fluids not included in below table, consult our technical office

Seals, recommended fluid temperature	NBR seals (standard) = -20°C ÷ +80°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		
Recommended viscosity	20÷100 mm <sup>2</sup> /s - max allowed range 15 ÷ 380 mm <sup>2</sup> /s		
Max fluid contamination level	ISO4406 class 20/18/15 NAS1638 class 9, see also filter section at www.atos.com or KTF catalog		
<b>Hydraulic fluid</b>	<b>Suitable seals type</b>	<b>Classification</b>	<b>Ref. Standard</b>
Mineral oils	NBR, FKM, HNBR	HL, HLP, HLPD, HVLP, HVLDP	DIN 51524
Flame resistant without water	FKM	HFDU, HFDR	ISO 12922
Flame resistant with water	NBR, HNBR	HFC	

5 TYPE OF POPPET FOR SC LI SLIP-IN CARTRIDGES

Type	Size								Functional sketch (hydraulic symbol)	Typical section	Area ratio	Related functional cover
	SC LI-16	SC LI-25	SC LI-32	SC LI-40	SC LI-50	SC LI-63	SC LI-80	SC LI-100				
<b>31</b>	●	●	●	●	●	●	●	—			1 : 1	Poppet type LIMM, LIMHA, LIMHC, LIC, LICM
Qmax [l/min] Δp = 5 bar	180	380	650	1100	2000	3200	5000					
<b>32</b>	●	●	●	●	●	●	●	●			1 : 1,1	Poppet type LIDA, LIDD, LIDB, LIDBH, LIDEW
Qmax [l/min] Δp = 5 bar	270	550	1000	1700	2500	4000	5500	9000				
<b>33</b>	●	●	●	●	●	●	●	●			1 : 1,5	Poppet type LIDA, LIDD, LIDB, LIDBH, LIDEW
Qmax [l/min] Δp = 5 bar	270	550	1000	1700	2500	4000	5500	9000				
<b>34</b>	●	○	○	—	—	—	—	—			1 : 1	Poppet type LIMM, LIMHA, LIMHC
Qmax [l/min] Δp = 5 bar	200											
<b>35</b>	●	●	●	●	●	—	—	—			1 : 1,1	Poppet type LIMM, LIMHA, LIMHC
Qmax [l/min] Δp = 5 bar	200	400	670	1200	2200							
<b>36</b>	●	●	●	●	●	●	●	—			1 : 1	Spool type LIC, LICM
Qmax [l/min] Δp = 5 bar	180	380	650	1100	2000	3200	5000					
<b>37</b>	●	●	●	●	—	—	—	—			1 : 1	Spool type LIRA
Qmax [l/min] Δp = 5 bar	160	270	540	840								
<b>42</b>	●	●	●	●	●	●	●	—			1 : 1,1	Poppet type with dumping nose LIDA, LIDD, LIDB, LIDBH, LIDEW
Qmax [l/min] Δp = 5 bar	240	500	800	1400	2200	3300	4000					
<b>43</b>	●	●	●	●	●	●	●	●			1 : 1,5	Poppet type with dumping nose LIDA, LIDD, LIDB, LIDBH, LIDEW
Qmax [l/min] Δp = 5 bar	240	500	800	1400	2200	3300	4000	6300				
<b>52</b>	●	●	●	●	●	—	—	—			1 : 1,1	Poppet type LIDA
Qmax [l/min] Δp = 5 bar	170	300	450	900	1800							
<b>62</b>	●	●	●	○	●	—	—	—			1 : 1,1	Poppet type LIDO
Qmax [l/min] Δp = 5 bar	170	300	450	900	1800							
<b>63</b>	●	●	●	○	●	—	—	—			1 : 1,1	Poppet type with dumping nose LIDO
Qmax [l/min] Δp = 5 bar	170	300	450	900	1800							
<b>69</b>	—	●	●	●	●	—	—	—			1 : 1,6	
Qmax [l/min] Δp = 5 bar												
<b>Mass [kg]</b>	0,2	0,5	0,9	1,7	3,0	7,0	13	22				

- normally available from stock
- on request
- not available

6 FUNCTIONALS COVERS - DIRECTIONAL CONTROL, see table H030

Function and type of control	Size	Hydraulic symbol	Functional cover size 16 ÷ 100	SC LI cartridges
Direct operated directional control valve with solenoid valve for pilot selection <b>LIDEW*</b>	16			SC LI-***32* SC LI-***33* size 16 ... 100
	25			SC LI-**42* size 16 ... 80 SC LI-**43* size 16 ... 100
	32			
	40			
	50			
	63			
80				
100				
Direct operated directional control valve with solenoid valve and shuttle valve for pilot selection <b>LIDBH1A</b> = open when solenoid is de-energized <b>LIDBH1C</b> = closed when solenoid is de-energized	16	<b>1A</b> <b>1C</b>		SC LI-***32* SC LI-***33* size 16 ... 100
	25			SC LI-**42* size 16 ... 80 SC LI-**43* size 16 ... 100
	32			
	40			
	50			
	63			
80				
100				
Direct operated directional control valve with solenoid and shuttle valve for pilot selection <b>LIDBH2A</b> = when solenoid is de-energized only connections X→F <b>LIDBH2C</b> = when solenoid is de-energized only connections Z1→F	16	<b>2A</b> <b>2C</b>		SC LI-***32* SC LI-***33* size 16 ... 100
	25			SC LI-**42* size 16 ... 80 SC LI-**43* size 16 ... 100
	32			
	40			
	50			
	63			
80				
100				

7 FUNCTIONALS COVERS - CHECK FUNCTION, see table H040

Function and type of control	Size	Hydraulic symbol	Functional cover size 16 ÷ 25	Functional cover size 32 ÷ 80	SC LI cartridges
Direct operated check valve normally closed <b>LIDA</b>	16				SC LI-***32* SC LI-***33* size 16 ... 80
	25				SC LI-**42* SC LI-**43* size 16 ... 80
	32				
	40				
	50				
63					
80					
Direct operated check valve normally open <b>LIDO</b>	16				SC LI-**62* SC LI-**63* size 16, 25, 32, 50
	25				
	32				
	40				
	50				
Direct operated check valve with shuttle valve for pilot selection <b>LIDB</b>	16				SC LI-***32* SC LI-***33* size 16 ... 63
	25				SC LI-**42* SC LI-**43* size 16 ... 63
	32				
	40				
	50				
63					
Direct operated check valve with hydraulically operated pilot check valve <b>LIDR</b>	16				SC LI-***32* SC LI-***33* size 16 ... 63
	25				SC LI-**42* SC LI-**43* size 16 ... 63
	32				
	40				
	50				
63					

8 TYPICAL FUNCTIONS OF COVERS - PRESSURE CONTROL, see table H010

Function and type of control	Size	Hydraulic symbol	Functional cover size 6 ÷ 32	Functional cover size 40 ÷ 80	SC LI cartridges	
Pressure relief control with manual setting <b>LIMM</b>	16				SC LI-**31* size 16... 80	
	25				SC LI-**34* size 16	
	32					
	40					
	50					
63	SC LI-**35* size 16...50					
80						
Pressure relief control with solenoid valve for venting <b>LIMHA</b> = unloading when solenoid is de-energized <b>LIMHC</b> = unloading when solenoid is energized <b>LIMH*</b>		16				SC LI-**31* size 16..80
		25				SC LI-**34* size 16
		32				
	40					
	50					
63	SC LI-**35* size 16...50					
80						
Pressure reducing control with manual setting. Open in resting position <b>LIRA</b>		16				SC LI-**37* size 16...40
		25				
		32				
	40					
Pressure compensator to be coupled with flow control valves <b>LIC</b>	16				SC LI-**31* size 16..80	
	25				SC LI-**36* size 16..80	
	32					
	40					
	50					
63	SC LI-**31* size 16..80					
80						
Pressure compensator with mechanical max pressure regulation to be coupled with flow control valves. <b>LICM</b>		16				SC LI-**31* size 16..80
		25				SC LI-**36* size 16..80
		32				
	40					
	50					
63	SC LI-**36* size 16..80					
80						

9 FUNCTIONAL COVERS - FLOW CONTROL, see table H020

Function and type of control	Size	Hydraulic symbol	Functional cover size 16 ÷ 63	SC LI cartridges
Flow control with stroke limiter <b>LIDD</b>	16			SC LI-**32* SC LI-**33* size 16..63
	25			SC LI-**42* SC LI-**43* size 16..63
	32			
	40			
	50			
63	SC LI-**42* SC LI-**43* size 16..63			