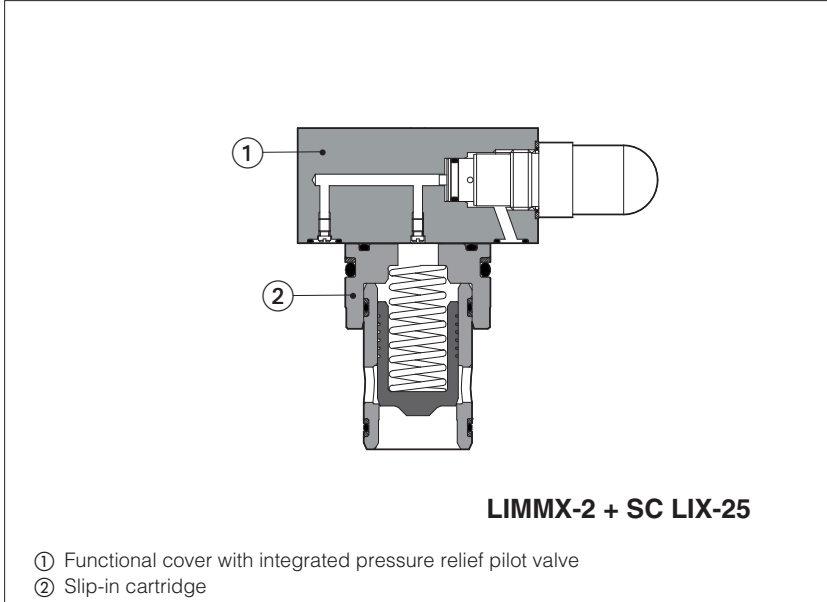


# Stainless steel pressure relief valves

ISO functional cover and 2-way slip-in cartridge



## LIMMX, LIMMXS, SC LIX

Pressure relief valves, in cartridge design conforming to ISO7368 standard for installation in compact manifolds. They are made by a functional cover **LIMMX(S)** and a 2-way slip-in cartridge **SC LIX**:

Functional covers are available in two different stainless steel executions for corrosive environments and fluids:

- **X** full stainless steel for external and internal parts, to withstand extreme and corrosive environmental conditions, and to ensure full compatibility also with water base and special fluids.
- **XS** stainless steel only for external parts to withstand extreme and corrosive environmental conditions.  
LIMMXS cover can be used also with standard SC LI-25\*, see tech. table H030

## LIMMX + SC LIX LIMMXS + SC LI :

Size: **25** - ISO 7368  
Max flow: **370 l/min** at  $\Delta p$  5 bar  
Max pressure: **350 bar**

### 1 MODEL CODE OF FUNCTIONAL COVER and SLIP-IN CARTRIDGE VALVES

#### 1.1 Model code of functional cover

<b>LIMM</b>	<b>X</b>	-	<b>2</b>	/	<b>350</b>	<b>**</b>	/	<b>*</b>	/	<b>*</b>
Cover according to ISO 7368						Series number				Test fluid, only for X execution: <b>(3)</b> H = mineral oil W = pure water
Stainless steel execution: <b>(1)</b> <b>X</b> = Full stainless steel <b>XS</b> = Stainless steel only external parts <b>(2)</b>					Pressure range <b>50</b> = 6 ÷ 50 bar <b>210</b> = 10 ÷ 210 bar <b>100</b> = 8 ÷ 100 bar <b>350</b> = 15 ÷ 350 bar			Seals material, see section <b>[5]</b> : - = NBR low temp. -40°C <b>PE</b> = FKM <b>BBT</b> = FVMQ fluorosilicon -60°C <b>(4)</b>		
Size: <b>2</b> = 25										

#### 1.2 Model code of slip-in cartridge

<b>SC LI</b>	<b>X</b>	-	<b>25</b>	/	<b>31</b>	/	<b>2</b>	<b>**</b>	/	<b>*</b>	/	<b>*</b>
Cartridge according to ISO 7368								Series number				Test fluid: <b>(3)</b> H = mineral oil W = pure water
Stainless steel execution: <b>X</b> = Full stainless steel							Spring cracking pressure <b>1</b> = 0,3 bar <b>3</b> = 3 bar <b>2</b> = 1,2 bar <b>6</b> = 6 bar			Seals material, see section <b>[5]</b> : - = NBR low temp. -40°C <b>PE</b> = FKM <b>BBT</b> = FVMQ fluorosilicon -60°C		
Size 25												
Poppet type: <b>31</b> = Area ratio 1 ÷ 1												

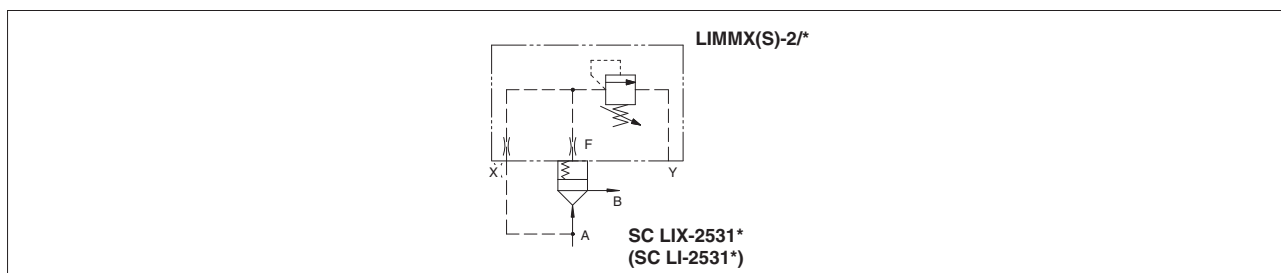
**(1)** See section **[5]** for material specifications

**(2)** LIMMXS cover can be used with standard SCLI-25\* cartridge

**(3)** LIMMX and SC LIX in full stainless steel execution are factory tested with mineral oil or pure water in order to avoid the contamination of the end user system. At the end of each valve model code must be specified the type of fluid to be used in the valve's testing: "H" for hydraulic oil or "W" for pure water.

**(4)** Only for full stainless steel "X" execution

## 2 HYDRAULIC SYMBOL



## 3 GENERAL CHARACTERISTICS

Assembly position / location	Any position
Mounting surface and cavity dimensions	ISO 7368, see section 9
MTTFd values according to EN ISO 13849	75 years, for further details see technical table P007
Ambient temperature	<b>Standard</b> = -40°C ÷ +70°C <b>/PE</b> option = -20°C ÷ +70°C <b>/BBT</b> option = -60°C ÷ +70°C
Storage temperature range	<b>Standard</b> = -40°C ÷ +80°C <b>/PE</b> option = -20°C ÷ +80°C <b>/BBT</b> option = -60°C ÷ +80°C
Compliance	RoHs Directive 2011/65/EU as last update by 2015/65/EU REACH Regulation (EC) n°1907/2006

## 4 HYDRAULICS CHARACTERISTICS

### 4.1 Hydraulic characteristics of LIMMX(S) functional cover

Functionl cover	LIMMX, LIMMXS
Opening pressure [bar]	Port X = 350; Port Y = 50

### 5.2 Hydraulic characteristics of SC LIX slip-in cartridge

Slip-in cartridge	SC LIX
Opening pressure [bar]	350
Nominal Flow at Δp 5 bar [l/min]	370
Type of poppet	<b>31</b>
Functional sketch (Hydraulic symbol)	
Typical section	
Area ratio A: AP	1:1

## 5 MATERIALS SPECIFICATION

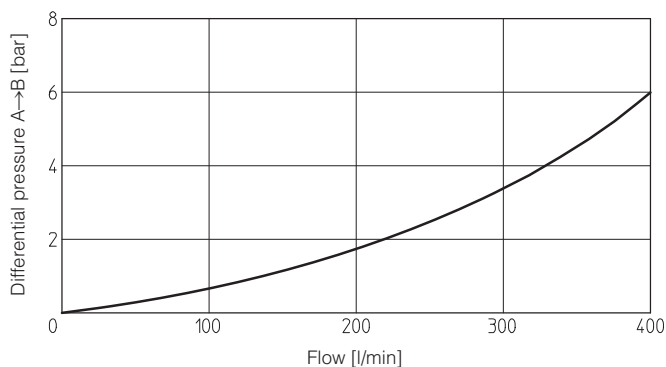
Valve code	Valve type	Valve body	Internal parts	Spring	Seals		
					std	/PE	/BBT
<b>LIMMX</b>	Functional cover	AISI 316L	AISI 316L, 420B, 630	AISI 302	NBR 70 Sh low temp	FKM (viton)	FMVQ (fluorosilicon)
<b>LIMMXS</b>	Functional cover	AISI 316L	Carbon steel	AISI 302	NBR 70 Sh low temp	FKM (viton)	-
<b>SC LIX</b>	Cartridge	AISI 316L	AISI 316L, 420B, 630	AISI 302	NBR 70 Sh low temp	FKM (viton)	FMVQ (fluorosilicon)

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

Seals, recommended fluid temperature <b>(1)</b>	NBR low temp. seals (standard) = -40°C ÷ +60°C FKM seals (/PE option) = -20°C ÷ +80°C FVMQ seals (/BBT option) = -60°C ÷ +60°C		
Recommended viscosity	15 ÷ 100 mm <sup>2</sup> /s - max allowed range 2.8 ÷ 500 mm <sup>2</sup> /s min = 0,9 mm <sup>2</sup> /s for X full stainless steel execution with pure water		
Max fluid contamination level	ISO4406 class 20/18/15 NAS1638 class 9, see also filter section at www.atos.com or KTF catalog		
Hydraulic fluid	Suitable seals type	Classification	Ref. Standard
Mineral oils	NBR low temp., FKM, FVMQ	HL, HLP, HLPD, HVL, HVLDP	DIN 51524
Flame resistant without water	FKM, FVMQ	HFDU, HFDR	ISO 12922
Flame resistant with water	NBR low temp.	HFA-E, HFA-S, HFB, HFC	

**(1)** The operating temperature of the fluid must be compatible with the maximum viscosity range allowed for the valve

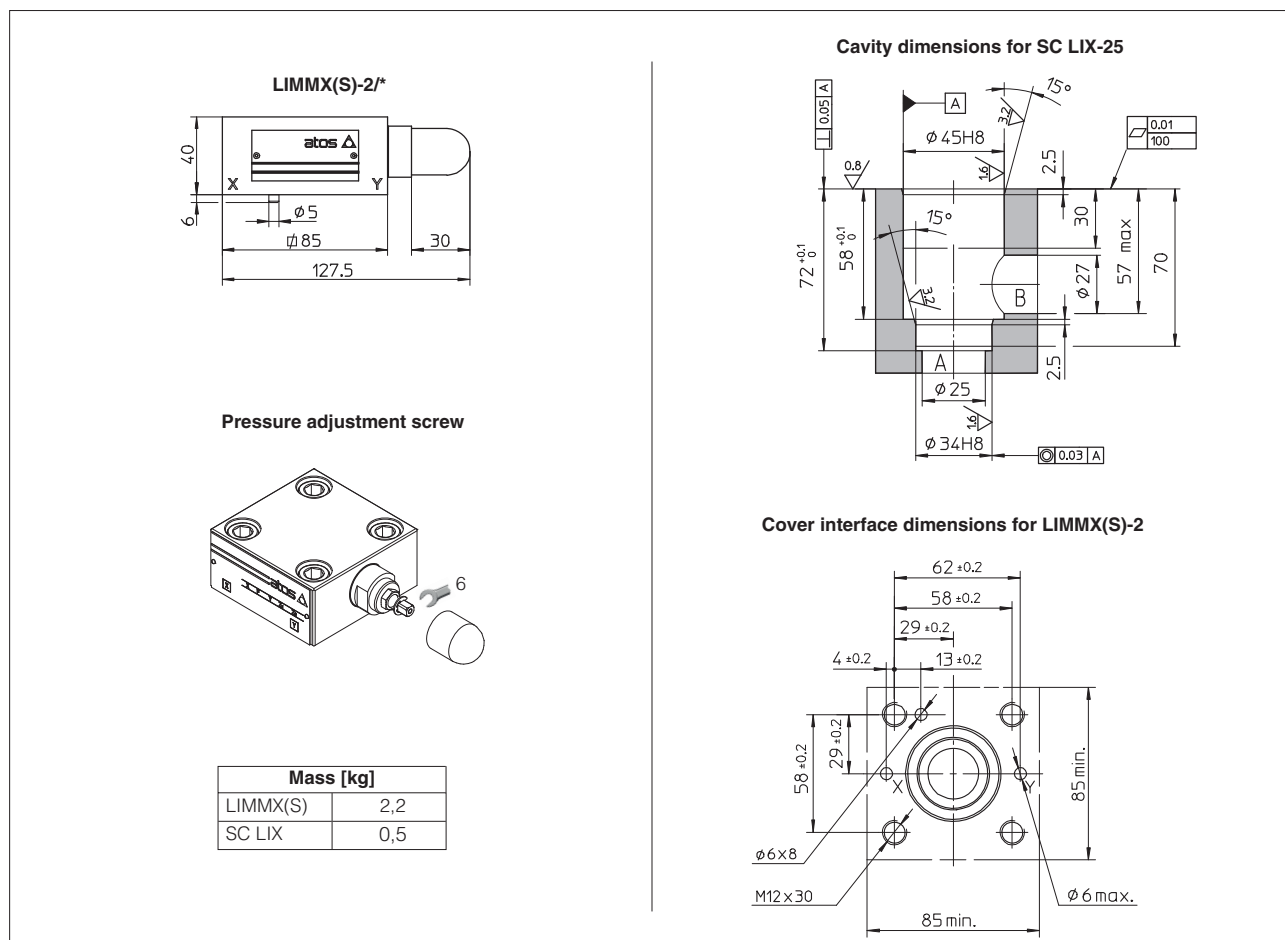
**7 FLOW/ $\Delta p$  DIAGRAM** (based on mineral oil ISO VG 46 at 50°C)



**8 FASTENING BOLTS AND SEALS**

Type	Size	Fastening bolts	Seals
LIMMX LIMMXS	25 (ISO 7368)	n°4 M12x45-A4-70 Tightening torque = 125Nm	n°2 OR-108
SC LIX	25 (ISO 7368)	-	n°1 OR-3100 n°1 OR-4150, n°2 4150.BURC-39.20 n°1 OR-2118, n°2 2118.BURC-31.20

**9 INSTALLATION DIMENSIONS**



**10 RELATED DOCUMENTATION**

- W010** Basics for electrohydraulics in corrosive environments
- W020** Summary of Atos stainless steel components
- EW900** Operating and maintenance information for stainless steel on-off valves