

Type 459 IC

Safety Relief Valves



CATALOG

LESER

The-Safety-Valve.com

General Information

Overview

LESER Compact Performance Safety Valves are the first choice solution for all industrial applications for steam, gas and liquid.

Compact Performance safety valves (LESER India Type 459 IC) are threaded and flanged safety valves with compact dimensions for economical protection of small and mid sized capacities.

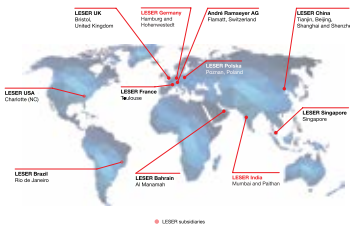
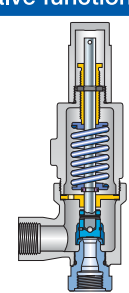
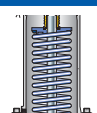
- ✓ Compact dimensions with high capacity
- ✓ Threaded and flanged connections.
- ✓ Pressure range: 0.2 up to 100 bar_g
- ✓ Temperature up to 427 °C

Advantages

LESER Type 459 is a globally proven safety valve with German technology and it is available in a configuration especially for Indian requirements (Indian Configuration, IC). It represents an advanced design concept for safety valves with the benefits shown in the table below.

General design features

- One design for steam, gas, liquid and multi-phase (single trim)
- Self draining body design, avoids residues and reduces corrosion
- Designed to meet API capacity of 'D' orifice
- Opens rapidly within an overpressure maximum 10% to full lift
- Maximum blowdown within 10% for steam/gas service and 20% for liquid service
- Developed in consultation with users from plants, OEM and service specialists
- High capacity compared to valve size
- Available with flanged and threaded connections

	Feature	Function	Benefit
Worldwide global references			
	Recognition in the market	LESER safety valves are used by leading companies worldwide	Satisfied users are proof that LESER fulfills the demands of leading companies for quality, delivery and price.
“Approved”	Approved by customers	LESER safety valves are listed on the Approved Vendor Lists of more than 100 End Users and EPCs	
Reliable valve function			
	Durable Design	<ul style="list-style-type: none"> • The body is designed to be self-draining to avoid residues • Straight Alignment with one-piece spindle and 2-point-guiding • Low minimum set pressure due to optimized design 	Durable Design ensures the long-term reliable function of the safety valve and can lead to extended maintenance intervals
Low lifecycle costs			
	Single Trim	<ul style="list-style-type: none"> • Use of identical trim parts for gas, steam and liquid services. • Lower number of springs because of wider pressure range per spring 	Reduced number of spare parts
Services around the safety valve			
Quick supply	Quick and reliable supply chains	6 weeks delivery time ex works Paithan	Quick availability in India

Type 459

Applications

For all smaller capacity applications of steam, gases and liquids Type 459 provides protection against undesired overpressures.

Typical applications are:

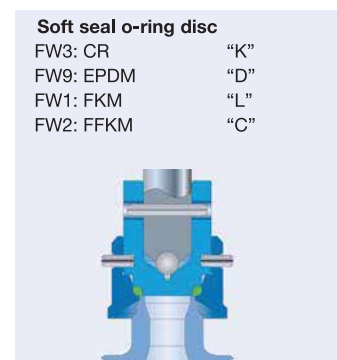
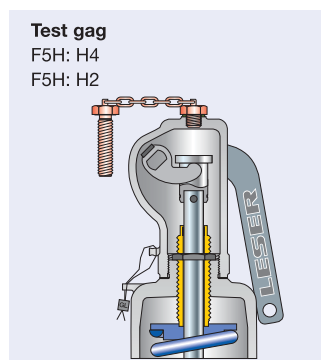
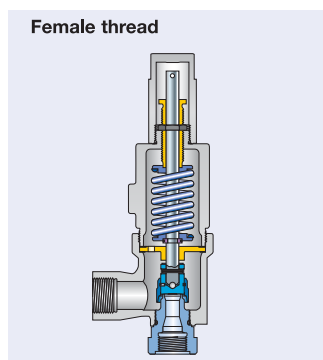
- Thermal relief applications for Oil and Gas
- Utility steam
- Air / gas compressors
- Pump discharge
- Mobile tanks (transport system)
- Chemical equipment and piping
- Pressure vessels
- LPG / LNG terminals, carriers etc.
- Cryogenic systems and oxygen applications

Approvals

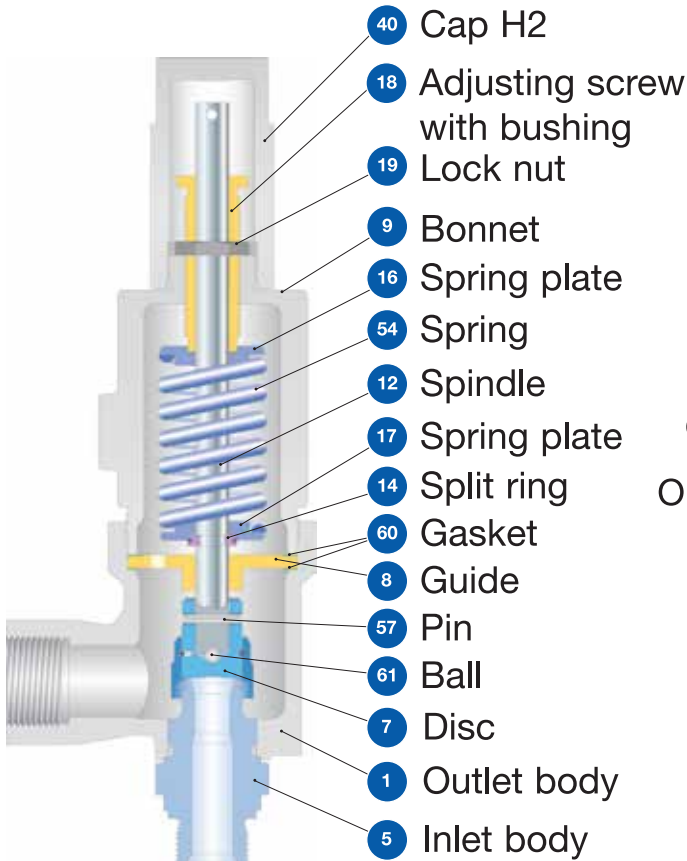
- UV stamp acc. to ASME section VIII Division 1,
- National Board certified capacities
- IBR Certificate Form III C (without attachment 11)
- Chief Controller of Explosives [CCoE/PESO]
- Third party inspections possible

Available options

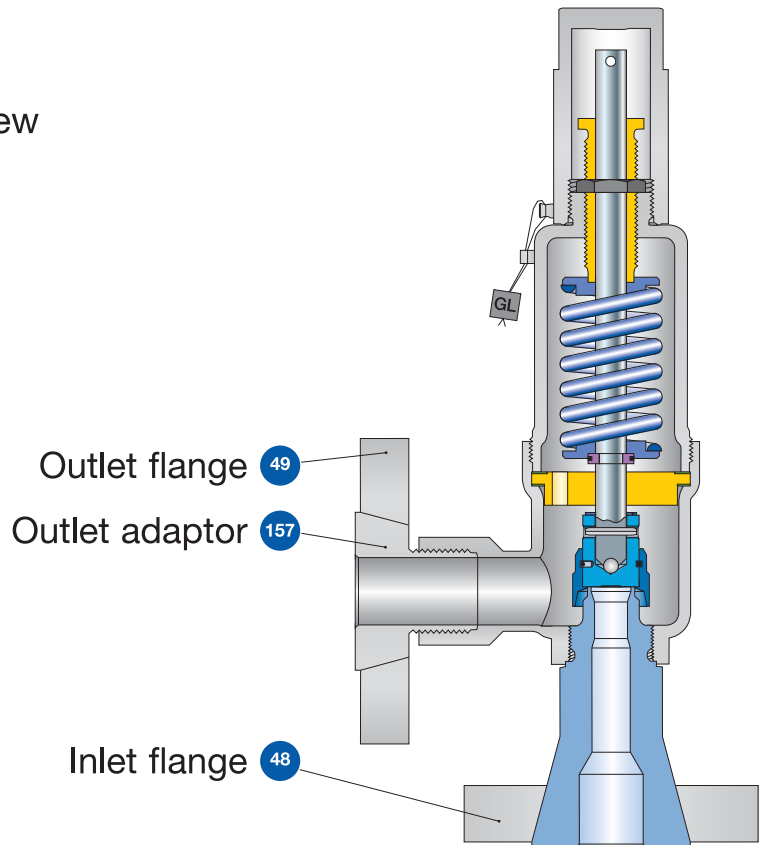
- ✓ Valve size 3/4" (inlet) X 1" (outlet)
- ✓ Threads according to different standards available (e.g. BSP, NPT, BSPT)
- ✓ Female thread also possible at inlet on special demand
- ✓ Balanced Bellows for variable back pressure on special demand
- ✓ Flanged connection acc. to ASME B16.5 [CL 150, CL 300, CL 600]
- ✓ Lifting device, H4
- ✓ Test gag
- ✓ Soft seal O-Ring disc



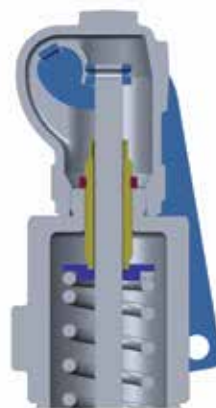
Type 459
Available designs



Conventional design
 Threaded connection



Conventional design
 Flange connection



Conventional design
 Packed Lever, H4

Type 459

Available designs

Materials

Item	Component	Remarks	Carbon Steel Version	Stainless Steel Version
1	Outlet body		SA 216 WCB	SA 351 CF8M
5	Base / Inlet body	Threaded connection	SA 479 316L	SA 479 316L
		Flange connection	SA 479 316L	SA 479 316L
157	Outlet adaptor	Flange connection	SA 479 316	SA 479 316
49	Outlet flange	Flange connection	A 105	SA 479 316
7	Disc		SA 479 316L	SA 479 316L
8	Guide		SA 479 316	SA 479 316
9	Bonnet		SA 216 WCB	SA 351 CF8M
12	Spindle		SA 479 316L	SA 479 316L
14	Split ring		SA 479 316	SA 479 316
16/17	Spring plate		Carbon Steel	SA 479 316
18	Adjusting screw with bushing		SA 479 316 PTFE	SA 479 316 PTFE
19	Lock nut		SA 479 316	SA 479 316
40	Cap H2		SA 216 WCB	SA 351 CF8M
48	Inlet flange	Flange connection	A 105	SA 479 316
54	Spring	Standard	Carbon Steel / Alloy Steel	Stainless Steel
		Optional	Stainless Steel / Inconel X750	Inconel X750
57	Pin		SA 479 316	SA 479 316
60	Gasket		Non Asb./Graphite/316L	Non Asb./Graphite/316L
61	Ball		SA 479 316	SA 479 316

Please Notice:

- Modifications reserved by LESER India.
- LESER India can upgrade materials without notice.
- Every part can be replaced by other material acc. to customer specification.

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Article number, dimensions and weights, pressure temperature ratings

Article numbers

Disc type	Metal to Metal	Soft seal O-Ring
Actual Orifice diameter d_o [mm]	13	13
Actual Orifice area A_o [mm ²]	133	133
Art.-no.	4590.0031	4590.0071
Setpressure range p [bar _g]	0.2 - 100	0.5 - 100

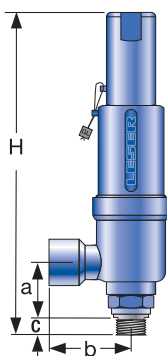
Dimensions and weights

Size				Actual Orifice diameter d_o [mm]	Height, H		Center to face dimensions			Weight approx. [kg]
Inlet [mm]	Outlet [mm]	Inlet [inch]	Outlet [inch]		Cap H2 [mm]	Lifting Lever H4 [mm]	Inlet [mm]		Outlet [mm]	
							a	c	b	
Male thread DIN ISO 228-1 G										
20	25	3/4"	1"	13	298	298	49	16	75	4.25
Flanged connections acc. to ASME B.16.5										
20	25	3/4"	1"	13	330	330	100	-	100	6.25 for CL 150
20	25	3/4"	1"	13	330	330	100	-	100	6.75 for CL 300
20	25	3/4"	1"	13	330	330	100	-	100	7.00 for CL 600

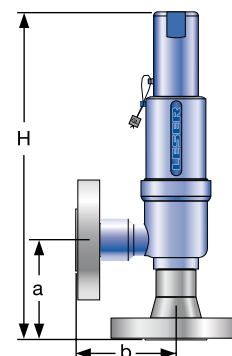
Note: Threads according to other standards are available (e.g. NPT, BSPT)

Pressure temperature ratings

		Carbon Steel Version		Stainless Steel Version	
Actual Orifice diameter d_o [mm]		13		13	
Actual Orifice area A_o [mm ²]		133		133	
		Metal to Metal	O-ring disc	Metal to Metal	O-ring disc
Minimum set pressure p [bar _g]	S/G/L	0.2	0.5	0.2	0.5
Maximum set pressure p [bar _g]	S/G/L	100	100	100	100
Temperature	min. [°C]	-29	-45	-196	-45
acc. to ASME	max. [°C]	427	150	427	150



Conventional design - Male thread



Conventional design - Flange connection

Type 459

Capacities steam, air, water

Coefficient of discharge acc. to ASME section VIII Div. 1

Medium	Approval No.	K
G	M 37112	0.811
L	M 37101	0.566

US Units

Capacities according to ASME Section VIII (UV), based on set pressure plus 10% overpressure.
Capacities at 30 psig (2.07 bar) and below are based on 3 psig (0.204 bar) overpressure.

US Units

ASME Section VIII

Actual Orifice diameter d_o [inch]	0.512		
actual Orifice area A_o [inch ²]	0.206		
LEO ³ [inch ²]	S/G = 0.171 L = 0.179		
Set pressure	Capacities		
	Steam saturated	Air 60° F and 14.5 psig [S.C.F.M.]	Water 70° F [US-G.P.M.]
[psig]	[lb/h]		
15	281	100	18.8
20	324	115	21.2
30	410	146	25.4
40	504	180	29.3
50	599	213	32.8
60	693	247	35.9
70	788	281	38.8
80	882	315	41.5
90	977	348	44
100	1071	382	46.4
120	1260	449	50.8
140	1449	517	54.9
160	1638	584	58.7
180	1827	652	62.3
200	2016	719	65.6
220	2205	787	68.8
240	2394	854	71.9
260	2584	921	74.8
280	2773	989	77.6
300	2962	1056	80.4
320	3151	1124	83
340	3340	1191	85.6
360	3529	1259	88
380	3718	1326	90.5
400	3907	1393	92.8
420	4096	1461	95.1
440	4285	1528	97.3
460	4474	1596	100
480	4663	1663	102
500	4852	1731	104
550	5352	1899	109
600	5797	2068	114
650	6270	2236	118
700	6742	2405	123
750	7215	2573	127
800	7688	2742	131
850	8160	2911	135
900	8633	3079	139
950	9105	3248	143
1000	9578	3416	147
1100	10523	3753	154
1200	11469	4091	161
1300	12414	4428	167
1400	13340	4765	174
1500	14373	5102	180

Other products



Type 441

Flanged standard and high pressure series suitable for steam, gas and liquid service. They have proven themselves as a universal safety valve for many applications. IBR & CCoE approved.



Type 549

Safety valve for gas, liquid or steam. Also for thermal relief application. Available in screwed and flanged connection for all utility applications. CCoE approved.



Type 526 IC

Flanged safety relief valves with "UV" stamp, Designed as per API 526, Now available from LESER India.



Type 237

For all smaller capacity applications of steam, gases and liquids. IBR approved.

How to contact LESER India

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