



TI-P315-03
CTLS Issue 15

SVL488

Stainless Steel Sanitary Safety Valve

Description

The SVL488 is a soft seated stainless steel, full lift, TÜV approved safety valve suitable for steam, gas and liquid applications.

Applications

The SVL488 is suitable for the overpressure protection of low pressure steam equipment, pipelines and pressure vessels, particularly within the brewing and beverage industries where extremely high standards of hygiene and cleanliness are required to maintain product quality and to minimise contamination of the process media.

Available types

Two main variations of the valve are available:

SVL488-B with a sealed cap for liquid service.

SVL488-C with a packed easing lever for steam (or other services where a lever is specified).

Note: Both designs have a closed bonnet and EPDM soft seat seal and bellows as standard.

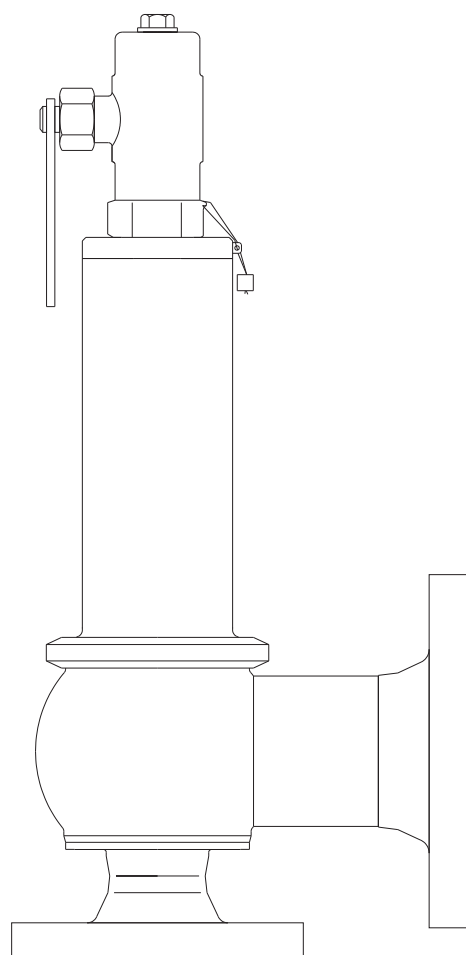
Certification

A manufacturers' Typical Test Report is provided as standard for each valve including valve set and hydraulic pressure. Also available on request is material certification in accordance with EN 10204 3.1.

Standards and approvals

- Approved by the TÜV to AD Merkblatt A2, TRD 421 and Vd TÜV SV100.
- EU Pressure Equipment Directive/UK Pressure Equipment (Safety) Regulations have been satisfied.
- The valve belongs to Category 4, having been designed for use with fluids in Group 1 and 2 (gases and liquids).

Always consult Spirax Sarco for fluid compatibility.



Sizes and end connections

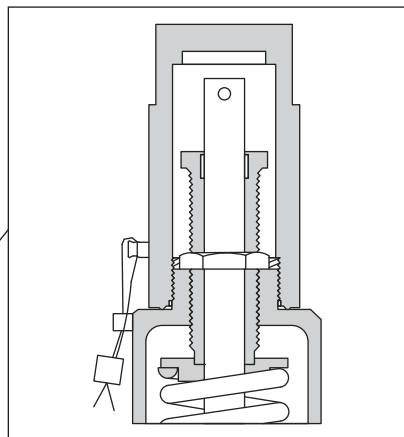
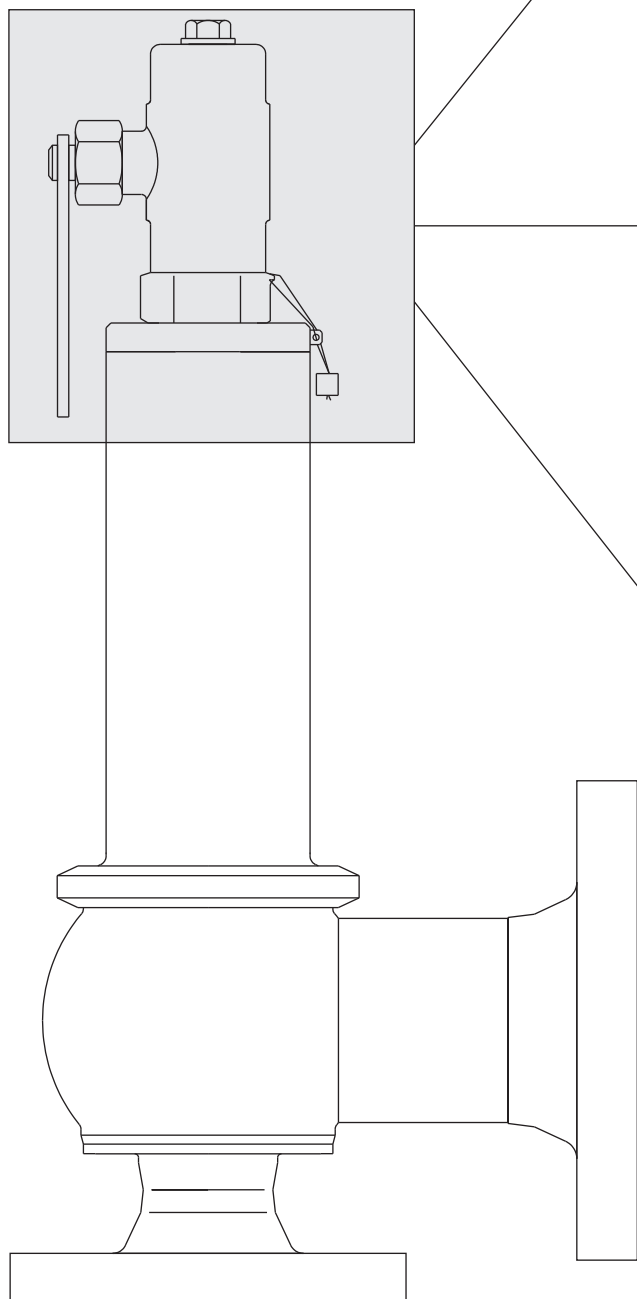
Nominal inlet size	DN	25 (1")	40 (1½")	50 (2")	65 (2½")	80 (3")	100 (4")
Nominal outlet size	DN	40 (1½")	65 (2½")	80 (3")	100 (4")	125 (5")	150 (6")
Inlet clamp	inch	1½	2	2½	3	4	4½
Outlet clamp	inch	2	3	4	4½	5	6

Pipe connections: Valves are available with flanged DIN 2633 PN16 or sanitary clamp ISO 2852 (ISO 2037 pipe standard) connections. Please state connection required when placing an order.

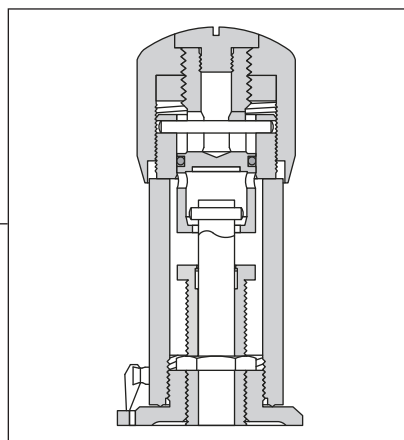
Optional extras

The standard inlet wetted surface finish is 0.75 µm (30 µin) Ra. Other finishes are available on request - Please contact Spirax Sarco.

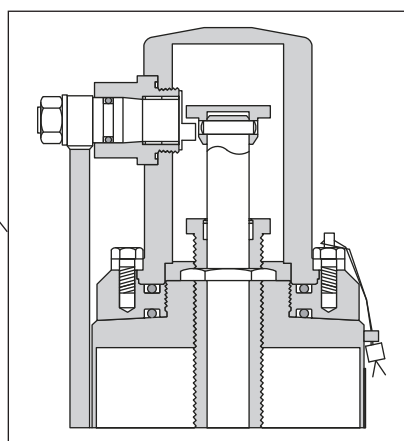
Cap/lifting lever types



Gastight cap
All sizes

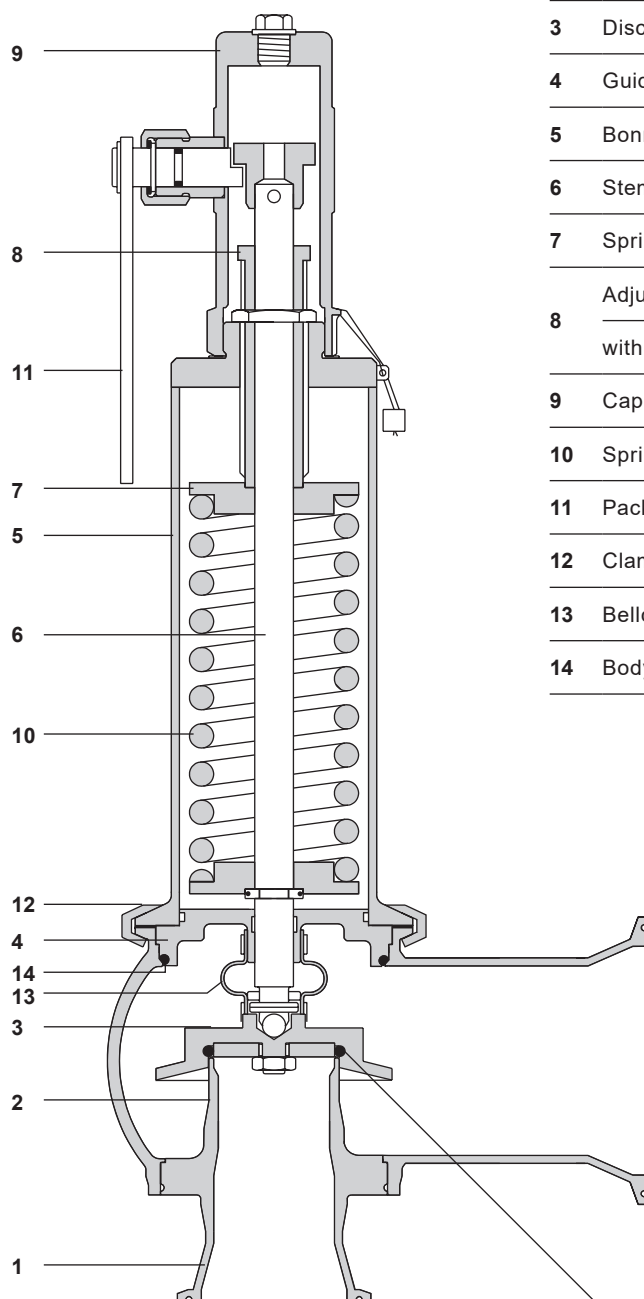


Gastight lifting device
DN25 (1") only



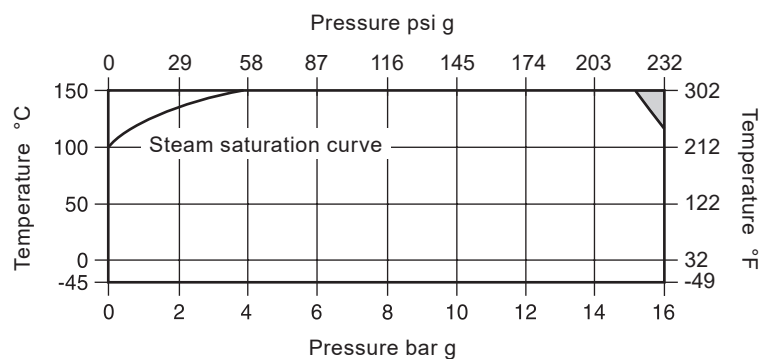
Packed lever
DN40 (1½") and larger

Materials



No.	Part	Material	
1	Body	Stainless steel	1.4404 316L
	Seat	Stainless steel	1.4404 316L
2	Disc	Stainless steel	1.4404 316L
	Disc 'O' ring	EPDM (FDA approved)	
4	Guide/bush	Stainless steel	1.4404 316L/PTFE + 15% Glass
5	Bonnet	Stainless steel	1.4404 316L
6	Stem	Stainless steel	1.4404 316L
7	Spring plates (2)	Stainless steel	1.4404 316L
8	Adjustment screw	Stainless steel	1.4404 316L
	with bush	PTFE + 15% glass	
9	Cap	Stainless steel	1.4404 316L
10	Spring	Stainless steel	1.4310 301
11	Packed lever	Stainless steel	1.4404 316L
12	Clamp	Stainless steel	1.4401 316
13	Bellows	EPDM (FDA approved)	
14	Body gasket	Laminated graphite	

Pressure/temperature limits



The product **must not** be used in this region.

Body design conditions				PN16
Set pressure range	DN25 and DN40 (1" and 1½")	Maximum	16 bar g	232 psi g
		Minimum	0.1 bar g	1.45 psi g
	DN50 (2")	Maximum	15 bar g	218 psi g
		Minimum	0.2 bar g	2.9 psi g
	DN65 and DN80 (2½" and 3")	Maximum	10.34 bar g	150 psi g
		Minimum	0.1 bar g	1.45 psi g
	DN100 (4")	Maximum	8.2 bar g	119 psi g
		Minimum	0.1 bar g	1.45 psi g
Temperature	With EPDM soft seat	Maximum	150 °C	302 °F
	All versions	Minimum	-45 °C	-49 °F
Performance data	Overpressure	Steam, gas	Maximum	10%
		Liquid	Maximum	10%
	Blowdown limits	Steam, gas	Maximum	10%
		Liquids	Maximum	20%
	Derated coefficient of discharge values αd	Steam, gas		0.70
		Liquid		0.45
Maximum permitted backpressure				10% of set pressure
Designed for a maximum inlet cold hydraulic test pressure of:			24 bar g	348 psi g

Table 1**SVL488 flow capacity for dry saturated steam in kilogrammes per hour (kg/h) and pounds per hour (lb/h)****(calculated at 10% overpressure. In accordance with EN ISO 4126)**

Valve size DN in/out	DN25/40 (1"/1½")	DN40/65 (1½"/2½")	DN50/80 (2"/3")	DN65/100 (2½"/4")	DN80/125 (3"/5")	DN100/150 (4"/6")
Flow diameter (mm)	23 (0.91)	37 (1.46)	46 (1.81)	60 (2.36)	74 (2.91)	92 (3.62)
Flow area (mm ²)	416 (0.64 in ²)	1 075 (1.67 in ²)	1 662 (2.58 in ²)	2 827 (4.38 in ²)	4 301 (6.67 in ²)	6 648 (10.3 in ²)

Set pressure (bar g)	Dry saturated steam, kg/h					
0.2 (2.9)	151 (333)	390 (860)	604 (1332)	1027 (2264)	1562 (3444)	2415 (5324)
0.5 (7.25)	214 (472)	554 (1221)	857 (1889)	1457 (3212)	2217 (4888)	3427 (7555)
1.0 (14.5)	319 (703)	825 (1819)	1 275 (2811)	2 169 (4782)	3 300 (7275)	5 100 (11244)
2.0 (29)	504 (1111)	1 303 (2873)	2 015 (4442)	3 427 (7555)	5 213 (11493)	8 058 (17765)
3.0 (43.5)	678 (1495)	1 751 (3860)	2 707 (5968)	4 605 (10152)	7 006 (15446)	10 829 (23874)
4.0 (58)	843 (1858)	2 177 (4799)	3 366 (7421)	5 726 (12617)	8 711 (19204)	13 465 (29685)

Table 2

SVL488 flow capacity for air or normal cubic meters per hour (Nm³/h) at 0 °C and 1013 mbar and standard cubic feet per minute (SCFM) at 32 °F and 14.7 psi.

(calculated in accordance with AD-MERKBLATT A2 and TRD 421)

Valve size DN in/out	DN25/40 (1"/1½")	DN40/65 (1½"/2½")	DN50/80 (2"/3")	DN65/100 (2½"/4")	DN80/125 (3"/5")	DN100/150 (4"/6")
Flow area (mm ²)	416 (0.64 in ²)	1 075 (1.67 in ²)	1 662 (2.58 in ²)	2 827 (4.38 in ²)	4 301 (6.67 in ²)	6 648 (10.3 in ²)

Set pressure (bar g)	Flow capacity for air Nm³/h (SCFM)					
1.0 (14.5)	386 (245)	999 (633)	1545 (980)	2628 (1666)	3998 (2535)	6179 (3917)
2.0 (29)	625 (396)	1617 (1025)	2499 (1584)	4251 (2695)	6467 (4100)	9995 (6337)
3.0 (43.5)	852 (540)	2204 (1397)	3406 (2159)	5795 (3674)	8816 (5589)	13626 (8639)
4.0 (58)	1069 (678)	2768 (1755)	4278 (2712)	7278 (6414)	11071 (7019)	17111 (10848)
5.0 (72.5)	1287 (816)	3331 (2112)	5149 (3264)	8761 (5554)	13326 (8449)	20597 (13058)
6.0 (87.0)	1505 (954)	3895 (2469)	6021 (3817)	10243 (6494)	15581 (9878)	24083 (15268)
7.0 (102)	1723 (1092)	4459 (2827)	6892 (4369)	11726 (7434)	17836 (11308)	27568 (17478)
8.0 (116)	1941 (1231)	5023 (3185)	7763 (4922)	13208 (8374)	20091 (12738)	31054 (19688)
8.2 (119)	1985 (1258)	5136 (3256)	7937 (5032)	13505 (8562)	20542 (13024)	31752 (20131)
9.0 (131)	2159 (1369)	5587 (3542)	8635 (5475)	14691 (9314)	22346 (14167)	The product must not be used in this region.
10.0 (145)	2377 (1507)	6150 (3899)	9506 (6027)	16173 (10254)	24601 (15597)	
10.34 (150)	2451 (1554)	6334 (4016)	9793 (6209)	16658 (10561)	25343 (16067)	
12.0 (174)	2812 (1783)	7278 (4614)	11249 (7132)	The product must not be used in this region.		
14.0 (203)	3248 (2059)	8405 (5329)	12992 (8237)			
15.0 (218)	3466 (2197)	8957 (5679)	14735 (9342)			
16.0 (232)	3684 (2336)	9533 (6044)				

Table 3**SVL488 flow capacity for water in kilogrammes per hour (kg/h) at 20 °C and pounds per hour (lb/h) at 68 °F.**

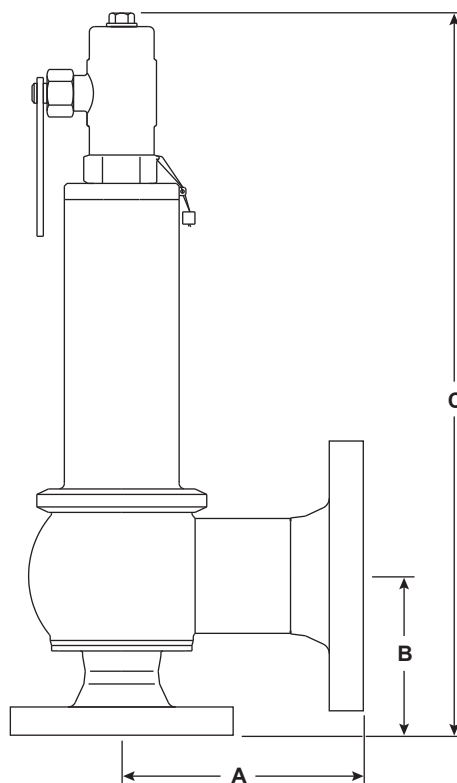
(calculated in accordance with AD-MERKBLATT A2 and TRD 421 at 10% overpressure)

Derated coefficient of discharge (Kdr) = 0.52

Valve size DN in/out	DN25/40 (1"/1½")	DN40/65 (1½"/2½")	DN50/80 (2"/3")	DN65/100 (2½"/4")	DN80/125 (3"/5")	DN100/150 (4"/6")
Flow area (mm²)	416 (0.64 in²)	1 075 (1.67 in²)	1 662 (2.58 in²)	2 827 (4.38 in²)	4 301 (6.67 in²)	6 648 (10.3 in²)

Set pressure (bar g)	Flow capacity for water kg/h (lb/h)					
1.0 (14.5)	9970 (21980)	25800 (56879)	39900 (87964)	67900 (149694)	103000 (227076)	160000 (352740)
2.0 (29)	14100 (31085)	36500 (80469)	56400 (124341)	96000 (211644)	126000 (277782)	226000 (498245)
3.0 (43.5)	17300 (38140)	44700 (98547)	69100 (152339)	118000 (260145)	179000 (394627)	276000 (608476)
4.0 (58)	19900 (43872)	51600 (113759)	79800 (175929)	136000 (299829)	206000 (454152)	319000 (703275)
5.0 (72.5)	22300 (49163)	57700 (127207)	89200 (196652)	152000 (335103)	231000 (509268)	357000 (787050)
6.0 (87.0)	24400 (53793)	63200 (139332)	97700 (215392)	166000 (365967)	253000 (557770)	391000 (862007)
7.0 (102)	26400 (58202)	68300 (150576)	106000 (233690)	180000 (369832)	273000 (601862)	422000 (930351)
8.0 (116)	28200 (62170)	73000 (160937)	113000 (249122)	192000 (423288)	292000 (643750)	451000 (994285)
8.2 (119)	28500 (62832)	73900 (162922)	114000 (251327)	194000 (427697)	292000 (643750)	458000 (1009717)
9.0 (131)	29900 (65918)	77400 (170638)	120000 (264555)	204000 (449743)	310000 (683433)	The product must not be used in this region.
10.0 (145)	31500 (69446)	81600 (179897)	126000 (277782)	215000 (473994)	326000 (718707)	
10.34 (150)	32000 (70548)	82700 (182322)	128000 (282192)	218000 (480608)	334000 (736343)	
12.0 (174)	34600 (76280)	89400 (197093)	138000 (304238)	The product must not be used in this region.		
14.0 (203)	37300 (82232)	96600 (212967)	149000 (328489)			
15.0 (218)	38600 (85098)	99700 (219801)	154000 (339512)			
16.0 (232)	39900 (87964)	103000 (227076)				

Dimensions/weights (approximate) in mm (inches) and kg (lbs)



Valve size Inlet/Outlet	A		B		C		Weight
	DIN 2633 Flanged PN16	ISO 2852 Sanitary clamp	DIN 2633 Flanged PN16	ISO 2852 Sanitary clamp	SVL488B sealed cap design	SVL488C Packed lever design	
DN25/40 (1"/1½")	134 (5.28)	112 (4.41)	99 (3.90)	75 (2.95)	264 (10.4)	332 (13.1)	9.0 (19.8)
DN40/65 (1½"/2½")	170 (6.69)	147 (5.79)	114 (4.49)	92 (3.62)	398 (15.7)	518 (20.4)	20.0 (44.1)
DN50/80 (2"/3")			123 (4.84)	99 (3.90)	406 (16.0)	534 (21.0)	21.7 (47.8)
DN65/100 (2½"/4")		153 (6.02)	132 (5.20)	109 (4.29)	415 (16.3)	552 (21.7)	26.5 (58.4)
DN80/125 (3"/5")	195 (7.68)	178 (7.01)	148 (5.83)	124 (4.88)	496 (19.5)	640 (25.2)	47.0 (104)
DN100/150 (4"/6")	198 (7.80)	181 (7.13)	166 (6.54)	149 (5.87)	514 (20.2)	684 (26.9)	56.0 (123)

Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions supplied with the product.

Installation note:

The safety valve should always be fitted with the centre line of the housing vertically above the line.

SVL488 safety valve selection guide

Model type	SVL488					SVL488
Configuration	A = Closed bonnet/pneumatic Lever					B
	B = Closed bonnet/sealed cap					
	C = Closed bonnet/packed easing lever					
Seal material	E = EPDM (FDA) 'O' Ring and bellows					E
	V = FKM 'O' ring and bellows					
Inlet connection	PN16 = Flanged PN16					PN16
	N = ANSI #150 RF ASME Flanged					
	T = ISO2852/ISO2037 Clamp Ends					
	S = ASME BPE Clamp Ends					
	D = DIN32676/DIN11850 Clamp Ends					
SVL488	-	B	-	E	-	PN16

How to order

Example: 1 off Spirax Sarco DN50 SVL488-B-E-PN16 safety valve with a set pressure of 10 bar g. (If the bellows is not required, please add 'without bellows').