

Safety Relief Valve VSE0

Full lift Spring Loaded – Single Piece Design

VSE0 Full Lift Safety Relief Valve is a high performance valve designed predominantly for Liquid Thermal Expansion service. It can also be advantageously used for most other applications like gases / vapours, and saturated steam systems involving small discharge capacities.

Salient Features

- Forged stainless steel body with integral nozzle in SS304 for pressure upto 320 bar and A105 for pressure upto 200 bar.
- Complete stainless steel trim
- O- Ring disc seal (SN 124) for bubble tight shut-off on gas service upto 90% of the set pressure (above 5 bar)
- Complete forged stainless steel construction suitable for Cryogenic systems upto a temperature of -196°C
- Valve offered in flanges and threaded end connection (NPT/BSP) as standard. Socket Weld End / Butt Weld End connection offered against request.
- Offered with IBR certificate on request. Valve not for boiler applications.
- Ideal for application such as high pressure Compressed Air, Argon, Nitrogen, Carbon Dioxide, Hydrogen, Nitrogen gas etc. and for H.P. Heater Vessels in power plants



Range

Size	: Inlet - ½", ¾", 1" (Standard) Outlet - 1" (Standard), 1 ½" (On request)	
Orifice diameter	: 7.5 mm (44.2 mm ² area) 9.0 mm (63.6 mm ² area)	
Connection	: Screwed ANSI B2.1 ANSI B521	: Flanged ANSI#150-2500 DIN PN 40-400
Pressure	: 2.5 to 320 bar g.	

Parameter

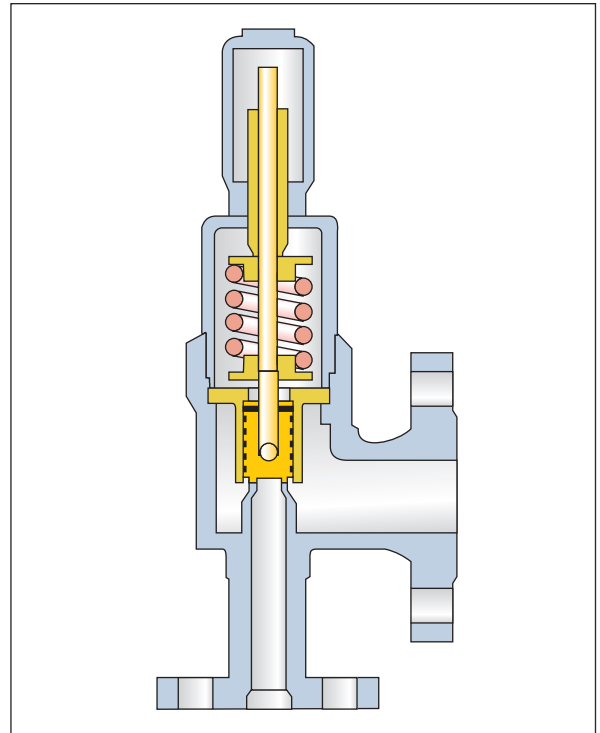
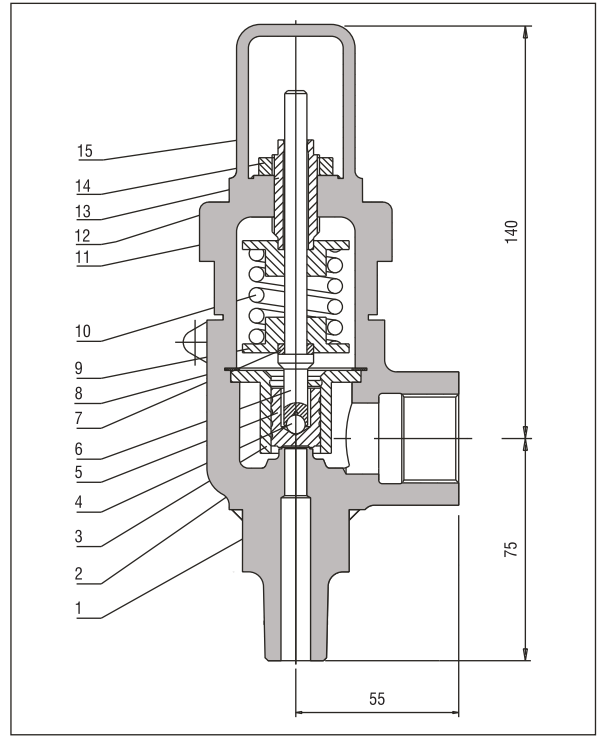
Least flow diameter, Do mm	7.5	9.0
Least flow section, Ao mm ²	44.2	63.6
Set pressure, p bar	2.8 to 320	2.5 to 200
Service Temperature °C (for valves in SS Material)	-196 to 200	-196 to 200
Service Temperature °C (for valves in CS Material)	-10 to 300	-10 to 300
(Lower set pressure possible on request)		

Material Specification

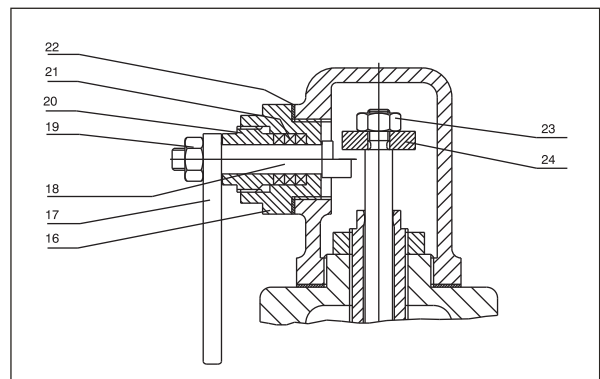
Specification 16 suitable for -196°C to 200°C
Specification 12 and 17 suitable for -10 to 200°C

Part NO.	Part Name	Specification 12, 16 & 17*
		Material Specification
1	Nozzle #	A105 / SS304.
2	Body #	A105 / SS 304
3	Guide Bush	SS 304
4	Ball •	SS 304
5	Disc •	SS 431
6	Stem	SS 431
8	Gasket	Graphite
9	Spring Plate	SS 410
10	Spring	X12CrNi177 / Eqvt. SS 302
11	Bonnet #	A105*/SS 304
12	Gasket	Graphite
13	Adjusting Screw	SS 410
14	Lock Nut	SS 304
15	Cap #	A105* / SS304
16	Gland	C20
17	Lever	C20
18	Square Shaft	C20
19	Hex.Nut	C20
20	Screwing	CS/SS
22	Gasket	Graphite
23	Hex.Nut	C20 or Carbon steel
24	Lock Nut	SS 304
25	Inlet Flange #	A105* / SS304
26	Outlet Flange #	A105* / SS304
27	Gasket	Graphite

Note: Body shall be in same material as nozzle in the design.
 ** Part 16 to 22 not applicable for SN-102 Cap without easing lever selection of which is recommended as standard.
 • Recommended Spares



Cap with Easing Lever



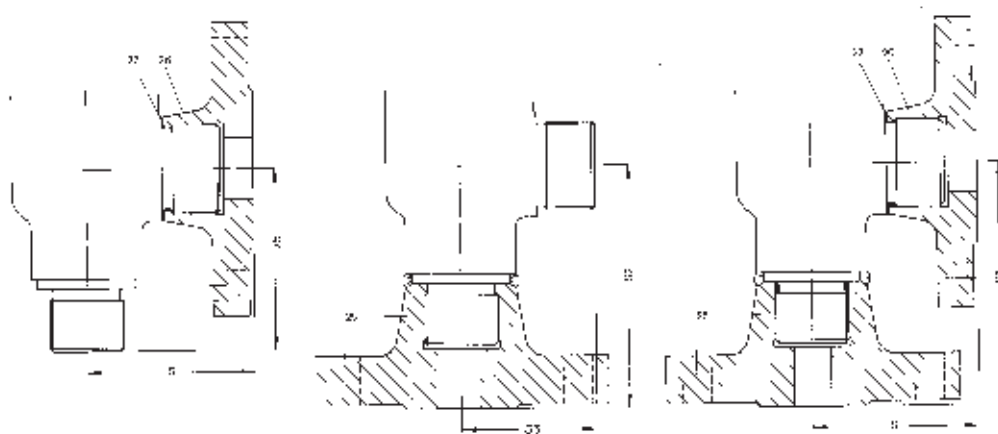
Recommended spare parts

Part No.	Description	Materials
• 4	Ball	SS 304
• 5	Disc	SS 431
• 8	Gasket	Graphite
• 12	Gasket	Graphite
• 22	Gasket	Graphite

Material Code with specification of valve parts:

Code	Body	Nozzle	Cap	Flanges
12	A105	A105	A105	A105
16	SS 304	SS 304	SS 304	SS 304
17	SS 304	SS 304	A105	A105

Special design



Specifications

Type	Designation	Inlet Conn.	PN max	S2 mm	Wt Kg	Designation	Outlet Conn.	PN max	S1	Wt mm	Total Wt (Kg)
External Thread	AM30	M 30 X 2	400	75		AM 36	M 36 X 2	160	55		Weight of valve = 3 KG
	AR 3/4	R 3/4"	250	75		AR 1	R 1"	160	55		
	AG 3/4	G 3/4"	250	75		AG 1	G 1"	160	55		
	AN 3/4	NPTM 3/4"	250	75							
	AR 1	R 1"	250	75							
	AG 1	G 1"	400	75							
Internal Thread	IR 3/4	R 3/4"	250	75		IR 1	R 1"	40	55		
	IG 3/4	IG 3/4"	250	75		IG 1	G 1"	40	55		
	IN 3/4	NPTF 3/4"	250	75		IN 1	NPTF 1"	40	55		
DIN Flanges	15	DN 15	40	85	1	25	DN 25	40	65	1.5	Weight of valve + Weight of Flanges
			64-160	95	1.5			64-160	95	2.5	
			250-320	110	2.5						
			400	115	3.5						
DIN Flanges	25	DN 25	40	110		25	DN 25	40	65		
			64-160	115				64-160	95		
			250-320	120							
			400	155							
ANSI Flanges	1/2	DN 1/2"	150	110	1	1	DN 1"	150	65	2	
			300-600	110	1			300	95	2	
			900-1500	115	2.5						
			2500	125	3.5						

Non Standard : To customers specifications

Flange Standards

SN Flanges according to DIN

81	Groove face (DIN 2512)
83	Female face (DIN 2513)
84	Recess for Ring Joint face (DIN 2514)
85	Welding neck for leak-proof seal welding (DIN 2695)
86	Flange design according to customer's request
87	Recess for convex seal (DIN 2696)

SN Flanges according to ANSI

802	Raised face 1/16" (ANSI)
811	Small groove face (ANSI)
812	Large groove face (ANSI)
831	Small female face (ANSI)
832	Large Female face (ANSI)
840	Ring Joint face (ANSI)

	VSE0 160 AM30 .75 .AM36 .16 .102		VSE0 .900 .1/2" .75 .1 .16 .102
Type Of Abbrv.		Type Of Abbrv.	
Nominal Pr to DIN		Nominal Pr to DIN	
Inlet Connection		Inlet Connection	
Seat Diameter (75-7.5mm)		Seat Diameter (75-7.5mm)	
Outlet Connection		Outlet Connection	
Material Specification		Material Specification	
Standard Accessories		Standard Accessories	

Standard Accessories of Design

- SN 102 Cap without easing gear,
(recommended as standard)
- SN 124 Disc with O-ring for high leak tightness
O-ring material depends on pressure temperature
(Max. temp. 150°C)

Accessories

SN 124 Disc with O-ring

The disc with O-ring SN124 is employed where demands of high leak tightness have to be met. The use of O ring reduces leakage to a third of the metal to metal seals (above Set Pt. 5 bar). Different O-ring materials are available covering a temperature range of -40 to 150°C. The O-ring seal also prevents damage to seating area under conditions of severe vibration in the piping system.

SN 102 Cap without easing lever – For Valves on Liquid service. (Offered as a standard accessory with all valves)

Ordering Information

- Operating medium and state of medium (gaseous or liquid)
- Set pressure, design pressure and operating pressure
- Operating temperature
- Capacity, if known else nominal
- Material specification
- Inlet and outlet type
- Standardised accessories of design and flanges

Medium, set pressure, temperature and capacity must be specified.



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