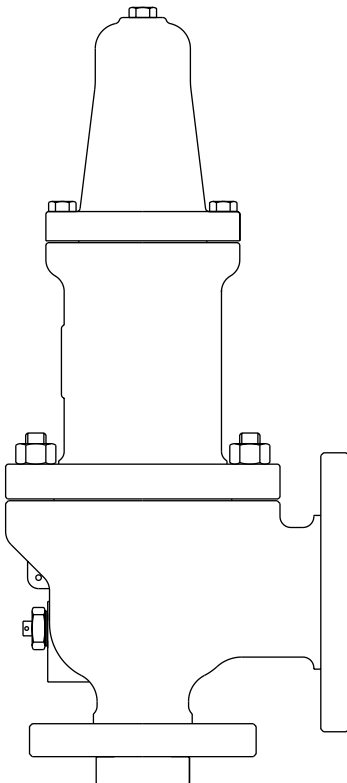


**SV80**

**Safety Valve**

**Installation and Maintenance Instructions**

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1. *Safety information*
2. *General product information*
3. *Installation*
4. *Commissioning*
5. *Maintenance*
6. *Fault finding*



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# 1. Safety information

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Safe operation of the product can be guaranteed only if it is properly installed, commissioned, used and maintained by a qualified person (see Section 1.11 on page 4) in compliance with the operating instructions. General installation and safety instructions for pipeline and plant construction, as well as the proper use of tools and safety equipment must also be complied with.

## 1.1 Intended use

Referring to these Installation and Maintenance Instructions, Name-plate and Technical Information sheet, check the product is suitable for the intended use/application. The product complies with the requirements of the European Pressure Equipment Directive 97/23/EC and fall within Category 4 and is CE marked accordingly. For compatibility of all other fluids except Group 2 gases, please consult the manufacturer.

- i) The product has been specifically designed for use on steam, air, inert industrial gases and liquids that are in Group 2 of the above mentioned Pressure Equipment Directive. The products' use on other fluids may be possible but, if this is contemplated, Spirax Sarco must be contacted to confirm the suitability of the product for the application being considered.
- ii) Check material suitability, pressure and temperature and their maximum and minimum values.
- iii) Determine the correct installation and direction of fluid flow.
- iv) Spirax Sarco products are not intended to withstand external stresses that may be induced by any system to which they are fitted. It is the responsibility of the installer to consider these stresses and take adequate precautions to minimise them. Reaction forces must be considered and are the responsibility of the person installing the valve.
- v) Remove protective covers from all connections immediately before installation.

## 1.2 Access

Ensure safe access and if necessary a safe working platform (suitably guarded) before attempting to work on the product. Arrange suitable lifting gear if required.

## 1.3 Lighting

Ensure adequate lighting to carry out all work on the product.

## 1.4 Hazardous liquids or gases in the pipeline

Consider the potential hazards of any residual liquids or gases in the pipeline or may have been in the pipeline at some previous time. Consider; flammable materials, substances hazardous to health, extremes of temperature.

## 1.5 Hazardous environment around the product

Consider explosion risk areas, lack of oxygen (e.g. tanks, pits), dangerous gases, extremes of temperature, hot surfaces, fire hazard (e.g. during welding), excessive noise, moving machinery.

## 1.6 The system

Consider the effect on the complete system of the work proposed. Will any intended action (e.g. closing isolation valves, electrical isolation) put any other part of the system or any personnel at risk?

Dangers might include isolation of vents or protective devices or the rendering ineffective of controls or alarms. Ensure isolation valves are turned on and off in a gradual way to avoid system shocks.

---

## 1.7 Pressure systems

Ensure that any pressure is isolated and safely vented to atmospheric pressure. Do not assume that the system has depressurised even when the pressure gauge indicates zero.

## 1.8 Temperature

Allow time for temperature to normalise to avoid danger of burns.

## 1.9 Tools and consumables

Before starting work ensure that you have suitable tools and/or consumables available. Use only genuine Spirax Sarco replacement parts.

## 1.10 Protective clothing

Consider whether protective clothing is required by you and/or others in the vicinity to protect against the hazards of, for example, chemicals, high/low temperature, radiation, noise, falling objects and danger to eyes and face.

## 1.11 Permits to work

All work must be carried out or be supervised by a suitably competent person. Installation and operating personnel should be trained in the correct use of the product according to these instructions. Where a formal 'permit to work' system is in force it must be complied with. Where there is no such system, it is recommended that a responsible person should know what work is being carried out and, where necessary, arrange to have an assistant whose primary responsibility is safety. Post 'warning notices' if necessary.

## 1.12 Handling

Manual handling of large and/or heavy products may present a risk of injury. Lifting, pushing, pulling, carrying or supporting a load by bodily force can cause injury particularly to the back. You are advised to assess the risks taking into account the task, the individual, the load and the working environment and use the appropriate handling method depending on the circumstances of the work being done. Never lift the valve by the lifting lever.

## 1.13 Residual hazards

In normal use the external surface of the product may be very hot. If used at the maximum permitted operating conditions the surface temperature of some products may reach temperatures in excess of 540°C (1004°F).

Many products are not self draining. Take care when dismantling or removing the product from an installation (refer to 'Maintenance Instructions').

## 1.14 Freezing

Provision must be made to protect products that are not self draining against frost damage in environments where they may be exposed temperatures below freezing point.

## 1.15 Safety information – Product specific

This product should not be dismantled without first releasing the compression on the adjustment spring.

Some variants of this valve contain PTFE or Viton components. If the valve has been subjected to a temperature approaching 175°C (347°F), these materials may generate toxic and corrosive compounds. Avoid skin contact and inhalation of any dust or fumes to prevent irritation to the eyes, nose, throat and lungs.

---

## **1.16 Disposal**

Unless otherwise stated in this Installation and Maintenance Instruction, this product is recyclable and no ecological hazard is anticipated with its disposal providing due care is taken.

## **1.17 Returning products**

Customers and stockists are reminded that under EC Health, Safety and Environment Law when returning products to Spirax Sarco they must provide information on any hazards and the precautions to be taken due to contamination residues or mechanical damage which may present a health, safety or environmental risk. This information must be provided in writing including Health and Safety data sheets relating to any substances identified as hazardous or potentially hazardous.

## — 2. General product information —

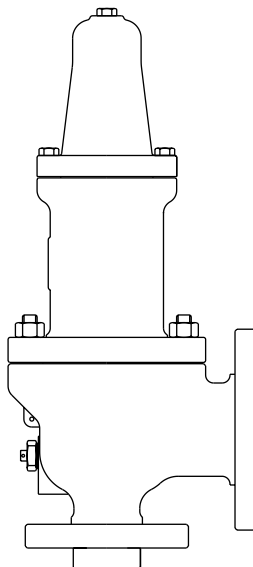


Fig. 1

### 2.1 Description

The SV80 is a full nozzle, safety valve suitable for gas, vapour, steam and liquid service in the oil and gas production, refining, petrochemical and process industries.

### 2.2 Available types

The body, bonnet, cap, nozzle, disc and spring are available in a variety of materials and selected to suit the chemical and physical characteristics of the specified process fluid and available with ANSI or DIN flanged end connections, open or closed bonnet configurations, with/without easing lever or packed easing lever.

A balanced bellows version can also be offered to isolate the stem, guide and bonnet parts from corrosion or, to balance the valve internals from the effects of variable back pressure.

### 2.3 Applications

The SV80 is designed to protect against overpressure in process applications including extreme service conditions such as high flowrates, high pressure, high temperature, corrosive media, viscous liquids and high back pressure. Please consult Spirax Sarco for confirmation of fluid/material compatibility.

### 2.4 Standards and approvals

The valves are designed in accordance with ASME Boiler and Pressure Vessel Code, Section VIII Division 1. Capacities are certified by the National Board of Boiler and Pressure Vessel Inspectors. For compressible fluids, the valve can be stamped with 'UV' and 'NB' marks. The materials of construction and the operating pressure and temperature limits comply with API Standard 526.

When required, the valve can be supplied with materials in compliance with NACE MR-01-75 standard for sour gas service.

The SV80 complies with the seat tightness requirements of the API standard 527.

The requirements of PED 97/23/EC have been satisfied and 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.

## 2.5 Valve sizes and pipe connections

### Valve size and orifice designation

Inlet* Flanged ANSI 300RF through ANSI 2500RF	Outlet* Flanged ANSI 150RF or ANSI 300RF	Orifice
1"	2"	D, E
1½"	2"	D, E, F
1½"	3"	D, E, F, G, H
2"	3"	G, H, J
3"	4"	J, K, L
3"	6"	K
4"	6"	L, M, N, P
6"	8"	Q, R
6"	10"	R
8"	10"	T
10"	14"	V
12"	2 x 12"	W

- \* **Notes:** 1. RTJ is also available. Contact Spirax Sarco for further information.  
 2. Selection of the inlet, orifice and outlet configurations shown may be limited by the required valve pressure rating. Refer to TI-P256-01 for API RP 526 designated orifice areas.

## 2.6 Limiting conditions

* <b>Minimum set pressure</b>	0.5 bar	(7.3 psi)
* <b>Maximum set pressure</b>	414 bar	(6 000 psi)
* <b>Maximum allowable back pressure</b>	71 bar	(740 psi)
<b>Hydrostatic test pressure</b>	1.5 times design pressure	

- \* Based on WCB carbon steel body at -29°C to +38°C (-20°F to +100°F). Values are subject to selection of suitable body/flange rating.

### Temperature

Body material	Specification	Min to Max °C (°F)	
<b>Low temp. CS</b>	ASTM A352 LCB400	-46 to -29	(-51 to -20)
<b>Carbon steel</b>	ASTM A216 WCB	-29 to 427	(-20 to 800)
<b>Chrome moly steel</b>	ASTM A217 WC6	427 to 540	(800 to 1004)
<b>Stainless steel</b>	ASTM A351 CF8	-200 to -21	(-328 to -6)
<b>Stainless steel</b>	ASTM A351 CF8M	-21 to 540	(-6 to 1004)
<b>Monel</b>	ASTM A494 M-30C	-28 to 482	(-18 to 900)
<b>Hastelloy</b>	ASTM A494 N-12MV/B	-28 to 482	(-18 to 900)

Valves with 'O' ring seat seal are limited to 200°C (392°F).

The above temperature limits are based on PED Groups 1 and Group 2 fluids.

These temperature ranges can be exceeded only with the authorisation of Spirax Sarco.

## 2.7 Materials

The SV80 safety valve is available in a wide range of materials that are selected by Spirax Sarco engineers after careful consideration of each application. A selection of some of the available materials is shown below.

Item	Description	Material
1	Nozzle	Stainless steel A479 Type 316 or A351 CF8M
		Monel M400 UNS N04400 or A494 M-30C
		Hastelloy B B-335 or A494 N-12MV/B
		Hastelloy C B-574 or A494 CW-12MW/C
		Option of Stellite AWS.A5.13.80 RCoCr-A overlaid on stainless steel A479 Type 316 or A351 CF8M.
2	Body	Carbon steel A216 WCB, A352 LCB
		Alloy steel A217 WC6
		Stainless steel A351 CF8, A351 CF8M
		Monel A494 M-30C
		Hastelloy B A494 N-12MV/B
3	Bonnet	Hastelloy C A494 CW-12MW/C
		Carbon steel A216 WCB, A352 LCB
4	Cap	Stainless steel A351 CF8M, A351 CF8
		Carbon steel A216 WCB
15	Spring	Stainless steel A351 CF8M
		Aluminized carbon steel ASTM A231 or BS2803 – 735 A 50
		Tungsten alloy ASTM A681 H12, H21 or BS 4659 – BH12, BH21
		Chrome-Nickel alloy Inconel X750 AMS 5699
		AISI 316+Ti 1.4571
29	Bellows	Chrome-Nickel alloy Inconel 600 UNS N06600
		Monel M400 UNS N04400
51	Disc	Stainless steel A479 Type 316, with option of Stellite AWS.A5.13.80 RCOCR-A
		Alloy steel 17-4 PH (steam service only) A564 Type 630 (H 900)
		Monel M400 UNS N04400
		Hastelloy B B-335
		Hastelloy C B-574
Option of soft seats with 'O' rings in FKM, NBR, EPDM, KALREZ, PTFE (consult Spirax Sarco)		

**Note: Please consult Spirax Sarco for details of other materials.  
See pages 10 and 11 for full parts list.**



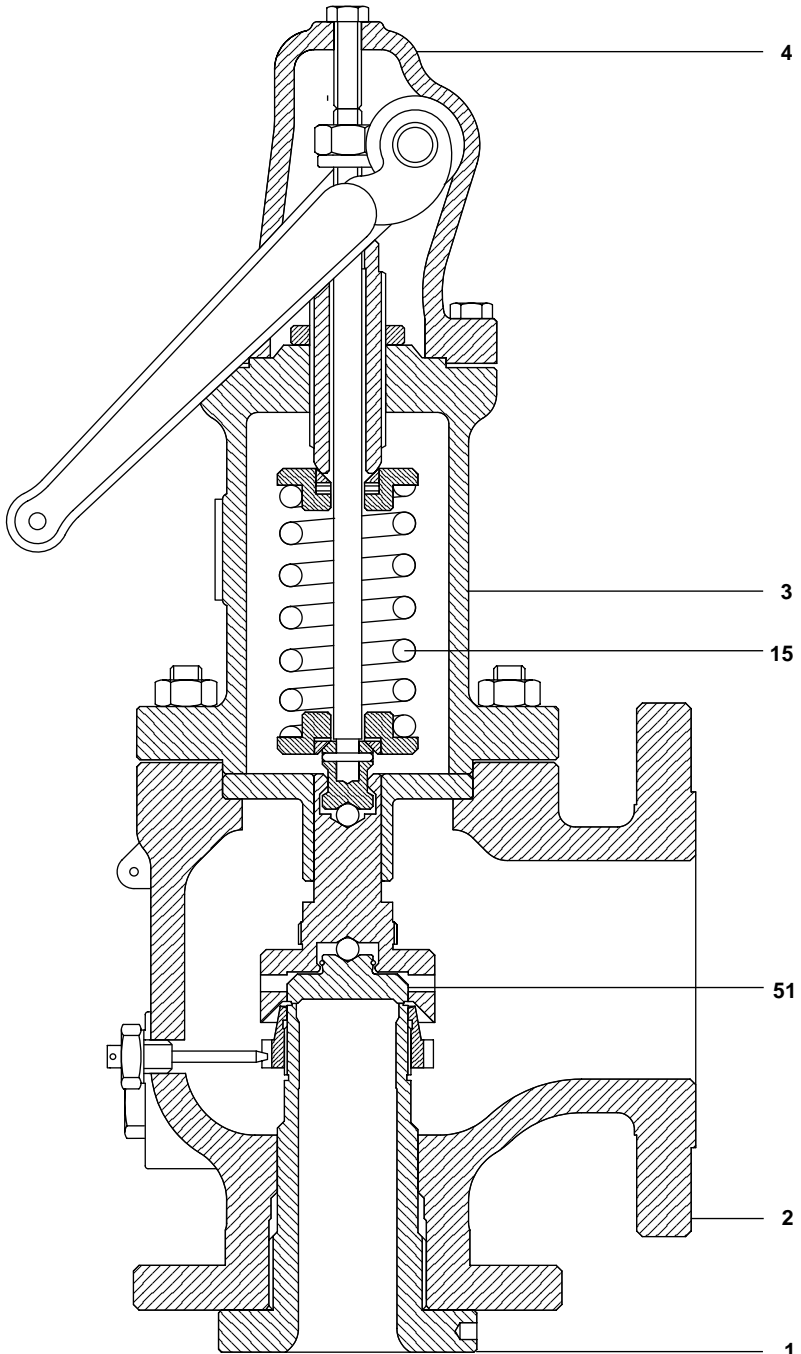


Fig. 2

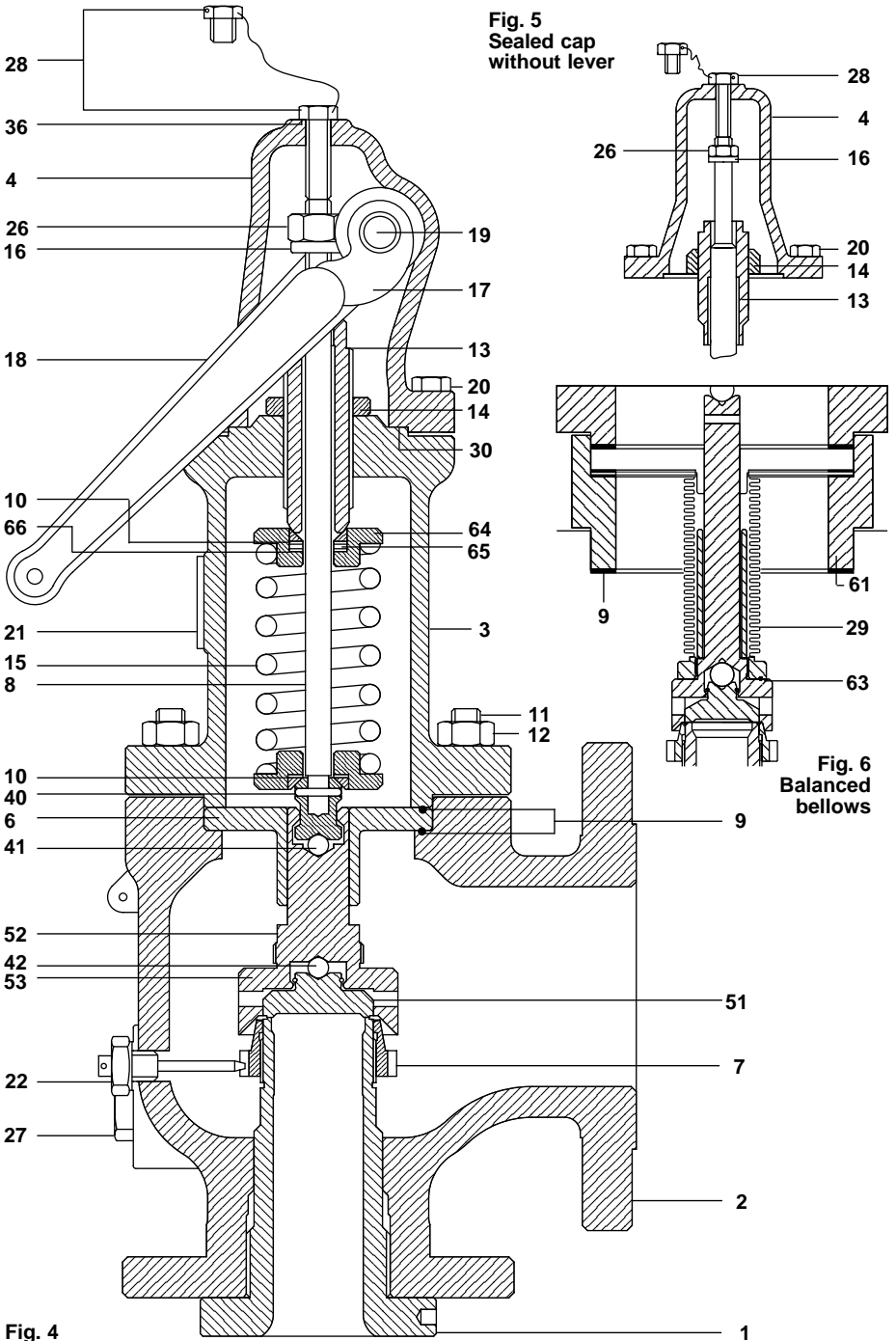


Fig. 4

Fig. 5  
Sealed cap  
without lever

Fig. 6  
Balanced  
bellows

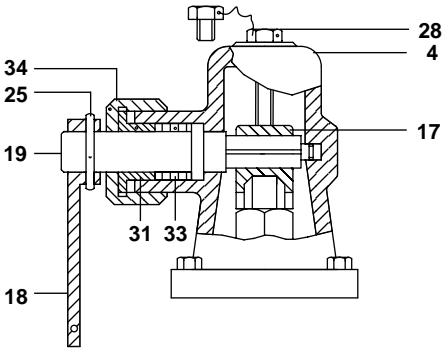


Fig. 7 Standard cap with packed lever

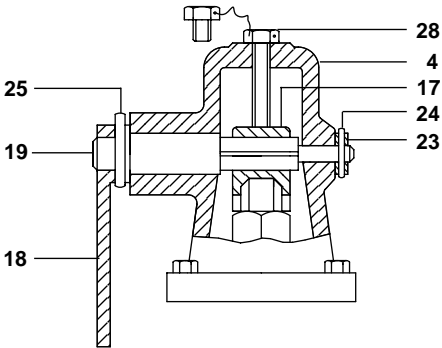


Fig. 8 Standard cap with open lever

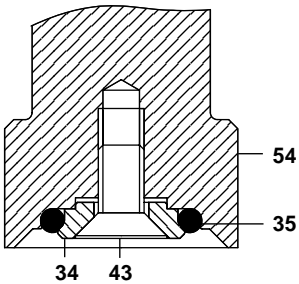


Fig. 9 'O' ring seat seal D to K orifice

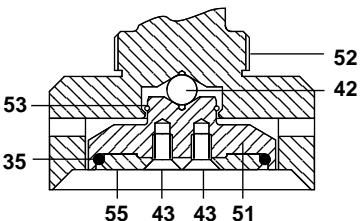


Fig. 10 'O' ring seat seal L to W orifice

**Parts list** (\*indicates not shown)

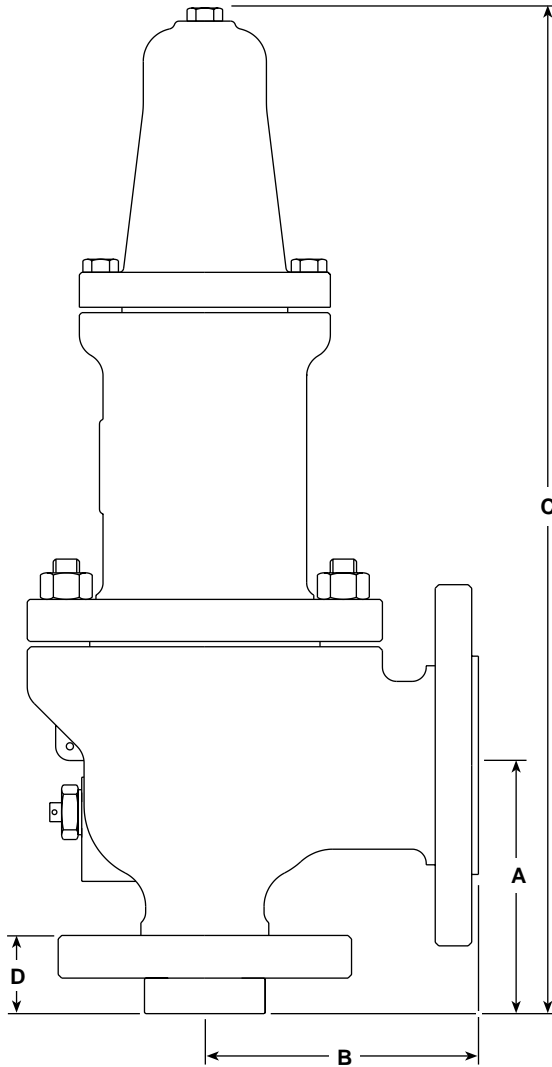
1	Nozzle
2	Body
3	Bonnet
4	Cap
6	Disc guide
7	Blowdown adjustment ring
8	Spindle assembly
9	Body gasket
10	Spring washer
11	Body stud
12	Nut
13	Adjusting screw
14	Adjusting screw nut
15	Spring
16	Release ring
17	Lifting fork
18	Lever
19	Lever spindle
20	Cap bolts
21	Nameplate
22	Blowdown locking pin
23	Washer
24	Lever locking pin
25	Locking pin
26	Release ring nut
27	Drain plug
28	Test gag
29	Bellows
30	Cap gasket
31	Gland seal
* 32	Packing nut
33	Packing
34	'O' ring retainer
35	'O' ring gasket
40	Spindle pin
41	Spindle ball
42	Disc ball
43	Retainer lock screw
51	Disc
52	Disc guide
53	Ring retainer
54	'O' ring disc holder
61	Guide extension
63	Bellows gasket
64	Support ring
65	Bearing
66	Friction plate

## 2.8 Dimensions and weights approximate in mm and kg (lb)

Orifice	Size (Inch)	DN (mm)	Rating ANSI	A	B	C	D	Weight kg (lb)
D	1 x 2	25 x 50	150 x 150	104.8	114.3	420	31	16 (35)
			300 x 150	104.8	114.3	420	33	18 (40)
			300 x 150					
			600 x 150					
	1½ x 2	40 x 50	900 x 300	104.8	139.7	420	37	30 (66)
			1500 x 300	104.8	139.7	420	47	40 (88)
1½ x 3	40 x 80	2500 x 300	139.7	177.8	620	60	50 (110)	
E	1 x 2	25 x 50	150 x 150	104.8	114.3	420	31	16 (35)
			300 x 150	104.8	114.3	420	33	18 (40)
			300 x 150					
			600 x 150					
	1½ x 2	40 x 50	900 x 300	104.8	139.7	420	37	30 (66)
			1500 x 300	104.8	139.7	420	47	40 (88)
1½ x 3	40 x 80	2500 x 300	139.7	177.8	620	60	50 (110)	
F	1½ x 2	40 x 50	150 x 150	123.8	120.7	445	34	23 (51)
			300 x 150	123.8	120.7	445	37	24 (53)
			300 x 150	123.8	152.4	445	37	30 (66)
			600 x 150	123.8	152.4	445	37	35 (77)
	1½ x 3	40 x 80	900 x 300	123.8	165.1	445	37	40 (88)
			1500 x 300	123.8	165.1	445	47	45 (99)
2500 x 300			139.7	177.8	640	60	52 (115)	
G	1½ x 3	40 x 80	150 x 150	123.8	120.7	465	33	25 (55)
			300 x 150	123.8	120.7	465	37	26 (57)
			300 x 150	123.8	152.4	465	37	26 (57)
			600 x 150	123.8	152.4	465	37	30 (66)
			900 x 300	123.8	165.1	525	37	35 (77)
	2 x 3	50 x 80	1500 x 300	155.6	171.5	640	54	47 (104)
2500 x 300	155.6	171.5	640	66	55 (121)			
H	1½ x 3	40 x 80	150 x 150	130.2	123.8	480	33	28 (62)
			300 x 150	130.2	123.8	480	37	30 (66)
	2 x 3	50 x 80	300 x 150	130.2	123.8	480	37	30 (66)
			600 x 150	154.0	161.9	553	41	38 (84)
			900 x 150	154.0	161.9	553	54	45 (99)
			1500 x 300	154.0	161.9	640	54	52 (115)
J	2 x 3	50 x 80	150 x 150	136.5	123.8	485	35	35 (77)
			300 x 150	136.5	123.8	485	38	40 (88)
	3 x 4	80 x 100	300 x 150	184.2	181.0	590	44	55 (121)
			600 x 150	184.2	181.0	680	47	60 (132)
			900 x 150	184.2	181.0	680	54	65 (143)
			1500 x 300	184.2	181.0	680	63	80 (176)

For orifice K to W dimensions please see pages 14 and 15.

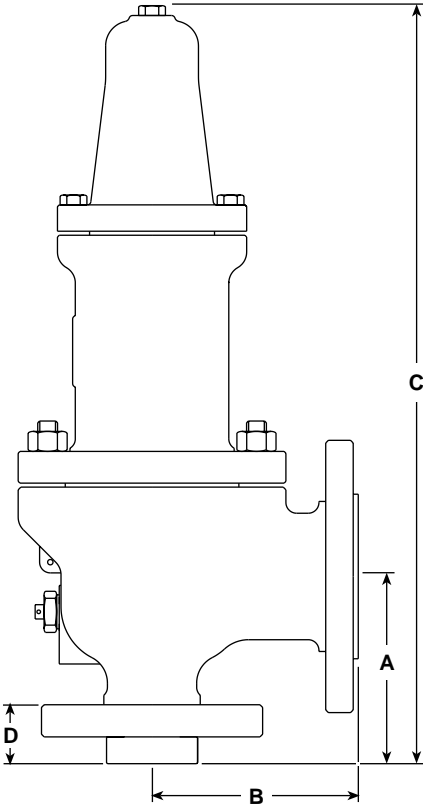
**Fig. 11**  
**Orifice D - V**



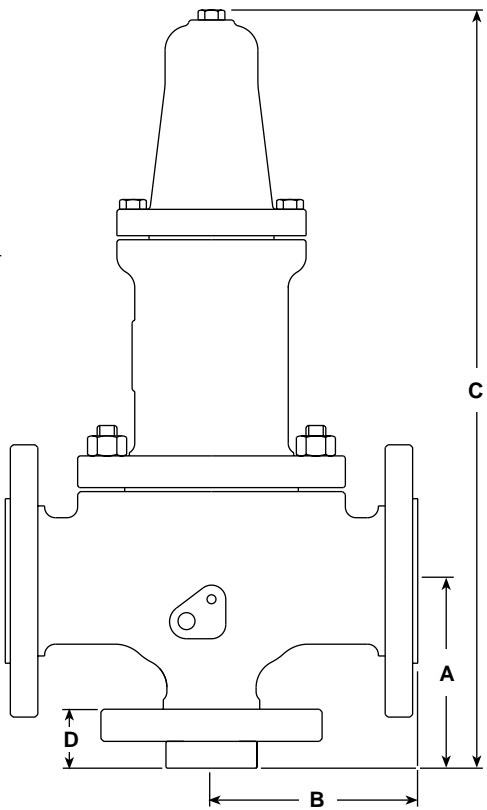
Orifice	Size (Inch)	DN (mm)	Rating ANSI	A	B	C	D	Weight kg (lb)
K	3 x 4	80 x 100	150 x 150	155.6	161.9	565	39	45 (99)
			300 x 150	155.6	161.9	565	44	47 (104)
			300 x 150	155.6	161.9	650	44	55 (121)
			600 x 150	184.2	181.0	680	47	62 (137)
	3 x 6	80 x 150	900 x 150	198.4	215.9	795	54	85 (187)
			1500 x 300	196.9	215.9	797	63	95 (209)
L	3 x 4	80 x 100	150 x 150	155.6	165.1	650	39	60 (132)
			300 x 150	155.6	165.1	650	44	62 (137)
	4 x 6	100 x 150	300 x 150	179.4	181.0	775	47	85 (187)
			600 x 150	179.4	203.2	775	54	87 (192)
			900 x 150	198.4	222.3	795	60	110 (243)
			1500 x 300	198.4	222.3	795	70	115 (254)
M	4 x 6	100 x 150	150 x 150	177.8	184.2	700	40	70 (154)
			300 x 150	177.8	184.2	700	47	72 (159)
			300 x 150	177.8	184.2	770	47	85 (187)
			600 x 150	177.8	203.2	770	54	90 (198)
			900 x 150	196.9	222.3	790	60	115 (254)
N	4 x 6	100 x 150	150 x 150	196.9	209.6	790	40	75 (165)
			300 x 150	196.9	209.6	790	47	77 (170)
			300 x 150	196.9	209.6	790	47	77 (170)
			600 x 150	196.9	222.3	860	54	115 (254)
			900 x 150	196.9	222.3	860	60	120 (165)
P	4 x 6	100 x 150	150 x 150	181.0	228.6	770	40	75 (165)
			300 x 150	181.0	228.6	770	47	77 (170)
			300 x 150	225.4	254.0	895	47	115 (254)
			600 x 150	225.4	254.0	970	54	160 (353)
			900 x 150	225.4	254.0	970	60	175 (386)
Q	6 x 8	150 x 200	150 x 150	239.7	241.3	940	46	150 (331)
			300 x 150	239.7	241.3	940	57	170 (375)
			300 x 150	239.7	241.3	1 015	57	220 (485)
			600 x 150	239.7	241.3	1 136	64	250 (551)
R	6 x 8	150 x 200	150 x 150	239.7	241.3	940	46	185 (408)
			300 x 150	239.7	241.3	940	57	190 (419)
	6 x 10	150 x 250	300 x 150	239.7	266.7	1 040	57	210 (463)
			600 x 150	239.7	266.7	1 085	68	270 (595)
T	8 x 10	200 x 250	150 x 150	276.2	279.4	1 240	50	262 (578)
			300 x 150	276.2	279.4	1 240	63	265 (584)
V	10 x 14	250 x 350	150 x 150	380.0	370.0	1 450	55	580 (1 279)
			300 x 150	380.0	370.0	1 450	72	600 (1 323)
W	12 x 12 (x 2)	300 x 300 (x 2)	150 x 150	327.0	430.0	1 450	55	900 (1 985)
			300 x 150	327.0	430.0	1 450	76	950 (2 095)

For orifice D to J dimensions please see pages 12 and 13.

**Fig. 12**  
**Orifice D - V**



**Fig. 13**  
**Orifice W**



## 2.9 Product identification

Model type

SV80

	<b>Body</b>	<b>Bonnet</b>	
<b>Body / bonnet material</b>	1 = LCB	LCB	<b>4</b>
	2 = WCB	WCB	
	3 = LCB	LCB (NACE)	
	4 = WCB	WCB	
	5 = WCB	WCB (NACE)	
	6 = CF8M	CF8M	
	8 = CF8	CF8	
	9 = CF8M	WCB Available with bellows only	
	M = Monel	WCB Available with bellows only	

API RP 526 orifice

D, E, F, G, H, J, K, L, M, N, P, Q, R, T,  
V, W (V and W are not part of API RP 256)

J

	<b>ANSI</b>	
<b>Rating (Inlet flange)</b>	0150 = ANSI 150	<b>0300</b>
	0315 = (ANSI 300)	
	0300 = ANSI 300	
	0600 = ANSI 600	
	0900 = ANSI 900	
	1500 = ANSI 1500	
	2500 = ANSI 2500	

	<b>PN</b>	
<b>Rating (Inlet flange)</b>	0016 = PN16	<b>0300</b>
	0025 = PN25	
	0046 = (PN40)	
	0040 = PN40	
	0064 = PN64	
	0100 = PN100	
	0160 = PN160	
	0250 = PN250	
	0400 = PN400	

Bonnet/cap type

	<b>Bonnet</b>	<b>Cap</b>	
<b>Bonnet/cap type</b>	A = Closed bonnet	plain lever	<b>A</b>
	B = Closed bonnet	sealed cap	
	C = Closed bonnet	packed easing lever	
	D = Open bonnet	plain lever	

Nozzle/disc material

	<b>Nozzle</b>	<b>Disc</b>	
<b>Nozzle/disc material</b>	A = 316	17-4 PH (Steam)	<b>S</b>
	E = AISI 316	EPDM	
	H = Hastelloy C	Hastelloy C	
	K = AISI 316	Kalrez	
	L = 316 + Stellite	316 + Stellite	
	M = Monel	Monel	
	N = AISI 316	Nitrile (NBR)	
	P = AISI 316	PTFE	
	S = AISI 316	AISI 316	
	T = 316	316 + Stellite	
	V = AISI 316	Viton (FKM)	



<b>Bellows</b>	<b>0</b> = None <b>1</b> = 316 + Ti <b>2</b> = Monel <b>3</b> = Inconel	<b>0</b>
<b>Flange face (Inlet x Outlet)</b>	<b>0</b> = RF x RF (ANSI) or Form C x Form C (DIN) <b>1</b> = RTJ x RF (ANSI)	<b>0</b>
<b>Spring material</b>	<b>A</b> = Carbon steel <b>T</b> = Tungsten <b>I</b> = AISI 302 (or 316) <b>X</b> = Inconel X-750	<b>A</b>
<b>Spring reference</b>	See separate chart	<b>728</b>

### Example of

### product nomenclature

SV80	4	J	0300	A	S	0	0	A	728
------	---	---	------	---	---	---	---	---	-----

### How to order a new product

**Example:** 1 off Spirax Sarco SV804 - J - 0300AS - 0 - 0 - A728

**Note:** We recommend that full process conditions (enabling us to size the valve) are provided prior to order placement.

---

# 3. Installation

---

## 3.1 Supply

Normally, the valve will be supplied set at the required pressure and sealed.

ASME/API standards and local regulations require that only authorised and competent persons should carry out setting of safety valves.

Spirax Sarco accepts no responsibility for any valve that has been reset by unauthorised persons.

## 3.2 Before fitting the valve

**3.2.1** Ensure that the pipework installation is suitable for the valve.

**3.2.2** Before installing the safety valve, blow through pipework to ensure that it is completely free of any foreign matter that may otherwise pass to the valve seat and cause damage, leading to seat leakage.

**3.2.3** Remove all packaging and protective flange covers.

**3.2.4** Visually inspect the valve for any apparent damage. Ensure that all wire and seals are intact.

**3.2.5** From the name-plate and documentation, verify that the size, capacity, set pressure and material compatibility are correct.

## 3.3 Installing the valve

### 3.3.1 Inlet piping

The SV80 safety valve should be installed in a vertical upright position. Inlet pipe should not be smaller than the inlet diameter of the valve and should be short and direct from the vessel or equipment being protected. The connection to the vessel should be straight and sharp corners should be avoided. Should this not be practical, then the inlet should be flared out at least one additional pipe diameter.

The pressure drop from the vessel to the safety valve must be less than 3% of the valve set pressure when the valve is flowing.

### 3.3.2 Outlet piping

Discharge lines from the SV80 shall be at least the same size as the valve outlet and as short and direct as possible. Discharge lines shall prevent condensate from collecting in the discharge side of the valve body and must be directed to a safe discharge area. Care should be taken to ensure thermal expansion of piping and support does not produce strains in the valve. Spring supports are recommended where this may be the case.

### 3.3.3 General

To avoid fluids collecting in the valve body, the valve body drain must be connected to a pipe and drained to a safe area.

Position the lifting lever in such a way that it can be accessed safely and that accidental contact is avoided.

Damage to the valve as a result of dirt and foreign objects in the piping will cause leakage at the seat and invalidate any guarantee.

Always ensure that any back pressure is within the recommended value. For conventional, unbalanced valves, where the back pressure exceeds 12% of set pressure please consult Spirax Sarco.

If the valve is of balanced bellows design, fit a pressure gauge into the connection located on the bonnet to indicate bellows failure when the valve is discharging.

## 3.4 Damage prevention

Excessive pressure loss at the inlet of a safety valve when it operates will cause extremely rapid opening and closing of the valve, observed as chattering or hammering.

This may result in reduced capacity as well as damage to seating faces and the other parts of the valve. When normal pressure is restored it is possible that the valve will leak.

The valve should be fitted 8 -10 pipe diameters downstream of converging or diverging fittings or bends.

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## 4. Commissioning

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Once the valve has been fitted check that there are no leaks from either the inlet or outlet connections.

Test the set pressure of the valve by slowly raising the system pressure. Ensure that the valve operates correctly at its specified set pressure as indicated on the name-plate.

Reduce the system pressure to the normal operating pressure and check that the safety valve reseats at the desired blowdown without leakage.

### 4.1 Testing during use

The SV80 safety valve is factory fitted with a test gag.

Where it is intended to pressure test the piping system above the set pressure of the safety valve, the test gag should be left in place until such tests are completed and then immediately removed and replaced by the blanking plug provided.

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## 5. Maintenance

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SV80 safety valves are 100% tested and then sealed to prevent unauthorised adjustment or repair. Valves should be inspected regularly to assure continued safe operation and long service life. A visual inspection is recommended at two month intervals while in service, followed by a complete pressure test at least once a year. The frequency of such tests will vary according to operating conditions.

The SV80 can be operated manually by means of the test lever (where fitted) when the system pressure is at least 75% of the set pressure, or the system pressure may be carefully increased until the valve operates.

Never attempt to stop leakage by compressing the spring or gagging the valve!

For resetting, adjustments or repairs contact Spirax Sarco for the name of competent, authorised personnel who are familiar with the servicing of these safety valves.

## 6. Fault finding

### Caution

Removal of the seal wires in an attempt to adjust and/or repair this product by unauthorised or non-qualified persons, voids the product guarantee and may cause damage to equipment and serious injury or death.

<b>SYMPTOM</b>	<b>Valve does not open at set pressure.</b>
<b>CAUSE 1 CHECK and CURE</b>	Incorrect set pressure. Consult supplier / manufacturer.
<b>CAUSE 2 CHECK and CURE</b>	Test gag fitted. Remove test gag.
<b>CAUSE 3 CHECK and CURE</b>	Protective flange cover not removed. Remove protective flange cover.
<b>CAUSE 4 CHECK and CURE</b>	Back pressure too high. Verify the maximum value of back pressure and or consult supplier / manufacturer.
<b>SYMPTOM</b>	<b>Excessive simmer.</b>
<b>CAUSE 1 CHECK and CURE</b>	Blowdown ring positioned too low. Consult supplier / manufacturer.
<b>CAUSE 2 CHECK and CURE</b>	Line vibrations. Eliminate any vibrations at the valve.
<b>SYMPTOM</b>	<b>Valve leaking and /or exhibits erratic popping action.</b>
<b>CAUSE 1 CHECK and CURE</b>	Damaged seat. Consult supplier / manufacturer.
<b>CAUSE 2 CHECK and CURE</b>	Misalignment of parts Consult supplier / manufacturer.
<b>CAUSE 3 CHECK and CURE</b>	Blowdown ring too high Consult supplier / manufacturer.
<b>CAUSE 4 CHECK and CURE</b>	Variable back pressure Verify and correct backpressure.
<b>CAUSE 5 CHECK and CURE</b>	Line vibrations. Identify and eliminate vibrations.
<b>SYMPTOM</b>	<b>Valve does not close, continuously discharging.</b>
<b>CAUSE 1 CHECK and CURE</b>	Operating pressure too close to set pressure. Consult supplier / manufacturer.
<b>CAUSE 2 CHECK and CURE</b>	Spring broken or relaxed. Consult supplier / manufacturer.
<b>CAUSE 3 CHECK and CURE</b>	Foreign material in seating or guide area. Consult supplier / manufacturer.
<b>SYMPTOM</b>	<b>Excessive blowdown.</b>
<b>CAUSE 1 CHECK and CURE</b>	High back pressure. Decrease back pressure by increasing outlet pipe discharge area.
<b>CAUSE 2 CHECK and CURE</b>	Blowdown ring positioned too high. Consult supplier / manufacturer.

<b>SYMPTOM</b>		<b>Chatter/short blowdown.</b>
<b>CAUSE 1</b>		Inlet piping pressure loss exceeds 3%.
<b>CHECK and CURE</b>		Change inlet pipe size and length.
<b>CAUSE 2</b>		Incorrect valve size for application.
<b>CHECK and CURE</b>		Consult supplier/manufacturer.
<b>CAUSE 3</b>		Gaskets for inlet/outlet incorrectly fitted.
<b>CHECK and CURE</b>		Change/refit the gaskets.
<b>CAUSE 4</b>		Variable back pressure exceeds 10% of set pressure.
<b>CHECK and CURE</b>		Consult supplier/manufacturer.
<b>SYMPTOM</b>		<b>Valve does not achieve required lift.</b>
<b>CAUSE 1</b>		Foreign matter trapped between disc and upper adjustment ring.
<b>CHECK and CURE</b>		Consult supplier/manufacturer.
<b>CAUSE 2</b>		Valve is oversized.
<b>CHECK and CURE</b>		Consult supplier/manufacturer.
<b>SYMPTOM</b>		<b>Valve cannot be lifted manually.</b>
<b>CAUSE 1</b>		Operating pressure is less than 75% of set pressure.
<b>CHECK and CURE</b>		Increase the operating pressure to 75% of set pressure or higher.





