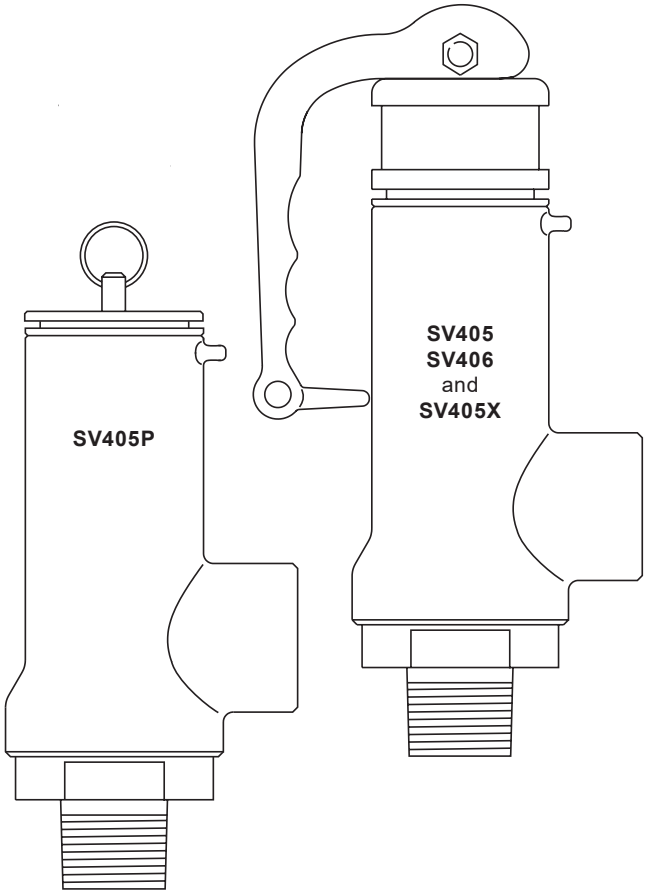
SV405, SV405P, SV405X and SV406 Safety Valves

Description

The SV405, SV405P, SV405X and SV406 are full nozzle safety valves for steam and air service in non-critical industrial processes requiring low flow, low pressure and low temperature. Minimum set pressure is 1.65 bar g.



Available types and applications

SV405 and **SV406**	The **SV405** has a brass body, 304 stainless steel nozzle and Viton 'O' ring seat seal as standard. The **SV406** has a stainless steel body, 316 stainless steel nozzle and Viton 'O' ring seat seal as standard. Both units have been designed to protect against overpressure in general process applications such as sterilisers, small compressors and pressure vessels.
SV405X	The **SV405X** has a brass body, 316 stainless steel nozzle and Viton 'O' ring seat seal as standard. This unit has been designed for applications where enhanced corrosion resistance is required.
SV405P	The **SV405P** has a brass body, 304 stainless steel nozzle and Viton 'O' ring seat seal as standard. It is available with screwed BSP connections. Minimum set pressure is 1.65 bar g. The SV405P safety valve **is not available unset**. This unit has a ring-pull device in place of a lever and is recommended for installations where space is limited.

Standards and approvals

Seat tightness complies with API standard 527.
This product fully complies with the requirements of the Pressure Equipment Directive (PED), fall within Category 4 for Group 2 gases and carries the CE mark.

Certification

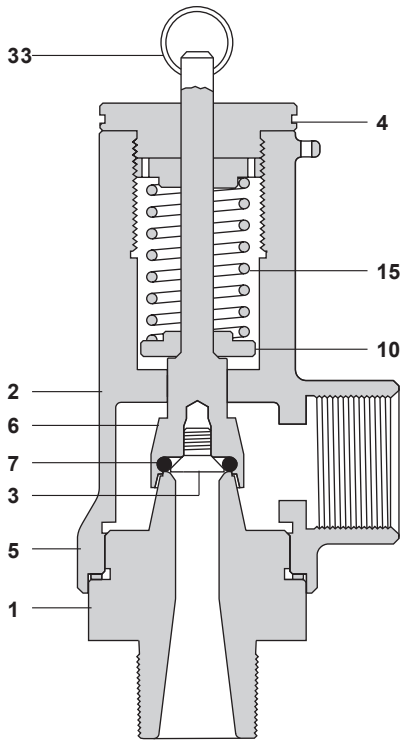
The product is available with a maunfacturers Typical Test Report.
Note: All certification / inspection requirements must be stated at the time of order placement.

Sizes and pipe connections

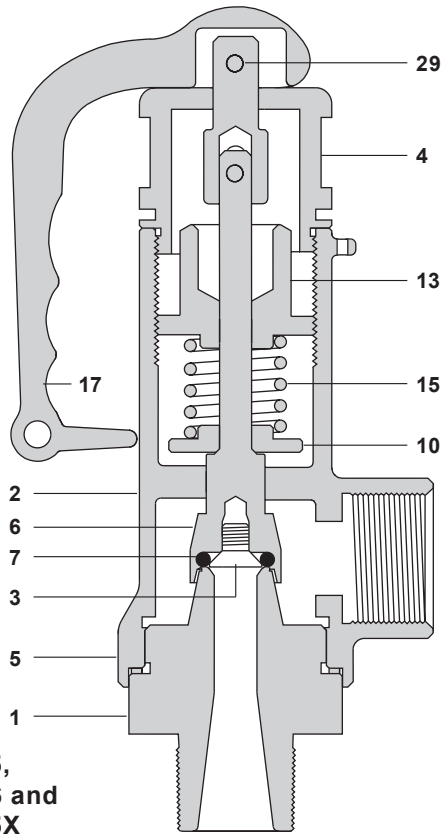
Inlet	Screwed ½" or ¾" BSP taper male BS 21 R or NPT*
Outlet	Screwed ¾" BSP parallel female BS 21 Rp or NPT*

*** Please note** that the SV405P is only available with BSP connections.

Materials



SV405P

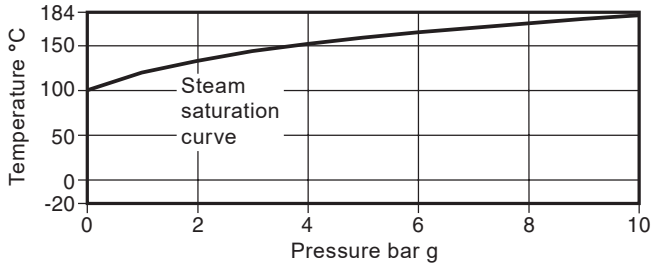


SV405, SV406 and SV405X

No.	Part	Material	SV405	SV405P	SV405X	SV406
1	Nozzle	Stainless steel 304	•	•		
		Stainless steel 316			•	•
2	Body	Brass EN 121640 CW617N	•	•	•	
		Stainless steel 1.4409				•
3	Screw	Stainless steel, A4	•	•	•	•
4	Cap	Brass EN 121640 CW617N	•	•	•	
		Brass EN 121640 CW617N, ELNP *				•
5	Gasket	PTFE	•	•	•	•
6	Stem/disc holder	Stainless steel, X20 Cr Ni 17	•	•	•	•
7	O'ring	Viton, FPM 75	•	•	•	•
10	Spring plate	Stainless steel, ASTM A276 304	•	•	•	•
13	Adjusting screw	Stainless steel, ASTM A276 304	•	•	•	•
15	Spring	Stainless steel, 1.4310	•	•	•	•
17	Lever	Stainless steel, 304	•		•	•
29	Joint	Brass EN 121640 CW617N	•		•	
		Brass EN 121640 CW617N, ELNP *				•
33	Ring-pull	Spring steel		•		

* ELNP = Electroless nickel plated

Pressure/temperature limits

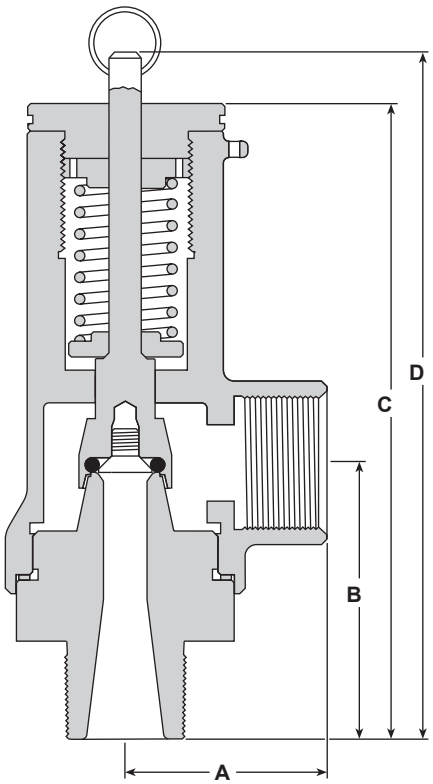


Set pressure range	Maximum		10 bar g
	Minimum		1.65 bar g (all variants)
Backpressure	Maximum		10% of set pressure
Temperature	Viton seat	Minimum	-20 °C
		Maximum	+184 °C
Performance data	Overpressure	Steam	10%
		Gas	10%
	Blowdown limits	Steam, gas	10%
	Derated coefficient of discharge values	Steam, gas	0.70
Designed for a maximum cold hydraulic test pressure of:			20 bar g

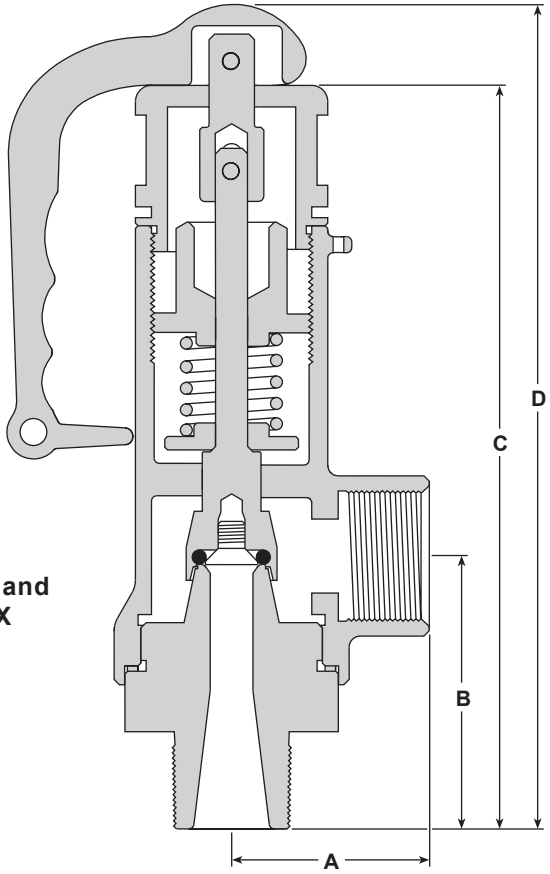
Dimensions, orifice, lift and weight (approximate) in mm and kg

Unit	A	B	C	D	Orifice	Lift	Weight
SV405, SV405X and SV406	37	50.7	137.7	152.7	8	2	0.75
SV405P	37	50.7	116.7	126.0	8	2	0.70

SV405P



SV405, SV406 and SV405X



Sizing
For the majority of applications, the valve capacity can be selected from the flow capacity table below.

Alternatively it can be calculated in accordance with ASME VIII UG –131. Kd = 0.78. Flow area = 0.50 cm², or it can be sized using the online safety valve sizing and selection software at **http://www.spiraxsarco.com/prs/product-sizing.asp**

Flow capacity (in accordance with EN ISO 4126)

Saturated steam and air with 10% overpressure

Set pressure bar g	Dry saturated steam kg/h	Air (0 °C @ 1013 mbar) Nm³/h
1.65	56	78
1.5	53	75
2.0	63	88
2.5	74	103
3.0	84	119
3.5	95	134
4.0	105	149
4.5	115	164
5.0	126	179
5.5	136	194
6.0	146	209
6.5	156	224
7.0	167	239
7.5	177	255
8.0	187	270
8.5	197	285
9.0	208	300
9.5	218	315
10.0	228	330

Safety information, installation and maintenance
For full details see the Installation and Maintenance Instructions (IM-P257-02) supplied with the product.

Installation note: The SV405 and SV406 should always be installed with the centre line of the spring housing vertically above the valve.

How to order
Example: 1 off Spirax Sarco SV405 safety valve having ¾" BSP inlet x ¾" BSP outlet connections, with a set pressure of 5 bar.