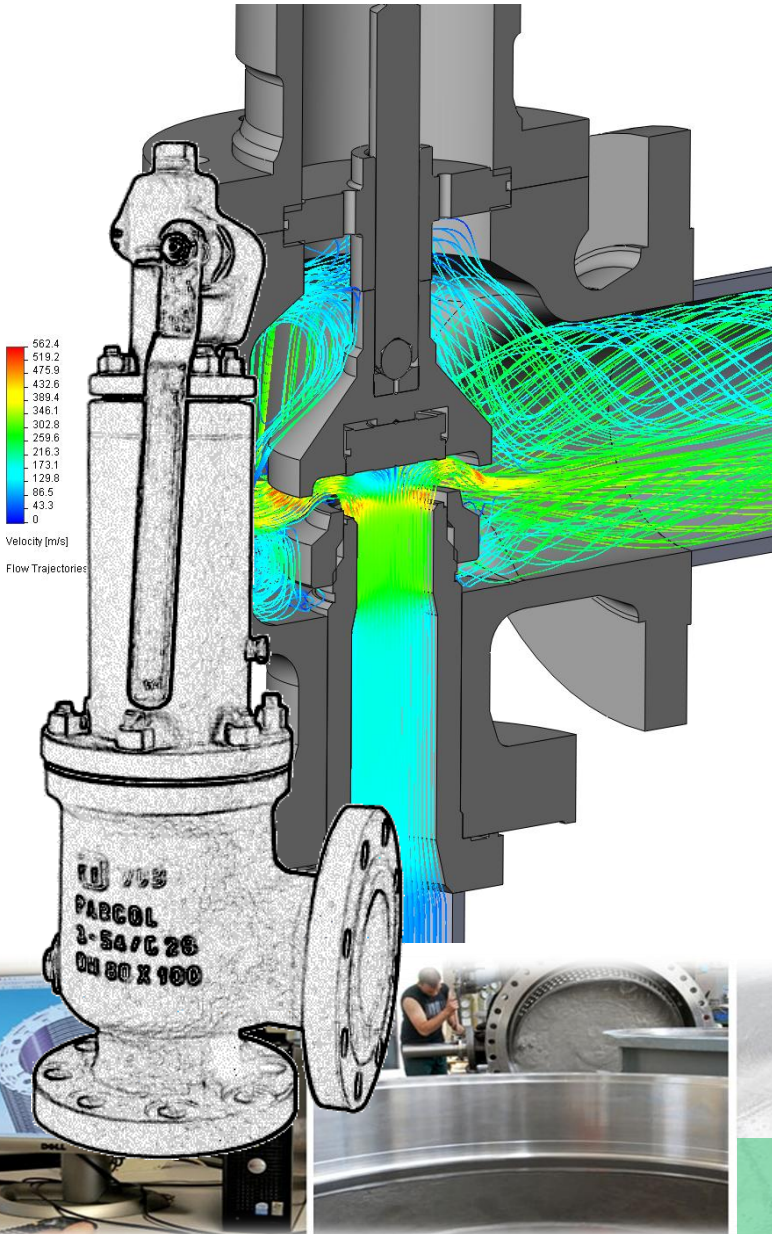


KOSO **PARCOL**



UV



ASME VSU series 3-5403 *Pressure Safety Relief Valves*

60 YEARS' EXPERIENCE

Product overview

The new series VSU 3-5403 universal pressure safety relief valves ASME Stamp certified, represents the third step in evolution of the first series 3-5401 dated 1989.

The new series geometry, both for compressible and incompressible fluids, is tailor-made to meet the requirements of ASME Code Section VIII.

Features and benefits

- ASME UV marking
- full nozzle design, threaded at top, ensures better nozzle/body alignment
- internal body shape, design and dimensions are particularly studied to reduce built-up back pressure and to avoid damages to balanced bellows during fluid discharge
- excellent body drain for any application
- orifice areas fully meet the interchangeability criteria as per standard API 526.

Refer to **Technical Bulletin 3-I Pressure Safety Relief Valves (ACA 0431)** for a general overview of safety valves.

Refer to **Technical Bulletin 3-5403 VSU Series Pressure Safety Relief Valves (ACA 0517)** for more detailed information about available models and materials.

ASME VSU series 3-5403 – Pressure Safety Relief Valves

Technical data

service	ovp	Kd (1)
gas	10% (minimum 0.2 bar)	0.975
liquid		0.772
alternate discharge		(2)
two-phase mixture		(3)

1) Value without backpressure. Refer to Bulletin 3-5403 VSU SERIES Pressure Safety Relief Valves (ACA 0517) for Kd values under backpressure conditions.

2) Valve set to discharge, alternatively, compressible and incompressible

3) According to standard API 520 Part I, Annex C (Omega Method).

Note: Minimum set pressure for valves model 3-5433 is 0.5 bar; for valves model 3-5483 it depends by orifice size. Contact Parcol Technical Department for more information.

Parcol VSU under backpressure tests on water (left) and air (right) at "Fluid-dynamics of Turbo-machines" Laboratories (LFM) at "Politecnico di Milano" University

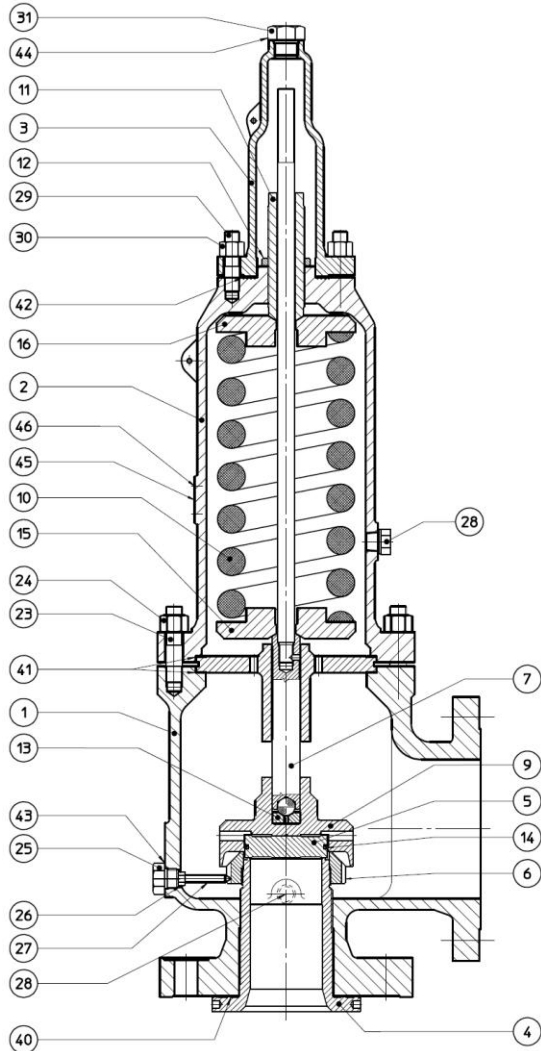


Table of orifices

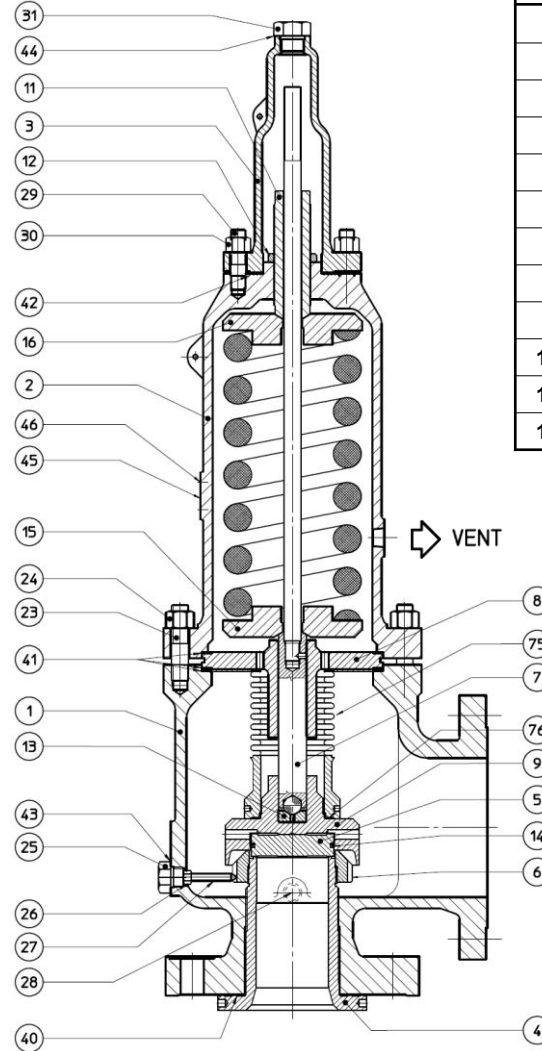
orifice type	flow diameter	flow area	thrust diameter	thrust area	nominal lift	
					3-5433	3-5483
-	mm	cm ²	mm	cm ²	mm	mm
G	23.5	4.34	24.3	4.64	10	12
H	27.7	6.03	28.5	6.38	12	14
J	36.3	10.3	37.5	11.0	16	18
K	41.7	13.7	43.5	14.9	18	21
L	51.9	21.2	54	22.9	23	26
M	58.2	26.6	60.5	28.7	25	29
N	63.9	32.1	66.5	34.7	28	32
P	76.2	45.6	79	49.0	33	38
Q	102	81.7	105	86.6	45	51
R	114.3	102.6	125	122.7	50	58
T	152.4	182.4	159	198.6	67	77
U	175	240.5	181	257.3	77	89

ASME VSU series 3-5403 – Pressure Safety Relief Valves

3-5433 conventional type



3-5483 balanced bellows type

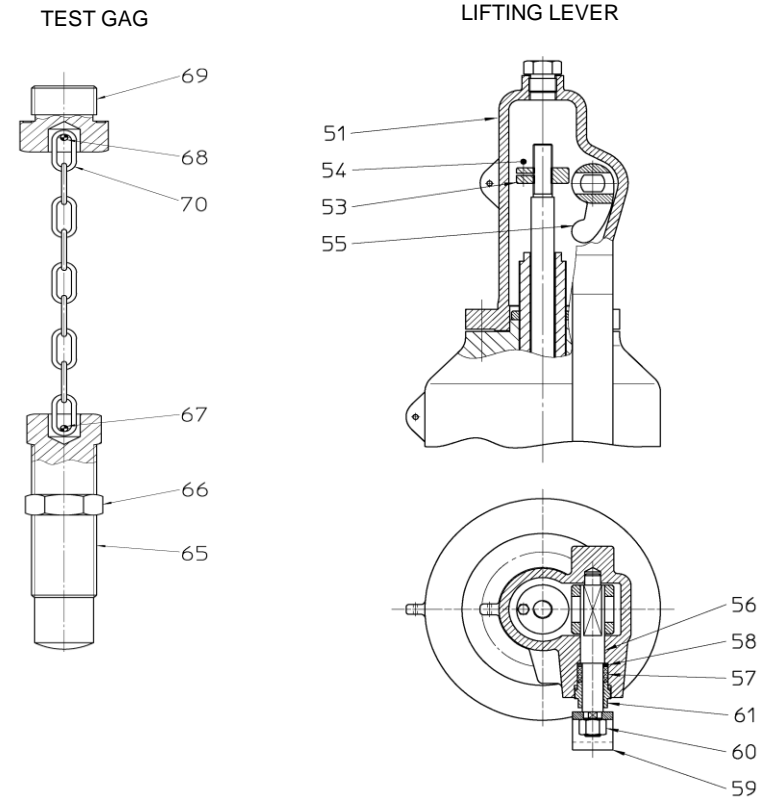


Item	Part name
1	Body
2	Tight bonnet
3	Cap
4	Nozzle
5	Disc
6	Adjusting ring
7	Stem assembly
8	Guide
9	Disc holder
10	Spring
11	Adjusting screw
12	Lock nut

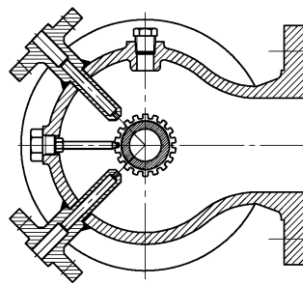
Item	Part name
13	Pivoting bush
14	Retaining ring
15	Lower spring seat
16	Upper spring seat
23	Body stud
24	Nut
25	Plug
26	Nut
27	Adjusting ring set screw
28	Plug (not shown on body)
29	Bonnet stud
30	Nut
31	Plug
40	Gasket
41	Gasket
42	Gasket
43	Gasket
44	Gasket
45	Name plate (not shown)
46	Name plate rivet (not shown)
48	Auxiliary piston (not shown)
75	Bellows
76	Bellows gasket
	Lifting lever (not shown)

Options and accessories

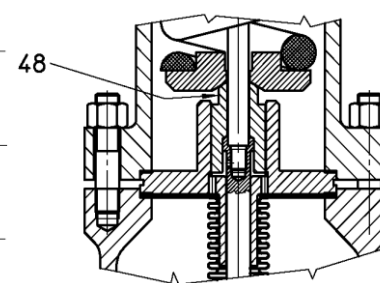
- PED marking
- ATEX marking
- special materials (included compliance to standard NACE MR0175)
- high discharge capacity also under severe backpressure conditions
- accessories: sealing surface washing, nozzle and/or body washing and/or jacketing, lifting lever and test gag. Auxiliary balanced piston and/or bellows protection for balanced bellows valves
- applications: power plants, refineries, industry, chemistry, oil and gas, geothermal, etc...



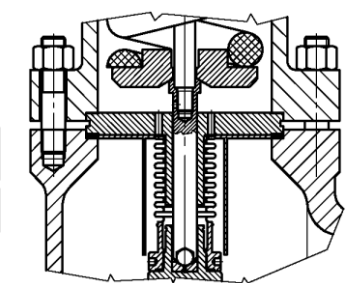
NOZZLE FLUSHING DEVICE



AUXILIARY PISTON



BELLOWS PROTECTION DEVICE



Test facilities

Parcol Safety Valves during Discharge Tests at "National Board Testing Laboratories" (NBTL) in Worthington, Columbus, OH



DN 1½" H 3" during testing with water

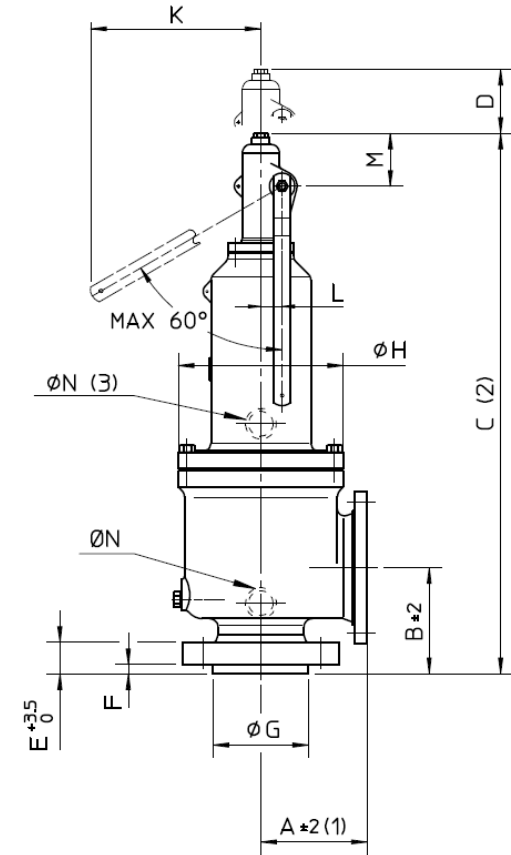


DN 2" J 3" during testing with nitrogen

ASME VSU series 3-5403 – Pressure Safety Relief Valves

Overall dimensions

DN entrata-inlet		1 1/2"						2"				3"				3"		4"			
DN uscita-outlet		3"						3"				4"				6"		6"			
TIPO VALVOLA		3-5433						3-5433				3-5433				3-5433		3-5433			
Valve type		3-5483						3-5483				3-5483				3-5483		3-5483			
ORIFICIO - Orifice		G	G	H	J	H	H	G - H	G	J	K	L	K	J	K	J	K	M	L	N	P
RATING ENTRATA Inlet rating	ANSI	150	300	150	150	300	600	1500	2500	300	600	150	300	900	1500	900	1500	150	300	150	150
	UNI	16	40	100	16	40	100	250	400	40	100	16	40	100	160	250	160	250	16	40	100
RATING USCITA Outlet rating	ANSI	150		150	150			300			150			300		150		150			
	UNI	16		16	16			40			16			40		16		16			
A		121	152	124	124		162	171	171	162	165	181			216	184	181	210			
B		124	130	136	130	154	156			184			198		178		197				
C		479	566	569	597	591	700			714	759			875		1020		886		1065	
D		110	130		130		150			170			220		170		220				
E		38	50	34	42	36	56	73			47	44	49	69		69	47	56			
F		14		16	14	16			16			16		16		16					
G	ANSI	73			92			95			127			130		130		160			
	UNI	88	85	88	100			95			138			130		130		160			
H		136	160		160		196			235			235		278		235		278		
K		90	165		165		235			235			370		235		370				
L		32		32		40			40			48		40		48					
M		44	51		51		73			73			80		105		80		105		
N (NPT)		3/8"	1/2"		1/2"			1/2"			1/2"		1/2"		1/2"						
MASSA mass (kg)	SENZA LEVA-without lever	20	28	31	30	47	60	63	52	71	68	87	105	120	86	114					
	CON LEVA-with lever	22	30	33	32	50	63	66	55	76	73	92	110	125	92	121					



DN entrata-inlet		4"				6"				6"		8"		8"		10"		
DN uscita-outlet		6"				8"				10"		12"		12"		10"		
TIPO VALVOLA		3-5433				3-5433				3-5433		3-5433		3-5433		3-5433		
Valve type		3-5483				3-5483				3-5483		3-5483		3-5483		3-5483		
ORIFICIO - Orifice		L = M	P	L = M = N	P	L	Q = R	Q	R	R	T	T	T	U				
RATING ENTRATA Inlet rating	ANSI	600		900		1500	150	300	150	300	300	300	600	150	300	300	150	300
	UNI	100		160		250	16	40	16	40	16	40	100	16	40	40	16	40
RATING USCITA Outlet rating	ANSI	150				150				150		150		150		150		
	UNI	16				16				16		16		16		16		
A		210	222		254	222	241	267			279	310	370					
B		197		225		197	240	240			276	301	340					
C		1065	1129		1302	1129	1226	1348		1226	1348	1414	1414	1600				
D		220		260		220	220	260		220	260	260		300				
E		56	64		64	71	69			69	61	61		68				
F		16				20				20		20		20	24			
G	ANSI	160				216				216		270		270		320		
	UNI	160				216				216		270		285		345		
H		278	310		374	310	374	374			448	448	520					
K		370		510	370	370	510	370	510	370	510	370	510	650				
L		48	62		48	48	62	62		62	62	62		80				
M		105	123		105	105	123	105		123	123	123		160				
N (NPT)		1/2"		3/4"	1/2"	3/4"		3/4"		3/4"	3/4"	3/4"	3/4"	3/4"				
MASSA mass (kg)	SENZA LEVA-without lever	111	120	135	175	146	230	260	250	280	355	365	385	520				
	CON LEVA-with lever	118	128	143	185	154	240	270	260	290	370	380	400	540				

NOTE In case of 3-5483 type valve equipped with auxiliary piston, contact Parcol Technical Department for mass and dimensions

1) When the outlet flange is RJ increase the dimension A of 6.5 mm for ANSI 150 and 8 mm for ANSI 300

3) For 3-5483 type valve only

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