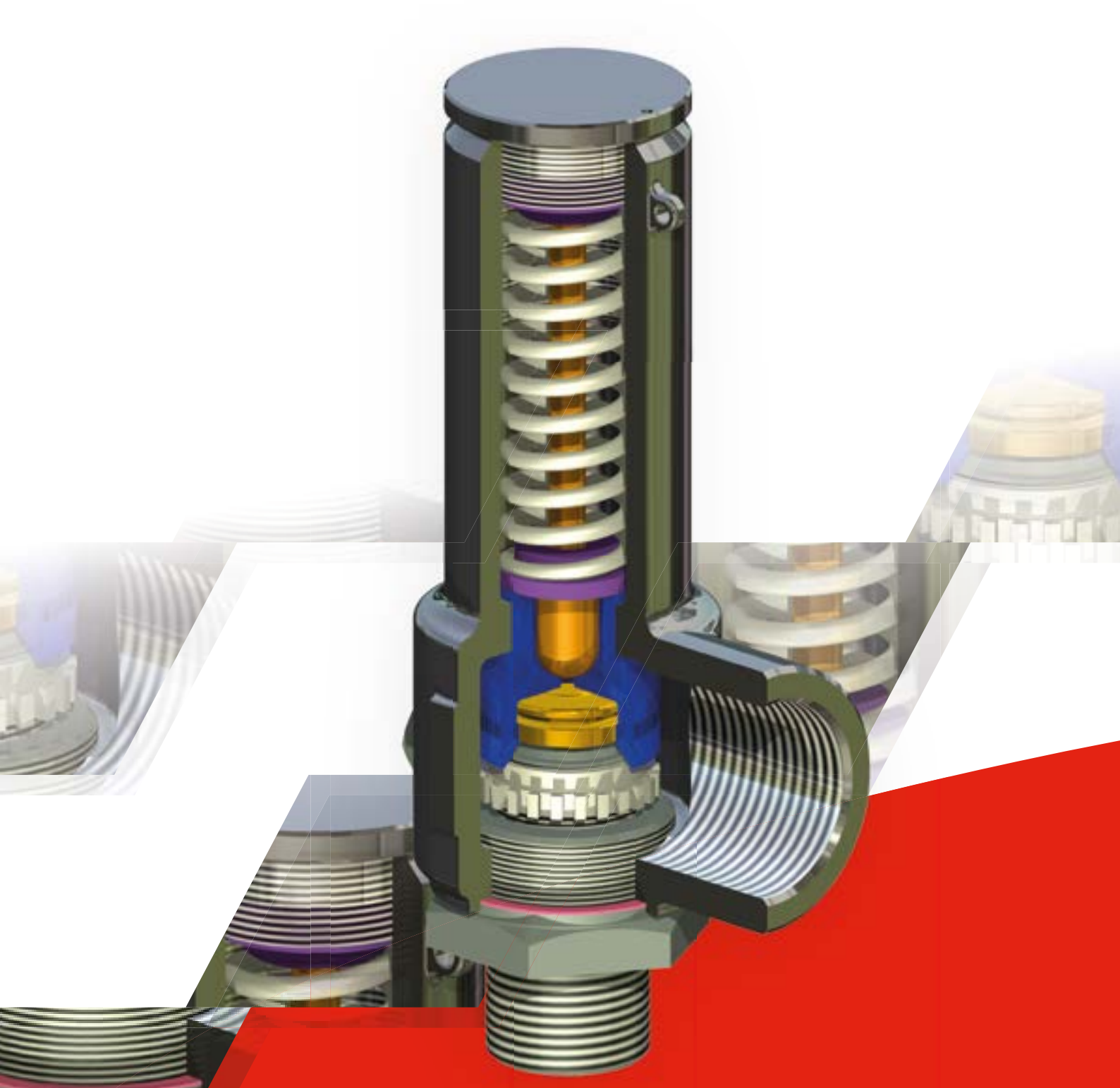
Nacional
SAFETY VALVES

Pekos Group



3-50

The Company

Production, R+D+i, evolution

VALVULAS NACIONAL, S.A. was established in Spain in 1976. The main target was to assist the petrochemical and chemical industries emerging in Spain at that time. Right from the start VALVULAS NACIONAL, S.A., has been designing and producing safety valves according to most recognized international standards and norms: API, ASME, ASTM and the European directives 2014/68/UE and 2014/34/UE. Our production process is accredited by an ISO 9001:2015 certification.

Our know how and capacity to adapt to the constantly changing demands of the market, made possible the introduction of new products designed for new applications on the market, like thermosolar plants where VALVULAS NACIONAL has supplied safety valves to more than 31 complete plants all over the world, while at the same time continuously supplying to all main players of the Spanish petrochemical, chemical and refining industries.

Production capacity

VALVULAS NACIONAL, S.A. valves' have their discharge coefficients approved in laboratory tests, in order to guarantee and assure that correct values are being used for every sizing process.
In our Technical-Sales department we count with a modern software which allows us to verify all the possibilities, and to assure strict fulfillment of all international standards.
VALVULAS NACIONAL, S.A. has established representation agreements with the most important O.E.M. companies in the safety sector of the industry, consolidating us as one of the main companies by product range; design and consulting in new plants or in new process.
Our continuous growth shows a clear trend, which confirms the integration of our workers to provide first class service to our customers and partners.

Factory & location

Our facilities in Rubí (Barcelona - Spain), with more than 3.000 Sq/m are fully prepared for our production activities: machining with modern CNC, assembling and testing. We also have long term agreements with approved workshops, which provides us with flexibility and fast feedback to customer demands, with full quality guarantee which has always been our main target.

Strategic alliances

Nowadays VALVULAS NACIONAL, S.A. starts an internationalization process, establishing representation agreements in different countries and continents all over the world, with specialized companies that will provide added value in our service towards the end user.

VALVULAS NACIONAL Making safety since 1976!

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VALVULAS NACIONAL

Making safety since 1976

General Features

Safety and Relief Valve 3-50

3-50 NACIONAL series is an angular type safety relief valve at 90º between the inlet and outlet connections, with threaded connections, full nozzle, direct action and spring loaded, with full lift and fast opening.

Design

- Valve body is angular type at 90º between inlet and outlet.
- Full nozzle type, guided and screw to body, enabling perfect alignment and easy disassembling.
- Disc is separate from disc-holder, for that reason its repair or change is improved and a better selection of materials can be performed.
- Springs are designed with experimental highly reliable calculation software and manufactured with the ideal material qualities for the process conditions, ensuring elasticity and accurate repetition of valve opening.

CODES AND STANDARDS

Valves have been designed and manufactured in compliance with the following directives, codes and standards:

European Directive: ..... 2014/68/UE (PED)

European Directive: ..... 2014/34/UE (ATEX)

Design: ..... EN ISO 4126-1 / ASME VIII DIV.1/ EAC - Eurasian Conformity

Certifications: ..... PED MODULO B+D

Pressure and Temperature Limits: ..... ASME B16.34

Tests: ..... API-527 y ASME B16.34

Quality System: ..... ISO 9001:2015

Materials: ..... ASME/ASTM y EN

SIZES AND RATINGS

Standard sizes and ratings:

ASME:

Sizes: ..... ½"x¾" to 1"x1"

Threaded connection: ..... NPT ASME B1.20.1

EN/ISO:

Sizes: ..... ½"x ¾" to 1"x1"

Threaded connection: ..... BSPP DIN ISO 228

OPERATING TECHNICAL CHARACTERISTICS TABLE

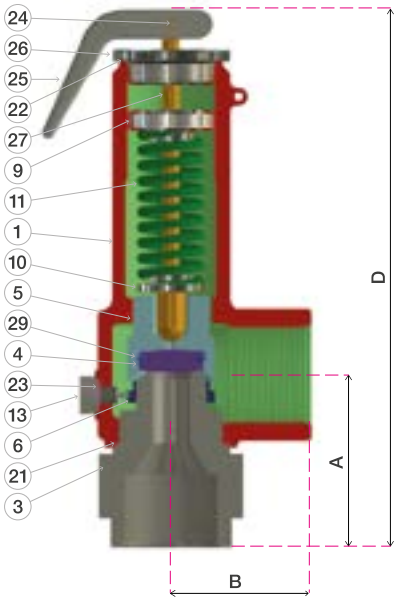
SAFETY VALVE 3-50 MODEL			
SERVICE		GAS	LIQUID
DISCHARGE COEFFICIENT		0,94(1)	0,62
Blowdown	MAX.	10%	20%
	MIN.	2%	12%
Set pressure Tolerance	±	3%(2)	
Minimum Set Pressure	ASME VIII Div.1 (bar)	1	
	EN ISO 4126-1 (bar)	0,5	

(1) 10% overpressure.

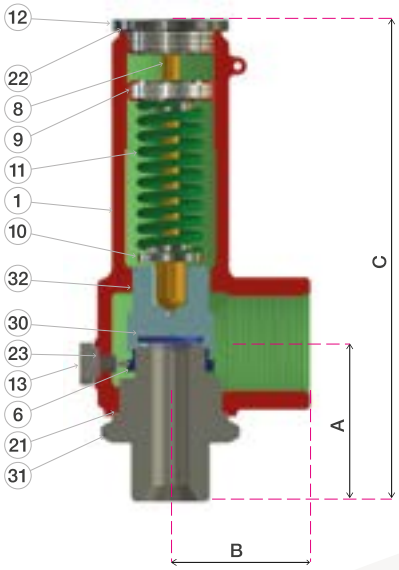
(2) or ± 0,15 bar, the bigger value.

Options

LEVER



SOFT SEAT



Materials

CLASS		A	E	F
ITEM	DENOMINATION	-29 a 250 ºC	-268 a 250 ºC	-29 a 250 ºC
1	BODY	SA 216 WCB	SA 351 CF8M	SA 216 WCC
3	NOZZLE	SEE SUBCLASS		
4	DISC			
5	DISC HOLDER	A 479 316	A 479 316	A 479 316
6	ADJUSTING RING	A 479 316	A 479 316	A 479 316
8	STEM	A 479 316	A 479 316	A 479 316
9	ADJUSTING SCREW	A 479 316	A 479 316	A 479 316
10	SPRING BUTTON	A 479 316	A 479 316	A 479 316
11	SPRING	A 313 316	A 313 316	A 313 316
12	CAP	SA 479 316	SA 479 316	SA 479 316
13	LOCK SCREW	A 582 303	A 582 303	A 582 303
21	GASKET	PTFE	PTFE	PTFE
22	GASKET	PTFE	PTFE	PTFE
23	GASKET	PTFE	PTFE	PTFE
24	PIN	AISI 302	AISI 302	AISI 302
25	LEVER	A 351 CF8M	A 351 CF8M	A 351 CF8M
26	LEVER CAP	SA 479 316	SA 479 316	SA 479 316
27	LEVER STEM	A 479 316	A 479 316	A 479 316
28	NAMEPLATE	AISI 304	AISI 304	AISI 304
29	ELASTIC RING	AISI 316	AISI 316	AISI 316
30	SOFT SEAT	FKM / NBR / EPDM / FFKM		
31	NOZZLE SOFT SEAT	SEE SUBCLASS		
32	DISC / DISC HOLDER SOFT SEAT			

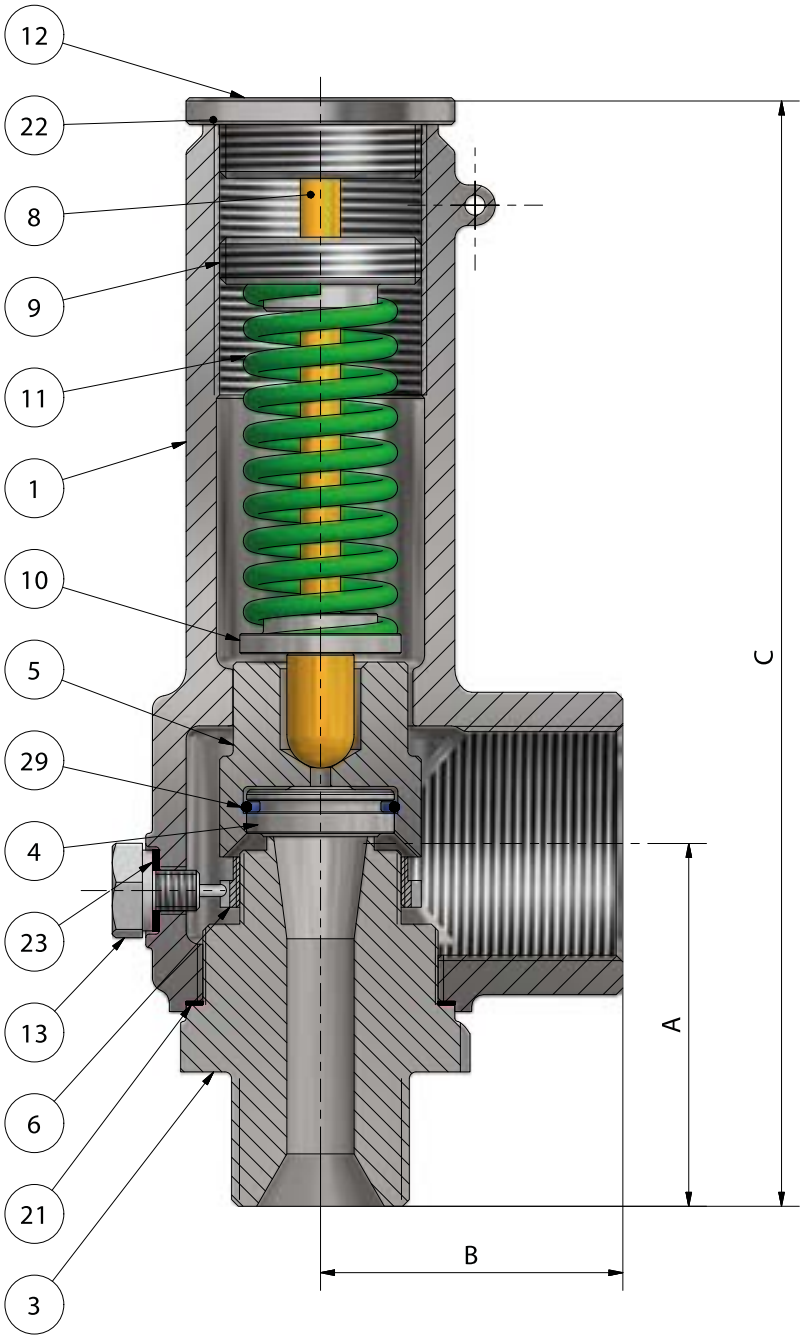
SUBCLASS		1	4
3	NOZZLE	SA 479 316	SA 479 316
4	DISC	SA 479 316	SA 564 630 (1)
31	NOZZLE SOFT SEAT	SA 479 316	SA 479 316
32	DISC / DISC HOLDER SOFT SEAT	SA 479 316	SA 564 630 (1)

(1) H900 condition, hardness between 40 ÷ 47 HRc. For temperatures > -30ºC.
H1150-M condition, hardness between 27 ÷ 30 HRc. For temperatures < -30ºC.

General Dimensions

		Sizes			ORIFICES	General dimensions (mm)				Std.	Lever
		INLET	OUTLET			A	B	C	D	Weight (Kg)	
THREADED CONNECTIONS	NPT M/H GAS M/H	1/2"	3/4"	1"	C(E), D(E), E	54	45	165	179	1,4	1,5
		3/4"	3/4"	1"	C(E), D(E), E, F						
		1"		1"							
	NPT H/H GAS H/H	1/2"	3/4"	1"	C(E), D(E), E					1,5	1,6
		3/4"	3/4"	1"	C(E), D(E), E, F						
		1"		1"		59	45	170	184		

ORIFICES	TIPE	Ø mm	cm²	Set Pressure Range
	C	6,3	0,31	0,3 - 40 Barg.
	D	10,0	0,78	
	E	12,7	1,26	
	F	15,9	1,98	0,3 - 25 Barg.



DEFINITIONS (EN ISO 4126-1)

- **Blowdown:** The difference between the set and re-seating pressures, normally stated as a percentage on the set pressure of a safety valve except for pressures of less than 3 bar when it is expressed in bar.
- **Built-up back pressure:** The pressure existing at the outlet of the safety valve caused by flow through the valve and the discharge system
- **Coefficient of discharge:** The value of actual flowing capacity (from tests).
- **Cold differential test pressure:** The inlet static pressure at which a safety valve is set to initiate to open on the test bench. This test pressure includes corrections for service conditions, as back pressure and/or temperature.
- **Flow area:** The minimum cross-sectional flow area (but not the curtain area) between inlet and nozzle which is used to calculate the theoretical flow to discharge.
- **Flow diameter:** The diameter corresponding to the flow area.
- **Lift:** The actual travel of the valve disc starting from the closed position.
- **Maximum allowable pressure:** The maximum pressure for which the equipment is designed as specified by the manufacturer.
- **Overpressure:** A pressure increase over the set pressure, at which the safety valve achieves the lift specified by the manufacturer, usually expressed as a percentage of the set pressure.
- **Pressure:** The pressure unit used in this standard is the bar (1 bar = 10^5 Pa). It is quoted as gauge (relative to atmospheric pressure) or absolute as appropriate.
- **Relieving pressure:** The pressure used for the sizing of the safety valve which is greater than or equal to the set pressure plus the overpressure.
- **Re-seating pressure:** The value of the inlet static pressure at which the disc re-establishes contact with the seat or at which the lift becomes zero.
- **Safety valve:** Valve which automatically, without the assistance of any energy other than that of the fluid concerned, discharges a quantity of the fluid so as to prevent a predetermined safe pressure being exceeded and which is designed to re-close and prevent further flow or fluid after nominal pressure conditions of service have been restored.
- **Set pressure:** The predetermined pressure at which a safety valve under operating conditions initiates to open.
- **Superimposed back pressure:** The pressure existing at the outlet of the safety valve at the time when the device is required to operate.

- The safety valve is an automatic direct action accessory whose function is to relief excessive overpressures in the recipients and installations that protects. Its main characteristics, allowing is its sudden fluid discharge with complete and fast opening (pop).
- Automatic valve opening is produced because of the additional push provided by the overpressure of the fluid itself helping to overcome spring resistance. Once the installation has recovered its normal service condition, the valve closes again.
- The data contained in this catalogue are indicative. Válvulas Nacional, S. A., reserves the right to change this catalogue without notice. Always check the specification sheets.

Nacional
SAFETY VALVES

C/ Compositor Vivaldi, 2-8, Pol. Ind. Can Jardí
08191 Rubí (Barcelona) - Spain
Tel.: +34 936 995 200
comercial@valvulasnacional.com

www.valvulasnacional.com

Member of

Pekos Group