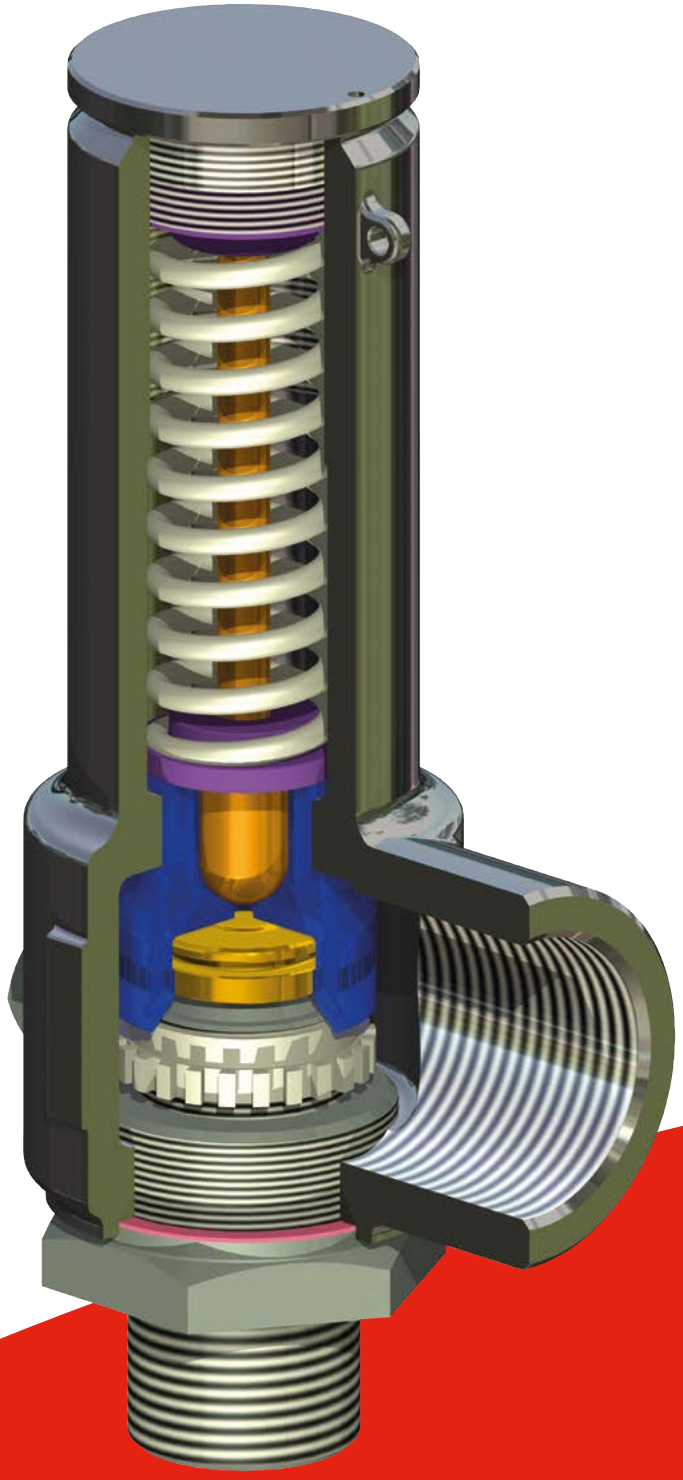
Nacional
SAFETY VALVES

Pekos Group



3-50

Nacional
SAFETY VALVES

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 certication.

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 companies 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 have 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 confi rms 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 fl exibility and fast feedback to customers demands, with full quality guarantee which has always been our main target.

STRATEGIC ALLIANCES

Nowadays VALVULAS NACIONAL, S.A. is an international company, with 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.

Index

General Features

Safety and Relief Valve 3-50

3-50 NACIONAL series is an angular type safety relief valve at 90° 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 90° between inlet and outlet.
- Full nozzle type, guided and screwed 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 & 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 XIII/ EAC - Eurasian Conformity
Certifications:	PED MODULE B+D
Pressure and Temperature Limits:	ASME B16.34
Tests:	API-527 and ASME B16.34
Quality System:	EN ISO 9001:2015
Materials:	ASME/ASTM and EN

Sizes & Ratings

Standard sizes and ratings:

NPT Threaded according to ASME B1.20.1:
Sizes: ½" x ¾" up to 1 "x 1"
BSPP Threaded according to ISO 228-1
Sizes: ½" x ¾" up to 1 "x 1"

Operating Technical Characteristics Table

SAFETY VALVE MODEL 3-50			
SERVICE		GAS	LIQUID
DISCHARGE COEFFICIENT		$0,94_{(1)}$	$0,64_{(2)}$
Blowdown	MAX.	10%	20%
	MIN.	2%	12%
Set Pressure Tolerance		3%	
Minimum Set Pressure	ASME XIII (bar)	1	
	EN ISO 4126-1(bar)	0,5	

(1) 10% Overpressure
(2) 25% Overpressure
(3) Or ± 0,15 bar, the highest value according to according to ASME XIII and EN ISO 4126-1

Materials

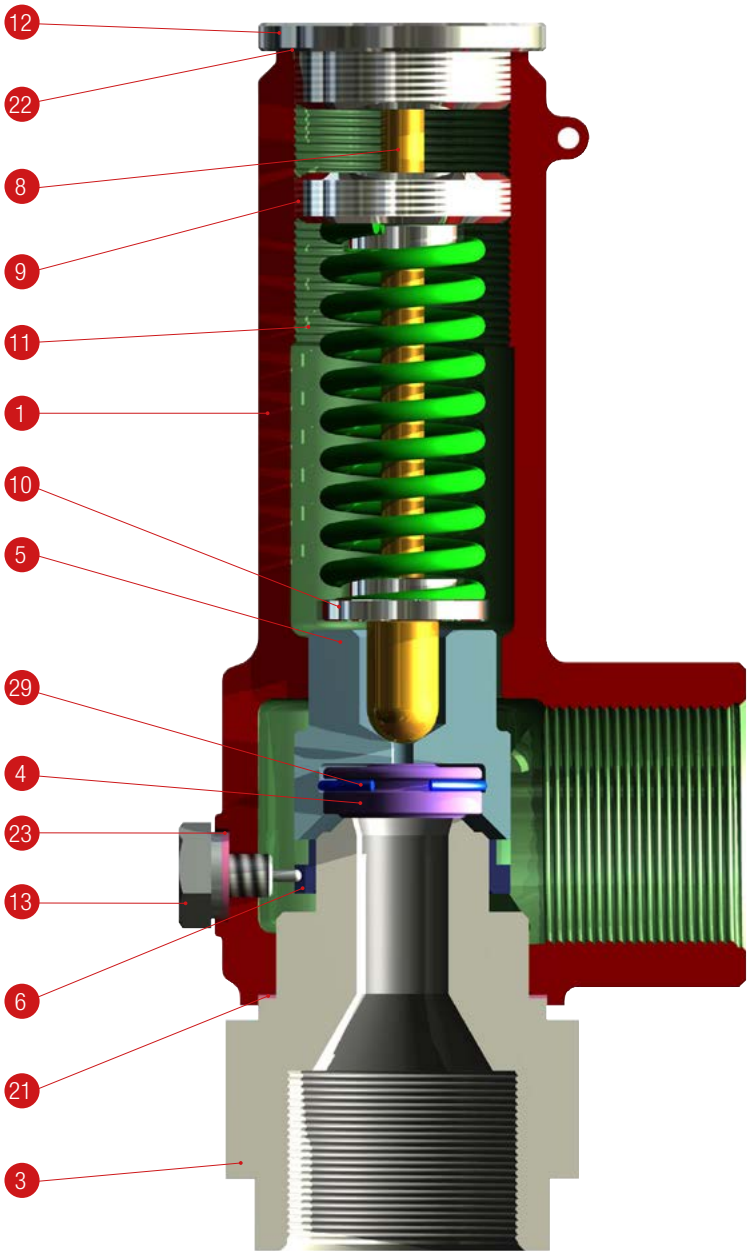
		ASTM MATERIALS CLASS	
	CLASS	**A**	**E**
ITEM	DEFINITION	-29 up to 250ºC	-268 up to 250ºC
1	BODY	SA 216 WCC (1)	SA 351 CF8M
3	NOZZLE	SA 479 316	SA 479 316
4	DISC	SA 479 316	SA 479 316
5	DISC HOLDER	A 479 316	A 479 316
6	ADJUSTING RING	A 479 316	A 479 316
8	STEM	A 479 316	A 479 316
9	ADJUSTING SCREW	A 479 316	A 479 316
10	SPRING BUTTON	A 479 316	A 479 316
11	SPRING	A 313 316	A 313 316
12	CAP	SA 479 316	SA 479 316
13	LOCK SCREW	A 479 316	A 479 316
21	SEAT GASKET	PTFE	PTFE
22	CAP GASKET	PTFE	PTFE
23	LOCK SCREW GASKET	PTFE	PTFE
28	NAMEPLATE	AISI 304	AISI 304
29	ELASTIC RING	AISI 316	AISI 316
30	ORING	NBR/EPDM/FKM/FFKM	
31	NOZZLE SOFT SEAT	SA 479 316	SA 479 316
32	DISC HOLDER SOFT SEAT	SA 479 316	SA 479 316

(1) Zinc plated electrolytic treatment

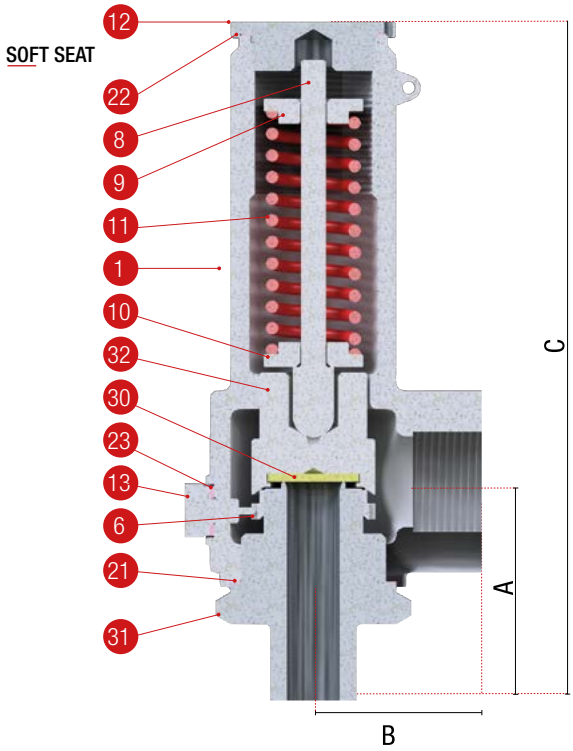
General Dimensions

		Sizes			ORIFICIES	General Dimensions				Std.	Lever
		INLET	OUTLET			A	B	C	D	Weight (Kg)	
THREADED CONNECTIONS	NPT M/ F BSPP M/ F	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						
		1"		1"							
	NPT M/ F BSPP M/ F	1/2"	3/4"	1"	$C_{(E)}$, (E), E					1,5	1,6
		3/4"	3/4"	1"	$C_{(E)}$, $D_{(E)}$, E						
		1"		1"		59	45	170	184		

ORIFICIES	TIPE	∅ mm	cm^2	Set Pressure Range
	C	6,3	0,31	0,3 - 40 barg.
	D	10,0	0,78	
	E	12,7	1,26	


12
22
8
9
11
1
10
5
29
4
23
13
6
21
3

Options


SOFT SEAT
12
22
8
9
11
1
10
32
30
23
13
6
21
31
C
A
B

DEFINITIONS (EN ISO 4126-1)

▪ **Blowdown**: The difference between actual popping pressure of a pressure relief valve and actual reseating pressure expressed as a percentage of set pressure or in pressure units.

▪ **Built-up back pressure:** The pressure existing at the outlet of the safety valve caused by fl ON 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 pressure relief valve is adjusted to open on the test stand. This test pressure includes corrections for service conditions of superimposed 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

▪ **Lift:**The diameter corresponding to the flow area.

▪ **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 manufacturer, usually expressed as a percentage of the set pressure.

▪ **Pressure**: The pressure unit used in this standard is the bar (1 bar = 105 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 over-pressure.

▪ **Re-seating pressure**: The value of decreasing inlet static pressure at which the valve disk re-establishes contact with the seat or at which 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 exceededand which is designed to re-clase and prevent further flow or fluid after nominal pressure conditions of service have been restored.

▪ **Set pressure**: The value of increasing inlet static pressure at which a pressure relief device displays one of the operational characteristics as defined under opening pressure, popping pressure, start-to-leak pressure, burst pressure, or breaking pressure. (The applicable operating characteristic for a specific device design is specified by the device manufacturer).

▪ **Superimposed back pressure**: The static pressure existing at the outlet of a pressure relief device at the time the device is required to operate. It is the result of pressure in the discharge system from other sources.

- 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 cla-ses 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.

MOD-6400 ASME UV SAFETY VALVE

MOD-5100 ASME UV SAFETY VALVE

MOD-3-50 SAFETY VALVE

MOD-3-51 SAFETY VALVE

MOD-5500 SAFETY VALVE

PILOT OPERATED SAFETY VALVE

MOD-2000 EMERGENCY VALVE

MOD-3400 BREATHER VALVE

VALVE SILENCER

Making safety since 1976

Nacional
SAFETY VALVES

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Member of
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