

ALIKRAFT ENGINEERS PRIVATE LIMITED
(An ISO 9001-2008 certified company)

WORKS / REGISTERED OFFICE

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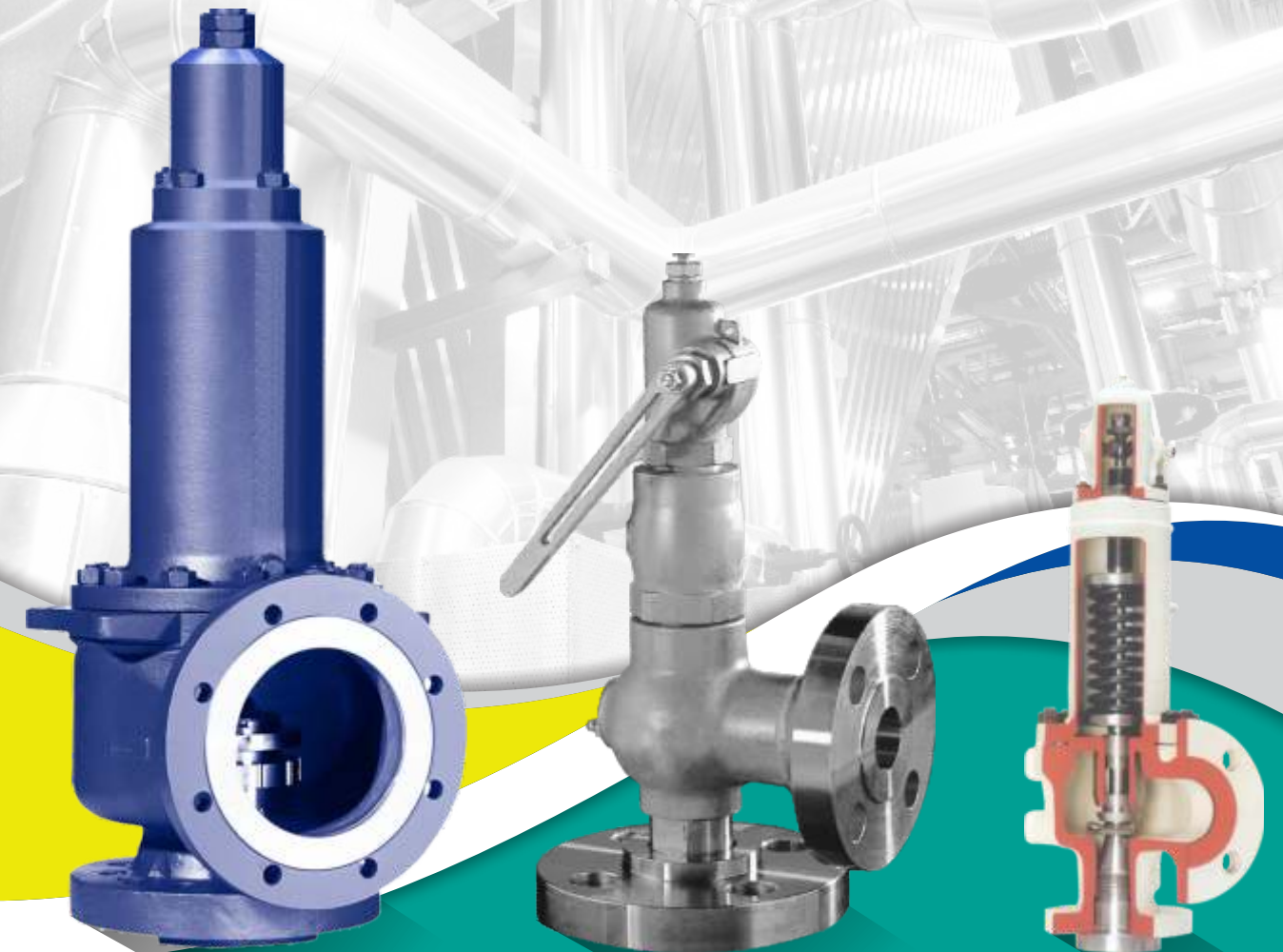
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PRESSURE RELIEF VALVES





ALIKRAFT
also undertake the service
contract for following:

RACK & PINION ELEVATOR: The scope of work defines below but not limited to same.

- Rental / hiring on short / long term basis
- Repair & Annual Maintenance Contract
- Organize trained manpower for operation
- Consultancy for identification for various applications
- Assist in compliance / obtaining statutory clearance for Elevator Operation.

REPAIR, ANNUAL MAINTENANCE OF SHOTCRETING & RAISE CLIMBER EQUIPMENTS.

REFURBISHMENT OF PRESSURE RELIEF DEVICES: The scope of work defines below but not limited to same.

- Annual Rate Contract for Safety Valves reconditioning.
- In – Situ Safety Valve Repairing & Testing during Annual Turn Around (ATA).
- Shut-Down & Emergency Safety Valve Maintenance.
- Installation & Commissioning of Safety Valves.
- Manufacturing & Commissioning of Safety Valves.
- Supply, replacement & to provide the spare parts of Indian & Overseas brand Safety Valves.
- Maintains a full inventory of new and reconditioned Valves with immediate delivery
- Provides factory warrantee support of Indian, Overseas & OEM brand as well as service for most other make valves after duly repaired & tested.
- Field Service & Technical Support.
- Total Valve Management

Alikraft Engineers Private Limited

established in the year 2010 with vision to provide best & safe Rack & Pinion type PM ELEVATOR. ALIKRAFT is now the flagship company and leading manufacturer in INDIA to provide the solution to the industries & infrastructure segment. The company is accredited with ISO-9001:2008, certification from QSI, Florida, USA and has competent engineering skills namely structural design capability, quality manufacturing, standardized bought out components, strict quality assurance, approved testing procedures. In short span of time "ALIKRAFT" have created faith and goodwill with customers and looking to the enormous growth, Set up a new plant of state-of art technology at Samlaya near Vadodara.

With economic liberalization and globalization of India economy and a deep understanding to the customer needs, ALIKRAFT has emerged as a market leader in phenomenal rate added more SBU in company.

The current range
of products
manufactured by
ALIKRAFT includes



High rising self erecting Rack & Pinion type Hoist



Shaft Raising Platform



Shotcreting Machines & Systems
(Technical Knowhow from SIKA- Switzerland)



Mining Cutters
(Technical Knowhow from Palmieri- Italy)



Muck Car
(Technical Knowhow from Palmieri- Italy)



Segment Car
(Technical Knowhow from Palmieri- Italy)

Philosophy

Mission Statement

ALIKRAFT mission is to achieve excellence in Service, Quality, Reliability, Safety, Customer Satisfaction and Build long lasting customer relationship that will make us preferred supplier.

Organization Values

Honesty and Integrity:

ALIKRAFT will act with absolute honesty and integrity in dealing with its customers, employees, vendors and society at large.

Care and Concern:

ALIKRAFT will always care for its customers by delivery value to them and delight them through quality products and services.

Team Work:

ALIKRAFT will encourage creativity and innovation across the organization and offer equal opportunity for growth to all employees through meritocracy, team work, commitment and discipline.

Trust and Reliability:

ALIKRAFT will always adopt fair practices and thereby will aim to become a symbol of trust and reliability of all customers, vendors and government bodies. We will strive to maximize value for our customer as well as vendors in a balanced manner.



Pressure Relief Valves

are designed to protect a pressure system against excessive normal or subnormal pressure in the event of positive or negative excursion of the system pressure. They are required to open at a predetermined system pressure, to discharge or let enter a specified amount of fluid so as to prevent the system pressure from exceeding a specified normal or subnormal pressure limit, and to reclose after the normal system pressure has been restored.

Pressure relief valves must also be self-actuated for maximum reliability except where premitted by the applicable Code of Practice for specific applications.

Special Features

- Sizing Calculation in accordance with all international standards such as API 520
- Seat Tightness Test as per API 527
- Body Design and Thickness in accordance with ASME B 16.34
- High Lift Full Nozzle design
- Single Blow down bring for easy maintenance and control
- Maximum inter changerability of parts

- Special Geometry of Disc's seal lip allows to minimise the thermal stresses avoiding the distortions that causes leakage through the seat. This is transferred from spindle to disc through a ball. This feature together with low positioning of the centre of thrust, helps in the homogenous distribution of the force on the sealing surface and minimise the side shifting of the disc from the nozzle while opening & closing of the valve. These structural features together with a scrupulous lapping of the seat contribute to obtain high seat tightness and set pressure reproducibility.

SAFETY VALVE an automatic pressure relieving device actuated by the static pressure upstream of the valve, and characterized by rapid full opening or pop action. Used for steam, gas or vapor service.

RELIEF VALVE an automatic pressure relieving device actuated by the static pressure upstream of the valve, which opens in proportion to the increase in pressure over the opening pressure.

SAFETY RELIEF VALVE an automatic pressure actuated relieving device suitable for use as either a safety or relief valve, depending on the application.

PRESSURE RELIEF VALVE a pressure relief device designed to re-close and prevent the further flow of fluid after normal conditions have been restored.

SET PRESSURE in pounds per square inch gage, the inlet pressure at which the pressure relief valve is adjusted to open under service conditions. In a safety or safety relief valve in gas, vapor or steam service, the set pressure is the inlet pressure at which the valve pops under service conditions. In a relief or safety relief valve liquid service, the set pressure is the inlet pressure at which the first steady steam flows from the valve perpendicular to the outlet.

DIFFERENTIAL SET PRESSURE the pressure differential, in pounds per square inch between the set pressure and the constant superimposed back pressure. It is applicable only when it is conventional type safety valve is being used in service against a constant superimposed back pressure.

COLD DIFFERENTIAL TEST PRESSURE in pounds per square inch gage is the inlet static pressure at which the pressure relief valve is adjusted to open on the test stand. This pressure includes the correction for service conditions of back pressure or temperature, or both

OPERATING PRESSURE the pressure, in pounds per square inch gage to which the vessel is usually subjected in service. A vessel is usually designed for a maximum allowable working pressure, in pounds per square inch gage, which will provide & suitable margin above the operating pressure in order to prevent any undesirable operation of the relief device. It is suggested that this margin be as great as possible consistent with economical vessel and other equipment design, system operation and the performance characteristics of the pressure relieving device.

MAXIMUM ALLOWABLE WORKING PRESSURE the maximum gage pressure permissible in the top of a completed vessel in its operating position for a designated temperature. This pressure is based on calculations for each element in a vessel using nominal thicknesses, exclusive of allowance for corrosion and thicknesses required for loadings other than pressure. It is the basis for the pressure setting of the pressure relieving protecting the vessel. The design pressure may be used in place of maximum allowable working pressure in cases where calculations are not made to determine the value of the latter.

OVER PRESSURE a pressure increase over the set pressure of a pressure relief valve, usually expressed as a percentage of the set pressure.

ACCUMULATION- the pressure increase over the maximum allowable working pressure of the vessel during discharge through the pressure relief valve, expressed as a percent of that pressure or in pounds per square inch.

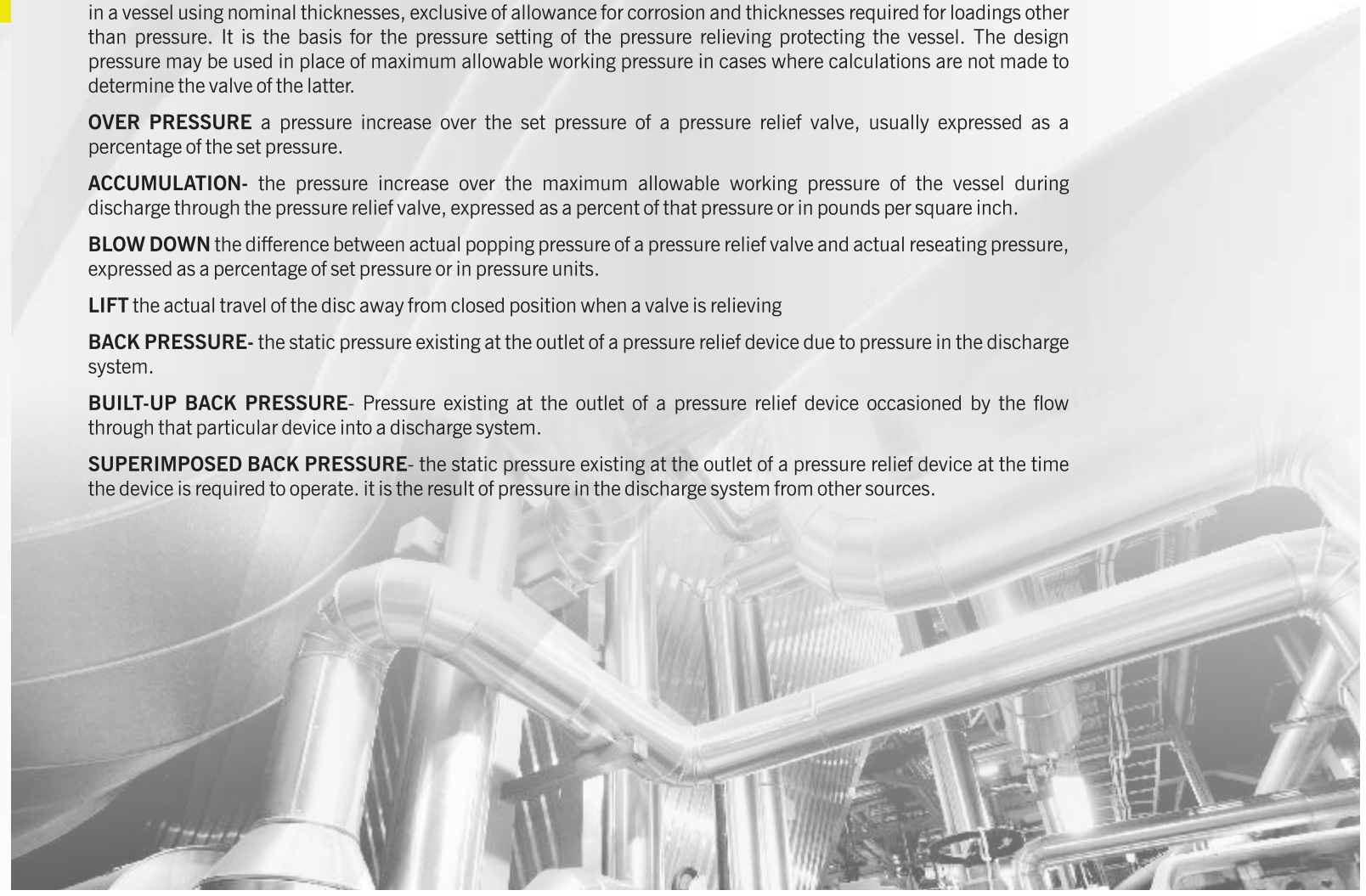
BLOW DOWN the difference between actual popping pressure of a pressure relief valve and actual reseating pressure, expressed as a percentage of set pressure or in pressure units.

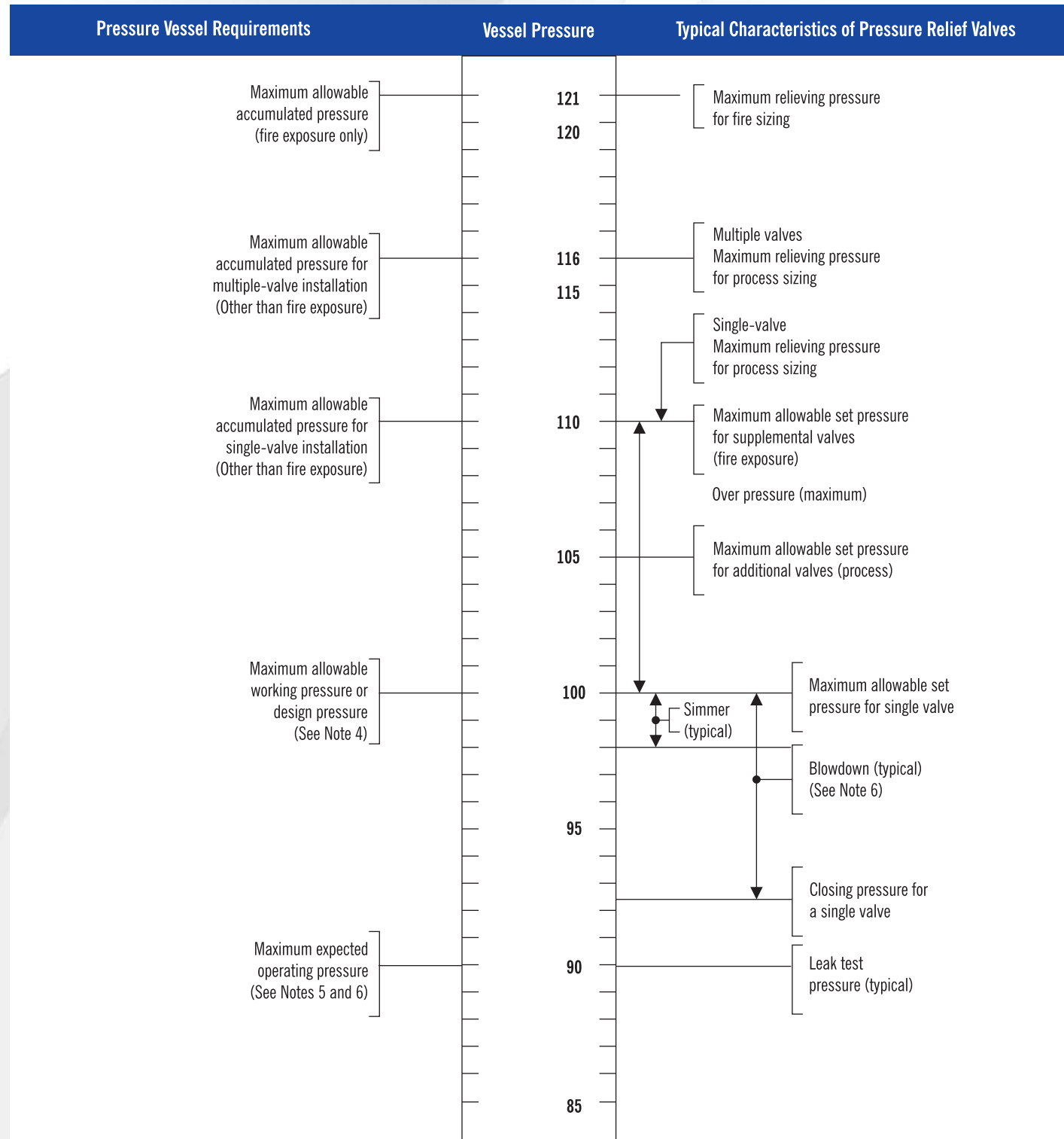
LIFT the actual travel of the disc away from closed position when a valve is relieving

BACK PRESSURE- the static pressure existing at the outlet of a pressure relief device due to pressure in the discharge system.

BUILT-UP BACK PRESSURE- Pressure existing at the outlet of a pressure relief device occasioned by the flow through that particular device into a discharge system.

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.





Notes:

- This figure conforms with the requirements of section VIII of the ASME Boiler and Unfired Pressure Vessel Code for MAWPs greater than 30 psi.
- The pressure conditions shown are for pressure relief valves installed on a pressure vessel.
- Allowable set-pressure tolerances will be in accordance with the applicable codes.
- The maximum allowable working pressure is equal to or greater than the design pressure for a coincident design temperature.
- The operating pressure may be higher or lower than 90
- Section VIII, Division 1, Appendix M of the ASME Code should be referred to for guidance on blowdown and pressure differentials.

GENERAL

Item Number :
 Tag Number :
 Service, Line, or Equipment Number :
 Number Required :

VALVE DESIGN

Design Type :
 Conventional Bellows Balanced Piston
 Nozzle Type : Full Semi
 Other Specify :
 Bonnet Type : Open Closed
 Seat Type : Metal-to-Metal Resilient
 Seat Tightness : API 527
 Other Specify :

CONNECTIONS

Inlet Size : Rating : Facing :
 Outlet Size : Rating : Facing :
 Other Specify :

SERVICE CONDITIONS

Fluid and State :
 Required Capacity per Valve and Units :
 Molecular Weight or Specific Gravity :
 Viscosity at Flowing Temperature and Unit :
 Operating Pressure and Units :
 Set Pressure and Units :
 Blowdown : Standard Other
 Latent Heat of Vaporization and Units :
 Operating Temperature and Units :
 Relieving Temperature and Units :
 Built-up Back Pressure and Units :
 Superimposed Back Pressure and Units :
 Cold Differential Test Pressure and Units :
 Allowable Overpressure in Percent or Units :
 Compressibility Factor, Z :
 Ratio of Specific Heats :

BASIS OF SELECTION

Code : ASME VIII Stamp Required : Yes No
 Other Specify :
 Comply with API 526 : Yes No
 Fire Other Specify : Control Valve Failure
 Rupture Disk : Yes No

MATERIALS

Body :
 Bonnet :
 Seat (Nozzle) : Disc :
 Resilient Seat :
 Guide :
 Adjusting Ring (s) :
 Spring : Washer :
 Balanced Bellows :
 Piston :
 Comply with NACE MR0175 : Yes No
 Other Specify :

ACCESSORIES

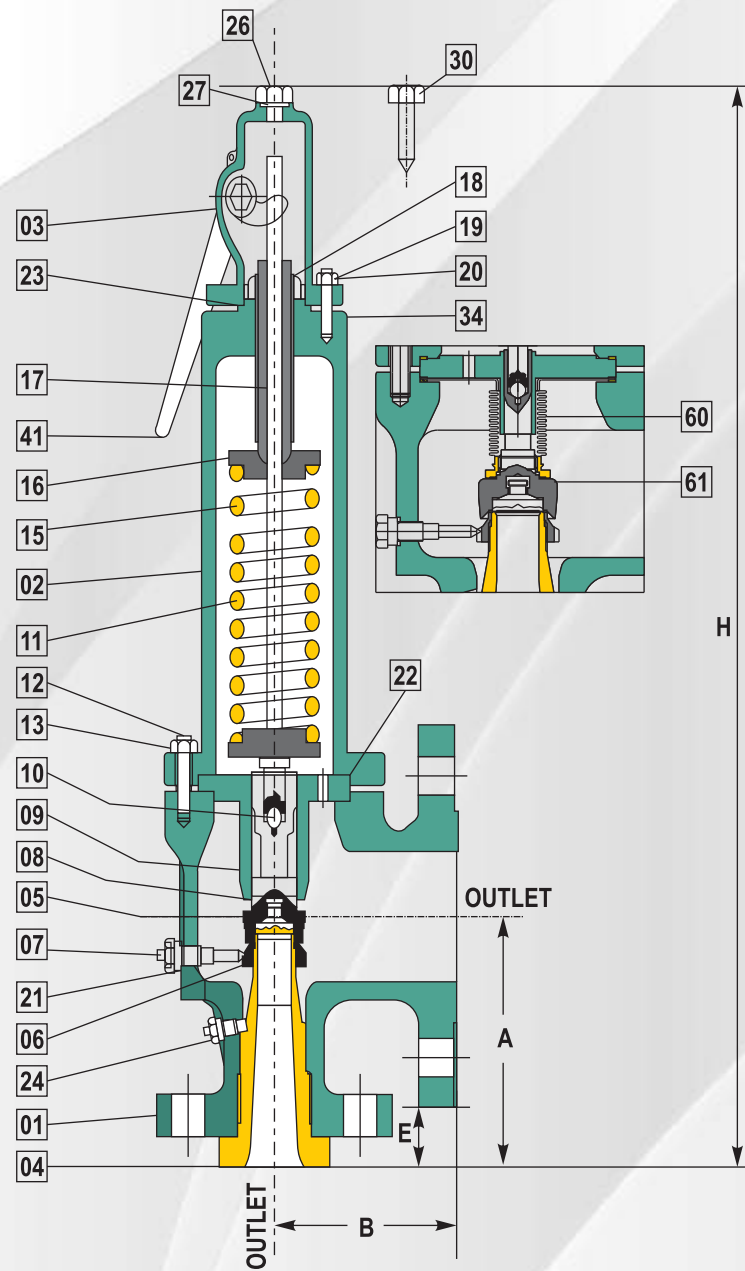
Cap : Screwed Bolted
 Lifting Lever : Plain Packed None
 Test Gag : Yes No
 Bug Screen : Yes No
 Other Specify :

SIZING AND SELECTION

Calculated Orifice Area (in Sq. in.):
 Selected Effective Orifice Area (in Sq. in.) :
 Orifice Designation (Letter) :
 Manufacturer :
 Model Number :
 Vendor Calculations Required : Yes No

Pressure Relief Valve

SERIES : AK -33



HIGH LIFT & HIGH CAPACITY, FULL NOZZLE CONSTRUCTION, DIRECT SPRING LOADED, METAL TO METAL SEAT, SIZE 1" TO 8" ('D' TO 'T' ORIFICE IN ACCORDANCE WITH API-526) FLANGED END ANSI 150# TO 2500# (TEMP-196°C TO +530°C SAFETY/PRESSURE RELIEF VALVE. SET PRESSURE RANGE 1 BAR TO 414 BAR

DESIGN FEATURE

- Face to face dimension according to API 526
- Adjusting and reaction rings
- Screwed full nozzle
- Flanges according to ANSI B 16.5
- Sizing & selection of safety relief valve in accordance with API 520, Part-I (Using API-520 coefficient & API-526 effective discharge area)

CONSTRUCTION

Body Materials

- Carbon steel code 3336
 - Stainless steel code 3356
 - Cr Mo steel code 3366
 - Low temperature steel code 3376
- Special materials included compliance to standard NACE MRO175

ACCESSORIES / OPTIONS

- Packed lifting lever with closed bonnet (F)
- Packed lifting lever with open bonnet (O)
- Bellows (P)
- Nozzle and disc stellited (S)
- Gag (V)

PRESSURE RELIEF VALVES FLANGED TYPE

SERIES : AK -33

PART LIST

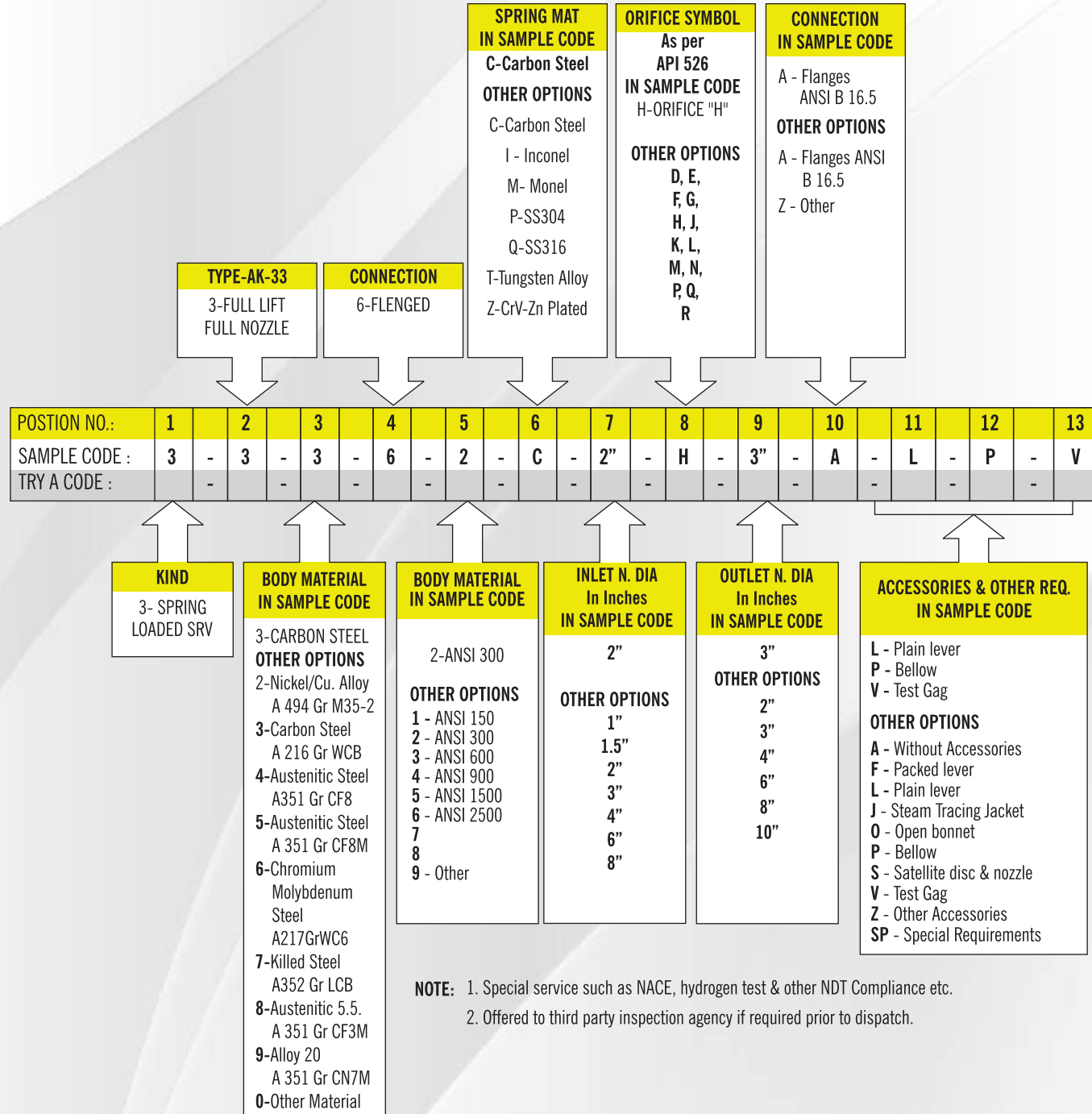
PART LIST		AK-3336 CARBON STEEL	AK-3356 STAINLESS STEEL CORROSIVE SERVICE	AK-3366 CR MO STEEL	AK-3376 LOW TEMPERATURE
PART NO	DESCRIPTION	TEMP-29°C TO 427°C	TEMP-196°C TO 530°C	TEMP-29°C TO 538°C	TEMP-30°C TO 345°C
01	Body	A 216 GR WCB	A 351 GR CF8M	A 217 GR WC6	A 352 GR LCB
02	Bonnet	A 216 GR WCB	A 351 GR CF8M	A 217 GR WC6	A 352 GR LCB
03	Cap	A 216 GR WCB	A 351 GR CF8M	A 217 GR WC6	A 352 GR LCB
04 (R)	Nozzle	SS-316 / CF8M	SS-316/CF8M	SS-316/CF8M	SS-316/CF8M
05 (R)	Disc	SS-316	SS-316	SS-316	SS-316
06	Adj. Ring	A 351 GR CF8M	A 351 GR CF8M	A 351 GR CF8M	A 351 GR CF8M
07	Adj. Ring Pin	SS - 304	SS-304	SS-304	SS-304
08	Disc Holder / Piston	SS -304/351 GR CF8	SS-304/351 GR CF8	SS-304/351 GR CF8	SS-304/351 GR CF8
09	Guide	SS-316/A 351 GR CF8M	SS-316/A 351 GR CF8M	SS-316/A 351 GR CF8M	SS-316/A 351 GR CF8M
10	Ball	SS-304	SS-304	SS-304	SS-304
11	Spindle	SS-304	SS-304	SS-304	SS-304
12	Body-Bonnet Bolting Stud	A 193 GR B7	A 193 GR B8	A 193 GR B7	A 193 GR B7
13	Body-Bonnet Bolting Nut	A 194 GR 2H	A 194 GR 8H	A 194 GR 2H	A 197 GR 2H
15 (R)	Spring	ACCORDING TO MEDIUM AND TEMPERATURE			
16	Spring Washer	C.S.	SS-304	SS-304	C.S.
17	Adj. Screw	SS-304	SS-304	SS-304	SS-304
18	Lock Nut	SS-304	SS-304	SS-304	SS-304
19/20	Cap- Bonnet Fastener	CARBON STEEL	SS-304	CARBON STEEL	CARBON STEEL
21	Set Screw Gasket	GRAPHOIL WITH SS FILLER	GRAPHOIL WITH SS FILLER	GRAPHOIL WITH SS FILLER	GRAPHOIL WITH SS FILLER
22	Guide Gasket	GRAPHOIL WITH SS FILLER	GRAPHOIL WITH SS FILLER	GRAPHOIL WITH SS FILLER	GRAPHOIL WITH SS FILLER
23 (R)	Cap Gasket	GRAPHOIL WITH SS FILLER	GRAPHOIL WITH SS FILLER	GRAPHOIL WITH SS FILLER	GRAPHOIL WITH SS FILLER
24	Drain Plug	SS-304	SS-304	SS-304	SS-304
26	Cap Plug	C.S.	SS-304	C.S.	C.S.
27 (R)	Plug Gasket	GRAPHOIL WITH SS FILLER	GRAPHOIL WITH SS FILLER	GRAPHOIL WITH SS FILLER	GRAPHOIL WITH SS FILLER
30	Test Gag	C.S.	SS-304	C.S.	C.S.
41	Lever Assembly	A 479 410	A 479 304	A 479 410	A 479 410
60 (R)	Bellow	SS-316 L	SS-316 L	SS-316 L	SS-316 L
61 (R)	Bellow Gasket	GRAPHOIL WITH SS FILLER	GRAPHOIL WITH SS FILLER	GRAPHOIL WITH SS FILLER	GRAPHOIL WITH SS FILLER

(R) : Recommended Spares	Other materials on Request	Recommended Spring Materials	
COLD DIFFERENTIAL TEST PRESSURE (CDTP):		Material	Temp Range (OC)
<ul style="list-style-type: none"> ▪ Actual service conditions are different from the test conditions, to compensate this effect CDTP is specified for adjusting set pressure at test bench. ▪ The CDTP for conventional valve with superimposed constant back pressure, $CDTP = (\text{Set pressure} - \text{Back pressure}) (1 + \text{Temp Correction factor})$ ▪ The temperature correction factor at reliving temp are (+67 to +120=1%) (+121 to 200 = +2%) (+201 to 351=3%) (+316 to 430' = +4%) (+431' to 450' = +5%) ▪ The spring design is suitable to modify the set pressure within $\pm 10\%$ of the original set pressure. For other modifications, consult to work. 		1. Carbon Steel (C.S. with Plating) 2. High Temp Alloy Steel (HTAS) a. 50 CrV4 (Chrome Alloy) b. Tungsten Alloy c. Inconel 3. Low Temp Alloy Steel (SS)	-59 to 232 -59 to 350 -59 to 538 -196 to 538 -196 to 260

PRESSURE RELIEF VALVES FLANGED TYPE

SERIES: AK-33

CODIFICATION NUMBERING SYSTEM



PRESSURE RELIEF VALVES FLANGED TYPE

SERIES: AK-33

SIZES

DESIGN-ATION	ORIFICE API - 526 EFFECTIVE AREA (cm ²) Sq In	FLANGES ANSI RF * ND in. Inlet x Outlet	CLASS ANSI		MAX SET PRESSURE AT 38°C (BAR-g)	DIMENSIONS				APPROX WEIGHT (KG)
			INLET	OUTLET		±3 A mm	±3 B mm	±3 E mm	±10 H mm	
D	(0.71) 0.11	1" x 2"	150	150	19.6	105	114	32.5	420	18
			300	150	19.6	105	114	32.5	420	18
			300	150	51	105	114	32.5	420	18
		1.5 x 2"	600	150	102	105	114	32.5	420	18
			900	300	153	105	140	40.5	512	30
			1500	300	255	105	140	40.5	512	30
E	(1.26) 0.196	1" x 2"	150	150	19.6	105	114	32.5	420	18
			300	150	19.6	105	114	32.5	420	18
			300	150	51	105	114	32.5	420	18
		1.5 x 2"	600	150	102	105	114	32.5	420	18
			900	300	153	105	140	40.5	512	30
			1500	300	255	105	140	40.5	512	30
F	(1.98) 0.307	1.5" x 2"	150	150	19.6	124	121	34	530	30
			300	150	19.6	124	121	34	530	30
			300	150	51	124	152	38	530	36
		1.5" x 3"	600	150	102	124	152	38	530	36
			900	300	153	124	165	47	554	48
			1500	300	255	124	165	47	554	48
G	(3.24) 0.503	1.5" x 3"	2500	300	345	140	178	60	640	60
			150	150	19.6	124	121	34	540	30
			300	150	19.6	124	121	34	540	30
		2" x 3"	300	150	51	124	152	38	540	36
			600	150	102	124	152	38	540	36
			900	300	153	124	165	47	650	42
H	(5.06) 0.785	1.5" x 3"	1500	300	255	156	171	64	740	78
			2500	300	255	156	171	64	740	84
			150	150	19.6	130	124	36	540	35
		2" x 3"	300	150	19.6	130	124	36	540	35
			600	150	51	130	124	36	540	35
			900	150	102	155	162	42	700	48
J	(8.3) 1.287	2" x 3"	1500	300	190	155	162	63	730	82
			150	150	19.6	137	124	36	559	35
			300	150	19.6	137	124	36	559	35
		3" x 4"	300	150	51	184	143	47	725	58
			600	150	102	184	181	49	750	98
			900	150	153	184	181	53	970	132
1500	300	186	184	181	67	771	145			

PRESSURE RELIEF VALVES FLANGED TYPE SERIES : AK-33

SIZES

DESIGNATION	ORIFICE		FLANGES ANSI RF*		MAX SET PRESSURE IN BAR AT 38°C	DIMENSIONS				APPROX WEIGHT (KG)
	API - 526		CLASS ANSI			±3 A mm	±3 B mm	±3 E mm	±3 H mm	
	EFFECTIVE AREA (cm ²) Sq In	ND in Inlet x Outlet	INLET	OUTLET						
K	(11.86) 1.838	3" x 4"	150	150	19.6	156	162	43.5	700	78
			300	150	19.6	156	162	43.5	700	78
			300	150	51	156	162	43.5	700	78
			600	150	102	184	181	53	970	130
		3" x 6"	900	150	153	198	216	54	1160	156
			1500	300	153	198	216	67	1160	210
L	(18.41) 2.853	3" x 4"	150	150	19.6	156	165	43.5	700	78
			300	150	19.6	156	165	43.5	700	78
			600	150	69	179	203	52.5	1000	180
		4" x 6"	900	150	103	197	222	61	1160	210
			1500	150	103	197	222	71	1160	222
			150	150	19.6	178	184	44	990	108
M	(23.2) 3.6	4" x 6"	300	150	19.6	178	184	44	990	130
			300	150	51	178	184	44	990	130
			600	150	76	178	203	52.5	1000	180
			900	150	76	197	222	61	1160	210
			150	150	19.6	197	210	46	1010	90
			300	150	19.6	197	210	46	1010	130
N	(28) 4.34	4" x 6"	300	150	51	197	210	46	1010	130
			600	150	69	197	222	61	1010	205
			900	150	69	197	222	61	1010	210
			150	150	19.6	181	229	46	1000	136
P	(41.2) 6.38	4" x 6"	300	150	19.6	181	229	46	1000	132
			300	150	36	225	254	46.5	1060	180
			600	150	69	225	254	60	1200	264
			900	150	69	225	254	60	1200	270
Q	(71.2) 11.05	6" x 8"	150	150	11.5	240	241	43.5	1100	192
			300	150	11.5	240	241	54	1120	264
			300	150	21	240	241	54	1120	264
			600	150	42	240	241	67.5	1133	288
R	(103) 16	6" x 8"	150	150	7	240	241	43.5	1100	198
			300	150	7	240	241	54	1120	270
		6" x 10"	300	150	16	240	267	54	1205	282
600	150		21	240	267	63	1205	306		
T	(168) 26.00	8" x 10"	150	150	4.5	276	279	47	1346	408
			300	150	8	276	279	60	1400	436
			300	150	21	276	279	60	1400	426

- Effective co-efficient of discharge as per API 520, for Gas/Vapour/Steam: "kd"=0.97 & Liquid: "kd" =0.62
- The hydro test is conducted for "Nozzles" at 1.5 times of inlet rating and for "Bodies" at 1.5 times of outlet back pressure limit of valves as per API 526 or as specified
- Seat leakage test is conducted as per API 527 or as specified

Remark:

*On request it is possible to supply different type of flanges. For ANSI flanges refer to limits indicated in ANSI B-16.5 standard.

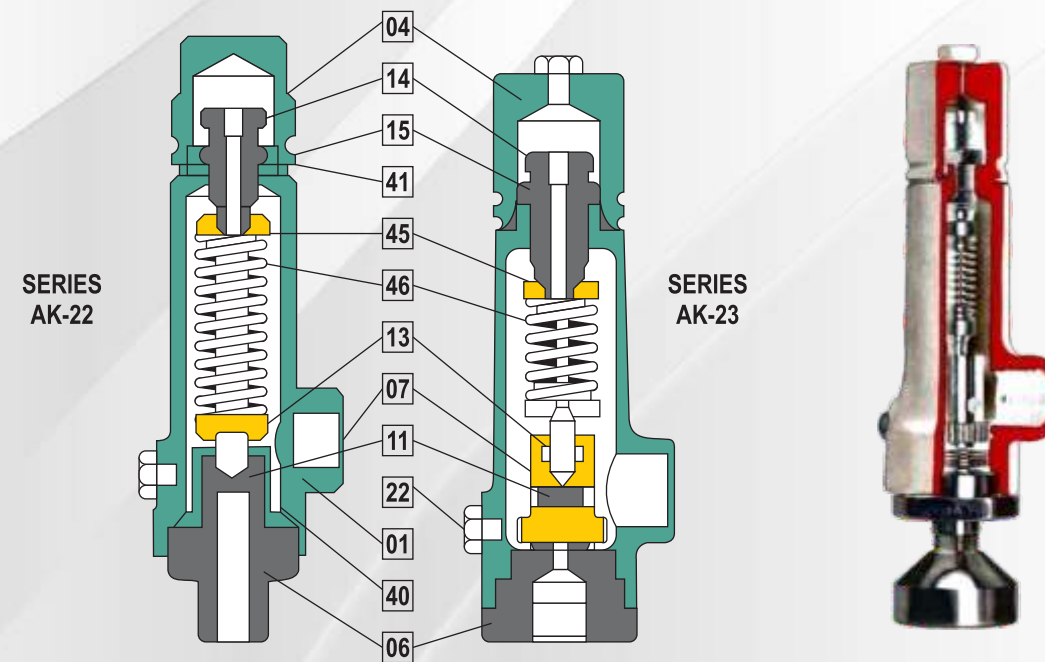
SAFETY / THERMAL RELIEF VALVES SERIES : AK -22 & AK -23

Series AK-22 & AK-23 full lift, modified nozzle, small bore, thermal expansion relief valves in screwed & flanged connection for gas or liquid for moderate flow upto 102 BAR.

AK-22 Valves suitable to relieve liquids, available in orifice area 0.80 cm² (0.12 in²)

AK-23 (Thermal expansion relief valves)

AK-23 valves suitable to relieve liquids or gas, available in orifice area 0.38 cm² (0.06 in²). Provided with an adjustable blow down ring.



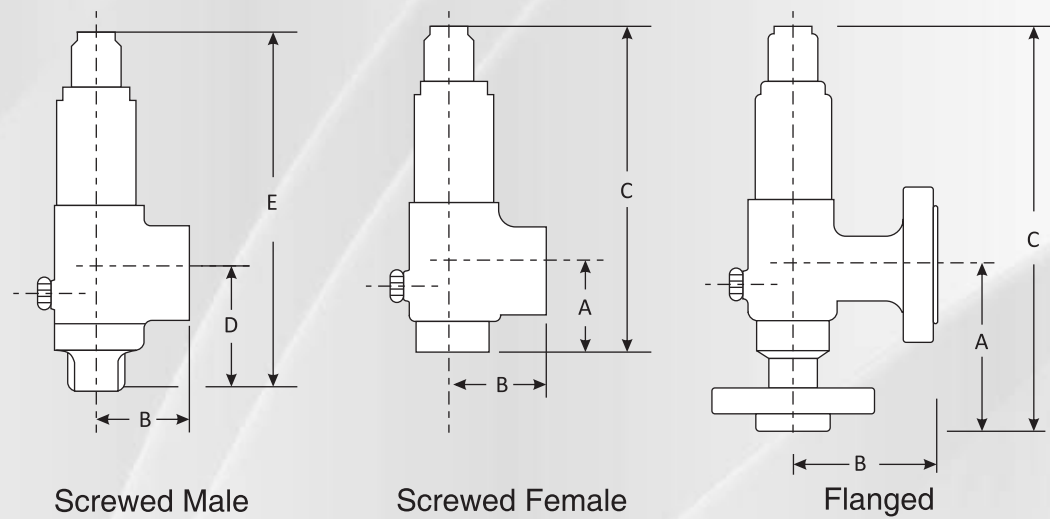
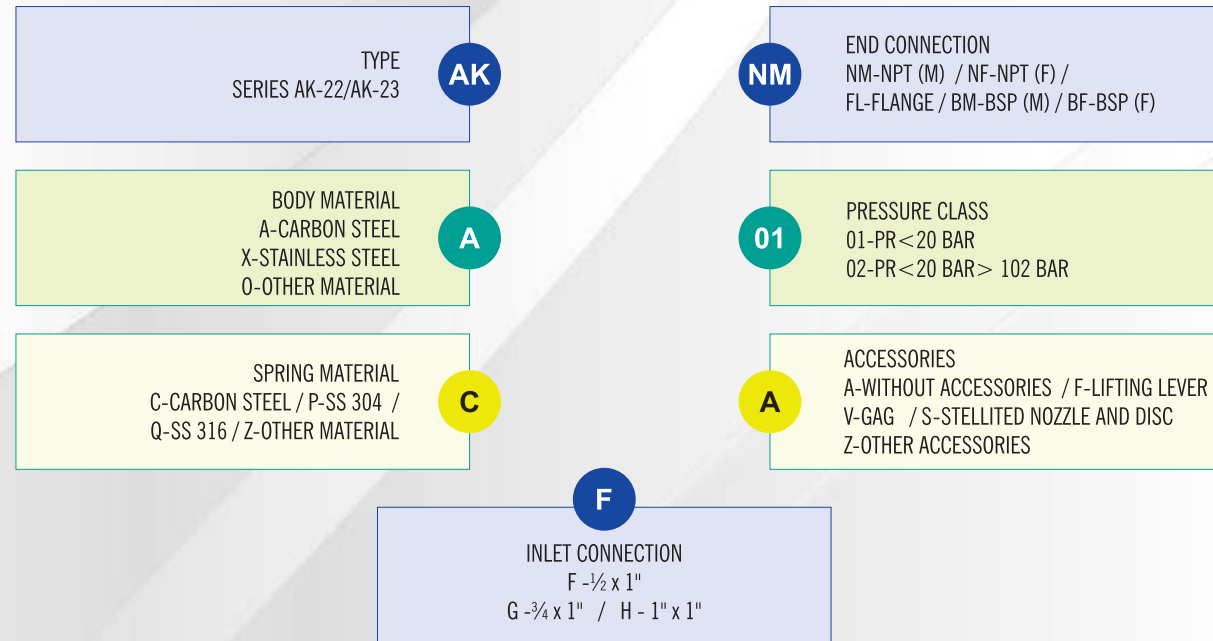
PART NO.	PART NAME	STANDARD MATERIALS	CORROSIVE SERVICES
01	Body	A216WCB	A351 CF8 M
04	Cap	CS / WCB	S.S.316 / CF8 M
06 (R)	Nozzle	S.S.316	S.S.316
07	Nozzle Ring (Guide)	S.S.316 / CF8 M	S.S.316 / CF8 M
11 (R)	Disc	S.S.316	S.S.316
13	Stem	S.S.316	S.S.316
14	Adjusting Screw	S.S.316	S.S.316
15	Adjusting Screw Nut	S.S.316	S.S.316
22	Set Screw	S.S.316	S.S.316
40-41 (R)	Gasket	PTFE	PTFE
45	Spring Wash	CS	S.S.316
46 (R)	Spring	S.S.316	S.S.316

® Recommended spare parts- Other material on request

SAFETY/THERMAL RELIEF VALVES

SERIES : AK-22 & AK - 23

CODIFICATION NUMBERING SYSTEM



Mounting Dimension

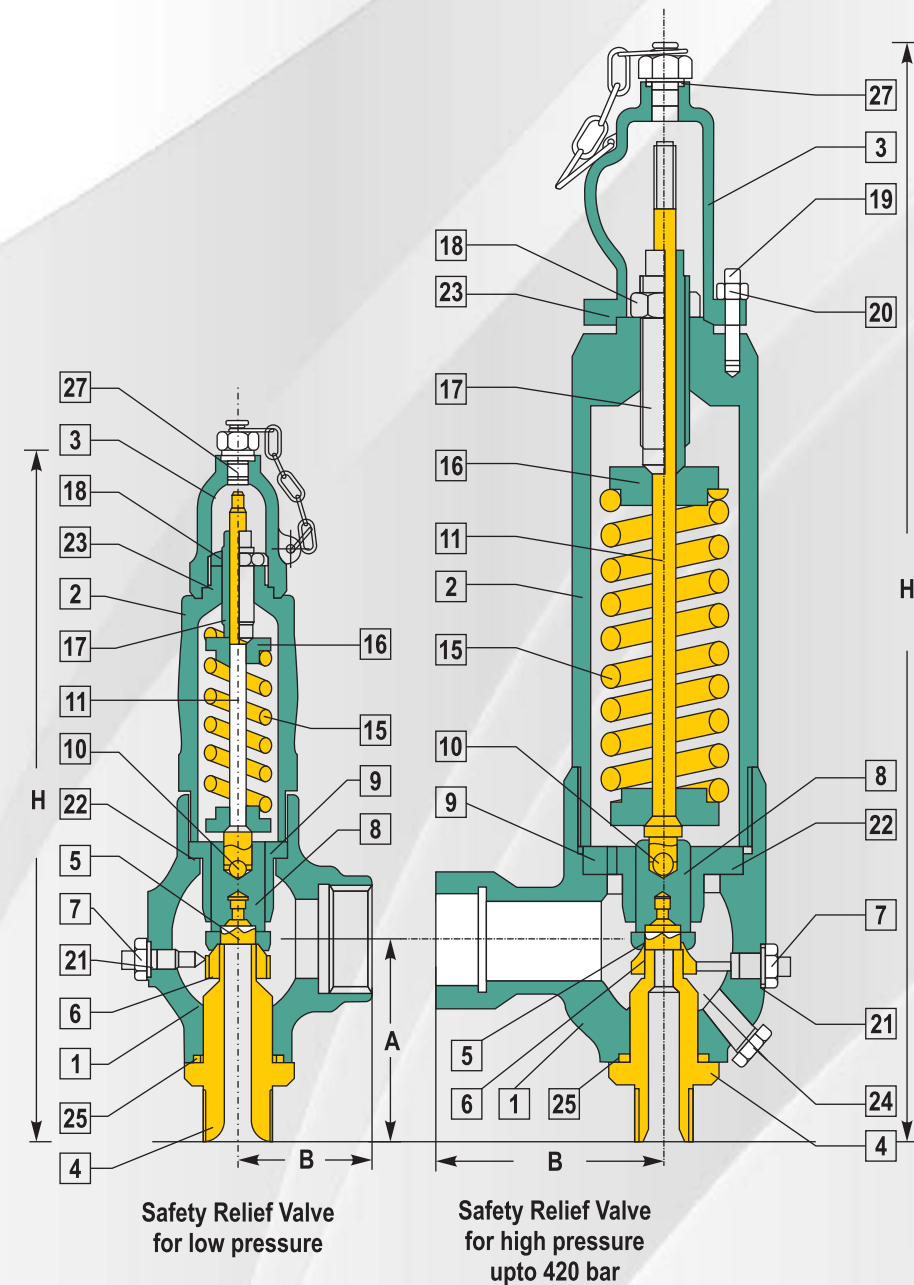
INLET	OUTLET	END CONNECTION	A ±3	B ±3	C ±3	D ±3	E ±3	Approx. Weight (Kg.)
1/2, 3/4, 1"	1"	SCREWED MALE	-	45	-	93	287	3.5
1/2, 3/4, 1"	1"	SCREWED FEMALE	65	45	260	-	-	3.5
1/2, 3/4, 1"	1"	FLANGED	122	85	316	-	-	5

Spring Loaded Safety Relief Valves

SERIES : AK -11



FULL LIFT, FULL NOZZLE, PORTABLE SPRING LOADED SAFETY RELIEF VALVE FOR GAS, LIQUID & CRYOGENIC SERVICE. SIZE 1/2" TO 1 1/2". SET PRESSURE UPTO 420 BAR. TEMPERATURE UPTO 400°C



DESIGN FEATURE

- End connection screwed (BSP or NPT) or flanged
- Adjustable blow down ring
- Inlet connection screwed male or female
- Screwed Full Nozzle
- Flanges according to ANSI B 16.5
- Metal to Metal OR Soft Seat
- Suitable for Thermal Relief applications
- Valve sizing in accordance with standard API-520, Part-I (Using API-520 Coefficient & effective discharge area as per API-526)
- Special materials (Included compliance to NACE MR 0175)

CONSTRUCTION

Body Materials

- Carbon Steel / LTCS (Killed)
- Stainless Steel (SA 351 CF8M/ 3M)
- Exotic Material

ACCESSORIES / OPTIONS

- Test Gag
- Lifting Lever (Packed only)
- Nozzle & Disc Stellited

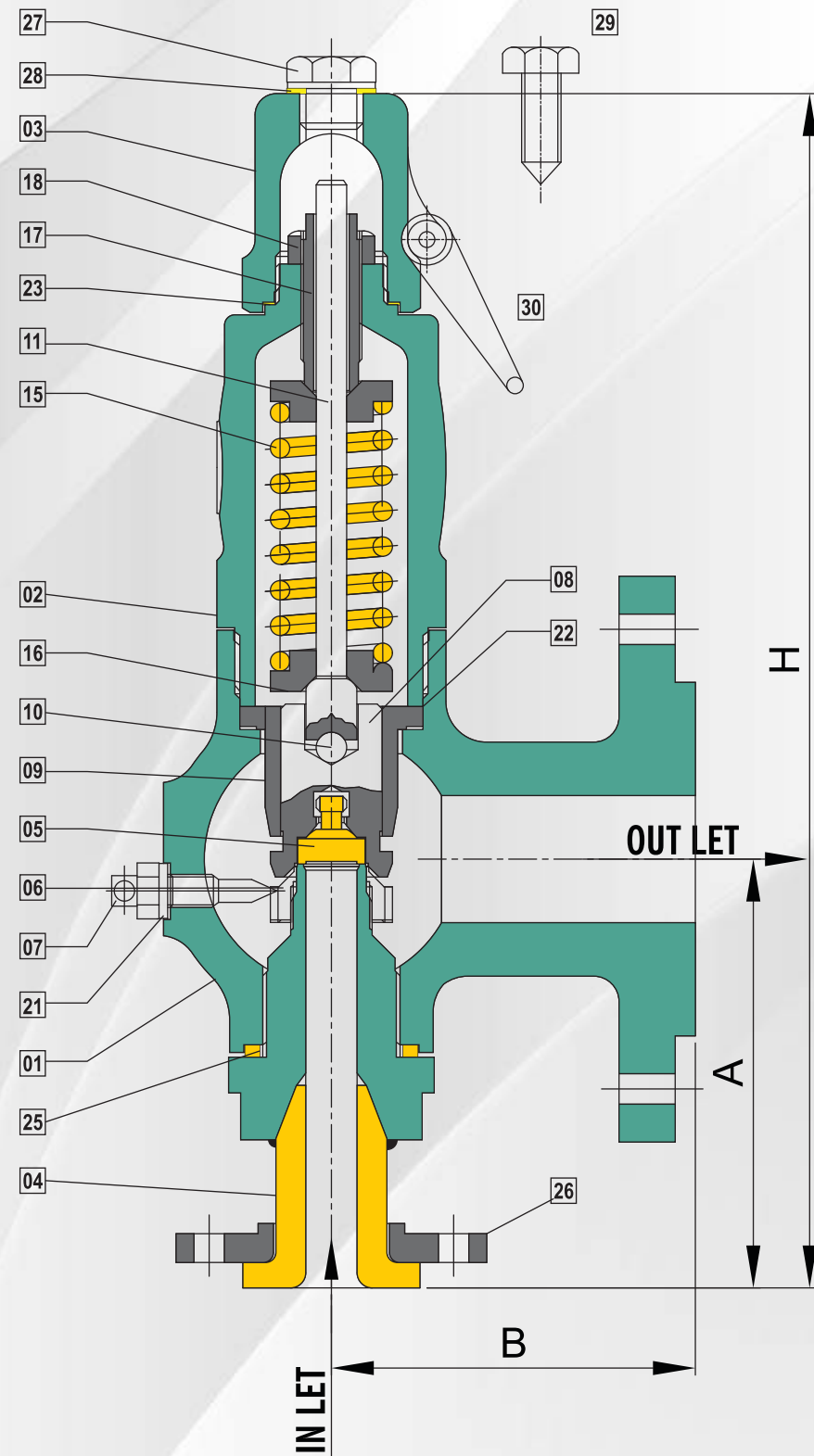
Recommended Spare Parts

Spring Loaded Safety Relief Valves
SERIES : AK -11



PRESSURE/SAFETY RELIEF VALVES
SCREWED & FLANGED TYPE

SERIES : AK-11



PART LIST		MATERIALS	
POSITION	DESCRIPTION	STAINLESS STEEL LOW TEMP - 29° C TO + 250° C	CARBON STEEL TEMP - 29° C TO + 250° C
01	BODY	A 351 Gr. CF8M / 3M	A 216 Gr. WCB
02	BONNET	A 351 Gr. CF8M / 3M	A 216 Gr. WCB
03	CAP	A 351 Gr. CF8M / 3M	A 216 Gr. WCB
04(R)	NOZZLE	SS 316 / 316 L	AISI 316
05(R)	DISC	SS 316 / 316 L	AISI 316
06	NOZZLE RING	A 351 Gr. CF8M / 3M	A 351 Gr. CF8M
07	NOZZLE RING PIN	SS 316	SS 316
08	PISTON	SS 316	SS 316
09	GUIDE	SS 316 / CF8M / 3M	SS 316 / CF8M
10	BALL	SS 304	SS 304
11	SPINDLE	SS 316	SS 316
15(R)	SPRING	SS 316	SS 316
16	SPRING WASHER	SS 316	SS 316
17	ADJUSTING SCREW	SS 316	SS 316
18	LOCK NUT	SS 316	SS 316
19/20	CAP -BONNET FASTENER	SS 304	CS
21	SET SCREW GASKET	PTFE	PTFE
22	GUIDE GASKET	PTFE	PTFE
23(R)	CAP GASKET	PTFE	PTFE
24	DRAIN PLUG	SS 304	SS 304
25(R)	NOZZLE GASKET	SS 316	SS 316
26	FLANG (LAPPED)	A182 G.316 / 316L	A 105
27	CAP PLUG	SS	CS
28(R)	CAP PLUG GASKET	PTFE	PTFE
29	TEST GAG	SS	CS
30	LEVER ASSEMBLY	A 479 304	A 479 304

® Recommended Spare Parts
 - Other Materials (Super Alloy) on Request

PRESSURE/SAFETY RELIEF VALVES SCREWED & FLANGED TYPE SERIES : AK-11

SIZES - SCREWED TYPE

Designation	ORIFICE Eff. Area (cm ²) SQ inch	PRESSURE CLASS	CONNECTION - BSP/NPT		MAX SET PRESSURE AT 38 °C (BAR-g)	DIMENSION - SCREWED CONNECTION				APPROX WEIGHT KG
			Inlet Male	Outlet Female		±3 A mm	±3 B mm	H mm (±20)		
								Non - Lever Type	Lever Type	
B	(0.28) 0.044	4	1/2"	1/2"	153	51	40	212	265	2.5
		4	1/2"	3/4"	153	51	40	212	265	2.5
		4	1/2"	1"	153	51	40	212	265	2.5
		4	3/4"	1"	153	51	40	212	265	2.5
		4	1"	1"	153	56	40	212	265	2.5
		6	3/4"	1"	420	64	85	332	332	6
D	(0.71) 0.11	3	*1/2"	1"	102	64	50	223	276	3
		3	3/4"	1"	102	64	50	223	276	3
		3	1"	1"	102	70	50	223	276	3
		5	3/4"	1"	255	64	85	332	332	6
E	(1.26) 0.196	2	3/4"	1"	51	64	50	224	277	3
		2	1"	1"	51	70	50	224	277	3
		4	3/4"	1"	153	64	85	332	332	6
F	(1.98) 0.307	2	1"	1.5"	51	91	60	291	344	6
		2	1.5"	1.5"	51	91	60	291	344	6
G	(3.24) 0.503	1	1"	1.5"	19.6	91	60	291	344	6
		1	1.5"	1.5"	19.6	91	60	291	344	6

* : NOT IN BSP MALE

SIZES - FLANGE TYPE

Designation	ORIFICE Eff. Area (cm ²) SQ inch	PRESSURE CLASS	CONNECTION				MAX SET PRESSURE AT 38 °C (BAR-g)	DIMENSION - FLANGE CONNECTION				APPROX WEIGHT KG
			N.D. Inlet	N.D. Outlet	Inlet Class	Outlet Class		±3 A mm	±3 B mm	H mm (±20)		
										Non - Lever Type	Lever Type	
B	(0.28) 0.044	4	1/2" / 3/4" / 1"	1"	150	150	19.7	98	85	261	314	6
		4			300	150	51	98	85	261	314	6
		4			600	150	102.1	98	85	261	314	6
		4			900	150	153.1	98	90	261	314	8
		6			1500	300	255.5	118	120	390	390	11
		6			2500	300	425.5	118	120	390	390	12
D	(0.71) 0.11	3	1/2" / 3/4" / 1"	1"	150	150	19.7	98	85	260	312	7
		3			300	150	51	98	85	260	312	7
		3			600	150	102.1	98	85	260	312	7
		5			900	150	153.1	118	120	390	390	11
E	(1.26) 0.196	2	3/4" / 1"	1"	150	150	19.7	98	85	260	312	7
		2			300	150	51	98	85	260	312	7
		4			600	150	102.1	118	120	390	390	11
F	(1.98) 0.307	2	1" / 1 1/2"	1 1/2"	150	150	19.7	118	100	318	371	10
		2			300	150	51	118	100	318	371	10
G	(3.24) 0.503	1	1" / 1 1/2"	1 1/2"	150	150	19.7	118	100	318	371	10

PRESSURE/SAFETY RELIEF VALVES SCREWED & FLANGED TYPE SERIES : AK-11

CODIFICATION NUMBERING SYSTEM

