SAPAG SAFETY RELIEF VALVE
SERIES 8100/8200

A full range of API 526 flanged safety relief valves for process applications, gas, steam and liquid.

FEATURES

- Full compliance with all major global pressure relief standards including ASME VIII, Section XIII, API 526/527, PED 2014/68/EU and PESR 2016-Instrument 2016 No. 1105.
- Certified ASME Section VIII on air, steam and water
- Forged Integral inlet nozzle
- High flow coefficient
- Top guided nozzle
- Easy blowdown adjustment
- Swivel disc
- Blow out proof body to bonnet gasket
- Special "Hightemp" trim for steam applications
- NACE Compliance
- Easy conversion to the balanced bellows type with a minimum quantity of components

Series 8100/8200 High Performance Safety Relief Valves

Type 8100: Gas and steam service
Type 8200: Liquid service

The Type 8100 is a flanged, spring loaded, full lift, adjustable blowdown, integral nozzle safety relief valve designed according to API Std 526. The Type 8200 is the "liquid" version of the Type 8100. It is available in 14 orifice sizes, "D" through "T", plus two extra large orifices designated "V" and "W".
The pressure range is from less than one bar up to 414 bar, ANSI pressure rating from Cl.150 lbs to Cl.2500 lbs or PN10 to PN40 per EN standard.
The performance and capacities of Types 8100/8200 are certified by the National Board of Boiler and Pressure Vessel Inspectors on air, steam and water as per ASME Code Section VIII and Section XIII requirements ("UV" stamp).

CONNECTIONS

Safety relief valve inlet and outlet connections are available in ASME-ANSI flange standards as well as EN 1092-1. Other flange facings, such as ring type joint or special connection types, are available on request.

SCOPE

Size:	1" to 12" inlet
Orifice:	D (0.71cm²) to W (393cm²)
Set pressure:	0.5 bar to 414 bar

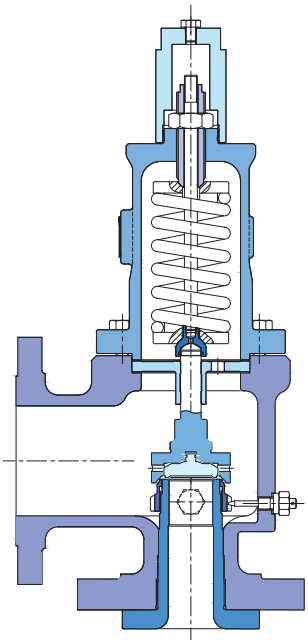
Conventional or balanced bellows
Metal to metal seat or soft seat
Carbon steel, stainless steel, Duplex, Monel®, etc.

Monel® is a mark owned by Special Metals Corporation.

CONVENTIONAL TYPE 8100

Most of the applications on gas or vapours are covered by the conventional Type 8100.
It is available in many different materials for high or low service temperature, as well as stainless steel for corrosive service. Available part lists are published in pages 7 to 12, however, special materials may be manufactured upon request. Contact the factory for assistance.

CONVENTIONAL TYPE 8100



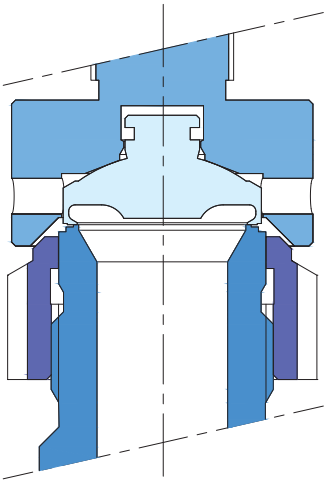
STEAM SERVICE TYPE 8100.V0/V1/V2/V3

The 8100.V's Series have been developed from the 8100 Series for steam applications.
The Type 8100.V0 is an open bonnet, plain lifting lever, alloy steel spring design, suitable for steam applications not exceeding 300°C.
The Type 8100.V3 is also an open bonnet, plain lifting lever, alloy steel spring design, using a special high temperature trim: Flexible "HIGHTEMP" disc made from a high strength martensitic stainless steel grade and a nickel-copper alloy guide. The Type 8100.V3 can be used up to 427°C.

When the valves are discharging into a closed system, closed bonnet designs 8100.V1 or .V2 must be used. Both valves feature the special high temperature trim and can be used with a balancing bellows when necessary.

Feature	8100.V0	8100.V3	8100.V1	8100.V2
Bonnet	Open	Open	Closed	Closed
Lift lever	Plain	Plain	Packed	Packed
Spring	Alloy steel	Alloy steel	Alloy steel	Tungsten alloy
Disc	Standard	"Hightemp"	"Hightemp"	"Hightemp"
Guide	Stainless steel	Nickel copper alloy	Nickel copper alloy	Nickel copper alloy
Bellows	Not available	Not available	8190.V1	8190.V2
Max. Temp.	300°C	427°C	300°C	427°C

FLEXIBLE "HIGH TEMP" DISC



HIGH TEMPERATURE SERVICE TYPES 8120/8150

The Type 8120.WC6 is to be used on high temperature service between 428 and 538°C.
This design includes CrMo alloy body and bonnet and Tungsten alloy or Ni-Cr alloy spring.
For extremely high temperature, up to 815°C, the Type 8120.T2 with an open bonnet, Tungsten alloy or Ni-Cr alloy spring, austenitic CrNiMo stainless steel casing and 25%Cr-20%Ni alloy trim shall be used.
When modified with balancing bellows, 8120 Series becomes 8150 Series.

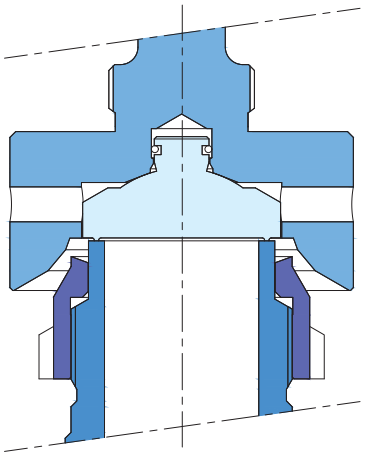
HIGH TEMPERATURE SERVICE

Service temperature	Open bonnet	Closed bonnet	Closed bonnet and bellows
< 300°C	8100.V0	8100.V1	8190.V1
< 427°C	8100.V3	8100.V2	8190.V2
< 538°C	- - - -	8120.WC6	8150.WC6
< 815°C	8120.T2	- - - -	- - - -

LIQUID SERVICE TYPE 8200/8290

The Type 8200 has been developed from the Type 8100 for full liquid relief applications.
The patented flow profile of the trim allows the valve to go to full lift at 10% overpressure and eliminates the risk of chattering or hammering often observed when using ordinary safety relief valves on liquid application. No dampening device is required.
The certified flow coefficient at not more than 10% overpressure is KD = 0.799. This very high value allows significant saving in valve sizing. In comparison, a non-certified valve sized according to API 520 would be affected by a flow coefficient of 0.62 multiplied by an overpressure factor of 0.6.
Liquid trim should be applied to full liquid operation, two phase flow or when flashing occurs.
The Type 8290 is a balanced bellows version of the liquid trim design.

LIQUID TRIM
Type 8200



BALANCED BELLOWS TYPE 8190

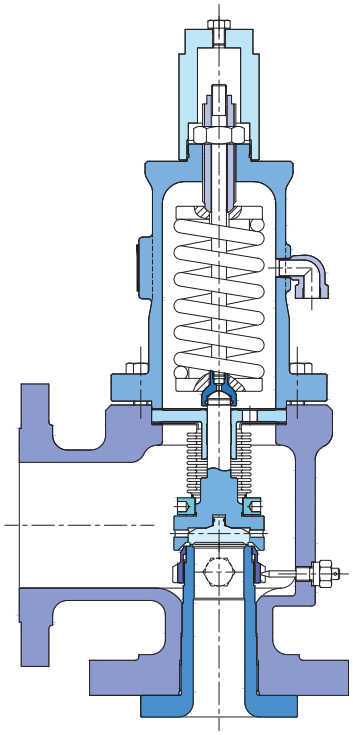
Balanced bellows safety relief valves shall be used in either of the two following cases:

1. When a valve discharges into a closed system, a variable back pressure (for example due to the relief of another valve discharging into the same header) can occur. This superimposed variable back pressure needs to be balanced in order to avoid unstable valve operation. However, a built up back pressure not exceeding 10% of the set pressure is generally considered acceptable with a non balanced (conventional) design.

2. When the valve is handling an aggressive or corrosive fluid and it is desirable to protect the upper part and mechanism of the valve against the medium. The bellows then acts as a chemical shield.

The Type 8190 is a truly balanced bellows valve, i.e. the effective area of the bellows is equal to the seating area of the disc, thus allowing the valve to have an opening pressure independent from the back pressure.
In order to get truly balanced valves in the small sizes (orifices "D" and "E"), Sapag offers as a standard a larger orifice size ("F") with a restricted lift to compensate and flow a "D" or "E" orifice size flow rate, respectively.
All balanced bellows valves must have their bonnet vented to atmosphere to remain truly balanced.
Standard bellows are 316L stainless steel; other materials such as Inconel® or Monel® are also available.
A conventional 8100 Series valve can be converted into a balanced 8190 with a minimum number of additional components.

BALANCED BELLOWS
Type 8190



Inconel® and Monel® are marks owned by Special Metals Corporation.

SOUR GAS SERVICE TYPE 8100.S2M/SGM

Type 8100.S2M shall be used when all materials used in the primary pressure zone of the safety relief valve (wetted while the valve is closed) must comply with the material requirements of ANSI/NACE MR0175/ISO 15156-1:2015. Materials of the primary pressure area components for Type 8100.S2M (conventional) and Type 8190.S2M (balanced bellows) are standard and the spring is aluminized.

When all materials used in secondary pressure zone (wetted parts while the valve is open and flowing) must also comply with the material requirements of ANSI/NACE MR0175/ISO 15156-1:2015, then Type 8100.SGM, conventional with Inconel® spring and annealed austenitic components or Type 8190.SGM with Inconel® bellows to prevent the corrosion of the aluminized steel spring shall be used.

The purchaser must decide whether the specific application requires compliance to NACE recommendations. Emerson will provide materials that meet the material requirements in the requested NACE specification. However, the purchaser must ensure the proper selection of all the valve materials to meet the NACE requirements.

SOFT SEATED TYPE 8110/8180

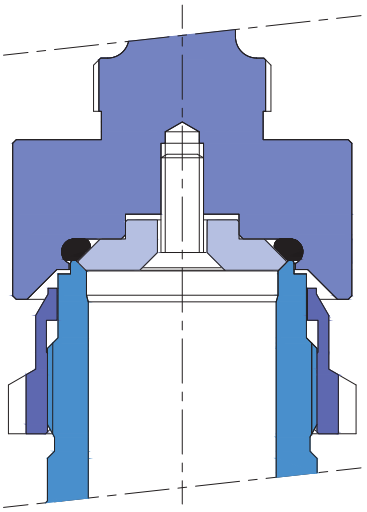
O-ring seat seal

The Type 8110 soft seated safety relief valve design combines a metal to metal seat to absorb the spring load between the disc and the nozzle, and an O-ring resilient soft seal. The design of the soft seal housing is such that the system pressure maintains the O-ring on the seating surface, thus improving the tightness of the valve, even at a pressure very close to the set pressure.
The Type 8110 soft seated construction is particularly recommended in the following applications:

- where a tightness better than metal to metal is required
- when the operating pressure is more than 92% of the set pressure.
- when handling fugitive, corrosive or soiled media (with an appropriate selection of the O-ring material);
- when the valve is used on vessels operating normally under vacuum, to avoid the penetration of atmospheric air into the system.
- when the system generates vibrations and pressure transients very close to the set pressure.

A Type 8100 valve can easily be converted into a Type 8110 soft seated version.
The Type 8180 is a soft seated balanced bellows safety relief valve.
Types 8110 and 8180 are available with inlet Class 150 and 300 lbs corresponding to model number Types 8111/8181 and Types 8113/8183, respectively.

DETAIL OF O-RING
Seat design option



Polytetrafluoroethylene (PTFE) soft seated valves for cryogenic applications

For cryogenic service, a PTFE soft seated version has been developed of the 8110/8180 Series; this model consists of a valve where the regular disc has been replaced by a solid virgin PTFE plug. This design is particularly suitable for Liquid Natural Gas service and guarantees premium tightness performance after many valve operations. This design is limited to moderate pressure values.

Soft seat material selection

Extreme attention is drawn on a proper selection of the soft material to use.
Such parameters are:

- compatibility of the soft material with the medium;
- soft material temperature limitation in continuous service;
- aging of the soft material in the medium at the service temperature

These issues must be taken into careful consideration. No one knows the behavior of soft material in the fluid better than the user whom needs to be consulted prior to the final selection.
Most of the applications are covered by Fluorocarbon (FKM) O-rings as indicated on the following table. The manufacturer designation refers to the valve codification system, see Page 97.
For special applications or other soft goods, consult the factory.

SOFT GOOD SELECTION TABLE[1]

Soft seat material[2]	Sapag option code	Typical application	Temperature range
Fluorocarbon (FKM)	code "P"	General	0 to +400°F [-18 to +204°C]
Kalrez® (FFKM)[3]	code "V"	Severe service	0 to +500°F [-18 to +260°C]
Ethylene Propylene (EPT)	code "K"	Saturated steam	-50 to +325°F [-46 to +163°C]
Polytetrafluoroethylene (PTFE)	code "R"	LNG (Cryogenic)	-150 to +500°F[4] [-101 to +260°C]
Nitrile (NBR)	code "T"	Hydrocarbon	-30 to +248°F [-34 to +121°C]

NOTES

1. Information on this table should be considered only as a guide. Compatibility of the selected material with the medium in service conditions has to be carefully considered by the user.
2. Other soft seat materials are available on request.
3. Kalrez® is a trademark and brand of DUPONT POLYMERS, INC.
4. For soft seats below -150°F [-101°C], consult your sales representative. Minimum cold differential test pressure for PTFE seat is 6.89 barg (100 psig).

STEAM JACKET AND STEAM INJECTION

All Series 8100 safety relief valves can be fitted with a steam heating jacket.

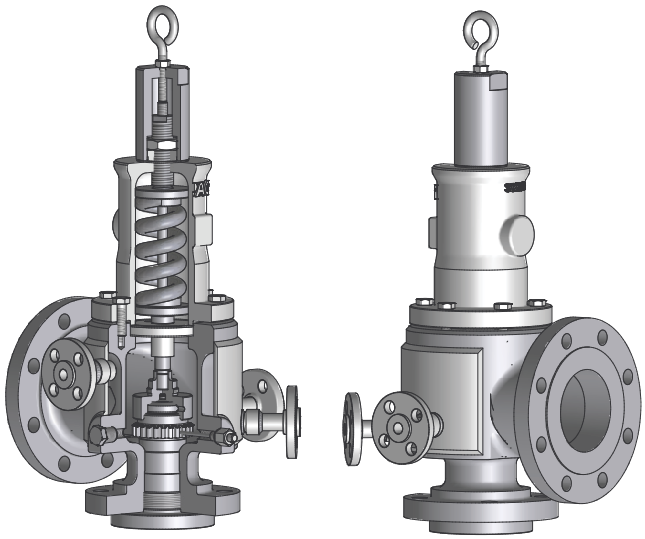
Steam jacketed safety relief valves are used in applications where it is necessary to keep the protected medium in a more liquefied condition, where normally the process fluid may be prone to high viscosity or potential for solidification.

To accommodate the steam heating medium within the jacket and to allow ease of fabrication, special body patterns are available with a wall thickness raised at the bottom and top edges. The preformed plates welded onto the casting body provide a very contained, compact and rigid jacketed design.

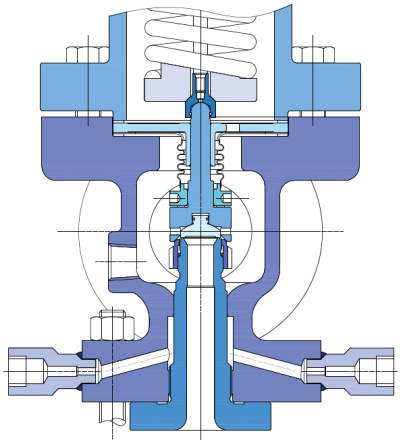
The steam jacket is hydrotested at 1.5 times the design pressure inside the heating system. Jacket connections are threaded or flanged. The steam jacket is normally fitted with an inlet and outlet connection and a drain plug.

Steam injection nozzles can be fitted on the body of the valves. The purpose of the steam injection is to "wash" continuously the seating area of the valve in order to prevent icing or solidification of the medium.

STEAM HEATING JACKET DESIGN



STEAM INJECTION DESIGN



Precision Pressure Setting
Meticulous care is taken in the selection of the springs.
The performances are systematically controlled to guarantee the precision of the pressure setting and its continual reliability.

Ease of Adaptation
O-ring and/or bellows seal can be easily fitted to standard manufactured valves.

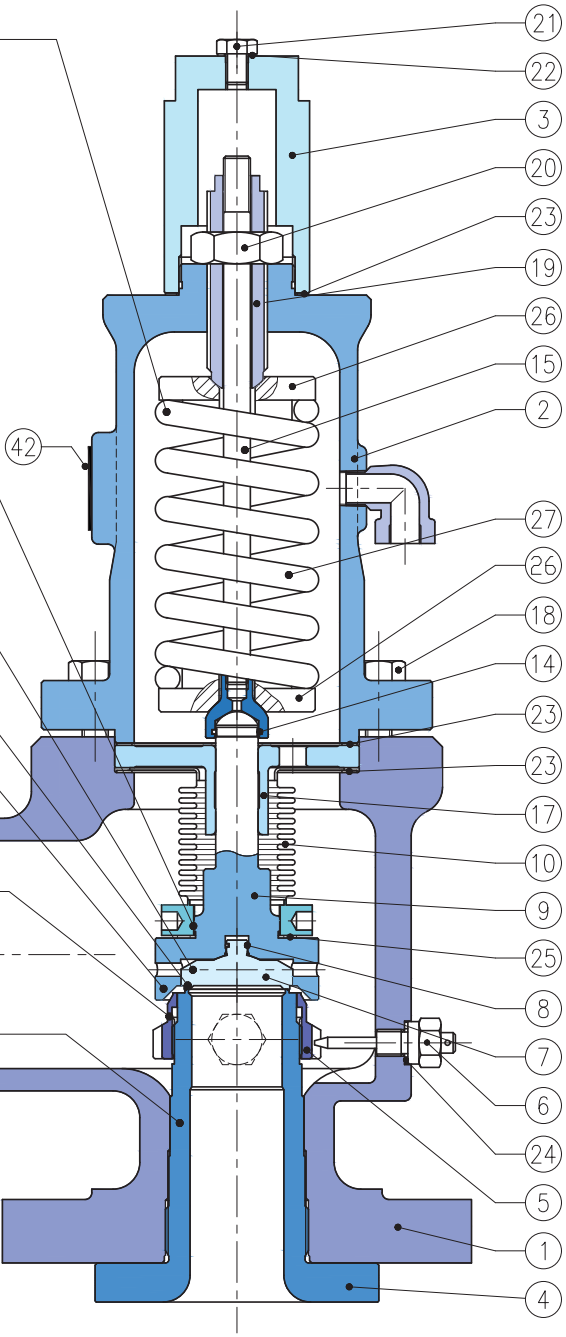
High Flow
Disc lifts above ¼ of the nozzle internal diameter that guarantees the maximum flow of the safety relief valve.

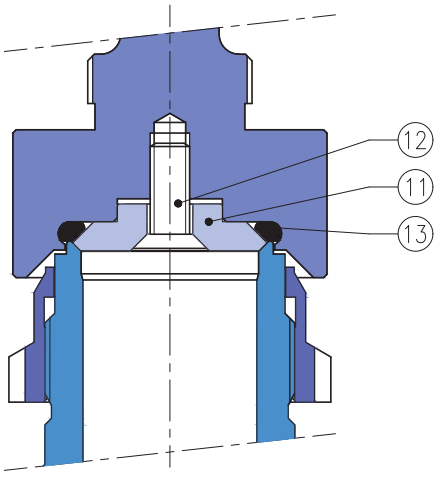
Increased Tightness
Extra fine lapping of the seating areas results in additional tightness above normal requirements.

Instant Opening
The shape of the disc holder has been designed to enhance the effect of the fluid thrust for an instant lift of the disc.

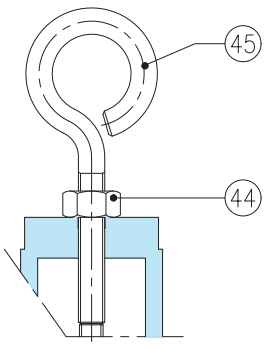
Simple Adjustment
A single adjusting ring assures accurate and reliable instant full lift and blowdown.

Reinforced Structural Assembly
The solid nozzle screwed into the body, close to the inlet precision guiding at the upper part of the body neck, increases the rigidity of the assembly in relation to the potential piping stresses.





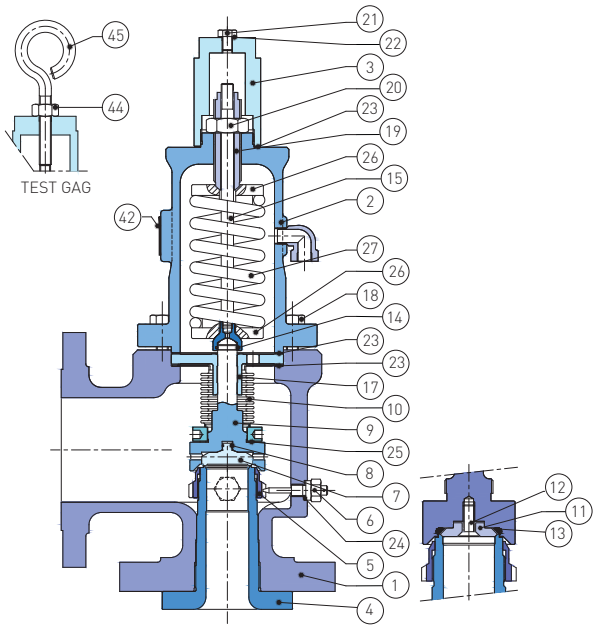
O-RING SOFT SEAT OPTION



TEST GAG

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 MATERIALS OF CONSTRUCTION



STANDARD MATERIALS

		STANDARD SERVICE		LOW TEMPERATURE SERVICE	
		WCB-1	**WCB-2**	**LCB**	**L3**
		-20 to +572°F	**+573 to +800°F**	**-55 to +650°F**	**-450 to -55°F**
ITEM	**PART NAME**	**[-29 to +300°C]**	**[+301 to +427°C]**	**[-48.5 to 343°C]**	**[-268 to -48.5°C]**
1	Body	SA-216 Gr. WCB/WCC[3]	SA-216 Gr. WCB/WCC[3]	SA-352 Gr. LCB/LCC[3]	SA-351 Gr. CF8M
2	Bonnet	SA-216 Gr. WCB/WCC[3]	SA-216 Gr. WCB/WCC[3]	SA-352 Gr. LCB/LCC[3]	SA-351 Gr. CF8M
3	Cap	Carbon Steel	Carbon Steel	Carbon Steel	316 Stainless Steel
4	Nozzle	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel
5	Adjusting Ring	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
6	Set Screw	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
7	Disc Insert	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel
8	Disc Retainer	Inconel®	Inconel®	Inconel®	Inconel®
9	Disc Holder	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
10	Bellows[1]	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel
11	O-Ring Retainer[2]	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
12	Retainer Lock Screw[2]	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
13	O-Ring[2]	Specify	Specify	Specify	Specify
14	Spindle Retainer	Inconel®	Inconel®	Inconel®	Inconel®
15	Spindle	416 Stainless Steel	416 Stainless Steel	416 Stainless Steel	316 Stainless Steel
17	Guide	Iron-Chromium-Nickel Alloy	Iron-Chromium-Nickel Alloy	Iron-Chromium-Nickel Alloy	Iron-Chromium-Nickel Alloy
18	Bonnet Screw	SA-193 Gr. B7	SA-193 Gr. B7	SA-193 Gr. B7 Or L7	SA-193 or SA-320 Gr. B8
19	Adjusting Screw	416 Stainless Steel	416 Stainless Steel	416 Stainless Steel	316 Stainless Steel
20	Adjusting Screw Nut	Carbon Steel	Carbon Steel	Carbon Steel	316 Stainless Steel
21	Cap Plug	Carbon Steel	Carbon Steel	Carbon Steel	316 Stainless Steel
22	Cap Plug Gasket	Armco Iron	Armco Iron	Armco Iron	316 Stainless Steel + Graphite
23	Gaskets	Impregnated Fiber	Impregnated Fiber	Impregnated Fiber	316 Stainless Steel + Graphite
24	Set Screw Gasket	Armco Iron	Armco Iron	Armco Iron	316 Stainless Steel + Graphite
25	Bellows Gasket[1]	316 Stainless Steel + Graphite	316 Stainless Steel + Graphite	316 Stainless Steel + Graphite	316 Stainless Steel + Graphite
26	Spring Washer	Carbon Steel	Carbon Steel	Carbon Steel	316 Stainless Steel
27	Spring	Chrome Steel[4]	Tungsten Steel[5]	Chrome Steel[4]	316 Stainless Steel
42	Name Plate	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
44	Test Gag Jam Nut	Carbon Steel	Carbon Steel	Carbon Steel	Stainless Steel
45	Test Gag	Carbon Steel	Carbon Steel	Carbon Steel	Stainless Steel

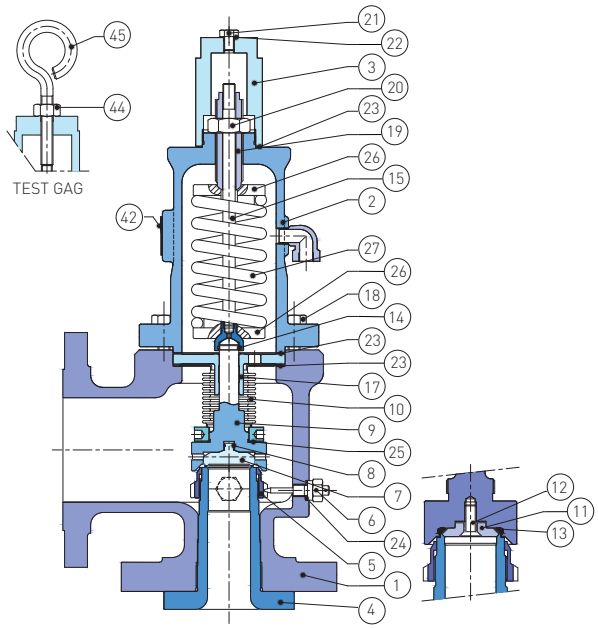
NOTES

1. Types 8190/8290/8150/8180 balanced bellows only
2. Types 8110/8180 soft seated only
3. Dual material certification
4. Corrosion-resistant coating
5. Sapag may upgrade to Inconel® X750.

Inconel® is a mark owned by Special Metals Corporation.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 MATERIALS OF CONSTRUCTION



STANDARD MATERIALS

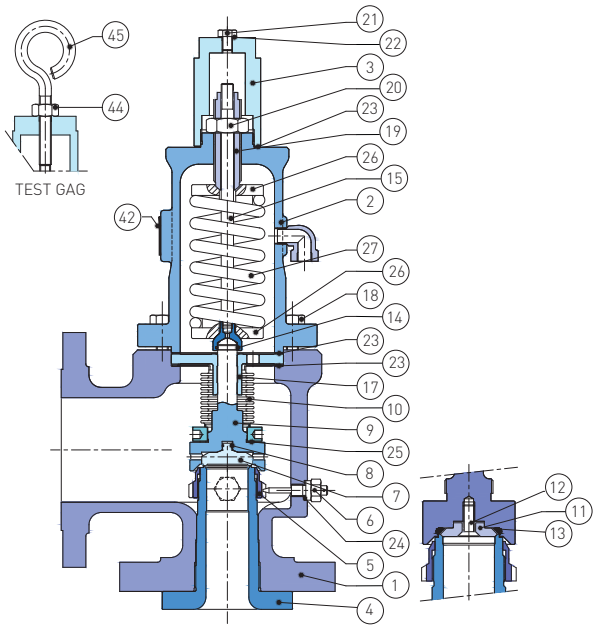
		STEAM SERVICE - OPEN BONNET		STEAM SERVICE - CLOSED BONNET		HIGH TEMPERATURE SERVICE	
		V0	V3	V1	V2	WC6	T2 (OPEN BONNET)
		≤ +572°F	≤ +800°F	≤ +572°F	≤ +800°F	≤ +1000°F	≤ +1500°F
ITEM	PART NAME	[≤ +300°C]	[≤ +427°C]	[≤ +300°C]	[≤ +427°C]	[≤ +538°C]	[≤ +815°C]
1	Body	SA-216 Gr. WCB/WCC[3]	SA-216 Gr. WCB/WCC[3]	SA-216 Gr. WCB/WCC[3]	SA-216 Gr. WCB/WCC[3]	SA-217 Gr. WC6	SA-351 Gr. CF8M
2	Bonnet	SA-216 Gr. WCB/WCC[3]	SA-216 Gr. WCB/WCC[3]	SA-216 Gr. WCB/WCC[3]	SA-216 Gr. WCB/WCC[3]	SA-217 Gr. WC6	SA-351 Gr. CF8M
3	Cap	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	316 Stainless Steel
4	Nozzle	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel	310 Stainless Steel
5	Adjusting Ring	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	310 Stainless Steel
6	Set Screw	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
7	Disc Insert	316L Stainless Steel	High Temp. Alloy Steel	High Temp. Alloy Steel	High Temp. Alloy Steel	316L Stainless Steel	310 Stainless Steel
8	Disc Retainer	Inconel®	Inconel®	Inconel®	Inconel®	Inconel®	Inconel®
9	Disc Holder	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	310 Stainless Steel
10	Bellows[1]	Not Available	Not Available	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel	Not Available
11	O-Ring Retainer[2]	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
12	Retainer Lock Screw[2]	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
13	O-Ring[2]	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
14	Spindle Retainer	Inconel®	Inconel®	Inconel®	Inconel®	Inconel®	Inconel®
15	Spindle	416 Stainless Steel	416 Stainless Steel	416 Stainless Steel	416 Stainless Steel	416 Stainless Steel	316 Stainless Steel
17	Guide	Fe-Cr-Ni Alloy	Monel®	Monel®	Monel®	Fe-Cr-Ni Alloy	310 Stainless Steel
18	Bonnet Screw	SA-193 Gr. B7	SA-193 Gr. B7	SA-193 Gr. B7	SA-193 Gr. B7	SA-193 Gr. B7	SA-193 Gr. B8
19	Adjusting Screw	416 Stainless Steel	416 Stainless Steel	416 Stainless Steel	416 Stainless Steel	416 Stainless Steel	316 Stainless Steel
20	Adjusting Screw Nut	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
21	Cap Plug	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
22	Cap Plug Gasket	Armco Iron	Armco Iron	Armco Iron	Armco Iron	Armco Iron	316 SST + Graphite
23	Gaskets	Impregnated Fiber	Impregnated Fiber	Impregnated Fiber	Impregnated Fiber	Impregnated Fiber	316 SST + Graphite
24	Set Screw Gasket	Armco Iron	Armco Iron	Armco Iron	Armco Iron	Armco Iron	316 SST + Graphite
25	Bellows Gasket[1]	Not Available	Not Available	316 SST + Graphite	316 SST + Graphite	316 SST + Graphite	Not Available
26	Spring Washer	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	316 Stainless Steel
27	Spring	Chrome Steel[4]	Chrome Steel[4]	Chrome Steel[4]	Tungsten Steel[5]	Tungsten Steel[5]	Tungsten Steel[5]
42	Name Plate	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
44	Test Gag Jam Nut	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
45	Test Gag	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel

NOTES

1. Types 8190/8290/8150/8180 balanced bellows only
2. Types 8110/8180 soft seated only
3. Dual material certification
4. Corrosion-resistant coating
5. Sapag may upgrade to Inconel® X750.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 MATERIALS OF CONSTRUCTION



STANDARD MATERIALS

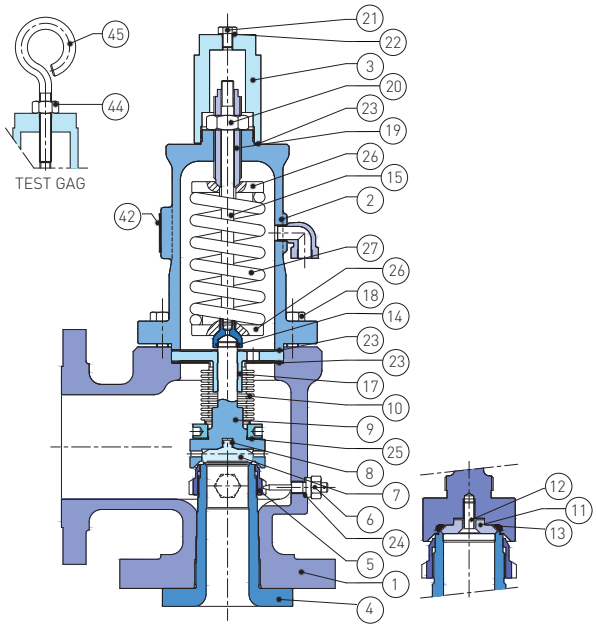
		SOUR GAS SERVICE TO ANSI/NACE MR0175/ISO 15156-1 WITHOUT BELLOWS (8100)		SOUR GAS SERVICE TO ANSI/NACE MR0175/ISO 15156-1 WITH BELLOWS (8190)	
ITEM	**PART NAME**	**S2M**	**SGM**	**S2M**	**SGM**
1	Body	SA-216 Gr. WCB/WCC[3]	SA-216 Gr. WCB/WCC[3]	SA-216 Gr. WCB/WCC[3]	SA-216 Gr. WCB/WCC[3]
2	Bonnet	SA-216 Gr. WCB/WCC[3]	SA-216 Gr. WCB/WCC[3]	SA-216 Gr. WCB/WCC[3]	SA-216 Gr. WCB/WCC[3]
3	Cap	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
4	Nozzle	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel
5	Adjusting Ring	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
6	Set Screw	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
7	Disc Insert	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel
8	Disc Retainer	Inconel®	Inconel®	Inconel®	Inconel®
9	Disc Holder	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
10	Bellows[1]	Not Available	Not Available	316L Stainless Steel	Inconel® 625
11	O-Ring Retainer[2]	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
12	Retainer Lock Screw[2]	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
13	O-Ring[2]	Specify	Specify	Specify	Specify
14	Spindle Retainer	Inconel®	Inconel®	Inconel®	Inconel®
15	Spindle	416 Stainless Steel	316 Stainless Steel	416 Stainless Steel	416 Stainless Steel
17	Guide	Iron-Chromium-Nickel Alloy	Iron-Chromium-Nickel Alloy	Iron-Chromium-Nickel Alloy	Iron-Chromium-Nickel Alloy
18	Bonnet Screw	SA-193 Gr. B7	SA-193 Gr. B7M	SA-193 Gr. B7	SA-193 GR. B7M
19	Adjusting Screw	416 Stainless Steel	316 Stainless Steel	416 Stainless Steel	416 Stainless Steel
20	Adjusting Screw Nut	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
21	Cap Plug	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
22	Cap Plug Gasket	Armco Iron	Armco Iron	Armco Iron	Armco Iron
23	Gaskets	Impregnated Fiber	Impregnated Fiber	Impregnated Fiber	Impregnated Fiber
24	Set Screw Gasket	Armco Iron	Armco Iron	Armco Iron	Armco Iron
25	Bellows Gasket[1]	Not Available	Not Available	316 Stainless Steel + Graphite	316 Stainless Steel + Graphite
26	Spring Washer	Carbon Steel	316 Stainless Steel	Carbon Steel	316 Stainless Steel
27	Spring	Aluminized Chrome Steel	Inconel® X750	Aluminized Chrome Steel	Aluminized Chrome Steel[5]
42	Name Plate	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
44	Test Gag Jam Nut	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
45	Test Gag	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel

NOTES

1. Types 8190/8290/8150/8180 balanced bellows only
2. Types 8110/8180 soft seated only
3. Dual material certification
4. Corrosion-resistant coating
5. Sapag may upgrade to Inconel® X750.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 MATERIALS OF CONSTRUCTION



OTHER CONSTRUCTIONS

SA351 CF3:	construction S3L, S4L (with SS spring)
SA351 CF3M:	construction S3D, S4D (with SS spring)
SA351 CF8:	construction S3 (with SS spring)
All Monel® but spring:	M3
All Monel®:	M4

STANDARD MATERIALS

		CONSTRUCTIONS FOR CORROSIVE SERVICE			
		S3M	S4M	S5M	M1
ITEM	PART NAME	All stainless except spring	All stainless only	With bellows (8190)	Monel® (or other alloys)
1	Body	SA-351 Gr. CF8M	SA-351 Gr. CF8M	SA-351 Gr. CF8M	SA-216 Gr. WCB/WCC[3]
2	Bonnet	SA-351 Gr. CF8M	SA-351 Gr. CF8M	SA-216 Gr. WCB/WCC[3]	SA-216 Gr. WCB/WCC[3]
3	Cap	316 Stainless Steel	316 Stainless Steel	Carbon Steel	Carbon Steel
4	Nozzle	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel	Monel®
5	Adjusting Ring	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
6	Set Screw	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
7	Disc Insert	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel	Monel®
8	Disc Retainer	Inconel®	Inconel®	Inconel®	Inconel®
9	Disc Holder	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
10	Bellows[1]	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel	316L Stainless Steel
11	O-Ring Retainer[2]	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
12	Retainer Lock Screw[2]	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
13	O-Ring[2]	Specify	Specify	Specify	Specify
14	Spindle Retainer	Inconel®	Inconel®	Inconel®	Inconel®
15	Spindle	316 Stainless Steel	316 Stainless Steel	416 Stainless Steel	416 Stainless Steel
17	Guide	Iron-Chromium-Nickel Alloy	Iron-Chromium-Nickel Alloy	Iron-Chromium-Nickel Alloy	Iron-Chromium-Nickel Alloy
18	Bonnet Screw	SA-193 Gr. B8	SA-193 Gr. B8	SA-193 Gr. B7	SA-193 Gr. B7
19	Adjusting Screw	316 Stainless Steel	316 Stainless Steel	416 Stainless Steel	416 Stainless Steel
20	Adjusting Screw Nut	316 Stainless Steel	316 Stainless Steel	Carbon Steel	Carbon Steel
21	Cap Plug	316 Stainless Steel	316 Stainless Steel	Carbon Steel	Carbon Steel
22	Cap Plug Gasket	316 Stainless Steel + Graphite	316 Stainless Steel + Graphite	Armco Iron	Armco Iron
23	Gaskets	Impregnated Fiber	Impregnated Fiber	Impregnated Fiber	Impregnated Fiber
24	Set Screw Gasket	316 Stainless Steel + Graphite	316 Stainless Steel + Graphite	316 Stainless Steel + Graphite	Armco Iron
25	Bellows Gasket[1]	316 Stainless Steel + Graphite	316 Stainless Steel + Graphite	316 Stainless Steel + Graphite	316 Stainless Steel + Graphite
26	Spring Washer	316 Stainless Steel	316 Stainless Steel	Carbon Steel	Carbon Steel
27	Spring	Chrome Steel[4]	316 Stainless Steel	Chrome Steel[4]	Chrome Steel[4]
42	Name Plate	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
44	Test Gag Jam Nut	Stainless Steel	Stainless Steel	Carbon Steel	Carbon Steel
45	Test Gag	Stainless Steel	Stainless Steel	Carbon Steel	Carbon Steel

NOTES

1. Types 8190/8290/8150/8180 balanced bellows only
2. Types 8110/8180 soft seated only
3. Dual material certification
4. Corrosion-resistant coating

LIFTING DEVICE OPTIONS

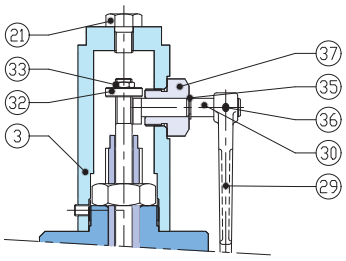
Plain (type C) or packed (type E or F) lifting devices are available on all types of valves. Remote air actuated lifting devices (Pneumatic actuator type P) are also available.

ITEM	PART NAME	CAP TYPE	WCB, LCB, V0, V1, V2, V3 WC6, S2M, SGM, S5M, M1	L3, T2, S3M, S4M M3, M4, S3X, S4X
28	Bonnet-Cap Screw	B, E	SA-193 Gr. B7[1]	SA-193 Gr. B8
29	Lever	C, E, F	Steel	316 Stainless Steel
30	Dog Shaft	C, E, F	416 Stainless Steel	316 Stainless Steel
31	Dog	C, E, F	Steel	316 Stainless Steel
32	Lifting Washer	C, E, F	416 Stainless Steel	316 Stainless Steel
33	Jam Nut	C, E, F	416 Stainless Steel	316 Stainless Steel
34	Retaining Ring	C, F	Steel	Stainless Steel
35	Elastic Ring	C, F	Inconel®	Inconel®
36	Pin	C, F	Steel	Stainless Steel
37	Dog Shaft Bearing	C, F	Steel	316 Stainless Steel
38	Dog Shaft Bearing Gasket	F	Armco Iron	Stainless Steel
39	O-ring Gasket	F	Nitrile (Nbr)	Nitrile (Nbr)
40	Packing	E	Impregnated Fiber	Impregnated Fiber
41	Packing Gland	E	Carbon Steel	316 Stainless Steel

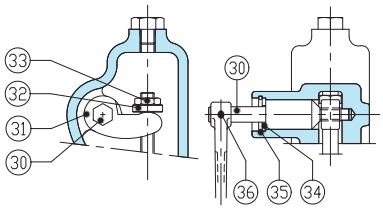
NOTE
1. SA-193 Gr. B7M for SGM construction

PLAIN TYPE C LEVER
(threaded)

ORIFICE < J

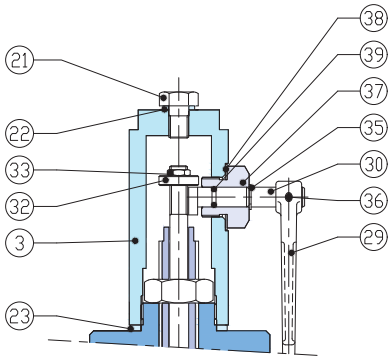


ORIFICE > K

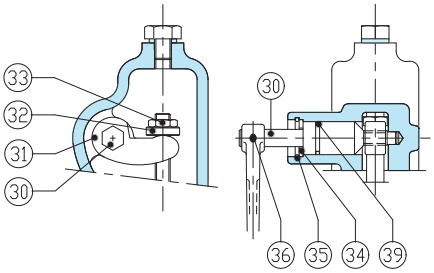


PACKED TYPE F LEVER
(threaded)

ORIFICE < J



ORIFICE > K

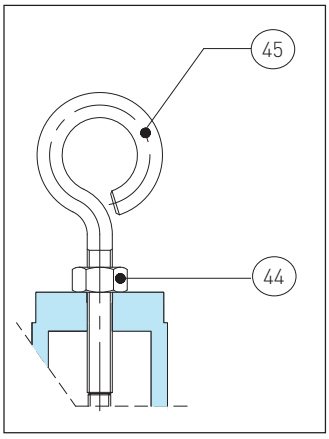


TEST GAG

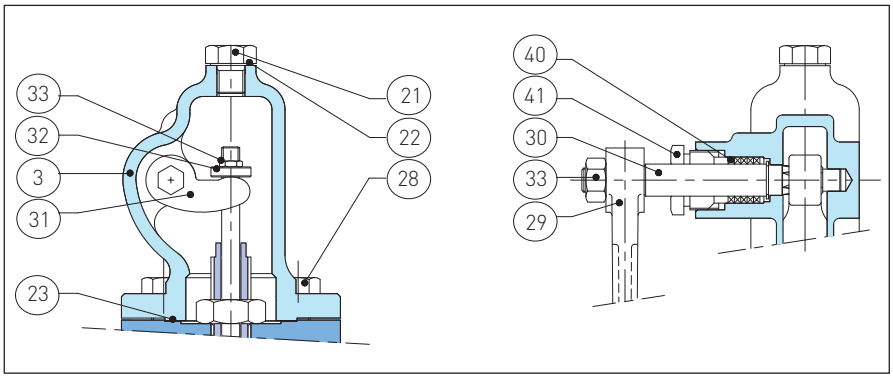
All Sapag safety relief valves are fitted with a test gag on top of the cap as standard. This gag is in place during transportation to avoid damaging the seating surfaces. When the gag is in place, the valve is locked in the closed position. For testing please refer to maintenance manual.

IMPORTANT
The test gag is clearly identified by a RED TAG attached to it specifying that it MUST be removed and replaced by the plug and gasket (supplied) before valve operation. It is advised that the gag is removed just after erection on site.

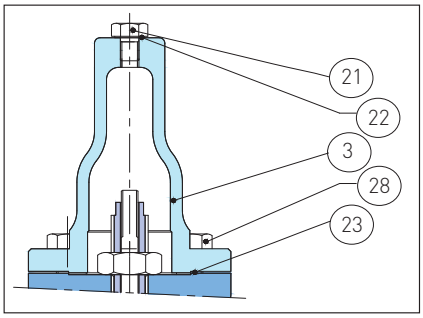
TEST GAG
(standard feature - all cap types)



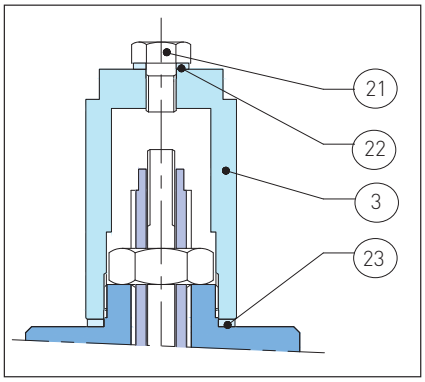
PACKED TYPE E LEVER
(bolted)



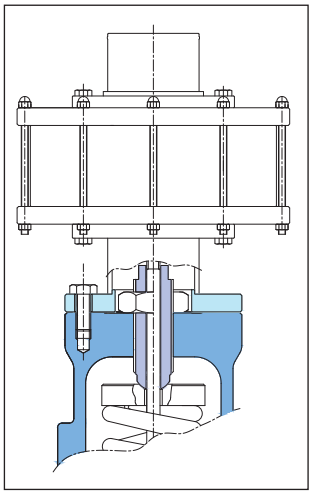
BOLTED CAP TYPE B



SCREWED CAP
(standard) Type A



PNEUMATIC ACTUATOR TYPE P



SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES, WEIGHTS AND DIMENSIONS

STANDARD ANSI FLANGES CONNECTIONS[1]

ORIFICE	VALVE SIZE (NPS) INLET x OUTLET	FLANGE RATING CLASS INLET x OUTLET	TYPE[2]	A[3], mm	B[3], mm	C[4], mm	S[5], mm	WEIGHT[4], kg
D, E	1 X 2	150 X 150	8101, 8191	104.8	114.3	418	32	15
	1 X 2	300 X 150	8102, 8192	104.8	114.3	418	35	15
	1 X 2	300 X 150	8103, -93, -23, -53	104.8	114.3	418	35	16
	1 X 2	600 X 150	8104, -94, -24, -54	104.8	114.3	418	35	16
	1 ½ X 2	900 X 300	8106, -96, -26, -56	104.8	139.7	440	49	28
	1 ½ X 2	1500 X 300	8107, -97, -27, -57	104.8	139.7	440	49	28
	1 ½ X 3	2500 X 300	8108, -98, -28, -58	139.7	177.8	660	62	60
	1 ½ X 2 ½	2500 X 300	Z 8108, -98, -28, -58	139.7	165.1	660	62	55
F	1 ½ x 2	150 x 150	8101, 8191	123.8	120.6	432	35	18
	1 ½ x 2	300 x 150	8102, 8192	123.8	120.6	432	38	18
	1 ½ x 2	300 x 150	8103, -93, -23, -53	123.8	152.4	432	38	21
	1 ½ x 2	600 x 150	8104, -94, -24, -54	123.8	152.4	454	40	23
	1 ½ x 3	900 x 300	8106, -96, -26, -56	123.8	165.1	576	49	40
	1 ½ x 3	1500 x 300	8107, -97, -27, -57	123.8	165.1	576	49	40
	1 ½ x 3	2500 x 300	8108, -98, -28, -58	139.7	177.8	576	62	59
	1 ½ x 2 ½	900 x 300	Z 8106, -96, -26, -56	123.8	152.4	576	49	36
	1 ½ x 2 ½	1500 x 300	Z 8107, -97, -27, -57	123.8	152.4	576	49	36
	1 ½ x 2 ½	2500 x 300	Z 8108, -98, -28, -58	139.7	165.1	565	62	55
G	1 ½ x 3	150 x 150	8101, 8191	123.8	120.6	432	35	23
	1 ½ x 3	300 x 150	8102, 8192	123.8	120.6	432	38	23
	1 ½ x 3	300 x 150	8103, -93, -23, -53	123.8	152.4	432	38	25
	2 x 3	600 x 150	8104, -94, -24, -54	123.8	152.4	454	40	27
	2 x 3	900 x 300	8106, -96, -26, -56	123.8	165.1	577	49	40
	2 x 3	1500 x 300	8107, -97, -27, -57	155.6	171.5	610	56	36
	2 x 3	2500 x 300	8108, -98, -28, -58	155.6	171.5	610	68	40
	1 ½ x 2 ½	150 x 150	Z 8101, 8191	123.8	120.6	432	35	21
	1 ½ x 2 ½	300 x 150	Z 8102, 8192	123.8	120.6	432	38	21
	1 ½ x 2 ½	300 x 150	Z 8103, -93, -23, -53	123.8	152.4	432	38	23
	1 ½ x 2 ½	600 x 150	Z 8104, -94, -24, -54	123.8	152.4	454	40	25
	1 ½ x 2 ½	900 x 300	Z 8106, -96, -26, -56	123.8	152.4	577	49	36
H	1 ½ x 3	150 x 150	8101, 8191	130.2	123.8	455	35	23
	1 ½ x 3	300 x 150	8102, 8192	130.2	123.8	455	38	23
	2 x 3	300 x 150	8103, -93, -23, -53	130.2	123.8	480	40	25
	2 x 3	600 x 150	8104, -94, -24, -54	154.0	161.9	625	44	30
	2 x 3	900 x 150	8106, -96, -26, -56	154.0	161.9	625	48	48
	2 x 3	1500 x 300	8107, -97, -27, -57	154.0	161.9	625	56	51
J	2 x 3	150 x 150	8101, 8191	136.5	123.8	500	37	28
	2 x 3	300 x 150	8102, 8192	136.5	123.8	500	40	28
	3 x 4	300 x 150	8103, -93, -23, -53	184.1	181.0	660	44	65
	3 x 4	600 x 150	8104, -94, -24, -54	184.1	181.0	660	46	67
	3 x 4	900 x 150	8106, -96, -26, -56	184.1	181.0	660	56	69
	3 x 4	1500 x 300	8107, -97, -27, -57	184.1	181.0	730	65	80
	2 ½ x 4	300 x 150	Z 8103, -93, -23, -53	136.5	142.9	620	44	36
	2 ½ x 4	600 x 150	Z 8104, -94, -24, -54	155.6	171.4	630	46	62
K	3 x 4	150 x 150	8101, 8191	155.6	161.9	635	42	40
	3 x 4	300 x 150	8102, 8192	155.6	161.9	635	46	40
	3 x 4	300 x 150	8103, -93, -23, -53	155.6	161.9	700	46	51
	3 x 4	600 x 150	8104, -94, -24, -54	184.1	181.0	730	49	55
	3 x 6	900 x 150	8106, -96, -26, -56	198.4	215.9	780	56	110
	3 x 6	1500 x 300	8107, -97, -27, -57	196.8	215.9	780	65	125

NOTES

1. Dimension of flanges in accordance with ASME B16.5. Raised faces supplied as standard with serrated spiral grooves and average surface roughness Ra from 3.2 µm to 6.3 µm.
2. Types with 'Z' prefix correspond to optional inlet or outlet valve size.
3. Tolerances of ±1.6 mm for valve inlet sizes up to and including 4 in., and ±3.2 mm for valve inlet sizes larger than 4 in.
4. Approximate values.
5. Use 'S' dimension to determine bolt length.

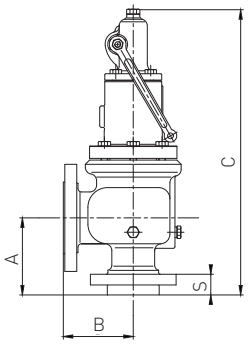
STANDARD ANSI FLANGES CONNECTIONS[1] (continued)

ORIFICE	VALVE SIZE (NPS) INLET x OUTLET	FLANGE RATING CLASS INLET x OUTLET	TYPE[2]	A[3], mm	B[3], mm	C[4], mm	S[5], mm	WEIGHT[4], kg
L	3 x 4	150 x 150	8101, 8191	155.6	165.1	695	42	51
	3 x 4	300 x 150	8102, 8192	155.6	165.1	695	46	52
	4 x 6	300 x 150	8103, -93, -23, -53	179.4	181.0	775	49	80
	4 x 6	600 x 150	8104, -94, -24, -54	179.4	203.2	785	56	82
	4 x 6	900 x 150	8106, -96, -26, -56	196.8	222.2	820	62	136
	4 x 6	1500 x 300	8107, -97, -27, -57	196.8	222.2	820	72	138
M	4 x 6	150 x 150	8101, 8191	177.8	184.1	720	42	68
	4 x 6	300 x 150	8102, 8192	177.8	184.1	720	50	68
	4 x 6	300 x 150	8103, -93, -23, -53	177.8	184.1	780	50	82
	4 x 6	600 x 150	8104, -94, -24, -54	177.8	203.2	805	56	110
	4 x 6	900 x 150	8106, -96, -26, -56	196.8	222.2	825	62	130
N	4 x 6	150 x 150	8101, 8191	196.8	209.5	810	42	80
	4 x 6	300 x 150	8102, 8192	196.8	209.5	810	50	60
	4 x 6	300 x 150	8103, -93, -23, -53	196.8	209.5	830	50	98
	4 x 6	600 x 150	8104, -94, -24, -54	196.8	222.2	920	56	136
	4 x 6	900 x 150	8106, -96, -26, -56	196.8	222.2	920	62	140
P	4 x 6	150 x 150	8101, 8191	181.0	228.6	900	42	98
	4 x 6	300 x 150	8102, 8192	181.0	228.6	900	50	100
	4 x 6	300 x 150	8103, -93, -23, -53	225.4	254.0	995	50	132
	4 x 6	600 x 150	8104, -94, -24, -54	225.4	254.0	1095	56	204
	4 x 6	900 x 150	8106, -96, -26, -56	225.4	254.0	1095	62	206
Q	6 x 8	150 x 150	8101, 8191	239.7	241.3	990	46	160
	6 x 8	300 x 150	8102, 8192	239.7	241.3	990	57	165
	6 x 8	300 x 150	8103, -93, -23, -53	239.7	241.3	1050	57	204
	6 x 8	600 x 150	8104, -94, -24, -54	239.7	241.3	1135	64	257
R	6 x 8	150 x 150	8101, 8191	240.0	241.0	1040	46	195
	6 x 8	300 x 150	8102, 8192	240.0	241.0	1040	57	200
	6 x 10	300 x 150	8103, -93, -23, -53	240.0	267.0	1100	57	206
	6 x 10	600 x 150	8104, -94, -24, -54	240.0	267.0	1180	69	276
T	8 x 10	150 x 150	8101, 8191	276.2	279.4	1075	50	253
	8 x 10	300 x 150	8102, -92, -22, -52	276.2	279.4	1155	62	276
	8 x 10	300 x 150	8103, -93, -23, -53	276.2	279.4	1275	62	320
V	10 x 14	150 x 150	8101, 8191	380.0	370.0	1415	51	410
	10 x 14	300 x 150	8102, 8192	380.0	370.0	1415	69	440
	10 x 14	300 x 150	8123, 8153	380.0	370.0	1415	69	440
W	12 x 12x2	150 x 150x2	8101, 8191	327.0	430.0	1870	53	950
	12 x 12x2	300 x 150x2	8102, 8192	327.0	430.0	1870	72	985
	12 x 12x2	300 x 150x2	8123, 8153	327.0	430.0	1870	72	985

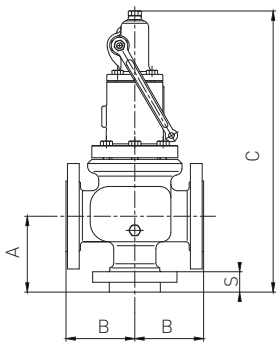
NOTES

1. Dimension of flanges in accordance with ASME B16.5. Raised faces supplied as standard with serrated spiral grooves and average surface roughness Ra from 3.2 µm to 6.3 µm.
2. Types with 'Z' prefix correspond to optional inlet or outlet valve size.
3. Tolerances of ±1.6 mm for valve inlet sizes up to and including 4 in., and ±3.2 mm for valve inlet sizes larger than 4 in.
4. Approximate values.
5. Use 'S' dimension to determine bolt length.

OVERALL DIMENSIONS
Orifices D to V



OVERALL DIMENSIONS
Orifice W



STANDARD EN-1092-1 FLANGES CONNECTIONS[1]

ORIFICE	VALVE SIZE (DN) INLET x OUTLET	FLANGE RATING PN INLET x OUTLET	TYPE[2]	A[3], mm	B[3], mm	C[4], mm	S[5], mm	WEIGHT[4], kg
D, E	DN25 x DN50	PN10 x PN10	8101, 8191	104.8	114.3	418	32	15
		PN16 x PN10	8101, 8191	104.8	114.3	418	32	15
		PN16 x PN16	8101, 8191	104.8	114.3	418	32	15
	DN25 x DN50	PN25 x PN10	8102, 8192	104.8	114.3	418	35	15
		PN25 x PN16	8102, 8192	104.8	114.3	418	35	15
		PN40 x PN10	8102, 8192	104.8	114.3	418	35	15
		PN40 x PN16	8102, 8192	104.8	114.3	418	35	15
	DN25 x DN50	PN25 x PN10	8103, -93, -23, -53	104.8	114.3	418	35	16
		PN25 x PN16	8103, -93, -23, -53	104.8	114.3	418	35	16
		PN40 x PN10	8103, -93, -23, -53	104.8	114.3	418	35	16
		PN40 x PN16	8103, -93, -23, -53	104.8	114.3	418	35	16
F	DN40 x DN50	PN10 x PN10	8101, 8191	123.8	120.6	432	35	18
		PN16 x PN10	8101, 8191	123.8	120.6	432	35	18
		PN16 x PN16	8101, 8191	123.8	120.6	432	35	18
	DN40 x DN50	PN25 x PN10	8102, 8192	123.8	120.6	432	38	18
		PN25 x PN16	8102, 8192	123.8	120.6	432	38	18
		PN40 x PN10	8102, 8192	123.8	120.6	432	38	18
		PN40 x PN16	8102, 8192	123.8	120.6	432	38	18
	DN40 x DN50	PN25 x PN10	8103, -93, -23, -53	123.8	152.4	432	38	21
		PN25 x PN16	8103, -93, -23, -53	123.8	152.4	432	38	21
		PN40 x PN10	8103, -93, -23, -53	123.8	152.4	432	38	21
		PN40 x PN16	8103, -93, -23, -53	123.8	152.4	432	38	21
G	DN40 x DN80	PN10 x PN10	8101, 8191	123.8	120.6	432	35	23
		PN16 x PN10	8101, 8191	123.8	120.6	432	35	23
		PN16 x PN16	8101, 8191	123.8	120.6	432	35	23
	DN40 x DN80	PN25 x PN10	8102, 8192	123.8	120.6	432	38	23
		PN25 x PN16	8102, 8192	123.8	120.6	432	38	23
		PN40 x PN10	8102, 8192	123.8	120.6	432	38	23
		PN40 x PN16	8102, 8192	123.8	120.6	432	38	23
	DN40 x DN80	PN25 x PN10	8103, -93, -23, -53	123.8	152.4	432	38	25
		PN25 x PN16	8103, -93, -23, -53	123.8	152.4	432	38	25
		PN40 x PN10	8103, -93, -23, -53	123.8	152.4	432	38	25
		PN40 x PN16	8103, -93, -23, -53	123.8	152.4	432	38	25
	DN40 x DN65	PN10 x PN10	Z 8101, 8191	123.8	120.6	432	35	21
		PN16 x PN10	Z 8101, 8191	123.8	120.6	432	35	21
		PN16 x PN16	Z 8101, 8191	123.8	120.6	432	35	21
	DN40 x DN65	PN25 x PN10	Z 8102, 8192	123.8	120.6	432	38	21
		PN25 x PN16	Z 8102, 8192	123.8	120.6	432	38	21
		PN40 x PN10	Z 8102, 8192	123.8	120.6	432	38	21
		PN40 x PN16	Z 8102, 8192	123.8	120.6	432	38	21
	DN40 x DN65	PN25 x PN10	Z 8103, -93, -23, -53	123.8	152.4	432	38	23
		PN25 x PN16	Z 8103, -93, -23, -53	123.8	152.4	432	38	23
		PN40 x PN10	Z 8103, -93, -23, -53	123.8	152.4	432	38	23
		PN40 x PN16	Z 8103, -93, -23, -53	123.8	152.4	432	38	23

NOTES

1. Dimension of flanges in accordance with EN 1092-1. Raised faces type B1 supplied as standard with serrated spiral grooves and average surface roughness Ra from 3.2 µm to 12.5 µm.
2. Types with 'Z' prefix correspond to optional inlet or outlet valve size.
3. Tolerances of ±1.6 mm for valve inlet sizes up to and including DN100, and ±3.2 mm for valve inlet sizes larger than DN100.
4. Approximate values.
5. Use 'S' dimension to determine bolt length.

STANDARD EN-1092-1 FLANGES CONNECTIONS[1] (continued)

ORIFICE	VALVE SIZE (DN) INLET x OUTLET	FLANGE RATING PN INLET x OUTLET	TYPE[2]	A[3], mm	B[3], mm	C[4], mm	S[5], mm	WEIGHT[4], kg
H	DN40 x DN80	PN10 x PN10	8101, 8191	130.2	123.8	455	35	23
		PN16 x PN10	8101, 8191	130.2	123.8	455	35	23
		PN16 x PN16	8101, 8191	130.2	123.8	455	35	23
	DN40 x DN80	PN25 x PN10	8102, 8192	130.2	123.8	455	38	23
		PN25 x PN16	8102, 8192	130.2	123.8	455	38	23
		PN40 x PN10	8102, 8192	130.2	123.8	455	38	23
		PN40 x PN16	8102, 8192	130.2	123.8	455	38	23
	DN50 x DN80	PN25 x PN10	8103, -93, -23, -53	130.2	123.8	480	40	25
		PN25 x PN16	8103, -93, -23, -53	130.2	123.8	480	40	25
		PN40 x PN10	8103, -93, -23, -53	130.2	123.8	480	40	25
		PN40 x PN16	8103, -93, -23, -53	130.2	123.8	480	40	25
J	DN50 x DN80	PN10 x PN10	8101, 8191	136.5	123.8	500	37	28
		PN16 x PN10	8101, 8191	136.5	123.8	500	37	28
		PN16 x PN16	8101, 8191	136.5	123.8	500	37	28
	DN50 x DN80	PN25 x PN10	8102, 8192	136.5	123.8	500	40	28
		PN25 x PN16	8102, 8192	136.5	123.8	500	40	28
		PN40 x PN10	8102, 8192	136.5	123.8	500	40	28
		PN40 x PN16	8102, 8192	136.5	123.8	500	40	28
	DN80 x DN100	PN25 x PN10	8103, -93, -23, -53	184.1	181.0	660	44	65
		PN25 x PN16	8103, -93, -23, -53	184.1	181.0	660	44	65
		PN40 x PN10	8103, -93, -23, -53	184.1	181.0	660	44	65
		PN40 x PN16	8103, -93, -23, -53	184.1	181.0	660	44	65
	DN65 x DN100	PN25 x PN10	Z 8103, -93, -23, -53	136.5	142.9	620	44	36
		PN25 x PN16	Z 8103, -93, -23, -53	136.5	142.9	620	44	36
		PN40 x PN10	Z 8103, -93, -23, -53	136.5	142.9	620	44	36
		PN40 x PN16	Z 8103, -93, -23, -53	136.5	142.9	620	44	36
K	DN80 x DN100	PN10 x PN10	8101, 8191	155.6	161.9	635	42	40
		PN16 x PN10	8101, 8191	155.6	161.9	635	42	40
		PN16 x PN16	8101, 8191	155.6	161.9	635	42	40
	DN80 x DN100	PN25 x PN10	8102, 8192	155.6	161.9	635	46	40
		PN25 x PN16	8102, 8192	155.6	161.9	635	46	40
		PN40 x PN10	8102, 8192	155.6	161.9	635	46	40
		PN40 x PN16	8102, 8192	155.6	161.9	635	46	40
	DN80 x DN100	PN25 x PN10	8103, -93, -23, -53	155.6	161.9	700	46	51
		PN25 x PN16	8103, -93, -23, -53	155.6	161.9	700	46	51
		PN40 x PN10	8103, -93, -23, -53	155.6	161.9	700	46	51
		PN40 x PN16	8103, -93, -23, -53	155.6	161.9	700	46	51
L	DN80 x DN100	PN10 x PN10	8101, 8191	155.6	165.1	695	42	51
		PN16 x PN10	8101, 8191	155.6	165.1	695	42	51
		PN16 x PN16	8101, 8191	155.6	165.1	695	42	51
	DN80 x DN100	PN25 x PN10	8102, 8192	155.6	165.1	695	46	52
		PN25 x PN16	8102, 8192	155.6	165.1	695	46	52
		PN40 x PN10	8102, 8192	155.6	165.1	695	46	52
		PN40 x PN16	8102, 8192	155.6	165.1	695	46	52
	DN100 x DN150	PN25 x PN10	8103, -93, -23, -53	179.4	181.0	775	49	80
		PN25 x PN16	8103, -93, -23, -53	179.4	181.0	775	49	80
		PN40 x PN10	8103, -93, -23, -53	179.4	181.0	775	49	80
		PN40 x PN16	8103, -93, -23, -53	179.4	181.0	775	49	80

NOTES

1. Dimension of flanges in accordance with EN 1092-1. Raised faces type B1 supplied as standard with serrated spiral grooves and average surface roughness Ra from 3.2 µm to 12.5 µm.
2. Types with 'Z' prefix correspond to optional inlet or outlet valve size.
3. Tolerances of ±1.6 mm for valve inlet sizes up to and including DN100, and ±3.2 mm for valve inlet sizes larger than DN100.
4. Approximate values.
5. Use 'S' dimension to determine bolt length.

STANDARD EN-1092-1 FLANGES CONNECTIONS[1] (continued)

ORIFICE	VALVE SIZE (DN) INLET x OUTLET	FLANGE RATING PN INLET x OUTLET	TYPE[2]	A[3], mm	B[3], mm	C[4], mm	S[5], mm	WEIGHT[4], kg
M	DN100 x DN150	PN10 x PN10	8101, 8191	177.8	184.1	720	42	68
		PN16 x PN10	8101, 8191	177.8	184.1	720	42	68
		PN16 x PN16	8101, 8191	177.8	184.1	720	42	68
	DN100 x DN150	PN25 x PN10	8102, 8192	177.8	184.1	720	50	68
		PN25 x PN16	8102, 8192	177.8	184.1	720	50	68
		PN40 x PN10	8102, 8192	177.8	184.1	720	50	68
		PN40 x PN16	8102, 8192	177.8	184.1	720	50	68
	DN100 x DN150	PN25 x PN10	8103, -93, -23, -53	177.8	184.1	780	50	82
		PN25 x PN16	8103, -93, -23, -53	177.8	184.1	780	50	82
		PN40 x PN10	8103, -93, -23, -53	177.8	184.1	780	50	82
		PN40 x PN16	8103, -93, -23, -53	177.8	184.1	780	50	82
N	DN100 x DN150	PN10 x PN10	8101, 8191	196.8	209.5	810	42	80
		PN16 x PN10	8101, 8191	196.8	209.5	810	42	80
		PN16 x PN16	8101, 8191	196.8	209.5	810	42	80
	DN100 x DN150	PN25 x PN10	8102, 8192	196.8	209.5	810	50	60
		PN25 x PN16	8102, 8192	196.8	209.5	810	50	60
		PN40 x PN10	8102, 8192	196.8	209.5	810	50	60
		PN40 x PN16	8102, 8192	196.8	209.5	810	50	60
	DN100 x DN150	PN25 x PN10	8103, -93, -23, -53	196.8	209.5	830	50	98
		PN25 x PN16	8103, -93, -23, -53	196.8	209.5	830	50	98
		PN40 x PN10	8103, -93, -23, -53	196.8	209.5	830	50	98
		PN40 x PN16	8103, -93, -23, -53	196.8	209.5	830	50	98
P	DN100 x DN150	PN10 x PN10	8101, 8191	181.0	228.6	900	42	98
		PN16 x PN10	8101, 8191	181.0	228.6	900	42	98
		PN16 x PN16	8101, 8191	181.0	228.6	900	42	98
	DN100 x DN150	PN25 x PN10	8102, 8192	181.0	228.6	900	50	100
		PN25 x PN16	8102, 8192	181.0	228.6	900	50	100
		PN40 x PN10	8102, 8192	181.0	228.6	900	50	100
		PN40 x PN16	8102, 8192	181.0	228.6	900	50	100
	DN100 x DN150	PN25 x PN10	8103, -93, -23, -53	225.4	254.0	995	50	132
		PN25 x PN16	8103, -93, -23, -53	225.4	254.0	995	50	132
		PN40 x PN10	8103, -93, -23, -53	225.4	254.0	995	50	132
		PN40 x PN16	8103, -93, -23, -53	225.4	254.0	995	50	132
Q	DN150 x DN200	PN10 x PN10	8101, 8191	239.7	241.3	990	46	160
		PN16 x PN10	8101, 8191	239.7	241.3	990	46	160
		PN16 x PN16	8101, 8191	239.7	241.3	990	46	160
	DN150 x DN200	PN25 x PN10	8102, 8192	239.7	241.3	990	57	165
		PN25 x PN16	8102, 8192	239.7	241.3	990	57	165
		PN40 x PN10	8102, 8192	239.7	241.3	990	57	165
		PN40 x PN16	8102, 8192	239.7	241.3	990	57	165
	DN150 x DN200	PN25 x PN10	8103, -93, -23, -53	239.7	241.3	1050	57	204
		PN25 x PN16	8103, -93, -23, -53	239.7	241.3	1050	57	204
		PN40 x PN10	8103, -93, -23, -53	239.7	241.3	1050	57	204
		PN40 x PN16	8103, -93, -23, -53	239.7	241.3	1050	57	204

NOTES

1. Dimension of flanges in accordance with EN 1092-1. Raised faces type B1 supplied as standard with serrated spiral grooves and average surface roughness Ra from 3.2 µm to 12.5 µm.
2. Types with 'Z' prefix correspond to optional inlet or outlet valve size.
3. Tolerances of ±1.6 mm for valve inlet sizes up to and including DN100, and ±3.2 mm for valve inlet sizes larger than DN100.
4. Approximate values.
5. Use 'S' dimension to determine bolt length.

STANDARD EN-1092-1 FLANGES CONNECTIONS[1] (continued)

ORIFICE	VALVE SIZE (DN) INLET x OUTLET	FLANGE RATING PN INLET x OUTLET	TYPE[2]	A[3], mm	B[3], mm	C[4], mm	S[5], mm	WEIGHT[4], kg
R	DN150 x DN200	PN10 x PN10	8101, 8191	240.0	241.0	1040	46	195
		PN16 x PN10	8101, 8191	240.0	241.0	1040	46	195
		PN16 x PN16	8101, 8191	240.0	241.0	1040	46	195
	DN150 x DN200	PN25 x PN10	8102, 8192	240.0	241.0	1040	57	200
		PN25 x PN16	8102, 8192	240.0	241.0	1040	57	200
		PN40 x PN10	8102, 8192	240.0	241.0	1040	57	200
		PN40 x PN16	8102, 8192	240.0	241.0	1040	57	200
	DN150 x DN250	PN25 x PN10	8103, -93, -23, -53	240.0	267.0	1100	57	206
		PN25 x PN16	8103, -93, -23, -53	240.0	267.0	1100	57	206
		PN40 x PN10	8103, -93, -23, -53	240.0	267.0	1100	57	206
		PN40 x PN16	8103, -93, -23, -53	240.0	267.0	1100	57	206
T	DN200 x DN250	PN10 x PN10	8101, 8191	276.2	279.4	1075	50	253
		PN16 x PN10	8101, 8191	276.2	279.4	1075	50	253
		PN16 x PN16	8101, 8191	276.2	279.4	1075	50	253
	DN200 x DN250	PN25 x PN10	8102, -92, -22, -52	276.2	279.4	1155	62	276
		PN25 x PN16	8102, -92, -22, -52	276.2	279.4	1155	62	276
		PN40 x PN10	8102, -92, -22, -52	276.2	279.4	1155	62	276
		PN40 x PN16	8102, -92, -22, -52	276.2	279.4	1155	62	276
	DN200 x DN250	PN25 x PN10	8103, -93, -23, -53	276.2	279.4	1275	62	320
		PN25 x PN16	8103, -93, -23, -53	276.2	279.4	1275	62	320
		PN40 x PN10	8103, -93, -23, -53	276.2	279.4	1275	62	320
		PN40 x PN16	8103, -93, -23, -53	276.2	279.4	1275	62	320
V	DN250 x DN350	PN10 x PN10	8101, 8191	380.0	370.0	1415	51	410
		PN16 x PN10	8101, 8191	380.0	370.0	1415	51	410
		PN16 x PN16	8101, 8191	380.0	370.0	1415	51	410
	DN250 x DN350	PN25 x PN10	8102, 8192	380.0	370.0	1415	69	440
		PN25 x PN16	8102, 8192	380.0	370.0	1415	69	440
		PN40 x PN10	8102, 8192	380.0	370.0	1415	69	440
		PN40 x PN16	8102, 8192	380.0	370.0	1415	69	440
	DN250 x DN350	PN25 x PN10	8123, 8153	380.0	370.0	1415	69	440
		PN25 x PN16	8123, 8153	380.0	370.0	1415	69	440
		PN40 x PN10	8123, 8153	380.0	370.0	1415	69	440
		PN40 x PN16	8123, 8153	380.0	370.0	1415	69	440

NOTES

1. Dimension of flanges in accordance with EN 1092-1. Raised faces type B1 supplied as standard with serrated spiral grooves and average surface roughness Ra from 3.2 µm to 12.5 µm.
2. Types with 'Z' prefix correspond to optional inlet or outlet valve size.
3. Tolerances of ±1.6 mm for valve inlet sizes up to and including DN100, and ±3.2 mm for valve inlet sizes larger than DN100.
4. Approximate values.
5. Use 'S' dimension to determine bolt length.

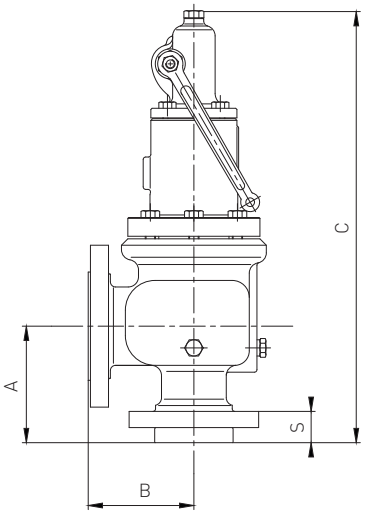
STANDARD EN-1092-1 FLANGES CONNECTIONS[1] (continued)

ORIFICE	VALVE SIZE (DN) INLET x OUTLET	FLANGE RATING PN INLET x OUTLET	TYPE[2]	A[3], mm	B[3], mm	C[4], mm	S[5], mm	WEIGHT[4], kg
W	DN300 x DN300x2	PN10 x PN10	8101, 8191	327.0	430.0	1870	53	950
		PN16 x PN10	8101, 8191	327.0	430.0	1870	53	950
		PN16 x PN16	8101, 8191	327.0	430.0	1870	53	950
	DN300 x DN300x2	PN25 x PN10	8102, 8192	327.0	430.0	1870	72	985
		PN25 x PN16	8102, 8192	327.0	430.0	1870	72	985
		PN40 x PN10	8102, 8192	327.0	430.0	1870	72	985
		PN40 x PN16	8102, 8192	327.0	430.0	1870	72	985
	DN300 x DN300x2	PN25 x PN10	8123, 8153	327.0	430.0	1870	72	985
		PN25 x PN16	8123, 8153	327.0	430.0	1870	72	985
		PN40 x PN10	8123, 8153	327.0	430.0	1870	72	985
		PN40 x PN16	8123, 8153	327.0	430.0	1870	72	985

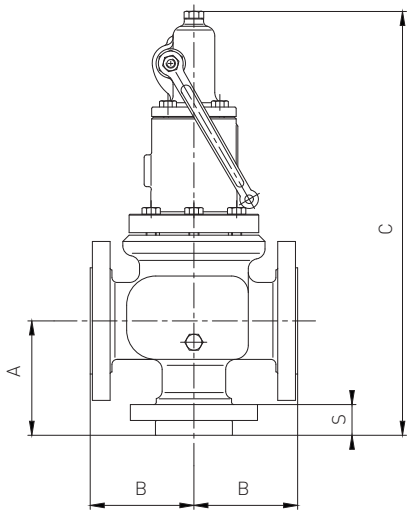
NOTES

1. Dimension of flanges in accordance with EN 1092-1. Raised faces type B1 supplied as standard with serrated spiral grooves and average surface roughness Ra from 3.2 µm to 12.5 µm.
2. Types with 'Z' prefix correspond to optional inlet or outlet valve size.
3. Tolerances of ±1.6 mm for valve inlet sizes up to and including DN100, and ±3.2 mm for valve inlet sizes larger than DN100.
4. Approximate values.
5. Use 'S' dimension to determine bolt length.

OVERALL DIMENSIONS
Orifices D to V



OVERALL DIMENSIONS
Orifice W



SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - METRIC UNITS

D ORIFICE

0.71 sq.cm API Effective Orifice Area[1] – 0.79 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1 1D2	8--2[3] 1D2	8--3 1D2	8--4 1D2	8--6 1.5D2	8--7 1.5D2	8--8 1.5D3[7]
Standard connections	Inlet flange rating class	150	300	300	600	900	1500	2500
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	300	300	300

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, barg[4]	-29 to +38°C	X	X	19.7	19.7	51.0	102.0	153.1	255.5	413.7
	+232°C	X	X	12.8	19.7	42.7	85.2	127.9	213.0	355.1
	+343°C	X	X	8.6	19.7	37.9	75.8	113.8	189.3	315.4
	+427°C	X	X	5.5	19.7	28.3	56.9	85.2	141.7	236.5
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.7	19.7	19.7	19.7	41.4	41.4	51.0
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	34.5	34.5	34.5

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, barg[4][6]	-29 to +38°C	X	X	18.4	18.4	48.0	96.0	144.1	240.1	400.1
	+200°C	X	X	13.8	18.4	42.5	85.1	127.6	212.7	354.4
	+343°C	X	X	8.4	18.4	36.4	72.8	109.2	182.0	303.3
Back pressure limit at +100°F, barg[4][5][6]	Conventional design	X	-	18.4	18.4	18.4	18.4	41.4	41.4	48.0
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	34.5	34.5	34.5

BODY MATERIAL: ASME SA217 Gr. WC6		812-	815-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, barg[4]	+427°C	X	X	–	–	35.2	70.0	105.1	175.1	291.6
	+538°C	X	X	–	–	14.8	29.6	44.8	74.5	124.1
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	–	–	20.0	20.0	41.4	41.4	51.7
	Balanced bellows design	-	X	–	–	15.9	15.9	34.5	34.5	34.5

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, barg[4]	-268 to -60°C	X	X	19.0	19.0	49.6	99.3	148.9	248.2	275.8
	-59 to -30°C	X	X	19.0	19.0	49.6	99.3	148.9	248.2	413.7
	-29 to +38°C	X	X	19.0	19.0	49.6	99.3	148.9	248.2	413.7
	+232°C	X	X	12.4	19.0	34.1	68.3	102.4	171.0	284.8
	+427°C	X	X	5.5	19.0	29.0	58.3	87.2	145.5	242.7
	+538°C	X	X	1.4	19.0	25.2	50.0	75.2	125.5	208.9
Back pressure limit at +100 °F, barg[4][5]	Conventional design	X	-	19.0	19.0	19.0	19.0	41.4	41.4	49.6
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	34.5	34.5	34.5

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3 if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).
7. Optional 2.5" outlet available. Please add the 'Z' prefix in front of the valve designation.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.5 barg
Types 8150 and 8190	1.3 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - METRIC UNITS

E ORIFICE

1.26 sq.cm API Effective Orifice Area[1] – 1.39 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1 1E2	8--2[3] 1E2	8--3 1E2	8--4 1E2	8--6 1.5E2	8--7 1.5E2	8--8 1.5E3[7]
Standard connections	Inlet flange rating class	150	300	300	600	900	1500	2500
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	300	300	300

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, barg[4]	-29 to +38°C	X	X	19.7	19.7	51.0	102.0	153.1	255.5	413.7
	+232°C	X	X	12.8	19.7	42.7	85.2	127.9	213.0	355.1
	+343°C	X	X	8.6	19.7	37.9	75.8	113.8	189.3	315.4
	+427°C	X	X	5.5	19.7	28.3	56.9	85.2	141.7	236.5
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.7	19.7	19.7	19.7	41.4	41.4	51.0
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	34.5	34.5	34.5

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, barg[4][6]	-29 to +38°C	X	X	18.4	18.4	48.0	96.0	144.1	240.1	400.1
	+200°C	X	X	13.8	18.4	42.5	85.1	127.6	212.7	354.4
	+343°C	X	X	8.4	18.4	36.4	72.8	109.2	182.0	303.3
Back pressure limit at +100°F, barg[4][5][6]	Conventional design	X	-	18.4	18.4	18.4	18.4	41.4	41.4	48.0
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	34.5	34.5	34.5

BODY MATERIAL: ASME SA217 Gr. WC6		812–	815–	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, barg[4]	+427°C	X	X	–	–	35.2	70.0	105.1	175.1	291.6
	+538°C	X	X	–	–	14.8	29.6	44.8	74.5	124.1
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	–	–	20.0	20.0	41.4	41.4	51.7
	Balanced bellows design	-	X	–	–	15.9	15.9	34.5	34.5	34.5

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, barg[4][6]	-268 to -60°C	X	X	19.0	19.0	49.6	99.3	148.9	248.2	275.8
	-59 to -30°C	X	X	19.0	19.0	49.6	99.3	148.9	248.2	413.7
	-29 to +38°C	X	X	19.0	19.0	49.6	99.3	148.9	248.2	413.7
	+232°C	X	X	12.4	19.0	34.1	68.3	102.4	171.0	284.8
	+427°C	X	X	5.5	19.0	29.0	58.3	87.2	145.5	242.7
	+538°C	X	X	1.4	19.0	25.2	50.0	75.2	125.5	208.9
Back pressure limit at +100°F, barg[4][5][6]	Conventional design	X	-	19.0	19.0	19.0	19.0	41.4	41.4	49.6
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	34.5	34.5	34.5

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3 if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).
7. Optional 2.5" outlet available. Please add the 'Z' prefix in front of the valve designation.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.6 barg
Types 8150 and 8190	1.3 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below
1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

F ORIFICE

1.98 sq.cm API Effective Orifice Area[1] – 2.14 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
		1.5F2	1.5F2	1.5F2	1.5F2	1.5F3[7]	1.5F3[7]	1.5F3[7]
Standard connections	Inlet flange rating class	150	300	300	600	900	1500	2500
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	300	300	300

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, barg[4]	-29 to +38°C	X	X	19.7	19.7	51.0	102.0	153.1	255.5	344.7
	+232°C	X	X	12.8	19.7	42.7	85.2	127.9	213.0	344.7
	+343°C	X	X	8.6	19.7	37.9	75.8	113.8	189.3	315.4
	+427°C	X	X	5.5	19.7	28.3	56.9	85.2	141.7	236.5
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.7	19.7	19.7	19.7	51.0	51.0	51.0
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	34.5	34.5	34.5

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, barg[4][6]	-29 to +38°C	X	X	18.4	18.4	48.0	96.0	144.1	240.1	344.8
	+200°C	X	X	13.8	18.4	42.5	85.1	127.6	212.7	344.8
	+343°C	X	X	8.4	18.4	36.4	72.8	109.2	182.0	303.3
Back pressure limit at +100°F, barg[4][5][6]	Conventional design	X	-	18.4	18.4	18.4	18.4	48.0	48.0	48.0
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	34.5	34.5	34.5

BODY MATERIAL: ASME SA217 Gr. WC6		812-	815-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, barg[4]	+427°C	X	X	–	–	35.2	70.0	105.1	175.1	291.6
	+538°C	X	X	–	–	14.8	29.6	44.8	74.5	124.1
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	–	–	20.0	20.0	51.7	51.7	51.7
	Balanced bellows design	-	X	–	–	15.9	15.9	34.5	34.5	34.5

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, barg[4]	-268 to -60°C	X	X	19.0	19.0	49.6	99.3	148.9	151.7	234.4
	-59 to -30°C	X	X	19.0	19.0	49.6	99.3	148.9	248.2	344.7
	-29 to +38°C	X	X	19.0	19.0	49.6	99.3	148.9	248.2	344.7
	+232°C	X	X	12.4	19.0	34.1	68.3	102.4	171.0	284.8
	+427°C	X	X	5.5	19.0	29.0	58.3	87.2	145.5	242.7
	+538°C	X	X	1.4	19.0	25.2	50.0	75.2	125.5	208.9
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.0	19.0	19.0	19.0	49.6	49.6	49.6
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	34.5	34.5	34.5

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3 if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).
7. Optional 2.5" outlet available. Please add the 'Z' prefix in front of the valve designation.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.5 barg
Types 8150 and 8190	0.5 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - METRIC UNITS

G ORIFICE

3.25 sq.cm API Effective Orifice Area[1] – 3.53 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
		1.5G3[7]	1.5G3[7]	1.5G3[7]	1.5G3[7]	1.5G3[7]	2G3	2G3
Standard connections	Inlet flange rating class	150	300	300	600	900	1500	2500
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	300	300	300

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, barg[4]	-29 to +38°C	X	X	19.7	19.7	51.0	102.0	153.1	255.5	255.5
	+232°C	X	X	12.8	19.7	42.7	85.2	127.9	213.0	255.5
	+343°C	X	X	8.6	19.7	37.9	75.8	113.8	189.3	255.5
	+427°C	X	X	5.5	19.7	28.3	56.9	85.2	141.7	236.5
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.7	19.7	19.7	19.7	51.0	51.0	51.0
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	32.4	32.4	32.4

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, barg[4][6]	-29 to +38°C	X	X	18.4	18.4	48.0	96.0	144.1	240.1	255.5
	+200°C	X	X	13.8	18.4	42.5	85.1	127.6	212.7	255.5
	+343°C	X	X	8.4	18.4	36.4	72.8	109.2	182.0	255.5
Back pressure limit at +100°F, barg[4][5][6]	Conventional design	X	-	18.4	18.4	18.4	18.4	48.0	48.0	48.0
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	32.4	32.4	32.4

BODY MATERIAL: ASME SA217 Gr. WC6		812-	815-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, barg[4]	+427°C	X	X	–	–	35.2	70.0	105.1	175.1	255.5
	+538°C	X	X	–	–	14.8	29.6	44.8	74.5	124.1
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	–	–	20.0	20.0	51.7	51.7	51.7
	Balanced bellows design	-	X	–	–	15.9	15.9	34.5	34.5	34.5

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, barg[4]	-268 to -60°C	X	X	19.0	19.0	49.6	99.3	148.9	168.9	179.3
	-59 to -30°C	X	X	19.0	19.0	49.6	99.3	148.9	248.2	248.2
	-29 to +38°C	X	X	19.0	19.0	49.6	99.3	148.9	248.2	248.2
	+232°C	X	X	12.4	19.0	34.1	68.3	102.4	171.0	248.2
	+427°C	X	X	5.5	19.0	29.0	58.3	87.2	145.5	242.7
	+538°C	X	X	1.4	19.0	25.2	50.0	75.2	125.5	208.9
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.0	19.0	19.0	19.0	49.6	49.6	49.6
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	34.5	34.5	34.5

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3 if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).
7. Optional 2.5" outlet available. Please add the 'Z' prefix in front of the valve designation.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.6 barg
Types 8150 and 8190	0.6 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

H ORIFICE
5.06 sq.cm API Effective Orifice Area[1] – 5.51 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1 1.5H3	8--2[3] 1.5H3	8--3 2H3	8--4 2H3	8--6 2H3	8--7 2H3
Standard connections	Inlet flange rating class	150	300	300	600	900	1500
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	150	300

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, barg[4]	-29 to +38°C	X	X	19.7	19.7	51.0	102.0	153.1	189.6
	+232°C	X	X	12.8	19.7	42.7	85.2	127.9	189.6
	+343°C	X	X	8.6	19.7	37.9	75.8	113.8	185.1
	+427°C	X	X	5.5	19.7	28.3	56.9	85.2	141.7
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.7	19.7	19.7	19.7	19.7	51.0
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	15.9	28.6

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, barg[4][6]	-29 to +38°C	X	X	18.4	18.4	48.0	96.0	144.1	189.7
	+200°C	X	X	13.8	18.4	42.5	85.1	127.6	189.7
	+343°C	X	X	8.4	18.4	36.4	72.8	109.2	182.0
Back pressure limit at +100°F, barg[4][5][6]	Conventional design	X		18.4	18.4	18.4	18.4	18.4	48.0
	Balanced bellows design		X	15.9	15.9	15.9	15.9	15.9	32.4

BODY MATERIAL: ASME SA217 Gr. WC6		812-	815-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, barg[4]	+427°C	X	X	–	–	35.2	70.0	105.1	175.1
	+538°C	X	X	–	–	14.8	29.6	44.8	74.5
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	–	–	20.0	20.0	20.0	51.7
	Balanced bellows design	-	X	–	–	15.9	15.9	15.9	28.6

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, barg[4]	-268 to -60°C	X	X	19.0	19.0	49.6	99.3	102.4	110.3
	-59 to -30°C	X	X	19.0	19.0	49.6	99.3	148.9	189.6
	-29 to +38°C	X	X	19.0	19.0	49.6	99.3	148.9	189.6
	+232°C	X	X	12.4	19.0	34.1	68.3	102.4	171.0
	+427°C	X	X	5.5	19.0	29.0	58.3	87.2	145.5
	+538°C	X	X	1.4	19.0	25.2	50.0	75.2	125.5
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.0	19.0	19.0	19.0	19.0	41.4
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	15.9	28.6

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3 if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.5 barg
Types 8150 and 8190	0.5 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - METRIC UNITS

J ORIFICE

8.30 sq.cm API Effective Orifice Area[1] – 9.03 sq.cm Actual Orifice Area[2]

		8--1	8--2[3]	8--3	8--4	8--6	8--7
VALVE SIZE	**INLET NPS x ORIFICE x OUTLET NPS**	**2J3**	**2J3**	**3J4[7]**	**3J4[7]**	**3J4**	**3J4**
Standard connections	Inlet flange rating class	150	300	300	600	900	1500
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	150	300

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, barg[4]	-29 to +38°C	X	X	19.7	19.7	51.0	102.0	153.1	186.2
	+232°C	X	X	12.8	19.7	42.7	85.2	127.9	186.2
	+343°C	X	X	8.6	19.7	37.9	75.8	113.8	185.1
	+427°C	X	X	5.5	19.7	28.3	56.9	85.2	141.7
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.7	19.7	19.7	19.7	19.7	41.4
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	15.9	15.9

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, barg[4][6]	-29 to +38°C	X	X	18.4	18.4	48.0	96.0	144.1	186.2
	+200°C	X	X	13.8	18.4	42.5	85.1	127.6	186.2
	+343°C	X	X	8.4	18.4	36.4	72.8	109.2	182.0
Back pressure limit at +100°F, barg[4][5][6]	Conventional design	X	-	18.4	18.4	18.4	18.4	18.4	41.4
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	15.9	15.9

BODY MATERIAL: ASME SA217 Gr. WC6		812-	815-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, barg[4]	+427°C	X	X	–	–	35.2	70.0	105.1	175.1
	+538°C	X	X	–	–	14.8	29.6	44.8	74.5
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	–	–	20.0	20.0	20.0	41.4
	Balanced bellows design	-	X	–	–	15.9	15.9	15.9	15.9

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, barg[4]	-268 to -60°C	X	X	19.0	19.0	34.5	43.1	55.2	55.2
	-59 to -30°C	X	X	19.0	19.0	49.6	99.3	148.9	189.6
	-29 to +38°C	X	X	19.0	19.0	49.6	99.3	148.9	189.6
	+232°C	X	X	12.4	19.0	34.1	68.3	102.4	171.0
	+427°C	X	X	5.5	19.0	29.0	58.3	87.2	145.5
	+538°C	X	X	1.4	19.0	25.2	50.0	75.2	125.5
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.0	19.0	19.0	19.0	19.0	41.4
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	15.9	15.9

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3 if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).
7. Optional 2.5" inlet available. Please add the 'Z' prefix in front of the valve designation.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.4 barg
Types 8150 and 8190	0.4 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - METRIC UNITS

K ORIFICE

11.86 sq.cm API Effective Orifice Area[1] – 12.87 sq.cm Actual Orifice Area[2]

		8--1	8--2[3]	8--3	8--4	8--6	8--7
VALVE SIZE	**INLET NPS x ORIFICE x OUTLET NPS**	**3K4**	**3K4**	**3K4**	**3K4**	**3K6**	**3K6**
Standard connections	Inlet flange rating class	150	300	300	600	900	1500
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	150	300

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		**810-820-**	**819-829-**	**8--1**	**8--2[3]**	**8--3**	**8--4**	**8--6**	**8--7**
Maximum set pressure, barg[4]	-29 to +38°C	X	X	19.7	19.7	51.0	102.0	153.1	153.1
	+232°C	X	X	12.8	19.7	42.7	85.2	127.9	153.1
	+343°C	X	X	8.6	19.7	37.9	75.8	111.0	153.1
	+427°C	X	X	5.5	19.7	28.3	56.9	85.2	141.7
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.7	19.7	19.7	19.7	19.7	41.4
	Balanced bellows design	-	X	10.3	10.3	10.3	13.8	13.8	13.8

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		**810-820-**	**819-829-**	**8--1**	**8--2[3]**	**8--3**	**8--4**	**8--6**	**8--7**
Maximum set pressure, barg[4][6]	-29 to +38°C	X	X	18.4	18.4	48.0	96.0	144.1	153.1
	+200°C	X	X	13.8	13.8	42.5	85.1	127.6	153.1
	+343°C	X	X	8.4	8.4	36.4	72.8	109.2	153.1
Back pressure limit at +100°F, barg[4][5][6]	Conventional design	X	-	18.4	18.4	18.4	18.4	18.4	41.4
	Balanced bellows design	-	X	10.3	10.3	10.3	13.8	13.8	13.8

BODY MATERIAL: ASME SA217 Gr. WC6		**812-**	**815-**	**8--1**	**8--2[3]**	**8--3**	**8--4**	**8--6**	**8--7**
Maximum set pressure, barg[4]	+427°C	X	X	–	–	35.2	70.0	105.1	153.1
	+538°C	X	X	–	–	14.8	29.6	44.8	74.5
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	–	–	20.0	20.0	20.0	41.4
	Balanced bellows design	-	X	–	–	15.9	15.9	15.9	15.9

BODY MATERIAL: ASME SA351 Gr. CF8M		**810-820-**	**819-829-**	**8--1**	**8--2[3]**	**8--3**	**8--4**	**8--6**	**8--7**
Maximum set pressure, barg[4]	-268 to -60°C	X	X	19.0	19.0	36.2	41.4	41.4	51.7
	-59 to -30°C	X	X	19.0	19.0	49.6	99.3	148.9	153.1
	-29 to +38°C	X	X	19.0	19.0	49.6	99.3	148.9	153.1
	+232°C	X	X	12.4	19.0	34.1	68.3	102.4	153.1
	+427°C	X	X	5.5	19.0	29.0	58.3	87.2	145.5
	+538°C	X	X	1.4	19.0	25.2	50.0	75.2	125.5
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.0	19.0	19.0	19.0	19.0	41.4
	Balanced bellows design	-	X	15.9	15.9	15.9	15.9	15.9	15.9

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3 if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.5 barg
Types 8150 and 8190	0.5 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

L ORIFICE
18.41 sq.cm API Effective Orifice Area[1] – 19.95 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1	8--2[3]	8--3	8--4	8--6	8--7
		3L4	3L4	4L6	4L6	4L6	4L6
Standard connections	Inlet flange rating class	150	300	300	600	900	1500
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, barg[4]	-29 to +38°C	X	X	19.7	19.7	51.0	68.9	103.4	103.4
	+232°C	X	X	12.8	19.7	42.7	68.9	103.4	103.4
	+343°C	X	X	8.6	19.7	37.9	68.9	103.4	103.4
	+427°C	X	X	5.5	19.7	28.3	56.9	85.2	103.4
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.7	19.7	19.7	19.7	19.7	19.7
	Balanced bellows design	-	X	6.9	6.9	11.7	11.7	11.7	11.7

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, barg[4][6]	-29 to +38°C	X	X	18.4	18.4	48.0	69.0	103.4	103.4
	+200°C	X	X	13.8	18.4	42.5	69.0	103.4	103.4
	+343°C	X	X	8.4	18.4	36.4	69.0	103.4	103.4
Back pressure limit at +100°F, barg[4][5][6]	Conventional design	X	-	18.4	18.4	18.4	18.4	18.4	18.4
	Balanced bellows design	-	X	6.9	6.9	11.7	11.7	11.7	11.7

BODY MATERIAL: ASME SA217 Gr. WC6		812-	815-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, barg[4]	+427°C	X	X	–	–	35.2	68.9	103.4	103.4
	+538°C	X	X	–	–	14.8	29.6	44.8	74.5
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	–	–	20.0	20.0	20.0	41.4
	Balanced bellows design	-	X	–	–	11.7	11.7	11.7	11.7

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, barg[4]	-268 to -60°C	X	X	19.0	19.0	36.9	36.9	48.3	–
	-59 to -30°C	X	X	19.0	19.0	49.6	68.9	103.4	–
	-29 to +38°C	X	X	19.0	19.0	49.6	68.9	103.4	–
	+232°C	X	X	12.4	19.0	34.1	68.3	102.4	–
	+427°C	X	X	5.5	19.0	29.0	58.3	87.2	–
	+538°C	X	X	1.4	19.0	25.2	50.0	75.2	–
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.0	19.0	19.0	19.0	19.0	–
	Balanced bellows design	-	X	6.9	6.9	11.7	11.7	11.7	–

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3 if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.4 barg
Types 8150 and 8190	0.4 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - METRIC UNITS

M ORIFICE

23.23 sq.cm API Effective Orifice Area[1] – 25.24 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1	8--2[3]	8--3	8--4	8--6
		4M6	4M6	4M6	4M6	4M6
Standard connections	Inlet flange rating class	150	300	300	600	900
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, barg[4]	-29 to +38°C	X	X	19.7	19.7	51.0	75.8	75.8
	+232°C	X	X	12.8	19.7	42.7	75.8	75.8
	+343°C	X	X	8.6	19.7	37.9	75.8	75.8
	+427°C	X	X	5.5	19.7	28.3	56.9	75.8
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.7	19.7	19.7	19.7	19.7
	Balanced bellows design	-	X	5.5	5.5	11.0	11.0	11.0

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, barg[4][6]	-29 to +38°C	X	X	18.4	18.4	48.0	75.9	75.9
	+200°C	X	X	13.8	13.8	42.5	75.9	75.9
	+343°C	X	X	8.4	8.4	36.4	72.8	75.9
Back pressure limit at +100°F, barg[4][5][6]	Conventional design	X	-	18.4	18.4	18.4	18.4	18.4
	Balanced bellows design	-	X	5.5	5.5	11.0	11.0	11.0

BODY MATERIAL: ASME SA217 Gr. WC6		812-	815-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, barg[4]	+427°C	X	X	–	–	35.2	68.9	75.8
	+538°C	X	X	–	–	14.8	29.6	44.8
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	–	–	20.0	20.0	20.0
	Balanced bellows design	-	X	–	–	11.0	11.0	11.0

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, barg[4]	-268 to -60°C	X	X	19.0	19.0	36.2	41.4	–
	-59 to -30°C	X	X	19.0	19.0	49.6	75.8	–
	-29 to +38°C	X	X	19.0	19.0	49.6	75.8	–
	+232°C	X	X	12.4	19.0	34.1	68.3	–
	+427°C	X	X	5.5	19.0	29.0	58.3	–
	+538°C	X	X	1.4	19.0	25.2	50.0	–
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.0	19.0	19.0	19.0	–
	Balanced bellows design	-	X	5.5	5.5	11.0	11.0	–

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3 if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.4 barg
Types 8150 and 8190	0.4 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - METRIC UNITS

N ORIFICE

28.00 sq.cm API Effective Orifice Area[1] – 30.29 sq.cm Actual Orifice Area[2]

		8--1	8--2[3]	8--3	8--4	8--6
VALVE SIZE	**INLET NPS x ORIFICE x OUTLET NPS**	**4N6**	**4N6**	**4N6**	**4N6**	**4N6**
Standard connections	Inlet flange rating class	150	300	300	600	900
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, barg[4]	-29 to +38°C	X	X	19.7	19.7	51.0	68.9	68.9
	+232°C	X	X	12.8	19.7	42.7	68.9	68.9
	+343°C	X	X	8.6	19.7	37.9	68.9	68.9
	+427°C	X	X	5.5	19.7	28.3	56.9	68.9
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.7	19.7	19.7	19.7	19.7
	Balanced bellows design	-	X	5.5	5.5	11.0	11.0	11.0

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, barg[4][6]	-29 to +38°C	X	X	18.4	18.4	48.0	69.0	69.0
	+200°C	X	X	13.8	13.8	42.5	69.0	69.0
	+343°C	X	X	8.4	8.4	36.4	69.0	69.0
Back pressure limit at +100°F, barg[4][5][6]	Conventional design	X	-	18.4	18.4	18.4	18.4	18.4
	Balanced bellows design	-	X	5.5	5.5	11.0	11.0	11.0

BODY MATERIAL: ASME SA217 Gr. WC6		812-	815-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, barg[4]	+427°C	X	X	–	–	35.2	68.9	68.9
	+538°C	X	X	–	–	14.8	29.6	44.8
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	–	–	20.0	20.0	20.0
	Balanced bellows design	-	X	–	–	11.0	11.0	11.0

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, barg[4]	-268 to -60°C	X	X	19.0	19.0	31.0	34.5	–
	-59 to -30°C	X	X	19.0	19.0	49.6	68.9	–
	-29 to +38°C	X	X	19.0	19.0	49.6	68.9	–
	+232°C	X	X	12.4	19.0	34.1	68.3	–
	+427°C	X	X	5.5	19.0	29.0	58.3	–
	+538°C	X	X	1.4	19.0	25.2	50.0	–
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.0	19.0	19.0	19.0	–
	Balanced bellows design	-	X	5.5	5.5	11.0	11.0	–

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3 if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.5 barg
Types 8150 and 8190	0.5 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - METRIC UNITS

P ORIFICE

41.16 sq.cm API Effective Orifice Area[1] – 44.55 sq.cm Actual Orifice Area[2]

		8--1	8--2[3]	8--3	8--4	8--6
VALVE SIZE	**INLET NPS x ORIFICE x OUTLET NPS**	**4P6**	**4P6**	**4P6**	**4P6**	**4P6**
Standard connections	Inlet flange rating class	150	300	300	600	900
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, barg[4]	-29 to +38°C	X	X	19.7	19.7	36.2	68.9	68.9
	+232°C	X	X	12.8	19.7	36.2	68.9	68.9
	+343°C	X	X	8.6	19.7	36.2	68.9	68.9
	+427°C	X	X	5.5	19.7	28.3	56.9	68.9
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.7	19.7	19.7	19.7	19.7
	Balanced bellows design	-	X	5.5	5.5	10.3	10.3	10.3

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, barg[4][6]	-29 to +38°C	X	X	18.4	18.4	36.2	69.0	69.0
	+200°C	X	X	13.8	18.4	36.2	69.0	69.0
	+343°C	X	X	8.4	18.4	36.2	69.0	69.0
Back pressure limit at +100°F, barg[4][5][6]	Conventional design	X	-	18.4	18.4	18.4	18.4	18.4
	Balanced bellows design	-	X	5.5	5.5	10.3	10.3	10.3

BODY MATERIAL: ASME SA217 Gr. WC6		812-	815-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, barg[4]	+427°C	X	X	–	–	35.2	68.9	68.9
	+538°C	X	X	–	–	14.8	29.6	44.8
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	–	–	20.0	20.0	20.0
	Balanced bellows design	-	X	–	–	11.0	11.0	11.0

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, barg[4]	-268 to -60°C	X	X	12.1	12.1	20.7	33.1	–
	-59 to -30°C	X	X	19.0	19.0	36.2	68.9	–
	-29 to +38°C	X	X	19.0	19.0	36.2	68.9	–
	+232°C	X	X	12.4	19.0	34.1	68.3	–
	+427°C	X	X	5.5	19.0	29.0	58.3	–
	+538°C	X	X	1.4	19.0	25.2	50.0	–
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	19.0	19.0	19.0	19.0	–
	Balanced bellows design	-	X	5.5	5.5	11.0	11.0	–

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3 if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.5 barg
Types 8150 and 8190	0.5 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - METRIC UNITS

Q ORIFICE

71.29 sq.cm API Effective Orifice Area[1] – 76.99 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1	8--2[3]	8--3	8--4
		6Q8	6Q8	6Q8	6Q8
Standard connections	Inlet flange rating class	150	300	300	600
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, barg[4]	-29 to +38°C	X	X	11.4	11.4	20.7	41.4
	+232°C	X	X	11.4	11.4	20.7	41.4
	+343°C	X	X	8.6	11.4	20.7	41.4
	+427°C	X	X	5.5	11.4	20.7	41.4
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	7.9	7.9	7.9	7.9
	Balanced bellows design	-	X	4.8	4.8	7.9	7.9

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, barg[4][6]	-29 to +38°C	X	X	11.4	11.4	20.7	41.4
	+200°C	X	X	11.4	11.4	20.7	41.4
	+343°C	X	X	8.4	8.4	20.7	41.4
Back pressure limit at +100°F, barg[4][5][6]	Conventional design	X	-	7.9	7.9	7.9	7.9
	Balanced bellows design	-	X	4.8	4.8	7.9	7.9

BODY MATERIAL: ASME SA217 Gr. WC6		812-	815-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, barg[4]	+427°C	X	X	–	–	11.4	41.4
	+538°C	X	X	–	–	11.4	29.6
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	–	–	7.9	7.9
	Balanced bellows design	-	X	–	–	7.9	7.9

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, barg[4]	-268 to -60°C	X	X	11.4	11.4	17.2	20.7
	-59 to -30°C	X	X	11.4	11.4	20.7	41.4
	-29 to +38°C	X	X	11.4	11.4	20.7	41.4
	+232°C	X	X	11.4	11.4	20.7	41.4
	+427°C	X	X	5.5	11.4	20.7	41.4
	+538°C	X	X	1.4	11.4	20.7	41.4
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	7.9	7.9	7.9	7.9
	Balanced bellows design	-	X	4.8	4.8	7.9	7.9

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3 if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.5 barg
Types 8150 and 8190	0.5 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - METRIC UNITS

R ORIFICE

103.23 sq.cm API Effective Orifice Area[1] – 108.25 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1	8--2[3]	8--3	8--4
		6R8	6R8	6R10	6R10
Standard connections	Inlet flange rating class	150	300	300	600
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, barg[4]	-29 to +38°C	X	X	6.9	6.9	15.9	20.7
	+232°C	X	X	6.9	6.9	15.9	20.7
	+343°C	X	X	6.9	6.9	15.9	20.7
	+427°C	X	X	5.5	6.9	15.9	20.7
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	4.1	4.1	6.9	6.9
	Balanced bellows design	-	X	4.1	4.1	6.9	6.9

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, barg[4][6]	-29 to +38°C	X	X	6.9	6.9	15.9	20.7
	+200°C	X	X	6.9	6.9	15.9	20.7
	+343°C	X	X	6.9	6.9	15.9	20.7
Back pressure limit at +100°F, barg[4][5][6]	Conventional design	X	-	4.1	4.1	6.9	6.9
	Balanced bellows design	-	X	4.1	4.1	6.9	6.9

BODY MATERIAL: ASME SA217 Gr. WC6		812-	815-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, barg[4]	+427°C	X	X	–	–	6.9	20.7
	+538°C	X	X	–	–	6.9	20.7
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	–	–	6.9	6.9
	Balanced bellows design	-	X	–	–	6.9	6.9

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, barg[4]	-268 to -60°C	X	X	3.8	3.8	10.3	13.8
	-59 to -30°C	X	X	6.9	6.9	15.9	20.7
	-29 to +38°C	X	X	6.9	6.9	15.9	20.7
	+232°C	X	X	6.9	6.9	15.9	20.7
	+427°C	X	X	5.5	6.9	15.9	20.7
	+538°C	X	X	1.4	6.9	15.9	20.7
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	4.1	4.1	6.9	6.9
	Balanced bellows design	-	X	4.1	4.1	6.9	6.9

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3 if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.5 barg
Types 8150 and 8190	0.5 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - METRIC UNITS

T ORIFICE

167.74 sq.cm API Effective Orifice Area[1] – 182.41 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1	8--2[3]	8--3	8--4
		8T10	8T10	8T10	8T10
Standard connections	Inlet flange rating class	150	300	300	300
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, barg[4]	-29 to +38°C	X	X	4.5	4.5	8.3	20.7
	+232°C	X	X	4.5	4.5	8.3	20.7
	+343°C	X	X	4.5	4.5	8.3	20.7
	+427°C	X	X	4.5	4.5	8.3	20.7
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	2.1	2.1	4.1	6.9
	Balanced bellows design	-	X	2.1	2.1	4.1	6.9

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, barg[4][6]	-29 to +38°C	X	X	4.5	4.5	8.4	20.7
	+200°C	X	X	4.5	4.5	8.4	20.7
	+343°C	X	X	4.5	4.5	8.4	20.7
Back pressure limit at +100°F, barg[4][5][6]	Conventional design	X	-	2.1	2.1	4.1	6.9
	Balanced bellows design	-	X	2.1	2.1	4.1	6.9

BODY MATERIAL: ASME SA217 Gr. WC6		812-	815-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, barg[4]	+427°C	X	X	–	–	8.3	20.7
	+538°C	X	X	–	–	6.9	14.8
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	–	–	4.1	6.9
	Balanced bellows design	-	X	–	–	4.1	6.9

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, barg[4]	-268 to -60°C	X	X	3.4	3.4	4.5	–
	-59 to -30°C	X	X	4.5	4.5	8.3	–
	-29 to +38°C	X	X	4.5	4.5	8.3	–
	+232°C	X	X	4.5	4.5	8.3	–
	+427°C	X	X	4.5	4.5	8.3	–
	+538°C	X	X	1.4	4.5	8.3	–
Back pressure limit at +100°F, barg[4][5]	Conventional design	X	-	2.1	2.1	4.1	–
	Balanced bellows design	-	X	2.1	2.1	4.1	–

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3 if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.7 barg
Types 8150 and 8190	0.7 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - METRIC UNITS

V ORIFICE

264 sq.cm API Effective Orifice Area[1] – 291.00 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1	8--2[3]	8--3
		10V14	10V14	10V14
Standard connections	Inlet flange rating class	150	300	300
ANSI flanges, raised faces	Outlet flange rating class	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3
Maximum set pressure, barg	-29 to +38°C	X	X	5.2	12.1	–
	+232°C	X	X	5.2	12.1	–
	+343°C	X	X	5.2	12.1	–
	+427°C	X	X	5.2	12.1	–
Back pressure limit at +38°F, barg[4]	Conventional design	X	-	2.0	2.0	–
	Balanced bellows design	-	X	2.0	2.0	–

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3
Maximum set pressure, barg	-29 to +38°C	X	X	5.2	12.1	–
	+200°C	X	X	5.2	12.1	–
	+343°C	X	X	5.2	12.1	–
Back pressure limit at +38°F, barg[4]	Conventional design	X	-	2.0	2.0	–
	Balanced bellows design	-	X	2.0	2.0	–

BODY MATERIAL: ASME SA217 Gr. WC6		812-	815-	8--1	8--2[3]	8--3
Maximum set pressure, barg	+427°C	X	X	–	–	12.1
	+538°C	X	X	–	–	12.1
Back pressure limit at +38°F, barg[4]	Conventional design	X	-	–	–	4.0
	Balanced bellows design	-	X	–	–	4.0

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of 38°C, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	2.8 barg
Types 8150 and 8190	2.8 barg

NOTE

** Consult factory for set pressures below the specified values. Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - METRIC UNITS

W ORIFICE

393 sq.cm API Effective Orifice Area[1] – 433.70 sq.cm Actual Orifice Area[2]

		8--1	8--2[3]	8--3
VALVE SIZE	**INLET NPS x ORIFICE x OUTLET NPS**	**12W12x2**	**12W12x2**	**12W12x2**
Standard connections	Inlet flange rating class	150	300	300
ANSI flanges, raised faces	Outlet flange rating class	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1	8--2[3]	8--3
Maximum set pressure, barg	-29 to +38°C	X	X	5.2	10.0	–
	+232°C	X	X	5.2	10.0	–
	+343°C	X	X	5.2	10.0	–
	+427°C	X	X	5.2	10.0	–
Back pressure limit at +38°F, barg[4]	Conventional design	X	-	1.0	2.0	–
	Balanced bellows design	-	X	1.0	2.0	–

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810- 820-	819- 829-	8--1	8--2[3]	8--3
Maximum set pressure, barg	-29 to +38°C	X	X	5.2	10.0	–
	+200°C	X	X	5.2	10.0	–
	+343°C	X	X	5.2	10.0	–
Back pressure limit at +38°F, barg[4]	Conventional design	X	-	1.0	2.0	–
	Balanced bellows design	-	X	1.0	2.0	–

BODY MATERIAL: ASME SA217 Gr. WC6		812-	815-	8--1	8--2[3]	8--3
Maximum set pressure, barg	+427°C	X	X	–	–	10.0
	+538°C	X	X	–	–	10.0
Back pressure limit at +38°F, barg[4]	Conventional design	X	-	–	–	2.0
	Balanced bellows design	-	X	–	–	2.0

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of 38°C, and pressure values at other temperatures may be determined from Annex C of API 526.
5. 12" dual outlet.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	2.8 barg
Types 8150 and 8190	2.8 barg

NOTE

** Consult factory for set pressures below the specified values. Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - METRIC UNITS

D ORIFICE

0.71 sq.cm API Effective Orifice Area[1] – 0.79 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		25xDx50			25xDx50				25xDx50			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-29 to +38°C	X	X	10.0	16.0	16.0	19.7	19.7	19.7	19.7	25.0	25.0	40.0	40.0
	+232°C	X	X	9.8	12.8	12.8	19.7	19.7	19.7	19.7	24.6	24.6	39.4	39.4
	+343°C	X	X	8.1	8.6	8.6	19.7	19.7	19.7	19.7	20.4	20.4	32.7	32.7
	+427°C	X	X	5.5	5.5	5.5	13.9	13.9	19.7	19.7	13.9	13.9	22.3	22.3
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	10.0	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	+427°C	X	X	–	–	–	–	–	–	–	21.7	21.7	34.8	34.8
	+538°C	X	X	–	–	–	–	–	–	–	7.6	7.6	12.2	12.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	–	–	–	–	–	–	–	10.0	15.9	10.0	15.9

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-268 to -60°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	-59 to -30°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	-29 to +38°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	+232°C	X	X	8.0	12.4	12.4	19.0	19.0	19.0	19.0	20.2	20.2	32.5	32.5
	+427°C	X	X	5.5	5.5	5.5	16.9	16.9	19.0	19.0	16.9	16.9	27.1	27.1
	+538°C	X	X	1.4	1.4	1.4	16.3	16.3	19.0	19.0	16.3	16.3	25.2	25.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	10.0	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.5 barg
Types 8150 and 8190	1.3 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - METRIC UNITS

E ORIFICE

1.26 sq.cm API Effective Orifice Area[1] – 1.39 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		25xEx50			25xEx50				25xEx50			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-29 to +38°C	X	X	10.0	16.0	16.0	19.7	19.7	19.7	19.7	25.0	25.0	40.0	40.0
	+232°C	X	X	9.8	12.8	12.8	19.7	19.7	19.7	19.7	24.6	24.6	39.4	39.4
	+343°C	X	X	8.1	8.6	8.6	19.7	19.7	19.7	19.7	20.4	20.4	32.7	32.7
	+427°C	X	X	5.5	5.5	5.5	13.9	13.9	19.7	19.7	13.9	13.9	22.3	22.3
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	10.0	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	+427°C	X	X	–	–	–	–	–	–	–	21.7	21.7	34.8	34.8
	+538°C	X	X	–	–	–	–	–	–	–	7.6	7.6	12.2	12.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	–	–	–	–	–	–	–	10.0	15.9	10.0	15.9

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-268 to -60°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	-59 to -30°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	-29 to +38°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	+232°C	X	X	8.0	12.4	12.4	19.0	19.0	19.0	19.0	20.2	20.2	32.5	32.5
	+427°C	X	X	5.5	5.5	5.5	16.9	16.9	19.0	19.0	16.9	16.9	27.1	27.1
	+538°C	X	X	1.4	1.4	1.4	16.3	16.3	19.0	19.0	16.3	16.3	25.2	25.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	10.0	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.6 barg
Types 8150 and 8190	1.3 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

F ORIFICE

1.98 sq.cm API Effective Orifice Area[1] – 2.14 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		40xFx50			40xFx50				40xFx50			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-29 to +38°C	X	X	10.0	16.0	16.0	19.7	19.7	19.7	19.7	25.0	25.0	40.0	40.0
	+232°C	X	X	9.8	12.8	12.8	19.7	19.7	19.7	19.7	24.6	24.6	39.4	39.4
	+343°C	X	X	8.1	8.6	8.6	19.7	19.7	19.7	19.7	20.4	20.4	32.7	32.7
	+427°C	X	X	5.5	5.5	5.5	13.9	13.9	19.7	19.7	13.9	13.9	22.3	22.3
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design		X	10.0	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	+427°C	X	X	–	–	–	–	–	–	–	21.7	21.7	34.8	34.8
	+538°C	X	X	–	–	–	–	–	–	–	7.6	7.6	12.2	12.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	–	–	–	–	–	–	–	10.0	15.9	10.0	15.9

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-268 to -60°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	-59 to -30°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	-29 to +38°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	+232°C	X	X	8.0	12.4	12.4	19.0	19.0	19.0	19.0	20.2	20.2	32.5	32.5
	+427°C	X	X	5.5	5.5	5.5	16.9	16.9	19.0	19.0	16.9	16.9	27.1	27.1
	+538°C	X	X	1.4	1.4	1.4	16.3	16.3	19.0	19.0	16.3	16.3	25.2	25.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	10.0	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.5 barg
Types 8150 and 8190	0.5 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - METRIC UNITS

G ORIFICE

3.25 sq.cm API Effective Orifice Area[1] – 3.53 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		40xGx80[6]			40xGx80[6]				40xGx80[6]			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-29 to +38°C	X	X	10.0	16.0	16.0	19.7	19.7	19.7	19.7	25.0	25.0	40.0	40.0
	+232°C	X	X	9.8	12.8	12.8	19.7	19.7	19.7	19.7	24.6	24.6	39.4	39.4
	+343°C	X	X	8.1	8.6	8.6	19.7	19.7	19.7	19.7	20.4	20.4	32.7	32.7
	+427°C	X	X	5.5	5.5	5.5	13.9	13.9	19.7	19.7	13.9	13.9	22.3	22.3
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	10.0	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	+427°C	X	X	–	–	–	–	–	–	–	21.7	21.7	34.8	34.8
	+538°C	X	X	–	–	–	–	–	–	–	7.6	7.6	12.2	12.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	–	–	–	–	–	–	–	10.0	15.9	10.0	15.9

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-268 to -60°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	-59 to -30°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	-29 to +38°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	+232°C	X	X	8.0	12.4	12.4	19.0	19.0	19.0	19.0	20.2	20.2	32.5	32.5
	+427°C	X	X	5.5	5.5	5.5	16.9	16.9	19.0	19.0	16.9	16.9	27.1	27.1
	+538°C	X	X	1.4	1.4	1.4	16.3	16.3	19.0	19.0	16.3	16.3	25.2	25.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	10.0	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Optional DN65 outlet available. Please add the 'Z' prefix in front of the valve designation.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.6 barg
Types 8150 and 8190	0.6 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - METRIC UNITS

H ORIFICE

5.06 sq.cm API Effective Orifice Area[1] – 5.51 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		40xHx80			40xHx80				50xHx80			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-29 to +38°C	X	X	10.0	16.0	16.0	19.7	19.7	19.7	19.7	25.0	25.0	40.0	40.0
	+232°C	X	X	9.8	12.8	12.8	19.7	19.7	19.7	19.7	24.6	24.6	39.4	39.4
	+343°C	X	X	8.1	8.6	8.6	19.7	19.7	19.7	19.7	20.4	20.4	32.7	32.7
	+427°C	X	X	5.5	5.5	5.5	13.9	13.9	19.7	19.7	13.9	13.9	22.3	22.3
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	10.0	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	+427°C	X	X	–	–	–	–	–	–	–	21.7	21.7	34.8	34.8
	+538°C	X	X	–	–	–	–	–	–	–	7.6	7.6	12.2	12.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	–	–	–	–	–	–	–	10.0	15.9	10.0	15.9

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-268 to -60°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	-59 to -30°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	-29 to +38°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	+232°C	X	X	8.0	12.4	12.4	19.0	19.0	19.0	19.0	20.2	20.2	32.5	32.5
	+427°C	X	X	5.5	5.5	5.5	16.9	16.9	19.0	19.0	16.9	16.9	27.1	27.1
	+538°C	X	X	1.4	1.4	1.4	16.3	16.3	19.0	19.0	16.3	16.3	25.2	25.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	10.0	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.5 barg
Types 8150 and 8190	0.5 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - METRIC UNITS

J ORIFICE

8.30 sq.cm API Effective Orifice Area[1] – 9.03 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		50xJx80			50xJx80				80xJx100[6]			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-29 to +38°C	X	X	10.0	16.0	16.0	19.7	19.7	19.7	19.7	25.0	25.0	40.0	40.0
	+232°C	X	X	9.8	12.8	12.8	19.7	19.7	19.7	19.7	24.6	24.6	39.4	39.4
	+343°C	X	X	8.1	8.6	8.6	19.7	19.7	19.7	19.7	20.4	20.4	32.7	32.7
	+427°C	X	X	5.5	5.5	5.5	13.9	13.9	19.7	19.7	13.9	13.9	22.3	22.3
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	10.0	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	+427°C	X	X	–	–	–	–	–	–	–	21.7	21.7	34.8	34.8
	+538°C	X	X	–	–	–	–	–	–	–	7.6	7.6	12.2	12.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	–	–	–	–	–	–	–	10.0	15.9	10.0	15.9

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-268 to -60°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	34.5	34.5
	-59 to -30°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	-29 to +38°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	+232°C	X	X	8.0	12.4	12.4	19.0	19.0	19.0	19.0	20.2	20.2	32.5	32.5
	+427°C	X	X	5.5	5.5	5.5	16.9	16.9	19.0	19.0	16.9	16.9	27.1	27.1
	+538°C	X	X	1.4	1.4	1.4	16.3	16.3	19.0	19.0	16.3	16.3	25.2	25.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	10.0	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Optional DN65 inlet available. Please add the 'Z' prefix in front of the valve designation.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.4 barg
Types 8150 and 8190	0.4 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - METRIC UNITS

K ORIFICE

11.86 sq.cm API Effective Orifice Area[1] – 12.87 sq.cm Actual Orifice Area[2]

		8--1			8--2[3]				8--3			
VALVE SIZE	**INLET DN x ORIFICE x OUTLET DN**	80xKx100			80xKx100				80xKx100			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-29 to +38°C	X	X	10.0	16.0	16.0	19.7	19.7	19.7	19.7	25.0	25.0	40.0	40.0
	+232°C	X	X	9.8	12.8	12.8	19.7	19.7	19.7	19.7	24.6	24.6	39.4	39.4
	+343°C	X	X	8.1	8.6	8.6	19.7	19.7	19.7	19.7	20.4	20.4	32.7	32.7
	+427°C	X	X	5.5	5.5	5.5	13.9	13.9	19.7	19.7	13.9	13.9	22.3	22.3
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	10.0	10.0	10.3	10.0	10.3	10.0	10.3	10.0	10.3	10.0	10.3

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	+427°C	X	X	–	–	–	–	–	–	–	21.7	21.7	34.8	34.8
	+538°C	X	X	–	–	–	–	–	–	–	7.6	7.6	12.2	12.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	–	–	–	–	–	–	–	10.0	15.9	10.0	15.9

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-268 to -60°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	36.2	36.2
	-59 to -30°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	-29 to +38°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	+232°C	X	X	8.0	12.4	12.4	19.0	19.0	19.0	19.0	20.2	20.2	32.5	32.5
	+427°C	X	X	5.5	5.5	5.5	16.9	16.9	19.0	19.0	16.9	16.9	27.1	27.1
	+538°C	X	X	1.4	1.4	1.4	16.3	16.3	19.0	19.0	16.3	16.3	25.2	25.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	10.0	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9	10.0	15.9

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.5 barg
Types 8150 and 8190	0.5 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - METRIC UNITS

L ORIFICE

18.41 sq.cm API Effective Orifice Area[1] – 19.95 sq.cm Actual Orifice Area[2]w

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		80xLx100			80xLx100				100xLx125			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-29 to +38°C	X	X	10.0	16.0	16.0	19.7	19.7	19.7	19.7	25.0	25.0	40.0	40.0
	+232°C	X	X	9.8	12.8	12.8	19.7	19.7	19.7	19.7	24.6	24.6	39.4	39.4
	+343°C	X	X	8.1	8.6	8.6	19.7	19.7	19.7	19.7	20.4	20.4	32.7	32.7
	+427°C	X	X	5.5	5.5	5.5	13.9	13.9	19.7	19.7	13.9	13.9	22.3	22.3
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	6.9	6.9	6.9	6.9	6.9	6.9	6.9	10.0	11.7	10.0	11.7

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	+427°C	X	X	–	–	–	–	–	–	–	21.7	21.7	34.8	34.8
	+538°C	X	X	–	–	–	–	–	–	–	7.6	7.6	12.2	12.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	–	–	–	–	–	–	–	10.0	11.7	10.0	11.7

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-268 to -60°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	36.9	36.9
	-59 to -30°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	-29 to +38°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	+232°C	X	X	8.0	12.4	12.4	19.0	19.0	19.0	19.0	20.2	20.2	32.5	32.5
	+427°C	X	X	5.5	5.5	5.5	16.9	16.9	19.0	19.0	16.9	16.9	27.1	27.1
	+538°C	X	X	1.4	1.4	1.4	16.3	16.3	19.0	19.0	16.3	16.3	25.2	25.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	6.9	6.9	6.9	6.9	6.9	6.9	6.9	10.0	11.7	10.0	11.7

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.4 barg
Types 8150 and 8190	0.4 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

M ORIFICE
23.23 sq.cm API Effective Orifice Area[1] – 25.24 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		100xMx125			100xMx125				100xMx125			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-29 to +38°C	X	X	10.0	16.0	16.0	19.7	19.7	19.7	19.7	25.0	25.0	40.0	40.0
	+232°C	X	X	9.8	12.8	12.8	19.7	19.7	19.7	19.7	24.6	24.6	39.4	39.4
	+343°C	X	X	8.1	8.6	8.6	19.7	19.7	19.7	19.7	20.4	20.4	32.7	32.7
	+427°C	X	X	5.5	5.5	5.5	13.9	13.9	19.7	19.7	13.9	13.9	22.3	22.3
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	5.5	5.5	5.5	5.5	5.5	5.5	5.5	10.0	11.0	10.0	11.0

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	+427°C	X	X	–	–	–	–	–	–	–	21.7	21.7	34.8	34.8
	+538°C	X	X	–	–	–	–	–	–	–	7.6	7.6	12.2	12.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	–	–	–	–	–	–	–	10.0	11.0	10.0	11.0

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-268 to -60°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	36.2	36.2
	-59 to -30°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	-29 to +38°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	+232°C	X	X	8.0	12.4	12.4	19.0	19.0	19.0	19.0	20.2	20.2	32.5	32.5
	+427°C	X	X	5.5	5.5	5.5	16.9	16.9	19.0	19.0	16.9	16.9	27.1	27.1
	+538°C	X	X	1.4	1.4	1.4	16.3	16.3	19.0	19.0	16.3	16.3	25.2	25.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	5.5	5.5	5.5	5.5	5.5	5.5	5.5	10.0	11.0	10.0	11.0

NOTES
1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.4 barg
Types 8150 and 8190	0.4 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE
** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - METRIC UNITS

N ORIFICE

28.00 sq.cm API Effective Orifice Area[1] – 30.29 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		100xNx125			100xNx125				100xNx125			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-29 to +38°C	X	X	10.0	16.0	16.0	19.7	19.7	19.7	19.7	25.0	25.0	40.0	40.0
	+232°C	X	X	9.8	12.8	12.8	19.7	19.7	19.7	19.7	24.6	24.6	39.4	39.4
	+343°C	X	X	8.1	8.6	8.6	19.7	19.7	19.7	19.7	20.4	20.4	32.7	32.7
	+427°C	X	X	5.5	5.5	5.5	13.9	13.9	19.7	19.7	13.9	13.9	22.3	22.3
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	5.5	5.5	5.5	5.5	5.5	5.5	5.5	10.0	11.0	10.0	11.0

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	+427°C	X	X	–	–	–	–	–	–	–	21.7	21.7	34.8	34.8
	+538°C	X	X	–	–	–	–	–	–	–	7.6	7.6	12.2	12.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	–	–	–	–	–	–	–	10.0	11.0	10.0	11.0

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-268 to -60°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	31.0	31.0
	-59 to -30°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	-29 to +38°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	40.0	40.0
	+232°C	X	X	8.0	12.4	12.4	19.0	19.0	19.0	19.0	20.2	20.2	32.5	32.5
	+427°C	X	X	5.5	5.5	5.5	16.9	16.9	19.0	19.0	16.9	16.9	27.1	27.1
	+538°C	X	X	1.4	1.4	1.4	16.3	16.3	19.0	19.0	16.3	16.3	25.2	25.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	5.5	5.5	5.5	5.5	5.5	5.5	5.5	10.0	11.0	10.0	11.0

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.5 barg
Types 8150 and 8190	0.5 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - METRIC UNITS

P ORIFICE

41.16 sq.cm API Effective Orifice Area[1] – 44.55 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		100xPx125			100xPx125				100xPx125			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-29 to +38°C	X	X	10.0	16.0	16.0	19.7	19.7	19.7	19.7	25.0	25.0	36.2	36.2
	+232°C	X	X	9.8	12.8	12.8	19.7	19.7	19.7	19.7	24.6	24.6	36.2	36.2
	+343°C	X	X	8.1	8.6	8.6	19.7	19.7	19.7	19.7	20.4	20.4	32.7	32.7
	+427°C	X	X	5.5	5.5	5.5	13.9	13.9	19.7	19.7	13.9	13.9	22.3	22.3
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	5.5	5.5	5.5	5.5	5.5	5.5	5.5	10.0	10.3	10.0	10.3

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	+427°C	X	X	–	–	–	–	–	–	–	21.7	21.7	34.8	34.8
	+538°C	X	X	–	–	–	–	–	–	–	7.6	7.6	12.2	12.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	–	–	–	–	–	–	–	10.0	11.0	10.0	11.0

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-268 to -60°C	X	X	10.0	12.1	12.1	12.1	12.1	12.1	12.1	20.7	20.7	20.7	20.7
	-59 to -30°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	36.2	36.2
	-29 to +38°C	X	X	10.0	16.0	16.0	19.0	19.0	19.0	19.0	25.0	25.0	36.2	36.2
	+232°C	X	X	8.0	12.4	12.4	19.0	19.0	19.0	19.0	20.2	20.2	32.5	32.5
	+427°C	X	X	5.5	5.5	5.5	16.9	16.9	19.0	19.0	16.9	16.9	27.1	27.1
	+538°C	X	X	1.4	1.4	1.4	16.3	16.3	19.0	19.0	16.3	16.3	25.2	25.2
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	10.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0	10.0	16.0
	Balanced bellows design	-	X	5.5	5.5	5.5	5.5	5.5	5.5	5.5	10.0	11.0	10.0	11.0

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.5 barg
Types 8150 and 8190	0.5 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

Q ORIFICE

71.29 sq.cm API Effective Orifice Area[1] – 76.99 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		125xQx200			125xQx200				125xQx200			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-29 to +38°C	X	X	10.0	11.4	11.4	11.4	11.4	11.4	11.4	20.7	20.7	20.7	20.7
	+232°C	X	X	9.8	11.4	11.4	11.4	11.4	11.4	11.4	20.7	20.7	20.7	20.7
	+343°C	X	X	8.1	8.6	8.6	11.4	11.4	11.4	11.4	20.4	20.4	20.7	20.7
	+427°C	X	X	5.5	5.5	5.5	11.4	11.4	11.4	11.4	13.9	13.9	20.7	20.7
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
	Balanced bellows design	-	X	4.8	4.8	4.8	4.8	4.8	4.8	4.8	7.9	7.9	7.9	7.9

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	+427°C	X	X	–	–	–	–	–	–	–	11.4	11.4	11.4	11.4
	+538°C	X	X	–	–	–	–	–	–	–	7.6	7.6	11.4	11.4
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	7.9	7.9	7.9	7.9
	Balanced bellows design	-	X	–	–	–	–	–	–	–	7.9	7.9	7.9	7.9

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-268 to -60°C	X	X	10.0	11.4	11.4	11.4	11.4	11.4	11.4	17.2	17.2	17.2	17.2
	-59 to -30°C	X	X	10.0	11.4	11.4	11.4	11.4	11.4	11.4	20.7	20.7	20.7	20.7
	-29 to +38°C	X	X	10.0	11.4	11.4	11.4	11.4	11.4	11.4	20.7	20.7	20.7	20.7
	+232°C	X	X	8.0	11.4	11.4	11.4	11.4	11.4	11.4	20.2	20.2	20.7	20.7
	+427°C	X	X	5.5	5.5	5.5	11.4	11.4	11.4	11.4	16.9	16.9	20.7	20.7
	+538°C	X	X	1.4	1.4	1.4	11.4	11.4	11.4	11.4	16.3	16.3	20.7	20.7
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
	Balanced bellows design	-	X	4.8	4.8	4.8	4.8	4.8	4.8	4.8	7.9	7.9	7.9	7.9

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.5 barg
Types 8150 and 8190	0.5 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

R ORIFICE
103.23 sq.cm API Effective Orifice Area[1] – 108.25 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		125xRx200			125xRx200				125xR250			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-29 to +38°C	X	X	6.9	6.9	6.9	6.9	6.9	6.9	6.9	15.9	15.9	15.9	15.9
	+232°C	X	X	6.9	6.9	6.9	6.9	6.9	6.9	6.9	15.9	15.9	15.9	15.9
	+343°C	X	X	6.9	6.9	6.9	6.9	6.9	6.9	6.9	15.9	15.9	15.9	15.9
	+427°C	X	X	5.5	5.5	5.5	6.9	6.9	6.9	6.9	13.9	13.9	15.9	15.9
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	4.1	4.1	4.1	4.1	4.1	4.1	4.1	6.9	6.9	6.9	6.9
	Balanced bellows design	-	X	4.1	4.1	4.1	4.1	4.1	4.1	4.1	6.9	6.9	6.9	6.9

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	+427°C	X	X	–	–	–	–	–	–	–	6.9	6.9	6.9	6.9
	+538°C	X	X	–	–	–	–	–	–	–	6.9	6.9	6.9	6.9
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	6.9	6.9	6.9	6.9
	Balanced bellows design	-	X	–	–	–	–	–	–	–	6.9	6.9	6.9	6.9

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-268 to -60°C	X	X	3.8	3.8	3.8	3.8	3.8	3.8	3.8	10.3	10.3	10.3	10.3
	-59 to -30°C	X	X	6.9	6.9	6.9	6.9	6.9	6.9	6.9	15.9	15.9	15.9	15.9
	-29 to +38°C	X	X	6.9	6.9	6.9	6.9	6.9	6.9	6.9	15.9	15.9	15.9	15.9
	+232°C	X	X	6.9	6.9	6.9	6.9	6.9	6.9	6.9	15.9	15.9	15.9	15.9
	+427°C	X	X	5.5	5.5	5.5	6.9	6.9	6.9	6.9	15.9	15.9	15.9	15.9
	+538°C	X	X	1.4	1.4	1.4	6.9	6.9	6.9	6.9	15.9	15.9	15.9	15.9
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	4.1	4.1	4.1	4.1	4.1	4.1	4.1	6.9	6.9	6.9	6.9
	Balanced bellows design	-	X	4.1	4.1	4.1	4.1	4.1	4.1	4.1	6.9	6.9	6.9	6.9

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.5 barg
Types 8150 and 8190	0.5 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE

** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

T ORIFICE
167.74 sq.cm API Effective Orifice Area[1] – 182.41 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		200xTx250			200xTx250				200xTx250			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-29 to +38°C	X	X	4.5	4.5	4.5	4.5	4.5	4.5	4.5	8.3	8.3	8.3	8.3
	+232°C	X	X	4.5	4.5	4.5	4.5	4.5	4.5	4.5	8.3	8.3	8.3	8.3
	+343°C	X	X	4.5	4.5	4.5	4.5	4.5	4.5	4.5	8.3	8.3	8.3	8.3
	+427°C	X	X	4.5	4.5	4.5	4.5	4.5	4.5	4.5	8.3	8.3	8.3	8.3
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	2.1	2.1	2.1	2.1	2.1	2.1	2.1	4.1	4.1	4.1	4.1
	Balanced bellows design	-	X	2.1	2.1	2.1	2.1	2.1	2.1	2.1	4.1	4.1	4.1	4.1

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	+427°C	X	X	–	–	–	–	–	–	–	8.3	8.3	8.3	8.3
	+538°C	X	X	–	–	–	–	–	–	–	6.9	6.9	6.9	6.9
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	4.1	4.1	4.1	4.1
	Balanced bellows design	-	X	–	–	–	–	–	–	–	4.1	4.1	4.1	4.1

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg[4]	-268 to -60°C	X	X	3.4	3.4	3.4	3.4	3.4	3.4	3.4	4.5	4.5	4.5	4.5
	-59 to -30°C	X	X	4.5	4.5	4.5	4.5	4.5	4.5	4.5	8.3	8.3	8.3	8.3
	-29 to +38°C	X	X	4.5	4.5	4.5	4.5	4.5	4.5	4.5	8.3	8.3	8.3	8.3
	+232°C	X	X	4.5	4.5	4.5	4.5	4.5	4.5	4.5	8.3	8.3	8.3	8.3
	+427°C	X	X	4.5	4.5	4.5	4.5	4.5	4.5	4.5	8.3	8.3	8.3	8.3
	+538°C	X	X	1.4	1.4	1.4	4.5	4.5	4.5	4.5	8.3	8.3	8.3	8.3
Back pressure limit at +38°C, barg[4][5]	Conventional design	X	-	2.1	2.1	2.1	2.1	2.1	2.1	2.1	4.1	4.1	4.1	4.1
	Balanced bellows design	-	X	2.1	2.1	2.1	2.1	2.1	2.1	2.1	4.1	4.1	4.1	4.1

NOTES
1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +38°C should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +38°C, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	0.7 barg
Types 8150 and 8190	0.7 barg
Type 8200	1 barg
Type 8290	1 barg

NOTE
** Valves set below 1.03 barg cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 1.03 barg. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - METRIC UNITS

V ORIFICE

264 sq.cm API Effective Orifice Area[1] – 291.00 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		250xVx350			250xVx350				250xVx350			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, barg	-29 to +38°C	X	X	5.2	5.2	5.2	12.1	12.1	12.1	12.1	–	–	–	–
	+232°C	X	X	5.2	5.2	5.2	12.1	12.1	12.1	12.1	–	–	–	–
	+343°C	X	X	5.2	5.2	5.2	12.1	12.1	12.1	12.1	–	–	–	–
	+427°C	X	X	5.2	5.2	5.2	12.1	12.1	12.1	12.1	–	–	–	–
Back pressure limit at +38°C, barg[4]	Conventional design	X	-	2.0	2.0	2.0	2.0	2.0	2.0	2.0	–	–	–	–
	Balanced bellows design	-	X	2.0	2.0	2.0	2.0	2.0	2.0	2.0	–	–	–	–

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, barg	+427°C	X	X	–	–	–	–	–	–	–	12.1	12.1	12.1	12.1
	+538°C	X	X	–	–	–	–	–	–	–	7.6	7.6	12.1	12.1
Back pressure limit at +38°C, barg[4]	Conventional design	X	-	–	–	–	–	–	–	–	4.0	4.0	4.0	4.0
	Balanced bellows design	-	X	–	–	–	–	–	–	–	4.0	4.0	4.0	4.0

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of 38°C, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	2.8 barg
Types 8150 and 8190	2.8 barg

NOTE

** Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - METRIC UNITS

W ORIFICE

393 sq.cm API Effective Orifice Area[1] – 433.70 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		300xWx300x2			300xWx300x2				300xWx300x2			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
	-29 to +38°C	X	X	5.2	5.2	5.2	10.0	10.0	10.0	10.0	–	–	–	–
Maximum set pressure,	+232°C	X	X	5.2	5.2	5.2	10.0	10.0	10.0	10.0	–	–	–	–
barg	+343°C	X	X	5.2	5.2	5.2	10.0	10.0	10.0	10.0	–	–	–	–
	+427°C	X	X	5.2	5.2	5.2	10.0	10.0	10.0	10.0	–	–	–	–
Back pressure limit at	Conventional design	X	-	1.0	1.0	1.0	2.0	2.0	2.0	2.0	–	–	–	–
+38°C, barg[4]	Balanced bellows design	-	X	1.0	1.0	1.0	2.0	2.0	2.0	2.0	–	–	–	–

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure,	+427°C	X	X	–	–	–	–	–	–	–	10.0	10.0	10.0	10.0
barg	+538°C	X	X	–	–	–	–	–	–	–	7.6	7.6	10.0	10.0
Back pressure limit at	Conventional design	X	-	–	–	–	–	–	–	–	2.0	2.0	2.0	2.0
+38°C, barg[4]	Balanced bellows design	-	X	–	–	–	–	–	–	–	2.0	2.0	2.0	2.0

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of 38°C, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	2.8 barg
Types 8150 and 8190	2.8 barg

NOTE

** Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - US UNITS

D ORIFICE

0.110 sq.in. API Effective Orifice Area[1] – 0.1219 sq.in. Actual Orifice Area[2]

		8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
VALVE SIZE	**INLET NPS x ORIFICE x OUTLET NPS**	**1D2**	**1D2**	**1D2**	**1D2**	**1.5D2**	**1.5D2**	**1.5D3[7]**
Standard connections	Inlet flange rating class	150	300	300	600	900	1500	2500
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	300	300	300

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, psig[4]	-20 to +100°F	X	X	285	285	740	1480	2220	3705	6000
	+450°F	X	X	185	285	620	1235	1855	3090	5150
	+650°F	X	X	125	285	550	1100	1650	2745	4575
	+800°F	X	X	80	285	410	825	1235	2055	3430
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	285	285	285	285	600	600	740
	Balanced bellows design	-	X	230	230	230	230	500	500	500

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, psig[4][6]	-55 to +100°F	X	X	265	265	695	1395	2090	3480	5805
	+400°F	X	X	200	265	615	1230	1845	3075	5125
	+650°F	X	X	125	265	535	1065	1600	2665	4440
Back pressure limit at +100°F, psig[4][5][6]	Conventional design	X	-	265	265	265	265	600	600	695
	Balanced bellows design	-	X	230	230	230	230	500	500	500

BODY MATERIAL: ASME SA217 Gr. WC6		812-	815-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, psig[4]	+800°F	X	X	–	–	510	1015	1525	2540	4230
	+1000°F	X	X	–	–	215	430	650	1080	1800
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	290	290	600	600	750
	Balanced bellows design	-	X	–	–	230	230	500	500	500

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, psig[4]	-450 to -76°F	X	X	275	275	720	1440	2160	3600	4000
	-75 to -21°F	X	X	275	275	720	1440	2160	3600	6000
	-20 to +100°F	X	X	275	275	720	1440	2160	3600	6000
	+450°F	X	X	180	275	495	990	1485	2480	4130
	+800°F	X	X	80	275	420	845	1265	2110	3520
	+1000°F	X	X	20	275	365	725	1090	1820	3030
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	275	275	275	275	600	600	720
	Balanced bellows design	-	X	230	230	230	230	500	500	500

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3C if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).
7. Optional 2.5" outlet available. Please add the 'Z' prefix in front of the valve designation.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	7.25 psig
Types 8150 and 8190	18.85 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - US UNITS

E ORIFICE

0.196 sq.in. API Effective Orifice Area[1] – 0.2157 sq.in. Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1 1E2	8--2[3] 1E2	8--3 1E2	8--4 1E2	8--6 1.5E2	8--7 1.5E2	8--8 1.5E3[7]
Standard connections	Inlet flange rating class	150	300	300	600	900	1500	2500
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	300	300	300

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, psig[4]	-20 to +100°F	X	X	285	285	740	1480	2220	3705	6000
	+450°F	X	X	185	285	620	1235	1855	3090	5150
	+650°F	X	X	125	285	550	1100	1650	2745	4575
	+800°F	X	X	80	285	410	825	1235	2055	3430
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	285	285	285	285	600	600	740
	Balanced bellows design	-	X	230	230	230	230	500	500	500

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, psig[4][6]	-55 to +100°F	X	X	265	265	695	1395	2090	3480	5805
	+400°F	X	X	200	265	615	1230	1845	3075	5125
	+650°F	X	X	125	265	535	1065	1600	2665	4440
Back pressure limit at +100°F, psig[4][5][6]	Conventional design	X	-	265	265	265	265	600	600	695
	Balanced bellows design	-	X	230	230	230	230	500	500	500

BODY MATERIAL: ASME SA217 Gr. WC6		812–	815–	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, psig[4]	+800°F	X	X	–	–	510	1015	1525	2540	4230
	+1000°F	X	X	–	–	215	430	650	1080	1800
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	290	290	600	600	750
	Balanced bellows design	-	X	–	–	230	230	500	500	500

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, psig[4]	-450 to -76°F	X	X	275	275	720	1440	2160	3600	4000
	-75 to -21°F	X	X	275	275	720	1440	2160	3600	6000
	-20 to +100°F	X	X	275	275	720	1440	2160	3600	6000
	+450°F	X	X	180	275	495	990	1485	2480	4130
	+800°F	X	X	80	275	420	845	1265	2110	3520
	+1000°F	X	X	20	275	365	725	1090	1820	3030
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	275	275	275	275	600	600	720
	Balanced bellows design	-	X	230	230	230	230	500	500	500

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3C if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).
7. Optional 2.5" outlet available. Please add the 'Z' prefix in front of the valve designation.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	8.7 psig
Types 8150 and 8190	18.85 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - US UNITS

F ORIFICE

0.307 sq.in. API Effective Orifice Area[1] – 0.3318 sq.in. Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
		1,5F2	1,5F2	1,5F2	1,5F2	1,5F3[7]	1,5F3[7]	1,5F3[7]
Standard connections	Inlet flange rating class	150	300	300	600	900	1500	2500
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	300	300	300

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, psig[4]	-20 to +100°F	X	X	285	285	740	1480	2220	3705	5000
	+450°F	X	X	185	285	620	1235	1855	3090	5000
	+650°F	X	X	125	285	550	1100	1650	2745	4575
	+800°F	X	X	80	285	410	825	1235	2055	3430
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	285	285	285	285	740	740	740
	Balanced bellows design	-	X	230	230	230	230	500	500	500

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, psig[4][6]	-55 to +100°F	X	X	265	265	695	1395	2090	3480	5000
	+400°F	X	X	200	265	615	1230	1845	3075	5000
	+650°F	X	X	125	265	535	1065	1600	2665	4440
Back pressure limit at +100°F, psig[4][5][6]	Conventional design	X	-	265	265	265	265	695	695	695
	Balanced bellows design	-	X	230	230	230	230	500	500	500

BODY MATERIAL: ASME SA217 Gr. WC6		812–	815–	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, psig[4]	+800°F	X	X	–	–	510	1015	1525	2540	4230
	+1000°F	X	X	–	–	215	430	650	1080	1800
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	290	290	750	750	750
	Balanced bellows design	-	X	–	–	230	230	500	500	500

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, psig[4]	-450 to -76°F	X	X	275	275	720	1440	2160	2200	3400
	-75 to -21°F	X	X	275	275	720	1440	2160	3600	5000
	-20 to +100°F	X	X	275	275	720	1440	2160	3600	5000
	+450°F	X	X	180	275	495	990	1485	2480	4130
	+800°F	X	X	80	275	420	845	1265	2110	3520
	+1000°F	X	X	20	275	365	725	1090	1820	3030
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	275	275	275	275	720	720	720
	Balanced bellows design	-	X	230	230	230	230	500	500	500

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3C if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).
7. Optional 2.5" outlet available. Please add the 'Z' prefix in front of the valve designation.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	7.25 psig
Types 8150 and 8190	7.25 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - US UNITS

G ORIFICE

0.503 sq.in. API Effective Orifice Area[1] – 0.5476 sq.in. Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1 1,5G3[7]	8--2[3] 1,5G3[7]	8--3 1,5G3[7]	8--4 1,5G3[7]	8--6 1,5G3[7]	8--7 2G3	8--8 2G3
Standard connections	Inlet flange rating class	150	300	300	600	900	1500	2500
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	300	300	300

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, psig[4]	-20 to +100°F	X	X	285	285	740	1480	2220	3705	3705
	+450°F	X	X	185	285	620	1235	1855	3090	3705
	+650°F	X	X	125	285	550	1100	1650	2745	3705
	+800°F	X	X	80	285	410	825	1235	2055	3430
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	285	285	285	285	740	740	740
	Balanced bellows design	-	X	230	230	230	230	470	470	470

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, psig[4][6]	-55 to +100°F	X	X	265	265	695	1395	2090	3480	3705
	+400°F	X	X	200	265	615	1230	1845	3075	3705
	+650°F	X	X	125	265	535	1065	1600	2665	3705
Back pressure limit at +100°F, psig[4][5][6]	Conventional design	X	-	265	265	265	265	695	695	695
	Balanced bellows design	-	X	230	230	230	230	470	470	470

BODY MATERIAL: ASME SA217 Gr. WC6		812-	815-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, psig[4]	+800°F	X	X	–	–	510	1015	1525	2540	3705
	+1000°F	X	X	–	–	215	430	650	1080	1800
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	290	290	750	750	750
	Balanced bellows design	-	X	–	–	230	230	500	500	500

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7	8--8
Maximum set pressure, psig[4]	-450 to -76°F	X	X	275	275	720	1440	2160	2450	2600
	-75 to -21°F	X	X	275	275	720	1440	2160	3600	3600
	-20 to +100°F	X	X	275	275	720	1440	2160	3600	3600
	+450°F	X	X	180	275	495	990	1485	2480	3600
	+800°F	X	X	80	275	420	845	1265	2110	3520
	+1000°F	X	X	20	275	365	725	1090	1820	3030
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	275	275	275	275	720	720	720
	Balanced bellows design	-	X	230	230	230	230	500	500	500

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3C if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).
7. Optional 2.5" outlet available. Please add the 'Z' prefix in front of the valve designation.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	8.7 psig
Types 8150 and 8190	8.7 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - US UNITS

H ORIFICE

0.785 sq.in. API Effective Orifice Area[1] – 0.8544 sq.in. Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1 1,5H3	8--2[3] 1,5H3	8--3 2H3	8--4 2H3	8--6 2H3	8--7 2H3
Standard connections	Inlet flange rating class	150	300	300	600	900	1500
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	150	300

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, psig[4]	-20 to +100°F	X	X	285	285	740	1480	2220	2750
	+450°F	X	X	185	285	620	1235	1855	2750
	+650°F	X	X	125	285	550	1100	1650	2685
	+800°F	X	X	80	285	410	825	1235	2055
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	285	285	285	285	285	740
	Balanced bellows design	-	X	230	230	230	230	230	415

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, psig[4][6]	-55 to +100°F	X	X	265	265	695	1395	2090	2750
	+400°F	X	X	200	265	615	1230	1845	2750
	+650°F	X	X	125	265	535	1065	1600	2665
Back pressure limit at +100°F, psig[4][5][6]	Conventional design	X		265	265	265	265	265	695
	Balanced bellows design		X	230	230	230	230	230	415

BODY MATERIAL: ASME SA217 Gr. WC6		812-	815-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, psig[4]	+800°F	X	X	–	–	510	1015	1525	2540
	+1000°F	X	X	–	–	215	430	650	1080
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	290	290	290	750
	Balanced bellows design	-	X	–	–	230	230	230	415

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, psig[4]	-450 to -76°F	X	X	275	275	720	1440	1485	1600
	-75 to -21°F	X	X	275	275	720	1440	2160	2750
	-20 to +100°F	X	X	275	275	720	1440	2160	2750
	+450°F	X	X	180	275	495	990	1485	2480
	+800°F	X	X	80	275	420	845	1265	2110
	+1000°F	X	X	20	275	365	725	1090	1820
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	275	275	275	275	275	600
	Balanced bellows design	-	X	230	230	230	230	230	415

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3C if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	7.25 psig
Types 8150 and 8190	7.25 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - US UNITS

J ORIFICE

1.287 sq.in. API Effective Orifice Area[1] – 1.3998 sq.in. Actual Orifice Area[2]

		8--1	8--2[3]	8--3	8--4	8--6	8--7
VALVE SIZE	**INLET NPS x ORIFICE x OUTLET NPS**	**2J3**	**2J3**	**3J4[7]**	**3J4[7]**	**3J4**	**3J4**
Standard connections	Inlet flange rating class	150	300	300	600	900	1500
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	150	300

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, psig[4]	-20 to +100°F	X	X	285	285	740	1480	2220	2700
	+450°F	X	X	185	285	620	1235	1855	2700
	+650°F	X	X	125	285	550	1100	1650	2685
	+800°F	X	X	80	285	410	825	1235	2055
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	285	285	285	285	285	600
	Balanced bellows design	-	X	230	230	230	230	230	230

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, psig[4][6]	-55 to +100°F	X	X	265	265	695	1395	2090	2700
	+400°F	X	X	200	265	615	1230	1845	2700
	+650°F	X	X	125	265	535	1065	1600	2665
Back pressure limit at +100°F, psig[4][5][6]	Conventional design	X	-	265	265	265	265	265	600
	Balanced bellows design	-	X	230	230	230	230	230	230

BODY MATERIAL: ASME SA217 Gr. WC6		812–	815–	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, psig[4]	+800°F	X	X	–	–	510	1015	1525	2540
	+1000°F	X	X	–	–	215	430	650	1080
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	290	290	290	600
	Balanced bellows design	-	X	–	–	230	230	230	230

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, psig[4]	-450 to -76°F	X	X	275	275	500	625	800	800
	-75 to -21°F	X	X	275	275	720	1440	2160	2750
	-20 to +100°F	X	X	275	275	720	1440	2160	2750
	+450°F	X	X	180	275	495	990	1485	2480
	+800°F	X	X	80	275	420	845	1265	2110
	+1000°F	X	X	20	275	365	725	1090	1820
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	275	275	275	275	275	600
	Balanced bellows design	-	X	230	230	230	230	230	230

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3C if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).
7. Optional 2.5" inlet available. Please add the 'Z' prefix in front of the valve designation.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	5.8 psig
Types 8150 and 8190	5.8 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - US UNITS

K ORIFICE

1.838 sq.in. API Effective Orifice Area[1] – 1.9956 sq.in. Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1	8--2[3]	8--3	8--4	8--6	8--7
		3K4	3K4	3K4	3K4	3K6	3K6
Standard connections	Inlet flange rating class	150	300	300	600	900	1500
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	150	300

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, psig[4]	-20 to +100°F	X	X	285	285	740	1480	2220	2220
	+450°F	X	X	185	285	620	1235	1855	2220
	+650°F	X	X	125	285	550	1100	1610	2220
	+800°F	X	X	80	285	410	825	1235	2055
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	285	285	285	285	285	600
	Balanced bellows design	-	X	150	150	150	200	200	200

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, psig[4][6]	-55 to +100°F	X	X	265	265	695	1395	2090	2220
	+400°F	X	X	200	200	615	1230	1845	2220
	+650°F	X	X	125	125	535	1065	1600	2220
Back pressure limit at +100°F, psig[4][5][6]	Conventional design	X	-	265	265	265	265	265	600
	Balanced bellows design	-	X	150	150	150	200	200	200

BODY MATERIAL: ASME SA217 Gr. WC6		812–	815–	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, psig[4]	+800°F	X	X	–	–	510	1015	1525	2220
	+1000°F	X	X	–	–	215	430	650	1080
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	290	290	290	600
	Balanced bellows design	-	X	–	–	230	230	230	230

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6	8--7
Maximum set pressure, psig[4]	-450 to -76°F	X	X	275	275	525	600	600	750
	-75 to -21°F	X	X	275	275	720	1440	2160	2220
	-20 to +100°F	X	X	275	275	720	1440	2160	2220
	+450°F	X	X	180	275	495	990	1485	2220
	+800°F	X	X	80	275	420	845	1265	2110
	+1000°F	X	X	20	275	365	725	1090	1820
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	275	275	275	275	275	600
	Balanced bellows design	-	X	230	230	230	230	230	230

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3C if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	7.25 psig
Types 8150 and 8190	7.25 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - US UNITS

L ORIFICE

2.853 sq.in. API Effective Orifice Area[1] – 3.0915 sq.in. Actual Orifice Area[2]

		8--1	8--2[3]	8--3	8--4	8--6	8--7
VALVE SIZE	**INLET NPS x ORIFICE x OUTLET NPS**	**3L4**	**3L4**	**4L6**	**4L6**	**4L6**	**4L6**
Standard connections	Inlet flange rating class	150	300	300	600	900	1500
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		**810-820-**	**819-829-**	**8--1**	**8--2[3]**	**8--3**	**8--4**	**8--6**	**8--7**
Maximum set pressure, psig[4]	-20 to +100°F	X	X	285	285	740	1000	1500	1500
	+450°F	X	X	185	285	620	1000	1500	1500
	+650°F	X	X	125	285	550	1000	1500	1500
	+800°F	X	X	80	285	410	825	1235	1500
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	285	285	285	285	285	285
	Balanced bellows design	-	X	100	100	170	170	170	170

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		**810-820-**	**819-829-**	**8--1**	**8--2[3]**	**8--3**	**8--4**	**8--6**	**8--7**
Maximum set pressure, psig[4][6]	-55 to +100°F	X	X	265	265	695	1000	1500	1500
	+400°F	X	X	200	265	615	1000	1500	1500
	+650°F	X	X	125	265	535	1000	1500	1500
Back pressure limit at +100°F, psig[4][5][6]	Conventional design	X	-	265	265	265	265	265	265
	Balanced bellows design	-	X	100	100	170	170	170	170

BODY MATERIAL: ASME SA217 Gr. WC6		**812–**	**815–**	**8--1**	**8--2[3]**	**8--3**	**8--4**	**8--6**	**8--7**
Maximum set pressure, psig[4]	+800°F	X	X	–	–	510	1000	1500	1500
	+1000°F	X	X	–	–	215	430	650	1080
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	290	290	290	600
	Balanced bellows design	-	X	–	–	170	170	170	170

BODY MATERIAL: ASME SA351 Gr. CF8M		**810-820-**	**819-829-**	**8--1**	**8--2[3]**	**8--3**	**8--4**	**8--6**	**8--7**
Maximum set pressure, psig[4]	-450 to -76°F	X	X	275	275	535	535	700	–
	-75 to -21°F	X	X	275	275	720	1000	1500	–
	-20 to +100°F	X	X	275	275	720	1000	1500	–
	+450°F	X	X	180	275	495	990	1485	–
	+800°F	X	X	80	275	420	845	1265	–
	+1000°F	X	X	20	275	365	725	1090	–
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	275	275	275	275	275	–
	Balanced bellows design	-	X	100	100	170	170	170	–

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3C if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	5.8 psig
Types 8150 and 8190	5.8 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - US UNITS

M ORIFICE

3.60 sq.in. API Effective Orifice Area[1] – 3.9127 sq.in. Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1	8--2[3]	8--3	8--4	8--6
		4M6	4M6	4M6	4M6	4M6
Standard connections	Inlet flange rating class	150	300	300	600	900
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, psig[4]	-20 to +100°F	X	X	285	285	740	1100	1100
	+450°F	X	X	185	285	620	1100	1100
	+650°F	X	X	125	285	550	1100	1100
	+800°F	X	X	80	285	410	825	1100
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	285	285	285	285	285
	Balanced bellows design	-	X	80	80	160	160	160

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, psig[4][6]	-55 to +100°F	X	X	265	265	695	1100	1100
	+400°F	X	X	200	200	615	1100	1100
	+650°F	X	X	125	125	535	1065	1100
Back pressure limit at +100°F, psig[4][5][6]	Conventional design	X	-	265	265	265	265	265
	Balanced bellows design	-	X	80	80	160	160	160

BODY MATERIAL: ASME SA217 Gr. WC6		812–	815–	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, psig[4]	+800°F	X	X	–	–	510	1000	1100
	+1000°F	X	X	–	–	215	430	650
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	290	290	290
	Balanced bellows design	-	X	–	–	160	160	160

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, psig[4]	-450 to -76°F	X	X	275	275	525	600	–
	-75 to -21°F	X	X	275	275	720	1100	–
	-20 to +100°F	X	X	275	275	720	1100	–
	+450°F	X	X	180	275	495	990	–
	+800°F	X	X	80	275	420	845	–
	+1000°F	X	X	20	275	365	725	–
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	275	275	275	275	–
	Balanced bellows design	-	X	80	80	160	160	–

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3C if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	5.8 psig
Types 8150 and 8190	5.8 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - US UNITS

N ORIFICE

4.34 sq.in. API Effective Orifice Area[1] – 4.6951 sq.in. Actual Orifice Area[2]

				8--1	8--2[3]	8--3	8--4	8--6
VALVE SIZE	**INLET NPS x ORIFICE x OUTLET NPS**			**4N6**	**4N6**	**4N6**	**4N6**	**4N6**
Standard connections	Inlet flange rating class			150	300	300	600	900
ANSI flanges, raised faces	Outlet flange rating class			150	150	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		**810-820-**	**819-829-**	**8--1**	**8--2[3]**	**8--3**	**8--4**	**8--6**
Maximum set pressure, psig[4]	-20 to +100°F	X	X	285	285	740	1000	1000
	+450°F	X	X	185	285	620	1000	1000
	+650°F	X	X	125	285	550	1000	1000
	+800°F	X	X	80	285	410	825	1000
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	285	285	285	285	285
	Balanced bellows design	-	X	80	80	160	160	160

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		**810-820-**	**819-829-**	**8--1**	**8--2[3]**	**8--3**	**8--4**	**8--6**
Maximum set pressure, psig[4][6]	-55 to +100°F	X	X	265	265	695	1000	1000
	+400°F	X	X	200	200	615	1000	1000
	+650°F	X	X	125	125	535	1000	1000
Back pressure limit at +100°F, psig[4][5][6]	Conventional design	X	-	265	265	265	265	265
	Balanced bellows design	-	X	80	80	160	160	160

BODY MATERIAL: ASME SA217 Gr. WC6		**812–**	**815–**	**8--1**	**8--2[3]**	**8--3**	**8--4**	**8--6**
Maximum set pressure, psig[4]	+800°F	X	X	–	–	510	1000	1000
	+1000°F	X	X	–	–	215	430	650
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	290	290	290
	Balanced bellows design	-	X	–	–	160	160	160

BODY MATERIAL: ASME SA351 Gr. CF8M		**810-820-**	**819-829-**	**8--1**	**8--2[3]**	**8--3**	**8--4**	**8--6**
Maximum set pressure, psig[4]	-450 to -76°F	X	X	275	275	450	500	–
	-75 to -21°F	X	X	275	275	720	1000	–
	-20 to +100°F	X	X	275	275	720	1000	–
	+450°F	X	X	180	275	495	990	–
	+800°F	X	X	80	275	420	845	–
	+1000°F	X	X	20	275	365	725	–
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	275	275	275	275	–
	Balanced bellows design	-	X	80	80	160	160	–

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3C if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	7.25 psig
Types 8150 and 8190	7.25 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - US UNITS

P ORIFICE

6.38 sq.in. API Effective Orifice Area[1] – 6.9046 sq.in. Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1	8--2[3]	8--3	8--4	8--6
		4P6	4P6	4P6	4P6	4P6
Standard connections	Inlet flange rating class	150	300	300	600	900
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, psig[4]	-20 to +100°F	X	X	285	285	525	1000	1000
	+450°F	X	X	185	285	525	1000	1000
	+650°F	X	X	125	285	525	1000	1000
	+800°F	X	X	80	285	410	825	1000
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	285	285	285	285	285
	Balanced bellows design	-	X	80	80	150	150	150

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, psig[4][6]	-55 to +100°F	X	X	265	265	525	1000	1000
	+400°F	X	X	200	265	525	1000	1000
	+650°F	X	X	125	265	525	1000	1000
Back pressure limit at +100°F, psig[4][5][6]	Conventional design	X	-	265	265	265	265	265
	Balanced bellows design	-	X	80	80	150	150	150

BODY MATERIAL: ASME SA217 Gr. WC6		812–	815–	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, psig[4]	+800°F	X	X	–	–	510	1000	1000
	+1000°F	X	X	–	–	215	430	650
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	290	290	290
	Balanced bellows design	-	X	–	–	160	160	160

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4	8--6
Maximum set pressure, psig[4]	-450 to -76°F	X	X	175	175	300	480	–
	-75 to -21°F	X	X	275	275	525	1000	–
	-20 to +100°F	X	X	275	275	525	1000	–
	+450°F	X	X	180	275	495	990	–
	+800°F	X	X	80	275	420	845	–
	+1000°F	X	X	20	275	365	725	–
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	275	275	275	275	–
	Balanced bellows design	-	X	80	80	160	160	–

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3C if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	7.25 psig
Types 8150 and 8190	7.25 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - US UNITS

Q ORIFICE

11.05 sq.in. API Effective Orifice Area[1] – 11.9337 sq.in. Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1	8--2[3]	8--3	8--4
		6Q8	6Q8	6Q8	6Q8
Standard connections	Inlet flange rating class	150	300	300	600
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, psig[4]	-20 to +100°F	X	X	165	165	300	600
	+450°F	X	X	165	165	300	600
	+650°F	X	X	125	165	300	600
	+800°F	X	X	80	165	300	600
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	115	115	115	115
	Balanced bellows design	-	X	70	70	115	115

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810-820-	819-829-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, psig[4][6]	-55 to +100°F	X	X	165	165	300	600
	+400°F	X	X	165	165	300	600
	+650°F	X	X	125	125	300	600
Back pressure limit at +100°F, psig[4][5][6]	Conventional design	X	-	115	115	115	115
	Balanced bellows design	-	X	70	70	115	115

BODY MATERIAL: ASME SA217 Gr. WC6		812–	815–	8--1	8--2[3]	8--3	8--4
Maximum set pressure, psig[4]	+800°F	X	X	–	–	165	600
	+1000°F	X	X	–	–	165	430
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	115	115
	Balanced bellows design	-	X	–	–	115	115

BODY MATERIAL: ASME SA351 Gr. CF8M		810-820-	819-829-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, psig[4]	-450 to -76°F	X	X	165	165	250	300
	-75 to -21°F	X	X	165	165	300	600
	-20 to +100°F	X	X	165	165	300	600
	+450°F	X	X	165	165	300	600
	+800°F	X	X	80	165	300	600
	+1000°F	X	X	20	165	300	600
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	115	115	115	115
	Balanced bellows design	-	X	70	70	115	115

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3C if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	7.25 psig
Types 8150 and 8190	7.25 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - US UNITS

R ORIFICE

16.00 sq.in. API Effective Orifice Area[1] – 16.7784 sq.in. Actual Orifice Area[2]

		8--1	8--2[3]	8--3	8--4
VALVE SIZE	**INLET NPS x ORIFICE x OUTLET NPS**	**6R8**	**6R8**	**6R10**	**6R10**
Standard connections	Inlet flange rating class	150	300	300	600
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		**810-820-**	**819-829-**	**8--1**	**8--2[3]**	**8--3**	**8--4**
	-20 to +100°F	X	X	100	100	230	300
Maximum set pressure,	+450°F	X	X	100	100	230	300
psig[4]	+650°F	X	X	100	100	230	300
	+800°F	X	X	80	100	230	300
Back pressure limit at	Conventional design	X	-	60	60	100	100
+100°F, psig[4][5]	Balanced bellows design	-	X	60	60	100	100

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		**810-820-**	**819-829-**	**8--1**	**8--2[3]**	**8--3**	**8--4**
	-55 to +100°F	X	X	100	100	230	300
Maximum set pressure,	+400°F	X	X	100	100	230	300
psig[4][6]	+650°F	X	X	100	100	230	300
Back pressure limit at	Conventional design	X	-	60	60	100	100
+100°F, psig[4][5][6]	Balanced bellows design	-	X	60	60	100	100

BODY MATERIAL: ASME SA217 Gr. WC6		**812–**	**815–**	**8--1**	**8--2[3]**	**8--3**	**8--4**
Maximum set pressure,	+800°F	X	X	–	–	100	300
psig[4]	+1000°F	X	X	–	–	100	300
Back pressure limit at	Conventional design	X	-	–	–	100	100
+100°F, psig[4][5]	Balanced bellows design	-	X	–	–	100	100

BODY MATERIAL: ASME SA351 Gr. CF8M		**810-820-**	**819-829-**	**8--1**	**8--2[3]**	**8--3**	**8--4**
	-450 to -76°F	X	X	55	55	150	200
	-75 to -21°F	X	X	100	100	230	300
Maximum set pressure,	-20 to +100°F	X	X	100	100	230	300
psig[4]	+450°F	X	X	100	100	230	300
	+800°F	X	X	80	100	230	300
	+1000°F	X	X	20	100	230	300
Back pressure limit at	Conventional design	X	-	60	60	100	100
+100°F, psig[4][5]	Balanced bellows design	-	X	60	60	100	100

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3C if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	7.25 psig
Types 8150 and 8190	7.25 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - US UNITS

T ORIFICE

26.00 sq.in. API Effective Orifice Area[1] – 28.2743 sq.in. Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1	8--2[3]	8--3	8--4
		8T10	8T10	8T10	8T10
Standard connections	Inlet flange rating class	150	300	300	300
ANSI flanges, raised faces	Outlet flange rating class	150	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, psig[4]	-20 to +100°F	X	X	65	65	120	300
	+450°F	X	X	65	65	120	300
	+650°F	X	X	65	65	120	300
	+800°F	X	X	65	65	120	300
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	30	30	60	100
	Balanced bellows design	-	X	30	30	60	100

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810- 820-	819- 829-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, psig[4][6]	-55 to +100°F	X	X	65	65	120	300
	+400°F	X	X	65	65	120	300
	+650°F	X	X	65	65	120	300
Back pressure limit at +100°F, psig[4][5][6]	Conventional design	X	-	30	30	60	100
	Balanced bellows design	-	X	30	30	60	100

BODY MATERIAL: ASME SA217 Gr. WC6		812–	815–	8--1	8--2[3]	8--3	8--4
Maximum set pressure, psig[4]	+800°F	X	X	–	–	120	300
	+1000°F	X	X	–	–	100	215
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	60	100
	Balanced bellows design	-	X	–	–	60	100

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1	8--2[3]	8--3	8--4
Maximum set pressure, psig[4]	-450 to -76°F	X	X	50	50	65	–
	-75 to -21°F	X	X	65	65	120	–
	-20 to +100°F	X	X	65	65	120	–
	+450°F	X	X	65	65	120	–
	+800°F	X	X	65	65	120	–
	+1000°F	X	X	20	65	120	–
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	30	30	60	–
	Balanced bellows design	-	X	30	30	60	–

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Inlet and outlet flange pressure limits correspond to the values in ASME B16.34 except for shaded cells. A value that is shown in a grey cell is less than that provided in ASME B16.34 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in ASME B16.34 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the ANSI flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Pressure-Temperature ratings taken from ASME B16.34 Table 2-1.3C if the maximum set pressure is not limited by API 526 for carbon steel material (shaded cells).

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	10.15 psig
Types 8150 and 8190	10.15 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - US UNITS

V ORIFICE

40.93 sq.in. API Effective Orifice Area[1] – 45.105 sq.in. Actual Orifice Area[2]

VALVE SIZE	INLET NPS x ORIFICE x OUTLET NPS	8--1	8--2[3]	8--3
		10V14	10V14	10V14
Standard connections	Inlet flange rating class	150	300	300
ANSI flanges, raised faces	Outlet flange rating class	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1	8--2[3]	8--3
Maximum set pressure, psig	-20 to +100°F	X	X	75	175	–
	+450°F	X	X	75	175	–
	+650°F	X	X	75	175	–
	+800°F	X	X	75	175	–
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	29	29	–
	Balanced bellows design	-	X	29	29	–

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		810- 820-	819- 829-	8--1	8--2[3]	8--3
Maximum set pressure, psig	-55 to +100°F	X	X	75	175	–
	+400°F	X	X	75	175	–
	+650°F	X	X	75	175	–
Back pressure limit at +100°F, psig[4]	Conventional design	X	-	29	29	–
	Balanced bellows design	-	X	29	29	–

BODY MATERIAL: ASME SA217 Gr. WC6		812–	815–	8--1	8--2[3]	8--3
Maximum set pressure, psig	+800°F	X	X	–	–	175
	+1000°F	X	X	–	–	175
Back pressure limit at +100°F, psig[4]	Conventional design	X	-	–	–	58
	Balanced bellows design	-	X	–	–	58

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	40.61 psig
Types 8150 and 8190	40.61 psig

NOTE

** Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR ANSI FLANGES - US UNITS

W ORIFICE

60.91 sq.in. API Effective Orifice Area[1] – 67.2235 sq.in. Actual Orifice Area[2]

		8--1	8--2[3]	8--3
VALVE SIZE	**INLET NPS x ORIFICE x OUTLET NPS**	**12W12x2**	**12W12x2**	**12W12x2**
Standard connections	Inlet flange rating class	150	300	300
ANSI flanges, raised faces	Outlet flange rating class	150	150	150

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		**810-820-**	**819-829-**	**8--1**	**8--2[3]**	**8--3**
Maximum set pressure, psig	-20 to +100°F	X	X	75	145	–
	+450°F	X	X	75	145	–
	+650°F	X	X	75	145	–
	+800°F	X	X	75	145	–
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	14.5	29	–
	Balanced bellows design	-	X	14.5	29	–

BODY MATERIAL: ASME SA352 Gr. LCB/LCC		**810-820-**	**819-829-**	**8--1**	**8--2[3]**	**8--3**
Maximum set pressure, psig	-55 to +100°F	X	X	75	145	–
	+400°F	X	X	75	145	–
	+650°F	X	X	75	145	–
Back pressure limit at +100°F, psig[4]	Conventional design	X	-	14.5	29	–
	Balanced bellows design	-	X	14.5	29	–

BODY MATERIAL: ASME SA217 Gr. WC6		**812–**	**815–**	**8--1**	**8--2[3]**	**8--3**
Maximum set pressure, psig	+800°F	X	X	–	–	145
	+1000°F	X	X	–	–	145
Back pressure limit at +100°F, psig[4]	Conventional design	X	-	–	–	29
	Balanced bellows design	-	X	–	–	29

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a Class 300 inlet flange is preferred over a Class 150 flange.
4. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.
5. 12" dual outlet.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	40.61 psig
Types 8150 and 8190	40.61 psig

NOTE

** Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - US UNITS

D ORIFICE

0.71 sq.cm API Effective Orifice Area[1] – 0.79 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		25xDx50			25xDx50				25xDx50			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-20 to +100°F	X	X	145	232	232	285	285	285	285	362	362	580	580
	+450°F	X	X	142	185	185	285	285	285	285	356	356	570	570
	+650°F	X	X	117	125	125	285	285	285	285	295	295	475	475
	+800°F	X	X	80	80	80	200	200	285	285	200	200	323	323
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	145	145	230	145	230	145	230	145	230	145	230

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	+800°F	X	X	–	–	–	–	–	–	–	315	315	504	504
	+1000°F	X	X	–	–	–	–	–	–	–	110	110	175	175
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	145	232	145	232
	Balanced bellows design	-	X	–	–	–	–	–	–	–	145	230	145	230

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-450 to -76°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	-75 to -21°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	-20 to +100°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	+450°F	X	X	116	180	180	275	275	275	275	292	292	470	470
	+800°F	X	X	80	80	80	245	245	275	275	245	245	393	393
	+1000°F	X	X	20	20	20	235	235	275	275	235	235	365	365
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	145	145	230	145	230	145	230	145	230	145	230

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	7.25 psig
Types 8150 and 8190	18.85 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - US UNITS

E ORIFICE

1.26 sq.cm API Effective Orifice Area[1] – 1.39 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		25xEx50			25xEx50				25xEx50			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-20 to +100°F	X	X	145	232	232	285	285	285	285	362	362	580	580
	+450°F	X	X	142	185	185	285	285	285	285	356	356	570	570
	+650°F	X	X	117	125	125	285	285	285	285	295	295	475	475
	+800°F	X	X	80	80	80	200	200	285	285	200	200	323	323
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	145	145	230	145	230	145	230	145	230	145	230

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	+800°F	X	X	–	–	–	–	–	–	–	315	315	504	504
	+1000°F	X	X	–	–	–	–	–	–	–	110	110	175	175
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	145	232	145	232
	Balanced bellows design	-	X	–	–	–	–	–	–	–	145	230	145	230

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-450 to -76°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	-75 to -21°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	-20 to +100°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	+450°F	X	X	116	180	180	275	275	275	275	292	292	470	470
	+800°F	X	X	80	80	80	245	245	275	275	245	245	393	393
	+1000°F	X	X	20	20	20	235	235	275	275	235	235	365	365
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	145	145	230	145	230	145	230	145	230	145	230

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	8.7 psig
Types 8150 and 8190	18.85 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - US UNITS

F ORIFICE

1.98 sq.cm API Effective Orifice Area[1] – 2.14 sq.cm Actual Orifice Area[2]

		8--1			8--2[3]				8--3			
VALVE SIZE	**INLET DN x ORIFICE x OUTLET DN**	**40xFx50**			**40xFx50**				**40xFx50**			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-20 to +100°F	X	X	145	232	232	285	285	285	285	362	362	580	580
	+450°F	X	X	142	185	185	285	285	285	285	356	356	570	570
	+650°F	X	X	117	125	125	285	285	285	285	295	295	475	475
	+800°F	X	X	80	80	80	200	200	285	285	200	200	323	323
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	145	145	230	145	230	145	230	145	230	145	230

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	+800°F	X	X	–	–	–	–	–	–	–	315	315	504	504
	+1000°F	X	X	–	–	–	–	–	–	–	110	110	175	175
Back pressure limit at +100°F, psig[4][5]	Conventional design	X		–	–	–	–	–	–	–	145	232	145	232
	Balanced bellows design		X	–	–	–	–	–	–	–	145	230	145	230

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-450 to -76°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	-75 to -21°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	-20 to +100°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	+450°F	X	X	116	180	180	275	275	275	275	292	292	470	470
	+800°F	X	X	80	80	80	245	245	275	275	245	245	393	393
	+1000°F	X	X	20	20	20	235	235	275	275	235	235	365	365
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	145	145	230	145	230	145	230	145	230	145	230

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	7.25 psig
Types 8150 and 8190	7.25 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - US UNITS

G ORIFICE

3.25 sq.cm API Effective Orifice Area[1] – 3.53 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		40xGx80[6]			40xGx80[6]				40xGx80[6]			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-20 to +100°F	X	X	145	232	232	285	285	285	285	362	362	580	580
	+450°F	X	X	142	185	185	285	285	285	285	356	356	570	570
	+650°F	X	X	117	125	125	285	285	285	285	295	295	475	475
	+800°F	X	X	80	80	80	200	200	285	285	200	200	323	323
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	145	145	230	145	230	145	230	145	230	145	230

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	+800°F	X	X	–	–	–	–	–	–	–	315	315	504	504
	+1000°F	X	X	–	–	–	–	–	–	–	110	110	175	175
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	145	232	145	232
	Balanced bellows design	-	X	–	–	–	–	–	–	–	145	230	145	230

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-450 to -76°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	-75 to -21°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	-20 to +100°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	+450°F	X	X	116	180	180	275	275	275	275	292	292	470	470
	+800°F	X	X	80	80	80	245	245	275	275	245	245	393	393
	+1000°F	X	X	20	20	20	235	235	275	275	235	235	365	365
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	145	145	230	145	230	145	230	145	230	145	230

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Optional DN65 outlet available. Please add the 'Z' prefix in front of the valve designation.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	8.7 psig
Types 8150 and 8190	8.7 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - US UNITS

H ORIFICE

5.06 sq.cm API Effective Orifice Area[1] – 5.51 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		40xHx80			40xHx80				50xHx80			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-20 to +100°F	X	X	145	232	232	285	285	285	285	362	362	580	580
	+450°F	X	X	142	185	185	285	285	285	285	356	356	570	570
	+650°F	X	X	117	125	125	285	285	285	285	295	295	475	475
	+800°F	X	X	80	80	80	200	200	285	285	200	200	323	323
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	145	145	230	145	230	145	230	145	230	145	230

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	+800°F	X	X	–	–	–	–	–	–	–	315	315	504	504
	+1000°F	X	X	–	–	–	–	–	–	–	110	110	175	175
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	145	232	145	232
	Balanced bellows design	-	X	–	–	–	–	–	–	–	145	230	145	230

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-450 to -76°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	-75 to -21°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	-20 to +100°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	+450°F	X	X	116	180	180	275	275	275	275	292	292	470	470
	+800°F	X	X	80	80	80	245	245	275	275	245	245	393	393
	+1000°F	X	X	20	20	20	235	235	275	275	235	235	365	365
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	145	145	230	145	230	145	230	145	230	145	230

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	7.25 psig
Types 8150 and 8190	7.25 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

J ORIFICE
8.30 sq.cm API Effective Orifice Area[1] – 9.03 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		50xJx80			50xJx80				80xJx100[6]			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-20 to +100°F	X	X	145	232	232	285	285	285	285	362	362	580	580
	+450°F	X	X	142	185	185	285	285	285	285	356	356	570	570
	+650°F	X	X	117	125	125	285	285	285	285	295	295	475	475
	+800°F	X	X	80	80	80	200	200	285	285	200	200	323	323
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	145	145	230	145	230	145	230	145	230	145	230

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	+800°F	X	X	–	–	–	–	–	–	–	315	315	504	504
	+1000°F	X	X	–	–	–	–	–	–	–	110	110	175	175
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	145	232	145	232
	Balanced bellows design	-	X	–	–	–	–	–	–	–	145	230	145	230

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-450 to -76°F	X	X	145	232	232	275	275	275	275	362	362	500	500
	-75 to -21°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	-20 to +100°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	+450°F	X	X	116	180	180	275	275	275	275	292	292	470	470
	+800°F	X	X	80	80	80	245	245	275	275	245	245	393	393
	+1000°F	X	X	20	20	20	235	235	275	275	235	235	365	365
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	145	145	230	145	230	145	230	145	230	145	230

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.
6. Optional DN65 inlet available. Please add the 'Z' prefix in front of the valve designation.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	5.8 psig
Types 8150 and 8190	5.8 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - US UNITS

K ORIFICE

11.86 sq.cm API Effective Orifice Area[1] – 12.87 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		80xKx100			80xKx100				80xKx100			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-20 to +100°F	X	X	145	232	232	285	285	285	285	362	362	580	580
	+450°F	X	X	142	185	185	285	285	285	285	356	356	570	570
	+650°F	X	X	117	125	125	285	285	285	285	295	295	475	475
	+800°F	X	X	80	80	80	200	200	285	285	200	200	323	323
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	145	145	150	145	150	145	150	145	150	145	150

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	+800°F	X	X	–	–	–	–	–	–	–	315	315	504	504
	+1000°F	X	X	–	–	–	–	–	–	–	110	110	175	175
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	145	232	145	232
	Balanced bellows design	-	X	–	–	–	–	–	–	–	145	230	145	230

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-450 to -76°F	X	X	145	232	232	275	275	275	275	362	362	525	525
	-75 to -21°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	-20 to +100°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	+450°F	X	X	116	180	180	275	275	275	275	292	292	470	470
	+800°F	X	X	80	80	80	245	245	275	275	245	245	393	393
	+1000°F	X	X	20	20	20	235	235	275	275	235	235	365	365
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	145	145	230	145	230	145	230	145	230	145	230

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	7.25 psig
Types 8150 and 8190	7.25 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - US UNITS

L ORIFICE

18.41 sq.cm API Effective Orifice Area[1] – 19.95 sq.cm Actual Orifice Area[2]

		8--1			8--2[3]				8--3			
VALVE SIZE	**INLET DN x ORIFICE x OUTLET DN**	**80xLx100**			**80xLx100**				**100xLx125**			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-20 to +100°F	X	X	145	232	232	285	285	285	285	362	362	580	580
	+450°F	X	X	142	185	185	285	285	285	285	356	356	570	570
	+650°F	X	X	117	125	125	285	285	285	285	295	295	475	475
	+800°F	X	X	80	80	80	200	200	285	285	200	200	323	323
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	100	100	100	100	100	100	100	145	170	145	170

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	+800°F	X	X	–	–	–	–	–	–	–	315	315	504	504
	+1000°F	X	X	–	–	–	–	–	–	–	110	110	175	175
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	145	232	145	232
	Balanced bellows design	-	X	–	–	–	–	–	–	–	145	170	145	170

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-450 to -76°F	X	X	145	232	232	275	275	275	275	362	362	535	535
	-75 to -21°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	-20 to +100°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	+450°F	X	X	116	180	180	275	275	275	275	292	292	470	470
	+800°F	X	X	80	80	80	245	245	275	275	245	245	393	393
	+1000°F	X	X	20	20	20	235	235	275	275	235	235	365	365
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	100	100	100	100	100	100	100	145	170	145	170

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	5.8 psig
Types 8150 and 8190	5.8 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - US UNITS

M ORIFICE

23.23 sq.cm API Effective Orifice Area[1] – 25.24 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		100xMx125			100xMx125				100xMx125			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-20 to +100°F	X	X	145	232	232	285	285	285	285	362	362	580	580
	+450°F	X	X	142	185	185	285	285	285	285	356	356	570	570
	+650°F	X	X	117	125	125	285	285	285	285	295	295	475	475
	+800°F	X	X	80	80	80	200	200	285	285	200	200	323	323
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	80	80	80	80	80	80	80	145	159	145	159

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	+800°F	X	X	–	–	–	–	–	–	–	315	315	504	504
	+1000°F	X	X	–	–	–	–	–	–	–	110	110	175	175
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	145	232	145	232
	Balanced bellows design	-	X	–	–	–	–	–	–	–	145	159	145	159

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-450 to -76°F	X	X	145	232	232	275	275	275	275	362	362	525	525
	-75 to -21°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	-20 to +100°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	+450°F	X	X	116	180	180	275	275	275	275	292	292	470	470
	+800°F	X	X	80	80	80	245	245	275	275	245	245	393	393
	+1000°F	X	X	20	20	20	235	235	275	275	235	235	365	365
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	80	80	80	80	80	80	80	145	159	145	159

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	5.8 psig
Types 8150 and 8190	5.8 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - US UNITS

N ORIFICE

28.00 sq.cm API Effective Orifice Area[1] – 30.29 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		100xNx125			100xNx125				100xNx125			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-20 to +100°F	X	X	145	232	232	285	285	285	285	362	362	580	580
	+450°F	X	X	142	185	185	285	285	285	285	356	356	570	570
	+650°F	X	X	117	125	125	285	285	285	285	295	295	475	475
	+800°F	X	X	80	80	80	200	200	285	285	200	200	323	323
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	80	80	80	80	80	80	80	145	159	145	159

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	+800°F	X	X	–	–	–	–	–	–	–	315	315	504	504
	+1000°F	X	X	–	–	–	–	–	–	–	110	110	175	175
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	145	232	145	232
	Balanced bellows design	-	X	–	–	–	–	–	–	–	145	159	145	159

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-450 to -76°F	X	X	145	232	232	275	275	275	275	362	362	450	450
	-75 to -21°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	-20 to +100°F	X	X	145	232	232	275	275	275	275	362	362	580	580
	+450°F	X	X	116	180	180	275	275	275	275	292	292	470	470
	+800°F	X	X	80	80	80	245	245	275	275	245	245	393	393
	+1000°F	X	X	20	20	20	235	235	275	275	235	235	365	365
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	80	80	80	80	80	80	80	145	159	145	159

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	7.25 psig
Types 8150 and 8190	7.25 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - US UNITS

P ORIFICE

41.16 sq.cm API Effective Orifice Area[1] – 44.55 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		100xPx125			100xPx125				100xPx125			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-20 to +100°F	X	X	145	232	232	285	285	285	285	362	362	525	525
	+450°F	X	X	142	185	185	285	285	285	285	356	356	525	525
	+650°F	X	X	117	125	125	285	285	285	285	295	295	475	475
	+800°F	X	X	80	80	80	200	200	285	285	200	200	323	323
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	80	80	80	80	80	80	80	145	150	145	150

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	+800°F	X	X	–	–	–	–	–	–	–	315	315	504	504
	+1000°F	X	X	–	–	–	–	–	–	–	110	110	175	175
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	145	232	145	232
	Balanced bellows design	-	X	–	–	–	–	–	–	–	145	159	145	159

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-450 to -76°F	X	X	145	175	175	175	175	175	175	300	300	300	300
	-75 to -21°F	X	X	145	232	232	275	275	275	275	362	362	525	525
	-20 to +100°F	X	X	145	232	232	275	275	275	275	362	362	525	525
	+450°F	X	X	116	180	180	275	275	275	275	292	292	470	470
	+800°F	X	X	80	80	80	245	245	275	275	245	245	393	393
	+1000°F	X	X	20	20	20	235	235	275	275	235	235	365	365
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	145	145	232	145	232	145	232	145	232	145	232
	Balanced bellows design	-	X	80	80	80	80	80	80	80	145	159	145	159

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	7.25 psig
Types 8150 and 8190	7.25 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - US UNITS

Q ORIFICE

71.29 sq.cm API Effective Orifice Area[1] – 76.99 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		125xQx200			125xQx200				125xQx200			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-20 to +100°F	X	X	145	165	165	165	165	165	165	300	300	300	300
	+450°F	X	X	142	165	165	165	165	165	165	300	300	300	300
	+650°F	X	X	117	125	125	165	165	165	165	295	295	300	300
	+800°F	X	X	80	80	80	165	165	165	165	200	200	300	300
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	115	115	115	115	115	115	115	115	115	115	115
	Balanced bellows design	-	X	70	70	70	70	70	70	70	115	115	115	115

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	+800°F	X	X	–	–	–	–	–	–	–	165	165	165	165
	+1000°F	X	X	–	–	–	–	–	–	–	110	110	165	165
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	115	115	115	115
	Balanced bellows design	-	X	–	–	–	–	–	–	–	115	115	115	115

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-450 to -76°F	X	X	145	165	165	165	165	165	165	250	250	250	250
	-75 to -21°F	X	X	145	165	165	165	165	165	165	300	300	300	300
	-20 to +100°F	X	X	145	165	165	165	165	165	165	300	300	300	300
	+450°F	X	X	116	165	165	165	165	165	165	292	292	300	300
	+800°F	X	X	80	80	80	165	165	165	165	245	245	300	300
	+1000°F	X	X	20	20	20	165	165	165	165	235	235	300	300
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	115	115	115	115	115	115	115	115	115	115	115
	Balanced bellows design	-	X	70	70	70	70	70	70	70	115	115	115	115

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	7.25 psig
Types 8150 and 8190	7.25 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

R ORIFICE
103.23 sq.cm API Effective Orifice Area[1] – 108.25 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		125xRx200			125xRx200				125xR10			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-20 to +100°F	X	X	100	100	100	100	100	100	100	230	230	230	230
	+450°F	X	X	100	100	100	100	100	100	100	230	230	230	230
	+650°F	X	X	100	100	100	100	100	100	100	230	230	230	230
	+800°F	X	X	80	80	80	100	100	100	100	200	200	230	230
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	60	60	60	60	60	60	60	100	100	100	100
	Balanced bellows design	-	X	60	60	60	60	60	60	60	100	100	100	100

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	+800°F	X	X	–	–	–	–	–	–	–	100	100	100	100
	+1000°F	X	X	–	–	–	–	–	–	–	100	100	100	100
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	100	100	100	100
	Balanced bellows design	-	X	–	–	–	–	–	–	–	100	100	100	100

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-450 to -76°F	X	X	55	55	55	55	55	55	55	150	150	150	150
	-75 to -21°F	X	X	100	100	100	100	100	100	100	230	230	230	230
	-20 to +100°F	X	X	100	100	100	100	100	100	100	230	230	230	230
	+450°F	X	X	100	100	100	100	100	100	100	230	230	230	230
	+800°F	X	X	80	80	80	100	100	100	100	230	230	230	230
	+1000°F	X	X	20	20	20	100	100	100	100	230	230	230	230
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	60	60	60	60	60	60	60	100	100	100	100
	Balanced bellows design	-	X	4.1	4.1	4.1	4.1	4.1	4.1	4.1	6.9	6.9	6.9	6.9

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	7.25 psig
Types 8150 and 8190	7.25 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - US UNITS

T ORIFICE

167.74 sq.cm API Effective Orifice Area[1] – 182.41 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		200xTx250			200xTx250				200xTx250			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-20 to +100°F	X	X	65	65	65	65	65	65	65	120	120	120	120
	+450°F	X	X	65	65	65	65	65	65	65	120	120	120	120
	+650°F	X	X	65	65	65	65	65	65	65	120	120	120	120
	+800°F	X	X	65	65	65	65	65	65	65	120	120	120	120
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	30	30	30	30	30	30	30	60	60	60	60
	Balanced bellows design	-	X	30	30	30	30	30	30	30	60	60	60	60

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	+800°F	X	X	–	–	–	–	–	–	–	120	120	120	120
	+1000°F	X	X	–	–	–	–	–	–	–	100	100	100	100
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	–	–	–	–	–	–	–	60	60	60	60
	Balanced bellows design	-	X	–	–	–	–	–	–	–	60	60	60	60

BODY MATERIAL: ASME SA351 Gr. CF8M		810- 820-	819- 829-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-450 to -76°F	X	X	50	50	50	50	50	50	50	65	65	65	65
	-75 to -21°F	X	X	65	65	65	65	65	65	65	120	120	120	120
	-20 to +100°F	X	X	65	65	65	65	65	65	65	120	120	120	120
	+450°F	X	X	65	65	65	65	65	65	65	120	120	120	120
	+800°F	X	X	65	65	65	65	65	65	65	120	120	120	120
	+1000°F	X	X	20	20	20	65	65	65	65	120	120	120	120
Back pressure limit at +100°F, psig[4][5]	Conventional design	X	-	30	30	30	30	30	30	30	60	60	60	60
	Balanced bellows design	-	X	30	30	30	30	30	30	30	60	60	60	60

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Inlet and outlet flange pressure limits correspond to the values specified in Annex G of EN 1092-1 except for shaded cells. A value that is shown in a grey cell is less than that provided in EN 1092-1 for the material considered. Maximum set and back pressure values at other temperatures may only be interpolated from tables in Annex G of EN 1092-1 for the material considered, if these values do not exceed the values in shaded cells.
5. Outlet pressure for temperatures above +100°F should not exceed the EN 1092-1 flange rating. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	10.15 psig
Types 8150 and 8190	10.15 psig
Type 8200	14.5 psig
Type 8290	14.5 psig

NOTE

** Valves set below 15 psig cannot be stamped with the ASME Code Symbol. Only metal seated valves may be set below 15 psig. Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - US UNITS

V ORIFICE

264 sq.cm API Effective Orifice Area[1] – 291.00 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		250xVx350			250xVx350				250xVx350			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-	819-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-20 to +100°F	X	X	75	75	75	175	175	175	175	–	–	–	–
	+450°F	X	X	75	75	75	175	175	175	175	–	–	–	–
	+650°F	X	X	75	75	75	175	175	175	175	–	–	–	–
	+800°F	X	X	75	75	75	175	175	175	175	–	–	–	–
Back pressure limit at +100°F, psig[4]	Conventional design	X	-	30	30	30	30	30	30	30	–	–	–	–
	Balanced bellows design	-	X	30	30	30	30	30	30	30	–	–	–	–

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	+800°F	X	X	–	–	–	–	–	–	–	175	175	175	175
	+1000°F	X	X	–	–	–	–	–	–	–	110	110	175	175
Back pressure limit at +100°F, psig[4]	Conventional design	X	-	–	–	–	–	–	–	–	58	58	58	58
	Balanced bellows design	-	X	–	–	–	–	–	–	–	58	58	58	58

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	40.61 psig
Types 8150 and 8190	40.61 psig

NOTE

** Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 SIZES AND PRESSURE/TEMPERATURE LIMITS FOR EN 1092-1 FLANGES - US UNITS

W ORIFICE

393 sq.cm API Effective Orifice Area[1] – 433.70 sq.cm Actual Orifice Area[2]

VALVE SIZE	INLET DN x ORIFICE x OUTLET DN	8--1			8--2[3]				8--3			
		300xWx300x2			300xWx300x2				300xWx300x2			
Standard connections ANSI flanges, raised faces	Inlet flange rating PN	PN10	PN16	PN16	PN25	PN25	PN40	PN40	PN25	PN25	PN40	PN40
	Outlet flange rating PN	PN10	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16

BODY MATERIAL: ASME SA216 Gr. WCB/WCC		810-	819-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	-20 to +100°F	X	X	75	75	75	145	145	145	145	–	–	–	–
	+450°F	X	X	75	75	75	145	145	145	145	–	–	–	–
	+650°F	X	X	75	75	75	145	145	145	145	–	–	–	–
	+800°F	X	X	75	75	75	145	145	145	145	–	–	–	–
Back pressure limit at +100°F, psig[4]	Conventional design	X	-	15	15	15	30	30	30	30	–	–	–	–
	Balanced bellows design	-	X	15	15	15	30	30	30	30	–	–	–	–

BODY MATERIAL: ASME SA217 Gr. WC6		812--	815-	8--1			8--2[3]				8--3			
Maximum set pressure, psig[4]	+800°F	X	X	–	–	–	–	–	–	–	145	145	145	145
	+1000°F	X	X	–	–	–	–	–	–	–	110	110	145	145
Back pressure limit at +100°F, psig[4]	Conventional design	X	-	–	–	–	–	–	–	–	30	30	30	30
	Balanced bellows design	-	X	–	–	–	–	–	–	–	30	30	30	30

NOTES

1. API 526 standard effective orifice area to be used for API sizing.
2. ASME actual orifice area to be used for ASME sizing.
3. Set pressure limited for low-pressure applications where a PN25 or PN40 inlet flange is preferred over a PN16 flange.
4. Bellows outlet pressure limits are the design pressure of the bellows at the outlet temperature of +100°F, and pressure values at other temperatures may be determined from Annex C of API 526.

LOW SET PRESSURE LIMITS**

Types 8100 and 8120	40.61 psig
Types 8150 and 8190	40.61 psig

NOTE

** Consult factory for set pressures below the specified values.
Not applicable to stellited nozzle and/or disc. Consult factory for low set pressure limits applicable to seating options 'D', 'E' and 'F'.

SAPAG SAFETY RELIEF VALVE

SERIES 8100 AIR CAPACITY TABLE - METRIC UNITS

AIR CAPACITIES [Nm³/min][1] - SERIES 8100

	ORIFICE LETTER DESIGNATION AND ACTUAL ORIFICE AREA, sq.cm															
SET PRESSURE, (barg)	D	E	F	G	H	J	K	L	M	N	P	Q	R	T	V	W
	0.79	1.39	2.14	3.53	5.51	9.03	12.87	19.95	25.24	30.29	44.55	76.99	108.25	182.41	291	433.7
1	1.7	3.0	4.5	7.5	11.7	19.2	27.4	42.4	53.6	64.4	94.6	163.6	230.0	387.6	618.3	921.5
2	2.4	4.3	6.6	10.9	17.0	27.8	39.6	61.3	77.6	93.1	137.0	236.7	332.9	560.9	894.8	1333.6
3	3.2	5.7	8.8	14.6	22.8	37.3	53.1	82.3	104.2	125.0	183.9	317.8	446.8	752.9	1201.1	1790.1
4	4.1	7.2	11.1	18.3	28.6	46.8	66.7	103.3	130.8	156.9	230.8	398.8	560.7	944.9	1507.4	2246.6
5	4.9	8.7	13.3	22.0	34.4	56.3	80.2	124.3	157.3	188.8	277.6	479.9	674.7	1136.9	1813.7	2703.1
6	5.7	10.1	15.6	25.7	40.2	65.8	93.8	145.3	183.9	220.7	324.5	560.9	788.6	1328.9	2120.0	3159.6
7	6.6	11.6	17.8	29.5	46.0	75.3	107.3	166.3	210.5	252.6	371.4	641.9	902.6	1520.9	2426.3	3616.1
8	7.4	13.1	20.1	33.2	51.8	84.8	120.9	187.3	237.0	284.4	418.3	723.0	1016.5	1712.9	2732.6	4072.6
9	8.2	14.5	22.4	36.9	57.6	94.3	134.5	208.3	263.6	316.3	465.2	804.0	1130.4	1905.0	3038.9	4529.1
10	9.0	16.0	24.6	40.6	63.4	103.8	148.0	229.3	290.2	348.2	512.1	885.1	1244.4	2097.0	3345.2	4985.6
11	9.9	17.5	26.9	44.3	69.2	113.3	161.6	250.3	316.8	380.1	559.0	966.1	1358.3	2289.0	3651.5	-
12	10.7	18.9	29.1	48.0	75.0	122.8	175.1	271.3	343.3	412.0	605.9	1047.1	1472.2	2481.0	3957.8	-
13	11.5	20.4	31.4	51.8	80.8	132.3	188.7	292.3	369.9	443.9	652.7	1128.2	1586.2	2673.0	-	-
14	12.4	21.9	33.6	55.5	86.6	141.8	202.2	313.3	396.5	475.7	699.6	1209.2	1700.1	2865.0	-	-
15	13.2	23.3	35.9	59.2	92.4	151.3	215.8	334.2	423.0	507.6	746.5	1290.3	1814.1	3057.0	-	-
16	14.0	24.8	38.1	62.9	98.2	160.9	229.3	355.2	449.6	539.5	793.4	1371.3	1928.0	3249.0	-	-
17	14.8	26.3	40.4	66.6	104.0	170.4	242.9	376.2	476.2	571.4	840.3	1452.3	2041.9	3441.0	-	-
18	15.7	27.7	42.6	70.4	109.8	179.9	256.4	397.2	502.7	603.3	887.2	1533.4	2155.9	3633.0	-	-
19	16.5	29.2	44.9	74.1	115.6	189.4	270.0	418.2	529.3	635.2	934.1	1614.4	2269.8	3825.0	-	-
20	17.3	30.6	47.1	77.8	121.4	198.9	283.5	439.2	555.9	667.0	981.0	1695.5	2383.7	4017.0	-	-
22	19.0	33.6	51.6	85.2	133.0	217.9	310.6	481.2	609.0	730.8	1074.7	1857.5	-	-	-	-
24	20.6	36.5	56.2	92.7	144.6	236.9	337.7	523.2	662.2	794.6	1168.5	2019.6	-	-	-	-
26	22.3	39.4	60.7	100.1	156.2	255.9	364.8	565.2	715.3	858.3	1262.3	2181.7	-	-	-	-
28	23.9	42.4	65.2	107.5	167.8	274.9	391.9	607.2	768.4	922.1	1356.1	2343.8	-	-	-	-
30	25.6	45.3	69.7	115.0	179.4	293.9	419.0	649.2	821.6	985.9	1449.8	2505.8	-	-	-	-
32	27.3	48.2	74.2	122.4	191.0	312.9	446.1	691.1	874.7	1049.6	1543.6	2667.9	-	-	-	-
34	28.9	51.2	78.7	129.9	202.6	332.0	473.2	733.1	927.9	1113.4	1637.4	2830.0	-	-	-	-
36	30.6	54.1	83.2	137.3	214.2	351.0	500.3	775.1	981.0	1177.2	1731.2	2992.1	-	-	-	-
38	32.2	57.0	87.7	144.7	225.8	370.0	527.5	817.1	1034.2	1240.9	1824.9	3154.2	-	-	-	-
40	33.9	59.9	92.2	152.2	237.4	389.0	554.6	859.1	1087.3	1304.7	1918.7	3316.2	-	-	-	-
42	35.5	62.9	96.7	159.6	249.0	408.0	581.7	901.1	1140.4	1368.5	2012.5	-	-	-	-	-
44	37.2	65.8	101.2	167.0	260.6	427.0	608.8	943.1	1193.6	1432.2	2106.3	-	-	-	-	-
46	38.8	68.7	105.7	174.5	272.2	446.0	635.9	985.1	1246.7	1496.0	2200.0	-	-	-	-	-

NOTES

1. Capacity in standard cubic meters per minute of air at 16°C and 10% overpressure for set pressures at 2.0 barg and above. Capacities below 2.0 barg set pressure are calculated at 0.2 barg overpressure. Valve discharging to atmospheric pressure.
2. Capacities at 1.0 barg and above are certified by the National Board of Boiler and Pressure Vessel Inspectors and in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII and Section XIII.

AIR CAPACITIES [Nm³/min][1] - SERIES 8100 (continued)

	ORIFICE LETTER DESIGNATION AND ACTUAL ORIFICE AREA, sq.cm															
SET PRESSURE, (barg)	D	E	F	G	H	J	K	L	M	N	P	Q	R	T	V	W
	0.79	1.39	2.14	3.53	5.51	9.03	12.87	19.95	25.24	30.29	44.55	76.99	108.25	182.41	291	433.7
48	40.5	71.7	110.2	181.9	283.8	465.0	663.0	1027.0	1299.9	1559.8	2293.8	-	-	-	-	-
50	42.2	74.6	114.7	189.4	295.4	484.0	690.1	1069.0	1353.0	1623.5	2387.6	-	-	-	-	-
55	46.3	81.9	126.0	208.0	324.5	531.6	757.8	1174.0	1485.8	1783.0	2622.0	-	-	-	-	-
60	50.4	89.2	137.3	226.5	353.5	579.1	825.6	1279.0	1618.7	1942.4	2856.5	-	-	-	-	-
65	54.6	96.6	148.5	245.1	382.5	626.6	893.3	1383.9	1751.5	2101.8	3090.9	-	-	-	-	-
70	58.7	103.9	159.8	263.7	411.5	674.2	961.1	1488.9	1884.4	-	-	-	-	-	-	-
75	62.8	111.2	171.1	282.3	440.5	721.7	1028.9	1593.9	2017.3	-	-	-	-	-	-	-
80	67.0	118.5	182.3	300.9	469.5	769.2	1096.6	1698.8	-	-	-	-	-	-	-	-
85	71.1	125.9	193.6	319.5	498.5	816.7	1164.4	1803.8	-	-	-	-	-	-	-	-
90	75.3	133.2	204.9	338.1	527.5	864.3	1232.1	1908.8	-	-	-	-	-	-	-	-
95	79.4	140.5	216.1	356.7	556.5	911.8	1299.9	2013.7	-	-	-	-	-	-	-	-
100	83.5	147.8	227.4	375.3	585.5	959.3	1367.7	2118.7	-	-	-	-	-	-	-	-
110	91.8	162.5	249.9	412.5	643.6	1054.4	1503.2	-	-	-	-	-	-	-	-	-
120	100.1	177.1	272.5	449.7	701.6	1149.4	1638.7	-	-	-	-	-	-	-	-	-
130	108.4	191.8	295.0	486.8	759.6	1244.5	1774.2	-	-	-	-	-	-	-	-	-
140	116.7	206.4	317.5	524.0	817.6	1339.6	1909.7	-	-	-	-	-	-	-	-	-
150	124.9	221.1	340.1	561.2	875.7	1434.6	2045.2	-	-	-	-	-	-	-	-	-
160	133.2	235.7	362.6	598.4	933.7	1529.7	-	-	-	-	-	-	-	-	-	-
170	141.5	250.4	385.1	635.6	991.7	1624.7	-	-	-	-	-	-	-	-	-	-
180	149.8	265.0	407.6	672.8	1049.7	1719.8	-	-	-	-	-	-	-	-	-	-
190	158.0	279.7	430.2	710.0	-	-	-	-	-	-	-	-	-	-	-	-
200	166.3	294.3	452.7	747.2	-	-	-	-	-	-	-	-	-	-	-	-
210	174.6	309.0	475.2	784.3	-	-	-	-	-	-	-	-	-	-	-	-
220	182.9	323.6	497.8	821.5	-	-	-	-	-	-	-	-	-	-	-	-
240	199.4	352.9	542.8	895.9	-	-	-	-	-	-	-	-	-	-	-	-
260	216.0	382.2	587.9	-	-	-	-	-	-	-	-	-	-	-	-	-
280	232.5	411.5	633.0	-	-	-	-	-	-	-	-	-	-	-	-	-
300	249.1	440.8	678.0	-	-	-	-	-	-	-	-	-	-	-	-	-
320	265.7	470.1	723.1	-	-	-	-	-	-	-	-	-	-	-	-	-
340	282.2	499.4	768.2	-	-	-	-	-	-	-	-	-	-	-	-	-
360	298.8	528.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
380	315.3	558.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400	331.9	587.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTES

1. Capacity in standard cubic meters per minute of air at 16°C and 10% overpressure for set pressures at 2.0 barg and above. Capacities below 2.0 barg set pressure are calculated at 0.2 barg overpressure. Valve discharging to atmospheric pressure.
2. Capacities at 1.0 barg and above are certified by the National Board of Boiler and Pressure Vessel Inspectors and in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII and Section XIII.

SAPAG SAFETY RELIEF VALVE

SERIES 8100 WATER CAPACITY TABLE - METRIC UNITS

WATER CAPACITIES [L/min][1] - SERIES 8200

	ORIFICE LETTER DESIGNATION AND ACTUAL ORIFICE AREA, sq.cm															
DIFFERENTIAL PRESSURE, (bar)[2]	D	E	F	G	H	J	K	L	M	N	P	Q	R	T	V	W
	0.79	1.39	2.14	3.53	5.51	9.03	12.87	19.95	25.24	30.29	44.55	76.99	108.25	182.41	291	433.7
1	48	85	131	216	337	551	786	1218	1541	1849	2720	4700	6609	11136	17766	26477
2	68	120	185	305	476	780	1112	1722	2179	2615	3846	6647	9346	15749	25124	37445
3	83	147	226	374	583	955	1361	2109	2669	3203	4710	8141	11446	19289	30771	45860
4	96	170	261	431	673	1103	1572	2435	3082	3699	5439	9401	13217	22273	35531	52955
5	107	190	292	482	752	1233	1758	2723	3446	4135	6081	10510	14777	24902	39725	59205
6	118	208	320	528	824	1350	1925	2983	3775	4530	6661	11513	16187	27278	43516	64856
7	127	225	346	571	890	1459	2080	3222	4077	4893	7195	12436	17484	29464	47003	70052
8	136	240	370	610	952	1559	2223	3444	4359	5230	7692	13295	18692	31498	50248	74889
9	144	255	392	647	1010	1654	2358	3653	4623	5548	8159	14101	19826	33409	53297	79432
10	152	269	413	682	1064	1743	2486	3851	4873	5848	8600	14864	20898	35216	56179	83729
11	159	282	433	715	1116	1829	2607	4038	5111	6133	9020	15589	21918	36935	58922	-
12	166	294	453	747	1166	1910	2723	4218	5339	6406	9421	16282	22893	38578	61542	-
13	173	306	471	778	1213	1988	2834	4390	5556	6668	9805	16947	23827	40153	-	-
14	180	318	489	807	1259	2063	2941	4556	5766	6919	10175	17587	24727	41669	-	-
15	186	329	506	835	1303	2135	3044	4716	5969	7162	10533	18204	25595	43131	-	-
16	192	340	523	863	1346	2205	3144	4871	6164	7397	10878	18801	26434	44546	-	-
17	198	350	539	889	1388	2273	3241	5020	6354	7625	11213	19380	27248	45917	-	-
18	204	360	554	915	1428	2339	3335	5166	6538	7846	11538	19942	28038	47248	-	-
19	209	370	570	940	1467	2403	3426	5308	6717	8061	11854	20488	28806	48542	-	-
20	215	380	584	965	1505	2466	3515	5445	6892	8270	12162	21020	29554	49803	-	-
22	225	398	613	1012	1578	2586	3687	5711	7228	8674	12756	22046	-	-	-	-
24	235	416	640	1057	1649	2701	3851	5965	7550	9059	13323	23027	-	-	-	-
26	245	433	666	1100	1716	2811	4008	6209	7858	9429	13867	23967	-	-	-	-
28	254	450	692	1141	1781	2917	4159	6443	8155	9785	14390	24872	-	-	-	-
30	263	465	716	1181	1843	3020	4305	6669	8441	10129	14895	25745	-	-	-	-
32	272	481	739	1220	1904	3119	4446	6888	8718	10461	15384	26589	-	-	-	-
34	280	495	762	1258	1962	3215	4583	7100	8986	10783	15857	27407	-	-	-	-
36	288	510	784	1294	2019	3308	4716	7306	9247	11096	16317	28202	-	-	-	-
38	296	524	806	1330	2074	3399	4845	7506	9500	11400	16764	28975	-	-	-	-
40	304	537	827	1364	2128	3487	4971	7701	9747	11696	17200	29727	-	-	-	-
42	311	551	847	1398	2181	3573	5094	7891	9987	11985	17624	-	-	-	-	-
44	318	564	867	1431	2232	3657	5214	8077	10222	12267	18039	-	-	-	-	-
46	326	576	886	1463	2282	3739	5331	8258	10452	12542	18445	-	-	-	-	-

NOTES

1. Capacities in liters per minute of water at 21°C and 10% overpressure for set pressures at at 2.0 barg and above. Capacities below 2.0 barg set pressure are calculated at 0.2 barg overpressure.
2. Differential pressure (ΔP) equals inlet pressure (set pressure plus overpressure) at flowing conditions minus back pressure.
3. Capacities at 1.0 barg and above are certified by the National Board of Boiler and Pressure Vessel Inspectors and in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII and Section XIII.

WATER CAPACITIES [L/min][1] - SERIES 8200 (continued)

	ORIFICE LETTER DESIGNATION AND ACTUAL ORIFICE AREA, sq.cm															
DIFFERENTIAL PRESSURE, (bar)[2]	D	E	F	G	H	J	K	L	M	N	P	Q	R	T	V	W
	0.79	1.39	2.14	3.53	5.51	9.03	12.87	19.95	25.24	30.29	44.55	76.99	108.25	182.41	291	433.7
48	333	589	905	1494	2331	3820	5446	8436	10677	12812	18841	-	-	-	-	-
50	340	601	924	1525	2380	3899	5558	8610	10897	13076	19230	-	-	-	-	-
55	356	630	969	1600	2496	4089	5829	9030	11429	13714	20168	-	-	-	-	-
60	372	658	1012	1671	2607	4271	6088	9432	11937	14324	21065	-	-	-	-	-
65	387	685	1054	1739	2713	4445	6337	9817	12425	14909	21925	-	-	-	-	-
70	402	711	1093	1805	2816	4613	6576	10188	12894	-	-	-	-	-	-	-
75	416	736	1132	1868	2914	4775	6807	10545	13346	-	-	-	-	-	-	-
80	429	760	1169	1929	3010	4931	7030	10891	-	-	-	-	-	-	-	-
85	443	783	1205	1989	3103	5083	7247	11226	-	-	-	-	-	-	-	-
90	455	806	1240	2046	3193	5230	7457	11552	-	-	-	-	-	-	-	-
95	468	828	1274	2102	3280	5374	7661	11868	-	-	-	-	-	-	-	-
100	480	850	1307	2157	3365	5513	7860	12176	-	-	-	-	-	-	-	-
110	504	891	1371	2262	3529	5782	8244	-	-	-	-	-	-	-	-	-
120	526	931	1432	2363	3686	6040	8610	-	-	-	-	-	-	-	-	-
130	547	969	1490	2459	3837	6286	8962	-	-	-	-	-	-	-	-	-
140	568	1005	1546	2552	3982	6524	9300	-	-	-	-	-	-	-	-	-
150	588	1041	1601	2642	4122	6752	9627	-	-	-	-	-	-	-	-	-
160	607	1075	1653	2728	4257	6974	-	-	-	-	-	-	-	-	-	-
170	626	1108	1704	2812	4388	7189	-	-	-	-	-	-	-	-	-	-
180	644	1140	1753	2894	4515	7397	-	-	-	-	-	-	-	-	-	-
190	662	1171	1801	2973	-	-	-	-	-	-	-	-	-	-	-	-
200	679	1201	1848	3050	-	-	-	-	-	-	-	-	-	-	-	-
210	696	1231	1894	3126	-	-	-	-	-	-	-	-	-	-	-	-
220	712	1260	1938	3199	-	-	-	-	-	-	-	-	-	-	-	-
240	744	1316	2025	3341	-	-	-	-	-	-	-	-	-	-	-	-
260	774	1370	2107	-	-	-	-	-	-	-	-	-	-	-	-	-
280	803	1422	2187	-	-	-	-	-	-	-	-	-	-	-	-	-
300	832	1472	2264	-	-	-	-	-	-	-	-	-	-	-	-	-
320	859	1520	2338	-	-	-	-	-	-	-	-	-	-	-	-	-
340	885	1567	2410	-	-	-	-	-	-	-	-	-	-	-	-	-
360	911	1612	-	-	-	-	-	-	-	-	-	-	-	-	-	-
380	936	1656	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400	960	1699	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTES

1. Capacities in liters per minute of water at 21°C and 10% overpressure for set pressures at at 2.0 barg and above. Capacities below 2.0 barg set pressure are calculated at 0.2 barg overpressure.
2. Differential pressure (ΔP) equals inlet pressure (set pressure plus overpressure) at flowing conditions minus back pressure.
3. Capacities at 1.0 barg and above are certified by the National Board of Boiler and Pressure Vessel Inspectors and in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII and Section XIII.

SAPAG SAFETY RELIEF VALVE

SERIES 8100 STEAM CAPACITY TABLE - METRIC UNITS

SATURATED STEAM CAPACITIES, UNFIRED PRESSURE VESSEL SERVICE [kg/hr][1] - SERIES 8100

	ORIFICE LETTER DESIGNATION AND ACTUAL ORIFICE AREA, sq.cm															
SET PRESSURE, (barg)	D	E	F	G	H	J	K	L	M	N	P	Q	R	T	V	W
	0.79	1.39	2.14	3.53	5.51	9.03	12.87	19.95	25.24	30.29	44.55	76.99	108.25	182.41	291	433.7
1	80	140	216	356	555	910	1296	2010	2543	3051	4488	7755	10904	18375	29314	43688
2	116	203	313	516	806	1321	1882	2918	3691	4430	6516	11260	15832	26678	42560	63430
3	155	273	420	693	1082	1773	2527	3917	4955	5947	8746	15115	21252	35811	57130	85146
4	195	342	527	870	1358	2225	3171	4916	6219	7463	10977	18970	26672	44945	71701	106861
5	234	412	634	1047	1634	2677	3816	5914	7483	8980	13208	22825	32092	54078	86272	128577
6	274	482	742	1223	1909	3129	4460	6913	8747	10497	15438	26680	37513	63212	100842	150293
7	313	551	849	1400	2185	3581	5104	7912	10010	12013	17669	30535	42933	72345	115413	172009
8	353	621	956	1577	2461	4034	5749	8911	11274	13530	19900	34390	48353	81479	129984	193725
9	392	690	1063	1754	2737	4486	6393	9910	12538	15047	22130	38245	53773	90612	144554	215440
10	432	760	1170	1930	3013	4938	7038	10909	13802	16563	24361	42100	59193	99746	159125	237156
11	472	830	1277	2107	3289	5390	7682	11908	15066	18080	26592	45955	64614	108879	173695	258872
12	511	899	1385	2284	3565	5842	8326	12907	16329	19597	28822	49810	70034	118012	188266	-
13	551	969	1492	2461	3841	6294	8971	13906	17593	21113	31053	53665	75454	127146	-	-
14	590	1038	1599	2637	4117	6746	9615	14905	18857	22630	33284	57520	80874	136279	-	-
15	630	1108	1706	2814	4392	7198	10260	15904	20121	24146	35514	61375	86294	145413	-	-
16	669	1178	1813	2991	4668	7651	10904	16903	21385	25663	37745	65230	91714	154546	-	-
17	709	1247	1920	3168	4944	8103	11548	17901	22648	27180	39976	69084	97135	163680	-	-
18	748	1317	2027	3344	5220	8555	12193	18900	23912	28696	42206	72939	102555	172813	-	-
19	788	1386	2135	3521	5496	9007	12837	19899	25176	30213	44437	76794	107975	181947	-	-
20	828	1456	2242	3698	5772	9459	13482	20898	26440	31730	46667	80649	113395	191080	-	-
22	907	1595	2456	4051	6324	10363	14771	22896	28967	34763	51129	88359	-	-	-	-
24	986	1734	2670	4405	6875	11268	16059	24894	31495	37796	55590	96069	-	-	-	-
26	1065	1874	2885	4758	7427	12172	17348	26892	34022	40830	60051	103779	-	-	-	-
28	1144	2013	3099	5112	7979	13076	18637	28890	36550	43863	64513	111489	-	-	-	-
30	1223	2152	3313	5465	8531	13981	19926	30887	39078	46896	68974	119199	-	-	-	-
32	1302	2291	3528	5819	9083	14885	21215	32885	41605	49930	73435	126909	-	-	-	-
34	1381	2430	3742	6172	9634	15789	22504	34883	44133	52963	77897	134619	-	-	-	-
36	1460	2570	3956	6526	10186	16693	23792	36881	46660	55996	82358	142329	-	-	-	-
38	1540	2709	4170	6879	10738	17598	25081	38879	49188	59029	86819	150039	-	-	-	-
40	1619	2848	4385	7233	11290	18502	26370	40877	51716	62063	91281	157749	-	-	-	-
42	1698	2987	4599	7586	11841	19406	27659	42874	54243	65096	95742	-	-	-	-	-
44	1777	3126	4813	7940	12393	20311	28948	44872	56771	68129	100203	-	-	-	-	-
46	1856	3266	5028	8293	12945	21215	30236	46870	59298	71163	104665	-	-	-	-	-

NOTES

1. Capacities in kilograms per hour of saturated steam at 10% overpressure for set pressures at 2.0 barg and above. Capacities below 2.0 barg set pressure are calculated at 0.2 barg overpressure. Valve discharging to atmospheric pressure.
2. Capacities at 1.0 barg and above are certified by the National Board of Boiler and Pressure Vessel Inspectors and in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII and Section XIII.

SATURATED STEAM CAPACITIES, UNFIRED PRESSURE VESSEL SERVICE [kg/hr][1] - SERIES 8100 (continued)

	ORIFICE LETTER DESIGNATION AND ACTUAL ORIFICE AREA, sq.cm															
SET PRESSURE, (barg)	D 0.79	E 1.39	F 2.14	G 3.53	H 5.51	J 9.03	K 12.87	L 19.95	M 25.24	N 30.29	P 44.55	Q 76.99	R 108.25	T 182.41	V 291	W 433.7
48	1935	3405	5242	8647	13497	22119	31525	48868	61826	74196	109126	-	-	-	-	-
50	2014	3544	5456	9000	14049	23023	32814	50866	64353	77229	113587	-	-	-	-	-
55	2212	3892	5992	9884	15428	25284	36036	55860	70672	84812	124741	-	-	-	-	-
60	2410	4240	6528	10768	16808	27545	39258	60855	76991	92396	135894	-	-	-	-	-
65	2608	4588	7064	11652	18187	29806	42480	65849	83310	99979	147047	-	-	-	-	-
70	2805	4936	7599	12535	19566	32066	45702	70844	89629	-	-	-	-	-	-	-
75	3003	5284	8135	13419	20946	34327	48924	75839	95948	-	-	-	-	-	-	-
80	3201	5632	8671	14303	22325	36588	52147	80833	-	-	-	-	-	-	-	-
85	3399	5980	9207	15187	23705	38848	55369	85828	-	-	-	-	-	-	-	-
90	3596	6328	9742	16070	25084	41109	58591	90822	-	-	-	-	-	-	-	-
95	3794	6676	10278	16954	26464	43370	61813	95817	-	-	-	-	-	-	-	-
100	3992	7024	10814	17838	27843	45630	65035	100812	-	-	-	-	-	-	-	-
110	4391	7726	11895	19621	30627	50193	71537	-	-	-	-	-	-	-	-	-
120	4828	8494	13078	21572	33672	55182	78649	-	-	-	-	-	-	-	-	-
130	5276	9282	14291	23573	36795	60302	85945	-	-	-	-	-	-	-	-	-
140	5737	10094	15540	25634	40012	65573	-	-	-	-	-	-	-	-	-	-
150	6214	10933	16832	27764	43337	71023	-	-	-	-	-	-	-	-	-	-
160	6709	11804	18173	29978	46792	76685	-	-	-	-	-	-	-	-	-	-
170	7227	12715	19576	32291	50403	82602	-	-	-	-	-	-	-	-	-	-
180	7771	13674	21051	34725	-	-	-	-	-	-	-	-	-	-	-	-
190	8350	14691	22618	37309	-	-	-	-	-	-	-	-	-	-	-	-
200	8970	15782	24297	40079	-	-	-	-	-	-	-	-	-	-	-	-

NOTES

1. Capacities in kilograms per hour of saturated steam at 10% overpressure for set pressures at 2.0 barg and above. Capacities below 2.0 barg set pressure are calculated at 0.2 barg overpressure. Valve discharging to atmospheric pressure.
2. Capacities at 1.0 barg and above are certified by the National Board of Boiler and Pressure Vessel Inspectors and in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII and Section XIII.

SAPAG SAFETY RELIEF VALVE

SERIES 8100 AIR CAPACITY TABLE - US UNITS

AIR CAPACITIES [SCFM] - SERIES 8100

	ORIFICE LETTER DESIGNATION AND ACTUAL ORIFICE AREA, sq.in															
SET PRESSURE, (psig)	D	E	F	G	H	J	K	L	M	N	P	Q	R	T	V	W
	0.122	0.216	0.332	0.548	0.854	1.400	1.996	3.092	3.913	4.695	6.905	11.934	16.778	28.274	45.105	67.224
15	63	112	172	284	444	727	1037	1606	2033	2439	3587	6200	8717	14689	23433	34924
30	92	163	251	415	647	1061	1512	2343	2965	3558	5233	9044	12715	21427	34182	50944
45	124	220	338	559	871	1428	2035	3153	3991	4789	7043	12172	17114	28839	46006	68566
60	156	277	425	702	1095	1795	2559	3964	5017	6020	8853	15300	21512	36251	57830	86189
75	188	333	512	846	1319	2162	3082	4774	6042	7250	10663	18429	25910	43663	69654	103811
90	220	390	599	989	1543	2529	3605	5585	7068	8481	12473	21557	30309	51075	81478	121433
105	252	446	686	1133	1767	2896	4128	6395	8094	9712	14283	24685	34707	58487	93302	139055
120	284	503	773	1276	1991	3263	4651	7205	9119	10943	16093	27814	39105	65899	105126	156677
135	316	559	860	1420	2215	3629	5174	8016	10145	12174	17902	30942	43504	73311	116950	174300
150	348	616	947	1563	2439	3996	5697	8826	11171	13404	19712	34070	47902	80723	128774	191922
165	380	672	1034	1707	2663	4363	6221	9637	12196	14635	21522	37199	52300	88134	140598	-
180	412	729	1121	1850	2887	4730	6744	10447	13222	15866	23332	40327	56699	95546	152422	-
195	444	785	1208	1994	3111	5097	7267	11257	14248	17097	25142	43455	61097	102958	-	-
210	476	842	1295	2138	3335	5464	7790	12068	15273	18328	26952	46584	65495	110370	-	-
225	508	899	1382	2281	3559	5831	8313	12878	16299	19558	28762	49712	69894	117782	-	-
240	540	955	1469	2425	3783	6198	8836	13689	17325	20789	30572	52841	74292	125194	-	-
255	572	1012	1556	2568	4007	6565	9359	14499	18350	22020	32382	55969	78690	132606	-	-
270	604	1068	1643	2712	4231	6932	9882	15309	19376	23251	34192	59097	83089	140018	-	-
285	636	1125	1730	2855	4455	7299	10406	16120	20402	24482	36002	62226	87487	147430	-	-
300	668	1181	1817	2999	4679	7666	10929	16930	21428	25712	37812	65354	91885	154842	-	-
330	731	1294	1991	3286	5127	8400	11975	18551	23479	28174	41432	71611	-	-	-	-
360	795	1407	2165	3573	5575	9134	13021	20172	25530	30635	45052	77867	-	-	-	-
390	859	1521	2339	3860	6023	9868	14068	21793	27582	33097	48672	84124	-	-	-	-
420	923	1634	2513	4147	6471	10601	15114	23414	29633	35559	52292	90381	-	-	-	-
450	987	1747	2687	4434	6919	11335	16160	25034	31684	38020	55912	96637	-	-	-	-
480	1051	1860	2861	4721	7367	12069	17206	26655	33736	40482	59532	102894	-	-	-	-
510	1115	1973	3035	5009	7815	12803	18253	28276	35787	42943	63152	109151	-	-	-	-
540	1179	2086	3209	5296	8263	13537	19299	29897	37839	45405	66772	115407	-	-	-	-
570	1243	2199	3383	5583	8711	14271	20345	31518	39890	47867	70392	121664	-	-	-	-
600	1307	2312	3557	5870	9159	15005	21391	33139	41941	50328	74012	127921	-	-	-	-
630	1371	2425	3731	6157	9607	15739	22438	34759	43993	52790	77632	-	-	-	-	-
660	1435	2538	3905	6444	10054	16473	23484	36380	46044	55251	81252	-	-	-	-	-

NOTES

1. Capacities in standard cubic feet per minute of air at 60°F and 10% overpressure for set pressures at 30 psig and above. Capacities below 30 psig set pressure are calculated at 3 psig overpressure. Valve discharging to atmospheric pressure.
2. Capacities at 15 psig and above are certified by the National Board of Boiler and Pressure Vessel Inspectors and in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII and Section XIII.

AIR CAPACITIES [SCFM] - SERIES 8100 (continued)

	ORIFICE LETTER DESIGNATION AND ACTUAL ORIFICE AREA, sq.in															
SET PRESSURE, (psig)	D	E	F	G	H	J	K	L	M	N	P	Q	R	T	V	W
	0.122	0.216	0.332	0.548	0.854	1.400	1.996	3.092	3.913	4.695	6.905	11.934	16.778	28.274	45.105	67.224
690	1498	2651	4079	6731	10502	17207	24530	38001	48095	57713	84872	-	-	-	-	-
720	1562	2765	4252	7018	10950	17940	25576	39622	50147	60174	88492	-	-	-	-	-
800	1733	3066	4716	7784	12145	19897	28367	43944	55617	66739	98146	-	-	-	-	-
900	1946	3443	5296	8741	13638	22344	31854	49347	62455	74944	110212	-	-	-	-	-
1000	2159	3820	5876	9698	15131	24790	35342	54750	69293	83149	122279	-	-	-	-	-
1100	2372	4197	6456	10655	16624	27236	38829	60153	76131	-	-	-	-	-	-	-
1200	2585	4574	7036	11612	18118	29683	42317	65555	-	-	-	-	-	-	-	-
1300	2798	4951	7616	12569	19611	32129	45804	70958	-	-	-	-	-	-	-	-
1400	3011	5328	8196	13526	21104	34575	49292	76361	-	-	-	-	-	-	-	-
1500	3224	5705	8775	14483	22597	37022	52779	81764	-	-	-	-	-	-	-	-
1600	3437	6082	9355	15440	24090	39468	56267	-	-	-	-	-	-	-	-	-
1700	3650	6459	9935	16397	25583	41914	59755	-	-	-	-	-	-	-	-	-
1800	3863	6836	10515	17354	27077	44361	63242	-	-	-	-	-	-	-	-	-
1900	4076	7213	11095	18311	28570	46807	66730	-	-	-	-	-	-	-	-	-
2000	4289	7590	11675	19268	30063	49253	70217	-	-	-	-	-	-	-	-	-
2100	4502	7967	12255	20225	31556	51700	73705	-	-	-	-	-	-	-	-	-
2200	4715	8344	12834	21182	33049	54146	77192	-	-	-	-	-	-	-	-	-
2300	4928	8721	13414	22139	34542	56592	80680	-	-	-	-	-	-	-	-	-
2400	5141	9097	13994	23096	36036	59039	-	-	-	-	-	-	-	-	-	-
2500	5354	9474	14574	24053	37529	61485	-	-	-	-	-	-	-	-	-	-
2600	5567	9851	15154	25010	39022	63931	-	-	-	-	-	-	-	-	-	-
2700	5780	10228	15734	25967	40515	66378	-	-	-	-	-	-	-	-	-	-
2800	5993	10605	16314	26924	42008	-	-	-	-	-	-	-	-	-	-	-
2900	6206	10982	16893	27881	-	-	-	-	-	-	-	-	-	-	-	-
3000	6420	11359	17473	28838	-	-	-	-	-	-	-	-	-	-	-	-
3500	7485	13244	20373	33623	-	-	-	-	-	-	-	-	-	-	-	-
4000	8550	15129	23272	38408	-	-	-	-	-	-	-	-	-	-	-	-
4500	9615	17014	26171	-	-	-	-	-	-	-	-	-	-	-	-	-
5000	10680	18898	29071	-	-	-	-	-	-	-	-	-	-	-	-	-
5500	11745	20783	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6000	12811	22668	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTES

1. Capacities in standard cubic feet per minute of air at 60°F and 10% overpressure for set pressures at 30 psig and above. Capacities below 30 psig set pressure are calculated at 3 psig overpressure. Valve discharging to atmospheric pressure.
2. Capacities at 15 psig and above are certified by the National Board of Boiler and Pressure Vessel Inspectors and in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII and Section XIII.

SAPAG SAFETY RELIEF VALVE

SERIES 8100 STEAM CAPACITY TABLE - US UNITS

SATURATED STEAM CAPACITIES, UNFIRED PRESSURE VESSEL SERVICE [lbm/hr][1] - SERIES 8100

	ORIFICE LETTER DESIGNATION AND ACTUAL ORIFICE AREA, sq.in															
SET PRESSURE, (psig)	**D**	**E**	**F**	**G**	**H**	**J**	**K**	**L**	**M**	**N**	**P**	**Q**	**R**	**T**	**V**	**W**
	0.122	**0.216**	**0.332**	**0.548**	**0.854**	**1.400**	**1.996**	**3.092**	**3.913**	**4.695**	**6.905**	**11.934**	**16.778**	**28.274**	**45.105**	**67.224**
15	178	315	484	799	1247	2043	2913	4512	5711	6853	10078	17418	24489	41268	65834	98117
30	260	459	706	1166	1819	2980	4249	6582	8330	9996	14701	25408	35723	60199	96033	143125
45	349	618	951	1569	2448	4011	5719	8859	11212	13454	19786	34197	48080	81022	129252	192634
60	439	777	1195	1972	3078	5042	7188	11136	14094	16912	24871	42986	60437	101845	162470	242142
75	529	936	1440	2376	3707	6073	8658	13413	16975	20370	29956	51775	72794	122669	195689	291651
90	619	1095	1684	2779	4336	7104	10128	15689	19857	23828	35041	60564	85150	143492	228908	341160
105	708	1254	1928	3182	4965	8135	11597	17966	22739	27285	40126	69353	97507	164316	262127	390668
120	798	1412	2173	3586	5595	9166	13067	20243	25620	30743	45211	78141	109864	185139	295346	440177
135	888	1571	2417	3989	6224	10197	14537	22520	28502	34201	50296	86930	122221	205962	328565	489686
150	978	1730	2661	4392	6853	11228	16007	24797	31383	37659	55381	95719	134578	226786	361784	539194
165	1068	1889	2906	4796	7482	12259	17476	27073	34265	41117	60466	104508	146935	247609	395002	-
180	1157	2048	3150	5199	8112	13290	18946	29350	37147	44575	65551	113297	159292	268433	428221	-
195	1247	2207	3394	5602	8741	14320	20416	31627	40028	48033	70636	122086	171649	289256	-	-
210	1337	2366	3639	6005	9370	15351	21885	33904	42910	51490	75722	130875	184006	310079	-	-
225	1427	2524	3883	6409	9999	16382	23355	36181	45792	54948	80807	139664	196363	330903	-	-
240	1516	2683	4128	6812	10629	17413	24825	38458	48673	58406	85892	148453	208720	351726	-	-
255	1606	2842	4372	7215	11258	18444	26295	40734	51555	61864	90977	157242	221077	372550	-	-
270	1696	3001	4616	7619	11887	19475	27764	43011	54436	65322	96062	166031	233434	393373	-	-
285	1786	3160	4861	8022	12516	20506	29234	45288	57318	68780	101147	174819	245791	414197	-	-
300	1876	3319	5105	8425	13146	21537	30704	47565	60200	72237	106232	183608	258147	435020	-	-
330	2055	3636	5594	9232	14404	23599	33643	52119	65963	79153	116402	201186	-	-	-	-
360	2235	3954	6082	10038	15663	25661	36583	56672	71726	86069	126572	218764	-	-	-	-
390	2414	4272	6571	10845	16921	27722	39522	61226	77489	92984	136743	236342	-	-	-	-
420	2594	4590	7060	11652	18180	29784	42461	65779	83253	99900	146913	253920	-	-	-	-
450	2773	4907	7549	12458	19438	31846	45401	70333	89016	106816	157083	271497	-	-	-	-
480	2953	5225	8037	13265	20697	33908	48340	74887	94779	113731	167253	289075	-	-	-	-
510	3132	5543	8526	14071	21955	35970	51280	79440	100542	120647	177423	306653	-	-	-	-
540	3312	5860	9015	14878	23213	38032	54219	83994	106306	127563	187594	324231	-	-	-	-
570	3491	6178	9504	15685	24472	40094	57159	88548	112069	134479	197764	341809	-	-	-	-
600	3671	6496	9992	16491	25730	42155	60098	93101	117832	141394	207934	359387	-	-	-	-
630	3851	6814	10481	17298	26989	44217	63037	97655	123595	148310	218104	-	-	-	-	-

NOTES

1. Capacities in pounds per hour of steam at 10% overpressure for set pressures at 30 psig and above. Capacities below 30 psig set pressure are calculated at 3 psig overpressure. Valve discharging to atmospheric pressure.
2. Capacities at 15 psig and above are certified by the National Board of Boiler and Pressure Vessel Inspectors and in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII and Section XIII.

SATURATED STEAM CAPACITIES, UNFIRED PRESSURE VESSEL SERVICE [lbm/hr][1] - SERIES 8100 (continued)

	ORIFICE LETTER DESIGNATION AND ACTUAL ORIFICE AREA, sq.in															
SET PRESSURE, (psig)	D	E	F	G	H	J	K	L	M	N	P	Q	R	T	V	W
	0.122	0.216	0.332	0.548	0.854	1.400	1.996	3.092	3.913	4.695	6.905	11.934	16.778	28.274	45.105	67.224
660	4030	7131	10970	18104	28247	46279	65977	102209	129358	155226	228274	-	-	-	-	-
690	4210	7449	11458	18911	29506	48341	68916	106762	135122	162141	238444	-	-	-	-	-
720	4389	7767	11947	19717	30764	50403	71856	111316	140885	169057	248615	-	-	-	-	-
800	4868	8614	13250	21868	34120	55901	79694	123459	156254	187499	275735	-	-	-	-	-
900	5467	9673	14880	24557	38315	62774	89492	138638	175464	210551	309636	-	-	-	-	-
1000	6065	10732	16509	27246	42510	69647	99290	153817	194675	233603	343536	-	-	-	-	-
1100	6664	11791	18138	29934	46705	76519	109089	168995	213886	-	-	-	-	-	-	-
1200	7262	12850	19767	32623	50900	83392	118887	184174	-	-	-	-	-	-	-	-
1300	7861	13909	21396	35312	55095	90265	128685	199353	-	-	-	-	-	-	-	-
1400	8459	14968	23025	38000	59290	97138	138483	214532	-	-	-	-	-	-	-	-
1500	9019	15958	24547	40513	63211	103561	147640	228718	-	-	-	-	-	-	-	-
1600	9667	17105	26312	43425	67754	111005	158252	-	-	-	-	-	-	-	-	-
1700	10325	18270	28104	46383	72370	118567	169032	-	-	-	-	-	-	-	-	-
1800	10995	19456	29928	49392	77065	126259	179999	-	-	-	-	-	-	-	-	-
1900	11678	20663	31785	52458	81849	134096	191172	-	-	-	-	-	-	-	-	-
2000	12374	21896	33681	55587	86731	142095	202575	-	-	-	-	-	-	-	-	-
2100	13086	23156	35620	58787	91723	150274	-	-	-	-	-	-	-	-	-	-
2200	13816	24448	37607	62066	96839	158656	-	-	-	-	-	-	-	-	-	-
2300	14566	25775	39648	65435	102095	167267	-	-	-	-	-	-	-	-	-	-
2400	15339	27142	41751	68905	107510	176138	-	-	-	-	-	-	-	-	-	-
2500	16137	28554	43924	72491	113105	185305	-	-	-	-	-	-	-	-	-	-
2600	16965	30019	46177	76210	-	-	-	-	-	-	-	-	-	-	-	-
2700	17827	31545	48524	80083	-	-	-	-	-	-	-	-	-	-	-	-
2800	18729	33141	50979	84136	-	-	-	-	-	-	-	-	-	-	-	-
2900	19678	34820	53562	88398	-	-	-	-	-	-	-	-	-	-	-	-

NOTES

1. Capacities in pounds per hour of steam at 10% overpressure for set pressures at 30 psig and above. Capacities below 30 psig set pressure are calculated at 3 psig overpressure. Valve discharging to atmospheric pressure.
2. Capacities at 15 psig and above are certified by the National Board of Boiler and Pressure Vessel Inspectors and in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII and Section XIII.

SAPAG SAFETY RELIEF VALVE

SERIES 8200 WATER CAPACITY TABLE - US UNITS

WATER CAPACITIES [USGPM][1] - SERIES 8200

	ORIFICE LETTER DESIGNATION AND ACTUAL ORIFICE AREA, sq.in															
DIFFERENTIAL PRESSURE, (psi)[2]	D	E	F	G	H	J	K	L	M	N	P	Q	R	T	V	W
	0.122	0.216	0.332	0.548	0.854	1.400	1.996	3.092	3.913	4.695	6.905	11.934	16.778	28.274	45.105	67.224
15	13	23	35	58	90	148	211	327	414	497	731	1263	1775	2992	4773	7113
30	18	32	50	82	128	209	299	463	586	703	1033	1786	2511	4231	6750	10060
45	22	40	61	100	157	257	366	567	717	860	1265	2187	3075	5182	8267	12320
60	26	46	70	116	181	296	422	654	828	994	1461	2526	3551	5984	9546	14226
75	29	51	79	130	202	331	472	731	926	1111	1634	2824	3970	6690	10672	15906
90	32	56	86	142	221	363	517	801	1014	1217	1790	3093	4349	7328	11691	17424
105	34	60	93	153	239	392	559	865	1095	1314	1933	3341	4697	7916	12628	18820
120	36	65	99	164	256	419	597	925	1171	1405	2066	3572	5022	8462	13499	20119
135	39	68	105	174	271	444	633	981	1242	1490	2192	3788	5326	8975	14318	21340
150	41	72	111	183	286	468	668	1034	1309	1571	2310	3993	5614	9461	15093	22494
165	43	76	116	192	300	491	700	1085	1373	1648	2423	4188	5888	9923	15829	-
180	45	79	122	201	313	513	731	1133	1434	1721	2531	4374	6150	10364	16533	-
195	47	82	127	209	326	534	761	1179	1493	1791	2634	4553	6401	10787	-	-
210	48	85	131	217	338	554	790	1224	1549	1859	2734	4725	6643	11194	-	-
225	50	88	136	224	350	574	818	1267	1603	1924	2830	4891	6876	11587	-	-
240	52	91	140	232	362	592	845	1309	1656	1987	2922	5051	7102	11967	-	-
255	53	94	145	239	373	611	871	1349	1707	2048	3012	5206	7320	12336	-	-
270	55	97	149	246	384	628	896	1388	1757	2108	3100	5357	7532	12693	-	-
285	56	99	153	253	394	646	920	1426	1805	2166	3185	5504	7739	13041	-	-
300	58	102	157	259	404	662	944	1463	1852	2222	3267	5647	7940	13380	-	-
330	61	107	165	272	424	695	990	1534	1942	2330	3427	5923	-	-	-	-
360	63	112	172	284	443	726	1034	1603	2028	2434	3579	6186	-	-	-	-
390	66	116	179	295	461	755	1077	1668	2111	2533	3725	6439	-	-	-	-
420	68	121	186	307	478	784	1117	1731	2191	2629	3866	6682	-	-	-	-
450	71	125	192	317	495	811	1157	1792	2268	2721	4002	6916	-	-	-	-
480	73	129	199	328	511	838	1195	1850	2342	2810	4133	7143	-	-	-	-
510	75	133	205	338	527	864	1231	1907	2414	2897	4260	7363	-	-	-	-
540	77	137	211	348	542	889	1267	1963	2484	2981	4384	7577	-	-	-	-
570	80	141	216	357	557	913	1302	2017	2552	3063	4504	7784	-	-	-	-
600	82	144	222	366	572	937	1336	2069	2618	3142	4621	7986	-	-	-	-
630	84	148	228	376	586	960	1368	2120	2683	3220	4735	-	-	-	-	-

NOTES

1. Capacities in U.S. gallons per minute of water at 70°F and 10% overpressure for set pressures at 30 psig and above. Capacities below 30 psig set pressure are calculated at 3 psig overpressure.
2. Differential pressure (ΔP) equals inlet pressure (set pressure plus overpressure) at flowing conditions minus back pressure.
3. Capacities at 15 psig and above are certified by the National Board of Boiler and Pressure Vessel Inspectors and in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII and Section XIII.

WATER CAPACITIES [USGPM][1] - SERIES 8200 (continued)

	ORIFICE LETTER DESIGNATION AND ACTUAL ORIFICE AREA, sq.in															
DIFFERENTIAL PRESSURE, (psi)[2]	D	E	F	G	H	J	K	L	M	N	P	Q	R	T	V	W
	0.122	0.216	0.332	0.548	0.854	1.400	1.996	3.092	3.913	4.695	6.905	11.934	16.778	28.274	45.105	67.224
660	86	151	233	384	600	983	1401	2170	2746	3295	4846	-	-	-	-	-
690	87	155	238	393	613	1005	1432	2219	2808	3370	4955	-	-	-	-	-
720	89	158	243	401	626	1026	1463	2266	2868	3442	5062	-	-	-	-	-
800	94	167	256	423	660	1082	1542	2389	3024	3628	5336	-	-	-	-	-
900	100	177	272	449	700	1147	1636	2534	3207	3848	5659	-	-	-	-	-
1000	105	186	287	473	738	1209	1724	2671	3380	4056	5965	-	-	-	-	-
1100	110	195	301	496	774	1268	1808	2801	3545	-	-	-	-	-	-	-
1200	115	204	314	518	809	1325	1889	2926	-	-	-	-	-	-	-	-
1300	120	212	327	539	842	1379	1966	3045	-	-	-	-	-	-	-	-
1400	125	221	339	560	873	1431	2040	3160	-	-	-	-	-	-	-	-
1500	129	228	351	579	904	1481	2112	3271	-	-	-	-	-	-	-	-
1600	133	236	363	598	934	1530	2181	-	-	-	-	-	-	-	-	-
1700	137	243	374	617	962	1577	2248	-	-	-	-	-	-	-	-	-
1800	141	250	385	635	990	1623	2313	-	-	-	-	-	-	-	-	-
1900	145	257	395	652	1018	1667	2377	-	-	-	-	-	-	-	-	-
2000	149	264	405	669	1044	1710	2438	-	-	-	-	-	-	-	-	-
2100	153	270	415	686	1070	1753	2499	-	-	-	-	-	-	-	-	-
2200	156	276	425	702	1095	1794	2557	-	-	-	-	-	-	-	-	-
2300	160	283	435	718	1120	1834	2615	-	-	-	-	-	-	-	-	-
2400	163	289	444	733	1144	1874	-	-	-	-	-	-	-	-	-	-
2500	167	295	453	748	1167	1912	-	-	-	-	-	-	-	-	-	-
2600	170	300	462	763	1190	1950	-	-	-	-	-	-	-	-	-	-
2700	173	306	471	777	1213	1987	-	-	-	-	-	-	-	-	-	-
2800	176	312	480	792	1235	-	-	-	-	-	-	-	-	-	-	-
2900	179	317	488	806	-	-	-	-	-	-	-	-	-	-	-	-
3000	182	323	497	819	-	-	-	-	-	-	-	-	-	-	-	-
3500	197	349	536	885	-	-	-	-	-	-	-	-	-	-	-	-
4000	211	373	573	946	-	-	-	-	-	-	-	-	-	-	-	-
4500	223	395	608	-	-	-	-	-	-	-	-	-	-	-	-	-
5000	235	417	641	-	-	-	-	-	-	-	-	-	-	-	-	-
5500	247	437	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6000	258	456	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTES

1. Capacities in U.S. gallons per minute of water at 70°F and 10% overpressure for set pressures at 30 psig and above. Capacities below 30 psig set pressure are calculated at 3 psig overpressure.
2. Differential pressure (ΔP) equals inlet pressure (set pressure plus overpressure) at flowing conditions minus back pressure.
3. Capacities at 15 psig and above are certified by the National Board of Boiler and Pressure Vessel Inspectors and in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII and Section XIII.

SAPAG SAFETY RELIEF VALVE

SERIES 8100/8200 CODIFICATION SYSTEM

SELECTION GUIDE

Example:	Z	819	3	G	A	WCB	A	T2*	DN40	PN25 B1	DN65	PN16 B1

Optional additional digit for special features

X	Additional device
Y	Special material
Z	Special machining

Valve type

8100	Conventional
8110	Soft seated
8120	High temperature, conventional
8150	High temperature, bellows
8180	Soft seat and bellows
8190	Bellows
8200	Liquid trim
8290	Liquid trim and bellows

Pressure class

1	150 lbs or PN 20
2	300 lbs or PN 50 light series *
3	300 lbs or PN 50
4	600 lbs or PN 100
6	900 lbs or PN 150
7	1500 lbs or PN 250
8	2500 lbs or PN 420

Orifice size - 8100/8200 Series

D	H	M	R
E	J	N	T
F	K	P	V
G	L	Q	W

Accessories

A	Screwed cap (standard)
B	Bolted cap
C	Screwed cap and plain lever
E	Bolted cap and packed lever
F	Screwed cap and packed lever
P	Remote air actuator

Material

WCB	SGM	M1	V3
LCB	S3M	V0	WC6
L3	S4M	V1	T2
S2M	S5M	V2	

Seating

A	Metal/metal	**P**	Fluorocarbon (FKM) soft seat
D	Stellited nozzle	**R**	Polytetrafluoroethylene (PTFE) solid disc
E	Stellited nozzle and disc	**T**	Nitrile (NBR) soft seat
F	Stellited disc	**V**	Kalrez® soft seat
K	Ethylene Propylene (EPT) soft seat		

Spring material

Note	Based on material availability, the factory reserves the right to offer a material better than specified
*	This digit is optional; when omitted, the spring material as per the standard bill of material and/or the specified service temperature will be offered
A	Chrome steel
S	Stainless steel
PH	Precipitation hardened stainless steel
X	Inconel® X750
K	Copper Nickel alloy
T2	Tungsten high temperature alloy steel
T9	High Tungsten alloy steel

Inlet NPS or DN

Inlet flange rating (Class or PN) and finish

Outlet NPS or DN

Outlet flange rating (Class or PN) and finish

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Inconel® is a mark owned by Special Metals Corporation.