BROADY
Valve and Flow Control Specialists

TYPE 3600 SAFETY RELIEF VALVE

The Type 3600 Safety Relief valve is designed to have a short 'simmer', then to open rapidly to the full open position, and to re-seat at a controlled pressure. When the valve is in its fully lifted position, the discharge area is controlled by the bore of the nozzle, which ensures that flow calculations for various mediums can be reliably made.

Valves are supplied in sizes ½" to 1" and can be manufactured in Cast Steel or Stainless Steel (other materials available on request) with ends screwed male x female, female x female or flanged to customer requirements.

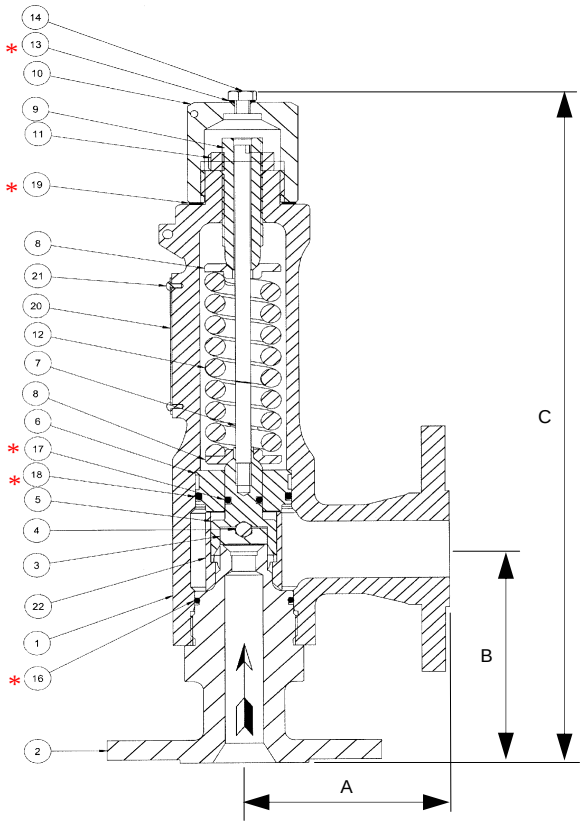
Valves can also be supplied with a packed lever lifting device, a limit switch to indicate opening and closing of the valve, or a governing ring to limit adjustment of the spring to the set point, for ease of resetting.

Limits and Standards
Minimum Set Pressure: 0.7 BARg
Maximum Set Pressure: 250 BARg
Orifice Designation 'D': Liquid 0.110 sq. in. / Gas 0.134 sq. in.
Design Standard: ASME B&PV Code, Section VIII Division 1: 2007 + 2009 Addenda
API Standard 520, 8th Edition, December 2008: Part 1
Materials of Construction: Stainless Steel, temperature range for type 316 is limited to –190°C to +548°C
Duplex Stainless Steel materials are limited to –29°C * to +315°C.
* Lower temperatures are permitted when the requirements of ASME VIII Div 1, UHA-51 are met in full.
Lapped Nozzle and Disc seating surfaces / Nitrile O Rings.
Many parts can be changed to suit customer requirements.
All materials used in the construction of the Type 3600 Safety Relief Valve comply with the impact testing requirements of Section UHA-51, ASME VIII, Div 1 2010.

Key Features
Opens rapidly with a maximum overpressure of 10% to full design lift.
Maximum blowdown of minus 7% for gases and minus 20% for liquid service.
Designed in close cooperation with industry specialists.

Industry Sectors
Chemical Injection
Metering Skids
Technical Gases
Hydraulics

Typical Flanged Type 3600 for Liquid



Installation
During installation of the valve avoid bumping or shaking to prevent damaging the end connections, or misalignment of the trim. To remove any foreign bodies, blow through the circuit line on which the valve is to be installed. Clean the valve and nozzle connections thoroughly; as foreign bodies on the nozzle may damage the valve seat during popping. Install the valve in a vertical position only, with the inlet downwards. After the valve has been installed make it pop at least twice to allow automatic alignment of the trim. Misalignment may be caused accidentally during transport or installation.

Maintenance
The most frequent operation to be carried out is a precise check, made a regular intervals, to observe whether any obvious faults exist in the different parts of the valve. It should be checked first of all that there are no leakages: these must always be avoided, especially when the medium is poisonous, highly volatile or very expensive. Carry out periodic venting for valves with a lifting device to check regular operation. During these tests the pressure must be at least 75% of the full working pressure.

Overhaul
To overhaul the valve the following procedure should be followed: remove the cap, mark the position of the Adjusting Screw relevant to the Locknut, so the correct position may be found during re-setting. Loosen the Adjusting Screw and Locknut to relax the spring, remove the Lockscrew from the Valve Body to free the Guide Ring. Unscrew the Nozzle from the Valve Body and
remove the complete Lid assembly from the inside of the body. Check the contact faces of the Nozzle and Disc. Should any scratching or pitting be present, the surfaces will require relapping. Replace all Joints and O Rings and reassemble the valve in reverse order. To prevent damage to the Disc and Nozzle faces, place a screwdriver in the spindle slot. This will prevent the spindle from turning whilst resetting the valve.

Item	Description	Material (S)	Material (C)
1	Valve Body	Stainless Steel	Carbon Steel
2	Nozzle	Stainless Steel	Stainless Steel
3	Disc	Stainless Steel	Stainless Steel
4	Ball	Stainless Steel	Stainless Steel
5	Disc Holder	Stainless Steel	Stainless Steel
6	Guide Ring	Stainless Steel	Stainless Steel
7	Spindle	Stainless Steel	Stainless Steel
8	Spring Carrier	Stainless Steel	Stainless Steel
9	Adjusting Screw	Stainless Steel	Stainless Steel
10	Cap	Stainless Steel	Carbon Steel
11	Locknut	Stainless Steel	Stainless Steel
12	Spring	Stainless Steel	Stainless Steel
* 13	Joint, Plugs	Non Asbestos	Non Asbestos
14	Cap Plug	Stainless Steel	Stainless Steel
15	Lockscrew (Not Shown)	Stainless Steel	Stainless Steel
* 16	O Rng	Nitrile	Nitrile
* 17	O Ring	Nitrile	Nitrile
* 18	O Ring	Nitrile	Nitrile
* 19	Cap Joint	Non Asbestos	Non Asbestos
20	Nameplate	Stainless Steel	Stainless Steel
21	Rivets	Stainless Steel	Stainless Steel
22	Huddling Ring (Liquid Duty Only)	Stainless Steel	Stainless Steel

* These Items are recommended spares.

Valve Size	A	B	C	Weight
Screwed Valves				
½" x 1"	48	83	285	4
¾" x 1"				
1" x 1"				
Flanged ANSI 150 x ANSI 150 Valves				
½" x 1"	81	95	297	6
¾" x 1"				
1" x 1"				
Flanged ANSI 300 x ANSI 150 Valves				
½" x 1"	81	98	300	6
¾" x 1"		100	302	
1" x 1"		101.5	303.5	

TYPE 3600 SAFETY RELIEF VALVE

Numbering System Code

To simplify the selection and specifying of Type 3600 Safety Relief Valves, a numbering system is used in which the digits have a distinct significance.

Examples:-

1. A ¾" ANSI 300 Flanged Inlet x 1" ANSI 150 Flanged Outlet, stainless steel body and trim, without test gag.
   The valve number would be:- **36312-SN-000**.

2. A 1" NPT Screwed Male Inlet x 1" NPT Screwed Female Outlet, stainless steel construction, fitted with a gag.
   The valve number would be:- **36003-SN-001**.

A breakdown of the numbering system is listed below:-

The first and second digit indicate the valve series.

36	3600

The third and fourth digit identify the inlet and outlet end connections.

Third Digit	Inlet Connection
0	Screwed NPT Male
1	Flanged ANSI 150
3	Flanged ANSI 300
5	Flanged ANSI 600

Fourth Digit	Outlet Connection
0	Screwed NPT Female
1	Flanged ANSI 150
2	Flanged ANSI 300

The fifth digit identifies the inlet bore.

Fifth Digit	Inlet Bore
1	½"
2	¾"
3	1"

The sixth digit identifies the body and spring materials.

Sixth Digit	**Body**	**Spring**
C	Carbon Steel SA216 WCB	Stainless Steel
S	Stainless Steel SA351 CF8M	Stainless Steel
A	Alloy Steel SA217 WC6	Inconel X750
B	Aluminium Bronze SB148 C95800	Stainless Steel
G	Gunmetal SB62 C83600	Stainless Steel
L	Alloy Steel SA352 LC1	Stainless Steel
T	Carbon Steel SA216 WCB	Inconel X750

The seventh digit indicates the type of construction.

N	Balanced Arrangement Available Only

The eighth digit indicates the type of bonnet.

0	Closed Bonnet Available Only

The ninth digit identifies the lifting device.

0	None
2	Packed Lifting Lever

The tenth digit refers to the test gag.

0	Without test gag
1	With test gag