



BROADY

F L O W C O N T R O L

Type 3500

Pressure Safety Valve



BROADY FLOW
CONTROL



Engineering complete solutions

Type 3500 Safety Relief Valve

The Type 3500 Relief/Safety Relief valves are 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 1" x 2" to 8" x 10", orifices D through to T and can be manufactured in Cast Steel, Stainless Steel and any other materials to suit the application. Valves can also be supplied with a packed lever or open lever lifting device, micro switch to indicate opening and closing of the valve, governing ring to limit adjustment of the spring to the set point, for ease of re-setting, balanced bellows when there is a variable back pressure.

Installation

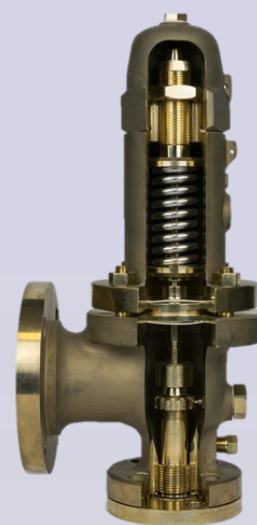
During installation of the valve avoid bumping or shaking to prevent damaging the flange faces and misalignment of the trim. Blow through the circuit line on which the valve is to be installed, this is to remove any foreign bodies. Clean the valve and nozzle connections thoroughly; foreign bodies on 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 during installation.

Maintenance

The most frequent operation to be carried out is a precise check, made at 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 clampscrew from the body. Using a screwdriver, move the blowdown ring until it touches the disc holder (moving From left to right) taking care to count and note the number of notches to regain the same position when re-setting. Remove the bonnet from the body by unscrewing the nuts. Remove the upper spring carrier, spring and lower spring carrier from the spindle. Using the spindle as a handle, pull out the whole unit from inside. Remove pin and unscrew the stem from the disc holder. Remove stem from the guide. Remove disc from the disc holder, place the disc holder on a wooden surface and drive the disc out downwards. Unscrew the blowdown ring in an anticlockwise direction. Remove the nozzle from the body. Check the contact faces of the seat and disc, should any scratching or pitting be present the surfaces will need to be relapped. Replace all of the joints then assemble the valve in reverse order. To prevent damage to the disc and nozzle faces, place a screwdriver in the spindle slot. This will stop the spindle turning whilst re-setting the valve.



Limits And Standards

Minimum Set Pressure: 0.34 Barg

Maximum Set Pressure: 425 Barg (Higher pressures available for non standard flanges)

Design Standard:

- API 520, 526, 527
- ASME VIII

Materials of construction:

- Cast Steels
- Gunmetal
- Aluminium Bronze
- Monel
- Hastelloy
- Inconel

Key Features:

- Direct acting, full lift safety valve.
- CE Marked to PED Cat IV Safety Accessory.
- AMSE Code stamping.
- Gas, liquid and 2 phase applications.
- Trevitest tapping supplied as standard.
- Excellent accumulation, blowdown and repeatable reseal characteristics.



BROADY

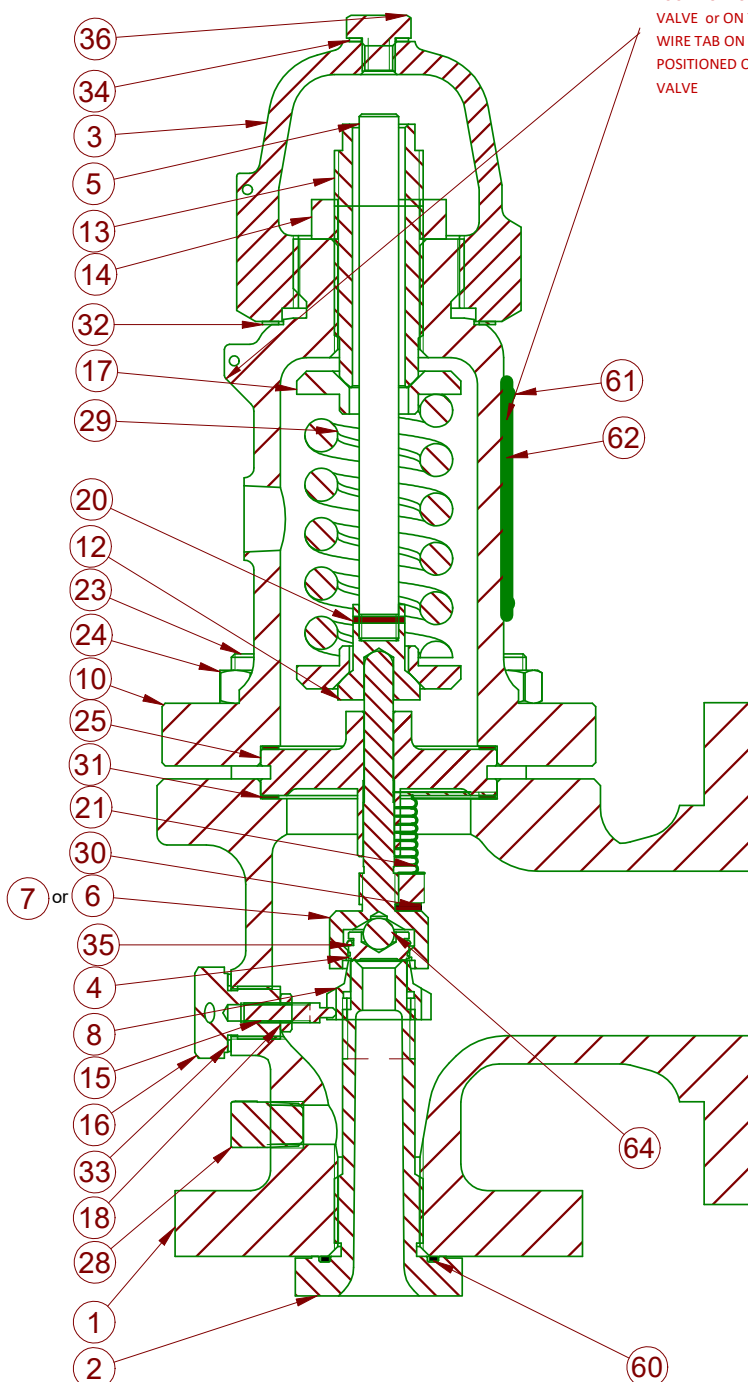
F L O W C O N T R O L

Type 3500 Safety Relief Valve

64	Ball
62	Nameplate
61	Nameplate Rivet
60	O Ring
36	Plug
35	Circlip (disc)
34	Joint (plug)
33	Joint (clampscrew)
32	Joint (cap)
31	Joint (guide)
30	Bellows Joint (if required)
29	Spring
28	Drain Plug
25	Guide Flange
24	Nut Body / Bonnet
23	Stud Body / Bonnet
21	Bellows (if required)
20	Pin Collar Small
18	Locknut
17	Spring Carrier
16	Clampscrew
15	Screwed Pin
14	Locknut
13	Adjusting Screw
12	Collar
10	Bonnet
8	Blowdown Ring
7	Disc Holder
6	Disc Holder F/W Bellows
5	Spindle
4	Disc
3	Cap
2	Nozzle
1	Body
Item	Title

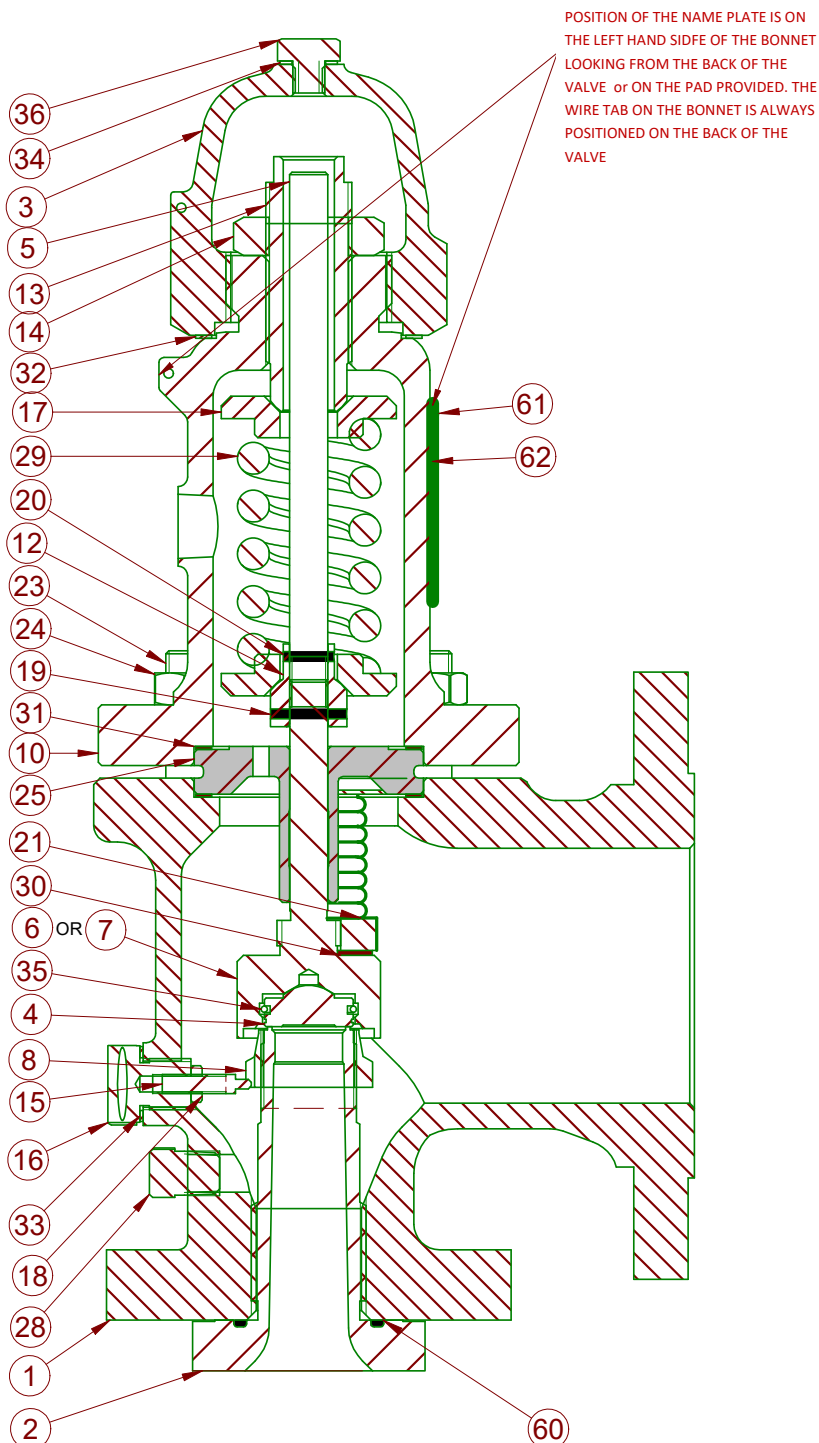
Items shown in red contained in soft goods kit

3582D + E
3572D + E
3562D + E
3551D + E
3531D + E
3511D + E
Valve Types



POSITION OF THE NAME PLATE IS ON THE LEFT HAND SIDE OF THE BONNET LOOKING FROM THE BACK OF THE VALVE or ON THE PAD PROVIDED. THE WIRE TAB ON THE BONNET IS ALWAYS POSITIONED ON THE BACK OF THE VALVE

Type 3500 Safety Relief Valve



62	Nameplate
61	Nameplate Rivet
60	Oring
36	Plug
35	Circlip (disc)
34	Joint (plug)
33	Joint (clampscrew)
32	Joint (cap)
31	Joint (guide)
30	Bellows Joint (if required)
29	Spring
28	Drain Plug
25	Guide Flange
24	Nut Body / Bonnet
23	Stud Body / Bonnet
21	Bellows (if required)
20	Pin Collar Small
19	Pin Collar Large
18	Locknut
17	Spring Carrier
16	Clampscrew
15	Screwed Pin
14	Locknut
13	Adjusting Screw
12	Collar
10	Bonnet
8	Blowdown Ring
7	Disc Holder
6	Disc Holder F/W Bellows
5	Spindle
4	Disc
3	Cap
2	Nozzle
1	Body
Item	Title

Items shown in red contained in soft goods kit

3511F + G + H
3531 / 3541F + G + H
3551F + G + H
3561H
3562F + G
3572F + G + H
3582F + G
Valve Types



BROADY

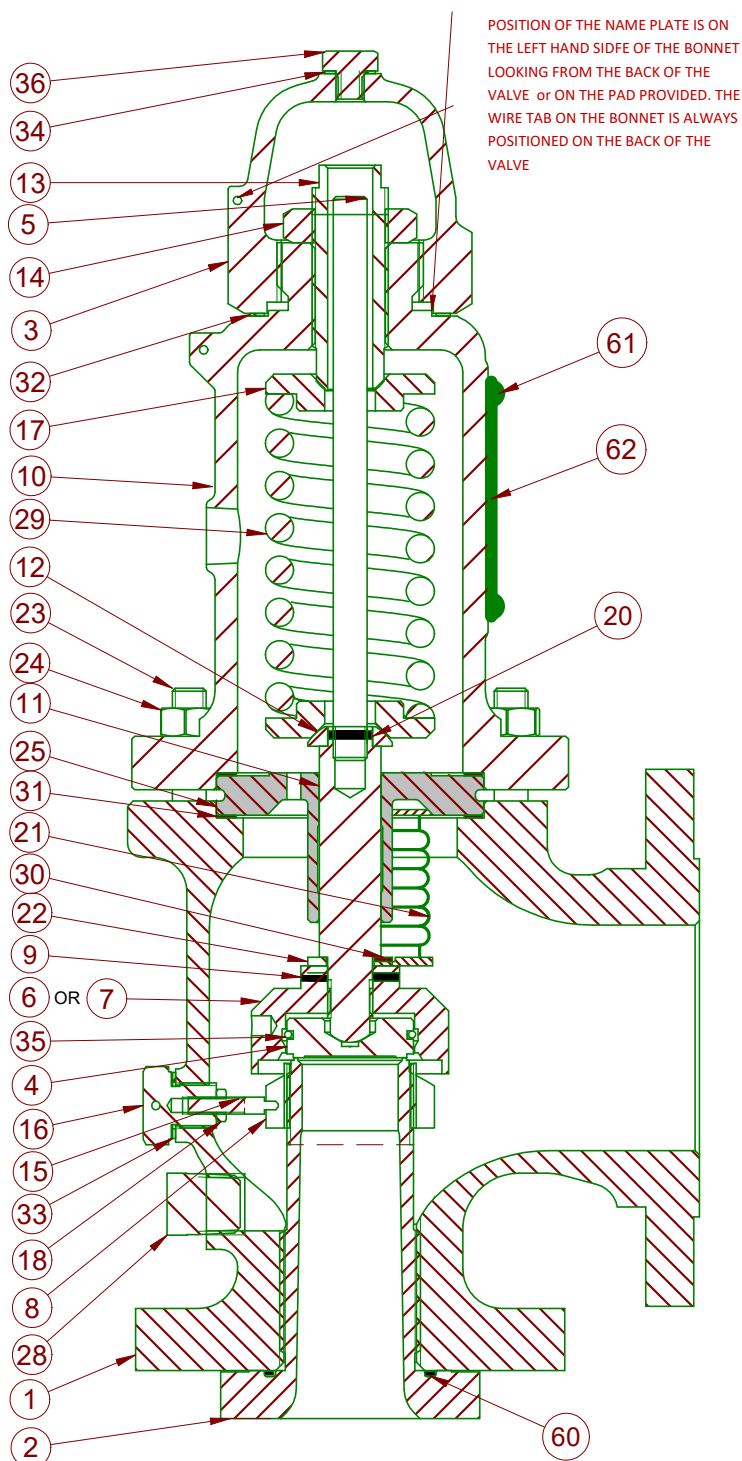
F L O W C O N T R O L

Type 3500 Safety Relief Valve

62	Nameplate
61	Nameplate Rivet
60	O Ring
36	Plug
35	Circlip (disc)
34	Joint (plug)
33	Joint (clampscrew)
32	Joint (cap)
31	Joint (guide)
30	Bellows Joint (if required)
29	Spring
28	Drain Plug
25	Guide Flange
24	Nut Body / Bonnet
23	Stud Body / Bonnet
22	Washer (No Bellows)
21	Bellows (if required)
20	Pin—Collar
18	Locknut
17	Spring Carrier
16	Clampscrew
15	Screwed Pin
14	Locknut
13	Adjusting Screw
12	Collar
11	Stem
10	Bonnet
9	Pin—Disc Holder
8	Blowdown Ring
7	Disc Holder
6	Disc Holder F/W Bellows
5	Spindle
4	Disc
3	Cap
2	Nozzle
1	Body
Item	Title

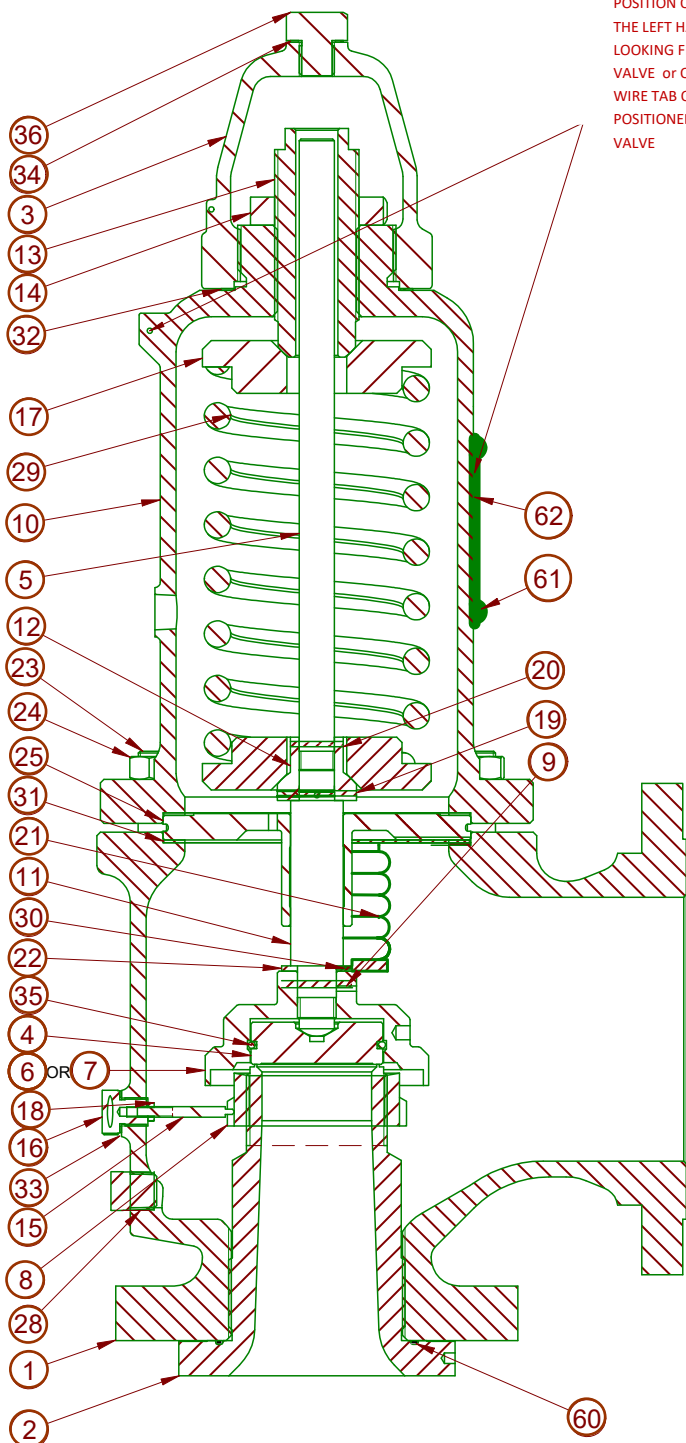
Items shown in red contained in soft goods kit

3511J + K + L + M
3531J + K + L
3541J + L
3551J + K + L
Valve Types



Type 3500 Safety Relief Valve

POSITION OF THE NAME PLATE IS ON THE LEFT HAND SIDE OF THE BONNET LOOKING FROM THE BACK OF THE VALVE or ON THE PAD PROVIDED. THE WIRE TAB ON THE BONNET IS ALWAYS POSITIONED ON THE BACK OF THE VALVE



62	Nameplate
61	Nameplate Rivet
60	O Ring
36	Plug
35	Circlip (disc)
34	Joint (plug)
33	Joint (clampscrew)
32	Joint (cap)
31	Joint (guide)
30	Bellows Joint (if required)
29	Spring
28	Drain Plug
25	Guide Flange
24	Nut Body / Bonnet
23	Stud Body / Bonnet
22	Washer (No Bellows)
21	Bellows (if required)
20	Pin—Collar Small
19	Pin—Collar Large
18	Locknut
17	Spring Carrier
16	Clampscrew
15	Screwed Pin
14	Locknut
13	Adjusting Screw
12	Collar
11	Stem
10	Bonnet
9	Pin—Disc Holder
8	Blowdown Ring
7	Disc Holder
6	Disc Holder F/W Bellows
5	Spindle
4	Disc
3	Cap
2	Nozzle
1	Body
Item	Title

Items shown in red contained in soft goods kit

3511N + P
3531M + N + P
3541P
3551M + N
3561J + K + L + M + N
3572J + K + L
Valve Types



BROADY

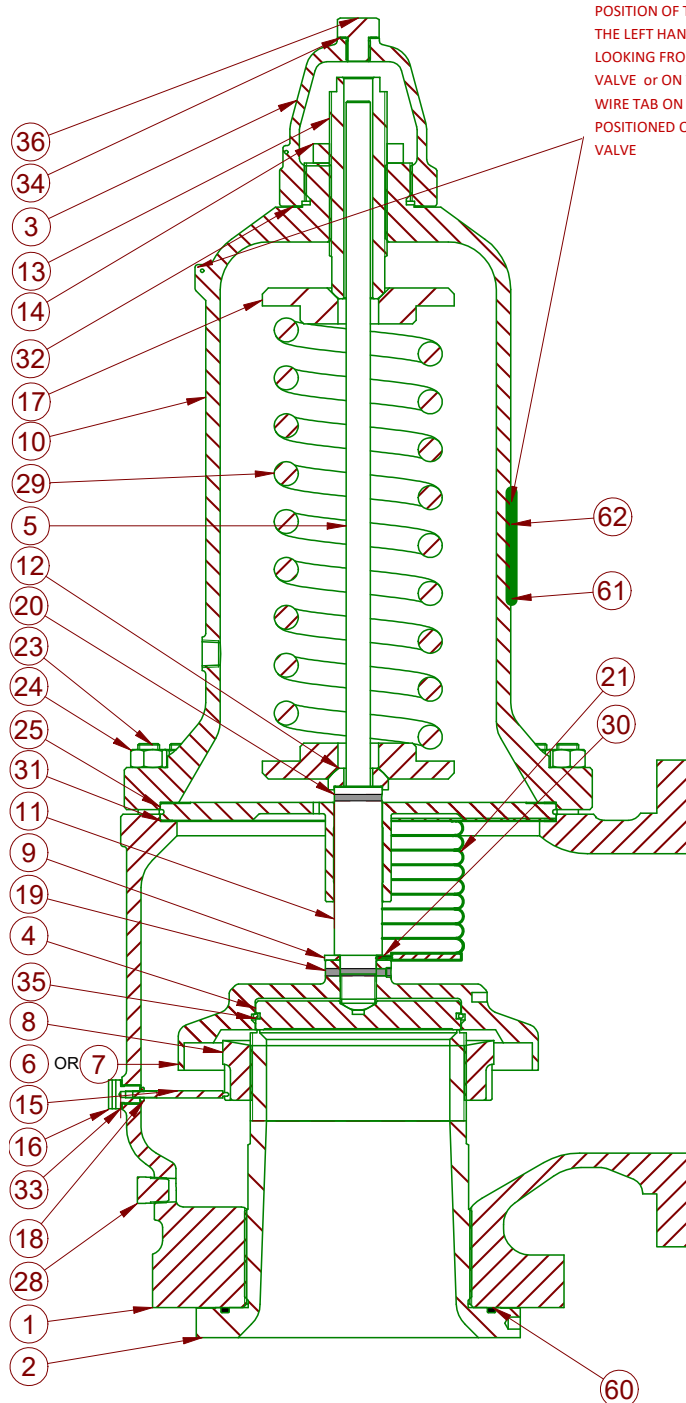
F L O W C O N T R O L

Type 3500 Safety Relief Valve

62	Nameplate
61	Nameplate Rivet
60	O Ring
36	Plug
35	Circlip (disc)
34	Joint (plug)
33	Joint (clampscrew)
32	Joint (cap)
31	Joint (guide)
30	Bellows Joint (if required)
29	Spring
28	Drain Plug
25	Guide Flange
24	Nut Body / Bonnet
23	Stud Body / Bonnet
22	Washer (No Bellows)
21	Bellows (if required)
20	Pin Spindle
18	Locknut
17	Spring Carrier
16	Clampscrew
15	Screwed Pin
14	Locknut
13	Adjusting Screw
12	Collar
11	Stem
10	Bonnet
9	Pin—Disc Holder
8	Blowdown Ring
7	Disc Holder
6	Disc Holder F/W Bellows
5	Spindle
4	Disc
3	Cap
2	Nozzle
1	Body
Item	Title

Items shown in red contained in soft goods kit

3511Q + R + T
3531Q + R + T
3541R
3551P + Q + R
3561P
Valve Types



Type 3500 Valve Coding

Valve Type

35 = Type 3500

Inlet Rating

1 = 150 ANSI
3 = 300 ANSI (LP)
4 = 300 ANSI (HP)
5 = 600 ANSI
6 = 900 ANSI
7 = 1500 ANSI
8 = 2500 ANSI
9 = API 6BX 10000 PSI
X = API 6BX 15000 PSI

Outlet Rating

1 = 150 ANSI
2 = 300 ANSI
3 = 600 ANSI

Orifice Size

D to T API

Body Material

C = Carbon Steel
S = Stainless Steel
M = Monel
AB = Aluminium Bronze
GM = Gunmetal
H = Hastelloy
L = Low Carbon Steel
INC = Inconel
DPX = Duplex
SDPX = Super Duplex
6Mo = 6Mo Stainless Steel

Type of Construction

N = Standard Valve
B = F/W Bellows

Type of Bonnet

0 = Closed Bonnet
1 = Open Bonnet

Test Medium

A = Gas / Steam
L = Liquid

Type of Cap

0 = Standard (screwed)
1 = Open Lever
2 = Packed Lever
3 = Bolted Cap

Type of Painting

0 = Unpainted
1 = Broady Standard Paint
2 = Broady Epoxy Paint
3 = Customer Specification

Test Gag, Microswitch

0 = Without Test Gag
1 = With Test Gag
2 = With Microswitch
3 = Governing Ring



Valve

Dimensions

Type No	Inlet Size (Inches)	Orifice	Outlet Size (Inches)	Ratings (ANSI)		Overall Dimensions					Approx. Weights
						Inlet Centre to Outlet Face	Outlet Centre to Inlet Face	Height	E (max)		
				mm	mm				mm	Standard Cap	
3511D	1	D	2	150	150	115	104	12	390	454	15
3531D				300							
3551D				600							
3562D	1 1/2		2	900	300	140	105	16	424	489	26
3572D				1500							
3582D				3							
3511E	1	E	2	150	150	115	104	12	389	454	15
3531E				300							
3551E				600							
3562E	1 1/2		2	900	300	140	105	16	424	489	26
3572E				1500							
3582E				3							
3511F	1 1/2	F	2	150	150	121	124	16	418	483	19
3531F				300							
3541F				450							
3551F				600							
3562F			3	900	300	165			518	567	36
3572F				1500							
3582F				2500							
3511G	1 1/2	G	3	150	150	121	124	16	418	483	19
3531G				300							
3541G				450							
3551G				600							
3562G				900	300	165			518	571	36
3572G				1500							
3582G	2		2500	172	156	582			632	51	
3511H	1 1/2	H	3	150	150	124	130	16	472	536	23
3531H				300							
3511H				150							
3541H	300										
3551H	600										
3561H	900										
3572H	1500			300	162	154	16	561	611	35	
								586	635	50	
3511J	2	J	3	150	150	124	135	17	485	550	28
3531J				300							
3541J	4		450	181		184	594		643	40	
3551J			600								613
3561J			900		726		806		77		
3572J			1500							300	

Valve

Dimensions

Type No	Inlet Size (Inches)	Orifice	Outlet Size (Inches)	Ratings (ANSI)		Overall Dimensions					Approx. Weights	
						Inlet Centre to Outlet Face	Outlet Centre to Inlet Face	Height	E (max)			
				Inlet	Outlet				mm	mm		mm
3511K	3	K	4	150	150	162	156	16	570	619	56	
3531K				300								
3551K				600								
3561K			6	900	216	197	752		832	85		
3572K				1500							300	92
3511L	3	L	4	150	150	165	156	16	570	622	45	
3531L				300								
3541L	4		6	300		181	179	20	630	683	64	
3551L				600		203			739	819	87	
3561L				900		222	197		757	837	100	
3572L				1500					792	866		
3511M				4		M	6		150	184	178	20
3531M	300		739					819	84			
3551M	600								203			
3561M	900		222					197	793			
3511N	4	N	6	150	210	197	20	774	854	89		
3531N				300								
3551N				600				222	808	888	105	
3561N				900								
3511P	4	P	6	150	229	181	20	758	838	94		
3531P				300				793	873	99		
3541P				450				254	225	837	917	115
3551P				600						1038	1131	148
3561P				900								
3511Q	6	Q	8	150	241	240	22	892	972	175		
3531Q				300								
3551Q				600				1075	1168	203		
3511R	6	R	8	150	241	240	22	892	972	175		
3531R				300								
3541R			10	450	267			1080	1173	224		
3551R				600								
3511T	8	T	10	150	279	279	25	1103	1188	266		
3531T				300								
3531T HP				300				1193	1286	310		



BROADY

F L O W C O N T R O L

Valves from the Broady Product Range



3500 Series Pressure Safety Valves



Fire Fighting (Hydrant Valves)



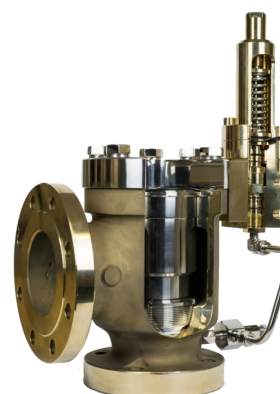
**Type 3600, 2600, 180 & 180-S
Safety Valves**



**Sustaining Valves
(Type A, Type D, Type 8, Type 9)**



Reducing Valves (A, AB, C, D, B2)



Type 4000 Pilot Operated Safety Relief Valve