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F L O W C O N T R O L

Type 3500 Pressure Safety Valve



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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 reseat characteristics.



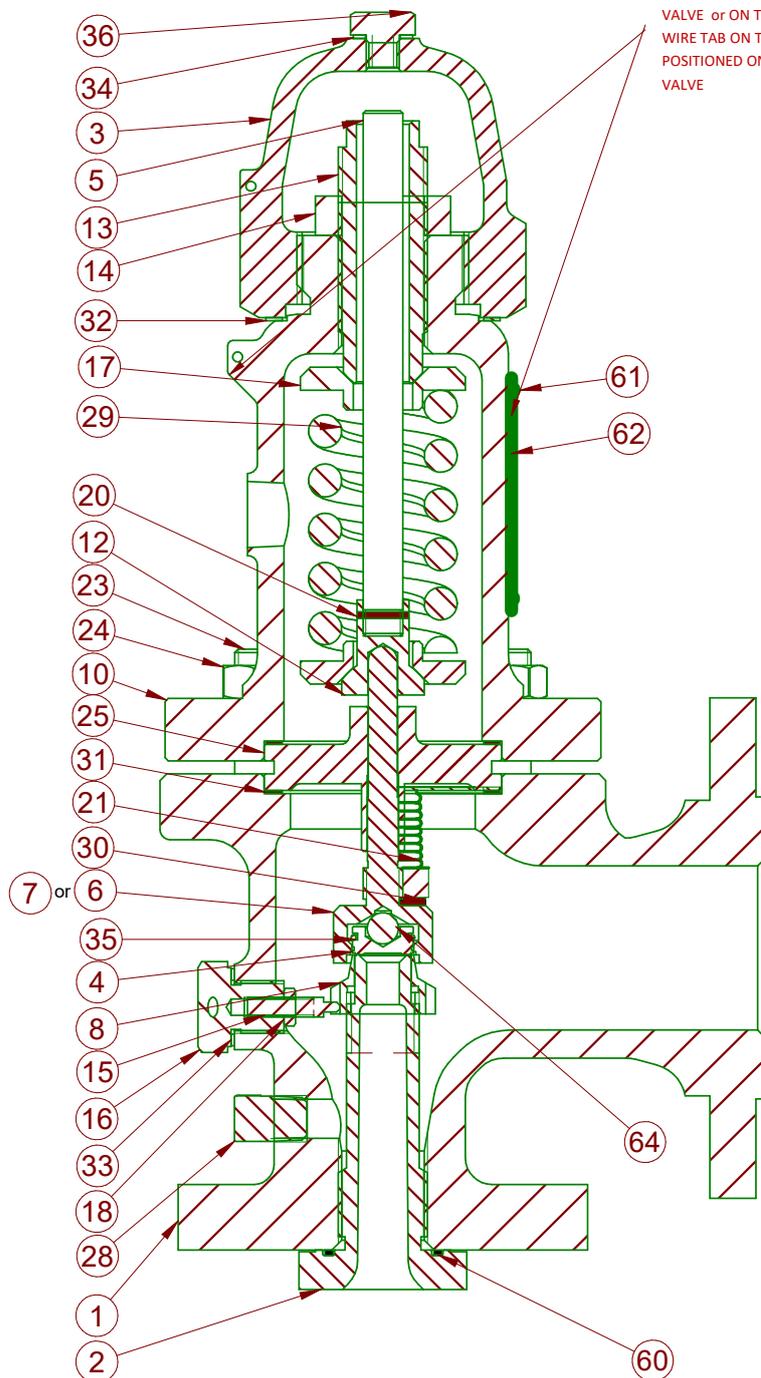
Type 3500 Safety Relief Valve

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

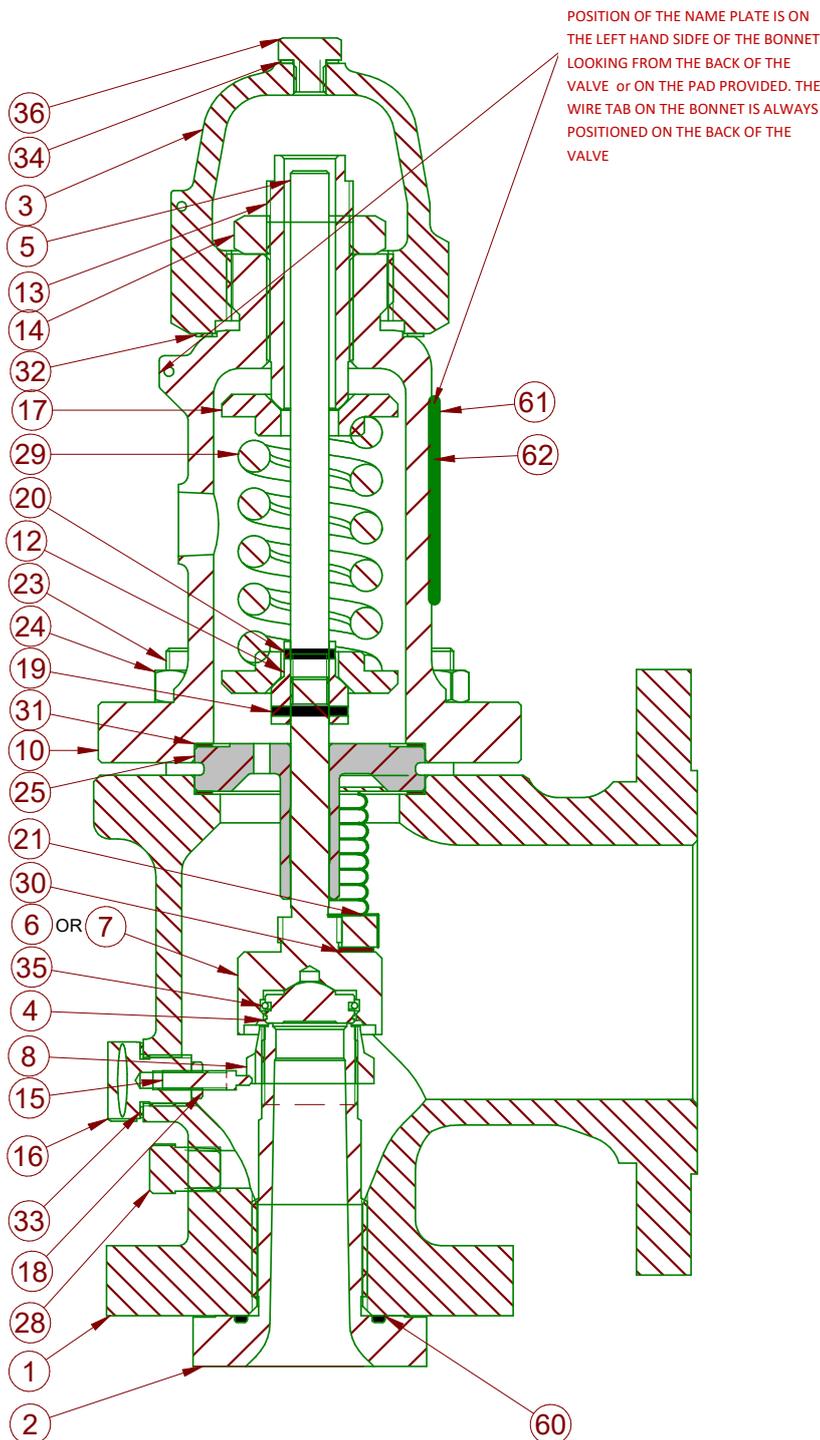
Items shown in red contained in soft goods kit

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



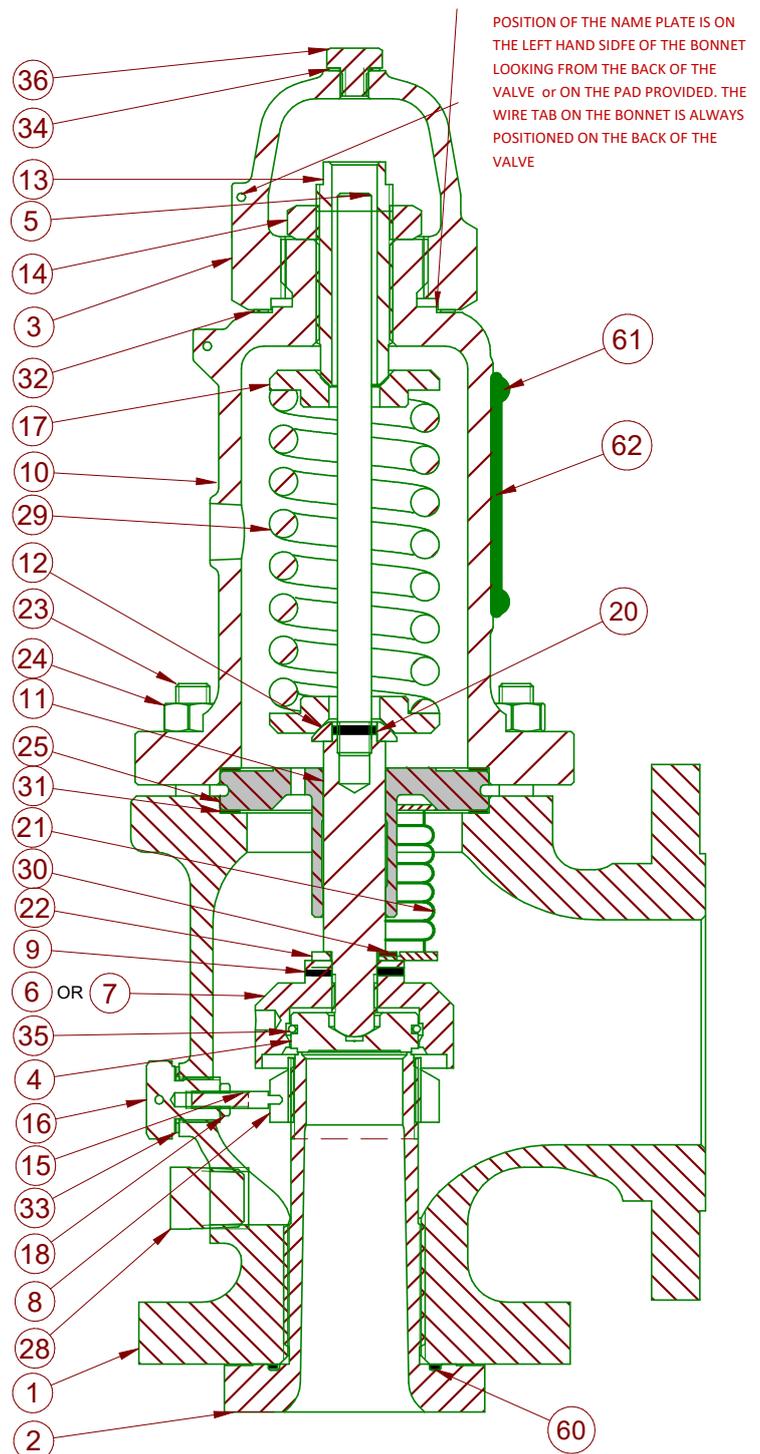
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Type 3500 Safety Relief Valve

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

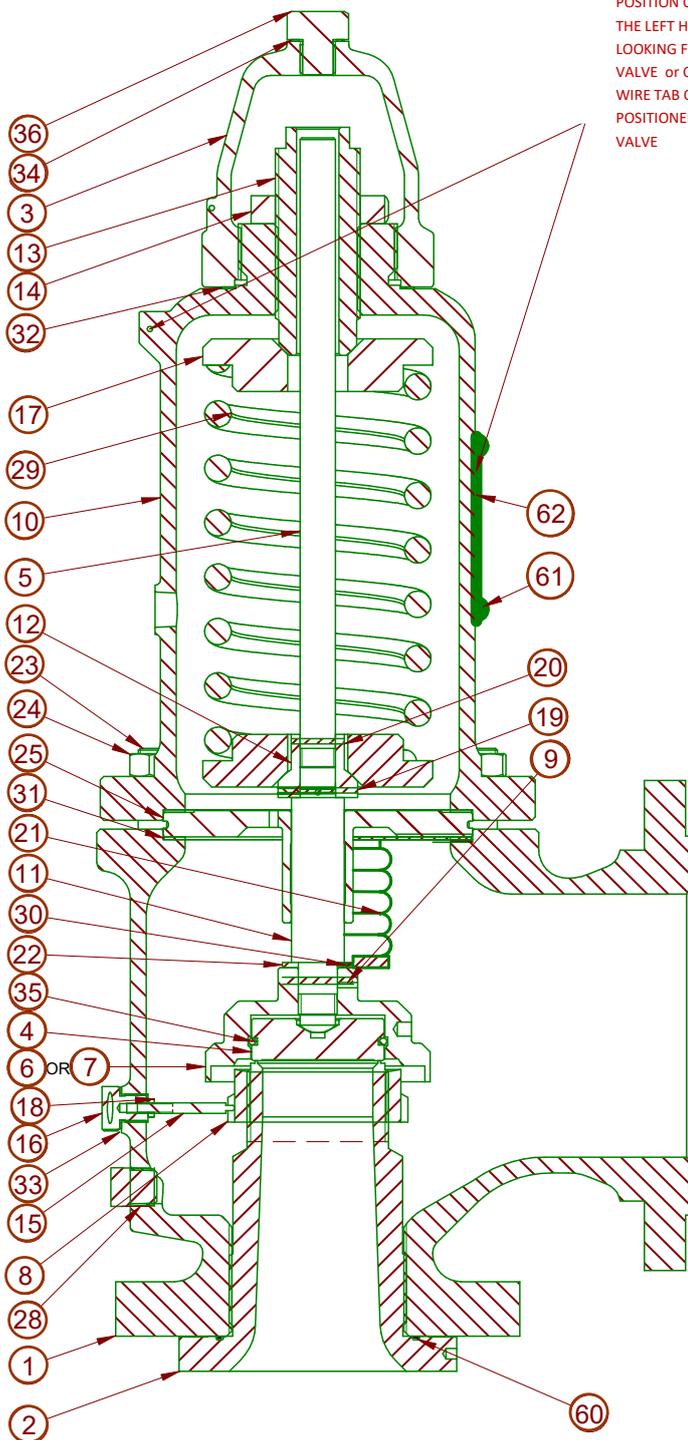


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Type 3500 Safety Relief Valve

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



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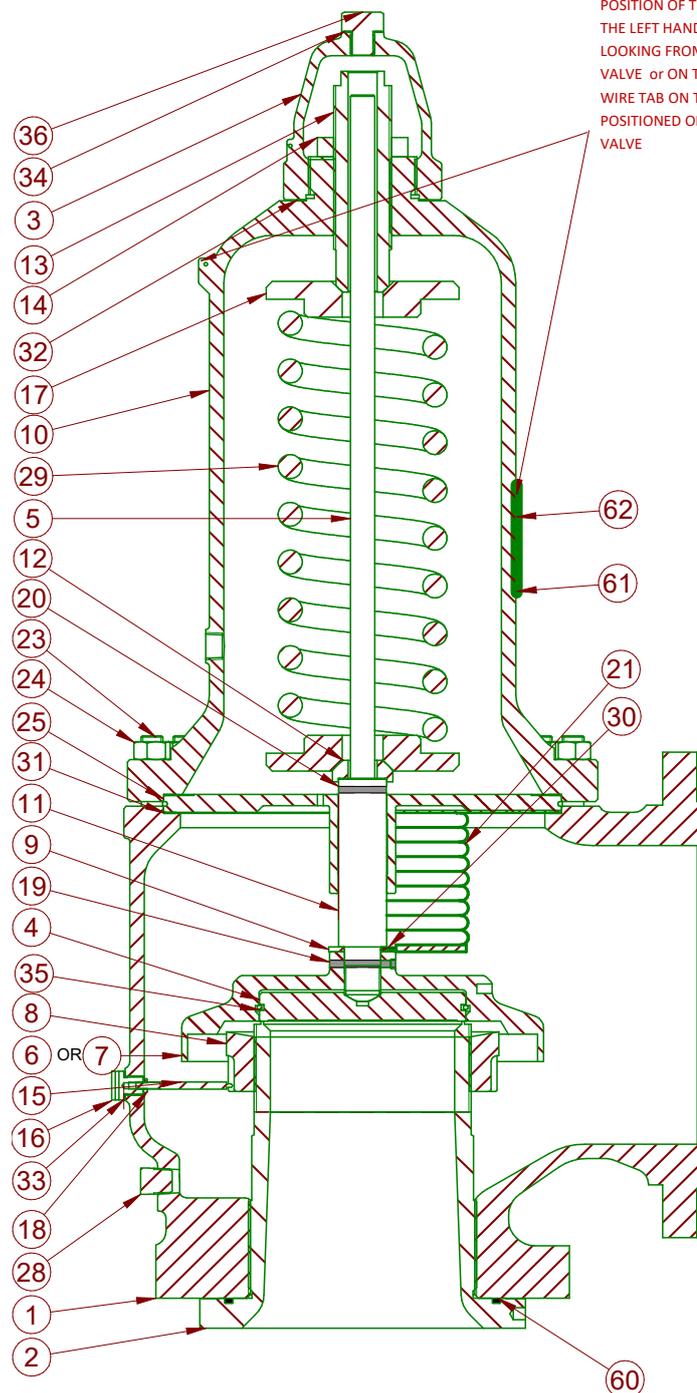
F L O W C O N T R O L

Type 3500 Safety Relief Valve

62	Nameplate
61	Nameplate Rivet
60	O Ring
36	Plug
35	Circlip (disc)
34	Joint (plug)
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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





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Valve Dimensions

Type No	Inlet Size (Inches)	Orifice	Outlet Size (Inches)	Ratings (ANSI)		Overall Dimensions					Approx. Weights Kg		
						Inlet Centre to Outlet Face mm	Outlet Centre to Inlet Face mm	Height mm	E (max)				
				mm	mm				mm	Standard Cap mm		Lever Cap mm	
3511D	1	D	2	150	150	115	104	12	390	454	15		
3531D				300									
3551D				600									
3562D	1 1/2		3	900	300	140	105	16	424	489	26		
3572D				1500									
3582D				2500								178	140
3511E	1	E	2	150	150	115	104	12	389	454	15		
3531E				300									
3551E				600									
3562E	1 1/2		3	900	300	140	105	16	424	489	26		
3572E				1500									
3582E				2500								178	140
3511F	1 1/2	F	2	150	150	121	124	16	418	483	19		
3531F				300									
3541F				450									
3551F			600	300	165	152	140	16	452	518	26		
3562F			900										
3572F			1500										
3582F	2500	178	140	532	583	41							
3511G	1 1/2	G	3	150	150	121	124	16	418	483	19		
3531G				300									
3541G				450									
3551G			600	300	165	152	156	16	452	518	26		
3562G			900										
3572G			1500										
3582G	2500	172	156	582	632	51							
3511H	1 1/2	H	3	150	150	124	130	16	472	536	23		
3531H				300									
3511H				150								150	162
3541H	300												
3551H	600												
3561H	2		3	900	300	162	154	16	561	611	35		
3572H		1500		586								635	50
3511J		2		J								3	150
3531J	300												
3541J	450		181		184	17	594	643	40				
3551J	600												
3561J	900												
3572J	3	4	1500		300	726	806	77					

Valve Dimensions

Type No	Inlet Size (Inches)	Orifice	Outlet Size (Inches)	Ratings (ANSI)		Overall Dimensions					Approx. Weights Kg	
						Inlet Centre to Outlet Face	Outlet Centre to Inlet Face	Height	E (max)			
									Standard Cap	Lever Cap		
mm	mm	mm	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	150	181	179	20	630	683	64	
3551L				600								739
3561L				900		222	197		757	837	100	
3572L				1500		792	866					
3511M	4		M	6	150	150	184	178	20	630	683	64
3531M					300							
3551M					600		203	179		793	873	87
3561M					900		222	197		793	873	104
3511N		4			N		6	150		150	210	197
3531N	300											
3551N	600		808	888		105						
3561N	900											
3511P	4	P	6	150	150	229	181	20	758	838	94	
3531P				300								793
3541P				450		254	225		1038	1131	148	
3551P				600								
3561P				900								
3511Q	6	Q	8	150	150	241	240	22	892	972	175	
3531Q				300								
3551Q				600					1075	1168	203	
3511R	6	R	8	150	150	241	240	22	892	972	175	
3531R				300								
3541R			10	450	150	267			1080	1173	224	
3551R				600								
3511T				8								T
3531T	300											
3531T HP	300	1193	1286		310							



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Valves from the Broady Product Range



3500 Series Pressure Safety Valves



Fire Fighting (Hydrant Valves)

Please contact the Broady Flow Control sales department for more information on our extensive product range on +44 (0)1482 619600 or via sales@broady.co.uk



Type 3600, 2600, 180 & 180-5
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

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Engineering complete solutions

Broady Flow Control Limited

English Street
Kingston Upon Hull
East Yorkshire
HU32DU

Telephone: +44 (0)1482 619600

Facsimile: +44 (0)1482 619700

Email: sales@broady.co.uk

Website: www.broady.valvitalia.com

Website: www.valvitalia.com



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