

ESHTEAL ARAK INDUSTRIAL ENGINEERING CO .

Manufacturer of burners, valves
and precision tools for steam boilers

Valves

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Eshteal Arak Industrial Engineering Company is the only manufacturer of high-capacity rotary cup burners in the country, and these burners are used by all boiler companies in the country. Among the unique products produced by this company are power valves that are designed for saturated and superheated steam lines. This product was produced for the first time in the country in 2014 in the Mobarake steel complex and at a pressure of 70 bar. It has been used successfully. Eshteal Arak Industrial Engineering Company has been modernizing its production lines since 2003 and is currently equipped with more than 98 machines, 61 of which are CNC lathes and milling centers (referred to at the end), stepped into the field of producing products with modern sophisticated technology. It should be mentioned that this company has succeeded in obtaining the knowledge-based badge on burners and valves during two consecutive periods, and in order to enhance the brand and satisfy customers, the necessary standards such as ISIRI 7595, ISIRI 7594, ISO 3834, ISO 9001:2015 and implemented 5S



This valve is a reliable pressure relief valve for industrial applications involving variable back pressure. The design and options provide maximum versatility and premium performance.

This valve is available in the size of $\frac{3}{4}$ "

Pressure relief Valve



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☎ 086-34121313-5

☎ 09908136277 (sales)
☎ 09912709038 (after sales)

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📍 Factory: Hadid St-Haji Abad Industrial Zone 7th km
of Qom Road-Arak-Iran

📍 Head office: 4th floor-No.3 Apartment Asef Vaziri
alley southern Bahar St Taleghani St-Tehran-Iran

Pressure Relief Valve

Type TSV

Description

TSV is a reliable pressure relief valve for industrial applications involving variable back pressure.

The design and options provide maximum versatility and premium performance.

Maximum back pressure in liquid applications is 70 % of set pressure. The maximum back pressure in vapor and gas applications is 50% of set pressure. For liquid thermal relief applications, maximum back pressure is 90 % of set pressure.

Maximum back pressure is 400 psig.



Applications

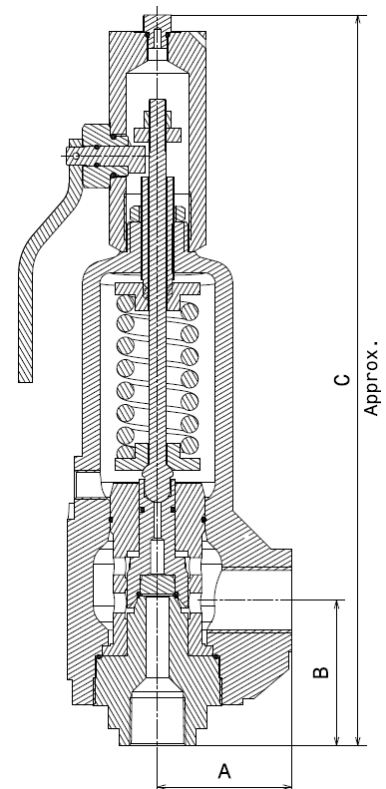
TSV pressure relief valve has a simplified, single trim design with superior application versatility.

This valve provides overpressure protection for low and Medium flow applications in refineries, chemical and petrochemical plants, power plant auxiliary systems, and pulp and paper mills.

Dimensions and pipe connections

Threaded connections

Orifice area		70.96 mm ²
Inlet thread type		NPT 3/4" (female)
Outlet thread type		NPT 1" (female)
Center to face	A	62.5 mm
	B	67.8 mm
Height	C	345 mm



Pressure/temperature rating

Maximum set pressure	103 barg
Maximum Temperature	204 °C

Capacities

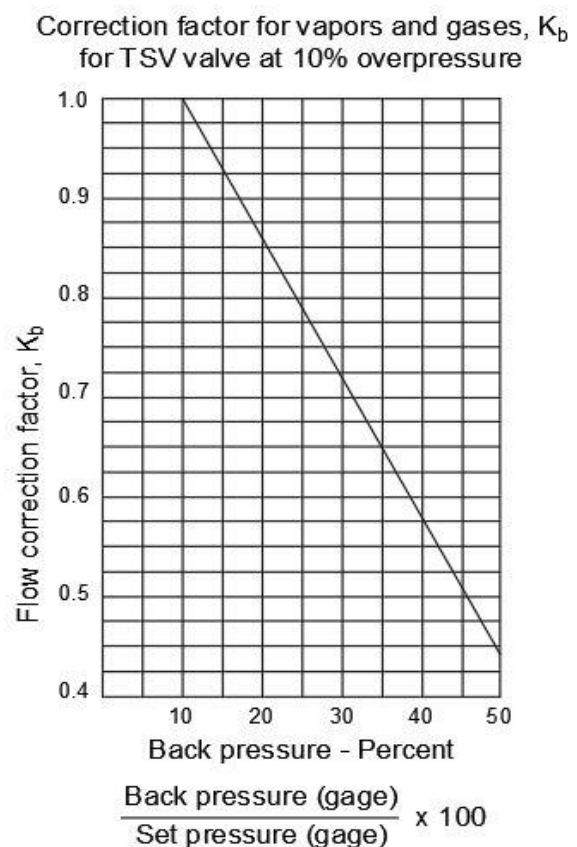
The capacities listed in the following tables are based on discharging to atmospheric pressure.

For applications involving back pressure these capacities must be multiplied by the back pressure correction factor determined from the applicable curve shown on Bottom.

Air Capacities

Capacity in standard cubic meters of air per minute at 16°C and 10% overpressure.

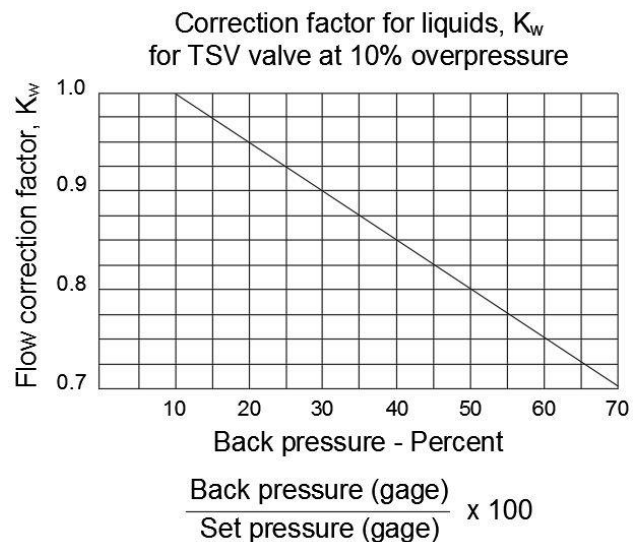
Set Pressure (barg)	Capacity
10	9.7
20	18.5
30	27.4
40	36.3
50	45.2
60	54.1
70	63
82	73.6
94	84.3
103	92.3



Water Capacities

Capacity in liters per minute of water at 21°C and 10% overpressure.

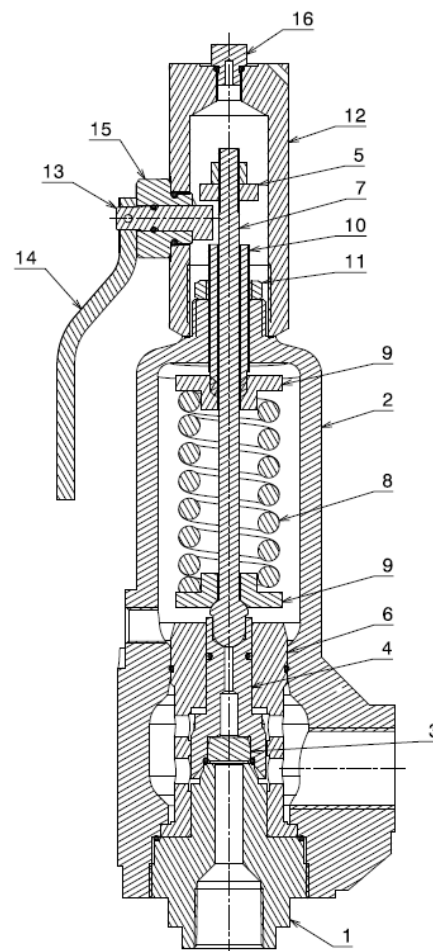
Diff. Pressure ΔP^* (bar)	Capacity
10	141
20	199
30	244
40	282
50	315
60	345
70	373
82	404
94	432
103	452



*Differential Pressure (ΔP) equals inlet pressure (set pressure plus overpressure) at flowing conditions minus back pressure.

Material

Item	Part name	Material
1	Base	Stainless Steel
2	Cylinder	Cast Steel
3	Disk Insert	Stainless Steel
4	Disk Holder	Stainless Steel
5	Spindle Nut	Steel
6	Guide	Stainless Steel
7	Spindle	Stainless Steel
8	Spring	Stainless Steel
9	Spring Washer	Stainless Steel
10	Adjusting Bolt	Stainless Steel
11	Adjusting Nut	Steel
12	Cap	Steel
13	Cam	Stainless Steel
14	Lever	Steel
15	Cam Sleeve	Stainless Steel
16	Cap Plug	Steel



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These valves are high capacity nozzle type safety valves and they meet the requirements of the ASME Boiler and Pressure Vessel Code, Section I

Steam Safety Valve



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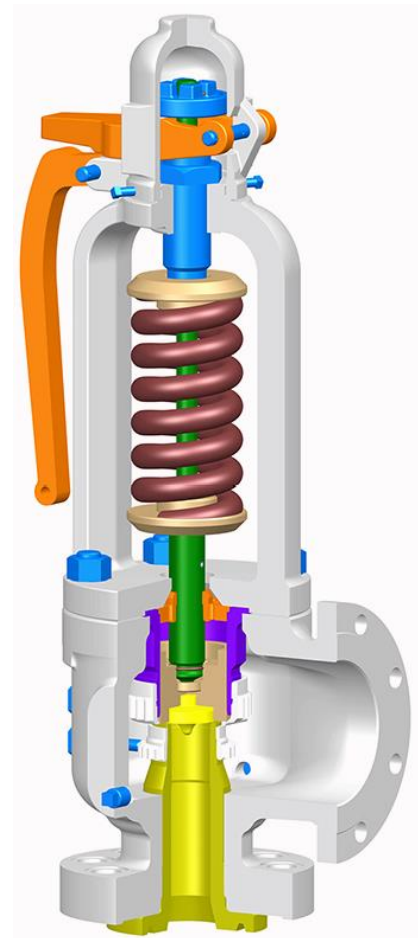
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Steam Safety Valve

Type HC

Description

Style HC is a high capacity reaction type safety valve. All Style HC welded inlet safety valves are equipped with hydrostatic test plugs and shipped in two parts: valve body and valve superstructure. This makes handling easier for installation welding. Style HC safety valve opens with a sharp pop at the set pressure and remains open, relieving rated capacity at 3% overpressure. As inlet pressure decays below the opening pressure, the safety valve remains open until a pressure about 4% below the set pressure is reached. At that point, the safety valve closes sharply.



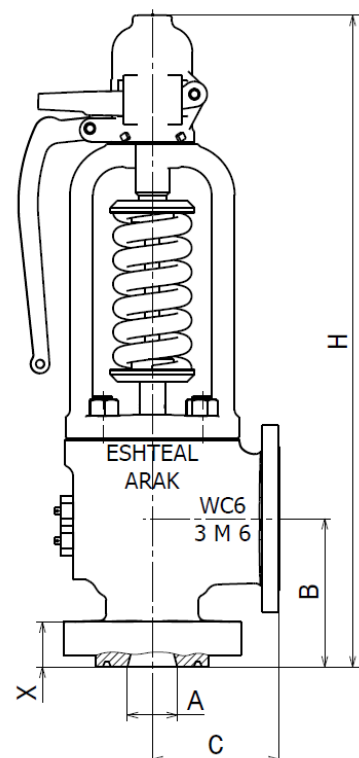
Applications

This valve designed for saturated and superheated steam applications to temperatures of 750°F.

Dimensions and pipe connections

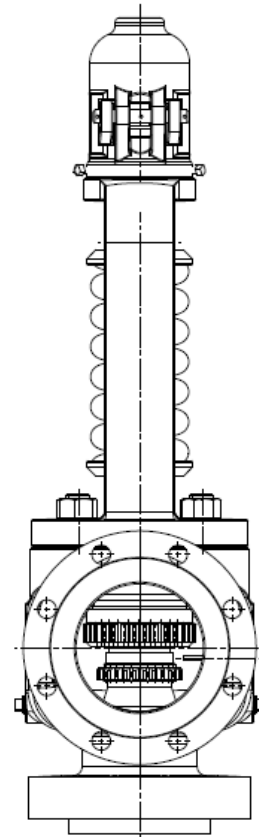
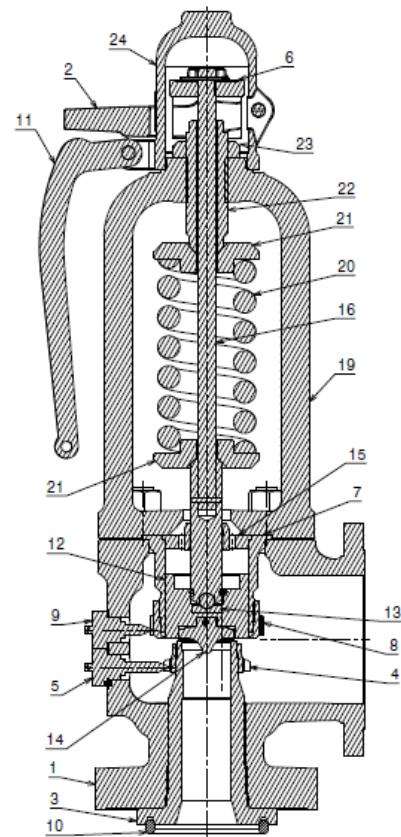
Dimensions (approx.) in mm

Valve Type		HC - 57		
Valve Size (inlet-orifice-outlet)		3 M 6		
Orifice Area (cm ²)		23.23		
Connections		ANSI Class Flanged Inlet	3 in - 1500	
		ANSI Class Flanged Outlet	6 in - 150	
Dimensions	Used to Find Bolt Length	X	67.5	
	Inlet I.D.	A	76.2	
	Center to face of	Inlet	B	222
		Outlet	C	190
Height		H	975	



Material

Item	Part Name	Material
1	Body	Alloy steel
2	Forked lever	S.G iron
3	Nozzle	Stainless steel
4	Nozzle ring	Stainless steel
5	Nozzle ring set screw	Stainless steel
6	Spindle nut	Carbon steel
7	Guide	Stainless steel
8	Guide ring	Stainless steel
9	Guide ring set screw	Stainless steel
10	Ring	Stainless steel
11	Hand lever	Carbon steel
12	Disc holder	Monel
13	Disc bushing	Stainless steel
14	Disc insert	Stainless steel/Stellite
15	Guide aligner	Bronze
16	Spindle assembly	Stainless steel/Monel
19	Bonnet	Alloy steel
20	Spring	Alloy steel
21	Spring washer	Carbon steel
22	Adjusting screw	Stainless steel
23	Adjusting screw lock nut	Carbon steel
24	Cap	Carbon steel

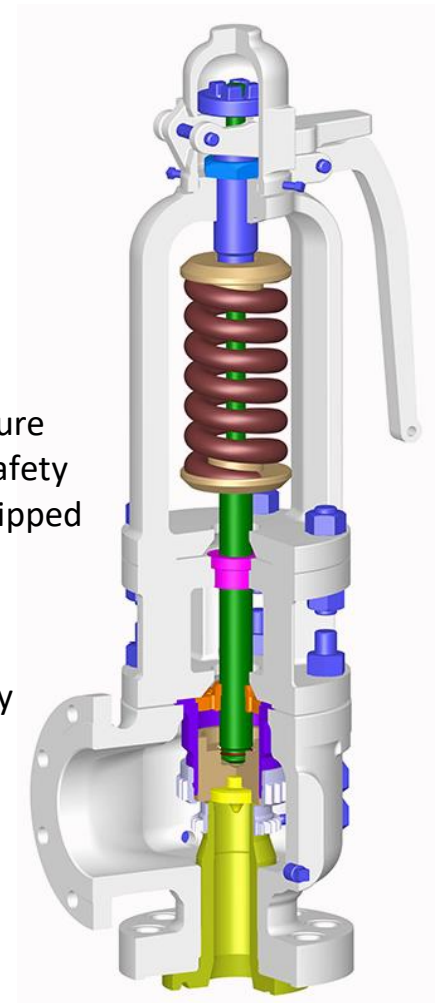


Steam Safety Valve

Type HCA

Description

Style HCA is a high capacity reaction type safety valve. In Style HCA valve, a cooling spool is placed between the body and bonnet to protect the spring from exposure to extreme temperatures. All Style HCA welded inlet safety valves are equipped with hydrostatic test plugs and shipped in two parts: valve body and valve superstructure. This makes handling easier for installation welding. Style HCA safety valve opens with a sharp pop at the set pressure and remains open, relieving rated capacity at 3% overpressure. As inlet pressure decays below the opening pressure, the safety valve remains open until a pressure about 4% below the set pressure is reached. At that point, the safety valve closes sharply.



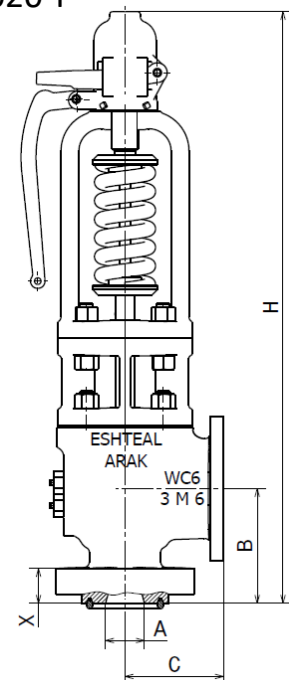
Applications

This valve designed for saturated and superheated steam applications. Style HCA is a high temperature version of the Style HC, with an alloy steel construction suitable to temperatures up to 1020°F

Dimensions and pipe connections

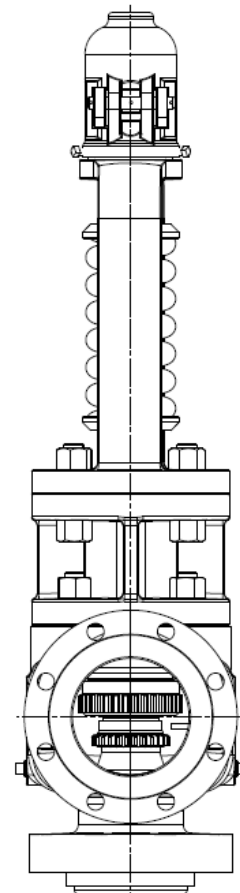
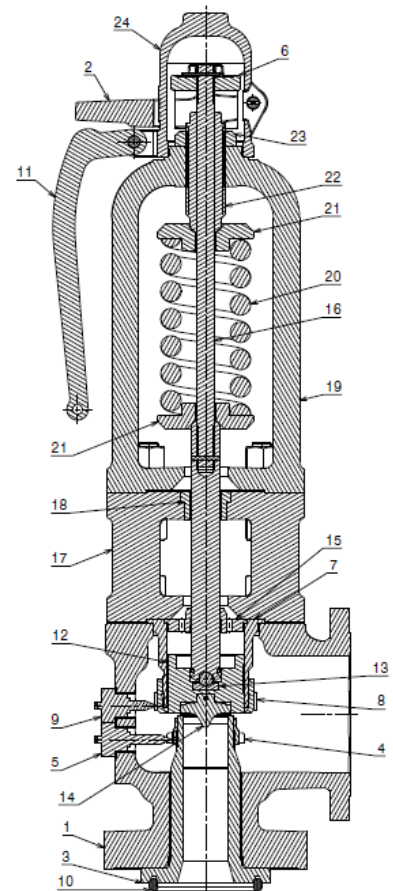
Dimensions (approx.) in mm

Valve Type		HCA - 57		
Valve Size (inlet-orifice-outlet)		3 M 6		
Orifice Area (cm ²)		23.23		
Connections		ANSI Class Flanged Inlet	3 in - 1500	
		ANSI Class Flanged Outlet	6 in - 150	
Dimensions	Used to Find Bolt Length	X	67.5	
	Inlet I.D.	A	76.2	
	Center to face of	Inlet	B	222
		Outlet	C	190
Height		H	1150	



Material

Item	Part Name	Material
1	Body	Alloy steel
2	Forked lever	S.G iron
3	Nozzle	Stainless steel
4	Nozzle ring	Stainless steel
5	Nozzle ring set screw	Stainless steel
6	Spindle nut	Carbon steel
7	Guide	Stainless steel
8	Guide ring	Stainless steel
9	Guide ring set screw	Stainless steel
10	Ring	Stainless steel
11	Hand lever	Carbon steel
12	Disc holder	Monel
13	Disc bushing	Stainless steel
14	Disc insert	Stainless steel /Stellite
15	Guide aligner	Bronze
16	Spindle assembly	Stainless steel /Monel
17	Cooling spool	Alloy steel
18	Cooling spool aligner	Bronze
19	Bonnet	Alloy steel
20	Spring	Alloy steel
21	Spring washer	Carbon steel
22	Adjusting screw	Stainless steel
23	Adjusting screw lock nut	Carbon steel
24	Cap	Carbon steel

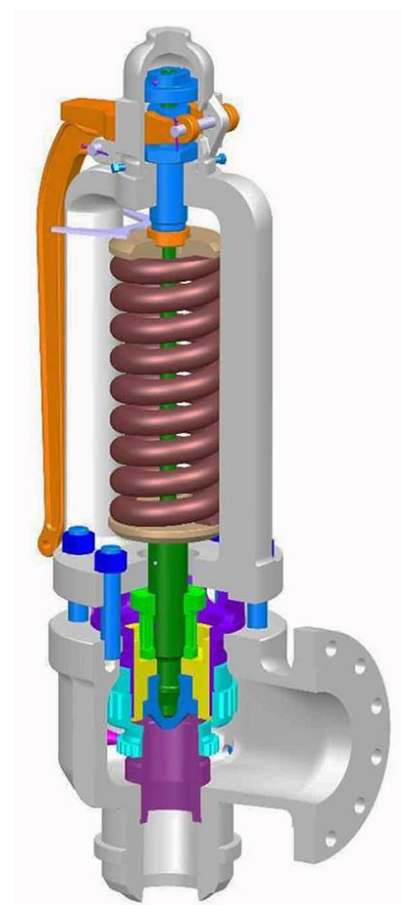


Steam Safety Valve

Type HCI (38 bar)

Description

Style HCI is a high capacity nozzle type safety valve and It meets the requirements of the ASME Boiler and Pressure Vessel Code, Section I, Power Boilers, and Section VIII, Unfired Pressure Vessels The adjustable nozzle and guide rings utilize the reactive and expansive forces of the flowing steam to provide full capacity lift. The open bonnet exposes the spring to atmosphere, minimizing thermal effects welded inlets and flanged outlets are the standard connections



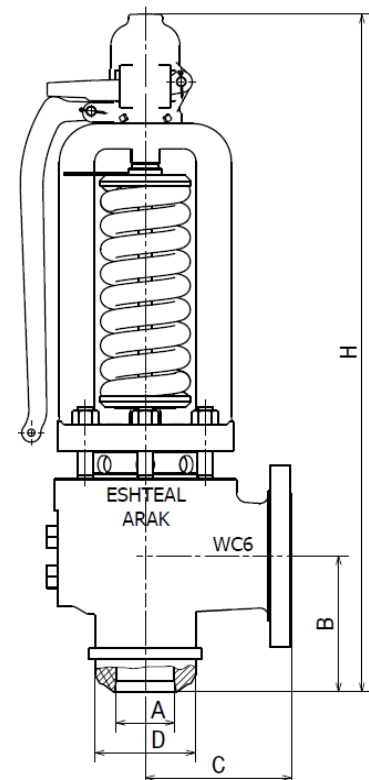
Applications

Style HCI is a safety valve for saturated and superheated steam service.

Dimensions and pipe connections

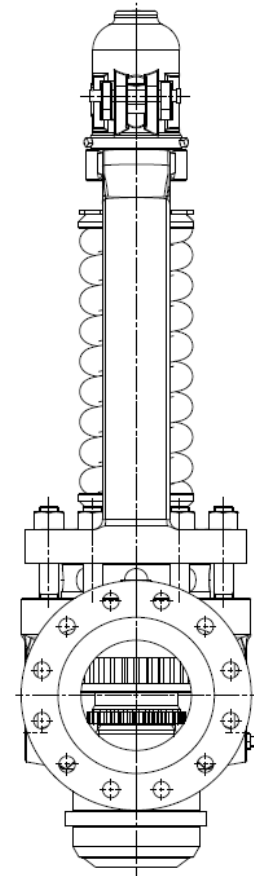
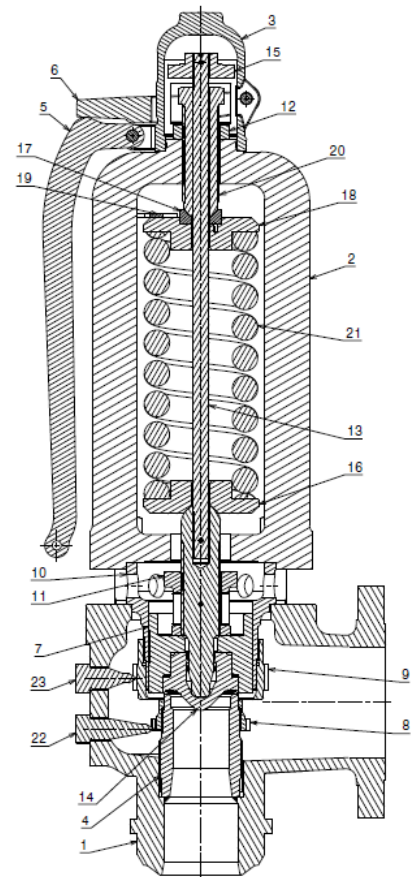
Dimensions (approx.) in mm

Valve Type		HCI - 58W		
Valve Size (inlet-orifice-outlet)		4 P2 6		
Orifice Area (cm ²)		45.61		
Connections (mm)		Butt Weld Inlet	101.6	
		ANSI Class Flanged Outlet	6 in - 300	
Dimensions	Inlet I.D.	A	101.6	
	Inlet O.D.	D	174.6	
	Center to face of	Inlet	B	238
		Outlet	C	254
	Height	H	1170	



Material

Item	Part Name	Material
1	Body	Alloy steel
2	Bonnet	Alloy steel
3	Cap	Carbon steel
4	Nozzle	Stainless steel
5	Hand lever	Carbon steel
6	Forked lever	Carbon steel
7	Disc holder	Nickel alloy
8	Nozzle ring	Stainless steel
9	Guide ring	Stainless steel
10	Guide	Nickel alloy
11	Disc holder retaining nut	Stainless steel
12	Adjusting screw nut	Stainless steel
13	Spindle assembly	Stainless steel
14	Disc insert	Inconel
15	Spindle nut	Stainless steel
16	Bottom spring washer	Steel
17	Bearing adapter	Alloy steel
18	Top spring washer	Steel
19	Top spring washer pin	Steel
20	Adjusting screw	Stainless steel
21	Spring	Alloy steel
22	Nozzle Ring Set Screw	Stainless steel
23	Guide Ring Set Screw	Stainless steel

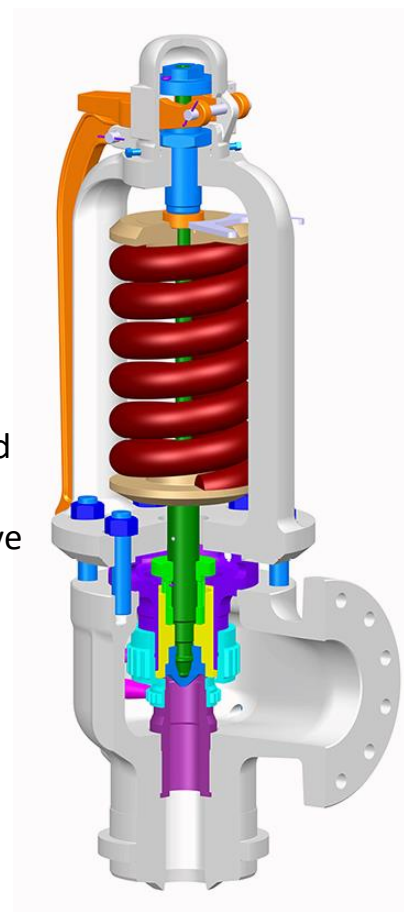


Steam Safety Valve

Type HCI (181.5 bar)

Description

Style HCI is a high capacity nozzle type safety valve and It meets the requirements of the ASME Boiler and Pressure Vessel Code, Section I, Power Boilers, and Section VIII, Unfired Pressure Vessels The adjustable nozzle and guide rings utilize the reactive and expansive forces of the flowing steam to provide full capacity lift. The open bonnet exposes the spring to atmosphere, minimizing thermal effects welded inlets and flanged outlets are the standard connections



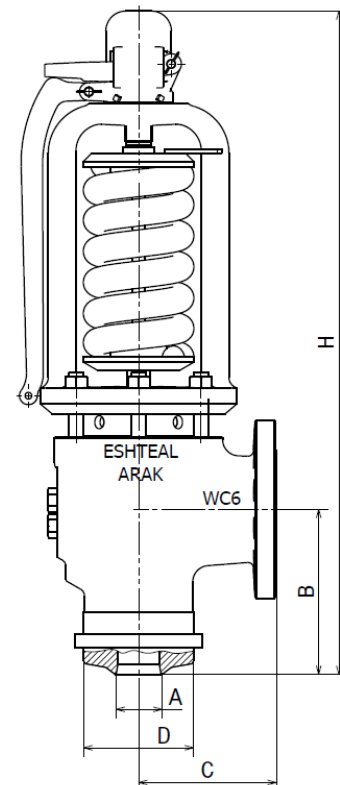
Applications

Style HCI is a safety valve for saturated and superheated steam service.

Dimensions and pipe connections

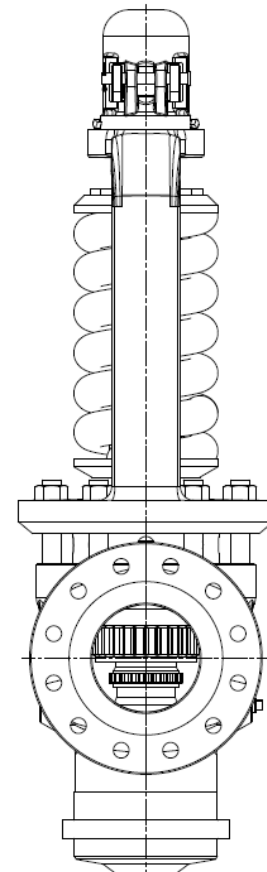
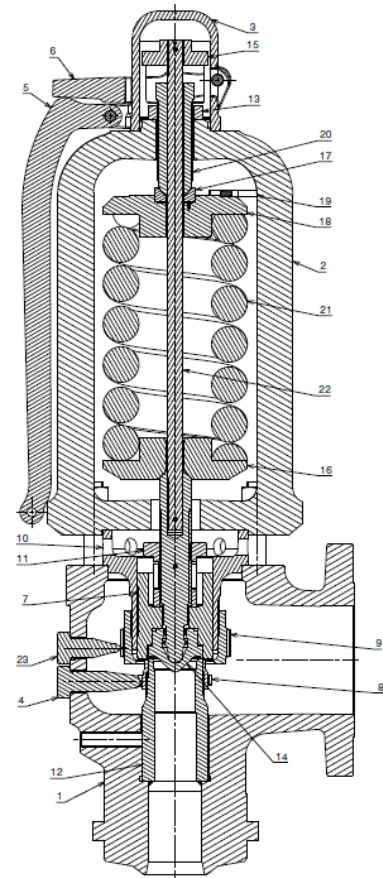
Dimensions (approx.) in mm

Valve Type		HCI - 98W		
Valve Size (inlet-orifice-outlet)		3 M2 6		
Orifice Area (cm ²)		25.65		
Connections (mm)		Butt Weld Inlet	76.2	
		ANSI Class Flanged Outlet	6 in - 300	
Dimensions	Inlet I.D.	A	76.2	
	Inlet O.D.	D	203.2	
	Center to face of	Inlet	B	305
		Outlet	C	254
Height	H	1240		



Material

Item	Part Name	Material
1	Body	Alloy steel
2	Bonnet	Alloy steel
3	Cap	Carbon steel
4	Nozzle Ring Set Screw	Stainless steel
5	Hand lever	Carbon steel
6	Forked lever	Carbon steel
7	Disc holder	Nickel alloy
8	Nozzle ring	Stainless steel
9	Guide ring	Stainless steel
10	Guide	Nickel alloy
11	Disc holder retaining nut	Stainless steel
12	Nozzle	Stainless steel
13	Adjusting screw nut	Stainless steel
14	Disc insert	Inconel
15	Spindle nut	Stainless steel
16	Bottom spring washer	Steel
17	Bearing adapter	Alloy steel
18	Top spring washer	Steel
19	Top spring washer pin	Steel
20	Adjusting screw	Stainless steel
21	Spring	Alloy steel
22	Spindle assembly	Stainless steel
23	Guide Ring Set Screw	Stainless steel



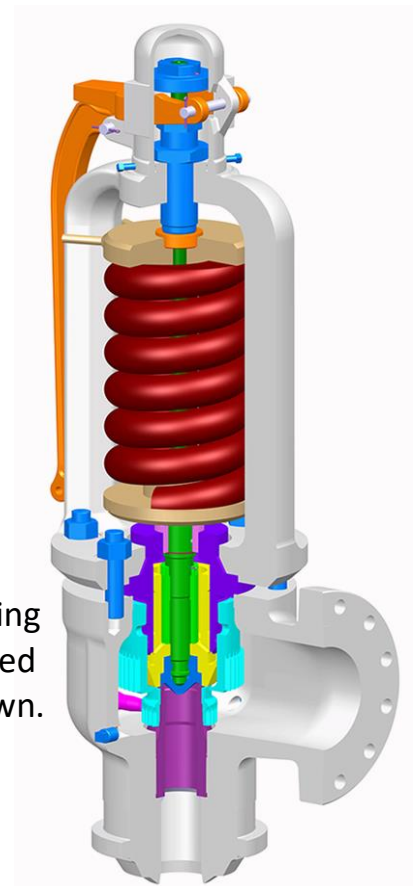
Steam Safety Valve

Type HE

Description

Style HE safety valve is high pressure, high capacity Reaction type valve, It incorporates the unique patented eductor control that permits the valve to attain full capacity lift at a pressure 3% above popping pressure in accordance with the requirements of Section I of the ASME Boiler and Pressure Vessel Code.

HE advanced trim design has the backpressure assist closing feature and patented Eductor Control, eliminating the need for complex adjustment to obtain Code required blowdown.



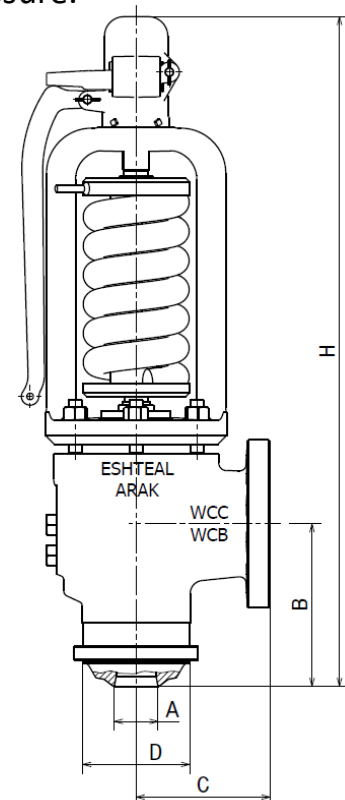
Applications

designed specifically for saturated steam service on boiler drums having design pressures above 2000 psig [138 barg] up to critical pressure.

Dimensions and pipe connections

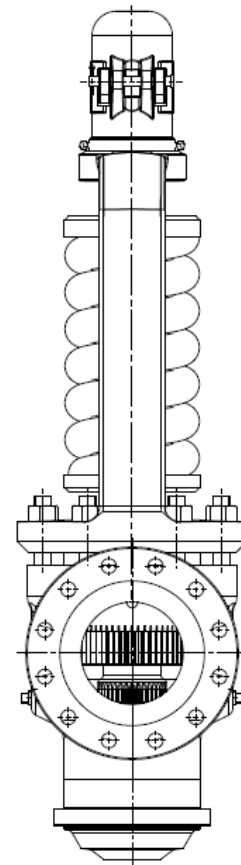
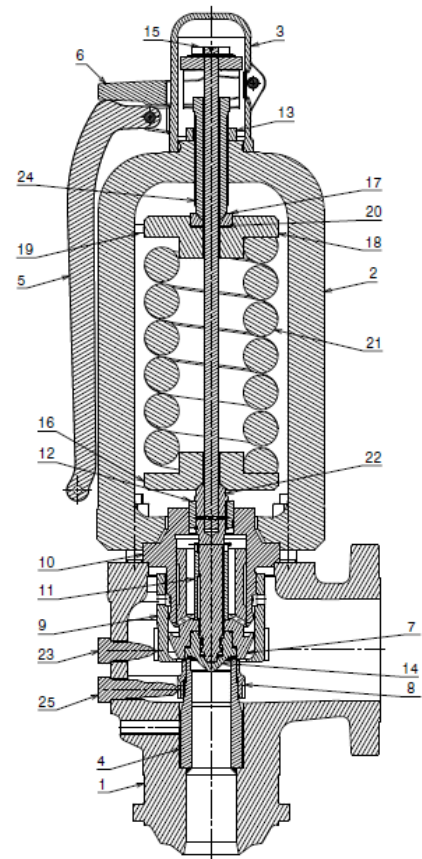
Dimensions (approx.) in mm

Valve Type		HE - 96W		
Valve Size (inlet-orifice-outlet)		3 M2 6		
Orifice Area (cm ²)		25.65		
Connections (mm)		Butt Weld Inlet	76.2	
		ANSI Class Flanged Outlet	6 in - 300	
Dimensions	Inlet I.D.	A	76.2	
	Inlet O.D.	D	203	
	Center to face of	Inlet	B	305
		Outlet	C	254
Height	H	1270		



Material

Item	Part Name	Material
1	Body	Carbon steel
2	Bonnet	Carbon steel
3	Cap	Carbon steel
4	Nozzle	Stainless steel
5	Hand lever	Carbon steel
6	Forked lever	Carbon steel
7	Disc holder	Nickel alloy
8	Nozzle ring	Stainless steel
9	Guide ring	Stainless steel
10	Guide	Nickel alloy
11	Disc holder retaining nut	Stainless steel
12	Piston	Nickel alloy
13	Adjusting screw nut	steel
14	Disc insert	Inconel
15	Spindle nut	steel
16	Bottom spring washer	Steel
17	Bearing adapter	Alloy steel
18	Top spring washer	Steel
19	Top spring washer pin	Steel
20	Thrust bearing	Steel
21	Spring	Alloy steel
22	Spindle assembly	Stainless steel
23	Guide Ring Set Screw	Stainless steel
24	Adjusting screw	Stainless steel
25	Nozzle Ring Set Screw	Stainless steel



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This safety valve is a type of High Lift and Semi Nozzle valves, which are available in two forms, single spring and double spring, which are suitable for steam, air and water, in these valves. Spring load is taken on the metal-to-metal seating with the PTFE facing functioning only as an efficient seal.

The material of the body is Cast Iron up to the maximum pressure of 11bar and Cast Steel up to the maximum pressure of 22bar

This valve is available in the sizes of 1 ½", 2", 2 ½", 3"

Dual Spring Safety valve



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Dual Spring Safety Valve

Type DSF

Description

This high lift safety valve is our standard recommendation for shell boilers and other plant items. Spring load is taken on the metal-to-metal seating with the PTFE facing functioning only as an efficient seal. Discharge capacities in accordance with BS 6759-1.



Applications

Dual spring safety valve is suitable for steam or Pressure vessels and piping systems containing gas and air.

Dimensions and pipe connections

▪ Cast iron Body Dimensions (approx.) in mm

Nominal size	Valve Dimensions and Standard of Flange														
	Inlet Flange (BS10 Table F)					Outlet Flange (BS10 Table A)							B	C	H
	Size	D1	N	O	P	Size	D2	Q	U	V	W	P			
1 ½"	2 ½" DN65	184	8	18	146	4" DN100	216	2	M16	2	18	178	216	174	575
2"	3" DN80	203	8	18	165	4" DN100	216	2	M16	2	18	178	242	184	645
2 ½"	4" DN100	229	8	18	190	5" DN125	254	2	M16	2	18	210	264	210	685
3"	5" DN125	279	8	22	235	6" DN150	279	2	M16	2	18	235	288	224	775

▪ **Cast steel Body** Dimensions (approx.) in mm

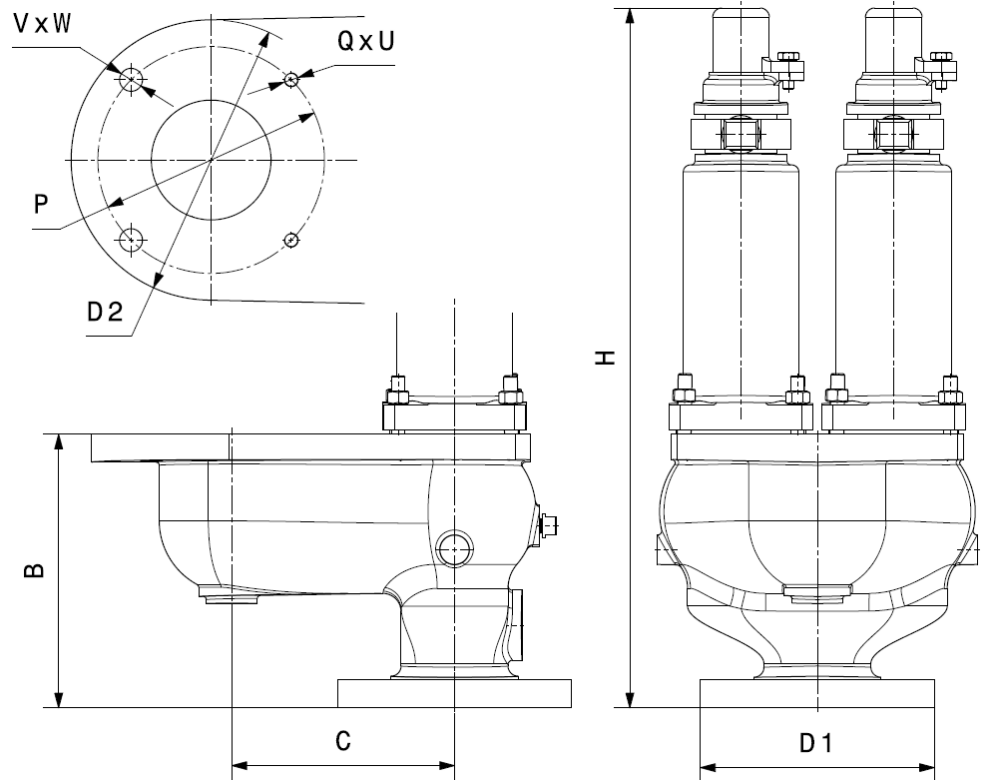
Nominal size	Valve Dimensions and Standard of Flange															
	Inlet Flange (BS10 Table H)						Outlet Flange (BS10 Table A)							B	C	H
	Raised Face	Size	D1	N	O	P	Size	D2	Q	U	V	W	P			
1 ½"	114 x 0.8	2 ½" DN65	184	8	22	146	4" DN100	216	2	M16	2	18	178	219	174	575
2"	127 x 0.8	3" DN80	203	8	22	165	4" DN100	216	2	M16	2	18	178	252	178	645
2 ½"	152 x 0.8	4" DN100	229	8	22	190	5" DN125	254	4	M16	4	18	210	275	210	685
3"	178 x 0.8	5" DN125	280	8	22	235	6" DN150	279	4	M16	4	18	235	297	224	775

Outlet flange

- Q = No. of tapped holes
- U = Thread size
- V = No. of plain holes
- W = Dia. of plain holes
- P = Pitch circle dia.

Inlet flange

- N = No. of holes
- O = Dia. of holes
- P = Pitch circle dia.



Pressure/temperature rating

Body material	Maximum set pressure	Temperature
Cast iron	11 bar	Up to 220 °C
Cast steel	20 bar	Up to 224 °C

Capacities

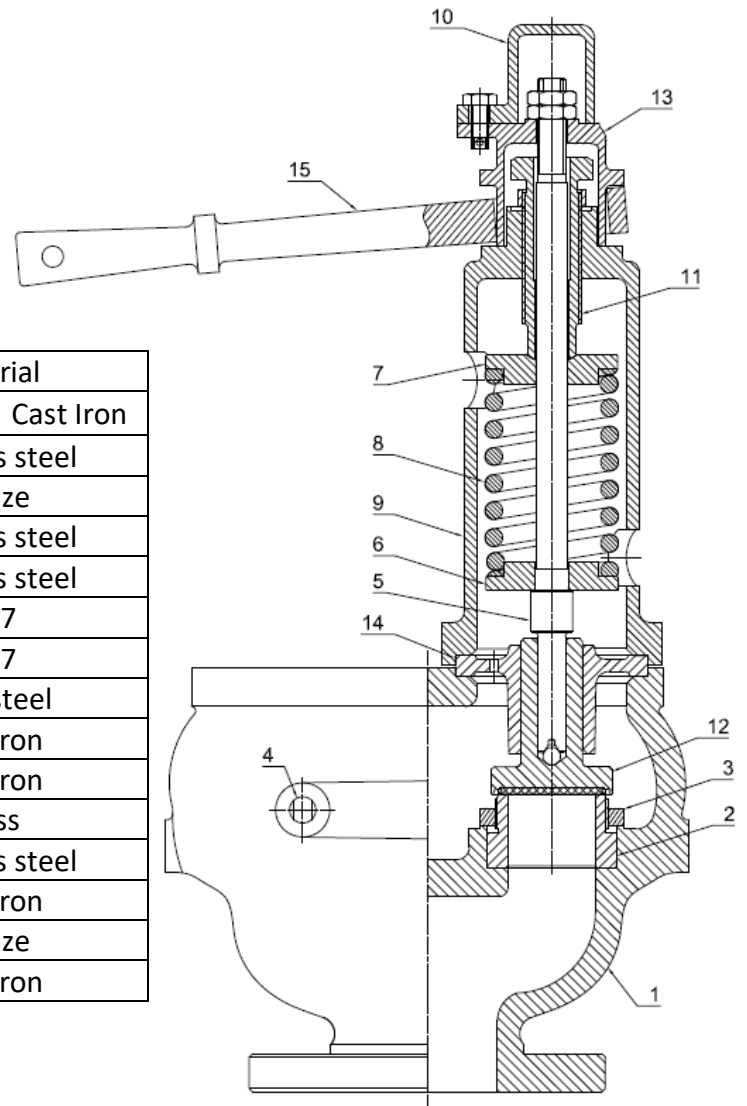
Discharge capacity to BS6759 Part 1 1984.

Coefficient of discharge $K_{dr} = 0.37$ Overpressure 10%.

Set Pressure (gauge) bar	I Dry saturated steam				II Air at 15°C (60°F)			
	Capacities (kg/h)							
	Nominal size							
	1 ½"		2"		2 ½"		3"	
	I	II	I	II	I	II	I	II
1	839	1025	1311	1601	2216	2706	3357	4100
2	1279	1562	1998	2440	3377	4124	5116	6248
3	1719	2099	2685	3279	4539	5542	6875	8396
4	2159	2637	3372	4118	5700	6960	8634	10544
5	2599	3174	4059	4957	6861	8378	10393	12691
6	3039	3711	4746	5795	8022	9796	12152	14839
7	3479	4248	5433	6634	9183	11214	13911	16987
8	3919	4785	6120	7473	10345	12632	15670	19135
9	4359	5322	6807	8312	11506	14050	17429	21283
10	4798	5860	7494	9151	12667	15468	19188	23431
11	5238	6397	8181	9990	13828	16886	20947	25579
12	5678	6934	8868	10829	14989	18304	22706	27726
13	6118	7471	9555	11668	16151	19722	24465	29874
14	6558	8008	10242	12507	17312	21140	26223	32022
15	6998	8546	10929	13345	18473	22558	27982	34170
16	7438	9803	11616	14184	19634	23976	29741	36318
17	7878	9620	12303	15023	20795	25394	31500	38466
18	8318	10157	12990	15862	21956	26812	33259	40614
19	8758	10694	13677	16701	23118	28230	35018	42761
20	9198	11231	14364	17540	24279	29647	36777	44909

Material

Item	Part Name	Material
1	Body	Cast steel Cast Iron
2	Seat ring	Stainless steel
3	Seat nut	Bronze
4	Locking stud	Stainless steel
5	Stem	Stainless steel
6	Bottom spring seat	ST37
7	Upper spring seat	ST37
8	Spring	Alloy steel
9	Spring cover	Cast Iron
10	Locking cover	Cast Iron
11	Adjusting screw	Brass
12	Disc	Stainless steel
13	Stem cover	Cast Iron
14	Disc bushing	Bronze
15	Wrench	Cast Iron



Eshteal Arak Industrial Engineering Company is the only manufacturer of high-capacity rotary cup burners in the country, and these burners are used by all boiler companies in the country. Among the unique products produced by this company are power valves that are designed for saturated and superheated steam lines. This product was produced for the first time in the country in 2014 in the Mobarake steel complex and at a pressure of 70 bar It has been used successfully Eshteal Arak Industrial Engineering Company has been modernizing its production lines since 2003 and is currently equipped with more than 98 machines, 61 of which are CNC lathes and milling centers (referred to at the end), stepped into the field of producing products with modern sophisticated technology It should be mentioned that this company has succeeded in obtaining the knowledge-based badge on burners and valves during two consecutive periods, and in order to enhance the brand and satisfy customers, the necessary standards such as ISIRI 7595, ISIRI 7594, ISO 3834, ISO 9001:2015 and implemented 5S



This safety valve is a type of High Lift and Semi Nozzle valves, which are available in two forms, single spring and double spring, which are suitable for steam, air and water, in these valves. Spring load is taken on the metal-to-metal seating with the PTFE facing functioning only as an efficient seal. The material of the body is Cast Iron up to the maximum pressure of 11bar and Cast Steel up to the maximum pressure of 22bar
This valve is available in the sizes of 1 ½", 2", 2 ½", 3"

Single Spring Safety valve



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📍 Factory: Hadid St-Haji Abad Industrial Zone 7th km
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📍 Head office: 4th floor-No.3 Apartment Asef Vaziri
alley southern Bahar St Taleghani St-Tehran-Iran

Single Spring Safety Valve

Type SSF

Description

This high lift safety valve is our standard recommendation for shell boilers and other plant items. Spring load is taken on the metal-to-metal seating with the PTFE facing functioning only as an efficient seal. Discharge capacities in accordance with BS 6759-1



Applications

Single spring safety valve is suitable for steam or Pressure vessels and piping systems containing gas and air.

Dimensions and pipe connections

▪ **Cast iron Body** Dimensions (approx.) in mm

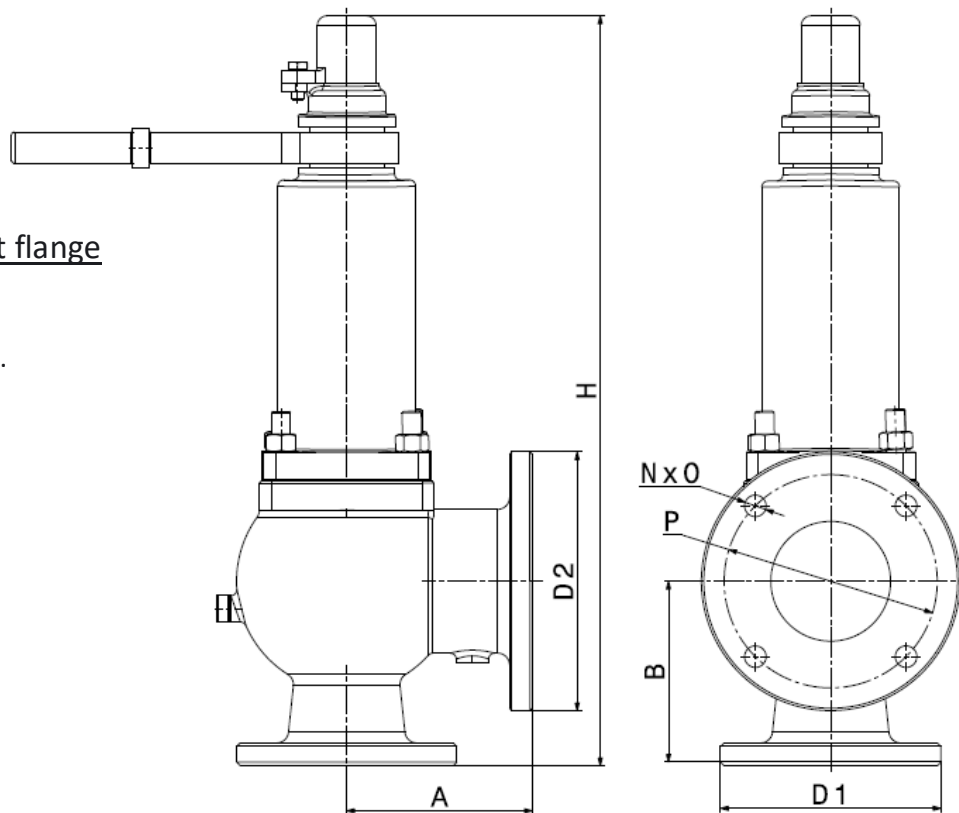
Nominal size	Valve Dimensions and Standard of Flange												
	Inlet Flange (BS10 Table F)					Outlet Flange (BS10 Table A)					A	B	H
	Size	D1	N	O	P	Size	D2	N	O	P			
1 ½"	1 ½" DN40	140	4	18	105	2 ½" DN65	165	4	18	127	135	135	555
2"	2" DN50	165	4	18	127	3" DN80	184	4	18	146	146	145	610
2 ½"	2 ½" DN65	184	8	18	146	4" DN100	216	4	18	178	155	154	650
3"	3" DN80	203	8	18	165	5" DN125	254	4	18	210	180	180	765

▪ **Cast steel Body** Dimensions (approx.) in mm

Nominal size	Valve Dimensions and Standard of Flange													
	Inlet Flange (BS10 Table H)						Outlet Flange (BS10 Table A)				A	B	H	
	Size	Raised Face	D1	N	O	P	Size	D2	N	O				P
1 ½"	1 ½" DN40	82 x 0.8	140	4	18	105	2 ½" DN65	165	4	18	127	135	135	555
2"	2" DN50	102 x 0.8	165	4	18	127	3" DN80	184	4	18	146	146	150	615
	Inlet Flange (BS10 Table H)						Outlet Flange (BS10 Table E)							
2 ½"	2 ½" DN65	114 x 0.8	184	8	22	146	4" DN100	216	8	18	178	155	160	656
3"	3" DN80	127 x 0.8	203	8	22	165	5" DN125	254	8	18	210	180	180	765

Inlet and Outlet flange

N = No. of holes
O = Dia. of holes
P = Pitch circle dia.



Pressure/temperature rating

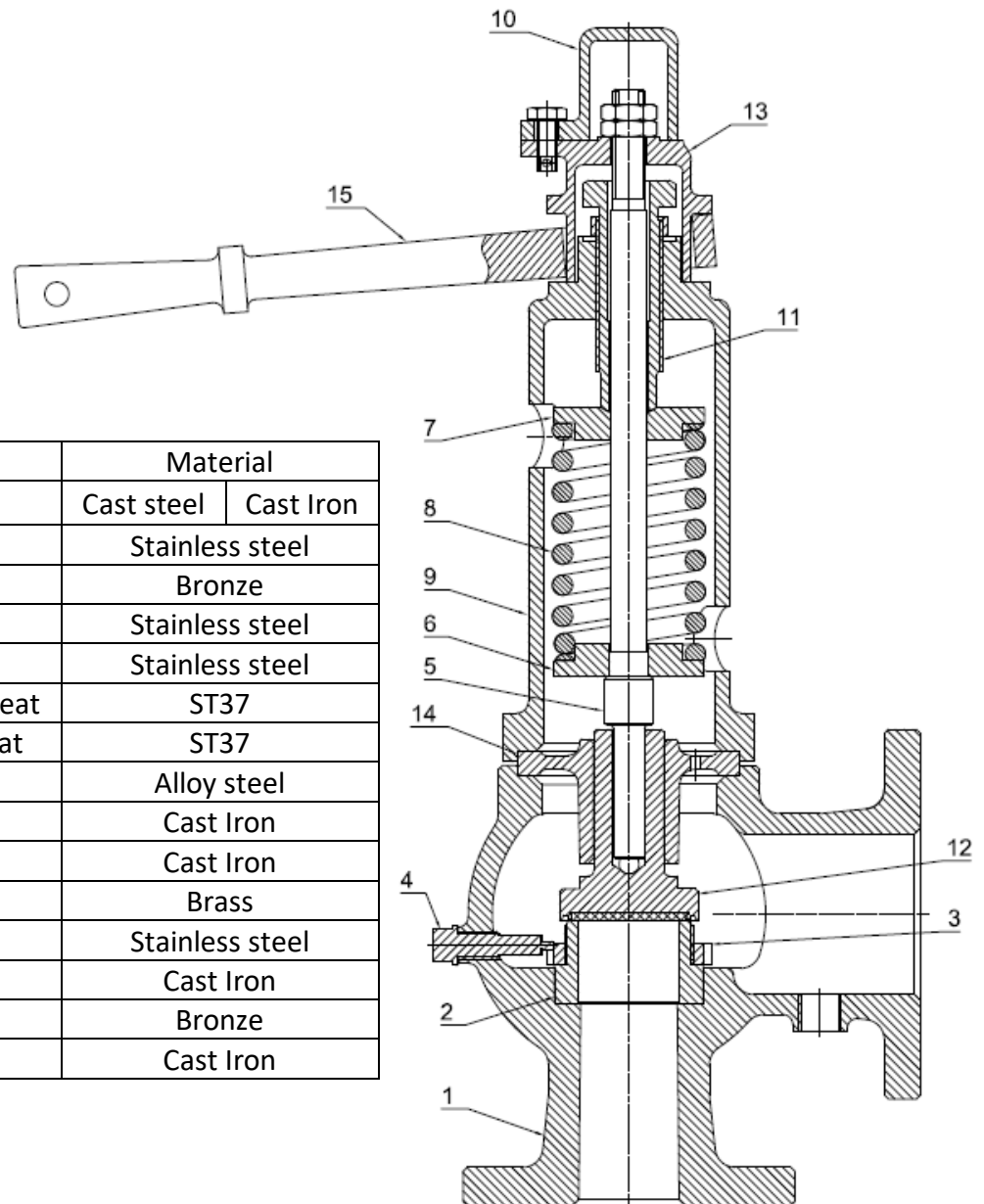
Body material	Maximum set pressure	Temperature
Cast iron	11 bar	Up to 220 °C
Cast steel	20 bar	Up to 224 °C

Capacities

Discharge capacity to BS6759 Part 1 1984.

Coefficient of discharge $K_{dr} = 0.37$ Overpressure 10%.

Set Pressure (gauge) bar	I Dry saturated steam				II Air at 15°C (60°F)			
	Capacities (kg/h)							
	Nominal size							
	1 ½"		2"		2 ½"		3"	
	I	II	I	II	I	II	I	II
1	512	839	789	1311	1353	2216	2050	3357
2	781	1279	1203	1998	2062	3377	3124	5116
3	1049	1719	1617	2685	2771	4539	4198	6875
4	1318	2159	2030	3372	3480	5700	5272	8634
5	1587	2599	2444	4059	4189	6861	6345	10393
6	1855	3039	2858	4746	4898	8022	7419	12152
7	2124	3479	3271	5433	5607	9183	8493	13911
8	2392	3919	3685	6120	6316	10345	9567	15670
9	2661	4359	4099	6807	7025	11506	10641	17429
10	2930	4798	4512	7494	7734	12667	11715	19188
11	3198	5238	4926	8181	8443	13828	12789	20947
12	3467	5678	5340	8868	9152	14989	13863	22706
13	3735	6118	5753	9555	9861	16151	14937	24465
14	4004	6558	6167	10242	10570	17312	16011	26223
15	4273	6998	6581	10929	11279	18473	17085	27982
16	4541	7438	6994	11616	11988	19634	18159	29741
17	4810	7878	7408	12303	12697	20795	19233	31500
18	5078	8318	7822	12990	13406	21956	20307	33259
19	5347	8758	8235	13677	14115	23118	21380	35018
20	5615	9198	8649	14364	14823	24279	22454	36777



Material

Item	Part Name	Material
1	Body	Cast steel Cast Iron
2	Seat ring	Stainless steel
3	Seat nut	Bronze
4	Locking stud	Stainless steel
5	Stem	Stainless steel
6	Bottom spring seat	ST37
7	Upper spring seat	ST37
8	Spring	Alloy steel
9	Spring cover	Cast Iron
10	Locking cover	Cast Iron
11	Adjusting screw	Brass
12	Disc	Stainless steel
13	Stem cover	Cast Iron
14	Disc bushing	Bronze
15	Wrench	Cast Iron

Eshteal Arak Industrial Engineering Company is the only manufacturer of high-capacity rotary cup burners in the country, and these burners are used by all boiler companies in the country. Among the unique products produced by this company are power valves that are designed for saturated and superheated steam lines. This product was produced for the first time in the country in 2014 in the Mobarake steel complex and at a pressure of 70 bar. It has been used successfully. Eshteal Arak Industrial Engineering Company has been modernizing its production lines since 2003 and is currently equipped with more than 98 machines, 61 of which are CNC lathes and milling centers (referred to at the end), stepped into the field of producing products with modern sophisticated technology. It should be mentioned that this company has succeeded in obtaining the knowledge-based badge on burners and valves during two consecutive periods, and in order to enhance the brand and satisfy customers, the necessary standards such as ISIRI 7595, ISIRI 7594, ISO 3834, ISO 9001:2015 and implemented 5S



This valve are designed to meet all industrial applications up to F orifice. open rapidly with an overpressure of max. 10 % to the full design lift. Threaded connections (DN 15 /DN 15) male and female. The material of the body is stainless steel. the type of sealing is Metal on Metal

Safety Relief Valves ½ “



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Safety Relief Valve

Type SFC 37

- Conventional design
- Long design

Description

- Compact Performance Safety Valves offer ultimate protection against unallowable overpressures in all applications for steam, gases and liquids where smaller capacities are required
- Open rapidly with an overpressure of max. 10 % to the full design lift
- Have a maximum blow down of minus 10 % for steam/gas service and Minus 20 % for liquid service
- Are designed to meet all industrial applications up to F orifice
- Compact Performance Safety Valves are designed, marked, produced according to EN ISO 4126-1

Applications

- Air/gas compressors and pumps
- Technical gases and CO₂ plants
- Cylinder filling stations
- Chemical equipment and piping
- Pressure vessels and piping systems containing gas, air, liquid or steam
- LPG / LNG terminals, carriers etc.
- Cryogenic systems and oxygen applications
- Thermal relief
- High pressure extraction plants

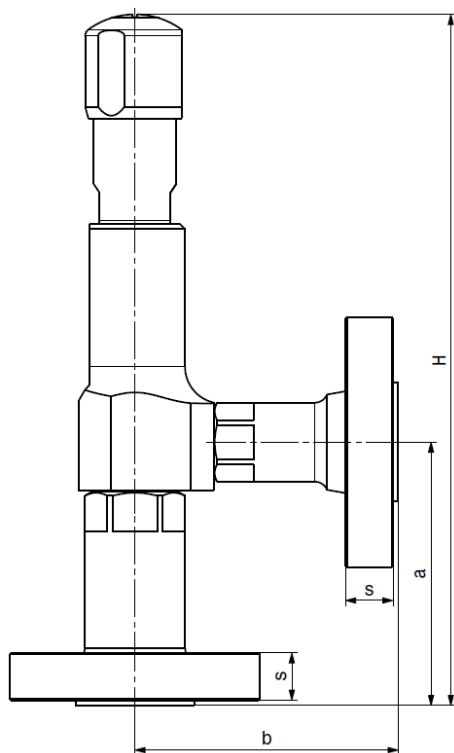


Conventional design
Cap E4

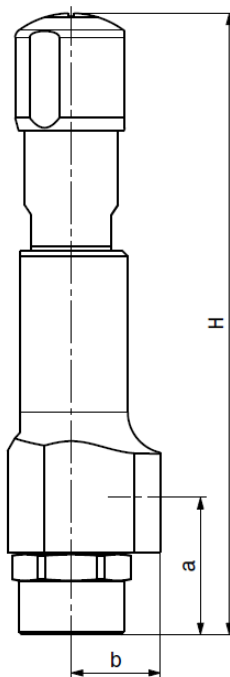
Dimensions and pipe connections

▪ Threaded connections

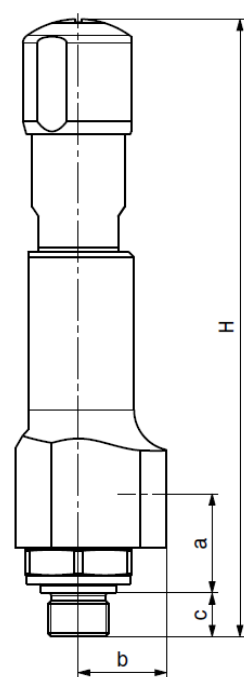
Inlet and Outlet thread	Valve model	
	Conventional design	Long design
Orifice diameter	10 mm	
Orifice area	78.5 mm ²	
Inlet thread type	DIN ISO 228-1 G 1/2"	
Outlet thread type	DIN ISO 228-1 G 1/2"	
Inlet and Outlet thread female		
Center to face	Inlet a	46 mm
	Outlet b	30 mm
Height (Cap E4)	H max.	209 mm
Inlet thread male and Outlet thread female		
Center to face	Inlet a	34 mm
	Outlet b	30 mm
Height (Cap E4)	H max.	212 mm
Length of screw end	C	15 mm



Flanged connection – Cap E4



Female thread – Cap E4



male thread - Cap E4

▪ Flanged connections

Inlet and Outlet flange	Valve model	
	Conventional design	Long design
Orifice diameter	10 mm	
Orifice area	78.5 mm ²	
Inlet and Outlet flange (DIN EN 1092-1 / Flange rating class PN 40)		
Inlet and Outlet flange Size	DN 15	
Center to face	Inlet a	100 mm
	Outlet b	100 mm
Height (Cap E4)	H max.	263 mm
Flange thickness	S	18 mm
Inlet and Outlet flange (ASME B16.5 / Flange rating class 150)		
Inlet and Outlet flange Size	NPS 1/2"	
Center to face	Inlet a	100 mm
	Outlet b	100 mm
Height (Cap E4)	H max.	263 mm
Flange thickness	S	14 mm
Inlet and Outlet flange (ASME B16.5 / Flange rating class ≥ 300)		
Inlet and Outlet flange Size	NPS 1/2"	
Center to face	Inlet a	103 mm
	Outlet b	100 mm
Height (Cap E4)	H max.	266 mm
Flange thickness	S	18 mm

Pressure/temperature rating (Metric units)

Valve model		Conventional design	Long design
Inlet Body	Pressure rating	PN 320	
Outlet body	Pressure rating	PN 160	
Minimum set pressure	p (bar g) S/G/L	0.1	68
Maximum set pressure	p (bar g) S/G/L	68	180
Temperature (acc. to DIN EN)	min (°C)	-270	
	max (°C)	+280	

Coefficient of discharge K_{dr} (EN ISO 4126-1)

S/G	0.50
L	0.35

Capacities

• Saturated steam

Capacities for saturated steam according to EN ISO 4126-1, based on set pressure 10 % over pressure. Capacities at 1 bar (14.5 psig) and below are based on 0.1 bar (1.45 psig) Overpressure.

Saturated steam (EN ISO 4126-1)

Set pressure (bar)	0.1	0.2	0.5	1	2	3	4	5	10	20	30	50	68
Capacities (kg/h)	12	17	29	43	70	94	118	141	255	483	712	1181	1620

• Air

Capacities for air according to EN ISO 4126-1, based on set pressure plus 10 % Over pressure at 0 °C and 1013 mbar. Capacities at 1 bar (14.5 psig) and below are based on 0.1 bar (1.45 psig) overpressure.

Air (EN ISO 4126-1)

Set pressure (bar)	0.1	0.2	0.5	1	2	3	4	5	10	20	30	50	68
Capacities (m ³ /h)	14	19	34	51	84	115	145	174	321	615	909	1498	2027

• Water

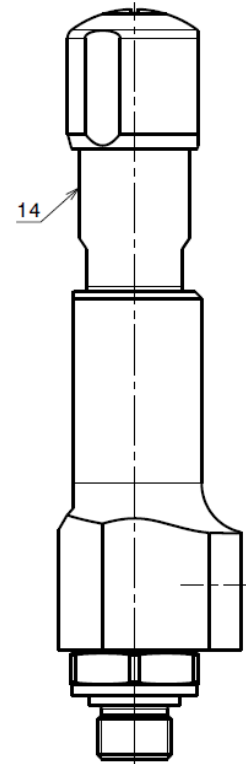
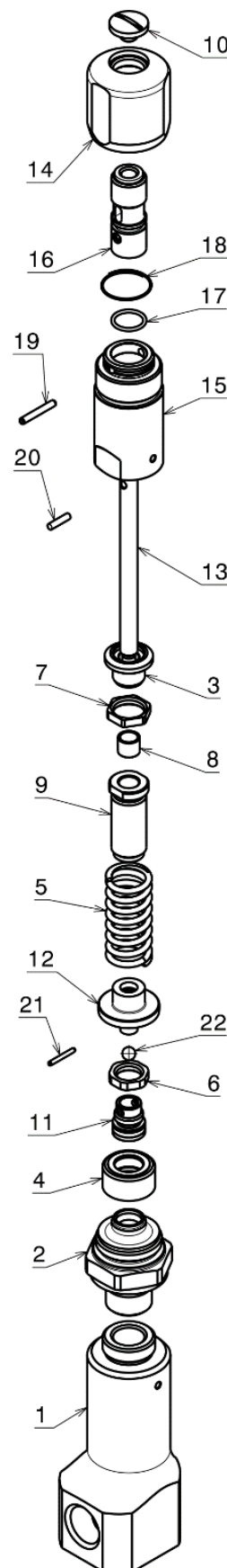
Capacities for water according to EN ISO 4126-1, based on set pressure plus 10 % overpressure at 20 °C (68 °F). Capacities at 1 bar (14.5 psig) and below are based on 0.1 bar (1.45 psig) overpressure.

Water (EN ISO 4126-1)

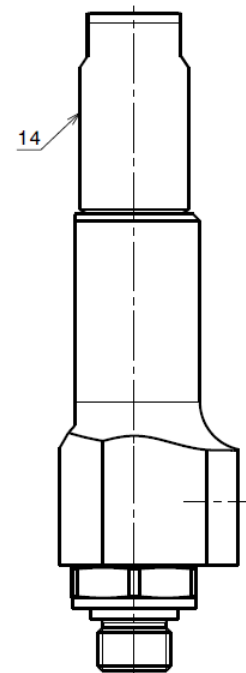
Set pressure (bar)	0.1	0.2	0.5	1	2	3	4	5	10	20	50	68
Capacities (10 ³ kg/h)	0.63	0.77	1.08	1.5	2.1	2.5	2.9	3.3	4.6	6.6	10.4	12.1

Material

Item	Part Name	Material
1	Outlet Body - Threaded connection - Flanged connection	Stainless Steel
2	Inlet Body - Threaded connection - Flanged connection	Stainless Steel
3	Spring Plate	Stainless Steel
4	Cone	Stainless Steel
5	Spring	Stainless Steel
6	Disc Nut	Stainless Steel
7	Lock Nut	Stainless Steel
8	Bush	PTFE
9	Adjusting Screw	Stainless Steel
10	Stop Unit	Stainless Steel
11	Disc	Stainless Steel
12	Spring Plate	Stainless Steel
13	Spindle	Stainless Steel
14	Cap E2 Cap E4	Stainless Steel
15	Lever Cover	Stainless Steel
16	Spindle Cap	Stainless Steel
17	O-Ring	Viton
18	Retaining Clip	Stainless Steel
19	Spring Pin	Stainless Steel
20	Pin	Stainless Steel
21	Spring Pin	Stainless Steel
22	Ball	Stainless Steel



male thread - Cap E4



male thread - Cap E2

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The SV500 full lift, full nozzle safety valve is suitable for steam, air, inert industrial gas and non-hazardous liquid service. Valves are available in sizes ranging $\frac{3}{4}$ " , 1" , $1\frac{1}{4}$ " , $1\frac{1}{2}$ " , 2" and have a bronze body with female screwed connections and a stainless steel nozzle

Spring Safety valve
SFV500



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Spring Safety Valve

Type SFV 500

Description

The SV615 full lift, full nozzle safety valve is suitable for steam, air, inert industrial gas and non-hazardous liquid service. Valves are available in sizes ranging from DN20 to DN50 and have a bronze body with female screwed connections and a stainless-steel nozzle.

This valve has a closed bonnet with either a lifting lever and metal on metal seal.



Applications

The SV615 is suitable for the protection of steam or hot water boilers, generators, vessels, receivers and air compressors, autoclaves, downstream of pressure reducing valves and for general pressure relief applications.

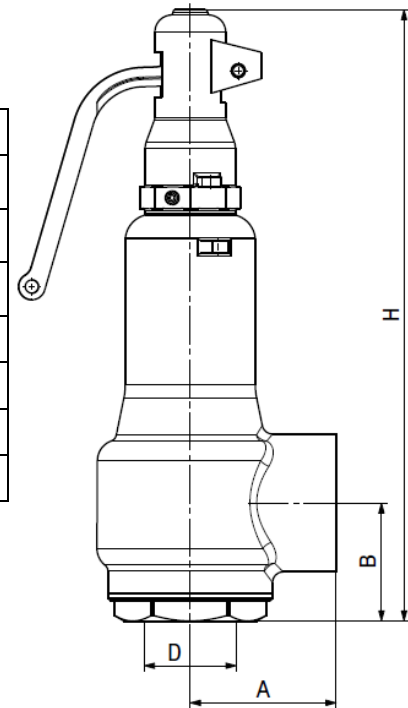
Pressure/temperature limits

body design		PN25	
Set pressure range	Maximum	$\frac{3}{4}$ " to $1 \frac{1}{4}$ "	18 bar g
		$1 \frac{1}{2}$ " and 2"	14 bar g
	Minimum		1.5 bar g
Temperature	Maximum	230°C	
	Minimum	-90°C	
Performance data	Overpressure	Steam	5%
		Gas	10%
		Liquid	10%
Blowdown limits	Steam, gas	10%	
	Liquids	20%	
Maximum permitted backpressure			10% of set pressure
Maximum cold hydraulic test pressure			37 bar

Dimensions and pipe connections

Dimensions (approx.) in mm

Valve size	DN20	DN25	DN32	DN40	DN50	
Inlet thread female	¾"	1"	1 ¼"	1 ½"	2"	
Outlet thread female	1 ¼"	1 ½"	2"	2 ½"	3"	
Orifice area (mm ²)	314	452	661	1075	1662	
Orifice diameter D	20	24	29	37	46	
Center to face	Inlet B	44	48	58	67	80
	Outlet A	55	60	70	81	97
Height H	231	244	281	368	424	



- Inlet and Outlet Connections Screwed BSP (BS 21 parallel)

Capacities

● Saturated steam and Air

Capacities for saturated steam and Air according to EN ISO 4126.

Set pressure (bar g)	I Dry saturated steam Capacities (kg/h)						II Air at 15°C (60°F) Capacities (l/s)			
	Valve size in/out									
	DN20/DN32		DN25/DN40		DN32/DN50		DN40/DN65		DN50/DN80	
	I	II	I	II	I	II	I	II	I	II
1.5	328	115	472	165	690	241	1122	392	1734	606
2	392	138	564	199	824	291	1341	473	2073	732
3	519	186	747	267	1092	391	1776	635	2746	982
4	645	233	929	335	1358	490	2008	797	3414	1 233
5	771	280	1109	403	1622	590	2638	959	4079	1 483
6	896	328	1289	472	1886	690	3067	1 121	4741	1 734
7	1020	375	1469	540	2148	789	3494	1 283	5401	1 984
8	1145	422	1648	608	2410	889	3920	1 446	6060	2 235
9	1269	470	1827	676	2672	988	4345	1 608	6717	2 485
10	1393	517	2005	744	2933	1 088	4769	1 770	7374	2 736
11	1517	564	2184	812	3194	1 188	5194	1 932	8030	2 986
12	1641	612	2362	880	3454	1 287	5618	2 094	8685	3 237
13	1765	659	2540	948	3715	1 387	6042	2 256	9340	3 487
14	1888	706	2718	1 017	3975	1 487	---	2 418	---	3 738
15	2012	---	2897	---	4236	---	---	---	---	---
16	2136	801	3075	1 153	4496	1 686	---	---	---	---
17	2260	---	3253	---	4757	---	---	---	---	---
18	2384	896	3431	1 289	5018	1 885	---	---	---	---

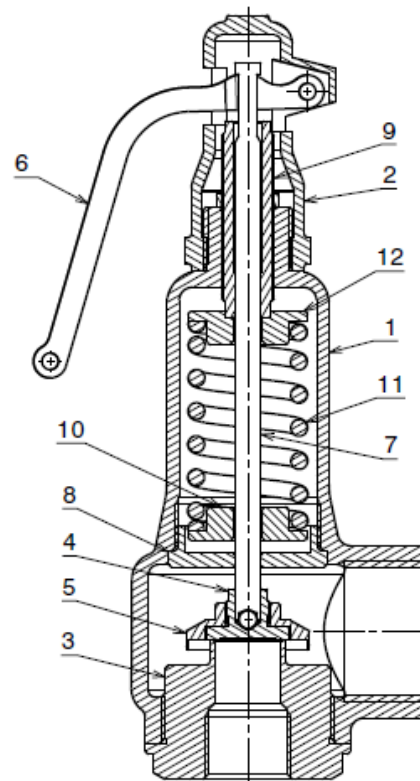
• Water and Hot water

Capacities for water and hot water according to EN ISO 4126.

Set pressure (bar g)	I Water at 20°C Capacities (kg/h)				II Hot water at or above 100 °C Capacities (Kw)					
	Valve size in/out									
	DN20/DN32		DN25/DN40		DN32/DN50		DN40/DN65		DN50/DN80	
	I	II	I	II	I	II	I	II	I	II
1.5	10668	142.36	15356	204.92	22456	299.66	36521	487.36	56463	753.47
2	12318	171.96	17731	247.45	25930	361.86	42171	588.51	65198	909.86
3	15086	230.99	21717	332.51	31758	486.24	51649	790.81	79851	1222.62
4	17420	290.08	25076	417.57	36671	610.63	59639	993.11	92204	1535.38
5	19476	349.17	28036	502.63	40999	735.02	66678	1195.42	103088	1848.15
6	21335	408.26	30712	587.69	44913	859.41	73042	1397.72	112927	2160.91
7	23045	467.36	33173	672.75	48511	983.80	78895	1600.12	121975	2473.67
8	24636	526.45	35463	757.81	51861	1108.18	84342	1802.32	130397	2786.43
9	26130	585.54	37614	842.88	55006	1232.57	89458	2004.62	138307	3099.20
10	27544	644.63	39649	927.94	57982	1356.96	94297	2206.92	145788	3411.96
11	28888	703.72	41584	1013.00	60812	1481.35	98900	2409.22	152904	3724.72
12	30172	762.81	43433	1098.06	63516	1605.74	103298	2611.52	159703	4037.49
13	31405	821.90	45207	1183.12	66110	1730.12	107515	2813.82	166224	4350.25
14	32590	880.99	46913	1268.18	68605	1854.51	111574	3016.12	172499	4663.01
16	34840	999.17	50152	1438.30	73342	2103.29	---	---	---	---
18	36954	1117.36	53194	1608.42	77791	2352.06	---	---	---	---

Material

Item	Part name	Material
1	Body	Bronze
2	Lever housing	Bronze
3	Nozzle	Stainless steel
4	Disk	Stainless steel
5	Skirt	Brass
6	Lever	SG iron
7	Stem	Stainless steel
8	Stem guide	Brass
9	Adjustment screw	Brass
10	Spring end plate	Brass
11	Spring	Alloy steel
12	Spring end plate	Brass



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These valves are Full Lift and Semi Nozzle types, which are suitable for steam, air and water. In these valves, the type of sealing is Metal on Metal. The material of the body is Cast Iron up to the maximum pressure of 12 bar and Ductile Iron up to the maximum pressure of 17.5 bar and Cast Steel up to the maximum pressure of 28 bar.

This valve is available in the size of 1", 1 1/2", 2", 3", 4"

Conventional Safety Valve (SFV 600)



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Spring Safety Valve

Type SFV 600

Description

The SFV600 is full lift, semi nozzle, spring loaded safety valve. This valve has open bonnet, lifting lever and metal on metal seal. For steam, air and water, calculations are according to EN ISO 4126.



Applications

This safety valve is suitable for:

Steam, Air, vessels and general relief applications.

Ability to built up back pressure max. 10% from set pressure.

Dimensions and pipe connections

▪ Cast iron Body Dimensions (approx.) in mm

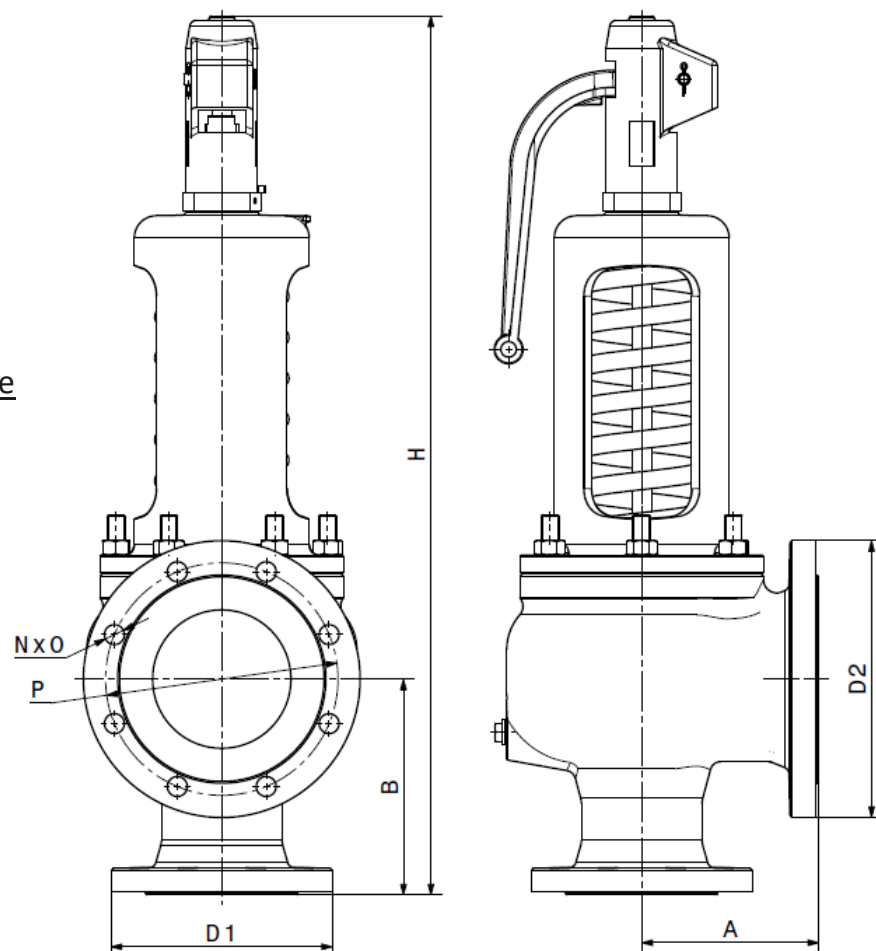
Nominal size	Valve Dimensions and Standard of Flange														
	Inlet Flange (BS 4504 PN16)						Outlet Flange (BS 4504 PN16)						A	B	H
	Size	Raised Face	D1	N	O	P	Size	Raised Face	D2	N	O	P			
1"	1" DN25	68 x 2	115	4	14	85	1 ½" DN40	88 x 3	150	4	18	110	100	105	430
1 ½"	1 ½" DN40	88 x 3	150	4	18	110	2 ½" DN65	122 x 3	185	4	18	145	115	140	555
2"	2" DN50	102 x 3	165	4	18	125	3" DN80	138 x 3	200	8	18	160	120	150	610
2 ½"	2 ½" DN65	122 x 2	185	4	18	145	4" DN100	158 x 3	220	8	18	180	140	170	735
3"	3" DN80	138 x 3	200	8	18	160	5" DN125	188 x 3	250	8	18	210	160	195	806
4"	4" DN100	158 x 2	220	8	18	180	6" DN150	212 x 2	285	8	22	240	180	220	930

▪ Cast steel Body Dimensions (approx.) in mm

Nominal size	Valve Dimensions and Standard of Flange														
	Inlet Flange (BS 4504 PN40)						Outlet Flange (BS 4504 PN16)						A	B	H
	Size	Raised Face	D1	N	O	P	Size	Raised Face	D2	N	O	P			
1"	1" DN25	68 x 2	115	4	14	85	1 1/2" DN40	88 x 3	150	4	18	110	100	107	430
1 1/2"	1 1/2" DN40	88 x 3	150	4	18	110	2 1/2" DN65	122 x 3	185	4	18	145	115	140	555
2"	2" DN50	102 x 3	165	4	18	125	3" DN80	138 x 3	200	8	18	160	120	150	610
2 1/2"	2 1/2" DN65	122 x 3	185	8	18	145	4" DN100	158 x 3	220	8	18	180	140	170	735
3"	3" DN80	138 x 3	200	8	18	160	5" DN125	188 x 3	250	8	18	210	160	196	807
4"	4" DN100	162 x 2	235	8	22	190	6" DN150	212 x 2	285	8	22	240	180	220	930

Inlet and Outlet flange

N = No. of holes
O = Dia. Of holes
P = Pitch circle dia.



Capacities

Capacity for saturated steam and air in 10% over pressure

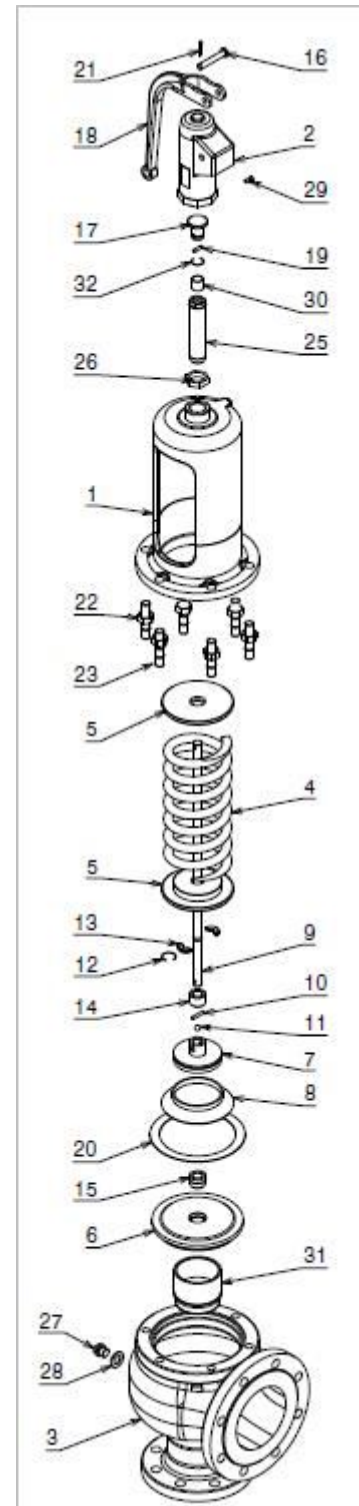
Set pressure Bar g	I saturated steam Capacities (kg/h)						II Air at 0°C and 1.013 bar a Capacities (Nm ³ /h)					
	DN25		DN40		DN50		DN65		DN80		DN100	
	I	II	I	II	I	II	I	II	I	II	I	II
2	477	607	1220	1550	1900	2425	3220	4100	4880	6210	7625	9700
2.5	572	731	1460	1870	2285	2925	3865	4945	5855	7490	9145	11700
3	662	850	1695	2175	2645	3400	4475	5750	6775	8700	10600	13600
4	837	1080	2140	2770	3350	4330	5650	7310	8570	11080	13400	17300
5	1000	1300	2565	3330	4000	5210	6770	8800	10260	13340	16000	20840
6	1165	1520	2990	3900	4665	6090	7890	10300	11950	15600	18650	24370
7	1330	1745	3400	4465	5320	6970	9000	11790	13600	17860	21300	27900
8	1495	1965	3820	5030	5980	7860	10100	13280	15300	20100	23900	31430
9	1660	2185	4245	5590	6630	8740	11200	14770	16950	22370	26500	34960
10	1820	2400	4665	6150	7290	9610	12300	16250	18650	24600	29150	38500
11	1985	2625	5080	6720	7940	10500	13400	17750	20300	26900	31750	42000
12	2150	2845	5500	7290	8590	11380	14500	19240	22000	29150	34350	45500
13	2310	3070	5920	7850	9250	12270	15600	20730	23650	31400	37000	49000
14	2475	3290	6340	8400	9900	13150	16700	22200	25350	33650	39600	52600
15	2640	3500	6760	8980	10550	14030	17800	23700	27000	35900	42200	56100
16	2800	3725	7170	9540	11200	14900	18950	25200	28700	38200	44800	59600
17	2965	3950	7590	10100	11850	15800	20050	26700	30350	40400	47400	63100
18	3130	4170	8010	10670	12500	16650	21150	28100	32050	42700	50100	66700
19	3295	4390	8430	11240	13150	17550	22250	29600	33700	44900	52700	70200
20	3460	4610	8850	11800	13800	18400	23350	31150	35400	47200	55300	73700
21	3620	4830	9250	12370	14500	19300	24500	32650	37100	49400	57900	77300
22	3790	5050	9700	12930	15150	20200	25600	34150	38800	51700	60600	80800

Pressure/temperature rating

Body material	Maximum set pressure	Maximum Temperature
Cast iron	16 bar	Up to 250 °C
Cast steel	22 bar	Up to 400 °C

Material

Item	Part name	Material
1	Bonnet	Cast iron
2	Cap	Cast iron
3	Body	Cast steel Cast iron
4	Spring	Alloy steel
5	Plug	Stainless steel
6	Spindle guide	Stainless steel (1" to 2")
		Cast iron (2 ½" to 4")
7	Disc	Stainless steel
8	Cone	Stainless steel
9	Spindle	Stainless steel
10	Pin	Steel
11	Ball	Stainless steel
12	Spindle key	Stainless steel
13	Bushing	Stainless steel
14	Washer	Stainless steel
15	Bushing	Stainless steel
16	Pin	Alloy steel
17	Pin	Stainless steel
18	Lever	Cast iron
19	Pin	Steel
20	Gasket	
21	Cotter pin	Steel
22	Hexagon nut	Steel
23	Stud	Steel
24	Stud	Steel
25	Adjusting screw	Stainless steel
26	Lock nut	Stainless steel
27	Screw	Stainless steel
28	Washer	Copper
29	Screw	Steel
30	Bushing	PTFE
31	Seal	Stainless steel



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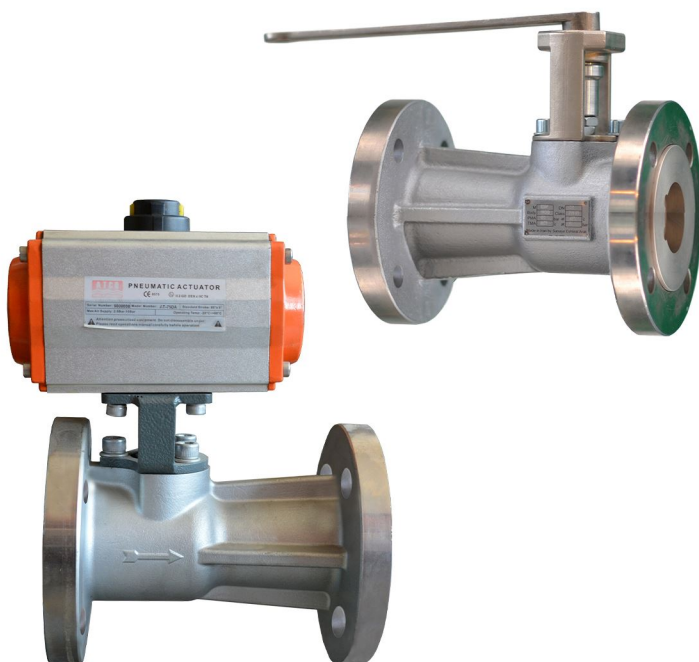


This valve is a carbon steel ball valve with a stainless-steel ball, adaptor and housing, and reinforced PTFE seats designed for boiler blowdown applications.

Cast iron for up to 10 bar rating and Bronze Gunmetal for 20 bar rating

This valve is available in the size of 1", 1 1/4", 1 1/2", 2"

Key Operated Boiler Blowdown valve



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Key Operated Boiler Blowdown Valve

Type BV 20

Description

The key operated boiler blowdown valve consists of a carbon steel ball valve with reinforced PTFE seats and a key operated mechanism in stainless steel. The key cannot be removed when the valve is open, to ensure compliance with boiler regulations. This valve is available in automatic and manual versions.



Applications

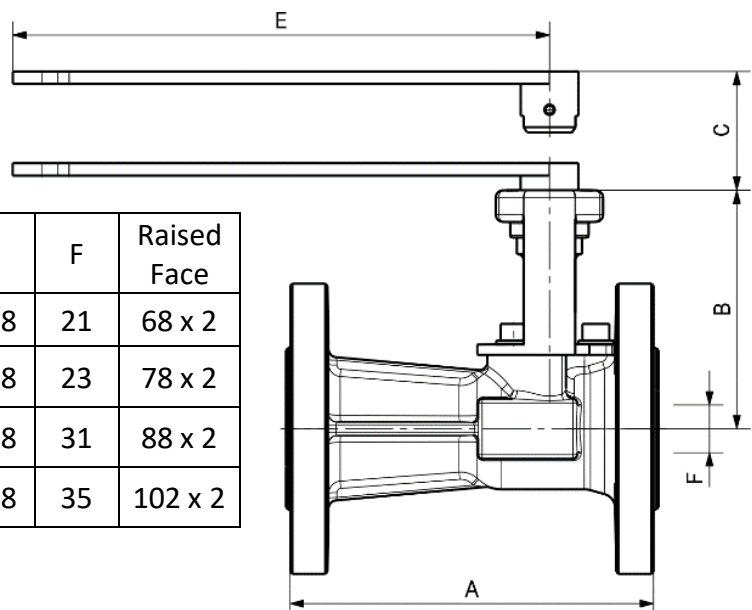
The valve is specifically designed for boiler blowdown applications. The BV 20 is designed for the removal of suspended/deposited solids and water from the bottom of steam boilers.

Size and Pipe Connections

Flange standard (BS EN 1092: PN40 , PN16)

Dimensions (approx.) in mm

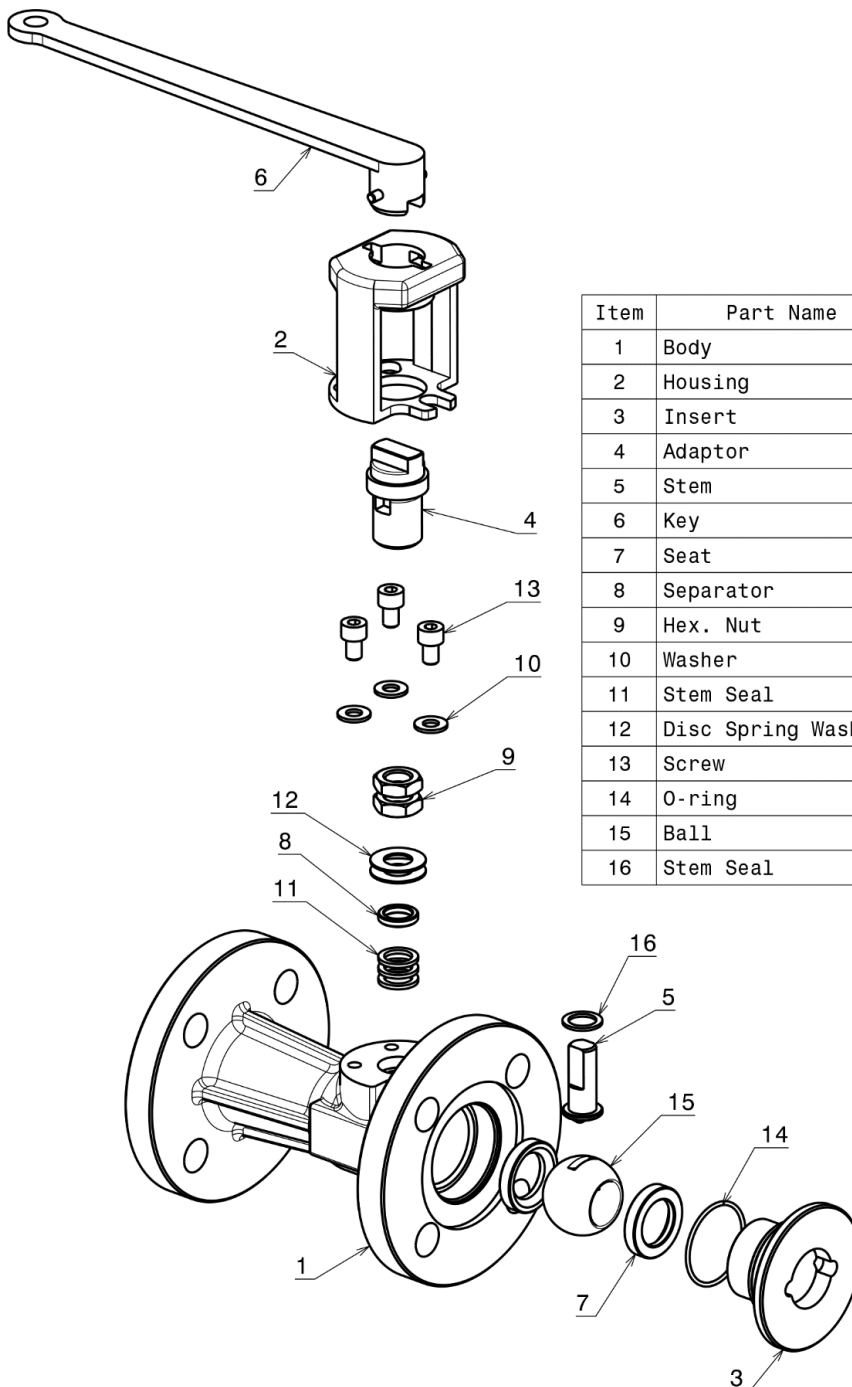
Size	A	B	C	E	F	Raised Face
1" DN25	165	114	35	258	21	68 x 2
1 ¼" DN32	178	117	35	258	23	78 x 2
1 ½" DN40	190	126	35	258	31	88 x 2
2" DN50	216	134	35	258	35	102 x 2



Limiting Conditions

Max. allowable pressure	17.25 bar g at 208°C
Cold hydraulic test pressure	60 bar g
Seat leakage test	6 bar g (air under water)

Material



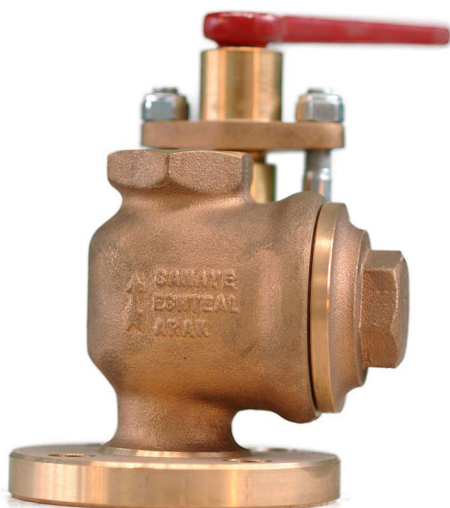
Item	Part Name	Material	QTY.
1	Body	ASTM A216 WCB	1
2	Housing	Stainless Steel	1
3	Insert	Alloy Steel	1
4	Adaptor	Stainless Steel	1
5	Stem	Stainless Steel	1
6	Key	Stainless Steel	1
7	Seat	PTFE	2
8	Separator	Stainless Steel	1
9	Hex. Nut	Steel	2
10	Washer	Steel	3
11	Stem Seal	PTFE	3
12	Disc Spring Washer	Stainless Steel	2
13	Screw	Steel	3
14	O-ring	Viton	1
15	Ball	Stainless Steel	1
16	Stem Seal	PTFE	1

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These valves are an adaptation parallel slide valve which is designed to ensure ease of operation and tight closure. The material of the body is Bronze up to the maximum pressure of 10bar
This valve is available in the size of 1" , 1 ¼" , 1 ½"

Parallel Slide Blowdown valve
link type for small boilers



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Parallel Slide Blowdown Valve Link type for small boilers

Type BVA

Description

This valve is an adaptation parallel slide valve which is designed to ensure ease of operation and tight closure. The valve being suitable for flow in either direction. The valve opens with less than a quarter turn of the box-key. A lever type box-key is supplied with each valve.



Applications

In boilers, blowdown valves removes both suspended solids and sludge from the surface and bottom respectively.

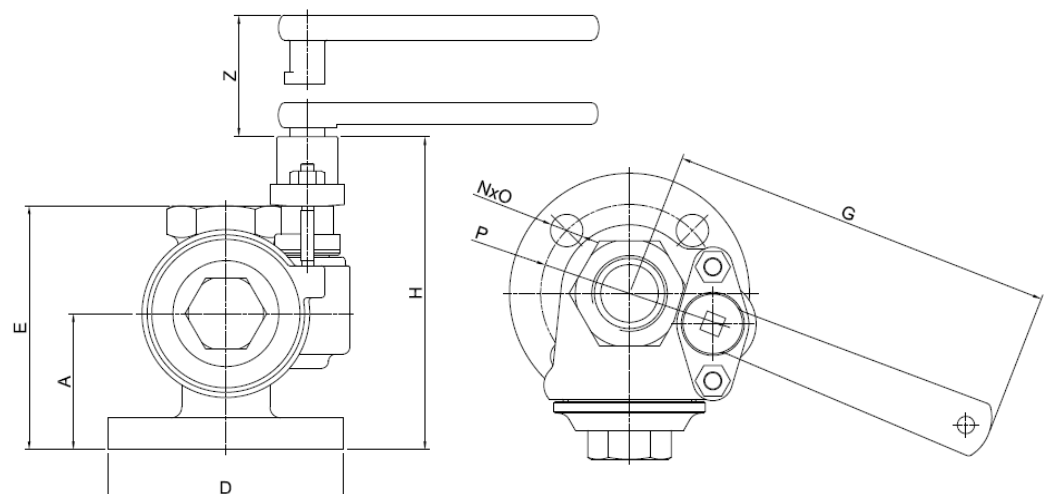
Size and Pipe Connections

Dimensions (approx.) in mm

Size	Valve Dimensions and Flange Standard										
	Connections		D	N	O	P	G	H	Z	A	E
	Inlet Flange (BS 10 Table F)	Outlet Thread (Female)									
DN25	1"	G 1"	121	4	18	87.5	170	170	30	74.5	125.5
DN32	1 ¼"	G 1 ¼"	133	4	18	98.5	220	190	35	77	138
DN40	1 ½"	G 1 ½"	140	4	18	105	220	190	35	77	138

Inlet flange

N = No. of holes
O = Dia. Of holes
P = Pitch circle dia.

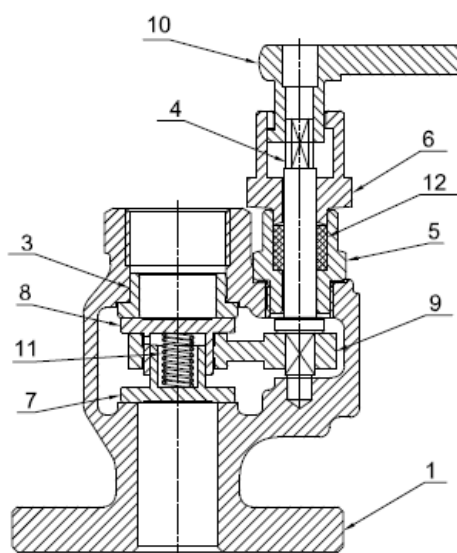


Limiting conditions

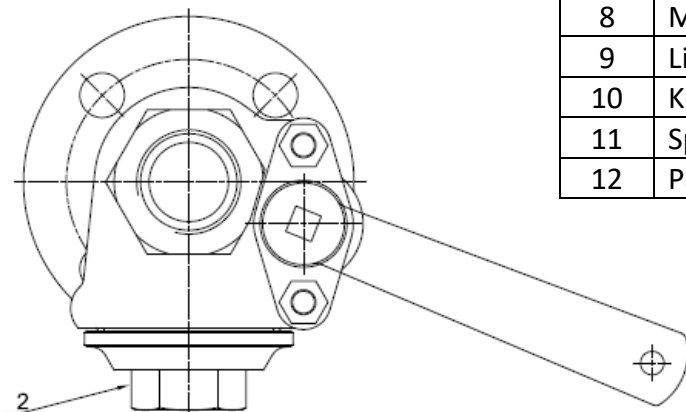
Pressure / temperature rating

Temperature (°C)	210
Max. Working pressure (bar)	12

Materials



Item	Part name	Material
1	Body	Bronze
2	Plug	Bronze
3	Seat	Nickel alloy
4	Stem	Stainless steel
5	Stem Bushing	Brass
6	Gland bushing	Bronze
7	Female disk	Nickel alloy
8	Male disk	Nickel alloy
9	Linkage	Bronze
10	Key	Cast steel
11	Spring	Stainless steel
12	Packing	PTFE

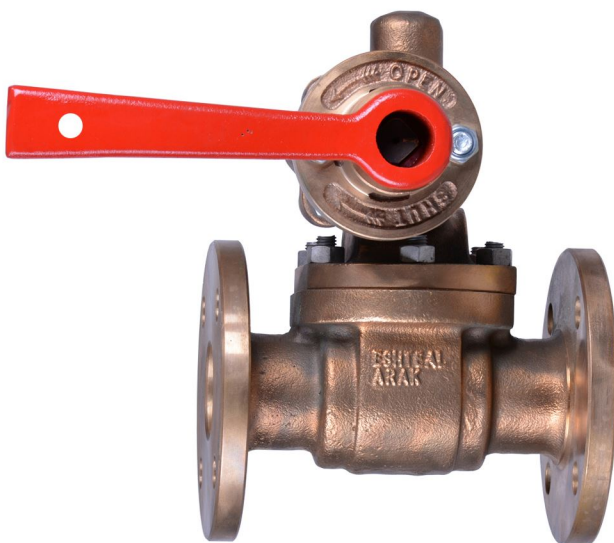


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This key valve embodies the design advantages of the parallel slide gate valve. Easy operation of the rack and pinion mechanism is by means of a removable box key which requires only half a turn for full operation. LG2 for up to 10 bar rating and Bronze Gunmetal for 21 bar rating
This valve is available in the size of 2".

Parallel Slide Blowdown valve



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Parallel Slide Blowdown Valve

Type BVB

Description

This key valve embodies the design advantages of the parallel slide gate valve.

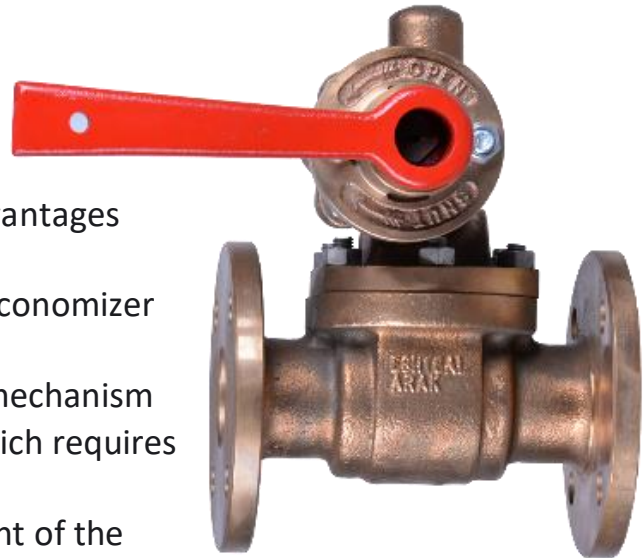
The valve is also recommended as an economizer blowdown valve.

Easy operation of the rack and pinion mechanism is by means of a removable box key which requires only half a turn for full operation.

Positive stops limit the rotary movement of the pinion and prevent straining of the rack/pinion teeth.

A guard is incorporated on the gland to prevent removal of the box key unless the valve is in the closed position.

Joints and gland packings are of exfoliated graphite.



Applications

In boilers, blowdown valves removes both suspended solids and sludge from the surface and bottom respectively.

Limiting conditions

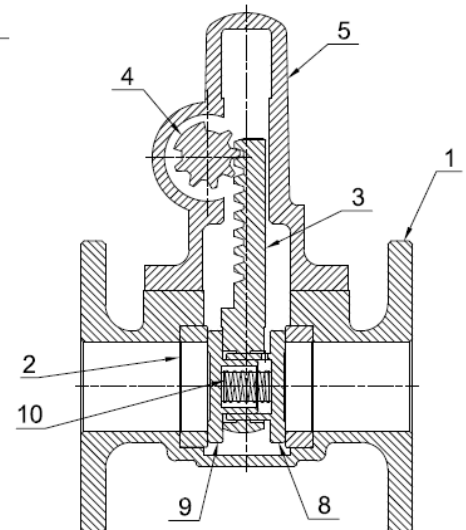
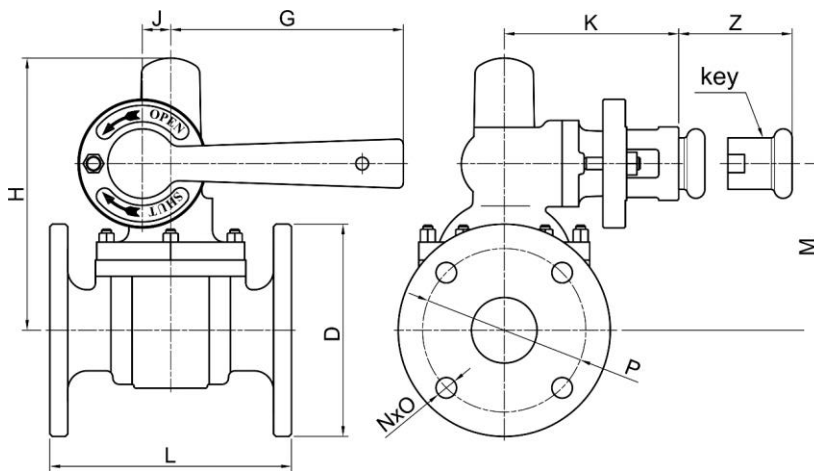
Pressure / temperature rating

Flange Standard	BS 4504 PN16	BS 4504 PN40	BS 10 Table F	BS 10 Table H
Temperature (°C)	240	200	210	200
Max. Working pressure (bar)	12	21	12	21

Size and pipe connections

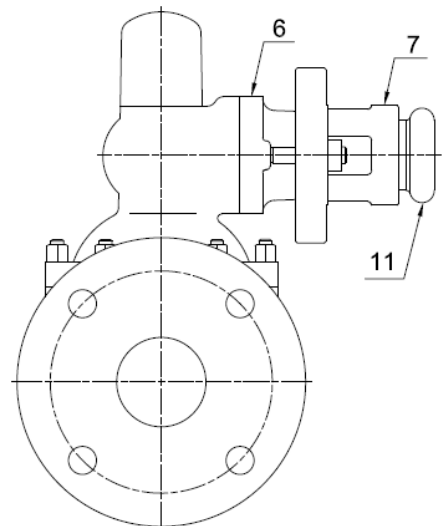
Dimensions (approx.) in mm

Body material	Size	Flange Standard	D	N	O	P	L	H	M	J	K	G	Z
Bronze (150psi)	2" DN50	BS 10 Table F	165	4	18	127	208	215	130	22	145	200	60
Gunmetal (300 psi)	2" DN50	BS 10 Table H	165	4	18	127	212	215	130	22	145		



Materials

Item	Part name	Material
1	Body	Bronze Gunmetal
2	Seat	Nickel alloy
3	Rack	Gunmetal
4	Pinion	Gunmetal
5	Bonnet	Bronze Gunmetal
6	Packing bushing	Bronze
7	Gland bushing	Bronze
8	Female disk	Nickel alloy
9	Male disk	Nickel alloy
10	Spring	Stainless steel
11	Key	Cast iron



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water level controller is a comprehensive range of magnetically operated water level controls.

Water Level Controller BX



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Water Level Controller

Type BX (Chamber Mounted Models)

Description

BX water level controller is a comprehensive range of magnetically operated water level controls.

They are designed to meet all the requirements for automatic on/off control of boiler feed pump, burner cut-out, high and/or low level alarm or any combination of these.



Cast steel Chamber

Operation

A primary permanent magnet attached to the float rod slides vertically inside a non-magnetic stainless steel center tube and transmits the movements of the float to a secondary magnet in each switch unit.

There are two pairs of contacts which are operated with a snap action and held by repulsion between the secondary magnet and the tertiary magnet of the switch unit assembly.



Cast iron Chamber

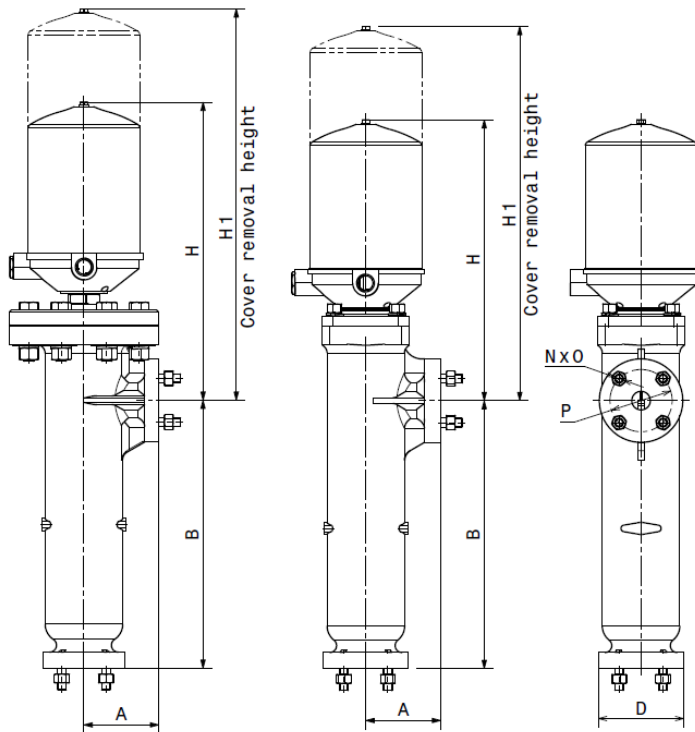
Limiting conditions

Maximum working pressure for the Cast iron material is 10 bar and for the Cast steel material is 20 bar.

Dimensions and pipe connections

Dimensions (approx.) in mm

Size	Chamber material	Type number	Operating Range (mm)	No. of switches	Dimensions							
					Flanged connections (Inlet and outlet)				A	B	H	H1
					D	N	O	P				
1" DN25	Cast iron	BX 02/1	62	1	BS 4504 (PN16)				102	266	295	405
		BX 05/2	150	2	115	4	M12	85		366	395	600
	Cast steel	BX 09/1	62	1	BS 4504 (PN40)				102	266	315	425
		BX 10/2	150	2	115	4	M12	85		101	366	415

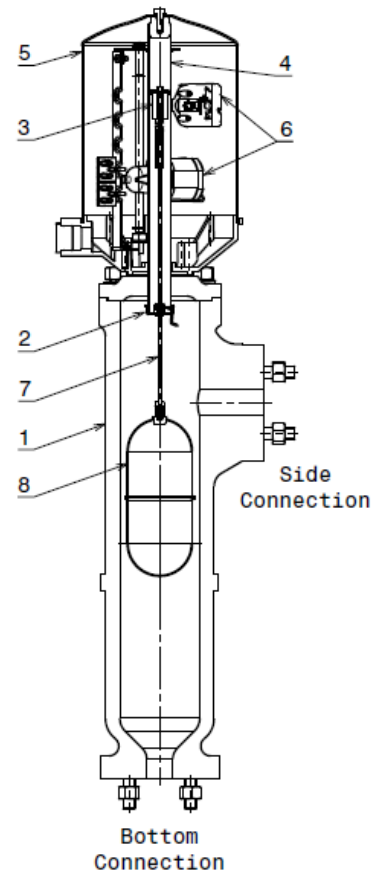


Bottom and Side Connection

N = No. of tapped holes

O = Thread size

P = Pitch circle dia.



Material

Item	Part name	Material
1	Chamber	Cast iron Cast steel
2	Stop cap	Stainless Steel
3	Magnet	-
4	Center tube	Stainless Steel
5	Switch head	Aluminum
6	Switch units	Cast ceramic
7	Float road	Stainless Steel
8	Float	Stainless Steel

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water level controller is a comprehensive range of magnetically operated water level controls.

Water Level Controller BD



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Water Level Controller

Type BD (Direct Mounted Models)

Description

BD water level controller is a comprehensive range of magnetically operated water level controls. They are designed to meet all the requirements for automatic on/off control of boiler feed pump, burner cut-out, high and/or low level alarm or any combination of these Direct Mounted Vertical Air Brake Controls employ the same principles of operation and piece parts as the chamber mounted equivalents except that the chamber is exchanged for a large round flange and the tube assembly for mounting the control directly on to the boiler shell connection.



Operation

A primary permanent magnet attached to the float rod slides vertically inside a non-magnetic stainless-steel center tube and transmits the movements of the float to a secondary magnet in each switch unit. There are two pairs of contacts which are operated with a snap action and held by repulsion between the secondary magnet and the tertiary magnet of the switch unit assembly.

Limiting conditions

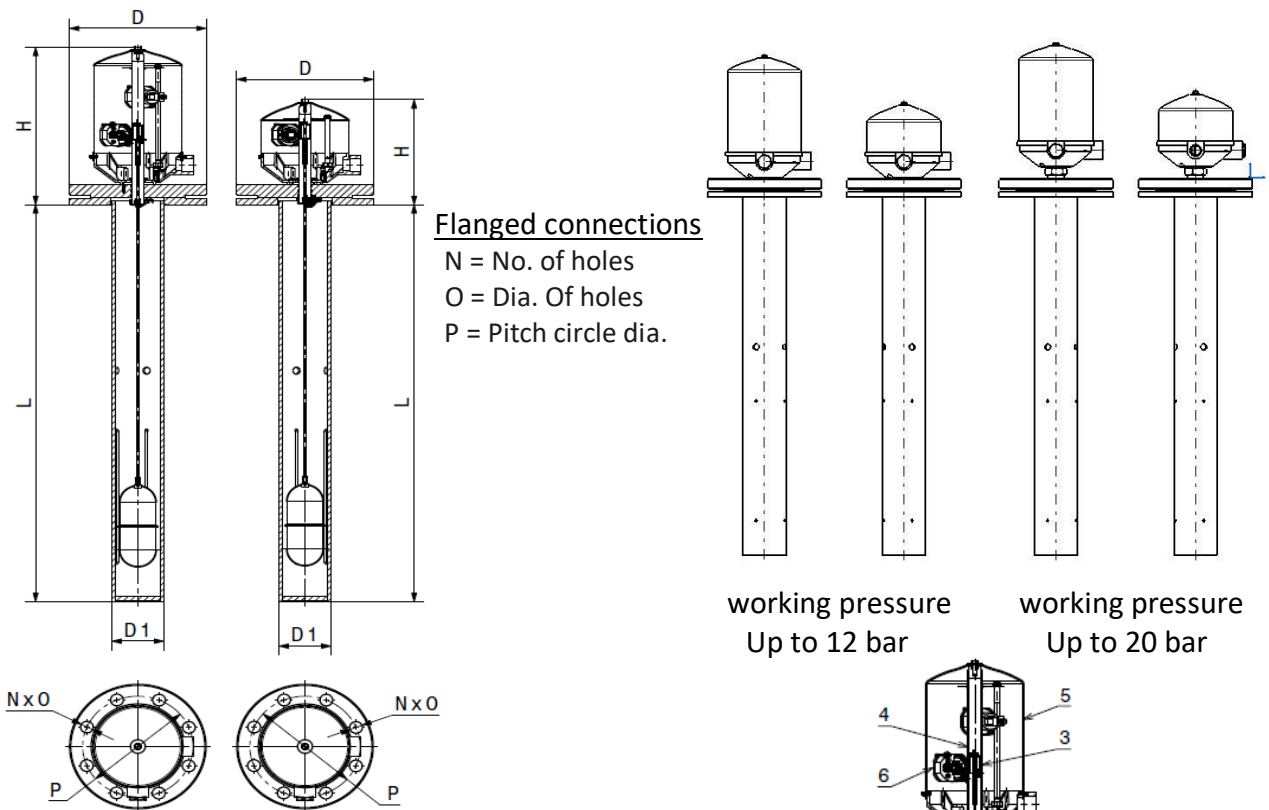
Maximum working pressure is 20 bar.

Dimensions and pipe connections

Dimensions (approx.) in mm

Type number	Maximum working pressure at saturated steam (bar)	Operating Range (mm)	No. of switches	Dimensions						
				Flanged connections BS 4504 (PN40)				L*	H	D1
				D	N	O	P			
BD 01/1	12	62	1	235	8	22	190	-	200	89
	20								300	
BD 02/2	12	150	2	235	8	22	190	-	200	89
	20								300	

* The Dimensions Can Be Changed According To The Installation Conditions.



Material

Item	Part name	Material
1	Flange	St 52
2	Stop cap	Stainless Steel
3	Magnet	-
4	Center tube	Stainless Steel
5	Switch head	Aluminum
6	Switch units	Cast ceramic
7	Float road	Stainless Steel
8	Float	Stainless Steel

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The sequencing valve is designed to function as a combined water isolating valve and a sequencing valve to provide positive purging of the water connection float chamber and steam connection of a boiler control. Blowdown of float chamber and connections is effected separately and in a pre-determined sequence by the operation of the single specially designed handwheel Cast iron for up to 10 bar rating and Bronze Gunmetal or 20 bar rating

Sequencing Blowdown valve



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Sequencing blowdown valve

Type SPV

Description

The sequencing valve is designed to function as a combined water isolating valve and a sequencing valve to provide positive purging of the water connection, float chamber and steam connection of a boiler control. Blowdown of float chamber and connections are affected separately and in a pre-determined sequence by the operation of the single specially designed hand wheel.



Function

Steam boiler external level control chamber isolation and purge.

Features

- One valve to provide separate blowdown of:
- Control Chamber
 - Steam Connection
 - Water Connection

Limiting conditions

Maximum working pressure for the Cast iron material is 10 bar and for the Gunmetal material is 20 bar.



Size and pipe connections

Dimensions (approx.) in mm

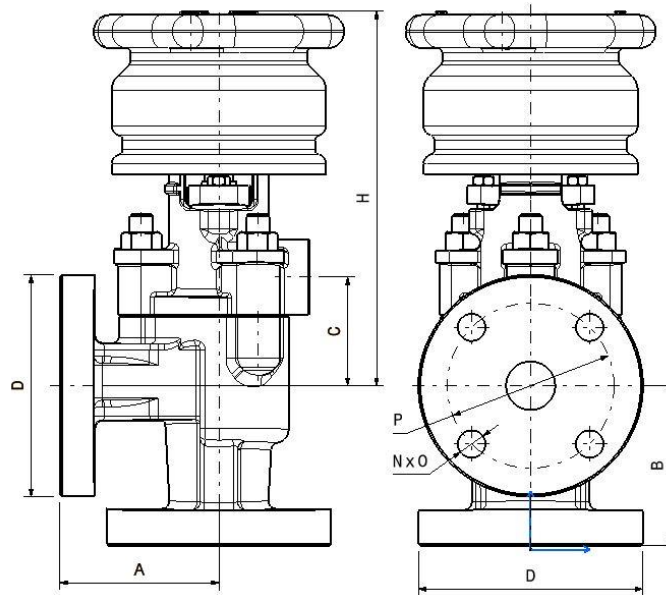
Size	Body material	Flange connections	D	N	O	P	A	B	H	C	Raised Face
1" DN25	Cast iron	BS 4504 PN16 (Inlet and outlet)	115	4	14	85	83	83	219	54	65 x 2
	Gunmetal	BS 4504 PN40 (Inlet and outlet)	115	4	14	85	83	83	219	54	68 x 2

Inlet and Outlet flange

N = No. of holes

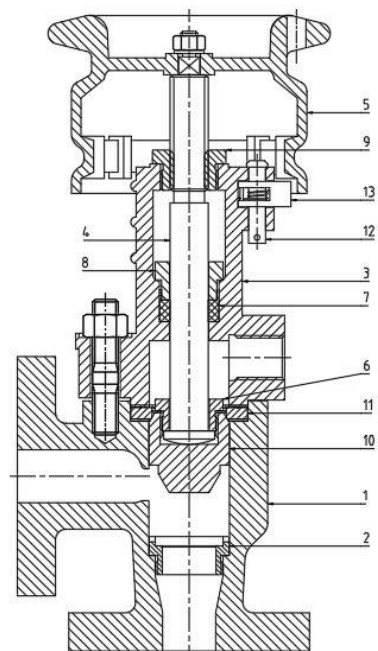
O = Dia. of holes

P = Pitch circle dia.



Material

Item	Part Name	Material
1	Water Leg	Cast iron Gunmetal
2	Water Leg valve seat	Stainless steel
3	Stuffing box	Cast iron Gunmetal
4	Spindle	Stainless steel
5	Hand wheel	Aluminum
6	Retaining nut	Stainless steel
7	Gland packing	Teflon packing
8	Gland follower	Stainless steel
9	ACME THRD nut	Brass
10	Valve Lid	Nickel alloy
11	Blow down seat	Nickel alloy
12	Split pin	Steel



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magnetic level gauges are used for continuous display of the filling level. A magnetic float transmits the level to an indicator consisting of magnetic rollers or flaps. Accessories such as magnetic switches can be fitted to the chambers as additional accessories. The body of this surface is made of stainless steel and its floater is made of titanium, which is designed for pressures of 10 bar and 20 bar

Magnetic Liquid Level Gage



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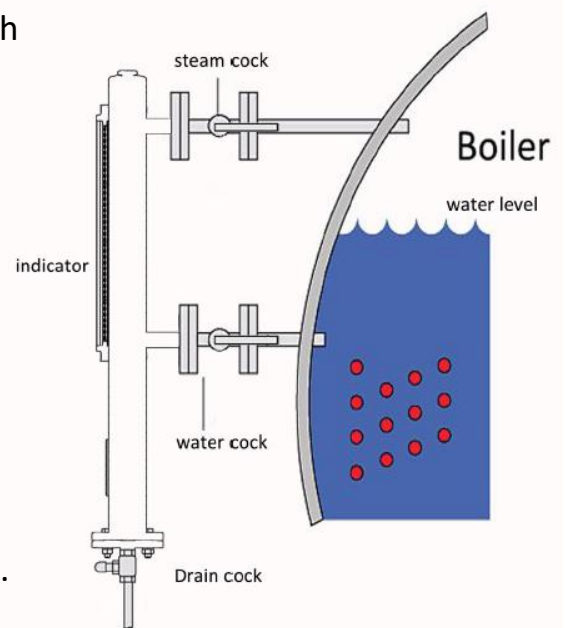
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Magnetic Liquid Level Gauge

Type MLG with BVL Valve

Description

A communicating bypass chamber is flanged to the side of a vessel, and as the liquid level in the tank rises or falls, a float with a built-in magnetic system inside the chamber rises or falls with it. The chamber is completely sealed so that the only moving part of the apparatus in contact with the liquid is the float itself. On the 'dry side' of the chamber is the magnetic Roller Display, a column of magnetic rollers which are white on one side and red on the other. As the float moves up or down the bunched field of the permanent magnet mounted in its top section 'pulls' the rollers through a rotation of 180°, thus changing their color. As the float rises the rollers are turned from white to red, and as the float falls, they are changed back to white again. This means that at any given time the amount of liquid in the tank is constantly represented by a red column without any external power supply. As options the following devices can be attached to a Magnetic Level Sensors to control the level of the liquid.



Float design according to process parameters S.G., pressure and temperature

Applications

The magnetic level gauge is a suitable tool for monitoring the liquid level in a vessel.

Dimensions and pipe connections

Dimensions (approx.) in mm

Connection Size	A	B	C	H*	D	N	O	P	Raised Face
3/4" DN20	107	100	235	457 or 380	115	4	19	82.6	44 x 4
1" DN25									62 x 4

* The Dimensions Can Be Changed According To The Installation Conditions.

– Max. Working pressure 20 bar

Connection

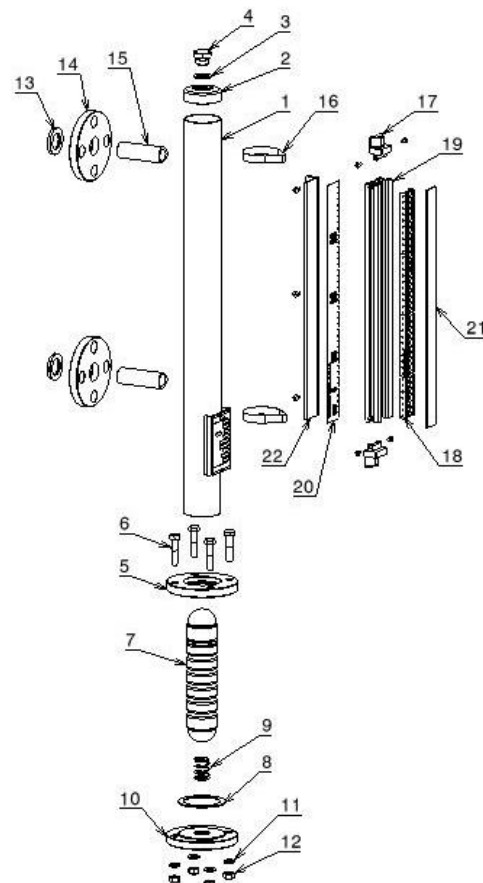
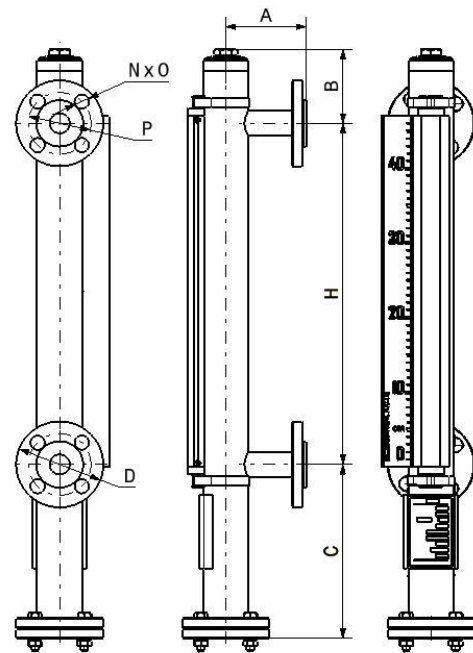
N = No. of holes

O = Dia. of holes

P = Pitch circle dia.

Material

Item	Part name	Material
1	Body	Stainless steel
2	Bonnet	Stainless steel
3	Washer	Steel
4	Screw	Stainless steel
5	Drain flange 2	Stainless steel
6	Screw	Steel
7	Floater	Stainless steel
8	Gasket	Compressed fiber
9	Spring	Stainless steel
10	Drain flange 1	Stainless steel
11	Spring washer	Steel
12	Nut	Steel
13	Washer	Stainless steel
14	Connection	Stainless steel
15	Pipe	Stainless steel
16	Clamp band	Stainless steel
17	Profile support	Aluminum
18	Flag	Aluminum
19	Profile 1	Aluminum
20	Line gauge	Stainless steel
21	Glass	Glass
22	Profile 2	Aluminum



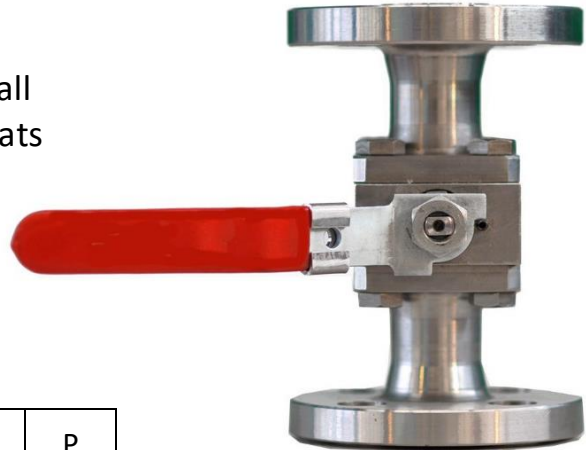
Ball Valve

Type BVL

Construction

Three Pieces Bolted Construction-Solid Ball
Anti-Blow Out Proof Stem Design-Soft Seats

Temperature: Up to +260°C



Dimensions and pipe connections

Dimensions (approx.) in mm

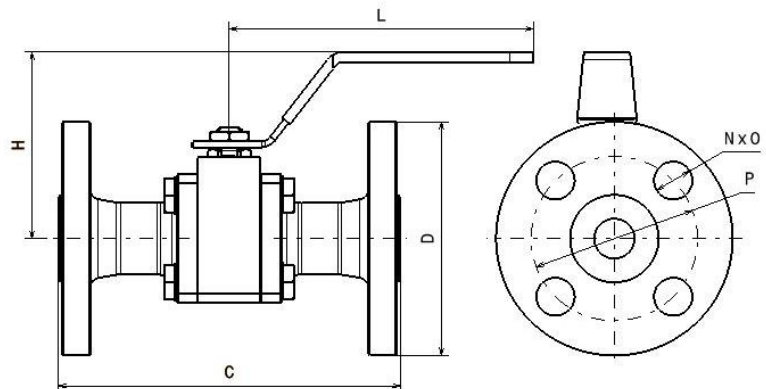
Size	L	C	H	D	N	O	P
3/4" DN20	170	170	90	117	4	19	82.6

Inlet and Outlet flange

N = No. of holes

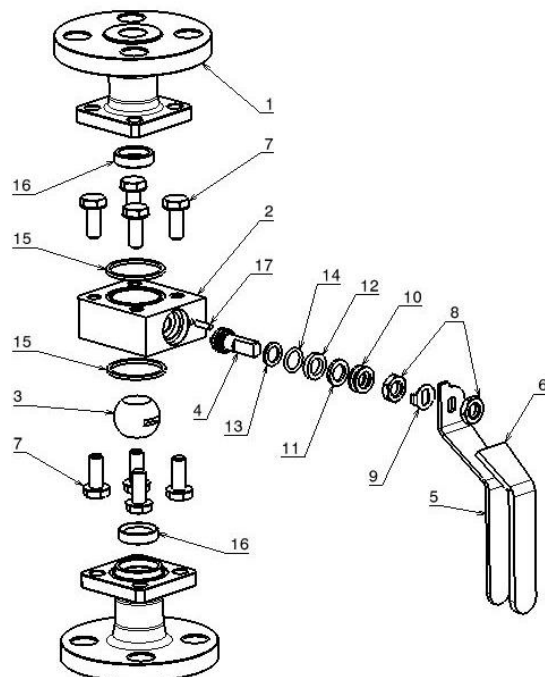
O = Dia. of holes

P = Pitch circle dia.



Material

Item	Part Name	Material
1	Flange	Stainless Steel
2	Body	Stainless Steel
3	Ball	Stainless Steel
4	Spindle	Stainless Steel
5	Lever	Stainless Steel
6	Lever Cover	-
7	Hexagon Screw	-
8	Hexagon Nut	Stainless Steel
9	Lock Nut	Stainless Steel
10	Washer	Stainless Steel
11	Washer	Stainless Steel
12	Packing	PTFE
13	Gasket	PTFE
14	Gasket	Viton
15	Packing	PTFE
16	Seat	PTFE
17	Pine	Stainless Steel



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The valves in this range are ideally suitable for boiler stop valve and also general purpose stop/regulating valve duties. The material of the body is Cast Iron up to the maximum pressure of 13bar and Cast Steel up to the maximum pressure of 21bar.

This valve is available in the sizes of 2 1/2", 3", 4", 14", 10", 8", 7", 5"

Globe Stop valve



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Globe stop valve

Type CGV

Description

The combination of simple design, high quality materials and high standard of production results in an easily maintained valve, capable of long and efficient service under high load conditions.

Applications

The valve in this range is ideally suitable for boiler stop valve and also general-purpose stop/regulating valve duties.



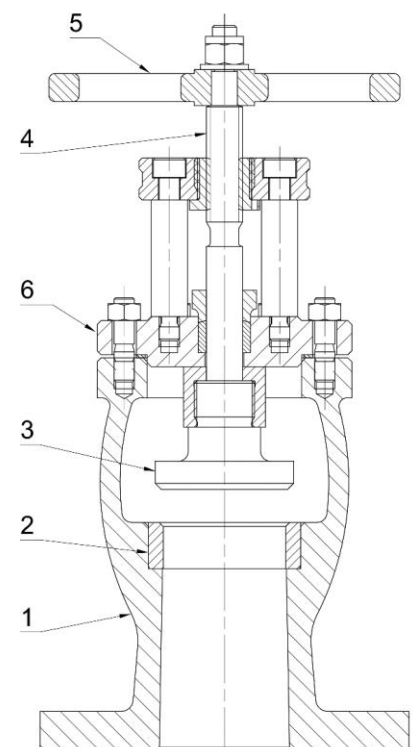
Limiting conditions

Pressure / temperature rating

Flange Standard	BS 10 Table F	BS 10 Table H
Temperature (°C)	210	200
Max. Working pressure (bar)	11	20

Materials

Item	Part Name	Material	
1	Body	Cast steel	Cast Iron
2	Seat	Stainless steel	
3	Disc	Bronze	
4	Stem	Stainless steel	
5	Hand wheel	Cast iron	
6	Bonnet	ST52	



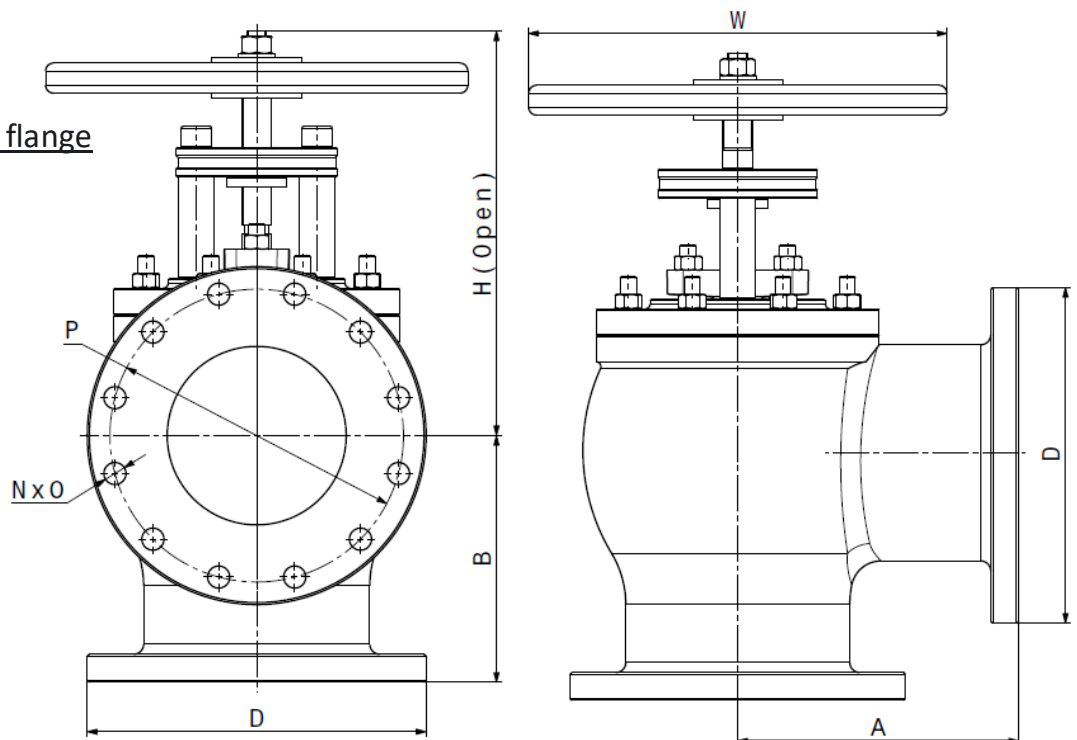
Size and pipe connections

Dimensions (approx.) in mm

Body material	Dimensions and Standard of Flange										
	BS 10 Table F (Inlet and outlet)										
	Size	Raised Face	D	N	O	P	A	B	W	H	
Cast iron	2 ½" DN65	-	184	8	18	146	148	148	190	300	
	3" DN80	-	203	8	18	165	180	156	190	350	
	4" DN100	-	229	8	18	191	173	181	215	360	
	5" DN125	-	280	8	22	235	203	203	215	465	
	7" DN175	-	337	12	22	292	285	267	565	585	
	8" DN200	-	368	12	22	324	303	289	565	650	
Cast steel	BS 10 Table H (Inlet and outlet)										
	2 ½" DN65	114 x 0.8	184	8	18	146	148	148	190	300	
	3" DN80	127 x 0.8	203	8	18	165	180	156	190	350	
	4" DN100	152 x 0.8	229	8	18	191	173	181	215	360	
	5" DN125	178 x 0.8	280	8	22	235	203	203	215	465	
	7" DN175	235 x 0.8	337	12	22	292	285	267	565	585	
	8" DN200	260 x 0.8	368	12	22	324	303	289	565	650	
	10" DN250	311 x 0.8	432	12	24	381	360	347	565	715	
14" DN350	419 x 0.8	552	16	26	495	428	428	565	1030		

Inlet and Outlet flange

N = No. of holes
O = Dia. of holes
P = Pitch circle dia.



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This valve comprises two valves, a stop valve and a check valve. Feed Check Valves are one of the most important components of boiler which control the flow of water from feed pump to the boiler and further prevents the backflow of water from boiler to pump when the boiler pressure is more than the pump pressure or when feed pump stops working.

The material of the body is Cast Iron up to the maximum pressure of 11bar and Cast Steel up to the maximum pressure of 25bar.

This valve is available in the sizes of 1", 1 ½", 2", 3"

Feed Check Valve



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Feed check valve

Type FCV

Description

This unit comprises two valves, a stop valve and a check valve. An important feature of the design is the accessibility of the check valve which can be examined, by removing the inlet straight bottom part.



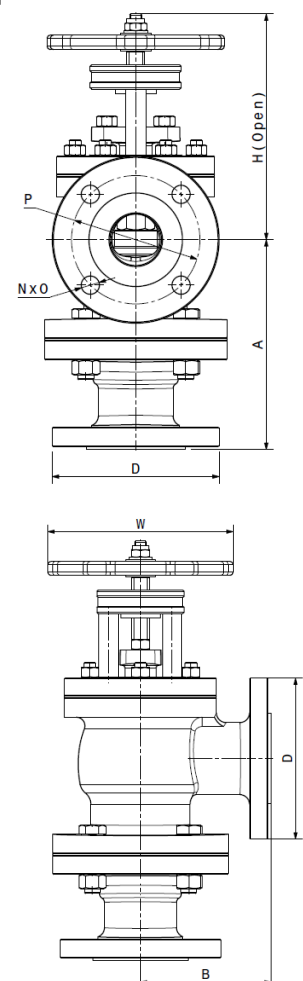
Applications

Feed Check Valve is one of the most important components of boiler which controls the flow of water from feed pump to the boiler and further prevents the backflow of water from boiler to pump when the boiler pressure is more than the pump pressure or when feed pump stops working.

Size and Pipe Connections

Dimensions (approx.) in mm

Body material	Dimensions and Standard of Flange									
	BS 10 Table F (Inlet and outlet)									
	Size	Raised Face	D	N	O	P	A	B	W	H
Bronze	1"	-	121	4	18	87.5	186	82	100	230
Cast iron	1 ½"	-	140	4	18	105	189	128	190	315
	2"	-	165	4	18	127	206	132	190	330
	3"	-	203	8	18	165	267	154	240	415
Cast steel	BS 10 Table H (Inlet and outlet)									
	1 ½"	83 x 0.8	140	4	18	105	193	128	190	315
	2"	102 x 0.8	165	4	18	127	212	138	190	330
	3"	127 x 0.8	203	8	18	165	274	160	240	415



Inlet and Outlet flange

N = No. of holes

O = Dia. of holes

P = Pitch circle dia.

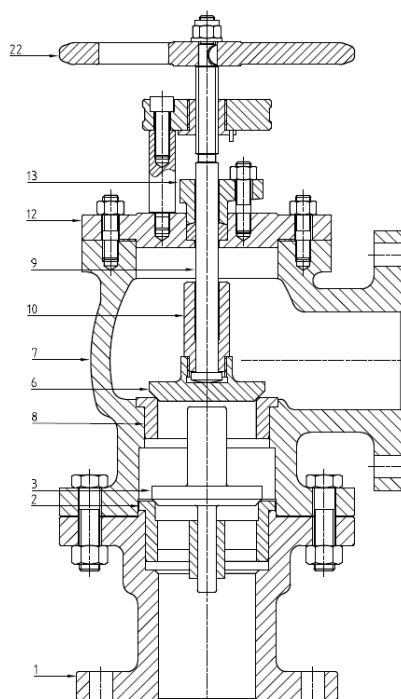
Limiting conditions

Pressure / temperature rating

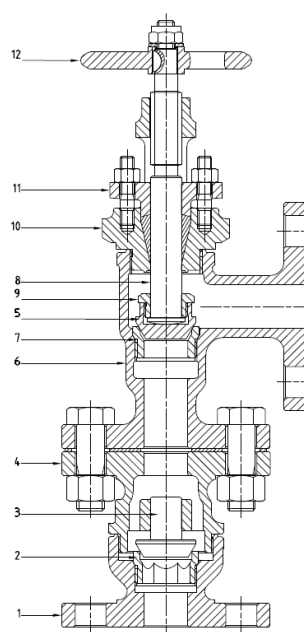
Body material	Bronze	Cast iron	Cast steel
Temperature (°C)	220	210	200
Max. Working pressure (bar)	10	11	20

Materials

Item	Part Name	Body material		
		Bronze	Cast iron	Cast steel
1	Check valve body	Bronze	Cast iron	Cast steel
2	Check valve seat ring	Stainless steel	Nickel alloy	Nickel alloy
3	Check valve Disc	Stainless steel	Stainless steel	Stainless steel
4	Check valve bonnet	Bronze	-	-
5	Feed valve Disc	Stainless steel	Stainless steel	Stainless steel
6	Feed valve body	Bronze	Cast iron	Cast steel
7	Feed valve seat ring	Stainless steel	Stainless steel	Stainless steel
8	Stem	Brass	Stainless steel	Stainless steel
9	Disc nut	Brass	Brass	Brass
10	Feed valve bonnet	Bronze	ST 52	ST 52
11	Gland flange	Bronze	Bronze	Bronze
12	Hand wheel	Cast iron	Cast iron	Cast iron



Size (DN40, DN50, DN80)



Size (DN25)

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The EDCV disc check valve is of the wafer pattern designed to be sandwiched between flanges.

Disc Check Valve



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Disc check valve

Type EDCV

Description

The EDCV disc check valve is of the wafer pattern designed to be sandwiched between flanges. It is suitable for use on a wide range of fluids for applications in process lines, hot water systems, steam and condensate systems etc.

Designed and manufactured in accordance with BS 7438.



Size and Pipe Connections

DN 25, 40, 50, 80

EDCV can be fitted between BS 10 Tables 'E' and 'H';

BS 4504/ (DIN) PN6, 10, 16, 25, 40;

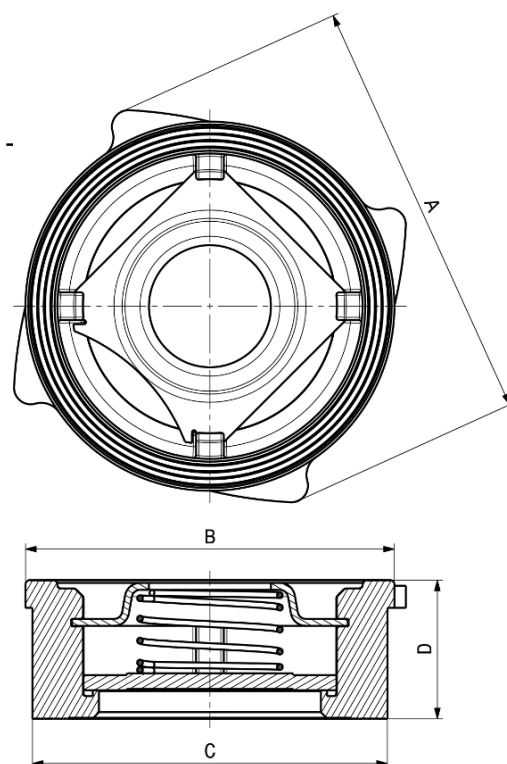
JIS 5, 10, 16, 20 flanges with the following exception: -

DN 40, 50 and 80 – will not fit between JIS 5 flanges

DN 80 – will not fit between BS 10 'E' flanges.

Dimensions (approx.) in mm

Size	A	B	C	D
1" DN25	80.5	63	55	22
1 ½" DN40	101	85	79	31.5
2" DN50	115	95	93	40
3" DN80	154	133	128	50

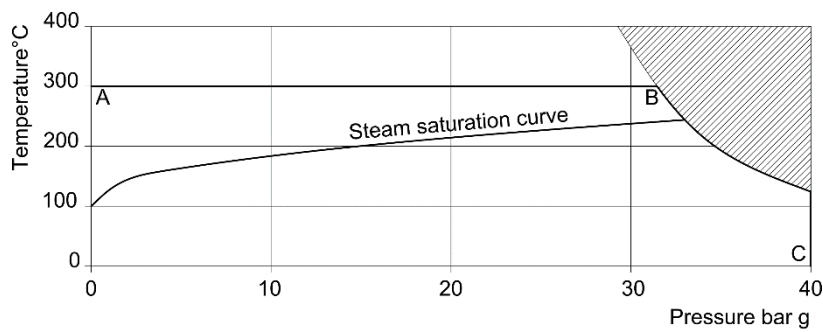



Limiting conditions

Maximum body design conditions	PN40
PMO - Maximum operating pressure	40 bar g
TMO - Maximum operating temperature	300°C
Minimum operating temperature	-50°C
Maximum cold hydraulic test pressure	60 bar g

Operating range

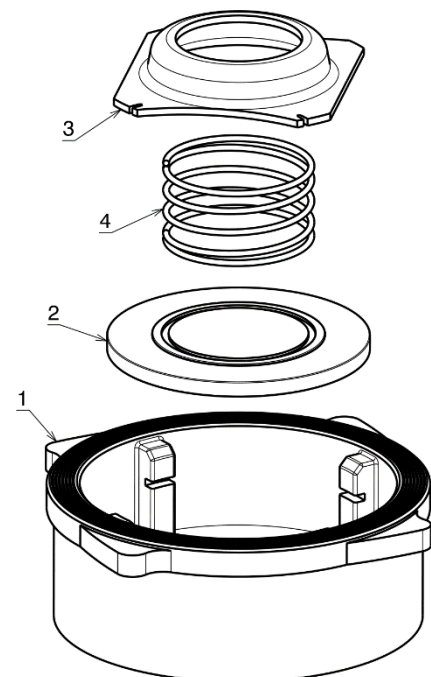
EDCV (A – B – C –)



 This product must not be used in this region.

Materials

Item	Part Name	Material
1	Body	Stainless steel
2	Disc	Stainless steel
3	Spring retainer	Stainless steel
4	Spring	Stainless steel



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This valve can be supplied as a Tester valve with elbow removed and outlet tapped 3/8 Rp* and plugged. This valve can be supplied as an Air valve or Tester valve with inlet screwed male and outlet tapped and plugged

Air & Tester valve



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Air & Tester valves

Type SDV

Description

This valve can be supplied as a Tester valve with elbow removed and outlet tapped 3/8" and plugged. It can also be supplied with outlet fitted with adaptor and tailpipe tapped 1/4".



Applications

In the boilers this valve used as the main valve on the way of pressure switch.

Size and Pipe Connections

Inlet flange connections: BS 10 Tables F, H

Dimensions (approx.) in mm

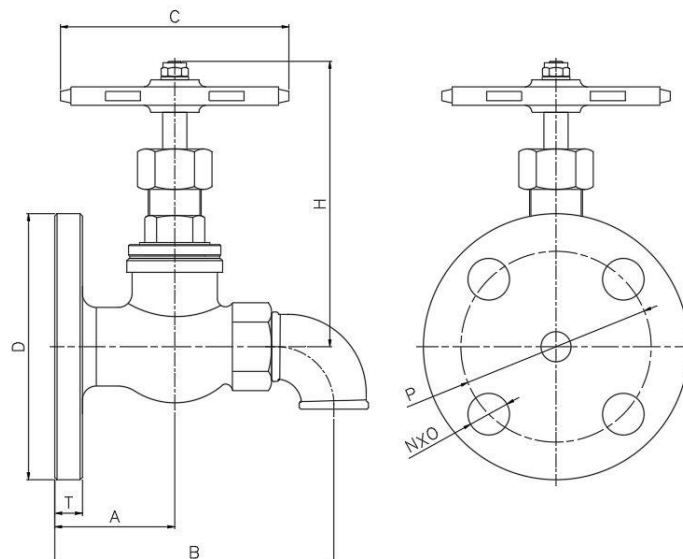
Size	D	Material	T	N	O	P	A	B	C	H
1/2"	95	Bronze 150psi	12	4	14	65	52	107	100	125
		Gunmetal 300psi	14							
	115	Bronze 150psi	12	4	14	82.5				
		Gunmetal 300psi	14							

Inlet and Outlet flange

N = No. of holes

O = Dia. of holes

P = Pitch circle dia.

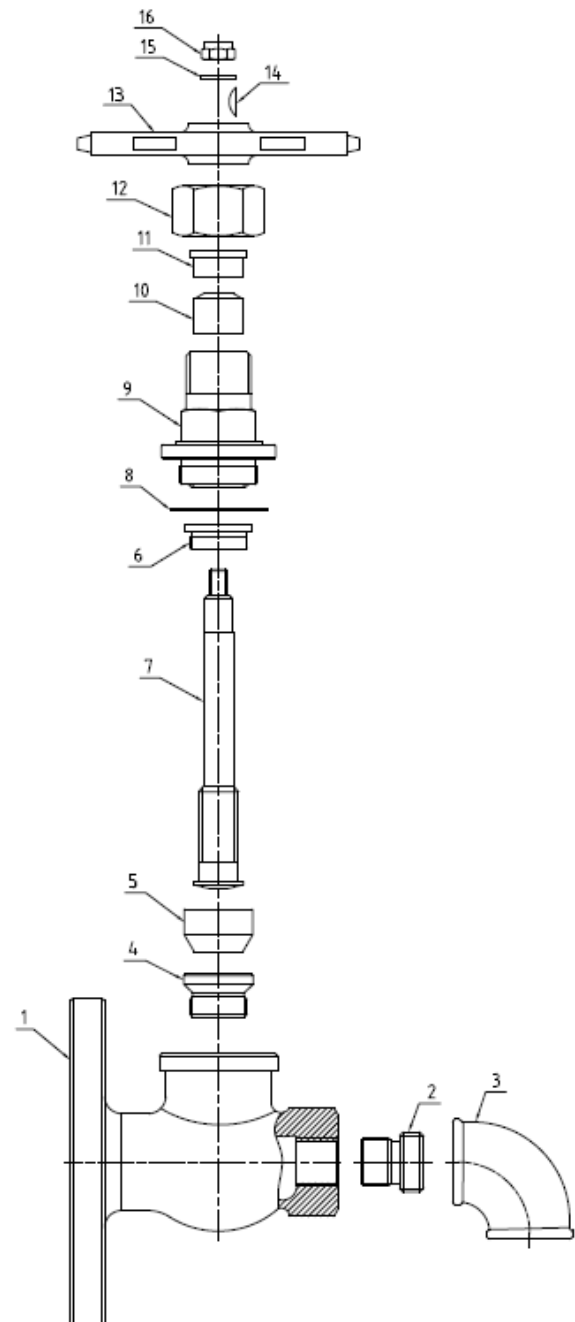


Pressure/temperature rating

Temperature (°C)	Saturated Steam temp.
Max. Working pressure (bar)	24

Material

Item	Part name	Material
1	Body	Bronze Gunmetal
2	Connector	Steel
3	Elbow	Cast iron
4	Seat ring	Stainless steel
5	Disc	Stainless steel
6	Disc Nut	Brass
7	Stem	Brass
8	Washer	Copper
9	Stem bushing	Brass
10	Packing	PTFE
11	Packing flange	Brass
12	Stem bushing nut	Brass
13	Hand Wheel	Cast iron
14	Woodruff key	Steel
15	Washer	Steel
16	Nut	Steel



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The 'Absolute' liquid level gauge is suitable for use with a variety of liquids on pressure vessels, tanks etc., in many industries. The gauge is automatic in top and bottom arms. In the event of the gauge glass breaking both the vapour and the liquid are automatically shut of by means of a ball in each arm.

Absolute Liquid Level Gauge



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Absolute Liquid Level Gauge

Type LGV

Description

Absolute Liquid Level Gauge offer an easy and cost-effective Way to indicate liquid levels. They are perfect for low pressure, non-hazardous applications.

The gauge is automatic in top and bottom arms. In the event Of the gauge glass breaking both the vapour and the liquid are automatically shut of by means of a ball in each arm. There is no possibility of trapping false liquid levels, as the use of a large ball valve in the water arm ensures its opening against the head of liquid in the vessel.



Applications

The Absolute liquid level gauge is suitable for use with a variety of liquids on pressure vessels, tanks etc., in many industries.

Limiting conditions

Maximum working pressure for the Bronze material is 12 bar and for the Gunmetal material is 20 bar.

Dimensions and pipe connections

Dimensions (approx.) in mm

Size	Material (Bottom arm body)	Flanged connections							A	B	E	L
		D	R	S	T	N	O	P				
1/2"	Bronze	95	28	3	12	4	14	66.5	83	135	82.5	110
	Bronze	115	28	3	12	4	14	82.5	83	135	82.5	110
3/4"	Bronze	115	28	3	12	4	18	82.5	83	135	82.5	110
	Gunmetal	115	28	3	14	4	18	82.5	83	135	82.5	110

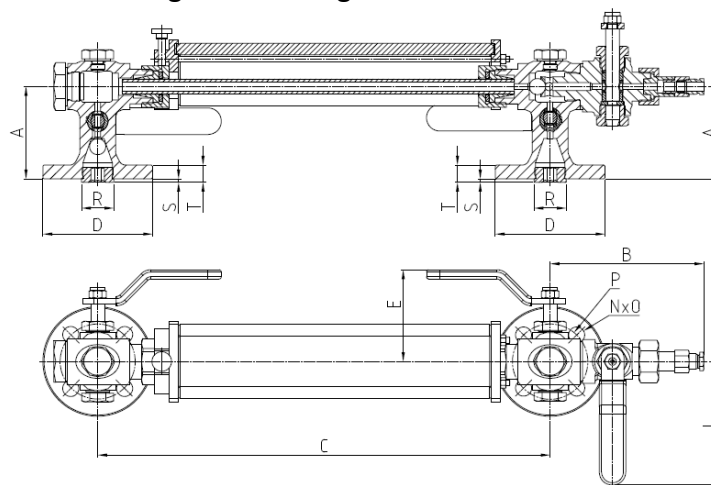
- The Dimension 'C' Can Be Changed According to The Installation Conditions.

Connection

N = No. of holes

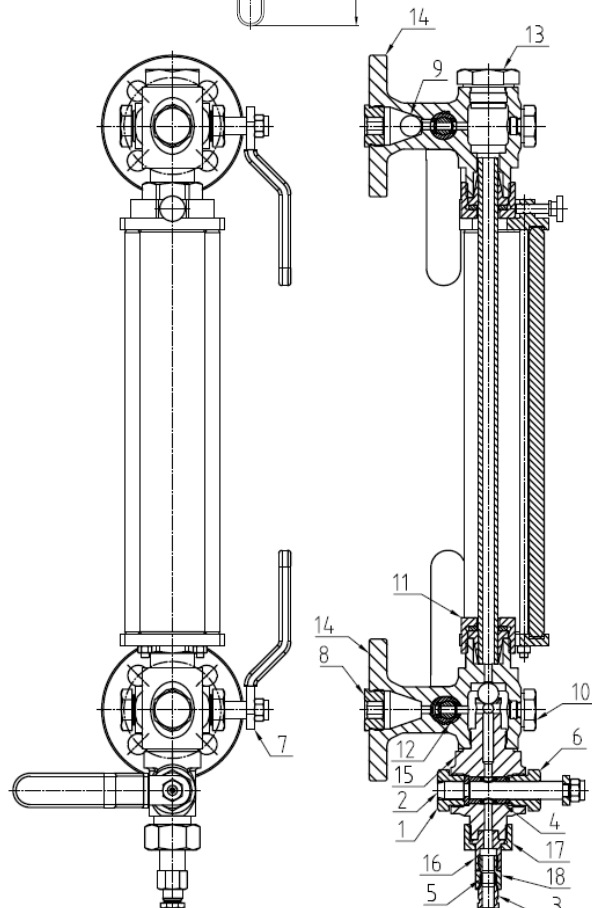
O = Dia. of holes

P = Pitch circle dia.



Material

Item	Part name	Material
1	Stem positioner nut	Brass
2	Stem	Stainless steel
3	Drain pipe fitting nut	Brass
4	Packing	PTFE
5	Olvis	Stainless steel
6	Packing nut	Brass
7	Handle	Steel
8	Bottom plug	Brass
9	Ball	Steel
10	Top plug	Brass
11	Gage glass packing nut	Brass
12	Pin	Stainless steel
13	End plug	Brass
14	Bottom arm body	Bronze
		Gunmetal
15	Try valve body	Bronze
16	Try valve fitting	Brass
17	Try valve fitting nut	Brass
18	Drain pipe nut	Brass



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Use conductivity transmitters ETC only for measuring the electrical conductivity in liquids. When used for conductivity limiting or continuous boiler blowdown in steam boilers. The compact-design conductivity transmitter ETC consists of a conductivity electrode, a temperature sensor for detecting the fluid temperature and a conductivity transmitting unit incorporated in the terminal box. The conductivity transmitter ETC works according to the conductometric measuring method using four measuring electrodes. The equipment measures the conductivity of electrically conductive fluids (TDS content) and provides current output (4-20 mA) or relay output as a function of the detected conductivity value.

Service pressure : PN 40, 32 bar at 238°C

Conductivity Transmitter ETC



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Conductivity transmitter

Type ETC 19-1

Description

The compact-design conductivity transmitter ETC 19-1 consists of a conductivity electrode, a temperature sensor for detecting the fluid temperature and a conductivity transmitter unit incorporated in the terminal box.

ETC 19-1 works according to the conductometric measuring method using four measuring electrodes. The equipment measures the electrical conductivity of electrically conductive fluids (TDS = Total Dissolved Solids content) and provides a 4-20 mA measuring current as a function of the detected conductivity value.



Applications

The conductivity transmitter ETC 19-1 is mainly used in industrial boiler plants operating with pressures up to PN40 and max. admissible conductivities acc. to TRD/EN of 6000 $\mu\text{S}/\text{cm}$.

Technical data

- **Service pressure**

PN 40, 32 bar at 238°C

- **Mechanical connection**

Screwed G 1" A, ISO 228

- **Materials**

Screw-in body: 1.4571, X6CrNiMoTi17-12-2

Electrode rod insulation: PTFE

Terminal box: 3.2161 G AlSi8Cu3

Spacer discs: PTFE/PEEK

- **Temperature sensor**

Resistance thermometer Pt 1000

Technical data - continued -

- **Electronic circuit board supply voltage**

24 VDC

- **Power consumption**

4.5 W

- **Fuse**

Electronic thermal fuse $T_{\max} = 85\text{ }^{\circ}\text{C}$,

Hysteresis – 2 K.

- **Temperature sensor**

Resistance thermometer Pt 1000

- **Measuring cycle**

1 sec.

- **Indicators and adjusters**

- Two LEDs for status messages
- One 10-pole code switch for setting
- measuring range
- temperature coefficient
- cell constant
- functional test

- **Output**

4 - 20 mA, proportional to conductivity and free relay contacts

- **Max. Admissible ambient temperature**

Max. 70 °C

- **Storage and transport temperature**

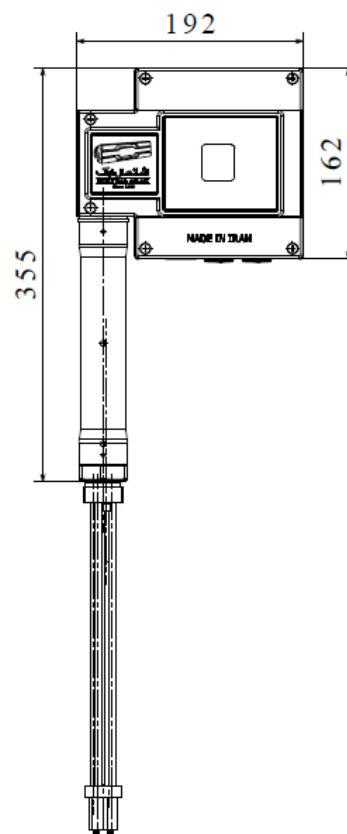
– 40 to + 80 °C

Dimension

Dimensions (approx.) in mm

Approvals: E.P.I.L Co

- Acc. to: IEC 61000-4-2
IEC 61000-4-3
IEC 61000-4-8
IEC 60068-2-78
IEC 60068-2-1
IEC 60068-2-2



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The compact system ELE works according to the conductivity measurement principle. With the ELE a maximum of 4 levels can be signalled in conductive liquids: MAX alarm, MIN a The conductivity measurement method can detect two conditions: electrode rod submerged/exposed or switchpoint reached/not reached. Before installation, the length of the electrode rod must be adapted to the switching levels, e. g. for max./min. alarm, controlling of a valve or pump alarm, pump ON ,pump OFF with one switchpoint each .
Service pressure : 32 bar at 238°C

Level electrode ELE



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level electrode

Type ELE 20-1

Description

The ELE 20-1 is a compact-type system consisting of a level electrode with four tips. For the correct functioning of the equipment the water must have a minimum conductivity of $> 25 \mu\text{S}/\text{cm}$ at 25°C . The lengths of the associated electrode rods determine the switch points for water level control and MIN / MAX water level. The equipment detects whether the electrode tips are exposed or immersed and activates the associated relay output contact accordingly.

Applications

The compact system is used as water level controller, for instance in steam boilers, (pressurized) hot-water installations as well as condensate and feed water collecting tanks.

Technical data

- **Service pressure**

PN 40, 32 bar at 238°C

- **Mechanical connection**

Screwed G 1" A, ISO 228

- **Materials**

Screw-in body: 1.4571, X6CrNiMoTi17-12-2

Sheath 1.4301 X5 CrNi18-10

Screw-in body 1.4571 X6 CrNiMoTi17-12-2

Flange 1.0460 C 22.8

Electrode tips 1.4571 X6 CrNiMoTi17-12-2

Insulation PTFE

Spacer disc PTFE



Technical data - continued -

● Power consumption

5 VA

● Supply voltage

24 VDC

● Fuse

External 500 mA, for 24 V.

Internal thermal fuse $T_{\max} = 102\text{ }^{\circ}\text{C}$

● Electrode voltage

10 V_{SS}

● Indicators and adjusters

3 red LEDs for signalling "Level 0 %" within the measuring range.

3 green LEDs for signalling "Normal Range" within the measuring range.

4 orange LEDs for signalling "Level 100 %" within the measuring range.

● Output

4 volt-free change-over contacts, 8 A 250 V AC / 30 V DC

$\cos \phi = 1$.

● Max. Admissible ambient temperature

Max. $70\text{ }^{\circ}\text{C}$

● Storage and transport temperature

-20 to $+80\text{ }^{\circ}\text{C}$

Dimension

Dimensions (approx.) in mm

Lengths supplied (L) = 500, 1000, 1500

Approvals: E.P.I.L Co

Acc. to: IEC 61000-4-2

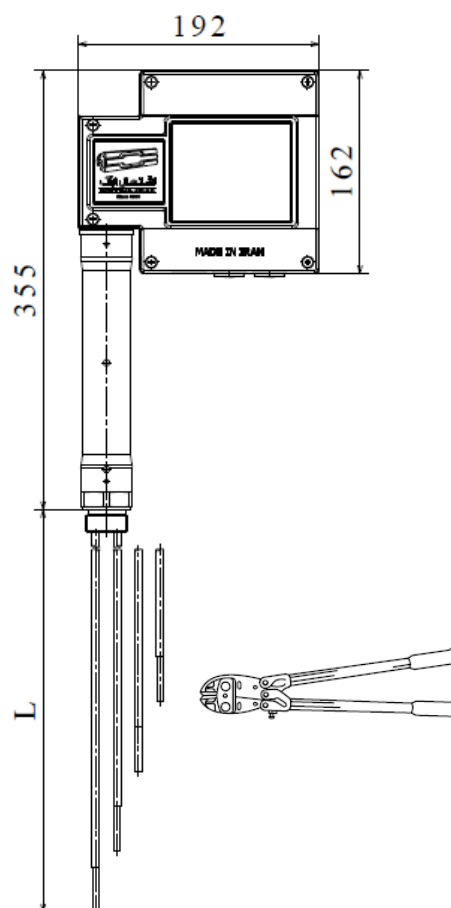
IEC 61000-4-3

IEC 61000-4-8

IEC 60068-2-78

IEC 60068-2-1

IEC 60068-2-2



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The level transmitters ELC are used for continuous level monitoring in steam boilers and (pressurized) hot-water installations or in condensate and feed water tanks. The level transmitter can be used in electrically conductive and non-conductive fluids. The level transmitter ELC works according to the capacitance measurement principle and translates the level changes into a level-dependent current signal of 4-20 mA, with the length of the electroderod determining the measuring range. The level transmitter is installed inside steam boilers, vessels or in an external level pot Service pressure : PN 40, 32 bar at 238°C

Level transmitter ELC



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level transmitter

Type ELC 19-1

Description

The level transmitter works according to the capacitance measurement principle and translates the level changes into a level-dependent current signal of 4-20 mA, with the length of the electrode rod determining the measuring range.

The level transmitter is installed inside steam boilers, vessels or in an external level pot. If the equipment is installed inside the boiler or vessel, a protection tube provided on side ensures correct functioning.



Applications

The level transmitter ELC 19-1 is used for continuous level monitoring in steam boilers and (pressurized) hot-water installations or in condensate and feed water tanks.

Technical data

- **Service pressure**
PN 40, 32 bar at 238°C
- **Mechanical connection**
Screwed G ¾" A, ISO 228
- **Materials**
Screw-in body: 1.4571, X6CrNiMoTi17-12-2
Electrode rod insulation: PTFE
Terminal box: 3.2161 G AlSi8Cu3
- **Electronic circuit board supply voltage**
24 V DC
- **Power consumption**
3 VA at 24 V DC

● **Fuse**

External slow-blow 0.5 A

Internal thermal fuse $T_{max} = 102^{\circ}C$

● **Sensitivity of response**

Range 1: Water $\geq 20 \mu S/cm$

Range 2: Water $\geq 0.5 \mu S/cm$

Range 3: Fuel oil EL, dielectric constant $\epsilon_r 2, 3$

● **Output**

Actual value output 4 – 20 mA, level proportional.

Technical data - continued -

● **Indicators and adjusters**

2 red LEDs for signalling "Level 0 %" within the measuring range.

2 orange LEDs for signalling "Level 100 %" within the measuring range,

6 green LED for signalling "Level between 0 % and 100%" of measuring range.

1 Selector switch for measuring range

2 adjustable resistors for small-percentage adjustment of the measuring range.

2 terminal lugs for voltage measurement.

● **Max. Admissible ambient temperature**

Max. 70 °C

● **Storage and transport temperature**

- 40 to + 80 °C

Dimension

Dimensions (approx.) in mm

Approvals: E.P.I.L Co

Acc. to: IEC 61000-4-2

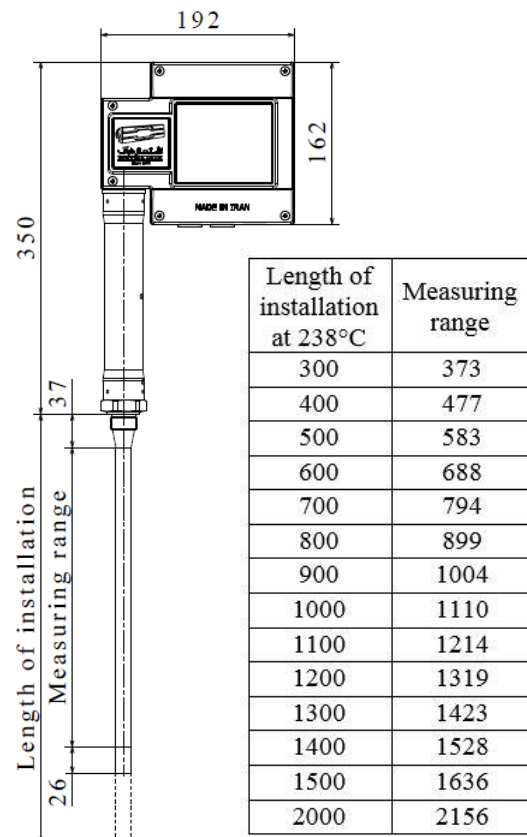
IEC 61000-4-3

IEC 61000-4-8

IEC 60068-2-78

IEC 60068-2-1

IEC 60068-2-2



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