



Section I
Power Boilers



Section VIII
Pressure Vessels

29 Series

OEM Style Bronze Safety Valves for Steam, Air and Non-Hazardous Gas



Conbraco 29 Series is ideally suited for OEM applications where compact size, dependable performance and maximum economy are required. These rugged safety valves feature a top guided design and patented Teflon® "soft-seat" for dramatically reduced seat leakage. Flow ratings are National Board certified.

ASME Sections I and VIII
Sizes 3/8" - 1-1/4" NPT
Set pressures 30 to 200 psig
Maximum temperature 406°F

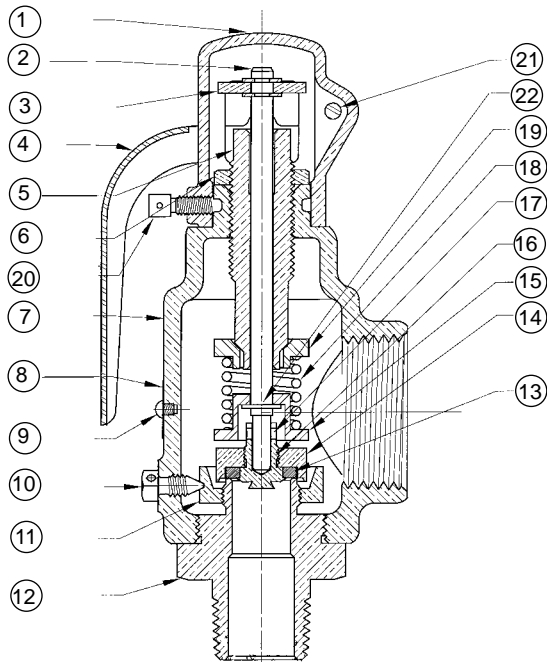
Applications: Small to medium sized steam power boilers, sterilizers and distillers, air compressors and receivers, pressure vessels and pressure piping systems.

Features

- Stainless steel springs are standard
- PFA Teflon® seat resists corrosive boiler chemicals
- Pressure settings from 30 to 200 psig
- Rust-proofed steel stem and spring washers
- Lower control ring ensures short, consistent blowdown
- Tapped body drain allows piping of condensate away from equipment
- Reduced repair costs; soft seat easily replaced
- Registered in all Canadian Provinces under CSA B51 CRN OG8547.5C

Options

- 316 Stainless steel wetted trim (29-202 & 29-303 sizes only)
- Oxygen cleaning



Materials

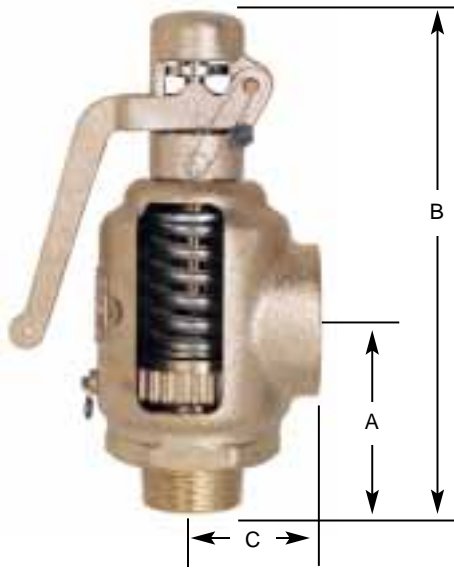
Item	Component	Material
1	CAP	BRONZE OR BRASS
2	STEM	STEEL - PLATED
3	LIFT WASHER	STEEL - PLATED
4	LIFT LEVER	STEEL - PLATED
5	ADJUSTING SCREW	BRASS
6	LOCK NUT	BRASS
7	BODY	BRONZE
8	NAMEPLATE	STAINLESS STEEL
9	DRIVE SCREWS	STAINLESS STEEL
10	SET SCREW	BRASS
11	BLOWDOWN RING	BRASS
12	NOZZLE*	BRASS/STAINLESS
13	SEAT INSERT	TEFLON® PFA
14	DISC HOLDER	BRASS
15	LOWER WASHER	STEEL - PLATED
16	SEAT RETAINER*	BRASS/STAINLESS
17	STEM PIN	STAINLESS STEEL
18	SPRING	STAINLESS STEEL
19	UPPER WASHER	STEEL - PLATED
20	LOCK SCREW	STEEL - PLATED
21	LEVER PIN	STEEL - PLATED
22	RETAINING RING	STAINLESS STEEL
-	SEAL & WIRE	LEAD/STEEL

®Teflon is a registered trademark of DuPont.

* Optional stainless steel wetted trim for models 29-202XXL and 29-302XXL. Items 12 & 16 are type 316 stainless steel.

29 Series Bronze Safety Valves

Dimensions and Weights



Model Number	Size (in./mm.)		Wt./Ea. (lbs./kg.)	Dimensions (in./mm.)		
	Inlet	Outlet		A	B	C
29-102	3/8	1	1.30	2.12	5.40	1.25
	10	25	.59	53	137	31
29-202	1/2	1	1.33	2.12	5.40	1.25
	15	25	.60	53	137	31
29-302	3/4	1	1.90	2.12	5.40	1.25
	20	25	.86	53	137	31
29-303	3/4	1-1/4	3.43	2.75	7.25	1.69
	20	32	1.55	69	184	42
29-402	1	1-1/4	3.43	2.75	7.25	1.69
	25	32	1.55	69	184	42
29-501	1-1/4	1-1/4	3.48	2.75	7.25	1.69
	32	32	1.58	69	184	42

29 Series Model Numbering System

29	202	21	L	US
Base Model Number	Inlet x Outlet NPT	Set Pressure Suffix Code	Optional Stainless Trim	ASME Code and Service
Bronze with Brass Trim and Teflon® Soft Seat	102 = 3/8 x 1 202 = 1/2 x 1 302 = 3/4 x 1 303 = 3/4 x 1-1/4 402 = 1 x 1-1/4 501 = 1-1/4 x 1-1/4	See Table Below	Add "L" Suffix for type 316 Stainless steel Wetted Trim. Models 29-202 and 29-303 only.	No Suffix (Default) = Sec. I "V" Steam US = Sec. VIII "UV" Steam UA = Sec. VIII "UV" Air

ORDERING CODE:

Use suffix codes to indicate set pressure, ASME Code and service requirements.

NOTE:

Unless otherwise specified, valves are furnished with ASME Section I "V" steam rating.

EXAMPLE:

29-202-21 = 1/2" x 1" valve set @ 100 psig, ASME Section I "V" steam.

29-303-09-US = 3/4" x 1-1/4" valve set @ 40 psig, ASME Section VIII "UV" steam.

Set Pressure Suffix Key

Set Pressure psig	Suffix	Set Pressure psig	Suffix
30	-07	115	-24
35	-08	120	-25
40	-09	125	-30
45	-10	130	-31
50	-11	135	-32
55	-12	140	-33
60	-13	145	-34
65	-14	150	-35
70	-15	155	-36
75	-16	160	-37
80	-17	165	-38
85	-18	170	-39
90	-19	175	-40
95	-20	180	-41
100	-21	185	-42
105	-22	190	-43
110	-23	195	-44
		200	-45

Note: Consult factory for pressure settings not listed.

29 Series Bronze Safety Valves



ASME Section I - Steam
POUNDS PER HOUR (KILOGRAMS PER HOUR) SATURATED STEAM AT 3%
OVERPRESSURE. NATIONAL BOARD CERTIFIED. RATINGS ARE 90% OF ACTUAL.



U.S. Customary Units lbs./hr.			Metric Units kg./hr.		
Model No.	29-102, 29-202, 29-302	29-303, 29-402, 29-501	Model No.	29-102, 29-202, 29-302	29-303, 29-402, 29-501
Seat Dia. (in.)	0.500	0.737	Seat Dia. (mm.)	12.70	18.72
Set Pressure			Set Pressure		
psig			barg		
30	164	330	2.1	77	155
35	182	367	2.5	86	174
40	201	405	3	98	197
45	220	442	3.5	110	221
50	238	479	4	122	245
55	257	517	4.5	134	269
60	275	554	5	146	293
65	294	591	5.5	158	318
70	312	628	6	170	342
75	331	664	6.5	182	367
80	349	702	7	195	391
85	368	739	7.5	207	416
90	386	777	8	219	440
95	405	814	8.5	231	465
100	423	851	9	243	489
105	442	888	9.5	255	514
110	460	925	10	268	538
115	479	963	10.5	280	563
120	497	1,000	11	292	587
125	516	1,036	11.5	304	612
130	534	1,074	12	316	636
135	553	1,112	12.5	329	661
140	571	1,149	13	341	685
145	590	1,186	13.5	353	710
150	608	1,223	13.8	360	724
155	627	1,261	Approx.		
160	645	1,298	0.1 barg		
165	664	1,335	increments	2.44	4.9
170	683	1,372			
175	701	1,409			
180	720	1,447			
185	738	1,484			
190	757	1,521			
195	775	1,558			
200	794	1,596			
Approx. 1 psi					
increments	3.7	7.4			

29 Series Bronze Safety Valves

ASME Section VIII Steam

POUNDS PER HOUR (KILOGRAMS PER HOUR) SATURATED STEAM AT 10%
OVERPRESSURE. NATIONAL BOARD CERTIFIED. RATINGS ARE 90% OF ACTUAL.



U.S. Customary Units lbs./hr.			Metric Units kg./hr.		
Model No.	29-102, 29-202, 29-302	29-303, 29-402, 29-501	Model No.	29-102, 29-202, 29-302	29-303, 29-402, 29-501
Seat Dia. (in.)	0.500	0.737	Seat Dia. (mm.)	12.70	18.72
Set Pressure			Set Pressure		
psig			barg		
30	172	345	2.1	79	158
35	191	385	2.5	89	179
40	211	425	3	102	205
45	231	465	3.5	115	231
50	251	504	4	128	257
55	270	544	4.5	141	284
60	290	584	5	154	310
65	310	624	5.5	167	336
70	330	664	6	180	362
75	350	704	6.5	193	388
80	369	744	7	206	414
85	389	783	7.5	219	441
90	409	823	8	232	467
95	429	863	8.5	245	493
100	448	902	9	258	519
105	468	943	9.5	271	545
110	488	982	10	284	571
115	508	1,022	10.5	297	598
120	528	1,062	11	310	624
125	547	1,102	11.5	323	650
130	567	1,142	12	336	676
135	587	1,182	12.5	349	702
140	607	1,221	13	362	728
145	626	1,261	13.5	375	755
150	646	1,299	13.8	383	770
155	666	1,341	Approx.		
160	686	1,381	0.1 barg		
165	706	1,420	increments	2.6	5.22
170	725	1,460			
175	745	1,500			
180	765	1,540			
185	785	1,580			
190	804	1,620			
195	824	1,659			
200	844	1,697			
Approx. 1 psi					
increments	3.95	8.0			

29 Series Bronze Safety Valves



ASME Section VIII Air
STANDARD CUBIC FEET PER MINUTE (NORMALIZED CUBIC METERS PER HOUR) OF AIR
AT 10% OVERPRESSURE. NATIONAL BOARD CERTIFIED. RATINGS ARE 90% OF ACTUAL.



U.S. Customary Units SCFM			Metric Units Nm ³ ./hr.		
Model No.	29-102, 29-202, 29-302	29-303, 29-402, 29-501	Model No.	29-102, 29-202, 29-302	29-303, 29-402, 29-501
Seat Dia. (in.)	0.500	0.737	Seat Dia. (mm.)	12.70	18.72
Set Pressure			Set Pressure		
psig			barg		
30	61	123	2.1	105	210
35	68	137	2.5	118	238
40	75	151	3	136	273
45	82	165	3.5	153	308
50	89	180	4	170	342
55	96	193	4.5	188	377
60	103	208	5	205	412
65	110	222	5.5	222	447
70	117	236	6	240	482
75	124	250	6.5	257	516
80	131	264	7	274	551
85	138	278	7.5	291	586
90	145	292	8	309	621
95	152	307	8.5	326	655
100	159	321	9	343	690
105	166	335	9.5	361	725
110	173	349	10	378	760
115	180	363	10.5	395	795
120	187	378	11	413	829
125	194	392	11.5	430	864
130	201	406	12	447	899
135	208	420	12.5	464	934
140	215	434	13	482	969
145	222	448	13.5	499	1,003
150	229	463	13.8	509	1,024
155	236	477	Approx.		
160	243	491	0.1 barg		
165	250	505	increments	3.46	6.96
170	257	519			
175	265	533			
180	272	547			
185	279	562			
190	286	576			
195	293	590			
200	300	604			
Approx. 1 psi					
increments	1.4	2.8			