

2478

• Safety Valves



Consolidated[®]

CONSOLIDATED Type 2478 pressure relief valve is a totally enclosed design for non-corrosive, thermal relief, liquid service.

2478



INLET SIZES — 1/2" through 2-1/2" threaded.

OUTLET SIZES — 3/4" through 2-1/2" threaded.

ORIFICE SIZES — Six sizes: D through J

PRESSURE RANGE — 5 psig to 300 psig

TEMPERATURE RANGE — -325°F to 406°F

MATERIALS — Cast bronze bonnet, brass base & trim and PTFE soft seats are standard.

CERTIFICATION — Non-Coded

BLOWDOWN — 7 - 15%

BACK PRESSURE LIMIT — 10% of Set Pressure

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Product Applications

Design limits of 300 psig and -325°F (-198°C) to +406°F (+207°C). This product should only be used for non-corrosive liquids. The 2478 is not ASME Code capacity certified. Cryogenic service applications can be satisfied by consulting the factory.

Connections

The 2478 is supplied with 1/2" through 2-1/2" male NPT inlet sizes. The inlet is equipped with a standard hexagon surface for easy wrenching.

Options

- Sealed Lifting Lever Assembly
- Spring 17-7 PH SS is available

Scope of Design

Inlet Size Male NPT	Orifice Designation	Discharge Area		Outlet Size Female NPT
		in. ²	cm. ²	
1/2"	D	.110	.710	3/4"
3/4"	D	.110	.710	3/4"
1"	E	.196	1.265	1"
1-1/4"	F	.307	1.981	1-1/4"
1-1/2"	G	.503	3.245	1-1/2"
2"	H	.785	5.065	2"
2-1/2"	J	1.287	8.304	2-1/2"

Pressure Temperature Limits

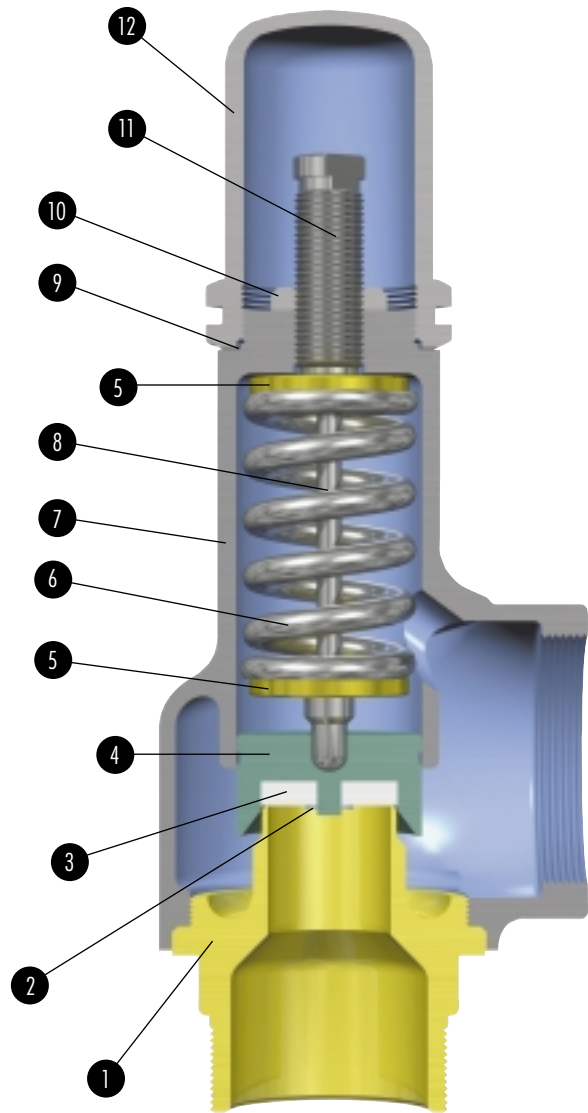
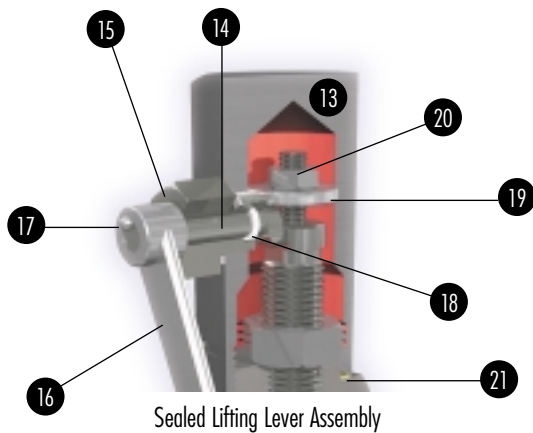
Pressure/Temperature Limits		
Valve Type	Pressure Limit Liquid (PSI)	Temperature Limit
2478	300	-325°F to + 406°F (-198°C to + 207°C)

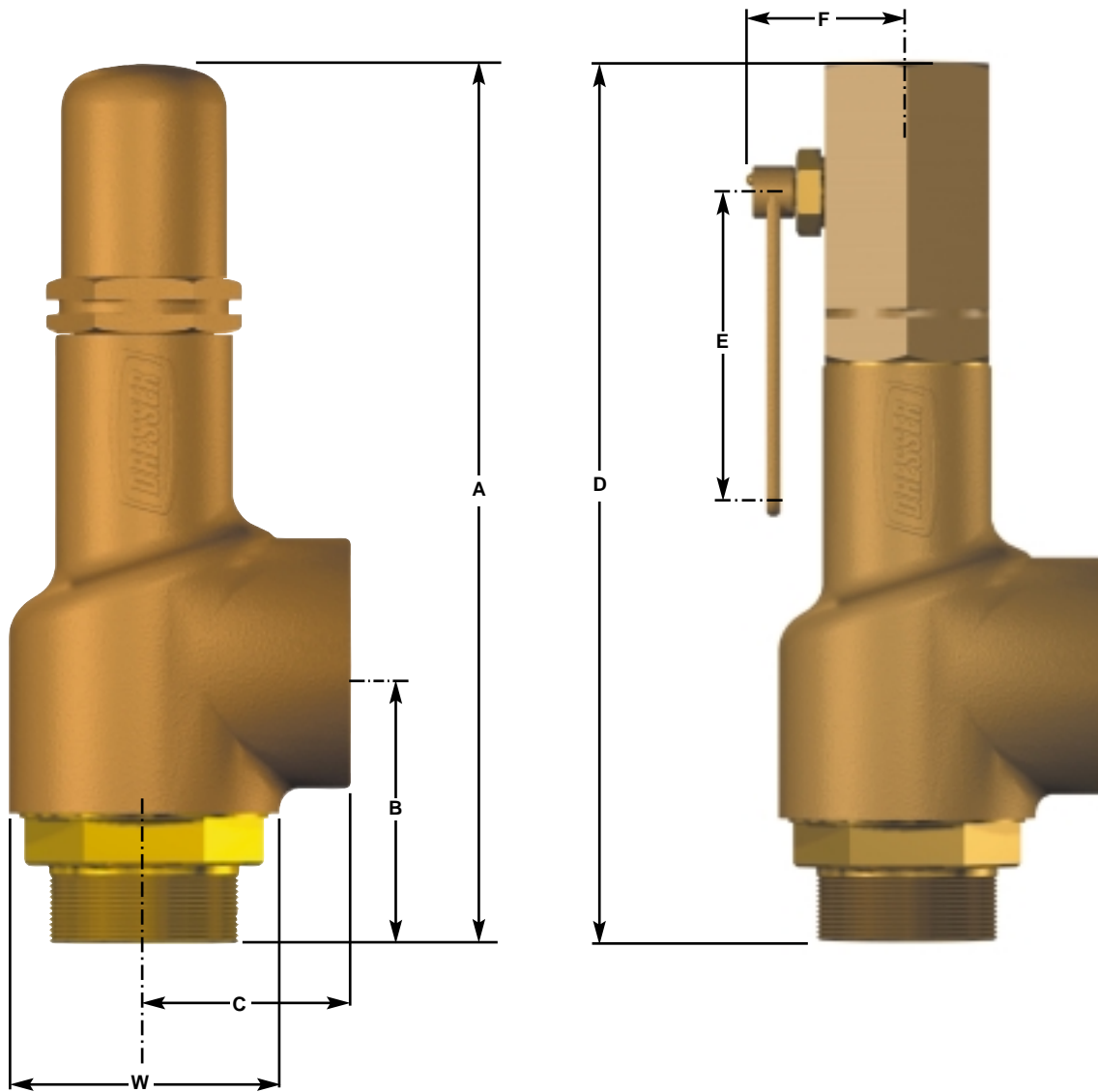
Ref. No.	Part	Material
1	Base	Brass
2	Seat Retainer Ring	Stainless Steel
3	Soft Seat	PTFE
4	Disc	Brass
5	Spring Washer	Brass
6	Spring*	Chrome Alloy Aluminum Metallized
7	Bonnet	Bronze
8	Spindle	Brass
9	O-Ring	Viton
10	Compression Screw Locknut	Brass
11	Compression Screw	Brass
12	Screwed Cap	Brass

*Stainless Steel Spring is recommended for temperatures below -20°F (-28°C) and cryogenic applications. Inconel X-750 or Phosphorus Bronze Springs are recommended for salt water service.

Lifting Lever Assembly

Ref. No.	Part	Material
13	Packed Cap	Brass
14	Cam Shaft	Stainless Steel
15	Bushing	Stainless Steel
16	Lever	Iron
17	Drive Screw	Stainless Steel
18	O-Ring	Buna N (70)
19	Release Nut	Stainless Steel
20	Release Locknut	Carbon Steel
21	O-Ring	Viton





2478 (USCS)

Size & Type	A in.	B in.	C in.	D in.	E in.	F in.	W in.	Dismantling Height (in.)	Approx. Weight (lbs.)
1/2" 2478D	6-9/16	2-1/4	1-7/16	6-11/16	2-7/16	1-1/4	1-3/4	7-3/4	1.8
3/4" 2478D	6-5/8	2-5/16	1-7/16	6-3/4	2-7/16	1-1/4	1-3/4	7-13/16	1.9
1" 2478E	7-3/16	2-9/16	1-5/8	7-5/16	2-7/16	1-1/4	2	8-1/2	2.3
1-1/4" 2478F	8-5/8	2-15/16	1-7/8	8-11/16	3-1/2	2	2-1/2	10-1/8	3.8
1-1/2" 2478G	9-1/4	3-1/8	2-1/8	9-5/16	3-1/2	2	2-7/8	10-7/8	5.3
2" 2478H	11-7/16	3-3/4	2-3/8	11-5/8	4-3/4	2-1/8	3-1/4	13-7/16	8.5
2-1/2" 2478J	12-3/4	4-1/4	3	12-15/16	4-3/4	2-1/8	4	14-15/16	13.0

2478 (metric units)

Size & Type	A mm	B mm	C mm	D mm	E mm	F mm	W mm	Dismantling Height (mm)	Approx. Weight (kg)
1/2" 2478D	166.7	57.2	36.5	169.9	61.9	31.8	44.5	196.9	0.8
3/4" 2478D	168.3	58.7	36.5	171.5	61.9	31.8	44.5	198.4	0.9
1" 2478E	182.6	65.1	41.3	185.7	61.9	31.8	50.8	215.9	1.0
1-1/4" 2478F	219.1	74.6	47.6	220.7	88.9	50.8	63.5	257.2	1.7
1-1/2" 2478G	235.0	79.4	54.0	236.5	88.9	50.8	73.0	276.2	2.4
2" 2478H	290.5	95.3	60.3	295.3	120.7	54.0	82.6	341.3	3.9
2-1/2" 2478J	323.9	108.0	76.2	328.6	120.7	54.0	101.6	379.4	5.9

Capacities (Not ASME Capacity Certified) U.S. Gallons Of Water Per Minute At 25% Overpressure

Orifice Designation & Discharge Area - Square Inches

Orifice Designation	D	E	F	G	H	J
Orifice Area (sq. in.)	.110	.196	.307	.503	.785	1.287
Set Pressure (psig)						
5	7	10	17	31	47	73
10	9	14	24	44	67	104
15	11	17	29	54	82	127
20	13	19	33	63	94	146
25	15	22	37	70	105	164
30	16	24	41	77	115	179
35	17	26	44	83	125	194
40	18	28	47	89	133	207
45	20	29	50	94	141	220
50	21	31	53	99	149	232
55	22	32	55	104	156	243
60	23	34	58	108	163	254
65	24	35	60	113	170	264
70	24	36	62	117	176	274
75	25	38	65	121	183	284
80	26	39	67	125	189	293
85	27	40	69	129	194	302
90	28	41	71	133	200	311
95	28	42	73	137	205	319
100	29	43	74	140	211	327
105	30	45	76	144	216	336
110	31	46	78	147	221	343
115	31	47	80	150	226	351
120	32	48	82	153	231	359
125	33	49	83	157	236	366
130	33	50	85	160	240	373
135	34	51	87	163	245	380
140	35	51	88	166	249	387
145	35	52	90	169	254	394
150	36	53	91	172	258	401
155	36	54	93	174	262	408
160	37	55	94	177	267	414
165	37	56	96	180	271	421
170	38	57	97	183	275	427
175	39	58	99	185	279	433
180	39	58	100	188	283	439
185	40	59	101	191	287	445
190	40	60	103	193	291	451
195	41	61	104	196	294	457
200	41	61	105	198	298	463
205	42	62	107	201	302	469
210	42	63	108	203	305	475
215	43	64	109	205	309	480
220	43	65	110	208	313	486
225	44	65	112	210	316	491
230	44	66	113	212	320	497
235	45	67	114	215	323	502
240	45	67	115	217	327	507
245	46	68	117	219	330	513
250	46	69	118	221	333	518
255	47	69	119	224	337	523
260	47	70	120	225	340	528
265	47	71	121	228	343	533
270	48	71	122	230	346	538
275	48	72	124	232	350	543
280	49	73	125	234	353	548
285	49	73	126	236	356	553
290	50	74	127	239	359	558
295	50	75	128	241	362	562
300	51	75	129	243	365	567