

High Capacity Flanged FT • HC • HD Safety Relief Valves

- Manufactured in accordance with ASME Code Section VIII
- NBBI capacity certified for Air/Gas & Liquid
- Pressures to 2,000 psi
- Soft seat seal
- 3/4" to 3" inlet flange sizes



Flanged Safety Relief Valves

21 AFL

MODEL INLET • OUTLET

FT MODEL	INLET		OUTLET		A	DIMS B C		APPRX WT
3/4A1FL	3/4"	150# x 1-1/2"	150#	150#	4-1/8"	4-1/2"	15"	20
3/4A2FL	3/4"	300# x 1-1/2"	150#	150#	4-1/8"	4-1/2"	15"	24
3/4A3FL	3/4"	600# x 1-1/2"	300#	300#	4-1/8"	4-1/2"	15"	24
2AFL	1"	150# x 1-1/2"	150#	150#	4-1/8"	4-1/2"	15"	20
8AFL	1"	150# x 2"	150#	150#	4-1/8"	4-1/2"	15"	22
3AFL	1"	300# x 1-1/2"	150#	150#	4-1/8"	4-1/2"	15"	22
3-4AFL	1"	300# x 1-1/2"	300#	300#	4-1/8"	4-1/2"	15"	24
9AFL	1"	300# x 2"	150#	150#	4-1/8"	4-1/2"	15"	26
9-11AFL	1"	300# x 2"	300#	300#	4-1/8"	4-1/2"	15"	28
4-2AFL	1"	600# x 1-1/2"	150#	150#	4-1/8"	4-1/2"	15"	28
4AFL	1"	600# x 1-1/2"	300#	300#	4-1/8"	4-1/2"	15"	30
10AFL	1"	600# x 2"	150#	150#	4-1/8"	4-1/2"	15"	30
11AFL	1"	600# x 2"	300#	300#	4-1/8"	4-1/2"	15"	30
20AFL	1-1/2"	150# x 1-1/2"	150#	150#	4-7/8"	4-3/4"	15-3/4"	32
22AFL	1-1/2"	300# x 1-1/2"	150#	150#	4-7/8"	4-3/4"	15-3/4"	34
24-2AFL	1-1/2"	600# x 1-1/2"	150#	150#	4-7/8"	4-3/4"	15-3/4"	34
21AFL	1-1/2"	150# x 2"	150#	150#	4-7/8"	4-3/4"	15-3/4"	34
23AFL	1-1/2"	300# x 2"	150#	150#	4-7/8"	6"	15-3/4"	36

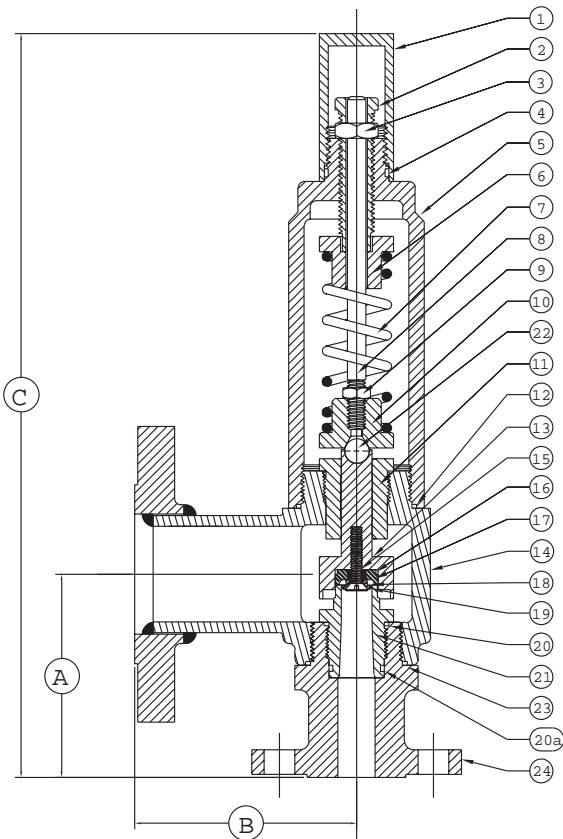
HC MODEL	INLET		OUTLET		A	DIMS B C		APPRX WT
21AFL	1-1/2"	150# x 2"	150#	150#	4-7/8"	4-3/4"	17-1/2"	34
23AFL	1-1/2"	300# x 2"	150#	150#	4-7/8"	6"	17-1/2"	36
24AFL	1-1/2"	600# x 2"	150#	150#	4-7/8"	6"	17-1/2"	38
25AFL	1-1/2"	600# x 2"	300#	300#	4-7/8"	6"	17-1/2"	42
26AFL	1-1/2"	600# x 2-1/2"	150#	150#	4-7/8"	6"	17-1/2"	44
20-32AFL	1-1/2"	150# x 3"	150#	150#	5-1/8"	4-7/8"	17-3/4"	40
30FL	2"	150# x 2"	150#	150#	6-7/8"	6-1/8"	19-1/2"	46
31FL	2"	150# x 2-1/2"	150#	150#	6-7/8"	6-1/8"	19-1/2"	54
32FL	2"	150# x 3"	150#	150#	6-7/8"	6-1/8"	19-1/2"	58
32AFL	2"	150# x 3"	150#	150#	5-3/8"	4-7/8"	18"	56
33FL	2"	300# x 2-1/2"	150#	150#	6-7/8"	6-1/8"	19-1/2"	58
34FL	2"	300# x 3"	150#	150#	6-7/8"	6-1/8"	19-1/2"	42
34AFL	2"	300# x 3"	150#	150#	5-3/8"	4-7/8"	17-3/4"	40
35FL	2"	300# x 3"	300#	300#	8"	7-1/4"	20-3/4"	44
36FL	2"	600# x 2"	150#	150#	6-7/8"	6-1/8"	19-1/2"	46
37FL	2"	600# x 2"	300#	300#	6-7/8"	6-1/8"	19-1/2"	48
39FL	2"	600# x 2-1/2"	150#	150#	6-7/8"	6-1/8"	19-1/2"	48
40FL	2"	600# x 2-1/2"	300#	300#	6-7/8"	6-1/8"	19-1/2"	50
41FL	2"	600# x 3"	150#	150#	6-7/8"	6-1/8"	19-1/2"	54
41AFL	2"	600# x 3"	150#	150#	6-1/16"	7-1/4"	18-3/4"	50
46FL	2"	900# x 3"	150#	150#	8-1/8"	7-1/4"	20-3/4"	74
47FL	2"	900# x 2"	300#	300#	8-1/8"	7-1/4"	20-3/4"	76
51FL	2-1/2"	150# x 3"	150#	150#	8"	7-1/4"	20-3/4"	70
52FL	2-1/2"	300# x 3"	150#	150#	8"	7-1/4"	20-3/4"	72
60FL	3"	150# x 3"	150#	150#	8"	7-1/4"	20-3/4"	70
61FL	3"	300# x 3"	150#	150#	8"	7-1/4"	20-3/4"	70
63FL	3"	600# x 3"	150#	150#	8"	7-1/4"	20-3/4"	74
65FL	3"	150# x 4"	150#	150#	8"	7-1/4"	20-3/4"	74

FL-DESIGNATES INTEGRALLY CAST FLANGE BODY

AFL-DESIGNATES FABRICATED FLANGE BODY

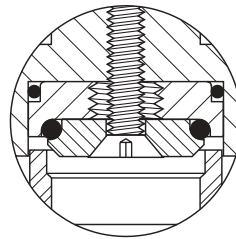
MODEL DEPENDENT ON ORIFICE SELECTION

MAX TEMPERATURE IS O-RING DEPENDENT

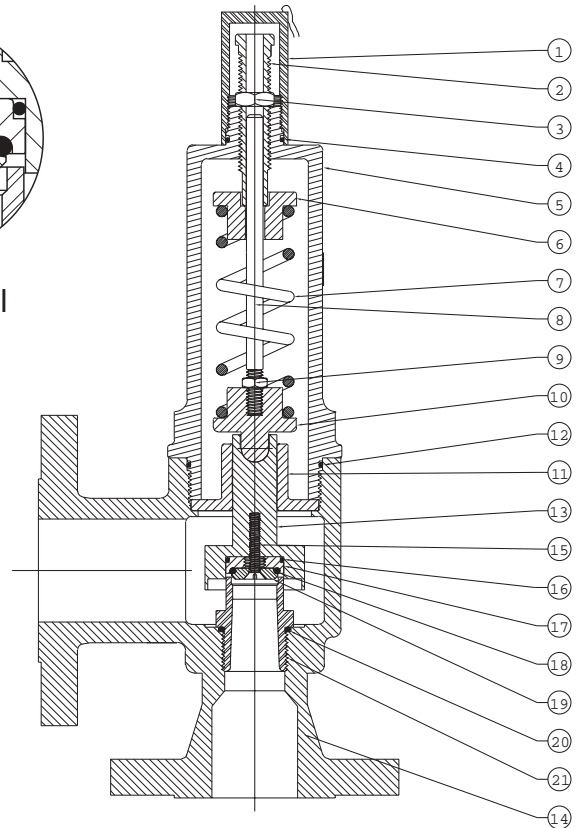


SERIES FT

5/8" DIAMETER ORIFICE



Seat Detail



SERIES HC

1" DIAMETER ORIFICE

Model Selection



1 FLANGE FACING	HC ORIFICE	N SOFT SEAT SEAL	O MATERIAL CODE	O CAP TYPE
INLET • OUTLET 1 RF x RF 2 RF x RTJ 3 RTJ x RF 4 RTJ x RTJ	AIR LIQUID FT FTL 5/8" Orifice 0.306 sq. in. HC HD 1" Orifice 0.785 sq. in. Orifice selection is model dependent	N - Nitrile [Buna-N] F - Fluorocarbon [Viton®] C - Neoprene K - Kalrez® Z - Kalrez® seat w/ Viton® Seals X - Teflon® Seat w/ Viton® Seals E - EPDM <i>O-ring material selection is media and temperature dependent</i>	0 - Standard Material 1 - Standard w/ 316 SS Spring 3 - All 316 SS 4 - All 316 SS w/ Inconel® Spring 5 - 316 SS Trim 6 - 316 SS Trim w/ Inconel® Spring 7 - Standard w/ Inconel® Spring	0 - Closed Cap L - Open Lift Lever P - Packed Lift Lever <hr/> ASME Code requires lift lever on water over 140° F and air except as allowed by ASME Code Case 2203

MATERIAL CODE	0	1	3	4	5	6	7
1. CAP	CSZ	CSZ	316 SS	316 SS	CSZ	CSZ	CSZ
2. ADJUSTING SCREW	CSZ	CSZ	316 SS	316 SS	316 SS	316 SS	CSZ
3. ADJUSTING LOCKNUT	CSZ	CSZ	316 SS	316 SS	316 SS	316 SS	CSZ
4. CAP SEAL	DETERMINED BY SOFT SEAT SELECTION						
5. BONNET	WCB	WCB	CF8M	CF8M	WCB	WCB	WCB
6. UPPER SPRING PLATE	SS	SS	316 SS	316 SS	316 SS	316 SS	SS
7. SPRING	CS	316 SS	316 SS	Inconel®	316 SS	Inconel®	Inconel®
8. GUIDE STEM	SS	SS	316 SS	316 SS	316 SS	316 SS	SS
9. STEM LOCKNUT	SS	SS	316 SS	316 SS	316 SS	316 SS	SS
10. LOWER SPRING PLATE	SS	SS	316 SS	316 SS	316 SS	316 SS	SS
11. SPINDLE GUIDE	17-4 PH	17-4 PH	316 SS	316 SS	316 SS	316 SS	17-4 PH
12. BONNET SEAL	DETERMINED BY SOFT SEAT SELECTION						
13. SPINDLE	SS	SS	316 SS	316 SS	316 SS	316 SS	SS
14. BODY	WCB	WCB	CF8M	CF8M	WCB	WCB	WCB
15. DISK RET. SCREW	SS	SS	316 SS	316 SS	316 SS	316 SS	SS
16. DISK SEAL	DETERMINED BY SOFT SEAT SELECTION						
17. DISK	SS	SS	316 SS	316 SS	316 SS	316 SS	SS
18. O-RING SEAT	DETERMINED BY SOFT SEAT SELECTION						
19. O-RING RETAINER	SS	SS	316 SS	316 SS	316 SS	316 SS	SS
20. SEAT SEAL	DETERMINED BY SOFT SEAT SELECTION						
21. SEAT	SS	SS	316 SS	316 SS	316 SS	316 SS	SS
22. BALL (FT only)	440C	440C	SS	SS	SS	SS	440C
23. BODY SEAL (FT only)	DETERMINED BY SOFT SEAT SELECTION						
24. BASE (FT only)	CS	CS	316 SS	316 SS	316 SS	316 SS	CS
25. OPEN LL ASS'Y	CS	CS	316 SS	316 SS	316 SS	316 SS	CS
26. PACKED LL ASS'Y	CS	CS	316 SS	316 SS	316 SS	316 SS	CS

CS - CARBON STEEL WCB - ASTM A 216 - WCB CARBON STEEL CSZ - CARBON STEEL - ZINC PLATED
 SS - STAINLESS STEEL CF8M - ASTM A 351 - CF8M STAINLESS STEEL

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Capacity Tables For Series FT and HC

ASME Section VIII "UV" Code Stamped for Air, Gas & Liquid.
All Capacities Listed at 10% Over Set Pressure

SERIES FT 5/8" ORIFICE DIAMETER 0.306 SQ. IN. AREA

SET PRESSURE PSI	AIR SCFM	NATURAL GAS [SG = 0.60] SCFM	WATER GPM
15	159	205	35
50	340	439	63
75	474	612	77
100	609	785	89
125	743	958	99
150	877	1131	109
200	1145	1477	126
250	1414	1824	141
300	1682	2170	154
350	1951	2516	166
400	2219	2862	178
450	2487	3209	189
500	2756	3555	199
550	3024	3901	209
600	3293	4247	218
650	3561	4594	227

SCFM [Air] = 4.88 [1.1 Set Pressure + 14.7]
Coefficient of Discharge [Air] 0.871

SET PRESSURE PSI	AIR SCFM	NATURAL GAS [SG = 0.60] SCFM	WATER GPM
700	3829	4940	235
750	4098	5286	244
800	4366	5632	252
850	4635	5979	259
900	4903	6325	267
950	5171	6671	274
1000	5440	7017	281
1050	5708	7363	288
1100	5977	7710	295
1150	6245	8056	302
1200	6513	8402	308
1250	6782	8748	314
1300	7050	9095	321
1400	7587	9787	333
1450	7855	10133	339
1500	8124	10480	344

GPM [Water] = 8.48 $\sqrt{1.1 \text{ Set Pressure}}$
Coefficient of Discharge [Water] 0.725

SERIES HC 1" ORIFICE DIAMETER 0.785 SQ. IN. AREA

SET PRESSURE PSI	AIR SCFM	NATURAL GAS [SG = 0.60] SCFM	WATER GPM
15	412	532	75
50	880	1135	131
100	1574	2030	185
150	2268	2925	226
200	2962	3821	261
250	3656	4716	292
300	4350	5612	320
350	5044	6507	346
400	5738	7402	390
450	6432	8298	392
500	7126	9193	413
550	7821	10088	433
600	8515	10984	453
650	9209	11879	471
700	9903	12775	489
750	10597	13670	506
800	11291	14566	523
850	11985	15461	539
900	12679	16356	554
950	13373	17252	570

SCFM [Air] = 12.62 [1.1 Set Pressure + 14.7]
Coefficient of Discharge [Air] 0.877

SET PRESSURE PSI	AIR SCFM	NATURAL GAS [SG = 0.60] SCFM	WATER GPM
1000	14068	18147	584
1050	14762	19042	599
1100	15456	19938	613
1150	16150	20833	627
1200	16844	21729	640
1250	17538	22624	653
1300	18232	23519	666
1350	18926	24415	679
1400	19620	25310	691
1450	20314	26206	704
1500	21008	27101	716
1550	21703	27996	728
1600	22397	28892	739
1650	23091	29787	751
1700	23785	30682	762
1750	24479	31578	773
1800	25173	32473	784
1850	25867	33369	795
1900	26561	34264	806
2000	27950	36055	826

GPM [Water] = 17.62 $\sqrt{1.1 \text{ Set Pressure}}$
Coefficient of Discharge [Water] 0.590

CANADIAN REGISTRATION NUMBER 0G0736.2C
(Applies to ASME Code stamped valves only.)



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