



## CASH VALVE TYPE C-776 SAFETY VALVES

A full lift ASME Section VIII air/gas and cryogenic, UV National Board certified safety valve suitable for cryogenic service



### FEATURES

- Ideal for cryogenic service to -320°F (-195°C).
- Kel-F® soft seat disc ensures positive reseating and leak tight seal.
- Full lift maximum discharge capacity.
- Unobstructed flow through top guided design.
- Pressure tight dome.
- Stainless steel springs as standard. Inconel® springs supplied for higher pressures.
- All parts are commercially cleaned for oxygen service.
- Built to ASME Code Section VIII for cryogenic service.
- Rated capacity: 110% of set pressure.

### GENERAL APPLICATION

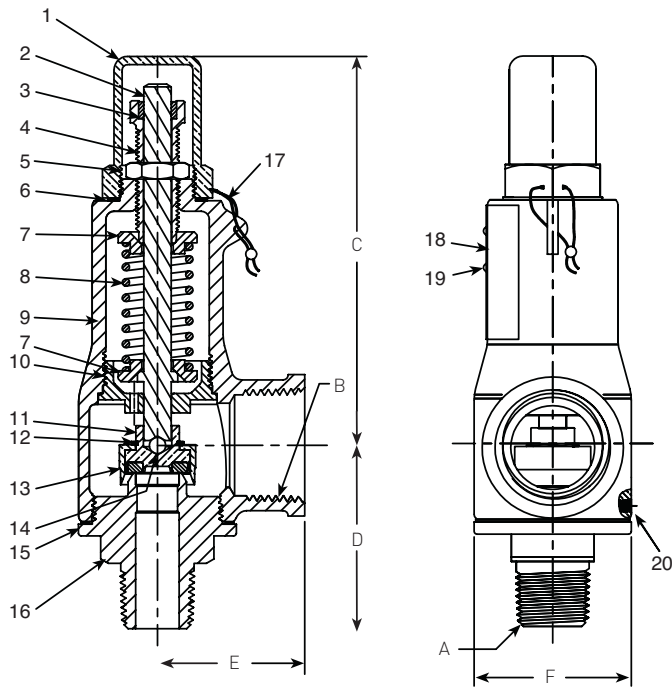
Protects piping, storage tanks and process equipment used in the distribution of industrial gases against damage caused by liquefied gas expansion. Ideal for oxygen, nitrogen, argon, carbon dioxide, helium, hydrogen and other industrial gases.

### TECHNICAL DATA

Materials:	Bronze
Sizes:	1/2" x 3/4" to 2" x 2 1/2"
Connections:	Threaded NPTF
Pressure ranges	
1/2" to 3/4" size:	15 to 600 psig* (1 to 41.3 barg)
1" to 2" size:	15 to 500 psig (1 to 34.5 barg)
Temperature range:	-320° to +150°F (-195° to 65.6°C)

\* 3/4" x 1 1/4" maximum pressure 500 psig (34.5 barg)

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## LIST OF MATERIALS

Item	Qty.	Description	Material
1	1	Adj. screw cap	Brass ASTM B16
2	1	Pull rod	Brass ASTM B16
3	1	Bushing	Virgin PTFE
4	1	Adjusting screw	Brass ASTM B16
5	1	Nut	Brass ASTM B16
6	1	Gasket	Gylon PTFE
7	2	Pressure plate	Brass ASTM B16
8	1	Spring	302 SST A313/Inconel® B637
9	1	Body	Bronze
10	1	Guide bushing	Brass ASTM B16
11	1	Seat assembly	Brass/Kel-F®
12	1	Retaining ring	SST
13	1	Seat shell	Brass ASTM B16
14	1	Ball	Monel®
15	1	Gasket	Gylon PTFE
16	1	Body seat	Brass ASTM B16
17	1	Wire seal	SST/Lead
18	1	Name plate	Aluminum
19	2	Drive screw	SST
20	1	Set screw	SST

## DIMENSIONS

Valve size	Inlet size		Outlet size		C In. (mm)	D In. (mm)	E In. (mm)	F In. (mm)
	A	B	A	B				
1/2"	1/2"	3/4"	1/2"	3/4"	4.46 [113.3]	2.11 [53.5]	1.69 [42.9]	1.81 [46.0]
1/2"	1/2"	1"	1/2"	1"	4.46 [113.3]	2.11 [53.5]	1.69 [42.9]	1.81 [46.0]
3/4"	3/4"	1"	3/4"	1"	4.46 [113.3]	2.11 [53.5]	1.69 [42.9]	1.81 [46.0]
3/4"	3/4"	1 1/4"	3/4"	1 1/4"	6.55 [166.3]	2.88 [73.1]	2.15 [54.6]	2.63 [66.7]
1"	1"	1 1/4"	1"	1 1/4"	6.55 [166.3]	2.88 [73.1]	2.15 [54.6]	2.63 [66.7]
1 1/4"	1 1/4"	1 1/2"	1 1/4"	1 1/2"	7.32 [185.9]	3.06 [77.7]	2.37 [60.1]	3.00 [76.2]
1 1/2"	1 1/2"	2"	1 1/2"	2"	9.36 [237.6]	3.28 [83.3]	2.75 [69.9]	3.74 [95.0]
2"	2"	2 1/2"	2"	2 1/2"	10.99 [279.1]	3.74 [94.9]	3.19 [81.0]	4.65 [118.0]

## NOTE

NPTF, also referred to as 'Dryseal' thread, is designed to provide a more leak-free seal without the use of PTFE tape or other sealant compound. NPTF threads are interchangeable with NPT threads and are standard on all Cash Valve products.

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## SPECIFICATIONS - Capacity (Air capacity in SCFM by size - ambient temperature)

Set pressure psig	1/2" x 3/4"		1" x 1 1/4"	3/4" x 1 1/4"		1 1/2" x 2"	2" x 2 1/2"
	1/2" x 1"	3/4" x 1"	Special for air products	1" x 1 1/4"	1 1/4" x 1 1/2"		
15	80		161	230	305	485	789
20	92		186	265	352	559	910
30	117		235	336	446	707	1152
40	144		289	413	548	870	1417
50	171		343	491	651	1034	1683
60	198		397	568	754	1197	1948
70	224		452	645	857	1360	2214
80	251		506	723	959	1523	2479
90	278		560	800	1062	1686	2745
100	305		614	878	1165	1849	3010
110	332		668	955	1268	2012	3276
120	359		722	1032	1370	2175	3541
130	386		776	1110	1473	2339	3807
140	413		831	1187	1576	2502	4073
150	440		885	1265	1679	2665	4338
160	467		939	1342	1781	2828	4604
170	494		993	1420	1884	2991	4869
180	521		1047	1497	1987	3154	5135
190	547		1101	1574	2090	3317	5400
200	574		1156	1652	2192	3480	5666
210	601		1210	1729	2295	3644	5931
220	628		1264	1807	2398	3807	6197
230	655		1318	1884	2500	3970	6463
240	682		1372	1962	2603	4133	6728
250	709		1426	2039	2706	4296	6994
260	736		1481	2116	2809	4459	7259
270	763		1535	2194	2911	4622	7525
280	790		1589	2271	3014	4785	7790
290	817		1643	2349	3117	4949	8056
300	844		1697	2426	3220	5112	8321
310	871		1751	2503	3322	5275	8587
320	897		1806	2581	3425	5438	8852
330	924		1860	2658	3528	5601	9118
340	951		1914	2736	3631	5764	9384
350	978		1968	2813	3733	5927	9649
400	1113		2239	3200	4247	6743	10977
450	1247		2510	3587	4761	7558	12305
500	1382		-	3974	5275	8374	13632
550	1517		-	-	-	-	-
600	1651		-	-	-	-	-

Discharge capacities in standard cubic feet per minute of air at 110% of set pressure or set pressure +3 psi, whichever is greater.

Gas	Oxygen	Nitrogen	Hydrogen	Helium	CO <sub>2</sub>	Argon	Methane
Factor	1.05	0.98	0.26	0.37	1.24	1.18	0.74

1. For gases other than air, multiply the required gas flow for your gas by the appropriate factor above to obtain the equivalent air flow. Then use the capacity chart above for determining valve size.
2. To find the gas flow equivalent to the air flow given in the above chart, divide the chart flow by the appropriate factor above.

Capacity data based on a maximum back pressure of 10%.

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## SELECTION GUIDE

Example:	C776	B	D	CD	K	01	-	K	M	0015
<b>Model</b>										
<b>C776</b> C776 valve										
<b>Connection/body and nozzle material</b>										
<b>B</b> Male x female NPTF bronze										
<b>Orifice area</b>										
<b>D</b> [0.169 in <sup>2</sup> ]										
<b>E</b> [0.340 in <sup>2</sup> ]										
<b>F</b> [0.486 in <sup>2</sup> ]										
<b>G</b> [0.645 in <sup>2</sup> ]										
<b>H</b> [1.024 in <sup>2</sup> ]										
<b>J</b> [1.667 in <sup>2</sup> ]										
<b>Valve (inlet/outlet) size</b>										
<b>CD</b> ½ x ¾										
<b>CE</b> ½ x 1										
<b>DE</b> ¾ x 1										
<b>AP</b> 1 x 1¼										
<b>DF</b> ¾ x 1¼										
<b>EF</b> 1 x 1¼										
<b>FG</b> 1¼ x 1½										
<b>GH</b> 1½ x 2										
<b>HJ</b> 2 x 2½										
<b>Seat material</b>										
<b>K</b> Kel-F®										
<b>Variation</b>										
<b>01</b> Threaded cap										
<b>Design revision</b>										
<b>(-)</b> Indicates original design										
<b>Service</b>										
<b>K</b> Air/gas ASME Section VIII										
<b>N</b> Non-code air/gas										
<b>Spring material</b>										
<b>M</b> 302 SST or Inconel® X750										
<b>Set pressure</b>										
15 psig (0015) through 600 <sup>1</sup> psig (0600) [1.0 barg through 41.3 barg]										

## NOTES

- Sizes DF, EF, FG, GH and HJ only available up to 500 psig (34.5 barg)  
Size AP only available up to 400 psig (27.5 barg)