CASH VALVE TYPE C-776

ASME SECTION VIII AIR/GAS AND CRYOGENIC, UV NATIONAL BOARD CERTIFIED SAFETY VALVE

Full lift safety valve suitable for cryogenic service.

UV

Description

The Type C-776 is a full lift safety valve suitable for cryogenic service. The Type C-776 combines top guided construction with an unobstructed seat bore to provide maximum discharge capacity. Superior seating performance achieved with Kel-F® soft seat technology.

Applications

The Type C-776 safety relief valve protects piping, storage tanks, and process equipment utilized in the distribution of industrial gases against damage caused by the expansion of liquefied gases. Ideal for oxygen, nitrogen, argon, carbon dioxide, helium, hydrogen and other industrial gases.

Construction

Bronze body, bronze or stainless steel valve seat, Kel-F® seat disc, gylon gaskets, and stainless steel pressure springs. All parts are commercially cleaned for oxygen service. For details of construction materials, see List of Materials on Page 4.

Features

- Approved and rated by National Board to ASME Code Section VIII
- Ideal for cryogenic service to -320°F
- Kel-F® seat disc ensures positive reseating and leak tight seal in accordance with accepted industry standards
- Full lift maximum discharge capacity
- Unobstructed flow through top guided design
- Pressure tight dome
- Built-in conformance to ASME Code Section VIII for Cryogenic Service.
- Rated Capacity: 110% of set pressure
- Temperature Rating: +150°F to -320°F
- Pressure Range:
  1/2" to 1" size 15-600 psig[1]
  1 1/4" to 2" size 15-500 psig[1]

Note:
1. Inconel® springs provided for pressure ranges listed on Page 3.

Specifications - Capacity (Air Capacity in SCFM by Size - Ambient Temperature)

Set Pressure psig	1/2" x 3/4" 1/2" x 1" 3/4" x 1"	1" x 1 1/4" Special for Air Products Part #21610	3/4" x 1 1/4" 1" x 1 1/4"	1 1/4" x 1 1/2"	1 1/2" x 2"	2" x 2 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_2	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%.

Model Number/Order Guide

Model Number Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Example	C	7	7	6	B	D	C	D	K	0	1	—	K	M	0	0	1	5

Model
C776 - C776 Valve

Connection/Body and Nozzle Material
B - Male x Female NPTF Bronze
S - Male x Female NPTF SST

Orifice Area	Valve (Inlet/Outlet) Size
D - [0.169 in^2]	CD - 1/2 x 3/4
D - [0.169 in^2]	CE - 1/2 x 1
D - [0.169 in^2]	DE - 3/4 x 1
E - [0.340 in^2]	AP - 1 x 1 1/4
F - [0.486 in^2]	DF - 3/4 x 1 1/4
F - [0.486 in^2]	EF - 1 x 1 1/4
G - [0.645 in^2]	FG - 1 1/4 x 1 1/2
H - [1.024 in^2]	GH - 1 1/2 x 2
J - [1.667 in^2]	HJ - 2 x 2 1/2

Seat Material
K - Kel-F®

Variation
01 - Threaded Cap

Design Revision
Dash (-) Indicates Original Design

Service
K - Air/Gas ASME Section VIII
N - Non-code Air/Gas

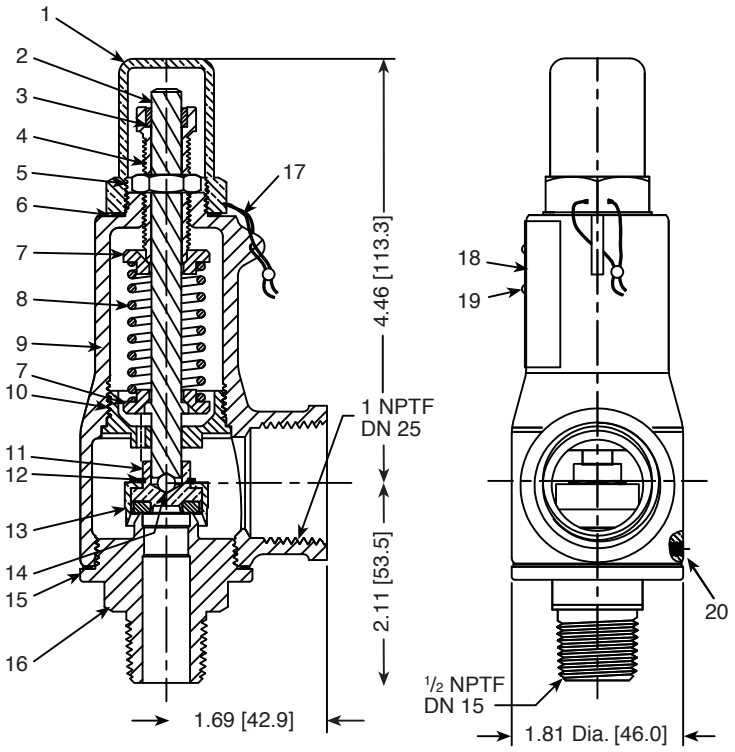
Spring Material
M - 302 SST or Inconel® X750

Set Pressure
15 psig (0015) through 600[2] psig (0600) [1.0 barg through 41.3 barg]

Notes:

1. NPTF, also referred to as "Dryseal" thread, is designed to provide a more leak-free seal without the use of Teflon® tape or other sealant compound. NPTF threads are interchangeable with NPT threads and are standard on all Cash Valve products.
2. 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]
3. Inconel® springs provided for pressure ranges listed below:

Valve Size	Spring Ranges – psi
1/2" and 3/4"	436-600
3/4" x 1 1/4"	251-500
1 1/4" and 1 1/2"	301-500
2"	259-500



List of Materials

Item	Qty.	Description	Material
1	1	Adj. Screw Cap	Brass ASTM B16/ASTM A479 SS
2	1	Pull Rod	Brass ASTM B16/ASTM A479 SS
3	1	Bushing	Virgin PTFE
4	1	Adjusting Screw	Brass ASTM B16/ASTM A479 SS
5	1	Nut	Brass (ASTM B16/ASTM A479 SS-?)
6	1	Gasket	Gylon PTFE
7	2	Pressure Plate	Brass ASTM B16/ASTM A479 SS
8	1	Spring	302 SST A313/Inconel® B637
9	1	Body	Bronze
10	1	Guide Bushing	Brass ASTM B16/ASTM A479 SS
11	1	Seat Assembly	Brass/Kel-F®
12	1	Retaining Ring	SST
13	1	Seat Shell	Brass ASTM B16/ASTM A479 SS
14	1	Ball	Monel®
15	1	Gasket	Gylon PTFE
16	1	Body Seat	Brass ASTM B16/ASTM A479 SS
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 A	Outlet Size B	C Inches	D Inches	E Inches	F Orifice Inches	Orifice Area	Weight - lb.
1/2"	1/2"	3/4"	1.57	2.06	6.81	0.465	0.169	2.2
1/2"	1/2"	1"	1.77	2.06	6.81	0.465	0.169	2.2
3/4"	3/4"	1"	1.77	2.06	6.81	0.465	0.169	2.2
3/4"	3/4"	1 1/4"	2.17	2.42	9.09	0.787	0.486	3.5
1"	1"	1 1/4"	2.17	2.87	9.49	0.787	0.486	3.5
1 1/4"	1 1/4"	1 1/2"	2.36	3.07	10.43	0.906	0.645	4.6
1 1/2"	1 1/2"	2"	2.76	3.31	12.72	1.142	1.024	8.8
2"	2"	2 1/2"	3.19	3.74	14.61	1.457	1.667	15.4

How To Order

Specify Cash Valve Type C-776 and state the following:

1. Valve size
2. Service – type of gas and temperature
3. Inlet and outlet connection
4. Pressure setting
5. Capacity requirements – maximum
6. System working pressure

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

PENTAIR VALVES & CONTROLS

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