

776 Cryogenic Safety Valve



DESIGN

The 776 Safety Relief Valve is designed for cryogenic duty down to -196°C. The valve combines a full lift design and top guided construction with an unobstructed seat bore to provide maximum discharge capacity. Positive sealing is achieved through a freely pivoted disc with Kel F (PCTFE) soft seat technology.

The valve is designed to conform with ISO4126, AD Merkblatt A2, ASME VIII and BS6759 Parts 2 & 3.

Production assembly and tests are carried out in accordance with both BOC and Air Products specifications.

BOC specification: 1819660 and 399856.

Air Products specification: 4WPI-EW80010, and 4WPI-SW70003.

TECHNICAL SPECIFICATION

Approvals

AD Merkblatt A2
ASME VIII
BS 6759 Pt. 2 & 3
PED certified Category IV

Materials

Body - Bronze (-196 to 60°C)
- Stainless steel (-268 to 60°C)
Trim - Kel F PCTFE (-268 to 60°C)

Size Range

Size (Orifice code)	Orifice mm ²	Min (Barg) Pressure	Max (Barg) Pressure
DN15 (1 & 2M)	109	1	41.3
DN20 (2R)	109	1	41.3
DN20 (2 & 2M1)	109	1	41.3
DN20 (3)	314	1	38.6
DN25 (4)	314	1	38.6
DN32 (5)	415	1	34.5
DN40 (6)	660	1	34.5
DN50 (7)	1075	1	31

Coefficient of Discharge

Air (TUV alpha W)	Above 3 Barg	Above 2.5 Barg	Above 2 Barg	Above 1.5 Barg	Above 1 Barg
Orifice codes 1, 2, 4, 5, 6, 7	0.69	0.69	0.69	0.67	0.63
3	0.67	0.65	0.63	0.62	0.58
1R, 2R	0.40	0.40	0.40	0.39	0.36
Air (ASME Kdr)	0.737				

Performance

Over Pressure 10% Blowdown 10%

Maximum Back Pressure

Barg 5.5
Constant 80%
Built-up 10%
Variable 0%

(Total % must not exceed Barg shown)

Connections

Screwed In x Screwed Out

Construction

Top Guided / Full Lift

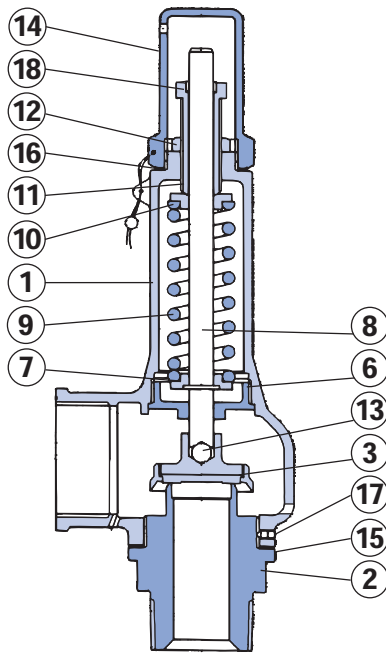
Cap Options

Pressure tight dome fitted as standard

Sizing

Refer to Capacity Charts (page 60-67)

PARTS

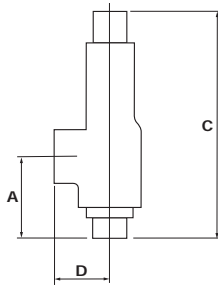


ITEM	PART	MATERIAL
1	Body	Bronze
2	Seat	Bronze
3*	Disc Assembly	St.St. / Kel F PCTFE
6	Guide	Bronze
7	Lower Spring Plate	Brass
8	Spindle	Brass
9*	Spring	St.St
10	Upper Spring Plate	Brass
11	Adjusting Screw	Brass
12	Locknut	Brass
13*	Ball	St.St
14	Cap	Brass
15*	Body Gasket	Gylon PTFE
16*	Cap Gasket	Gylon PTFE
17	Grubscrew	St.St
18	Bush	PTFE

Note:

* Recommended spares; available from Safety Systems UK Ltd.
Refer to factory for Stainless Steel version.
Recommended inspection every 12 months.

DIMENSIONS



Valve Type	Valve Size	Inlet *BSP	Outlet *BSP	A	'C' Dome	D	Weight (kg)
Male x Female	DN15 /1	1/2"	3/4"	52	173	40	1.0
	DN15 /1R	1/2"	3/4"	52	173	40	1.0
	DN15 /2M	1/2"	1"	52	173	45	1.0
	DN20 /2R	3/4"	1"	70	191	45	1.0
	DN20 /2	3/4"	1"	70	191	45	1.0
	DN20 /3	3/4"	1 1/4"	63	231	55	1.6
	DN25 /2M1	1"	1"	70	191	45	1.0
	DN25 /4	1"	1 1/4"	73	241	55	1.6
	DN32 /5	1 1/4"	1 1/2"	78	265	60	2.1
	DN40 /6	1 1/2"	2"	84	323	70	4.0
	DN50 /7	2"	2 1/2"	95	371	81	7.0

* Other threaded options are also available.
All dimensions in mm.

FIGURE NUMBERING

Fig.	Size	Trim	Connections
776/1	DN15 x 20		
776/1R	DN15 x 20		
776/2M	DN15 x 25		
776/2R	DN20 x 25		
776/2	DN20 x 25	Soft Seat	*Screwed
776/3	DN20 x 32	Kel F	BSP
776/2M1	DN25 x 25		
776/4	DN25 x 32	(PCTFE)	Male x Female
776/5	DN32 x 40		
776/6	DN40 x 50		
776/7	DN50 x 65		