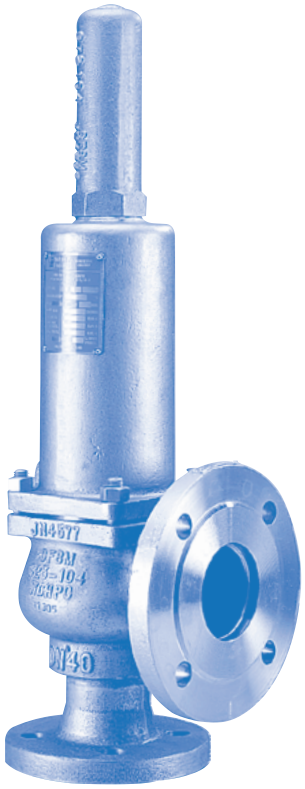
746 Safety Relief Valve



DESIGN

The 746 Safety Relief Valve incorporates a freely pivoting disc, which ensures correct alignment with the nozzle. The combination of top guiding, unobstructed seat bore and full lift capability ensures the highest possible discharge rate thus maximum plant protection.

Due to the large flows available the inlet pipework must be sized to give a maximum inlet pressure drop of 3%

The 746 safety relief valve is available in both conventional and balanced bellows types, and features a special disc style for liquid application, which enhances valve performance.

The 'conventional' arrangement is suitable for applications where the built up pressure will not exceed 5%. The conventional valve can also be used in systems where the superimposed backpressure is at a constant level (up to 80%).

The 'balanced bellows' arrangement is for applications where several safety relief valves discharge into a common discharge manifold, or in any circumstances where a variable back pressure can occur, up to a maximum of 40%.

TECHNICAL SPECIFICATION

Approvals

BS6759 Pt 1, 2, & 3
ASME VIII
TUV-AD Merkblatt A2
PED certified Category IV

Materials

Body - Carbon St. gr WCB (-29 to 427°C)
- Stainless St. gr CF8M (-46 to 427°C)
Trim - Stainless Steel (-46 to 427°C)
- Viton (-29 to 200°C)
- PTFE (-46 to 220°C)
- EPDM - Hot Water (-29 to 150°C)

Size Range

Size	Orifice mm^2	Min (Barg) Pressure*	Max (Barg) Pressure
DN25 (1")	415	0.35	40
DN32 (1¼")	660	0.35	40
DN40 (1½")	1075	0.35	40
DN50 (2")	1662	0.35	40
DN65 (2½")	2827	0.35	35
DN80 (3")	4301	0.35	32 #
DN100 (4")	6648	0.35	25 #

* Minimum pressure for bellows valves is greater than stated
# See note regarding requirement for High Pressure valve.

Performance (BS6759)

	Kdr	Over pressure	Blow down
Steam	0.7	5%	15%*
Hot water‡	0.7	5%	15%*
Air / Gas	0.7	10%	10%*
Liquid	0.46	10%	20%†

*or 0.3 Barg min †or 0.6 Barg min ‡above 100°C

Performance (ASME)

	Kdr	Over pressure	Blow down
Steam	0.738	10%	Fixed
Air / Gas	0.738	10%	Fixed
Liquids	0.482	10%	Fixed

Maximum Back Pressure

Barg	16
Constant	80%
Built-up	5%
Variable	40% (when bellows fitted)

(Total % must not exceed Barg shown)

Connections

Flanged In x Flanged Out

Construction

Top Guided / Full Lift

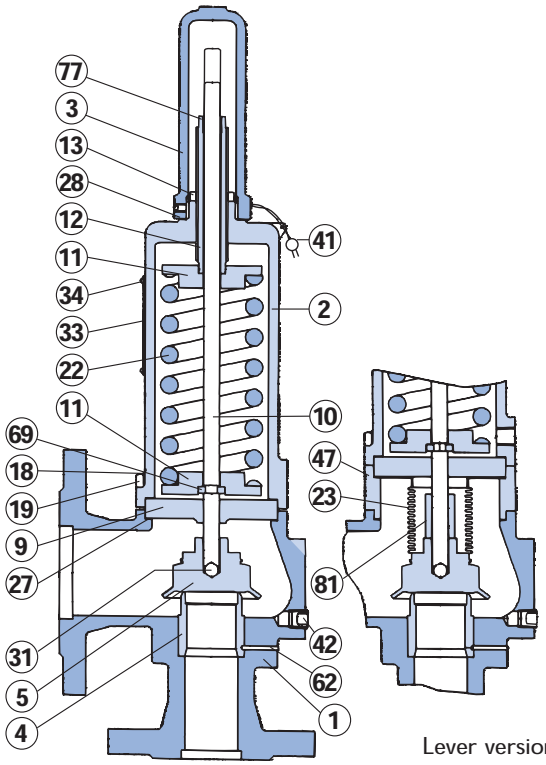
Cap Options

Pressure tight dome
Packed lever
Open lever

Sizing

Refer to Capacity Charts (page 60-67)

PARTS



Lever versions are available.

ITEM	PART	MATERIALS Carbon Steel	St.St
1	Body	Carbon St	St.St
2	Bonnet	Carbon St.	St.St
3	Cap	Carbon St.	St.St
4	Seat	St.St	St.St
5*	Disc#	St.St	St.St
9	Guide Plate	St.St	St.St
10 (H)	Spindle	St.St	St.St
11	Spring Plate	St.St	St.St
12	Adjusting Screw	St.St	St.St
13	Locknut	St.St	St.St
18 (H)	Body Stud	Carbon St	St.St
19	Body Nut	Carbon St	St.St
22 (H)	Spring**	C.V	St.St
23 (B)*	Bellows Unit	St.St	St.St
27*	Body/Bonnet Gasket	Garlock	Garlock
28*	Cap Gasket	Garlock	Garlock
31*	Ball	St.St	St.St
33	Nameplate	St.St	St.St
34	Nameplate Pin	Carbon St	St.St
41	Warranty Seal	Lead/wire	Lead/wire
42	Drain Plug	Carbon St	St.St
47(BH)	Spacing Piece	St.St	St.St
62	Seat Pin	St.St	St.St
69	Split Collar	St.St	St.St
77	Adjusting Screw Bush	PTFE	PTFE
81(B)	Lift Stop	St.St	St.St

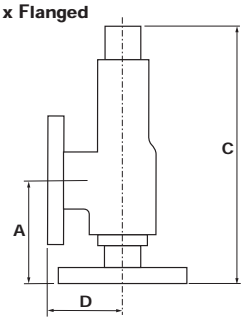
Note:
B - Denotes used on Bellows type valves.
H - High Pressure type valves; spacer, larger studs, spring and spindle.

Resilient trims are available.
* Recommended spares; available from Safety Systems UK Ltd.
** Other spring material options are available dependent on duty.

Recommended inspection every 12 months.

DIMENSIONS

Flanged x Flanged



Valve Type	Valve Size	Inlet	Outlet	A	'C' Dome	'C' Lever	'C' Bellows	D	Weight (kg)
Flanged	DN25	1"	1½"	105	410	410	445	100	8.5
	DN32	1¼"	2"	115	455	455	490	110	14.0
	DN40	1½"	2½"	140	570	570	605	115	20.0
	DN50	2"	3"	150	615	615	665	120	30.0
	DN65	2½"	4"	170	725	725	785	140	42.5
	DN80	3"	5"	195	825/ 925H	825/ 925H	865/ 965H	160	64.5
	DN100	4"	6"	220	925/ 1030 H	925/ 1030 H	955/ 1060	180	86.0

Flange sizes listed are for:
Carbon Steel Flanges PN 40x16
Others available on request.

All dimensions in mm

FIGURE NUMBERING

746 / [ ] [ ] [ ] [ ] [ ]

TYPE
1. Conventional
2. Bellows
3. Liquid Conventional
4. Liquid Bellows

CONNECTIONS
1. PN 16 RF x PN 16 RF
2. PN 40 RF x PN 16 RF
5. ANSI 150 RF x 150 RF
6. ANSI 300 RF x 150 RF

FEATURES
D. Domed Cap
F. Ferrule
G. Gag
M. Open Lever
N. NACE Materials
P. Packed Lever
R. Resilient Seat
H. High Pressure (H)
X. Special Details

SIZE
1. 25 x 40mm
2. 32 x 50mm
3. 40 x 65mm
4. 50 x 80mm
5. 65 x 100mm
6. 80 x 125mm
7. 100 x 150mm

BODY MATERIAL
2. Carbon Steel
3. Stainless Steel

Notes:
A. Any special requirements will be indicated by the letter X which will be agreed with the sales office. For example, paint specification or spring material.
B. Any combination of features can be called up eg. DG, PR, DFRN etc.
C. (H) for '746' 80 and 100mm valves only.
D. DN80 Size - HP valve required for set pressures above 19.0 Barg.
DN100 Size - HP valve required for set pressures above 12.5 Barg.