



## KUNKLE BAILEY 766 SAFETY RELIEF VALVE

The 766 safety valve is a double spring high lift valve with high discharge capacity



### FEATURES

- Top guided piston design incorporates an adjustable blowdown ring.
- Meets all the requirements of BS6759 Part 1.
- Freely pivoting disc and precision lapped stainless steel trim give positive re-seating for steam duty.
- Fitted with a test lever for inline testing as standard.

### GENERAL APPLICATION

The 766 is ideally suited to applications on steam boilers and pipelines where blowdown tolerances are critical.

### TECHNICAL DATA

Material: Carbon steel  
Sizes: 1½" to 3" (DN 40 to 80)  
Connections: Flanged  
Pressure range: 5 to 348 psig (0.35 to 24 barg)  
Temperature range: -20°F to 446°F (-29°C to 230°C)

# KUNKLE BAILEY 766 SAFETY RELIEF VALVE

## SPECIFICATIONS/DIMENSIONS

### SPECIFICATIONS

#### Materials

Body - Carbon st. gr WCB [-29°C to 230°C]  
 Trim - Stainless steel [-29°C to 230°C]

#### SIZE RANGE

Size, in (DN)	Orifice, mm <sup>2</sup>	Min pressure, barg	Max pressure, barg
1½ (40)	2280	0.35	24
2 (50)	4054	0.35	24
2½ (65)	6334	0.35	24
3 (80)	9121	0.35	24

#### PERFORMANCE

	BS6759		
	Kdr	Over pressure	Blow down
Steam	0.4	10%	10%*

\* or 0.3 barg min

#### Maximum back pressure

Barg CS 12/Cl 6  
 Constant 0%  
 Built-up 50%  
 Variable 0%  
 (Total % must not exceed barg shown)

#### Connections

Flanged in x flanged out

#### Cap options

Open lever fitted as standard

#### Approvals

BS6759 Pt 1  
 PED certified category IV

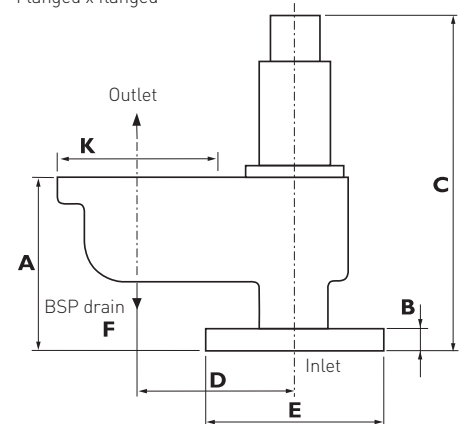
#### DIMENSIONS

Valve size	A		F (BSP)				Weight			
DN	Inlet	Outlet	B CS	C CS	D	E CS	Drain	K CS	(kg)	
40	2½"	3"	197	22	452	156	185	¾"	200	25
50	3"	4"	229	24	498	181	200	½"	220	38
65	4"	5"	279	24	660	219	235	½"	250	58
80	4"	6"	295	24	702	238	235	½"	285	83

#### NOTES

Flange sizes listed are for:  
 Carbon Steel Flanges PN 40 x 16  
 Others available on request.  
 All dimensions in mm.

Flanged x flanged

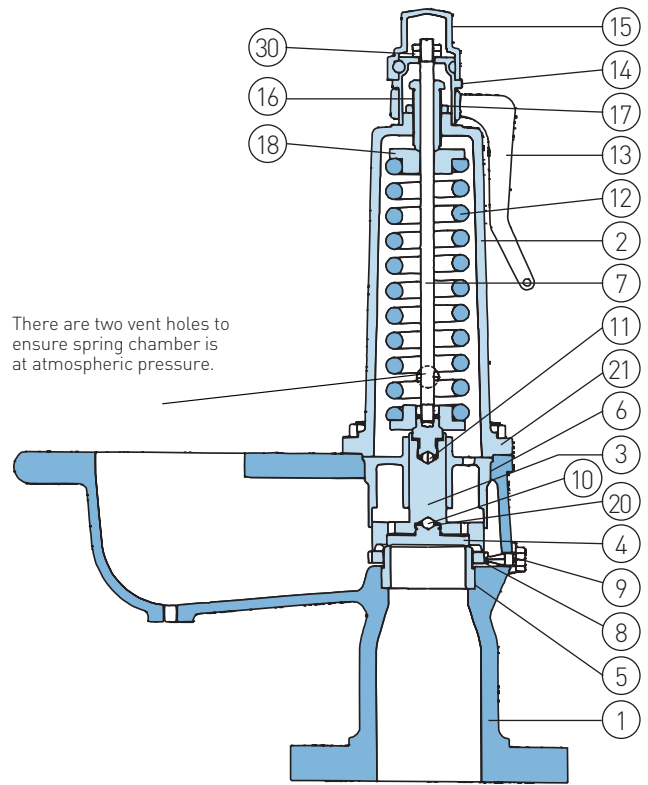


# KUNKLE BAILEY 766 SAFETY RELIEF VALVE

## PARTS AND MATERIALS

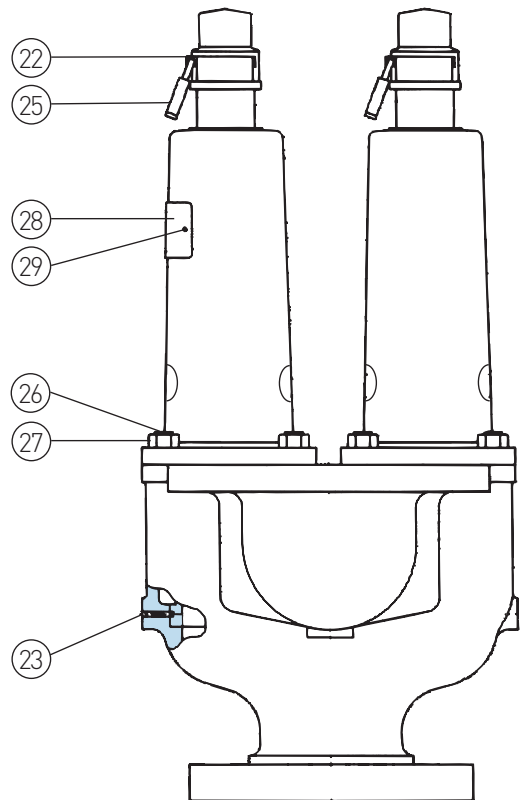
### MATERIALS

Item	Part	Carbon steel
1	Body	Carbon steel
2	Cover	Carbon steel
3	Valve disc holder	Bronze
4*	Valve disc	St. St.
5	Seat ring	St. St.
6	Guide	Bronze
7	Spindle	St. St.
8	Blow down ring	St. St.
9	Setting screw	St. St.
10*	Valve disc ball	St. St.
11*	Spindle ball	St. St.
12*	Spring	Chrome vanadium
13	Easing lever	SG Iron
14	Dome	Bronze
15	Dome cap	Carbon steel
16	Adjusting screw	Brass
17	Locknut	Brass
18	Spring plate	Plated steel
20*	Disc retaining clip	St. St.
21*	Body gasket	Garlock
22	Locking pin	Brass
23	Seat securing pin	St. St.
25	Padlock	Brass
26	Body stud	Steel
27	Body stud nut	Steel
28	Nameplate	St. St.
29	Nameplate screw	Steel
30	Locknut	Steel



### NOTES

\* Recommended spares.  
Recommended inspection every 12 months.



# KUNKLE BAILEY 766 SAFETY RELIEF VALVE

## STEAM CAPACITY/FSH CONVERSION

### SATURATED STEAM CAPACITY (kg/h) - Metal seat valve

Set pressure (barg)	BS6759 Pt1 at 10% overpressure*			
	DN 40	DN 50	DN 65	DN 80
0.35	402	716	1119	1611
1.0	893	1587	2480	3571
2.0	1485	2640	4125	5940
3.0	2065	3673	5738	8262
4.0	2592	4609	7201	10369
5.0	3119	5545	8664	12475
6.0	3645	6482	10127	14582
7.0	4172	7418	11591	16689
8.0	4699	8355	13054	18795
9.0	5226	9291	14517	20902
10.0	5752	10228	15980	23009
12.0	6806	12100	18906	27222
12.5	7069	12569	19638	28276
14.0	7859	13974	21832	31436
16.0	8912	15847	24759	35649
18.0	9965	17720	27685	39863
20.0	11019	19593	30612	44076
22.0	12072	21466	33538	48289
24.0	13126	23338	36464	52503

\* Minimum overpressure = 0.07 barg at set pressure less than 0.7 barg.

### FSH - SUPERHEAT STEAM CORRECTION

Set pressure (barg)	Saturated steam temp. °C	Total steam temperature in degrees centigrade					
		150	200	260	310	370	430
1	120	1.00	0.98	0.93	0.88	0.84	0.80
4	150	1.00	0.99	0.93	0.88	0.84	0.81
7	170	1.00	0.99	0.94	0.89	0.84	0.81
10	361	1.00	0.99	0.94	0.89	0.85	0.81
14	180	1.00	0.99	0.95	0.89	0.85	0.81
18	210	-	1.00	0.95	0.90	0.85	0.81
24	220	-	1.00	0.96	0.90	0.86	0.82
34	240	-	1.00	0.96	0.92	0.86	0.82
41	250	-	1.00	0.97	0.92	0.87	0.82

### Other temperatures

This steam table is based on saturated steam, at the temperatures shown.

For steam systems operating at higher temperatures, the above capacities will need to be derated by using the super heat correction factor.

### Useful conversions

lbs/h = kg/h x 2.2046

# KUNKLE BAILEY 766 SAFETY RELIEF VALVE

## SELECTION GUIDE

Example:	766	1	3	2	2	M
<b>Model</b>						
<b>766</b>						
<b>Type</b>						
<b>1</b>	Conventional					
<b>Valve size<sup>(1)(5)</sup></b>						
<b>3</b>	DN 40 (2½" x 3")					
<b>4</b>	DN 50 (3" x 4")					
<b>5</b>	DN 65 (4" x 5")					
<b>6</b>	DN 80 (4" x 6")					
<b>Connections</b>						
<b>1</b>	PN 16 RF x PN 16 RF					
<b>2</b>	PN 40 RF x PN 16 RF					
<b>5</b>	ANSI 150 RF x 150 RF					
<b>6</b>	ANSI 300 RF x 150 RF					
<b>Body material</b>						
<b>2</b>	Carbon steel					
<b>Features</b>						
<b>G</b>	Gag					
<b>M</b>	Open lever					

## NOTES

1. Flange sizes are larger than the valve size, refer to the dimensions table.
2. 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.
3. Any combination of features can be called up eg. MG.
4. Flange options are dependent on valve body materials.
5. Please see table on page 2 for inlet and outlet connection sizes.

Neither Emerson, Emerson Automation Solutions, nor any of their affiliated entities assumes responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use, and maintenance of any product remains solely with the purchaser and end user.

Emerson Automation Solutions, Emerson and the Emerson logo are trademarks and service marks of Emerson Electric Co. All other marks are the property of their respective owners.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available upon request. We reserve the right to modify or improve the designs or specifications of such products at any time without notice.

[Emerson.com/FinalControl](http://Emerson.com/FinalControl)