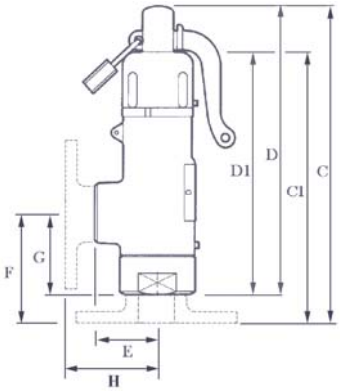

Bailey Birkett

707

Bronze
Safety Relief Valve
Medium Capacity, High Lift
Suitable for Steam, Water, Liquids, Air & Gases*

The 707 range of safety relief valves offer protection against overpressure on boilers, compressors, pressure vessels, process pipelines and pressurised equipment.

They have a top guided construction with an unobstructed seat bore providing full protection with a high lift capacity.

All safety relief valves are set to your pressure requirements and issued with fully traceable test certification prior to despatch.

Approvals, Features & Benefits

- BS6759 Part 1, 2 & 3
- BS EN ISO 4126 Part 1 (SAFED)
- WRAS approved (EPDM trim only)
- Set, tested and certified prior to dispatch
- BSP, NPT or flanged connections
- Quality & reliable product

Pressure & Temperature

Pressure range:-

0.30 up to 24 bar

Body temperature range:-

-20°C to 224°C

See table below for disc temperature ranges

Size	DN15	DN20	DN25	DN32	DN40	DN50
C**	n/a (152)	187 (181)	202 (208)	239 (237)	276 (277)	333 (333)
C1**	n/a (130)	164 (159)	179 (185)	206 (205)	243 (245)	298 (298)
D	133	162	186	215	249	303
D1	111	140	163	183	216	268
E	29	37	40	48	56	71
F**	n/a (59)	70 (65)	71 (78)	90 (89)	94 (95)	110 (109)
G	40	46	56	67	67	79
Orifice (mm^2)	126	364	481	791	1240	1943
Weight Kg (Screwed)**	0.6 (0.5)	1 (1.6)	1.5 (2)	3 (3.5)	4.5 (5)	6 (7)
Weight Kg (Flanged)	n/a	2	3	4.5	6	9

** Figures in brackets for male x female screwed version

Disc Options

Material	Temperature Range	Application*
EPDM	-20°C to 95°C	Water
Aflas	-20°C to 200°C	Air, Gases & Steam
St. St.	-20°C to 224°C	Steam & Process Liquids

Performance

Media	Kdr	Over Pressure	Blowdown
Steam	0.173	10%	15% or 0.3 bar min
Hot Water (>100°C)	0.173	10%	15% or 0.3 bar min
Air/Gases	0.173	10%	15% or 0.3 bar min
Liquid	0.149	10%	20% or 0.6 bar min

Maximum Back Pressure (Total % must not exceed bar shown)

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

Materials	
Body	Bronze
Seat	Bronze
Disc Assembly	EPDM, Aflas or Stainless Steel
Spindle	Stainless Steel
Spring Cap	Stainless Steel
Spring	Chrome Alloy
Adjusting Screw & Locking Ring	Bronze
Dome & Lever	Bronze
Ball	Stainless Steel
Padlock	Brass
Bush	PTFE
Pinning Screw	Steel

Body Configuration Codes

Disc	Top	BSP M x F	BSP F x F	NPT M x F	NPT F x F	Flanged PN25	Flanged ANSI 150	Flanged H
EPDM	Dome	1ED	2ED	3ED	4ED	5ED	6ED	7ED
Aflas	Dome	1VD	2VD	3VD	4VD	5VD	6VD	7VD
St. St.	Dome	1MD	2MD	3MD	4MD	5MD	6MD	7MD
EPDM	Lever	1EL	2EL	3EL	4EL	5EL	6EL	7EL
Aflas	Lever	1VL	2VL	3VL	4VL	5VL	6VL	7VL
St. St.	Lever	1ML	2ML	3ML	4ML	5ML	6ML	7ML

*** Dependent on materials, please check compatibility**

707

Capacity Charts/Sizing

AIR CAPACITY (*l*/s) @ 0.3 bar or 10% overpressure* and 15°C
BS EN ISO 4126 Part 1 (BS6759 Part 1, 2 & 3)

Set Pressure (bar)	DN15	DN20	DN25	DN32	DN40	DN50
0.35	3.93	11.4	15.0	24.7	38.7	60.6
1.0	8.28	23.9	31.6	52.0	81.5	128
2.0	13.6	39.1	51.7	85.0	133	209
3.0	18.3	52.8	69.8	115	180	282
4.0	22.9	66.3	87.6	144	226	354
5.0	27.6	79.7	105	173	272	426
6.0	32.3	93.2	123	203	317	497
7.0	36.9	107	141	232	363	569
8.0	41.6	120	159	261	409	641
9.0	46.2	134	177	290	455	713
10.0	50.9	147	194	320	501	785
12.0	60.2	174	230	378	593	929
12.5	66.6	181	239	393	616	965
14.0	69.5	201	265	437	684	1072
16.0	78.9	228	301	495	776	1216
18.0	88.2	255	337	554	868	1360
20.0	97.5	282	372	612	960	1504
22.0	107	309	408	671	1051	1647
24.0	116	336	443	729	1143	1791

* Minimum overpressure = 0.7 bar at set pressure less the 1.0 bar

Other Gases
If you wish to use the valve on other compatible gases, the sizing details above can be used. The valve capacity will however change depending on the specific gravity of the flowing gas. Multiply the valve air capacity by 1/ SG to give the gas capacity.
SG = specific gravity (relative to air = 1)

Useful Conversions
Nm^3/h = 1/sec x 3.60
SCFM = 1/sec x 2.12

WATER CAPACITY (*l*/min) @ 10% overpressure* and 20°C
BS6759 Part 3

Set Pressure (bar)	DN15	DN20	DN25	DN32	DN40	DN50
0.35	10.3	29.8	39.4	64.8	102	159
1.0	16.7	48.3	63.8	105	164	258
2.0	23.6	68.3	90.2	148	233	364
3.0	28.9	83.6	110	182	285	446
4.0	33.4	96.5	128	210	329	515
5.0	37.4	108	143	235	368	576
6.0	40.9	118	156	257	403	631
7.0	44.2	128	169	278	435	682
8.0	47.3	137	180	297	465	729
9.0	50.1	145	191	315	493	773
10.0	52.8	153	202	332	520	815
12.0	57.9	167	221	363	570	893
12.5	59.1	171	226	371	581	911
14.0	62.5	181	239	392	615	964
16.0	66.8	193	255	420	658	1031
18.0	70.9	205	271	445	698	1093
20.0	74.7	216	285	469	735	1152
22.0	78.4	226	299	492	771	1208
24.0	81.9	236	312	514	806	1262

* Minimum overpressure = 0.7 bar at set pressure less the 0.7 bar

Other Liquids
If you wish to use the valve on other compatible liquids, the sizing details above can be used. The valve capacity will however change depending on the specific gravity of the flowing liquid. Multiply the valve water capacity by 1/ √SG to give the liquid capacity.
SG = specific gravity (relative to water = 1)

Useful Conversions
lgpm = 1/min x 0.22
m^3/min= 1/min x 0.001

SATURATED STEAM CAPACITY (kg/h)
BS EN ISO 4126 Part 1 (BS6759 Part 1, 2 & 3) @ 10% Overpressure

Set Pressure (bar)	DN15	DN20	DN25	DN32	DN40	DN50
0.35	9.68	28.0	37.0	60.8	95.3	149
1.0	22.6	65.2	86.2	142	222	348
2.0	35.9	104	137	225	353	553
3.0	47.8	138	182	300	470	737
4.0	59.3	171	226	372	583	914
5.0	76.6	221	292	481	753	1181
6.0	89.0	257	340	559	876	1372
7.0	99.9	289	381	627	983	1540
8.0	112	324	428	705	1104	1731
9.0	123	355	469	771	1208	1893
10.0	135	390	515	848	1329	2082
12.0	157	454	600	987	1548	2425
12.5	167	482	637	1048	1642	2573
14.0	182	524	693	1140	1787	2799
16.0	201	606	801	1318	2066	3237
18.0	243	702	928	1527	2393	3750
20.0	256	739	977	1606	2518	3946
22.0	284	822	1086	1786	2799	4386
24.0	308	889	1174	1931	3027	4743

* Minimum overpressure = 0.7 bar at set pressure less the 1.0 bar

Other Temperatures
For steam systems operating at higher temperatures, the above capacities will need to be de-rated by using the super heat correction factor table below.

Useful Conversions
lbs/h = kg/h x 2.2046

SUPERHEAT STEAM CORRECTION TABLE

Set Pressure	Saturated Steam	Total Steam Temperature in °C					
(bar)	Temperature °C	150	200	260	310	370	430
1.0	120	1.00	0.98	0.93	0.88	0.84	0.80
4.0	150	1.00	0.99	0.93	0.88	0.84	0.81
7.0	170	1.00	0.99	0.94	0.89	0.84	0.81
10.0	184	1.00	0.99	0.94	0.89	0.85	0.81
14.0	198	1.00	0.99	0.95	0.89	0.85	0.81
18.0	210	-	1.00	0.95	0.90	0.85	0.81
24.0	220	-	1.00	0.96	0.90	0.86	0.82

HOT WATER CAPACITY (*kW*) @ 10% overpressure*
Pressurised (un-vented) Systems
BS6759 Part 1

Set Pressure (bar)	DN15	DN20	DN25	DN32	DN40	DN50
0.35	6.88	19.9	26.3	43.2	67.7	106
1.0	14.0	40.5	53.5	88.0	138	216
2.0	22.9	66.3	87.5	144	226	354
3.0	30.9	89.4	118	194	304	477
4.0	38.8	112	148	244	382	599
5.0	46.7	135	178	293	460	720
6.0	54.6	158	208	343	537	842
7.0	62.5	181	239	392	615	964
8.0	70.4	203	269	442	693	1085
9.0	78.3	226	299	491	770	1207
10.0	86.2	249	329	541	848	1329
12.0	102	294	389	640	1003	1572
12.5	106	306	404	665	1042	1633
14.0	118	340	449	739	1158	1815
16.0	133	386	510	838	1314	2059
18.0	149	431	570	937	1469	2302
20.0	165	477	630	1036	1624	2545
22.0	181	522	690	1135	1780	2788
24.0	197	568	751	1234	1935	3032

* Minimum overpressure = 0.7 bar at set pressure less the 0.7 bar

Note
Pressurised (un-vented) hot water systems have the entire discharge capacity handled solely by the valve.

Open vented systems take into account the discharge capacities of the vent. Hence the equivalent discharge of the valve/system is considered to be double the above chart capacities.