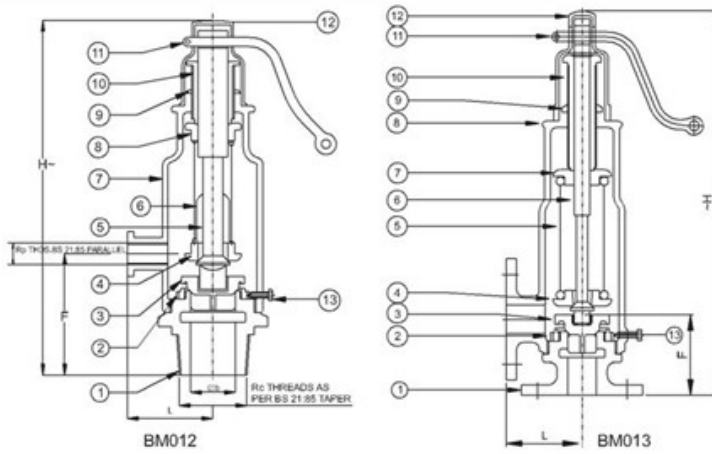




## BRONZE POP TYPE SAFETY VALVES



### STANDARD MATERIAL COMBINATION

| P.NO. | QTY. | DESCRIPTION             | MATERIALS    | SPECIFICATIONS               |
|-------|------|-------------------------|--------------|------------------------------|
| 1     | 1    | BODY                    | BRONZE       | IBR Clause 282 (a) (iv) Gr.B |
| 2     | 1    | ADJUSTING RING          | BRONZE       | IBR Clause 282 (a) (iv) Gr.B |
| 3     | 1    | VALVE DISC              | BRONZE       | IBR Clause 282 (a) (iv) Gr.B |
| 4     | 1    | LOWER SPRING DISC       | BRONZE       | IBR Clause 282 (a) (iv) Gr.B |
| 5     | 1    | SPRING                  | CARBON STEEL | IBR Clause 282 (a) (iv) Gr.B |
| 6     | 1    | STEM                    | H.T. BRASS   | IBR Clause 307 to 314        |
| 7     | 1    | UPPER SPRING DISC       | BRONZE       | IBR Clause 282 (a) (iv) Gr.B |
| 8     | 1    | CHAMBER                 | BRONZE       | IBR Clause 282 (a) (iv) Gr.B |
| 9     | 1    | CHECK NUT               | BRONZE       | IBR Clause 282 (a) (iv) Gr.B |
| 10    | 1    | ADJUSTING SCREW         | BRONZE       | IBR Clause 282 (a) (iv) Gr.B |
| 11    | 1    | EASING LEVER            | CARBON STEEL | -                            |
| 12    | 1    | STEM HOUSING CAP        | ALUMINIUM    | -                            |
| 13    | 1    | ADJUSTING RING FASTENER | BRASS        | IS6912 Gr. FHTB1             |

### DIMENSIONAL DATA

| NPS                      | 1/2     | 3/4     | 1       | 1 1/4   | 1 1/2   | 2       | 2 1/2   | 3       |
|--------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>H</b>                 | 285     | 305     | 305     | 405     | 405     | 455     | 495     | 515     |
| <b>L</b>                 | 45      | 64      | 64      | 66      | 66      | 86      | 108     | 121     |
| <b>F</b>                 | 72      | 84      | 84      | 111     | 111     | 114     | 114     | 145     |
| <b>Rp</b>                | 1/2"    | 3/4"    | 1"      | 1 1/4"  | 1 1/2"  | 2"      | 2 1/2"  | 3"      |
| <b>Rc</b>                | 3/4"    | 1"      | 1 1/4"  | 1 1/2"  | 2"      | 2 1/2"  | 3"      | 4"      |
| <b>Aprox. Wt. ^</b>      | 2.200   | 4.950   | 4.997   | 6.850   | 7.800   | 12.070  | 15.800  | 23.550  |
| <b>Product Code Nos.</b> | BM012 D | BM012 F | BM012 G | BM012 H | BM012 I | BM012 J | BM012 K | BM012 L |
| <b>H1</b>                | 285     | 305     | 305     | 405     | 405     | 455     | 495     | 515     |
| <b>L1</b>                | 59      | 73      | 75      | 83      | 84      | 111     | 113     | 140     |
| <b>F1</b>                | 67      | 73      | 75      | 83      | 84      | 111     | 110     | 140     |
| <b>Aprox. Wt. ^</b>      | 6.190   | 6.01    | 6.965   | 9.675   | 14.535  | 18.675  | 21.755  | --      |
| <b>Product Code Nos.</b> | BM013 D | BM013 F | BM013 G | BM013 H | BM013 I | BM013 J | BM013 K | BM013 L |

NOTE: The above data is subject to change without notice due to our continuing product improvement program. (^WEIGHT GIVEN IN KGS)

(01)



## BRONZE POP TYPE SAFETY VALVE

| PRODUCT CODE NOS.   |          |   |
|---|----------|---|
| PRODUCT   | CODE NO. | END DETAILS   |
| Pop type safety valve, Angle Pattern, Enclosed Discharge, Threaded Ends | BM012    | Inlet: Screwed male BSP Taper Threads to BS 21<br>Outlet: Screwed female BSP parallel Threads to BS21 |
| Pop type safety Valve, Angle Pattern, Enclosed Discharge, Flanged Ends  | BM013    | Flanges as per BS 10 Table F  |

| TEST PRESSURES                        |                          |                                       |
|---------------------------------------|--------------------------|---------------------------------------|
| MAX. WORKING PRESSURE                 | SHELL TEST (HYDROSTATIC) | MAX. SET PRESSURES (STEM)             |
| 250 Psig (17.24 bar) at 435°F (225°C) | 500 psig (34.5 bar)      | 250 psig (17.24 bar) at 435°F (225°C) |

### APPLICATION

Pop type safety valves are meant for use on steam, air, gas or vapour service (i.e. for compressible fluids). The maximum set pressure for which these valves can be supplied is 250 psig (17.24 bar).

Recommended maximum working temperature is 435°F (225°C)

### INSTALLATION

Pop type safety valves should be connected directly to the boiler nozzle super heater outlet connection or other vessels to which they are attached and in no case the area of such connection should be less than that of valve inlet. Any intervening piping is likely to cause chattering. Nor should a stop valve or other fitting be placed between the safety valve and pressure vessel outlet not in the discharge pipe between safety valve and atmosphere. Before mounting valve, all connections or piping must be carefully cleaned. Use very little pipe compound and only on male threads. Wrenches should be used with care so as not to distort the valve. Outlet piping should be as short as possible. If discharging against a constant back pressure, the valve must be set to compensate for the back pressure. Pop type safety valves should be operated regularly to ensure certainty of proper functioning. The disc may be lifted from its seat by means of easing lever. All valves should be installed with their spindles in vertical upright position.

### RELIEVING CAPACITIES

The relieving or discharge capacities of these valves at various set pressure are tabulated in capacity table.

| TABLE I RELIEVING CAPACITIES                                   |   |      |     |        |        |      |        |      |  |
|--|---|------|-----|--------|--------|------|--------|------|--|
| Pop type safety valves for saturated steam at 10% accumulation |   |      |     |        |        |      |        |      |  |
| Size at Inlet  | 1/2"  | 3/4" | 1"  | 1 1/4" | 1 1/2" | 2"   | 2 1/2" | 3"   |  |
| Set Pressure kg/cm <sup>2</sup> g                              | KILOGRAMS OF STEAM PER HOUR AT SET PRESSURE |      |     |        |        |      |        |      |  |
| 1.0  | 20  | 46   | 82  | 128    | 185    | 329  | 514    | 740  |  |
| 2.0  | 29  | 68   | 122 | 191    | 276    | 491  | 767    | 1104 |  |
| 3.0  | 39  | 91   | 162 | 254    | 367    | 653  | 1020   | 1469 |  |
| 4.0  | 49  | 113  | 203 | 317    | 458    | 815  | 1273   | 1833 |  |
| 5.0  | 59  | 136  | 243 | 380    | 459    | 977  | 1526   | 2198 |  |
| 6.0  | 69  | 159  | 283 | 443    | 640    | 1139 | 1780   | 2562 |  |
| 7.0  | 79  | 181  | 324 | 506    | 731    | 1301 | 2033   | 2927 |  |
| 8.0  | 88  | 204  | 364 | 569    | 822    | 1463 | 2286   | 3291 |  |
| 9.0  | 98  | 227  | 405 | 632    | 914    | 1625 | 2539   | 3656 |  |
| 10.0   | 108   | 249  | 445 | 695    | 1005   | 1787 | 2792   | 4020 |  |
| 12.0   | 128   | 295  | 526 | 821    | 1187   | 2111 | 3299   | 4749 |  |
| 15.0   | 157   | 363  | 647 | 1010   | 1460   | 2597 | 4058   | 5843 |  |
| 17.57  | 183   | 421  | 751 | 1172   | 1695   | 3014 | 4709   | 6780 |  |

| TABLE II RELIEVING CAPACITIES   |   |      |      |        |        |      |        |      |  |
|---|---|------|------|--------|--------|------|--------|------|--|
| Pop type safety valves for air at 10% accumulation at inlet temperature at 15°c |   |      |      |        |        |      |        |      |  |
| Size at Inlet   | 1/2"  | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"   | 2 1/2" | 3"   |  |
| Set Pressure kg/cm <sup>2</sup> g   | KILOGRAMS OF STEAM PER HOUR AT SET PRESSURE |      |      |        |        |      |        |      |  |
| 1.0   | 0.6   | 1.0  | 1.7  | 2.0    | 3.0    | 4.5  | 6.5    | 10.0 |  |
| 2.0   | 1.0   | 1.2  | 2.5  | 3.0    | 4.5    | 7.0  | 10.0   | 15.0 |  |
| 3.0   | 1.3   | 2.0  | 3.2  | 4.0    | 5.8    | 9.0  | 13.0   | 19.0 |  |
| 4.0   | 1.6   | 2.5  | 4.0  | 5.0    | 7.4    | 11.5 | 16.5   | 26.0 |  |
| 5.0   | 2.0   | 3.0  | 5.0  | 6.2    | 9.0    | 14.0 | 20.0   | 30.0 |  |
| 6.0   | 2.3   | 3.5  | 5.9  | 7.4    | 10.5   | 16.5 | 23.5   | 35.0 |  |
| 7.0   | 2.6   | 4.0  | 6.8  | 8.5    | 12.2   | 19.0 | 27.0   | 41.0 |  |
| 8.0   | 3.0   | 4.5  | 7.5  | 9.3    | 13.4   | 20.0 | 30.0   | 44.5 |  |
| 9.0   | 3.2   | 4.9  | 8.1  | 10.0   | 14.6   | 22.6 | 32.3   | 48.5 |  |
| 10.0  | 3.7   | 5.5  | 9.3  | 11.6   | 16.7   | 26.0 | 37.0   | 55.5 |  |
| 12.0  | 4.4   | 6.6  | 11.0 | 13.9   | 20.0   | 31.0 | 44.0   | 66.5 |  |
| 15.0  | 5.4   | 8.0  | 13.5 | 16.9   | 24.4   | 37.9 | 54.2   | 81.3 |  |
| 17.57   | 6.3   | 9.5  | 15.9 | 19.9   | 28.7   | 44.7 | 63.9   | 95.9 |  |

### INFORMATION REQUIRED WHILE ENQUIRING/ORDERING

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Size</li> <li>2. Item code no</li> <li>3. Fluid to be handled</li> <li>4. Set pressure</li> <li>5. Working temperature</li> <li>6. Maximum allowable over pressure</li> <li>7. Discharge capacity</li> </ol> | <ol style="list-style-type: none"> <li>8. End connections; if required other than standard.</li> <li>9. Whether flanges of flanged valves are required drilled or undrilled</li> <li>10. Scope of inspection if it is to be carried out at our works before despatch</li> </ol> |
|--|---|

NOTE: ITEMS CAN BE SUPPLIED WITH CERTIFICATE OF MANUFACTURE AND TEST OF FORM III C AS PER REGULATIONS 269 OF IBR

| MULTIPLYING FACTORS |            |                              |            |
|---------------------|------------|------------------------------|------------|
| Inlet temperature°C | Multiplier | Name of Gas                  | Multiplier |
| 25                  | 0.98       | Natural Gas Sp. Gravity 0.60 | 1.142      |
| 40                  | 0.96       | Nitrogen                     | 1.016      |
| 60                  | 0.93       | Oxygen                       | 0.944      |
| 80                  | 0.90       | Carbon Dioxide               | 0.790      |
| 100                 | 0.87       | Butane                       | 0.623      |
| 120                 | 0.85       | Ethane                       | 0.870      |
| 160                 | 0.81       | Methane                      | 1.190      |
| 180                 | 0.80       | Propane                      | 0.176      |
| 220                 | 0.76       | Ethylene                     | 0.900      |

NOTE: The above data is subject to change without notice due to our continuing product improvement program.



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