



**480/485/490**  
**Bronze / Stainless Steel**  
**By-Pass / Relief Valve**  
**For Liquids**  
**BSP Threaded**  
**Bailey Birkett**



The 480/485/490 are suitable for use with positive displacement pumps either of the rotary or reciprocating type and have been used successfully with water and most corrosive liquids. They can also be used as a relief or combined relief and bypass valve and can be modified to operate as an integral pump by-pass relief valve.

The spring is housed in a cartridge type assembly which can be withdrawn from the body without disturbing the pressure setting, thus allowing the seating surfaces to be cleaned without the need to reset the valve.

**Approvals, Features & Benefits**

- BS6759 Part 3
- Three body and seat material options
- 485 option has renewable stainless steel seat
- Dome top to prevent leakage
- Cartridge type assembly
- 'O' ring to protect spring as standard
- Suitable for by-pass & relief duties
- Set, tested and certified prior to despatch

**Pressure & Temperature**

Pressure range:-

0.35 up to 24 bar\*  
\*DN80 Max pressure 10 bar

Body temperature range:-

Bronze:  
-20°C to 120°C (224°C)

Stainless Steel:  
-20°C to 200°C (260°C)

Figures in brackets are without 'O' ring

DN	20	25	40	50	80
BSP	¾"	1"	1½"	2"	3"
B	49	64	73	91	111
C	176	198	237	270	390
Orifice (mm <sup>2</sup> )	285	507	1140	2027	4560
Weight Kg	1	2	3	5	13

Materials	480	485	490
Body, Dome, Valve Disc & Guide	Bronze	Bronze	Stainless Steel
Valve Disc	Bronze	Bronze	Stainless Steel
'O' Ring	Nitrile	Nitrile	FKM
Spring	Steel	Steel	Stainless Steel
Seat	Bronze	Stainless Steel (Renewable)	Stainless Steel

Performance	Media	Kdr	Over Pressure	Blowdown
	Liquid	0.11	10%	20% or 0.6 bar min

Water Capacity (l/min) @ 10% overpressure* and 20°C BS6759 Part 3					
Set Pressure (bar)	DN20	DN25	DN40	DN50	DN80
1.0	27.90	49.63	112	198	446
2.0	34.17	60.78	137	243	547
3.0	39.46	70.19	158	281	631
4.0	55.80	99.27	223	397	893
5.0	62.39	111	250	444	998
6.0	48.34	122	273	486	1093
7.0	73.82	131	295	525	1181
8.0	78.91	140	316	561	1263
9.0	83.70	149	334	595	1339
10.0	88.23	157	353	628	1412
12.0	96.65	172	387	687	-
12.5	98.64	176	395	702	-
14.0	104	186	418	742	-
16.0	112	199	446	794	-
18.0	118	211	473	842	-
20.0	125	222	499	887	-
22.0	131	233	523	931	-
24.0	137	243	547	972	-

\* 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**

l/gpm = 1/min x 0.22    m<sup>3</sup>/min = 1/min x 0.001