

Engineering Specification PS-128

Torque For PBT Stem Caps

Purpose:

Provide a specification that addresses torque requirements for Polybutylene Terephthalate stem caps when assembled on shutoff valves requiring a refrigerant tight seal*.

Scope:

This specification extends to PBT stem caps (P/N's 44220 & 44444) when used on brass and steel packed and steel o-ring type shutoff valves. This specification covers the application listed in the chart below:

Temperature Range:	-40°F to +225°F
Service Pressure:	700 psig Max.
Burst Pressure:	2500 psig Min.

Torque Recommendations:

Cap P/N	Body Size & Shape	Recommended Seating Torque
44220	3/4 Hex or Sq.	8 to 12 Ft. - Lbs.
44220	7/8 Hex or Sq.	8 to 12 Ft. - Lbs.
44444	1 1/8 Sq.	8 to 12 Ft. - Lbs.

Notes:


1. The PBT stem cap does not require lubrication of any kind for seating or assembly.
2. *Leak test per Electronic Leak Test, specification PS-105.

Approved Materials:

GE Valox 420-7001
 Celanex 4300
 DuPont Crastin SK605 BK851
 Or Automatic Machine Products approved equivalent

When applied to standard valves, the cap:

1. should not exhibit thread failure at torque less than 17 Ft-Lbs and should not exhibit breakage at less than 22 foot-pounds.
2. should remain leak proof before and after eight hours at 300°F with no internal pressure.
3. should remain leak proof during five alternate and continuous hot/cold cycles without a re-torque. The heat cycle is to be two hours at 225°F with 300 psig internal pressure; the cold cycle is to be two hours at -40°F after being pre-charged with liquid refrigerant at room temperature.

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