

ENGY RECOMMENDED CLOSING TORQUES

General

The recommended torques are only valid for the Technocraft Closure System. The conversion ftlbs-Kgm-Nm has been rounded off; the following conversion factors were used.

1 Kgm= 10 Nm

1 ftlbs= 0.13825 Kgm

After tightening of plugs, torques will reduce over a period. Particularly plastic components are subject to stress relaxation resulting in reduction of torque. In general no re-tightening of plugs will be required when the recommended torques have been applied.

For quality Assurance purposes it is recommended to calibrate pneumatic torque wrenches.

Rubber includes Buna, EPDM, Viton, etc and P.E. stands for standard Polyethylene and P.I. stands for Poly Irradiated.

Technical support of ENGY quality engineers is just a phone call / email away. Please feel free to communicate.

Over torquing is as bad as under torquing. Use recommended value range.

RECOMMENDED CLOSING TORQUES FOR DRUM MAKERS

Plug Type	Washer Type	3/4" Closure			2" Closure		
		ftlbs	Kgm	Nm	ftlbs	Kgm	Nm
Steel Plugs	Rubber	8.0 -15	1.1 - 2.0	11.0 - 20	12.0 - 25	1.7 - 3.4	17 - 34
	P.E.	8.0 -15	1.1 - 2.0	11.0 - 20	12.0 - 25	1.7 - 3.4	17 - 34
Plastic Plugs	Rubber	8.0 -12	1.1 - 1.7	11.0 - 17	18.0 - 25	2.5 - 3.4	25 - 34
	P.E.	8.0 -12	1.1 - 1.7	11.0 - 17	11.0 - 20	1.5 - 2.8	15 - 28

RECOMMENDED CLOSING TORQUES FOR DRUM FILLERS

Plug Type	Washer Type	3/4" Closure			2" Closure		
		ftlbs	Kgm	Nm	ftlbs	Kgm	Nm
Steel Plugs	Rubber	8.0 - 15	1.1 - 2.0	11.0 - 20	15.0 -25	2.0 - 3.4	20 - 34
	P.E.	8.0 - 15	1.1 - 2.0	11.0 - 20	15.0 - 25	2.0 - 3.4	20 - 34
Plastic Plugs	Rubber	8.0 - 12	1.1 - 1.7	11.0 - 17	18.0 - 25	2.5 - 3.4	25 - 34
	P.E.	8.0 - 12	1.1 - 1.7	11.0 - 17	11.0 - 20	1.5 - 2.8	15 - 28

CLOSURE INSTRUCTIONS FOR OPEN HEAD DRUMS

1. All removable head, UN 1A2, steel drums, 49 CFR 178.504(a)(2), that are supplied with bolt rings, bolts, gaskets and lids must be closed for shipment using only the components supplied and specified in the design tests for the drum.

1. Place lid with gasket in place, as supplied, on the curl at the top of the drum body.
2. Place bolt ring around the drum head and curl.
3. Using a head compressor, apply force to the top of the drum head assembly to compress head gasket.
4. Drive bolt into lug until the ends of the bolt ring are as follow:
 - a. For steel drum thickness 1.3/1.1/1.1 to 1.1/0.9/1.1: 1/2" or less ring gap. A gap of 3/16"-1/8" or less is required for open head drums used for liquids.
 - b. For steel drum thickness 1.1/08/1.1 or less: 3/8" or less ring gap. A gap of 3/16"-1/8" is required for open head drums used for liquids.
 - c. If prescribed ring gap cannot be achieved, torque ring to 75 +/-5 ft.-lbs. The ends of the ring should not be touching. Maintain a minimum gap of 1/8".
5. If a head compressor is not available, start bolt into lug, alternating tapping of ring with a mallet and drive bolt with wrench, until bolt ring ends meet the above requirements.
6. When ring has been tightened as required, the jam nut must be tightened against the left lug.
7. If using a 0.625" shoulder type bolt a jam nut is not required. These particular bolts claim easier ergonomics for the person closing the drums and less deformation of the ring in closing, hence better fit. Thread the bolt into the ring nut and tighten until the threaded portion is through the nut. The smooth unthreaded portion will not engage the threads and tightening stops at the prescribed gap.