

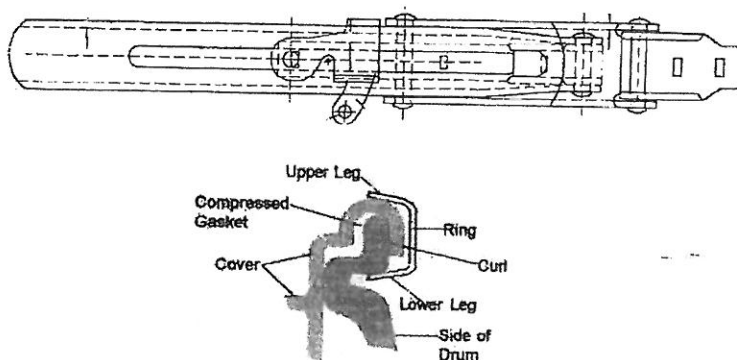
PLASTIC REMOVABLE HEAD DRUMS

	Part Size / Part Number (Plug number with gasket)	Plug Torque
A	Vanguard and Vanguard HLR lid with 2 inch NPS plug	15-20 ft.-lbs.
B	Vanguard and Vanguard HLR lid with ¾ inch NPS plug	6-9 ft.-lbs.

1. All removable head, UN 1H2, Plastic Drums, 49 CFR § 178.509(a)(2), of nominal capacity 15 to 60 U.S. gallons supplied with plastic lids, gaskets and associated clamp bands, or locking rings, or bolt rings, must be **closed for shipment using only the components supplied and specified** in the design qualification tests according to the following installation instructions:

- Place drum lid with gasket and selected clamp band as supplied on the top opening of the drum body.
- Firmly place lid onto top opening by applying downward pressure to lid above drum sidewall.
- While pressing down on lid, engage locking mechanism of clamp band to secure the lid in place. Make sure the locking mechanism is completely latched. Insert locking tab into slots in lever lock handle.

Lever Lock Side View



2. Please note that the Vanguard 57 gallon HLR drum carries a liquid rating Y1.2/100 with a bolt ring or lever lock closure. This is valid when the lid is factory installed with a lid press. This drum should be filled through the 2-inch opening in the lid and bungs closed as in the steps listed above. If the lid is removed the liquid rating is no longer valid unless a new lid is installed with a lid press and a MAUSER bolt ring or lever lock is used for closure.

3. The MAUSER removable head plastic drum may be provided with a bolt ring closing device. This bolt ring is closed as follows:

- Place lid with gasket in place, as supplied, on the curl at the top of the drum body.
- Place bolt ring around the drum head and curl.
- Using a head compressor, apply force to the top of the drum head assembly to compress head gasket.
- Drive bolt into ring until the ends of the bolt ring are at a 3/8-inch or less ring gap.
- If a head compressor is not available, start bolt into threaded eye, alternating tapping of ring with a mallet and drive bolt with a wrench, until bolt ring ends meet the above requirements.
- When ring has been tightened as required, the jam nut, if supplied, must be tightened against the left threaded eye.
- In the case of the Vanguard V57 HLR drum supplied with a bolt ring for liquid service, the bolt may have no jam nut but may use a shoulder type bolt. Follow the previous steps to tighten the bolt until the shoulder meets the threaded eye.

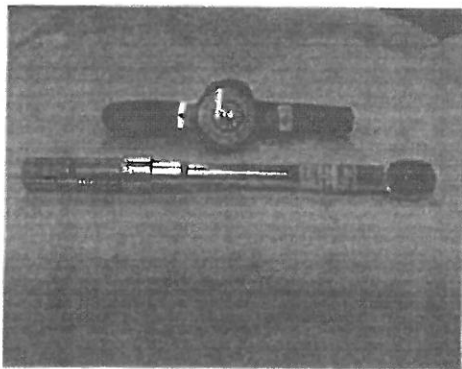
COMPOSITE DRUMS

All non-removable head, UN 6HA1, Composite drums, 49 CFR § 178.522(a)(1), 55 gallon nominal capacity supplied with plug or screw cap closures with gaskets must be **closed for shipment using only the closures and gaskets supplied and specified** in the design qualification test for the drum as indicated below:

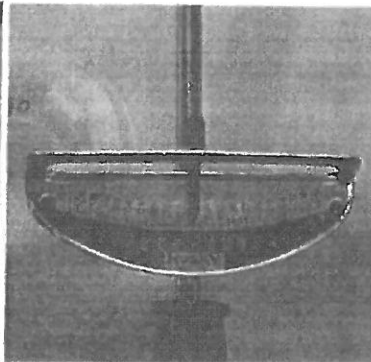
	Part Size / Part Number (Plug number with gasket)	Torque
A	HDPE Liner 6HA1/X1.8/350 and X1.8/300: 2 inch double buttress L10 with L11 EPDM	29-32 ft-lbs
B	HDPE Liner 6HA1/Y1.8/100: 2-inch double buttress: L10-xx with L11 EPDM	20-25 ft.-lbs.
C	Liner 5510 :2-inch double buttress: L10-HD with L11F-HD Polyolefin gasket	25-30 ft.-lbs.
D	Nylon/Polypropylene 2 inch with EPDM Gasket	12-15 ft-lbs.
E	HDPE Liner 6HA1 with 56x4 mm PP metric plugs with BUNA Gaskets	18-22 ft-lbs

TORQUE WRENCHES

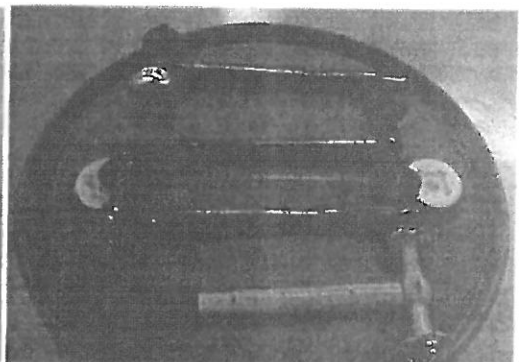
The following are photographs of various torque wrenches MAUSER has found suitable to apply the required closing torque. These are typical units and other brands of adjustable wrenches are acceptable. These should be regularly calibrated.



Dial Indicating and Adjustable Torque Wrench



Husky Brand Indicating Wrench



Rieke Brand Preset Wrenches

<sup>i</sup> Note: MAUSER uses various buttress and NPS plugs under the generic part numbers L10 and L16 respectively. They are supplied with the drum with gasket-installed ready for final closing for shipment. The plug and gasket are specific to the drum as tested. The closures must be properly installed and tightened to the torque shown or specified on the particular closing instructions for the drum supplied. Closures must be tightened to recommended torque using pre-set or variable-range machinist torque wrenches calibrated to the indicated value. Variable range machinist torque wrenches are available and most auto parts stores, catalog stores like Grainger and Mc Master Carr, Sears, Home Depot, Lowes, on-line drum parts suppliers, and many others.

<sup>ii</sup> MAUSER L-ring drums marked UN 1H1/Y1.9/150\*\* must have a torque applied of 25-27 ft-lbs (34-37 N-m)