

TECHNICAL BULLETIN

1202508

TITLE: ASSEMBLY PROCEDURE FOR DRIVE GEAR CLUTCH SCREWS

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Effective immediately, the procedure for assembling our drive gear clutch on midship pumps has been updated. Use the new procedure for any future repairs or new pump shipments. This procedure is not required on older pumps where the pump clutch gear holes are threaded.

Previously, we recommended assembling the pump clutch gear by torquing the screws to a high value. In some cases, the clamp load developed was insufficient to prevent the two gears from oscillating torsionally, which in rare cases led to fastener failure. The new procedure eliminates this condition.

Due to the high stresses developed during tightening, when repairing any midship pump, discard and replace the drive gear clutch screws. Please note the torque values for these screws have changed.

See the following page for the correct assembly procedure.

Table 1: Torque values for 5/16-18 UNC and 1/4-20 UNC screws

Screw Size: 5/16-18UNC, assembled with Loctite 262

<u>Description:</u>	<u>Torque Value:</u>
Grade 9, Zinc Dichromate plating	22 ft-lb

Screw Size: 1/4-20UNC, assembled with Loctite 262

<u>Description:</u>	<u>Torque Value:</u>
Grade 9, Zinc Dichromate plating	10.5 ft-lb

Drive Gear Clutch Assembly Procedure:

The following procedure should be followed once the gear is ready to be assembled into the transmission.

- 1) Clean the mating faces of the drive gear and pump clutch gear using isopropyl alcohol or another solvent that dries without leaving a residue, removing all grease and oil. Do not use a Loctite primer product.
- 2) Apply Loctite 680 to both mating faces, taking care not to spill any on to any bearings or bearing journals. Do not apply anything to the threaded bearing retainer.
- 3) Apply Loctite 262 to the threads of the six hex head cap screws that mount the pump clutch gear to the drive gear.
- 4) Tighten the screws in a crisscross pattern until they are snug.
- 5) Use a torque wrench calibrated to +/- 4% for the tightening procedure.
- 6) Torque the screws in a crisscross pattern to a value of 80% of the recommended final torque. For 5/16-18UNC screws, this equals 17.5 ft-lb. For 1/4-20UNC screws, this equals 8.5 ft-lb.
- 7) Using a crisscross pattern, tighten the screws to their final torque value indicated in table 1 on page 1.
- 8) Drive gear assembly must be allowed to cure for one hour before oil is added and the pump started.

Failure to follow this procedure has led to fastener failure in rare instances, nearly always within the first ten hours of operation. Customers who want to inspect their transmissions for this type of failure can do so by simply removing the sheet metal inspection plate from the side of the gearcase and visually inspecting the screws directly. Pumps that have been in operation for over 20 hours are not expected to be at risk.

OEM customers and repair centers that want to receive updated copies of the repair manuals for the pumps affected may contact our customer service department.

Please direct any questions regarding this bulletin to our engineering office at 800-634-7812 or 715-726-2650.

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