GMC Engines Only

Wash the gears thoroughly and inspect them for wear and scores. If either gear is defective, they must be replaced as a PAIR.

Remove the oil pressure regulator valve cap, spring, and valve. The oil filter bypass valve and spring MUST NOT be removed because they are staked in place.

Wash the parts removed and check each one carefully. Inspect the regulator valve for wear and scores. Check the regulator valve spring to be sure it has not worn on its side or has collapsed. If in doubt about the condition of the spring, install a new one. Clean the screen staked in the cover with a file.

Check the regulator valve in the cover. The clearance for this valve should only be a slip fit. If any side clearance can be felt, the valve or the cover should be replaced.

Inspect the relief valve for nicks, cracks, or wear. The valve should be flat with no burr or scratches.

Mercury Marine and Ford Engines Only

Wash the rotor and the shaft thoroughly and inspect them for wear and scores. If either the rotor or the shaft is defective, they MUST be replaced as a PAIR.

Wash the pump parts carefully. Inspect the relief valve for wear or scores. Check the relief valve spring to be sure it is not worn on its side or has not collapsed. If in doubt about the condition of the spring, install a new one. Check the relief valve in its bore in the housing. The clearance for the valve should only be a slip fit. If any side clearance can be felt, the valve or the housing should be replaced. Clean the pickup tube and screen.
OIL PUMP ASSEMBLING AND INSTALLATION

Assembling and installation of the oil pump is divided into two sets of procedures. The first set covers GMC engines and the second set Mercury Marine and Ford engines. Installation of the pan is the same for both GMC, Mercury Marine and Ford engines.

GMC Engines Only

Apply a generous amount of oil to the pressure regulator valve and spring. Install the lubricated valve and spring into the bore of the oil pump cover and then slide the retaining pin in place.

Install the gears and shaft onto the oil pump body aligning the two marked teeth together. Check the gear end clearance. Place a straightedge over the gears, and then measure the clearance between the straightedge and the gasket surface. The clearance should be 0.0023" (0.06mm) to 0.0058" (0.15mm).

If the gear end clearance is acceptable, remove the gears and pack the gear pocket full of petroleum jelly, DO NOT use chassis lube.

[Diagram showing arrangement of oil pump parts on a Mercury Marine and Ford engine. Identified parts are: Welsh plug (a), relief valve spring (b), relief valve plunger (c), pump housing (d), outer rotor (e), inner rotor (f), cover (g), lockwashers (h), and screws (l).]

[Diagram showing using an alignment tool to properly position the oil pump before tightening the attaching bolts.]

Seriously consequences can result if the pump is not packed with petroleum jelly at time of assembling.

INSTALLATION

Unless the pocket is packed with petroleum jelly, it may not prime itself when the engine is started.

Install the gears and shaft again, pushing the gears into the petroleum jelly. Place a new gasket in position, and then install the cover screws. Tighten the screws alternately and evenly to a torque value of 7 ft lb (10Nm).

If the oil pump pickup screen was removed, apply sealer to the mating surfaces.
Double trim and tilt hose installation connected to the port side of the gimbal housing. Stern drives with this hose arrangement are: Model 120, 140, 160, 180, 210, 2495185 and below; Model 888, 225S, 233, 2763412 and below; Model 888, 225S, 233, 3784375 and below.

Stern drive units without the reverse lock. On these models the reverse lock is incorporated in the trim/tilt system: Model 120, 140, 160, 165, 2495186 thru 3780850 and above; Model 888, 3784375 and above; Model 888, 225S, 233, 3784375 and above.
hanging. The standard gear ratio for all Bravo units is 1.5:1. No gear ratio change is available (at press time) for the Bravo when operating at high altitudes. However, the manufacturer recommends a propeller change for higher elevations. Consult the local dealer for his propeller suggestions.

A table in the Appendix lists the overall gear ratios associated with the various stern drives.

14-4 SHIFT IDENTIFICATION
ALL UNITS EXCEPT BRAVO

The following paragraphs will be helpful in identifying the type of shift mechanism installed through the stern drive serial number.

Hand-operated reverse lock is used on early model stern drive units. This arrangement requires the operator to extend himself over the transom to engage the reverse lock.

Short adjusting slot shift lever used on the following stern drive units: Model 120, 140, 165, 3780850 and above; Model 888, 225S, 233, 3784375 and above.

Bolt arrangement used to secure the shock absorber to the upper gear housing on very early model stern drive units. Models using nuts on both ends as shown: Model 1, 1535211 and below, Model 1, 1535212 thru 1563553. Models using bolt with single nut: Model 1, 1563554 thru 1684188.

Hexagon-type universal joint cover nut used on the following stern drive units: Model 1, 1535211 and below, Model 1, 1535212 thru 1684188.
Wire identification and routing -- Model MCM 898R, 228R, 260R, 230, also 5.0 Litre and 5.7 Litre engines.