

pressure plate and disc following the procedure in Group 16—Clutch.

On a vehicle with automatic transmission, remove the transmission and converter housing following the procedure in Group 17—Automatic Transmission.

2. Remove the flywheel attaching bolts and remove the flywheel and engine rear cover plate.
3. Remove the core plug as detailed under Core Plugs in Part 21-01.

Installation

1. Install a new plug with the tool shown in Fig. 33 using the procedure given in Part 21-01.

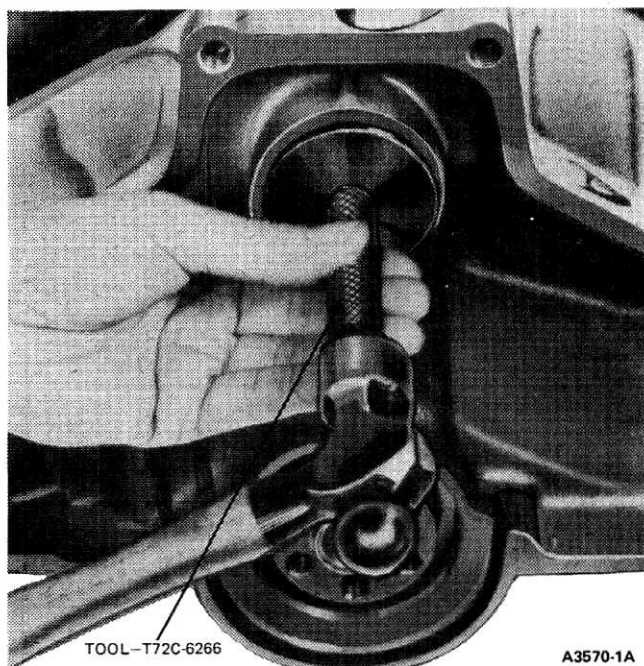


FIG. 33 Installing Camshaft Rear Bearing Core Plug

2. Install the engine rear cover plate, apply oil-resistant sealer to the flywheel bolts and install the flywheel. Torque the attaching bolts to specifications.

On a vehicle with a manual-shift transmission, install the clutch pressure plate, disc, and transmission following the procedure in Group 16—Clutch.

On a vehicle with automatic transmission, install the transmission and converter housing following the procedure in Group 17—Automatic Transmission.

CRANKSHAFT REAR OIL SEAL

Removal

1. Remove the transmission. Remove clutch pressure plate and clutch disc, if so equipped. Follow the procedures given in Group 16.
2. Remove flywheel, flywheel housing and rear plate.
3. Use an awl to punch two holes in the crankshaft rear oil seal. Punch the holes on opposite sides of the crankshaft and just above the bearing cap to cylinder block split line. Install a sheet metal screw

in each hole (Fig. 34). Use two large screwdrivers or small pry bars and pry against both screws at the same time to remove the crankshaft rear oil seal. It may be necessary to place small blocks of wood against the cylinder block to provide a fulcrum point for the pry bars. **Use caution throughout this procedure to avoid scratching or otherwise damaging the crankshaft oil seal surface.**

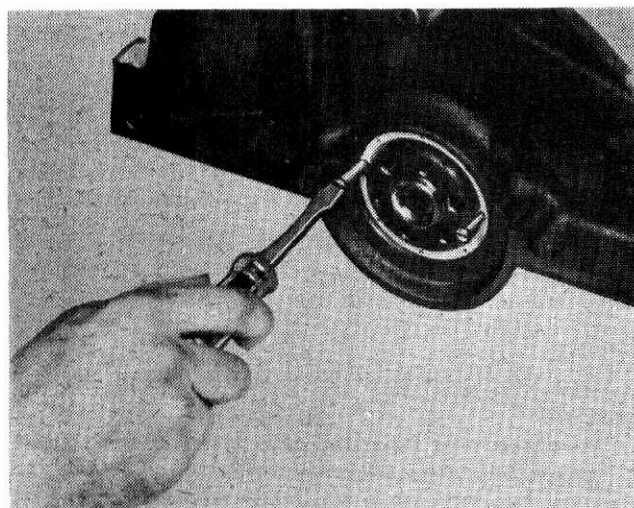


FIG. 34 Removing Crankshaft Rear Oil Seal

4. Clean the oil seal recess in the cylinder block and main bearing cap. **Inspect and clean the oil seal contact surface on the crankshaft, following the procedure in Part 21-01.**

Installation

1. Coat the oil seal to cylinder block surface of the oil seal with oil. Coat the seal contact surface of the oil seal and crankshaft with Lubriplate or equivalent. Start the seal in the recess and install it with the tool as shown in Fig. 35. Drive the seal into position until it is firmly seated.

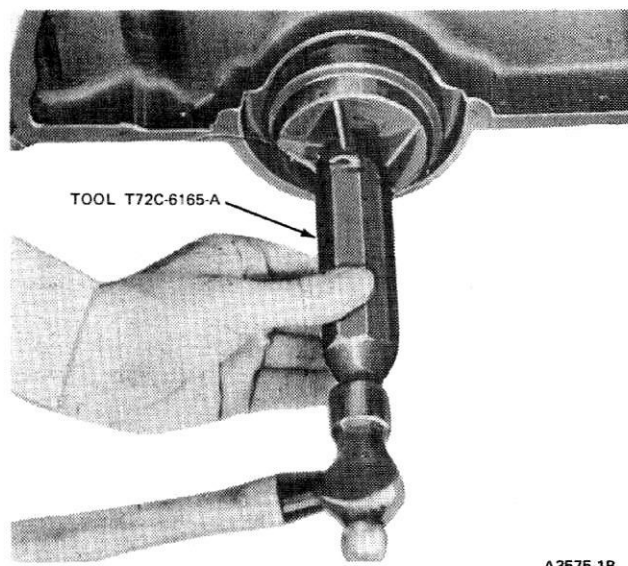


FIG. 35 Installing Crankshaft Rear Oil Seal

2. Install rear plate, flywheel housing, and flywheel. Tighten flywheel bolts to specifications.
3. Install clutch disc and clutch pressure plate, if so equipped. Align clutch disc before tightening pressure plate attaching screws.
4. Install transmission.

MAIN BEARINGS

The main and connecting rod bearing inserts are selective fit. **Do not file or lap bearing caps or use shims to obtain the proper bearing clearance. Selective fit main bearings are available for service in standard and undersizes. Refer to the parts catalog for the available sizes. Undersize bearings which are not selective fit, are available for use on journals that have been refinished.** (See specifications.)

If the rear main bearing is to be replaced, remove the engine and place it in a work stand.

Removal

1. Drain the crankcase. Remove the oil pan and oil pump.
2. **Replace one bearing at a time, leaving the other bearings securely fastened.** Remove the main bearing cap to which new bearings are to be installed.
3. Insert the upper bearing removal Tool 6331 in the journal oil hole.
4. Rotate the crankshaft slowly in the direction of engine rotation to force the bearing insert out of the block.

Installation

1. Clean each crankshaft journal before installing the main bearing insert. Inspect the journals for nicks, burrs or bearing pick-up that would cause premature bearing wear. Make sure that the four thrust washers are in place on the No. 3 main bearing.
2. To install the upper main bearing, lubricate the bearing with heavy engine oil SE then place the end of the bearing over the shaft on the locking tang side of the block and partially install the bearing so that Tool 6331 can be inserted in the journal oil hole. With Tool 6331 installed, rotate the crankshaft slowly in the opposite direction of engine rotation until the bearing tang is seated. Remove the bearing tool.
3. Select fit the bearing for proper clearance following procedures under Fitting Main and Connecting Rod Bearings in Part 21-01.
4. Coat the bearing insert and journal with heavy engine oil SE and install the bearing cap. Tighten the cap bolt to specification.
5. Install the remaining bearings in the same manner. If servicing the rear main bearing, apply sealer to the cap as shown in Fig. 36. If necessary, align the thrust bearing by loosening the center main bearing cap bolts, prying the crankshaft toward the front, forcing the thrust bearing to the rear and tightening the bolts to specifications (Fig. 37).

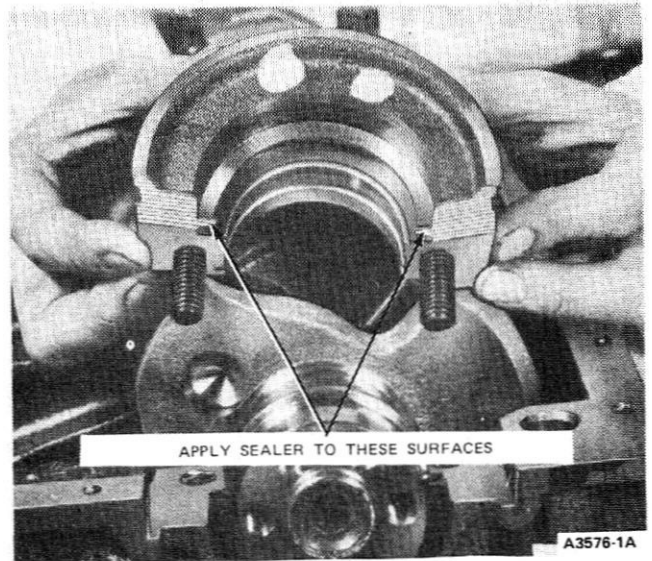


FIG. 36 Sealer Application to Rear Main Bearing Cap

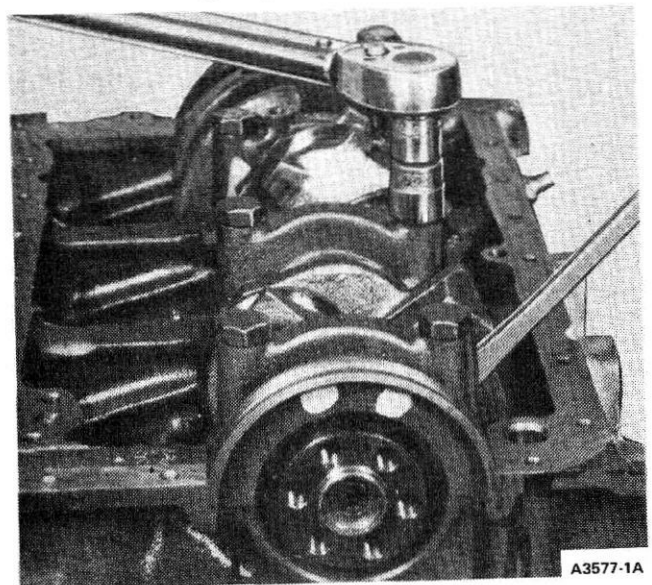


FIG. 37 Aligning Thrust Bearing

6. Clean all oil pan gasket surfaces thoroughly. Straighten the oil pan flange if deformed due to overtightening the bolts.
7. Clean oil pump inlet tube screen. Prime pump by filling inlet opening with oil while rotating shaft until oil emerges from outlet opening. Install pump and screen and torque attaching bolts to specifications.
8. Coat the cylinder block oil pan surfaces and oil pan gasket surface with oil-resistant sealer.
9. Position the gaskets on the block. See Fig. 38 for installation of the rear main bearing cap wedge seals. Install one end seal in the rear main bearing cap and the other in the cylinder block front cover. Be sure ends engage oil pan side gaskets properly.
10. Position the oil pan and install the attaching bolts. Torque the bolts to specification.
11. Fill the crankcase to the correct level with the specified oil. Start the engine and check for leaks.