Disassembly (Pump 131-0257)

1. Disconnect all hoses and remove the pump from the engine.
2. Loosen the pulley set screw and remove the pulley from the pump shaft.
3. Remove the impeller housing screws, impeller housing, and gasket.
4. Pull the impeller out of the impeller housing.
5. Remove the wear plate from the pump housing, using a screwdriver to pry loose the plate if necessary.
6. Remove the external retaining ring from the impeller end of the water pump shaft.
7. Remove the two piece seal assembly. The spring portion of the seal is removed first. The second portion of the seal can be loosened and removed with a screwdriver or needle-nose pliers.
8. Remove the internal retaining ring from the drive pulley end of the pump housing.
9. Carefully drive out the shaft and bearing assembly from the impeller end of the housing.
10. Remove the slinger from the water pump shaft.

Assembly (Pump 131-0257)

Inspect the impeller housing for wear, rough surfaces, or pitting and replace if any of these conditions exist. Replace any other worn components such as bearings, seals, or impeller and use a new impeller housing gasket.

1. Install the new slinger on the water pump shaft.
2. Install the ceramic part of the two piece seal assembly in the pump housing. The rubber side of the seal should be toward the bearings.
3. Coat the inside of the water pump housing and the outside of the ball bearing races with grease.
4. Insert the water pump shaft into the pump housing, and install the internal retaining ring in the drive pulley end of the housing.
5. Install the spring portion of the two piece seal on the pump shaft and secure in place with the external retaining ring.
6. Install the wear plate so that the notch in the plate fits into the machining in the pump housing.
7. Coat the inside of the impeller housing with grease.
8. Install the impeller in the impeller housing by twisting it clockwise while pushing it into place.
9. While holding the gasket in place against the pump housing, install the impeller housing securing it with four screws removed during disassembly.
10. Mount the pump on the engine and attach the hoses.
11. Align the pump drive pulley with the crankshaft drive pulley and tighten the set screw.

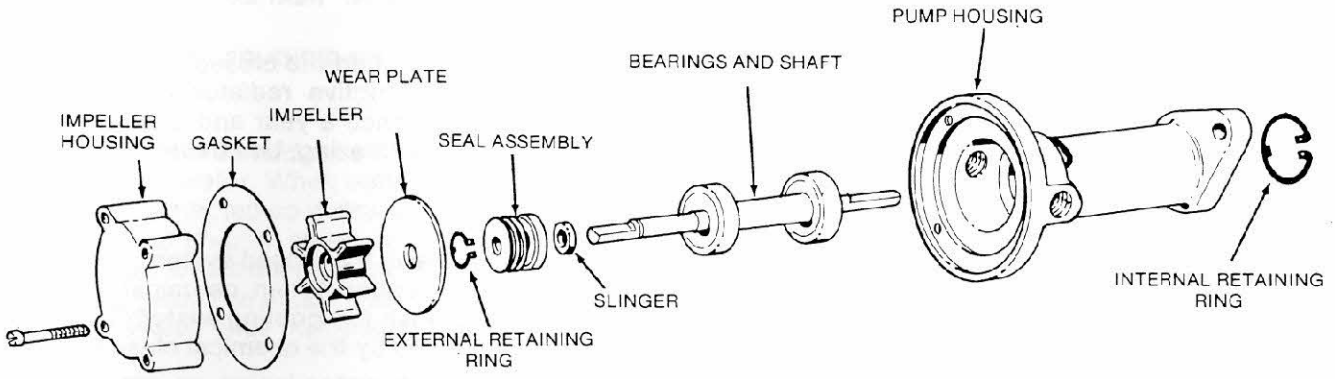

FIGURE 27. PUMP 131-0257

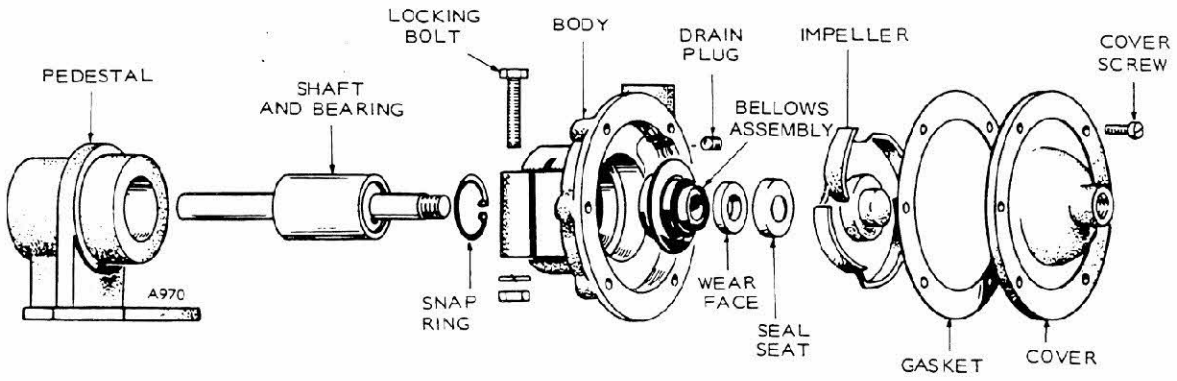

FIGURE 28. CENTRIFUGAL PUMP 132-0110

Disassembly (Centrifugal Pump 132-0110)

1. Remove the water inlet fitting, drive belt pulley, cover screws, and pump cover gasket.
2. Unscrew the threaded impeller from the pump shaft by turning the impeller in a counterclockwise direction when facing impeller.
3. Slide the seal seat, wear face, and bellows assembly off the shaft. Loosen the clamp screw and slide the pump body off the pedestal.
4. Remove the bearing lock ring and drive the shaft and bearing assembly out of the pedestal. The bearing is press fit on the shaft and comes off in one integral part. The bearing is packed with a lifelong lubricant and is sealed at each end.

Assembly (Pump 132-0110)

Replace all worn components such as bearings, seals, wear face, and impeller and use a new cover gasket. Assembly sequence is the reverse of the disassembly procedure.

HEAT EXCHANGER

Closed-type cooling systems are commonly referred to as fresh water cooling or heat exchanger cooling. Water circulated through the engine is called fresh water, hot water, etc. Water circulated through the heat exchanger only is called raw water, sea water, cold water, discharged water, etc. This system with an anti-freeze coolant is recommended where freezing coditions exist, or where the owner wants to prevent the possibility of salt water or rust problems.

The closed water system continually recirculates captive water through the water jacket, exhaust manifold, centrifugal pump, and one side of the heat exchanger. Figure 29 shows a typical heat exchanger.

CAUTION ***Do not use the existing neoprene impeller water pump in the hot water side of the cooling system. Heat or soluble oil (in many rust inhibitors and anti-freezes) will damage the impeller. Instead, connect the neoprene impeller pump on the cold water side. Use a metal impeller, centrifugal-type water pump (Onan 132-0110 or equal) in the fresh water side. See Figure 28.***

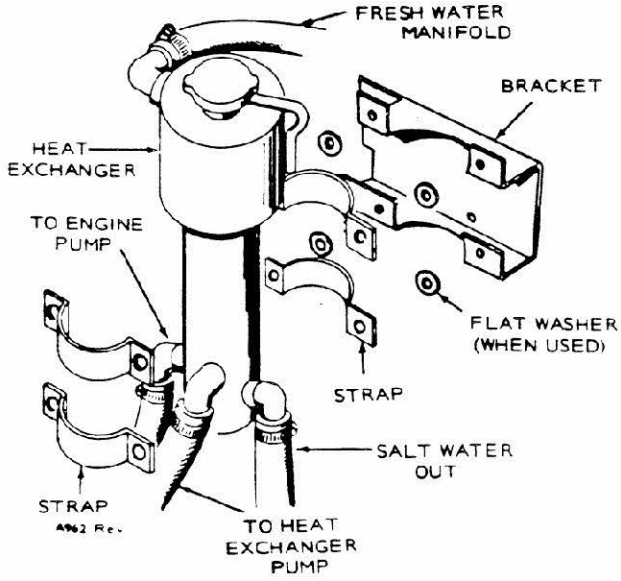

FIGURE 29. HEAT EXCHANGER

Maintenance: Maintain the closed water system the same as an automotive radiator cooling system. Clean and flush once a year and use anti-freeze if there is danger of freezing. Use a rust inhibitor in the closed water system.

Cleaning: To clean the closed system, drain and fill with radiator cleaner. When chemical cleaning is done, always flush the cooling system to wash out deposits loosened by the chemical cleaning.

Flush the engine water jacket as previously discussed. First remove the water outlet hose from the engine water jacket to the heat exchanger. Flush both the open and closed water system sides of the heat exchanger. Remove the rubber impeller pump cover to flush the open system. Also flush the water-cooled exhaust manifold. When flushing is completed, check the system thoroughly for leaks.