service bulletin

mercruiser

STERN DRIVES/INBOARD ENGINES

NUMBER: 81-35
DATE: 12/22/81

A. Use of Permanent Type Anti-Freeze Solutions in Mercury Marine Engines - MCM/MIE 470 and MCM 485 Models

B. Thermostat Operation in Mercury Marine Engines - MCM/MIE 470 and MCM 485 Models

CIRCULATE TO:
SERVICE MANAGER
PARTS MANAGER
MECHANICS

A. USE OF PERMANENT TYPE ANTI-FREEZE SOLUTIONS IN MERCURY MARINE ENGINES - MCM/MIE 470 and MCM 485 Models

It has been found that most permanent type anti-freeze solutions may become corrosive to aluminum after about 3 years of use OR if exhaust gases have entered into the cooling system from a blown head gasket. This corrosion is not sufficient enough to cause significant damage to the engine block, but loose particles that are generated can travel to the heat exchanger. These loose particles may plug up the coolant side of the heat exchanger.

NOTE: The coolant (anti-freeze) flows AROUND THE OUTSIDE of the cooling tubes while seawater flows THRU THE INSIDE of the cooling tubes in the heat exchanger.

The automotive companies are experiencing the same problem in products with aluminum parts that come in contact with the current permanent type anti-freeze. Because of this, automotive companies will be recommending a different type of anti-freeze solution for aluminum engines/ radiators in the near future. This later type anti-freeze solution is not compatible with the present permanent type anti-freeze. The two types must not be mixed.

As soon as this new type anti-freeze solution is readily available, we will notify the field. At present, Mercury Marine is not using the new anti-freeze solution in new MCM/MIE 470 and 485 engines. Because of this, it is strongly recommended that:

- The coolant be completely drained and flushed from the closed cooling system at least every two (2) years.
- The coolant be completely drained and flushed from the closed cooling system whenever exhaust gases have entered into the system.
- The complete system be refilled with a 50/50 mixture of water and fresh permanent type anti-freeze.

NOTE: DO NOT operate system on straight water. System MUST USE a 50/50 mixture of permanent type anti-freeze and water.

B. THERMOSTAT OPERATION IN MERCURY MARINE ENGINES - MCM/MIE 470 and MCM 485 Models

The thermostat in a MCM/MIE 470 or MCM 485 engine determines which direction the coolant flow should take. If the thermostat is closed, the coolant bypasses the heat exchanger. When the thermostat is open, the coolant flows thru the heat exchanger to be cooled. The cooling system on these model engines MUST NOT BE OPERATED WITHOUT A THERMOSTAT installed. Without a thermostat, the engine WILL OVERHEAT.