MERCRUISER SERVICE BULLETIN

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Hydraulic Valve Lifters

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Warranty claims have been received which relate to hydraulic valve lifter noise after an engine has been operated for a period of time.

Inspection of the hydraulic valve lifters in question has revealed varnish and gum deposits in the lifters. These deposits result from the type of lubricating oil which is used and do not reflect a defect in material or workmanship. Specifications in the "Operation and Maintenance Guide" (Owner's Manual) require that crankcase lubricating oils have an A.P.I. classification of "MS" ("Most Severe" service), such as KIEKHAEFER QUICKSILVER 4-CYCLE MARINE MOTOR OIL FORMULA 4 SAE 20 (above 90°, use SAE 30).

Even when using a good grade lubricating oil, if operating conditions are such that short runs or slow speed operation do not permit engine to heat up sufficiently, varnish and gum deposits may occur.

Warranty claims will not be allowed on any hydraulic lifters which are noisy or sticking as a result of varnish, gum or carbon deposits.

The following is a copy of service procedures outlined on Page 1 in Engine Mechanical Section VIII of the MerCruiser Service Manual:

VALVE LIFTER NOISE

Hydraulic valve lifters very seldom require attention. The lifters are extremely simple in design, readjustments are not necessary and servicing of lifters require only that care and cleanliness be exercised in handling of parts.

The easiest method for locating a noisy valve lifter is by use of a piece of garden hose approximately 4 feet in length. Place one end of hose near end of each intake and exhaust valve with other end of hose to ear.

In this manner, the sound is localized, making it easy to determine which lifter is at fault.

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Another method is to place a finger on face of valve spring retainer. If lifter is not functioning properly, a distinct shock will be felt when valve returns to its seat.

General types of valve lifter noise are as follows:

1. Hard Rapping Noise - Usually caused by plunger becoming tight in bore of lifter body to such an extent that return spring can no longer push plunger back up to working position. Probable causes are -
   a. Excessive varnish or carbon deposit, causing abnormal stickiness.
   b. Galling or "pick-up" between plunger and bore of lifter body, usually caused by an abrasive piece of dirt or metal wedging between plunger and lifter body.
2. Moderate Rapping Noise - Probable causes are -
   a. Excessively high leakdown rate.
   b. Leaky check valve seat.
   c. Improper lash adjustment.
3. General Noise Throughout the Valve Train - This will, in most cases, be a definite indication of insufficient oil supply or improper lash adjustment.
4. Intermittent Clicking - Probable causes are -
   a. A microscopic piece of dirt momentarily caught between ball seat and check valve ball.
   b. In rare cases, the ball itself may be out-of-round or have a flat spot.
   c. Improper lash adjustment.