



# MERCRUISER SERVICE BULLETIN

Section: XII (Bulletins)

Number: 67-1204

Date : 3/6/67

Oil Consumption - 4-Cycle Engines

## Oil Consumption - 4-Cycle Engines

Occasionally, we receive a complaint of excessive oil consumption in a MerCruiser engine, possibly a quart of oil each five to ten hours of operation. It has been brought to our attention that many owners are of the erroneous opinion that present day engines should not use any noticeable amount of oil between oil changes.

To remedy the problem, a dealer often will disassemble the engine and replace the piston rings, concluding that the rings were not sealing properly. We find that this is not the case, that this is normal oil consumption at wide-open-throttle (W.O.T.).

Therefore, this bulletin is being issued to assist dealer personnel to understand and relieve this situation.

A break-in additive (Engine Oil Supplement, C-92-33365-1) is added to the initial fill of oil. It is best to leave this oil in the engine for the recommended 20 hours or 60 days, whichever comes first. After the initial fill of oil has been drained, an oil of known good quality should be used according to recommendations in current Owner's Operation and Maintenance Manuals.

Since modern engines are equipped with hard, chrome face piston rings which exert a low pressure between ring and cylinder wall, they may take more time to "seat" in. Initially, this may result in some apparent oil consumption, but it will be more than offset by a noticeable reduced rate of engine wear. This, in fact, is the major reason that most current model engines can run for so many hours before re-ringing is necessary, where, in the past, new rings were required in engines with considerably less hours.

Maintaining a proper oil level also is an important factor in controlling oil consumption. An over-full crankcase will allow oil to be splashed by the reciprocating parts onto the cylinder walls in greater quantities than the rings can control. This excess oil, subsequently, will be drawn into the combustion chamber and burned.

In extreme cases, the oil also may become aerated, causing it to foam and be thrown from the filler neck.

(OVER)

An over-supply of oil may be added if the dipstick markings are not understood. The space between the "full" and "add" marks in most instances represents one quart, and it is not necessary to add oil unless the level is at or below the "add" mark.

When checking oil levels, the engine should be warm, the engine must be level, the dipstick pushed down to the stop, and sufficient time (approximately 5 minutes) must be allowed for oil to drain back from the upper engine cavities to the pan, or a false reading may be obtained.

Continuous testing of MerCruiser engines and other makes of 4-cycle engines reveals that a certain amount of oil consumption exists at W.O.T. conditions. The same condition is present in automotive engines when run at W.O.T.; in fact, higher engine operating temperatures in automotive engines cause even higher oil consumption. Aircraft engines are designed to consume given amounts of oil.

On the other hand, when an engine is used principally at slow speed conditions, where considerable crankcase dilution occurs, a rapid lowering of the oil level may result when the boat is operated for some distance at high speed. This is due to the dilution from slow driving being removed from the crankcase by the heat of high speed operation. This is a normal condition and should not be mistaken for excessive oil consumption.

If, however, it can be determined definitely that oil usage is caused by a possible mechanical malfunction, an inspection for leaks should be made. A careful check must be carried out, especially in areas such as rocker cover gaskets, oil pan gaskets, side cover gaskets and crankshaft seals, front and rear.

In addition, a check also should be made to assure that neither the valve guides nor stems are worn excessively nor that the valve stem seals are mispositioned or damaged. If any of the above possible conditions are present, it should be remedied and the engine placed in service to again carry out a reasonable oil consumption check.

This should be determined by draining the sump and re-filling it with the recommended quantity of fresh oil (not above the "full" mark on the dipstick). The owner should be requested to drive the boat via his normal driving habits for 20 hours. During this period, no oil is to be added unless the level falls below the "add" mark on the dipstick. In this event, the owner should, if possible, return to the dealer for re-filling.

After 20 hours operation, the oil level should be checked carefully after the engine has been shut off for a minimum period of five minutes. The dipstick reading then will permit dealer personnel to accurately estimate the rate of oil consumption.

In conclusion, it must be emphasized that every internal combustion engine should use a certain amount of oil to act as a lubricating and cooling agent, particularly during the break-in period, and that the initial rate of consumption gradually will decrease until it becomes stabilized after approximately 100 hours operation. We find that a 4-cylinder engine can consume one quart of oil in five to 14 hours of W.O.T. operation.