Hi-Performance MARINER OUTBOARDS
MERCURY PERFORMANCE OUTBOARDS

service bulletin

Revised 9-19-94

No. 93-9

Fuel Recommendation for MHP Outboards

MODELS: MHP 2.5 Carb/EFI/EFI Offshore

A minimum average pump posted octane of (R+M)/2=89, or a research octane number (RON) of 93 is required (without alcohol whenever possible).

A minimum average pump posted octane of (R+M)/2=92, or a RON of 98 is preferred (without alcohol whenever possible).

NOTE: This is a change from what was published in earlier publications. Although the earlier 2.5 engines will run on 87 average (92 RON) gas; if the purchased fuel is a little lower than posted it may be detrimental to the engine. Copies of this bulletin should be posted and customers made aware of the change.

MODELS: MHP 150/200/225 Pro Max and Super Magnum

A minimum average pump posted octane of (R+M)/2= 89, or a research octane number (RON) of 93 is required (without alcohol whenever possible).

MERCURY/MARINER HI-PERFORMANCE OUTBOARDS

Dealers are encouraged to convey the new recommendations to your customers to ensure their boating pleasure.

The new recommendation is necessary because of changes in the chemical composition of gasoline that has occurred since the previous recommendation was printed. The previous gasoline recommendation printed is no longer valid and should be destroyed.

MAJOR CHANGES/ADDITIONS:

Oxygenated Gasolines - MTBE, Ethanol, and Methanol:

Oxygenated gasolines are in use and may be required to be used by US Federal Law in Environmental Protection Agency designated carbon monoxide non-attainment zones. Oxygenation, as the word implies, adds oxygen to the gasoline. The advantage of oxygenated gasoline is that it produces harmless carbon dioxide instead of hazardous carbon monoxide when it burns. However, as a general note, gasoline containing oxygenates has less energy and can cause a highly tuned engine to run leaner. Today"s gasolines can be oxygenated by the addition of chemicals such as MTBE, ethanol, or methanol. MTBE, in normal concentrations has no known affect, except producing less energy, when used in current or older Mercury or Mariner Hi-Performance outboards. However, gasolines containing ethanol or methanol can have adverse affects on marine engines. Gasoline that contains ethanol or methanol absorbs water from the air. With time, this accumulation of water can be drawn into the engine and cause poor performance and serious damage to the engine. Ethanol, and to a greater extent, methanol, forms an organic acid that can deteriorate elastomer and plastic parts, such as gaskets, seals, and hoses; and can cause fuel leaks in older outboards. This acid can also dissolve and loosen fuel system deposits and the debris can plug up carburetor jets and fuel filters.

Hi-Performance Outboards may use gasoline containing up to 10% ethanol, but the addition of a Quicksilver Water Separating Fuel Filter is recommended. The fuel filter will trap water and dissolved deposits and debris. The water separating fuel filter DOES require periodic maintenance.

Gasolines containing methanol should be avoided whenever possible because of the stronger organic acids that can be formed.

Marinas may be exempt from selling oxygenated fuels. Customers should be advised to inquire what gasolines are available from both marinas and the service stations.

Carbon Deposits:

Today's gasolines can leave significant amounts of carbon deposits when used in two cycle outboard engines. Carbon deposits can cause piston ring sticking and/or piston ring "jacking" and may contribute to powerhead failure. Encourage the use of gasoline that has fuel injector cleaner added at the factory to control carbon deposits which results in a cleaner and more efficient engine. Caution your customers on the use of fuel injector cleaners that are manually added

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to the gasoline as the mixture ratio is critical to controlling carbon deposits. Also, if too much cleaner is added, engine damage may result due to the removal of some of the lubricating properties of the oil.

Use Mercury Hi-Performance Synthetic Blend 2 Cycle Oil (P/N 92-813743A2) to help control carbon deposits. Use Quicksilver Quickleen (P/N 92-824074A12 to periodically clean up internal carbon deposits.

Gasoline Storage:

Use a major name brand of gasoline from an outlet that sells a large amount of fuel. Fuel stored longer than 15 days may have lost some of the desired properties (dependent on temperature and storage conditions). Plan to use up the fuel in one to two months after purchase.

Always keep the vent closed on portable fuel tanks when not in use to prevent air exchange and water absorption.

Store fuel in a cool/dry area.

Use Quicksilver Fuel System Treatment and Stabilizer (P/N92-78383A12) and Gasoline Stabilizer (P/N 92-817529A12) to prevent unused gasoline from losing desired properties during periods of non-use (15 days or more).

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