IMPORTANT INFORMATION

1

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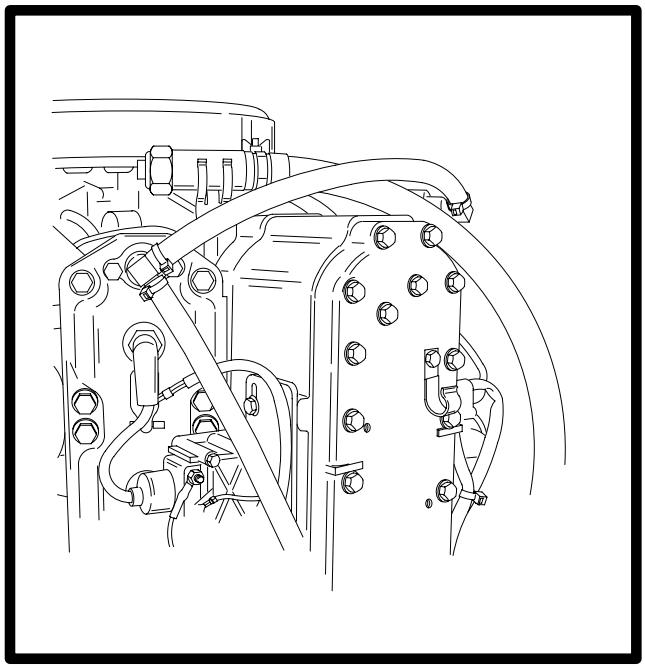

MAINTENANCE

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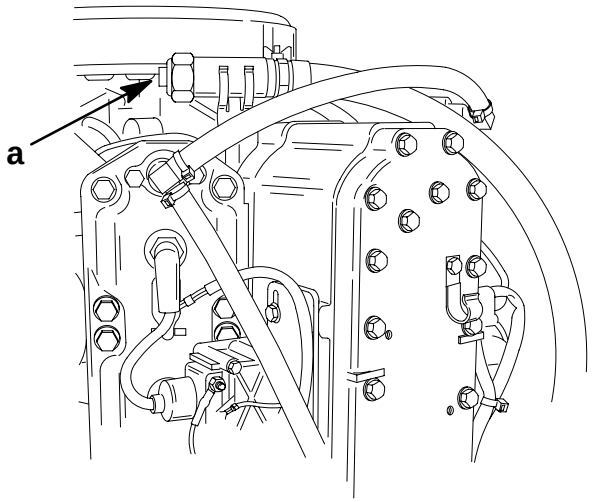
Flushing Cooling System

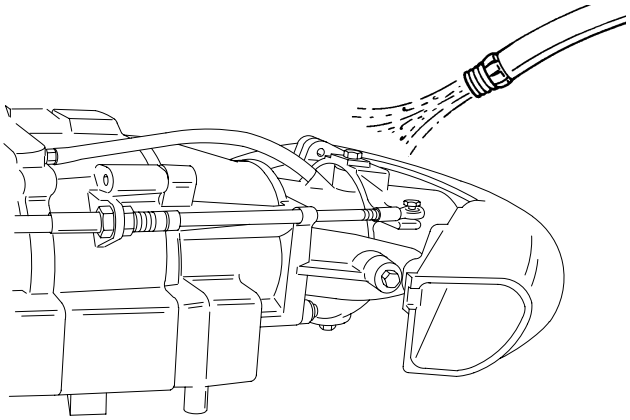
Flushing the cooling system is essential after each use in salt water, after the boat has run aground, or when the overheat warning horn sounds (possible debris in jet powerhead).

1. Remove flush adaptor plug and attach water hose.



a - Flush Adapter Plug

2. The engine may be run using the Flushing Attachment: DO NOT run the engine above idle speeds.
3. Turn water on and flush engine block for at least 10 minutes.
4. Remove water hose and install flush adaptor plug.
5. Flush outer surfaces of pump with water stream.



Following Complete Submersion

Submerged engine treatment is divided into three distinct problem areas. The most critical is submersion in salt water; the second is submersion while running; the third is submerged in fresh water.

SALT WATER SUBMERSION (SPECIAL INSTRUCTIONS)

Due to the corrosive effect of salt water on internal engine components complete disassembly is necessary before any attempt is made to start the engine.

SUBMERGED WHILE RUNNING (SPECIAL INSTRUCTIONS)

When an engine is submerged while running, the possibility of internal engine damage is greatly increased. If, after engine is recovered and with spark plugs removed, engine fails to rotate freely when turning flywheel, the possibility of internal damage (bent connecting rod and/or bent crankshaft) exists. If this is the case the powerhead must be disassembled.

FRESH WATER SUBMERSION (SPECIAL INSTRUCTIONS)

1. Recover engine as quickly as possible.
2. Flush exterior of engine with fresh water to remove mud, weeds, etc. DO NOT attempt to start engine if sand has entered powerhead, as powerhead will be severely damaged. Disassemble powerhead if necessary to clean components.
3. Remove spark plugs and get as much water as possible out of powerhead by rotating flywheel.
4. Pour alcohol into carburetor throat (alcohol will absorb water). Again rotate flywheel.
5. Pour alcohol into spark plug openings and again rotate flywheel.
6. Pour engine oil into throats of carburetors while rotating flywheel to distribute oil throughout crankcase.
7. Pour approximately one teaspoon of engine oil into each spark plug opening. Rotate flywheel to distribute oil in cylinders.
8. Remove and clean carburetors and fuel pump assembly.
9. Reinstall spark plugs, carburetors and fuel pump.
10. Attempt to start engine, using a fresh fuel source. If engine starts it should be run for at least one hour to eliminate any water in engine.

11. If engine fails to start determine cause (fuel, electrical or mechanical). Engine should be run within two hours after recovery from water as serious internal damage may occur. If unable to start engine in this period disassemble engine and clean all parts and apply oil as soon as possible.

Out-of-Season Storage

⚠ WARNING

As a safety precaution, when boat is in storage, remove positive (+) battery cable. This will eliminate possibility of accidental starting of engine and resultant overheating and damage to engine from lack of water.

In preparing for out-of-season storage, two precautions must be considered: 1) The engine must be protected from physical damage caused by freezing trapped water and 2) the engine must be protected from rust, corrosion and dirt.

The following storage procedures should be followed to prepare the Sport Jet for out-of-season storage or prolonged storage (two months or longer).

⚠ CAUTION

Never start or run the Sport Jet (even momentarily) without water circulating through the cooling system to prevent damage to the unit.

FUEL SYSTEM

IMPORTANT: Gasoline containing alcohol (ethanol or methanol) can cause a formation of acid during storage and can damage the fuel system. If the gasoline being used contains alcohol, it is advisable to drain as much of the remaining gasoline as possible from the fuel tank, remote fuel line, and engine fuel system.

Fill the fuel system (tank, hoses, fuel pump, and carburetors) with treated (stabilized) fuel to help prevent formation of varnish and gum. Proceed with the following instructions.

- Portable Fuel Tank: Pour the required amount of Quicksilver Gasoline Stabilizer (follow instructions on container) into fuel tank. Tip fuel tank back and forth to mix stabilizer with the fuel.
- Permanently Installed Fuel Tank: Pour the required amount of Quicksilver Gasoline Stabilizer (follow instructions on container) into a separate container and mix with approximately one quart (one liter) of gasoline. Pour this mixture into fuel tank.
- Place the Sport Jet in the water or use the flushing attachment. Run the engine for ten minutes to allow treated fuel to reach the carburetors.

1. With Sport Jet in the water, start the engine and let it warm up to operating temperature.
2. Disconnect the fuel line. When the engine starts to stall quickly spray Quicksilver Storage Seal into each carburetor throat. Continue to spray until engine dies from lack of fuel.
3. Remove spark plugs and inject a five second spray of Quicksilver Storage Seal around the inside of each cylinder. Manually turn engine over several times to distribute Storage Seal throughout cylinders. Reinstall spark plugs.
4. Drain and refill drive housing unit and stator assembly with Quicksilver Hi Performance Gear Lube as explained in "**Jet Pump**" section (see **Table of Contents**).
5. Clean engine thoroughly including all accessible powerhead parts and spray with Corrosion and Rust Preventive.
6. Lubricate all lubrication points.
7. To prevent freeze damage drain the speedometer system of water completely before storage. Remove tubing from speedometer fitting and blow through tubing to remove water.
8. Store battery as outlined in **Out-of-Season Battery Storage** following:

IMPORTANT: Check and refill housings with Quicksilver Hi Performance Gear Lube before storage to protect against possible water leakage into housings which is caused by loose lubricant vent or fill plug. Inspect gaskets under lubricant vent and fill plugs replacing any damaged gaskets before reinstalling plugs.

Out-of-Season Battery Storage

1. Remove battery as soon as possible and remove all grease, sulfate and dirt from top surface.
2. Cover plates with distilled water, but not over 3/16 in. (5 mm) above perforated baffles.

3. Cover terminal bolts well with grease.
4. Store battery in a cool, dry place in a dry carton or box.
5. Remove battery from storage every 60 days. Check water level and place on charge for 5 to 6 hours at 6 amperes. DO NOT fast charge.

⚠ CAUTION

A discharged battery can be damaged by freezing.

How Weather Affects Engine Performance

It is a known fact that weather conditions exert a profound effect on power output of internal combustion engines. Therefore, established horsepower ratings refer to the power that the engine will produce at its rated RPM under a specific combination of weather conditions.

Corporations internationally have settled on adoption of I.S.O. (International Standards Organization) engine test standards as set forth in I.S.O. 3046 standardizing the computation of horsepower from data obtained on the dynamometer correcting all values to the power that the engine will produce at sea level at 30% relative humidity at 77° F (25° C) temperature and a barometric pressure of 29.61 inches of mercury.

Summer Conditions of high temperature, low barometric pressure and high humidity all combine to reduce the engine power. This, in turn, is reflected in decreased boat speeds--as much as 2 or 3 miles-per-hour (3 or 5 km per hour) in some cases. Nothing will regain this speed for the boater, but the coming of cool, dry weather.

In pointing out the practical consequences of weather effects, an engine running on a hot, humid, summer day may encounter a loss of as much as 14% of the horsepower it would produce on a dry, brisk spring or fall day. The horsepower that any internal combustion engine produces depends upon the density of the air that it consumes and, in turn, this density is dependent upon the temperature of the air, its barometric pressure and water vapor (or humidity) content.

Detonation: Causes and Prevention

Detonation in a 2-cycle engine resembles the “pinging” heard in an automobile engine. It can be described as a “rattling” or “plinking” sound.

Detonation generally is thought of as spontaneous ignition, but it is best described as a noisy explosion in an unburned portion of the fuel/air charge after the spark plug has fired. Detonation creates severe, untimely shock waves in the engine and these shock waves often find or create a weakness: the dome of a piston, piston rings or piston ring lands, piston pin and roller bearings.

While there are many causes for detonation in a 2-cycle engine emphasis is placed on those causes which are most common in marine 2-cycle application. A few which are not commonly understood are:

1. Over-advanced ignition timing.
2. Use of low octane gasoline.
3. Lean fuel mixture at or near wide open throttle.
4. Spark plugs (heat range too hot, incorrect reach, cross-firing).
5. Inadequate engine cooling (deteriorated cooling system).
6. Combustion chamber/piston deposits (result in higher compression ratio).

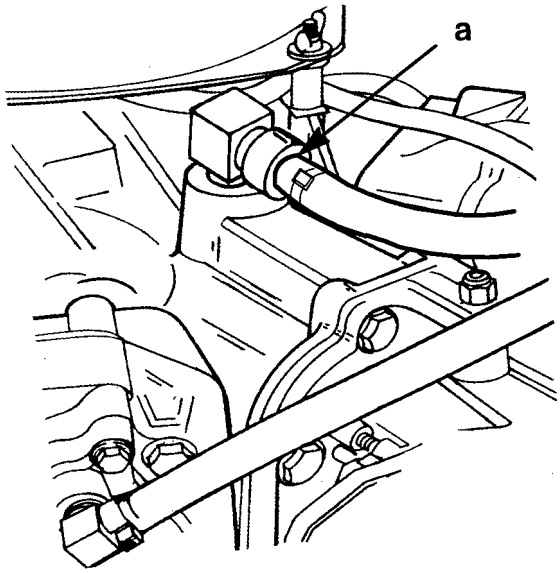
Detonation usually can be prevented provided that (1) the engine is correctly set up and (2) diligent maintenance is applied to combat the preceding detonation causes listed.

Compression Check

1. Remove spark plugs.
2. Install compression gauge in spark plug hole.
3. Hold throttle plates at W.O.T.
4. Crank engine through at least four compression strokes to obtain highest possible reading.
5. Check and record compression of each cylinder. Variation of more than 15 psi (103.5 kPa) between cylinders indicates that lower compression cylinder is in some way defective such as worn or sticking piston rings and/or scored piston and cylinder.
6. Compression check is important because an engine with low or uneven compression cannot be tuned successfully to give peak performance. It is essential, therefore, that improper compression be corrected before proceeding with an engine tune-up.
7. Cylinder scoring: if powerhead shows any indication of overheating, such as discolored or scorched paint, visually inspect cylinders for scoring or other damage as outlined in Section 4: **Powerhead**.

Water Pressure Check

NOTE: *To perform these checks a Water Pressure Gauge Kit P/N 91-79250A2 is recommended. Water pressure is taken at the top of the powerhead.*



a - Water Pressure Taken At This Location

⚠ CAUTION

Static test requires the boat be stationary in the water secured to a dock or trailer and run in forward. Do not use a flushing device for this test.

RPM	Water Pressure PSI (kPa)
1,000 - 1,100 in neutral	1/2 - 1-1/2 (3.4 - 10)
5,300 boat on trailer (static)	9 - 10 (62 - 69)
5,300 boat on plane	35 - 40 (241 - 276)