

MAINTENANCE

Outboard Care

To keep your outboard in the best operating condition, it is important that your outboard receive the periodic inspections and maintenance listed in the Inspection and Maintenance Schedule. We urge you to keep it maintained properly to ensure the safety of you and your passengers, and retain its dependability.

WARNING

Neglected inspection and maintenance service of your outboard or attempting to perform maintenance or repair on your outboard if you are not familiar with the correct service and safety procedures could cause personal injury, death, or product failure.

Record maintenance performed in Maintenance Log at the back of this book. Save all maintenance work orders and receipts.

SELECTING REPLACEMENT PARTS FOR YOUR OUTBOARD

We recommend using original Mercury Precision or Quicksilver replacement parts and Genuine Lubricants.

WARNING

Using a replacement part that is inferior to the original part could result in personal injury, death, or product failure.


EPA Emissions Regulations

All new outboards manufactured by Mercury Marine are certified to the United States Environmental Protection Agency, as conforming to the requirements of the regulations for the control of air pollution from new outboard motors. This certification is contingent on certain adjustments set to factory standards. For this reason, the factory procedure for servicing the product must be strictly followed and, wherever practicable, returned to the original intent of the design. **Maintenance, replacement, or repair of the emission control devices and systems may be performed by any marine spark ignition (SI) engine repair establishment or individual.**

MAINTENANCE

EMISSION CERTIFICATION LABEL

An emission certification label, showing emission levels and engine specifications directly related to emissions, is placed on the engine at time of manufacture.

		EMISSION CONTROL INFORMATION	
THIS ENGINE CONFORMS TO <input type="checkbox"/> CALIFORNIA AND U.S. EPA EMISSION REGULATIONS FOR SPARK IGNITION MARINE ENGINES			
REFER TO OWNERS MANUAL FOR REQUIRED MAINTENANCE SPECIFICATIONS AND ADJUSTMENTS			
a →	IDLE SPEED (in gear) : <input type="text"/>	FAMILY: <input type="text"/>	f →
b →	<input type="text"/> hp	<input type="text"/> cc	g →
c →	TIMING (IN DEGREES): <input type="text"/>		h →
d →	<input type="text"/>	SPARK PLUG : <input type="text"/>	i →
		GAP : <input type="text"/>	
e →	COLD VALVE CLEARANCE (mm) : <input type="text"/>	INTAKE : <input type="text"/>	
		EXHAUST : <input type="text"/>	

ob00366

- | | |
|--|--|
| a - Idle speed | f - Family number |
| b - Engine horsepower | g - Maximum emission output for the engine family |
| c - Piston displacement | h - Timing specification |
| d - Date of manufacture | i - Recommended spark plug and gap |
| e - Valve clearance (if applicable) | |

OWNER RESPONSIBILITY

The owner/operator is required to have routine engine maintenance performed to maintain emission levels within prescribed certification standards.

The owner/operator is not to modify the engine in any manner that would alter the horsepower or allow emissions levels to exceed their predetermined factory specifications.

Inspection And Maintenance Schedule

BEFORE EACH USE

- Check engine oil level. See **Fuel & Oil - Checking and Adding Engine Oil**.
- Visually inspect the fuel system for deterioration or leaks.
- Check outboard for tightness on transom.
- Check propeller blades for damage.

MAINTENANCE

AFTER EACH USE

- Flush out the outboard cooling system if operating in salt or polluted water. See **Flushing the Cooling System**.
- Wash off all salt deposits and flush out the exhaust outlet of the propeller and gearcase with fresh water if operating in salt water.

EVERY 100 HOURS OF USE OR ONCE YEARLY, WHICHEVER OCCURS FIRST

- Lubricate all lubrication points. Lubricate more frequently when used in salt water. See **Lubrication Points**.
- Change engine oil. The oil should be changed more often when the engine is operated under adverse conditions such as extended trolling. See **Changing Engine Oil**.
- Replace spark plug at first 100 hours or first year. After that, inspect spark plug every 100 hours or once yearly. Replace spark plug as needed. See **Spark Plug Inspection and Replacement**.
- Drain and replace gearcase lubricant. See **Gearcase Lubrication**.
- Check fuel line filter for contaminants. See **Fuel System**.
- Check corrosion control anode. Check more frequently when used in salt water. See **Corrosion Control Anodes**.
- Lubricate splines on the driveshaft.¹
- Replace water pump impeller.¹
- Check tightness of bolts, nuts, and other fasteners.

BEFORE PERIODS OF STORAGE

- Refer to Storage procedure. See **Storage** section.

Flushing The Cooling System

Flush the internal water passages of the outboard with fresh water after each use in salt, polluted, or muddy water. This will help prevent a buildup of deposits from clogging the internal water passages.

Use a Mercury Precision or Quicksilver accessory (or equivalent) flushing attachment.

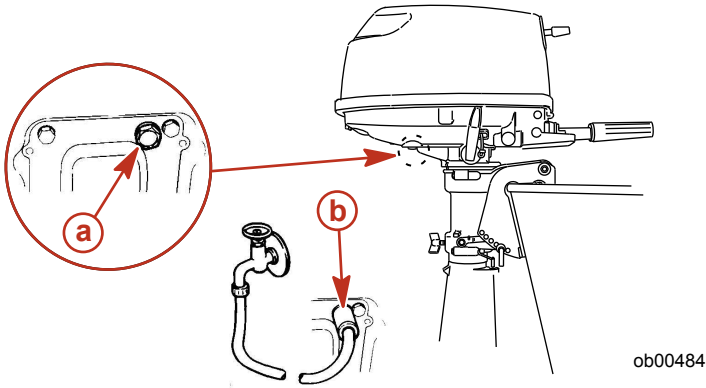
NOTE: *Do not run the engine while flushing the cooling system.*

1. Remove plug and gasket and thread-in hose coupling.
2. Attach a water hose to the hose coupling. Turn on the water gently and flush the cooling system for 3 to 5 minutes.

1. These items should be serviced by an authorized dealer.

MAINTENANCE

3. Remove the thread-in hose coupling and reinstall plug and gasket.



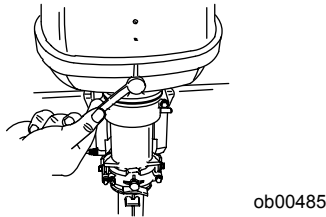
a - Gasket

b - Thread-in hose coupling

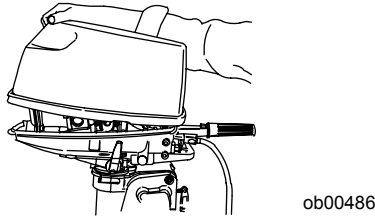
Top Cowl Removal And Installation

REMOVAL

1. Unlock the rear latch by pushing lever down.



2. Lift rear of cowl and disengage front hook.



INSTALLATION

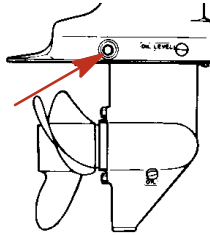
1. Engage the front hook and push cowl back over the cowl seal.
2. Push cowl down and move the rear latch lever up to lock.

MAINTENANCE

Corrosion Control Anode

Your outboard has a corrosion control anode installed on the gearcase. An anode helps protect the outboard against galvanic corrosion by sacrificing its metal to be slowly corroded instead of the outboard metals.

The anode requires periodic inspection especially in salt water which will accelerate the erosion. To maintain this corrosion protection, always replace the anode before it is completely eroded. Never paint or apply a protective coating on the anode as this will reduce effectiveness of the anode.



ob00487

Exterior Care

Your outboard is protected with a durable baked enamel finish. Clean and wax often using marine cleaners and waxes.

Fuel System

⚠ WARNING

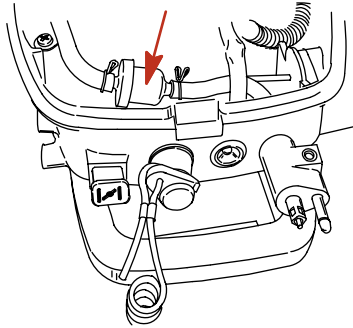
Avoid serious injury or death from gasoline fire or explosion. Carefully follow all fuel system service instructions. Always stop the engine and do not smoke or allow open flames or sparks in the area while servicing any part of the fuel system.

Before servicing any part of the fuel system, stop engine and disconnect the battery. Drain the fuel system completely. Use an approved container to collect and store fuel. Wipe up any spillage immediately. Material used to contain spillage must be disposed of in an approved receptacle. Any fuel system service must be performed in a well-ventilated area. Inspect any completed service work for signs of fuel leakage.

MAINTENANCE

FUEL LINE FILTER

Inspect the fuel line filter. If the filter appears to be contaminated, remove and replace.



ob00488

IMPORTANT: Visually inspect for fuel leakage from the filter connections by squeezing the primer bulb until firm, forcing fuel into the filter.

FUEL LINE INSPECTION

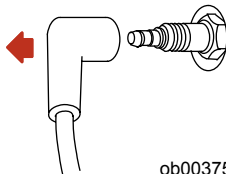
Visually inspect the fuel line and primer bulb for cracks, swelling, leaks, hardness, or other signs of deterioration or damage. If any of these conditions are found, the fuel line or primer bulb must be replaced.

Propeller Replacement

⚠ WARNING

If the propeller shaft is rotated while the engine is in gear, there is the possibility that the engine will crank over and start. To prevent this type of accidental engine starting and possible serious injury caused from being struck by a rotating propeller, always shift outboard to neutral position and remove spark plug leads when you are servicing the propeller.

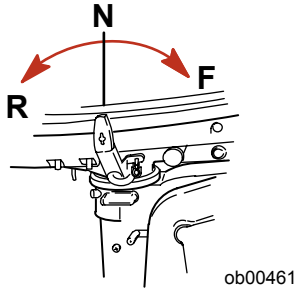
1. Remove the spark plug lead to prevent engine from starting.



ob00375

MAINTENANCE

2. Move gear shift lever into neutral.

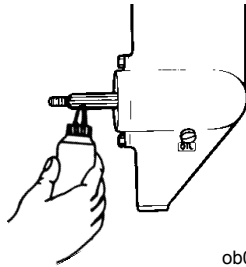


ob00461



3. Straighten and remove cotter pin.
4. Place a block of wood between gearcase and propeller to hold propeller and remove propeller nut.
5. Pull propeller straight off shaft. If propeller is seized to the shaft and cannot be removed, have the propeller removed by an authorized dealer.

IMPORTANT: To prevent the propeller hub from corroding and seizing to the propeller shaft (especially in salt water), always apply a coat of the recommended lubricant to the entire propeller shaft at the recommended maintenance intervals and also each time the propeller is removed.

6. Coat the propeller shaft with Quicksilver or Mercury Precision Lubricants Anti-Corrosion Grease or 2-4-C with Teflon.



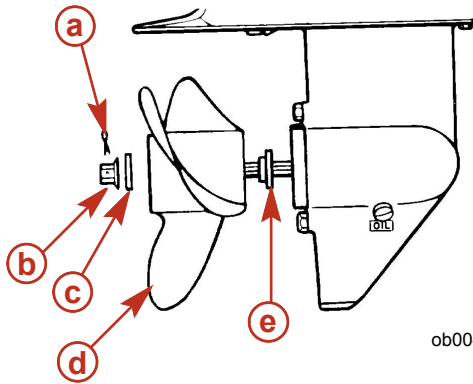
ob00490

Tube Ref No.	Description	Where Used	Part No.
 94	Anti-Corrosion Grease	Propeller shaft	92-802867A 1
 95	2-4-C with Teflon	Propeller shaft	92-802859A 1

7. Install front thrust washer, propeller, rear thrust hub, and propeller nut onto the shaft.

MAINTENANCE

- Place a block of wood between gearcase and propeller to prevent rotation and tighten propeller nut. Secure propeller nut to the shaft with cotter pin.



ob00489

- a - Cotter pin
- b - Propeller nut
- c - Rear thrust hub

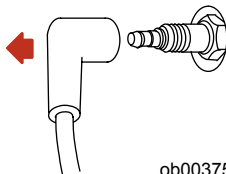
- d - Propeller
- e - Front thrust washer

Spark Plug Inspection And Replacement

⚠ WARNING

Avoid serious injury or death from fire or explosion caused by damaged spark plug boots. Damaged spark plug boots can emit sparks. Sparks can ignite fuel vapors under the engine cowl. To avoid damaging spark plug boots, do not use any sharp object or metal tool such as pliers, screwdriver, etc. to remove spark plug boots.

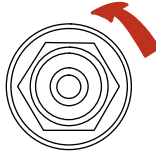
- Remove the spark plug boot. Twist the rubber boot slightly and pull off.



ob00375

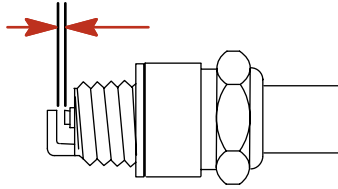
MAINTENANCE

- Remove the spark plug to inspect. Replace spark plug if electrode is worn or the insulator is rough, cracked, broken, blistered or fouled.



ob00423

- Set the spark plug gap to specification.



ob00424



Spark Plug	
Spark plug gap	0.9 mm (0.035 in.)

- Before installing spark plug, clean off any dirt on the spark plug seat. Install plug finger tight, and then tighten 1/4 turn or torque to specifications.

Description	Nm	lb. in.	lb. ft.
Spark plug	27		20

Lubrication Points

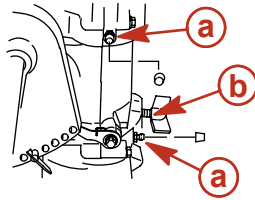
- Lubricate the following with Quicksilver or Mercury Precision Lubricants 2-4-C with Teflon or Special Lubricant 101.

Tube Ref No.	Description	Where Used	Part No.
 95	2-4-C with Teflon	Co-pilot, swivel bracket, transom clamp screws, tiller handle bushing, shift handle detent	92-802859A 1
 34	Special Lubricant 101	Co-pilot, swivel bracket, transom clamp screws, tiller handle bushing, shift handle detent	92-802865A 1

- Co-Pilot - Lubricate threads.

MAINTENANCE

- Swivel Bracket - Lubricate through fittings.

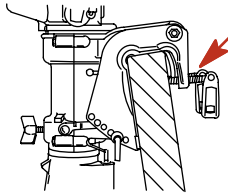


ob00491

a - Swivel bracket

b - Co-pilot

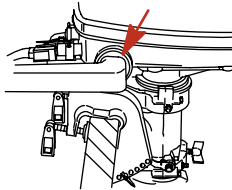
- Transom Clamp Screws - Lubricate threads.



ob00492

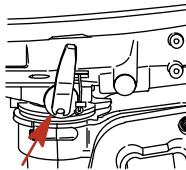
NOTE: Lubricating the tiller handle bushing and shift handle detent requires disassembly of the product. These points should be lubricated at least once a year by an authorized dealer.

- Tiller Handle Rubber Bushing - Lubricate internal diameter.



ob00493

- Shift Handle Detent - Lubricate detent.

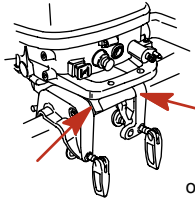


ob00494

2. Lubricate the following with Light Weight Oil.



MAINTENANCE

- Tilt Pivot.

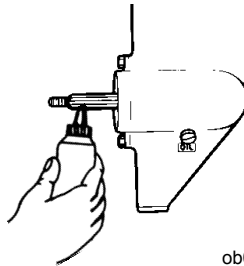


ob00495

3. Lubricate the following with Quicksilver or Mercury Precision Lubricants Anti-Corrosion Grease or 2-4-C with Teflon.

Tube Ref No.	Description	Where Used	Part No.
 94	Anti-Corrosion Grease	Propeller shaft	92-802867A 1
 95	2-4-C with Teflon	Propeller shaft	92-802859A 1

- Propeller Shaft - Refer to **Propeller Replacement** for removal and installation of the propeller. Coat the entire propeller shaft with lubricant to prevent the propeller hub from corroding to the shaft.



ob00490

Changing Engine Oil

ENGINE OIL CAPACITY

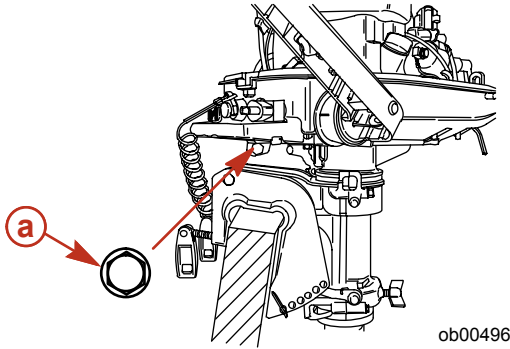
Engine oil capacity is approximately 450 ml (15 fl. oz.).

OIL CHANGING PROCEDURE

1. Place outboard in an upright (not tilted) position.
2. Turn the outboard to gain access to the drain plug. Remove drain plug and drain engine oil into an appropriate container. Lubricate the seal on the drain plug with oil and reinstall.

MAINTENANCE

IMPORTANT: Inspect oil for signs of contamination. Oil contaminated with water will have a milky color to it; oil contaminated with fuel will have a strong fuel smell. If contaminated oil is noticed, have the engine checked by your dealer.



ob00496

a - Drain plug

OIL FILLING

IMPORTANT: Do not overfill. Be sure that the outboard is upright (not tilted) when checking oil.

Remove the oil fill cap and refill with 450 ml (15 fl. oz.) of oil. Reinstall the oil fill cap.

Idle engine for five minutes and check for leaks. Stop engine and check oil level on dipstick. Add oil if necessary.

Gearcase Lubrication

When adding or changing gearcase lubricant, visually check for the presence of water in the lubricant. If water is present, it may have settled to the bottom and will drain out prior to the lubricant, or it may be mixed with the lubricant, giving it a milky colored appearance. If water is noticed, have the gearcase checked by your dealer. Water in the lubricant may result in premature bearing failure or, in freezing temperatures, will turn to ice and damage the gearcase.

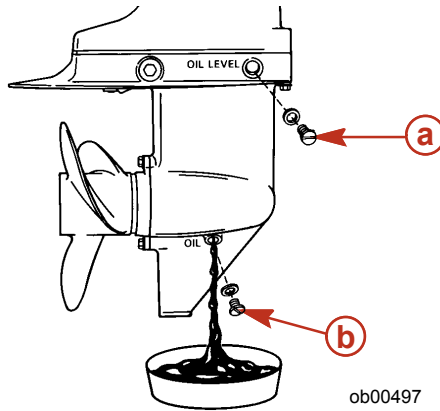
Examine the drained gearcase lubricant for metal particles. A small amount of metal particles indicates normal gear wear. An excessive amount of metal filings or larger particles (chips) may indicate abnormal gear wear and should be checked by an authorized dealer.

DRAINING GEARCASE

1. Tilt outboard so that the oil drain plug is at the lowest point.
2. Place drain pan below outboard.

MAINTENANCE

3. Remove vent plug and fill/drain plug and drain lubricant.



a - Vent plug

b - Fill/drain plug

GEARCASE LUBRICANT CAPACITY

Gearcase lubricant capacity is approximately 195 ml (6.6 fl. oz.).

GEARCASE LUBRICANT RECOMMENDATION

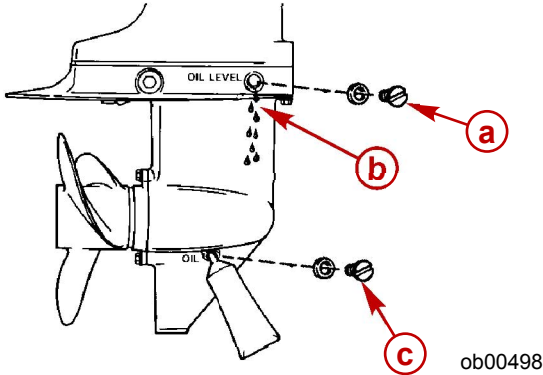
Mercury or Quicksilver Premium or High Performance Gear Lubricant.

CHECKING LUBRICANT LEVEL AND REFILLING GEARCASE

1. Place outboard in a vertical operating position.
2. Remove vent plug from vent hole.

MAINTENANCE

3. Place lubricant tube into the fill hole and add lubricant until it appears at the vent hole.



a - Vent plug

b - Lubricant at vent hole

c - Fill/drain plug

IMPORTANT: Replace sealing washers if damaged.

4. Stop adding lubricant. Install the vent plug and sealing washer before removing the lubricant tube.
5. Remove lubricant tube and reinstall cleaned fill/drain plug and sealing washer.

Submerged Outboard

A submerged outboard will require service within a few hours by an authorized dealer once the outboard is recovered from the water. This immediate attention by a servicing dealer is necessary once the engine is exposed to the atmosphere to minimize internal corrosion damage to the engine.