



IMPORTANT INFORMATION

Section 1B - Maintenance

**1
B**

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Specifications

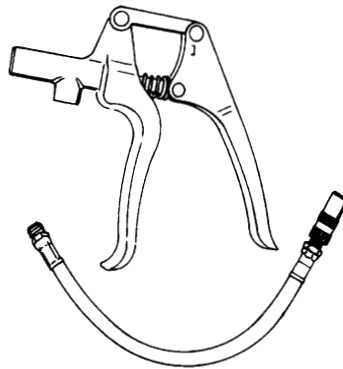
Gear Case Lubricant Capacity

Gear Case Ratio	Capacity
1.87:1	22.5 fl. oz. (717 ml)
2.00:1	22.5 fl. oz. (717 ml)
2.30:1	22.5 fl. oz. (717 ml)

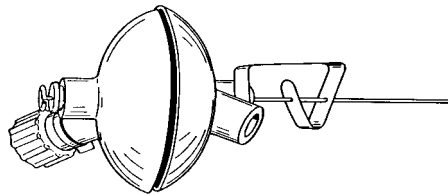


Special Tools

1. Grease Gun 91-37299A1

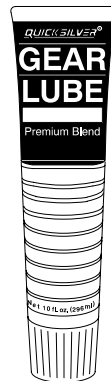


2. Flushing Attachment 44357A2

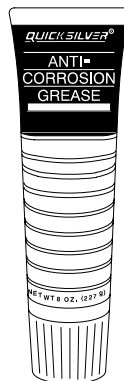


Quicksilver Lubricant/Sealant

1. Gear Lubricant - Premium Blend 92-850737A1

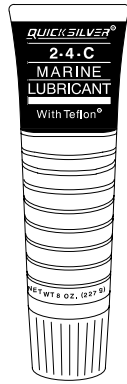


2. Anti-Corrosion Grease 92-850735A1





3. 2-4-C Marine Lubricant with Teflon 92-850736A1



4. SAE 30W Motor Oil (Obtain Locally)



5. Quicksilver Power Trim and Steering Fluid 91-90100A12



6. 2 Stroke Outboard Oil 92-82666A24





Inspection and Maintenance Schedule

Before Each Use

1. Check that lanyard stop switch stops the engine.
2. Visually inspect the fuel system for deterioration or leaks.
3. Check outboard for tightness on transom.
4. Check steering system for binding or loose components.
5. Visually check steering link rod fasteners for proper tightness.
6. Check propeller blades for damage.

After Each Use

1. Flush out the outboard cooling system if operating in salt or polluted water.
2. Wash off all salt deposits and flush out the exhaust outlet of the propeller and gear case with fresh water if operating in salt water.

Every 100 Hours of Use or Once Yearly, Whichever Occurs First

1. Lubricate all lubrication points. Lubricate more frequently when used in salt water.
2. Inspect and clean spark plugs.
3. Check engine fuel filter for contaminants – Carburetor models.
4. Replace water separating fuel filter – EFI models.
5. Replace compressor air intake filter.
6. Check corrosion control anodes. Check more frequently when used in salt water.
7. Drain and replace gear case lubricant.
8. Lubricate splines on the drive shaft and shift shaft.*
9. Check power trim fluid.
10. Inspect battery.
11. Check control cable adjustments.*
12. Check tightness of bolts, nuts, and other fasteners.
13. Replace water pump impeller (more often if overheating occurs or reduced water pressure is noted).*

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



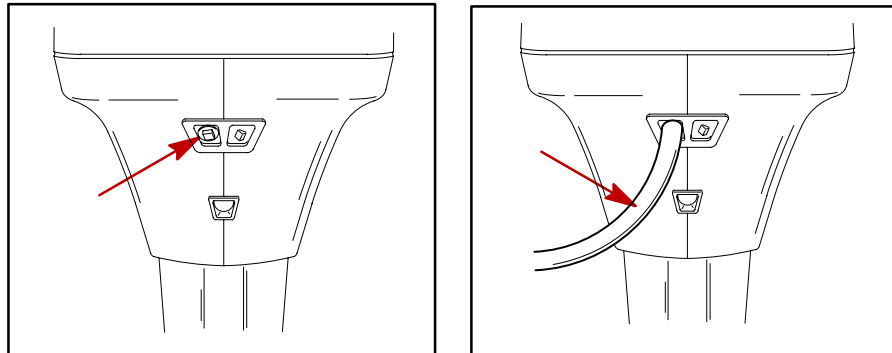
Flushing Engine

Flushing Cooling System – Using Cowl Flush Plug

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.

NOTE: Engine can be stopped or running at idle speed when flushing the cooling system. Do not flush engine using a water system that exceeds 45 psi.

1. Remove the plug from fitting in the bottom cowl.



2. Attach a water hose to the fitting. Turn water on and flush for 3 to 5 minutes.

Flushing Cooling System – Using Flushing Attachment 44357A2

⚠ WARNING

When flushing, verify that area in vicinity of propeller is clear and that no person is standing nearby – to avoid possible injury. It is recommended to remove propeller as a precautionary measure.

1. Install Quicksilver Flushing Attachment 44357A2 (or equivalent tool) on the gear housing from the FRONT side, positioning the rubber cups over the water intake openings.
2. Connect hose [1/2 in. (12.7 mm) I.D. or larger] between flushing attachment and water tap.

IMPORTANT: To prevent water pump damage, do not start or run engine unless cooling water is flowing.

3. With the outboard in the normal operating position (vertical), partially open water tap (IT IS NOT NECESSARY to use full water pressure) and adjust water flow so that there is a significant water loss around the rubber cups.
4. Start engine and idle in NEUTRAL. Increase engine speed, not to exceed 2500 RPM.
5. Flush or service engine as required. Verify adequate cooling water is provided.
 - a. Water must be discharged thru “tell tale.”

IMPORTANT: Prevent engine overheating. If water flow is insufficient, stop engine and determine cause before continuing.

- b. Flush until discharge water is clear. In saltwater areas, run outboard 3 to 5 minutes.
 - c. Stop engine before turning off water.
6. Stop engine, turn water off and remove flushing attachment from gear housing.



IMPORTANT: While and after flushing, keep outboard in upright position until all water has drained from drive shaft housing to prevent water from entering the powerhead via drive shaft housing and exhaust ports.

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.

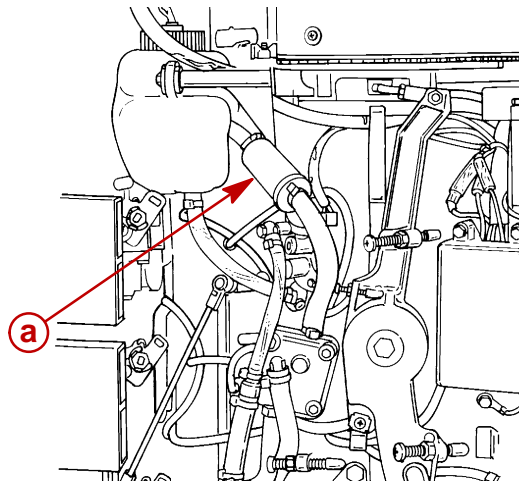
Before servicing any part of the fuel system, stop engine and disconnect the battery. Drain the fuel system completely. Use an approved container to collect and store fuel. Wipe up any spillage immediately. Material used to contain spillage must be disposed of in an approved receptacle. Any fuel system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

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 is found, the fuel line or primer bulb must be replaced.

Fuel Line Filter (Models With Carburetors)

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



a - Fuel Line Filter

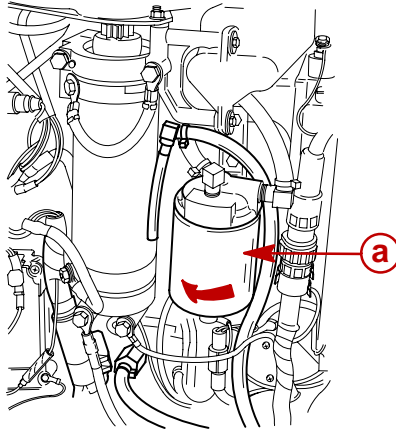
IMPORTANT: Visually inspect for fuel leakage from the filter connections by squeezing the primer bulb until firm, forcing fuel into the filter.



Water Separating Fuel Filter – EFI Models

NOTE: The warning system will turn on when water in the fuel filter reaches the full level.

1. This filter removes moisture and also debris from the fuel. If the filter becomes filled with water, the water can be removed. If the filter becomes plugged with debris, the filter must be replaced with a new filter.



a - Fuel/Water Separator Filter

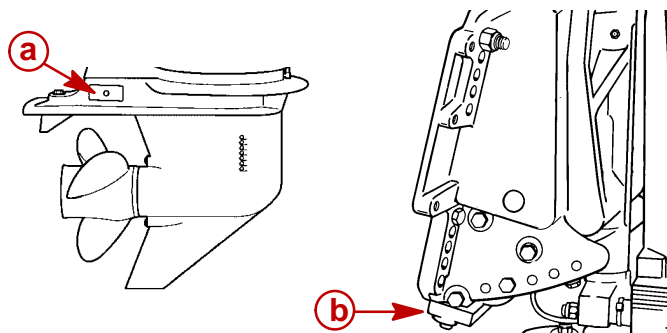
Remove and replace filter as follows:

- a. Turn ignition key switch to OFF position.
- b. Disconnect wire at bottom of filter.
- c. Remove filter by turning the filter in the direction of the arrow (clockwise). Tip the filter to drain fluid in a suitable container.
- d. Lubricate the sealing ring on the filter with oil. Thread on the filter and tighten securely by hand. Reconnect the wire to the filter.

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

Corrosion Control Anode

The gear case has two corrosion control anodes (a). Another anode (b) is installed on the bottom of the transom bracket assembly. An anode helps protect the outboard against galvanic corrosion by sacrificing its metal to be slowly eroded instead of the outboard metals.



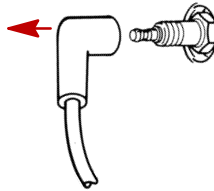
Each anode requires periodic inspection especially in salt water which will accelerate the erosion. To maintain this corrosion protection, always replace the anode before it is completely eroded. Never paint or apply a protective coating on the anode as this will reduce effectiveness of the anode.



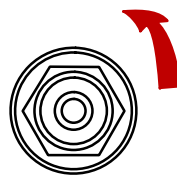
Spark Plug Inspection

Inspect spark plugs at the recommended intervals.

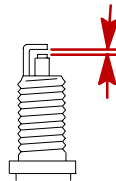
1. Remove the spark plug leads by twisting the rubber boots slightly and pull off. Inspect spark plug boots and replace if cracked.



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



3. Set the spark plug gap. See Specification Chart in General Information Section.



4. Before reinstalling spark plugs, clean away dirt on the spark plug seats. Install plugs finger tight, and tighten 1/4 turn or torque to 20 lb. ft. (27 Nm).

Battery Inspection

The battery should be inspected at periodic intervals to ensure proper engine starting capability.

IMPORTANT: Read the safety and maintenance instructions which accompany your battery.

1. Turn off the engine before servicing the battery.
2. Add water as necessary to keep the battery full.
3. Make sure the battery is secure against movement.
4. Battery cable terminals should be clean, tight, and correctly installed. Positive to positive and negative to negative.
5. Make sure the battery is equipped with a nonconductive shield to prevent accidental shorting of battery terminals.

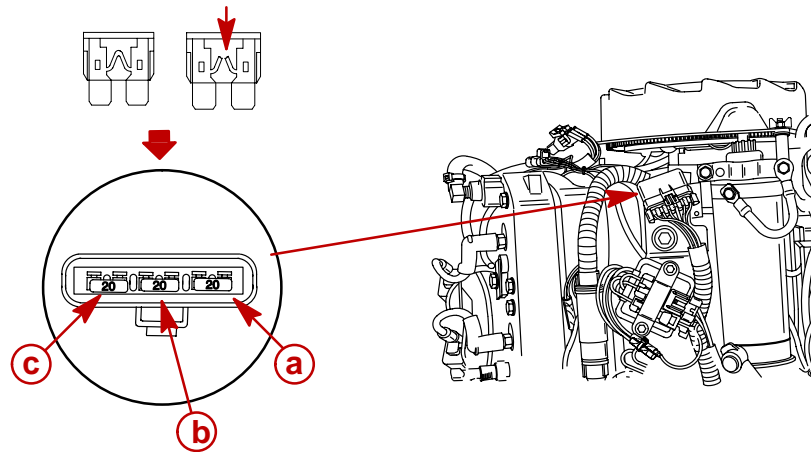


Fuse Replacement

IMPORTANT: Always carry spare SFE 20 AMP fuses.

The electrical wiring circuits on the outboard are protected from overload by fuses in the wiring. If a fuse is blown, try to locate and correct the cause of the overload. If the cause is not found, the fuse may blow again.

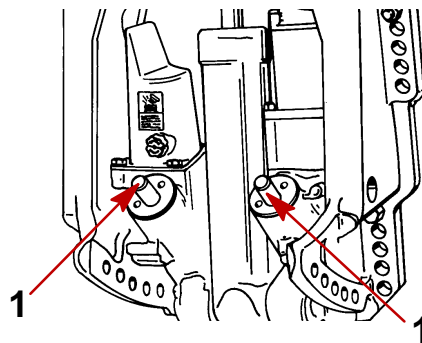
1. Open the fuse holder and look at the silver colored band inside the fuse. If band is broken, replace the fuse. Replace fuse with a new fuse with the same rating.
2. The fuses and circuits are identified as follows:
 - a. Accessories and Starting Circuit – 20 AMP Fuse.
 - b. Upper Voltage Regulator – 20 AMP Fuse.
 - c. Lower Voltage Regulator – 20 AMP Fuse.



Lubrication Points

Lubricate Point 1 with Quicksilver Special Lubricant 101.

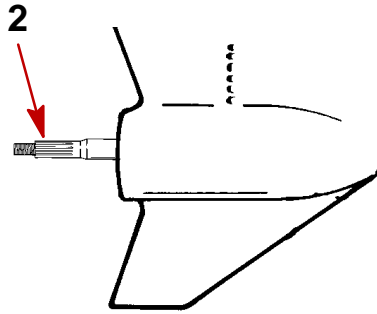
1. Trim Rod Ball Ends – Turn the ball ends to work the lubricant into the ball sockets.





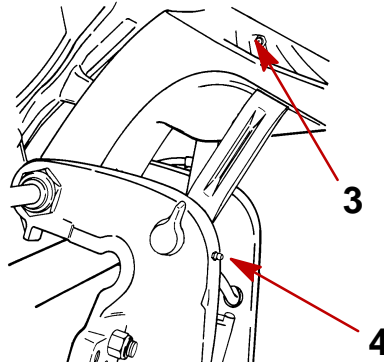
Lubricate Point 2 with Quicksilver Anti-Corrosion Grease or 2-4-C Marine Lubricant with Teflon.

2. 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 and seizing to the shaft.

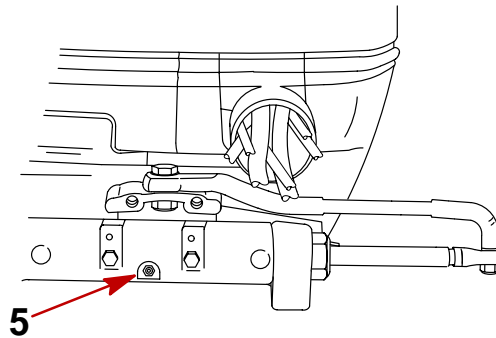


Lubricate Points 3 thru 6 with Quicksilver 2-4-C Marine Lubricant with Teflon or Special Lubricate 101.

3. Swivel Bracket – Lubricate through fitting.
4. Tilt Support Lever – Lubricate through fitting.



5. Tilt Tube – Lubricate through fitting.



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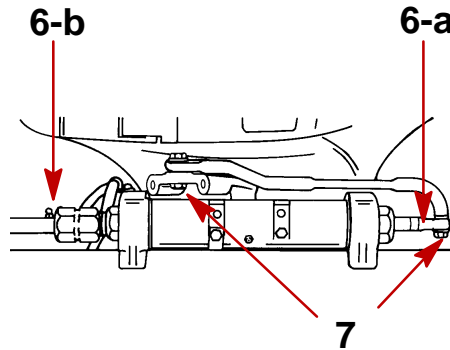
- Steering Cable Grease Fitting (If Equipped) – Rotate steering wheel to fully retract the steering cable end (a) into the outboard tilt tube. Lubricate through fitting (b).

⚠ WARNING

The end of the steering cable must be fully retracted into the outboard tilt tube before adding lubricant. Adding lubricant to steering cable when fully extended could cause steering cable to become hydraulically locked. An hydraulically locked steering cable will cause loss of steering control, possibly resulting in serious injury or death.

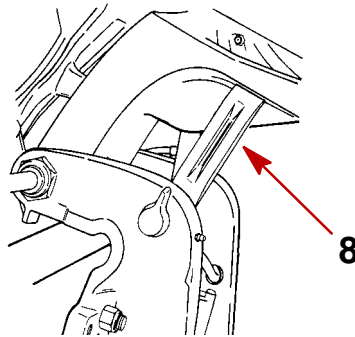
Lubricate Points 7 With Light Weight Oil.

- Steering Link Rod Pivot Points – Lubricate pivot points.

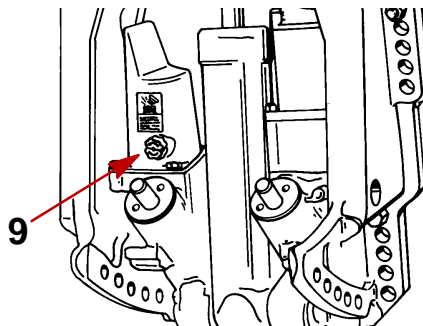


Checking Power Trim Fluid

- Tilt outboard to the full up position and engage the tilt support lock.



- Remove fill cap and check fluid level. The fluid level should be even with the bottom of the fill hole. Add Quicksilver Power Trim & Steering Fluid. If not available, use automotive (ATF) automatic transmission fluid.





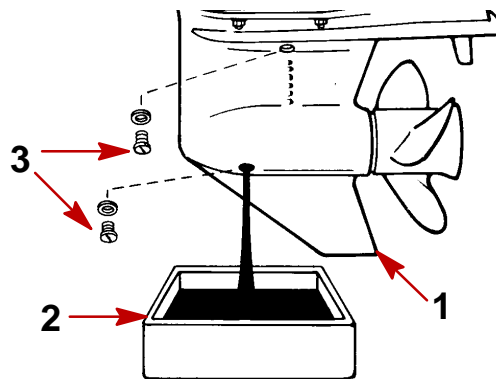
Gear Case Lubrication

When adding or changing gear case 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 gear case 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 gear case.

DRAINING GEAR CASE

NOTE: Some models may have the vent and fill/drain plugs on the opposite side.

1. Place outboard in a vertical operating position.
2. Place drain pan below outboard.
3. Remove vent plug and fill/drain plug and drain lubricant.



GEAR CASE LUBRICANT CAPACITY

Gear case lubricant capacity is approximately 22.5 fl. oz. (665 ml).



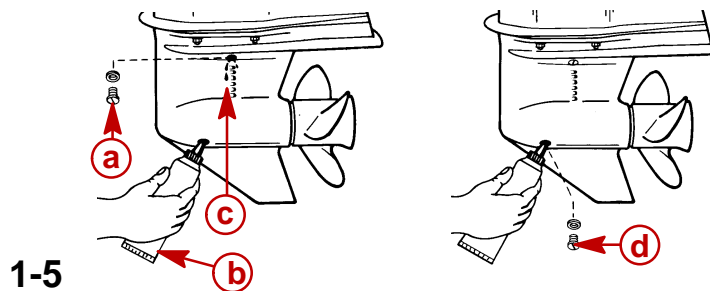
CHECKING GEAR CASE LUBRICANT LEVEL AND REFILLING GEAR CASE

NOTE: Some models may have the vent and fill/drain plugs on the opposite side.

1. Place outboard in a vertical operating position.
2. Remove vent plug (a).
3. Place lubricant tube (b) into the fill hole and add lubricant until it appears at the vent hole (c).

IMPORTANT: Replace sealing washers if damaged.

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



Storage Preparation

The major consideration in preparing your outboard for storage is to protect it from rust, corrosion, and damage caused by freezing of trapped water.

The following storage procedures should be followed to prepare your outboard for out of season storage or prolonged storage (two months or longer).

CAUTION

Never start or run your outboard (even momentarily) without water circulating through all the cooling water intake holes in the gear case to prevent damage to the water pump (running dry) or overheating of the engine.

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 pumps, and fuel injection systems) with treated (stabilized) fuel to help prevent formation of varnish and gum. Proceed with following instructions.

1. **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.
2. **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.



3. Place the outboard in water or connect flushing attachment for circulating cooling water. Run the engine at 2000 rpm for 10 minutes to allow treated fuel to fill the fuel system.

PROTECTING INTERNAL ENGINE COMPONENTS

NOTE: Make sure the fuel system has been prepared for storage.

Carburetor Models

1. Remove carburetor cover.
2. Place the outboard in water or connect flushing attachment for circulating cooling water. Start the engine and let it run in neutral to warm up.
3. With engine running at fast idle, stop the fuel flow by kinking the remote fuel line and run engine until it stops, draining the fuel system. When engine begins to stall, quickly spray Mercury Precision or Quicksilver Storage Seal into carburetors until engine stops from lack of fuel.
4. Remove the spark plugs and pour in 1 oz. (295 ml) of outboard oil around the inside of each cylinder.
5. Rotate the flywheel manually several times to distribute the oil in the cylinders. Reinstall spark plugs.

Electronic Fuel Injection (EFI) Models

NOTE: Make sure the fuel system has been prepared for storage.

1. Remove the spark plugs and add approximately one ounce (30ml) of engine oil into each spark plug hole. Rotate the flywheel manually several times to distribute the oil in the cylinders. Reinstall spark plugs.
2. Remove the water separating fuel filter and empty contents into a suitable container. Refer to Maintenance Section for removal and installation of filter. Replace fuel filter annually, or every 100 Hours of operation, or if large amount of fuel contamination is present.

PROTECTING EXTERNAL OUTBOARD COMPONENTS

1. Lubricate all outboard components listed in the Inspection and Maintenance Schedule.
2. Touch up any paint nicks. See your dealer for touch-up paint.
3. Spray Quicksilver Corrosion Guard on external metal surfaces (except corrosion control anodes).

GEAR CASE

Drain and refill the gear case lubricant (refer to maintenance procedure).

POSITIONING OUTBOARD FOR STORAGE

Store outboard in an upright (vertical) position to allow water to drain out of outboard.

CAUTION

If outboard is stored tilted up in freezing temperature, trapped cooling water or rain water that may have entered the propeller exhaust outlet in the gear case could freeze and cause damage to the outboard.



BATTERY STORAGE

1. Follow the battery manufacturers instructions for storage and recharging.
2. Remove the battery from the boat and check water level. Recharge if necessary.
3. Store the battery in a cool, dry place.
4. Periodically check the water level and recharge the battery during storage.