

GENERAL INFORMATION

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Water Pickups -- Check for marine growth.	
Inspect condition and check tension.	Every 100 hours of operation or 120 days, whichever occurs first.
-- Lubricate.	Saltwater Use: Every 50 hours of operation or 60 days, whichever occurs first.
-- Exterior Surfaces -- Spray with rust inhibitor.	Freshwater Use: Every 100 hours of operation or 120 days, whichever occurs first.
Exterior Surfaces -- Clean and dry.	Once a year
-- Flush seawater section.	Saltwater Use: After every use.

MAINTENANCE

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Maintenance Schedules

Maintenance Intervals

Maintenance intervals and the tasks to be performed, as shown in this current schedule, or as found in a previously printed schedules, are generally based on an average boating application and environment. However, individual operating habits and personal maintenance preferences can have an impact on the suggested intervals. In consideration of these factors, MerCruiser has adjusted some maintenance intervals and corresponding tasks to be performed. In some cases, this may allow for more individual tasks to be performed in a single visit to the serving dealer, rather than multiple visits. Therefore, it is very important that the boat owner and servicing dealer discuss the current Maintenance Schedule and develop appropriate maintenance intervals to coincide with the individual operating habits, environment and maintenance requirements.

Scheduled Maintenance That Can Be Performed By Owner/Operator

NOTE: Only perform maintenance which applies to your particular power package.

Task	Interval
Engine Crankcase Oil - Check level.	Weekly
Closed Cooling Coolant - Check level.	
Power Steering Fluid - Check level.	
Sterndrive Unit Oil - Check level.	
Battery - Check level and inspect for damage.	
Fuel Pump Sight Tube (If Equipped) - Check that no fuel is present.	
Power Trim Pump Oil - Check level.	
Anodes - Inspect for erosion.	
Gear Housing Water Pickups - Check for marine growth or debris.	
Drive Belts - Inspect condition and check tension.	Every 100 hours of operation or 120 days, whichever occurs first.
Propeller Shaft - Lubricate.	Saltwater Use: Every 50 hours of operation or 60 days, whichever occurs first.
Power Package - Exterior Surfaces - Spray with rust preventative.	Freshwater Use: Every 100 hours of operation or 120 days, whichever occurs first.
Power Package Exterior Surfaces - Clean and paint.	Once a year
Cooling System - Flush seawater section.	Saltwater Use: After every use.

Scheduled Maintenance That Can Be Performed by Dealer

NOTE: Only perform maintenance which applies to your particular power package.

Task	Interval
Seawater Pickup Pump - Disassemble and inspect.	Whenever insufficient seawater flow is suspected. (If operating temperature exceeds normal range.)
Crankcase Oil and Filter - Change.	End of first boating season and thereafter, every 100 hours of operation or once yearly, whichever occurs first.
Ignition system - Clean and inspect condition.	
Flame Arrestor and Crankcase Ventilation Hose - Clean and inspect.	
Positive Crankcase Ventilation (PCV) Valve (If Equipped) - Change.	
Sterndrive Unit Oil - Change.	
Gimbal Ring Clamping Screws - Retorque to 50-55 ft. lb. (67-74 N·m).	
Rear Engine Mounts - Check torque to 30-40 ft. lb. (47-54 N·m).	
Gimbal Bearing - Lubricate.	
Cooling System - Clean and inspect.	
Steering System - Lubricate and inspect for loose, damaged or missing parts.	
Electrical System - Check for loose or damaged wiring.	
Closed Cooling System Pressure Cap - Clean, inspect and test .	
Cooling System Hoses and Clamps - Inspect for damage and deterioration. Check clamps for tightness.	
Continuity Circuit - Check components for loose connections, broken or frayed wires.	
Shift and Throttle Cable and Linkage - Lubricate and inspect for loose, damaged or missing parts.	
Engine Exhaust System - Inspect externally for damage, deterioration and restrictions. Check for tightness.	
Ignition System - Check timing and adjust as needed.	

Scheduled Maintenance That Can Be Performed by Dealer (Continued)

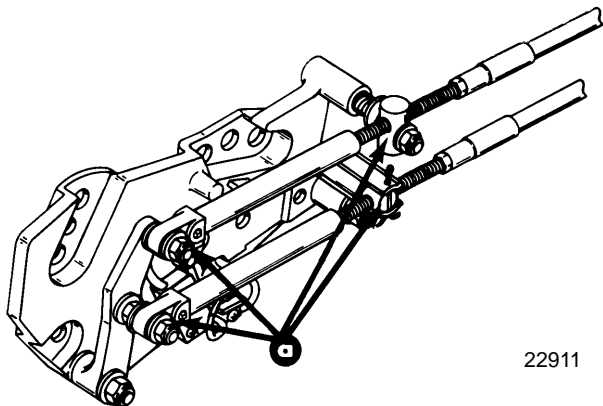
NOTE: Only perform maintenance which applies to your particular power package.

Task	Interval
Steering Head and Remote Control - Inspect and lubricate.	End of first boating season and thereafter, every 100 hours of operation or once yearly, whichever occurs first.
Carburetor - Inspect and adjust.	
Fuel Filters - Replace.	Once a Year
Quicksilver Mercathode System - Test output.	
Closed Cooling Coolant - Test for alkalinity.	
Heat Exchanger - Clean seawater section.	
Drive Unit Bellows and Clamps - Inspect.	
Engine Alignment - Check.	
Engine Coupling Universal Joint Shaft Splines - Lubricate.	End of first boating season and thereafter, Saltwater Use: Every 300 hours of operation or once yearly, whichever occurs first Freshwater Use: Every 300 hours of operation or once every two years, whichever occurs first.
Universal Joint Cross Bearings- Inspect.	
Closed Cooling Coolant - Replace.	Every Five Years

¹Only if Extended Life 5/100 Ethylene Glycol Antifreeze/Coolant is used. If any non-compatible coolant is added to this coolant, coolant must be changed every 2 years or 400 hours, whichever occurs first. All coolants other than Extended Life 5/100 Ethylene Glycol Antifreeze/Coolant must be changed every 2 years or 400 hours, whichever occurs first.

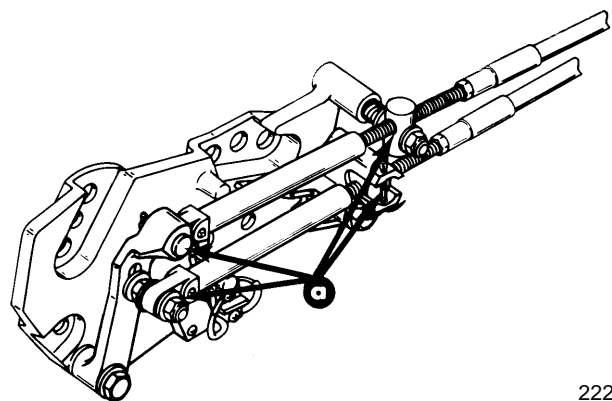
Lubricating Shift Cable Pivot Points

1. Lubricate with SAE 20 or SAE 30 Oil.



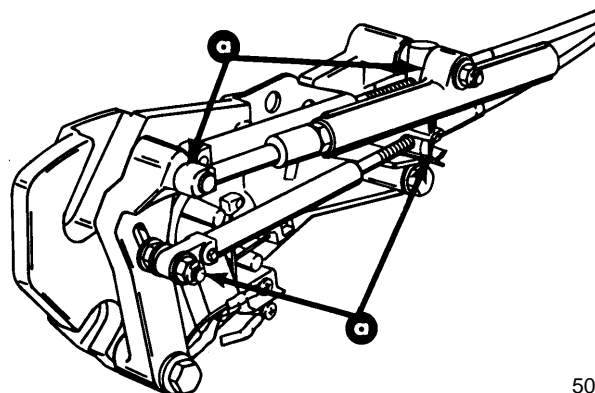
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Early Models



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Later Models



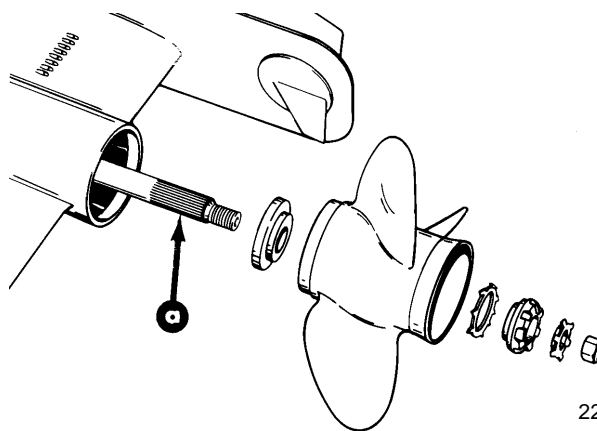
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Models With Shift Assist Assembly

a - Lubrication Points

Lubricating Propeller Shaft

1. Lubricate with Special Lubricant 101, 2-4-C Marine Lubricant With Teflon or Perfect Seal (listed in order of effectiveness).



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a - Lubrication Point

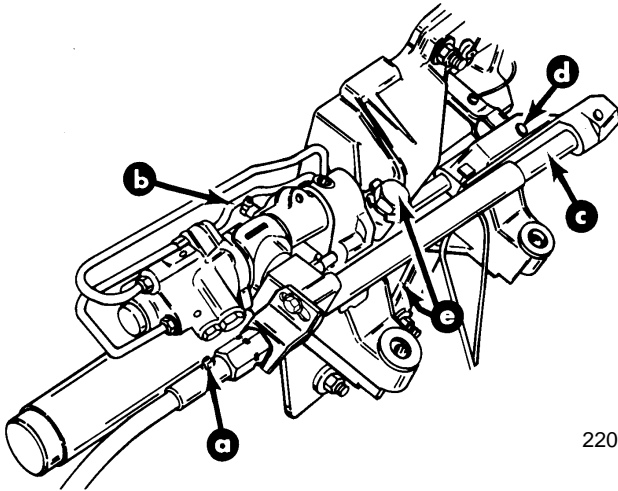
Lubricating Steering System

⚠ WARNING

Transom end of steering cable **MUST BE** fully retracted into cable housing when lubricating cable. If cable is lubricated while extended, hydraulic lock of cable could occur.

Power Steering Models

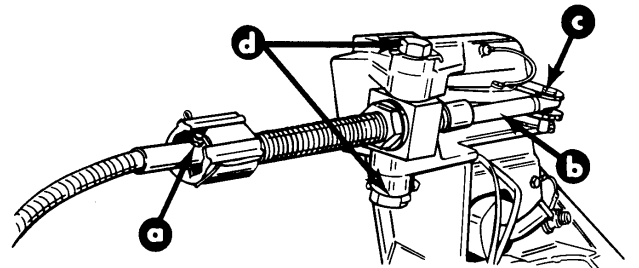
1. Lubricate following points with specified lubricant.



22023

- a - Steering Cable Grease Fitting - 2-4-C Marine Lubricant With Teflon (See Previous Warning)
- b - Control Valve Grease Fitting - 2-4-C Marine Lubricant With Teflon
- c - Steering Cable End - Special Lubricant 101
- d - Pivot Point - SAE 20 Or 30 Engine Oil
- e - Pivot Bolts - Special Lubricant 101

Manual Steering Models



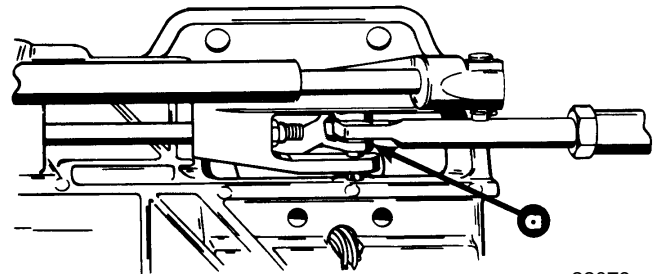
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- a - Steering Cable Grease Fitting - 2-4-C Marine Lubricant With Teflon
- b - Steering - Cable End And Exposed Portion - Special Lubricant 101
- c - Pivot Points - SAE 20 Or 30 Engine Oil
- d - Pivot Bolts - Special Lubricant 101
- e - Lubricating Tie Bar Pivot Points

Lubricating Tie Bar Pivot Points

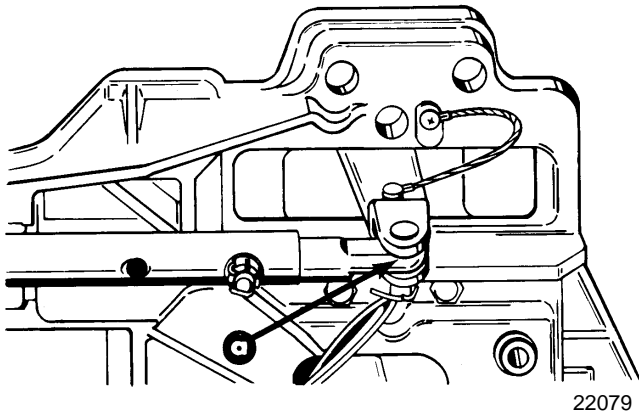
CONTROL VALVE MOUNTED ON STARBOARD TRANSOM

1. Lubricate pivot points with SAE 20 or SAE 30 oil.



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Starboard Engine



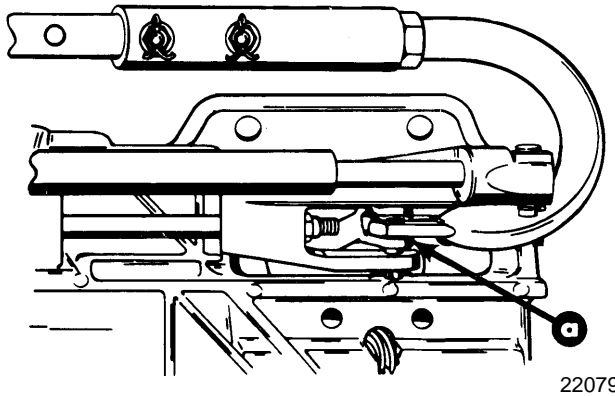
Port Engine

a - Pivot Points

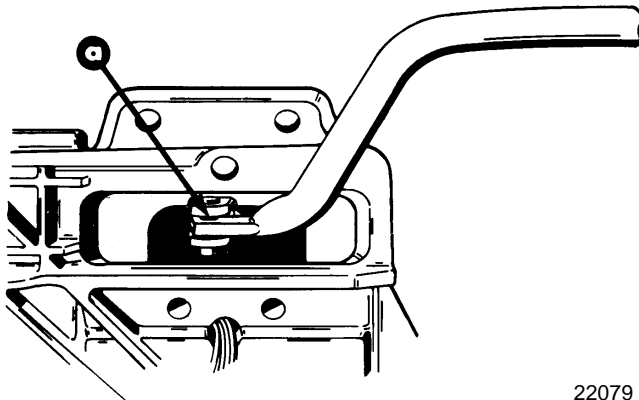
Lubricating Tie Bar Pivot Points

CONTROL VALVE MOUNTED ON PORT TRANSOM

1. Lubricate pivot points with SAE 20 or SAE 30 oil.



Port Engine

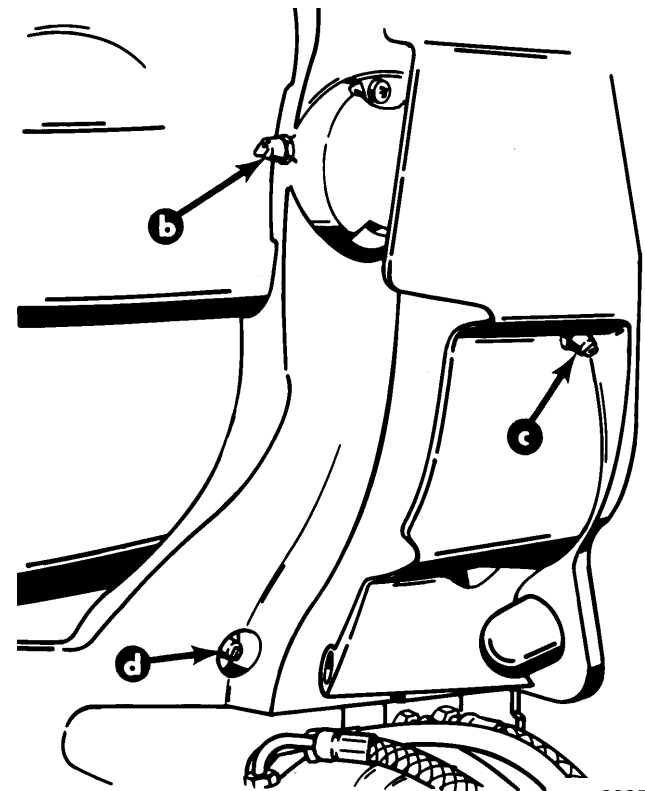
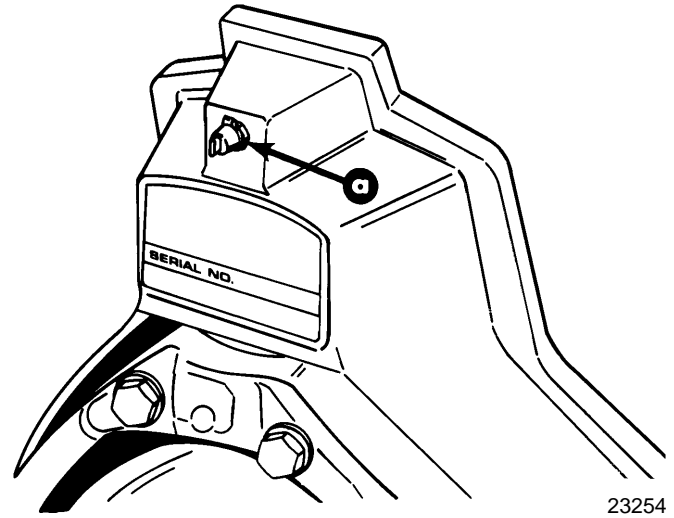


Starboard Engine

a - Pivot Points

Lubricating Transom Gimbal Housing Assembly Swivel Shaft, Swivel Pin, Hinge Pins and Gimbal Bearing

1. Lubricate the following points with specified lubricant.



- a - Swivel Shaft (Later Models May Not Be Equipped With Fitting) [2-4-C Marine Lubricant With Teflon]
- b - Hinge Pin (One Each Side) [2-4-C Marine Lubricant With Teflon]
- c - Gimbal Bearing (U-Joint And Gimbal Bearing Grease)
- d - Swivel Pin (2-4-C Marine Lubricant With Teflon)

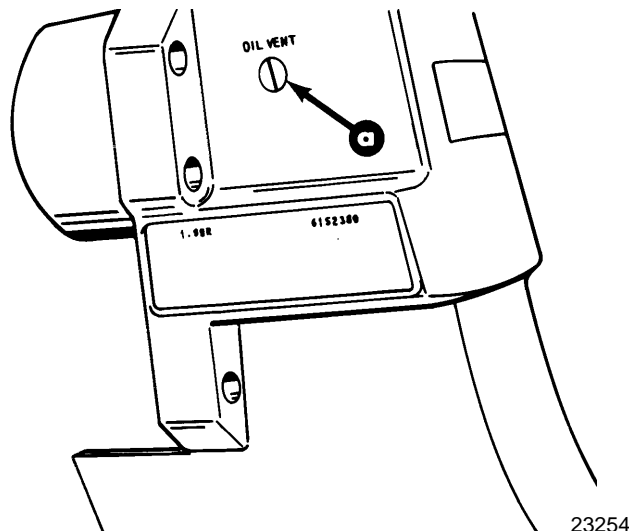
Checking and Adding Sterndrive Oil

Units Without Gear Lube Monitor

1. Position sterndrive unit so that anti-ventilation plate is level.
2. Remove oil vent plug from drive shaft housing.
3. Check oil level - Oil should be even with bottom edge of oil vent hole. If oil is at proper level, reinstall vent screw and sealing washer. If oil level is low, proceed with next steps.

CAUTION

DO NOT attempt to fill drive unit through oil vent hole, as air will be trapped in drive unit and unit will be damaged from lack of lubricant.



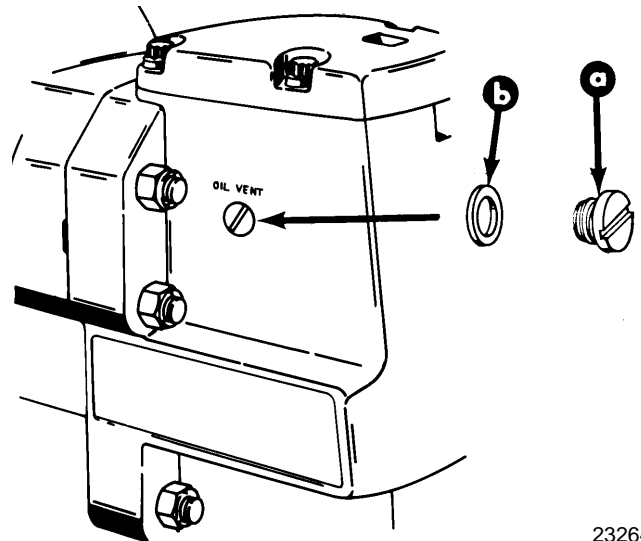
a - Oil Vent Screw

CAUTION

If more than 2 fl. oz. (60 ml) of oil is required to fill drive unit, an oil leak may exist. Find and correct cause of leak before unit is placed in operation.

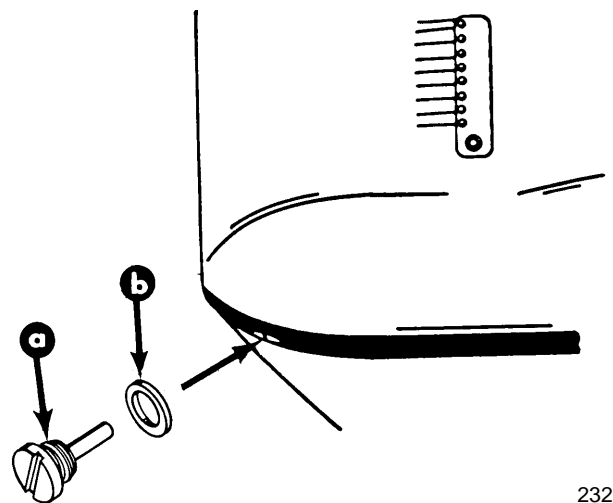
4. If oil level is low, reinstall oil vent screw and sealing washer. Remove oil fill/drain screw and insert lubricant pump into oil fill/drain hole.
5. Remove oil vent screw. Fill drive unit (through oil fill/drain hole) with oil until an air-free stream of oil flows out of oil vent hole.

6. Without removing lubricant pump from fill/drain hole, reinstall vent screw and sealing washer. Torque to 30 - 50 lb. in. (3.4 - 5.7 N·m).
7. Remove lubricant pump and quickly reinstall fill/drain screw and sealing washer. Torque to 30 - 50 lb. in. (3.4 - 5.7 N·m).
8. Recheck oil level after operation of unit.



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a - Oil Vent Screw
b - Sealing Washer



23266

a - Oil Fill/Drain Screw
b - Sealing Washer

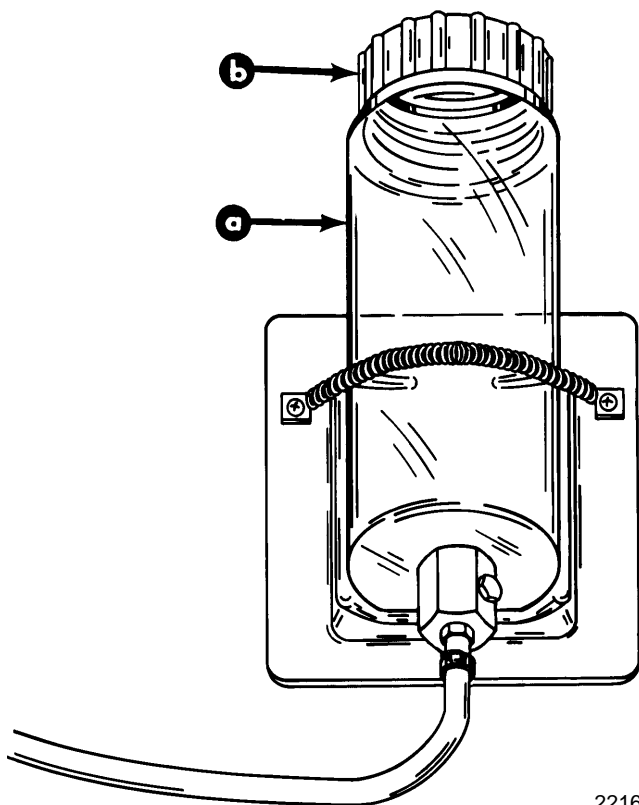
Models With Gear Lube Monitor

IMPORTANT: DO NOT check oil level with drive unit hot from operation, as hot, expanded oil may provide a false reading at reservoir. Allow drive unit to cool prior to checking oil level.

CAUTION

If color of oil appears milky, or if continuous low oil level readings in reservoir are noted, a leak may exist. Find and correct cause for leak before unit is placed in operation.

1. Maintain oil level to "Full" mark on reservoir. DO NOT OVERFILL.
2. Reinstall reservoir cap. Make sure cap is tight.



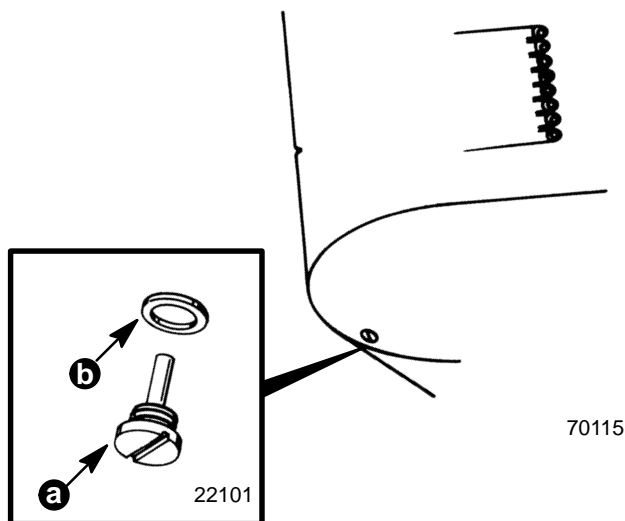
a - Oil Reservoir
b - Cap

Checking Lubricant for Water

Periodically inspect lubricant for water to ensure that drive unit seals are not leaking.

Models Without Gear Lube Monitor

1. Trim drive unit to the full trim UP/OUT position. Remove fill/drain plug to take a sample of lubricant. If water is observed or if lubricant appears discolored, drive unit is leaking and must be re-sealed.



a - Fill/Drain Plug
b - Sealing Washer Or O-ring

2. Reinstall fill/drain plug. Torque to 30-50 lb. in. (3.4-5.7 N·m).

Models With Gear Lube Monitor

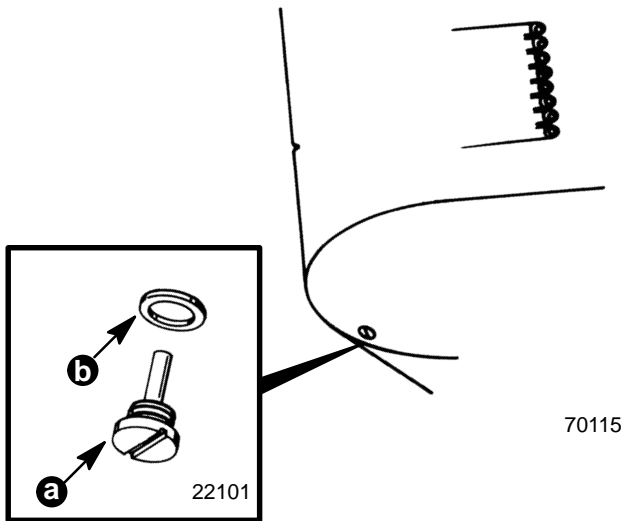
Check for water at bottom of monitor. If oil appears discolored, a water leak is indicated somewhere in the drive unit and the drive unit **must** be resealed.

⚠ CAUTION

If more than 2 fl. oz. (59 mL) of Quicksilver Gear Lube is required to fill monitor, a seal may be leaking. Find and correct cause of leak before unit is placed in operation.

IMPORTANT: If drive unit has set overnight or longer, check for water in drive unit as follows:

1. Trim drive unit to full UP/OUT position.



- a - Oil Fill/Drain Plug
- b - Sealing Washer Or O-ring

2. Remove fill/drain plug to sample lubricant. If water runs out and/or if lubricant appears discolored, drive unit is leaking and **must** be resealed.
3. Reinstall fill/drain plug. Torque to 30-50 lb. in. (3.4-5.7 N•m).

Changing Sterndrive Oil

Models Without Gear Lube Monitor

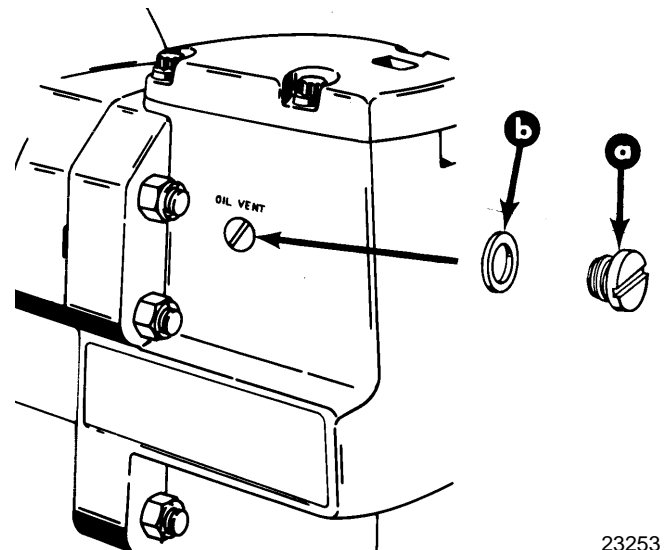
⚠ CAUTION

If any water drains from fill/drain hole, or if oil is discolored, a leak in drive unit may exist. Find and correct cause of leak before placing unit back in operation.

⚠ CAUTION

DO NOT attempt to fill drive unit thru oil vent hole, as air will be trapped in drive unit and unit will be damaged from lack of lubricant.

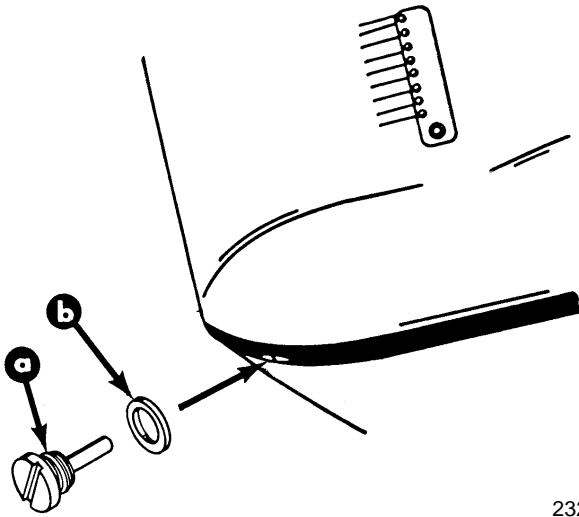
4. Remove fill/drain screw and vent plug from drive unit, and allow oil to drain completely.
5. Position drive unit so that anti-ventilation plate is level.



- a - Oil Vent Screw
- b - Sealing Washer

6. Using lubricant pump, fill drive unit through fill/drain hole until oil level is even with bottom edge of vent hole.
7. Without removing lubricant pump from fill/drain hole, reinstall oil vent plug and sealing washer. Torque to 30 - 50 lb. in. (3.4 - 5.7 N•m).

- Remove lubricant pump and quickly reinstall fill/drain screw and sealing washer. Torque to 30 - 50 lb. in. (3.4-5.7 N-m).
- Recheck oil level after first use.



23266

- a - Oil Fill/Drain Plug
- b - Sealing Washer

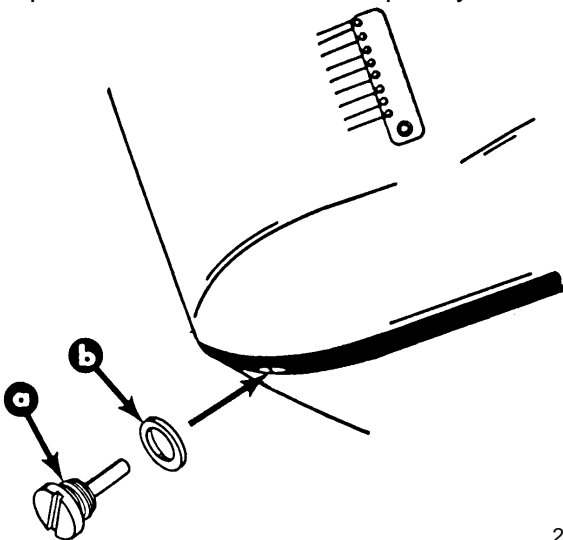
Units With Gear Lube Monitor

- Raise drive unit to the full trim OUT position.

CAUTION

If any water drains from fill/drain hole, or if oil color appears milky, a leak in drive unit is indicated. Find and correct cause of leak before placing unit back in operation.

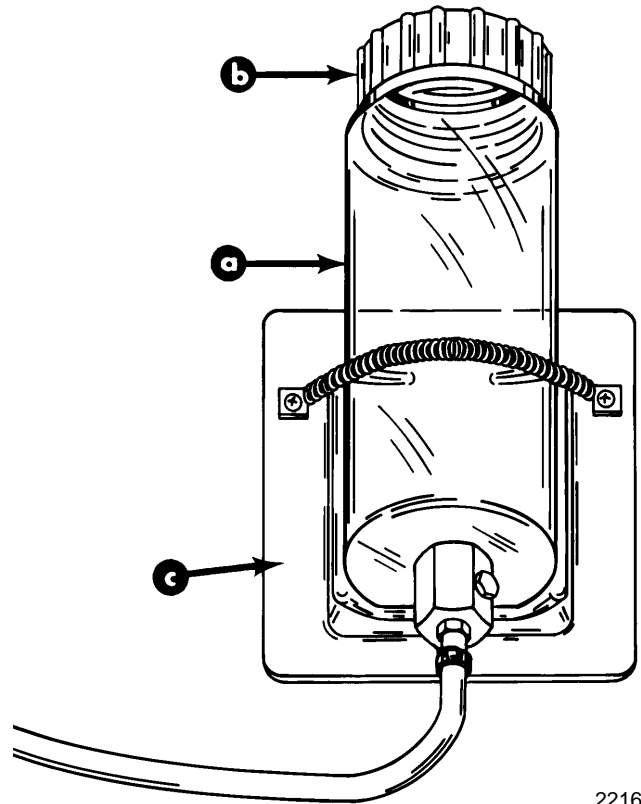
- Remove fill/drain screw and remote oil reservoir cap and allow oil to drain completely.



23266

- a - Oil Fill/Drain Screw
- b - Sealing Washer

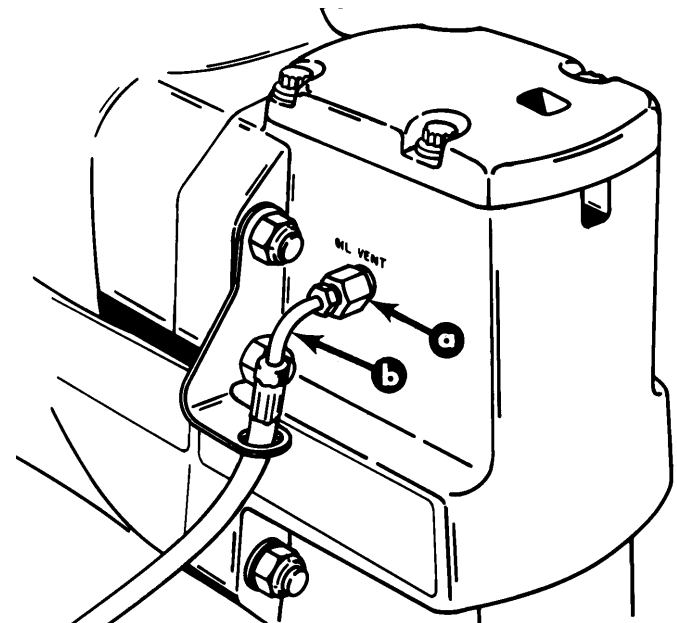
- Remove reservoir from bracket and remove any remaining oil from reservoir.



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- a - Oil Reservoir
- b - Cap
- c - Bracket

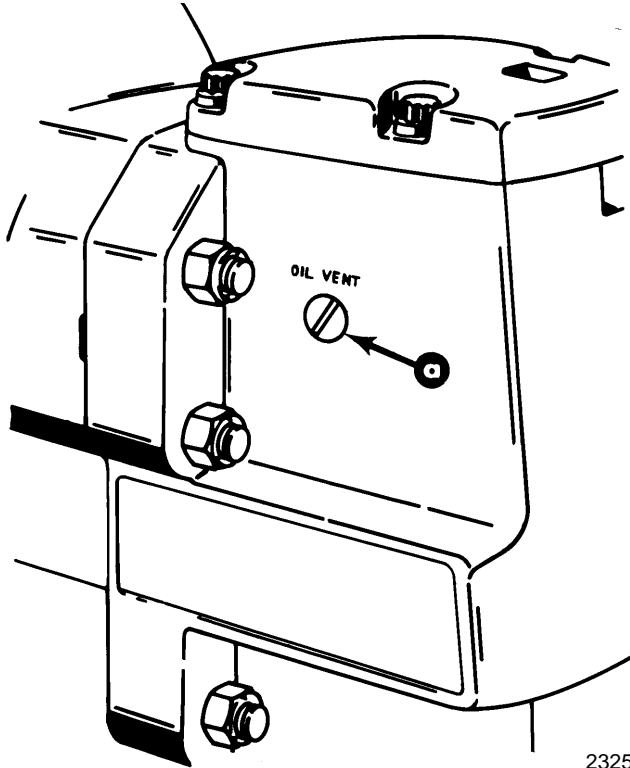
- Remove hose and adapter from vent hole.



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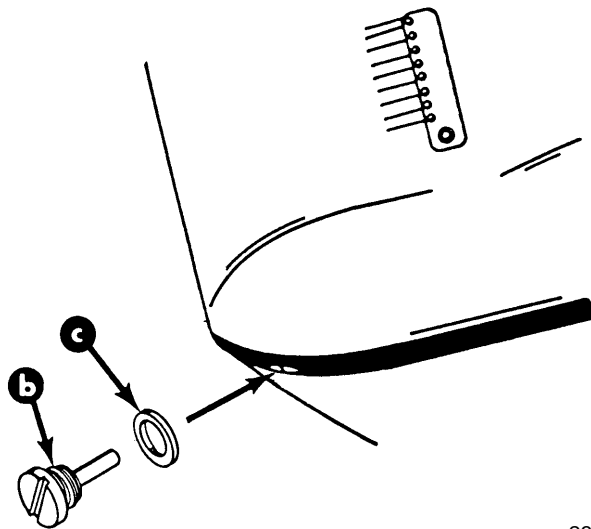
- a - Adapter and Seal
- b - Hose

5. Position sterndrive unit so that anti-ventilation plate is level.
6. Using lubricant pump, fill drive unit through fill/drain hole until an air-free stream of oil flows out of vent hole.
7. Temporarily plug vent hole.
8. Remove lubricant pump and quickly reinstall fill/drain screw and sealing washer.



a - Vent Hole

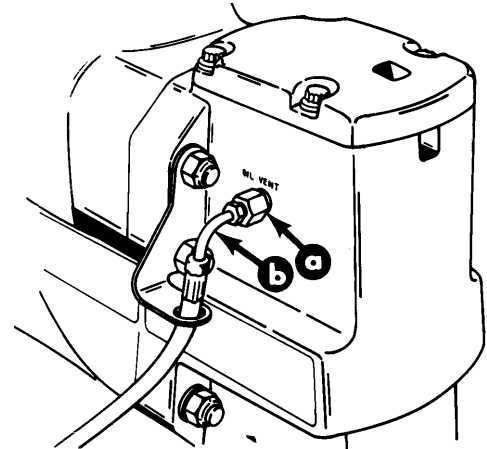
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b - Fill/Drain Screw
c - Sealing Washer

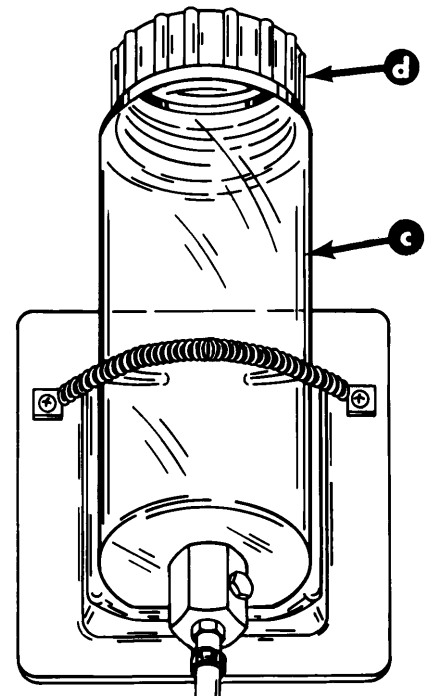
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9. Unplug vent hole; then, install adapter and sealing washer into vent hole. Torque adapter to 30 - 50 lb. in. (3.4-5.7 N-m). Install reservoir hose and tighten fitting LOOSELY.
10. Fill oil reservoir to "Fill" mark. DO NOT OVER-FILL. Install cap and tighten securely.
11. Loosen hose fitting from adapter until an air-free stream of oil flows from between adapter and hose fitting; then, torque hose fitting to 30 - 50 lb. in. (3.4-5.7 N-m).
12. If necessary, add oil to reservoir up to "Full" mark.



a - Adapter
b - Hose Fitting

23253



c - Oil Reservoir
d - Cap

22161

13. Recheck oil level after first use.

General Maintenance

Maintaining Power Package Exterior Surfaces

Entire Power Package should be sprayed at recommended intervals with Quicksilver Corrosion and Rust Preventive Type II. Follow instructions on can for proper application.

At least once each year, entire Power Package should be cleaned and external surfaces, which have become bare, should be repainted with Quicksilver Primer and Spray Paint.

Steering Head and Remote Control Maintenance

Lubricate steering head and remote control with 2-4-C Marine Lubricant. Inspect steering head and remote control for ease of operation.

Checking Quicksilver MerCathode System

If boat is equipped with a Quicksilver MerCathode System, system should be tested to ensure that it is providing adequate output to protect underwater metal parts on boat. Test should be made where boat is moored, using Quicksilver Reference Electrode and Test Meter. Refer to SECTION 7.

Maintaining Alloy Trim Tab and Anodic Heads

Sterndrive unit is equipped with a sacrificial alloy trim tab and 2 anodic heads to help protect underwater metal parts from galvanic corrosion. Because of their self-sacrificing nature, trim tab and anodic heads **MUST BE** replaced if eroded 50% or more. To replace trim tab and/or anodic heads, proceed as follows:

REPLACING TRIM TAB

CAUTION

DO NOT paint new trim tab, as this will render it ineffective as a galvanic corrosion inhibitor.

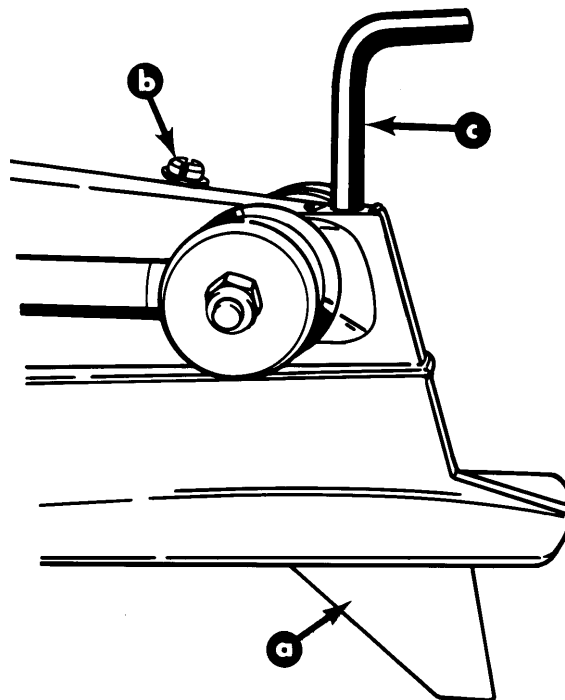
1. Mark position of trim tab fin in relation to gear housing so that new trim tab can be installed in same relative position. If power package is equipped with Power Steering, trim tab is positioned with fin straight back.

2. Remove plug from drive shaft housing to gain access to trim tab attaching screw (not shown in photo).
3. Use a 3/8 in. allen wrench and unthread trim tab attaching screw from trim tab - **DO NOT** attempt to remove trim tab attaching screw.

CAUTION

To be effective, new trim tab MUST make good electrical contact with gear housing.

4. Scrape trim tab mounting surface on gear housing down to bare metal.
5. Install trim tab, aligning trailing edge with index mark made in Step 1. Tighten screw securely.
6. Reinstall plug in drive shaft housing.
7. If power package is equipped with manual steering, adjust trim tab.



- a - Trim Tab
- b - Plug
- c - 3/8 in. Allen Wrench

Maintaining Continuity Circuit

Transom assembly and sterndrive unit may be equipped with a continuity circuit to ensure good electrical continuity between engine, transom assembly and sterndrive components. Good continuity is essential for the anodes and MerCathode System (if equipped) to function most effectively.

Inspect the following continuity circuit components, at intervals specified in "Maintenance Chart," for loose connections or broken or fraying wires. Refer to SECTION 7.

REPLACING ANODIC HEADS - ONE EACH SIDE

⚠ CAUTION

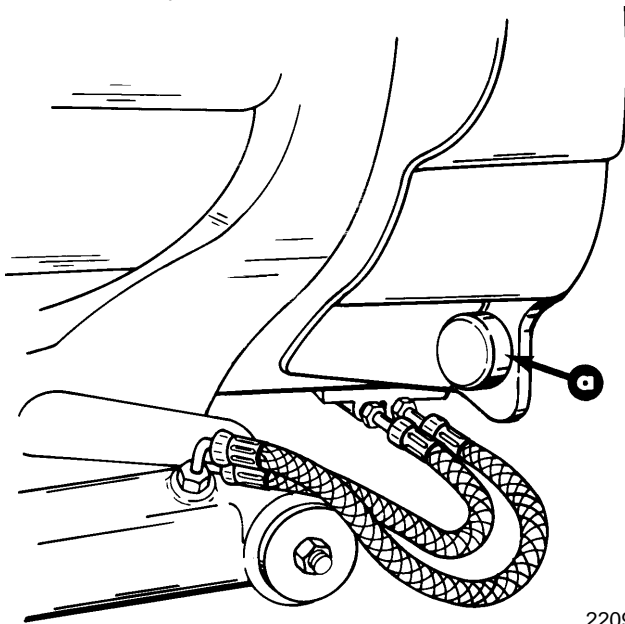
DO NOT paint new anodic heads, as this will render them ineffective as galvanic corrosion inhibitors.

1. Remove anodic heads and gaskets (not seen) by turning counterclockwise with a pair of pliers.

⚠ CAUTION

To be effective, new anodic heads MUST make good electrical contact with gimbal housing.

2. Clean anodic head mounting surfaces.
3. Install new heads (using new gaskets) and tighten securely.



a - Anodic Heads (One Each Side)

Checking Optional Quicksilver Anti-Corrosion Anode Kit

If boat is equipped with Quicksilver Anti-Corrosion Anode Kit, inspect anode and replace if eroded to less than 50% of its original size. Carefully follow installation instructions that accompany new Anode Kit to ensure proper installation.

Boat Bottom Care

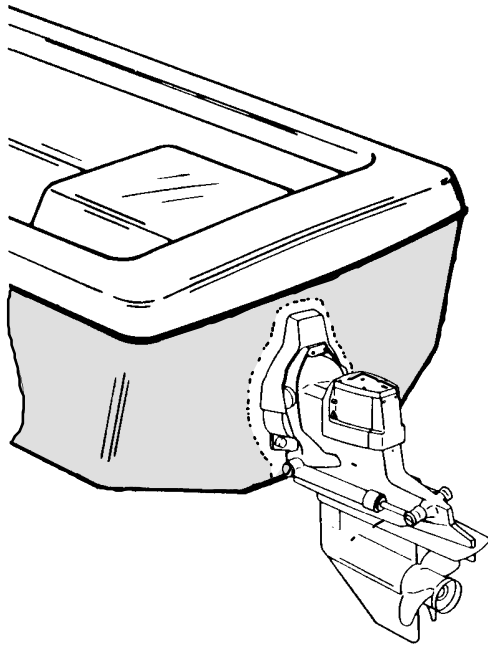
To achieve maximum performance and fuel economy, boat bottom MUST BE kept clean. Accumulation of marine growth or other foreign matter can greatly reduce boat speed and increase fuel consumption. To ensure best performance and efficiency, periodically clean boat bottom in accordance with manufacturer's recommendations. In some areas, it may be advisable to paint bottom to help prevent marine growth.

⚠ CAUTION

DO NOT paint anodes or MerCathode System anode and reference electrode, if equipped, as this will render them ineffective as a galvanic corrosion inhibitors.

IMPORTANT: Corrosion damage that results from the improper application of anti-fouling paint will not be covered by the limited warranty.

If anti-fouling protection is required for boat hull or boat transom, copper or tin base paints, if not prohibited by law, can be used. If using copper or tin based anti-fouling paint, avoid any electrical interconnection between the MerCruiser product, anodic blocks, or MerCathode system and the paint. Allow a minimum of 1¹/₂ in. (40 mm) of UNPAINTED area around these items to ensure that there is no interconnection.



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Paint the drive unit and transom assembly with a good quality marine paint or anti-fouling paint that **DOES NOT** contain copper, tin, or any other material that could conduct electrical current. Do not paint drain holes, anodes, MerCathode system, or items specified by the boat manufacturer.

Spray power package components inside the boat every 2 - 3 weeks with Quicksilver Corrosion Guard to protect the finish from dulling and corrosion. External power package components may also be sprayed.

All lubrication points, especially steering system, shift and throttle linkages should be kept well lubricated. Flush the cooling system periodically, preferably after each use.

Power Package Layup (Out of Season Storage)

Engine

Refer to appropriate Engine Service Manual.

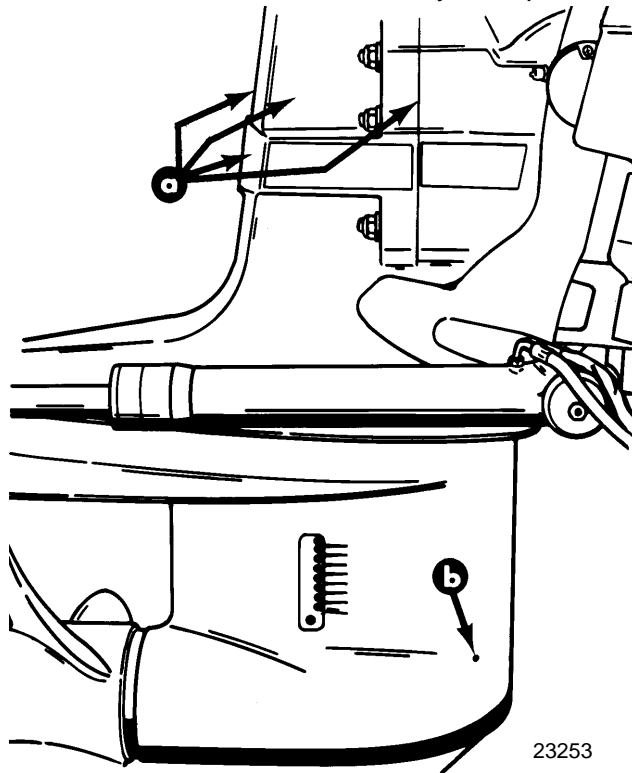
Sterndrive

1. Lubricate steering system. Refer to SECTION 1-B.
2. Lubricate transom gimbal housing assembly swivel shaft and pin, hinge pins, gimbal bearing and propeller shaft. Refer to SECTION 1-B.
3. Lubricate sterndrive unit U-Joint shaft splines and cross bearings. Refer to SECTION 3-A.
4. Inspect U-Joint bellows for cracks or other signs of deterioration. Check bellows clamps for tightness. Refer to SECTION 4.
5. Check engine alignment. Refer to Engine Service Manual.
6. Change sterndrive unit oil.

CAUTION

Water drain holes in sterndrive unit MUST BE open to allow water to drain, or trapped water may freeze and cause severe damage to housings.

7. Using a piece of wire, check water drain holes in sterndrive unit to ensure that they are open.



Sterndrive Unit Water Drain Holes

- a - Drive Shaft Housing Water Drain Holes (Two Each Side)
- b - Gear Housing Water Drain Hole

8. Inspect sterndrive for damage. Repair or replace damaged components.
9. Clean sterndrive exterior surfaces and repaint any bare metal surfaces with Quicksilver Primer and Spray Paint. Refer to SECTION 1-B.
10. After paint has dried spray entire sterndrive with Quicksilver Corrosion Guard. Refer to SECTION 1-B.

CAUTION

The gear case exhaust cavity might fill with water and freeze if stored in the UP/OUT position. Avoid gear case damage by storing the sterndrive unit in the full IN/DOWN position.

CAUTION

U-Joint bellows may develop a “set” if unit is stored in raised position and may fail when unit is returned to service. Store sterndrive unit in the full trim IN/DOWN position.

11. If not already done, place sterndrive unit in the full trim IN/DOWN position.
12. Store battery, using the following procedure.
 - a. Remove battery as soon as possible and remove all grease sulfate and dirt from top surface.
 - b. Fill battery with distilled water to level specified by manufacturer.
 - c. Cover terminal bolts well with petroleum base grease.
 - d. Store battery in a COOL, DRY place in a dry carton or box.

CAUTION

A discharged battery can be damaged by freezing.

- e. Remove battery from storage every 45 days. Check water level and place on charge, following battery manufacturer’s instructions. DO NOT fast charge.

NOTE: Larger batteries generally will accept a higher charging rate.

- f. When replacing battery in service, remove excess grease from terminals (leaving small amount on), recharge as necessary and reinstall in your equipment.

Power Package Recommissioning

Engine

Refer to appropriate Engine Service Manual.

Sterndrive

1. Perform ALL maintenance specified for completion “At Least Once Each Year” in “Maintenance Chart” (In Front of This Section), except items which were performed at the time of sterndrive lay up.
2. Install fully-charged battery. Clean battery cable clamps and terminals and reconnect cables. Be sure to tighten clamps securely. Apply a thin coat of petroleum base grease to clamps and terminals to help retard corrosion.
3. After recommissioning and starting engine, check steering system and shift control for proper operation.

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