NOTE: The following applies to CE marked products only.

Declaration of Conformance – Mercury MerCruiser

This sterndrive or inboard engine when installed in accordance to Mercury MerCruisers' instructions complies with the requirements of the following directives by meeting the associated standards, as amended:

Recreational Craft Directive 94/25/EC; 2003/44/EC

Applicable Requirement	Standards Applied
Owner's manual (A.2.5)	ISO 10240
Openings in Hull, Deck and superstructure (A. 3.4)	ISO 9093-1; ISO 9093-2
Handling characteristics (A.4)	ISO 8665
Inboard Engine (A.5.1.1)	ISO 15584; ISO 10088; ISO 7840; ISO 10133
Fuel System (A.5.2)	ISO 10088; ISO 7840; ISO 8469
Electrical System (A.5.3)	ISO 10133; ISO 8846
Steering system (A.5.4)	Applicable portions of: ISO 10592, ISO 8848 and ABYC P-17
Exhaust emission requirements (B.2)	ISO 8178
Owner's manual (B.4)	ISO 8665
Noise emission levels (C.1)	ISO 14509
Ignition-protected equipment (Annex II)	ISO 8846; SAE J1171; SAE J1191; SAE J 2031

Mercury MerCruiser declares that our sterndrive or inboard engines without integral exhaust, when installed in a recreational craft, in accordance with the manufacturers supplied instructions, will meet the exhaust emissions requirements of the directive mentioned above. This engine must not be put into service until the recreational craft in which it is to be installed has been declared in conformity, if so required, with the relevant provision of the directive.

Electromagnetic Compatibility Directive 89/336/EC, 92/31/EEC and 93/68/EEC

Generic emission standard	EN 50081-1
Generic immunity standard	EN 50082-1
Vehicles, boats and internal combustion engine driven devices - Radio disturbance characteristics	SAE J551 (CISPR 12)
Electrostatic discharge testing	EN 61000-6-2; EN 61000-4-2; EN61000-4-3

The notified body responsible for surveillance of the quality system under Full Quality Assurance Module H of Directive 2003/44/EC is:

Det Norske Veritas
Norway
Notified Body Number: 0575

This declaration is issued under the sole responsibility of Mercury Marine and Mercury MerCruiser.

Patrick C. Mackey

President - Mercury Marine, Fond du Lac, WI USA

Regulatory contact:
Engineering - Regulatory
MerCruiser
3003 N. Perkins Rd
Stillwater, Oklahoma 74075
USA
(405) 377-1200

Identification Record

Please record the following information:

Engine Model and Horsepower		**Engine Serial Number**
Transom Assembly Serial Number (Sterndrive)	**Gear Ratio**	**Sterndrive Unit Serial Number**
Transmission Model (Inboard)	**Gear Ratio**	**Transmission Serial Number**
Propeller Number	**Pitch**	**Diameter**
Hull Identification Number (HIN)		**Purchase Date**
Boat Manufacturer	**Boat Model**	**Length**
Exhaust Gas Emissions Certification Number		

The serial numbers are the manufacturer's keys to numerous engineering details that apply to your Mercury MerCruiser® power package. When contacting your Authorized Mercury MerCruiser Dealer about service, **always specify model and serial numbers.**

The description and specifications contained herein were in effect at the time this guide was approved for printing. Mercury Marine, whose policy is one of continuous improvement, reserves the right to discontinue models at any time, or to change specifications or designs, without notice and without incurring obligation.

Mercury Marine, Fond du Lac, Wisconsin, U.S.A. Printed in U.S.A.

Welcome

You have selected one of the finest marine power packages available. It incorporates numerous design features to assure operating ease and durability.

With proper care and maintenance, you will thoroughly enjoy using this product for many boating seasons. To ensure maximum performance and carefree use, we ask that you thoroughly read this manual.

The Operation, Maintenance and Warranty Manual contains specific instructions for using and maintaining your product. We suggest that this manual remain with the product for ready reference whenever you are on the water.

Thank you for purchasing one of our Mercury MerCruiser products. We sincerely hope your boating will be pleasant!

Mercury MerCruiser

Warranty Message

The product you have purchased comes with a **limited warranty** from Mercury Marine; the terms of the warranty are set forth in the Warranty Sections of this manual. The warranty statement contains a description of what is covered, what is not covered, the duration of coverage, how to best obtain warranty coverage, **important disclaimers and limitations of damages** and other related information. Please review this important information.

Mercury Marine products are designed and manufactured to comply with our own high quality standards, applicable industry standards and regulations, as well as certain emissions regulations. At Mercury Marine every engine is operated and tested before it is boxed for shipment to make sure that the product is ready for use. In addition, certain Mercury Marine products are tested in a controlled and monitored environment, for up to 10 hours of engine run time, in order to verify and make a record of compliance with applicable standards and regulations. All Mercury Marine product, sold as new, receives the applicable limited warranty coverage, whether the engine participated in one of the test programs described above or not.

Read This Manual Thoroughly

IMPORTANT: If you don't understand any portion of this manual, contact your dealer for a demonstration of actual starting and operating procedures.

Notice

Throughout this publication, and on your power package, dangers, warnings, cautions, and notices, accompanied by the International Hazard Symbol ⚠, may be used to alert the installer/user to special instructions concerning a particular service or operation that may be hazardous if performed incorrectly or carelessly. These safety alerts follow ANSI standard Z535.6-2006 for product safety information in product manuals, instructions, and other collateral materials. **Observe them carefully.**

These Safety Alerts alone cannot eliminate the hazards that they signal. Strict compliance with these special instructions while performing the service, plus common sense operation, are major accident prevention measures.

⚠ DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates a situation which, if not avoided, could result in engine or major component failure.

IMPORTANT: Identifies information essential to the successful completion of the task.

NOTE: *Indicates information that helps in the understanding of a particular step or action.*

⚠ WARNING

The operator (driver) is responsible for the correct and safe operation of the boat, the equipment aboard and the safety of all occupants aboard. We strongly recommend that the operator read this Operation, Maintenance and Warranty Manual and thoroughly understand the operational instructions for the power package and all related accessories before the boat is used.

⚠ WARNING

The engine exhaust from this product contains chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

TABLE OF CONTENTS

Section 1 - Warranty

Warranty Registration: United States and Canada....2
Warranty Registration: Outside the United States and Canada....2
Transfer of Warranty....3
Mercury Product Protection Plan: United States and Canada....3
Mercury MerCruiser Limited Warranty (Gasoline-Fueled Products Only) 4
3-Year Limited Warranty Against Corrosion....5
Global Warranty Charts....6
Consumer Application Warranty Chart....7
Commercial Application Warranty Chart....8
Government Application Warranty Chart....9
Mercury Installation Quality Certification Program....9
California Emissions Limited Warranty....10
What Is Covered....10
Duration Of Coverage....11
How To Obtain Warranty Coverage....11
What Mercury Will Do....11
What Is Not Covered....12
Components Of The Emission Control System 12
Disclaimers And Limitations....13
California Emission Control Warranty Statement....13
Your Warranty Rights and Obligations....13
Manufacturer's Warranty Coverage....13
Owner's Warranty Responsibilities....13
Emission Control Information Label....14
Owner Responsibility....15
Emission Certification Star Label....15

Section 2 - Getting to Know Your Power Package

Identification....18
Engine Serial Number....18
Vazer Sterndrive Identification....18
Vazer Transom Serial Number....19
Lanyard Stop Switch....19
Instrumentation....20
Digital Gauges....20
Analog Gauges....21
Remote Controls....22
Panel Mount Features....22
Console Mount Features....23
Power Trim....23
Single Engine Trim and Trailer....24
Electrical System Overload Protection....25
Audio Warning System....27
Testing The Audio Warning System....27
Engine Guardian Strategy....27
Warning Horn Signals....28

Section 3 - On The Water

Safe Boating Suggestions....30
Be Alert To Carbon Monoxide Poisoning....31
Good Ventilation....31
Poor Ventilation 32
Basic Boat Operation....32
Launching and Boat Operation....32
Operation Chart....33
Starting and Stopping the Engine....33
Starting the Engine....33
Stopping the Engine....34
Starting the Engine After Stopped While in Gear....34
Throttle-Only Operation....34
Trailering the Boat....35
Freezing Temperature Operation....35
Drain Plug and Bilge Pump....35
Protecting People In The Water....35
While You Are Cruising....35
While Boat Is Stationary....36
High-Speed and High-Performance Boat Operation....36
Passenger Safety in Pontoon Boats and Deck Boats....36
Boats Having An Open Front Deck....36
Boats With Front-Mounted, Raised Pedestal Fishing Seats....36
Wave And Wake Jumping....37
Impact with Underwater Hazards....37
Sterndrive Impact Protection....38
Conditions Affecting Operation....38
Weight Distribution (Passengers and Gear) Inside the Boat....38

Bottom Of Boat....39
Cavitation....39
Ventilation....39
Elevation and Climate....39
Propeller Selection....39
Getting Started....40
20-Hour Break-In Period....40
After the Break-In Period....40
End of First Season Checkup....41

Section 4 - Specifications

Fuel Requirements....44
Fuel Ratings....44
Using Reformulated (Oxygenated) Gasolines (USA Only)....44
Gasolines Containing Alcohol....44
Engine Oil....45
Engine Specifications....45
Fluid Specifications....46
Engine....46
Sterndrives....46
Power-Assisted Steering and Power Trim Fluids....46
Approved Power-Assisted Steering Fluids....46
Approved Power Trim Fluids....46
Approved Paints....47

Section 5 - Maintenance

Owner/Operator Responsibilities....50
Dealer Responsibilities....50
Maintenance....50
Do It Yourself Maintenance Suggestions....51
Inspection....51
Maintenance Schedule—Sterndrive Models....52
Routine Maintenance....52
Each Day Start....52
Each Day End....53
Weekly....53
Every Two Months or 50 Hours....53
Scheduled Maintenance....53
After the Initial 20 Hour Break-In Period....53
Every 100 Hours or Annually (Whichever Occurs First)....53
Every 300 Hours or 3 Years....53
Every 5 Years....54
Maintenance Log....54
Engine Oil....56
Checking....56
Filling....56
Changing Oil and Filter....57
Easy Engine Oil Drain System....57
Engine Oil Drain Pump....57
Changing the Oil Filter....58
Power-Assisted Steering Fluid....59
Checking....59
Filling....60
Changing....60
Engine Coolant....60
Checking....60
Filling....61
Changing....61
Sterndrive Gear Lube....61
Checking....62
Filling....62
Changing....63
Power Trim Fluid....65
Checking....65
Filling....65
Changing....66
Flame Arrestor and PCV Valve....66
Cleaning the Flame Arrestor....66
Positive Crankcase Ventilation Valve (PCV)....67
Changing....67
Fuel Filters....68
Removal....68
Installation....69
Flushing the Power Package....71
General Information....71
Sterndrive Water Pickup....71
Flushing Attachments (Non-Running Flush)....71
Quick-Connect Flush (Non-Running Flush)....72
Flushing Attachments (Running Flush)....73
Vazer Sterndrive Connection....73
Flushing the Power Package (Running Flush)....73
Lubrication....74
Steering System....74
Throttle Cable....76
Shift Cable....77
Sterndrive U-joint Shaft Splines and O-rings (Sterndrive Removed)....77
Engine Coupler....77
Propellers....78
Propeller Repair....78
Vazer Propeller Removal....78

Vazer Propeller Installation....80
Corrosion Protection....82
Vazer Sterndrive Corrosion Protection Components....83
MerCathode Kit (if Equipped)....85
Painting Your Power Package....85
Serpentine Drive Belt....86
Checking....86
Replacing....87
Battery....88
Supplying Cooling Water to the Engine....88
Supplying Cooling Water to the Engine (Boat out of the Water)....88
Supplying Cooling Water to the Engine (Boat in the Water)....89

Section 6 - Storage

Cold Weather (Freezing Temperature) and Extended Storage....92
Draining the 100 Vazer Seawater System...92
Preparing the Power Package for Extended Storage....92
Engine and Fuel System Preparation....93
Battery Storage....94
Power Package Recommissioning....94

Section 7 - Troubleshooting

Diagnosing EFI Problems....96
Engine Guardian System....96
Troubleshooting Charts....96
Starter Motor Will Not Crank Engine, Or Cranks Slow....96
Engine Will Not Start Or Is Hard To Start....96
Engine Runs Rough, Misses And/Or Backfires....96
Poor Performance....97
Excessive Engine Temperature....97
Insufficient Engine Temperature....97
Low Engine Oil Pressure....97
Battery Will Not Come Up On Charge....98
Remote Control Operates Hard, Binds, Has Excessive Free-play Or Makes Unusual Sounds....98
Steering Wheel Turns Hard Or Jerky....98
Power Trim Does Not Operate (Motor Does Not Operate)....98
Power Trim Does Not Operate (Motor Operates But Sterndrive Unit Does Not Move)....98

Section 8 - Customer Assistance Information

Owner Service Assistance....100
Local Repair Service....100
Service Away From Home....100
Stolen Power Package....100
Attention Required After Submersion....100
Replacement Service Parts....100
Parts And Accessories Inquiries....101
Resolving A Problem....101
Mercury Marine Service Offices....101
Ordering Literature....102
United States and Canada....102
Outside The United States and Canada....102

Section 1 - Warranty

1

Table of Contents

Warranty Registration: United States and Canada 2
Warranty Registration: Outside the United States and Canada..... 2
Transfer of Warranty..... 3
Mercury Product Protection Plan: United States and Canada..... 3
Mercury MerCruiser Limited Warranty (Gasoline-Fueled Products Only) 4
3-Year Limited Warranty Against Corrosion..... 5
Global Warranty Charts..... 6
Consumer Application Warranty Chart 7
Commercial Application Warranty Chart 8
Government Application Warranty Chart 9
Mercury Installation Quality Certification Program 9
California Emissions Limited Warranty..... 10
What Is Covered 10
Duration Of Coverage 11
How To Obtain Warranty Coverage 11
What Mercury Will Do 11
What Is Not Covered 12
Components Of The Emission Control System 12
Disclaimers And Limitations 13
California Emission Control Warranty Statement 13
Your Warranty Rights and Obligations 13
Manufacturer's Warranty Coverage 13
Owner's Warranty Responsibilities 13
Emission Control Information Label..... 14
Owner Responsibility 15
Emission Certification Star Label..... 15

Warranty Registration: United States and Canada

To ensure that your warranty coverage begins promptly, your selling dealer should fill out the Warranty Registration Card completely and mail it to the factory immediately upon sale of the new product.

The Warranty Registration Card identifies the name and address of the original purchaser, product model and serial number(s), date of sale, type of use and selling dealer's code, name, and address. The dealer also certifies that you are the original purchaser and user of the product. A temporary Owner Warranty Registration Card will be presented to you when you purchase the product.

Upon receipt of the Warranty Registration Card at the factory, Mercury MerCruiser will send you an owner resource guide that includes your warranty registration confirmation. If you do not receive your owner resource guide within 60 days from date of new product sale, please contact your selling dealer.

Because of your selling dealer's ongoing interest in your satisfaction, the product should be returned to him for warranty service.

The product warranty is not effective until the product is registered at the factory.

NOTE: *Registration lists must be maintained by the factory and dealer on marine products sold in the United States in the event that a safety recall notification under the Federal Boat Safety Act is required.*

You may change your address at any time, including at time of warranty claim, by calling Mercury MerCruiser or sending a letter or fax to Mercury MerCruiser's warranty registration department with your name, old address, new address, and engine serial number. Your dealer can also process this change of information.

United States customers or dealers may contact:
Mercury Marine
Attn: Warranty Registration Department
W6250 Pioneer Road
P.O. Box 1939
Fond du Lac, WI 54936-1939
920-929-5054
Fax 920-929-5893

Canadian customers or dealers may contact:
Mercury Marine Canada Limited
2395 Meadowpine Blvd.
Mississauga, ON
Canada, L5N 7W6
Fax 1-800-663-8334

Warranty Registration: Outside the United States and Canada

To ensure that your warranty coverage begins promptly, your selling dealer should fill out the warranty registration card completely and mail it to the distributor responsible for administering the warranty registration and claim program for your area.

The warranty registration card identifies your name and address, product model and serial numbers, date of sale, type of use, and the selling distributor's and dealer's code number, name, and address. The distributor or dealer also certifies that you are the original purchaser and user of the product. A copy of the warranty registration card, designated as the purchaser's copy, MUST be given to you immediately after the card has been completely filled out by the selling distributor or dealer. This card represents your factory registration identification. Keep the card; if you ever need warranty service on this product, your dealer may ask you for the warranty registration card to verify date of purchase and to use the information on the card to prepare the warranty claim forms.

In some countries, the distributor will issue a permanent (plastic) warranty registration card to you within 30 days after receiving the factory copy of the warranty registration card from your distributor or dealer. If you receive a plastic warranty registration card, you may discard the purchaser's copy that you received from the distributor or dealer when you purchased the product. Ask your distributor or dealer if this plastic card program applies to you. For further information concerning the warranty registration card and its relationship to warranty claim processing, refer to the International Warranty. See Table of Contents.

NOTE: *Registration lists must be maintained by the factory and dealer on marine products sold in the United States in the event of a safety recall notification under the Federal Boat Safety Act.*

Transfer of Warranty

The limited warranty is transferable to a subsequent purchaser, but only for the remainder of the unused portion of the limited warranty. This will not apply to products used for commercial applications.

To transfer the warranty to the subsequent owner, send or fax a copy of the bill of sale or purchase agreement, new owner's name, address and engine serial number to Mercury Marine's warranty registration department. In the United States mail to:

Mercury Marine
Attn: Warranty Registration Department
W6250 W. Pioneer Road
P.O. Box 1939
Fond du Lac, WI 54936-1939
920-929-5054
Fax 920-929-5893

In Canada mail to:
Mercury Marine Canada Limited
2395 Meadowpine Blvd.
Mississauga, ON
Canada, L5N 7W6
Fax 1-800-663-8334

Upon processing the transfer of warranty, Mercury Marine will send registration verification to the new owner of the product by mail.

There is no charge for this service.

For products purchased outside the United States and Canada, contact the distributor in your country, or the distributor closest to you.

Mercury Product Protection Plan: United States and Canada

(Certain performance products, triple engine installations, and commercial applications are excluded.)

The Mercury Product Protection Plan provides coverage against unexpected mechanical and electrical breakdowns that may occur beyond the standard limited warranty.

The optional Mercury Product Protection Plan is the only Factory Plan available for your engine.

One-, two-, three-, four-, or five- year term plans can be purchased up to 12 months after the original engine registration date.

See your participating Mercury MerCruiser dealer for complete program details.

Mercury MerCruiser Limited Warranty (Gasoline-Fueled Products Only)

MERCURY MERCRUISER LIMITED WARRANTY (GASOLINE-FUELED PRODUCTS ONLY)

What is Covered

Mercury Marine warrants its new products to be free of defects in material and workmanship during the period described following.

Duration of Coverage

Warranty Period for Recreational Use

The warranty period begins on the date the product is first sold to a recreational-use retail purchaser or the date on which the product is first put into service, whichever occurs first. Products installed by an Installation Quality Certified Installer receive one (1) year of additional warranty coverage. The repair or replacement of parts or the performance of service under this warranty does not extend the life of this warranty beyond its original expiration date. The warranty period is specific to the model covered; see your model for the base coverage period:

Horizon Sterndrive and Inboard Models, MX 6.2 Black Scorpion Tow Sport Model Coverage, and 100 Vazer Models

The Limited Warranty for the Horizon Sterndrive and Inboard Models, MX 6.2 Black Scorpion Tow Sport Models, and 100 Vazer Models is four (4) years when installed by an Installation Quality Certified Installer or three (3) years for noncertified installations.

SeaCore Sterndrive Model Coverage

The Limited Warranty for SeaCore Sterndrive Models is four (4) years when installed by an Installation Quality Certified Installer or three (3) years for noncertified installations.

Standard Model Coverage

The Limited Warranty for Standard Models, which do not include Horizon Sterndrive and Inboard Models, MX 6.2 Black Scorpion Tow Sport Models, 100 Vazer Models, or SeaCore Sterndrive Models, is two (2) years when installed by an Installation Quality Certified Installer or one (1) year for noncertified installations.

Warranty Period for Commercial Use

The warranty period begins on the date the product is first sold to a commercial-use retail purchaser or the date on which the product is first put into service, whichever occurs first. Commercial users of these products receive warranty coverage for either one (1) year from the date of first retail sale or the accumulation of 500 hours of operation, whichever occurs first. Commercial use is defined as any work-related or employment-related use of the product, or any use of the product that generates income for any part of the warranty period, even if the product is only occasionally used for such purposes. The repair or replacement of parts or the performance of service under this warranty does not extend the life of this warranty beyond its original expiration date.

Transfer of Coverage

Unexpired warranty coverage can be transferred from one recreational-use customer to a subsequent recreational-use customer upon proper reregistration of the product. Unexpired warranty coverage cannot be transferred either to or from a commercial-use customer.

Termination of Coverage

Warranty coverage is terminated for used product obtained in any of the following ways:

- Repossession from a retail customer
- Purchase at auction
- Purchase from a salvage yard
- Purchase from an insurance company that obtained the product as a result of an insurance claim

Conditions That Must Be Met in Order to Obtain Warranty Coverage

Warranty coverage is available only to retail customers that purchase from a dealer authorized by Mercury Marine to distribute the product in the country in which the sale occurred, and then only after the pre-delivery inspection process specified by Mercury Marine is completed and documented. Warranty coverage becomes available upon proper registration of the product by the authorized dealer. Inaccurate warranty registration information regarding recreational use or subsequent change of use from recreational to commercial (unless properly reregistered) may void the warranty at the sole discretion of Mercury Marine. Routine maintenance must be performed according to the maintenance schedule in the Operation, Maintenance & Warranty manual in order to obtain warranty coverage. Mercury Marine reserves the right to make any warranty coverage contingent upon proof of proper maintenance.

What Mercury Marine Will Do

Mercury Marine's sole and exclusive obligation under this warranty is limited to, at our option, repairing a defective part, replacing such part or parts with new or Mercury Marine certified remanufactured parts, or refunding the purchase price of the Mercury Marine product. Mercury Marine reserves the right to improve or modify products from time to time without assuming an obligation to modify products previously manufactured.

How to Obtain Warranty Coverage

The customer must provide Mercury Marine with a reasonable opportunity to repair and reasonable access to the product for warranty service. Warranty claims shall be made by delivering the product for inspection to a Mercury Marine dealer authorized to service the product. If the purchaser cannot deliver the product to such a dealer, written notice must be given to Mercury Marine. Mercury Marine will then arrange for the inspection and any covered repair. The purchaser in that case shall pay for all related transportation charges and travel time. If the service provided is not covered by this warranty, the purchaser shall pay for all related labor and material and any other expenses associated with that service. The purchaser shall not, unless requested by Mercury Marine, ship the product or parts of the product directly to Mercury Marine. Proof of registered ownership must be presented to the dealer at the time warranty service is requested in order to obtain coverage.

What Is Not Covered

This limited warranty does not cover the following:

- Routine maintenance items
- Adjustments
- Normal wear and tear
- Damage caused by abuse
- Abnormal use
- Use of a propeller or gear ratio that does not allow the engine to run in its recommended RPM range (see the Operation, Maintenance & Warranty manual)
- Operation of the product in a manner inconsistent with the recommended operation and duty cycle section of the Operation, Maintenance & Warranty manual
- Neglect
- Accident
- Submersion
- Improper installation (proper installation specifications and techniques are set forth in the installation instructions for the product)
- Improper service
- Use of an accessory or part that was not manufactured or sold by Mercury Marine and that damages the Mercury product
- Jet pump impellers and liners
- Operation with fuels, oils, or lubricants that are not suitable for use with the product (see the Operation, Maintenance & Warranty manual)
- Alteration or removal of parts
- Water entering the engine through the fuel intake, air intake, or exhaust system or damage to the product from insufficient cooling water caused by blockage of the cooling system by a foreign body
- Running the engine out of water
- Mounting the engine too high on the transom
- Operating the boat with the engine over trimmed

Use of the product for racing or other competitive activity, or operating with a racing-type lower unit at any point, even by a previous owner of the product, voids the warranty. Expenses related to haul-out, launch, towing, storage, telephone, rental, inconvenience, slip fees, insurance coverage, loan payments, loss of time, loss of income, or any other type of incidental or consequential damages are not covered by this warranty. Also, expenses associated with the removal or replacement of boat partitions or other material in order to gain access to the product are not covered by this warranty. No individual or entity, including Mercury Marine authorized dealers, has been given authority by Mercury Marine to make any affirmation, representation, or warranty regarding the product, other than those contained in this limited warranty. If such affirmation, representation, or warranty is made, it shall not be enforceable against Mercury Marine.

DISCLAIMERS AND LIMITATIONS

THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. TO THE EXTENT THAT THEY CANNOT BE DISCLAIMED, THE IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE LIFE OF THE EXPRESS WARRANTY. INCIDENTAL AND CONSEQUENTIAL DAMAGES ARE EXCLUDED FROM COVERAGE UNDER THIS WARRANTY. SOME STATES/COUNTRIES DO NOT ALLOW FOR THE DISCLAIMERS, LIMITATIONS AND EXCLUSIONS IDENTIFIED ABOVE. AS A RESULT, THEY MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER LEGAL RIGHTS WHICH VARY FROM STATE TO STATE AND COUNTRY TO COUNTRY.

3-Year Limited Warranty Against Corrosion

3-YEAR LIMITED WARRANTY AGAINST CORROSION

What Is Covered

Mercury Marine warrants that each new Mercury, Mariner, Mercury Racing, Sport Jet, M^2 Jet Drive, Tracker by Mercury Marine Outboard, MerCruiser Inboard or Sterndrive engine (Product) will not be rendered inoperative as a direct result of corrosion for the period of time described below.

Duration of Coverage

This limited corrosion warranty provides coverage for three (3) years from either the date the product is first sold, or the date on which the product is first put into service, whichever occurs first. The repair and replacement of parts, or the performance of service under this warranty does not extend the life of this warranty beyond its original expiration date. Unexpired warranty coverage can be transferred to subsequent (noncommercial use) purchaser upon proper re-registration of the product. Warranty coverage is terminated for used product repossessed from a retail customer, purchased at auction, from a salvage yard, or from an insurance company that obtained the product as a result of an insurance claim.

Condition That Must Be Met in Order to Obtain Warranty Coverage

Warranty coverage is available only to retail customers that purchase from a dealer authorized by Mercury Marine to distribute the product in the country in which the sale occurred, and then only after the Mercury Marine specified pre-delivery inspection process is completed and documented. Warranty coverage becomes available upon proper registration of the product by the authorized dealer. Corrosion prevention devices specified in the Operation, Maintenance & Warranty manual must be in use on the boat, and routine maintenance outlined in the Operation, Maintenance & Warranty manual must be timely performed (including without limitation the replacement of sacrificial anodes, use of specified lubricants, and touch-up of nicks and scratches) in order to maintain warranty coverage. Mercury Marine reserves the right to make warranty coverage contingent upon proof of proper maintenance.

What Mercury Will Do

Mercury's sole and exclusive obligation under this warranty is limited to, at our option, repairing a corroded part, replacing such part or parts with new or Mercury Marine certified re-manufactured parts, or refunding the purchase price of the Mercury product. Mercury reserves the right to improve or modify products from time to time without assuming an obligation to modify products previously manufactured.

How to Obtain Warranty Coverage

The customer must provide Mercury with a reasonable opportunity to repair, and reasonable access to the product for warranty service. Warranty claims shall be made by delivering the product for inspection to a Mercury dealer authorized to service the product. If purchaser cannot deliver the product to such a dealer, written notice must be given to Mercury. We will then arrange for the inspection and any covered repair. Purchaser in that case shall pay for all related transportation charges and/or travel time. If the service provided is not covered by this warranty, purchaser shall pay for all related labor and material, and any other expenses associated with that service. Purchaser shall not, unless requested by Mercury, ship the product or parts of the product directly to Mercury. Proof of registered ownership must be presented to the dealer at the time warranty service is requested in order to obtain coverage.

What Is Not Covered

This limited warranty does not cover electrical system corrosion; corrosion resulting from damage, corrosion which causes purely cosmetic damage, abuse or improper service; corrosion to accessories, instruments, steering systems; corrosion to factory installed jet drive unit; damage due to marine growth; product sold with less than a one year limited Product warranty; replacement parts (parts purchased by the Customer); products used in a commercial application. Commercial use is defined as any work or employment related use of the product, or any use of the product which generates income, for any part of warranty period, even if the product is only occasionally used for such purposes.

Global Warranty Charts

IMPORTANT: Please refer to www.mercurymarine.com/global_warranty for the most currant Global Warranty Charts.

Consumer Application Warranty Chart

Consumer Application: Standard Factory Limited Warranty by Region & Boat Brand									Limited Corrosion Warranty	
	Non-Certified Boat Brand				Certified Boat Brand				All Boat Brands	
Region	**Standard**	**SeaCore**	**Horizon and Vazer**	**6.2 Scorpion**	**Standard**	**SeaCore**	**Horizon and Vazer**	**6.2 Scorpion**	**Standard, Horizon, and Vazer**	**SeaCore**
USA and Canada	1 year	3 years	3 years	3 years	2 years	4 years	4 years	4 years	3 years	4 years
Latin America	1 year	3 years	1 year	1 year	2 years	4 years	2 years	2 years	3 years	4 years
Mexico	1 year	3 years	1 year	1 year	1 year	4 years	1 year	1 year	1 year	4 years
Europe	2 years	3 years	2 years	2 years	3 years	4 years	3 years	3 years	3 years	4 years
Japan	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year
Australia and New Zealand	2 years	3 years	3 years	3 years all Tow Sports	2 years	3 years	3 years	3 years all Tow Sports	3 years	4 years
South Pacific	1 year	3 years	1 year	1 year	1 year	3 years	1 year	1 year	3 years	4 years
Asia (excluding Japan, South Pacific, Australia, New Zealand)	2 years	2 years	2 years	3 years all Tow Sports	2 years	2 years	2 years	3 years all Tow Sports	2 years	2 years

NOTE: *In regions where the Certified Boat Builder program is not applicable, the regular warranty always applies.*

NOTE: *In regions where TBD (To Be Determined) is listed, check with your local dealer for warranty length and conditions.*

Commercial Application Warranty Chart

Commercial Application: Standard Factory Limited Warranty by Region & Boat Brand									Limited Corrosion Warranty	
	Non-Certified Boat Brand				Certified Boat Brand				All Boat Brands	
Region	**Standard**	**SeaCore**	**Horizon and Vazer**	**6.2 Scorpion**	**Standard**	**SeaCore**	**Horizon and Vazer**	**6.2 Scorpion**	**Standard, Horizon, and Vazer**	**SeaCore**
USA and Canada	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	none	none
Latin America	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	none	none
Mexico	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year
Europe	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	none	none
Japan	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	none	none
Australia and New Zealand	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	none	none
South Pacific	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	none	none
Asia (excluding Japan, South Pacific, Australia, New Zealand)	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	none	none
NOTE: *In regions where the Certified Boat Builder program is not applicable, the regular warranty always applies*										

Government Application Warranty Chart

Government Application: Standard Factory Limited Warranty by Region & Boat Brand									Limited Corrosion Warranty	
	Non-Certified Boat Brand				Certified Boat Brand				All Boat Brands	
Region	**Standard**	**SeaCore**	**Horizon and Vazer**	**6.2 Scorpion**	**Standard**	**SeaCore**	**Horizon and Vazer**	**6.2 Scorpion**	**Standard, Horizon, and Vazer**	**SeaCore**
USA and Canada	1 year	3 years	3 years	3 years	2 years	4 years	4 years	4 years	3 years	4 years
Latin America	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	none	none
Mexico	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1year
Europe	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	none	none
Japan	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	none	none
Australia and New Zealand	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	none	none
South Pacific	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	none	none
Asia (excluding Japan, South Pacific, Australia, New Zealand)	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	1 year or 500 hours	none	none
NOTE: *In regions where the Certified Boat Builder program is not applicable, the regular warranty always applies*										

Mercury Installation Quality Certification Program

15502

Mercury MerCruiser products installed by a Mercury Installation Quality Certified Manufacturer are Installation Quality certified products and may receive an additional one (1) year of limited warranty coverage.

The Installation Quality Certification program was developed to recognize MerCruiser boatbuilder customers who have achieved higher manufacturing standards. It is the first and only comprehensive manufacturer-installation certification program in the industry.

The program has three goals:

1. To enhance overall product quality.
2. To improve the boat ownership experience.
3. To enhance overall customer satisfaction.

The certification process is designed to review all facets of manufacturing and engine installation. The program is composed of design, manufacturing and installation review stages with which builders must comply. Certification applies leading-edge methodologies to create:

- Efficiencies and best practices specific to engine installation.
- World-class assembly and component specifications.
- Efficient installation processes.
- Industry standard end-of-line test procedures

Boat builders that successfully complete the program and meet all certification requirements earn Installation Quality System Certified Manufacturer status and receive an additional one (1) year of Mercury limited factory warranty coverage on all MerCruiser-powered boats that are registered on and after the boat builder's certification date for all worldwide registrations.

Mercury has designated a section of our Website to promote the Installation Quality Certification Program and communicate its benefits to consumers. For a current list of MerCruiser-powered boat brands that have earned Installation Quality Certification, visit www.mercurymarine.com/mercruiser_warranty.

California Emissions Limited Warranty

NOTE: *Mercury Marine does not establish model years for the Mercury MerCruiser product line. In order to comply with CARB warranty regulations, and for that limited purpose only, model year shall have the same meaning as calendar year. As an example, 2003 model year products refers to products manufactured during calendar year 2003.*

The California Air Resources Board has promulgated air emissions regulations for inboard and sterndrive engines. The regulations apply to all inboard and sterndrive engines that were manufactured for the 2003 model year and later. Mercury Marine, in compliance with those regulations, provides this limited warranty for the emission control systems (see the components of the emission control system listed following), and further warrants that the inboard or sterndrive engine was designed, built, and equipped to conform with all applicable regulations adopted by the California Air Resources Board pursuant to its authority in Chapters 1 and 2, Part 5, Division 26 of the Health and Safety Code. For information regarding the limited warranty for the non-emissions related components of the inboard or sterndrive engine, please see the limited warranty statement for your engine.

What Is Covered

NOTE: *Mercury Marine does not establish model years for the Mercury MerCruiser product line. In order to comply with CARB warranty regulations, and for that limited purpose only, model year shall have the same meaning as calendar year. As an example, 2003 model year products refers to products manufactured during calendar year 2003.*

NOTE: *Your dealer will register your engine for warranty coverage for you. The warranty registration process is not related in any way to the process of obtaining a license, title or registration from state boating authorities. You should ask your dealer to update your warranty registration information to reflect a change of address or a transfer of ownership. (This change may be made at any time.) See the Warranty Registration section of your manual or your dealer for more information.*

Mercury Marine warrants the components of the emissions control systems (see the components of the emission control system listed following) of its new, 2003 model year and later California certified inboard and sterndrive engines, registered to a California resident, to be free from defects in material or workmanship that cause the failure of a warranted part to be identical in all material respects to that part as described in the application of Mercury Marine for certification from the California Air Resources Board, for the period of time, and under the conditions identified below. The cost to diagnose a warranty failure is covered under the warranty (if the warranty claim is approved). Damage to other engine components caused by the failure of a warranted part will also be repaired under warranty.

Duration Of Coverage

NOTE: *Mercury Marine does not establish model years for the Mercury MerCruiser product line. In order to comply with CARB warranty regulations, and for that limited purpose only, model year shall have the same meaning as calendar year. As an example, 2003 model year products refers to products manufactured during calendar year 2003*

This limited warranty provides coverage for the components of the emissions control systems of new 2003-2008 model year inboard and sterndrive engines for 2 years from either the date the product is first sold, or first put into service, whichever occurs first. Emission related normal maintenance items such as spark plugs and filters, that are on the warranted parts list (see following) are warranted up to their first required replacement interval only. (See Maintenance Schedule). The repair or replacement of parts, or the performance of service under this warranty, does not extend the life of this warranty beyond its original expiration date. Unexpired warranty coverage can be transferred to a subsequent purchaser. (See instructions on transfer of warranty). Warranty coverage is terminated for used product repossessed from a retail customer, purchased at auction, from a salvage yard, or from an insurance company that obtained the product as a result of an insurance claim.

How To Obtain Warranty Coverage

The customer must provide Mercury with a reasonable opportunity to repair and reasonable access to the product for warranty service. Warranty claims shall be made by delivering the product for inspection to a Mercury dealer authorized to service the product. If purchaser cannot deliver the product to such a dealer, please notify Mercury Marine and Mercury will then arrange for the inspection and any covered repair. Purchaser in that case shall pay for all related transportation charges and/or travel time. If the service provided is not covered by this warranty, purchaser shall pay for all related labor and material, and any other expenses associated with that service. Purchaser shall not, unless requested by Mercury, ship the product or parts of the product directly to Mercury. Proof of registered ownership must be presented to the dealer at the time warranty service is requested in order to obtain coverage.

What Mercury Will Do

Mercury Marine's sole and exclusive obligation under this warranty is limited to, at our expense and at our option, repairing or replacing defective parts with new or Mercury Marine certified re-manufactured parts, or refunding the purchase price of the Mercury product. Mercury reserves the right to improve or modify products from time to time without assuming an obligation to modify products previously manufactured.

What Is Not Covered

This limited warranty does not cover routine maintenance items, tune ups, adjustments, normal wear and tear, damage caused by abuse, abnormal use, use of a propeller or gear ratio that does not allow the engine to run in its recommended wide-open-throttle RPM range (see Specifications), operation of the product in a manner inconsistent with the recommended operation procedures, neglect, accident, submersion, improper installation (proper installation specifications and techniques are set forth in the installation instructions for the product), improper service, use of an accessory or part not manufactured or sold by us, jet pump impellers and liners, operation with fuels, oils or lubricants which are not suitable for use with the product (see Specifications), alteration or removal of parts, or water entering the engine through the fuel intake, air intake or exhaust system. Use of the product for racing or other competitive activity, or operating with a racing type lower unit, at any point, even by a prior owner of the product, voids the warranty.

Expenses related to haul-out, launch, towing, storage, telephone, rental, inconvenience, slip fees, insurance coverage, loan payments, loss of time, loss of income, or any other type of incidental or consequential damages are not covered by this warranty. Also, expenses associated with the removal and/or replacement of boat partitions or material caused by boat design for access to the product are not covered by this warranty.

Non-warranty maintenance, replacement, or repair of emission control devices and systems may be performed by any marine engine repair establishment or individual. The use of non-Mercury parts for non-warranty maintenance or repairs will not be grounds for disallowing other warranty work. The use of add-on (as defined at section 1900 (b)(1) and (b)(10) of Title 13 of the California Code of Regulations) or modified parts not exempted by the California Air Resources Board may be grounds for disallowing a warranty claim, at the discretion of Mercury Marine. Failures of warranted parts caused by the use of a non-exempted add-on or modified part will not be covered.

Components Of The Emission Control System

1. Fuel Metering System
   a. Carburetor and internal parts (and/or pressure regulator or fuel injection system)
   b. Intake valves
2. Air Induction System
   a. Intake manifold
3. Ignition System
   a. Spark plugs
   b. Electronic ignition
   c. Ignition coil and/or control module
   d. Ignition wires
4. Positive Crankcase Ventilation (PCV) System
   a. PCV Valve
   b. Oil filler cap
5. Exhaust System.
   a. Exhaust manifold
   b. Exhaust elbow
   c. Intermediate exhaust elbow
   d. Lower exhaust pipe
   e. Tailpipe
   f. Exhaust valve

6. Miscellaneous Items Used in Above Systems
   a. Hoses, clamps, fittings, tubing, sealing gaskets or devices, and mounting hardware
   b. Pulleys, belts, and idlers
   c. Vacuum, temperature, check and time sensitive valves and switches
   d. Electronic controls.

Disclaimers And Limitations

DISCLAIMERS AND LIMITATIONS
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. TO THE EXTENT THAT THEY CANNOT BE DISCLAIMED, THE IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE LIFE OF THE EXPRESS WARRANTY. INCIDENTAL AND CONSEQUENTIAL DAMAGES ARE EXCLUDED FROM COVERAGE UNDER THIS WARRANTY. SOME STATES/COUNTRIES DO NOT ALLOW FOR THE DISCLAIMERS, LIMITATIONS AND EXCLUSIONS IDENTIFIED ABOVE. AS A RESULT, THEY MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER LEGAL RIGHTS WHICH VARY FROM STATE TO STATE AND COUNTRY TO COUNTRY.

If you have any questions regarding your warranty rights and responsibilities, refer to Owner Service Assistance for contact information.

California Emission Control Warranty Statement

Your Warranty Rights and Obligations

The California Air Resources Board is pleased to explain the emission control system warranty on your 2003 model year[1.] and later inboard or sterndrive engine. In California, new inboard and sterndrive engines must be designed, built and equipped to meet the State's stringent anti-smog standards. Mercury Marine must warrant the emission control system on your inboard or sterndrive engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your inboard or sterndrive engine.

Your emission control system may include parts such as the carburetor or fuel injection system, the ignition system, and catalytic converter. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, Mercury Marine will repair your inboard or sterndrive engine at no cost to you; including diagnosis, parts and labor.

Manufacturer's Warranty Coverage

For 2003-2008 spark-ignition inboard and sterndrive marine engines: Select emission control parts from model year[1.] 2003-2008 inboard and sterndrive engines are warranted for 2 years. If any emission-related part on your engine is defective under warranty, the part will be repaired or replaced by Mercury Marine.

Owner's Warranty Responsibilities

As the inboard or sterndrive engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. Mercury Marine recommends that you retain all receipts covering maintenance on your inboard or sterndrive engine, but Mercury Marine cannot deny warranty solely for the lack of receipts or your failure to ensure the performance of all scheduled maintenance.

1. Mercury Marine does not establish model years for the Mercury MerCruiser product line. In order to comply with CARB warranty regulations, and for that limited purpose only, model year shall have the same meaning as calendar year. As an example, 2003 model year products refers to products manufactured during calendar year 2003.

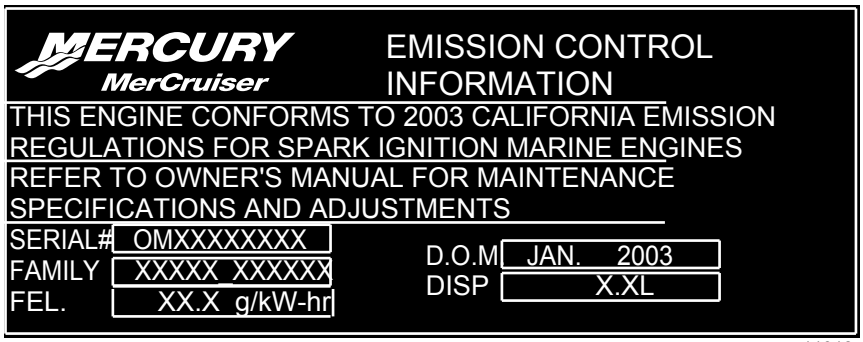
As the inboard or sterndrive engine owner, you should however be aware that Mercury Marine may deny you warranty coverage if your inboard or sterndrive engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications. Warranty coverage is terminated for used product repossessed from a retail customer, purchased at auction, from a salvage yard, or from an insurance company that obtained the product as a result of an insurance claim.

You are responsible for presenting your inboard or sterndrive engine to a Mercury Marine dealer authorized to service the product as soon as a problem exists. The warranty repairs will be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, refer to Owner Service Assistance for contact information.

Emission Control Information Label

A tamper-resistant Emission Control Information label is affixed in a visible location to the engine at time of manufacture by Mercury MerCruiser. In addition to the required emissions statement, the label lists the engine serial number, family, FEL (emission level), date of manufacture (month, year), and the engine displacement. Please note that the low emissions certification will not affect the fit, function, or performance of the engines. Boatbuilders and dealers may not remove the label or the part it is affixed to before sale. If modifications are necessary, contact Mercury MerCruiser about the availability of replacement decals before proceeding.



Emission Control Label - Non CE Marked

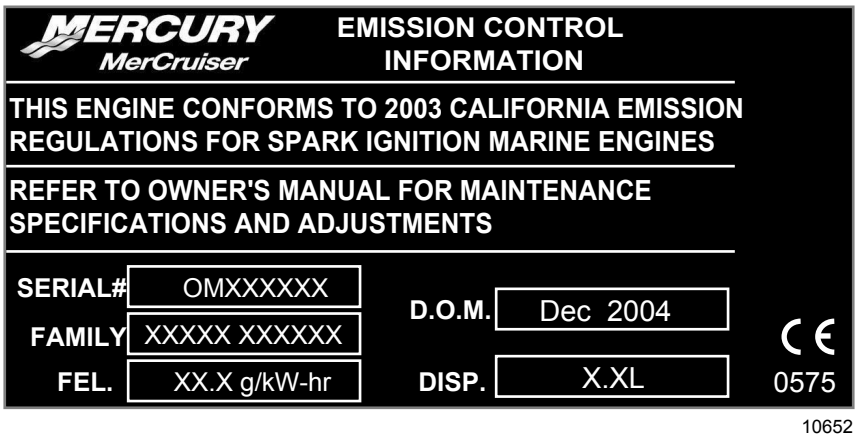
"SERIAL#" - Engine Serial Number

"FAMILY" - Engine Family

"FEL." - Family Emission Limit

"D.O.M." - Date of Manufacture

"DISP" - Piston Displacement



Emission Control Label - CE Marked

"SERIAL#" - Engine Serial Number

"FAMILY" - Engine Family

"FEL." - Family Emission Limit

"D.O.M." - Date of Manufacture

"DISP" - Piston Displacement

CE - When this mark is present in the lower right corner of the Emission Control Information Label, on the engine, the Declaration of Conformance applies. Refer to the front page of this Manual for further information.

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.

Emission Certification Star Label

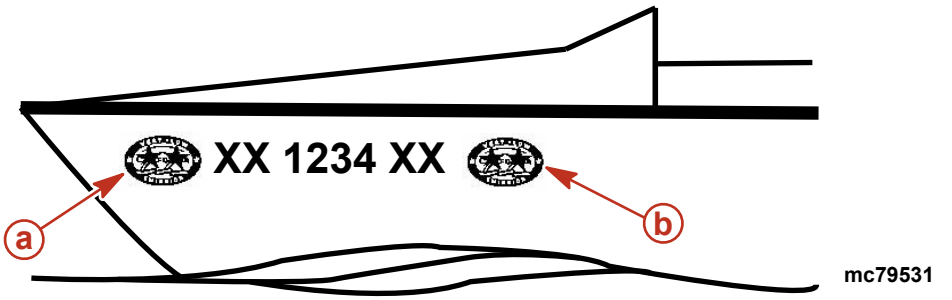
Your boat is labeled on the hull with one of the following star labels. The Symbol for Cleaner Marine Engines Means:

1. Cleaner Air and Water - for a healthier lifestyle and environment.
2. Better Fuel Economy - burns up to 30-40 percent less gas and oil than conventional carbureted two-stroke engines, saving money and resources.
3. Longer Emission Warranty - Protects consumer for worry free operation.

Beginning January 1, 2003, one Three-Star label will be included with each factory-certified Mercury MerCruiser engine.

All Mercury MerCruiser engines (500 hp and below) will have a Three-Star Ultra Low Emission rating. The Three-Star label identifies that these engines meet the California Air Resources Board's Sterndrive and Inboard marine engine 2003 exhaust emission standards. Engines meeting these standards have 65% lower emissions than One-Star - Low Emissions engines.

The Three-Star label will be affixed on the left side of the hull as shown.



a - Recommended location **b -** Secondary location

One Star - Low emission	
 mc79569-1	The one-star label identifies personal watercraft, outboard, sterndrive and inboard engines that meet the Air Resources Board's Personal Watercraft and Outboard marine engine 2001 exhaust emission standards. Engines meeting these standards have 75% lower emissions than conventional carbureted two-stroke engines. These engines are equivalent to the U.S. EPA's 2006 standards for marine engines.
Two Stars - Very Low emission	
 mc79570-1	The two-star label identifies personal watercraft, outboard, sterndrive and inboard engines that meet the Air Resources Board's Personal Watercraft and Outboard marine engine 2004 exhaust emission standards. Engines meeting these standards have 20% lower emissions than One Star - Low-Emission engines.
Three Stars - Ultra Low emission	
 mc79571-1	The three-star label identifies engines that meet the Air Resources Board's Personal Watercraft and Outboard marine engine 2008 exhaust emission standards or the Sterndrive and Inboard marine engine 2003 exhaust emission standards. Engines meeting these standards have 65% lower emissions than One Star - Low Emission engines.
Four Stars - Super Ultra Low emission	
 mc79572-1	The Four Star label identifies engines that meet the Air Resources Board's Sterndrive and Inboard marine engine 2009 exhaust emission standards. Personal Watercraft and Outboard marine engines may also comply with these standards. Engines meeting these standards have 90% lower emissions than One Star - Low Emission engines.

Section 2 - Getting to Know Your Power Package

Table of Contents

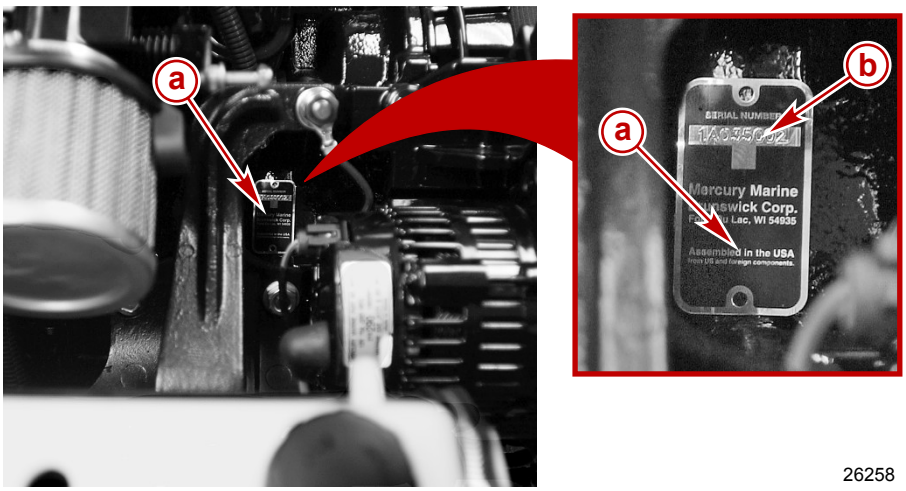
Identification..... 18
Engine Serial Number..... 18
Vazer Sterndrive Identification..... 18
Vazer Transom Serial Number..... 19
Lanyard Stop Switch..... 19
Instrumentation..... 20
Digital Gauges..... 20
Analog Gauges..... 21
Remote Controls..... 22
Panel Mount Features..... 22
Console Mount Features..... 23
Power Trim..... 23
Single Engine Trim and Trailer..... 24
Electrical System Overload Protection..... 25
Audio Warning System..... 27
Testing The Audio Warning System 27
Engine Guardian Strategy..... 27
Warning Horn Signals..... 28

Identification

The serial numbers are the manufacturer's keys to numerous engineering details that apply to your Mercury MerCruiser power package. When contacting Mercury Marine about service, always specify model and serial numbers.

Engine Serial Number

The engine serial number is located on a metal tag just below the alternator on the engine block.

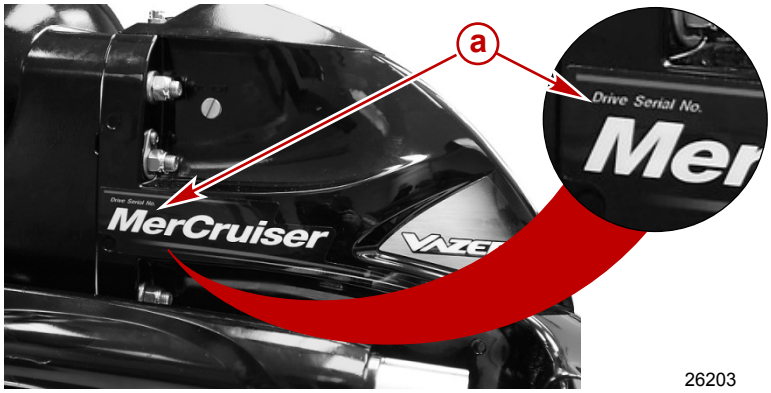


26258

a - Serial number tag **b -** Serial number

Vazer Sterndrive Identification

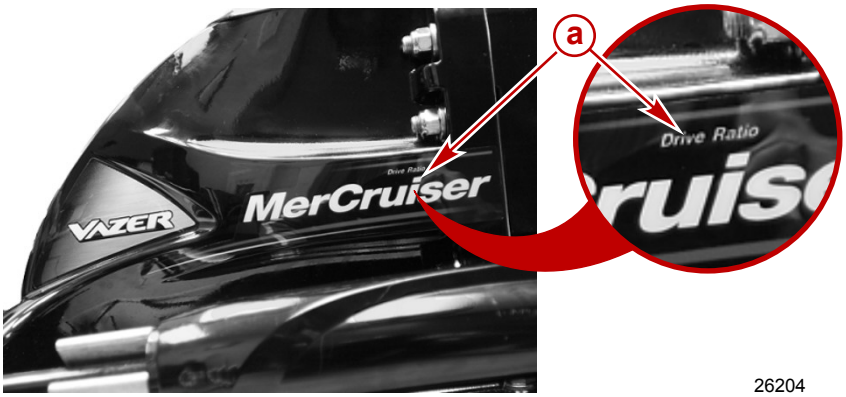
Vazer models: The drive serial number is located on the port side decal.



26203

a - Drive serial number

The drive ratio is located on the starboard side decal.

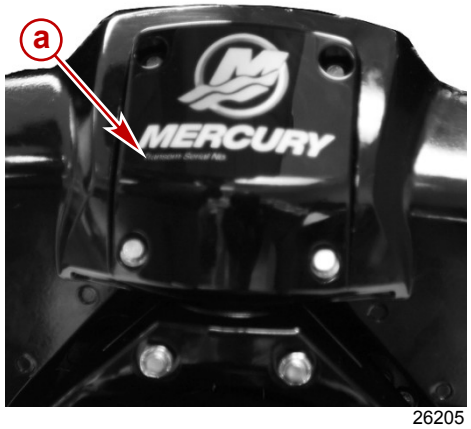


26204

a - Drive ratio

Vazer Transom Serial Number

The Vazer transom serial number is located on the decal at the top of the transom assembly.

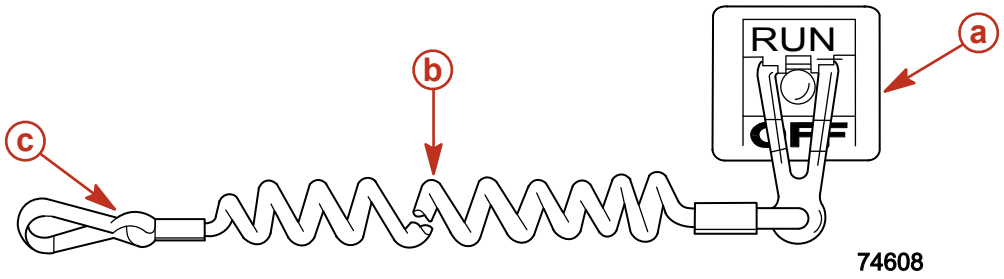


26205

a - Transom assembly serial number

Lanyard Stop Switch

The purpose of a lanyard stop switch is to turn off the engine when the operator moves outside the operator's position (as in accidental ejection from the operator's position).



74608

a - Stop switch
b - Lanyard
c - Clips to the operator

Accidental ejections, such as falling overboard, are more likely to occur in:

- low sided sport boats
- bass boats
- high performance boats

Accidental ejections can also occur from:

- poor operating practices
- sitting on the seat or gunwale at planing speeds
- standing at planing speeds
- operating at planing speeds in shallow or obstacle infested waters
- releasing your grip on the steering wheel that is pulling in one direction
- consuming alcohol or drugs
- high speed boating maneuvers

The lanyard is a cord usually between 122 and 152 cm (4 and 5 feet) in length when stretched out, with an element on one end made to be inserted into the switch and a snap on the other end for attaching to the operator. The lanyard is coiled to make its at-rest condition as short as possible to minimize the likelihood of lanyard entanglement with nearby objects. Its stretched-out length is made to minimize the likelihood of accidental activation should the operator choose to move around in an area close to the normal operator's position. If it is desired to have a shorter lanyard, wrap the lanyard around the operator's wrist or leg, or tie a knot in the lanyard.

Activation of the lanyard stop switch will stop the engine immediately, but the boat will continue to coast for some distance depending upon the velocity and degree of any turn at shut down. However, the boat will not complete a full circle. While the boat is coasting, it can cause injury to anyone in the boat's path as seriously as the boat would when under power.

We strongly recommend that other occupants be instructed on proper starting and operating procedures should they be required to operate the engine in an emergency (e.g. if the operator is accidentally ejected).

⚠ WARNING

Should the operator fall out of the boat, the possibility of serious injury or death from being run over by the boat can be greatly reduced by stopping the engine immediately. Always properly connect both ends of the stop switch lanyard to the stop switch and the operator.

Accidental or unintended activation of the switch during normal operation is also a possibility. This could cause any, or all, of the following potentially hazardous situations:

- Occupants could be thrown forward due to unexpected loss of forward motion, a particular concern for passengers in the front of the boat who could be ejected over the bow and possibly struck by the propulsion or steering components.
- Loss of power and directional control in heavy seas, strong current or high winds.
- Loss of control when docking.

⚠ WARNING

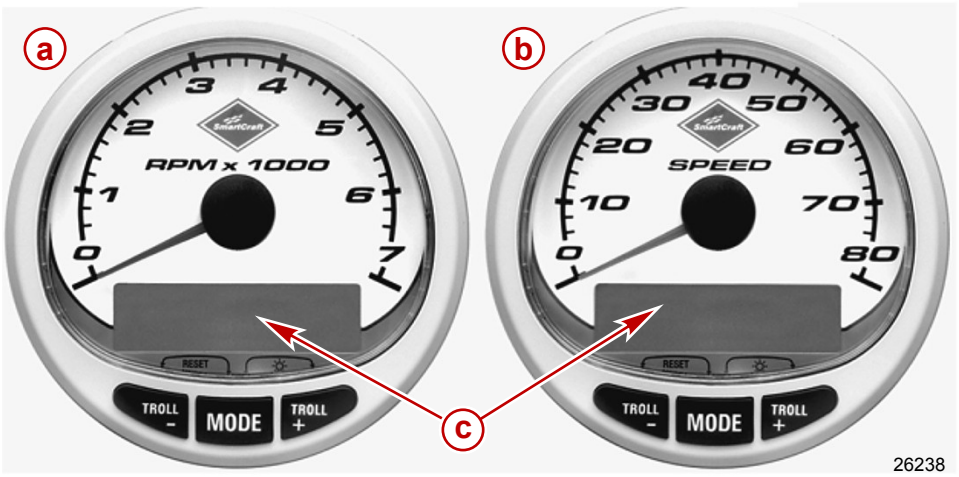
Avoid serious injury or death from deceleration forces resulting from accidental or unintended stop switch activation. The boat operator should never leave the operator's station without first disconnecting the stop switch lanyard from the operator.

Instrumentation

Digital Gauges

A Mercury SmartCraft System instrument package can be purchased for this product. A few of the functions the instrument package will display are engine RPM, coolant temperature, oil pressure (requires a SmartCraft oil pressure sender kit), battery voltage, fuel consumption, and engine operating hours.

SmartCraft digital gauges also feature troll control. This allows a vessel to maintain a constant speed with an engine speed between 500 and 1200 RPM.



SmartCraft gauges

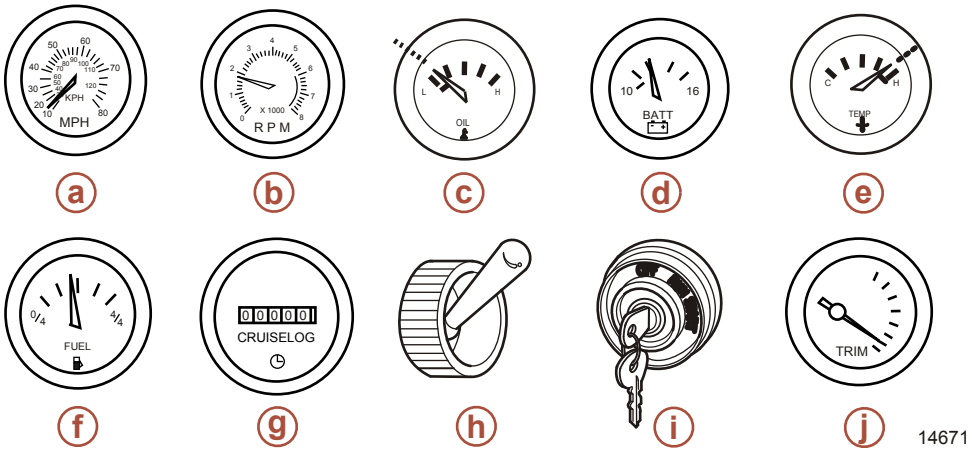
a - Tachometer
b - Speedometer
c - LCD system view display

The SmartCraft instrument package also aids in Engine Guardian diagnostics. The SmartCraft Instrument package displays critical engine alarm data and potential problems.

Refer to the manual with your gauge package for the warning functions monitored by and basic operation of the SmartCraft instrument package.

Analog Gauges

The following is a brief explanation of the instrumentation typically found on some boats. The owner and operator should be familiar with all instruments and their functions. Because of the large variety of instrumentation and manufacturers, you should have your boat dealer explain the particular gauges and normal readings for your boat.



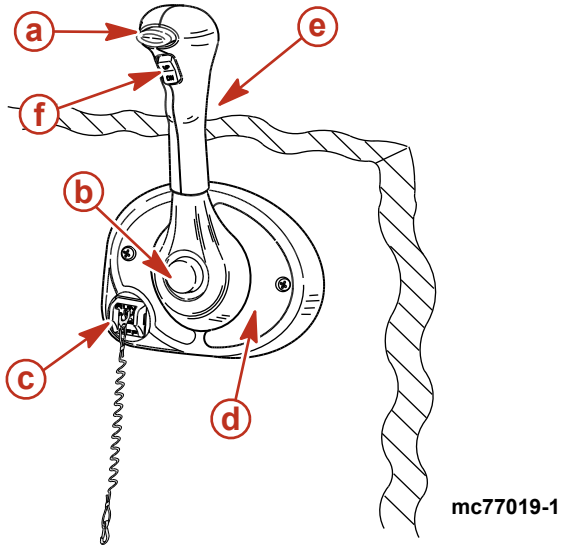
Reference	Gauge	Function
a	Speedometer	Indicates boat speed.
b	Tachometer	Indicates engine RPM.
c	Oil pressure gauge	Indicates engine oil pressure.
d	Voltmeter	Indicates battery voltage.
e	Coolant temperature gauge	Indicates engine operating temperature.
f	Fuel gauge	Indicates quantity of fuel in tank.
g	Hour meter	Records engine operating time.
h	Bilge blower switch	Operates the bilge blower.

Reference	Gauge	Function
i	Ignition switch	Allows the operator to start and stop engine.
j	Power trim gauge	Indicates sterndrive angle (trim up [out] and down [in]).

Remote Controls

Your boat may be equipped with a Mercury Precision Parts or Quicksilver remote control. All controls may not have all features shown. Consult your dealer for a description and demonstration of your remote control.

Panel Mount Features



mc77019-1

a - Neutral lock button
b - Throttle-only button
c - Lanyard stop switch
d - Control handle tension adjustment screw
e - Control handle
f - Trim (tilt) button

Neutral lock button. Prevents accidental shift and throttle engagement. Neutral lock button must be pushed into move the control handle out of neutral.

Throttle-only button. Allows the engine throttle advancement without shifting the engine. This is done by disengaging the shift mechanism from the control handle. The throttle-only button can be depressed only when the remote control handle is in the neutral position, and should only be used to assist in starting the engine.

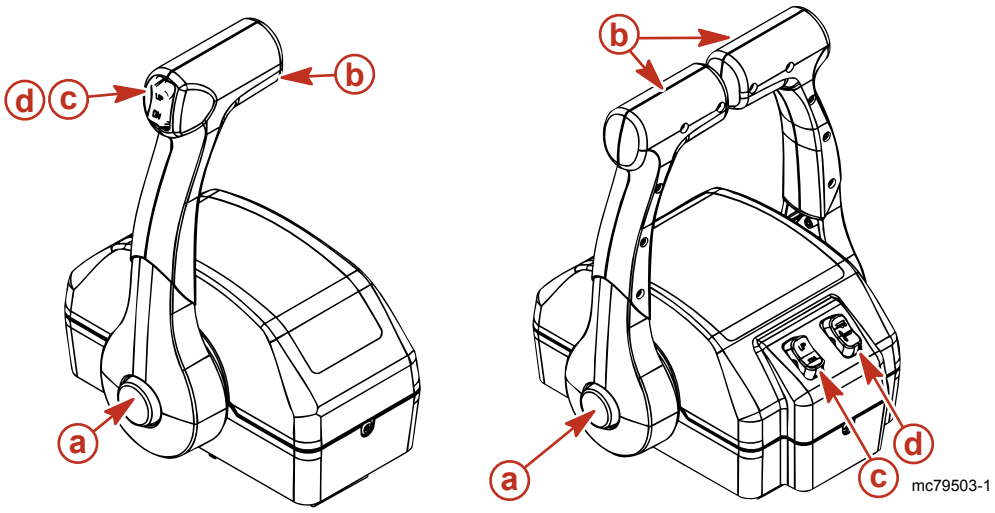
Lanyard stop switch. Turns the ignition off whenever the operator (when attached to the lanyard) moves far enough away from the operator's position to activate the switch. See **Lanyard Stop Switch** for information on the use of this switch.

Control handle. Operation of the shift and throttle are controlled by the movement of the control handle. Push the control handle forward from neutral with a quick, firm motion to the first detent for forward gear. Continue pushing forward to increase speed. Pull the control handle back from neutral with a quick, firm motion to the first detent for reverse gear and continue pushing back to increase speed.

Control handle tension adjustment screw (not visible). This screw is used to adjust the effort required to move the remote control handle. Refer to instructions provided with remote control for complete adjustment instructions.

Trim (tilt) button. For detailed power trim operating procedures, see **Power Trim**.

Console Mount Features



a - Throttle-only button
b - Control handle
c - Power trim switch
d - Trailer switch

Throttle-only button. Allows the engine throttle advancement without shifting the engine. This is done by disengaging the shift mechanism from the control handle. The throttle-only button can be depressed only when the remote control handle is in the neutral position.

Control handles. Operation of the the shift and throttle are controlled by the movement of the control handle. Push the control handle forward from neutral with a quick, firm motion to the first detent for forward gear and continue pushing forward to increase speed. Pull the control handle back from neutral with a quick, firm motion to the first detent for reverse gear and continue pushing back to increase speed.

Control handle tension adjustment screw (not visible). This screw is used to adjust the effort required to move the remote control handle. Refer to the instructions provided with remote control for complete adjustment instructions.

Power trim switch. See the **Power Trim** section for detailed power trim operating procedures.

Trailer switch. Used to raise sterndrive for trailering, launching, beaching, or shallow water operation. For detailed trailer switch operation, see **Power Trim**.

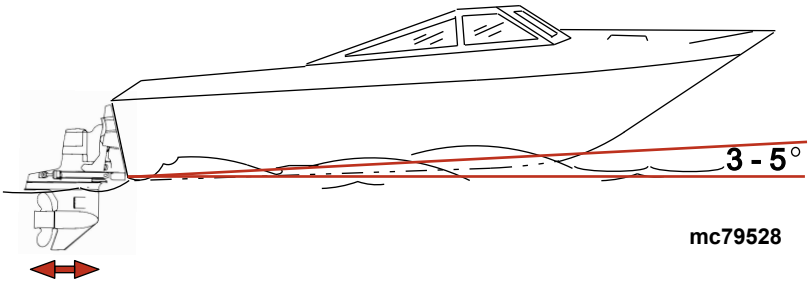
Power Trim

Power trim allows the operator to adjust the sterndrive angle while underway to provide the ideal boat angle for varying load and water conditions. Also, the trailering feature allows the operator to raise and lower the sterndrive for trailering, beaching, launching, and low speed (below 1200 RPM engine speed) and shallow water operation.

⚠ CAUTION

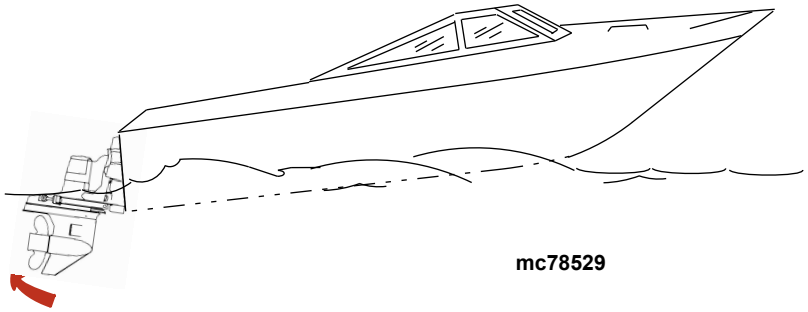
Avoid damage to the sterndrive. Use caution when operating the boat with the sterndrive raised. Do not raise the sterndrive beyond the gimbal ring support flanges at engine speeds above 1200 RPM. Never use the trailer switch to raise the sterndrive while the boat is underway at engine speeds above 1200 RPM.

For best performance trim the sterndrive so that the boat bottom is at a 3–5° angle to the water.



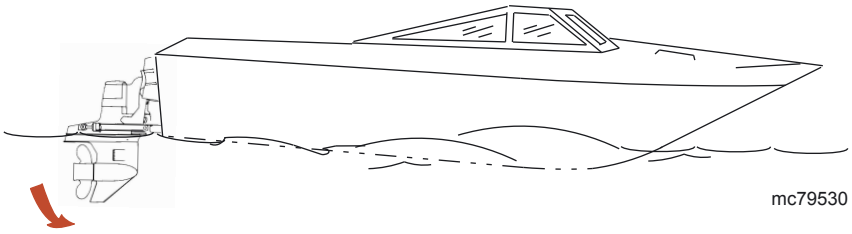
Trimming sterndrive up (out) can:

- Generally increase top speed
- Increase clearance over submerged objects or a shallow bottom
- Cause boat to accelerate and plane off slower
- In excess, cause boat porpoising (bouncing) or propeller ventilation
- Cause engine overheating if trimmed up (out) to a point where any cooling water intake holes are above the water line



Trimming sterndrive down (in) can:

- Help the boat accelerate and plane off quicker
- Generally improve the ride in choppy water
- In most cases, reduce boat speed
- If in excess, lower the bow of some boats to a point at which they begin to plow with their bow in the water while on plane. This can result in an unexpected turn in either direction called bow steering or oversteering if any turn is attempted or if a significant wave is encountered.



Single Engine Trim and Trailer

Single engine applications will have a button that can be pressed to trim the sterndrive up or down.

To raise the sterndrive for trailering, beaching, launching, or low speed (below 1200 RPM) and shallow water operation, push the trim button to raise the sterndrive to the full up (out) position.

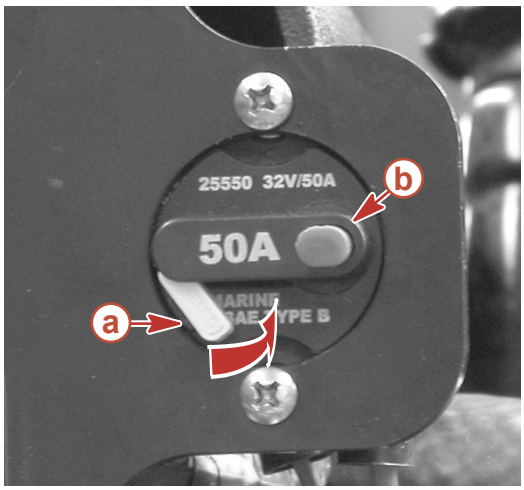
Some controls also have a trailer button that trims the sterndrive to a position suitable for trailer purposes only.

Electrical System Overload Protection

If an electrical overload occurs, a fuse will blow or the circuit breaker will trip open. The cause must be found and corrected before replacing the fuse or resetting the circuit breaker.

NOTE: *In an emergency, when the engine must be operated and the cause for the high current draw cannot be located and corrected, turn off or disconnect all accessories connected to the engine and instrumentation wiring. Reset the circuit breaker. If the breaker remains open, the electrical overload has not been eliminated. Further checks must be made on the electrical system. Contact your authorized Mercury MerCruiser dealer.*

1. A circuit breaker provides protection for the engine wiring harness and the instrumentation power lead. The circuit breaker can be tested by pushing the red button. If the circuit breaker is functioning properly, the yellow lever will appear. Reset the yellow lever after testing, or if tripped, by pushing the yellow lever back into the housing.



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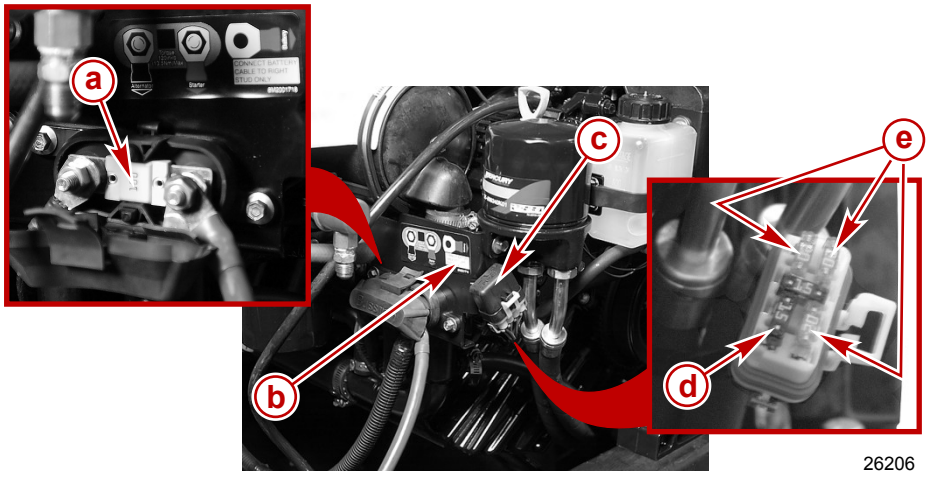
Yellow lever style circuit breaker-typical

a - Yellow lever-shown tripped **b -** Red test button

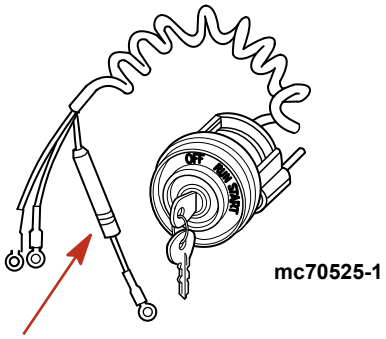
2. A 100-amp fuse is located on the remote oil filter bracket. This fuse provides main power overload protection.

3. A fuse block containing four separate fuses is also located on the remote oil filter bracket. These fuses are designed to protect the engine wiring harness if an electrical overload occurs.

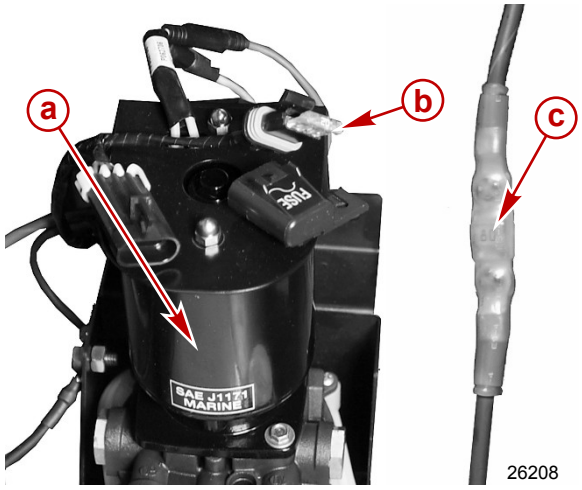


a - 100-amp main fuse
b - Oil filter bracket
c - Fuse block
d - 15-amp fuse
e - 20-amp fuse (3)

4. A 20-amp fuse may be located in the ignition switch "I" terminal lead to protect the electrical system. Check for a blown fuse if the ignition key is turned to the "START" position and nothing happens (and the circuit breaker is not tripped).

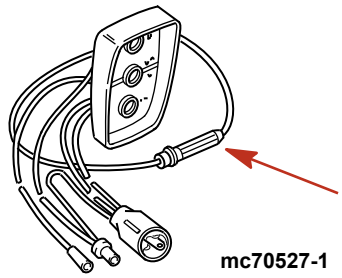


5. The power trim system is protected from overload by a 20-amp fuse on the power trim pump. The trim pump also has an inline 80-amp fuse in the power trim positive lead near the battery switch or battery connection.

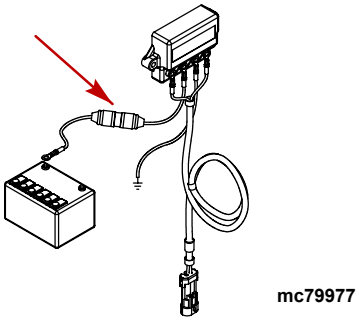


a - Power trim pump
b - 20-amp fuse
c - 80-amp in-line fuse

6. The Quicksilver Three-Button Power Trim Control Panel is further protected by a 20-amp inline fuse.



7. The Quicksilver MerCathode System, if equipped, has a 20-amp inline fuse in the wire that connects to the positive (+) terminal on the controller. If the fuse is blown, the system will not operate, resulting in a loss of corrosion protection.



Audio Warning System

Your Mercury MerCruiser power package may be equipped with an Audio Warning System. The Audio Warning System will not protect the engine from damage. It is designed to warn the operator that a problem has occurred.

The audio warning system will sound with a continuous horn if one of the following occurs:

- Engine oil pressure too low
- Engine temperature too hot
- Seawater pressure too low

The audio warning system will sound with an intermittent beeping if the following occurs:

- Sterndrive oil level too low

NOTICE
A continuous horn indicates a critical fault. Operating the engine during a critical fault can damage components. If the warning horn emits a continuous beep, do not operate the engine unless avoiding a hazardous situation.

If the alarm sounds, stop the engine immediately. Investigate cause and correct it, if possible. If the cause cannot be determined, contact your authorized Mercury MerCruiser dealer.

Testing The Audio Warning System

1. Turn the ignition switch to the "ON" position without cranking the engine.
2. Listen for the audio alarm. The alarm will sound if the system is functioning correctly.

Engine Guardian Strategy

IMPORTANT: Boat speed could be reduced to idle and may not respond to the throttle.

Engine Guardian Strategy is designed to help reduce the potential for engine damage by reducing engine power when a potential problem is sensed by the ECM. Engine Guardian monitors:

- Oil pressure
- Coolant temperature
- Engine overspeed
- Exhaust Manifold Temperature

Also the Engine Guardian Strategy will reduce engine power to 90 percent of maximum if any sensor on the power package fails.

For example, if the water inlet becomes partially blocked, Engine Guardian Strategy will reduce the available power level of the engine to help prevent damage from decreased cooling water flow to the engine. If the debris passes through and full water flow is restored, engine power levels are restored to normal.

To avoid a possible recurrence of the problem you should contact an authorized Mercury MerCruiser dealer. The ECM stores the fault and with this information the technician will be able to more rapidly diagnose problems.

Warning Horn Signals

Most faults will cause the warning horn circuit to activate. How the warning horn activates depends on how serious the problem is. There are four warning horn states:

- Caution - horn signal varies with product line and calibration. Minimal guardian.
- Warning - horn signal varies with product line and calibration.
- Severe - horn is beeping constantly.
- Critical - horn is beeping constantly and guardian will be at forced idle.

In addition, depending on the gauge package, there will be warning icons and fault messages on the dash mounted gauges.

Section 3 - On The Water

Table of Contents

Safe Boating Suggestions..... 30
Be Alert To Carbon Monoxide Poisoning..... 31
Good Ventilation 31
Poor Ventilation 32
Basic Boat Operation..... 32
Launching and Boat Operation..... 32
Operation Chart 33
Starting and Stopping the Engine..... 33
Starting the Engine 33
Stopping the Engine 34
Starting the Engine After Stopped While in Gear..... 34
Throttle-Only Operation..... 34
Trailering the Boat..... 35
Freezing Temperature Operation..... 35
Drain Plug and Bilge Pump..... 35
Protecting People In The Water..... 35
While You Are Cruising 35
While Boat Is Stationary 36
High-Speed and High-Performance Boat Operation..... 36
Passenger Safety in Pontoon Boats and Deck Boats..... 36
Boats Having An Open Front Deck 36
Boats With Front-Mounted, Raised Pedestal Fishing Seats 36
Wave And Wake Jumping..... 37
Impact with Underwater Hazards..... 37
Sterndrive Impact Protection 38
Conditions Affecting Operation..... 38
Weight Distribution (Passengers and Gear) Inside the Boat..... 38
Bottom Of Boat..... 39
Cavitation..... 39
Ventilation..... 39
Elevation and Climate..... 39
Propeller Selection..... 39
Getting Started..... 40
20-Hour Break-In Period..... 40
After the Break-In Period..... 40
End of First Season Checkup..... 41

Safe Boating Suggestions

In order to safely enjoy the waterways, familiarize yourself with local and all other governmental boating regulations and restrictions, and consider the following suggestions.

Know and obey all nautical rules and laws of the waterways.

- Mercury MerCruiser strongly recommends that all powerboat operators complete a boating safety course. Courses are offered in the U.S.A. by: The U.S. Coast Guard Auxiliary, The Power Squadron, The Red Cross and your state or provincial boating law enforcement agency. Inquiries may be made to the Boating Hotline at 1-800-368-5647 or the Boat U.S. Foundation at 1-800-336-BOAT.

Perform safety checks and required maintenance.

- Follow a regular schedule and ensure that all repairs are properly made.

Check safety equipment on board.

- Here are some suggestions of the types of safety equipment to carry when boating:
  - Approved fire extinguishers
  - Signal devices: flashlight, rockets or flares, flag and whistle or horn
  - Tools necessary for minor repairs
  - Anchor and extra anchor line
  - Manual bilge pump and extra drain plugs
  - Drinking water
  - Transistor radio
  - Paddle or oar
  - Spare propeller, thrust hubs, and an appropriate wrench
  - First aid kit and instructions
  - Water-proof storage containers
  - Spare operating equipment, batteries, bulbs and fuses
  - Compass and map or chart of the area
  - Personal flotation device (1 per person on board)

Watch for signs of weather change and avoid foul weather and rough-sea boating.

Tell someone where you are going and when you expect to return.

Passenger boarding.

- Stop the engine whenever passengers are boarding, unloading or are near the back (stern) of the boat. Shifting the drive unit into neutral is not sufficient.

Use personal flotation devices.

- Federal Law requires that there be a U. S. Coast Guard approved life jacket (personal flotation device), correctly sized and readily accessible for every person on board, plus a throwable cushion or ring. We strongly advise that everyone wear a life jacket at all times while in the boat.

Prepare other boat operators.

- Instruct at least 1 person on board in the basics of starting and operating the engine and boat handling in case the driver becomes disabled or falls overboard.

Do not overload your boat.

- Most boats are rated and certified for maximum load (weight) capacities (refer to your boat capacity plate). Know your boat's operating and loading limitations. Know if your boat will float if full of water. When in doubt, contact your authorized Mercury MerCruiser dealer or the boat manufacturer.

Ensure that everyone in the boat is properly seated.

- Do not allow anyone to sit or ride on any part of the boat that was not intended for such use. This includes the backs of seats, gunwales, transom, bow, decks, raised fishing seats and any rotating fishing seat; anywhere that sudden unexpected acceleration, sudden stopping, unexpected loss of boat control or sudden boat movement could cause a person to be thrown overboard or into the boat. Ensure that all passengers have a proper seat and are in it before any boat movement.

Never be under the influence of alcohol or drugs while boating (it is the law).

- They impair your judgment and greatly reduce your ability to react quickly.

Know your boating area and avoid hazardous locations.

Be alert.

- The operator of the boat is responsible by law to maintain a proper lookout by sight and hearing. The operator must have an unobstructed view particularly to the front. No passengers, load or fishing seats should block the operators view when the boat is above idle or planing transition speed. Watch out for others, the water and your wake.

Never drive your boat directly behind a water skier in case the skier falls.

- As an example, your boat traveling at 40 km/h (25 MPH) will overtake a fallen skier who was 61 m (200 ft.) in front of you in 5 seconds.

Watch fallen skiers.

- When using your boat for water skiing or similar activities, always keep a fallen or down skier on the operator's side of the boat while returning to attend to the skier. The operator should always have the down skier in sight and never back up to the skier or anyone in the water.

Report accidents.

- Boat operators are required by law to file a Boating Accident Report with their state boating law enforcement agency when their boat is involved in certain boating accidents. A boating accident must be reported if 1) there is loss of life or probable loss of life, 2) there is personal injury requiring medical treatment beyond first aid, 3) there is damage to boats or other property where the damage value exceeds $500.00 or 4) there is complete loss of the boat. Seek further assistance from local law enforcement.

Be Alert To Carbon Monoxide Poisoning

Carbon monoxide is present in the exhaust fumes of all internal combustion engines including the outboards, sterndrives and inboard engines that propel boats, as well as the generators that power various boat accessories. Carbon monoxide is a deadly gas that is odorless, colorless and tasteless.

Early symptoms of carbon monoxide poisoning, which should not be confused with seasickness or intoxication, include headache, dizziness, drowsiness and nausea.

⚠ WARNING

Avoid prolonged exposure to carbon monoxide. Carbon monoxide poisoning can lead to unconsciousness, brain damage or death. Ensure that the boat, while at rest or underway, is well ventilated.

Good Ventilation

Ventilate the passenger area, open the side curtains or forward hatches to remove fumes.

1. Example of desired air flow through the boat.

mc79553-1

Poor Ventilation

Under certain conditions, permanently enclosed or canvas enclosed cabins or cockpits with insufficient ventilation may draw in carbon monoxide. Install one or more carbon monoxide detectors in your boat.

Although the occurrence is rare, on a very calm day, swimmers and passengers in an open area of a stationary boat that contains or is near an operating engine may be exposed to a hazardous level of carbon monoxide.

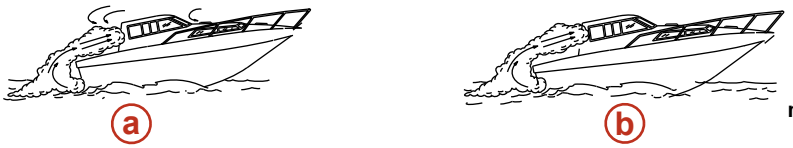
1. Examples of poor ventilation while a boat is stationary:

mc79554-1

a - Operating the engine when the boat is moored in a confined space

b - Mooring close to another boat with its engine operating

2. Examples of poor ventilation while a boat is moving:



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a - Operating the boat with the trim angle of the bow too high

b - Operating the boat with no forward hatches open (station wagon effect)

Basic Boat Operation

Launching and Boat Operation

IMPORTANT: Install the bilge drain plug prior to launching boat.

OPERATION CHART

Operation Chart			
BEFORE STARTING	AFTER STARTING	WHILE UNDERWAY	STOPPING and SHUT DOWN
Install the bilge drain plug.	Observe all gauges to check the condition of the engine. If it is not normal, stop the engine.	Frequently observe all gauges to check the condition of the engine. If it is not normal, stop the engine.	Shift the remote control lever to the neutral position.
Open the engine hatch. Air out the bilge completely.	Check for fuel, oil, water, fluid, and exhaust leaks.	Listen for the audio alarm.	Turn the ignition key to the "OFF" position.
Turn the battery switch on, if equipped.	Check the shift and throttle control operation.		Turn the battery switch to the "OFF" position, if equipped.
Turn on and run the engine compartment bilge blower, if equipped, for 5 minutes.	Check the steering operation.		Close the fuel shut-off valve, if equipped.
Open fuel shut off valve, if equipped.			Flush the seawater cooling circuit, if operating in saltwater, brackish water, or polluted water.
Place sterndrive in full down (in) position.			Drain the bilge.
Check the engine oil.			
Perform all other checks specified by your dealer and boat builder.			
Listen for the Audio Warning Alarm to sound when the ignition switch is in the "ON" position.			
Warm-up the engine at a fast idle-RPM for several minutes.			

Starting and Stopping the Engine

NOTE: *Only perform those functions applicable to your power package.*

STARTING THE ENGINE

1. Check all items listed in the Operation Chart.
2. Place the remote control handle in neutral.

⚠ CAUTION

Overheating from insufficient cooling water will cause engine and drive system damage. Ensure that there is sufficient water always available at water inlet holes during operation.

⚠ WARNING

Avoid fire or explosion. Before starting the engine, operate the bilge blower for at least five minutes to remove any explosive fumes from the engine compartment. If the boat is not equipped with a bilge blower, open the engine hatch and leave it open while starting the engine.

3. Turn the ignition key to the "START" position. Release the key when the engine starts and allow the switch to return to the "ON" position. Allow the engine to warm up 6–10 minutes on first start of the day.

NOTE: The engine will only start if the control handle is in neutral or is being operated using the ***throttle-only*** *button.*

4. If the engine does not start after three attempts:
   a. Push the **throttle-only** button and position the remote control handle to the 1/4 throttle position.
   b. Turn the ignition key to the "START" position. Release the key when the engine starts and allow the switch to return to the "ON" position.
5. If the engine does not start after step 4:
   a. Using the **throttle-only** button, move the remote control handle to the wide-open throttle (WOT) position, then return to 1/4 throttle.
   b. Turn the ignition key to the "START" position. Release the key when the engine starts and allow the switch to return to the "ON" position.

NOTE: Return the control handle to the neutral detent position to disengage the ***throttle-only*** *button and allow the power package to shift into gear.*

6. Inspect the power package for fuel, oil, water, and exhaust leaks.

⚠ CAUTION
Shifting the drive system at RPMs greater than engine idle speed may cause internal damage to the drive system. Shift the drive system only when the engine is at idle RPM.

7. Move the control handle with a firm, quick motion forward to shift into forward gear, or backward to shift into reverse. After shifting, advance the throttle to the desired setting.

STOPPING THE ENGINE

1. Move the remote control handle to the neutral position and allow the engine to slow to idle speed. If the engine has been operated at high speed for a long period of time, allow the engine to cool at idle speed for 3 to 5 minutes.
2. Turn the ignition key to the "OFF" position.

Starting the Engine After Stopped While in Gear

IMPORTANT: Avoid stopping the engine if the sterndrive is in gear. If the engine does stop while the sterndrive is in gear, see the following procedure:

1. Push and pull repeatedly on the remote control handle until the handle returns to the neutral position. This may take several tries if the power package was operating above idle RPM when the engine stopped.
2. After the handle returns to the neutral position, resume normal starting procedures.

Throttle-Only Operation

1. For remote control features, refer to **Remote Controls** in the **Getting to Know Your Power Package** section.
2. Move the control lever to the neutral position.
3. Depress and hold the throttle-only button, and move the control lever to the forward, idle position.
4. Advancing the control lever beyond the forward, idle position will cause engine speed to increase.

IMPORTANT: Moving the control lever back to the neutral position will disengage the throttle-only button and allow the engine to shift into gear.

5. Throttle-only mode is deactivated by moving the control lever to the neutral position. Moving the control lever from the neutral position to the forward, idle or reverse, idle position without pressing the throttle-only button will shift the power package into the chosen gear.

Trailering the Boat

Your boat can be trailered with the sterndrive in the up or down position. Adequate clearance is required between the road and the sterndrive when transporting.

If adequate road clearance is a problem, place the sterndrive in the full trailer position and support it with an optional trailer kit, which is available from your authorized Mercury MerCruiser dealer.

Freezing Temperature Operation

IMPORTANT: If the boat is operated during periods of freezing temperature, precautions must be taken to prevent freeze damage to the power package.

If operating in freezing or near freezing temperatures, keep the sterndrive trimmed down (in) at all times so that the sterndrive remains submerged. This prevents trapped water in the sterndrive from freezing and causing possible damage to the seawater pump and other sterndrive components.

IMPORTANT: The seawater section of the 100 Vazer is self draining and will drain when the boat is removed from the water.

If there is a chance of ice forming on the water, remove the boat from the water and allow the seawater section to drain completely of water. If ice should form at the water level inside the sterndrive or engine, it will block water flow to the engine causing possible engine and sterndrive damage.

1. Remove the boat from the water.

IMPORTANT: Place the sterndrive in the full down (in) position to ensure that no seawater gets trapped in the engine or sterndrive.

2. Place the sterndrive in the full down (in) position.
3. Allow the system to drain for a minimum of 5 minutes before raising the sterndrive.

Drain Plug and Bilge Pump

The engine compartment in your boat is a natural place for water to collect. For this reason, boats are normally equipped with a drain plug and/or a bilge pump. It is very important to check these items on a regular basis to ensure that the water level does not come into contact with your power package. Components on your engine will be damaged if submerged. Damage caused by submersion is not covered by the Mercury MerCruiser Limited Warranty.

Protecting People In The Water

WHILE YOU ARE CRUISING

It is very difficult for a person in the water to take quick action to avoid a boat heading in their direction, even at slow speeds.

Always slow down and exercise extreme caution any time you are boating in an area where there might be people in the water.

Whenever a boat is moving (even coasting) and the gear shift is in neutral, there is sufficient force by the water on the propeller to cause the propeller to rotate. This neutral propeller rotation can cause serious injury.

WHILE BOAT IS STATIONARY

⚠ WARNING

Stop your engine immediately whenever anyone in the water is near your boat. Serious injury to the person in the water is likely if contacted by a rotating propeller, a moving boat, a moving gearcase, or any solid device rigidly attached to a moving boat or gearcase.

Shift into neutral and shut off the engine before allowing people to swim or be in the water near your boat.

High-Speed and High-Performance Boat Operation

If your boat is considered a high-speed or high-performance boat with which you are unfamiliar, we recommend that you never operate it at its high speed capability without first requesting an initial orientation and demonstration ride with your dealer or an operator experienced with your boat. For additional information, refer to the **Hi-Performance Boat Operation** booklet (90-849250-R3) from your dealer, distributor, or Mercury Marine.

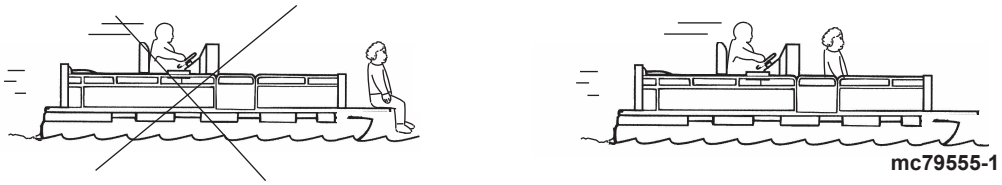
Passenger Safety in Pontoon Boats and Deck Boats

Whenever the boat is in motion, observe the location of all passengers. Do not allow any passengers to stand or use seats other than those designated for traveling faster than idle speed. A sudden reduction in boat speed, such as plunging into a large wave or wake, a sudden throttle reduction, or a sharp change of boat direction, could throw them over the front of boat. Falling over the front of the boat between the two pontoons will position them to be run over.

BOATS HAVING AN OPEN FRONT DECK

No one should ever be on the deck in front of the rail while the boat is in motion. Keep all passengers behind the front rail or enclosure.

Persons on the front deck could easily be thrown overboard or persons dangling their feet over the front edge could get their legs caught by a wave and pulled into the water.



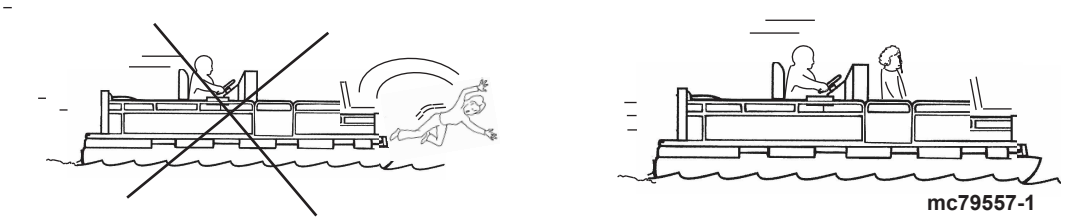
⚠ WARNING

Avoid serious injury or death from falling over the front end of a pontoon or deck boat and being run over. Stay back from the front end of the deck and remain seated while the boat is in motion.

BOATS WITH FRONT-MOUNTED, RAISED PEDESTAL FISHING SEATS

Elevated fishing seats are not intended for use when the boat is traveling faster than idle or trolling speed. Sit only in seats designated for traveling at faster speeds.

Any unexpected, sudden reduction in boat speed could result in the elevated passenger falling over the front of the boat.



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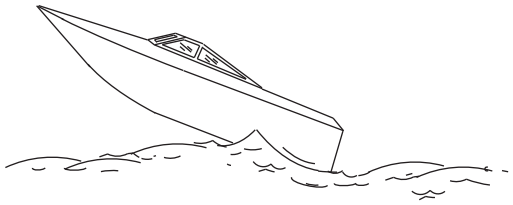
Wave And Wake Jumping

⚠ WARNING

Avoid serious injury or death from being thrown within or out of a boat when it lands after jumping a wave or wake. Avoid wave or wake jumping whenever possible. Instruct all occupants that if a wake or wave jump occurs, get low and hang on to any boat hand hold.



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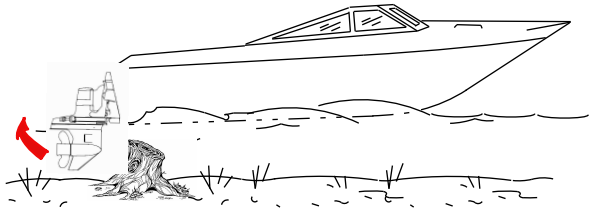
Operating recreational boats over waves and wakes is a natural part of boating. However, when this activity is done with enough speed to force the boat hull partially or completely out of the water, certain hazards arise, particularly when the boat re-enters the water.

The primary concern is the boat changing direction while in the midst of the jump. In such cases the landing may cause the boat to violently veer in a new direction. Such a sharp change in direction or turn can cause occupants to be thrown out of their seats or out of the boat.

There is another less common hazardous result from allowing your boat to launch off of a wave or wake. If the bow of your boat pitches down far enough while airborne, upon water contact it may penetrate under the water surface and submarine for an instant. This will bring the boat nearly to a stop in an instant and can send the occupants flying forward. The boat may also veer sharply to one side.

Impact with Underwater Hazards

Reduce speed and proceed with caution whenever you're driving a boat in shallow water or in areas where the waters are suspected of having underwater obstacles that could be struck by the underwater drive components, rudder, or the bottom of the boat.



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IMPORTANT: The most important thing you can do to help reduce injury or impact damage from striking a floating or underwater object is control the boat speed. Under these conditions, boat speed should be kept to a maximum speed of 24 to 40 km/h (15 to 25 MPH).

The following demonstrate some, but not all, examples of what can happen if the boat strikes an object:

- The boat could move suddenly in a new direction. Such a sharp change in direction or turn can throw occupants out of their seats or out of the boat.
- A rapid reduction in speed. This will cause occupants to be thrown forward, even out of the boat.
- Impact damage to the underwater drive components, rudder, or boat.

Keep in mind that one of the most important things you can do to help reduce injury or impact damage in these situations is control the boat speed. Boat speed should be kept to a minimum planing speed when driving in waters known to have underwater obstacles.

After striking a submerged object, stop the engine as soon as possible and inspect the drive system for any broken or loose parts. If damage is present or suspected, the power package should be taken to an authorized Mercury MerCruiser dealer for a thorough inspection and any necessary repair.

The boat should be checked for hull fractures, transom fractures, and water leaks.

Operating with damaged underwater drive components, rudder, or boat bottom could cause additional damage to other parts of the power package, or could affect control of the boat. If continued operation is necessary, do so at greatly reduced speeds.

⚠ WARNING

Avoid serious injury or death from loss of boat control. Continued boating with major impact damage can result in sudden component failure with or without subsequent impacts. Have the power package thoroughly inspected and any necessary repairs made.

Sterndrive Impact Protection

The power trim hydraulic system is designed to provide impact protection for the sterndrive. If a submerged object is struck while the boat is moving forward, the hydraulic system will cushion the kickup of the sterndrive as it clears the object, reducing damage to the sterndrive. After the sterndrive has cleared the object, the hydraulic system allows the sterndrive to return to its original operating position, preventing loss of steering control and engine overspeed.

Use extreme caution when operating in shallow water or where underwater objects are known to be present. No impact protection is provided in reverse; use extreme care to prevent striking submerged objects while operating in reverse.

IMPORTANT: Impact protection system cannot be designed to ensure total protection from impact damage under all conditions.

Conditions Affecting Operation

Weight Distribution (Passengers and Gear) Inside the Boat

Shifting weight to rear (stern):

- Generally increases speed and engine RPM
- Causes bow to bounce in choppy water
- Increases danger of following wave splashing into the boat when coming off plane
- At extremes, can cause the boat to porpoise

Shifting weight to front (bow):

- Improves ease of planing
- Improves rough water ride
- At extremes, can cause the boat to veer back and forth (bow steer)

Bottom Of Boat

To maintain maximum speed, the boat bottom should be:

- Clean, free of barnacles and marine growth
- Free of distortion; nearly flat where it contacts the water
- Straight and smooth, fore and aft

Marine vegetation may accumulate when the boat is docked. This growth must be removed before operation; it may clog the water inlets and cause the engine to overheat.

Cavitation

Cavitation occurs when water flow cannot follow the contour of a fast-moving underwater object, such as a gear housing or a propeller. Cavitation permits the propeller to speed up, but the boat speed to reduce. Cavitation can seriously erode the surface of the gear housing or the propeller. Common causes of cavitation are:

- Weeds or other debris snagged on the propeller
- Bent propeller blade
- Raised burrs or sharp edges on the propeller

Ventilation

Ventilation is caused by surface air or exhaust gases that are introduced around the propeller resulting in propeller speed-up and a reduction in boat speed. Air bubbles strike the propeller blade and cause erosion of the blade surface. If allowed to continue, eventual blade failure (breakage) will occur. Excessive ventilation is usually caused by:

- Sterndrive trimmed up (out) too far.
- A missing propeller diffuser ring.
- A damaged propeller or gear housing, which allows exhaust gases to escape between the propeller and gear housing.
- Sterndrive installed too high on transom.

Elevation and Climate

Elevation and climate changes will affect the performance of your power package. Loss of performance can be caused by:

- Higher elevations
- Higher temperatures
- Low barometric pressures
- High humidity

For you to have optimum engine performance under changing weather conditions and high elevation, use a propeller that allows the engine to operate at or near the top end of the specified maximum RPM range with a normal boat load during your normal boating weather conditions.

In most cases, recommended RPM can be achieved by changing to a lower pitch propeller.

Propeller Selection

IMPORTANT: The engines covered in this manual are equipped with an RPM rev-limiter that is set to an upper (or limited) RPM amount. This limit is slightly above the normal operating range of the engine and is designed to help prevent damage from excessive engine RPM. Once the RPM returns to the recommended operating RPM range, normal engine operation resumes.

It is the responsibility of the boat manufacturer and/or the selling dealer to equip the power package with the correct propeller. Refer to Mercury Marine's web page **http://www.mercurymarine.com/everything_you_need_to_know_about_propellers6**.

Select a propeller that will allow the engine power package to operate at or near the top end of the recommended WOT operating RPM range with a normal load.

If full throttle operation is below the recommended range, the propeller must be changed to prevent loss of performance and possible engine damage. On the other hand, operating an engine above the recommended operating RPM range will cause higher than normal wear and/or damage.

After initial propeller selection, the following common problems may require that the propeller be changed to a lower pitch.

- Warmer weather and greater humidity cause a loss of RPM.
- Operating in a higher elevation causes a loss of RPM.
- Operating with a dirty boat bottom causes a loss of RPM.
- Operating with increased load (additional passengers, pulling skiers) causes a loss of RPM.

For better acceleration, such as is needed for water skiing, use the next lower pitch propeller. When not pulling skiers, do not operate at full throttle when using the lower pitch propeller.

Getting Started

20-Hour Break-In Period

IMPORTANT: The first 20 hours of operation is the engine break-in period. Correct break-in is essential to obtain minimum oil consumption and maximum engine performance. During this break-in period, the following rules must be observed:

- Do not operate below 1500 RPM for extended periods of time for the first 10 hours. Shift into gear as soon as possible after starting and advance the throttle above 1500 RPM **if conditions permit safe operation**.
- Do not operate at one speed consistently for extended periods.
- Do not exceed 3/4 throttle during the first 10 hours. During the next 10 hours, occasional operation at wide-open throttle (WOT) is permissible (5 minutes at a time maximum).
- Avoid WOT acceleration from idle speed.
- Do not operate at WOT until the engine reaches normal operating temperature.
- Frequently check engine oil level. Add oil as needed. It is normal for oil consumption to be high during the break-in period.

After the Break-In Period

To help extend the life of your Mercury MerCruiser power package, the following recommendations should be considered;

- Ensure that propeller allows the engine to operate at or near the top of the specified WOT RPM range (Refer to the **Specifications** and **Maintenance** sections) when at full throttle with a normal boat load.
- Operation at 3/4 throttle setting or lower is recommended. Refrain from prolonged operation at WOT RPM.
- Change the engine oil and oil filter. Refer to **Engine Oil** in the **Maintenance** section.

End of First Season Checkup

At the end of the first season of operation, contact an authorized Mercury MerCruiser dealer to discuss or perform scheduled maintenance items. If you are in an area where the product is operated continuously, year-round, you should contact your dealer at the end of the first 100 hours of operation or once yearly, whichever occurs first.

Notes:

Section 4 - Specifications

Table of Contents

Fuel Requirements..... 44
Fuel Ratings 44
Using Reformulated (Oxygenated) Gasolines (USA Only) 44
Gasolines Containing Alcohol 44
Engine Oil..... 45
Engine Specifications..... 45
Fluid Specifications..... 46
Engine.....46
Sterndrives.....46
Power-Assisted Steering and Power Trim Fluids.....46
Approved Power-Assisted Steering Fluids 46
Approved Power Trim Fluids 46
Approved Paints..... 47

4

Fuel Requirements

IMPORTANT: Use of improper gasoline can damage your engine. Engine damage resulting from the use of improper gasoline is considered misuse of the engine, and damage caused thereby will not be covered under the limited warranty.

Fuel Ratings

Mercury MerCruiser engines will operate satisfactorily when using a major brand of unleaded gasoline meeting the following specifications:

USA and Canada - having a posted pump Octane Rating of 87 (R+M)/2 minimum. Premium gasoline [92 (R+M)/2 Octane] is also acceptable. Do not use leaded gasoline.

Outside USA and Canada - having a posted pump Octane Rating of 90 RON minimum. Premium gasoline (98 RON) is also acceptable. If unleaded gasoline is not available, use a major brand of leaded gasoline.

Using Reformulated (Oxygenated) Gasolines (USA Only)

This type of gasoline is required in certain areas of the USA. The 2 types of oxygenates used in these fuels is Alcohol (Ethanol) or Ether (MTBE or ETBE). If Ethanol is the oxygenate that is used in the gasoline in your area, refer to Gasolines Containing Alcohol.

These Reformulated Gasolines are acceptable for use in your Mercury MerCruiser engine.

Gasolines Containing Alcohol

If the gasoline in your area contains either methanol (methyl alcohol) or ethanol (ethyl alcohol), you should be aware of certain adverse effects that can occur. These adverse effects are more severe with methanol. Increasing the percentage of alcohol in the fuel can also worsen these adverse effects.

Some of these adverse effects are caused because the alcohol in the gasoline can absorb moisture from the air, resulting in a separation of the water/alcohol from the gasoline in the fuel tank.

The fuel system components on your Mercury MerCruiser engine will withstand up to 10% alcohol content in the gasoline. We do not know what percentage your boat's fuel system will withstand. Contact your boat manufacturer for specific recommendations on the boat's fuel system components (fuel tanks, fuel lines, and fittings). Be aware that gasolines containing alcohol may cause increased:

- Corrosion of metal parts
- Deterioration of rubber or plastic parts
- Fuel permeation through rubber fuel lines
- Starting and operating difficulties

⚠ WARNING

FIRE AND EXPLOSION HAZARD: Fuel leakage from any part of the fuel system can be a fire and explosion hazard which can cause serious bodily injury or death. Careful periodic inspection of entire fuel system is mandatory, particularly after storage. All fuel components should be inspected for leakage, softening, hardening, swelling or corrosion. Any sign of leakage or deterioration requires replacement before further engine operation.

Because of possible adverse effects of alcohol in gasoline, it is recommended that only alcohol-free gasoline be used where possible. If only fuel containing alcohol is available, or if the presence of alcohol is unknown, increased inspection frequency for leaks and abnormalities is required.

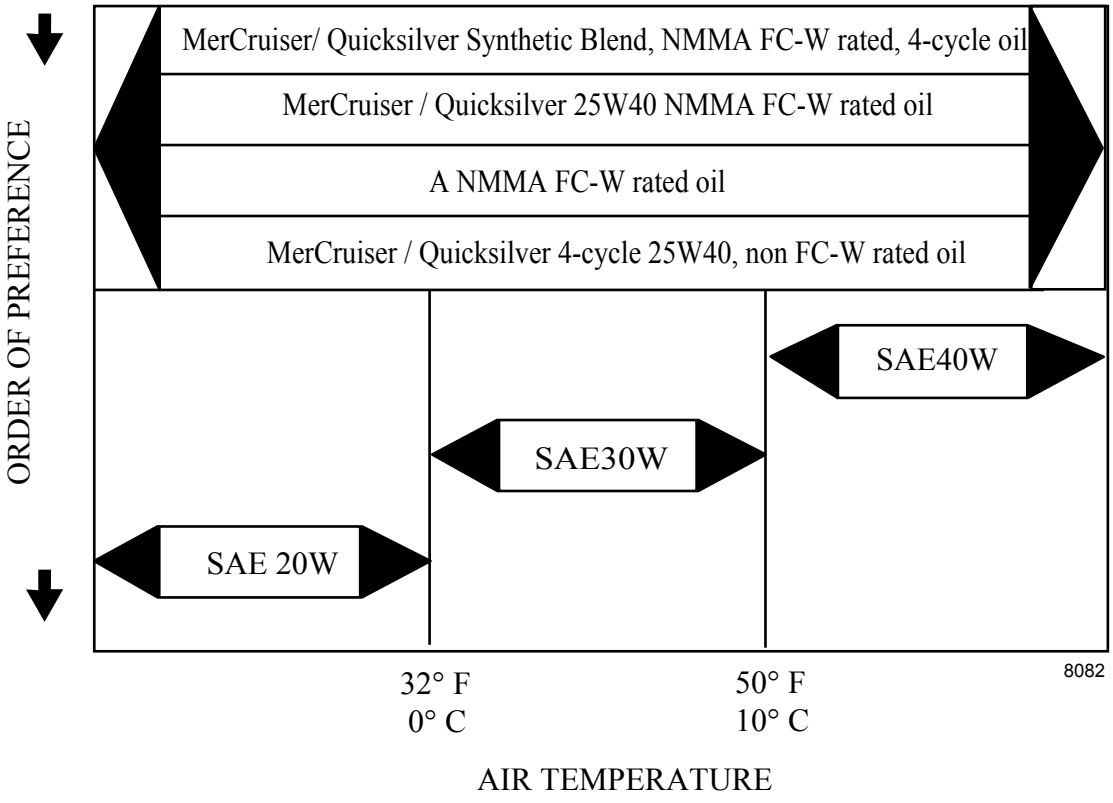
IMPORTANT: When operating a Mercury MerCruiser engine on gasoline containing alcohol, storage of gasoline in the fuel tank for long periods should be avoided. Long periods of storage, common to boats, create unique problems. In cars alcohol-blend fuels normally are consumed before they can absorb enough moisture to cause trouble, but boats often sit idle long enough for phase separation to take place. In addition, internal corrosion may take place during storage if alcohol has washed protective oil films from internal components.

Engine Oil

To help obtain optimum engine performance and to provide maximum protection, we strongly recommend the use of the following oils listed in the order of recommendation:

1. MerCruiser / Quicksilver Synthetic Blend, NMMA FC-W rated, 4 cycle oil.
2. MerCruiser / Quicksilver 25W40 NMMA FC-W rated oil.
3. A NMMA FC-W rated oil.
4. MerCruiser / Quicksilver 4-cycle 25W40, non FC-W rated oil.
5. A good grade straight weight detergent automotive oil per the operating chart below.

NOTE: *The use of non-detergent oils, multi-viscosity oils (other than as specified), non FC-W rated synthetic oils, low quality oils or oils that contain solid additives are specifically not recommended.*



Engine Specifications

NOTE: *Performance ratings are obtained and corrected in accordance with SAE J1228/ ISO 8665 Crankshaft Power.*

NOTE: *All measurements are taken with the engine at normal operating temperature.*

Models	100 Vazer
Horsepower	100
Kilowatts	75
Number of cylinders	4

Models	100 Vazer
Displacement	1.6L (98 cid)
Bore and stroke	79 × 81.5 mm (3.11 × 3.21 in.)
Compression ratio	9.6:1
Idle RPM in neutral	600
Max RPM at WOT	5600–6000
Minimum oil pressure at idle	127 kPa (18.5 psi)
Thermostat (opening temperature)	82° C (180° F)
Timing	Non-adjustable
Electrical system	12V negative ground
Minimum battery requirement	375 CCA / 475 MCA / 90 Ah
Alternator rating	65 amp
Firing order	1-3-4-2
Spark plug type	Champion—RN2C
Spark plug gap	0.9 mm ± 0.1 mm (0.035 in. ± 0.004 in.)

Fluid Specifications

Engine

IMPORTANT: All capacities are approximate fluid measures.

IMPORTANT: If necessary, to adjust oil levels depending on installation angle and cooling systems (heat exchanger and fluid lines).

IMPORTANT: Always use the dipstick to determine the exact quantity of oil or fluid required.

100 Vazer Model	Capacity	Fluid Type
Engine Oil with Filter	4 liters (4.25 U.S qts)	Mercury/Quicksilver Synthetic Blend MerCruiser Engine Oil 25W-40
Closed Cooling System	7.8 liters (8.24 U.S. qts)	Mercury Extended Life Coolant/Antifreeze or Extended Life Ethylene Glycol 5/100 Antifreeze/ Coolant mixed 50/50 with Purified Water

Sterndrives

NOTE: *Oil capacity includes Drive Lube Monitor*

Model	Capacity	Fluid Type
Vazer Drive	1892 ml (64 oz)	High Performance Gear Lubricant

Power-Assisted Steering and Power Trim Fluids

APPROVED POWER-ASSISTED STEERING FLUIDS

Description	Part Number
Power Trim and Steering Fluid	92-858074K01
Dexron III Automatic Transmission Fluid	Obtain Locally

APPROVED POWER TRIM FLUIDS

Description	Part Number
Power Trim and Steering Fluid	92-858074K01
SAE Engine Oil 10W 30	Obtain locally
SAE Engine Oil 10W 40	

Approved Paints

Description	Part Number
Mercury Light Gray Primer	92-802878 52
Mercury Phantom Black	92-802878Q 1

Notes:

Section 5 - Maintenance

Table of Contents

Owner/Operator Responsibilities..... 50
Dealer Responsibilities..... 50
Maintenance..... 50
Do It Yourself Maintenance Suggestions..... 51
Inspection..... 51
Maintenance Schedule—Sterndrive Models.... 52
Routine Maintenance..... 52
Each Day Start 52
Each Day End 53
Weekly 53
Every Two Months or 50 Hours 53
Scheduled Maintenance..... 53
After the Initial 20 Hour Break-In Period 53
Every 100 Hours or Annually (Whichever Occurs First) 53
Every 300 Hours or 3 Years 53
Every 5 Years 54
Maintenance Log..... 54
Engine Oil..... 56
Checking..... 56
Filling..... 56
Changing Oil and Filter..... 57
Easy Engine Oil Drain System..... 57
Engine Oil Drain Pump..... 57
Changing the Oil Filter..... 58
Power-Assisted Steering Fluid..... 59
Checking..... 59
Filling..... 60
Changing..... 60
Engine Coolant..... 60
Checking..... 60
Filling..... 61
Changing 61
Sterndrive Gear Lube..... 61
Checking..... 62
Filling..... 62
Changing..... 63
Power Trim Fluid..... 65
Checking..... 65
Filling..... 65
Changing..... 66
Flame Arrestor and PCV Valve..... 66
Cleaning the Flame Arrestor..... 66
Positive Crankcase Ventilation Valve (PCV) 67
Changing 67
Fuel Filters..... 68
Removal..... 68
Installation..... 69
Flushing the Power Package..... 71
General Information..... 71
Sterndrive Water Pickup..... 71
Flushing Attachments (Non-Running Flush) 71
Quick-Connect Flush (Non-Running Flush) 72
Flushing Attachments (Running Flush)..... 73
Vazer Sterndrive Connection..... 73
Flushing the Power Package (Running Flush) 73
Lubrication..... 74
Steering System..... 74
Throttle Cable..... 76
Shift Cable..... 77
Sterndrive U-joint Shaft Splines and O-rings (Sterndrive Removed)..... 77
Engine Coupler..... 77
Propellers..... 78
Propeller Repair..... 78
Vazer Propeller Removal..... 78
Vazer Propeller Installation..... 80
Corrosion Protection..... 82
Vazer Sterndrive Corrosion Protection Components..... 83
MerCathode Kit (if Equipped)..... 85
Painting Your Power Package..... 85
Serpentine Drive Belt..... 86
Checking..... 86
Replacing..... 87
Battery..... 88
Supplying Cooling Water to the Engine..... 88
Supplying Cooling Water to the Engine (Boat out of the Water)..... 88
Supplying Cooling Water to the Engine (Boat in the Water)..... 89

Owner/Operator Responsibilities

It is the operator's responsibility to perform all safety checks, to ensure that all lubrication and maintenance instructions are complied with for safe operation and to return the unit to an authorized Mercury MerCruiser dealer for a periodic checkup.

Normal maintenance service and replacement parts are the responsibility of the owner/operator and as such, are not considered defects in workmanship or material within the terms of the warranty. Individual operating habits and usage contribute to the need for maintenance service.

Proper maintenance and care of your power package will ensure optimum performance and dependability and will keep your overall operating expenses at a minimum. See your authorized Mercury MerCruiser dealer for service aids.

Dealer Responsibilities

In general, a dealer's responsibilities to the customer include predelivery inspection and preparation such as:

- Ensure that the boat is properly equipped.
- Prior to delivery, make certain that the Mercury MerCruiser power package and other equipment are in proper operating condition.
- Make all necessary adjustments for maximum efficiency.
- Familiarize the customer with the on-board equipment.
- Explain and demonstrate the operation of the power package and boat.
- Provide you with a copy of a Predelivery Inspection Checklist.
- Your selling dealer should fill out the Warranty Registration Card completely and mail it to the factory immediately upon sale of the new product.

Maintenance

⚠ WARNING

Avoid product damage, injury, or death from electrical shock, fire or explosion. Always disconnect both battery cables from the battery before servicing the power package.

⚠ WARNING

Fuel vapors can be present in the engine compartment. Avoid injury or power package damage caused by fuel vapors or explosion. Always ventilate the engine compartment prior to servicing the power package.

IMPORTANT: See the maintenance schedule for a complete listing of all scheduled maintenance to be performed. Some listings can be done by owner and operator, while others should be performed by an authorized Mercury MerCruiser dealer. Before attempting maintenance or repair procedures not covered in this manual, purchase and read a Mercury MerCruiser Service Manual.

NOTE: *Maintenance points are color coded for ease of identification. See the decal on engine for identification.*

Maintenance Point Color Codes	
Blue	Seawater Flush
Yellow	Engine Oil
Orange	Coolant
Black	Gear Lube Oil
Brown	Power-assisted steering fluid

Do It Yourself Maintenance Suggestions

Present day marine equipment, such as your Mercury MerCruiser power package, are highly technical pieces of machinery. Electronic ignition and special fuel delivery systems provide greater fuel economies, but also are more complex for the untrained mechanic.

If you are one of those persons who likes to do it yourself, here are some suggestions for you.

- Do not attempt any repairs unless you are aware of the Cautions, Warnings and procedures required. Your safety is our concern.
- If you attempt to service the product yourself, we suggest you order the service manual for that model. The service manual outlines the correct procedures to follow. It is written for the trained mechanic, so there may be procedures you don't understand. Do not attempt repairs if you do not understand the procedures.
- There are special tools and equipment that are required to perform some repairs. Do not attempt these repairs unless you have these special tools and/or equipment. You can cause damage to the product in excess of the cost a dealer would charge you.
- Also, if you partially disassemble an engine or drive assembly and are unable to repair it, the dealer's mechanic must reassemble the components and test to determine the problem. This will cost you more than taking it to the dealer immediately upon having a problem. It may be a very simple adjustment to correct the problem.
- Do not telephone the dealer, service office or the factory to attempt for them to diagnose a problem or to request the repair procedure. It is difficult for them to diagnose a problem over the telephone.

Your authorized dealer is there to service your power package. They have qualified factory trained mechanics.

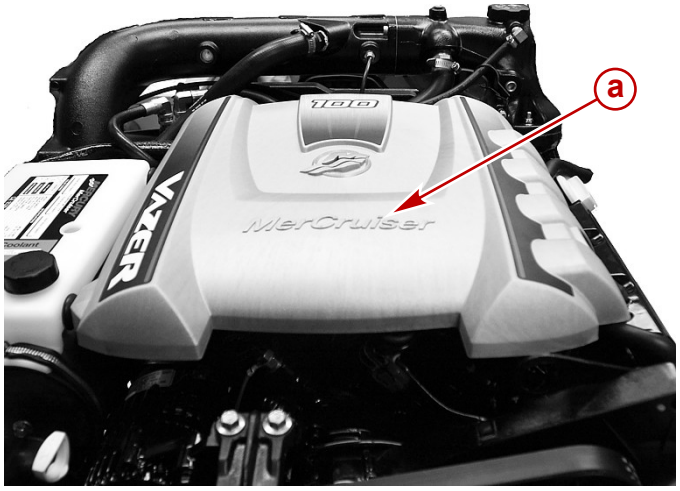
It is recommended you have the dealer do periodic maintenance checks on your power package. Have them winterize it in the fall and service it before the boating season. This will reduce the possibility of any problems occurring during your boating season when you want trouble free boating pleasure.

Inspection

Inspect your power package often and at regular intervals to help maintain its top operating performance and correct potential problems before they occur. The entire power package should be checked carefully, including all accessible engine parts.

1. Check for loose, damaged, or missing parts, hoses and clamps; tighten or replace as necessary.
2. Check electrical connections and leads for damage.
3. Remove and inspect the propeller. If badly nicked, bent, or cracked, contact your authorized Mercury MerCruiser dealer.
4. Repair nicks and corrosion damage on power package exterior finish. Contact your authorized Mercury MerCruiser dealer.

If necessary, remove the engine cover during some maintenance inspections and procedures. To remove the engine cover:



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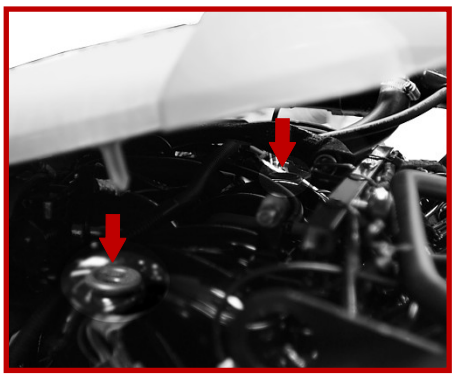
a - engine cover

1. Lift the port side of the engine cover and detach the from the port side mounts.
2. Pull the engine cover horizontally to the port side to detach from the starboard side mounts.

Starboard side horizontal mounts



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Port side vertical mounts

To install the engine cover:

1. Install the cover horizontally and attach it to the starboard side horizontal mounts.
2. Set the port side of the engine cover over the port mounts and press the cover down in the mount areas.

Maintenance Schedule—Sterndrive Models

Routine Maintenance

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

EACH DAY START

- Check the crankcase oil (interval can be extended based on experience).
- Check the sterndrive gear lube level.
- Check the trim pump oil level.
- Check the power-assisted steering pump fluid level.

EACH DAY END

- If operating in saltwater, brackish water, or polluted water, flush the seawater section of the cooling system after each use.

WEEKLY

- Check the water inlets for debris or marine growth.
- Check the seawater strainer, if equipped and clean.
- Check the coolant level.
- Inspect the sterndrive anodes and replace if 50% eroded.

EVERY TWO MONTHS OR 50 HOURS

- Lubricate the propeller shaft and retorque the nut (if operating in only freshwater, this maintenance may be extended to every four months).
- If operating in saltwater, brackish, or polluted water only: treat the power package with Corrosion Guard.
- Check the battery connections and the fluid level.
- Ensure that the gauges and the wiring connections are secure. Clean the gauges. (If operating in saltwater, interval is reduced to every 25 hours or 30 days whichever occurs first.)

Scheduled Maintenance

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

AFTER THE INITIAL 20 HOUR BREAK-IN PERIOD

To help extend the life of your Mercury MerCruiser power package, we recommend the following:

- Change the engine oil and filter.
- Change the sterndrive gear lube.

EVERY 100 HOURS OR ANNUALLY (WHICHEVER OCCURS FIRST)

- Touch-up the paint on the power package.
- Change the crankcase oil and filter.
- Change the sterndrive gear lube.
- Test the engine coolant (antifreeze) with an engine coolant tester. Ensure that it will protect the engine to the lowest temperature to which it will be exposed.
- Retorque the connection of the gimbal ring to the steering shaft.
- Replace the water-separating fuel filter.
- Check the steering system and the remote control for loose, missing, or damaged parts. Lubricate the cables and the linkages.
- Check the continuity circuit for loose or damaged connections. Test the MerCathode unit output if equipped.
- Clean the flame arrestor, IAC muffler (MPI engines), and the crankcase ventilation hoses.
- Inspect the condition and the tension of the belts.
- Driveshaft extension models: Lubricate the driveshaft U-joints, and tailstock input and output bearings.

EVERY 300 HOURS OR 3 YEARS

- Check the engine mounts for tightness and retorque if necessary.
- Check the distributor cap, if equipped.
- Check the electrical system for loose, damaged, or corroded fasteners.
- Check the cooling system and the exhaust system hose clamps for tightness. Inspect both systems for damage or leaks.

- Disassemble and inspect the seawater pump and replace worn components.
- Clean the seawater section of the closed cooling system. Clean, inspect, and test the pressure cap.
- Inspect the exhaust system components and verify that the flapper valves are not missing or worn, if equipped.
- Check the engine alignment.
- Inspect the U-joints, the splines, the bellows, and check the clamps.
- Lubricate the U-joint splines and cross bearing, if equipped with a grease fitting.
- Lubricate the gimbal bearing and the engine coupler. (Lubricate the engine coupler every 150 hours if operated at idle for prolonged periods of time.)

EVERY 5 YEARS

- Replace the coolant (every two years if extended life coolant (antifreeze) is not being used).

Maintenance Log

Record all maintenance performed on your power package here. Be sure to save all work orders and receipts.

Date	Maintenance Performed	Engine Hours

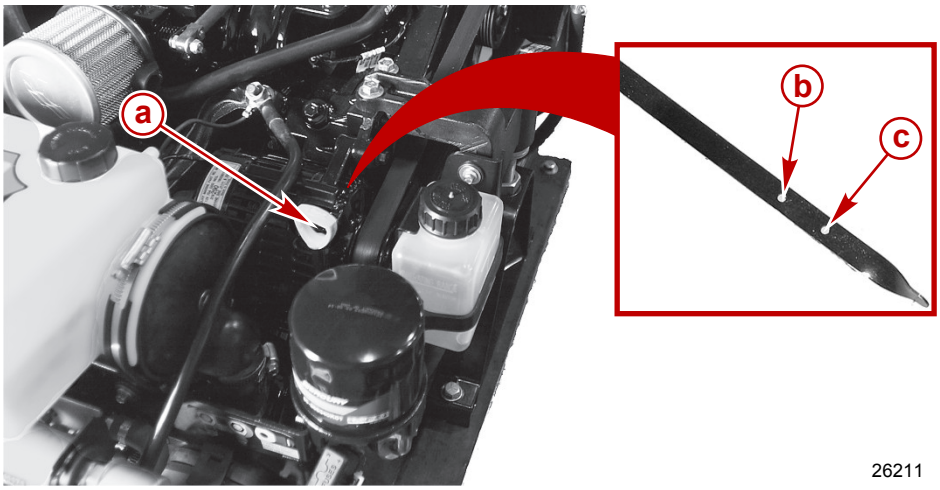
Engine Oil

⚠ CAUTION

ENVIRONMENTAL HAZARD! Discharge of oil or oil waste into the environment is restricted by law. Do not spill oil or oil waste into the environment when using or servicing your boat. Contain and dispose of oil or oil waste as directed by local authorities.

Checking

1. Stop the engine. Allow approximately 5 minutes for the oil to drain into the oil pan. The boat must be at rest in the water.
2. Remove the dipstick. Wipe clean and reinstall the dipstick into the dipstick tube. Wait 60 seconds to allow trapped air to vent.



26211

a - Dipstick
b - Maximum mark
c - Minimum mark

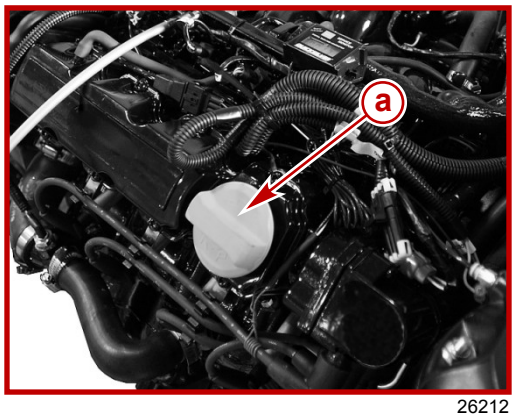
3. Remove the dipstick and observe the oil level. The oil level must be between the upper and lower marks on the dipstick. If necessary, add oil. See **Filling**.
4. Reinstall the dipstick into the dipstick tube.

Filling

IMPORTANT: Do not overfill the engine with oil.

IMPORTANT: Always use the dipstick to determine the exact quantity of oil or fluid required.

1. Remove the oil fill cap.



26212

a - Oil fill cap

NOTE: Adding 0.95 liters (1 quart) of engine oil will raise the level from the add mark to the top of the OK range.

2. Add the specified engine oil to bring the level up to, but not over, the full or OK range mark on the dipstick.

Engine Model	Capacity	Fluid Type
100 Vazer	4.02 liters (4.25 U.S. Quart)	Mercury/Quicksilver Synthetic Blend MerCruiser Engine Oil 25W-40

3. Check the oil level. See **Checking**.
4. Replace the fill cap.

Changing Oil and Filter

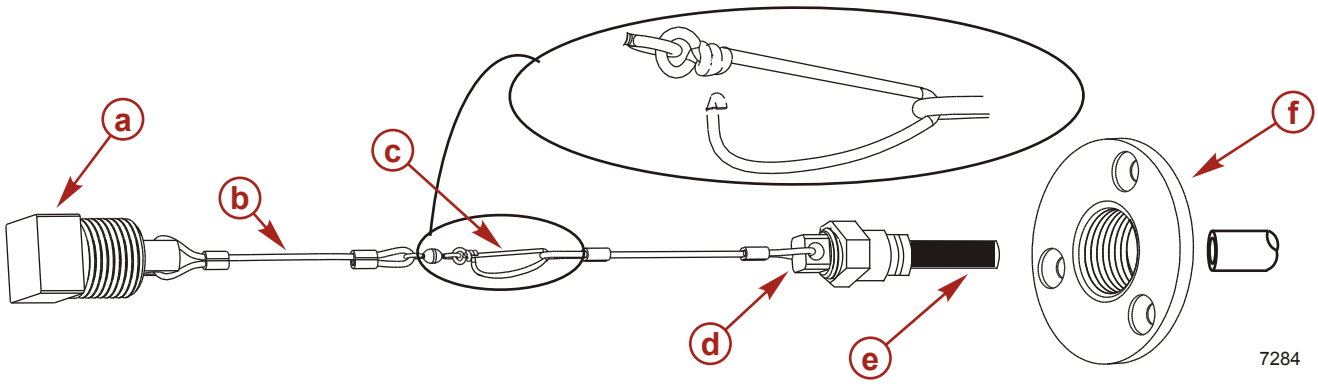
See **Maintenance Schedule** for the change interval. Engine oil should be changed before placing the boat in storage.

IMPORTANT: Change engine oil when the engine is warm from operation. Warm oil flows more freely, carrying away more impurities. Use only recommended engine oil (refer to the Specifications section).

Easy Engine Oil Drain System

NOTE: The boat must be out of water to perform this procedure.

1. Loosen the oil filter to vent the system.
2. Allow sufficient time for the oil to drain from the filter down into the engine block.
3. Remove the bilge drain plug.
4. Pull tether through the bilge drain.



a - Bilge drain plug
b - Tether
c - Clip
d - Oil drain hose plug
e - Oil drain hose
f - Bilge drain flange

5. Place the oil drain hose in a suitable container.
6. Remove the drain plug from the oil drain hose.
7. After oil has drained completely, install the drain plug in the oil drain hose.
8. Push the hose through bilge drain and install the plug.
9. Replace the engine oil filter. See **Changing the Oil Filter**.

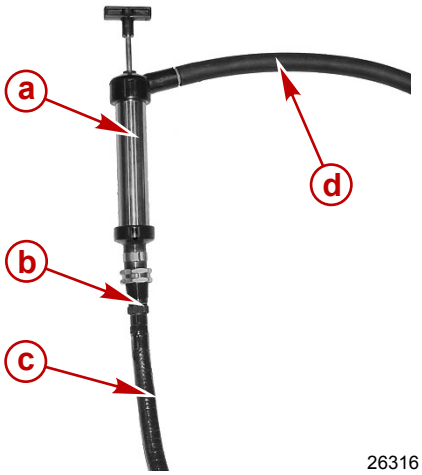
Engine Oil Drain Pump

*NOTE: This is an alternate method to utilize the **Easy Engine Oil Drain System** hose.*

IMPORTANT: The oil drain pump can only be used if the Easy Engine Oil Drain System is not connected to the bilge drain plug.

1. Loosen the oil filter to vent the system.
2. Allow sufficient time for the oil to drain from the filter down into the engine block.
3. Raise the engine oil drain hose so that the plug end is above the engine.

4. Remove the drain plug from the oil drain hose.
5. Attach an appropriate hose barb fitting to the oil drain hose that will connect to an oil removal pump .
6. Connect the oil removal pump onto the barb fitting attached to the oil drain hose.



26316

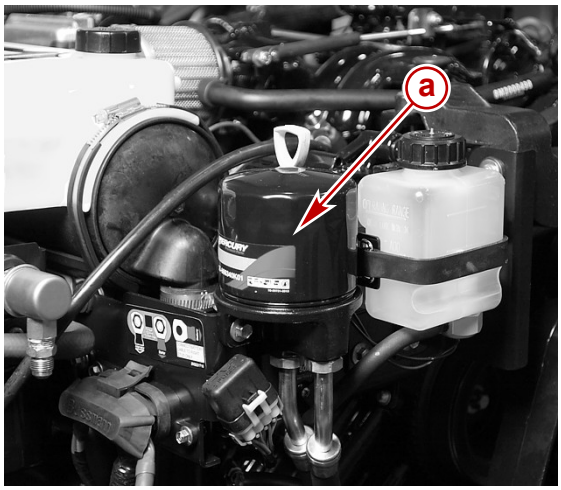
a - Typical oil pump
b - Adapter fitting
c - Engine oil drain hose
d - Pump drain hose

7. Pump the oil into an appropriate container until the crankcase is empty.
8. Remove the pump and the fitting.
9. Install the drain plug in the oil drain hose.
10. Replace the engine oil filter. See **Changing the Oil Filter**.

Changing the Oil Filter

NOTE: *Allow the oil in the oil filter to drain back into the engine block prior to removing it will prevent oil spillage when removing the filter.*

1. Remove and discard the old oil filter and sealing ring.

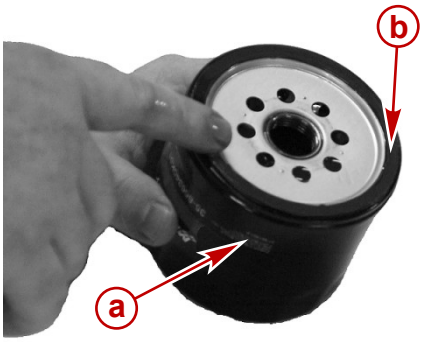


26213

a - Oil filter

2. Clean up any spilled oil with a shop towel.

3. Coat the sealing ring on the new filter with engine oil and install.



26262

a - Oil filter b - Sealing ring

Tube Ref No.	Description	Where Used	Part No.
80	SAE Engine Oil 30W	Oil filter sealing ring.	Obtain Locally

4. Tighten the oil filter securely (following the filter manufacturer's instructions). Do not overtighten.
5. Fill the engine with oil. See **Filling**.
6. Supply cooling water to the engine. See **Supplying Cooling Water to the Engine**.
7. Start the engine, run the engine for three minutes, and check for leaks. Stop the engine.
8. Check the oil level. See **Checking**.

Power-Assisted Steering Fluid

IMPORTANT: Use only Quicksilver Power Trim and Steering Fluid or Dexron III automatic transmission fluid (ATF) in the power-assisted steering system.

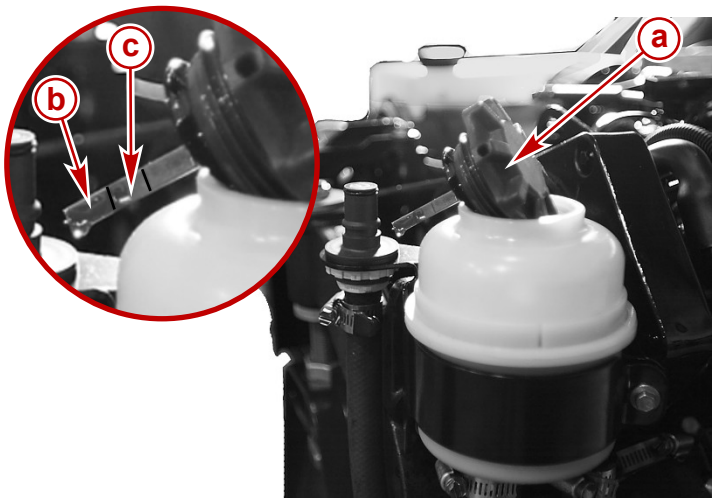
⚠ WARNING

Avoid possible serious injury, death, or property damage resulting from a loss of steering control. Insufficient fluid in the steering system will cause the pump to fail. Ensure that the power-assisted steering system is always filled to the proper level.

Checking

1. Center the sterndrive and stop the engine.
2. Remove the fill cap and dipstick and observe the fluid level.
   a. The proper fluid level with the engine at normal operating temperature should be within the warm range.

b. The proper fluid level with the engine cold should be within the cold range.



26214

Power-assisted steering reservoir

a - Fill cap and dipstick
b - Cold range
c - Warm range

3. Fill with specified fluid as necessary. See **Filling**.

IMPORTANT: If fluid is not visible in pump, contact your authorized Mercury MerCruiser dealer.

Filling

1. Remove the fill cap and dipstick and observe the fluid level.
2. Add the specified fluid to bring the fluid level up to the proper level.

Tube Ref No.	Description	Where Used	Part No.
114	Power Trim and Steering Fluid	Power-assisted steering pump	92-858074K01

Tube Ref No.	Description	Where Used	Part No.
28	Dexron III Automatic Transmission Fluid	Power-assisted steering system	Obtain Locally

3. Install the fill cap and dipstick.

Changing

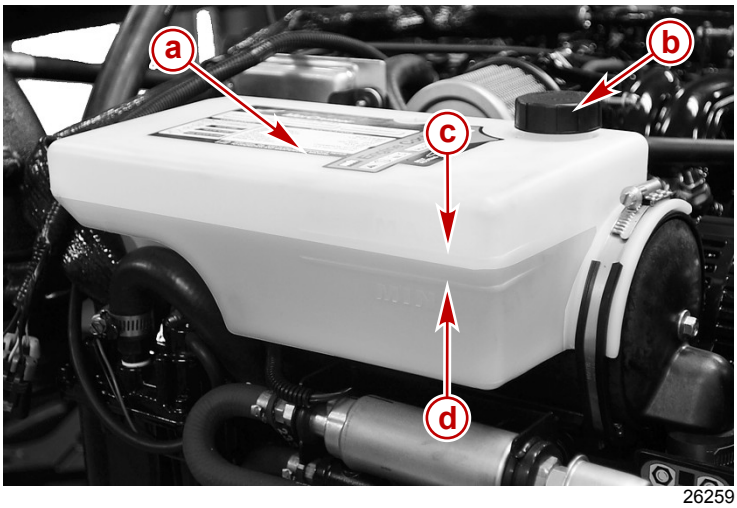
Power-assisted steering fluid does not require changing unless it becomes contaminated with water or debris. Contact your authorized Mercury MerCruiser dealer.

Engine Coolant

Checking

1. With the engine at normal operating temperature, check the coolant level in the coolant recovery bottle.

2. The coolant level should be between the "MIN" and "MAX" marks.



26259

a - Coolant recovery bottle
b - Fill cap
c - "MAX" line
d - "MIN" line

NOTE: *If the coolant recovery bottle requires filling more than once a year, contact your authorized Mercury MerCruiser dealer.*

3. Add the specified fluid as necessary. See **Filling**.

Filling

⚠ CAUTION

Alcohol or Methanol based antifreeze or plain water, are not recommended for use in the coolant section of the Closed Cooling System at any time.

⚠ CAUTION

Overheating from insufficient cooling water will cause engine and drive system damage. Ensure that there is sufficient water always available at water inlet holes during operation.

NOTE: *Add coolant only when engine is at normal operating temperature.*

1. Remove the fill cap from the coolant recovery bottle.
2. Fill to the "MAX" line with the specified coolant.

Tube Ref No.	Description	Where Used	Part No.
122	Extended Life Antifreeze/ Coolant	Closed Cooling System	92-877770K1

3. Install the fill cap onto the coolant recovery bottle.

Changing

Contact your authorized Mercury MerCruiser dealer.

Sterndrive Gear Lube

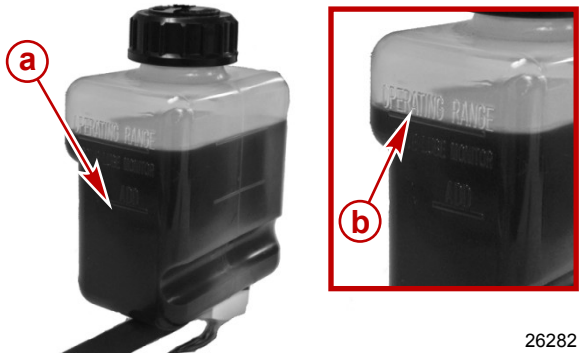
⚠ CAUTION

ENVIRONMENTAL HAZARD! Discharge of oil or oil waste into the environment is restricted by law. Do not spill oil or oil waste into the environment when using or servicing your boat. Contain and dispose of oil or oil waste as directed by local authorities.

Checking

NOTE: Gear lube level will fluctuate during operation. Gear lube level should be checked with the engine cold, before starting.

1. Check the gear lube monitor to determine the gear lube level. Keep the gear lube level within the recommended operating range. See **Filling**.



Gear lube level shown is at the correct operating range

a - "ADD" mark

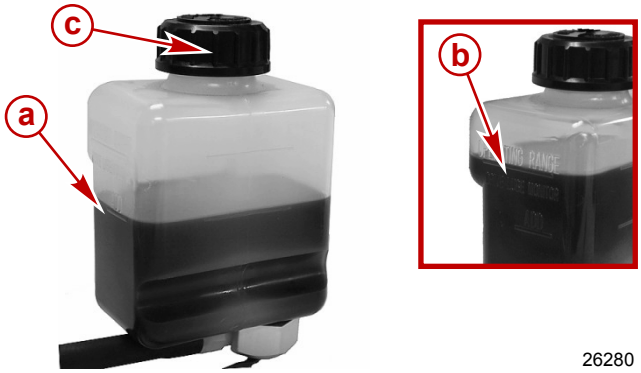
b - "OPERATING RANGE" mark

IMPORTANT: If any water is visible at the bottom of the gear lube monitor or appears at the fill and drain plug hole, or if the gear lube appears discolored, contact your authorized Mercury MerCruiser dealer immediately. Both conditions may indicate a water leak in the sterndrive.

Filling

IMPORTANT: If more than 59 ml (2 fl. oz.) of High Performance Gear Lubricant is required to fill the monitor, a seal may be leaking. Damage to the sterndrive may occur due to lack of lubrication. Contact your authorized Mercury MerCruiser dealer.

1. Remove the gear lube monitor cap.
2. Fill the monitor with the specified fluid so that the gear lube level is in the operating range. Do not overfill.



Gear lube monitor

a - Gear lube level at the "ADD" mark

b - Gear lube level at the "OPERATING RANGE" mark

c - Gear lube monitor cap

Tube Ref No.	Description	Where Used	Part No.
87	High Performance Gear Lubricant	Gear lube monitor	92-802854A1

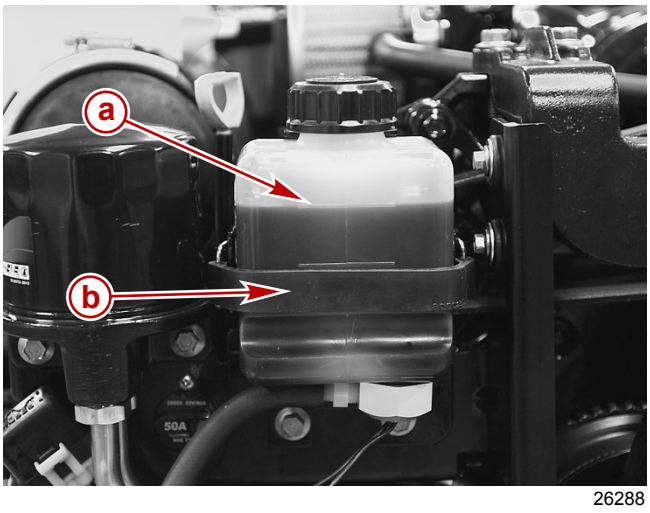
3. Ensure that the rubber gasket is inside the gear lube monitor cap and install the cap. Do not overtighten.

a - Gear lube monitor cap

NOTE: *When filling the entire sterndrive, see* ***Changing****.*

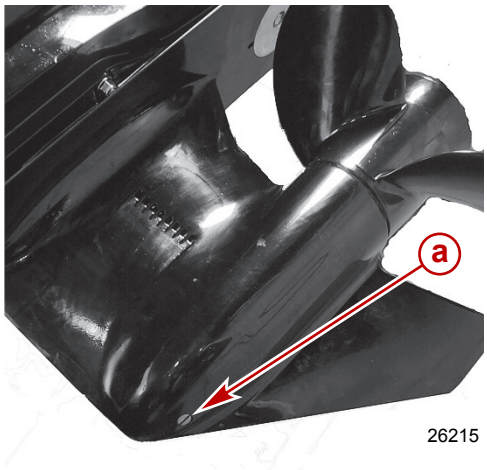
Changing

1. Remove the gear lube monitor from the bracket.



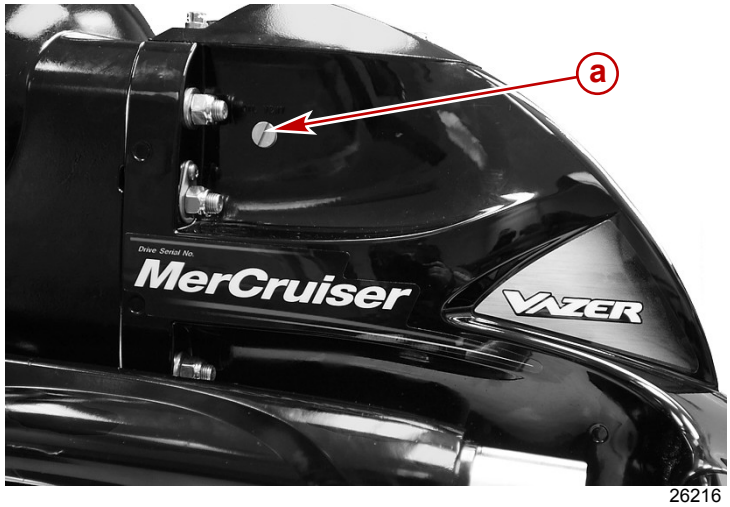
a - Gear lube monitor b - Retaining strap

2. Empty the contents into a suitable container.
3. Install the gear lube monitor in the bracket.
4. Place the sterndrive in full trim limit up (out) position
5. Remove the oil fill and drain screw and the sealing washer.
6. Drain the gear lube into a suitable container.



a - Oil fill and drain screw

7. Remove the oil vent screw and sealing washer. Allow the gear lube to drain completely.



26216

a - Oil vent screw

IMPORTANT: If any water drained from the oil fill and drain hole, or if the gear lube appears milky, the sterndrive is leaking and should be checked immediately by your authorized Mercury MerCruiser dealer.

8. Lower the sterndrive so that the propeller shaft is level.
9. Fill the sterndrive through the oil fill and drain hole with specified gear lubricant until an air-free stream of lubricant flows from oil vent hole.

Tube Ref No.	Description	Where Used	Part No.
87	High Performance Gear Lubricant	Sterndrive	92-802854A1

IMPORTANT: Use only Mercury/Quicksilver High Performance Gear Lubricant in sterndrive.

10. Install the oil vent screw and sealing washer.
11. Continue to pump gear lubricant into the drive through the oil fill and drain hole until the gear lubricant appears in the gear lube monitor.
12. Fill the monitor so that the gear lube level is in the operating range. Do not overfill.
13. Ensure that the rubber gasket is inside the gear lube monitor cap and install the cap. Do not overtighten.

26217

a - Gear lube monitor cap

NOTE: *Oil capacity includes gear lube monitor.*

Model	Capacity	Fluid Type
Vazer Drive	1892 ml (64 oz)	High Performance Gear Lubricant

14. Remove the pump from the oil fill and drain hole.

15. Quickly install the sealing washer and oil fill and drain screw. Tighten securely.
16. Recheck the gear lube level after the first use. See **Checking**.

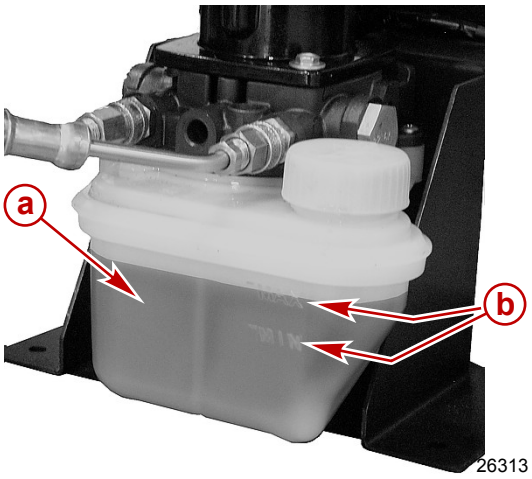
IMPORTANT: Oil level in the gear lube monitor will rise and fall during sterndrive operation; always check the oil level when the sterndrive is cool and the engine is shut down.

Power Trim Fluid

Checking

IMPORTANT: Check the oil level with the sterndrive in the full down (in) position only.

1. Place the sterndrive in full down (in) position.
2. Observe the oil level. Level must be between the "MIN" and "MAX" lines on the reservoir.



Power trim pump reservoir with fluid level between the "MIN" and MAX" lines

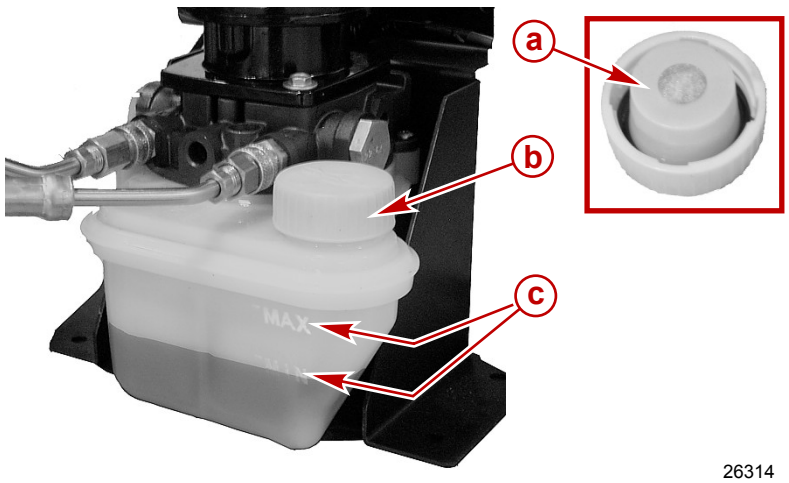
a - Reservoir **b -** "MIN" and "MAX" lines

3. Fill as necessary with the specified fluid. See **Filling**.

Filling

NOTE: *The fill cap is vented.*

1. Remove the fill cap from the reservoir.

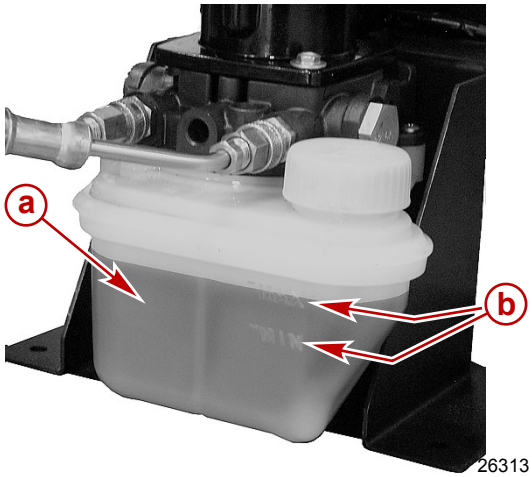


Power trim pump reservoir shows the fluid level is below "MIN" line

a - Fill cap assembly **c -** "MIN" and "MAX" lines

b - Fill cap installed

2. Add the specified fluid to bring the fluid level to within the "MIN" and "MAX" lines on the reservoir.



Power trim pump reservoir with fluid level between the "MIN" and MAX" lines

a - Reservoir **b -** "MIN" and "MAX" lines

Tube Ref No.	Description	Where Used	Part No.
114	Power Trim and Steering Fluid	Power trim pump	92-858074K01

3. Install the fill cap.

Changing

Power trim fluid does not require changing unless it becomes contaminated with water or debris. Contact your authorized Mercury MerCruiser dealer.

Flame Arrestor and PCV Valve

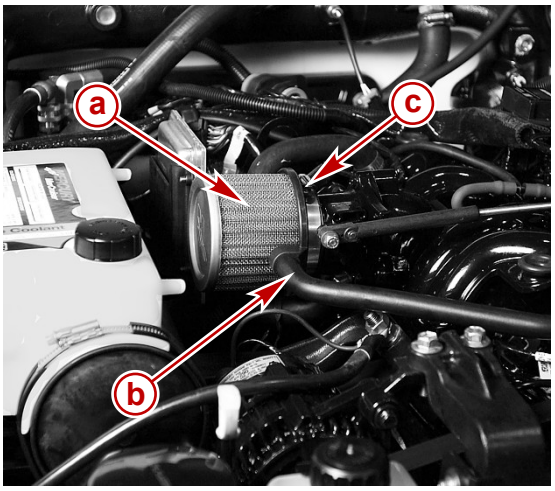
Cleaning the Flame Arrestor

⚠ WARNING

Avoid gasoline fire or explosion. Gasoline is extremely flammable and highly explosive under certain conditions. Be careful when cleaning flame arrestor; ensure that ignition is off. Do not smoke or allow sources of spark or open flame in area when cleaning flame arrestor.

1. Remove the engine cover.
2. Disconnect and remove the crankcase ventilation hose from the fitting on the flame arrestor.

3. Remove the flame arrestor.



26218

a - Flame arrestor
c - Clamp
b - Crankcase ventilation hose

⚠ WARNING

Avoid gasoline fire or explosion. Gasoline is extremely flammable and highly explosive under certain conditions. Never use gasoline as a cleaning solvent.

IMPORTANT: Do not use an acidic based cleaner as it can deteriorate portions of the flame arrestor.

4. Clean the flame arrestor with warm, soapy water.
5. Inspect the flame arrestor for holes, cracks, or deterioration. Replace if necessary.
6. Allow the flame arrestor to air dry completely before use.
7. Clean the crankcase ventilation hose with warm, soapy water. Dry with compressed air or allow to air dry completely.
8. Inspect the crankcase ventilation hose for cracks or deterioration. Replace if necessary.
9. Install the flame arrestor. Torque the flame arrestor clamp nut.

Description	Nm	lb. in.	lb. ft.
Flame arrestor bracket nut	12	106	

10. Connect the crankcase ventilation hose to the fitting on the flame arrestor and valve cover.
11. Install the engine cover.

Positive Crankcase Ventilation Valve (PCV)

CHANGING

NOTE: *On 100 Vazer models, the PCV valve is non-serviceable and is an internal component of the vacuum hose assembly.*

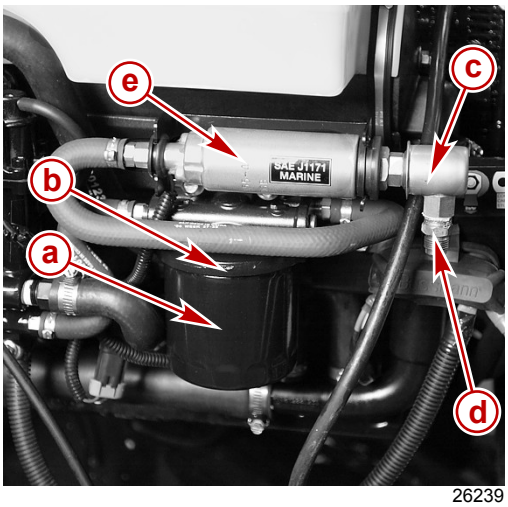
Fuel Filters

⚠ WARNING

Avoid serious injury or death from a gasoline fire or explosion; gasoline is extremely flammable and highly explosive under certain conditions. When servicing the fuel system components ensure that the engine is cool, the ignition switch is in the off position, and that the lanyard stop switch, if equipped, is in the off position. Do not smoke or allow spark or open flame in the area. Wipe up any spilled fuel immediately. Ensure that no fuel leaks exist before closing the engine hatch.

⚠ WARNING

Avoid serious injury or death caused by fire or explosion. The fuel system is pressurized during operation. Use care when removing the fuel filter. Fuel could spray on the hot engine causing fire or explosion. Allow the engine to cool down and relieve fuel system pressure before attempting to remove the fuel filter.



26239

Fuel filters

a - Water-separating fuel filter
b - Fuel filter mounting bracket
c - Pre-engine fuel filter
d - Fuel inlet fitting
e - Boost pump

Removal

1. Allow the engine to cool down.

NOTE: *Mercury MerCruiser recommends that the engine be shut off for 12 hours prior to filter removal.*

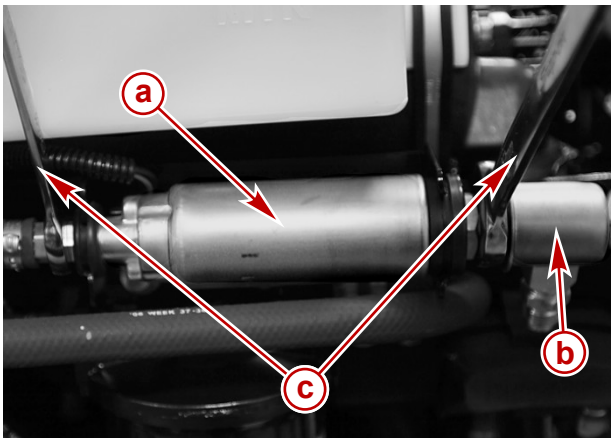
2. Close fuel supply valve, if equipped.

⚠ WARNING

Dispose of fuel-soaked rags, paper, etc., in an appropriate air tight, fire retardant container. Fuel-soaked items may spontaneously ignite and result in a fire hazard which could cause serious bodily injury or death.

3. Wrap the water-separating fuel filter and pre fuel filter with a cloth to help catch any fuel spills or spray.
4. Remove and discard the water-separating fuel filter and sealing ring from the mounting bracket.
5. Disconnect and plug the fuel line from the inlet fitting on the pre-engine fuel filter.

6. Remove the pre-engine fuel filter from the fuel boost pump.

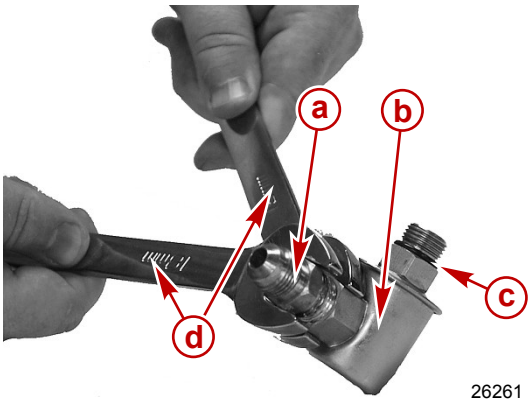


26260

a - Fuel boost pump
b - Pre-engine fuel filter
c - Wrench

IMPORTANT: Do not discard the fuel inlet fitting unless it is to be replaced.

7. Remove and save the fuel inlet fitting from the fuel filter. Discard the used fuel filter and O-ring.

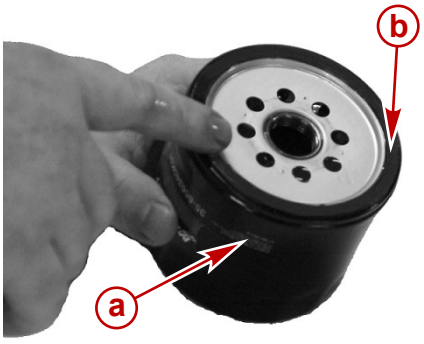


26261

a - Fuel inlet fitting
b - Fuel filter
c - O-ring
d - Wrench

Installation

1. Lubricate the sealing ring of the new water-separating fuel filter.

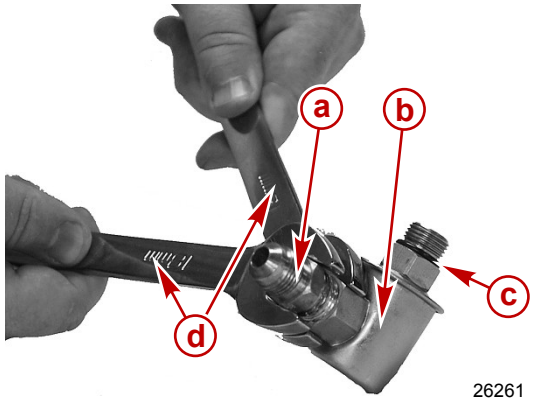


26262

a - Water-separating fuel filter
b - Sealing ring

Tube Ref No.	Description	Where Used	Part No.
80	SAE Engine Oil 30W	Water-separating fuel filter sealing ring	Obtain Locally

2. Install the new water-separating fuel filter. Tighten securely by hand.
3. Install the fuel inlet fitting on the new pre-engine fuel filter.
4. Install the new O-ring and coat it with engine oil.

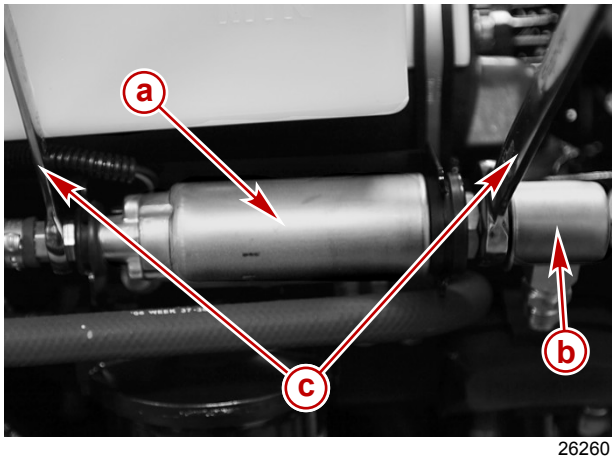


26261

a - Fuel inlet fitting
b - Fuel filter
c - O-ring
d - Wrench

Tube Ref No.	Description	Where Used	Part No.
80	SAE Engine Oil 30W	Pre-engine fuel filter O-ring	Obtain Locally

5. Install the pre-engine fuel filter onto the fuel boost pump.



26260

a - Fuel boost pump
b - Pre-engine fuel filter
c - Wrench

6. Unplug and reconnect the fuel line to the fuel inlet fitting on the pre-engine fuel filter.
7. Open the fuel supply valve, if equipped.

⚠ CAUTION

Overheating from insufficient cooling water will cause engine and drive system damage. Ensure that there is sufficient water always available at water inlet holes during operation.

8. Supply cooling water to the engine. See **Supplying Cooling Water to the Engine**.
9. Start the engine. Check for gasoline leaks around the fuel filter assemblies. If leaks exist, stop the engine immediately. Recheck the filter installation, clean spilled fuel and properly ventilate the engine compartment. If leaks continue, stop engine immediately and contact your authorized Mercury MerCruiser dealer.

Flushing the Power Package

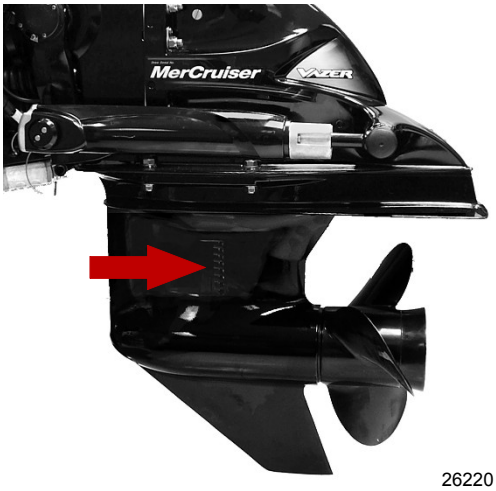
General Information

IMPORTANT: Flushing the power package is most effective when performed with the boat and sterndrive out of the water.

IMPORTANT: Flushing is needed if the engine package has been operated in saltwater, brackish water, mineral-laden water, or polluted water. For best results, flushing is recommended after each outing and before cold weather and extended storage.

Sterndrive Water Pickup

Mercury MerCruiser Vazer sterndrives only have side water pickups available. Side pickups require the flushing attachment (44357Q 2).



26220

Vazer sterndrive side water pickup

Flushing Attachments (Non-Running Flush)

Quick Connect Flushing Attachment	Contained in parts bag
 26222	Connects to the attachment mounted on the engine. Provides flushing water to the power package. Do not operate the engine while using this flushing attachment. This is a static flushing attachment only.

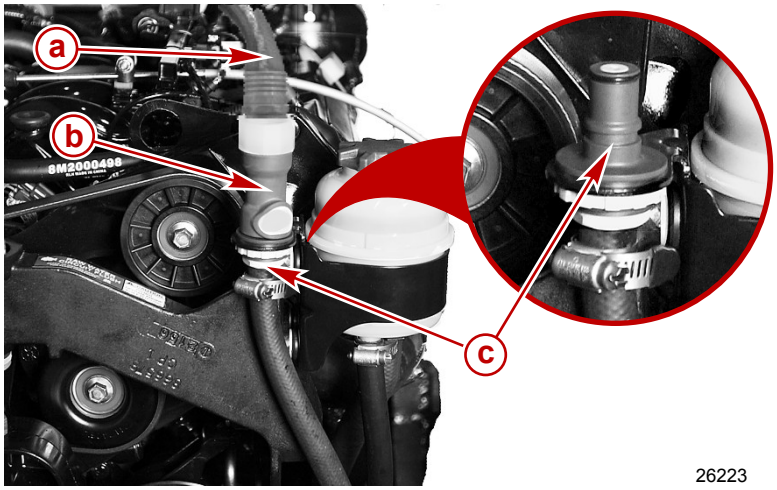
Quick-Connect Flush (Non-Running Flush)

IMPORTANT: This is a static flushing procedure. Do not operate the engine while flushing the power package using the quick-connect flushing method.

26266

NOTE: *This flushing procedure can be performed with the boat in or out of the water and provides flush water to all seawater passages located in the engine, sterndrive, and transom.*

1. Lower the sterndrive to the full down (in) position.
2. Connect a water supply hose to the male quick-connect fitting.
3. Connect the blue female quick-connect fitting to the blue male quick-connect fitting located on the power-assisted steering reservoir bracket.

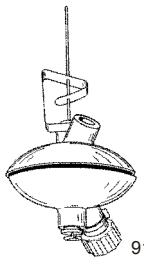


26223

a - Water supply hose
b - Blue female quick-connect fitting
c - Blue male quick-connect fitting

4. Completely open the water source to provide maximum water supply.
5. Flush the system for a minimum of 10 minutes.
6. **For power packages operated in saltwater, brackish water, mineral-laden water, or polluted water,** continue to flush the power package until the discharge water is clear.
7. Shut off the supply water.
8. Disconnect the quick-connect fitting and remove the water supply hose.

Flushing Attachments (Running Flush)

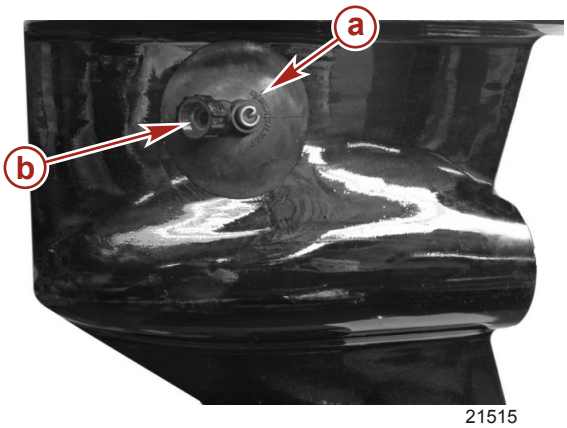
Flushing Device	91-44357Q 2
 9192	Attaches to the water intakes; provides a fresh water connection when flushing the cooling system or operating the engine.

Vazer Sterndrive Connection

⚠ WARNING

Contact with moving drive components and the propeller can cause personal injury or death. To avoid possible injury, remove the propeller and ensure that no people or animals are in the area of the drive unit while flushing.

1. **With the boat out of the water**, remove the propeller. See **Propellers**.
2. **With the boat in the water**, raise the sterndrive to the trailer position.
3. Install the appropriate flushing attachment over the water inlet holes in the gear housing.



21515

Flushing attachments for side water pickup

a - Flushing device **b -** Hose attachment

4. Connect a water supply hose to the flushing attachment.
5. Lower the sterndrive to the full down (in) position.
6. Flush the power package. See **Flushing the Power Package (Running Flush)**.

Flushing the Power Package (Running Flush)

1. Connect the water supply hose to the water source.

⚠ CAUTION

Flush water will collect in the exhaust system when the engine is not operating, resulting in engine damage. Do not supply flush water for more than 15 seconds without the engine operating.

2. With the sterndrive in the normal operating position, completely open the water source to provide maximum water supply.
3. Place the remote control in the neutral idle speed position.
4. Immediately start the engine.

⚠ CAUTION

Avoid engine damage from overheating. If the engine is operated above 1400 RPM during flushing, suction created by the seawater pickup pump may collapse the flushing water hose, causing the engine to overheat.

5. Depress the throttle-only button and slowly advance the throttle until the engine reaches 1300 RPM (± 100 RPM).

⚠ CAUTION

Engine overheating can cause engine damage. To avoid, observe the water temperature gauge and ensure that the engine is operating in the normal range.

6. Observe the water temperature gauge to ensure that the engine is operating in the normal range.
7. Operate the engine with the sterndrive in neutral for a minimum of 10 minutes.
8. **For power packages operated in saltwater, brackish water, mineral-laden water, or polluted water,** continue to operate the engine until the discharge water is clear.
9. Slowly return the throttle to idle speed position.

⚠ CAUTION

Flush water will collect in the exhaust system when the engine is not operating, resulting in engine damage. Do not supply flush water for more than 15 seconds without the engine operating.

10. Stop the engine.
11. Immediately shut off the supply water.
12. **On models that were flushed in the water**, raise the sterndrive to the trailer position.
13. Remove the flushing attachment from the sterndrive.
14. **On models that were flushed out of the water**, reinstall the propeller. See **Propellers**.

Lubrication

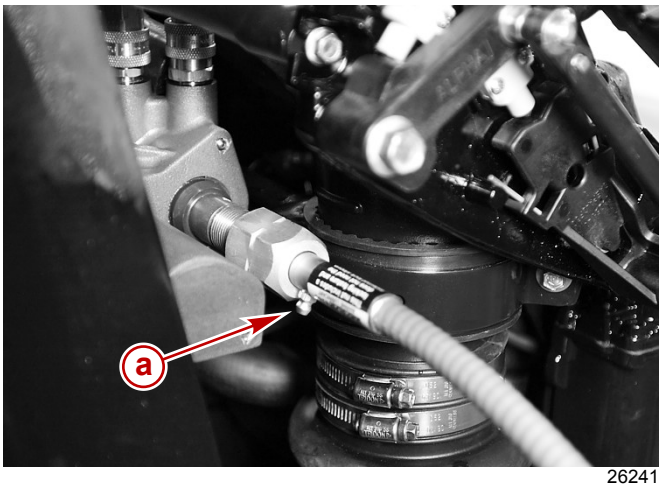
Steering System

⚠ WARNING

Do not grease the steering cable while it is extended. Hydraulic lock could occur and cause loss of steering control.

NOTE: *If the steering cable does not have a grease fitting, the inner wire of cable cannot be greased.*

1. **If the steering cable has grease fittings**, turn the steering wheel until the steering cable is fully retracted into the cable housing. Apply approximately three pumps of grease from a typical hand-operated grease gun.

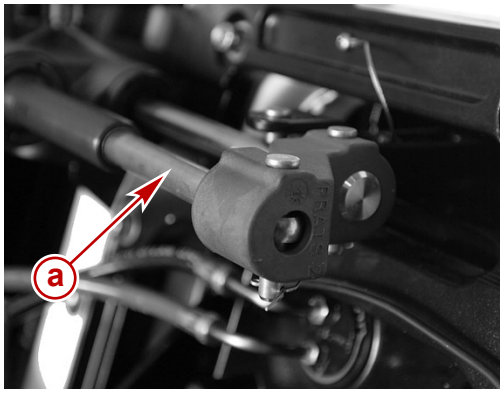


26241

a - Steering cable grease fitting

Tube Ref No.	Description	Where Used	Part No.
34	Special Lubricant 101	Steering cable grease fitting	92-802865A1

2. Turn steering wheel until steering cable fully extended. Lightly lubricate the exposed part of cable.

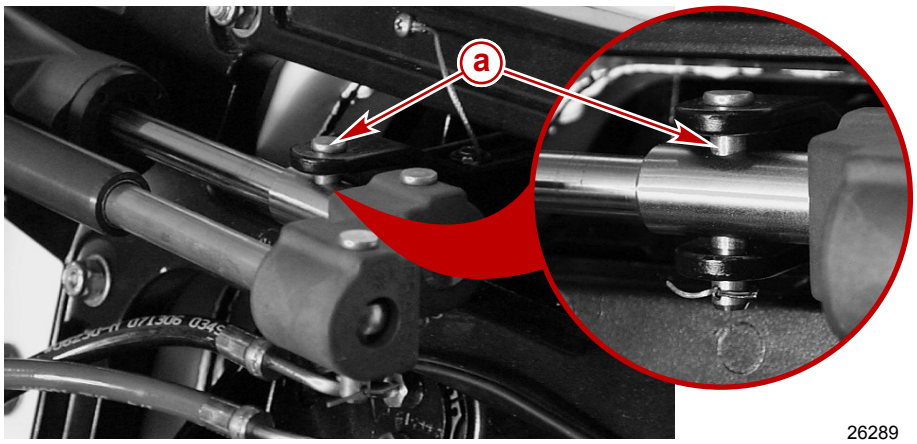


26268

a - Extended steering cable

Tube Ref No.	Description	Where Used	Part No.
34	Special Lubricant 101	Steering cable	92-802865A1

3. Lubricate the steering pin.



26289

a - Steering pin

Tube Ref. No.	Description	Where Used	Part No.
	Synthetic Blend MerCruiser Engine Oil SAE25W-40	Steering pin	92-883725K01

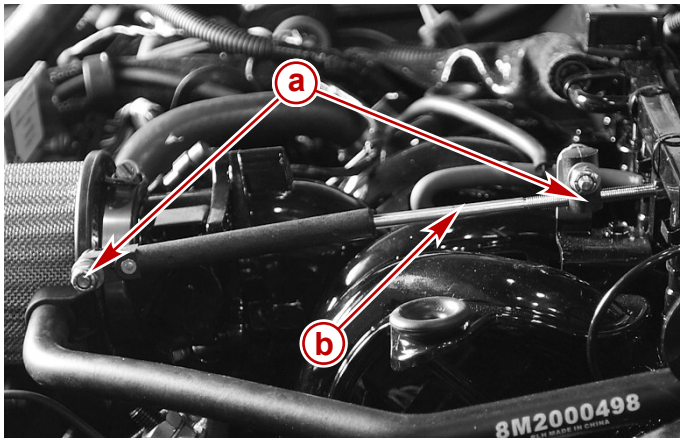
4. On dual engine boats: Lubricate the tie bar pivot points.

Tube Ref. No.	Description	Where Used	Part No.
	Synthetic Blend MerCruiser Engine Oil SAE25W-40	Tie bar pivot points	92-883725K01

5. Upon first starting engine, turn the steering wheel several times to starboard and then port to ensure that the steering system operates properly before getting underway.

Throttle Cable

1. Lubricate the pivot points and the guide contact surfaces.



26242

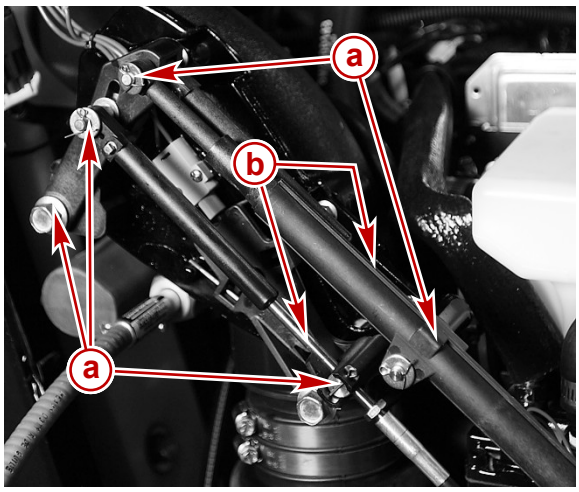
a - Pivot points

b - Guide contact surface

Tube Ref. No.	Description	Where Used	Part No.
	Synthetic Blend MerCruiser Engine Oil SAE25W-40	Throttle cable pivot points & guide contact surfaces	92-883725K01

Shift Cable

1. Lubricate the pivot points and the guide contact surfaces.



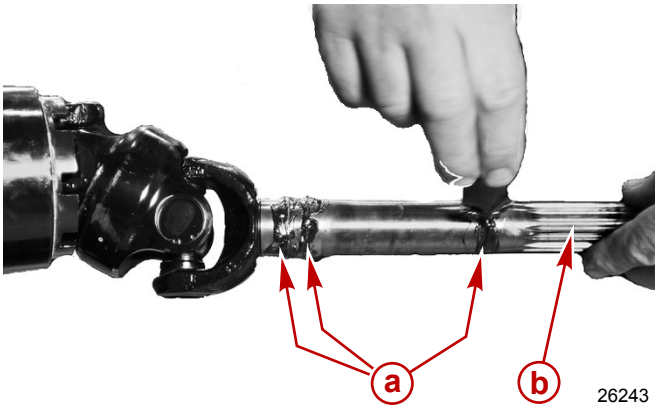
26267

a - Pivot points **b -** Guide contact surfaces

Tube Ref. No.	Description	Where Used	Part No.
	Synthetic Blend MerCruiser Engine Oil SAE25W-40	Shift cable pivot points & guide contact surfaces	92-883725K01

Sterndrive U-joint Shaft Splines and O-rings (Sterndrive Removed)

1. Coat sterndrive U-joint O-rings and driveshaft splines with grease.



26243

a - U-joint O-rings (3) **b -** Driveshaft splines

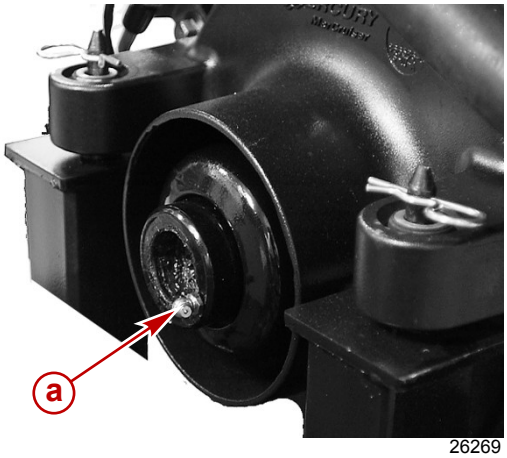
Tube Ref No.	Description	Where Used	Part No.
91	Engine Coupler Spline Grease	Driveshaft splines and U-joint O-rings	92-802869A1

2. For propeller shaft lubrication, see **Propellers**.

Engine Coupler

1. Lubricate engine coupler splines through grease fittings on coupler by applying approximately 8 to 10 pumps of grease from a typical hand-operated grease gun.

NOTE: If the boat is operated at idle for prolonged periods of time, coupler should be lubricated every 150 hours.



26269

Engine coupler shown with drive removed for clarity only

a - Engine coupler grease fitting

Tube Ref No.	Description	Where Used	Part No.
91	Engine Coupler Spline Grease	Coupler	92-802869A1

NOTE: Your 100 Vazer power package is equipped with a sealed engine coupler and Perm-a-Lube U-joints. The sealed coupler and shaft splines can be lubricated without removing the sterndrive. The Perm-a-Lube U-joints do not require lubrication.

Propellers

Propeller Repair

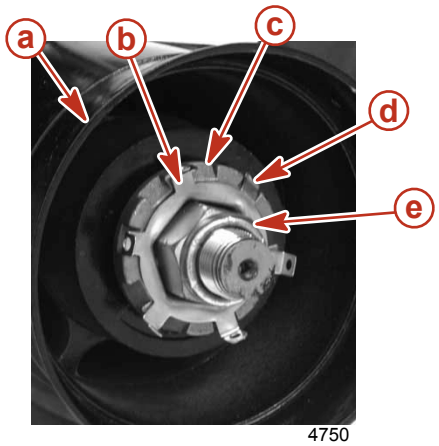
Some damaged propellers can be repaired. Contact your authorized Mercury MerCruiser dealer.

Vazer Propeller Removal

⚠ WARNING

Avoid Injury: Remote Control must be in neutral and ignition key removed from switch before removing and/or installing propeller.

1. Straighten the bent tabs on the tab washer.

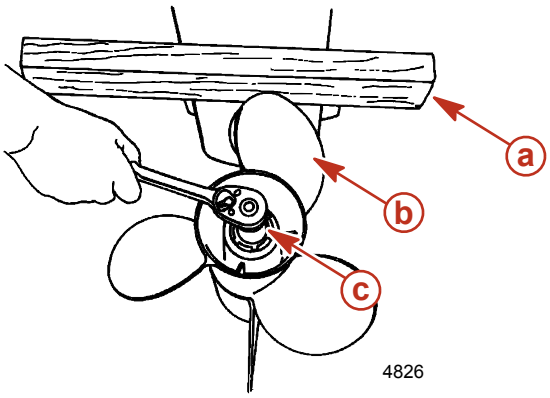


a - Prop
b - Tab washer
c - Drive sleeve adapter
d - Tab bent down
e - Propeller nut

⚠ WARNING

A rotating propeller can cause injury. Place a block of wood between the anti-ventilation plate and the propeller to protect hands from the propeller blades, and to prevent the propeller from rotating when removing or installing the propeller nut.

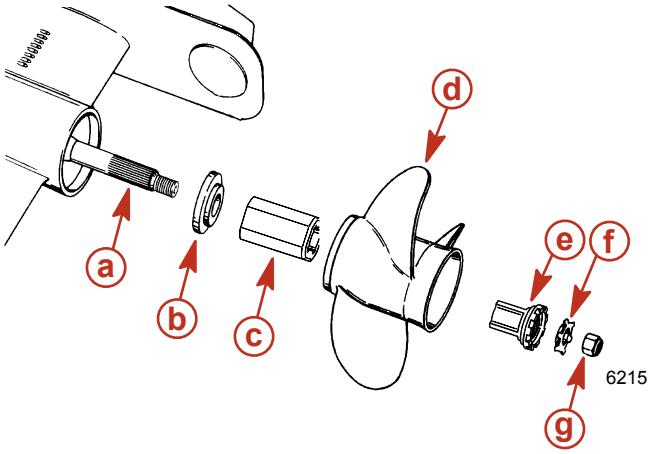
2. Place a wood block between the propeller blade and anti-ventilation plate to prevent rotation.



a - Wood block
b - Propeller
c - Propeller nut under socket

3. Turn the propeller shaft nut counterclockwise to remove the nut.

4. Slide the propeller and attaching hardware from the propeller shaft.



a - Propeller shaft
b - Thrust hub
c - Flo-Torq II drive hub
d - Propeller
e - Drive sleeve
f - Locking tab washer
g - Propeller nut

Vazer Propeller Installation

⚠ CAUTION

Avoid injury and propeller or sterndrive damage, or both, caused by a loose propeller. The propeller may become loose during normal operation. Periodically throughout the boating season and at the maintenance intervals specified, the propeller nut must be checked for tightness. Torque the propeller nut to specification.

⚠ WARNING

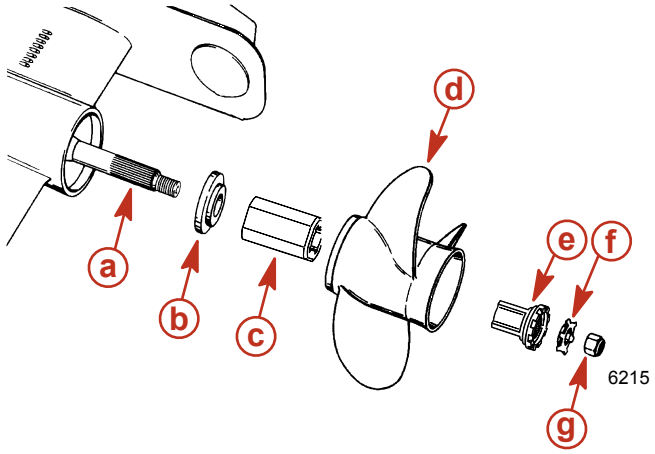
Ensure that remote control is in NEUTRAL position and ignition key is removed from switch prior to installing propeller.

IMPORTANT: If reusing the tab washer, carefully inspect tabs for cracks or other damage. Replace the tab washer if its condition is questionable.

1. Apply a liberal coat of one of the following lubricants to the propeller shaft.

Tube Ref No.	Description	Where Used	Part No.
34	Special Lubricant 101	Propeller shaft	92-802865A1
94	Anti-Corrosion Grease	Propeller shaft	92-802867A1
95	2-4-C Marine Lubricant with Teflon	Propeller shaft	92-802859A1

2. Install the propeller with the attaching hardware as shown.

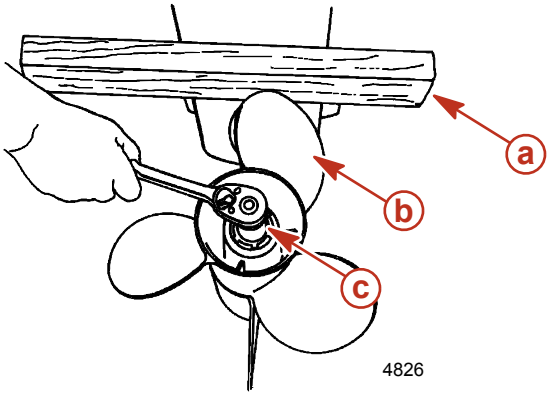


a - Propeller shaft
b - Thrust hub
c - Flo-Torq II drive hub
d - Propeller
e - Drive sleeve
f - Locking tab washer
g - Propeller nut

⚠ WARNING

A rotating propeller can cause injury. Place a block of wood between the anti-ventilation plate and the propeller to protect hands from the propeller blades, and to prevent the propeller from rotating when removing or installing the propeller nut.

3. Install and torque the propeller nut.



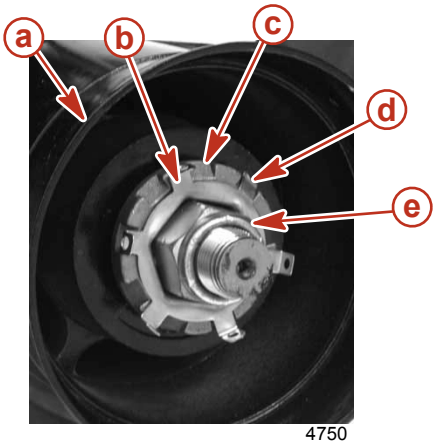
a - Wood block
b - Propeller
c - Propeller nut under socket

NOTE: *The propeller torque stated is a minimum torque value.*

Description	Nm	lb. in.	lb. ft.
Propeller nut	75		55

4. Continue to tighten the propeller nut until the three tabs on the tab washer align with the grooves on the spline washer.

5. Bend three tabs down into the grooves.



a - Prop
b - Tab washer
c - Drive sleeve adapter
d - Tab bent down
e - Propeller nut

6. After the first use, bend the three tabs straight and retorque the propeller nut. Bend the tabs back down into the spline washer. Recheck the propeller at the beginning and end of each season. Do not operate with a loose propeller.

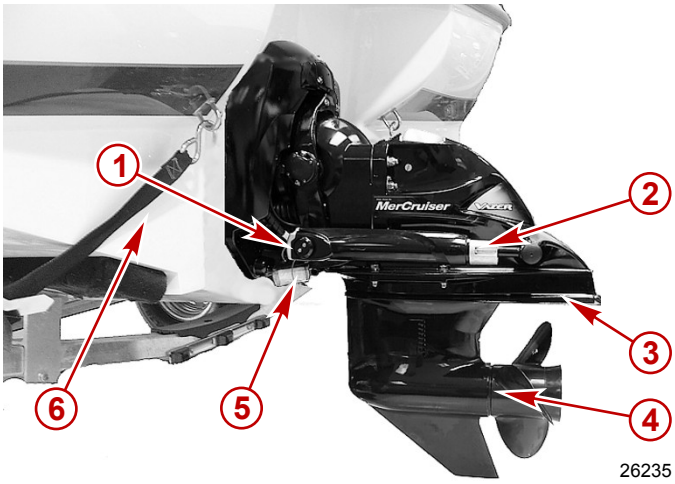
Corrosion Protection

Whenever two or more dissimilar metals (like those found on the sterndrive) are submerged in a conductive solution, such as saltwater, polluted water, or water with a high mineral content, a chemical reaction takes place causing electrical current to flow between metals. The electrical current flow causes the metal that is most chemically active, or anodic, to erode. This is known as galvanic corrosion and, if not controlled, it will in time cause the need for replacement of power package components exposed to water. Refer to the **Marine Corrosion Protection Guide**.

Mercury MerCruiser power packages are equipped with anodes to help protect them from galvanic corrosion under moderate conditions. However, for severe conditions (i.e. when using a stainless steel propeller, docking/mooring in areas with rapid water flow, etc.), install a Quicksilver Anti-Corrosion Anode Kit, a MerCathode System, or both.

Vazer Sterndrive Corrosion Protection Components

To help control the effects of galvanic corrosion, Mercury MerCruiser sterndrives come with several sacrificial anodes and other corrosion protection devices. For a more comprehensive explanation of corrosion and corrosion protection refer to the **Marine Corrosion Protection Guide**.

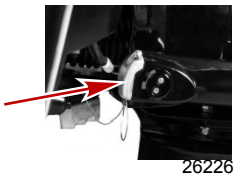
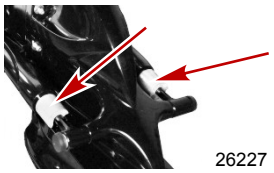
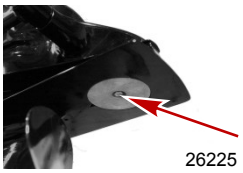
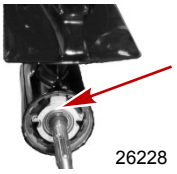
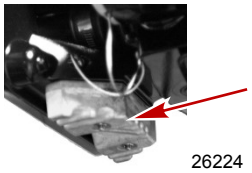


1 - Front trim cylinder anodes (2)
2 - Rear Trim cylinder anodes (2)
3 - Gearcase anodic plate
4 - Bearing carrier anode
5 - Gimbal housing anode
6 - Anode kit (if equipped)

IMPORTANT: Replace sacrificial anodes if eroded 50% or more.

The following sacrificial anodes are installed at different locations on your power package. These anodes help protect against galvanic corrosion by sacrificing its metal to be slowly eroded instead of the metal components on the power package.

MerCathode System. See **MerCathode Kit (if Equipped)**.

Description	Location	Figure
Front trim cylinder anodes	Mounted on the front on each of the trim cylinders.	 26226
Rear trim cylinder anodes	Mounted on the rear on each of the trim cylinders.	 26227
Gearcase anodic plate	Mounted on the underside of the lower gearcase.	 26225
Bearing carrier anode	Located in front of the propeller, between the front side of the propeller and the gear housing.	 26228
Gimbal housing anode	Mounted on the bottom of the gimbal housing.	 26224
MerCathode Kit (if equipped)	Mounted to the boat transom on opposite sides of the sterndrive. The MerCathode controller is mounted on the engine or on the inside of the boat transom.	 26234
Anode kit (if equipped)	Mounted to the boat transom.	 26300

In addition to the corrosion protection devices, take the following steps to inhibit corrosion.

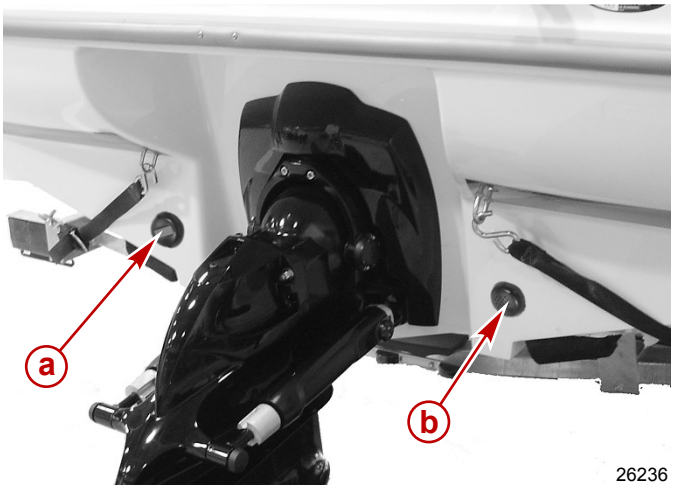
1. Paint the power package. See **Painting Your Power Package**.
2. Annually spray the power package components on the inside of the boat with Corrosion Guard to protect the finish from dulling and corrosion. You may also spray external power package components.
3. Keep all lubrication points, especially the steering system, shift and throttle linkages, well lubricated.
4. Flush the cooling system periodically, preferably after each use. See **Flushing Your Power Package**.

MerCathode Kit (if Equipped)

⚠ CAUTION

Improper boat-cleaning procedures can cause product damage. Washing the MerCathode assembly, especially with a brush or high-pressure washer, will damage the MerCathode assembly making it unable to inhibit galvanic corrosion. When cleaning the boat, do not use a brush or a high-pressure washer to wash the MerCathode assembly found on the bottom of the transom assembly.

Do not pressure-wash the MerCathode assembly. Doing so will damage the coating on the reference electrode wire and decrease the corrosion protection.



The MerCathode is mounted on the boat transom, port and starboard sides of the drive

a - MerCathode anode **b -** MerCathode reference electrode

The system should be tested to ensure adequate output. The test should be performed where the boat is moored using a Quicksilver Reference Electrode and Test Meter. Contact your authorized Mercury MerCruiser dealer.

Painting Your Power Package

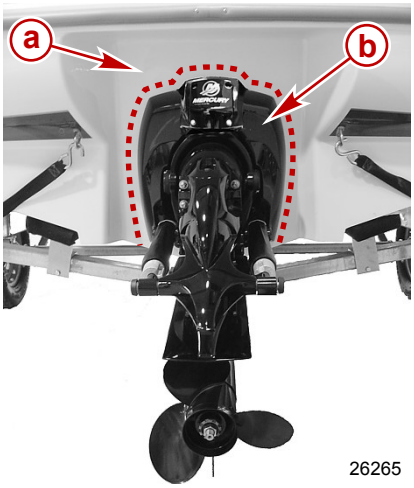
IMPORTANT: Corrosion damage that results from the improper application of anti-fouling paint is not covered by the limited warranty.

1. **Painting the boat hull or transom**: you may apply anti-fouling paint to the boat hull and transom. However, observe the following:

IMPORTANT: Do not paint anodes or MerCathode System reference electrode and anode. Paint will render them ineffective as inhibitors of galvanic corrosion.

IMPORTANT: If anti-fouling protection is required for the boat hull or transom, you can use copper-based or tin-based paints where not prohibited by law. If using copper-based or tin-based anti-fouling paints, observe the following:

- Avoid any electrical interconnection between the paint and the Mercury MerCruiser product, anodic blocks, or MerCathode system by allowing a minimum of 40 mm (1-1/2 in.) unpainted area on the transom of the boat around these items.



a - Painted boat transom **b -** Unpainted area on transom

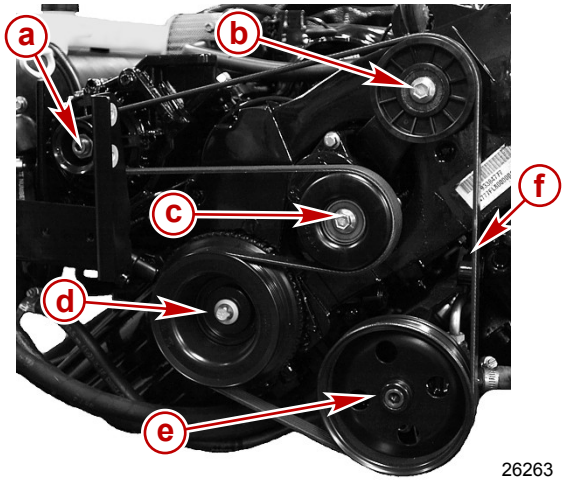
2. **Painting the sterndrive or transom assembly**: The sterndrive and transom assembly should be painted with a good-quality marine paint or an anti-fouling paint that does not contain copper, tin, or any other material that could conduct electrical current. Do not paint drain holes, anodes, MerCathode system, or items specified by the boat manufacturer.

Serpentine Drive Belt

⚠ WARNING

Avoid possible serious injury. Make sure that the engine is turned off and the ignition key is removed before inspecting belts.

NOTE: *Image shown with front mount removed for clarity only.*



Belt routing

a - Alternator pulley
b - Idler
c - Automatic tensioner
d - Crankshaft pulley
e - Power steering pump pulley
f - Serpentine belt

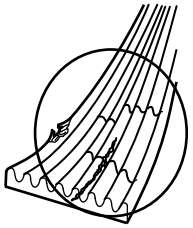
Checking

1. Inspect the drive belt for proper tension and for the following:

- Excessive wear
- Cracks

NOTE: *Minor, transverse cracks (across the belt width) may be acceptable. Longitudinal cracks (in the direction of belt length) that join transverse cracks are NOT acceptable.*

- Fraying
- Glazed surfaces



21062

- Proper tension. Deflection with moderate thumb pressure, on the belt at the location that has the longest distance between two pulleys.

Description	
Deflection	6 mm (1/4 in.)

Replacing

IMPORTANT: If a belt is to be reused, it should be installed in the same direction of rotation as before.

The belt tensioner is designed to operate within the limits of movement provided by the cast stops when the belt length and geometry are correct.

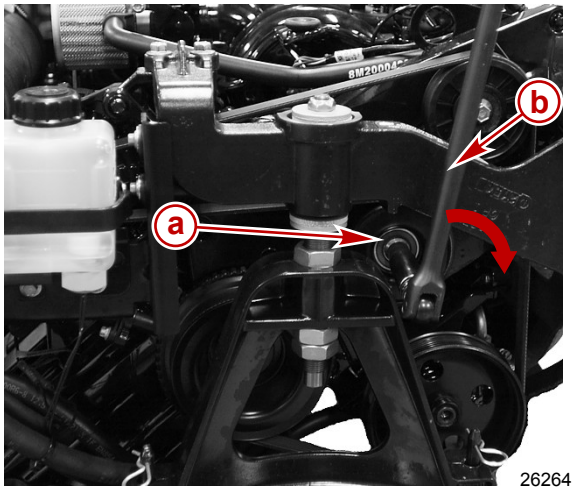
If the tensioner is contacting either of the cast stops during operation, check the mounting brackets and the belt length. Loose brackets, bracket failure, accessory drive component movement, incorrect belt length, or belt failure can cause the tensioner to contact the cast stops.

See your authorized MerCruiser dealer for service if these conditions exist.

⚠ CAUTION

The belt tensioner assembly contains a high tension spring. Rapid release of the tensioner, or allowing the tensioner to snap back quickly, could injure the operator or cause product damage. Relieve the spring tension slowly to avoid injury or product damage.

1. Using a suitable tool, rotate the automatic tensioner and remove tension on the belt.



26264

a - Automatic tensioner **b -** Suitable tool

2. Replace the serpentine belt. Be sure to use proper belt routing.
3. Carefully release the automatic tensioner and ensure that the belt stays positioned properly.
4. Check the tension of the serpentine belt.

Description	
Deflection	6 mm (1/4 in.)

Battery

Refer to specific instructions and warnings accompanying your battery. If this information is not available, observe the following precautions when handling a battery.

⚠ WARNING

Avoid serious injury from fire or explosion. Do not use jumper cables and a booster battery to start engine. Do not recharge a weak battery in the boat. Remove battery and recharge in a ventilated area away from fuel vapors, sparks or flames.

⚠ WARNING

Batteries contain acid which can cause severe burns. Avoid contact with skin, eyes and clothing. If electrolyte is spilled or splashed on any part of the body, immediately flush the exposed area with liberal amounts of water and obtain medical aid as soon as possible. Safety glasses and rubber gloves are recommended when handling batteries or filling with electrolyte.

Supplying Cooling Water to the Engine

⚠ CAUTION

Overheating from insufficient cooling water will cause engine and drive system damage. Ensure that there is sufficient water always available at water inlet holes during operation.

Certain maintenance procedures require you to operate the engine. Never operate the engine without cooling water available at the seawater pickups.

To supply cooling water to the engine, proceed with the following that applies to your particular power package.

Supplying Cooling Water to the Engine (Boat out of the Water)

NOTE: *When operating the engine with the boat out of the water, an external source of water is needed.*

⚠ WARNING

Contact with moving drive components and the propeller can cause personal injury or death. To avoid possible injury, remove the propeller and ensure that no people or animals are in the area of the drive unit while flushing.

1. Remove the propeller. See **Propellers**.
2. Place the sterndrive in the full down (in) position.
3. Connect the appropriate attachment to the seawater inlets. See **Flushing Attachments (Running Flush)**

⚠ CAUTION

Flush water will collect in the exhaust system when the engine is not operating, resulting in engine damage. Do not supply flush water for more than 15 seconds without the engine operating.

4. Completely open the water source to supply maximum cooling water to the seawater inlets.
5. Immediately start the engine.

⚠ CAUTION

Avoid engine damage from overheating. If the engine is operated above 1400 RPM with the boat out of the water, suction created by the seawater pickup pump may collapse the water supply hose, causing the engine to overheat.

6. Depress the throttle-only button and slowly advance the throttle until the engine reaches 1300 RPM (± 100 RPM).

⚠ CAUTION

Engine overheating can cause engine damage. To avoid, observe the water temperature gauge and ensure that the engine is operating in the normal range.

7. Observe the water temperature gauge to ensure that the engine is operating in the normal range.
8. After the specified operating time is complete, slowly return the throttle to idle RPM.

⚠ CAUTION

Flush water will collect in the exhaust system when the engine is not operating, resulting in engine damage. Do not supply flush water for more than 15 seconds without the engine operating.

9. Stop the engine.
10. Immediately shut off the supply water and remove the attachment.
11. Reinstall the propeller. See **Propellers**.

Supplying Cooling Water to the Engine (Boat in the Water)

NOTE: *When operating the engine with the boat in the water, no external source of water is needed.*

1. Place the sterndrive in the full down (in) position.
2. Ensure that the external water level is above the seawater inlets.
3. Start the engine.
4. Depress the throttle-only button and slowly advance the throttle until the engine reaches 1300 RPM (± 100 RPM).

⚠ CAUTION

Engine overheating can cause engine damage. To avoid, observe the water temperature gauge and ensure that the engine is operating in the normal range.

5. Observe the water temperature gauge to ensure that the engine is operating in the normal range.
6. After specified operating time is complete, slowly return the throttle to neutral idle RPM position.
7. Stop the engine.

Notes:

Section 6 - Storage

Table of Contents

Cold Weather (Freezing Temperature) and Extended Storage..... 92
Draining the 100 Vazer Seawater System 92
Preparing the Power Package for Extended Storage..... 92
Engine and Fuel System Preparation..... 93
Battery Storage..... 94
Power Package Recommissioning..... 94

6

Cold Weather (Freezing Temperature) and Extended Storage

IMPORTANT: Mercury MerCruiser strongly recommends that these services be performed by an authorized Mercury MerCruiser dealer.

NOTICE
Avoid cooling system and engine damage. Water trapped in the seawater section of the cooling system can cause corrosion damage, freeze damage, or both. Remove the boat from the water to drain the seawater section of the cooling system immediately after operation, or before any length of storage in cold weather, if the possibility of freezing temperatures exists.

1. Read all precautions and perform all procedures found in **Draining the 100 Vazer Seawater System** and drain the seawater section of the cooling system.

Draining the 100 Vazer Seawater System

The 100 Vazer has a self draining seawater system. Removing the boat from the water and placing the sterndrive in the full down (in) position will allow the self draining system to drain all seawater from the engine and the sterndrive.

1. Remove the boat from the water.

IMPORTANT: Place the sterndrive in the full down (in) position to ensure that no seawater gets trapped in the engine or sterndrive.

2. Place the sterndrive in the full down (in) position to allow any trapped water in the sterndrive to drain.
3. Allow the system to drain for a minimum of 5 minutes.

Preparing the Power Package for Extended Storage

IMPORTANT: Mercury MerCruiser recommends performing all scheduled maintenance before proceeding with the Extended Storage procedure. Refer to the Maintenance section.

1. Flush the seawater cooling system. Refer to **Flushing the Seawater System** in the **Maintenance** section.
2. Fill the fuel tanks with fresh gasoline (that does not contain alcohol) and a sufficient amount of Quicksilver Gasoline Stabilizer for Marine Engines to treat the gasoline. Follow instructions on the container.
3. If the boat is to be placed in storage with fuel containing alcohol in fuel tanks (if fuel without alcohol is not available), drain the fuel tanks as low as possible and add Mercury/Quicksilver Gasoline Stabilizer for Marine Engines to any fuel remaining in the tank. For additional information, refer to **Fuel Requirements** in the **Specification** section.
4. Change the engine oil and the oil filter. Refer to **Engine Oil** in the **Maintenance** section.
5. Prepare the engine and fuel system for storage. See **Engine and Fuel System Preparation**.
6. Drain the engine seawater cooling system. See **Draining the 100 Vazer Seawater System**.

NOTICE
The universal joint bellows may develop a set when stored in a raised or up position, causing the bellows to fail when returned to service and allowing water to enter the boat. Store the sterndrive in the full down position.

7. Place the sterndrive in the full down (in) position.
8. Store the battery according to the manufacturer's instructions.

Engine and Fuel System Preparation

⚠ WARNING

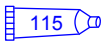
Avoid serious injury or death from a gasoline fire or explosion; gasoline is extremely flammable and highly explosive under certain conditions. When servicing the fuel system components ensure that the engine is cool, the ignition switch is in the off position, and that the lanyard stop switch, if equipped, is in the off position. Do not smoke or allow spark or open flame in the area. Wipe up any spilled fuel immediately. Ensure that no fuel leaks exist before closing the engine hatch.

⚠ WARNING

Fuel vapors can be present in the engine compartment. Avoid injury or power package damage caused by fuel vapors or explosion. Always ventilate the engine compartment prior to servicing the power package.

1. Mix the following in a 23 L (6 gal.) remote fuel tank.

Fluid Type	Amount in Mixture
Regular unleaded 87 octain (90 RON) gasoline	19 L (5 gal.)
Premium Plus 2-Cycle TC-W3 Outboard Oil	1.89 L (2 U.S. qts.)
Fuel System Treatment and Stabilizer or Fuel System Treatment and Stabilizer Concentrate	150 mL (5 ounces.) or 30 mL (1 ounces.)

Tube Ref No.	Description	Where Used	Part No.
	Premium Plus 2-cycle TC-W3 Outboard Oil	Fuel system	92-802824A1
	Fuel System Treatment & Stabilizer	Fuel system	802875A1

2. Allow the engine to cool down.
3. Close the fuel shut off valve, if equipped.

⚠ WARNING

Environmental Hazard. Use a suitable container to collect fuel. Clean up any spills immediately and dispose of fuel in a safe manner in accordance with all local, federal, and international regulations.

4. Disconnect and plug the fuel line if not equipped with a fuel shut off valve.
5. Connect the remote fuel tank (with the mixture) to the fuel inlet fitting.

⚠ CAUTION

Overheating from insufficient cooling water will cause engine and drive system damage. Ensure that there is sufficient water always available at water inlet holes during operation.

6. Supply cooling water to the seawater inlets. Refer to **Supplying Cooling Water to the Engine** in the **Maintenance** section.
7. Start the engine. Allow the mixture to run through the fuel system for 5 minutes. Turn off the engine.
8. Allow the engine to cool down.

IMPORTANT: The mixture in the fuel system is not intended to remain in the fuel filters during storage. The fuel filters must be replaced and unused until recommissioning.

9. Replace the fuel filters. Refer to **Fuel Filters** in the **Maintenance** section. Do not start the engine at this time. Check the fuel filters for leaks when first starting the engine during recommissioning.
10. Disconnect the remote fuel tank and reconnect the fuel line to the fuel inlet fitting.

Battery Storage

Whenever the battery will be stored for an extended period of time, be sure the cells are full of water and the battery is fully charged and in good operating condition. It should be clean and free of leaks. Follow the battery manufacturer's instructions for storage.

Power Package Recommissioning

1. Open the fuel shut off valve if equipped.
2. Ensure that all cooling system hoses are connected properly and hose clamps are tight.

⚠ CAUTION

Reversing the battery cables or connection order will damage the electrical system. When installing the battery, be sure to connect the positive (+) battery cable to the positive (+) battery terminal first, and the negative (–) battery cable to the negative (–) battery terminal second.

3. Install a fully charged battery. Clean the battery cable clamps and terminals and reconnect cables. Tighten each cable clamp securely when connecting.
4. Coat the terminal connections with a battery terminal anti-corrosion agent.
5. Perform all the checks in the before starting column of the **Operation Chart**.

⚠ CAUTION

Overheating from insufficient cooling water will cause engine and drive system damage. Ensure that there is sufficient water always available at water inlet holes during operation.

6. Supply cooling water to the seawater inlets. Refer to **Supplying Cooling Water to the Engine** in the **Maintenance** section.
7. Start the engine and closely observe instrumentation to ensure that all systems are functioning correctly.
8. Carefully inspect the engine for fuel, oil, fluid, water, and exhaust leaks.
9. Inspect the steering system, shift, and throttle control for proper operation.

Section 7 - Troubleshooting

Table of Contents

Diagnosing EFI Problems..... 96
Engine Guardian System..... 96
Troubleshooting Charts..... 96
Starter Motor Will Not Crank Engine, Or Cranks Slow.....96
Engine Will Not Start Or Is Hard To Start 96
Engine Runs Rough, Misses And/Or Backfires 96
Poor Performance.....97
Excessive Engine Temperature.....97
Insufficient Engine Temperature.....97
Low Engine Oil Pressure.....97
Battery Will Not Come Up On Charge.....98
Remote Control Operates Hard, Binds, Has Excessive Free-play Or Makes Unusual Sounds.....98
Steering Wheel Turns Hard Or Jerky.....98
Power Trim Does Not Operate (Motor Does Not Operate).....98
Power Trim Does Not Operate (Motor Operates But Sterndrive Unit Does Not Move) 98

Diagnosing EFI Problems

Your authorized Mercury MerCruiser dealer has the proper service tools for diagnosing problems on Electronic Fuel Injection (EFI) Systems. The Electronic Control Module (ECM) on these engines has the ability to detect some problems with the system when they occur, and store a Trouble Code in the ECM's memory. This code can then be read later by a service technician using a special diagnostic tool.

Engine Guardian System

The Engine Guardian System monitors the critical sensors on the engine for any early indications of problems. The system will respond to a problem by emitting a continuous beep and/or reducing engine power in order to provide engine protection.

If Guardian System has been activated, reduce throttle speed. The horn will turn off when throttle speed is within the allowable limit. Consult an authorized Mercury MerCruiser dealer for assistance.

Troubleshooting Charts

Starter Motor Will Not Crank Engine, Or Cranks Slow

Possible Cause	Remedy
Battery switch turned off.	Turn the switch on.
Remote control not in neutral position.	Position the control lever in neutral.
Open circuit breaker or blown fuse.	Check and reset the circuit breaker or replace fuse.
Loose or dirty electrical connections or damaged wiring.	Check all electrical connections and wires (especially battery cables). Clean and tighten all faulty connections.
Bad battery or low battery voltage.	Test the battery and charge if necessary; replace if bad.
Lanyard stop switch activated.	Check the lanyard stop switch.

Engine Will Not Start Or Is Hard To Start

Possible Cause	Remedy
Lanyard stop switch activated.	Check the lanyard stop switch.
Improper starting procedure.	Read the starting procedure.
Insufficient fuel supply.	Fill fuel tank or open valve.
Faulty ignition system component.	Service the ignition system.
Clogged fuel filter.	Replace fuel filter.
Stale or contaminated fuel.	Drain fuel tank. Fill with fresh fuel.
Fuel line or tank vent line kinked or clogged.	Replace kinked lines or blow out lines with compressed air to remove obstruction.
Faulty wire connections.	Check wire connections.
EFI system fault.	Have EFI System checked by an authorized Mercury MerCruiser dealer.

Engine Runs Rough, Misses And/Or Backfires

Possible Cause	Remedy
Clogged fuel filter.	Replace filter.
Stale or contaminated fuel.	If contaminated, drain tank. Fill with fresh fuel.
Kinked or clogged fuel line or fuel tank vent line.	Replace kinked lines or blow out lines with compressed air to remove obstruction.
Flame Arrestor dirty.	Clean Flame Arrestor.

Possible Cause	Remedy
Faulty ignition system component.	Service ignition system.
Idle speed too low.	Have EFI system checked by an authorized Mercury MerCruiser dealer.
EFI System fault.	Have EFI System checked by an authorized Mercury MerCruiser dealer.

Poor Performance

Possible Cause	Remedy
Throttle not fully open.	Inspect the throttle cable and linkages for proper operation.
Damaged or improper propeller.	Replace the propeller.
Excessive bilge water.	Drain and check for cause of entry.
Boat overloaded or load improperly distributed.	Reduce load or redistribute load more evenly.
Flame arrestor dirty.	Clean the flame arrestor.
Boat bottom fouled or damaged.	Clean or repair as necessary.
Ignition problem.	See **Engine Runs Rough, Misses or Backfires**.
Engine overheating.	See **Excessive Engine Temperature**.
EFI System fault	Have EFI System checked by an authorized Mercury MerCruiser dealer.

Excessive Engine Temperature

Possible Cause	Remedy
Water inlet or seacock closed.	Open.
Drive belt loose or in poor condition.	Replace or adjust belt.
Seawater pickups or sea strainer obstructed.	Remove obstruction.
Faulty thermostat.	Replace.
Coolant level (if equipped) low in closed cooling section.	Check for cause of low coolant level and repair. Fill system with proper coolant solution.
Heat Exchanger or Fluid Cooler plugged with foreign material	Clean the heat exchanger, engine oil cooler, and transmission oil cooler (if equipped).
Loss of pressure in closed cooling section.	Check for leaks. Clean, inspect and test pressure cap.
Faulty seawater pickup pump.	Repair.
Seawater discharge restricted or plugged.	Clean exhaust elbows.

Insufficient Engine Temperature

Possible Cause	Remedy
Faulty thermostat.	Replace.

Low Engine Oil Pressure

Possible Cause	Remedy
Insufficient oil in crankcase.	Check and add oil.
Excessive oil in crankcase (causing it to become aerated).	Check and remove required amount of oil. Check for cause of excessive oil (improper filling).
Diluted or improper viscosity oil.	Change oil and oil filter, using correct grade and viscosity oil. Determine cause for dilution (excessive idling).

Battery Will Not Come Up On Charge

Possible Cause	Remedy
Excessive current draw from battery.	Turn off non-essential accessories.
Alternator drive belt loose or in poor condition.	Replace and/or adjust.
Unacceptable battery condition.	Test battery, replace if necessary.
Loose or dirty electrical connections or damaged wiring.	Check all associated electrical connections and wires (especially battery cables). Clean and tighten faulty connections. Repair or replace damaged wiring.
Faulty alternator	Test alternator output, replace if necessary.

Remote Control Operates Hard, Binds, Has Excessive Free-play Or Makes Unusual Sounds

Possible Cause	Remedy
Insufficient lubrication on shift and throttle linkage fasteners.	Lubricate.
Obstruction in shift or throttle linkages.	Remove obstruction.
Loose or missing shift and throttle linkages.	Check all throttle linkages. If any are loose or missing, see authorized Mercury MerCruiser dealer immediately.
Shift or throttle cable kinked.	Straighten cable or have authorized Mercury MerCruiser dealer replace cable if damaged beyond repair.

Steering Wheel Turns Hard Or Jerky

Possible Cause	Remedy
Low power steering pump fluid level.	Check for leak. Refill system with fluid.
Drive belt loose or in poor condition.	Replace and/or adjust.
Insufficient lubrication on steering components.	Lubricate.
Loose or missing steering fasteners or parts.	Check all parts and fasteners if any are loose or missing, see authorized Mercury MerCruiser dealer immediately.
Contaminated power steering fluid.	See authorized Mercury MerCruiser dealer.

Power Trim Does Not Operate (Motor Does Not Operate)

Possible Cause	Remedy
Blown fuse.	Replace fuse.
Loose or dirty electrical connections or damaged wiring.	Check all associated electrical connections and wires (especially battery cables). Clean and tighten faulty connection. Repair or replace wiring.

Power Trim Does Not Operate (Motor Operates But Sterndrive Unit Does Not Move)

Possible Cause	Remedy
Trim pump oil level low.	Fill pump with oil.
Drive unit binding in gimbal ring.	Check for obstruction.

Section 8 - Customer Assistance Information

Table of Contents

Owner Service Assistance..... 100
Local Repair Service 100
Service Away From Home 100
Stolen Power Package 100
Attention Required After Submersion 100
Replacement Service Parts 100
Parts And Accessories Inquiries 101
Resolving A Problem 101
Mercury Marine Service Offices 101
Ordering Literature..... 102
United States and Canada 102
Outside The United States and Canada .. 102

8

Owner Service Assistance

Local Repair Service

Always return your Mercury MerCruiser powered boat to your authorized dealer should the need for service arise. Only he has the factory trained mechanics, knowledge, special tools and equipment and the genuine Quicksilver parts and accessories[1] to properly service your engine should the need occur. He knows your engine best.

Service Away From Home

If you are away from your local dealer and the need arises for service, contact the nearest authorized dealer. Refer to the Yellow Pages of the telephone directory. If, for any reason, you cannot obtain service, contact the nearest Regional Service Center. Outside the United States and Canada, contact the nearest Marine Power International Service Center.

Stolen Power Package

If your power package is stolen, immediately advise the local authorities and Mercury Marine of the model and serial numbers and to whom the recovery is to be reported. This information is maintained in a database at Mercury Marine to aid authorities and dealers in recovery of stolen power packages.

Attention Required After Submersion

1. Before recovery, contact an authorized Mercury MerCruiser dealer.
2. After recovery, immediate service by an authorized Mercury MerCruiser dealer is required to reduce the possibility of serious engine damage.

Replacement Service Parts

⚠ WARNING

Avoid fire or explosion hazard. Electrical, ignition, and fuel system components on Mercury Marine products comply with U.S. Coast Guard rules to minimize risk of fire or explosion. Do not use replacement electrical or fuel system components that do not comply with these rules. When servicing the electrical and fuel systems, properly install and tighten all components.

Marine engines are expected to operate at or near full throttle for most of their life. They are also expected to operate in both fresh and saltwater environments. These conditions require numerous special parts. Care should be exercised when replacing marine engine parts as specifications are quite different from those of the standard automotive engine.

For example, one of the most important, and probably the least suspected special replacement part, is the cylinder head gasket. Since saltwater is highly corrosive, the steel-type automotive head gasket cannot be used. A marine engine head gasket uses special materials to resist corrosive action.

Since marine engines must be capable of running at or near maximum RPM much of the time, special valve springs, valve lifters, pistons, bearings, camshafts and other heavy duty moving parts are required for long life and peak performance.

These are but a few of the many special modifications that are required in Mercury MerCruiser marine engines to provide long life and dependable performance.

1. Quicksilver parts and accessories are engineered and built by Mercury Marine, specifically for Mercury MerCruiser sterndrives and inboards.

PARTS AND ACCESSORIES INQUIRIES

All inquiries concerning Quicksilver replacement parts and accessories should be directed to your local authorized dealer. The dealer has the necessary information to order parts and accessories for you should he not have them in stock. Only authorized dealers can purchase genuine Quicksilver parts and accessories from the factory. Mercury Marine does not sell to unauthorized dealers or retail customers. When inquiring on parts and accessories, the dealer requires the **engine model** and **serial numbers** to order the correct parts.

Resolving A Problem

Satisfaction with your Mercury MerCruiser product is very important to your dealer and to us. If you ever have a problem, question or concern about your power package, contact your dealer or any authorized Mercury MerCruiser dealership. If additional assistance is required, take these steps:

1. Talk with the dealership's sales manager or service manager. If this has already been done, then contact the owner of the dealership.
2. Should you have a question, concern or problem that cannot be resolved by your dealership, please contact Mercury Marine Service Office for assistance. Mercury Marine will work with you and your dealership to resolve all problems.

The following information will be needed by the service office:

- Your name and address
- Daytime telephone number
- Model and serial numbers for your power package
- The name and address of your dealership
- Nature of problem

Mercury Marine Service Offices are listed on the next page.

Mercury Marine Service Offices

For assistance, call, fax or write. Please include your daytime telephone number with mail and fax correspondence.

Telephone	Fax	Mail
(405) 743 6566	(405) 743 6570	Mercury MerCruiser 3003 N. Perkins Rd. Stillwater, OK 74075
(905) 567 MERC (6372)	(905) 567 8515	Mercury Marine Ltd. 2395 Meadowpine Blvd. Mississauga, Ontario L5N 7W6 Canada
(61) (3) 9791 5822	(61) (3) 9793 5880	Mercury Marine Australia 132-140 Frankston Road Dandenong, Victoria 3164 Australia
(32) (87) 32 32 11	(32) (87) 31 19 65	Marine Power - Europe, Inc. Parc Industriel de Petit-Rechain B-4800 Verviers, Belgium
(954) 744 3500	(954) 744 3535	Mercury Marine - Latin America & Caribbean 11650 Interchange Circle North, Miramar, FL 33025 U.S.A.

Telephone	Fax	Mail
(81) 53 423 2500	(81) 53 423 2510	Mercury Marine - Japan 283-1 Anshin-cho Hamamatsu, Shizuoka 435-0005 Japan
(65) 6546 6160	(65) 6546 7789	Mercury Marine Singapore 72 Loyang Way , 508762 Singapore

Ordering Literature

Before ordering literature, please have the following information about your power package available:

- Model
- Serial Number
- Horsepower
- Year built

United States and Canada

For information on additional literature that is available for your particular Mercury MerCruiser power package and how to order that literature contact your nearest dealer or contact
Mercury Marine Publications
P.O. Box 1939
Fond du Lac, WI 54936-1939
(920) 929-5110
Fax (920) 929-4894

Outside The United States and Canada

Contact your nearest dealer or Marine Power Service Center for information on additional literature that is available for your particular Mercury MerCruiser power package and how to order that literature.

Please return with payment to:
Mercury Marine
Attn: Publications Department
W6250 West Pioneer Road
P.O. Box 1939
Fond du Lac, WI 54936-1939

Ship To: (Please Print Or Type - This Is Your Shipping Label)

Name

Address

City State ZIP