

Welcome Aboard!

Proper care and maintenance is an important part in keeping your Mercury Product operating at peak efficiency for maximum performance and economy. The enclosed Owner's Registration Card is your key to trouble-free family fun. Refer to your **Operation and Maintenance Manual** for full details of your warranty coverage.

Details of your nearest dealer can be found on www.marinepower.com where country maps and full contact information are displayed.

Is your engine properly registered for warranty purpose? Please check on www.marinepower.com. If necessary, please contact your local dealer.

If the outboard motor's serial number plate contains the CE mark in the lower left-hand corner, the following statement applies:

This outboard motor manufactured by Mercury Marine, Fond du Lac, WI, USA or Marine Power Europe Inc. Park Industriel, de Petit-Rechain, Belgium complies with the requirements of the following directives and standards, as amended:

Recreational Craft Directive: 94/25/EC; std. ISO 8665, ISO 11547

Machinery Directive: 98/37/EC,

EMC Directive: 89/336/EC; std. EN50081-1, SAE J551 (CISPR Pub. 12),
EN 50082-1, IEC 61000 PT4-2, IEC 61000 PT4-3



Patrick C. Mackey

President, Mercury Marine, Fond du Lac, WI USA

European Regulations Contact:

Product Environmental Engineering Department, Mercury Marine, Fond du Lac, WI USA

TABLE OF CONTENTS

Warranty Information

Transfer Of Warranty.....	1
Warranty Registration United States And Canada.....	1
Warranty Registration Outside The United States And Canada.....	1
Mercury Marine Two Years Limited Warranty (Europe).....	2
Mercury Marine One Year Limited Warranty (Confederation of Independent States, Middle-East, Africa).....	3
3 Year Limited Warranty Against Corrosion.....	5
Warranty Coverage And Exclusions.....	6

General Information

Boater's Responsibilities.....	8
Before Operating Your Outboard.....	8
Boat Horsepower Capacity.....	8
Lanyard Stop Switch.....	9
Protecting People In The Water.....	10
Exhaust Emissions.....	10
Selecting Accessories For Your Outboard.....	12
Safe Boating Suggestions.....	12
Recording Serial Number.....	12
Specifications.....	13

Installation

Installing Outboard.....	14
--------------------------	----

Transporting

Carrying Outboard.....	15
Transporting Outboard When Removed From Boat.....	15
Trailerling Boat.....	15

Fuel and Oil

Gasoline Recommendations.....	17
Oil Recommendation.....	17
Mixing Fuel and Oil.....	17
Filling Fuel Tank.....	18

Features and Controls

Features & Controls.....	19
Tilting Outboard.....	20
Setting The Operating Angle Of Your Outboard.....	21

TABLE OF CONTENTS

Operation

Pre-Starting Check List.....	22
Operating In Freezing Temperatures.....	22
Operating In Salt Water Or Polluted Water.....	22
Engine Break-in Procedure.....	22
Starting The Engine.....	22
Gear Shifting - Models with Gear Shift.....	25
Stopping The Engine	25
Emergency Starting.....	26

Maintenance

Outboard Care.....	28
EPA Emissions.....	28
Inspection And Maintenance Schedule.....	29
Top Cowl Removal And Installation.....	29
Exterior Care.....	30
Flushing The Cooling System.....	30
Propeller Replacement.....	30
Corrosion Control Anode.....	32
Spark Plug Inspection And Replacement.....	32
Engine Idle Speed Adjustment.....	33
Lubrication Points.....	34
Gearcase Lubrication.....	35
Submerged Outboard.....	37

Storage

Storage Preparation.....	38
Protecting External Outboard Components.....	38
Protecting Internal Engine Components.....	38
Gearcase.....	38
Positioning Outboard For Storage.....	38

Troubleshooting

Engine Will Not Start.....	39
Engine Runs Erratically.....	39
Performance Loss.....	39

Owner Service Assistance

Local Repair Service.....	40
Service Away From Home.....	40
Parts And Accessories Inquiries.....	40
Service Assistance.....	40
Mercury Marine Service Offices.....	40

WARRANTY INFORMATION

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.

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

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 Mercury Marine Service Office closest to you.

Warranty Registration United States And Canada

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

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

NOTE: Registration lists must be maintained by Mercury Marine and any dealer on marine products sold in the United States, should a safety recall notification under the Federal Safety Act be required.

2. To be eligible for warranty coverage, the product must be registered with Mercury Marine. At the time of sale, the dealer should complete the warranty registration and immediately submit it to Mercury Marine via MercNET, E-mail, or mail. Upon receipt of this warranty registration, Mercury Marine will record the registration.
3. Upon processing the warranty registration, Mercury Marine will send registration verification by mail to the purchaser of the product. If this registration verification is not received within 30 days, please contact your selling dealer immediately. Warranty coverage is not effective until your product is registered with Mercury Marine.

Warranty Registration Outside The United States And Canada

1. It is important that your selling dealer fills out the Warranty Registration Card completely and mails it to the distributor or Marine Power Service Center responsible for administering the warranty registration/claim program for your area.
2. 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/dealer's code number, name and address. The distributor/dealer also certifies that you are the original purchaser and user of the product.
3. 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/dealer. This card represents your factory registration identification, and should be retained by you for future use when required. Should you ever require 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.

WARRANTY INFORMATION

4. In some countries, the Marine Power Service Center will issue you a permanent (plastic) Warranty Registration Card within 30 days after receiving the Factory Copy of the Warranty Registration Card from your distributor/dealer. If you receive a plastic Warranty Registration Card, you may discard the Purchaser's Copy that you received from the distributor/dealer when you purchased the product. Ask your distributor/dealer if this plastic card program applies to you.

IMPORTANT: Registration lists must be maintained by the factory and dealer in some countries by law. It is our desire to have ALL products registered at the factory should it ever be necessary to contact you. Make sure your dealer/distributor fills out the warranty registration card immediately and sends the factory copy to the Marine Power International Service Center for your area.

5. For further information concerning the Warranty Registration Card and its relationship to Warranty Claim processing, refer to the International Warranty.

Mercury Marine Two Years Limited Warranty (Europe)

WHAT IS COVERED: Mercury Marine warrants each new Mercury Outboard, Mariner Outboard, Jet Products, Thruster Electric Trolling Motors, Mercruiser Inboard or Sterndrive engine products to be free of defects in material and workmanship during the period described below.

DURATION OF COVERAGE: This Limited Warranty provides coverage for two (2) years from 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. Commercial users of these products receive warranty coverage of two (2) years 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 or employment related use of the product, or any use of the product which 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. Unexpired warranty coverage can be transferred to one recreational use to a subsequent recreational use customer upon proper re-registration of the product.

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 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. Inaccurate warranty registration information regarding recreational use, or subsequent change of use from recreational to commercial (unless properly re-registered) may void the warranty at the sole discretion of Mercury Marine. Routine maintenance outlined in the Operation and Maintenance Manual must be timely performed in order to maintain warranty coverage. If this maintenance is performed by the retail customer Mercury Marine reserves the right to make future warranty coverage contingent on 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 defective 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. The warranty registration card is the only valid registration identification and must be presented to the dealer at the time warranty service is requested in order to obtain coverage.

WARRANTY INFORMATION

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 the Operation and Maintenance Manual), operation of the product in a manner inconsistent with the recommended operation/duty cycle section of the Operation and Maintenance 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 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 the Operation and Maintenance Manual), 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.

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, and if made, shall not be enforceable against Mercury Marine.

For additional information regarding events and circumstances covered by this warranty, and those that are not, see the Warranty Coverage section of the Operation and Maintenance Manual, incorporated by reference into this warranty.

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.

Mercury Marine One Year Limited Warranty (Confederation of Independent States, Middle-East, Africa)

WHAT IS COVERED: Mercury Marine warrants each new Mercury outboard, Mariner outboard, Jet Products, Thruster Electric Trolling Motors, Mercruiser Inboard or Sterndrive engine products to be free of defects in material and workmanship during the period described below.

DURATION OF COVERAGE: This Limited Warranty provides coverage for one (1) year from 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. Commercial users of these products receive warranty coverage of one (1) years 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 or employment related use of the product, or any use of the product which 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. Unexpired warranty coverage can be transferred to a subsequent purchaser upon proper re-registration of the product.

WARRANTY INFORMATION

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 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. Inaccurate warranty registration information regarding recreational use, or subsequent change of use from recreational to commercial (unless properly re-registered) may void the warranty at the sole discretion of Mercury Marine. Routine maintenance outlined in the Operation and Maintenance Manual must be timely performed in order to maintain warranty coverage. If this maintenance is performed by the retail customer Mercury Marine reserves the right to make future warranty coverage contingent on 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 defective 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. The warranty registration card is the only valid registration identification and 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 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 the Operation and Maintenance Manual), operation of the product in a manner inconsistent with the recommended operation/duty cycle section of the Operation and Maintenance 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 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 the Operation and Maintenance Manual), 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.

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, and if made, shall not be enforceable against Mercury Marine.

For additional information regarding events and circumstances covered by this warranty, and those that are not, see the Warranty Coverage section of the Operation and Maintenance Manual, incorporated by reference into this warranty.

WARRANTY INFORMATION

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

WHAT IS COVERED: Mercury Marine warrants that each new Mercury, Mariner, Mercury Racing, Sport Jet, M² 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 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 subsequent (non-commercial use) purchaser upon proper re-registration of the product.

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 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 and Maintenance Manual must be in use on the boat, and routine maintenance outlined in the Operation and Maintenance 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 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 the warranty period, even if the product is only occasionally used for such purposes.

WARRANTY INFORMATION

Corrosion damage caused by stray electrical currents (on-shore power connections, nearby boats, submerged metal) is not covered by this corrosion warranty and should be protected against by the use of a corrosion protection system, such as the Mercury Precision Parts or Quicksilver MerCathode system and/or Galvanic Isolator. Corrosion damage caused by improper application of copper base anti-fouling paints is also not covered by this limited warranty. If anti-fouling protection is required, Tri-Butyl-Tin-Adipate (TBTA) base anti-fouling paints are recommended on Outboard and MerCruiser boating applications. In areas where TBTA base paints are prohibited by law, copper base paints can be used on the hull and transom. Do not apply paint to the outboard or MerCruiser product. In addition, care must be taken to avoid an electrical interconnection between the warranted product and the paint. For MerCruiser product, an unpainted gap of at least 38 mm (1.5 in.) should be left around the transom assembly. Refer to the Operation and Maintenance Manual for additional details.

For additional information regarding events and circumstances covered by this warranty, and those that are not, see the Warranty Coverage section of the Operation and Maintenance Manual, incorporated by reference into this warranty.

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.

Warranty Coverage And Exclusions

The purpose of this section is to help eliminate some of the more common misunderstandings regarding warranty coverage. The following information explains some of the types of services that are not covered by warranty. The provisions set forth following have been incorporated by reference into the Three Year Limited Warranty Against Corrosion Failure, the International Limited Outboard Warranty, and the United States and Canada Limited Outboard Warranty.

Keep in mind that warranty covers repairs that are needed within the warranty period because of defects in material and workmanship. Installation errors, accidents, normal wear, and a variety of other causes that affect the product are not covered.

Warranty is limited to defects in material or workmanship, but only when the consumer sale is made in the country to which distribution is authorized by us.

Should you have any questions concerning warranty coverage, contact your authorized dealer. They will be pleased to answer any questions that you may have.

GENERAL EXCLUSIONS FROM WARRANTY

1. Minor adjustments and tune-ups, including checking, cleaning or adjusting spark plugs, ignition components, carburetor settings, filters, belts, controls, and checking lubrication made in connection with normal services.
2. Factory installed jet drive units - Specific parts excluded from the warranty are: The jet drive impeller and jet drive liner damaged by impact or wear, and water damaged drive shaft bearings as a result of improper maintenance.
3. Damage caused by neglect, lack of maintenance, accident, abnormal operation or improper installation or service.
4. Haul out, launch, towing charges, removal and/or replacement of boat partitions or material because of boat design for necessary access to the product, all related transportation charges and/or travel time, etc. Reasonable access must be provided to the product for warranty service. Customer must deliver product to an authorized dealer.
5. Additional service work requested by customer other than that necessary to satisfy the warranty obligation.

WARRANTY INFORMATION

6. Labor performed by other than an authorized dealer may be covered only under following circumstances: When performed on emergency basis (providing there are no authorized dealers in the area who can perform the work required or have no facilities to haul out, etc., and prior factory approval has been given to have the work performed at this facility).
7. All incidental and/or consequential damages (storage charges, telephone or rental charges of any type, inconvenience or loss of time or income) are the owner's responsibility.
8. Use of other than Mercury Precision or Quicksilver parts when making warranty repairs.
9. Oils, lubricants or fluids changed as a matter of normal maintenance is customer's responsibility unless loss or contamination of same is caused by product failure that would be eligible for warranty consideration.
10. Participating in or preparing for racing or other competitive activity or operating with a racing type lower unit.
11. Engine noise does not necessarily indicate a serious engine problem. If diagnosis indicates a serious internal engine condition which could result in a failure, condition responsible for noise should be corrected under the warranty.
12. Lower unit and/or propeller damage caused by striking a submerged object is considered a marine hazard.
13. Water entering engine through the fuel intake, air intake or exhaust system or submersion.
14. Failure of any parts caused by lack of cooling water, which results from starting motor out of water, foreign material blocking inlet holes, motor being mounted too high or trimmed too far out.
15. Use of fuels and lubricants which are not suitable for use with or on the product. Refer to the **Maintenance** section.
16. Our limited warranty does not apply to any damage to our products caused by the installation or use of parts and accessories which are not manufactured or sold by us. Failures which are not related to the use of those parts or accessories are covered under warranty if they otherwise meet the terms of the limited warranty for that product.

GENERAL INFORMATION

Boater's Responsibilities

The operator (driver) is responsible for the correct and safe operation of the boat and safety of its occupants and general public. It is strongly recommended that each operator (driver) read and understand this entire manual before operating the outboard.

Be sure at least one additional person on board is instructed in the basics of starting and operating the outboard and boat handling in case the driver is unable to operate the boat.

Before Operating Your Outboard

Read this manual carefully. Learn how to operate your outboard properly. If you have any questions, contact your dealer.

Safety and operating information that is practiced, along with using good common sense, can help prevent personal injury and product damage.

This manual as well as safety labels posted on the outboard use the following safety alerts to draw your attention to special safety instructions that should be followed.

DANGER

DANGER - indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

WARNING

WARNING - indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION

CAUTION - indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury or property damage. It may also be used to alert against unsafe practices.

Boat Horsepower Capacity

WARNING

Using an outboard that exceeds the maximum horsepower limit of a boat can: 1) cause loss of boat control 2) place too much weight at the transom altering the designed flotation characteristics of the boat or 3) cause the boat to break apart particularly around the transom area. Overpowering a boat can result in serious injury, death or boat damage.

Do not overpower or overload your boat. Most boats will carry a required capacity plate indicating the maximum acceptable power and load as determined by the manufacturer following certain federal guidelines. If in doubt, contact your dealer or the boat manufacturer.

GENERAL INFORMATION

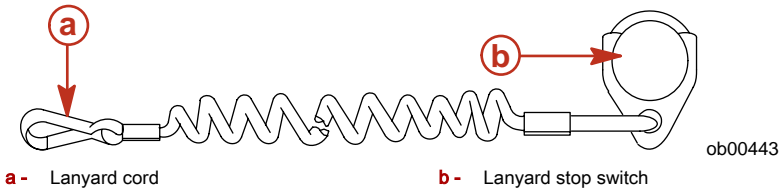
U.S. COAST GUARD CAPACITY	
MAXIMUM HORSEPOWER	XXX
MAXIMUM PERSON CAPACITY (POUNDS)	XXX
MAXIMUM WEIGHT CAPACITY	XXX

ob00306

Lanyard Stop Switch

The purpose of a lanyard stop switch is to turn off the engine when the operator moves far enough away from the operator's position (as in accidental ejection from the operator's position) to activate the switch. Tiller handle outboards and some remote control units are equipped with a lanyard stop switch. A lanyard stop switch can be installed as an accessory - generally on the dashboard or side adjacent to the operator's position.

The lanyard is a cord usually between 1220 and 1524 mm (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.



Read the following Safety Information before proceeding.

Important Safety Information: The purpose of a lanyard stop switch is to stop the engine when the operator moves far enough away from the operator's position to activate the switch. This would occur if the operator accidentally falls overboard or moves within the boat a sufficient distance from the operator's position. Falling overboard and accidental ejections are more likely to occur in certain types of boats such as low sided inflatables, bass boats, high performance boats, and light, sensitive handling fishing boats operated by a hand tiller. Falling overboard and accidental ejections are also likely to occur as a result of poor operating practices such as sitting on the back of the seat or gunwale at planing speeds, standing at planing speeds, sitting on elevated fishing boat decks, operating at planing speeds in shallow or obstacle infested waters, releasing your grip on a steering wheel or tiller handle that is pulling in one direction, drinking alcohol or consuming drugs, or daring, high speed boat maneuvers.

While activation of the lanyard stop switch will stop the engine immediately, a 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.

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.

GENERAL INFORMATION

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

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.

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 gearcase or propeller.
- Loss of power and directional control in heavy seas, strong current or high winds.
- Loss of control when docking.

Protecting People In The Water

WHILE YOU ARE CRUISING

It is very difficult for a person standing or floating in the water to take quick action to avoid a boat heading in his/her direction, even at slow speed.



ob00311

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 (coasting) and the outboard gear shift is in neutral position, 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 outboard into neutral and shut off the engine before allowing people to swim or be in the water near your boat.

Exhaust Emissions

BE ALERT TO CARBON MONOXIDE POISONING

Carbon monoxide is present in the exhaust fumes of all internal combustion engines. This includes 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.

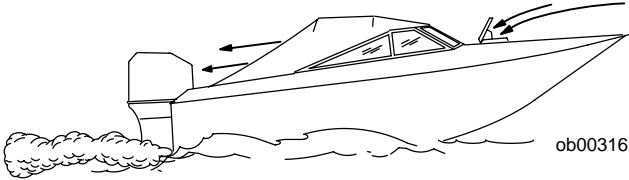
GENERAL INFORMATION

⚠ WARNING

Avoid the combination of a running engine and poor ventilation. Prolonged exposure to carbon monoxide in sufficient concentration can lead to unconsciousness, brain damage, or death.

GOOD VENTILATION

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



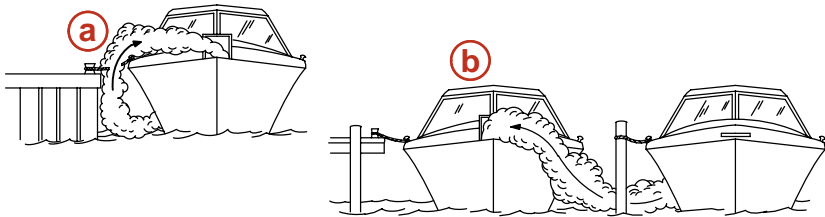
Example of desired air flow through the boat.

POOR VENTILATION

Under certain running and/or wind 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 enclosed area of a stationary boat that contains or is near a running engine may be exposed to a hazardous level of carbon monoxide.

WHILE BOAT IS STATIONARY



- a- Running the engine when the boat is moored in a confined space.
- b- Mooring close to another boat that has its engine running.

WHILE BOAT IS MOVING



- a- Running the boat with the trim angle of the bow too high.
- b- Running the boat with no forward hatches open.

GENERAL INFORMATION

Selecting Accessories For Your Outboard

Genuine Mercury Precision or Quicksilver Accessories have been specifically designed and tested for your outboard. These accessories are available from Mercury Marine dealers.

WARNING

Check with your dealer before installation of accessories. The misuse of acceptable accessories or the use of unacceptable accessories can result in serious injury, death, or product failure.

Some accessories not manufactured or sold by Mercury Marine are not designed to be safely used with your outboard or outboard operating system. Acquire and read the installation, operation, and maintenance manuals for all your selected accessories.

Safe Boating Suggestions

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

Use flotation devices. Have an approved personal flotation device of suitable size for each person aboard (it is the law) and have it readily accessible.

Do not overload your boat. Most boats are rated and certified for maximum load (weight) capacities (refer to your boat capacity plate). If in doubt, contact your dealer or the boats manufacturer.

Perform safety checks and required maintenance. Follow a regular schedule and ensure that all repairs are properly made.

Know and obey all nautical rules and laws of the waterways. Boat operators should complete a boating safety course. Courses are offered in the U.S.A. by 1) The U.S. Coast Guard Auxiliary, 2) The Power Squadron, 3) The Red Cross and 4) your state boating law enforcement agency. Inquiries may be made to the Boating Hotline, 1-800-368-5647 or the Boat U.S. Foundation information number 1-800-336-BOAT.

Make sure 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 back of seats, gunwales, transom, bow, decks, raised fishing seats, any rotating fishing seat; or anywhere that an 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.

Never be under the influence of alcohol or drugs while boating (it is the law). Alcohol or drug use impairs your judgment and greatly reduces your ability to react quickly.

Prepare other boat operators. Instruct at least one other person on board in the basics of starting and operating the outboard, and boat handling, in case the driver becomes disabled or falls overboard.

Passenger boarding. Stop the engine whenever passengers are boarding, unloading, or are near the back (stern) of the boat. Just shifting the outboard into neutral is not sufficient.

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 operating the boat above idle speed.

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 61 m (200 ft.) in front of you in 5 seconds.

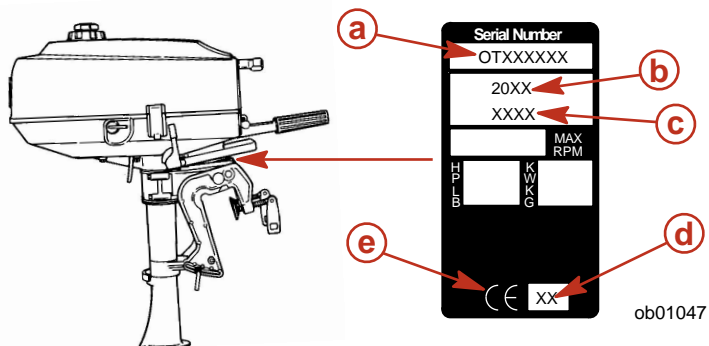
Watch fallen skiers. When using your boat for water skiing or similar activities, always keep a fallen or down skier on the operator's side of the boat while returning to assist the skier. The operator should always have the down skier in sight and never back up to the skier or anyone in the water.

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.

Recording Serial Number

It is important to record this number for future reference. The serial number is located on the outboard as shown.

GENERAL INFORMATION



- a** - Serial number
- b** - Model year
- c** - Model designation
- d** - Year manufactured
- e** - Certified Europe Insignia (as applicable)

Specifications

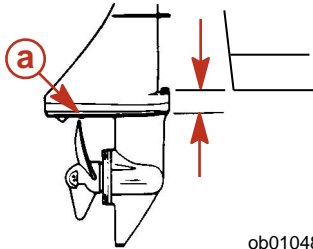
Models	2.5	3.3
Horsepower	2.5	3.3
Kilowatts	1.9	2.5
Full Throttle RPM Range	4000-5000	4500-5500
Idle Speed in Forward Gear	900-1000 RPM	
Number of Cylinders	1	
Piston Displacement	74.6 cc (4.6 cu. in.)	
Cylinder Bore	47 mm (1.85 in.)	
Piston Stroke	43 mm (1.69 in.)	
Recommended Spark Plug	NGK BPR6HS-10 or Champion RL87YC	
Spark Plug Gap	1.0 mm (0.40 in.)	
Gearcase Lubricant Capacity	135 ml (4.5 fl. oz.)	
Gear Ratio	2.18:1	1.85:1
Recommended Gasoline	Refer to Fuel & Oil	
Recommended Oil	Refer to Fuel & Oil	

INSTALLATION

Installing Outboard

BOAT TRANSOM HEIGHT REQUIREMENT

1. Measure the transom height of your boat. The anti-ventilation plate should be 25 - 50 mm (1 - 2 in.) below the bottom of the boat.

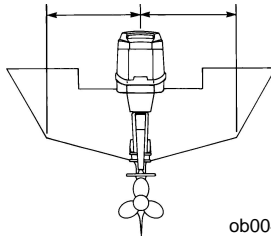


ob01048

a - Anti-ventilation plate

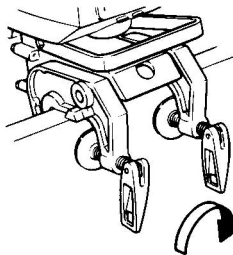
INSTALLING OUTBOARD ON TRANSOM

1. Place outboard on center line of transom.



ob00446

2. Tighten transom clamp handles.

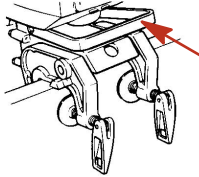


ob01049

TRANSPORTING

Carrying Outboard

The outboard has a carrying handle located in front.



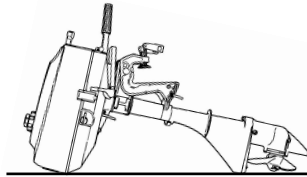
ob01051

Transporting Outboard When Removed From Boat

⚠ CAUTION

Transport and store the outboard only as shown. Otherwise, engine damage or property damage could result from leaking oil.

1. With the outboard still in the water, close the fuel shut-off valve and run engine until it stops. This will drain fuel from the carburetor. Remove outboard from the boat and hold upright until all cooling water is drained out.
2. Lay the outboard down on its back side so the tiller handle is facing up as shown. Place a protective pad under the outboard.



ob01052

3. Close the fuel tank vent.

Trailing Boat

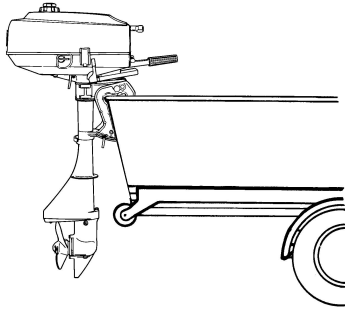
IMPORTANT: The tilt lock mechanism is not intended to support the outboard in the tilted up position when trailing. Use of the tilt lock mechanism could allow the outboard to bounce and drop down causing damage to the outboard.

The boat should be trailed with the outboard tilted down (normal operating position).

If additional ground clearance is required, remove the outboard from the boat and store securely. Additional clearance may be needed for railroad crossings, driveways, and trailer bouncing.

TRANSPORTING

Side shift models - Set the gear shift into forward gear. This prevents the propeller from spinning freely.



ob01053

FUEL AND OIL

Gasoline Recommendations

UNITED STATES AND CANADA

Use a major brand of automotive unleaded gasoline with a minimum posted octane rating of 87. Mid-grade automotive gasolines that contain fuel injector cleaner are preferred for added internal engine cleanliness. Leaded gasoline is not recommended.

INTERNATIONAL

Use a major brand of automotive unleaded gasoline with a minimum posted octane rating of 90RON. Automotive gasolines that contain fuel injector cleaner are preferred for added internal engine cleanliness. Leaded gasoline is acceptable in areas where unleaded gasoline is not available.

USING REFORMULATED (OXYGENATED) FUELS - UNITED STATES ONLY

This type of fuel is required in certain areas of the United States. The two types of reformulated ingredients in these fuels are alcohol (Ethanol) or Ether (MTBE or ETBE). If Ethanol is the oxygenates that is used in the gasoline, refer to **Alcohol in Gasoline**.

These reformulated fuels are acceptable for use in the Mercury engine.

ALCOHOL IN GASOLINE

We do not recommend the use of gasoline which contains alcohol because of the possible adverse effect the alcohol may have on the fuel system. In general, if only gasoline containing alcohol is available, it must not contain more than 10% ethanol or 5% methanol, and the addition of a water separating fuel filter is recommended.

If gasoline containing alcohol is used or if you suspect the presence of alcohol in your gasoline, increase your inspection of the fuel system, visually checking for fuel leaks or abnormalities.

Gasoline containing alcohol may cause the following problems to your outboard and fuel system:

- Corrosion of metal parts
- Deterioration of elastomers and plastic parts
- Wear and damage of internal engine parts
- Starting and operating difficulties
- Vapor lock or fuel starvation

Some of these adverse effects are due to the tendency of gasoline containing alcohol to absorb moisture from the air, resulting in a phase of water and alcohol which separates from the gasoline in the fuel tank.

The adverse effects of alcohol are more severe with methanol and are worse with increasing content of alcohol.

Oil Recommendation

Recommended Oil	Mercury or Quicksilver Premium 2-Cycle TC-W3 Outboard Oil
------------------------	--

IMPORTANT: Oil must be NMMA certified TC-W3 2-Cycle oil.

Mercury or Quicksilver Premium TC-W3 2-Cycle oil is recommended for this engine. For added protection and lubrication, Mercury or Quicksilver Premium Plus TC-W3 2-Cycle oil is recommended. If Mercury or Quicksilver outboard oil is not available, substitute another brand of 2-cycle outboard oil that is NMMA Certified TC-W3. Severe engine damage may result from use of an inferior oil.

Mixing Fuel and Oil

Use a 25:1 (4%) gasoline/oil mixture in the first tank of fuel.

After the break-in fuel mixture is used up, use a 50:1 (2%) gasoline/oil mixture. Refer to the table (following) for mixing ratios.

FUEL AND OIL

GASOLINE/OIL MIXING RATIO CHART

GASOLINE/OIL MIXING RATIO CHART			
Gas/Oil Ratio	3.8 liters (1 gal.) gas	11.5 liters (3 gal.) gas	23 liters (6 gal.) gas
25:1 (4%)	148 ml (5 fl. oz.) oil	473 ml (16 fl. oz.) oil	946 ml (32 fl. oz.) oil
50:1 (2%)	89 ml (3 fl. oz.) oil	237 ml (8 fl. oz.) oil	473 ml (16 fl. oz.) oil

MIXING PROCEDURE

Pour the full amount of oil along with approximately one gallon of gasoline into an approved container. Shake the two together until they are thoroughly mixed. Add the remainder of gasoline and shake container to ensure mixing.

Filling Fuel Tank

WARNING

Avoid serious injury or death from a gasoline fire or explosion. Always stop the engine and do not smoke or allow open flames or sparks in the area while filling fuel tanks.

Fill fuel tanks outdoors away from heat, sparks, and open flames.

Always stop engine before refilling tanks.

Do not overfill the fuel tank. Fuel will expand in volume as its temperature rises and can leak under pressure if the tank is completely filled.

The oil and fuel mixture should always be thoroughly mixed in an approved container before pouring into motor fuel tank. Do not pour separately into fuel tank.

Pour fuel into tank through a fine mesh strainer to remove dirt which may be present.

FEATURES AND CONTROLS

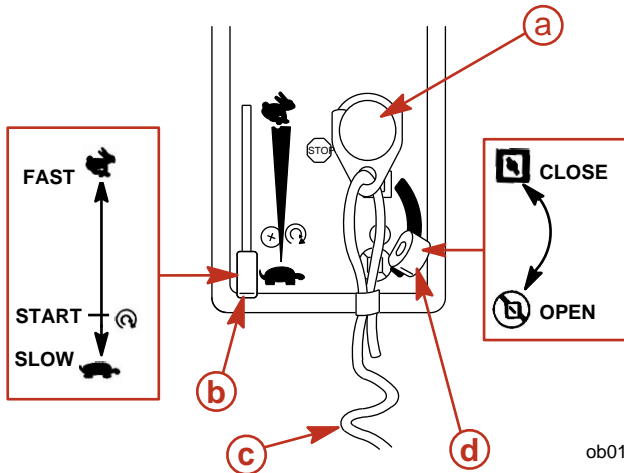
Features & Controls

Throttle lever - Move to start position for starting. Move lever up to increase engine speed and down to reduce engine speed.

Choke lever - Move up to the closed position for starting a cold engine. Move halfway down as engine warms up. Move down to the open position after engine is warmed up.

Engine stop switch/Lanyard stop switch - Push in or pull lanyard to stop engine. The engine will not start unless the lanyard is engaged with the stop switch.

Lanyard - Refer to **General Information - Lanyard Stop Switch**.

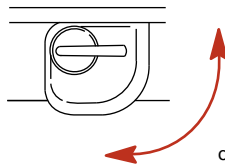


ob01054

- a - Engine stop switch/lanyard stop switch
- b - Throttle lever

- c - Lanyard
- d - Choke lever

Fuel shut-off valve - Turn clockwise to open fuel line and turn counterclockwise to close.



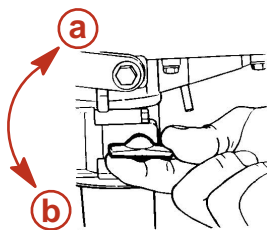
ob01055

⚠ WARNING

Avoid possible serious injury or death from loss of boat control. Maintain sufficient steering friction to prevent the outboard from steering into a full turn if the tiller handle or steering wheel is released.

Steering friction adjustment - Adjust this knob to achieve the desired steering friction (drag) on the tiller handle. Move knob clockwise to tighten friction and move knob counterclockwise to loosen friction.

FEATURES AND CONTROLS

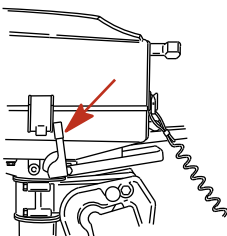


ob01056

a- Tighten friction

b- Loosen friction

Side handle gear shift (if equipped) - controls gear shift.

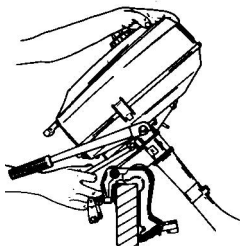


ob01057

Tilting Outboard

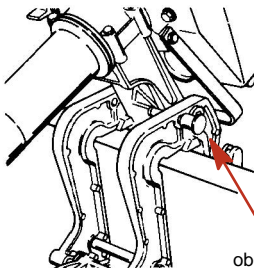
TILTING TO FULL UP POSITION

1. Stop the engine.
2. Take hold of the top cowl grip and raise outboard to the full up position.



ob01058

3. Push in the tilt support pin. Lower the outboard to rest on the tilt support pin.

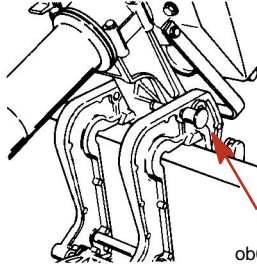


ob01059

FEATURES AND CONTROLS

LOWERING TO RUN POSITION

1. Lift outboard and pull out the tilt support pin. Lower the outboard.

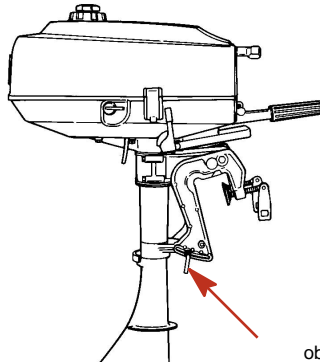


ob01059

Setting The Operating Angle Of Your Outboard

The vertical operating angle of your outboard is adjusted by changing the position of the tilt pin in the adjustment holes provided. Proper adjustment allows the boat to achieve optimum performance, stability, and minimize steering effort.

The tilt pin should be adjusted so the outboard is positioned to run perpendicular to the water when the boat is running at full speed. This allows the boat to be driven parallel to the water.



ob01060

Arrange passengers and load in the boat so the weight is distributed evenly.

OPERATION

Pre-Starting Check List

- Operator knows safe navigation, boating, and operating procedures.
- An approved personal flotation device of suitable size for each person aboard and readily accessible (it is the law).
- A ring type life buoy or buoyant cushion designed to be thrown to a person in the water.
- Know your boat's maximum load capacity. Look at the boat capacity plate.
- Fuel supply OK.
- Arrange passengers and load in the boat so the weight is distributed evenly and everyone is seated in a proper seat.
- Tell someone where you are going and when you expect to return.
- It is illegal to operate a boat while under the influence of alcohol or drugs.
- Know the waters and area you will be boating; tides, currents, sand bars, rocks, and other hazards.
- Make inspection checks listed in **Maintenance - Inspection and Maintenance Schedule**.

Operating In Freezing Temperatures

When using your outboard or having your outboard moored in freezing or near freezing temperatures, keep the outboard tilted down at all times so the gearcase is submerged. This prevents trapped water in gearcase from freezing and causing possible damage to the water pump and other components.

If there is a chance of ice forming on the water, the outboard should be removed and drained completely of water. If ice should form at the water level inside the outboard driveshaft housing, it will block water flow to the engine causing possible damage.

Operating In Salt Water Or Polluted Water

We recommend that you flush the internal water passages of your outboard with fresh water after each use in salt or polluted water. This will prevent a buildup of deposits from clogging the water passages. Refer to **Maintenance - Flushing The Cooling System**.

If you keep your boat moored in the water, always tilt the outboard so the gearcase is completely out of water (except in freezing temperatures) when not in use.

Wash the outboard exterior and flush out the exhaust outlet of the propeller and gearcase with fresh water after each use. Each month, spray Mercury Precision or Quicksilver Corrosion Guard on external metal surfaces. Do not spray on corrosion control anodes as this will reduce the effectiveness of the anodes.

Engine Break-in Procedure

CAUTION

Severe damage to the engine can result by not complying with the Engine Break-in Procedure.

ENGINE BREAK-IN FUEL MIXTURE

Use a 25:1 (4%) gasoline/oil mixture in the first tank of fuel.

BREAK-IN PROCEDURE

Vary the throttle setting during the first hour of operation. During the first hour of operation, avoid remaining at a constant speed for more than two minutes and avoid sustained wide open throttle.

Starting The Engine

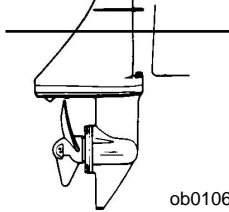
Before starting, read the Pre-Starting Check List, Special Operating Instructions, and Engine Break-in Procedure in the Operation Section.

OPERATION

⚠ CAUTION

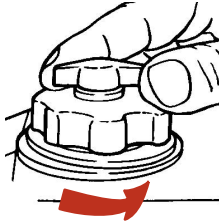
Never start or operate your outboard (even momentarily) without water circulating through all the cooling water intake holes in the gearcase to prevent damage to the water pump (running dry) or overheating of the engine.

1. Lower the outboard to the vertical operating position. Make sure all cooling water intake holes are submerged.



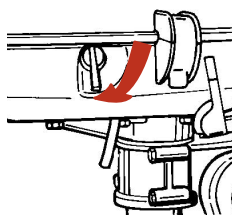
ob01061

2. Open fuel tank vent.



ob01062

3. Open the fuel shut-off valve.

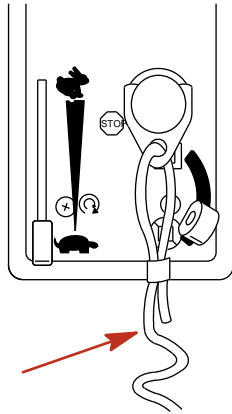


ob01063

4. Attach the lanyard to the stop switch. Refer to **General Information - Lanyard Stop Switch**.

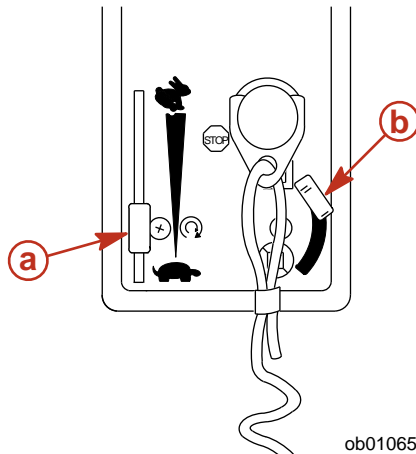
NOTE: The engine will not start unless the lanyard is engaged with the stop switch.

OPERATION



ob01064

5. If engine is cold, move choke lever to closed (up) position. Move halfway down as engine warms up. Move down to the open position after engine is warmed up.
6. Move the throttle lever to the start position.

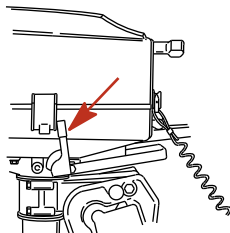


ob01065

a- Throttle lever

b- Choke lever

7. Models with gear shift - Move gear shift lever to neutral position.



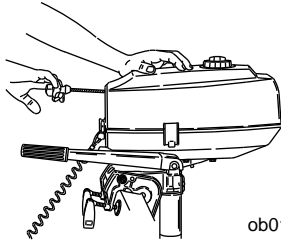
ob01057

OPERATION

⚠ WARNING

Direct Drive Models (non-gear shift) - Outboard is in gear at all times. Do not start the engine with the throttle lever past the start position. Always remain seated when attempting to start the engine. Sudden acceleration could cause loss of balance by occupants resulting in serious injury or death.

8. Always remain seated when attempting to start the engine. Pull the starter rope slowly until the starter engages, then pull rapidly to crank the engine. Allow rope to return slowly. Repeat until engine starts.

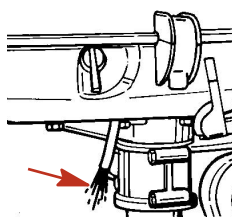


ob01066

NOTE: Starting flooded engine - Move the choke lever down to the open position. Wait 30 seconds, keep the throttle lever at the start position, then continue to crank engine for starting.

9. After engine starts, check for a steady stream of water flowing out of the water pump indicator hole.

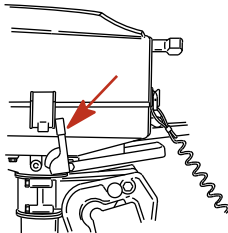
IMPORTANT: If no water is coming out of the water pump indicator hole, stop engine and check cooling water intake for obstruction. No obstruction may indicate a water pump failure or blockage in the cooling system. These conditions will cause the engine to overheat. Have the outboard checked by your dealer. Operating the engine while overheated will cause engine damage.



ob01067

Gear Shifting - Models with Gear Shift

- The outboard has two gear shift positions to provide operation: forward and neutral.
- Reduce throttle speed to idle speed.
- Always shift outboard into gear with a quick motion.

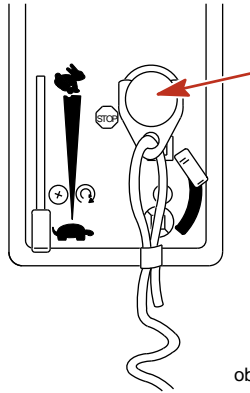


ob01057

Stopping The Engine

Reduce engine speed and push in the stop switch or pull the lanyard.

OPERATION



ob01068

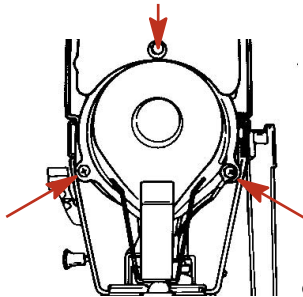
Emergency Starting

If the starter rope should break or the rewind starter fails, use the spare starter rope (provided) and follow this procedure.

⚠ WARNING

When using the emergency starter rope to start engine, the start at idle speed protection is inoperative. Make sure to have the engine speed set at slow, and the outboard gear shift positioned in neutral to prevent outboard from starting in gear. Sudden unexpected acceleration could result in serious injury or death.

1. Side shift models - Shift outboard to neutral position.
2. Remove three bolts and rewind starter assembly.



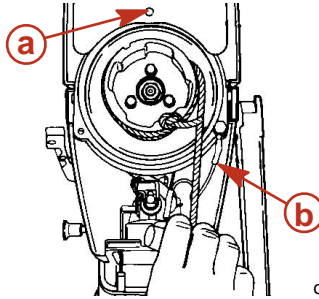
ob01069

3. Reinstall the rear rewind starter mounting bolt into the fuel tank.

IMPORTANT: The black lead from the engine stop switch will have to be reconnected in order to use the engine stop switch to stop the engine.

4. Reconnect the black lead using a bolt from the rewind starter.

OPERATION



ob01070

a - Bolt

b - Black lead

5. Place the starter rope knot into the starter cup notch and wind the rope clockwise around the cup.
6. Pull the starter rope to start the engine.

WARNING

To prevent getting an electrical shock, do not touch any ignition component, wiring, or spark plug wire when starting or running the engine.

WARNING

The exposed moving flywheel can cause serious injury. Keep your hands, hair, clothing, tools, and other objects away from engine when starting or running the engine. Do not attempt to reinstall the rewind starter assembly or top cowl when engine is running.

MAINTENANCE

Outboard Care

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

⚠ WARNING

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

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

SELECTING REPLACEMENT PARTS FOR YOUR OUTBOARD

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


⚠ WARNING

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

EPA Emissions

EMISSION CERTIFICATION LABEL

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

		EMISSION CONTROL INFORMATION	
This engine conforms to <input type="checkbox"/> model year EPA regulations for Marine SI engines. Refer to Owner's Manual for required maintenance.			
a →	IDLE SPEED: <input type="text"/>	FAMILY: <input type="text"/>	f →
b →	<input type="text"/> hp	<input type="text"/> cc	g →
c →	TIMING (IN DEGREES): <input type="text"/>	FEL: <input type="text"/> g/kWh	h →
d →	Standard spark plug: <input type="text"/>	<input type="text"/>	i →
e →	Suppressor spark plug: <input type="text"/>		
	GAP: <input type="text"/>		
	Valve Clearance (Cold) mm	Intake <input type="text"/>	
		Exhaust <input type="text"/>	

ob01071

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

OWNER RESPONSIBILITY

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

MAINTENANCE

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

Inspection And Maintenance Schedule

BEFORE EACH USE

- Visually inspect the fuel system for deterioration or leaks.
- Check outboard for tightness on transom.
- Check steering system for binding or loose components.
- Check propeller blades for damage.

AFTER EACH USE

- Flush out the outboard cooling system if operating in salt or polluted water. See **Flushing the Cooling System**.
- Wash off all salt deposits with fresh water if operating in salt water.

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

- Lubricate all lubrication points. Lubricate more frequently when used in salt water. See **Lubrication Points**.
- Replace spark plug at first 100 hours or first year. After that, inspect spark plug every 100 hours or once yearly. Replace spark plug as needed. See **Spark Plug Inspection and Replacement**.
- Drain and replace gearcase lubricant. See **Gearcase Lubrication**.
- Check corrosion control anode. Check more frequently when used in salt water. See **Corrosion Control Anodes**.
- Lubricate splines on the drive shaft.¹
- Replace water pump impeller.¹
- Check tightness of bolts, nuts, and other fasteners.

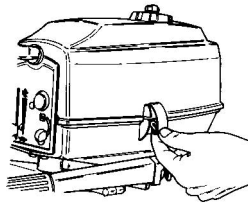
BEFORE PERIODS OF STORAGE

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

Top Cowl Removal And Installation

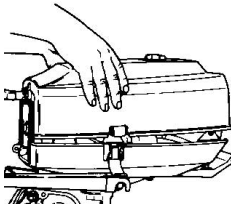
REMOVAL

1. Open cowl latches on both sides of cowl.



ob01072

2. Lift top cowl off engine.



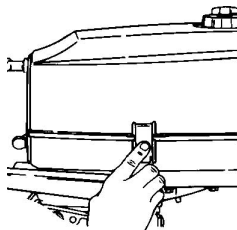
ob01214

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

MAINTENANCE

INSTALLATION

1. Position top cowl over engine. Place the rear of the cowl on first, then the front.
2. Engage cowl latches to fasten cowl.



ob01215

Exterior Care

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

Flushing The Cooling System

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

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

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

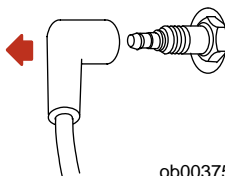
1. Place outboard in a test tank containing fresh water. Start the outboard and operate for 3 to 4 minutes.

Propeller Replacement

WARNING

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

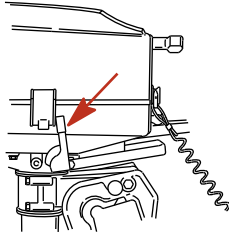
1. Remove the spark plug lead to prevent engine from starting.



ob00375

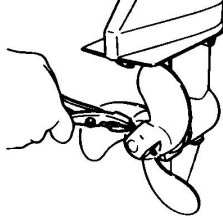
2. Models with gear shift - Move gear shift lever into neutral.

MAINTENANCE



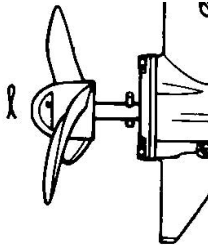
ob01057

3. Straighten and remove cotter pin.



ob01217

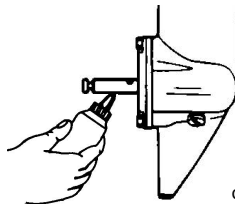
4. Pull propeller straight off shaft. If propeller is seized to the shaft and cannot be removed, have the propeller removed by an authorized dealer.



ob01218

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

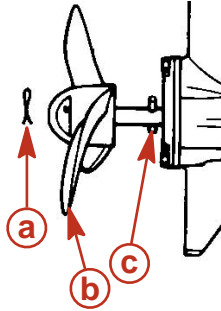
5. Coat the propeller shaft with Quicksilver or Mercury Precision Lubricants Anti-Corrosion Grease or 2-4-C with Teflon.



ob01219

6. If removed, insert drive pin into propeller shaft.
7. Slide propeller onto shaft, making sure the slot in propeller engages with the drive pin.
8. Install the cotter pin through hole in propeller and bend to hold in place.

MAINTENANCE



ob01220

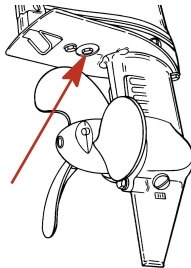
- a- Cotter pin
- b- Propeller

c- Drive pin

Corrosion Control Anode

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

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



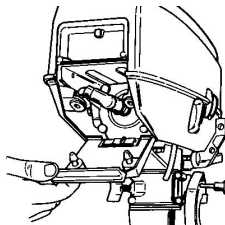
ob01221

Spark Plug Inspection And Replacement

WARNING

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

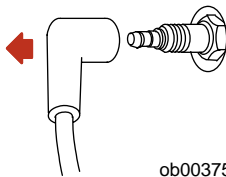
1. Open the spark plug access door.



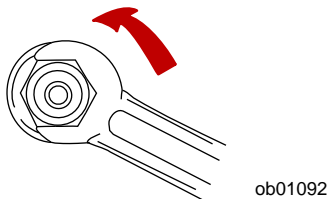
ob01222

MAINTENANCE

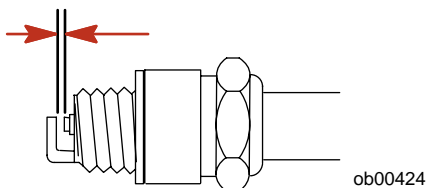
- Remove the spark plug boot. Twist the rubber boots slightly and pull off.



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



- Set spark plug gap to specifications.



Spark Plug	
Spark plug gap	1.0 mm (0.040 in.)

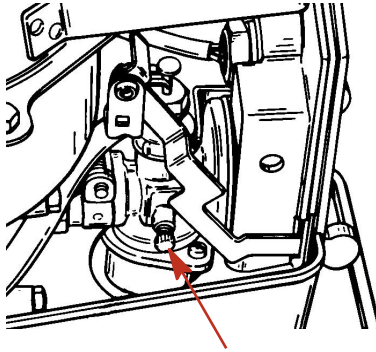
- Before installing spark plug, clean off any dirt on the spark plug seats. Install plugs finger tight, and then tighten 1/4 turn or torque to specifications.

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

Engine Idle Speed Adjustment

- With boat tied securely to dock, start engine and allow it to warm up.
- With outboard in forward gear, reduce engine speed to idle.
- Adjust the idle speed screw to obtain the recommended engine idle speed. See **General Information - Specifications**.

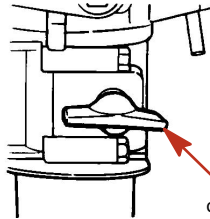
MAINTENANCE



ob01223

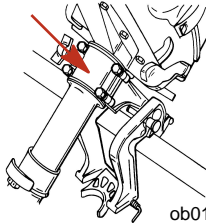
Lubrication Points

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



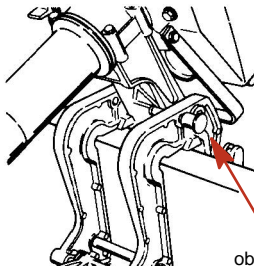
ob01224

- Swivel Bracket - Remove four (4) bolts and rear cover and lubricate the inner nylon bushings.



ob01225

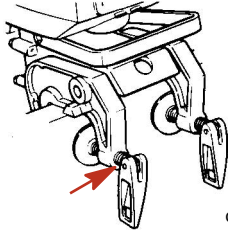
- Tilt support pin



ob01059

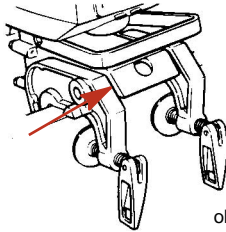
- Transom clamp screws - Lubricate threads.

MAINTENANCE



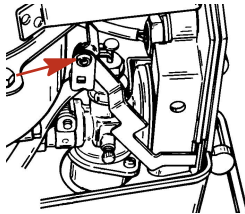
ob01226

2. Lubricate the following with Light Weight Oil.
 - Tilt Pivot.



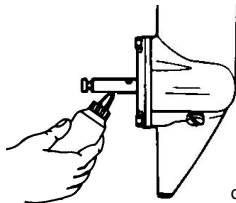
ob01227

- Throttle linkage - Lubricate pivot point.



ob01228

3. Lubricate the following with Quicksilver or Mercury Precision Lubricants Anti-Corrosion Grease or 2-4-C with Teflon.
 - Propeller Shaft - Refer to **Propeller Replacement** for removal and installation of the propeller. Coat the entire propeller shaft with lubricant to prevent the propeller hub from corroding to the shaft.



ob01219

Gearcase Lubrication

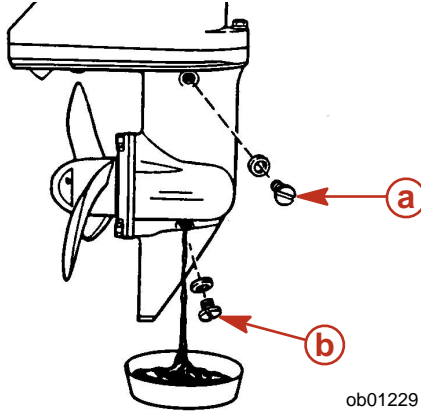
When adding or changing gearcase lubricant, visually check for the presence of water in the lubricant. If water is present, it may have settled to the bottom and will drain out prior to the lubricant, or it may be mixed with the lubricant, giving it a milky colored appearance. If water is noticed, have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

MAINTENANCE

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

DRAINING GEARCASE

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



a - Vent plug

b - Fill/drain plug

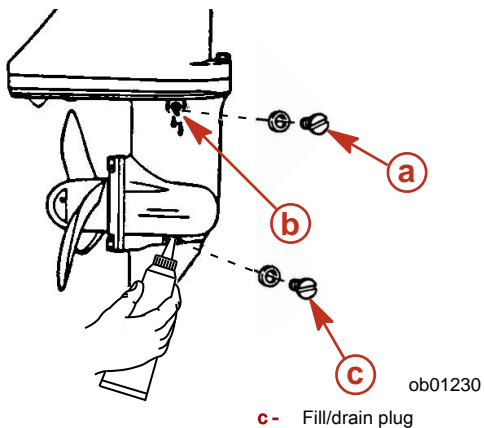
GEARCASE LUBRICANT CAPACITY

Gearcase lubricant capacity is approximately 135 ml (4.5 fl. oz.).

CHECKING LUBRICANT LEVEL AND REFILLING GEARCASE

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

MAINTENANCE



- a** - Vent plug
- b** - Vent hole

- c** - Fill/drain plug

IMPORTANT: Replace sealing washers if damaged.

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

Submerged Outboard

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

STORAGE

Storage Preparation

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

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

CAUTION

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

FUEL SYSTEM

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

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

- Pour the required amount of gasoline stabilizer (follow instructions on container) into fuel tank. Tip fuel tank back and forth to mix stabilizer with the fuel.
- Place the outboard in water. Run the engine for five minutes to allow treated fuel to reach the carburetor.

Protecting External Outboard Components

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

Protecting Internal Engine Components

NOTE: Make sure the fuel system has been prepared for storage. Refer to Fuel System, preceding.

IMPORTANT: Refer to **Maintenance - Spark Plug Inspection and Replacement** for correct procedure for removing spark plug boots.

- Place the outboard in water. Start the engine and let it run in neutral to warm up.
- With engine running at fast idle, stop the fuel flow by closing the fuel shut-off valve. When engine begins to stall, quickly spray Quicksilver or Mercury Precision Lubricants Storage Seal into carburetor until engine stops from lack of fuel.
- Remove the spark plug and inject a five second spray of storage seal around the inside of the cylinder.
- Rotate the flywheel manually several times to distribute the storage seal in the cylinder. Reinstall spark plug.

Gearcase

- Drain and refill the gearcase lubricant (refer to **Maintenance - Gearcase Lubrication**).

Positioning Outboard For Storage

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

CAUTION

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

TROUBLESHOOTING

Engine Will Not Start

POSSIBLE CAUSES

- Incorrect starting procedure. Refer to **Operation** section.
- Old or contaminated gasoline.
- Engine flooded. Refer to **Operation** section.
- Fuel is not reaching the engine.
 - a. Fuel tank is empty.
 - b. Fuel tank vent not open or restricted.
 - c. Fuel shut-off valve closed
 - d. Fuel tank filter obstructed.
- Ignition system component failure.
- Spark plug fouled or defective. Refer to **Maintenance** section.
- Carburetor inlet needle stuck from contaminated gasoline.

Engine Runs Erratically

POSSIBLE CAUSES

- Spark plug fouled or defective. Refer to **Maintenance** section.
- Fuel is being restricted to the engine.
 - a. Fuel tank vent not open or restricted.
 - b. Fuel tank filter obstructed.
- Ignition system component failure.

Performance Loss

POSSIBLE CAUSES

- Damaged or improper size propeller.
- Boat overloaded or load improperly distributed.
- Excessive water in bilge.
- Boat bottom is dirty or damaged.

OWNER SERVICE ASSISTANCE

Local Repair Service

Always return your outboard to your local authorized dealer should the need for service arise. Only he has the factory trained mechanics, knowledge, special tools, equipment, and genuine parts and accessories 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 Mercury Marine Service Office.

Parts And Accessories Inquiries

All inquiries concerning genuine 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. When inquiring on parts and accessories, the dealer requires the model and serial number to order the correct parts.

Service Assistance

Your satisfaction with your outboard product is very important to your dealer and to us. If you ever have a problem, question or concern about your outboard product, contact your dealer or any authorized Mercury Marine 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 number of your outboard
- The name and address of your dealership
- Nature of problem

Mercury Marine Service Offices

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

United States		
Telephone	(920) 929-5040	Mercury Marine W6250 W. Pioneer Road P.O. Box 1939 Fond du Lac, WI 54936-1939
Fax	(920) 929-5893	
Website	www.mercurymarine.com	

Canada		
Telephone	(905) 567-6372	Mercury Marine Ltd. 2395 Meadowpine Blvd. Mississauga, Ontario L5N 7W6 Canada
Fax	(905) 567-8515	

OWNER SERVICE ASSISTANCE

Australia, Pacific		
Telephone	(61) (3) 9791-5822	Mercury Marine Australia 132-140 Frankston Road Dandenong, Victoria 3164 Australia
Fax	(61) (3) 9793-5880	

Europe, Middle East, Africa		
Telephone	(32) (87) 32 • 32 • 11	Marine Power - Europe, Inc. Parc Industriel de Petit-Rechain B-4800 Verviers, Belgium
Fax	(32) (87) 31 • 19 • 65	

Mexico, Central America, South America, Caribbean		
Telephone	(954) 744-3513	Mercury Marine 11650 Interchange Circle North Miramar, FL 33025 U.S.A.
Fax	(954) 744-3535	

Japan		
Telephone	81-053-423-2500	Mercury Marine - Japan Anshin-cho 283-1 Hamamatsu Shizuoka-ken, Japan 435-0005 Japan
Fax	81-053-423-2510	

Asia, Singapore		
Telephone	5466160	Mercury Marine Singapore 72 Loyang Way Singapore, 508762
Fax	5467789	