

## Thank You

for your purchase of one of the finest outboards available. You have made a sound investment in boating pleasure. Your outboard has been manufactured by Mercury Marine, a world leader in marine technology and outboard manufacturing since 1939. These years of experience have been committed to the goal of producing the finest quality products. This led to Mercury Marine's reputation for strict quality control, excellence, durability, lasting performance and being the best at providing after the sale support.

Please read this manual carefully before operating your outboard. This manual has been prepared to assist you in the operation, safe use and care of your outboard.

All of us at Mercury Marine took pride in building your outboard and wish you many years of happy and safe boating.

Again, thank you for your confidence in Mercury Marine.

## EPA Emissions Regulations

Outboards sold by Mercury Marine in the United States are certified to the United States Environmental Protection Agency as conforming to the requirements of the regulations for the control of air pollution from new outboard motors. This certification is contingent on certain adjustments being set to factory standards. For this reason, the factory procedure for servicing the product must be strictly followed and, wherever practicable, returned to the original intent of the design.

**Maintenance, replacement, or repair of the emission control devices and systems may be performed by any marine engine repair establishment or individual.**

Engines are labeled with an Emission Control Information decal as permanent evidence of EPA certification.

### WARNING

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

## 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 Information** Section 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.

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

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

Litho in U.S.A.

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Mercury, Mercury Marine, MerCruiser, Mercury MerCruiser, Mercury Racing, Mercury Precision Parts, Mercury Propellers, Mariner, Quicksilver, #1 On The Water, Alpha, Bravo, Pro Max, OptiMax, Sport-Jet, K-Planes, MerCathode, RideGuide, SmartCraft, Zero Effort, M with Waves logo, Mercury with Waves logo, and SmartCraft logo are all registered trademarks of Brunswick Corporation. Mercury Product Protection logo is a registered service mark of Brunswick Corporation.

## Declaration of Conformity - Outboard, Conventional 2-Stroke

Manufacturer:

Tohatsu Marine Corporation (TMC)  
Mercury Marine Joint Venture  
Shimodaira 4495-9, Komagane-City,  
Nagano, Japan 399-4101

Authorized Representative:

Brunswick Marine in EMEA Inc.  
Parc Industriel De Petit-Rechain,  
B-2800 Verviers, Belgium

**Safety of Machinery Directive 98/37/EC**

Principles of safety integration (1.1.2)	ISO 12100-1; ISO 12100-2; EN 1050
Noise (1.5.8)	ICOMIA 39/94
Vibration (1.5.9)	ICOMIA 38/94

Engine type: Outboard  
Fuel type: Gasoline  
Combustion cycle: 2-Stroke

This declaration is issued under the sole responsibility of Mercury Marine and Brunswick Marine in EMEA Inc.

**Name and function:**



Mark D. Schwabero  
President, Mercury Marine, Fond du Lac, WI USA

**Date and place of issue:**

November 20, 2008  
Mercury Marine, Fond du Lac, WI USA  
European Regulations Contact:  
Regulations and Product Safety Department,  
Mercury Marine, Fond du Lac, WI USA



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# 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. In the United States and Canada, 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 +1 920 929 5893

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 Marine Power Service Center 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 Pioneer Road  
P.O. Box 1939  
Fond du Lac, WI 54936-1939  
920-929-5054  
Fax 920-929-5893

## WARRANTY INFORMATION

***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.

### **FourStroke Outboard Limited Warranty United States, Canada, Europe and Confederation of Independent States**

Outside the United States, Canada, Europe and Confederation of Independent States - check with local distributor.

**WHAT IS COVERED:** Mercury Marine warrants its new products to be free of defects in material and workmanship during the period described below.

## WARRANTY INFORMATION

**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 one (1) year from the date of first retail sale, or one (1) year from the date in which the product was first put into service, 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 from one recreational use customer to a subsequent recreational use customer upon proper re-registration of the product. Unexpired warrant coverage cannot be transferred either to or from a commercial use customer. Warranty coverage may be terminated for used or repossessed product; or product purchased at auction, from a slvage yard, or from an insurance company.

**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. Routine maintenance outlined in the Operation and Maintenance Manual must be timely performed in order to maintain warranty coverage. Mercury Marine reserves the right to make future warranty coverage contingent on proof of proper maintenance.

## WARRANTY INFORMATION

**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 remanufactured 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.

## 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, 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, or running the boat with the engine trimmed out too far.. 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.

## WARRANTY INFORMATION

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.

### FourStroke Outboard Limited Warranty (Middle-East, and Africa)

**WHAT IS COVERED:** Mercury Marine warrants its new Outboard and Jet Products to be free of defects in material and workmanship during the period described below.

# WARRANTY INFORMATION

**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 one (1) year from the date on which the product was first put into service, 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 from one recreational use customer to a subsequent recreational use customer upon proper re-registration of the product. Unexpired warranty coverage cannot be transferred either to or from a commercial use customer.

**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. Routine maintenance outlined in the Operation and Maintenance Manual must be timely performed in order to maintain warranty coverage. Mercury Marine reserves the right to make 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.



# WARRANTY INFORMATION

**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 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, or damage to the product from insufficient cooling water caused by blockage of the cooling system by foreign body, running the engine out of water, mounting the engine too high on the transom, or running the boat with the engine trimmed out too far.

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.

## WARRANTY INFORMATION

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.

<b>DISCLAIMERS AND LIMITATIONS:</b>
<b>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.</b>

### 3 Year Limited Warranty Against Corrosion

**WHAT IS COVERED:** Mercury Marine warrants that each new Mercury, Mariner, Mercury Racing, Sport Jet, M<sup>2</sup> Jet Drive, Tracker by Mercury Marine Outboard, Mercury MerCruiser Inboard or Sterndrive Engine (Product) will not be rendered inoperative as a direct result of corrosion for the period of time described below.

## WARRANTY INFORMATION

**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 (noncommercial use) purchaser upon proper reregistration 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 predelivery 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 remanufactured 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.

## WARRANTY INFORMATION

**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 (onshore 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 antifouling paints is also not covered by this limited warranty. If antifouling protection is required, Tri-Butyl-Tin-Adipate (TBTA) base antifouling 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 INFORMATION

## 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 driveshaft 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.

## WARRANTY INFORMATION

5. Additional service work requested by customer other than that necessary to satisfy the warranty obligation.
6. Labor performed by other than an authorized dealer may be covered only under the 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.

## WARRANTY INFORMATION

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 onboard 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**

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.

# GENERAL INFORMATION

## Boat Horsepower Capacity

### WARNING

Exceeding the boat's maximum horsepower rating can cause serious injury or death. Overpowering the boat can affect boat control and flotation characteristics or break the transom. Do not install an engine that exceeds the boat's maximum power rating.

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.

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

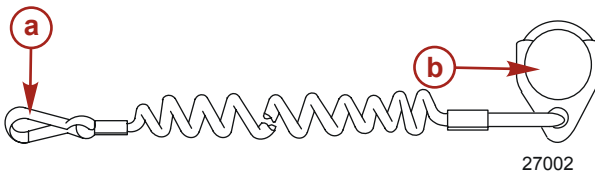
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## Lanyard Stop Switch

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.

## GENERAL INFORMATION

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.



- a** - Lanyard cord
- b** - Lanyard stop switch

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.

## GENERAL INFORMATION

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

**If the operator falls out of the boat, stop the engine immediately to reduce the possibility of serious injury or death from being struck by the boat. Always properly connect the operator to the stop switch using a lanyard.**

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.

# GENERAL INFORMATION

## 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.



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

**A spinning propeller, a moving boat, or any solid device attached to the boat can cause serious injury or death to swimmers. Stop the engine immediately whenever anyone in the water is near your boat.**

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.

# GENERAL INFORMATION

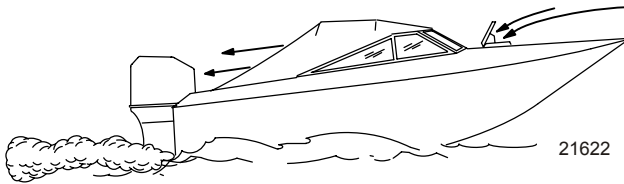
Early symptoms of carbon monoxide poisoning which should not be confused with seasickness or intoxication, include headache, dizziness, drowsiness, and nausea.

## **⚠ WARNING**

**Carbon monoxide poisoning can lead to unconsciousness, brain damage, or death. Keep the boat well ventilated while at rest or underway and avoid prolonged exposure to carbon monoxide.**

### **GOOD VENTILATION**

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



**Example of desired air flow through the boat**

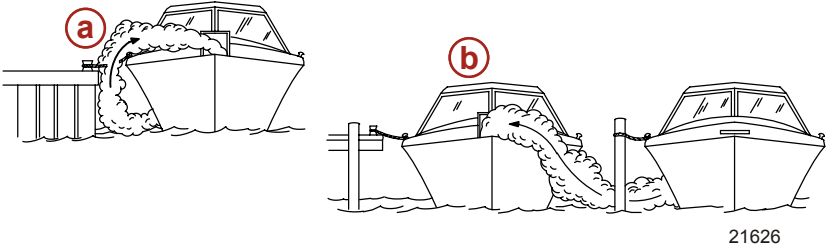
### **POOR VENTILATION**

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.

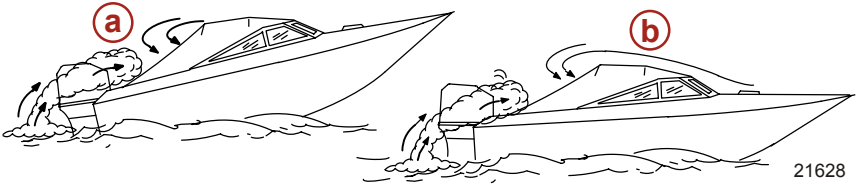
# GENERAL INFORMATION

## 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

## 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.

**IMPORTANT: Check with your dealer before installing accessories. The misuse of approved accessories or the use of nonapproved accessories can damage the product.**

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.

# GENERAL INFORMATION

## 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 boat's 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 onboard 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.



## GENERAL INFORMATION

**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 operator's 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 waterskiing 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 the serial number and other important information for future reference.

Please record the serial number of the engine as indicated (on the lower engine cover and the cylinder block) in the space below. This number will come in handy in the event of theft and it can help you to quickly identify the product type.

Serial number:
Model year:
Model designation:
Year manufactured:

# GENERAL INFORMATION

Certified Europe Insignia (as applicable):

## 4/5 Specifications

Models	4C	5B-D
Overall length	700 mm ( 27.6 in.)	
Overall width	310 mm (12.2 in.)	
Overall height	S=1007 mm (39.6 in.) L=1134 mm (44.6 in.)	
	—	UL=1261 mm (49.6 in.)
Transom height	S=435 mm (17.1 in.) L=562 mm (22.1 in.) UL=689 mm (27.1 in.)	
Weight	S=20.0 kg (44 lb) L=20.5 kg (45 lb)	
	—	UL=21.0 kg (46 lb)
Output	2.9 kW (4 HP)	3.7 kW (5 HP)
Max operating range	4500 – 5500 rpm	
Idle speed in forward gear	850 rpm	
Idle speed in neutral gear	1000 rpm	
Engine type	2-stroke	
Number of cylinder	1	
Bore x stroke	55 x 43 mm (2.17 x 1.69 in.)	
Displacement	102 mL (6.22 Cu in.)	
Exhaust system	Through hub exhaust	
Cooling system	Thermostat controlled	
Lubrication system	Engine oil mixed gasoline	
Fuel	Unleaded regular gasoline pump posted 87 Octane (research octane rating of 92)	
Engine oil	Mercury/Quicksilver or recommended 2-stroke engine oil	

## GENERAL INFORMATION

Models	4C	5B-D
Engine oil mixing ratio	1:50 (Engine oil:fuel )	
Starting system	Manual starter	
Ignition system	Flywheel magneto CDI	
Spark plug	NGK BPR7HS-10	
Trim position	6	
Gear oil	Mercury/Quicksilver gear oil or API GLS, SAE #80 to #90, Approximately 195 mL (6.6 fl.oz.)	
Fuel tank capacity	2.5 L (0.66 US gal)	2.5 L (0.66 US gal), 12 L (3.17 US gal)*
Gear reduction ratio	2.15 (13:28)	

\* In case of dual fuel tank system, use together with 12 L separate tank.

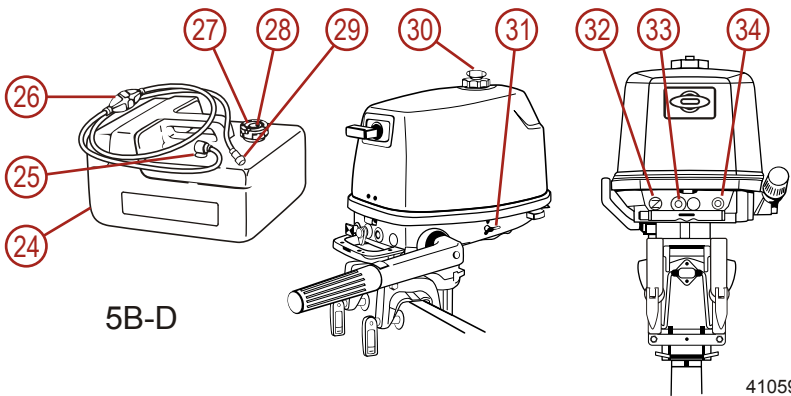
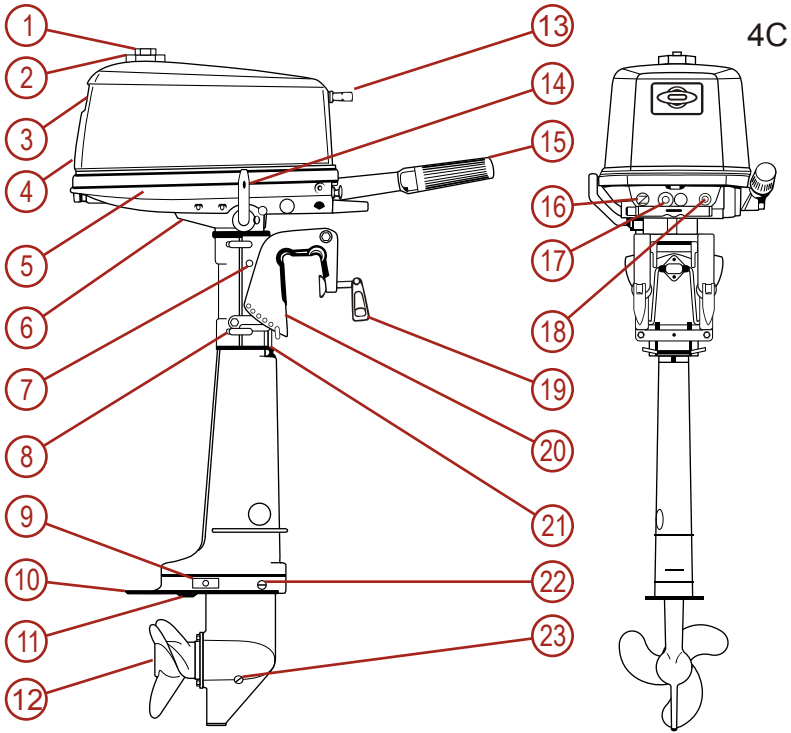
# GENERAL INFORMATION

**NOTE:**



# GENERAL INFORMATION

## Component identification



41059

# GENERAL INFORMATION

- 1 - Air vent screw
- 2 - Fuel tank cap
- 3 - Tilt handle
- 4 - Upper motor cover
- 5 - Lower motor cover
- 6 - Cooling water check port
- 7 - Tilt lever
- 8 - Steering adjustment screw
- 9 - Anode
- 10 - Anti ventilation plate
- 11 - Water inlet
- 12 - Propeller
- 13 - Starter handle
- 14 - Shift lever
- 15 - Throttle grip
- 16 - Choke knob
- 17 - Stop switch
- 18 - Fuel valve knob
- 19 - Clamp screw
- 20 - Clamp bracket
- 21 - Thrust rod
- 22 - Oil plug(upper)
- 23 - Oil plug(lower)
- 24 - Fuel tank
- 25 - Fuel pick up elbow
- 26 - Primer bulb
- 27 - Fuel tank cap
- 28 - Air vent screw
- 29 - Fuel connector
- 30 - Air vent screw
- 31 - Fuel valve
- 32 - Chock knob
- 33 - Stop switch
- 34 - Fuel connector

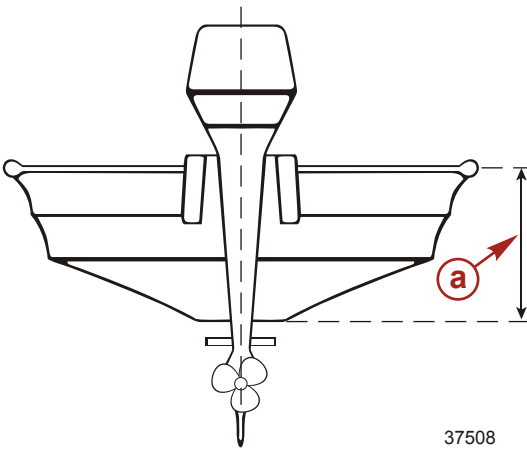
# INSTALLATION

## Installing Outboard

### INSTALLING OUTBOARD ON TRANSOM

**IMPORTANT:** Most boats are rated and certified in terms of their maximum horsepower, and this is shown on the boat's certification plate. Do not equip your boat with an outboard that exceeds this limit. If in doubt, contact your dealer. Do not operate the engine unit until it has been securely mounted on the boat in accordance with the instructions below.

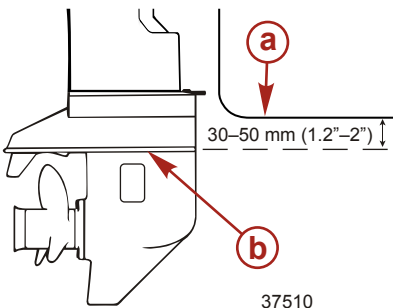
1. Position the outboard at the center of the transom. Mount it using a cushioning pad or plate.



**a** - Boat transom

### BOAT TRANSOM HEIGHT REQUIREMENT

1. Measure the transom height of your boat. The anti-ventilation plate should be 30 - 50 mm (1.2 - 2 in.) below the bottom of the boat.



**a** - Bottom of hull

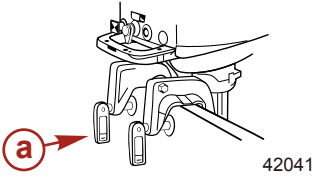
**b** - Anti-ventilation plate



# INSTALLATION

## ATTACH THE ENGINE TO THE BOAT

1. Tighten the clamp screws by turning their handles. Secure with a cable to prevent accidental loss overboard.



**a** - Clamp screw

# TRANSPORTING

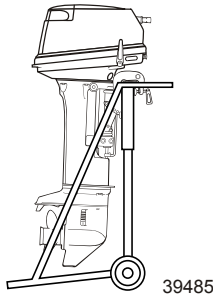
## Removing the Motor

**IMPORTANT:** Ensure the proper procedures are followed for transportation and storage of the outboard to avoid the possibility of oil leaks.

1. Stop the engine, close the air vent screw.
2. Close the fuel valve knob (5B). Disconnect the fuel connector (5BS).
3. Remove the motor from the hull and completely drain the water from the gear case.

## Carrying the Motor

Be sure to keep the engine vertical posture whenever you carry the motor.



**NOTE:** If you carry the motor horizontal posture, keep the power head higher than the propeller.

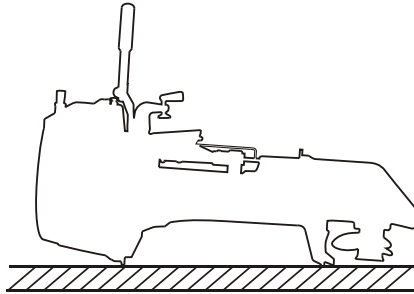
**IMPORTANT:** Beware of explosion danger. Spilled and vapored gasoline may easily catch fire and explode. Be sure to fully discharge gasoline from the carburetors when transporting the engine. Wipe off spilled gasoline with a rag.

## Storing the Motor

1. With the outboard still in the water, close the fuel shut-off valve or disconnect the remote fuel line (if equipped) 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.

# TRANSPORTING

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.



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3. Close the fuel tank vent.

## Trailing the Boat

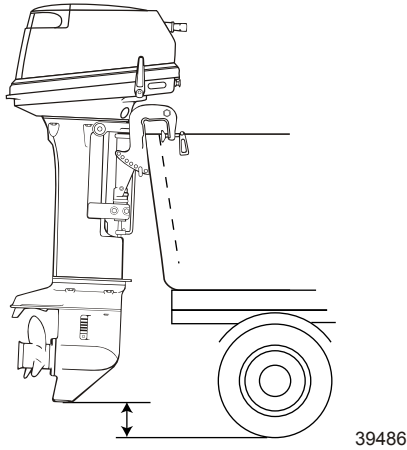
**IMPORTANT:** The tilt lock mechanism is not intended to support the outboard in the tilted up position when trailering. Use of the tilt lock mechanism could allow the outboard to bounce and drop down causing damage to the outboard.

The boat should be trailered with the outboard tilted down (normal operating position). If trailering with engine fully down is not available (the gear case skeg is too close to the road in a vertical position), fix the motor securely using a device (like a transom saver bar) in the tilted 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

Set the gear shift into Forward (F) gear. This prevents the propeller from spinning freely.



**NOTE:** *The tilt support device supplied on your outboard is not intended for towing. It is intended to support the engine while the boat is ducked, beached, etc.*

# FUEL AND OIL

## Fuel Recommendations

**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 Marine 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 are 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 Marine 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.

## FUEL AND OIL

The fuel system components on your Mercury Marine 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

**Fuel leakage is a fire or explosion hazard, which can cause serious injury or death. Periodically inspect all fuel system components for leaks, softening, hardening, swelling, or corrosion, particularly after storage. 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 Marine 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.

# FUEL AND OIL

## Oil Recommendation

Recommended Oil	Mercury or Quicksilver Premium 2-Cycle TC-W3 Outboard Oil
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**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 1:25 oil /gasoline mixture in the first tank of fuel.

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

### GASOLINE/OIL MIXING RATIO CHART

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

## Engine Break-In

### Engine Break-In Fuel Mixture

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

### Engine Break-In Procedure

Refer to **Operation - Engine Break-In Procedure** for correct break-in procedure.

# FUEL AND OIL

## Filling Fuel Tank

### WARNING

**Avoid serious injury or death from a gasoline fire or explosion. Use caution when filling fuel tanks. 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.

### **PORTABLE FUEL TANK**

Fill fuel tanks outdoors away from heat, sparks, and open flames. Remove portable fuel tanks from boat to refill them.

Always stop engine before refilling tanks.

Do not completely fill the fuel tank. Leave approximately 10% of tank volume unfilled. Fuel will expand in volume as its temperature rises and can leak under pressure if tank is completely filled.

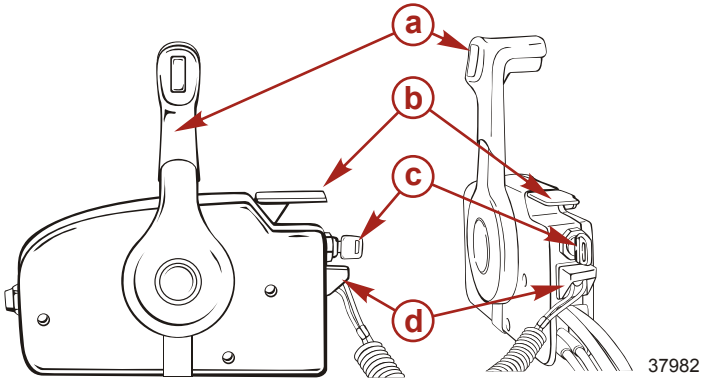


# FEATURES AND CONTROLS

## Features & Controls

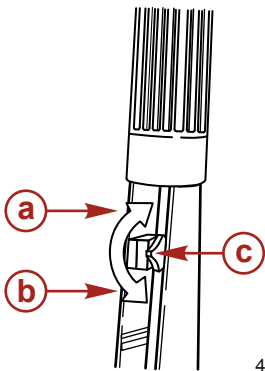
### REMOTE CONTROL FEATURES

Your boat may be equipped with the remote control shown. If not, consult your dealer for a description of the functions and operations of the remote control.



- a** - Remote control handle
- b** - Throttle only lever
- c** - Ignition key switch
- d** - Lanyard stop switch

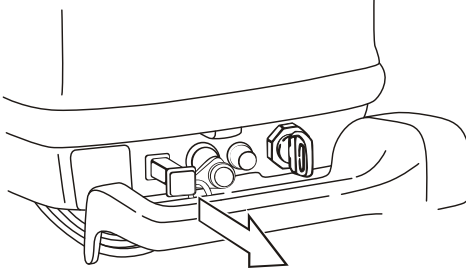
**Throttle Grip Friction Knob:** The steering friction can be adjusted in accordance with your preference by turning the adjustment screw.



- a** - Direction to heavier friction
- b** - Direction to lighter friction
- c** - Throttle adjustment screw

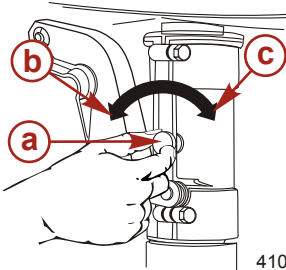
# FEATURES AND CONTROLS

**Choke Knob:** Pull completely out when starting a cold engine. Push halfway in as engine is warming up. Push in completely after engine is warmed up.



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**Steering Friction Adjustment:** The steering friction can be adjusted in accordance with your preference by turning the adjustment screw.



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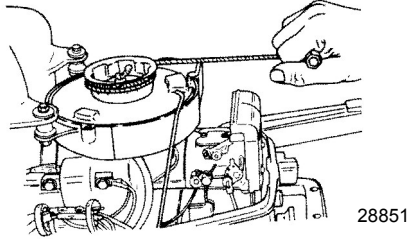
- a** - Steering adjustment screw
- b** - Turn counterclockwise to lighter steering
- c** - Turn clockwise to heavier steering

## WARNING

Insufficient friction adjustment can cause serious injury or death due to loss of boat control. When setting the friction adjustment, maintain sufficient steering friction to prevent the outboard from steering into a full turn if the tiller handle or steering wheel is released.

# FEATURES AND CONTROLS

**Starter Rope:** Pull the starter handle slowly until you feel engagement. Then pull it quickly. Repeat it necessary till started.

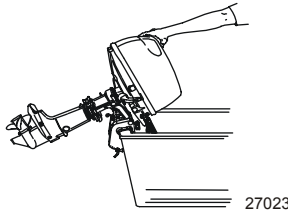


When starting the engine, push the choke knob back then return the grip to SLOW position and run the engine to warm up for several minutes.

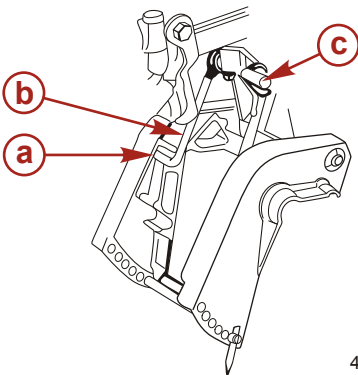
## Tilting Outboard

### TILTING TO FULL UP POSITION

1. Stop the engine. Shift the outboard into Forward (F) gear.
2. Take hold of the top cowl grip and raise outboard to the full up position.



3. Then slightly lower the motor for locking at tilt-up position.



- a - Tilt up position
- b - Tilt stopper
- c - Tilt lever

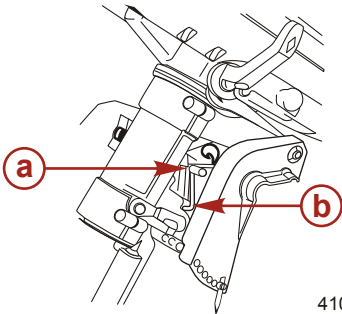
41065

# FEATURES AND CONTROLS

4. The spring loaded tilt lock lever will engage automatically and lock the outboard in full up position.

## LOWERING TO RUN POSITION

1. Raise the outboard and pull up on the tilt release lever. Gently lower outboard down.



- a - Tilt lever
- b - Tilt stopper

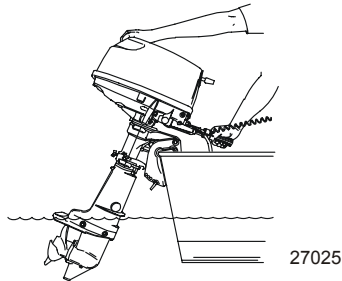
41066

## Shallow Water Operation

This outboard has a shallow water drive position. This will allow you to tilt the outboard to a higher position to prevent hitting bottom.

## ENGAGING SHALLOW WATER DRIVE

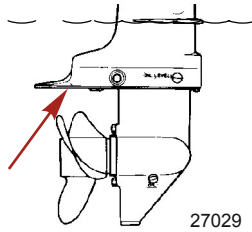
1. Reduce engine speed to idle in forward gear. Take hold of the top cowl grip and raise outboard to the higher tilt position. The spring loaded tilt lock lever will engage automatically and lock the outboard in the shallow water drive position.



27025

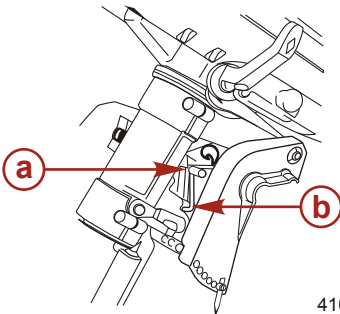
# FEATURES AND CONTROLS

2. Ensure the cooling water intake is submerged.



**IMPORTANT: Operate outboard at slow speed for shallow water operation and keep the cooling water intake submerged.**

3. To release outboard back down to run position, tilt outboard up slightly (approximately  $15^\circ$ ), then pull up on the tilt release lever. Gently lower outboard down to the normal running position.



- a** - Tilt lever
- b** - Tilt stopper

Please follow the instructions below.

- Be sure that the water intake is submerged at all times and that water is continuously flowing from the cooling water pump indicator hole.
- Be sure to run the engine slowly when using the shallow water drive. Running at higher speeds will result in lack of control and may damage the mounting bracket.
- Care must be taken while running in this tilt position not come in contact with the bottom, or submerged objects, especially in reverse. This may cause damage to the motor and/or boat.

# FEATURES AND CONTROLS

## Trim Angle Adjustment

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 following instructions explain how to set the best angle of the boat.

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.

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

The trim angle is adjusted by setting the trim position pin in the correct trim position.

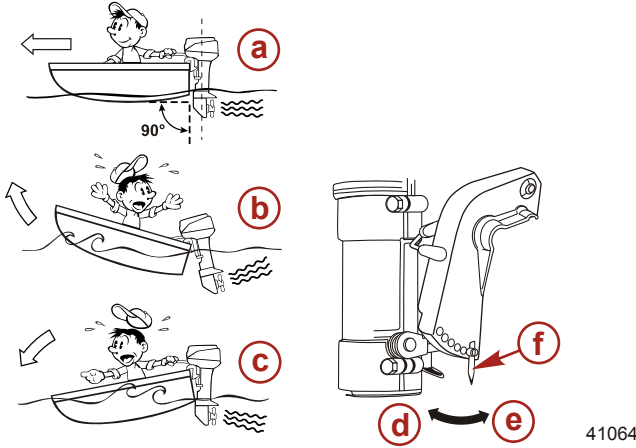
# FEATURES AND CONTROLS

## TRIM POSITION ADJUSTMENTS

- **Correct trim:** The trim angle is optimum when the boat is parallel to the water surface while running.
- **Trim down:** If the trim angle is excessive, the bow will rise out of the water and the speed will decrease. Furthermore, the bow may sway or the bottom may slam the water while cruising. In this case, decrease the trim angle by setting the trim position pin in a lower position.

# FEATURES AND CONTROLS

- **Trim up:** If the trim angle is too small, the bow will enter the water, the speed will decrease, and water may enter the boat. In this case, the trim angle should be increased by setting the trim position pin in a higher position.



- a** - Correct trim
- b** - Trim down
- c** - Trim up
- d** - Move pin to raise bow up
- e** - Move pin to lower bow down
- f** - Trim position pin

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# 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 boats' 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 the trapped water in the 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.

# OPERATION

## Operating at High Elevations

**IMPORTANT:** To prevent serious damage to the engine caused by a lean fuel mixture, do not operate the outboard (if the jets were changed for high elevation) at a lower elevation unless the jets are changed again to correspond to the new elevation.

Operating the outboard at an elevation higher than 762 m (2500 ft.) above sea level may require a carburetor jet change. Consult your dealer. This will reduce the normal performance loss experienced as a result of reduced oxygen in the air causing an overly rich fuel mixture.

## Operating in Saltwater 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

**IMPORTANT:** Failure to follow the engine break-in procedures can result in poor performance throughout the life of the engine and can cause engine damage. Always follow break-in procedures.

### ENGINE BREAK-IN FUEL MIXTURE

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

### BREAK-IN PROCEDURE

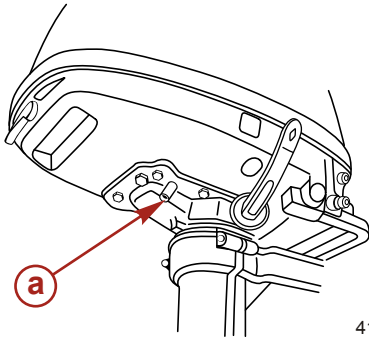
Vary the throttle setting during the first hour of operation. During the first hour of operation, avoid remaining at a constant speed for more than two minutes and avoid sustained wide open throttle.

# OPERATION

## Warming Up the Engine

It's important to warm up the engine for three minutes. This allows the lubrication system to circulate and deliver oil to all the moving parts of an engine.

Operating the engine without warm up will reduce engine performance and shorten the life of the engine. Be sure to check that cooling water is coming out of the water pump indicator hole during warm up.



**a** - Water pump indicator hole

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### *NOTICE*

Without sufficient cooling water, the engine, the water pump, and other components will overheat and suffer damage. Provide a sufficient supply of water to the water inlets during operation.

**Engine speed:** Idling speed after warming up.

In Gear	In Neutral
850 rpm	1000 rpm

## Starting the Engine

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

### STARTING THE ENGINE

**IMPORTANT:** Be sure to connect the emergency lanyard to your waist or clothing. The engine will shut down if the lanyard becomes disconnected from the engine.

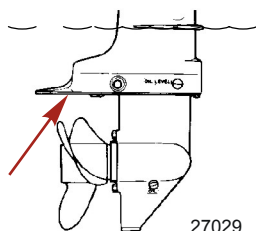
# OPERATION

**NOTE:** The engine will not start unless the lanyard has been properly connected to the emergency stop switch.

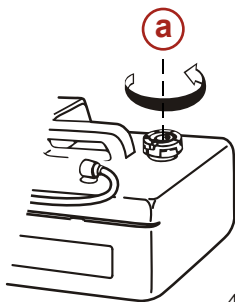
1. Lower the outboard to the run position. Make sure the cooling water intake is submerged.

## NOTICE

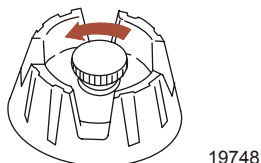
Without sufficient cooling water, the engine, the water pump, and other components will overheat and suffer damage. Provide a sufficient supply of water to the water inlets during operation.



2. Loosen the air vent screw on the tank cap.

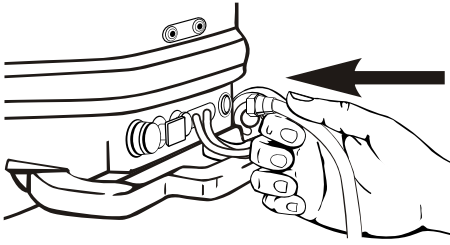


**a** - Air vent screw



# OPERATION

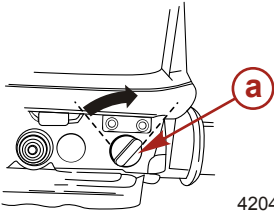
3. Attach the fuel connector to the engine connector.



42043

**5B-D**

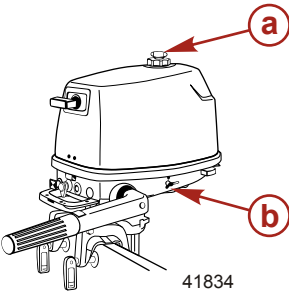
4. The arrow mark on the primer bulb should be facing the engine. (Separate fuel tank)
5. Open the fuel valve. (internal fuel tank)



42042

**4C**

**a** - Fuel valve



41834

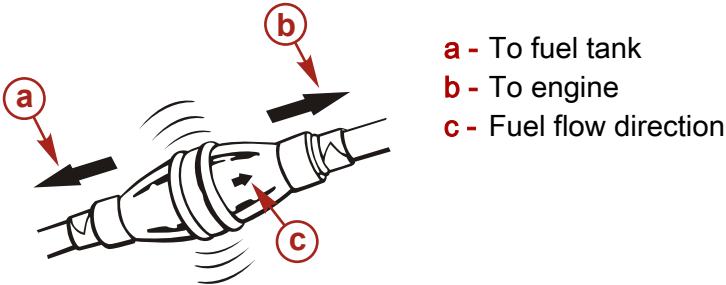
**5B-D**

**a** - Air vent screw

**b** - Fuel valve

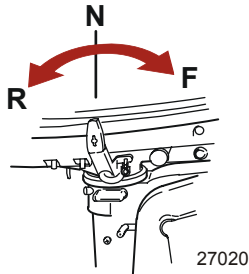
# OPERATION

6. Feed fuel to the carburetor by squeezing the primer bulb until it is firm. (Separate fuel tank)



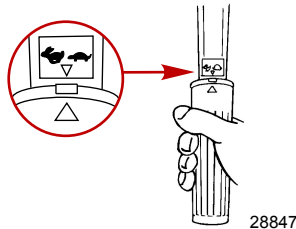
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7. Move gear shift lever to Neutral (N) position. Be sure that the shift is in Neutral (N) when starting the engine. This model is provided with a function that prevents starting in gear protection.



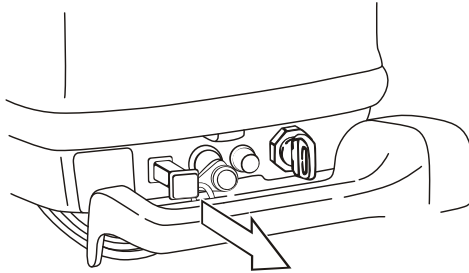
**NOTE:** If the motor somehow does start in gear, do not operate it. Contact your authorized dealer.

8. Move the throttle grip to the start position.

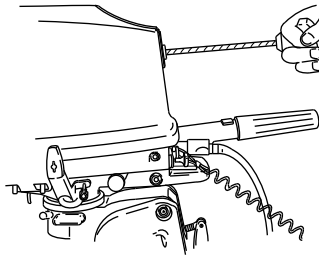


# OPERATION

9. If engine is cold, completely pull the choke knob out. Push in the choke halfway as the engine is warming up. Push in completely after engine is warmed up.



10. Pull the starter rope slowly until you feel the starter engage, then pull rapidly to crank the engine. Allow rope to return slowly. Repeat until engine starts.



**NOTE:** Starting Flooded Engine - Push in the choke knob. Wait 30 seconds, then continue to crank engine for starting.

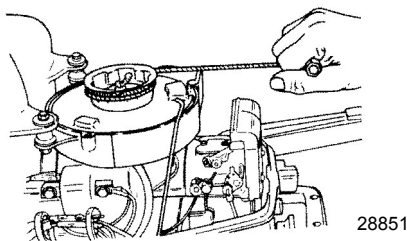
11. Check for a steady stream of water flowing out of the water pump indicator hole.

**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 a dealer. Operating the engine while overheated may cause serious engine damage.

# OPERATION

## IF THE RECOIL STARTER FAILS TO OPERATE

- Remove the upper motor cover and the recoil starter. Wrap a rope around the starter pulley then pull quickly to start.
- Use a 10 mm socket wrench as a rope handle.



### 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.

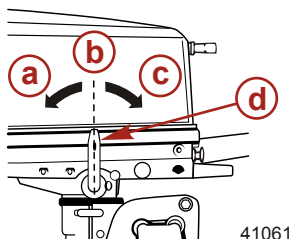
## Gear Shifting

Your outboard has three gear shift positions to provide operation: Forward (F), Neutral (N), and Reverse (R).

Reduce throttle speed to idle speed.

**NOTE:** *Personal injury and/or equipment damage may occur if shifting at high speed. Engine must be in the slow running position before shifting is attempted.*

**NOTE:** *Do not increase engine speed more than necessary in reverse.*



- a** - Reverse
- b** - Neutral
- c** - Forward
- d** - Shift lever



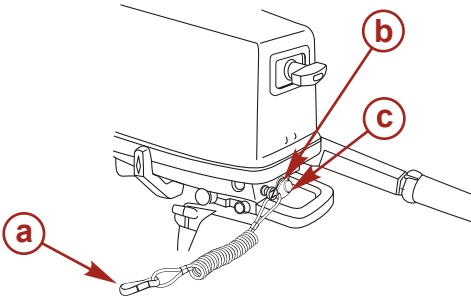
# OPERATION

Always shift outboard into gear with a quick motion.

- **Forward:** Turn the throttle grip to reduce engine speed. When the engine reaches trolling (or idling) speed, quickly pull the shift lever to the Forward (F) position.
- **Reverse:** Reduce engine speed, when the engine reaches trolling (or idling) speed, quickly push the shift lever to the Reverse (R) position.

## Stopping the Engine

1. Turn the throttle grip to the slow position.
2. Put the shift lever in Neutral (N) position. Run the engine for 2–3 minutes at idling speed if it has been running at full speed.
3. Push the stop switch to stop the engine.



- a** - Lanyard hook
- b** - Stop switch lock
- c** - Stop switch

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# 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. Record maintenance performed in the **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.

## EPA Regulations

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

# MAINTENANCE

## 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.

The image shows a Mercury Emission Control Information label. The label is rectangular with a black border. At the top left is the Mercury logo. To the right of the logo is the text "EMISSION CONTROL INFORMATION". Below this, there is a paragraph: "This engine conforms to  model year EPA regulations for Marine SI engines. Refer to Owner's Manual for required maintenance." Below the paragraph are several fields: "IDLE SPEED:" followed by a box, "FAMILY:" followed by a box, " hp", " cc", "FEL:" followed by a box, and "g/kWh". Below these are "TIMING (IN DEGREES):" followed by a box, "Standard spark plug:" followed by a box, "Suppressor spark plug:" followed by a box, and "GAP:" followed by a box. At the bottom are "Valve Clearance (Cold) mm" followed by a box, and "Intake Exhaust" followed by two boxes. Red callouts labeled a through i point to these fields: a to Idle Speed, b to Engine horsepower, c to Timing, d to Spark plug and gap, e to Valve clearance, f to Family number, g to Maximum emission output, h to Piston displacement, and i to Date of manufacture. The number 28405 is printed at the bottom right of the label.

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

28405

- 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 displacement
- 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.

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

### Inspection And Maintenance Schedule

#### BEFORE EACH USE

- Visually inspect the fuel system for deterioration or leaks.

# MAINTENANCE

- 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 saltwater. 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 carburetor adjustments. See **Carburetor Adjustment**.
- Check fuel line filter for contaminants. See **Fuel System**.
- Check corrosion control anode. Check more frequently when used in salt water. See **Corrosion Control Anode**.
- Lubricate splines on the driveshaft.<sup>1</sup>
- Replace water pump impeller.<sup>1</sup>
- Check tightness of bolts, nuts, and other fasteners.

## BEFORE PERIODS OF STORAGE

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

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

# MAINTENANCE

## 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.

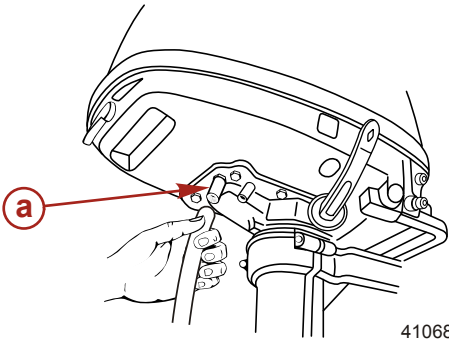
**IMPORTANT:** Before flushing, remove the propeller.

**IMPORTANT:** Never start or operate the engine indoors or in any space which is not well ventilated. Exhaust gas contains carbon monoxide, a colorless and odorless gas which can be fatal if inhaled for any length of time.

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

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

1. Remove the water plug from the motor, and screw in the flushing attachment (hose adapter).
2. Attach a hose to the flushing attachment.
3. With the shift lever in Neutral (N), run the engine at a low speed while flushing the cooling system to ensure all sea water and mud are removed.



**a** - Flushing attachment

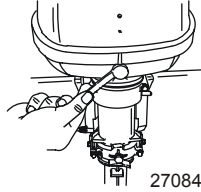
41068

# MAINTENANCE

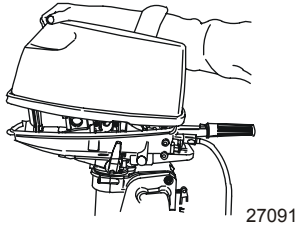
## Top Cowl Removal And Installation

### REMOVAL

1. Unlock the rear latch by pushing lever down.



2. Lift rear of cowl and disengage front hook.



### INSTALLATION

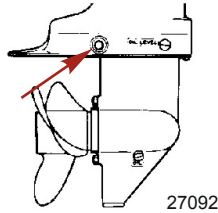
1. Engage the front hook and push cowl back over the cowl seal.
2. Push cowl down and move the rear latch lever up to lock.

## 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.

# MAINTENANCE

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.



## Exterior Care

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

## Fuel System

### WARNING

**Fuel is flammable and explosive. Ensure that the key switch is off and the lanyard is positioned so that the engine cannot start. Do not smoke or allow sources of spark or open flame in the area while servicing. Keep the work area well ventilated and avoid prolonged exposure to vapors. Always check for leaks before attempting to start the engine, and wipe up any spilled fuel immediately.**

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

# MAINTENANCE

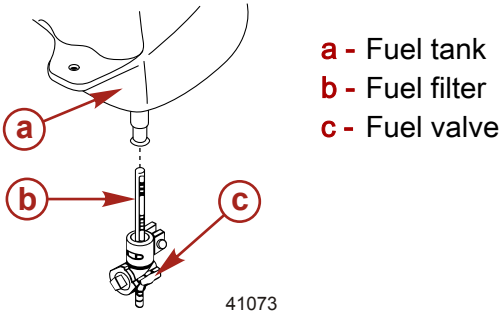
## FUEL LINE INSPECTION

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

## CLEANING THE FUEL FILTERS AND THE FUEL TANK

Fuel filters are provided inside the fuel tank (4C & 5B-D) and engine. (5B-D)

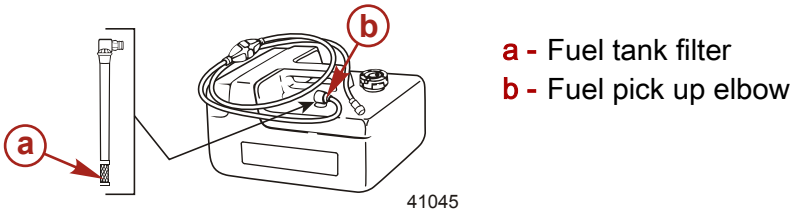
- **4C, 5B-D:** Drain all fuel from the fuel tank. Remove the fuel valve from the fuel tank.



- Clean the fuel filter.
- **5B-D:** If there is water or dirt inside, replace the filter provided inside of the engine cover.



- Loosen the fuel pick up elbow, remove it and clean the fuel filter.





# MAINTENANCE

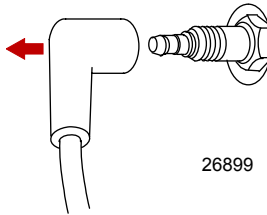
- **Fuel tank:** Water or dirt in the fuel tank will cause engine performance problems. Check and clean the tank at specified time or after the motor has been stored for a long period of time (over three months).

## Propeller Replacement

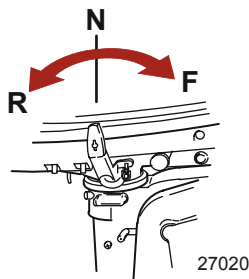
### ⚠ WARNING

Rotating propellers can cause serious injury or death. Never operate the boat out of the water with a propeller installed. Before installing or removing a propeller, place the drive unit in neutral and engage the lanyard stop switch to prevent the engine from starting. Place a block of wood between the propeller blade and the anti-ventilation plate.

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



2. Move gear shift lever into neutral.



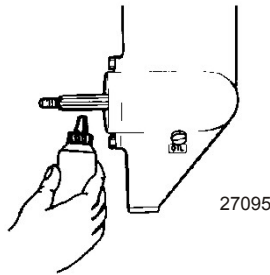
3. Straighten and remove cotter pin.
4. Place a block of wood between gearcase and propeller to hold propeller and remove propeller nut.

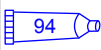
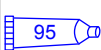
# MAINTENANCE

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

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

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

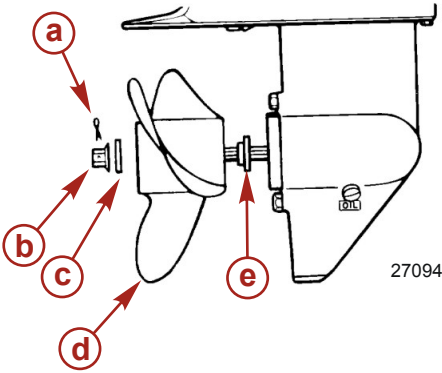


Tube Ref No.	Description	Where Used	Part No.
 94	Anti-Corrosion Grease	Propeller shaft	92-802867Q 1
 95	2-4-C with Teflon	Propeller shaft	92-802859A 1

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

## MAINTENANCE

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



- a - Cotter pin
- b - Propeller nut
- c - Rear thrust hub
- d - Propeller
- e - Front thrust washer

### Propeller Selection

Propeller must be selected that will allow the engine to reach recommended rpm when cruising at wide-open throttle.

Wide-open throttle rpm range
4500–5500 rpm

Recommended propellers are listed on **Propeller Table** of this manual.

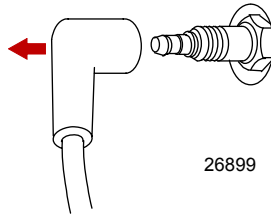
### Spark Plug Inspection And Replacement

#### **⚠ WARNING**

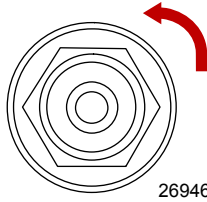
Damaged spark plug boots may emit sparks which can ignite fuel vapors under the engine cowl, resulting in serious injury or death from a fire or explosion. To avoid damaging the spark plug boots, do not use any sharp object or metal tool to remove the spark plug boots.

# MAINTENANCE

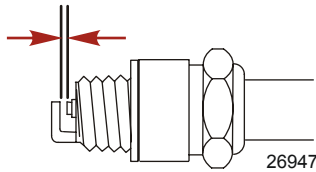
1. Remove the spark plug boot. Twist the rubber boot slightly and pull off.



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



3. Set the spark plug gap to specification.



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



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

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

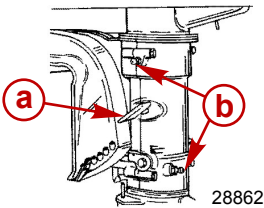
## Lubrication Points

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

# MAINTENANCE

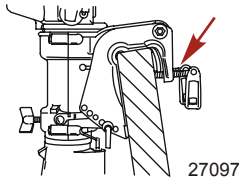
Tube Ref No.	Description	Where Used	Part No.
 95	2-4-C with Teflon	Co-pilot threads, swivel bracket, transom clamp screws, tiller handle bushing, shift handle detent	92-802859A 1
 34	Special Lubricant 101	Co-pilot threads, swivel bracket, transom clamp screws, tiller handle bushing, shift handle detent	92-802865Q02

- Co-Pilot - Lubricate threads.
- Swivel Bracket - Lubricate through fittings.



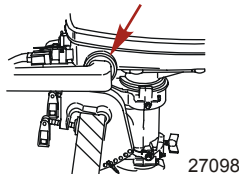
- a - Co-pilot
- b - Swivel bracket

- Transom Clamp Screws - Lubricate threads.



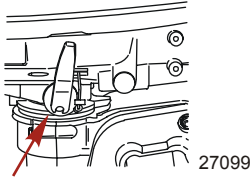
**NOTE:** Lubricating the tiller handle bushing and shift handle detent requires disassembly of the product. These points should be lubricated at least once a year by an authorized dealer.

- Tiller Handle Rubber Bushing - Lubricate internal diameter.



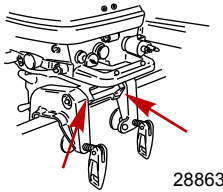
# MAINTENANCE

- Shift Handle Detent - Lubricate detent.





2. Lubricate the following with Light Weight Oil.

- Tilt Pivot.

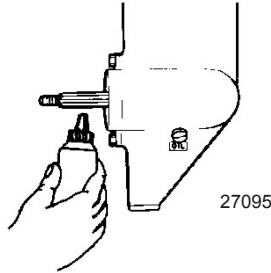


3. Lubricate the following with Quicksilver or Mercury Precision Lubricants Anti-Corrosion Grease or 2-4-C with Teflon.

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

## MAINTENANCE

- 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.



### Gearcase Lubrication

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

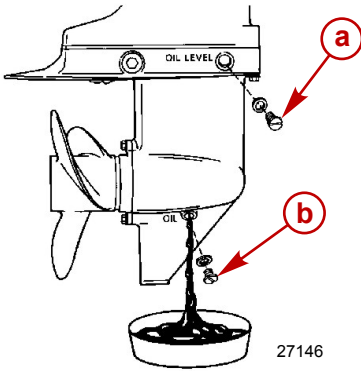
Examine the drained gearcase lubricant for metal particles. A small amount of metal particles indicates normal gear wear. An excessive amount of metal filings or larger particles (chips) may indicate abnormal gear wear and should be checked by an authorized dealer.

### DRAINING GEARCASE

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

# MAINTENANCE

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



- a - Vent plug
- b - Fill/drain plug

## GEARCASE LUBRICANT CAPACITY

Gearcase lubricant capacity is approximately 200 ml (6.8 fl. oz.).

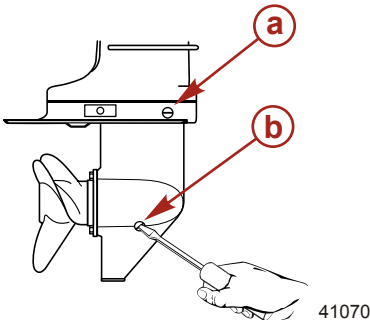
## GEARCASE LUBRICANT RECOMMENDATION

Mercury or Quicksilver Premium or High Performance Gear Lubricant.

## CHANGING GEAR OIL

1. Place outboard in a vertical operating position.
2. Remove the oil drain plugs (upper and lower), and completely drain the gear oil into a pan.

**NOTE:** If water in the oil, giving it a milky colored appearance, contact your dealer.

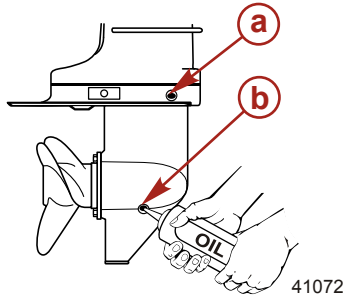


- a - Oil drain plug (upper)
- b - Oil drain plug (lower)



## MAINTENANCE

3. Insert the oil tube nozzle into the lower oil plug hole, and fill with gear oil by squeezing the oil tube until oil flows out of the upper plug hole.



4. Replace the oil plug gasket with a new one. Install the upper oil plug, and then remove oil tube nozzle and install the lower oil plug.

**NOTE:** Use Mercury or Quicksilver gear oil or the recommended gear oil (API GL-5:SAE #80 to #90). Required volume: approx. 195 mL

### 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).

### *NOTICE*

**Without sufficient cooling water, the engine, the water pump, and other components will overheat and suffer damage. Provide a sufficient supply of water to the water inlets during operation.**

## 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.

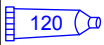
Fill the fuel tank and engine fuel system with treated (stabilized) fuel to help prevent formation of varnish and gum. Proceed with following instructions.

- 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 or connect flushing attachment for circulating cooling 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).

# STORAGE

Tube Ref No.	Description	Where Used	Part No.
 120	Corrosion Guard	External metal surfaces	92-802878 55

## 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 **Gearcase Lubrication**).

## Positioning Outboard for Storage

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

### **NOTICE**

Storing the outboard in a tilted position can damage the outboard. Water trapped in the cooling passages or rain water collected in the propeller exhaust outlet in the gearcase can freeze. Store the outboard in the full down position.

# 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

## OWNER SERVICE ASSISTANCE

- 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.

<b>United States, Canada</b>		
Telephone	English - (920) 929-5040 Français - (905) 636-4751	Mercury Marine W6250 W. Pioneer Road P.O. Box 1939 Fond du Lac, WI 54936-1939
Fax	English - (920) 929-5893 Français - (905) 636-1704	
Website	www.mercurymarine.com	

<b>Australia, Pacific</b>		
Telephone	(61) (3) 9791-5822	Brunswick Asia Pacific Group 132-140 Frankston Road Dandenong, Victoria 3164 Australia
Fax	(61) (3) 9706-7228	

<b>Europe, Middle East, Africa</b>		
Telephone	(32) (87) 32 • 32 • 11	Brunswick Marine Europe Parc Industriel de Petit-Rechain B-4800 Verviers, Belgium
Fax	(32) (87) 31 • 19 • 65	

<b>Mexico, Central America, South America, Caribbean</b>		
Telephone	(954) 744-3500	Mercury Marine 11650 Interchange Circle North Miramar, FL 33025 U.S.A.
Fax	(954) 744-3535	

<b>Japan</b>		
Telephone	072-233-8888	Kisaka Co., Ltd. 4-130 Kannabecho Sakai-shi Sakai-ku 5900984 Osaka, Japan
Fax	072-233-8833	

## OWNER SERVICE ASSISTANCE

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

# MAINTENANCE LOG

## Maintenance Log

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

Date	Maintenance Performed	Engine Hours

# ACCESSORIES

## Propeller Recommendation

Use Mercury/Quicksilver propeller.

A propeller must be selected so that the engine rpm measured at wide open throttle while cruising is within the recommended range: 4500 - 5500 rpm.

Light boats ----- Heavy boats			
Size as indicated on propeller	9	8	7
Propeller size (mm) Diameter x pitch (in.)	200 x 229 7.9 x 9.0	198 x 203 7.8 x 8.0	198 x 178 7.8 x 7.0
Model	Optional	5B-D S, L, UL	4C S, L

Transom height: S (short), L (long), UL (extra long):

## Tool Kit and Spare Parts

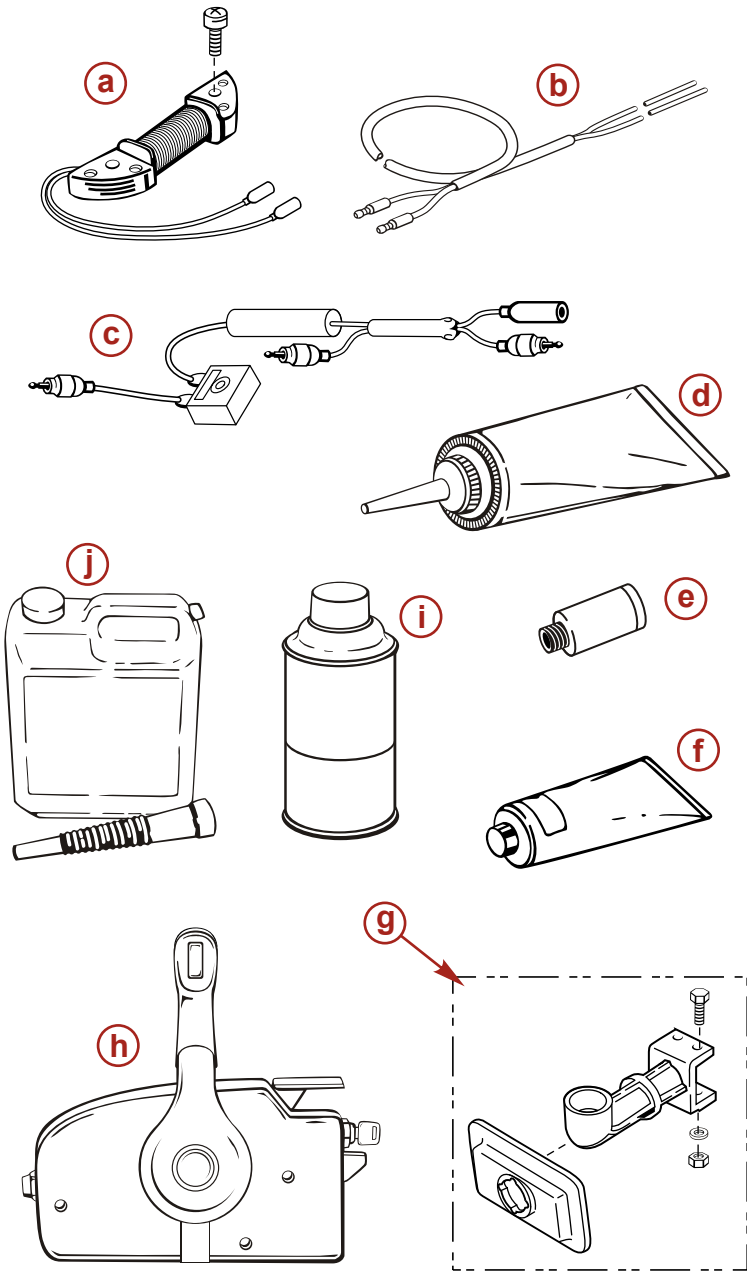
A listed tools and spare parts below are provided with the motor.

Items		Quantity	Dimensions	Remark
Service tools	Tool bag	1		
	Pliers	1		
	Socket wrench	1	10 x 13 mm	
	Socket wrench	1	21 mm	
	Socket wrench handle	1		
	screwdrivers	1	Cross and straight point	
	Screwdriver handle	1		
Spare parts	Rope	1	1000 mm	
	Spark plug	1	NGK BPR 7HS10	
	Cotter pin	1		
Parts packaged with engine	Fuel tank 12 L	1		5B-D only
	Primer bulb	1set		5B-D only



# ACCESSORIES

## Optional Accessories



41075

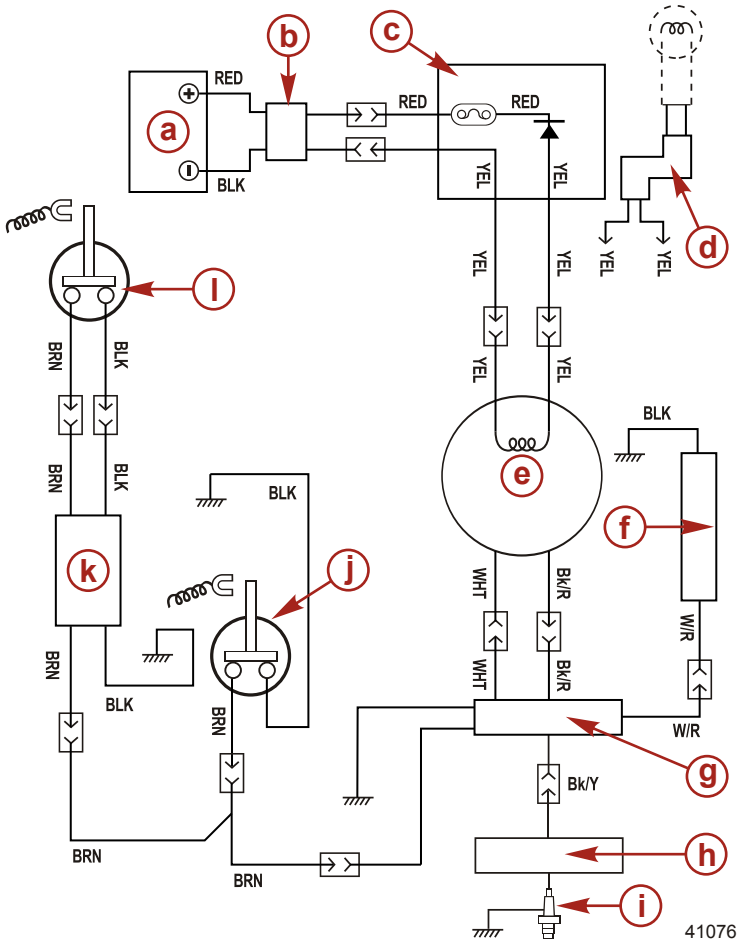
# ACCESSORIES

- a** - Alternator (12 V, 60 W)
- b** - Extension cord for light (Lights are available on the market.)
- c** - Rectifier
- d** - Gear oil (500 mL)
- e** - Flushing attachment
- f** - Grease (250 g)
- g** - Vertical starter
- h** - Remote control box
- i** - Touch up paint (300 mL)
- j** - Engine oil (0.4 L, 1 L, 4 L, 20 L)



# ACCESSORIES

## Wiring Diagram



# ACCESSORIES

- a** - Battery
- b** - Extension cord (optional)
- c** - Rectifier (optional)
- d** - Light extension cord (optional)
- e** - Lighting unit (optional)
- f** - Pulser coil
- g** - CD unit
- h** - Ignition coil
- i** - Spark plug
- j** - Stop switch (optional)

## Wire Color Code Abbreviations

Wire Color Abbreviations				
BLK	Black		BLU	Blue
BRN	Brown		GRY	Gray
GRN	Green		ORN or ORG	Orange
PNK	Pink		PPL or PUR	Purple
RED	Red		TAN	Tan
WHT	White		YEL	Yellow
LT or LIT	Light		DK or DRK	Dark