

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-4800 Verviers, Belgium

Safety of Machinery Directive 2006/42/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

Electromagnetic compatibility Directive 2004/108/EC

Generic emission standard	EN 61000-6-3
Generic emission standard	EN 61000-6-1
Vehicles, boats and internal combustion engine driven devices - Radio disturbance characteristics	SAE J551 CISPR 12; EN 55012:2002/A1:2005
Electrostatic discharge testing	EN 61000-6-2; EN 61000-4-2; EN 61000-4-3

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:

August 20, 2013
Mercury Marine, Fond du Lac, WI USA
European Regulations Contact:
Regulations and Product Safety Department,
Mercury Marine, Fond du Lac, WI USA

Welcome

You have selected one of the finest outboards available. It incorporates numerous design features to ensure operating ease and durability.

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

This manual contains specific instructions for using and maintaining your product. We recommend that this manual remain with the product for ready reference whenever you are on the water.

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

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 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, and to change specifications, designs, methods, or procedures without notice and without incurring obligation.

Copyright and Trademark Information

© MERCURY MARINE. All rights reserved. Reproduction in whole or in part without permission is prohibited.

Alpha, Axis, Bravo One, Bravo Two, Bravo Three, Circle M with Waves Logo, K-planes, Mariner, MerCathode, MerCruiser, Mercury, Mercury with Waves Logo, Mercury Marine, Mercury Precision Parts, Mercury Propellers, Mercury Racing, MotorGuide, OptiMax, Quicksilver, SeaCore, Skyhook, SmartCraft, Sport-Jet, Verado, VesselView, Zero Effort, Zeus, #1 On the Water and We're Driven to win are registered trademarks of Brunswick Corporation. Pro XS is a trademark of Brunswick Corporation. Mercury Product Protection is a registered service mark of Brunswick Corporation.

WARRANTY INFORMATION

Warranty Registration United States and Canada.....	1
Transfer of Warranty United States and Canada.....	1
Transfer of Mercury Product Protection (Extended Service Coverage) Plan United States and Canada.....	2
Outboard Limited Warranty.....	2
3 Year Limited Warranty Against Corrosion.....	5
Warranty Policy—Australia and New Zealand.....	7
Global Warranty Charts Outboard and Jets.....	11

General Information

Boater's Responsibilities.....	16
Before Operating Your Outboard.....	16
Boat Horsepower Capacity.....	16
Outboard Remote Control Models	17
Remote Steering Notice.....	17
Lanyard Stop Switch.....	18
Protecting People in the Water.....	21
Passenger Safety Message - Pontoon Boats and Deck Boats.....	21
Wave and Wake Jumping.....	23
Impact with Underwater Hazards.....	24
Safety Instructions for Hand-Tilted Outboards.....	25
Exhaust Emissions.....	25
Selecting Accessories for Your Outboard.....	27
Safe Boating Recommendations.....	27
Recording Serial Number.....	29
Specifications.....	31
Component Identification.....	34
Associated Parts.....	40

Transporting

Removing the Motor.....	41
Carrying the Motor.....	41
Storing the Motor.....	41
Trailing Boat/Outboard.....	42
Transporting Portable Fuel Tanks.....	43

Fuel and Oil

Fuel Recommendations.....	44
Oil Recommendation.....	45
Mixing Fuel and Oil.....	45
Engine Break-In.....	46
Filling Fuel Tank.....	46

Features and Controls

Remote Control Features.....	47
Tilt Up and Tilt Down.....	47
Shallow Water Operation.....	49
Trim Angle Adjustment.....	50
Steering Friction Adjustment.....	51
Throttle Grip Turning Friction Adjustment.....	52
Trim Tab Adjustment.....	52

Operation

Prestarting Check List.....	55
Operating in Freezing Temperatures.....	55
Operating in Saltwater or Polluted Water.....	55
Operating at High Elevations.....	56
Operating Outboard as an Auxiliary Engine.....	56
Prestarting Instructions.....	56
Engine Break-In Procedure.....	57
Warming Up the Engine.....	58
Starting the Engine.....	59
Gear Shifting.....	62
Stopping the Engine.....	64
Emergency Starting.....	66

Maintenance

Outboard Care.....	68
Inspection and Maintenance Schedule.....	68
Flushing the Cooling System.....	69
Top Cowl Removal and Installation.....	70
Battery Inspection	70
Fuel System.....	71
Exterior Care.....	72
Fuse Replacement - Electric Start Remote Control Models.....	73
Replacing the Anodes.....	73
Propeller Replacement.....	74
Spark Plug Inspection and Replacement.....	77
Lubrication Points.....	78
Changing Gear Oil.....	78
Submerged Outboard.....	79

Storage

Preseason Check.....	80
Storage Preparation.....	80
Protecting External Outboard Components.....	81
Protecting Internal Engine Components.....	81
Gearcase.....	81
Positioning Outboard for Storage.....	82
Battery Storage.....	82

Troubleshooting

Starter Motor Will Not Crank the Engine (Electric Start Models).....	83
Engine Will Not Start.....	83
Engine Runs Erratically.....	83
Performance Loss.....	84
Battery Will Not Hold Charge.....	84

Owner Service Assistance

Service Assistance.....	85
Ordering Literature.....	87

Installation

Mercury Marine Validated Engine Mounting Hardware.....	89
Installing Outboard.....	89
Installing the Remote Control Devices.....	91
Wire Color Code Abbreviations.....	96
Battery Installation.....	97
Propeller Selection.....	98

Accessories

Propeller Table.....	99
Accessories.....	100

Wiring Diagrams

MH Models.....	102
EH Models.....	104
E Models.....	106
Single Remote Control Box.....	108

Maintenance Log

Maintenance Log.....	110
----------------------	-----

WARRANTY INFORMATION

Warranty Registration United States and Canada

To be eligible for warranty coverage, the product must be registered with Mercury Marine.

At the time of sale, the selling 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.

A copy of the warranty registration should be provided to you by your selling dealer.

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

You may change your registered 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 +1 920 907 6663

OUTSIDE UNITED STATES AND CANADA

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

Transfer of Warranty United States and Canada

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 Pioneer Road
P.O. Box 1939
Fond du Lac, WI 54936-1939
920-929-5054
Fax +1 920 907 6663

WARRANTY INFORMATION

Upon processing the transfer of warranty, Mercury Marine will record the new owner's information.

There is no charge for this service.

OUTSIDE THE UNITED STATES AND CANADA

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

Transfer of Mercury Product Protection (Extended Service Coverage) Plan United States and Canada

The remaining coverage period of the Product Protection Plan is transferable to the subsequent purchaser of the engine within thirty (30) days from the date of sale. Contracts not transferred within thirty (30) days of the subsequent purchase will no longer be valid and the product will no longer be eligible for coverage under the terms of the contract.

To transfer the plan to the subsequent owner, contact Mercury Product Protection or an authorized dealer to receive a Request for Transfer form. Submit to Mercury Product Protection a receipt/bill of sale, a completed Request of Transfer form, and a check payable to Mercury Marine in the amount of \$50.00 (per engine) to cover the transfer fee.

Plan coverage is not transferable from one product to another product or for noneligible applications.

The certified preowned engine plans are not transferable.

For help or assistance, contact Mercury Product Protection Department at 1-888-427-5373 from 7:30 a.m. to 4:30 p.m. CST, Monday–Friday or e-mail mpp_support@mercmarine.com.

Outboard Limited Warranty

Outside the United States and Canada - Check with your local distributor.

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.

DURATION OF COVERAGE: This limited warranty provides coverage for one (1) year 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 from one recreational use customer to a subsequent recreational use customer upon proper reregistration of the product. Unexpired warranty coverage cannot be transferred either to or from a commercial use customer. 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

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 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 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, faded paint, 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, 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 the limited warranty, and if made, shall not be enforceable against Mercury Marine.

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

WARRANTY INFORMATION

DISCLAIMERS AND LIMITATIONS:

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

3 Year Limited Warranty Against Corrosion

WHAT IS COVERED: Mercury Marine warrants that each new Mercury, Mariner, Mercury Racing Outboards, Sport-Jet, M² 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.

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.

WARRANTY INFORMATION

WHAT MERCURY WILL DO: Mercury Marine'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 Marine product. Mercury Marine reserves the right to improve or modify products from time to time without assuming an obligation to modify products previously manufactured.

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

WHAT IS NOT COVERED: This limited warranty does not cover 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.

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.

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.

Warranty Policy—Australia and New Zealand

MERCURY/MARINER OUTBOARD LIMITED WARRANTY—AUSTRALIA AND NEW ZEALAND POLICY

This limited warranty is given by Marine Power International Pty Ltd ACN 003 100 007 of 41–71 Bessemer Drive, Dandenong South, Victoria 3175 Australia (telephone (61) (3) 9791 5822) e-mail: merc_info@mercmarine.com.

What is Covered

Mercury Marine warrants its new products to be free of defects in material and workmanship during the period described following. The benefits to the consumer given by the warranty are in addition to other rights and remedies of the consumer under a law in relation to the goods or services to which the warranty relates.

Guarantees Under Australian Consumer Law

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Warranty Period for Recreational Use

This Limited Warranty provides coverage for three (3) 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. Unexpired warranty coverage can be transferred to a subsequent recreational use customer upon proper registration of the product.

WARRANTY INFORMATION

Warranty Period for Commercial Use

Commercial users of these products receive warranty coverage under this Limited Warranty of one (1) year 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. Unexpired warranty coverage cannot be transferred either to or from a commercial use customer.

Conditions That Must Be Met to Obtain Warranty Coverage

Warranty coverage under this Limited Warranty 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. Inaccurate warranty registration information regarding recreational use, or subsequent change of use from recreational to commercial (unless properly registered) may void the warranty at the sole discretion of Mercury Marine. Routine maintenance outlined in the Operation and Maintenance Manual must be timely performed in order to maintain warranty coverage. Mercury Marine reserves the right to make warranty coverage contingent upon proof of proper maintenance.

What Mercury Will Do

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

WARRANTY INFORMATION

How to Obtain Warranty Coverage Under This Limited Warranty

The customer must provide Mercury Marine with a reasonable opportunity to repair and reasonable access to the product for warranty service. Warranty claims shall be made by delivering the product for inspection to a Mercury Marine dealer authorized to service the product. A list of dealers and their contact details is available at www.mercurymarine.com.au. If the purchaser cannot deliver the product to such a dealer, written notice must be given to Mercury Marine at the address shown above. Mercury Marine will then arrange for the inspection and any covered repair. This Limited Warranty will not cover the purchaser for all related transportation charges and travel time. If the service provided is not covered by this limited warranty, the purchaser shall pay for all related labor and material and any other expenses associated with that service, provided that a consumer will not be obligated to pay where the service has been carried out to remedy a failure of an acceptable quality guarantee which is binding on Mercury Marine under the Australian Consumer Law. The purchaser shall not, unless requested by Mercury Marine, ship the product or parts of the product directly to Mercury Marine. Proof of registered ownership must be presented to the dealer at the time warranty service is requested in order to obtain coverage under this Limited Warranty.

What is Not Covered

This limited warranty does not cover routine maintenance items, tune-ups, adjustments, normal wear and tear, faded paint, 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 that are not suitable for use with the product (see the Operation and Maintenance Manual), alteration or removal of parts, water entering the engine through the fuel intake, air intake or exhaust system, or damage to the product from insufficient cooling water caused by blockage of the cooling system by a foreign body, running the engine out of water, mounting the engine too high on the transom, 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 Limited 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.

WARRANTY INFORMATION

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.

Expense of Claiming This Limited Warranty

This Limited Warranty does not cover any expenses you may incur claiming the warranty.

DISCLAIMERS AND LIMITATIONS:
EXCEPT FOR APPLICABLE GUARANTEES AND OTHER RIGHTS AND REMEDIES THAT A CONSUMER MAY HAVE UNDER THE AUSTRALIAN CONSUMER LAW OR OTHER LAW IN RELATION TO WHICH THE PRODUCTS RELATE, 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 LIMITED WARRANTY.

TRANSFER OF WARRANTY—AUSTRALIA AND NEW ZEALAND POLICY

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 hull identification number (HIN) to Mercury Marine's Warranty Registration Department. In Australia and New Zealand, mail to:

Mercury Marine
Attn: Warranty Registration Department
Brunswick Asia Pacific Group
Private Bag 1420
Dandenong South, Victoria 3164
Australia

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.

WARRANTY INFORMATION

You may change your address at any time, including at the time of the warranty claim, by calling Mercury Marine or sending a letter or fax with your name, old address, new address, and hull identification number (HIN) to Mercury Marine's Warranty Registration Department.

Global Warranty Charts Outboard and Jets

UNITED STATES WARRANTY CHARTS—OUTBOARD AND JET

Product	Standard Limited Warranty	Standard Limited Corrosion Warranty
FourStroke (2.5 - 300 hp including Verado, Pro FourStroke and jet outboards)	3 years	3 years
OptiMax (75 - 250 hp including Pro XS and jet outboards)	3 years	3 years
OptiMax jet drive (200 and 250 hp)	1 year	3 years

Racing Product (Recreation use only)	Standard Limited Warranty	Standard Limited Corrosion Warranty
OptiMax (250 XS)	2 years	3 years
OptiMax (225 Sport XS)	2 years	3 years
OptiMax (300 XS)	2 years	3 years
Verado (350 SCi)	2 years	3 years

Outside the United States

For product purchased outside the United States, contact the distributor in your country, or the authorized Marine Power Service Center closest to you.

CANADA WARRANTY CHARTS—OUTBOARD AND JET

Product	Standard Limited Warranty	Standard Limited Corrosion Warranty
2-Stroke carbureted (50 - 90 hp)	1 year	3 years
2-Stroke EFI (150 hp)	2 years	3 years
2-Stroke carbureted (V6)	2 years	3 years
FourStroke (2.5 - 300 hp including Verado, Pro FourStroke and jet outboards)	3 years	3 years

WARRANTY INFORMATION

Product	Standard Limited Warranty	Standard Limited Corrosion Warranty
OptiMax (75 - 250 hp including Pro XS and jet outboards)	3 years	3 years
OptiMax jet drive (200 and 250 hp)	1 year	3 years

Racing Product (Recreation use only)	Standard Limited Warranty	Standard Limited Corrosion Warranty
OptiMax (250 XS)	2 years	3 years
OptiMax (225 Sport XS)	2 years	3 years
OptiMax (300 XS)	2 years	3 years
Verado (350 SCi)	2 years	3 years

Outside of Canada

For product purchased outside of Canada, contact the distributor in your country, or the authorized Marine Power Service Center or dealer closest to you.

AUSTRALIA AND NEW ZEALAND WARRANTY CHARTS—OUTBOARD AND JET

Products	Standard Limited Warranty	Standard Limited Corrosion Warranty	Light Commercial
All outboard	3 years	3 years	Contact the Marine Power Service Center closest to you

Outside of Australia and New Zealand

For product purchased outside of Australia and New Zealand, contact the distributor in your country, or the Marine Power Service Center closest to you.

WARRANTY INFORMATION

SOUTH PACIFIC WARRANTY CHART–OUTBOARD AND JET

Products	Standard Limited Warranty	Standard Limited Corrosion Warranty	Light Commercial
All outboard	2 years	3 years	Contact the Marine Power Service Center closest to you

Outside of South Pacific

For product purchased outside of the South Pacific region, contact the distributor in your country, or the Marine Power Service Center closest to you.

ASIA WARRANTY CHARTS–OUTBOARD AND JET

Product (Recreational only)	Standard Limited Warranty	Standard Limited Corrosion Warranty	Commercial Application
2-Stroke	1 year	3 years	Contact the Marine Power Service Center closest to you
FourStroke	1 year	3 years	
OptiMax	1 year	3 years	
Verado	1 year	3 years	

Racing Product (Recreational only)	Standard Limited Warranty	Standard Limited Corrosion Warranty	Commercial Application
Verado 350 SCi	1 year	3 years	None

Outside of Asia

For product purchased outside of the Asian region, contact the distributor in your country, or the Marine Power Service Center closest to you.

WARRANTY INFORMATION

EUROPE AND THE CONFEDERATION OF INDEPENDENT STATES (CIS) WARRANTY CHARTS—OUTBOARD AND JET

Product (Recreational only)	Standard Limited Warranty	Standard Limited Corrosion Warranty	Commercial Application
2-Stroke	2 years	3 years	Contact the Marine Power Service Center closest to you
FourStroke	2 years	3 years	
OptiMax (including Pro XS)	3 years	3 years	
Verado (including Pro)	3 years	3 years	

Racing Product (Recreational only)	Standard Limited Warranty	Standard Limited Corrosion Warranty	Commercial Application
Verado 350 SCi	2 years	3 years	Contact the Marine Power Service Center closest to you

Outside Europe and CIS

For products purchased outside of Europe and CIS regions, contact the distributor in your country, or the Marine Power Service Center closest to you.

MIDDLE-EAST AND AFRICA (EXCLUDING SOUTH AFRICA) WARRANTY CHARTS—OUTBOARD AND JET

Product (Recreational only)	Standard Limited Warranty	Standard Limited Corrosion Warranty	Commercial Application
2-Stroke	1 year	3 years	Contact the Marine Power Service Center closest to you
FourStroke	2 years	3 years	
OptiMax (including Pro XS)	3 years	3 years	
Verado (including Pro)	3 years	3 years	

WARRANTY INFORMATION

Racing Product (Recreational only)	Standard Limited Warranty	Standard Limited Corrosion Warranty
Verado 350 SCi	2 years	3 years

Outside Middle-East and Africa

For products purchased outside of the Middle-East and Africa regions, contact the distributor in your country, or the Marine Power Service Center closest to you.

SOUTH AFRICA WARRANTY CHARTS—OUTBOARD AND JET

Product (Recreational only)	Standard Limited Warranty	Standard Limited Corrosion Warranty	Commercial Application
2-Stroke	2 years	3 years	Contact the Marine Power Service Center closest to you
FourStroke	2 years	3 years	
OptiMax (including Pro XS)	3 years	3 years	
Verado (including Pro)	3 years	3 years	

Racing Product (Recreational only)	Standard Limited Warranty	Standard Limited Corrosion Warranty
Verado 350 SCi	2 years	3 years

Outside South Africa

For products purchased outside of the South Africa region, contact the distributor in your country, or the Marine Power Service Center closest to you.

GENERAL INFORMATION

Boater's Responsibilities

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

Be sure that 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.

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.

GENERAL INFORMATION

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

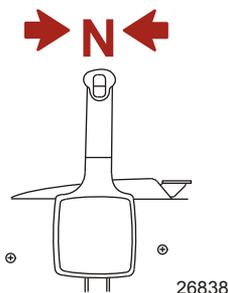
26777

Outboard Remote Control Models

The remote control connected to your outboard must be equipped with a start in neutral only protection device. This prevents the engine from starting when the shift is actuated in any position other than neutral.

▲ WARNING

Starting the engine with the drive in gear can cause serious injury or death. Never operate a boat that does not have a neutral-safety-protection device.



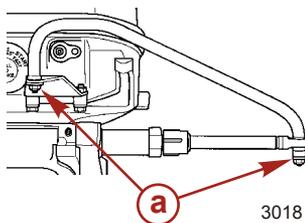
Remote Steering Notice

▲ WARNING

Improper fasteners or improper installation procedures can result in loosening or disengagement of the steering link rod. This can cause a sudden, unexpected loss of boat control, resulting in serious injury or death due to occupants being thrown within or out of the boat. Always use required components and follow instructions and torque procedures.

GENERAL INFORMATION

The steering link rod that connects the steering cable to the engine must be fastened utilizing self-locking nuts. These self-locking nuts must never be replaced with common nuts (non-locking) as they will work loose and vibrate off, freeing the link rod to disengage.



a - Self-locking nuts

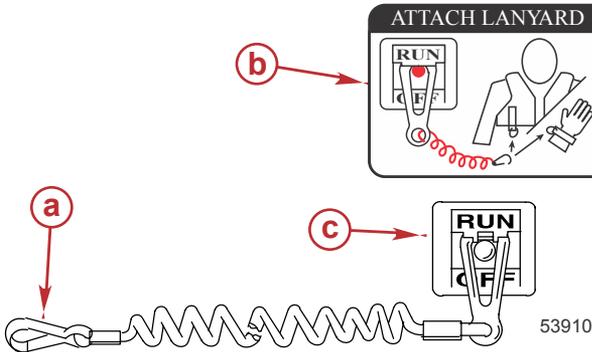
Lanyard Stop Switch

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.

A decal near the lanyard stop switch is a visual reminder for the operator to attach the lanyard to their personal flotation device (PFD) or wrist.

GENERAL INFORMATION

The lanyard cord is usually 122–152 cm (4–5 feet) in length when stretched out, with an element on one end made to be inserted into the switch and a clip on the other end for attaching to the operator's PFD or wrist. 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 clip
- b - Lanyard decal
- c - 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.

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.

GENERAL INFORMATION

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

▲ 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.

▲ 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.

KEEP THE LANYARD STOP SWITCH AND LANYARD CORD IN GOOD OPERATING CONDITION

Before each use, check to ensure the lanyard stop switch works properly. Start the engine and stop it by pulling the lanyard cord. If the engine does not stop, have the switch repaired before operating the boat.

Before each use, visually inspect the lanyard cord to ensure it is in good working condition and that there are no breaks, cuts, or wear to the cord. Check that the clips on the ends of the cord are in good condition. Replace any damaged or worn lanyard cords.

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.



21604

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

Passenger Safety Message - Pontoon Boats and Deck Boats

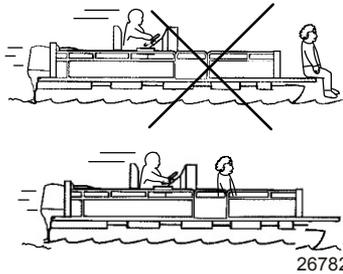
Whenever the boat is in motion, observe the location of all passengers. Do not allow any passengers to stand or use seats other than those designated for traveling faster than idle speed. A sudden reduction in boat speed, such as plunging into a large wave or wake, a sudden throttle reduction, or a sharp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

BOATS HAVING AN OPEN FRONT DECK

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

GENERAL INFORMATION

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



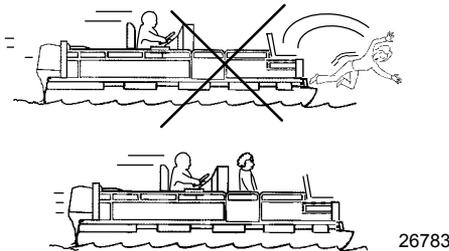
⚠ WARNING

Sitting or standing in an area of the boat not designed for passengers at speeds above idle can cause serious injury or death. Stay back from the front end of deck boats or raised platforms and remain seated while the boat is in motion.

BOATS WITH FRONT MOUNTED, RAISED PEDESTAL FISHING SEATS

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

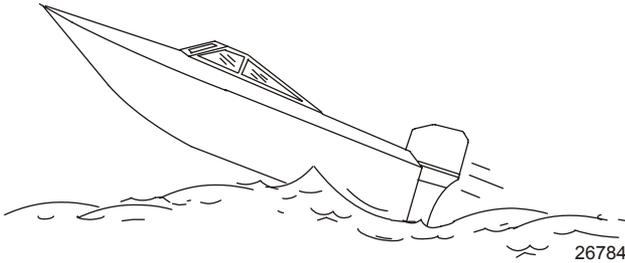
Any unexpected, sudden reduction in boat speed could result in the elevated passenger falling over the front of the boat.



GENERAL INFORMATION

Wave and Wake Jumping

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



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

⚠ WARNING

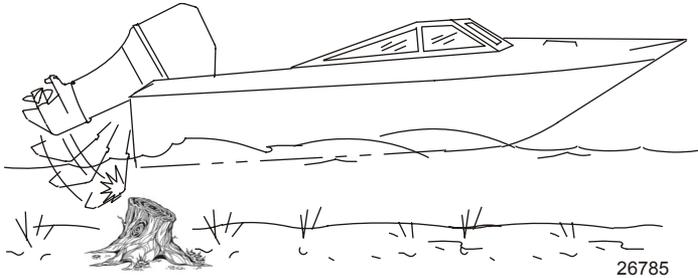
Wave or wake jumping can cause serious injury or death from occupants being thrown within or out of the boat. Avoid wave or wake jumping whenever possible.

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

GENERAL INFORMATION

Impact with Underwater Hazards

Reduce speed and proceed with caution whenever you drive a boat in shallow water areas, or in areas where you suspect underwater obstacles may exist which could be struck by the outboard or the boat bottom. **The most important thing you can do to help reduce injury or impact damage from striking a floating or underwater object is to control the boat speed. Under these conditions, boat speed should be kept to a minimum planing speed of 24 to 40 km/h (15 to 25 mph).**



Striking a floating or underwater object could result in an infinite number of situations. Some of these situations could result in the following:

- Part of the outboard or the entire outboard could break loose and fly into the boat.
- The boat could move suddenly in a new direction. Such a sharp change in direction can cause occupants to be thrown out of their seats or out of the boat.
- A rapid reduction in speed. This will cause occupants to be thrown forward, or even out of the boat.
- Impact damage to the outboard and/or boat.

Keep in mind, the most important thing you can do to help reduce injury or impact damage during an impact is control the boat speed. Boat speed should be kept to a minimum planing speed when driving in waters known to have underwater obstacles.

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

The boat should also be checked for any hull fractures, transom fractures, or water leaks.

Operating a damaged outboard could cause additional damage to other parts of the outboard, or could affect control of the boat. If continued running is necessary, do so at greatly reduced speeds.

GENERAL INFORMATION

⚠ WARNING

Operating a boat or engine with impact damage can result in product damage, serious injury, or death. If the vessel experiences any form of impact, have an authorized Mercury Marine dealer inspect and repair the vessel or power package.

Safety Instructions for Hand-Tilted Outboards

No person or cargo should occupy the area directly in front of the outboard while the boat is in motion. If an underwater obstacle is struck, the outboard will tilt up and could seriously injure anyone occupying this area.

MODELS WITH CLAMP SCREWS:

Some outboards come with transom bracket clamp screws. The use of clamp bracket screws alone, is insufficient to properly and safely secure the outboard to the transom. Proper installation of the outboard includes bolting the engine to the boat through the transom. Refer to **Installation - Installing Outboard** for more complete installation information.

⚠ WARNING

Failure to correctly fasten the outboard could result in the outboard propelling off the boat transom resulting in property damage, serious injury, or death. Before operation, the outboard must be correctly installed with the required mounting hardware.

If an obstacle is struck at planing speed and the outboard is not securely fastened to the transom, it is possible the outboard could lift off the transom and land in the boat.

Exhaust Emissions

BE ALERT TO CARBON MONOXIDE POISONING

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

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

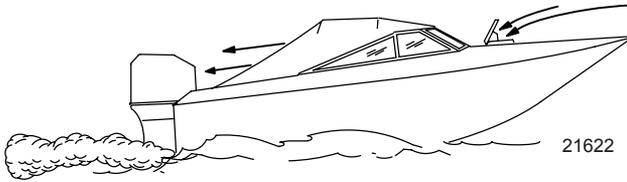
⚠ WARNING

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.

GENERAL INFORMATION

GOOD VENTILATION

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



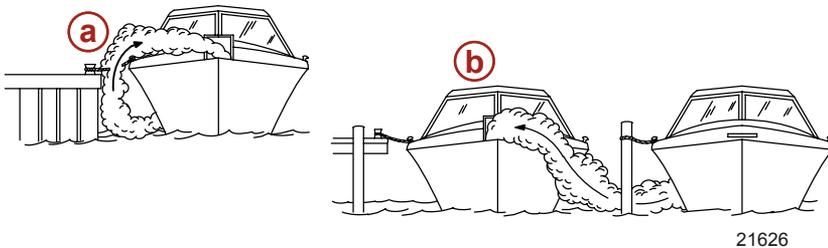
Example of desired air flow through the boat

POOR VENTILATION

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

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

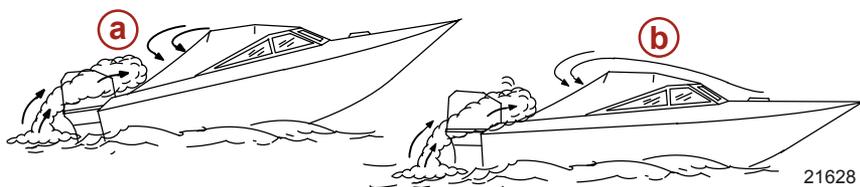
WHILE BOAT IS STATIONARY



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

GENERAL INFORMATION

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.

Safe Boating Recommendations

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

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

- We recommend that all powerboat operators complete a boating safety course. In the U.S., the U.S. Coast Guard Auxiliary, the Power Squadron, the Red Cross, and your state or provincial boating law enforcement agency provide courses. For more information in the U.S., call the Boat U.S. Foundation at 1-800-336-BOAT (2628).

Perform safety checks and required maintenance.

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

Check safety equipment onboard.

- Here are some suggestions of the types of safety equipment to carry when boating:
 - Approved fire extinguishers
 - Signal devices: flashlight, rockets or flares, flag, and whistle or horn
 - Tools necessary for minor repairs

GENERAL INFORMATION

- Anchor and extra anchor line
- Manual bilge pump and extra drain plugs
- Drinking water
- Radio
- Paddle or oar
- Spare propeller, thrust hubs, and an appropriate wrench
- First aid kit and instructions
- Waterproof storage containers
- Spare operating equipment, batteries, bulbs, and fuses
- Compass and map or chart of the area
- Personal flotation device (one per person onboard)

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

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

Passenger boarding.

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

Use personal flotation devices.

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

Prepare other boat operators.

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

Do not overload your boat.

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

Ensure that everyone in the boat is properly seated.

GENERAL INFORMATION

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

Never operate a boat while under the influence of alcohol or drugs. It is the law.

- Alcohol or drugs can impair your judgment and greatly reduce your ability to react quickly.

Know your boating area and avoid hazardous locations.

Be alert.

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

Never drive your boat directly behind a water skier.

- Your boat traveling at 40 km/h (25 mph) will overtake a fallen skier who is 61 m (200 ft) in front of you in five 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 attend to the skier. The operator should always have the down skier in sight and never back up to the skier or anyone in the water.

Report accidents.

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

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.

GENERAL INFORMATION

Serial number:
Model year:
Model designation:
Year manufactured:
Certified Europe Insignia (as applicable):

GENERAL INFORMATION

Specifications

MODEL		9.9 MH	9.9 EH
Overall length		869 mm (34.2 in.)	
Overall width		345 mm (13.6 in.)	
Overall height		S = 1067 mm (42.0 in.) L = 1194 mm (47.0 in.) XL = 1321 mm (52.0 in.)	
Transom height		S = 435 mm (17.1 in.) L = 562 mm (22.1 in.) XL = 689 mm (27.1 in.)	
Weight	S	41.0 kg (90.3 lb)	44.0 kg (97.0 lb)
	L	42.0 kg (92.6 lb)	45.0 kg (99.2 lb)
	XL	43.0 kg (94.8 lb)	46.0 kg (101.4 lb)
Output		7.3 kW	
Maximum operating range		4500–5300 RPM	
Number of cylinders		2	
Displacement		247 cc	
Bore x stroke		55 x 52 mm (2.1 x 2.0 in.)	
Exhaust system		Through-the-hub exhaust	
Lubrication system		Engine oil mixed gasoline	
Cooling system		Thermostat controlled	
Starting system		Manual	Electric with manual backup
Ignition		Flywheel magneto CDI	
Spark plugs		NGK B7HS-10/BR7HS-10 or Champion L82C/ RL82C gap 1.0 mm (0.039 in.)	
Trim system		Manual, 6 positions	
Engine oil mixing ratio		Mercury/Quicksilver 2-Stroke engine oil: Unleaded gasoline 1:50	
Gear oil		Mercury/Quicksilver gear oil API GL5, SAE #80–90 approximately 370 mL (12.5 oz)	
Fuel tank capacity		25 Liter (6.6 US gal)	
Gear reduction ratio		13:24 (1.84:1)	

GENERAL INFORMATION

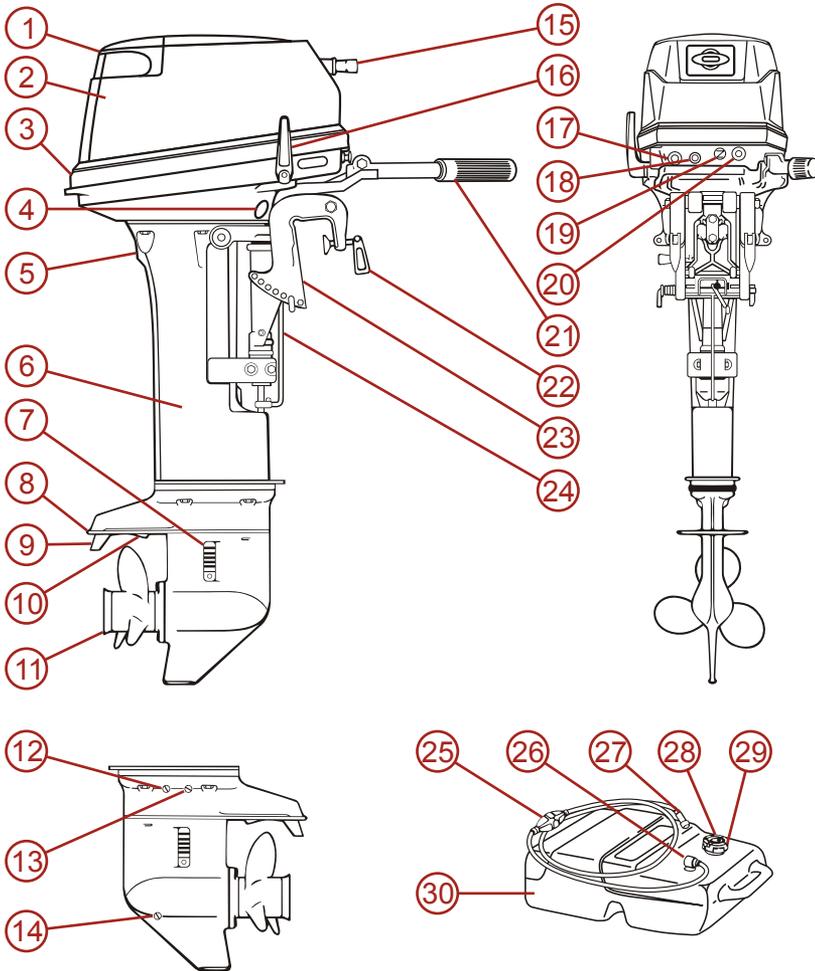
MODEL		15 MH	15 EH
Overall length		869 mm (34.2 in.)	
Overall width		345 mm (13.6 in.)	
Overall height		S = 1067 mm (42.0 in.) L = 1194 mm (47.0 in.) XL = 1321 mm (52.0 in.)	
Transom height		S = 435 mm (17.1 in.) L = 562 mm (22.1 in.) XL = 689 mm (27.1 in.)	
Weight	S	41.0 kg (90.3 lb)	44.0 kg (97.0 lb)
	L	42.0 kg (92.6 lb)	45.0 kg (99.2 lb)
	XL	43.0 kg (94.8 lb)	46.0 kg (101.4 lb)
Output		7.3 kW	
Maximum operating range		5200–5800 RPM	
Number of cylinders		2	
Displacement		294 cc	
Bore x stroke		55 x 52 mm (2.1 x 2.0 in.)	
Exhaust system		Through-the-hub exhaust	
Lubrication system		Engine oil mixed gasoline	
Cooling system		Thermostat controlled	
Starting system		Manual	Electric with manual backup
Ignition		Flywheel magneto CDI	
Spark plugs		NGK B7HS-10/BR7HS-10 or Champion L82C/ RL82C gap 1.0 mm (0.039 in.)	
Trim system		Manual, 6 positions	
Engine oil mixing ratio		Mercury/Quicksilver 2-Stroke engine oil: Unleaded gasoline 1:50	
Gear oil		Mercury/Quicksilver gear oil API GL5, SAE #80–90 approximately 370 mL (12.5 oz)	
Fuel tank capacity		25 Liter (6.6 US gal)	
Gear reduction ratio		13:24 (1.84:1)	

GENERAL INFORMATION

MODEL	18 MH	
Overall length	869 mm (34.2 in.)	
Overall width	345 mm (13.6 in.)	
Overall height	S = 1067 mm (42.0 in.) L = 1194 mm (47.0 in.) XL = 1321 mm (52.0 in.)	
Transom height	S = 435 mm (17.1 in.) L = 562 mm (22.1 in.) XL = 689 mm (27.1 in.)	
Weight	S	41.0 kg (90.3 lb)
	L	42.0 kg (92.6 lb)
	XL	43.0 kg (94.8 lb)
Output	13.2 kW	
Max operating range	5200–5800 RPM	
Number of cylinders	2	
Displacement	294 cc	
Bore x stroke	60 x 52 mm (2.3 x 2.0 in.)	
Exhaust system	Through-the-hub exhaust	
Lubrication system	Engine oil mixed gasoline	
Cooling system	Thermostat controlled	
Starting system	Manual	
Ignition	Flywheel magneto CDI	
Spark plugs	NGK B7HS-10/BR7HS-10 or Champion L82C/RL82C gap 1.0 mm (0.039 in.)	
Trim system	Manual, 6 positions	
Engine oil mixing ratio	Mercury/Quicksilver 2-Stroke engine oil: Unleaded gasoline 1:50	
Gear oil	Mercury/Quicksilver gear oil API GL5, SAE #80–90 approximately 370 mL (12.5 oz)	
Fuel tank capacity	25 Liter (6.6 US gal)	
Gear reduction ratio	13:24 (1.84:1)	

GENERAL INFORMATION

Component Identification



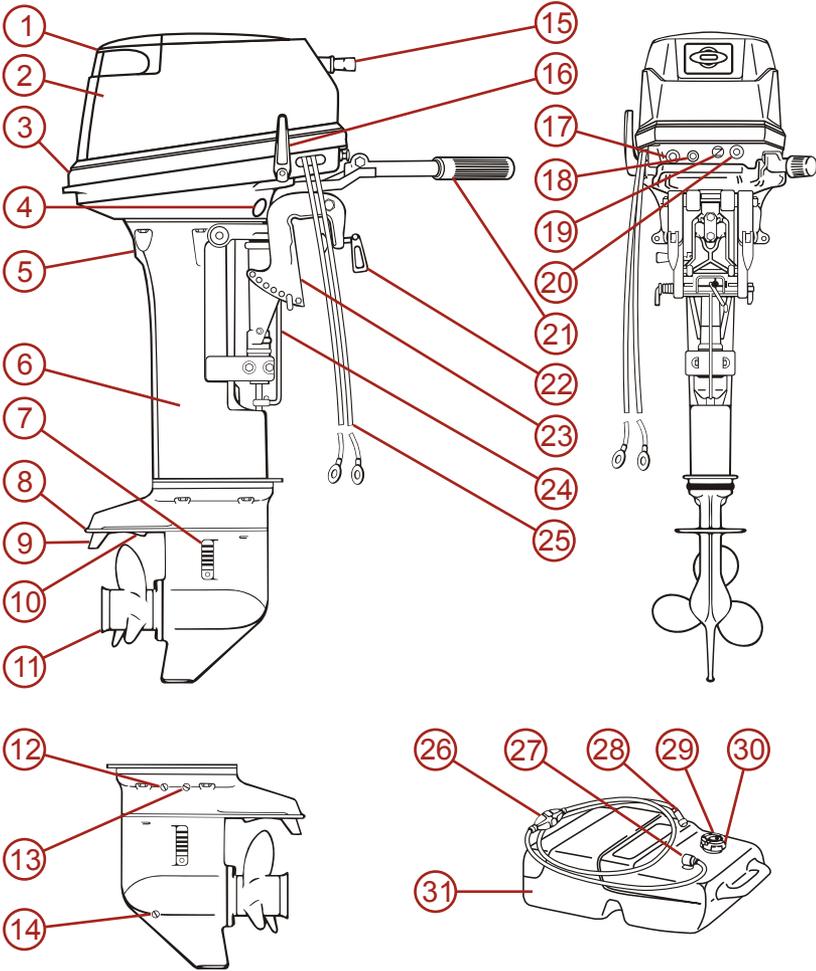
40465

GENERAL INFORMATION

MH Models

- 1** - Tilt handle
- 2** - Top cowl
- 3** - Bottom cowl
- 4** - Reverse lock lever
- 5** - Water pump indicator hole
- 6** - Driveshaft housing
- 7** - Water strainer
- 8** - Anti-ventilation plate
- 9** - Anode/trim tab
- 10** - Secondary water intake
- 11** - Propeller
- 12** - Oil drain plug (upper)
- 13** - Water plug
- 14** - Oil drain plug (lower)
- 15** - Starter handle
- 16** - Shift lever
- 17** - Stop switch
- 18** - Starter switch button
- 19** - Choke knob
- 20** - Fuel hose connector
- 21** - Throttle grip
- 22** - Clamp screws
- 23** - Transom brackets
- 24** - Thrust rod
- 25** - Primer bulb
- 26** - Fuel pickup elbow
- 27** - Fuel connector
- 28** - Fuel tank cap
- 29** - Air vent screw
- 30** - Fuel tank

GENERAL INFORMATION



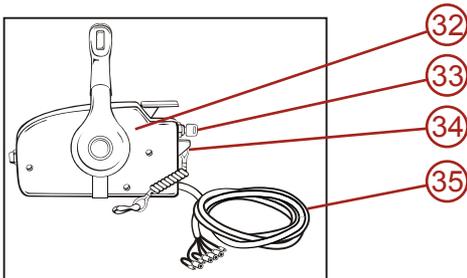
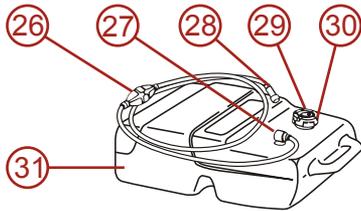
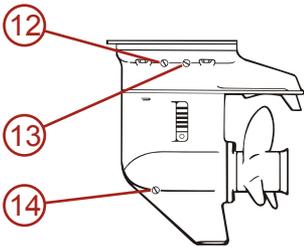
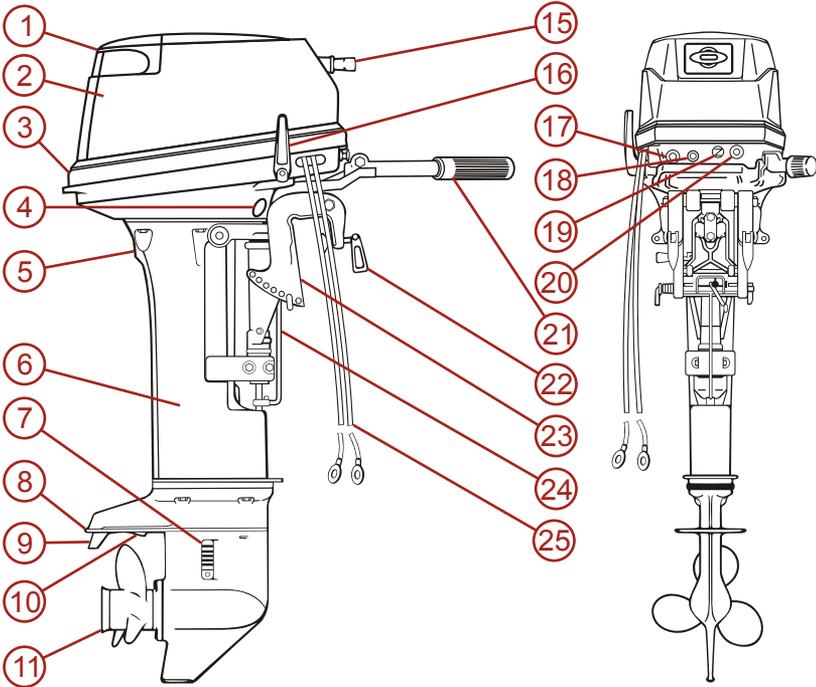
40466

GENERAL INFORMATION

EH Models

- 1 - Tilt handle
- 2 - Top cowl
- 3 - Bottom cowl
- 4 - Reverse lock lever
- 5 - Water pump indicator hole
- 6 - Driveshaft housing
- 7 - Water strainer
- 8 - Anti-ventilation plate
- 9 - Anode/trim tab
- 10 - Secondary water intake
- 11 - Propeller
- 12 - Oil drain plug (upper)
- 13 - Water plug
- 14 - Oil drain plug (lower)
- 15 - Starter handle
- 16 - Shift lever
- 17 - Stop switch
- 18 - Starter switch button
- 19 - Choke knob
- 20 - Fuel hose connector
- 21 - Throttle grip
- 22 - Clamp screws
- 23 - Transom brackets
- 24 - Thrust rod
- 25 - Battery cables
- 26 - Primer bulb
- 27 - Fuel pickup elbow
- 28 - Fuel connector
- 29 - Fuel tank cap
- 30 - Air vent screw
- 31 - Fuel tank

GENERAL INFORMATION



40467

GENERAL INFORMATION

E Models

- | | |
|--------------------------------------|-----------------------------------|
| 1 - Tilt handle | 18 - Starter switch button |
| 2 - Top cowl | 19 - Choke knob |
| 3 - Bottom cowl | 20 - Fuel hose connector |
| 4 - Reverse lock lever | 21 - Throttle grip |
| 5 - Water pump indicator hole | 22 - Clamp screws |
| 6 - Driveshaft housing | 23 - Transom brackets |
| 7 - Water strainer | 24 - Thrust rod |
| 8 - Anti-ventilation plate | 25 - Battery cables |
| 9 - Anode/trim tab | 26 - Primer bulb |
| 10 - Secondary water intake | 27 - Fuel pickup elbow |
| 11 - Propeller | 28 - Fuel connector |
| 12 - Oil drain plug (upper) | 29 - Fuel tank cap |
| 13 - Water plug | 30 - Air vent screw |
| 14 - Oil drain plug (lower) | 31 - Fuel tank |
| 15 - Starter handle | 32 - Remote control box |
| 16 - Shift lever | 33 - Main switch |
| 17 - Stop switch (optional) | 34 - Lanyard stop switch |
| | 35 - Harness assembly |

GENERAL INFORMATION

Associated Parts

	Name	Qty.	Dimensions
Service tools	Tool bag	1	
	Pliers	1	
	Socket wrench	1	10 x 13 mm
	Socket wrench	1	21 mm
	Socket wrench handle	1	
	Screwdriver	1	
	Screwdriver handle	1	
Spare parts	Starter rope	1	1000 mm
	Spark plug	1	NGK B7HS-10 or Champion L82C (gap: 1.0 mm)
	Cotter pin	1	
Other*	Fuel tank	1	
	Primer bulb	1 set	
	Remote control box	1 set	E Models only
	Remote control attachment	1 set	E Models only

* Not included as standard accessories in some markets.

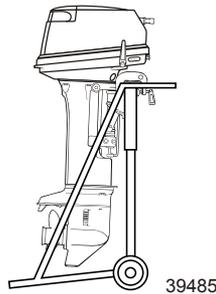
TRANSPORTING

Removing the Motor

1. Stop the engine.
2. Disconnect the fuel connector, the remote control cable, the battery cables, bracket fixing bolts and nuts, etc. from the motor.
3. Remove the motor from the hull and completely drain the water from the gear housing. Be sure to keep the engine higher than the propeller whenever you carry the motor.

Carrying the Motor

Be sure to keep the motor in a vertical position whenever you carry the motor.



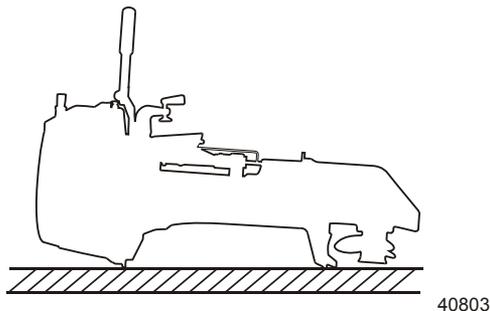
NOTE: If you carry the motor in a horizontal position, keep the powerhead higher than the propeller.

IMPORTANT: Beware of explosion danger. Spilled and vaped 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

Keep the motor in a vertical position whenever you store the motor.

NOTE: If you store the motor in a horizontal position, lay the motor down on the ground with the handles facing upward.

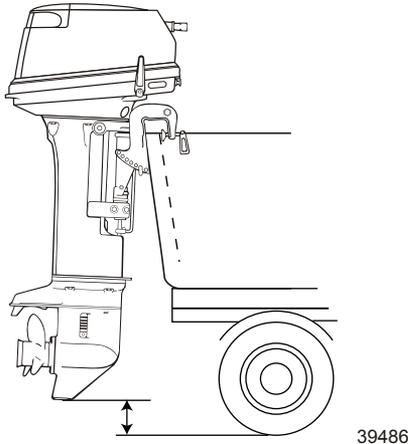


TRANSPORTING

Trailing Boat/Outboard

The boat should be trailed with the outboard tilted down in a vertical (normal running) position, fully down.

NOTE: *Trailing in the tilted position may cause damage to the motor, boat, etc. If trailing with the motor fully down is not available (the gearcase skeg is too close to the road in a vertical position), secure the motor using a device like a transom saver bar in the tilted position.*



Shift the outboard to the forward gear. This prevents the propeller from spinning freely.

If additional ground clearance is required, the outboard should be tilted up using an accessory outboard support device. Refer to your local dealer for recommendations. Additional clearance may be required for railroad crossings, driveways, and trailer bouncing.

IMPORTANT: The tilt lock and shallow water drive feature (tiller handle models) on the outboard are not intended to support the outboard in the tilted position when trailing.

TRANSPORTING

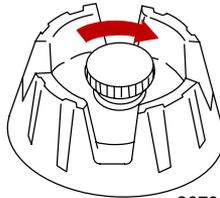
Transporting Portable Fuel Tanks

⚠ WARNING

Avoid serious injury or death from a gasoline fire or explosion. Follow the transporting instructions supplied with the portable fuel tank. Transport the fuel tank in a well ventilated area away from open flame or sparks.

MANUAL VENTING TYPE FUEL TANK

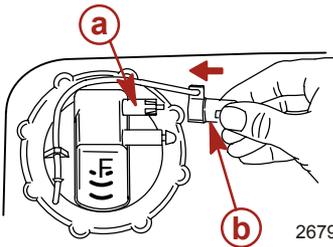
Close the fuel tank air vent when transporting tank. This will prevent escape of fuel or vapors from tank.



26793

AUTO-VENTING TYPE FUEL TANK

1. Disconnect the remote fuel line from tank. This will close the air vent and prevent escape of fuel or vapors from tank.
2. Install tether cap over the fuel line connector stem. This will protect the connector stem from being accidentally pushed-in, allowing fuel or vapor to escape.



a - Connector stem

b - Tether cap

26794

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, therefore, any damage caused 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 two 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.

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, idling, and other engine performance problems.
- Do not use gasoline that contains more than 10% ethanol or more than 5% methanol.

FUEL AND OIL

- Damages resulting from the use of gasolines that contain alcohol, acetone, or benzene are not covered under the limited warranty.

▲ 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.

Oil Recommendation

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

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

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

Mixing Fuel and Oil

Use a 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.

OIL/GASOLINE MIXING RATIO CHART

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

FUEL AND OIL

GASOLINE/OIL MIXING RATIO CHART			
Oil/Gas Ratio	3.8 liters (1 US gal) gas	11.5 liters (3 US gal) gas	23 liters (6 US gal) gas
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 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.

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 completely fill the fuel tanks. Leave approximately 10% of the tank volume unfilled. Fuel will expand in volume as its temperature rises and can leak under pressure if the tank is completely filled.

FILLING FUEL TANKS PERMANENTLY INSTALLED

Slowly pour the correct amount of oil along with gasoline as the tank is being filled.

FILLING PORTABLE FUEL TANKS

Remove the portable fuel tanks from the boat to refill them.

Pour the full amount of oil, along with one gallon of gasoline, into the fuel tank. Mix thoroughly, then pour the remainder of gasoline into the tank.

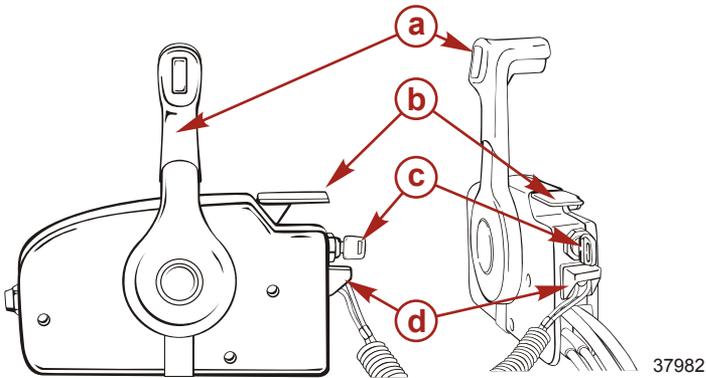
PORTABLE FUEL TANK PLACEMENT IN THE BOAT

Place the fuel tank in the boat so the vent is higher than the fuel level under normal boat operating conditions.

FEATURES AND 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

Tilt Up and Tilt Down

BASIC TILTING OPERATION

The tilt feature allows the operator to tilt the outboard to a higher tilt angle for operation in shallow water, or tilt the outboard to the full up position.

When running the outboard, keep the tilt lever in the release position. This allows the outboard to return to the running position if the outboard should hit an underwater obstacle and be lifted up.

Moving the tilt lever to the tilt position will allow the outboard to lock into the shallow water drive position or the full up position.

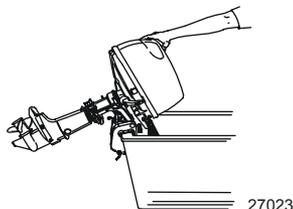
IMPORTANT: When tilting up or down, be careful not to place your hand between the swivel bracket and the stern bracket. Be sure to tilt the outboard down slowly.

NOTE: Stop the engine before tilting up.

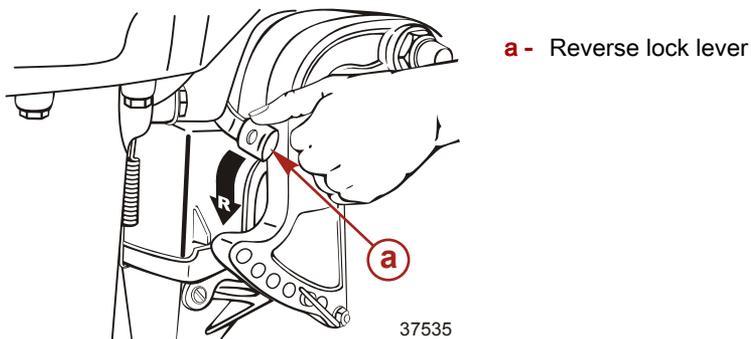
1. Stop the engine.

FEATURES AND CONTROLS

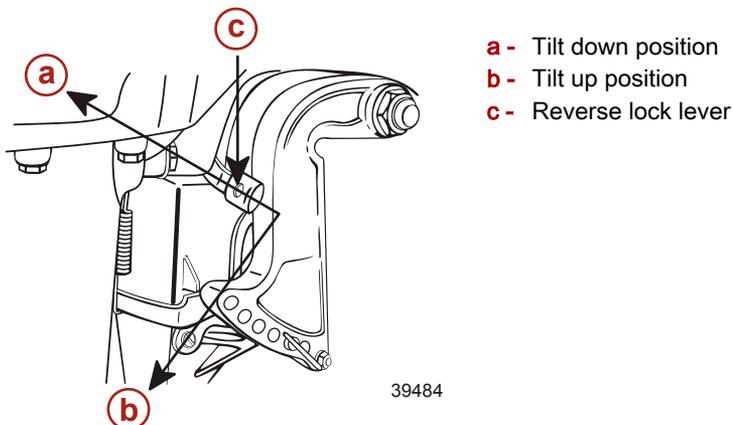
2. With the shift lever in Neutral (N) or Forward (F), fully tilt the motor up toward by holding the tilt handle provided at the rear of the upper motor cover.



3. **Tilt up:** Push the reverse lock lever down until it stops. This is the tilt up position.
4. Tilt the engine all the way up until it locks in place.



5. **Tilt down:** Pull the reverse lock lever upward until it stops. This is the tilt down position.
6. Lift the engine up slightly, and then allow gravity to lower it for you.



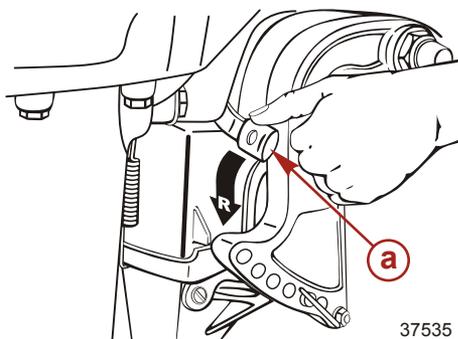
FEATURES AND CONTROLS

Shallow Water Operation

IMPORTANT: When in shallow water operation, be careful not to place your hand between the swivel bracket and the stern bracket. Be sure to tilt the outboard down slowly.

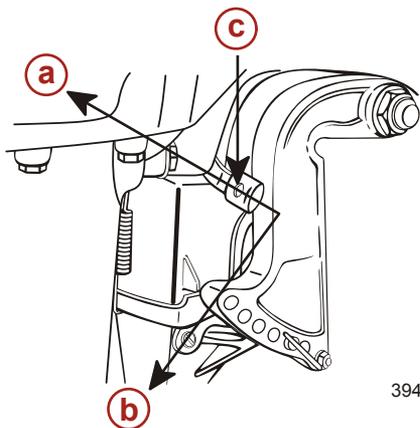
NOTE: Slow down to trolling speed, and shift to Neutral (N) before operating in shallow water.

1. Stop the engine.
2. **Tilt up:** Put the reverse lock lever in the tilt up position, and tilt up the engine to put the engine in the shallow water running position.



a - Reverse lock lever

3. **Tilt down:** Pull the reverse lock lever in the tilt down position, slightly lift up the engine, then put it down.



- a** - Tilt down position
- b** - Tilt up position
- c** - Reverse lock lever

FEATURES AND CONTROLS

NOTE: Please follow the instructions below:

- *Ensure that the water inlet is submerged at all times and that water is continuously running out of the cooling water check port.*
- *Be sure to run the engine slowly when using the shallow water drive. Running at higher speed will result in lack of control and may damage the engine.*
- *Ensure the motor does not strike the bottom, especially when running in reverse. If the motor does strike the bottom while in reverse, the impact is transmitted to the transom, which could damage both the motor and the boat.*

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.

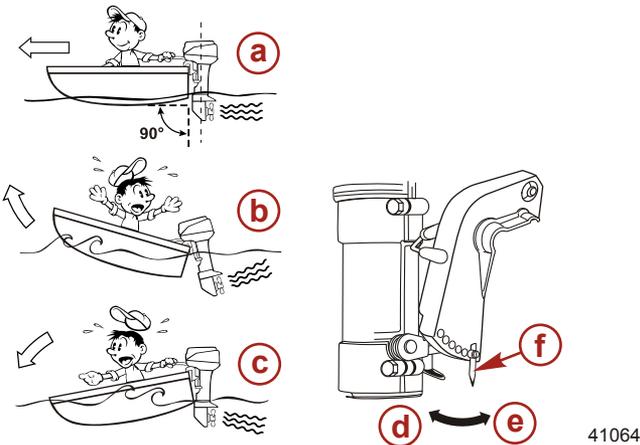
The trim angle is adjusted by setting the trim position pin in the correct trim position.

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

Steering Friction Adjustment

Steering friction can be adjusted according to your preference with the steering co-pilot.

⚠ WARNING

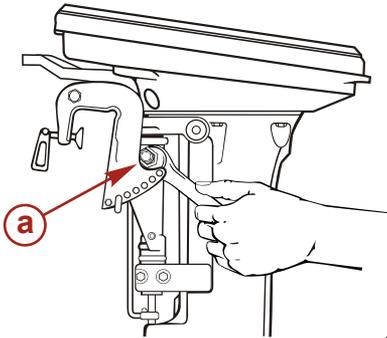
Insufficient friction adjustment can cause serious injury or death due to loss of boat control. When setting the friction adjustment, maintain sufficient steering friction to prevent the outboard from steering into a full turn if the tiller handle or steering wheel is released.

Adjust the steering co-pilot to achieve desired steering friction.

- Turn clockwise for more friction.

FEATURES AND CONTROLS

- Turn counterclockwise for less friction.



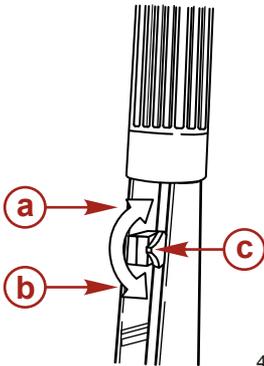
a - Steering co-pilot

40867

NOTE: The steering adjustment bolt is used to adjust the sliding friction of the steering, but not to correct the steering. If excess tightening is given to the bolt, it may cause damage to the swivel bracket.

Throttle Grip Turning Friction Adjustment

Turn the friction adjustment screw to set and maintain the throttle at desired speed. Turn screw clockwise to tighten friction and turn screw counterclockwise to loosen friction.



- a - Tighten friction
- b - Loosen friction
- c - Throttle adjustment screw

41034

Trim Tab Adjustment

Propeller steering torque will cause the boat to pull in one direction. This steering torque is a normal result from the outboard not trimmed with the propeller shaft parallel to the water surface. The trim tab can help compensate for this steering torque in many cases and can be adjusted within limits to reduce any unequal steering effort.

- Operate the boat at normal cruising speed with the outboard set at the desired operating angle position. Turn the boat left and right and note the direction the boat turns more easily.

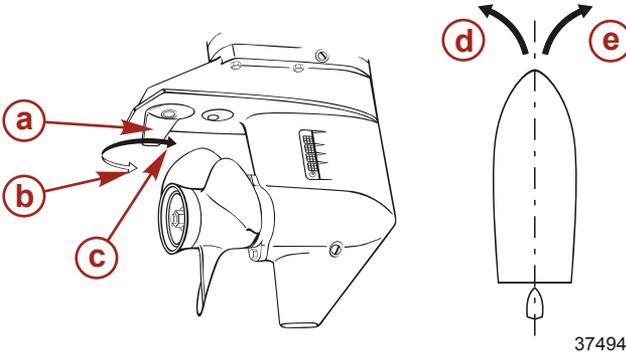
FEATURES AND CONTROLS

- If adjustment is necessary, loosen the trim tab bolt and make small adjustments at a time.
- After the adjustment, securely tighten the trim tab bolt.

NOTE: Check for looseness of the bolt and the trim tab at regular intervals. Due to corrosion, the trim tab will wear down over time.

The trim tab is located under the anti-ventilation plate.

- If the boat steers toward the left, set the trim tab in the direction of B.
- If the boat steers toward the right, set the trim tab in the direction of C.



- a** - Trim tab
- b** - Steers toward the left, set the trim tab in the direction of B
- c** - Steers toward the right, set the trim tab in the direction of C
- d** - Turning left
- e** - Turning right

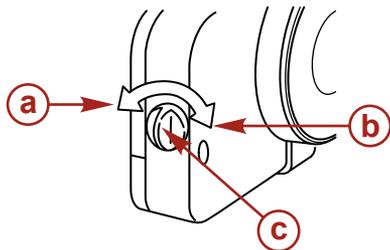
IMPORTANT: The trim tab also acts as an anode to prevent galvanic corrosion. Do not apply any paint, grease, or other material to the surface of the trim tab.

NOTE: Trim tab adjustment will have little effect reducing steering torque if the outboard is installed with the anti-ventilation plate approximately 50 mm (2 in.) or more above the boat bottom.

FEATURES AND CONTROLS

REMOTE CONTROL LEVER FRICTION (THROTTLE FRICTION ADJUSTMENT SCREW)

To adjust the friction of the remote control lever, turn the throttle friction adjustment screw on the front of the remote control box. Turn clockwise to increase the friction and counterclockwise to decrease it.



38385

- a** - Turn counterclockwise to decrease the friction
- b** - Turn clockwise to increase the friction
- c** - Throttle friction adjustment screw

OPERATION

Prestarting 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.

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.

OPERATION

Operating at High Elevations

IMPORTANT: To prevent serious damage to the engine caused by a lean fuel mixture, do not operate your 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 your outboard at an elevation higher than 750 m (2500 ft.) above sea level may require a carburetor jet change and/or different pitch propeller. 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.

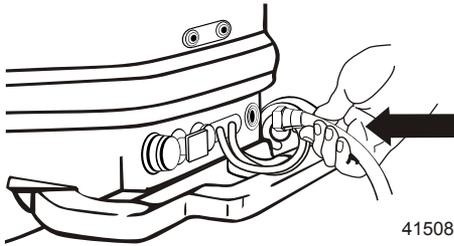
Operating Outboard as an Auxiliary Engine

If the outboard is used as an auxiliary engine, stop the engine and tilt the outboard out of the water when using the main power source.

IMPORTANT: The outboard must be restrained from bouncing while operating the boat using the main power source. Bouncing can damage the outboard and boat transom.

Prestarting Instructions

1. Attach the fuel connector to the engine connector. The arrow-mark on the primer bulb should be facing the engine.

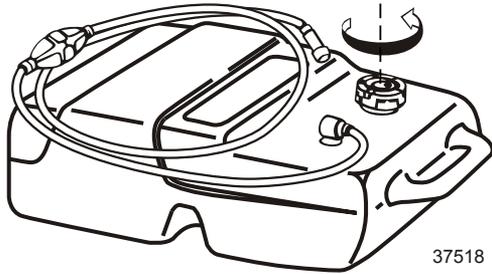


NOTICE

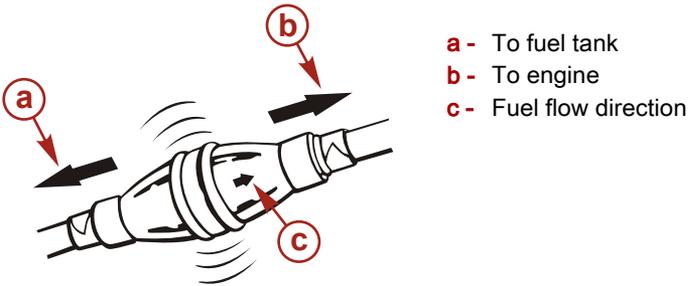
Without sufficient cooling water, the engine, the water pump, and other components will overheat and suffer damage. Provide a sufficient supply of water to the water inlets during operation.

OPERATION

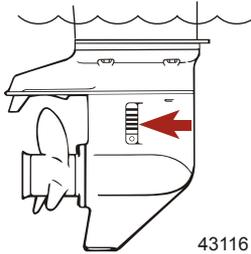
2. Loosen the air vent screw on the tank cap.



3. Feed fuel to the carburetor by squeezing the primer bulb until it is firm.



4. Make sure the cooling water intake is submerged.



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 OIL

Use Mercury or Quicksilver engine oil or the other recommended oil (TC-W3).

OPERATION

NOTE: Do not mix different brands of oil. The mixing of different brands, or different kinds even if the same brand, may cause gelling, resulting in blockage of filter screens. This may lead to serious engine damage due to the lack of lubrication.

Mixing ratio (1:50): Mercury or Quicksilver engine oil or recommended engine oil (TC-W3), 1:Unleaded gasoline 50.

ENGINE BREAK-IN FUEL MIXTURE

Use a 1:25 oil/gasoline mixture in the first tank of fuel. Use Mercury or Quicksilver engine oil or the recommended oil (TC-W3).

BREAK-IN

Break-in period for 10 hours

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.

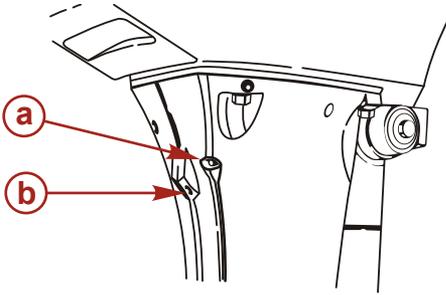
Time	0–9 min.	10–59 min.	1:00–1:59 hrs.	2:00–9:59 hrs.	10 hrs.
Method of operation	Idling or trolling	Throttle open less than ½ of the way (about 3000 RPM)	Throttle open less than ¾ of the way (about 4000 RPM)	Throttle open ¾ of the way (about 4000 RPM)	Normal operating
Conditions	Cruising at no more than minimum speed		A full-throttle run is allowed for 1 min. every 10 min.	A full-throttle run is allowed for 2 min. every 10 min.	

Warming Up the Engine

Warm the engine at low engine speeds for about three minutes. This allows the lubrication oil to circulate to all parts of the engine. Operating the engine without allowing it to warm up, shortens the engine life. Be sure to check that water is coming out of the water pump indicator when warming up the engine.

OPERATION

NOTE: If the engine is operated continuously without water discharging from the water pump indicator or idle hole, the engine may overheat.



- a - Water pump indicator
- b - Idle hole

40472

Engine speeds: Idling speed after warming up.

In gear	In Neutral
800 RPM	950 RPM

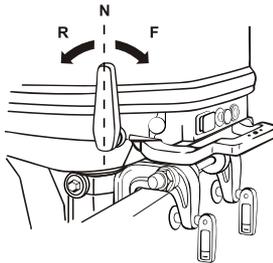
Starting the Engine

Before starting, read the **Pre-Starting Check List**, special operating instructions, and **Engine Break-in Procedure** in the **Operation** section.

Electric starting outboard models must not be started manually using the starter rope, or run, without having the battery leads connected to a battery. Damage to the charging system could result.

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

1. **MH and EH Models:** Place the shift lever in the Neutral (N) position.



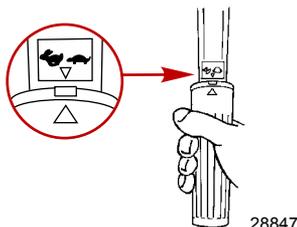
38347

NOTE: Be sure that the shift lever is in Neutral (N) when starting the engine. This model is provided with a function that prevents starting in gear.

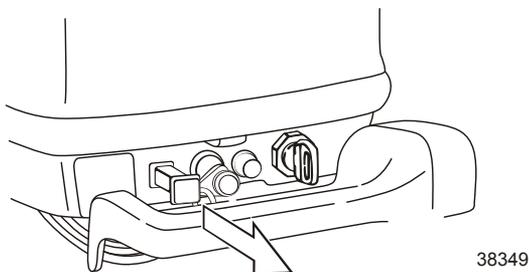
OPERATION

IMPORTANT: If the motor somehow does start in gear, do not use it. Contact your authorized dealer.

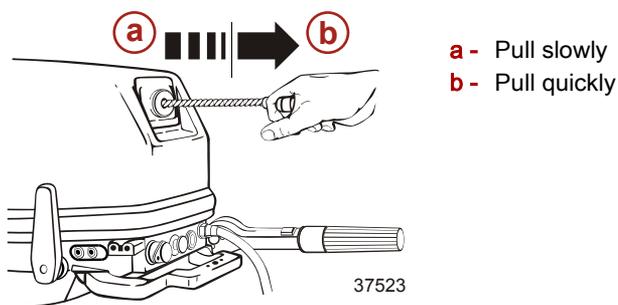
2. Turn the throttle grip until the mark on the grip faces the triangular mark on the steering handle.



3. Pull the choke knob out all the way. The choke operation is not necessary when the engine is warm.

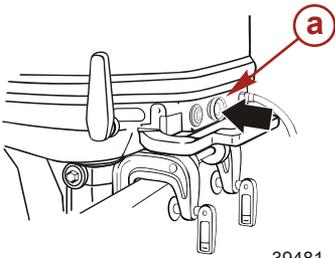


4. **MH models:** Pull the starter handle slowly until you feel resistance. Then pull it quickly.



OPERATION

5. **EH Models:** Push the starter switch button.



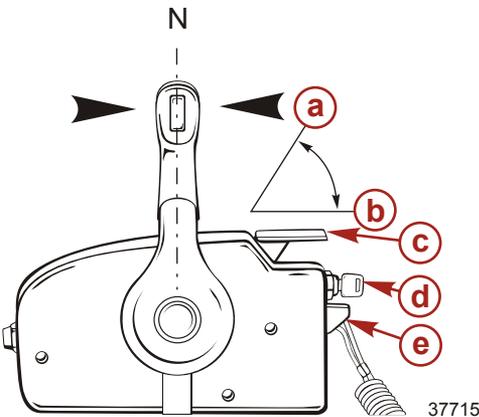
a - Starter switch button

39481

6. Release the button when the engine has started.

IMPORTANT: If the choke knob was used for the engine start, push it back when the engine has started.

7. **E Models:** Insert the main switch key.
8. Set the control lever in the Neutral (N) position. Raise the Neutral (N) warm-up lever.



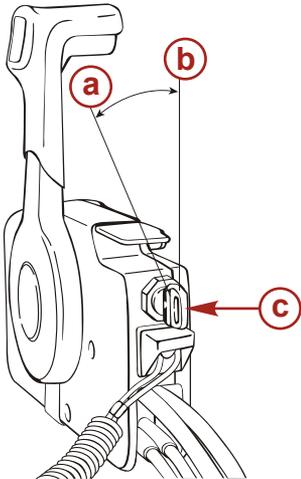
a - Fully opened
b - Fully closed
c - Neutral warm-up lever
d - Ignition key
e - Lanyard stop switch

37715

9. Turn the main switch key to the start position. Then, continuously push the key to operate the choke.

OPERATION

NOTE: Choke operation is not necessary if the engine is warm.



- a** - Off
- b** - On
- c** - Push to operate choke

37466

10. Stop pushing the key when the engine has started. The key returns to the original position automatically.

NOTE: The neutral warm-up lever cannot be raised when the control lever shift is in Forward (F) or Reverse (R).

NOTE: E and EH Models:

- Continuous operation of the starter motor can shorten the life of the battery and the starter motor. Operate the starter motor for a maximum of three seconds. If the engine does not start, wait five seconds before engaging the starter motor again.
- Do not engage the starter motor after the engine has started.

Gear Shifting

IMPORTANT: Observe the following:

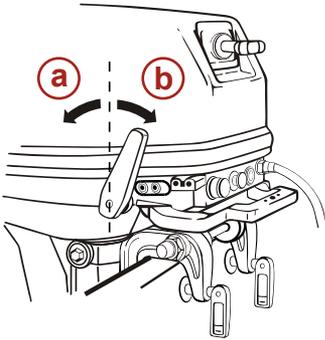
- **Never shift the outboard into gear unless the engine speed is at idle. Do not shift the outboard into reverse when the engine is not running.**

MH and EH Models

1. **Forward:** Turn the throttle grip to reduce the engine speed. When the engine reaches trolling speed, quickly pull the shift lever to the Forward (F) position.

OPERATION

2. **Reverse:** As when shifting to Forward (F), reduce the engine speed, when the engine reaches trolling speed, quickly push the shift lever to Reverse (R) position.



- a - Reverse (R)
- b - Forward (F)

37713

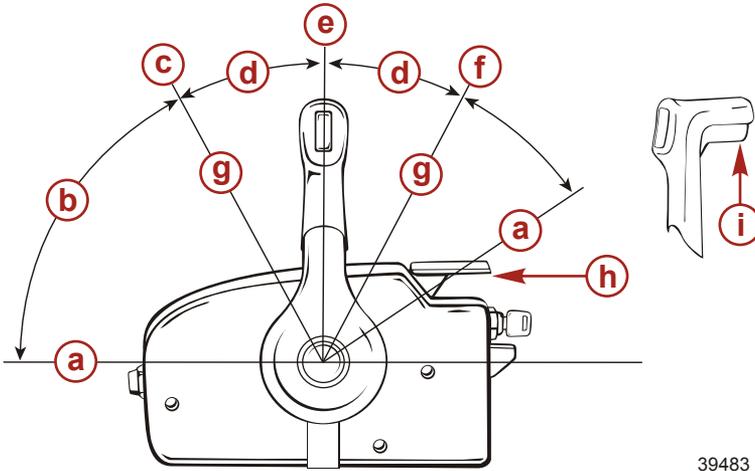
E Models

1. **Forward:** Quickly push the control lever to the Forward (F) position at 32°, where the gear is connected, while lifting up on the lock button located at the bottom of the control lever grip. Further shifting will open the throttle.
2. **Reverse:** Quickly pull the control lever to the Reverse (R) position at 32°, where the gear is connected, while lifting up on the lock button located at the bottom of the control lever grip. Further shifting will open the throttle.

NOTE: The control lever is inoperative unless the neutral warm-up lever is in the fully closed position.

OPERATION

NOTE: Do not increase the engine speed unnecessarily when operating the neutral warm-up lever.



- a** - Fully open
- b** - Throttle
- c** - Forward (F)
- d** - Shift
- e** - Neutral (N)
- f** - Reverse (R)
- g** - Fully closed
- h** - Neutral warm-up lever
- i** - Lock button

39483

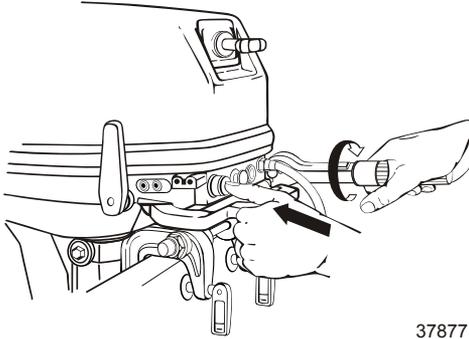
Stopping the Engine

MH and EH Models

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

OPERATION

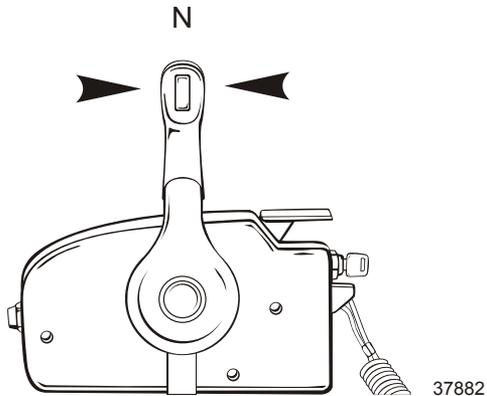
3. Push the stop switch to stop the engine.



37877

E Models

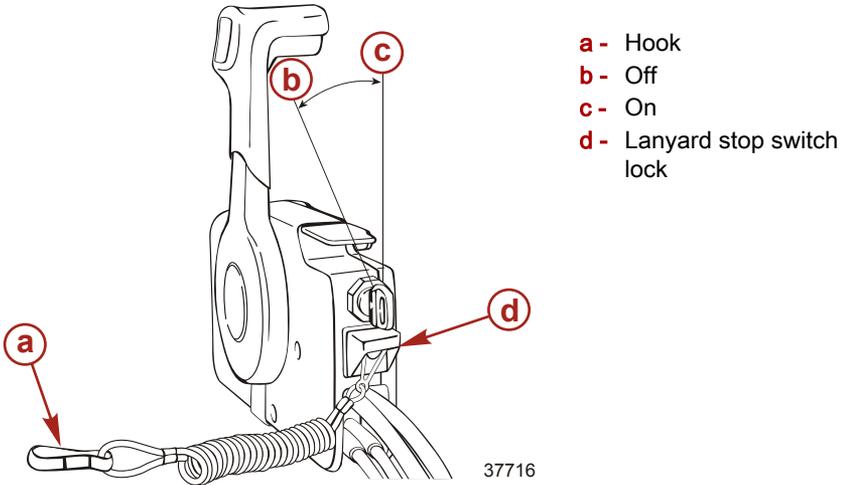
1. Put the shift lever into the Neutral (N) position and run the engine for 2–3 minutes at idling speed.



37882

OPERATION

- Turn the main switch key to the off position or pull out the lanyard stop switch lock.



IMPORTANT: Please follow the instructions below:

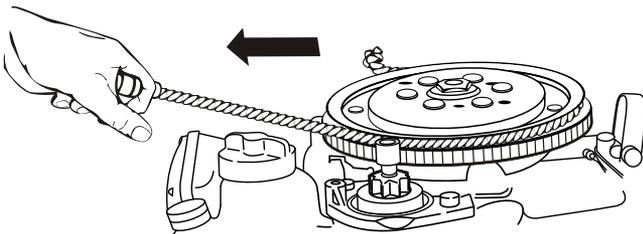
- After stopping the engine, close the air vent screw on the tank cap.
- Disconnect the fuel connector of the engine or the fuel tank.
- Disconnect the battery cable of the EH or E type engine, if the engine will not be used for more than three days.

Emergency Starting

If the starter system fails, use the spare starter rope provided and follow the procedure.

Remove the top cowl and use the spare starter rope provided and follow the procedure.

- Pull directly on the starter rope by hand.
- Use a 10 mm socket wrench as a handle on the rope.



OPERATION

⚠ WARNING

High voltage is present any time the key is turned on, especially when starting or operating the engine. Do not touch ignition components or metal test probes and stay clear of spark plug leads when performing live tests.

⚠ 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 flywheel cover or top cowl when engine is running.

MAINTENANCE

Outboard Care

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

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.

Inspection and Maintenance Schedule

BEFORE EACH USE

- Check that lanyard stop switch stops the engine.
- Visually inspect the fuel system for deterioration or leaks.
- Check outboard for tightness on transom.
- Check steering system for binding or loose components.
- Remote control models - Visually check steering link rod fasteners for proper tightness.
- Check propeller blades for damage.

AFTER EACH USE

- Flush out the outboard cooling system if operating in salt or polluted water. Refer to **Flushing the Cooling System**.
- Wash off all salt deposits and flush out the exhaust outlet of the propeller and gearcase with fresh water if operating in saltwater.

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

- Lubricate all lubrication points. Lubricate more frequently when used in saltwater. Refer to **Lubrication Points**.
- Inspect and clean spark plugs. Refer to **Spark Plug Inspection and Replacement**.
- Check fuel line filter for contaminants. Refer to **Fuel System**.
- Check carburetor adjustments, if required.¹
- Check corrosion control anodes. Check more frequently when used in saltwater. Refer to **Replacing the Anodes**.
- Drain and replace gearcase lubricant. Refer to **Changing Gear Oil**.
- Lubricate splines on the driveshaft and shift shaft.¹
- Electric start models - Inspect battery. Refer to **Battery Inspection**.

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

MAINTENANCE

- Remote control models - Check control cable adjustments.¹
- Remove engine deposits with Mercury Precision or Quicksilver Power Tune Engine Cleaner.
- Check tightness of bolts, nuts, and other fasteners.
- Clean fuel tank pick up filter.

EVERY 300 HOURS OF USE OR THREE YEARS

- Replace water pump impeller (more often if overheating occurs or reduced water pressure is noted).¹

BEFORE PERIODS OF STORAGE

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

Flushing the Cooling System

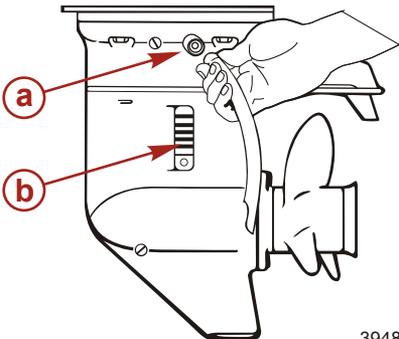
Flush the internal water passages of the outboard with fresh water after each use in salt, polluted, or muddy water. This will help prevent a buildup of deposits from clogging the internal water passages.

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

⚠ 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 propeller. Refer to **Propeller Replacement**. Remove the water plug from the motor, and screw in the flushing attachment (hose adapter).
2. Connect a hose to the flushing attachment to flush out the inside of the motor with water. (Be sure to seal the water strainer, located in the gearcase, with tape.)



- a - Water plug
- b - Water strainer

39488

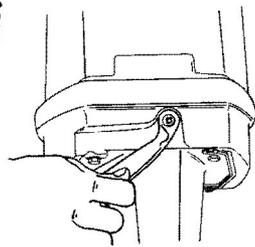
MAINTENANCE

3. With the shift lever in Neutral (N), run the engine at a low speed while flushing the cooling system to ensure all seawater and mud are removed.
4. Check for a steady stream of water flowing out of the water pump indicator hole. Continue flushing the outboard for 3–5 minutes, carefully monitoring the water supply at all times.
5. Stop the engine, turn off the water, and remove the flushing attachment. Install the propeller.

Top Cowl Removal and Installation

REMOVAL

1. Unlock the rear latch by pushing lever down.



29054

2. Lift rear of cowl and disengage front hook.



26851

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.

Battery Inspection

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

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

1. Turn off the engine before servicing the battery.
2. Ensure the battery is secure against movement.
3. Battery cable terminals should be clean, tight, and correctly installed. Positive to positive and negative to negative.

MAINTENANCE

4. Ensure the battery is equipped with a nonconductive shield to prevent accidental shorting of battery terminals.

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.

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.

ENGINE FUEL FILTER

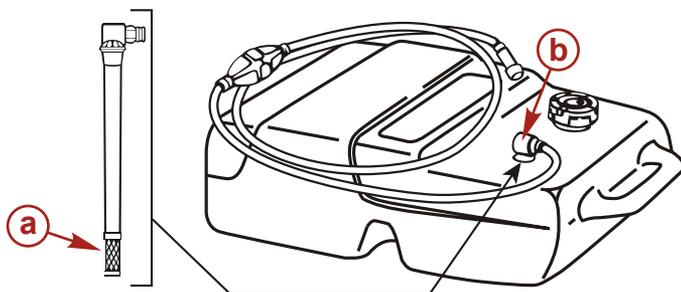
Inspect the sight bowl for water accumulation and inspect the filter element for sediment. Clean the filter as follows.

Cleaning the fuel filters and the fuel tank

Fuel filters are provided inside the fuel tank and engine.

MAINTENANCE

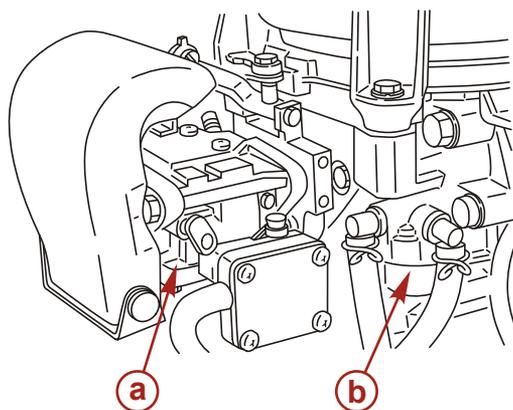
1. **Fuel tank filter:** Loosen the fuel pickup elbow shown, remove it and clean the fuel filter.



37711

- a - Filter
- b - Fuel pickup elbow

2. **Engine filter:** Remove cap, then clean the fuel filter in the engine.



40475

- a - Carburetor
- b - Fuel filter

3. **Fuel tank:** Water or dirt in the fuel tank may cause engine trouble. Clean the tank at specified times or after the motor has been stored for a long period (over three months).

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

Exterior Care

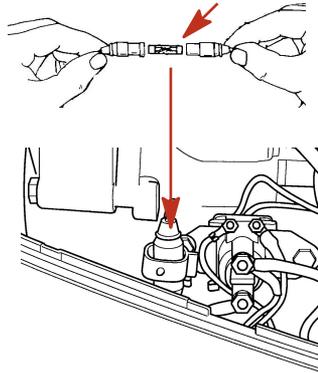
Your outboard is protected with a durable baked enamel finish. Clean and wax often using marine cleaners and waxes.

MAINTENANCE

Fuse Replacement - Electric Start Remote Control Models

IMPORTANT: Always carry spare SFE 20 amp fuses.

The electric starting circuit is protected from overload by an SFE 20 amp fuse. If the fuse is blown, the electric starter motor will not operate. Try to locate and correct the cause of the overload. If the cause is not found, the fuse may blow again. Replace fuse with a fuse of the same rating.

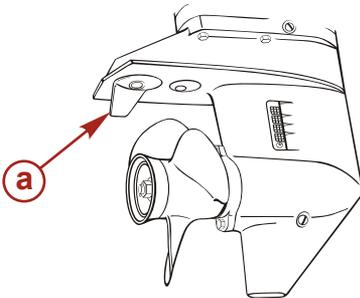


3036

Replacing the Anodes

The 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 eroded instead of the outboard metals.

Two anodes are fitted at the gearcase and the mount bracket. When the anodes has been eroded more than 2/3, replace it immediately.



a - Anode/trim tab

37879

IMPORTANT: Please follow the instructions below:

1. Never grease or paint the anode.
2. At each inspection, retighten the anode attaching bolt, as it is likely to be subjected to electrolytic corrosion.

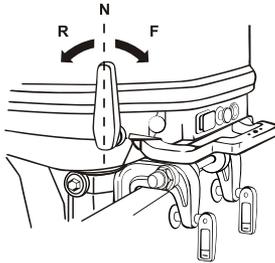
MAINTENANCE

Propeller Replacement

⚠ WARNING

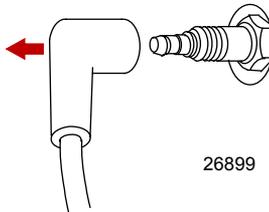
Rotating propellers can cause serious injury or death. Never operate the boat out of the water with a propeller installed. Before installing or removing a propeller, place the drive unit in neutral and engage the lanyard stop switch to prevent the engine from starting. Place a block of wood between the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

1. Shift outboard to Neutral (N) position.



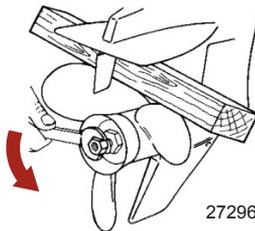
38347

2. Remove the spark plug leads to prevent the engine from starting.



26899

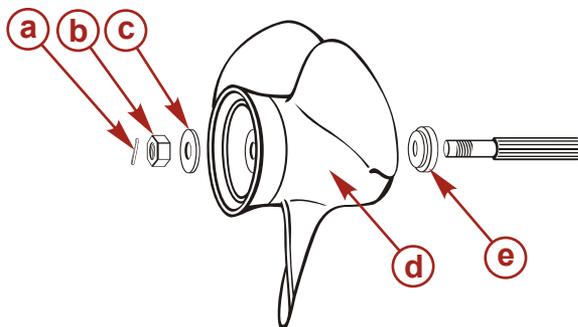
3. Place a block of wood between the gearcase and the propeller to hold the propeller and remove the propeller nut.



27296

MAINTENANCE

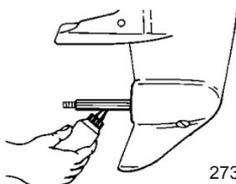
- Remove the propeller from the shaft. If the propeller is seized to the shaft and cannot be removed, have the propeller removed by an authorized dealer.



38055

- a - Cotter pin
- b - Nut
- c - Washer
- d - Propeller
- e - Thrust hub

- Coat the propeller shaft with Mercury Extreme Grease or 2-4-C with PTFE.



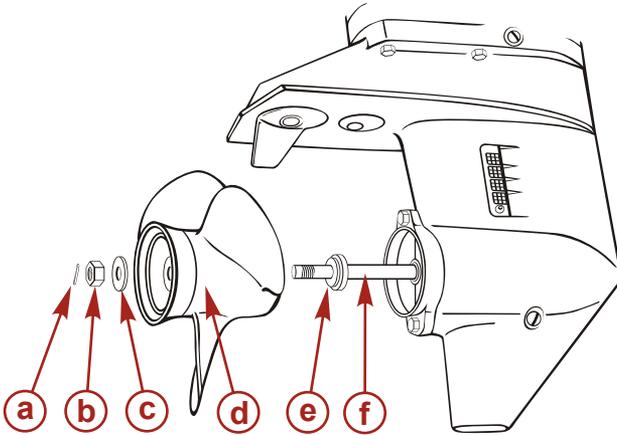
27305

Tube Ref No.	Description	Where Used	Part No.
	Extreme Grease	Propeller shaft	8M0071842
	2-4-C with PTFE	Propeller shaft	92-802859A 1

IMPORTANT: To prevent the propeller hub from corroding and seizing to the propeller shaft (especially in saltwater), 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.

MAINTENANCE

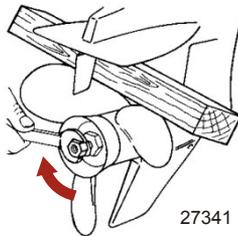
6. Install forward thrust hub, propeller, washer, nut, and cotter pin onto the propeller shaft.



37520

- a** - Cotter pin
- b** - Nut
- c** - Washer
- d** - Propeller
- e** - Forward thrust hub
- f** - Propeller shaft

7. Place a block of wood between the gearcase and propeller and tighten the propeller nut.



27341

8. Install the spark plug leads.

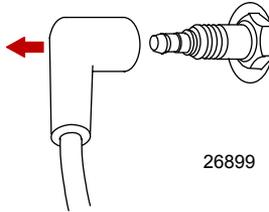
MAINTENANCE

Spark Plug Inspection and Replacement

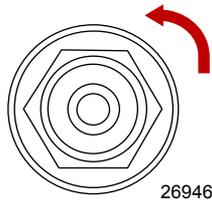
⚠ WARNING

Damaged spark plug boots may emit sparks that 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.

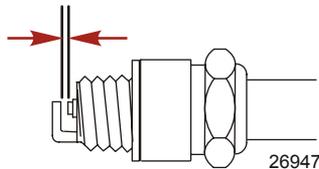
1. Remove the spark plug leads. Twist the rubber boots slightly and pull off.



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



3. Set the spark plug gap (0.9–1.0 mm).



Spark Plug

NGK B7HS-10 or BPR7HS-10 or recommended ones (Champion L82 or RL 82C with 1.0 mm gap)

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

MAINTENANCE

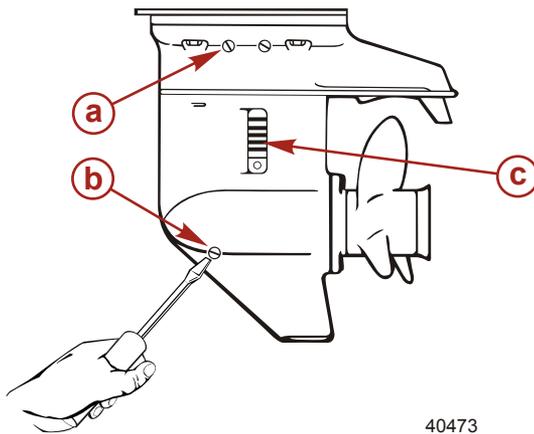
Description	Nm	lb-in.	lb-ft
Spark plug	27		20

Lubrication Points

Only let an authorized Mercury dealer perform service or maintenance on this product. Be sure to use genuine parts, genuine lubricants, or recommended lubricants.

Changing Gear Oil

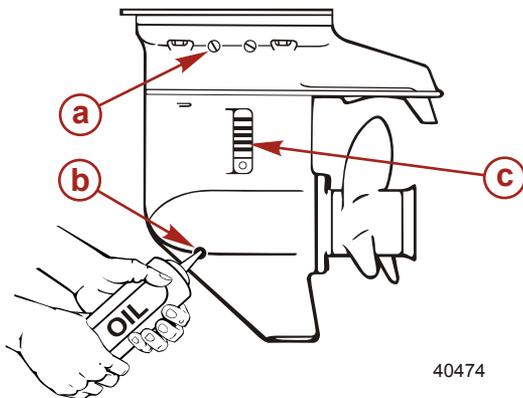
1. Place the outboard in a vertical operating position.
2. Place a drain pan below the outboard.
3. Remove the oil plugs (upper and lower) and drain the gear oil completely.



- a - Upper oil drain plug
- b - Lower oil drain plug
- c - Water strainer

40473

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



- a - Upper oil drain plug
- b - Lower oil drain plug
- c - Water strainer

40474

MAINTENANCE

5. Install the upper oil drain plug, then remove the oil tube nozzle and install the lower oil drain plug.

IMPORTANT: Use Mercury/Quicksilver gear oil or the recommended one (APL GL-5: SAE #80–#90). Required volume: 370 ml (0.10 US gal).

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

Preseason Check

1. Check the electrolyte level, and measure the voltage and specific gravity of the battery.

Specific Gravity at 20 °C	Terminal Voltage (V)	Charge Condition
1.120	10.5	Fully discharged
1.160	11.1	1/4 charged
1.210	11.7	1/2 charged
1.250	12.0	3/4 charged
1.280	13.2	Fully charged

2. Check that the battery is secure and the battery cables are properly installed.
3. Check that the shift and throttle function properly. Be sure to turn the propeller shaft when checking the shift function or else the shift linkage may be damaged.

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 the following instructions.

- Portable fuel tank - 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.
- Permanently installed fuel tank - Pour the required amount of gasoline stabilizer (follow instructions on container) into a separate container and mix with approximately 1 liter (1 U.S. quart) of gasoline. Pour this mixture into fuel tank.

STORAGE

- Place the outboard in water or connect flushing attachment for circulating cooling water. Run the engine for ten minutes to fill the engine fuel system.

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

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).

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 or connect flushing attachment for circulating cooling water. Start the engine and let it run in neutral to warm up.
- With engine running at fast idle, stop the fuel flow by disconnecting the remote fuel line. 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 plugs 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 **Changing Gear Oil**.

STORAGE

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.

Battery Storage

- Follow the battery manufacturer's instructions for storage and charging.
- Remove the battery from the boat and check water level. Charge if necessary.
- Store the battery in a cool, dry place.
- Periodically check the water level and charge the battery during storage.

TROUBLESHOOTING

Starter Motor Will Not Crank the Engine (Electric Start Models)

POSSIBLE CAUSES

- Remote control models - Blown 20 amp fuse in the starting circuit. Refer to **Maintenance** section.
- Outboard is not shifted to neutral position.
- Weak battery or battery connections are loose or corroded.
- Ignition key switch failure.
- Wiring or electrical connection faulty.
- Starter motor or starter solenoid failure.

Engine Will Not Start

POSSIBLE CAUSES

- Lanyard stop switch not in "RUN" position.
- Incorrect starting procedure. Refer to **Operation** section.
- Old or contaminated gasoline.
- Engine flooded. Refer to **Operation** section.
- Fuel is not reaching the engine.
 - a. Fuel tank is empty.
 - b. Fuel tank vent not open or restricted.
 - c. Fuel line is disconnected or kinked.
 - d. Primer bulb not squeezed.
 - e. Primer bulb check valve is faulty.
 - f. Fuel filter is obstructed. Refer to **Maintenance** section.
 - g. Fuel pump failure.
 - h. Fuel tank filter obstructed.
- Ignition system component failure.
- Spark plugs fouled or defective. Refer to **Maintenance** section.

Engine Runs Erratically

POSSIBLE CAUSES

- Spark plugs fouled or defective. Refer to **Maintenance** section.
- Incorrect setup and adjustments.
- Fuel is being restricted to the engine.
 - Engine fuel filter is obstructed. Refer to **Maintenance** section.
 - Fuel tank filter obstructed.
 - Stuck anti-siphon valve on built in fuel tank.
 - Fuel line is kinked or pinched.
- Fuel pump failure.

TROUBLESHOOTING

- Ignition system component failure.

Performance Loss

POSSIBLE CAUSES

- Throttle not fully open.
- Damaged or improper size propeller.
- Incorrect engine timing, adjustments, or setup.
- Boat overloaded or load improperly distributed.
- Excessive water in bilge.
- Boat bottom is dirty or damaged.

Battery Will Not Hold Charge

POSSIBLE CAUSES

- Battery connections are loose or corroded.
- Low electrolyte level in battery.
- Worn out or inefficient battery.
- Excessive use of electrical accessories.
- Defective rectifier, alternator, or voltage regulator.

OWNER SERVICE ASSISTANCE

Service Assistance

LOCAL REPAIR SERVICE

If you need service for your Mercury-outboard-powered boat, take it to your authorized dealer. Only authorized dealers specialize in Mercury products and have factory-trained mechanics, special tools and equipment, and genuine Quicksilver parts and accessories to properly service your engine.

NOTE: *Quicksilver parts and accessories are engineered and built by Mercury Marine specifically for your power package.*

SERVICE AWAY FROM HOME

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

STOLEN POWER PACKAGE

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

ATTENTION REQUIRED AFTER SUBMERSION

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

REPLACEMENT SERVICE PARTS

WARNING

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

Marine engines are expected to operate at or near full throttle for most of their lives. They are also expected to operate in both fresh and saltwater environments. These conditions require numerous special parts.

OWNER SERVICE ASSISTANCE

PARTS AND ACCESSORIES INQUIRIES

Direct any inquiries concerning Quicksilver replacement parts and accessories to your local authorized dealer. The dealer has the necessary information to order parts and accessories for you if they are not in stock. Only authorized dealers can purchase genuine Quicksilver parts and accessories from the factory. Mercury Marine does not sell to unauthorized dealers or retail customers. When inquiring about parts and accessories, the dealer requires the **engine model** and **serial numbers** to order the correct parts.

RESOLVING A PROBLEM

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

1. Talk with the dealership's sales manager or service manager. Contact the owner of the dealership if the sales manager and service manager have been unable to resolve the problem.
2. If your question, concern, or problem cannot be resolved by your dealership, please contact the 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 Customer Service:

- Your name and address
- Your daytime telephone number
- The model and serial numbers of your power package
- The name and address of your dealership
- The nature of the problem

CONTACT INFORMATION FOR MERCURY MARINE CUSTOMER SERVICE

For assistance, call, fax, or write to the geographic office in your area. Please include your daytime telephone number with mail and fax correspondence.

United States, Canada		
Telephone	English +1 920 929 5040 Français +1 905 636 4751	Mercury Marine W6250 Pioneer Road P.O. Box 1939 Fond du Lac, WI 54936-1939
Fax	English +1 920 929 5893 Français +1 905 636 1704	
Website	www.mercurymarine.com	

OWNER SERVICE ASSISTANCE

Australia, Pacific		
Telephone	+61 3 9791 5822	Brunswick Asia Pacific Group 41-71 Bessemer Drive Dandenong South, Victoria 3175 Australia
Fax	+61 3 9706 7228	

Europe, Middle East, Africa		
Telephone	+32 87 32 32 11	Brunswick Marine Europe Parc Industriel de Petit-Rechain B-4800 Verviers, Belgium
Fax	+32 87 31 19 65	

Mexico, Central America, South America, Caribbean		
Telephone	+1 954 744 3500	Mercury Marine 11650 Interchange Circle North Miramar, FL 33025 U.S.A.
Fax	+1 954 744 3535	

Japan		
Telephone	+072 233 8888	Kisaka Co., Ltd. 4-130 Kannabecho, Sakai-ku Sakai-shi, Osaka 590-0984, Japan
Fax	+072 233 8833	

Asia, Singapore		
Telephone	+65 65466160	Brunswick Asia Pacific Group T/A Mercury Marine Singapore Pte Ltd 29 Loyang Drive Singapore, 508944
Fax	+65 65467789	

Ordering Literature

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

Model		Serial Number	
Horsepower		Year	

UNITED STATES AND CANADA

For additional literature for your Mercury Marine power package, contact your nearest Mercury Marine dealer or contact:

OWNER SERVICE ASSISTANCE

Mercury Marine		
Telephone	Fax	Mail
(920) 929-5110 (USA only)	(920) 929-4894 (USA only)	Mercury Marine Attn: Publications Department P.O. Box 1939 Fond du Lac, WI 54936-1939

OUTSIDE THE UNITED STATES AND CANADA

Contact your nearest Mercury Marine authorized service center to order additional literature that is available for your particular power package.

Submit the following order form with payment to:	Mercury Marine Attn: Publications Department W6250 Pioneer Road P.O. Box 1939 Fond du Lac, WI 54936-1939
Ship To: (Copy this form and print or type—This is your shipping label)	
Name	
Address	
City, State, Province	
ZIP or postal code	
Country	

Quantity	Item	Stock Number	Price	Total
			.	.
			.	.
			.	.
			.	.
			.	.
Total Due				.

INSTALLATION

Mercury Marine Validated Engine Mounting Hardware

IMPORTANT: Mercury Marine provides validated fasteners and installation instructions, including torque specifications, with all of our outboards so they can be properly secured to boat transoms. Improper installation of the outboard can cause performance and reliability issues that can lead to safety concerns. Follow all of the instructions relating to the outboard installation. **DO NOT** mount any other accessory onto the boat with the fasteners provided with the outboard. For example, do not mount a tow sport bars or boarding ladders onto the boat using the mounting hardware included with the outboard. Installing other products onto the boat that utilize the outboard mounting hardware will compromise the ability of that hardware to properly and safely secure the outboard to the transom.

Outboards that require validated mounting hardware will have the following decal on the transom clamp.



51965

Installing Outboard

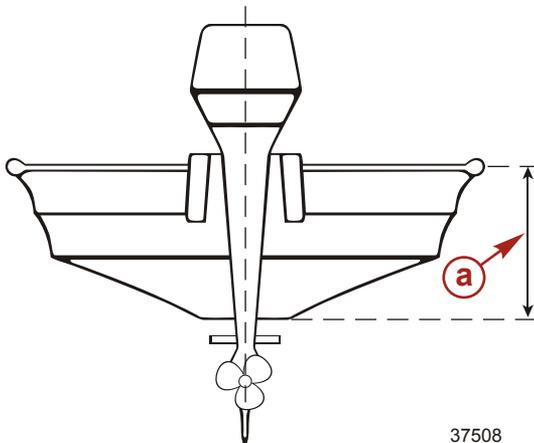
NOTE: If outboard is a remote control electric start model, follow instructions in the outboard installation manual (provided with the outboard) for installing remote steering shift and throttle cables and remote wiring harness.

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.

INSTALLATION

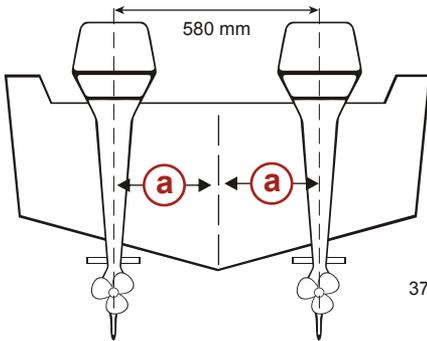
1. **Single engine:** Position the outboard motor at the center of the transom. Mount it using a cushioning pad or plate.



a - Boat transom

37508

2. **Twin engine:** Position the outboard engines approximately 580 mm (22.8 in.) apart, measured from the centerline of each engine, and equal distance (a) from the center of the transom.



a - Equal distance from the center

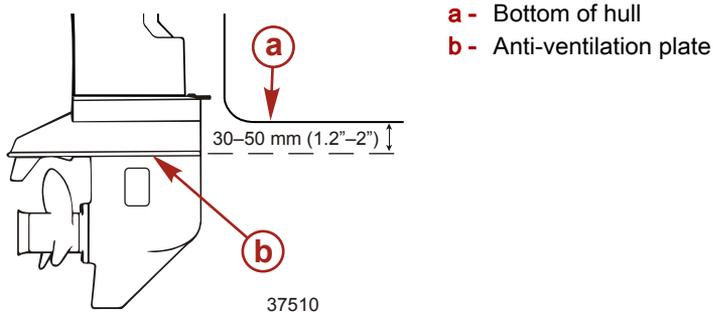
37509

3. **Transom matching:** Be sure that the anti-ventilation plate of the outboard is below the water surface when running with the throttle wide open. If the above condition cannot be met due to the shape of the bottom of the boat, please consult the dealer.

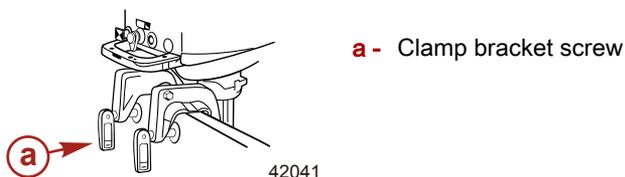
IMPORTANT: If the anti-ventilation plate is at a level higher than the bottom of the boat, overheating may occur as a lack of cooling water flow in the cooling systems.

INSTALLATION

4. Clearance between the anti-ventilation plate of the motor and the bottom of the boat must be 30–50 mm (1.2–2 in.). If the height difference exceeds 50 mm (2 in.), engine power performance is likely to be reduced as a result of increased water resistance to the gearcase assembly.



5. Fasten the outboard by drilling two 7.9 mm (5/16 in.) holes through the transom using transom clamp holes as a template. Fasten with two bolts, flat washers, and locknuts. The use of clamp bracket screws alone is insufficient to properly and safely secure the outboard to the transom. Use a marine waterproofing sealer in holes and around bolts to make the installation water tight.



⚠ WARNING

Failure to correctly fasten the outboard could result in the outboard propelling off the boat transom resulting in property damage, serious injury, or death. Before operation, the outboard must be correctly installed with the required mounting hardware.

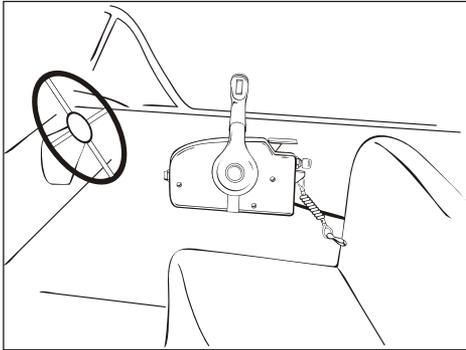
Installing the Remote Control Devices

It is recommended to consult with your dealer for installation and adjustment of the remote control device.

1. **Installation of the remote control cables (box side):** Follow the instruction sheet provided with the remote control box.

INSTALLATION

2. **Installation of the remote control box:** Follow the instruction sheet provided with the remote control box.

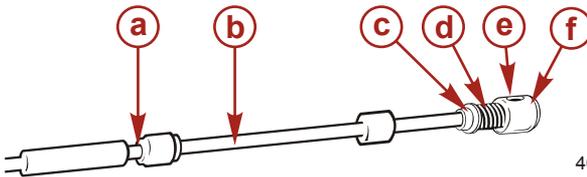


37529

3. Installing of the remote control cable (engine side) and the harness assembly (wiring harness).

- a. **Fitting of throttle cable and shift cable guide:**

- **Throttle side:** Attach the throttle cable adapter to the end of the cable and secure it with the nut.

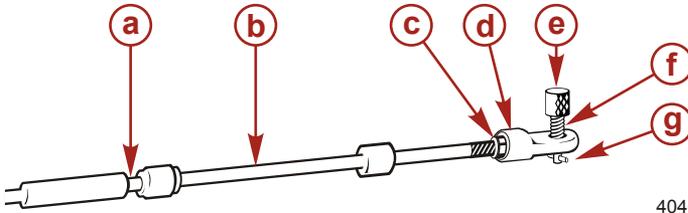


40468

- a** - Cable outer groove
- b** - Throttle cable
- c** - Nut
- d** - Spring
- e** - Throttle cable adapter
- f** - Ball holder

INSTALLATION

- **Shift side:** Attach the shift cable adapter to the end of the cable and secure it with the nut.



40469

- a** - Cable outer groove
- b** - Shift cable
- c** - Nut
- d** - Shift cable adapter
- e** - Lock pin
- f** - Spring
- g** - Spring pin

b. Fitting of remote control cable to the engine:

- **Throttle side:** Set the throttle cable to the cable clip and connect the throttle cable adapter to the ball joint of the advancer arm.

INSTALLATION

- q** - Cable clip
- r** - Lower cowl
- s** - Clamp
- t** - Steering hook plate
- u** - Shift cable clip

NOTE: Put the control lever in the Neutral (N) position and the neutral warm-up lever in the fully closed position.

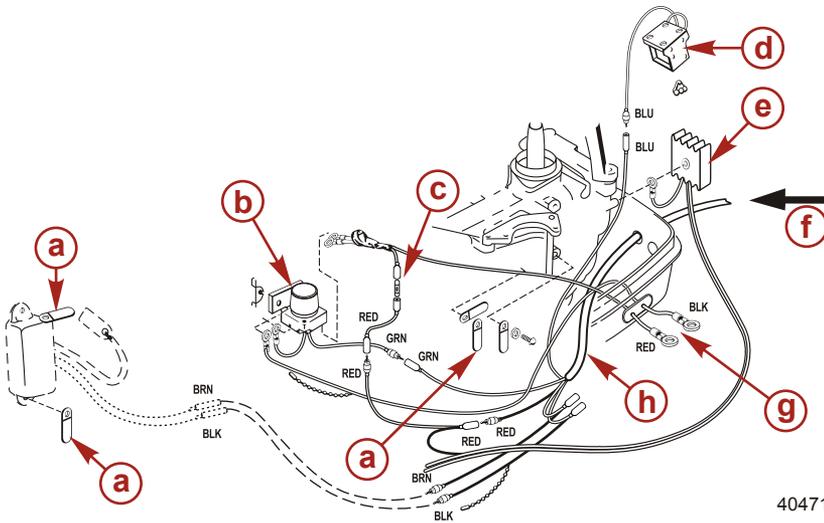
NOTE: Confirm whether the engine side shift is in gear when shifting the control lever of the remote control box to its first position in Forward (F) or Reverse (R), about 32°, and whether the throttle of the carburetor is fully open when shifting the lever further. Confirm whether the carburetor's throttle is fully closed when the control lever is shifted to the Neutral (N) position. If it is not, adjust the position of the ball holder.

c. Connecting Electrical Harnesses

- Pass the cable assembly from the remote control box through the hole in the lower cowl and connect the electric terminals.

INSTALLATION

- Secure the cable assembly with the clamp according to the drawing below.



- a** - Clamp
- b** - Starter solenoid
- c** - Fuse wire
- d** - Choke solenoid
- e** - Rectifier
- f** - From the remote control box
- g** - Battery cable
- h** - Cable assembly

Wire Color Code Abbreviations

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

INSTALLATION

Battery Installation

MOUNTING BATTERY

Follow the battery manufacturer's instructions carefully. Mount battery securely to the hull in a place free from splashing water.

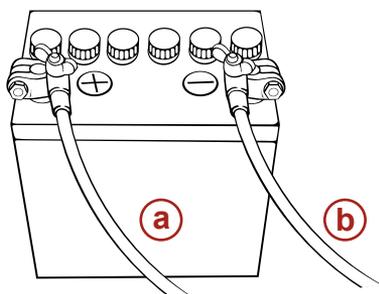
NOTE: *Electric starting outboards must have the battery cables connected to a battery whenever the engine is running, even if started manually, as damage to the charging system could result.*

BATTERY CONNECTIONS

Connect a red cable to the positive (+) terminal first and a black cable to the negative (-) terminal of the battery. Put a red cap on the positive terminal. When disconnecting battery cables, be sure to disconnect the black cable first, and then the red cable.

Required battery rating: 12 V battery with a recommended capacity of 40 AH or more.

- Battery cables must be long enough to allow free steering.
- Battery cables must be arranged and protected from damage during steering.
- With poor cable connections, the starter will fail to start.
- Battery cable terminals should be clean, tight, and correctly installed. Positive to positive and negative to negative.
- Battery must be fully charged before running the motor.



- a** - Red cable (+)
- b** - Black cable (-)

37712

IMPORTANT: Please follow the instructions below:

- Hydrogen gas is generated when charging a battery. Keep the battery in a well-ventilated area during charging. Remove the battery from the boat; this will protect your hull and interior from damage. Electric sparks, cigarette smoking, and other sources of fire must be avoided in the charging area to prevent explosion of the battery.
- The battery fluid (electrolyte) contains sulfuric acid. If electrolyte is spilled on the skin or clothes, wash with plenty of water and consult a medical doctor. Always use safety glasses and rubber gloves when handling the battery.

INSTALLATION

Propeller Selection

The propeller supplied with your outboard provides the best overall performance under average operating conditions.

A propeller must be selected so that the engine RPM when cruising with a wide-open throttle, is within the recommended range.

Model	Wide-open throttle RPM range
9.9	4500–5300 RPM
15/18	5200–5800 RPM

If changing conditions cause the RPM to drop below the recommended range, such as warmer, more humid weather, operation at higher elevations, increased boat load, or a dirty boat bottom/gearcase, a propeller change or cleaning may be required to maintain performance and ensure the outboard's durability.

Check full-throttle RPM, using an accurate tachometer, with the engine trimmed out to a balanced-steering condition (steering effort equal in both directions) without causing the propeller to break loose.

PROPELLER TABLE

A propeller must be selected so that the engine RPM measured at wide-open throttle while cruising is within the recommended range. Refer to **Accessories - Propeller Table** of this manual.

ACCESSORIES

Propeller Table

Use a 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: 9.9 HP = 4500–5300 RPM; 15/18 HP = 5200–5800 RPM.

Transom height: S = short, L = long, XL = extra long

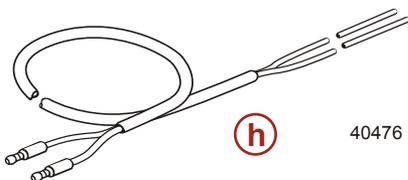
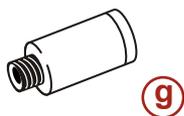
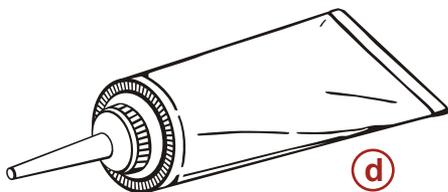
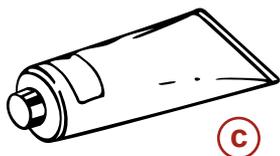
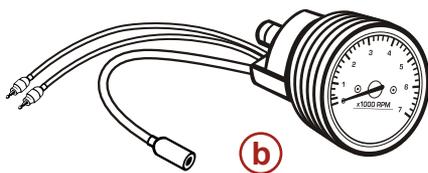
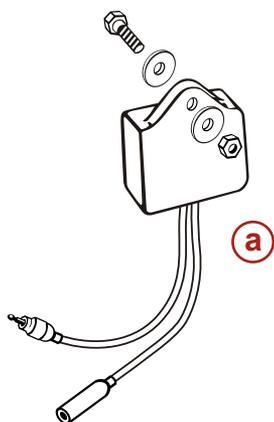
Propeller Chart (Standard Equipment)		
Propeller size	235 x 203 mm (9.2 x 8 in.)	235 x 229 mm (9.2 x 9 in.)
9.9 HP	L, XL	S
15 HP	L, XL	S
18 HP	XL	S, L

Propeller Chart			
Propeller size	234 x 155 mm (9.2 x 6 in.)	234 x 254 mm (9.2 x 10 in.)	234 x 292 mm (9.2 x 11.5 in.)
9.9 HP	Optional	Optional	Optional
15 HP	Optional	Optional	Optional
18 HP	Optional	Optional	Optional

ACCESSORIES

Accessories

OPTIONAL ACCESSORIES



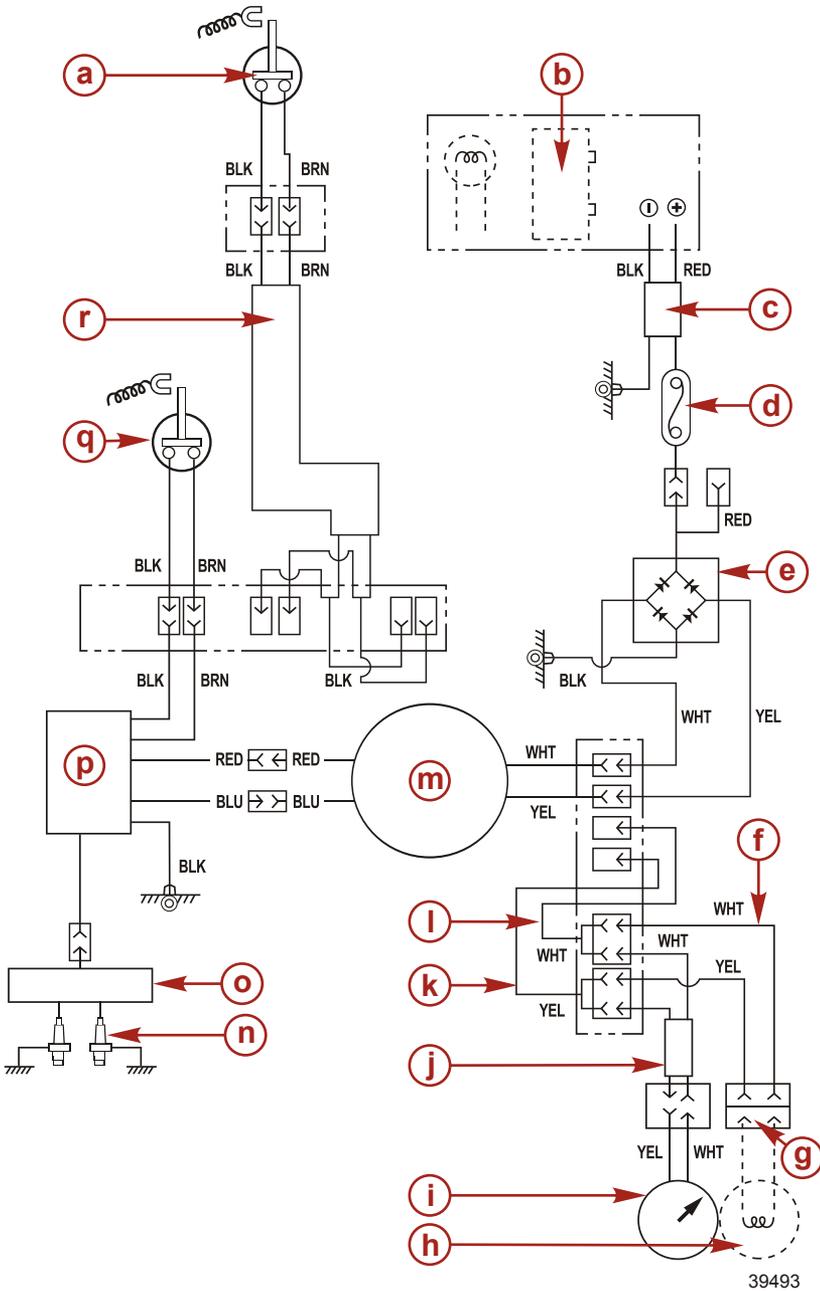
40476

ACCESSORIES

- a** - Tachometer unit kit
- b** - Tachometer
- c** - Mercury/Quicksilver grease (250 g)
- d** - Mercury/Quicksilver gear oil (500 ml)
- e** - Touch-up paint
- f** - Mercury/Quicksilver engine oil (0.4 L, 1 L, 4 L, 20 L)
- g** - Flushing attachment
- h** - Extension cord for light (lights are available on the market)

WIRING DIAGRAMS

MH Models

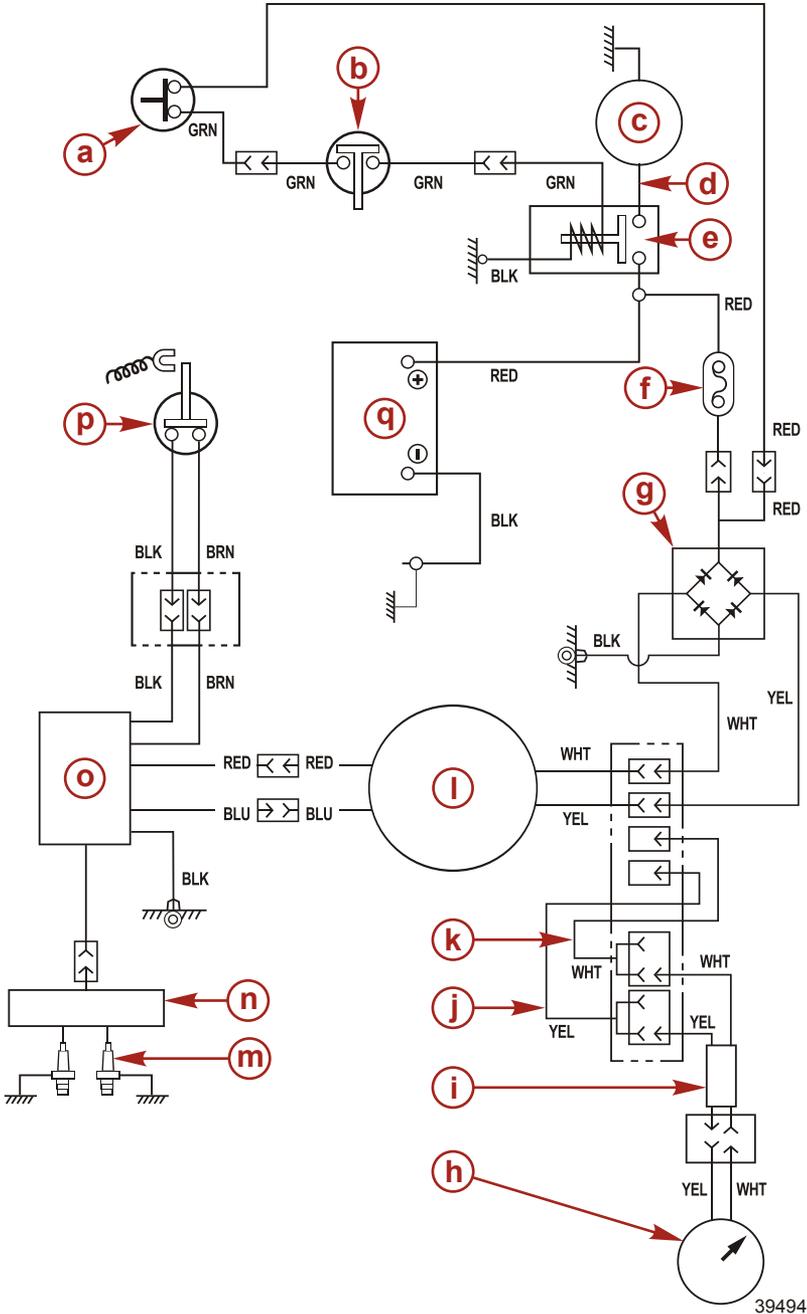


WIRING DIAGRAMS

- a** - Remote control box (optional)
- b** - Battery
- c** - Extension cord (optional)
- d** - Fuse
- e** - Rectifier
- f** - Extension cord for light (optional)
- g** - Receptacle plug (optional)
- h** - Lamp (12V 80W) [AC] (sold separately)
- i** - Tachometer (optional)
- j** - Tachometer, lead wire (optional)
- k** - Separate cord, yellow (optional)
- l** - Separate cord, white (optional)
- m** - Flywheel magneto
- n** - Spark plug
- o** - Ignition coil
- p** - CD unit
- q** - Lanyard stop switch
- r** - Stop cord (optional)

WIRING DIAGRAMS

EH Models

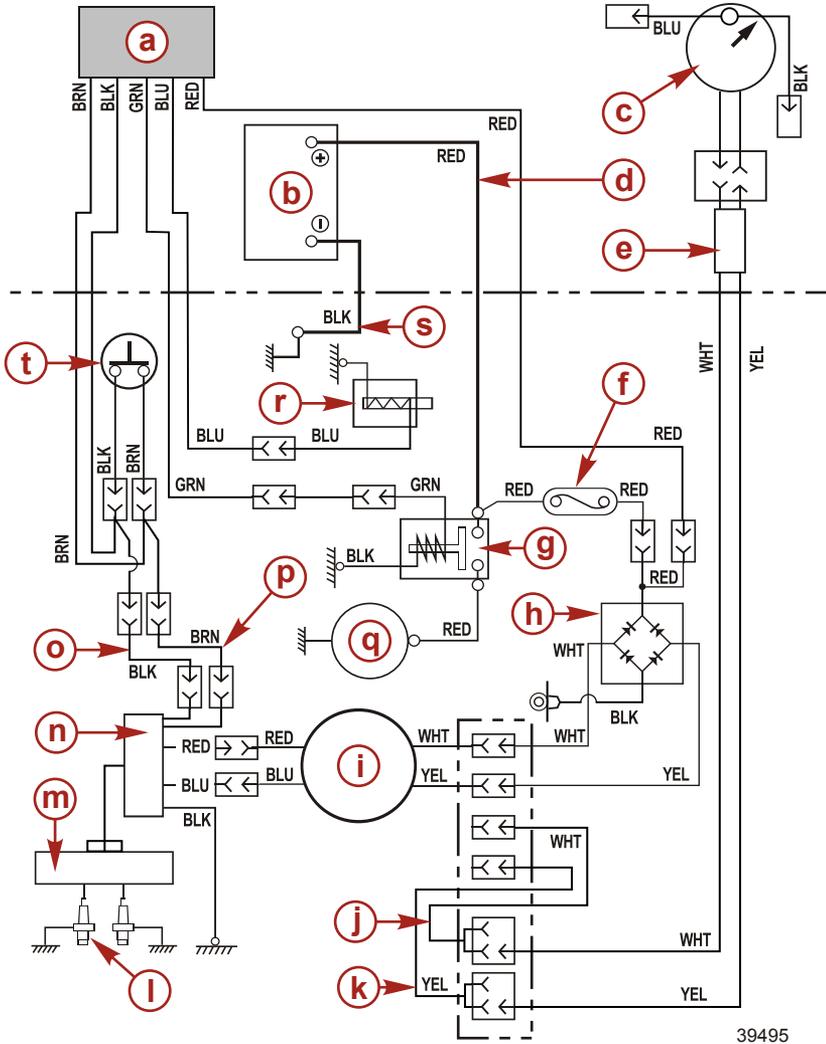


WIRING DIAGRAMS

- a** - Main switch
- b** - Neutral switch
- c** - Starter motor
- d** - Starter cord
- e** - Starter solenoid
- f** - Fuse
- g** - Rectifier
- h** - Tachometer
- i** - Tachometer lead wire (optional)
- j** - Separate cord, yellow (optional)
- k** - Separate cord, white (optional)
- l** - Flywheel magneto
- m** - Spark plugs
- n** - Ignition coil
- o** - CDU
- p** - Lanyard stop switch
- q** - 12V 40AH or 12V 70AH (sold separately)

WIRING DIAGRAMS

E Models



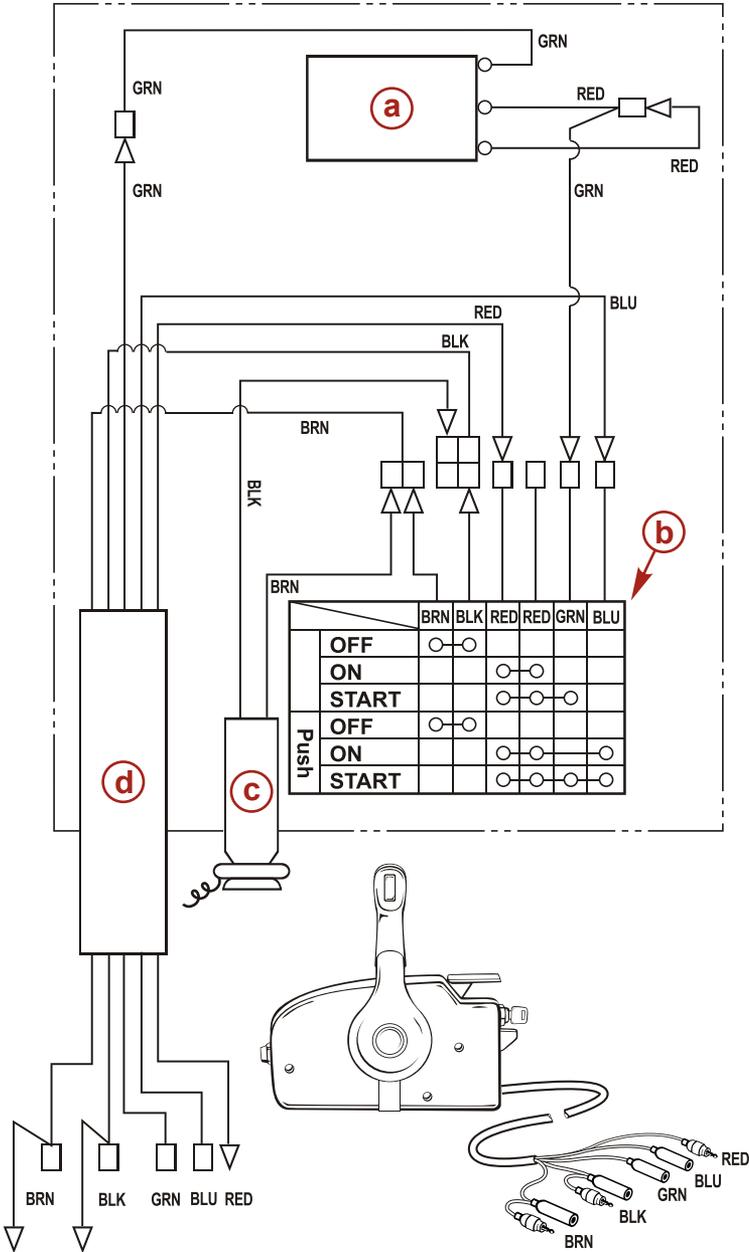
39495

WIRING DIAGRAMS

- a** - Harness assembly
- b** - 12V 40AH or 12V 70AH battery (sold separately)
- c** - Tachometer
- d** - Battery cable (+)
- e** - Tachometer lead wire (optional)
- f** - Fuse 15A
- g** - Starter solenoid
- h** - Rectifier
- i** - Flywheel magneto
- j** - Separate cord, white (optional)
- k** - Separate cord, yellow (optional)
- l** - Spark plugs
- m** - Ignition coil
- n** - CD unit
- o** - Lead wire, black
- p** - Lead wire, brown
- q** - Starter motor
- r** - Choke solenoid
- s** - Battery cables
- t** - Lanyard stop switch (optional)

WIRING DIAGRAMS

Single Remote Control Box



39496

WIRING DIAGRAMS

- a** - Neutral switch
- b** - Main switch
- c** - Stop switch
- d** - Cord assembly

