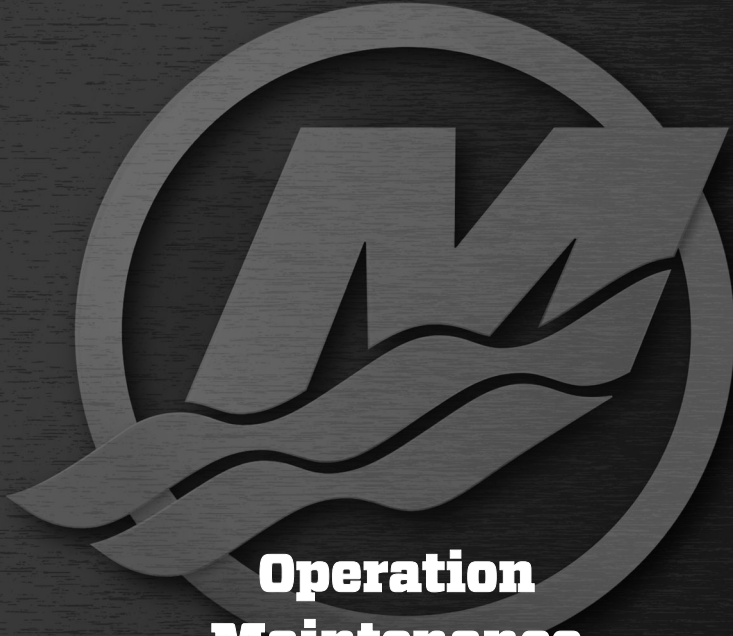
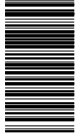




MERCURY[®]

8M0118479 416 eng



**Operation
Maintenance
and
Installation
Manual**

2.5/3.3

© 2016 Mercury Marine

Welcome

You have selected one of the finest marine power packages 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.

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

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

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

Name / function:

John Pfeifer, President,
Mercury Marine




Read This Manual Thoroughly

IMPORTANT: If you do not understand any portion of this manual, contact your dealer. Your dealer can also provide a demonstration of actual starting and operating procedures.

Notice

Throughout this publication, and on your power package, warnings, cautions,

and notices, accompanied by the International Hazard Symbol , may be used to alert the installer and user to special instructions concerning a particular service or operation that may be hazardous if performed incorrectly or carelessly. Observe them carefully.

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

WARNING

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

CAUTION

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

NOTICE

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

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

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

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

⚠ WARNING

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

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

Descriptions and specifications contained herein were in effect at the time this was approved for printing. Mercury Marine, whose policies are based on continuous improvement, reserves the right to discontinue models at any time or to change specifications or designs without notice and without incurring obligation.

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 Manual included with the product. The Warranty Manual contains a description of what is covered, what is not covered, the duration of coverage, how to best obtain warranty coverage, **important disclaimers and limitations of damages**, and other related information. Please review this important information.

Copyright and Trademark Information

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

Alpha, Axius, 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.

Identification Records

Please record the following applicable information:

Outboard		
Engine Model and Horsepower		
Engine Serial Number		
Gear Ratio		
Propeller Number	Pitch	Diameter
Hull Identification Number (HIN)		Purchase Date
Boat Manufacturer	Boat Model	Length
Exhaust Gas Emissions Certification Number (Europe Only)		

General Information

Boater's Responsibilities.....	1
Before Operating Your Outboard.....	1
Boat Horsepower Capacity.....	1
Lanyard Stop Switch.....	2
Protecting People in the Water.....	5
Exhaust Emissions.....	5
Selecting Accessories for Your Outboard.....	7
Safe Boating Recommendations.....	7
Recording Serial Number.....	10
Specifications.....	10

Installation

Installing Outboard.....	11
--------------------------	----

Transporting

Carrying Outboard.....	12
Transporting Outboard When Removed From Boat.....	12
Trailer Boat.....	13

Fuel and Oil

Fuel Requirements.....	14
Oil Recommendation.....	15
Mixing Fuel and Oil.....	15
Filling Fuel Tank.....	16

Features and Controls

Features & Controls.....	17
Tilting Outboard.....	18
Setting The Operating Angle Of Your Outboard	19

Operation

Prestarting Check List.....	21
Operating in Freezing Temperatures.....	21
Operating in Saltwater or Polluted Water.....	21
Engine Break-in Procedure.....	22
Starting The Engine.....	22
Gear Shifting - Models with Gear Shift.....	25
Stopping The Engine	26
Emergency Starting.....	26

Maintenance

Outboard Care.....	28
EPA Regulations.....	28
EPA Emissions.....	29
Inspection and Maintenance Schedule.....	29
Top Cowl Removal And Installation.....	31
Exterior Care.....	31
Flushing the Cooling System.....	32
Propeller Replacement.....	32
Corrosion Control Anode.....	34
Spark Plug Inspection And Replacement.....	34
Engine Idle Speed Adjustment.....	36
Lubrication Points.....	36
Gearcase Lubrication.....	38
Submerged Outboard.....	40

Storage

Storage Preparation.....	41
Protecting External Outboard Components.....	41
Protecting Internal Engine Components.....	41
Gearcase.....	42
Positioning Outboard for Storage.....	42

Troubleshooting

Engine Will Not Start.....	43
Engine Runs Erratically.....	43
Performance Loss.....	43

Owner Service Assistance

Service Assistance.....	44
Ordering Literature.....	46

Maintenance Log

Maintenance Log.....	48
----------------------	----

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.

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

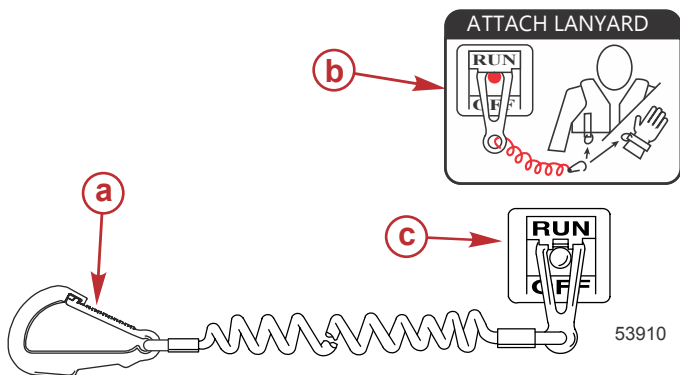
Lanyard Stop Switch

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.

GENERAL INFORMATION

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

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.



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.

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.

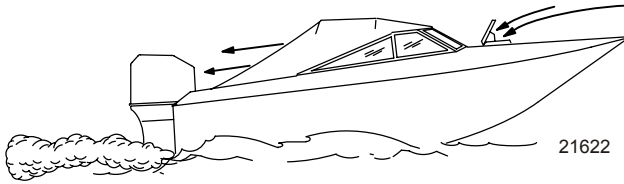
▲ WARNING

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.



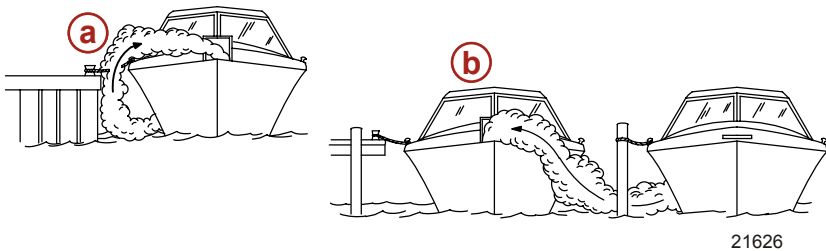
Example of desired air flow through the boat

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.

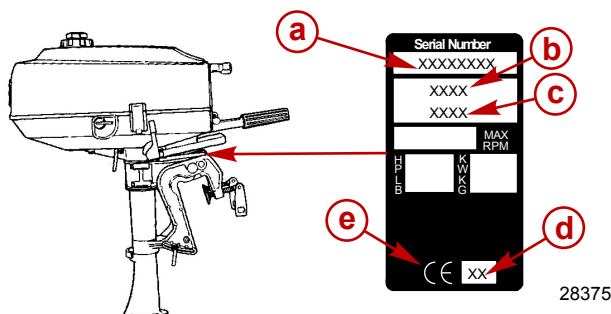
Report accidents.

- 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.

GENERAL INFORMATION

Recording Serial Number

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



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

Specifications

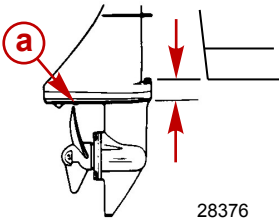
Models	2.5	3.3
Horsepower	2.5	3.3
Kilowatts	1.9	2.5
Full Throttle RPM Range	4000-5000	4500-5500
Idle Speed in Forward Gear	900-1000 RPM	
Number of Cylinders	1	
Piston Displacement	74.6 cc (4.6 cu. in.)	
Cylinder Bore	47 mm (1.85 in.)	
Piston Stroke	43 mm (1.69 in.)	
Recommended Spark Plug	NGK BPR6HS-10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

INSTALLATION

Installing Outboard

BOAT TRANSOM HEIGHT REQUIREMENT

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

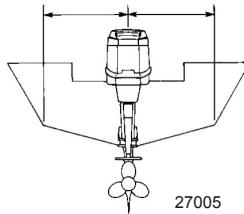


a - Anti-ventilation plate

28376

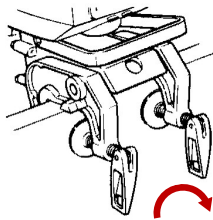
INSTALLING OUTBOARD ON TRANSOM

1. Place outboard on center line of transom.



27005

2. Tighten transom clamp handles.

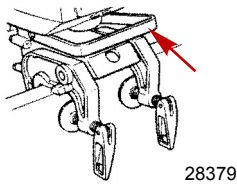


28377

TRANSPORTING

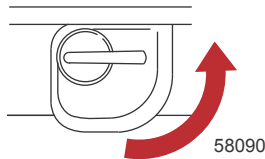
Carrying Outboard

The outboard has a carrying handle located in front.

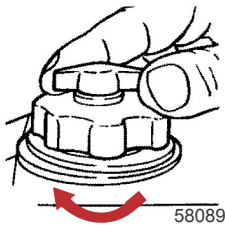


Transporting Outboard When Removed From Boat

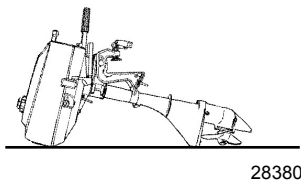
1. With the outboard still in the water, close the fuel shut-off valve and run engine until it stops. The running engine will consume remaining fuel in the carburetor.



2. Close the fuel tank vent.



3. Remove the outboard from the boat and hold upright until all cooling water has drained out.
4. Lay the outboard down on its back side so the tiller handle is facing up, as shown. Place a protective pad under the outboard.



TRANSPORTING

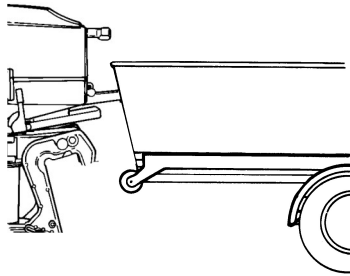
Trailer Boat

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

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

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

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



28381

FUEL AND OIL

Fuel Requirements

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

FUEL RATINGS

Mercury outboard engines will operate satisfactorily with any major brand of unleaded gasoline that meets the following specifications:

USA and Canada - A posted pump octane rating of 87 (R+M)/2, minimum, for most models. Premium gasoline 91 (R+M)/2 octane is also acceptable for most models. **Do not** use leaded gasoline.

Outside USA and Canada - A posted pump octane rating of 91 RON, minimum, for most models. Premium gasoline (95 RON) is also acceptable for all models. **Do not** use leaded gasoline.

USING REFORMULATED (OXYGENATED) GASOLINE (USA ONLY)

Reformulated gasoline is required in certain areas of the USA and is acceptable for use in your Mercury Marine engine. The only oxygenate currently in use in the USA is alcohol (ethanol, methanol, or butanol).

GASOLINE CONTAINING ALCOHOL

Bu16 Butanol Fuel Blends

Fuel blends of up to 16.1% butanol (Bu16) that meet the published Mercury Marine fuel rating requirements are an acceptable substitute for unleaded gasoline. Contact your boat manufacturer for specific recommendations on your boat's fuel system components (fuel tanks, fuel lines, and fittings).

Methanol and Ethanol Fuel Blends

IMPORTANT: The fuel system components on your Mercury Marine engine will withstand up to 10% alcohol (methanol or ethanol) content in the gasoline. Your boat's fuel system may not be capable of withstanding the same percentage of alcohol. Contact your boat manufacturer for specific recommendations on your boat's fuel system components (fuel tanks, fuel lines, and fittings).

Be aware that gasoline containing methanol or ethanol may cause increased:

- Corrosion of metal parts
- Deterioration of rubber or plastic parts
- Fuel permeation through the rubber fuel lines
- Likelihood of phase separation (water and alcohol separating from the gasoline in the fuel tank)

FUEL AND OIL

⚠ 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.

IMPORTANT: If you use gasoline that contains or might contain methanol or ethanol, you must increase the frequency of inspection for leaks and abnormalities.

IMPORTANT: When operating a Mercury Marine engine on gasoline containing methanol or ethanol, do not store the gasoline in the fuel tank for long periods. Cars normally consume these blended fuels before they can absorb enough moisture to cause trouble; boats often sit idle long enough for phase separation to take place. Internal corrosion may occur 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 25:1 (4%) gasoline/oil mixture in the first tank of fuel.

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

GASOLINE/OIL MIXING RATIO CHART

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

FUEL AND OIL

MIXING PROCEDURE

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

Filling Fuel Tank

WARNING

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

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

Always stop engine before refilling tanks.

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

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

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

FEATURES AND CONTROLS

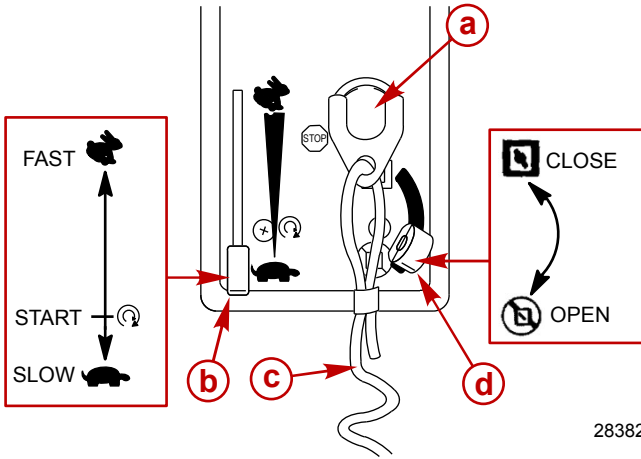
Features & Controls

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

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

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

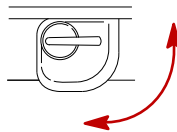
Lanyard - Refer to **General Information - Lanyard Stop Switch**.



28382

- a** - Engine stop switch/lanyard stop switch
- b** - Throttle lever
- c** - Lanyard
- d** - Choke lever

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



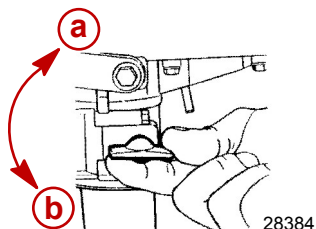
28383

FEATURES AND CONTROLS

⚠ 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.

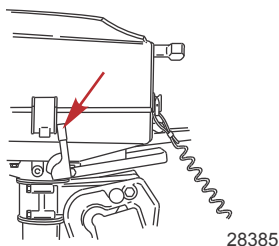
Steering friction adjustment - Adjust this knob to achieve the desired steering friction (drag) on the tiller handle. Move knob clockwise to tighten friction and move knob counterclockwise to loosen friction.



a - Tighten friction

b - Loosen friction

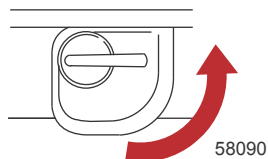
Side handle gear shift (if equipped) - controls gear shift.



Tilting Outboard

TILTING TO FULL UP POSITION

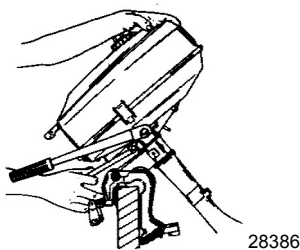
1. Close the fuel shut-off valve and run the engine out of fuel. This will prevent fuel spilling out of the carburetor.



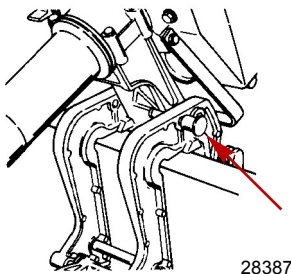
2. Close the fuel tank vent. This will prevent fuel spilling out of the fuel tank vent.

FEATURES AND CONTROLS

3. Take hold of the top cowl grip and raise outboard to the full up position.

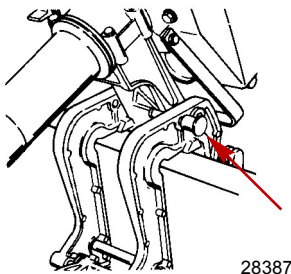


4. Push in the tilt support pin. Lower the outboard to rest on the tilt support pin.



LOWERING TO RUN POSITION

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



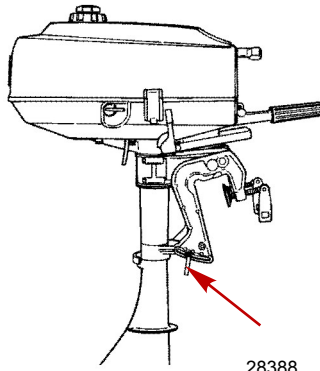
2. Open the fuel tank vent and open the fuel shut-off valve.

Setting The Operating Angle Of Your Outboard

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

FEATURES AND CONTROLS

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.



28388

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

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

Engine Break-in Procedure

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

ENGINE BREAK-IN FUEL MIXTURE

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

BREAK-IN PROCEDURE

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

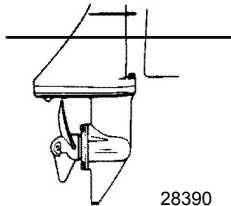
Starting The Engine

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

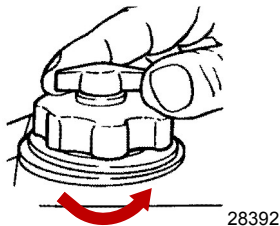
NOTICE

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.

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

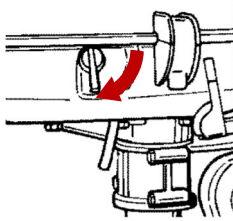


2. Open fuel tank vent.



OPERATION

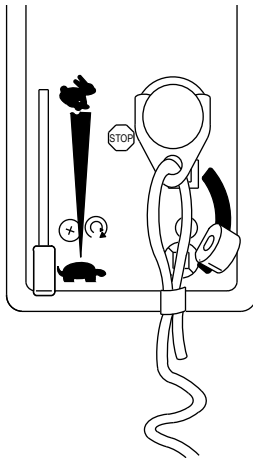
3. Open the fuel shut-off valve.



28396

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

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

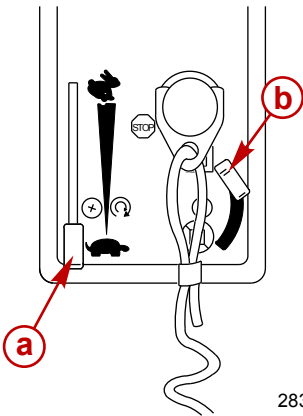


28397

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

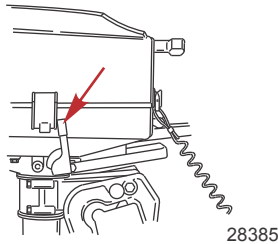
OPERATION

6. Move the throttle lever to the start position.



- a - Throttle lever
- b - Choke lever

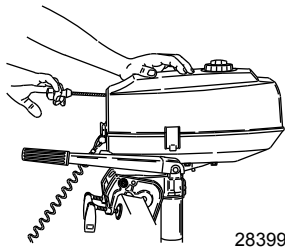
7. Models with gear shift - Move gear shift lever to neutral position.



⚠ WARNING

Sudden acceleration can serious injury or death. This outboard is a direct-drive model, meaning the lower unit is in gear at all times. Do not start the engine with the throttle lever past the start position and remain seated when starting.

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

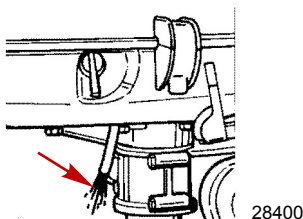


OPERATION

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

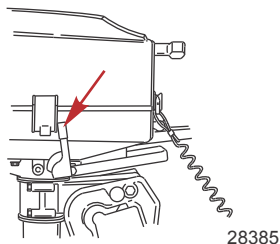
9. After engine starts, check for a steady stream of water flowing out of the water pump indicator hole.

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



Gear Shifting - Models with Gear Shift

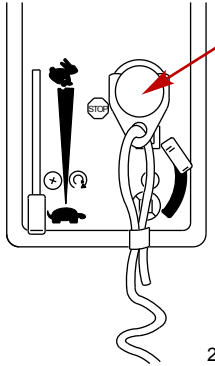
- The outboard has two gear shift positions to provide operation: forward and neutral.
- Reduce throttle speed to idle speed.
- Always shift outboard into gear with a quick motion.



OPERATION

Stopping The Engine

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



28401

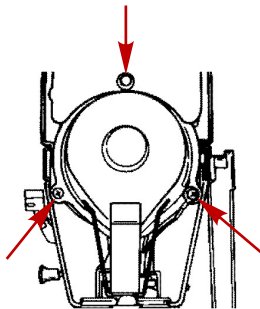
Emergency Starting

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

⚠ WARNING

The neutral-speed-protection device is inoperative when starting the engine with the emergency starter rope. Set the engine speed at idle and the gear shift in neutral to prevent the outboard from starting in gear.

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



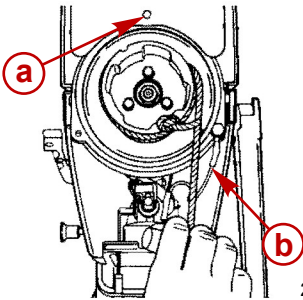
28402

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

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

OPERATION

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



- a - Bolt
- b - Black lead

28403

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

⚠ WARNING

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 rewind starter assembly or top cowl when engine is running.

MAINTENANCE

Outboard Care

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

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

SELECTING REPLACEMENT PARTS FOR YOUR OUTBOARD

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

EPA Regulations

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

Maintenance, replacement, or repair of the emission control devices and systems may be performed by any marine spark ignition (SI) engine repair establishment or individual.

MAINTENANCE

EPA Emissions

EMISSION CERTIFICATION LABEL

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

The diagram shows a rectangular label with the Mercury logo on the left and the title "EMISSION CONTROL INFORMATION" on the right. The label contains the following text and fields:

- Top left: **MERCURY** logo
- Top right: **EMISSION CONTROL INFORMATION**
- Text: "This engine conforms to model year EPA regulations for Marine SI engines. Refer to Owner's Manual for required maintenance."
- Field **a**: "IDLE SPEED:
- Field **b**: " hp" (horsepower)
- Field **c**: " cc" (piston displacement)
- Field **d**: "TIMING (IN DEGREES):
- Field **e**: "Standard spark plug:
Suppressor spark plug:
GAP:
- Field **f**: "FAMILY:
- Field **g**: "FEL: g/kWh" (maximum emission output)
- Field **h**: "Date of manufacture" (represented by a square box)
- Field **i**: "Valve Clearance (Cold) mm" (with sub-fields for Intake and Exhaust)

28405

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

OWNER RESPONSIBILITY

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

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

Inspection and Maintenance Schedule

DAILY CHECKS

- Check the engine oil level
- Check the lanyard stop switch
- Inspect the fuel system for leaks
- Inspect the engine tightness on the transom
- Check the steering system for binding
- Check the propeller for damage

MAINTENANCE

- Inspect the hydraulic steering fittings and hoses for leaks or signs of damage, if equipped
- Check the hydraulic steering fluid level, if equipped

AFTER EACH USE

- Wash the power package exterior with fresh water
- Flush the outboard cooling system, saltwater or brackish water only

ANNUALLY OR 100 HOURS

- Grease the engine, if applicable
- Change the engine oil and filter, if equipped
- Inspect the thermostat, saltwater or brackish water only
- Add Quickleen to the fuel tank, once per year, per engine
- Apply anti-seize to the spark plug threads
- Replace the gear lubricant
- Inspect the corrosion control anodes
- Replace all filters on the suction side of the fuel system—dealer item
- Lubricate the driveshaft splines—dealer item
- Lubricate the propeller shaft splines—dealer item
- Check the tightness on all the fasteners—dealer item
- Check the torque of the outboard mounting hardware—dealer item
- Check the battery condition and tightness of the battery cable connection—dealer item

THREE YEARS OR 300 HOURS

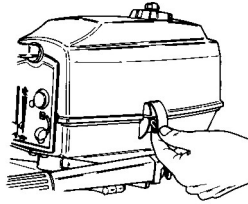
- Replace the spark plugs
- Replace the water pump impeller—dealer item
- Inspect the carbon fiber reeds—dealer item
- Inspect the wire harness connectors—dealer item
- Check the remote control cable adjustment, if applicable—dealer item
- Replace the high-pressure fuel filter—dealer item
- Replace the accessory drive belt—dealer item
- Check the power trim fluid level—dealer item
- Inspect the engine motor mounts—dealer item

MAINTENANCE

Top Cowl Removal And Installation

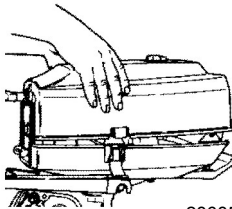
REMOVAL

1. Open cowl latches on both sides of cowl.



28406

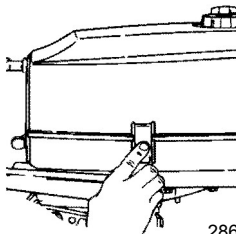
2. Lift top cowl off engine.



28685

INSTALLATION

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



28686

Exterior Care

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

MAINTENANCE

Flushing the Cooling System

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

1. Place outboard in a test tank containing fresh water.

IMPORTANT: Do not run engine above idle when flushing.

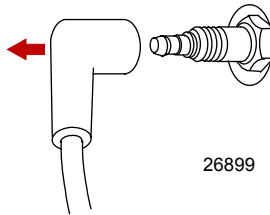
2. Start the outboard and operate at idle RPM in neutral for five minutes.

Propeller Replacement

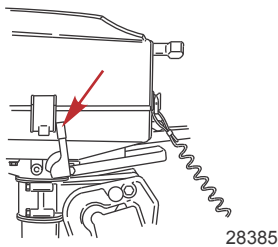
⚠ WARNING

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

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

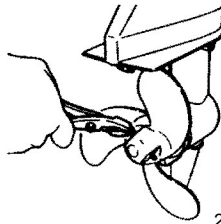


2. Move gear shift lever into neutral.



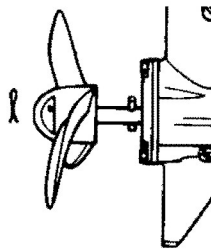
MAINTENANCE

3. Straighten and remove cotter pin.



28704

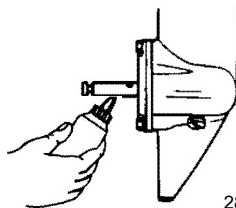
4. Pull the propeller off the shaft. If propeller is seized to the shaft and cannot be removed, have the propeller removed by an authorized dealer.




28706

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.

5. Apply 2-4-C with PTFE to the propeller shaft.



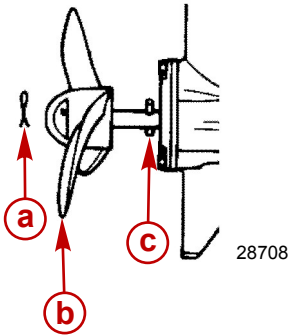
28707

Tube Ref No.	Description	Where Used	Part No.
 95	2-4-C with PTFE	Propeller shaft	92-802859A 1

6. If removed, insert drive pin into propeller shaft.
7. Slide propeller onto shaft and verify the slot in propeller engages with the drive pin.

MAINTENANCE

8. Install the cotter pin through hole in propeller and bend cotter pins to secure the propeller in place.

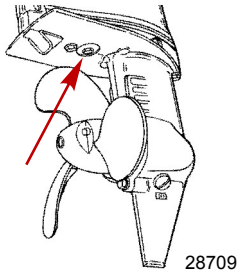


- a - Cotter pin
- b - Propeller
- c - Drive pin

Corrosion Control Anode

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

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



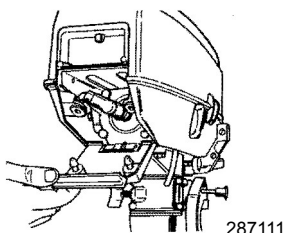
Spark Plug Inspection And Replacement

▲ WARNING

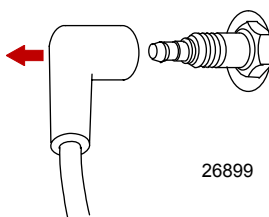
Damaged spark plug boots may emit sparks that can ignite fuel vapors under the engine cowl, resulting in serious injury or death from a fire or explosion. To avoid damaging the spark plug boots, do not use any sharp object or metal tool to remove the spark plug boots.

MAINTENANCE

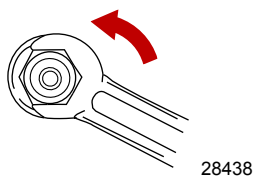
1. Open the spark plug access door.



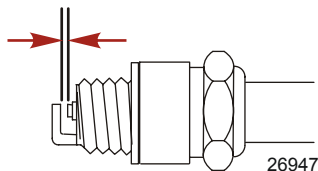
2. Remove the spark plug boot. Twist the rubber boots slightly and pull off.



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



4. Set spark plug gap to specifications.



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

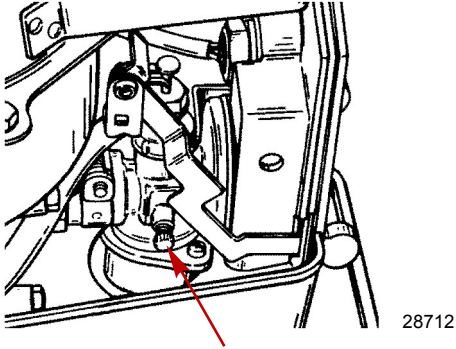
5. Before installing spark plug, clean off any dirt on the spark plug seats. Install plugs finger tight, and then tighten 1/4 turn or torque to specifications.

MAINTENANCE

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


Engine Idle Speed Adjustment

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

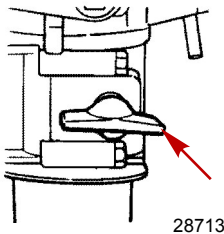


Lubrication Points

1. Lubricate the following with 2-4-C with PTFE.

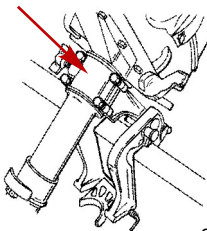
Tube Ref No.	Description	Where Used	Part No.
 95	2-4-C with PTFE	Copilot threads, swivel bracket, tilt support pin, transom clamp screw threads, propeller shaft	92-802859A 1

- Copilot - Lubricate threads.



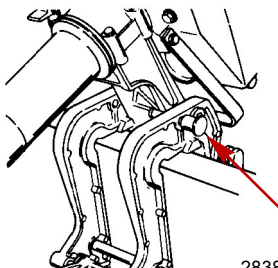
MAINTENANCE

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



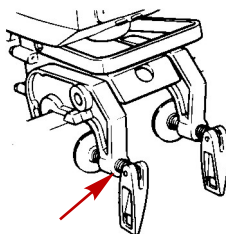
28714

- Tilt support pin.



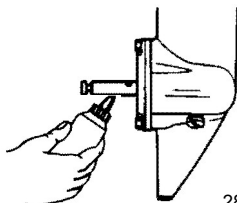
28387

- Transom clamp screw threads.



28715

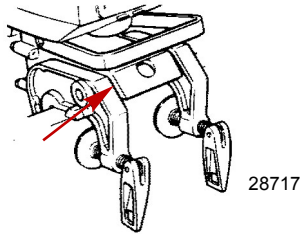
- Propeller shaft - Refer to **Propeller Replacement** for removal and installation of the propeller. Apply 2-4-C with PTFE to the entire propeller shaft to prevent the propeller hub from corroding to the shaft.



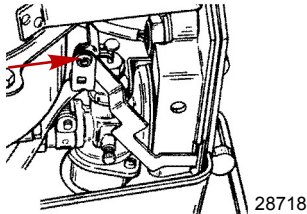
28707

MAINTENANCE

2. Lubricate the following with lightweight oil.
 - Tilt pivot.



- Throttle linkage - Lubricate pivot point.



Gearcase Lubrication

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

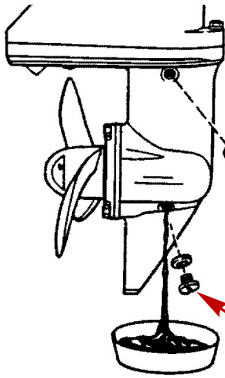
Examine the drained gearcase lubricant for metal particles. A small amount of metal particles indicates normal gear wear. An excessive amount of metal filings or larger particles (chips) may indicate abnormal gear wear and should be checked by an authorized dealer.

DRAINING GEARCASE

1. Place outboard in a vertical operating position.
2. Place drain pan below outboard.

MAINTENANCE

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



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

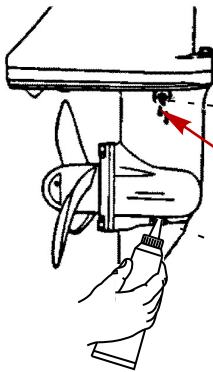
28719

GEARCASE LUBRICANT CAPACITY

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

CHECKING LUBRICANT LEVEL AND REFILLING GEARCASE

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



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

28720

IMPORTANT: Replace sealing washers if damaged.

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

MAINTENANCE

Submerged Outboard

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

STORAGE

Storage Preparation

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

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

NOTICE

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

FUEL SYSTEM



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

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

- Pour the required amount of gasoline stabilizer (follow instructions on container) into the fuel tank. Tip fuel tank back and forth to mix stabilizer with the fuel.
- Place the outboard in water or connect flushing attachment for circulating cooling water. Start the outboard and operate at idle RPM in neutral for five minutes to allow stabilized fuel to reach the carburetor.

Protecting External Outboard Components

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

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.

STORAGE

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

Gearcase

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

Positioning Outboard for Storage

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

NOTICE

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

TROUBLESHOOTING

Engine Will Not Start

POSSIBLE CAUSES

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

Engine Runs Erratically

POSSIBLE CAUSES

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

Performance Loss

POSSIBLE CAUSES

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

OWNER SERVICE ASSISTANCE

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				.

MAINTENANCE LOG

Maintenance Log

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

Date	Maintenance Performed	Engine Hours