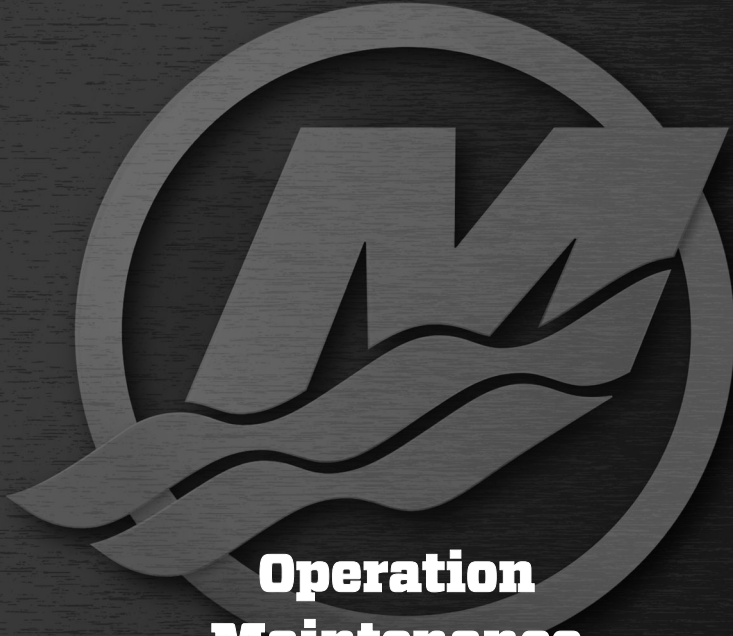




**MERCURY**<sup>®</sup>

8M0118481 416 eng



**Operation  
Maintenance  
and  
Installation  
Manual**

**6/8/9.8/9.9 TwoStroke**

© 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.

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## 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)		



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# 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

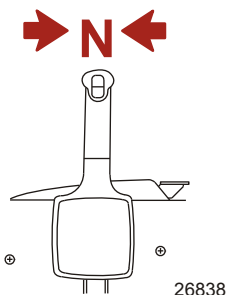
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## Outboard Remote Control Models

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.



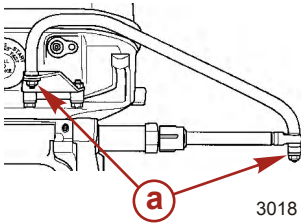
## Remote Steering Notice

### ⚠ 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

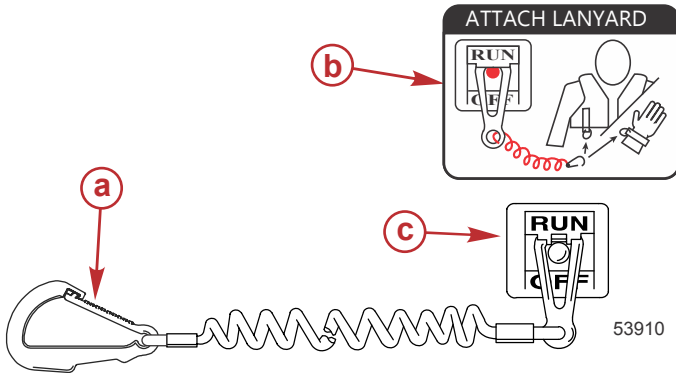
## Lanyard Stop Switch

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.

# 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.

## 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.

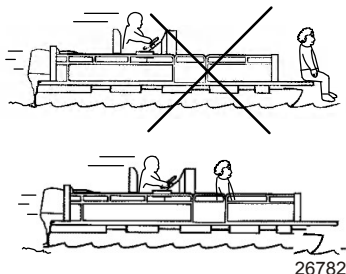
### BOATS HAVING AN OPEN FRONT DECK

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.



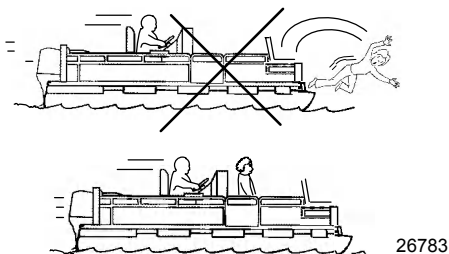
## ⚠ WARNING

**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.

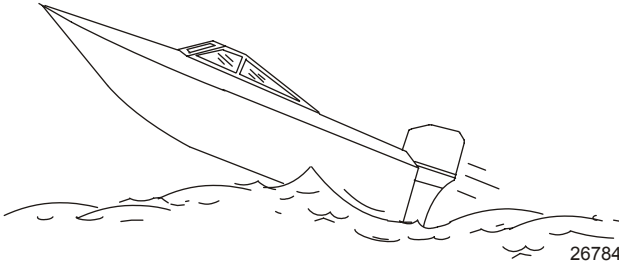
Any unexpected, sudden reduction in boat speed could result in the elevated passenger falling over the front of the boat.



# 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**

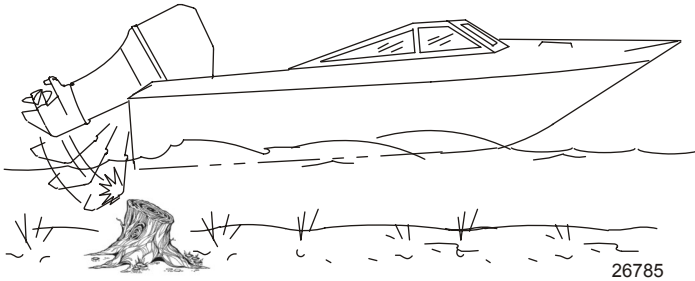
**Wave or wake jumping can cause serious injury or death from occupants being thrown within or out of the boat. Avoid wave or wake jumping whenever possible.**

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-Tilled 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 (CO) is a deadly gas that is present in the exhaust fumes of all internal combustion engines, including the engines that propel boats, and the generators that power boat accessories. By itself, CO is odorless, colorless, and tasteless, but if you can smell or taste engine exhaust, you are inhaling CO.

Early symptoms of carbon monoxide poisoning, which are similar to the symptoms of seasickness and intoxication, include headache, dizziness, drowsiness, and nausea.

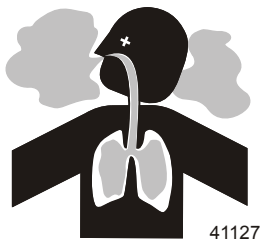
# GENERAL INFORMATION

## ⚠ WARNING

Inhaling engine exhaust gases can result in carbon monoxide poisoning, which can lead to unconsciousness, brain damage, or death. Avoid exposure to carbon monoxide.

Stay clear from exhaust areas when engine is running. Keep the boat well-ventilated while at rest or underway.

## STAY CLEAR OF EXHAUST AREAS

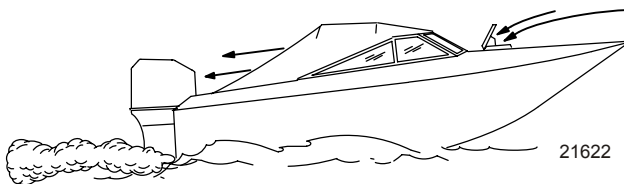


Engine exhaust gases contain harmful carbon monoxide. Avoid areas of concentrated engine exhaust gases. When engines are running, keep swimmers away from the boat, and do not sit, lie, or stand on swim platforms or boarding ladders. While underway, do not allow passengers to be positioned immediately behind the boat (platform dragging, teak/body surfing). This dangerous practice not only places a person in an area of high engine exhaust concentration, but also subjects them to the possibility of injury from the boat propeller.

## GOOD VENTILATION

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

Example of desired air flow through the boat:



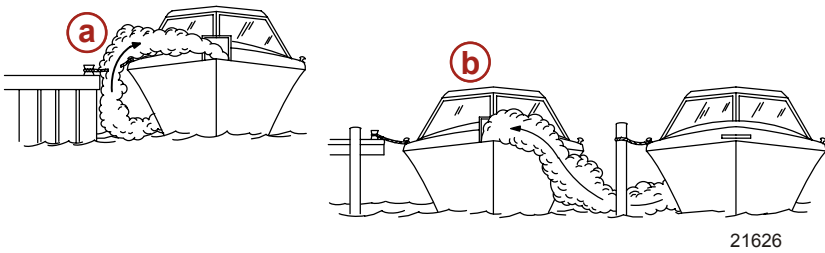
## POOR VENTILATION

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 open area of a stationary boat that contains, or is near, a running engine may be exposed to a hazardous level of carbon monoxide.

# GENERAL INFORMATION

## 1. Examples of poor ventilation while the boat is stationary:



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

## 2. Examples of poor ventilation while the boat is moving:



- a** - Operating the boat with the trim angle of the bow too high
- b** - Operating the boat with no forward hatches open (station wagon effect)

## 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.**

# GENERAL INFORMATION

- 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
  - 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.**

# GENERAL INFORMATION

- 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.**

- 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.**



# GENERAL INFORMATION

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

## Recording Serial Number

It is important to record the serial number and other important information for future reference.

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

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

## Specifications

MODEL	6, 8, 9.8, 9.9 MH	8, 9.8, 9.9 EH	8, 9.8, 9.9 E	
Overall length	793 mm (31.2 in.)		505 mm (19.9 in.)	
Overall width	320 mm (12.6 in.)		275 mm (10.8 in.)	
Overall height	S = 996 mm (39.2 in.), L = 1123 mm (44.2 in.), UL = 1250 mm (49.2 in.)			
Transom height	S = 435 mm (17.1 in.), L = 562 mm (22.1 in.), UL = 689 mm (27.1 in.)			
Weight	S	26.0 kg (57 lb)	29.0 kg (64 lb)	28.5 kg (63 lb)
	L	27.0 kg (60 lb)	30.0 kg (66 lb)	29.5 kg (65 lb)
	UL	28.0 kg (62 lb)	31.0 kg (68 lb)	30.5 kg (67 lb)
Output	4.4 kW (6 HP), 5.9 kW (8 HP), 7.3 kW (9.8 HP), 7.38 kW (9.9 HP)			
Max operating range	6, 8: 4500–5500 9.8, 9.9: 5000–6000 RPM			

# GENERAL INFORMATION

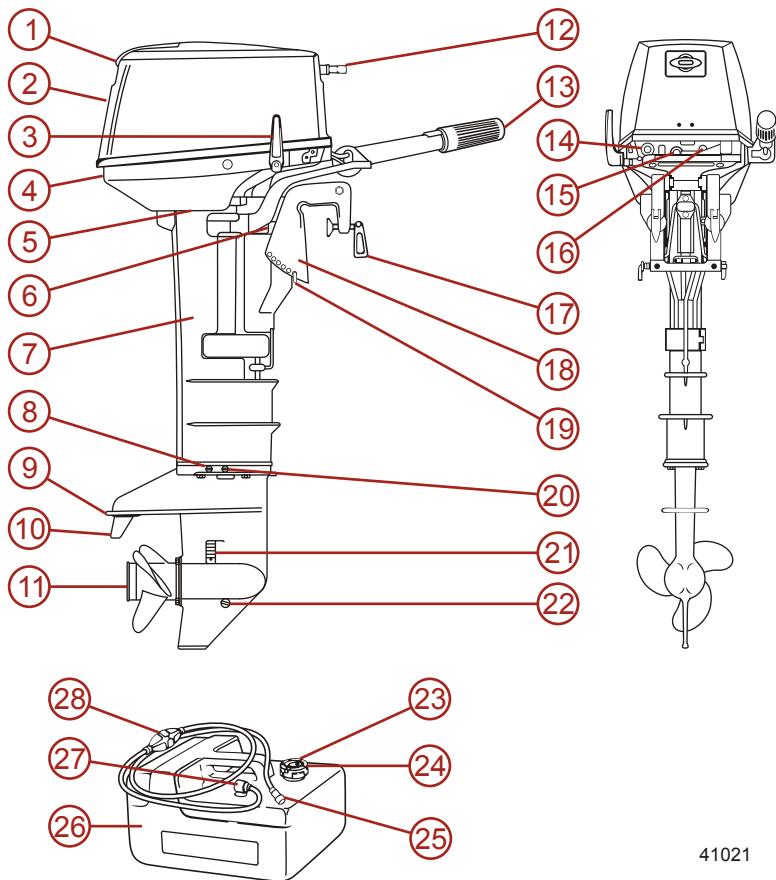
MODEL	6, 8, 9.8, 9.9 MH	8, 9.8, 9.9 EH	8, 9.8, 9.9 E
Idle speed in forward gear	750 RPM		
Idle speed in neutral gear	950 RPM		
Engine type	2-stroke		
Number of cylinders	2		
Bore x stroke	50 x 43 mm (1.97 x 1.69 in.)		
Displacement	169 cc (10.3 in. <sup>3</sup> )		
Exhaust system	Through hub exhaust		
Lubrication system	Premixed gasoline		
Cooling system	Thermostat controlled		
Fuel	Unleaded regular gasoline pump posted 87 octane (91 RON)		
Engine oil	Mercury/Quicksilver or recommended 2-stroke engine oil		
Starting system	Manual	Electric with manual back up	
Ignition	Flywheel magneto CDI		
Spark plugs	NGK BPR7HS-10		
Trim position	Manual, 6 positions		
Engine oil mixing ratio	50:1		
Gear oil	Mercury/Quicksilver gear oil API GL5, SAE #80-90, approximately 320 cc (10.8 fl oz)		
Fuel tank capacity	12 L (3.17 US gal)		
Gear reduction ratio	2.08 (13:27)		

# GENERAL INFORMATION

Notes:

# GENERAL INFORMATION

## Component Identification



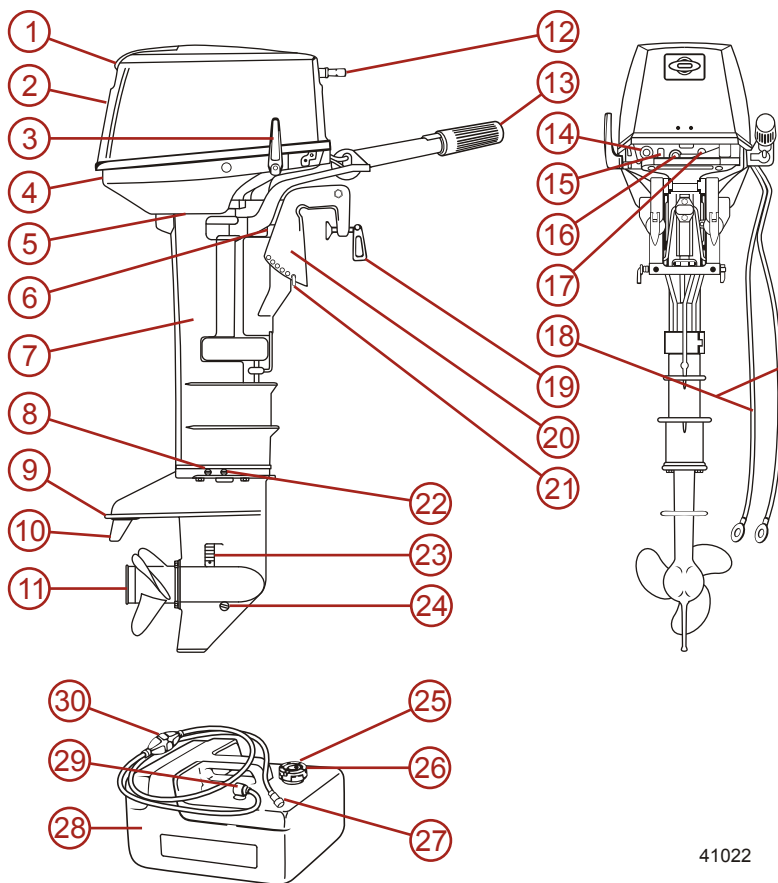
41021

# GENERAL INFORMATION

6, 8, 9.8 MH

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

# GENERAL INFORMATION



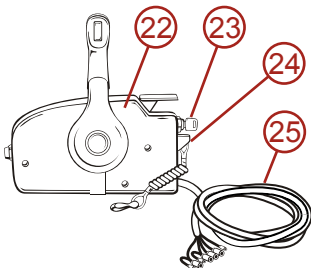
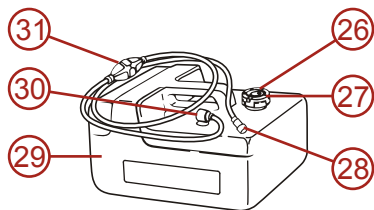
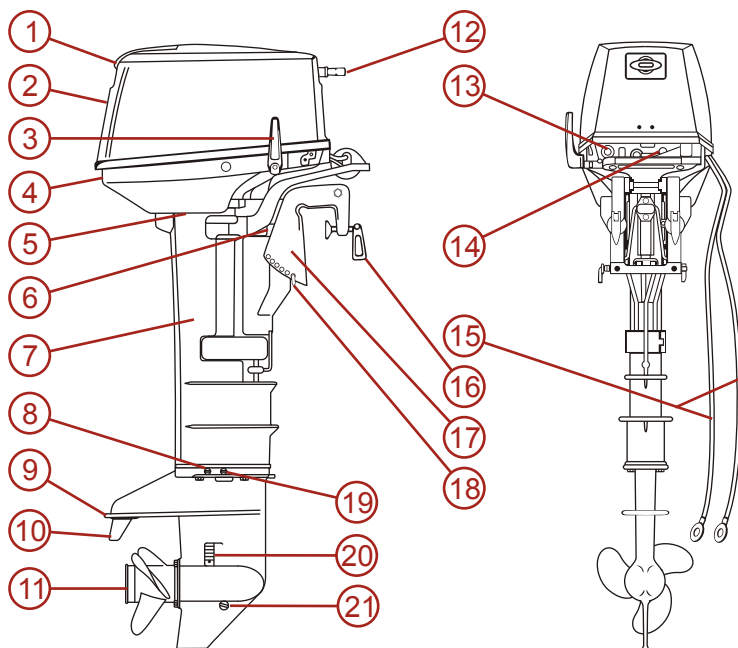
41022

# GENERAL INFORMATION

8B EH, 9.8B EH

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

# GENERAL INFORMATION



41023



# GENERAL INFORMATION

8 E, 9.8 E

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

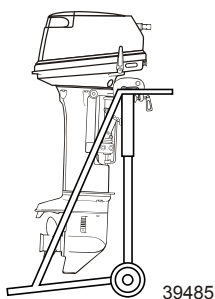
# TRANSPORTING

## Removing the Motor

1. Verify the engine has cooling water supplied.
2. Disconnect the fuel connector and run the engine out of fuel. Pull the choke out when the engine begins to stall. This will help evacuate the remaining fuel out of the carburetor.
3. After the engine has stalled, the remote control cable, the battery cables, and the bracket fixing bolts and nuts from the motor.
4. 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.

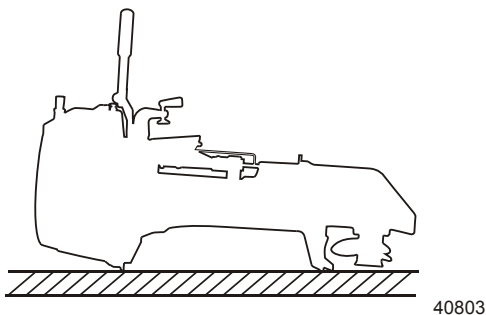


**NOTE:** If you carry the motor in a horizontal position, keep the powerhead higher than the propeller.

## 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.

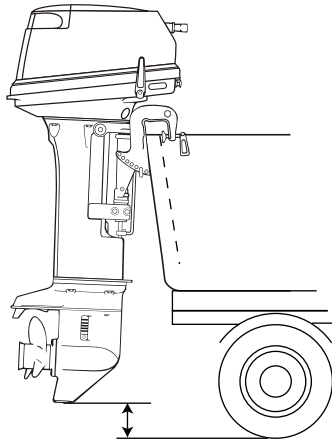


# TRANSPORTING

## Trailer Boat/Outboard

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

**NOTE:** *Trailer in the tilted position may cause damage to the motor, boat, etc. If trailering 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.*



39486

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 trailering.

# TRANSPORTING

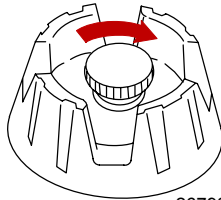
## Transporting Portable Fuel Tanks

### **⚠ 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

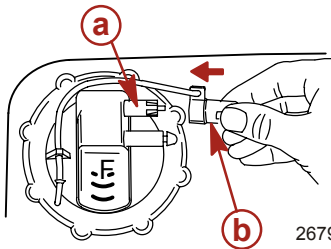
Close the fuel tank air vent when transporting tank. This will prevent escape of fuel or vapors from tank.



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.



26794

- a** - Connector stem
- b** - Tether cap

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

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

## Mixing Fuel and Oil

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

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

## 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
1:50	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 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.

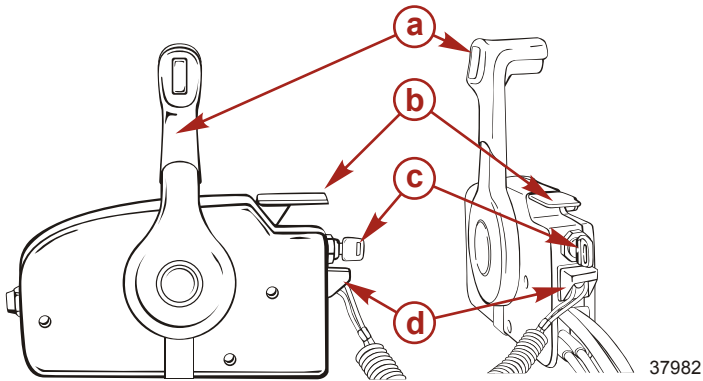
### PORTABLE FUEL TANK PLACEMENT IN THE BOAT

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 transom bracket. Be sure to tilt the outboard down slowly.

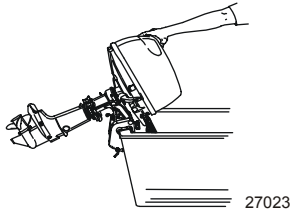
**NOTE:** Stop the engine before tilting up.

1. Stop the engine.

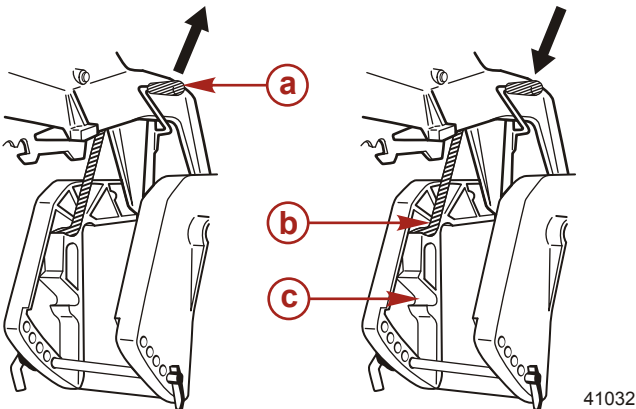


# FEATURES AND CONTROLS

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



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



- a** - Tilt lever
- b** - Tilt up position
- c** - Shallow water operating position

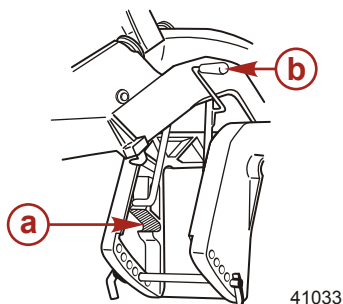
## Shallow Water Operation

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

**NOTE:** Slow down to trolling speed and shift to the Neutral (N) position before shallow water operating.

# FEATURES AND CONTROLS

1. Shallow water operating position: With the shift lever in Neutral (N) or Forward (F), tilt the motor up slowly by about 40° and then lower the tilt lever for setting at the shallow water operating position.
2. Tilt down from shallow water operating position: Tilt the motor up fully and then return the motor down slowly to the normal running position.



- a - Shallow water operating position
- b - Tilt lever

**NOTE:** Please follow the instructions below.

- Ensure that the water inlet is submerged at all times and water is continuously running out of the water pump indicator hole.
- Be sure to run the engine slowly when using the shallow water drive. Running at higher speeds will result in lack of control and may damage the 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.

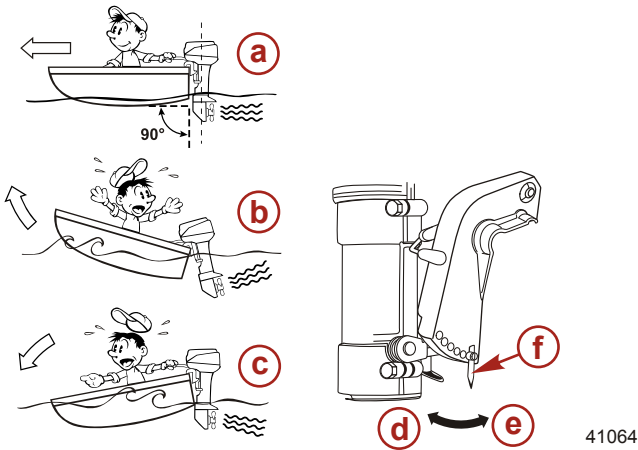
The trim angle is adjusted by setting the trim position pin in the correct trim position.

## TRIM POSITION ADJUSTMENTS

- **Correct trim:** The trim angle is optimum when the boat is parallel to the water surface while running.

# FEATURES AND CONTROLS

- **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.
- **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

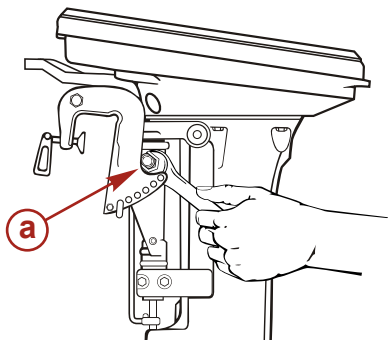
Insufficient friction adjustment can cause serious injury or death due to loss of boat control. When setting the friction adjustment, maintain sufficient steering friction to prevent the outboard from steering into a full turn if the tiller handle or steering wheel is released.

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

- Turn clockwise for more friction.

# FEATURES AND CONTROLS

- Turn counterclockwise for less friction.



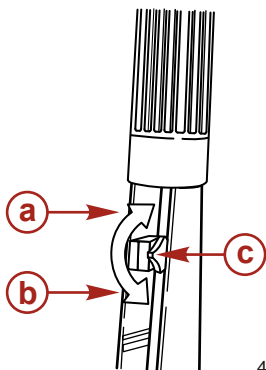
a - Steering co-pilot

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

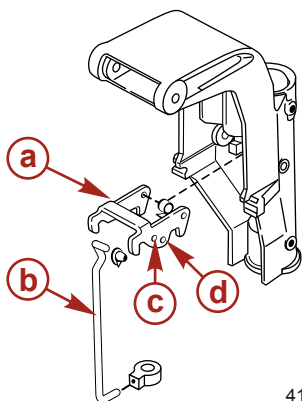
41034

## Reverse Lock

The shift lever is normally locked in Reverse (R). The reverse lock link is in (d) position.

# FEATURES AND CONTROLS

When locking the shift lever in Reverse (R) and Neutral (N), shift the reverse lock link from (d) to (c) position.



- a** - Reverse lock
- b** - Reverse lock link
- c** - Reverse lock link in (c) position
- d** - Reverse lock link in (d) position

41035

## 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.
- 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.

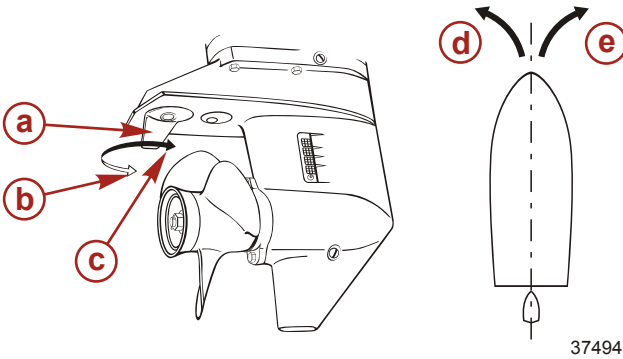
**NOTE:** Check for looseness of the bolt and the trim tab at regular intervals. Due to corrosion, the trim tab will wear down over time.

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.

# FEATURES AND CONTROLS

- 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

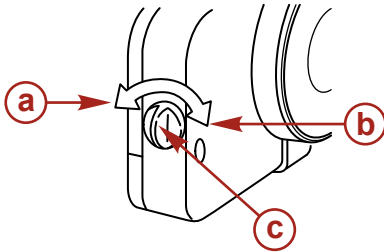
**IMPORTANT:** The trim tab also acts as an anode to prevent galvanic corrosion. Do not apply any paint, grease, or other material to the surface of the trim tab.

**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.

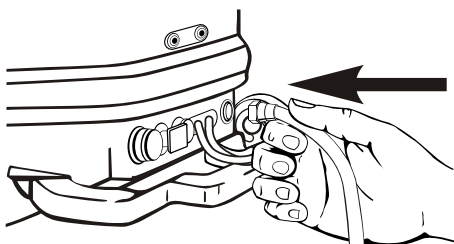
## Operating Outboard as an Auxiliary Engine

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.

## Pre-Starting Instructions

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



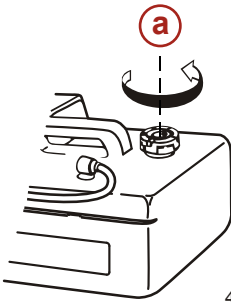
42043

### **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

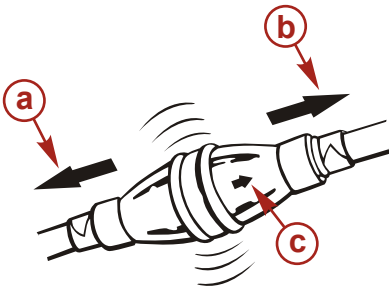
2. Loosen the air vent screw on the tank cap.



41046

**a** - Air vent screw

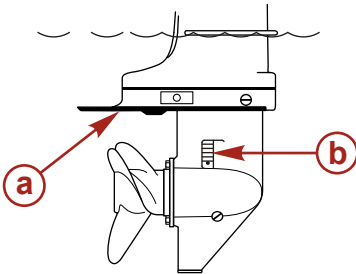
3. Feed fuel to the carburetor by squeezing the primer bulb until it is firm.



37714

**a** - To fuel tank  
**b** - To engine  
**c** - Arrow-mark (fuel flow direction)

4. Make sure the cooling water intake is submerged.



42604

**a** - Water intake  
**b** - Water strainer

## 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.

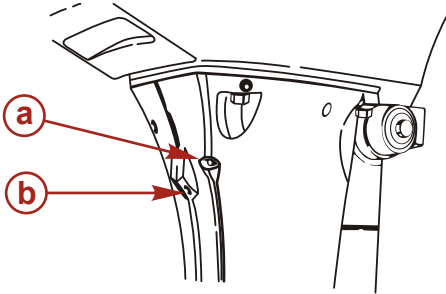
Time	0–9 min.	10–59 min.	1:00–1:59 hrs.	2:00–9:59 hrs.	10 hrs.
Method of operation	Idling or trolling	Throttle open less than ½ of the way (about 3000 RPM)	Throttle open less than ¾ of the way (about 4000 RPM)	Throttle open ¾ of the way (about 4000 RPM)	Normal operating
Conditions	Cruising at no more 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 warming it up shortens the engine life. Be sure to check that cooling water is coming out of the water pump indicator hole when warming up the engine.

# OPERATION

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



- a - Water pump indicator hole
- b - Idle hole

40472

Engine speeds: Idling speed after warming up.

In Gear	In Neutral
750 RPM	950 RPM

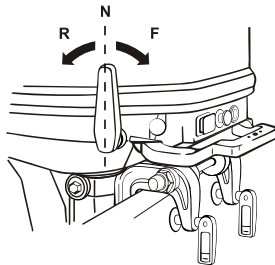
## Starting the Engine

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.



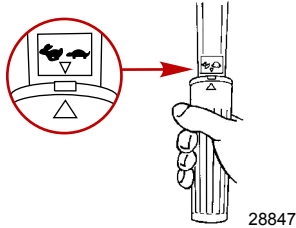
38347

**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.

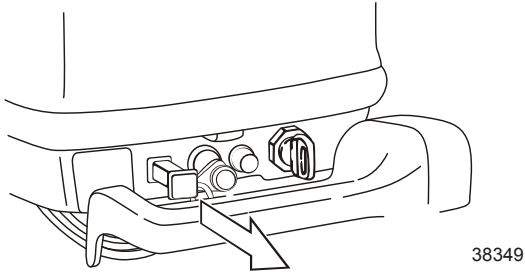
# OPERATION

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

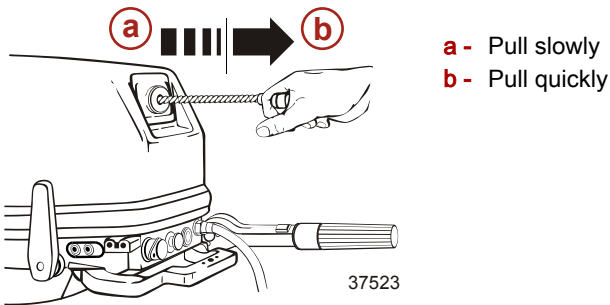
2. Turn the throttle grip until the mark on the grip faces the triangular mark on the steering handle.



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

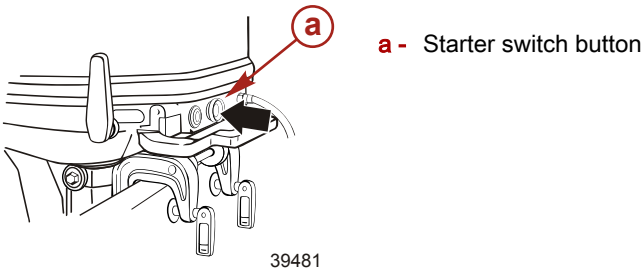


4. **MH models:** Pull the starter handle slowly until you feel resistance. Then pull it quickly.



# OPERATION

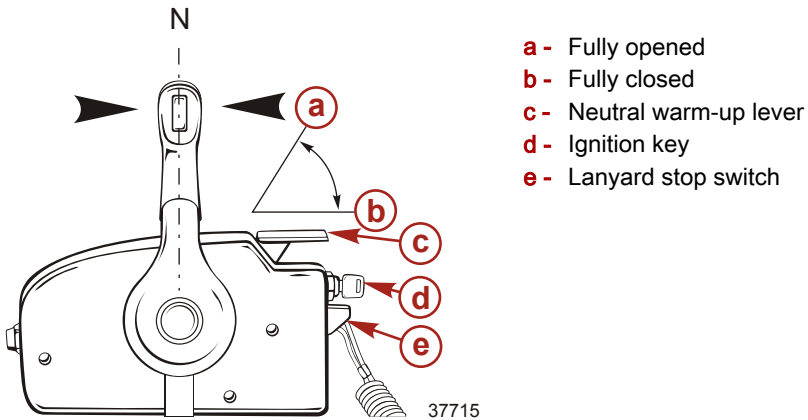
5. **EH Models:** Push the starter switch button.



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.**

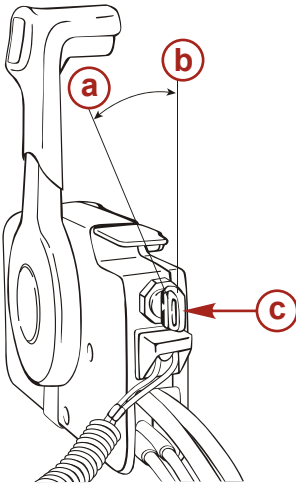
7. **E Models:** Insert the main switch key.  
8. Set the control lever in the Neutral (N) position. Raise the Neutral (N) warm-up lever.



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.

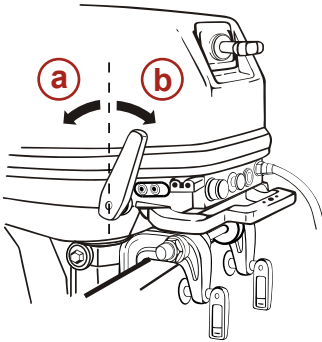
## Gear Shifting

**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.

# OPERATION

## MH and EH Models



**a** - Reverse (R)

**b** - Forward (F)

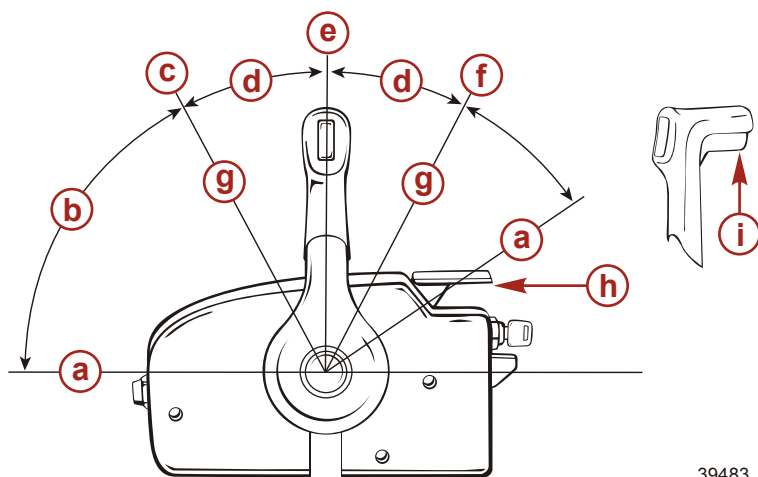
37713

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.
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.



# OPERATION

## 3. E Models



39483

- 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

4. **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.
5. **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.

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

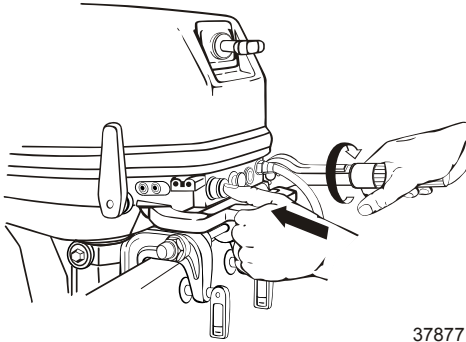
## Stopping the Engine

### MH and EH Models

1. Turn the throttle grip to the low speed position.

# OPERATION

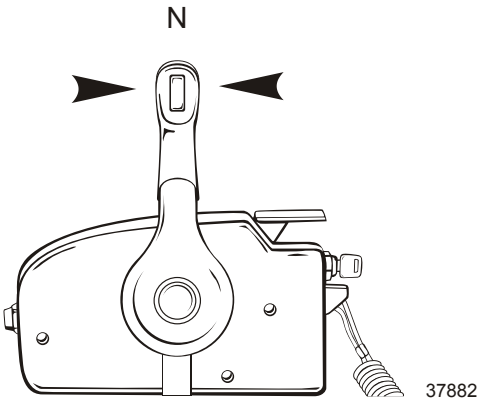
2. Put the shift lever into the Neutral (N) position. Run the engine for 2–3 minutes at idling speed if it has been running at full speed.
3. Push the stop switch to stop the engine.



37877

## E Models

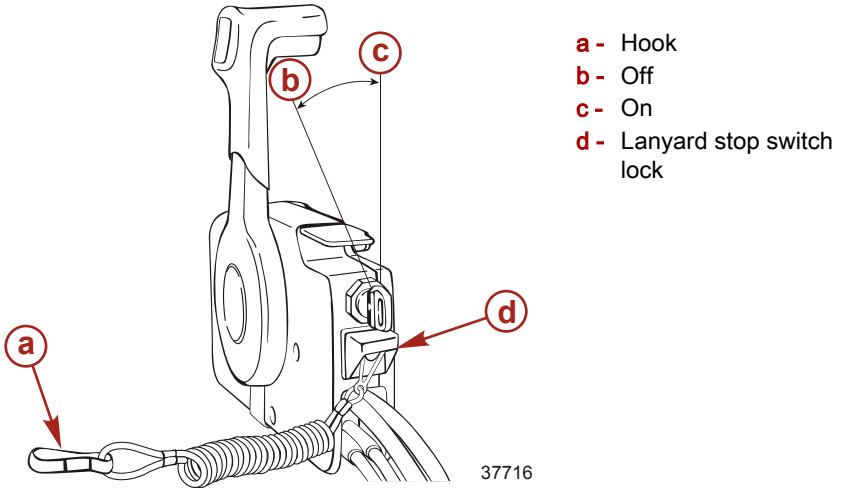
1. Put the shift lever into the Neutral (N) position and run the engine for 2–3 minutes at idling speed.



37882

# OPERATION

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



**IMPORTANT:** Please follow the instructions below:

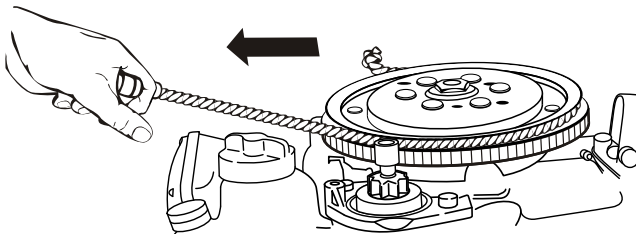
- After stopping the engine, close the air vent screw on the tank cap.
- Disconnect the fuel connector of the engine or the fuel tank.
- Disconnect the battery cable of the EH or E type engine, if the engine will not be used for more than three days.

## 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.

1. Pull directly on the starter rope by hand.
2. 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

### 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
- 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

# MAINTENANCE

- 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

## 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.

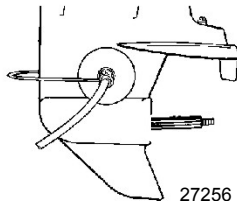
Use a Mercury Precision or Quicksilver accessory (or equivalent) flushing attachment.

**IMPORTANT:** The engine must be run during flushing in order to open the thermostat and circulate water through the water passages.


### ▲ 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.

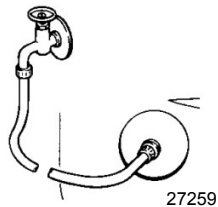
1. Remove the propeller. Refer to **Propeller Replacement**. Install the flushing attachment so the rubber cups fit tightly over the cooling water intake.



# MAINTENANCE

Flushing Device	91-44357Q 2
 <p data-bbox="409 418 452 440">9192</p>	<p data-bbox="625 261 952 347">Attaches to the water intakes; provides a fresh water connection when flushing the cooling system or operating the engine.</p>

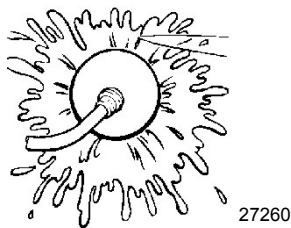
2. Attach a water hose to the flushing attachment. Turn on the water and adjust the flow so water is leaking around the rubber cups to ensure the engine receives an adequate supply of cooling water.



3. Start the engine and run it at idle speed in neutral shift position.

**IMPORTANT: Do not run the engine above idle when flushing.**

4. Adjust the water flow (if necessary) so excess water continues leaking out from around the rubber cups to ensure the engine is receiving an adequate supply of cooling water.



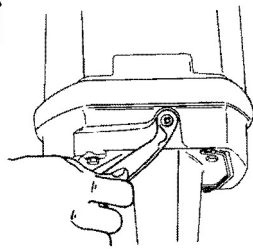
5. Check for a steady stream of water flowing out of the water pump indicator hole. Continue flushing the outboard for 3 to 5 minutes, carefully monitoring water supply at all times.
6. Stop the engine, turn off the water, and remove the flushing attachment. Install the propeller.

# MAINTENANCE

## Top Cowl Removal and Installation

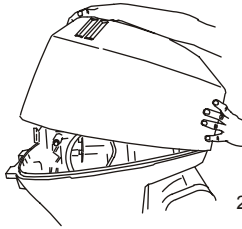
### REMOVAL

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



# MAINTENANCE

## 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.

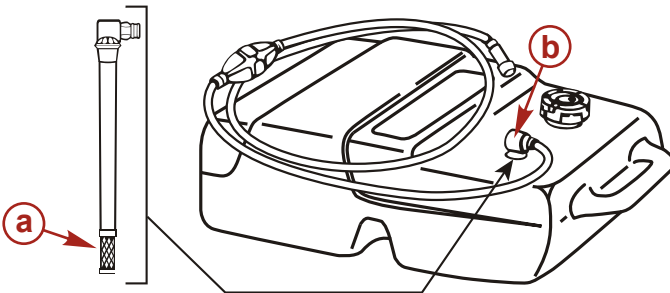
### ENGINE FUEL FILTER

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.

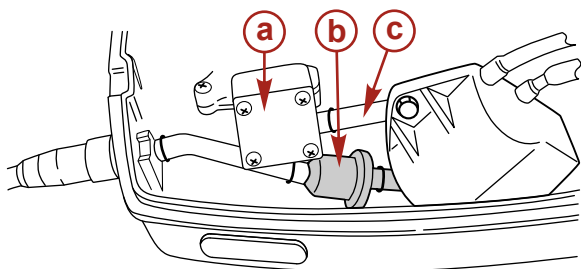
1. **Fuel tank filter:** Loosen the fuel pickup elbow shown. Remove it and clean the fuel filter.



- a - Filter
- b - Fuel pickup elbow

# MAINTENANCE

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



41036

- a** - Fuel pump
- b** - Fuel filter
- c** - Fuel pipe

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.

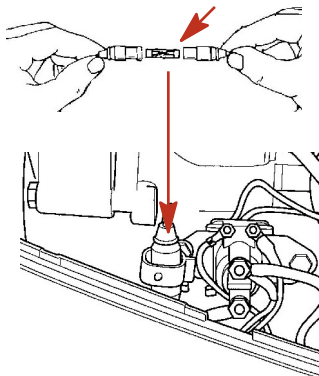
## Exterior Care

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

## 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.



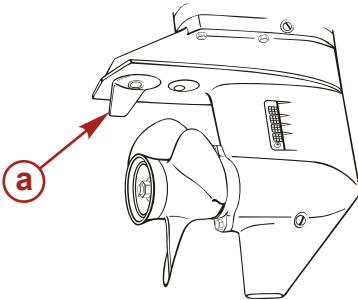
3036

# MAINTENANCE

## 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:

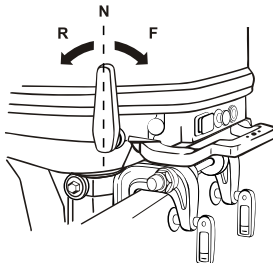
1. Never grease or paint the anode.
2. At each inspection, retighten the anode attaching bolt, as it is likely to be subjected to electrolytic corrosion.

## 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.

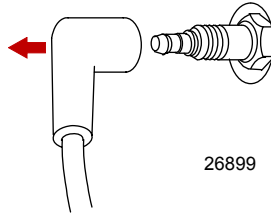
1. Shift outboard to Neutral (N) position.



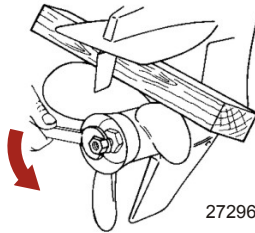
38347

# MAINTENANCE

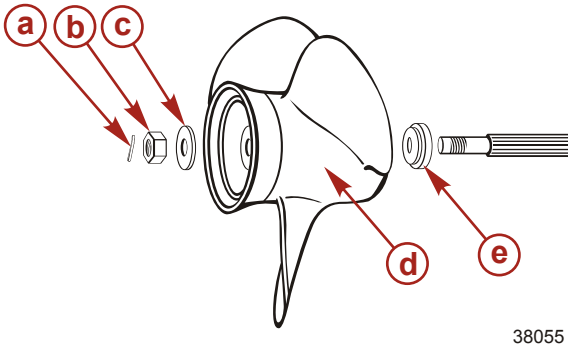
2. Remove the spark plug leads to prevent the engine from starting.



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



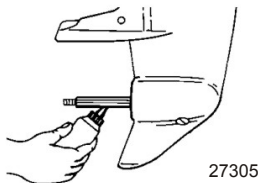
4. Pull the propeller straight off the shaft. If the propeller is seized to the shaft and cannot be removed, have the propeller removed by an authorized dealer.





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

# MAINTENANCE

5. Coat the propeller shaft with Quicksilver or Mercury Precision Lubricants Extreme Grease or 2-4-C with PTFE.

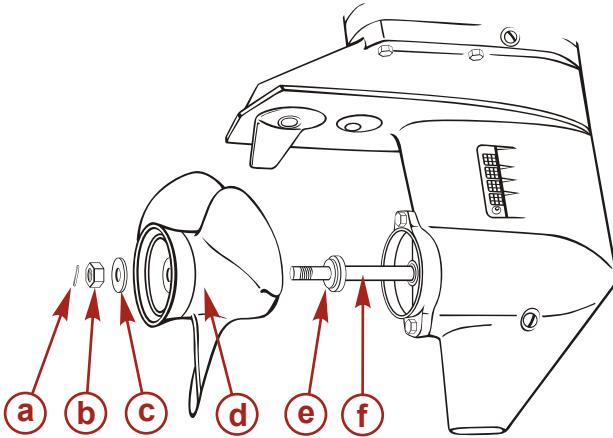


Tube Ref No.	Description	Where Used	Part No.
	Extreme Grease	Propeller shaft	8M0071842
	2-4-C with PTFE	Propeller shaft	92-802859A 1

**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

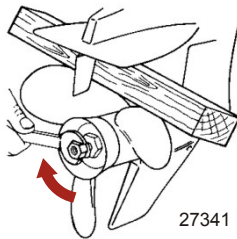
6. Install forward thrust hub, propeller, washer, nut, and cotter pin onto the propeller shaft.



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.

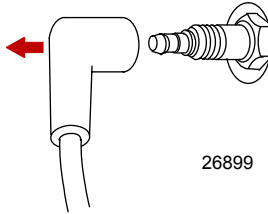
# MAINTENANCE

## Spark Plug Inspection and Replacement

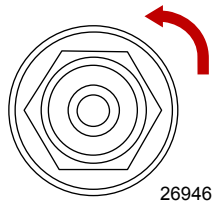
### ⚠ WARNING

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.

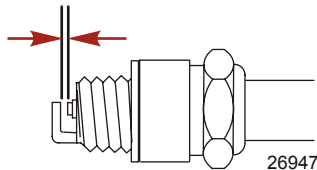
1. Remove the spark plug leads. Twist the rubber boots slightly and pull off.



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

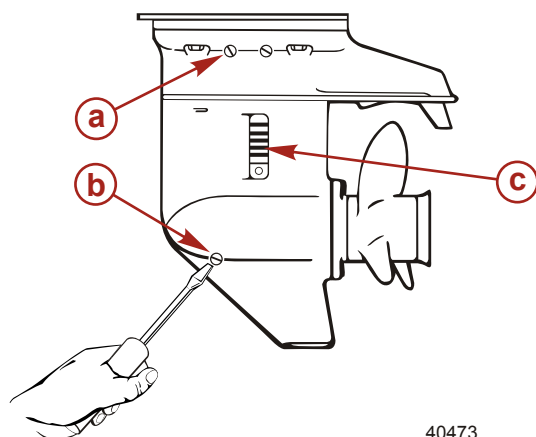
Description	Nm	lb-in.	lb-ft
Spark plug	27		20

## 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.

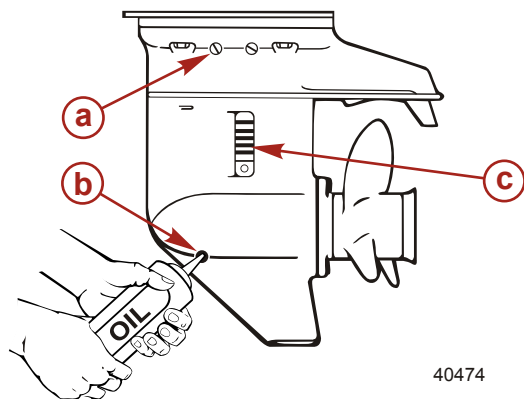
## Changing Gear Oil

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

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

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



# MAINTENANCE

**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 the 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. qt) of gasoline. Pour this mixture into the fuel tank.

# STORAGE

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

## 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.

## 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.

# STORAGE

## **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.

# 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 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.



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## Installing Outboard

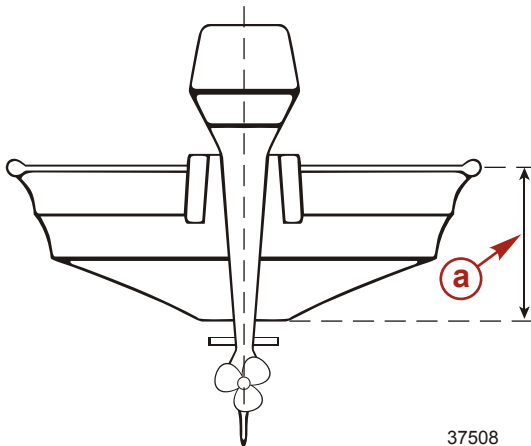
**NOTE:** If outboard is a remote control electric start model, follow instructions in the outboard installation manual (provided with the outboard) for installing remote steering shift and throttle cables and remote wiring harness.

### 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

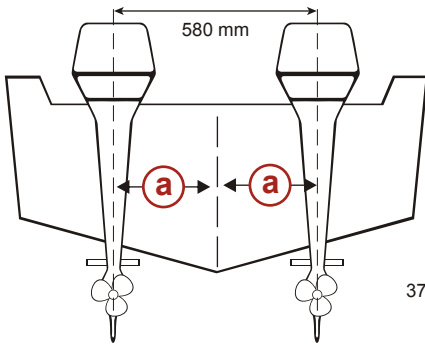
1. **Single engine:** Position the outboard motor at the center of the transom. Mount it using a cushioning pad or plate.



**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

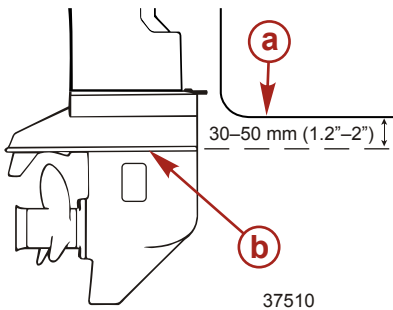
3. **Transom matching:** Be sure that the anti-ventilation plate of the outboard is below the water surface when running with the throttle wide open. If the above condition cannot be met due to the shape of the bottom of the boat, please consult the dealer.

**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.



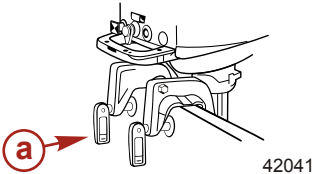
# INSTALLATION

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.



- a - Bottom of hull
- b - Anti-ventilation plate

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.



- a - Clamp bracket screw

## ⚠ 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.

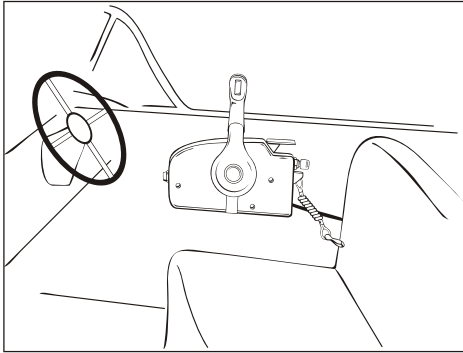
## Installing the Remote Control Devices

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.

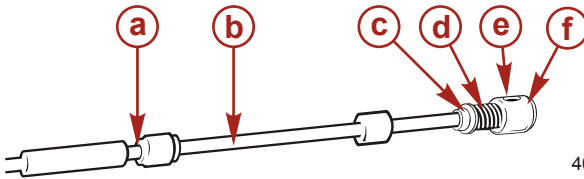


37529

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

## FITTING OF THROTTLE AND SHIFT CABLE ADAPTERS

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

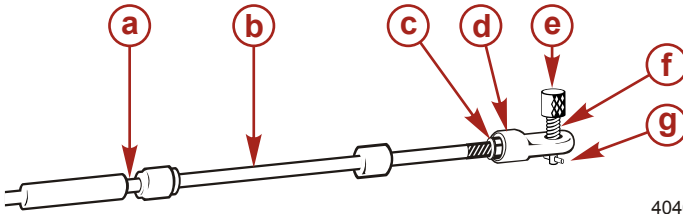


40468

- 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.

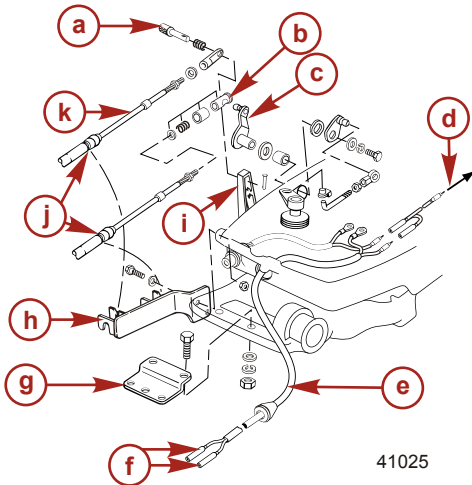


40469

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

## 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 throttle lever.
- **Shift side:** Set the shift cable to the cable clip and insert the lock pin at the shift lever fitting hole and turn it 90° to lock it.



41025

- a** - Shift cable adapter: Fit it to remote control cable and fit it to shift lever
- b** - Throttle cable adapter: Fit it to remote control cable and fit it to ball joint
- c** - Throttle lever
- d** - To CD unit
- e** - Remote control stop cord (sold separately)
- f** - Connect to remote control box harness
- g** - Steering hook plate
- h** - Cable clip
- i** - Shift lever
- j** - Cable outer groove
- k** - Shift cable

# INSTALLATION

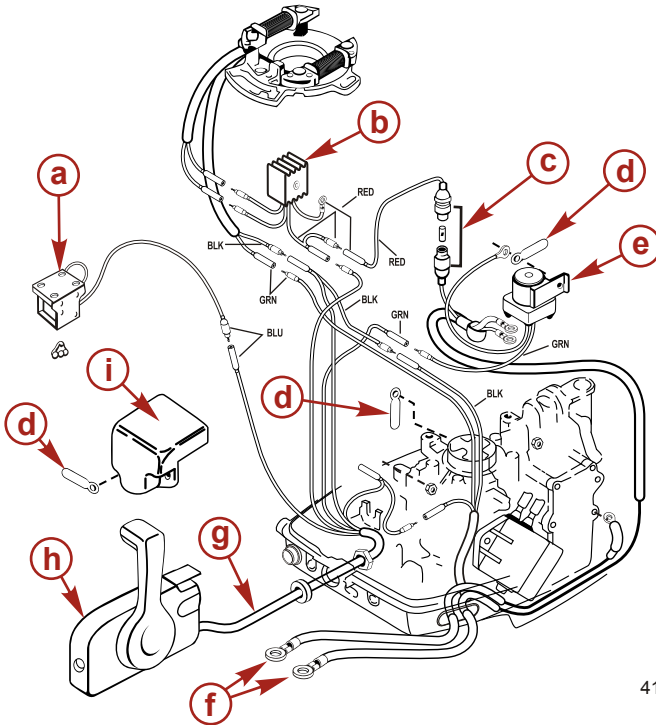
**NOTE:** Put the control lever in the Neutral (N) position and the Neutral warm-up lever in the fully closed position.

**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.

# INSTALLATION

## CONNECTING ELECTRICAL HARNESSES

- Pass the cord assembly from the remote control box through the hole in the bottom cowl and connect the electric terminals. Secure the cord assembly with the clamp according to the drawing below.



41026

- a** - Choke solenoid
- b** - Rectifier
- c** - Fuse wire
- d** - Clamp
- e** - Starter solenoid
- f** - Battery cable
- g** - Harness
- h** - Single remote control box
- i** - Air silencer

# 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.

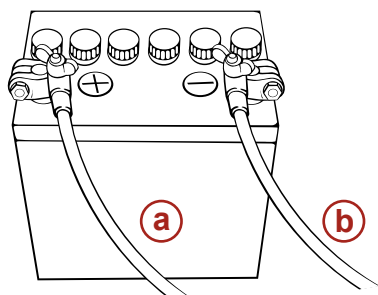
**NOTE:** *Electric starting outboards must have the battery cables connected to a battery whenever the engine is running, even if started manually, as damage to the charging system could result.*

### 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
6, 8	4500-5500 RPM
9.8	5000-6000 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.

# ASSOCIATED PARTS

## Associated Parts

	Name	Qty.	Dimensions	Remarks
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	Cross and straight point	
	Screwdriver handle	1		
Spare parts	Starter rope	1	1000 mm	
	Spark plug	1	NGK B7HS-10 or BPR7HS-10	
	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.

## NOTES:



# ASSOCIATED PARTS

# 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: 6, 8 = 4500–5500 RPM; 9.8 = 5000–6000 RPM.

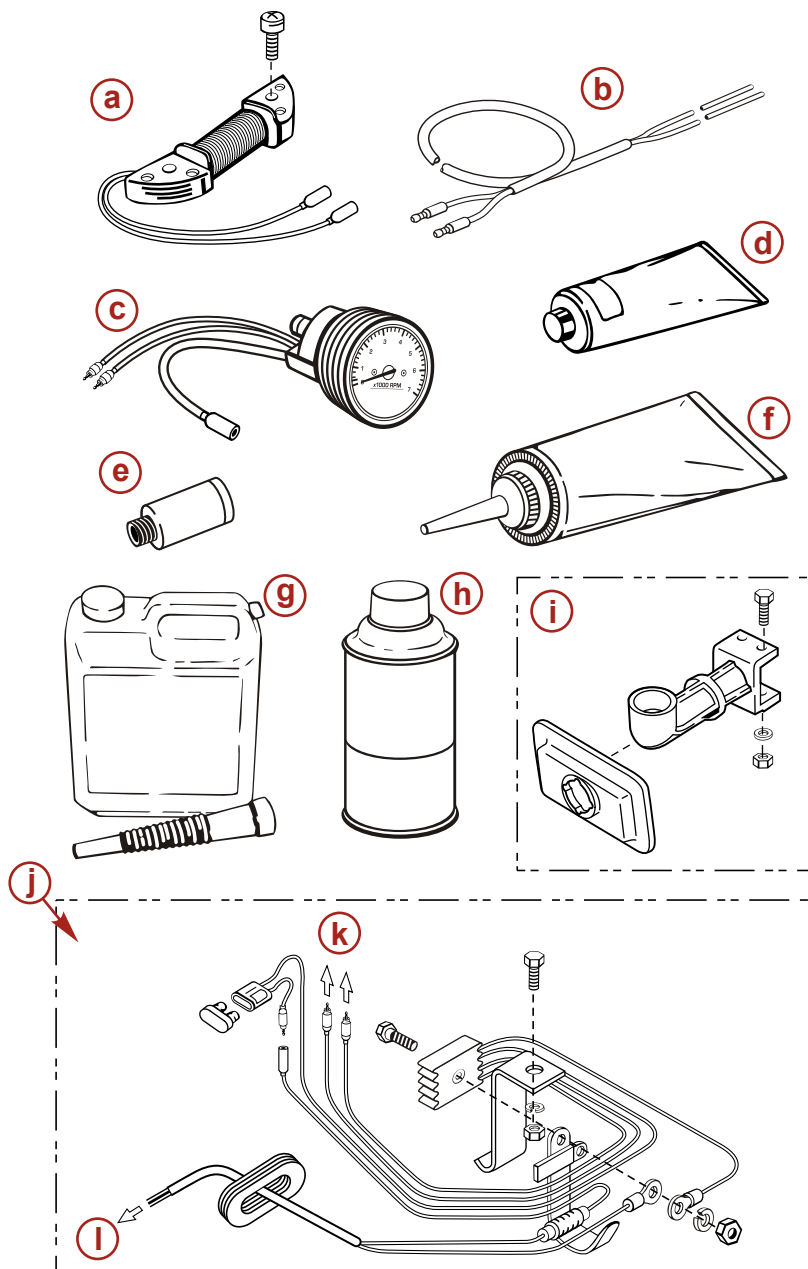
		Light boats			Heavy boats	
Size as indicated on propeller		9.5	F8.5	7.5	7.0	6.5
Propeller size diameter (mm) x pitch (in.)		226 x 255 (8.9 x 10)	226 x 211 (8.9 x 8.3)	216 x 190 (8.5 x 7.5)	226 x 178 (8.9 x 7.0)	216 x 165 (8.5 x 6.5)
Standard propeller model	6		S		L	
	8		S		L and UL	
	9.8		S	L and UL		

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

# ACCESSORIES

## Accessories

### OPTIONAL ACCESSORIES



# ACCESSORIES

- a** - Alternator (12 V, 80 W): For lamp in run mode only
- b** - Extension cord for light: Lights are available on the market
- c** - Tachometer
- d** - Mercury/Quicksilver grease
- e** - Flushing attachment
- f** - Mercury/Quicksilver gear oil
- g** - Mercury/Quicksilver engine oil (0.4 L, 1 L, 4 L, 20 L)
- h** - Touch-up paint
- i** - Vertical starter
- j** - Rectifier: For charging battery (12 V)
- k** - Alternator
- l** - Battery or lamp

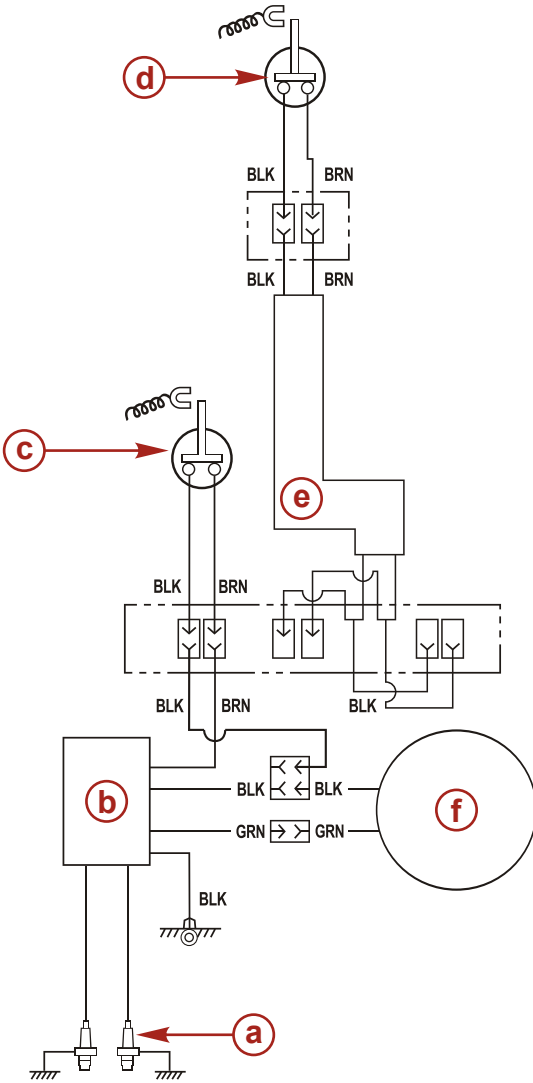
# WIRING DIAGRAMS

## Wire Color Code Abbreviations

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

# WIRING DIAGRAMS

## MH Models



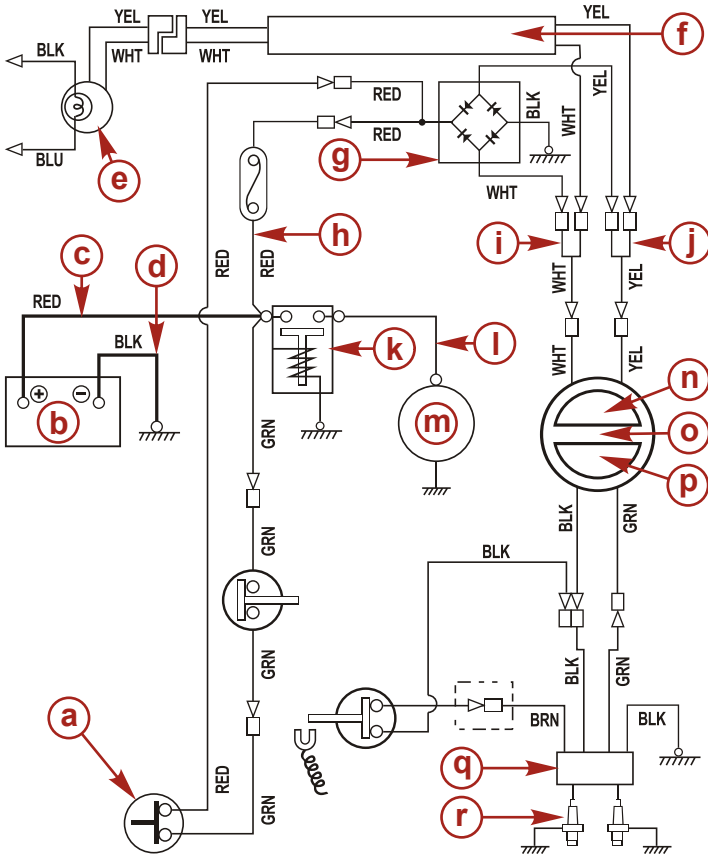
41038

# WIRING DIAGRAMS

- a** - Spark plug
- b** - CD unit
- c** - Stop switch
- d** - Remote control stop switch (optional)
- e** - Starter cord
- f** - Flywheel magneto

# WIRING DIAGRAMS

## EH Models



41039

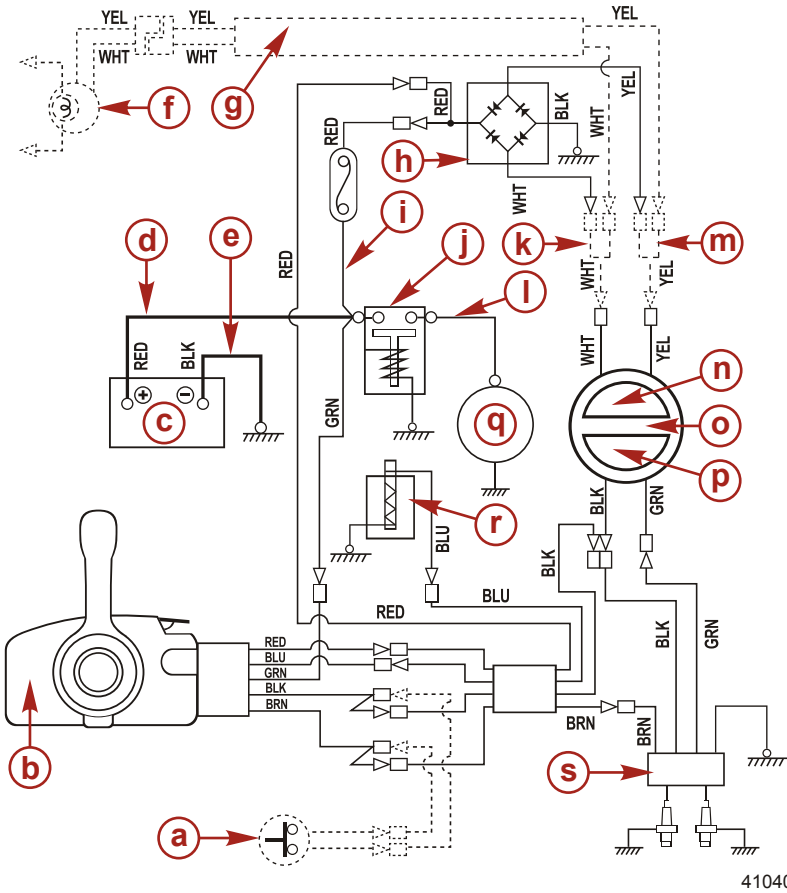


# WIRING DIAGRAMS

- a** - Main switch
- b** - Battery
- c** - Battery cable (red)
- d** - Battery cable (black)
- e** - Tachometer (optional)
- f** - Tachometer lead wire (optional)
- g** - Rectifier
- h** - Fuse wire
- i** - Separate cord (white) (optional)
- j** - Separate cord (yellow) (optional)
- k** - Starter solenoid
- l** - Starter cord
- m** - Starter motor
- n** - Alternator
- o** - Flywheel magneto
- p** - Exciter coil
- q** - CD unit
- r** - Spark plug

# WIRING DIAGRAMS

## E Models

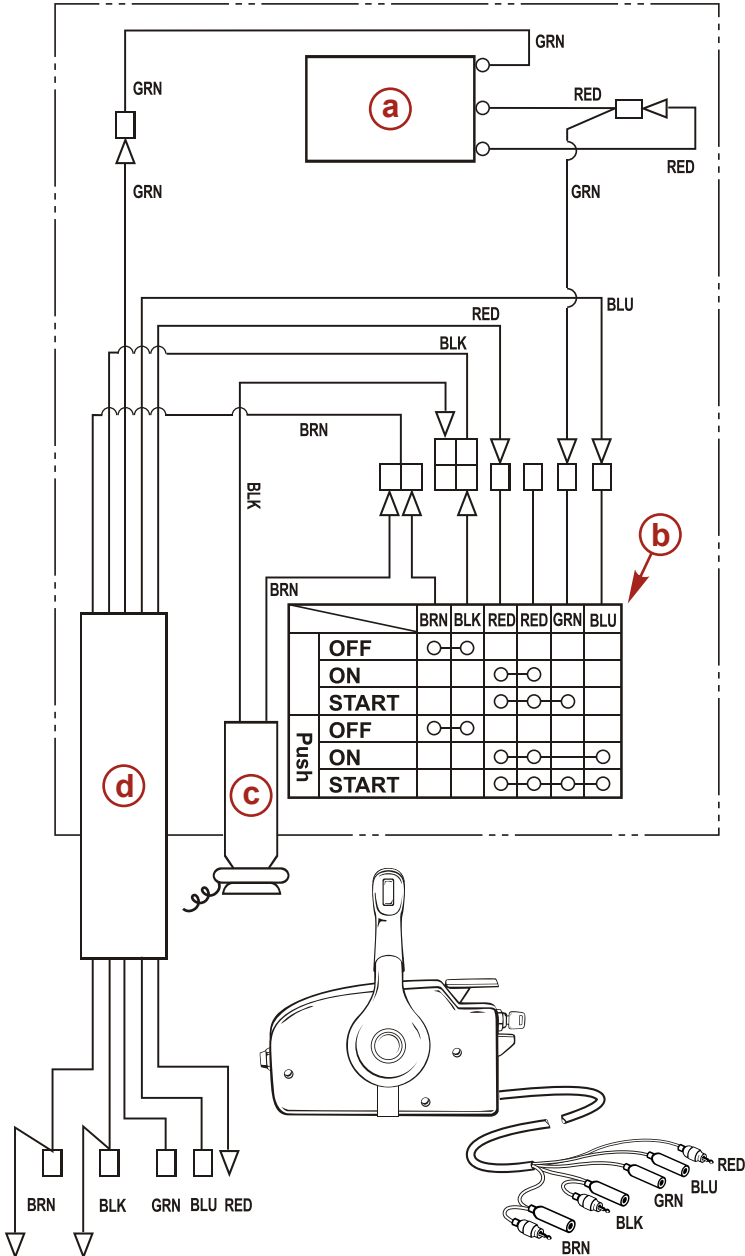


# WIRING DIAGRAMS

- a** - Stop switch (optional)
- b** - Single remote control box
- c** - Battery (12 V, 40 AH)
- d** - Battery cable (red)
- e** - Battery cable (black)
- f** - Tachometer (optional)
- g** - Tachometer lead wire (optional)
- h** - Rectifier
- i** - Fuse wire
- j** - Starter solenoid
- k** - Separate cord (white) (optional)
- l** - Starter cord
- m** - Separate cord (yellow) (optional)
- n** - Alternator
- o** - Flywheel magneto
- p** - Exciter coil
- q** - Starter motor
- r** - Choke solenoid
- s** - CD unit

# WIRING DIAGRAMS

## Single Remote Control Box



39496

# WIRING DIAGRAMS

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

# 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.

### PARTS AND ACCESSORIES INQUIRIES

Direct any inquiries concerning genuine Mercury Precision Parts® or Quicksilver Marine Parts and Accessories® to a local authorized dealer. Dealers have the proper systems to order parts and accessories, if they are not in stock. **Engine model** and **serial number** are required to order correct parts.

# OWNER SERVICE ASSISTANCE

## 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.
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.

<b>United States, Canada</b>		
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	<a href="http://www.mercurymarine.com">www.mercurymarine.com</a>	

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

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

# OWNER SERVICE ASSISTANCE

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

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

<b>Asia, Singapore</b>		
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:

<b>Mercury Marine</b>		
<b>Telephone</b>	<b>Fax</b>	<b>Mail</b>
(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.



# OWNER SERVICE ASSISTANCE

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
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<b>Ship To: (Copy this form and print or type—This is your shipping label)</b>	
<b>Name</b>	
<b>Address</b>	
<b>City, State, Province</b>	
<b>ZIP or postal code</b>	
<b>Country</b>	

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