Thank You

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

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

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

Again, thank you for your confidence in Mariner Outboards.

READ THIS MANUAL THOROUGHLY

If you don’t understand any portion, contact your dealer for a demonstration of actual starting and operating procedures.

NOTICE

Throughout this publication, and on your outboard, DANGER, WARNINGS and CAUTIONS, accompanied by the international HAZARD Symbol ▲, may be used to alert the installer/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 to these special instructions while performing the service, plus "common sense" operation, are major accident prevention measures.

WARNING

The following advantages and disadvantages of an EMERGENCY STOP SWITCH (lanyard type) should be considered before electing to use, or not to use, such a switch.

ADVANTAGES: The purpose of an EMERGENCY STOP SWITCH is to stop the engine when the operator leaves his control station, either accidentally by falling into the boat, or by falling or being ejected overboard. This is most likely in certain types of boats such as low sided bass boats, high performance boats and light sensitive handling, fishing boats operated by hand-tiller. It is also likely as a result of poor operating practices such as sitting on the back of the seat at planing speeds, standing at planing speeds, operating at high speeds in shallow or obstacle infected waters, drinking and driving, or daring, high speed boat maneuvers.

DISADVANTAGES: inadvertent activation of the switch is also a possibility. This could cause any or all of the following potentially hazardous situations:

- Loss of balance and falling forward of unstable boat passengers - a particular concern in bow rider type boats.
- Loss of power and directional control in heavy seas, strong current or high winds.
- Loss of control when docking.
As we cannot possibly know of and advise the boating public of ALL conceivable boat/motor types and/or poor operating practices, the final decision of whether to use an EMERGENCY STOP SWITCH rests with you, the owner/driver.

We strongly recommend that other occupants be instructed on proper starting and operating procedures should they be required to operate the outboard and boat in an emergency.

**WARNING**

A SECURITY LINE that is long enough to allow the outboard to disengage from the transom but too short to permit the outboard to submerge and stop running could cause the outboard to rebound into the boat and injure the occupants.

- An effective SECURITY LINE should be of a working strength approximately five (5) times the weight of the outboard motor.

- The SECURITY LINE should be SHORT enough and affixed in a manner to prevent the outboard from rising up and disengaging from the transom - OR -

- The SECURITY LINE should be LONG enough and affixed in a manner to permit the outboard to submerge behind the boat and thus stop running.

**WARNING**

It is difficult for a person standing or floating in the water to move clear if they see a powerboat heading toward them, even at slow speed. Shift the unit to neutral and shut off engine when your boat is near people in the water.

SERIOUS INJURY IS LIKELY IF A PERSON IN THE WATER IS STRUCK BY A MOVING BOAT, GEAR HOUSING, PROPeller, OR ACCESSORY RIGIDLY ATTACHED TO YOUR BOAT OR OUTBOARD.

**WARNING**

The use of accessories not manufactured or sold by Mercury Marine is not recommended for use with your outboard. If your outboard or outboard operating system is equipped with an accessory not manufactured by Mercury Marine, be sure to read the Operation and Maintenance Manual for that accessory before operation. If you haven't been supplied with such a manual, contact your dealer or the manufacturer of the accessory to secure the applicable manual.

**WARNING**

USE CARE when transporting fuel container, whether in a boat or car. DO NOT fill fuel container to maximum capacity. Gasoline will expand considerably as it warms up and can build up pressure in the fuel container. This can cause fuel leakage and a potential fire hazard.

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

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

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**SPECIFICATIONS**

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<th>Magnum 10</th>
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<td>750 RPM (in Gear)</td>
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<td>Piston Displacement</td>
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<td>Recommended Spark Plug</td>
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<td>Spark Plug Gap</td>
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<td>Quicksilver 2-Cycle Outboard Oil</td>
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<tr>
<td>Standard Propeller</td>
<td>3 Blade Aluminum</td>
<td>(9&quot; Dia. x 9&quot; Pitch)</td>
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<tr>
<td>Gear Ratio</td>
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<tr>
<td>Transom Height</td>
<td>Short Shaft = 15&quot; (38cm)</td>
<td>Long Shaft = 20&quot; (51cm)</td>
<td></td>
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</tbody>
</table>

*Measured at the propeller in accordance with COMIA 28.*

**IMPORTANT:** Fasteners (screws and nuts) used in the manufacture of your outboard motor are METRIC. (A few exceptions are: flywheel nut and spark plugs, which are 13/16", and lift tube nuts, which are 1-1/4".)

**COMBINATION TOOL**

A "Combination Tool" is provided with the outboard motor (stored in the "Owner's Literature Packet").

This handy tool incorporates a 21mm (13/16") hex socket (fits spark plugs) and a 10mm hex socket (fits 10mm fasteners, such as the rewind starter mounting bolts). The tool handle also incorporates a standard tip (straight) screwdriver blade.

**SPARE STARTER ROPE**

A spare starter rope also is supplied with the motor (stored in the "Owner's Literature Packet"). The rope may be used for a replacement in the rewind starter assembly or as an emergency starter rope, in event that the rewind starter is inoperable.
MOTOR INSTALLATION

WARNING

DO NOT OVERPOWER - Most boats are rated and certified for the maximum horsepower capabilities of the boat. Refer to the boat “Certification Plate” for the maximum horsepower limit. If in doubt, contact your dealer.

LIFT HANDLE

IMPORTANT: Motor MUST BE in NEUTRAL (which locks the reverse hooks over the tilt lock pin) before lifting or carrying the motor with the lift handle.

1. The lift handle is located at the front of the motor between the clamp brackets.

2. “Finger grip wells” are located at the back of both top and bottom cowls.

TRANSOM HEIGHT

3. Proper transom height is important for best boating performance. The gear housing anti-ventilation plate should be parallel to the boat bottom and at least 1” (25mm) below boat bottom.

MOUNTING MOTOR ON TRANSOM

WARNING

Before operating, motor(s) MUST BE SECURED to boat transom with two (hardware supplied) bolts and clamp screws tightened securely as shown. Installation must be water tight and clamp screws and mounting bolts checked occasionally for tightness on the transom. Failure to fasten motor to transom with mounting bolts and clamp screws, may result in damage to boat and/or loss of motor and possible injury to occupants of boat.

Centerline

4. Center motor on boat transom.

Securing Motor

5. Tighten clamp screws securely.

6. Drill through transom and bolt motor clamp brackets to transom with bolts, nuts and washers provided.


IMPORTANT: Periodically check clamp screws and transom mounting bolts to ensure that motor is secure on transom.

TILTING MOTOR

IMPORTANT: The motor must be shifted into FORWARD gear before the motor is tilted. To tilt the motor, grasp the rear of the top cowl and pull the motor forward.

The tilt angle of an outboard motor refers to how far out from the transom surface the lower unit is tilted. The tilt angle of the lower unit has a distinct effect on the planing angle of the boat, and can significantly alter top speed and handling.
MOTOR INSTALLATION
(Continued)

Automatic Tilt

Your motor is equipped with Automatic Tilt for quick and easy adjustment of tilt angle. The operator should become familiar with the operation of the automatic tilt before using the motor. Automatic tilt provides:

- Three preset bottom tilt positions
- Three shallow water troll positions
- One high tilt position

IMPORTANT: Motor must be in FORWARD gear in order to change motor tilt position.

Basic Operation

1. Shift motor into FORWARD gear.
2. Grasp rear of top cowl and tilt motor forward.
3. The decal on right (starboard) clamp bracket indicates the various tilt angle positions and two RELEASE AND RETURN positions. The arrow mark indicates the current motor position.

Tilt Angle Adjustment

4. The first three tilt angle positions are PRESET BOTTOM TRIM POSITIONS and are numbered beside the trim angle knob. Place the tilt angle knob at the tilt angle position of your choice. This sets the PRESET BOTTOM TRIM POSITION to which the motor will return each time it is manually tilted from the RELEASE AND RETURN position.

Shallow Water Troll Operation

5. For your convenience, the motor can be manually tilted at slow speed in FORWARD to any higher tilt angle position. Tip the motor toward you and it will click each time it moves into the next tilt position. To return to the PRESET BOTTOM TRIM POSITION, simply continue to tilt the motor until it reaches the first RELEASE AND RETURN position. The motor can then be lowered to the PRESET BOTTOM TRIM POSITION.

CAUTION

Follow these precautions when operating in the three higher trim shallow water positions:

- **DO NOT** operate motor above fast idle (1500 rpm).
- **BE SURE** rear edge of anti-ventilation plate remains submerged. This assures that the cooling water inlet is below water level.
- **DO NOT** move forward in the boat while the motor is running (even in NEUTRAL). Moving to the front of the boat may raise the water inlet above the water level and lead to motor damage caused by overheating.
MOTOR INSTALLATION

(Continued)

FULL TILT UP POSITION
This outboard can be conveniently held in a full tilt up position in the following manner.

CAUTION
Engine MUST NOT be run when outboard is in the full tilt up position, as water pickup in lower unit will be out of the water and water pump and/or engine would be damaged.

CAUTION
If placing outboard in full tilt up position when trailering boat/outboard (refer to TRAILERING BOAT/OUTBOARD) or; during high speed and/or rough water operation of a boat powered by a larger main power unit, the tilt lock lever MUST BE placed to LOCK position. Failure to place tilt lock lever to the LOCK position as described, could allow outboard to bounce and drop out of full tilt up position, causing damage to outboard.

Placing outboard into full tilt up position:
1. Shift outboard into FORWARD gear.
2. Place tilt lock lever to desired position.
A LOCK - Locks outboard in full tilt up position.
B UNLOCK - Holds outboard in full tilt up position until outboard is tilted completely up, which releases the tilt mechanism allowing outboard to be lowered to the preset bottom trim position.
3. Grasp outboard “finger grip wall” at rear of top cowl and lift (tilt) outboard to full tilt up position.
4. The spring loaded tilt mechanism will engage automatically and hold outboard in full tilt up position.
To release outboard from full tilt up position:
5. Place tilt lock lever to UNLOCK position.

CAUTION
6. Tilt outboard up and forward as far as it will go. This disengages the spring loads tilt mechanism and allows the outboard to be manually lowered to the preset bottom trim position.

CO-PILOT ADJUSTMENT
7. Proper co-pilot adjustment will keep motor on a fixed course (during NORMAL operation) while allowing easy manual steering control.

Turn adjusting screw clockwise to increase friction or counterclockwise to decrease friction.

BATTERY AND ELECTRICAL ACCESSORIES
Manual start alternator models are equipped with a 60 watt alternator.

CAUTION
Connect red battery cable to positive (+) battery terminal, and black battery cable to negative (-) battery terminal. Reversed connections will damage charging system.

IMPORTANT: Secure battery in a favorable position in the boat.

Any accessories, such as horns, lights, etc., should be properly fused and installed with connections attached directly to battery terminals.

MOUNTING FUEL TANK AND CONNECTING FUEL LINES
Secure fuel tank in a convenient location.
Arrange fuel line so that it does not become twisted, kinked, pinched, or stretched.

8. Connect fuel line to outboard. Make sure clip of fuel line connector is locked on barb of outboard fuel connector.
PROPPELLERS

PROPELLER SELECTION

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

Alternative propellers are available for specific boating requirements. Consult your Authorized Dealer for recommendations.

PROPELLER REMOVAL

⚠️ WARNING

Before attempting to remove or install propeller, remove spark plug leads from spark plugs to prevent engine from starting accidentally.

1. Remove top cowl (see COWL REMOVAL AND INSTALLATION) and disconnect spark plug leads.

2. Place wood block between propeller blade and anti-ventilation plate to prevent rotation.

3. Turn propeller shaft nut counterclockwise to remove nut (use a 15mm wrench.)

Remove propeller shaft nut and rear thrust hub from propeller shaft.

4. Slide propeller and splined thrust hub off propeller shaft.

PROPELLER REPAIR

Some damaged propellers can be repaired. Consult your Dealer.

PROPELLER INSTALLATION

IMPORTANT: Periodically check propeller nut for tightness during boating season.

5. Apply a liberal coat of one of the following Quicksilver lubricants to the propeller shaft; Special Lubricant 101, 2-4-C Marine Lubricant.

IMPORTANT: The cupped washer attached to the thrust hub prevents backward installation of the hub. The cupped washer MUST REMAIN IN PLACE.

6. Slide splined thrust hub onto propeller shaft with thrust hub "shoulder" toward gear housing.

Slide propeller onto propeller shaft and install rear thrust hub and propeller shaft nut.

Place a wood block between propeller blade and anti-ventilation plate to prevent rotation.

Turn propeller shaft nut clockwise. Using a 15mm wrench, TIGHTEN NUT SECURELY.

Reconnect spark plug leads and install top cowl.
**CONDITIONS AFFECTING OPERATION**

**WEIGHT DISTRIBUTION**
Positioning of weight (passengers and gear) inside the boat has the following effects:

A. Shifting weight to rear (stern).
   - Generally increases speed and engine RPM.
   - At extremes, can cause boat to porpoise.
   - Causes bow to bounce in choppy water.
   - Increases danger of the following-wave splashing into boat when coming off plane.

B. Shifting weight to front (bow).
   - Improves ease of planing off.
   - Improves rough water ride.
   - At extremes, can cause boat to veer back and forth (bow steer).

**BOTTOM OF BOAT**
To maintain maximum speed the following conditions of the bottom should be observed:
A. Clean, free of barnacles and marine growth.
B. Free of distortion, nearly flat where it contacts the water.
C. Straight and smooth, fore and aft.

**FUEL RECOMMENDATIONS**

Any leaded or unleaded (lead-free) gasoline, that will satisfactorily operate an automobile engine is suitable for use in these model outboard motors.

However, gasolines containing alcohol, either methyl alcohol (methanol) or ethyl (ethanol) may cause increased:

- Corrosion of metal parts.
- Deterioration of elastomer and plastic parts.
- Fuel permeation through flexible fuel lines.
- Wear and damage of internal engine parts.
- Starting and operating difficulties.

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

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

**WARNING**

**FIRE AND EXPLOSION HAZARD:** Fuel leakage from any part of the fuel system can be a fire and explosion hazard which can cause serious bodily injury or death. Careful periodic inspection of the entire fuel system is mandatory, particularly after storage. All fuel components including fuel tanks, whether plastic, metal or fiberglass, fuel lines, primer bulbs, fittings, fuel filters and carburetors should be inspected for leakage, softening, hardening, swelling or corrosion. Any sign of leakage or deterioration necessitates replacement before further engine operation.

Because of the possible adverse effects of alcohol in gasoline, it is recommended that only alcohol-free gasoline be used wherever possible. If only alcohol-containing fuel is available, or if the presence of alcohol is unknown, then increased inspection frequency for leaks and abnormalities is required.

**CAUTION**

The use of other than recommended gasoline and Quicksilver 2-Cycle Outboard Oil or an acceptable NMMA TC-W II oil may cause piston scoring, bearing failure or both. DO NOT, under any circumstances, use multi-grade or other highly detergent automobile oils or oils which contain metallic additives.

Mix recommended gasoline with Quicksilver 2-Cycle Outboard Oil in ratio shown in the following chart. In an emergency, if this is not available, substitute a high quality 2-cycle oil that is intended for outboard use and meets NMMA rating TC-W II™, shown on oil container. Use the oil manufacturer's recommended gasoline-oil mixture as shown on the label (NOT TO EXCEED 50:1 RATIO).

**MIXING INSTRUCTIONS**

Observe fire prevention rules, particularly NO SMOKING. Mix fuel outdoors or in well ventilated location.

**WARNING**

DO NOT EXCEED the full throttle RPM range. See SPECIFICATIONS for RPM range.

**FUEL RECOMMENDATIONS**

**WARNING**

USE CARE when transporting fuel container, whether in a boat or car. DO NOT fill fuel container to maximum capacity. Gasoline will expand considerably as it warms up and can build up pressure in the fuel container. This can cause fuel leakage and a potential fire hazard.

**OIL RECOMMENDATIONS**

**CAUTION**

IMPORTANT: Always use fresh gasoline. Gasoline which is kept in tank too long will form gum and varnish deposits which may cause trouble.

Mix fuel directly into remote tank. Pour small, equal amounts of gasoline and oil into tank. Mix thoroughly, then add remaining oil and gasoline. Mix again. Keep fuel clean and mix each batch of fuel exactly the same way.

**MOTOR BREAK-IN PROCEDURE**

**CAUTION**

Follow break-in procedure carefully.

A. Mix gasoline and oil at normal 50:1 ratio mixture.

B. Operate new motor at varied throttle settings for the first hour (one hour).

IMPORTANT: Avoid both wide-open throttle operation and prolonged idling during first hour.

C. After first hour (one hour) of operation, motor is ready for normal operation and may be run at any speed.

**NORMAL 50:1 FUEL MIXTURE**

<table>
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<tr>
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<th>U.S. Measure</th>
<th>Imperial Measure</th>
<th>Metric Measure</th>
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<tr>
<td>Quicksilver 2-Cycle</td>
<td>16 U.S. oz.</td>
<td>16 Imp. oz.</td>
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<td>Outboard Oil</td>
<td>to each 6 gallons</td>
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<td>Other Acceptable</td>
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<tr>
<td>NMMA TC-W II™ Oil</td>
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**CAUTION**

DO NOT EXCEED 50:1.
MOTOR CONTROLS

1 PRIMER/FAST IDLE KNOB
A ROTATE KNOB - Clockwise (to stop) when starting engine or to increase idle speed.
B PULL KNOB COMPLETELY OUT - (After rotating fully clockwise) to inject fuel into manifold for fast, easy starting when engine is cold.
C PUSH KNOB COMPLETELY IN - After engine starts. As engine warms up, rotate knob counterclockwise to return to normal idle speed.

2 TILLER HANDLE - Provides a means to steer boat, and control engine speed on manually operated-motors.

3 SHIFT POSITIONS
Gear shift lever is mounted on starboard side of motor.
A “NEUTRAL” - lever in vertical position.
B “FORWARD” - lever toward front of engine.
C “REVERSE” - lever toward rear of engine.

4 THROTTLE FRICTION KNOB - Adjusts twist grip friction to hold throttle at desired boat speed. Turn knob in either direction to increase friction.

5 TILLER HANDLE MOUNTED ELECTRIC START BUTTON - Used to start engine.

6 STOP BUTTON - Used to stop motor.

7 EMERGENCY STOP SWITCH - Refer to page 2 for explanation. The lanyard, when used with the emergency stop switch and connected to the driver, will stop the engine if the driver no longer has access to the tiller handle.

8 WATER PUMP OPERATION (No Thermostat)
Normal water pump operation is indicated by a steady, “Tell-Tale” stream of water issuing from a small hole at rear of bottom cowl while the motor is running and remain steady during the entire operation of the engine.

Water Pump Operation (Thermostat)
IMPORTANT: On models which are equipped with a thermostat (OPTIONAL ACCESSORY) in the cooling system, a "Tell-Tale" stream may not be visible until the engine reaches normal operating temperature and the thermostat opens (5 to 45 seconds, depending upon engine RPM and water temperature). The "Tell-Tale" may become intermittent while running as the thermostat opens and closes.

Operation with a defective water pump or obstruction in the cooling system will cause overheating and severe damage. Refer motor to Authorized Service facilities.

NOTICE: If your outboard will be operated primarily in cold water areas (normal water temperature BELOW 50°F (10°C)) and/or areas where extreme day-to-day air temperature variations of more than 30°F (17°C) are common, we recommend installation of a thermostat (OPTIONAL ACCESSORY) in the engine cooling system.

A thermostat controlled cooling system maintains a constant, higher engine operating temperature, thus providing smoother engine operation, particularly at slower operating speeds. See an Authorized Servicing Dealer for this accessory.
OPERATION MODELS WITH TILLER HANDLE

BEFORE STARTING

**CAUTION**

This outboard is water cooled. **DO NOT** operate outboard with cooling water intake out-of-water or serious damage to outboard could result from overheating.

**DO NOT** attempt to shift motor into REVERSE gear WHEN ENGINE IS NOT RUNNING. Damage to the shift mechanism could result.

**OPERATOR and PASSENGERS SHOULD BE SEATED WHENEVER ATTEMPTING to START the MOTOR.**

Before attempting to start motor, MAKE CERTAIN that motor is shifted into NEUTRAL and that area around boat is clear (to get underway).

Check fuel tank for sufficient fuel and that tank is secure in boat.

1. Open air vent on fuel tank cap.
2. Squeeze fuel primer bulb until it is firm.
3. Check that emergency stop switch is in RUN position.

STARTING

**IMPORTANT:** Manual starting motors are equipped with a rewind starter "lock-out" mechanism -- motor MUST BE in NEUTRAL in order to start motor.

**ELECTRIC** starting motors are equipped with a starter "cut-out" switch -- the shift lever or the remote control handle MUST BE in NEUTRAL position in order to start the engine.

4. Position twist grip to START and shift handle to NEUTRAL.
5. Rotate Primer/Fast Idle Knob clockwise (to stop) and pull completely out when starting cold engine. When re-starting warm engine, rotate knob to full clockwise position. Do not pull out knob.

6A. **On manual start models,** pull Starter-Rope Handle slowly until engaged, then vigorously. Allow rope to rewind slowly. Repeat until motor starts.

6B. **On electric start models,** press STARTER BUTTON - as soon as motor starts, release button.

**CAUTION**

**DO NOT** operate starter motor for longer than 30 seconds or starter motor may be damaged. Allow at least 2 minutes between starting attempts.

AFTER STARTING

7. **WATER PUMP OPERATION (No Thermostat)**

Normal water pump operation is indicated by a steady, "Tell-Tale" stream of water issuing from a small hole at rear of bottom cowl while the motor is running and remain steady during the entire operation of the engine.

Water Pump Operation (Thermostat)

**IMPORTANT:** On models which are equipped with a thermostat (OPTIONAL ACCESSORY) in the cooling system, a "Tell-Tale" stream may not be visible until the engine reaches normal operating temperature and the thermostat opens (5 to 45 seconds, depending upon engine RPM and water temperature). The "Tell-Tale" may become intermittent while running as the thermostat opens and closes.

Operation with a defective water pump or obstruction in the cooling system will cause overheating and severe damage. Refer motor to Authorized Service facilities.
OPERATION (Continued)
MODELS WITH TILLER HANDLE

THROTTLE/SHIFTING GEARS

1 FORWARD GEAR - Turn twist grip to SHIFT position, then pull forward on shift handle to engage gear. Rotate twist grip counterclockwise to increase speed.

During operation, the Idle Speed portion of the Primer/Fast Idle/Idle Speed Knob can be adjusted to set an idle speed for trolling, etc. Turning clockwise increases idle speed. Turning counterclockwise and pushing in on knob decreases idle speed.

CAUTION
Primer/Fast Idle Knob must be rotated completely counterclockwise BEFORE shifting. Shift gears with a firm, quick motion to avoid "gear chatter".

2 REVERSE GEAR - Turn twist grip to SHIFT position, then push back on shift handle to engage gear.

STopping

3 Press Stop Button at end of twist grip and hold until motor stops.

IMPORTANT: In an emergency the motor can be stopped at any speed, in or out of gear. For normal stopping, idle motor and shift to NEUTRAL before pressing STOP BUTTON.

CAUTION
Exercise extreme care when operating in REVERSE GEAR. DO NOT operate motor at high speeds when in REVERSE.
QUICKSILVER 
REMOTE CONTROL COMPONENTS

1 Neutral Lock Bar - prevents accidental shift and throttle engagement. Bar must be squeezed before control handle can be moved, from NEUTRAL.

2 Control Handle - controls forward, reverse motion and motor speed.

3 Ignition/Choke Switch - turns engine OFF and ON, actuates electric starter motor, and actuates carburetor choke.

4 Emergency Stop Switch - Refer to page 2 for explanation. The lanyard cord/clip, when used with the emergency stop switch MUST BE connected to boat driver. Should driver be unable to reach steering wheel or remote control, the lanyard cord/clip will be pulled from emergency stop switch and the engine will shut OFF. This emergency stop switch SHOULD NOT BE USED as normal engine shut-off.

5 Engine can be restarted with or without lanyard cord/clip installed by simply pushing switch up to run position. If necessary push switch down with key to reinstall clip.

6 FAST IDLE LEVER - Allows engine throttle advancement, without shifting gears, to assist engine starting.

7 THROTTLE FRICTION Adjustment Knob - Adjusts control handle friction so that motor speed can be set and driver does not have to hold handle. Turn knob clockwise to increase friction. DO NOT thread knob all the way out.

8 Tachometer Receptacle - Wiring harness connector for tachometer.

OPERATION 
ELECTRIC START MODELS 
WITH REMOTE CONTROL

⚠️ WARNING ⚠️
OPERATOR AND PASSENGERS SHOULD BE SEATED WHENEVER ATTEMPTING to START the MOTOR.

Before attempting to start motor, MAKE CERTAIN that motor is shifted into NEUTRAL and that area around boat is clear (to get underway).

⚠️ CAUTION ⚠️
This outboard is water cooled. DO NOT operate outboard with cooling water intake out-of-water or serious damage to outboard could result from overheating.

IMPORTANT: Remote control must be equipped with a neutral start switch. remote control handle MUST BE in NEUTRAL position in order to operate the starter.
OPERATION ELECTRIC START MODELS WITH REMOTE CONTROL

BEFORE STARTING
Check fuel tank for sufficient fuel and that tank is secure in boat.
1. Open air vent on fuel tank cap.
2. Squeeze fuel primer bulb until it is firm.
3. Place control handle in NEUTRAL. Check that emergency stop switch is in RUN position.

⚠️ CAUTION
DO NOT operate starter motor for longer than 30 seconds or starter motor may be damaged. Allow at least 2 minutes between starting attempts.

IMPORTANT: Starter circuit is protected by SFE 20 AMP fuse at port side of engine. If starter fails to operate, check for blown fuse. BEFORE replacing fuse locate and correct cause of overload.

STARTING COLD MOTOR
Push ignition key in to activate choke.
4. Hold ignition key switch IN and turn key to the START position.
As soon as motor starts, allow key to return to RUN position. If motor falters, continue choking.
5. After the motor has started, lift up Fast Idle Lever to increase idle speed until motor is warmed up.

IMPORTANT: With Fast Idle Lever in up position, control handle CANNOT be moved into FORWARD or REVERSE GEAR.
6. After warm-up, return Fast Idle Lever to full down position.

STARTING WARM MOTOR
Turn key clockwise past RUN position to START.
As soon as motor starts, allow key to return to RUN position. If motor falters, push in on key to actuate choke.

NOTE: If motor fails to start, follow STARTING COLD MOTOR Procedure.

Water Pump Operation (No Thermostat)
Normal water pump operation is indicated by a steady, "Tell-Tale" stream of water issuing from a small hole at rear of bottom cowl while the motor is running and remain steady during the entire operation of the engine.

Water Pump Operation (Thermostat)
IMPORTANT: On models which are equipped with a thermostat OPTIONAL ACCESSORY in the cooling system, a "Tell-Tale" stream may not be visible until the engine reaches normal operating temperature and the thermostat opens (5 to 45 seconds, depending upon engine RPM and water temperature). The "Tell-Tale" may become intermittent while running as the thermostat opens and closes.

Operation with a defective water pump or obstruction in the cooling system will cause overheating and severe damage. Refer motor to Authorized Service facilities.

THROTTLE/SHIFTING GEARS
7. Squeezing Neutral Lock Bar and pushing control handle forward engages the FORWARD GEAR. Pushing handle further forward increases motor speed.

⚠️ CAUTION
Exercise extreme care when operating in REVERSE GEAR. DO NOT operate motor at high speeds in REVERSE.

Squeezing Neutral Lock Bar and pulling back on control handle engages REVERSE GEAR.

STOPPING
8. Shift to NEUTRAL and turn key counter-clockwise to OFF position.

IMPORTANT: In an emergency the motor can be stopped at any speed, in or out of gear. For normal operation, idle motor and shift to NEUTRAL before turning key OFF.
EMERGENCY OPERATION

If rewind starter becomes inoperative, the motor can be cranked (utilizing spare starter rope supplied) in the following manner.

1. Remove top cowl (refer to COWL REMOVAL and INSTALLATION).
2. Remove fuel filter from starter housing (use "Combination Tool"). DO NOT turn or cock filter, pull filter straight down.
3. Remove manual start interlock linkage from the right (starboard) side of the rewind starter assembly.
4. Remove 3 bolts which secure rewind starter assembly to engine. Lift rewind starter from engine.
5. Shift outboard or remote control into neutral.

REMOTE CONTROL IS INOPERATIVE. Make sure to shift outboard or position remote control handle into neutral before starting outboard to prevent outboard from starting in gear. Sudden unexpected acceleration can cause serious injury or death.

6. Tie knot in end of spare rope. Hook rope knot in flywheel notch and wind rope CLOCKWISE around flywheel at least 2 turns.

Observe preliminary motor starting steps as outlined in OPERATION procedures and pull rope to start motor. Repeat, if motor has not started.

WARNING

Care must be taken when using emergency starting procedure. DO NOT attempt to replace rewind starter assembly or cowlung after engine has started. Stay clear of flywheel. DO NOT WEAR loose clothing when operating under these conditions.

COWL REMOVAL and INSTALLATION

WARNING

DO NOT ATTEMPT TO REMOVE OR INSTALL COWL WHILE MOTOR IS RUNNING.

REMOVAL

STOP MOTOR

7. Push down to disengage cowl latch at rear of motor.

8. Lift up on rear of cowl and tilt forward to disengage cowl hook at front of motor.

LIFT COWL OFF.

INSTALLATION

Position cowl over motor.

Lift up on rear of cowl and tilt it forward slightly to engage front hook.

Lower cowl into position and engage rear latch.

Push latch up to secure cowl.
## LUBRICATION GUIDE

<table>
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<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
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<th>SALT WATER FREQUENCY</th>
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<td>Throttle/Shift Linkage (All Pivot Points)</td>
<td>A</td>
<td>Every 60 days</td>
<td>Every 30 days</td>
</tr>
<tr>
<td>2</td>
<td>Tilt Tube/Control Handle Pivot</td>
<td>A</td>
<td>Every 60 days</td>
<td>Every 30 days</td>
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<tr>
<td>3</td>
<td>Clamp Screws</td>
<td>A</td>
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<tr>
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<td>Every 30 days</td>
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<td>5</td>
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<td>Every 30 days</td>
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<td>6</td>
<td>Gear Housing</td>
<td>B</td>
<td>After 1st 10 days, then every 30 days</td>
<td>After 1st 10 days, then every 30 days</td>
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<td>Propeller Shaft</td>
<td>A</td>
<td>Once a season</td>
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<tr>
<td>8</td>
<td>Replace Water Pump Impeller</td>
<td>A</td>
<td>Every 300 hours or once a season</td>
<td>Every 300 hours or once a season</td>
</tr>
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</table>

Type of Lubricants

A = Quicksilver 2-4-C Marine Lubricant  
B = Quicksilver Gear Lube

## GEAR HOUSING LUBRICATION

### CAUTION

Have gear housing checked by your local service dealer if any of the following are found:
- Water drains from filler hole.
- Metal particles are present on magnetic fill plug.

**NOTE:** Presence of a small amount of fine metal particles (resembling powder) indicates normal wear.

Lubricant appears milky brown.

Large amounts of lubricant must be added to fill gear housing.

Lubricate gear housing as follows:

**IMPORTANT:** DO NOT use automotive lubricant in gear housing. Use only Quicksilver Gear Lube.

8. Remove fill plug and washer.

9. Insert lubricant tube into filler hole.

**IMPORTANT:** NEVER add lubricant to gear housing without first removing vent screw.

10. Remove vent screw and washer.

Add lubricant to gear housing until excess flows from vent hole.

Replace vent screw and washer.

Remove lubricant tube and install fill plug and washer.
INSPECTION AND MAINTENANCE

Inspect motor often, and at regular intervals, to help maintain its top operating performance, and correct potential problems before they occur. The entire motor should be checked carefully, including all accessible engine parts.

Check for loose, damaged or missing parts. Tighten or replace as required.

Lubricate and check gear housing oil level per LUBRICATION GUIDE.

Service spark plugs. Check plug leads and electrical leads for damage.

Inspect fuel lines for damage. Service fuel filters.

Remove and inspect propeller. If badly nicked, bent or cracked, refer to Authorized Service Facilities. (Refer to PROPELLER - INSTALLATION.)

Repair nicks and corrosion damage on finish. Use Quicksilver spray paints - see your Dealer.

1. Inspect anodic plate. Replace if 50% of anodic plate has been eroded away.

IMPORTANT: The anodic plate is made of a special alloy to protect motor housings from galvanic corrosion. DO NOT paint or place protective coating on the anodic plate.

FLUSHING MOTOR COOLING SYSTEM

CAUTION

When flushing, remove the propeller.

To prevent silt and/or salt buildup in cooling system, flush with fresh water periodically.

2. Remove propeller. Refer to PROPELLER REMOVAL.

3. Install Quicksilver Flushing Attachment (or equivalent) over water intake gear housing.

4. Connect hose between flushing attachment and water tap.

5. With motor in normal operating position, open water tap and adjust flow so that some water leaks from around flushing attachment.

6. Check that water is running from 'Tell-Tale'. Shift motor to NEUTRAL and start.

With motor running at idle speed, continue flushing until water becomes clear (3 to 5 minutes for salt water units).

7. Stop motor, turn-off water and remove flushing attachment.

IMPORTANT: Keep motor in upright position until all water has drained out. Water left trapped in motor could cause engine damage.

8. Install propeller. Refer to PROPELLER INSTALLATION.

9. Clean motor surfaces and wipe with Quicksilver Corrosion and Rust Preventive Type II to protect finish.
IGNITION MAINTENANCE

**CAUTION**

DO NOT touch or disconnect any ignition system parts while engine is running, as high voltage is present.

If electrical/ignition system is not operating, DO NOT attempt to repair, but refer to your authorized service facility.

SPARK PLUGS

Periodic inspection, cleaning and/or replacement of spark plugs will enhance motor performance. Always replace spark plugs with type specified in SPECIFICATIONS.

Replace spark plugs as follows:

1. Disconnect spark plug leads and use "Combination Tool" supplied, or 13/16" wrench, to remove spark plugs.
2. Check that gaskets are in place and install new plugs.
3. Reconnect spark plug leads to correct plugs.
   Inspect spark plug leads for damage - replace as necessary.

CLEANING FUEL FILTERS

**WARNING**

Be careful when cleaning fuel filter elements; gasoline is extremely flammable and highly explosive under certain conditions. Always stop the engine and DO NOT smoke or allow open flames in the area while cleaning fuel filter elements.

**SIGHT BOWL FUEL FILTER**

1. Unscrew sight bowl from filter cover. DO NOT allow cover to twist or turn.
2. Pull filter from cover. Rinse sight bowl and filter in clean gasoline.
3. Check that rubber seal ring is properly positioned in bowl.
   Push filter into cover and hand tighten sight bowl onto cover.
   Prime fuel system and check for fuel leaks.

**FUEL TANK PICKUP FILTER**

Disconnect fuel line from tank.
Loosen and remove fuel pickup tube.
Clean filter by rinsing in clean gasoline.
Reinstall on fuel tank.

**FUEL RESERVE**

*(6.6 Gallon Polyethylene Tank Only)*

The 6.6 gallon polyethylene tank incorporates a fuel reserve of approximately 1 gallon.

4. To utilize fuel reserve, tip tank toward fuel pickup and allow reserve fuel to flow into fuel pickup chamber.
CARBURETOR ADJUSTMENTS

The carburetor has been calibrated and pre-set at factory to provide best performance under normal conditions. However, extreme changes in weather and/or elevation may necessitate further carburetor adjustments.

IMPORTANT: To maintain peak engine performance when operating at HIGHER ELEVATIONS, it will be necessary to install a LEANER fixed high speed jet. (See your authorized service facility).

LOW SPEED MIXTURE

1 Pre-set low speed mixture screw as follows:
   A Lightly tighten screw - turn clockwise.
   B Back-out screw 1-1/2 turns counterclockwise.
   Start engine - Allow to run at IDLE for several minutes.

2 With engine at IDLE, shift to FORWARD GEAR.

3 Turn screw counterclockwise until engine starts to "load-up" or fire unevenly (TOO RICH).

4 Slowly turn screw clockwise until engine fires evenly and RPM increases. Continue turning clockwise until RPM decreases and engine misfires (TOO LEAN). Set low speed mixture screw at point midway between TOO RICH and TOO LEAN. When in doubt, set slightly RICH rather than TOO LEAN.

IDLE SPEED

5 Engine Equipped with an Adjustable Idle Speed Screw - With engine running at IDLE in FORWARD GEAR, make sure Primer/Fast Idle Knob is pushed completely in and rotated fully counterclockwise to stop. Adjust idle speed screw to obtain recommended Idle Speed. (See SPECIFICATIONS.)

Engines Not Equipped with an Adjustable Idle Speed Screw - Carburetors of engines not equipped with an adjustable idle speed screw have been calibrated to run at the recommended idle speed (see SPECIFICATIONS).
TRAILERING BOAT/OUTBOARD

**CAUTION**

This outboard is water cooled. DO NOT operate outboard with cooling water intake out-of-water or serious damage to outboard could result from overheating.

When trailering or transporting the boat/outboard, it is recommended that outboard remain in normal operating position, with steering friction co-pilot tightened enough to hold forward direction and the gear shift placed in neutral to prevent outboard from bouncing.

If adequate road clearance presents a problem, either remove outboard from boat transom and store securely or; raise the outboard lower unit by tilting outboard up and securing in one of the manners:

1. Tilt outboard up to any of the six tilt positions and place gear shift in neutral to prevent outboard from bouncing. Refer to MOTOR INSTALLATION - TILT ANGLE ADJUSTMENT.

2. Place tilt lock lever to LOCK position and lift (tilt) outboard to full tilt up position. Refer to MOTOR INSTALLATION - FULL TILT UP POSITION.

**CAUTION**

If placing outboard in full tilt up position when trailering boat/outboard or; during high speed and/or rough water operation of a boat powered by a larger main power unit, the tilt lock lever MUST BE placed to LOCK position. Failure to place tilt lock lever to the LOCK position as described, could allow outboard to bounce and drop out of full tilt up position, causing damage to outboard.

**REMOVING OUTBOARD FROM BOAT**

When removing outboard from boat transom, keep outboard in an upright position, resting on its skeg, until all water has drained from gear housing.

If outboard is placed on its side while water remains trapped in the gear housing, some water may enter the cylinders through the exhaust ports and cause internal engine damage.