IMPORTANT OWNER IDENTIFICATION and REGISTRATION INFORMATION

The Mariner Outboard Motor Warranty is not effective until the product is registered at the factory. For further warranty and registration information read the following information and see “International Warranty” on the back cover of this manual.

It is vitally important that your selling dealer fill out the Mariner Outboard Registration Card (shown at right) completely and mail the copies designated “Factory Copy” and “Distributor Copy” to the Mariner Area Office or Distributor in your area immediately upon your purchase of a new Mariner Outboard Motor. It identifies your name and address, the product model and serial number, date of sale, type of use and selling dealer’s name, address and code number. The dealer also certifies that you are the original purchaser and user of the product.

A copy of the Mariner Outboard Registration Card designated “Customer Copy” will be given to you by your dealer immediately upon your purchase of a new Mariner Outboard Motor. It is the only valid registration identification card that you will receive, unless you are informed otherwise by your dealer. (See Note Below) Should your Mariner Outboard Motor require warranty service, present your copy of the Mariner Outboard Registration Card to the servicing dealer. Warranty service will not be performed by the dealer unless the registration card is presented by you at the time the service is requested.

NOTE: In some countries, Mercury Marine will issue the original owner a permanent Mariner Owner Registration Card within forty-five (45) days after receipt of the “Factory Copy” of the Mariner Outboard Registration Card. (Ask your dealer for further details).

IMPORTANT: Read this manual carefully and thoroughly, particularly SAFETY WARNING, CAUTION and IMPORTANT information in bold type.
TO THE OWNER

We congratulate you on your purchase of a Mariner product and welcome you to the ever-growing family of Mariner outboard owners. You have selected one of the Marine Industry's finest products.

Proper maintenance, care and operation of your Mariner product is necessary to help ensure your complete satisfaction and continued boating pleasure. For this reason, we ask that you read this manual carefully.

We especially call your attention to the inside front cover and back cover of this manual. A thorough understanding of the owner registration information, our warranty and the operation and maintenance procedures will help to protect your investment and avoid any misunderstanding.

All of our authorized dealers and employees are trained to serve you and are dedicated to your satisfaction. If you should experience a problem with your motor we ask that you first contact your dealer for assistance. If your dealer is unable to help you or you are not satisfied with action taken by your dealer, contact the Mariner Area Office or Distributor closest to you.

Thank you for purchasing our product and may you always experience the best that boating has to offer.

MARINER - Customer Relations Department.

For best results, we recommend use of genuine Mariner or Quicksilver parts & accessories.

This owner's publication includes operation and service instructions. If disassembly or replacement, particularly of internal parts, is required, the owner is advised to see an Authorized Mariner Service facility and not to attempt the repair work himself.

When writing a letter to Mariner, include the following:

1. Model number and serial number.
2. Date purchased and dealer from whom purchased.
4. Propeller pitch and number of blades (or part number).
5. Normal use and approximate gross load.
6. Number of hours motor has been operated.
7. Details of trouble experienced.
8. Dates of previous correspondence.

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

The following special information will alert you to possible dangers and to important information in this manual. Observe them carefully. "Safety Warnings" and "Cautions" (see below) alone do not eliminate the dangers they signal. Your close attention to implement them, plus "common sense" operation are major accident prevention measures.

SAFETY WARNING: Failure to follow a "Safety Warning" may result in bodily injury.

CAUTION: Non-compliance with a "Caution" instruction may result in failure or damage to the product and/or equipment.

IMPORTANT: Indicates information or instructions that are necessary for proper operation and/or maintenance.

DEALER’S RESPONSIBILITIES

In general, a dealer’s responsibility to the customer is to make sure that the boat has the correct power and is properly equipped. The dealer should help familiarize the customer with the on-board equipment and explain operation of the equipment and boat/motor.

Prior to delivery, the dealer should make certain that the product and equipment are operational, that the proper propeller is installed and that oil, fuel, gas tank and lubrication recommendations are understood.

The dealer also should check for correct carburetor adjustment and remote control and steering function, that instrumentation is operational and that water for cooling is circulating properly.

On a trial run, the dealer should test for maximum engine RPM as listed in "Specifications," following, for proper operation of all equipment, that steering effort and direction is checked and that all necessary adjustments for maximum efficiency have been made.
OPERATOR'S RESPONSIBILITIES

It is the operator's responsibility to perform all safety checks and to ensure that all lubrication and maintenance instructions are complied with for safe operation.

It also is the operator's responsibility to return the unit to the local dealer for a periodic checkup.

Proper maintenance and care of your outboard will assure a minimum number of problems and, subsequently, will keep your overall operating expenses at a minimum.

REPLACEMENT PARTS

When performing normal maintenance or repairs on your outboard, it is recommended that only Quicksilver replacement parts be used.

To be sure that you use only correct components for your outboard, order your parts through an Authorized Servicing Dealer.

GENERAL INFORMATION

PERIODIC CHECKUP

After 20 hours or 3 months of operation, whichever first occurs, an inspection should be performed by an Authorized Dealer at local rates and paid for by the owner. After the 20-hour check, your outboard should be taken to an Authorized Dealer every six months or 100 hours of operation — or at least once each year — for lube change, tuneup, etc.

To find the Authorized Service facilities in your locality, or when traveling, refer to the classified pages in the local telephone directory under "Outboard Motors."

SERVICE RECOMMENDATIONS

This publication includes operating and service instructions for your outboard motor.

The owner is advised not to attempt repairs which are not specifically covered in this book. Other repairs, particularly those which require disassembly or replacement of internal parts, should be done only by Authorized Service facilities which have the necessary factory-designed tools and equipment, plus the knowledge and experience required to do the job correctly and economically.

MOTOR AND BOAT INSURANCE

See your local insurance agent for motor and boat protection which covers damage, theft, liability for property damage and personal injury to others.
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# SPECIFICATIONS

<table>
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<th>MARINER MODEL</th>
<th>2</th>
<th>4</th>
<th>5</th>
</tr>
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<tbody>
<tr>
<td>Bore</td>
<td>39 mm (1.54 in.)</td>
<td>50 mm</td>
<td>54 mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>36 mm (1.42 in.)</td>
<td>42 mm</td>
<td>45 mm</td>
</tr>
<tr>
<td>Displacement</td>
<td>43 cc 2.62 cu. in.</td>
<td>82.5 cc</td>
<td>103 cc</td>
</tr>
<tr>
<td>Spark Plug</td>
<td>NGK B5HS</td>
<td>NGK B7HS</td>
<td>NGK B7HS</td>
</tr>
<tr>
<td>Spark Plug Gap</td>
<td>0.55 mm .021 in.</td>
<td>0.55 mm .021 in.</td>
<td>0.55 mm .021 in.</td>
</tr>
<tr>
<td>Operating RPM Range</td>
<td>4000-5000</td>
<td>4500-5500</td>
<td>4500-5500</td>
</tr>
<tr>
<td>Fuel Tank Capacity</td>
<td>1 L. .26 gal.</td>
<td>2.8 L.</td>
<td>14 L.</td>
</tr>
<tr>
<td>Fuel Mixture Ratio</td>
<td>50:1 (2%)</td>
<td>50:1 (2%)</td>
<td>50:1 (2%)</td>
</tr>
</tbody>
</table>
Fig. 1A. Nomenclature

1-A Model 2

1-B Model 4
1 - Starter Handle
2 - Engine Controls
3 - Steering Handle
4 - Clamp Brackets
5 - Clamp Handles
6 - Steering Adjustment Wing Nut (Port Side)
7 - Tilt Pin
8 - Lower Unit
9 - Water Outlet
10 - Anti-Cavitation
11 - Propeller
12 - Fuel Tank Cap
13 - Air Screw
14 - Shift Lever
15 - Tilt Stop Lever
16 - Top Cowl
17 - Cowl Clamp Lever (Port Side)
18 - Throttle Friction Screw
MOTOR INSTALLATION

MOUNTING THE MOTOR

Adjust Height

It may be necessary to use a block of wood to raise the motor to the correct height. Figure 2 shows the correct measurement (from the anti-cavitation plate to the water surface) on a round bottom boat.

Figure 3 shows the correct measurement (from anti-cavitation plate to bottom of boat) on a flat bottom boat.

IMPORTANT: If using a block of wood, it must be securely fastened to the center of the boat transom.

Fig. 2. Round Bottom Boat

Fig. 3. Flat Bottom Boat
SAFETY WARNING: If engine is not securely clamped on the transom during operation, it may cause damage to the boat and injury to occupants.

Position motor exactly in the center of the boat transom. (Fig. 4) Securely clamp the bracket to the transom by tightening clamp screw handles.

IMPORTANT: While cruising, check clamp screws periodically to make sure they remain tight.

Fig. 4. Centered on Transom

1 - Center Line of Boat

SAFETY WARNING: If engine is at an incorrect angle it may cause hazardous operation of the boat.

TILT ANGLE PIN POSITION/ADJUSTMENT

Motor mounting angle can be adjusted by moving the tilt angle pin (Figure 5 or 6) to any one of the holes in the clamp bracket. The tilt angle position you select will depend on transom angle or load aboard the boat. Select tilt angle pin position which will make anti-cavitation plate of the motor parallel to the water surface. See Figure 7.

Fig. 5. Tilt Pin Model 2

1 - Water Outlet Holes
2 - Tilt Pin
3 - Wing Nut

Safety Rope

Use a safety rope or chain to prevent loss of your motor if clamp screws become loose. Thread rope or chain through one of the holes in the clamp handles (Figure 1) and attach it to the hull.

2/4/5HP
In "1" tilt angle pin position is incorrect, causing front of boat to "plow." To correct this condition, move tilt pin away from the transom.

In "2" tilt angle pin position is also incorrect, causing rear of the boat to "squat." To correct this condition, move tilt pin toward the transom.

In "3" tilt angle pin position is correct and maximum performance is ensured.

Your propeller is suitable for most applications; however, if it does not fit a particular application, we suggest that you keep it for general use and acquire another propeller for your application. For propeller recommendations, consult your Authorized Dealer and see the following paragraph. Using an improper propeller can cause serious damage to your outboard motor.

**GASOLINE AND LUBRICATING OIL RECOMMENDATIONS**

**Gasoline**

Any gasoline that will satisfactorily operate an automobile engine is suitable for use in MARINER outboards in normal service.

**GASOHOL** (blends of gasoline and ethyl alcohol). Although MARINER OUTBOARDS will operate satisfactorily on gasohol, its use is not recommended for the following reason:
Ethyl alcohol containing fuels have a tendency to absorb moisture from the air and/or water that has condensed inside the fuel tank. At first, the moisture (water) will remain in solution, but once the water content reaches approximately 1% it will separate from the gasoline bringing the alcohol with it and settle at the bottom of the fuel tank. Should this separation occur while the engine is running, the engine will normally stop and would be impossible to restart until the fuel system is completely purged of the water and/or alcohol. Should the engine continue to run after separation, severe damage to the powerhead could occur. Therefore, if gasohol is used, storage of fuel in the tank for periods of more than 2 or 3 days MUST be avoided.

**CAUTION**

The use of other than recommended gasoline and Formula 50-D or an acceptable oil may cause piston scoring, bearing failure or both. DO NOT, under any circumstances, use multigrade or other highly detergent automobile oils or oils which contain metallic additives.

Mix recommended gasoline with Quicksilver Formula 50-D 2-Cycle Outboard Lubricant at a gasoline/oil ratio of 50:1 after normal break-in. In an emergency, when Quicksilver Formula 50-D oil is not available, the use of another brand of outboard motor oil that has the BIA rating TC-W printed on the oil container label would be acceptable. BIA rating TC-W is the Boating Industry Association’s designation for approved, 2-Cycle water cooled outboard oils. When you must use these oils, mix them at 50:1.

**BREAK-IN PROCEDURE AND FUEL MIXTURE**

**CAUTION**

Follow break-in procedure carefully.

Mix gasoline and oil during the 5 hour break-in period at a 25:1 ratio, as shown in the following chart. Operate a new motor at 1/2 throttle (2500-3500RPM) for two (2) hours. After two (2) hours, the motor may be run at any speed, although sustained operation at idle or full throttle should be avoided for an additional three (3) hours.

**BREAK-IN GASOLINE/OIL MIXTURE (25:1)**

<table>
<thead>
<tr>
<th>GALLONS OF GASOLINE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUNCES OF OIL TO BE ADDED</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>10</td>
<td>16</td>
<td>22</td>
<td>26</td>
<td>32</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>LITERS OF GASOLINE</th>
<th>4</th>
<th>8</th>
<th>12</th>
<th>16</th>
<th>20</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>MILLILITERS OF OIL TO BE ADDED</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>160</td>
<td>320</td>
<td>480</td>
<td>640</td>
<td>800</td>
<td>960</td>
<td></td>
</tr>
</tbody>
</table>

2/4/5HP
AFTER BREAK-IN FUEL MIXTURE
After motor break-in, use a 50:1 gasoline-oil ratio.

IMPORTANT: Using less than the recommended proportion of oil may result in very serious motor damage from lack of sufficient lubrication. Using more than the recommendations will cause spark plug fouling, erratic carburetion, excessive smoking and faster-than-normal carbon accumulation.

AFTER BREAK-IN GASOLINE/OIL MIXTURE (50:1)

<table>
<thead>
<tr>
<th>Gallons of Gasoline</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ounces of Oil to Be Added</td>
<td>3</td>
<td>5</td>
<td>8</td>
<td>11</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Liters of Gasoline</td>
<td>4</td>
<td>8</td>
<td>12</td>
<td>16</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td>Milliliters of Oil to Be Added</td>
<td>80</td>
<td>160</td>
<td>240</td>
<td>320</td>
<td>400</td>
<td>480</td>
</tr>
</tbody>
</table>

CORRECT FUEL MIXING PROCEDURE

SAFETY WARNING: Observe fire prevention rules, particularly the matter of smoking. Mix fuel outdoors or at least in a well ventilated area.

IMPORTANT: Always use fresh gasoline. Gasoline forms gum and varnish deposits and, when kept in storage for a length of time, may cause trouble.

Mix fuel directly and accurately in remote tank. Pour equal amounts of gasoline and oil into remote tank. (Figure 11) Mix thoroughly, then add balance of gasoline and mix again. Cleanliness, too, is important in mixing fuel. Be consistent, prepare each batch of fuel exactly the same as previous amounts (to avoid readjustment of carburetor idle mixture screw).

SAFETY WARNING: Use CARE when transporting fuel tank(s), whether in a boat or car. DO NOT fill fuel tank(s) to maximum capacity. Cool gasoline expands considerably, due to higher outside temperatures, and builds up pressure in the fuel tank. This can cause fuel leakage and a potential fire hazard.

IMPORTANT: In countries outside of the U.S.A. and Canada, consult a Mariner Outboard Distributor or Dealer for a recommended gasoline. The words, "Premium" and "Regular," have different significance in different countries.

IMPORTANT: Repair and/or replacement of damaged parts which occur from the use of incorrect fuels, oils and mixtures thereof, are the responsibility of the owner.
STARTING (MODEL 2)

CAUTION: This is a water cooled engine. If it is operated out of water it will be seriously damaged. Make sure the propeller and water inlet are under water whenever the engine is run.

Fuel Cock
Move the fuel cock handle (Figure 8) from CLOSE to OPEN, to allow fuel to flow from the fuel tank to the carburetor.

Air Screw
Loosen the air screw (located on the fuel tank cap) two turns, to allow air into the fuel tank.

Fig. 8. Fuel Cock (Model 2)

Choke Lever
If engine is cold turn the choke lever (Figure 9) to START.

Throttle Lever
Move the throttle lever (Figure 9) to START. At different temperatures, start the motor with the throttle lever in slightly different positions. Refer to the following chart.

Fig. 9. Engine Controls (Model 2)

1 - Throttle
2 - Stop Button
3 - Choke Lever
4 - Throttle Friction Screw
5 - Idle Speed Screw
NOTE: When the temperature is near 0°C (32°F), and the engine has started, move the throttle from FAST back to START.

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Throttle Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°C (32°F)</td>
<td>Slightly above START</td>
</tr>
<tr>
<td>20°C (68°F)</td>
<td>START</td>
</tr>
<tr>
<td>40°C (104°F)</td>
<td>Slightly below START</td>
</tr>
</tbody>
</table>

Hold top cowl firmly with one hand while SLOWLY pulling starter handle (Figure 10) with other hand until mechanism engages. Finish pull with a strong, fast stroke to start engine. If you wish to stop the engine at this time for any reason, close throttle and press the stop button (Figure 9).

Choke

After the engine starts, slowly turn the choke lever back to RUN. If the engine falters, turn it slightly back toward START for a few moments.

CAUTION: Check water outlet (figure 1) to be sure water is running from it. If engine is operated with no water running from the water outlet, the engine will overheat and be damaged.
INSTALLING FUEL TANK (MODEL 5)

1. Connect fuel line to fuel tank by inserting twist connector into fuel receptacle (Figure 11) and lock by turning 1/8-turn clockwise.

2. Place fuel tank in the most favorable position in boat.

3. Arrange the fuel line so that it cannot become pinched, kinked, sharply bent or stretched during operation of the motor. Check with motor in extreme left and right turn positions.

4. Connect fuel line connection (on end of fuel line coming from tank) to engine fuel connection (attached to front of bottom cowl). Open vent screw located on fuel tank cap. (Figure 11)

5. Feed fuel from fuel tank to carburetor by repeatedly squeezing and releasing the primer valve until it becomes hard. (Figure 12)
STARTING MODELS 4 AND 5

Fuel Cock (Model 4)

1. Move the fuel cock handle (Figure 14) from CLOSE TO OPEN, to allow fuel to flow from the fuel tank to the carburetor.

Air Screw (Model 4)

2. Loosen the air screw (located on the fuel tank cap) (Figure 13) two turns, to allow air into the fuel tank.

CAUTION: This is a water cooled engine. If it is operated out of water it will be seriously damaged. Make sure the propeller and water inlet are under water whenever the engine is run.

3. If engine is warm, open throttle slightly. If engine is cold, align “START” on throttle handle decal with raised mark on steering handle.

4. If engine is cold turn the choke lever (Figure 14).

5. Be sure shift handle is in “NEUTRAL” position. (Figure 13)

SAFETY WARNING: Be sure that outboard is in “Neutral” gear before attempting to start electrically or manually. If outboard starts while in gear, occupants may be thrown from boat.

6. Hold top cowl firmly with one hand while SLOWLY pulling starter handle (Figure 13) with other hand until mechanism engages. Finish pull with a strong, fast stroke to start engine. If you wish to stop the engine at this time for any reason, close throttle and press the stop button. (Figure 14)

CAUTION: Check water outlet (Figure 1) to be sure water is flowing from it. If no water flows out during operation, the engine will overheat and be damaged.
Fig. 13. Shift Handle and Starter Handle

1 - Neutral
2 - Forward
3 - Reverse
4 - Shift Handle
5 - Starter Handle
6 - Air Screw

Fig. 14. Choke Knob and Stop Button

1 - Fuel Cock Closed
2 - Fuel Cock Open
3 - Choke Knob
4 - Stop Button

STOPPING

The engine should not be stopped quickly during full throttle operation. First, reduce engine speed. Allow engine to cool by operating at idling speed for a few minutes. Stop by pushing stop button. (Figure 9 or 14)
WARMING UP

Before cruising the engine must be warmed up. This allows all parts to become lubricated and reach operating temperature. As the engine warms, slowly return the choke knob to its original position. Run the engine slowly for a minimum of three minutes. The warm up period is important for long engine life, even after the break-in period. After the engine is warm, be sure the choke knob is returned to its original (run) position.

BREAK-IN

The break-in procedure is necessary to allow moving parts to wear into a good clearance between adjacent surfaces.

Break-in Period
10 hours.

Fuel (gasoline/oil mixing ratio)
25:1

IMPORTANT: See “Gasoline and Lubricating Oil Recommendations.” Check “Table of Contents” for page number.
For the first five minutes, operate engine at slowest possible cruising speed. After five minutes, slowly increase speed to half throttle. Operate at half throttle for the first two hours. For the last eight hours, keep throttle at 1/2 to 3/4 open. Throttle may be opened to "FAST" for about one minute out of every ten minutes of operation.

TILT-UP AND MOORING

If engine will not be run for some time, or if boat is moored in shallow water, engine should be tilted up. This protects the propeller and lower unit against damage from rocks or corrosion.

To tilt the engine, first tighten the air screw on the fuel tank cap. Move the fuel cock lever to CLOSE on models 2 and 4. Hold the rear of the top cowling, and pull it toward you, tilting the engine to lift the propeller out of the water.

SHALLOW WATER CRUISING (MODELS 4 and 5)

The engine is designed to tilt up automatically if the bottom end of the lower case hits an underwater obstacle. It can tilt in four positions. To return it to its normal position, move the shift handle to NEUTRAL, pull the power unit toward you, pull the tilt stop lever (Figure 6) toward you, and return the engine to its normal position.

FORWARD AND REVERSE (MODELS 4 and 5)

SAFETY WARNING: Before changing to opposite direction, be sure to reduce engine speed to SLOW. If not, water may enter boat or control may be lost. When backing boat, never open throttle more than 1/2 open.

Reduce engine speed to idle. Operate shift control smoothly, but quickly in desired direction.

Gear positions are "FORWARD" (toward front), "NEUTRAL" (vertical, as shown in Figure 13) and "REVERSE" (toward rear).

Models 2, 4 and 5

The engine can be turned 360° in the swivel bracket. For reverse, reduce engine speed to SLOW, and turn the engine 180°.

SAFETY WARNING: Model 5 is equipped with a separate fuel tank. If the engine is turned 180° for reverse operation, make sure the fuel line is clear and is of ample length to allow this operation.
AFTER OPERATION

Removal and Carrying (Models 2 and 4)

Tighten air screw on fuel tank cap, and move fuel cock level to CLOSE. Allow the engine to run at idle until it stops, indicating the carburetor has run dry. Loosen clamp screws and remove motor from boat. Drain water from lower case before transporting motor. While carrying motor, be careful not to damage the propeller. Also, be careful to hold motor so power unit is always higher than the propeller.

Removal and Carrying (5 Model)

Disconnect the fuel line at the engine. Allow the engine to run at idle until it stops, indicating the carburetor has run dry. Remove safety rope or chain, loosen clamp screws and remove motor from boat. Drain water from the lower case before transporting motor. While carrying the engine, be careful not to damage the propeller. Also, be careful to hold engine so power unit is always higher than the propeller.

Cleaning

When the engine has been used in salt water or in muddy water, clean it off thoroughly with fresh water. Flush the cooling system by operating the engine for three minutes in fresh water. Be sure the propeller and water inlet are completely submerged while operating.

NOTE: When the engine is operating, be sure water is flowing out of the water outlet. If not, the cooling system is plugged or faulty.

Engine Placement

Avoid placing the motor directly on the ground. It is best to place boards under the propeller and the power unit. Place the motor on the boards with the controls facing up.
INSPECTION AND SERVICE

DAILY INSPECTION

Check the following items before each trip.

Fuel

Before starting the engine, be sure the fuel tank is full. The fuel must be a 50:1 mixture of gasoline and oil. (During the break-in period, the mixing ratio is 25:1.)

CAUTION: Do not fill the tank completely full. Gasoline will expand as it warms, and this may cause leakage and fire hazard if there is no room for expansion.

Fuel Line Connections

Check all fuel line connections for leakage. On the 5 H.P. model, make sure fuel line connection at engine is secure.

Propeller and Drive Pin

Before mounting the engine on the boat, check the propeller blades and the drive pin to be sure they are not broken.

Propeller Cap and Cotter pin

Check the propeller cap and cotter pin for damage. If either one breaks during operation, the propeller will come off.

Spark Plug

Keep the spark plug clean. A fouled plug can be the cause of other serious engine problems. Make sure the spark plug wire connections are tight.

PERIODIC INSPECTION

After Operation

Check the propeller for damage. Clean the exterior of the engine.

Every 30 Hours

Take out the spark plug and clean it thoroughly, removing all carbon. Adjust the spark plug gap to 0.5 - 0.6 mm (0.019 - 0.024 in.). Check the fuel line for fuel leaks, damage or air bubbles. Clean the fuel tank.

Every 50 Hours

Add oil to the lower case. Retighten all bolts and nuts. Inspect the anode.

Every 100 Hours (By your Mariner Outboard Dealer)

Adjust the trolling speed and idling speed on the carburetor, and check for smooth acceleration. Check the starter rope for damage or signs of breaking. Lubricate throttle linkage.

2/4/5HP
ANODE (Models 4 and 5)

An anode is attached under the anti-cavitation plate (Figure 16). This sacrificial metal anode helps protect the lower unit against galvanic corrosion, which takes place more actively in salt or polluted water. The anode corrodes instead of the lower unit, and must be inspected periodically. When it becomes excessively corroded, replace it.
Fig. 17. Lubrication Points

- **THROTTLE GRIP (INSIDE)**
  - Water resistant grease every 100 hours
  - Models 4 and 5 only

- **SHIFT HANDLE**
  - Water resistant grease every 100 hours
  - Models 4 and 5 only

- **SWIVEL BRACKET**
  - Water resistant grease every 100 hours

- **CLAMP SCREWS**
  - Water resistant grease every 30 hours

- **PROPELLER SHAFT**
  - Perfect seal or water resistant grease every 30 hours

- **LOWER UNIT**
  - High quality gear lubricant recommended by your Mariner dealer
  - Replace after first 20 hours
  - Check level and fill every 50 hours
  - Replace every 100 hours
STEERING ADJUSTMENT

SAFETY WARNING: Do not tighten steering so tight that it cannot be overcome in an emergency situation.

The tightness of the steering handle movement can be adjusted by turning the wing nut (figure 6) attached to the swivel bracket. To restrict movement, turn the wing nut clockwise. To ease movement, turn the wing nut counterclockwise.

Carburetor Adjustments (Model 2)
Engine should be fully warmed up before idle speed adjustment is made. Idle speed RPM should be $1000 \pm 50$. Idle speed (RPM) can be adjusted by turning throttle stop screw. (Figure 9)

Carburetor Adjustment Models 4 and 5

SAFETY WARNING: When engine is uncovered, be extremely careful not to touch moving parts, hot areas, and high voltage ignition wires.

1. Engine should be fully warmed up before an adjustment is made. Move throttle handle to lowest position. Remove engine top cowl.

2. Turn idle mixture screw in until lightly seated, then back out 1 to 1-1/2 turns (Figure 18). With outboard in gear, slowly turn idle mixture screw in and out, and leave it where the engine runs best.

3. In gear idle RPM should be $650 \pm 50$ rpm. Idling speed (RPM) can be adjusted by turning throttle stop screw. (Figure 18)

IMPORTANT: Do not adjust carburetor unnecessarily.

Fig. 18. Carburetor Adjustments

1 - Idle Mixture Screw
2 - Idle Speed Screw
PARTS REPLACEMENT

Spark Plug Replacement
Remove the top cowl and disconnect the ignition wire. Using a 21 mm socket wrench and drive handle, turn the spark plug counterclockwise to remove it. When installing the spark plug, be sure to tighten it firmly.

SAFETY WARNING: Do not turn the starter pulley while holding the ignition wire. You will receive a high voltage shock.

Drive Pin Replacement
If the propeller hits an obstacle under water, the drive pin is designed to break instantly, allowing the propeller shaft to turn without turning the propeller. This protects the propeller and other parts from damage. Use only genuine Mariner replacement parts.

Removal

SAFETY WARNING: Disconnect the ignition wire from the spark plug while working around the propeller, to avoid accidental starting.

Using a pliers, straighten the cotter pin and pull it out (Figure 19). Remove the propeller cap on the models 4 and 5.

Pull the propeller straight off the propeller shaft.

Remove the drive pin.

2/4/5HP
Coat propeller shaft with Perfect Seal or good quality water resistant grease. Insert drive pin into hole in propeller shaft (Figure 20). Align groove inside propeller hub with drive pin and slide propeller onto propeller shaft. Install nut, and tighten securely until cotter pin hole in propeller nut aligns with cotter pin hole in propeller shaft, insert cotter pin, and spread ends to secure.

CAUTION: Operating the engine with a loose propeller nut will cause the drive pin groove in the propeller and/or drive pin hole in propeller shaft to wear excessively. Check propeller for looseness by trying to move it forward and backward on propeller shaft. If movement is detected, remove cotter pin and tighten propeller nut until no movement is detected. Continue to tighten (not loosen) propeller nut until the cotter pin hole aligns with hole in propeller shaft. Install cotter pin and spread ends to secure.
PARTS REPLACEMENT

Spark Plug Replacement
Remove the top cowl and disconnect the ignition wire. Using a 21 mm socket wrench and drive handle, turn the spark plug counterclockwise to remove it. When installing the spark plug, be sure to tighten it firmly.

SAFETY WARNING: Do not turn the starter pulley while holding the ignition wire. You will receive a high voltage shock.

Drive Pin Replacement
If the propeller hits an obstacle under water, the drive pin is designed to break instantly, allowing the propeller shaft to turn without turning the propeller. This protects the propeller and other parts from damage. Use only genuine Mariner replacement parts.

Removal

SAFETY WARNING: Disconnect the ignition wire from the spark plug while working around the propeller, to avoid accidental starting.

Using a pliers, straighten the cotter pin and pull it out (Figure 19). Remove the propeller cap on the models 4 and 5.
Pull the propeller straight off the propeller shaft.
Remove the drive pin.

2/4/5HP
GEAR OIL REPLACEMENT

Draining Oil

SAFETY WARNING: Disconnect spark plug ignition wires before working near propeller to avoid accidental starting.

Place an empty container under the lower unit and remove lower "OIL" plug (Figure 21 or 22), using a slot-head screwdriver.

Remove upper "OIL LEVEL" plug. Crank the engine a few times to turn the gears and remove all oil. (Gear shift handle must be in neutral.)

Fig. 21. Lower Unit Drain Plugs (Model 2)

1 - "Oil Level" Plug
2 - "Oil" Plug

Refilling with Oil

Feed a high quality lower unit lubricant, recommended by your Mariner Outboard dealer, into the "OIL" hole.

When oil begins to flow out of the "OIL LEVEL" hole, install upper plug and tighten. Install lower plug and tighten.
OFF SEASON STORAGE

Before storing your motor until the next boating season, it should be shop serviced by your nearest Authorized Dealer. Perform following checks and services yourself.

Draining Fuel

Drain carburetor by allowing engine to run, at idle speed, with fuel line disconnected from bottom cowl connector until it stops indicating the carburetor has run dry. Fill fuel tank with proper gas-oil mixture. Keeping the fuel tank full during storage is a rust preventive measure. Before using the engine next season replace fuel with a fresh gas-oil mixture.

Cleaning Outside

Thoroughly clean exterior with fresh water, dry, and apply a light film of oil.

Cleaning Inside

Remove spark plugs, feed a good quality 2-cycle motor oil into the cylinders and crank engine a few times to spread the oil evenly throughout the cylinders. Install spark plugs finger tight. During the storage season, crank the engine once a month, with spark plugs out.

Propeller and Propeller Shaft

SAFETY WARNING: Be sure to disconnect spark plug ignition wires from spark plugs before working with propeller to avoid accidental starting.

Remove propeller and coat propeller shaft with Perfect Seal or good quality water resistant grease.

SUBMERGED ENGINE

If your engine was accidentally submerged it must be completely overhauled as soon as possible. If it is not, severe rust and corrosion will develop throughout the engine. If your engine has been submerged, take the following preventive measures. Remove engine from water as quickly as possible. Wash thoroughly with fresh water to remove all salt, mud, and seaweed. Remove spark plugs and drain all water from cylinders. Feed engine oil into each cylinder through the spark plug hole and crank engine several times to spread oil to cylinder walls. Turn engine over and pour several ounces of engine oil thru carburetor while cranking engine. Have the engine overhauled by your Authorized Dealer as soon as possible.
CAUTION: As soon as engine starts, be prepared to reduce throttle setting. Use the throttle to maintain lowest possible RPM while excess fuel is burned from engine.

1. Move choke knob to open position.

2. Disconnect fuel line connector from bottom cowl fuel connector. On Model 5, Move fuel cock to closed on Models 2 and 4.

3. Place shift handle (Figure 13) in "NEUTRAL" position.

4. Place throttle at wide-open (FAST) position.

5. Hold top cowl firmly with one hand while SLOWLY pulling starter handle (Figure 13) with other hand until mechanism engages. Finish pull with a strong, fast stroke to start engine. Repeat as necessary until engine starts.

6. Reduce throttle setting to maintain lowest possible RPM while excess fuel is burned from engine.

7. Reconnect fuel line connector to bottom cowl connector or open fuel cock.

IMPORTANT: If engine fails to start using proceeding procedure, install new spark plugs (see "Servicing Spark Plugs") and repeat Steps 1 thru 7. If engine still fails to start, take it to your Authorized Servicing Dealer.
# TROUBLE CHART

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<th>POSSIBLE CAUSE</th>
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<td>Propeller of Wrong Pitch or Diameter</td>
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*Inspection should be performed by an Authorized Dealer.
The descriptions 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, or to change specifications or designs, without notice and without incurring obligation.

The following are trademarks of Brunswick Corporation:

MERCURY MARINE  MARINER  QUICKSILVER
I. We warrant each new Mariner Outboard Motor and accessories attached thereto, (hereafter referred to as "Product") manufactured by us to be free from defects in material and workmanship. This warranty shall remain in effect for a period of one (1) year from date of purchase.

II. Since this warranty applies to defects in material and workmanship, it does not apply to normal worn parts, adjustments, tuneups or to damage caused by: 1) Neglect, lack of maintenance, accident, abnormal operation or improper installation or service; 2) Use of an accessory or part not manufactured or sold by Mercury Marine; 3) Operation with fuels, oils, lubricants, or fuel/oil mixtures which are not recommended for use with the Product; 4) Participating in or preparing for racing or other competitive activity or operating with a racing type lower unit; or 5) Alteration or removal of parts.

III. Reasonable access must be provided to the product for warranty service. This warranty will not apply to: 1) Haul-out, launch, towing and storage charges; telephone or rental charges of any type, inconvenience or loss of time or income; or 2) Removal and/or replacement of boat partitions or material because of boat design for necessary access to the Product.

IV. Claim shall be made under this warranty by delivering the Product for inspection to a Mariner Outboard Dealer authorized to service the Product. If purchaser cannot deliver Product to such authorized dealer, he may give notice in writing to the Mercury Marine Area Office or Distributor. The Mercury Area Office or Distributor shall then arrange for the inspection and repair, provided such service is covered under this warranty. Purchaser shall pay for all related transportation charges and/or travel time. If the service is not covered by this warranty, purchaser shall pay for all related labor and material and any other expenses associated with that service. Any Product or parts shipped by purchaser for inspection or repair must be shipped with transportation charges prepaid.

Purchaser must provide "proof of purchase" and substantiate "date of purchase" by presenting the "Customer Copy" of the "Mariner Outboard Registration Card" or the plastic "Owner's Warranty Registration Card" to the dealer authorized to service the product. If either of these items is not available, purchaser must provide a copy of the original Bill of Sale (Sales Contract) for the product to be serviced. Warranty Claims will not be accepted until adequate "proof of purchase" and "date of purchase" is presented by purchaser.

V. Our obligation under this Warranty shall be limited to repairing a defective part or at our option replacing such part or parts as shall be necessary to remedy any malfunction resulting from defects in material or workmanship as covered by this warranty. We reserve the right to improve the design of any Product without assuming any obligation to modify any Product previously manufactured.

VI. All incidental and/or consequential damages are excluded from this warranty. Implied warranties are limited to the life of this warranty.

VII. This warranty is in lieu of all other warranties, expressed or implied, and may not be modified or extended by anyone, except that any qualification or restriction contained herein which is prohibited by any law where the Product is sold and such qualification or restriction only, is null and void. All other qualifications and restrictions of this warranty remain in full force and effect.

VIII. This warranty gives you specific legal rights and you may also have other legal rights which vary from country to country.

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