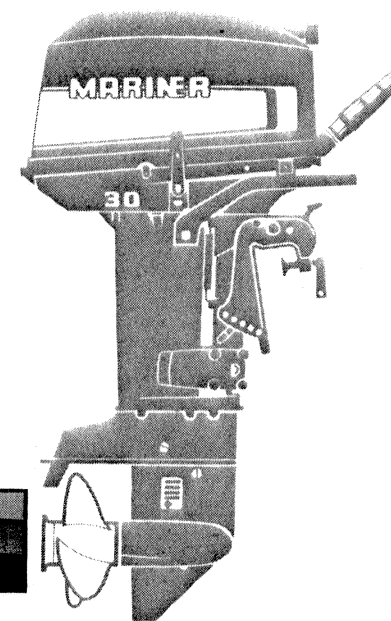




**MODELS 25/30**

**OPERATION AND  
MAINTENANCE MANUAL**



## 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, Marine Power International 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.**

MARINER OUTBOARDS		OWNER WARRANTY REGISTRATION CARD	
IMPORTANT: SELLER PLEASE PROVIDE ALL INFORMATION LEGIBLY AND CLEARLY.			
ENGINE SERIAL NO.	MODEL NO.	DATE OF SALE	PRIMARY USE <input type="checkbox"/> PLEASURE <input type="checkbox"/> COMPETITIVE RACING <input type="checkbox"/> COMMERCIAL <input type="checkbox"/> DEMO
			
IMPORTANT: THE FEDERAL BOAT SAFETY ACT REQUIRES REGISTRATION LISTS BE MAINTAINED ON PRODUCT SALES. SELLER MUST FILL OUT AND MAIL THIS REGISTRATION CARD IMMEDIATELY FOLLOWING SALE OF THE PRODUCT.		MARINER DEALER CODE NO.	
<input type="checkbox"/> THE SELLER HEREBY CERTIFIES THAT THE PURCHASER, WHOSE NAME APPEARS ON THIS CARD, IS THE ORIGINAL RETAIL PURCHASER AND FIRST USER OF THE PRODUCT, HAS RECEIVED THE "OPERATIONS AND MAINTENANCE MANUAL" PROVIDED WITH THE PRODUCT AND HAS BEEN BRIEFED ON THE WARRANTY PROVISIONS SET FORTH THEREIN.		DEALER NAME	
		ADDRESS	
		CITY STATE PROVINCE ZIP+POST CODE	
		DEALER IMPRINT IDENTIFICATION PLATE HERE	
M-90-98538 PRINTED IN U.S.A.			

# TO THE OWNER

We congratulate you on your purchase of a Mariner product and welcome you to the ever-growing family of Mariner out-board 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.
3. Boat make and size.
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 that 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.

## **SAFETY WARNING**

**It is extremely difficult for people standing or floating in the water to take evasive action should they see a power boat headed toward them, even if the boat is proceeding at a slow speed. Therefore, it is strongly recommended that when your boat is in the immediate vicinity of people in the water, the outboard motor be shifted to neutral and the engine switched off. SERIOUS INJURY TO A PERSON IN THE WATER IS LIKELY IF CONTACT IS MADE WITH A MOVING BOAT, GEAR HOUSING, PROPELLER OR ANY SOLID DEVICE WHICH IS RIGIDLY ATTACHED TO THE BOAT OR GEAR HOUSING.**

# 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.

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# SPECIFICATIONS

MARINER MODEL	25	30
Bore	67 mm (2.64 in.)	72 mm (2.83 in.)
Stroke	61 mm (2.40 in.)	61 mm (2.40 in.)
Displacement	430 cc (26.25 cu. in.)	497 cc (30.32 cu. in.)
Spark Plug	NGK B7HS	NGK B7HS
Spark Plug Gap	0.5 - 0.6 mm (.019 - .024 in.)	0.5 - 0.6 mm (.019 - .024 in.)
Spark Plug Conversion	Champion L82/AC S41F	Champion L82/AC S41F
Operating RPM Range	4500 - 5500	4500 - 5500
Fuel Tank Capacity	24 Liters (6.3 U.S. Gal.)	24 Liters (6.3 U.S. Gal.)
Fuel Mixture Ratio	50:1	50:1

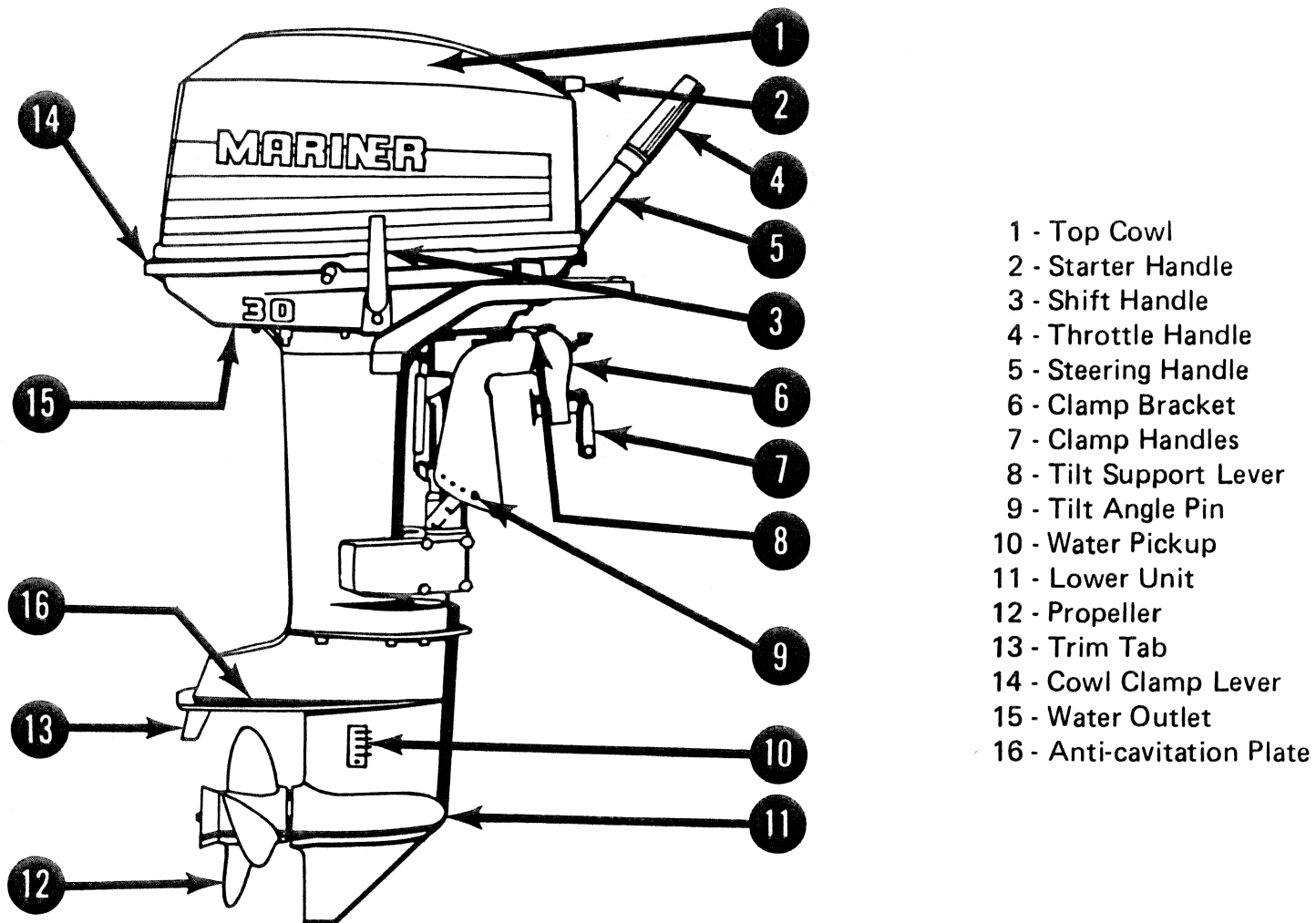


Figure 1. Nomenclature

# 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.

## RECORDING ELECTRIC STARTER KEY NUMBER

RECORD YOUR  
ELECTRIC STARTER  
KEY NO. HERE \_\_\_\_\_

If key is lost, a new key  
may be purchased from  
your Dealer.  
Key number must be given  
at time of purchase.

# MOTOR INSTALLATION

## MOUNTING THE MOTOR

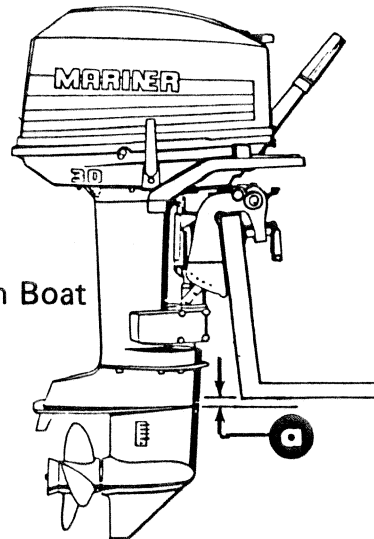
### Adjust Height

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 or flat bottom boat.

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

Figure 2. Motor Height

a - 1 inch (25mm) on Flat Bottom Boat  
2 inches (51mm) on Round Bottom Boat



### Position at Center

#### SAFETY WARNING

**If engine is not securely clamped and bolted through 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. (Figure 3) Securely clamp the bracket to the transom by tightening clamp screw handles, then bolt clamp brackets through the transom with bolts, washers and nuts. See Figure 7.

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

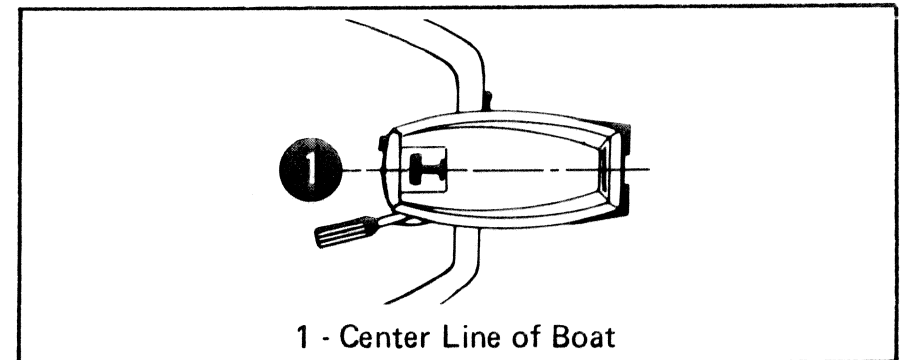
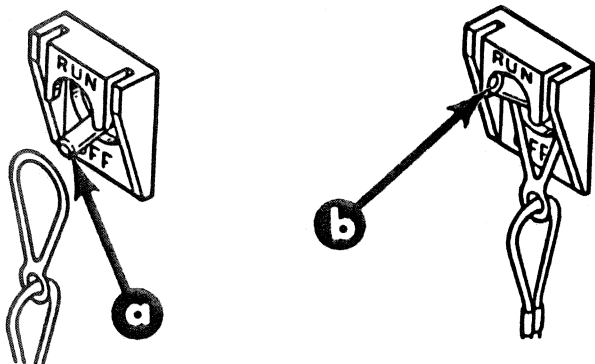


Figure 3. Centered on Transom

## LANYARD IGNITION SWITCH (Manual Start Models)

The lanyard ignition switch is the normal engine "Run/Off" switch on a manual start model. To start, the switch toggle must be in "Run" position. The ignition switch lanyard, (Figure 4) when used with the ignition switch and connected to the driver, will shut the engine off if the driver no longer has access to the steering handle.

Should the lanyard clip become removed from the switch housing, reinstall as follows: Move ignition toggle switch to "Off" position, insert clip into housing, push upward to snap into retainer and move switch toggle to "Run" position.



a - "OFF" Position

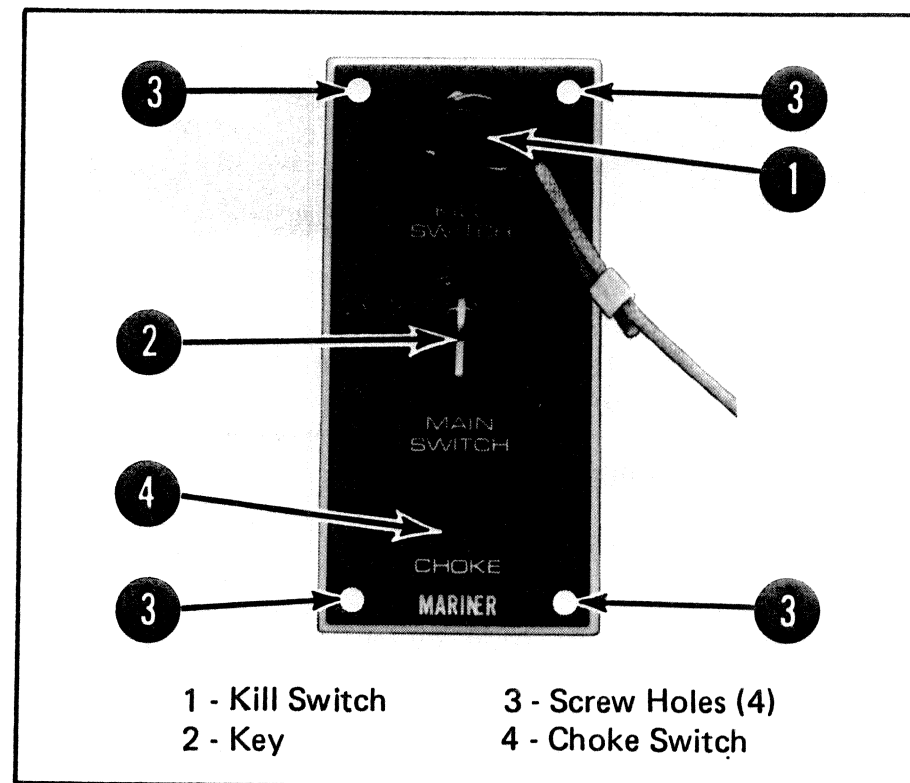
b - "RUN" Position

Figure 4. Lanyard Ignition Switch

## ELECTRIC START INSTALLATION

### Switch Installation

Install the key switch panel (Figure 5) in the boat dash panel, or in any convenient location where it will be least exposed to moisture. All unused leads should be taped against the harness.



1 - Kill Switch  
2 - Key

3 - Screw Holes (4)  
4 - Choke Switch

Figure 5. Switch Panel

1. Cut a hole in the size and shape shown in template (last page of book).
2. Disconnect wiring harness socket and plug. (Figure 6)

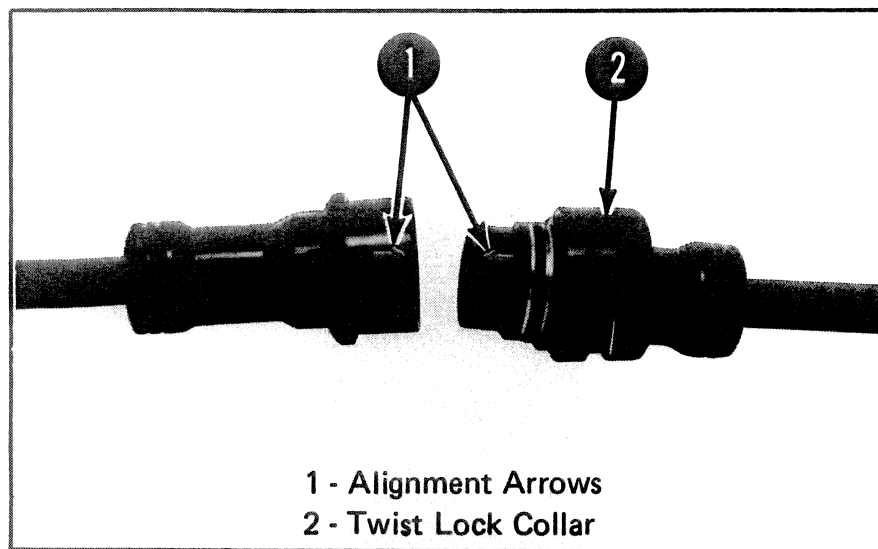


Figure 6. Harness Connection

3. Insert wiring harness from switch panel into the hole. Install switch panel in the hole and secure with four screws.
4. Align arrows (Figure 6) and connect wiring harness socket and plug. Secure connection with twist lock collar.

## Battery Installation

### SAFETY WARNING

Use care in handling a battery. It contains an acid solution as an electrolyte. If electrolyte is splashed on any part of your body, immediately flush the contacted area with water. Obtain medical treatment as soon as possible.

A battery is required for the Mariner electric start models. Recommended battery size is 12 volts, 40 ampere-hours. If a battery of this capacity is not available, use a battery of larger capacity. Install battery in a battery box and secure it so it cannot move. Install a battery cover and mount battery in a location where it will be protected from moisture. On aluminum boats we also recommend an 8 A.W.G. bonding cable be installed between the battery negative post and the boat hull.

### CAUTION

Connect red cable to positive (+) battery terminal. Failure to observe correct polarity will result in destruction of rectifier. DO NOT use new "sealed" type batteries.

Connect positive battery cable (with red insulation) to positive battery terminal, and negative cable (black insulation) to negative battery terminal. Position cables and wiring harness so that when the Outboard Motor is turned all the way right or left, they will not be pulled excessively, pinched, or rubbed by steering cables.



## TILT ANGLE PIN POSITION/ADJUSTMENT

Motor mounting angle can be adjusted by moving the tilt angle pin (Figure 7) to any one of five 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 8.

### SAFETY WARNING

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

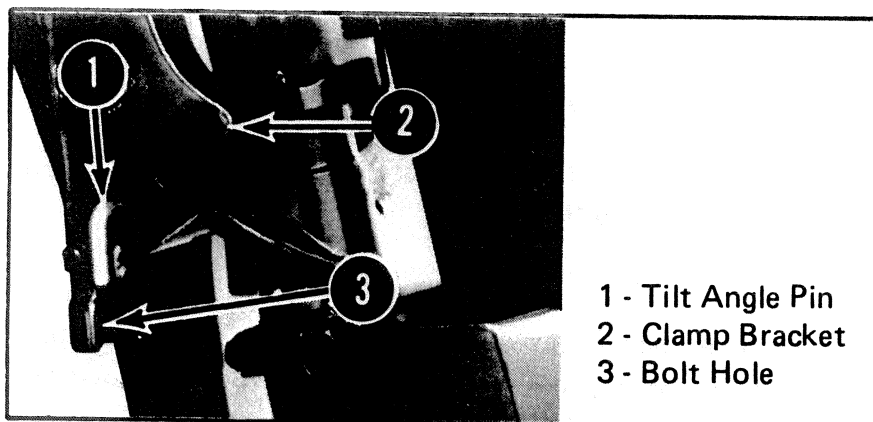


Figure 7. Tilt Angle Pin

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.

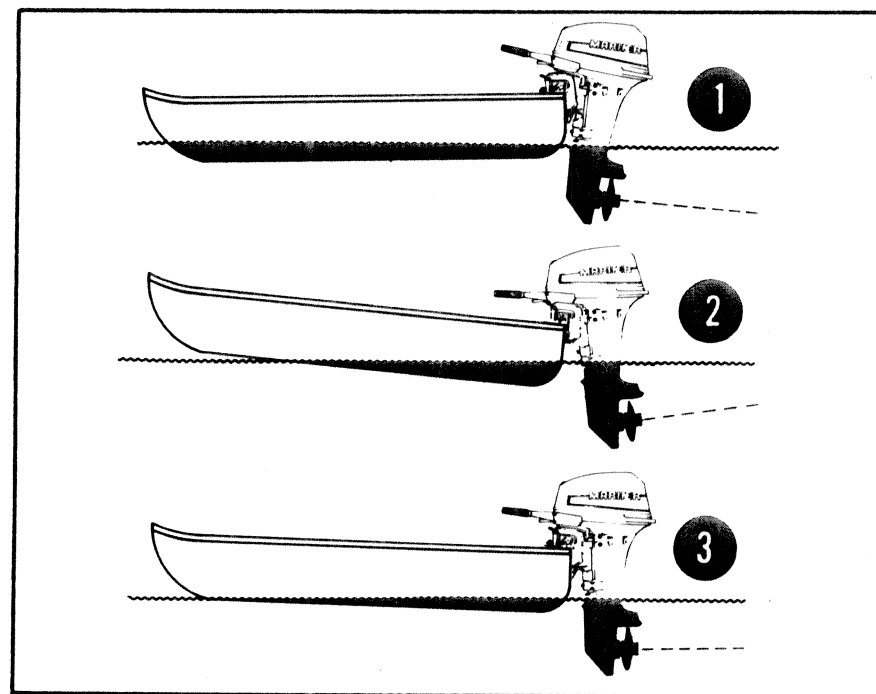


Figure 8. Tilt Angle Positions

# PROPELLER RECOMMENDATIONS

## GENERAL

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.

## PROPELLER SELECTION

1. Select a propeller that will allow the motor to operate at or near the top of the recommended full throttle RPM range (See "Specifications") with a normal load. Maximum engine speed (RPM) for propeller selection exists when boat speed is maximum and trim is minimum for that speed. (High RPM, caused by an excessive trim angle, should not be used in determining correct propeller.) Normally, there is a 300 to 500 RPM change between propeller pitches.
2. If full throttle RPM is below the recommended range, the propeller **MUST BE** changed to prevent loss of performance and possible engine damage.
3. For better acceleration, such as is needed in water skiing, propping up to 500 RPM above the recommended maximum RPM is advised. Continuous operation above the recommended maximum RPM, however, is not permissible.
4. After initial propeller installation, the following common problems may require that the propeller be changed to a lower pitch:
  - a. Warmer weather and greater humidity cause an RPM loss.
  - b. Operating in a higher elevation causes an RPM loss.
  - c. Operating with a damaged propeller or dirty boat bottom or gear housing cause an RPM loss.
  - d. Operating with an increased load (additional passengers, pulling skiers, etc).
5. For dual installation, try the next higher pitch propeller. For water skiing, use next lower pitch propeller; however, do not operate at full throttle when using ski propeller but not pulling skiers.

# FUEL MIXTURE and FUEL SYSTEM

## INSTALLING FUEL TANK

1. Connect fuel line to fuel tank by inserting twist connector into fuel receptacle (Figure 9) 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.

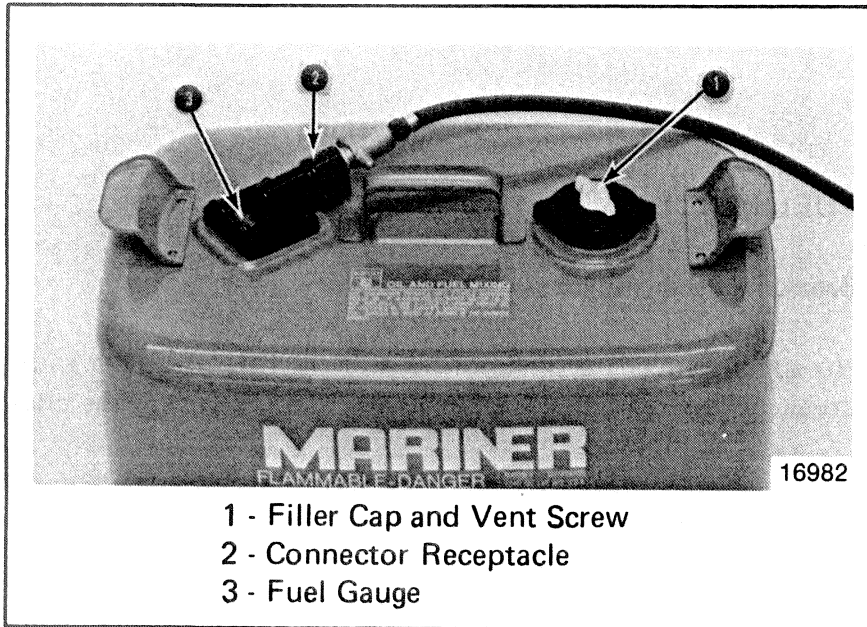


Figure 9. Fuel Tank

## 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.

## 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.*

## Oil

### 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

### CAUTION

**Follow break-in procedure carefully.**

Mix gasoline and oil during the 5 hour break-in period at a 50:1 ratio, as shown in the following chart. Operate a new motor at 1/2 throttle (2500-3500 RPM) 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.

## FUEL MIXTURE

### Break-In Fuel Mixture

No special mixture of gasoline and oil for outboard motor break-in is required. Use "Normal Fuel Mixture", see chart.

## Normal Fuel Mixture

Use a 50:1 gasoline to oil ratio as shown in the following chart.

**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.

### Normal 50:1 Fuel Mixture

GALLONS OF GASOLINE					
1	2	3	4	5	6
OUNCES OF OIL TO BE ADDED					
3	5	8	11	13	16
LITERS OF GASOLINE					
4	8	12	16	20	24
MILLILITERS OF OIL TO BE ADDED					
80	160	240	320	400	480

## 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 9) 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).

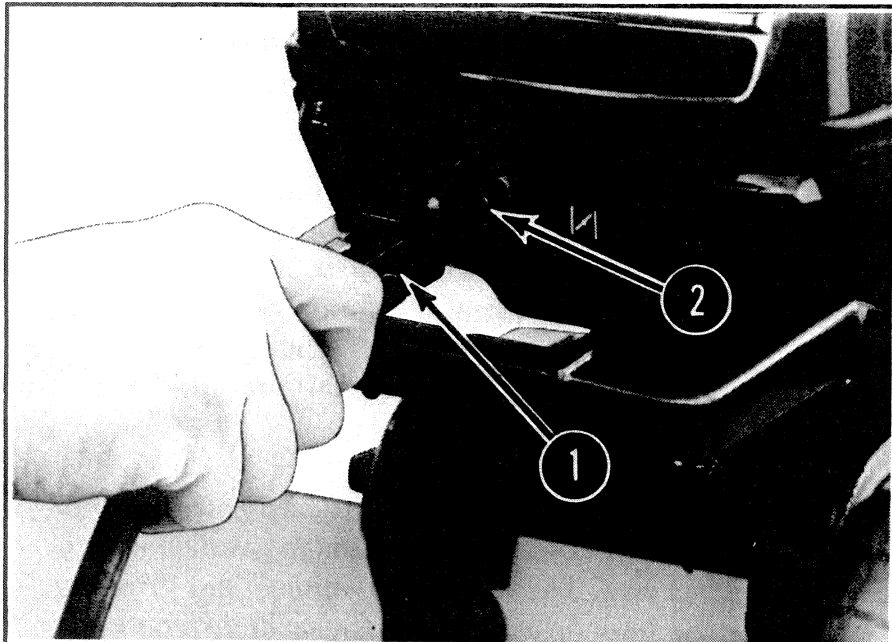
**IMPORTANT:** Consult a Mariner Outboard Distributor or Dealer for a recommended gasoline in your area. The words, "Premium" and "Regular," have different significance in different countries.

**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.

# OPERATION

## STARTING PROCEDURE

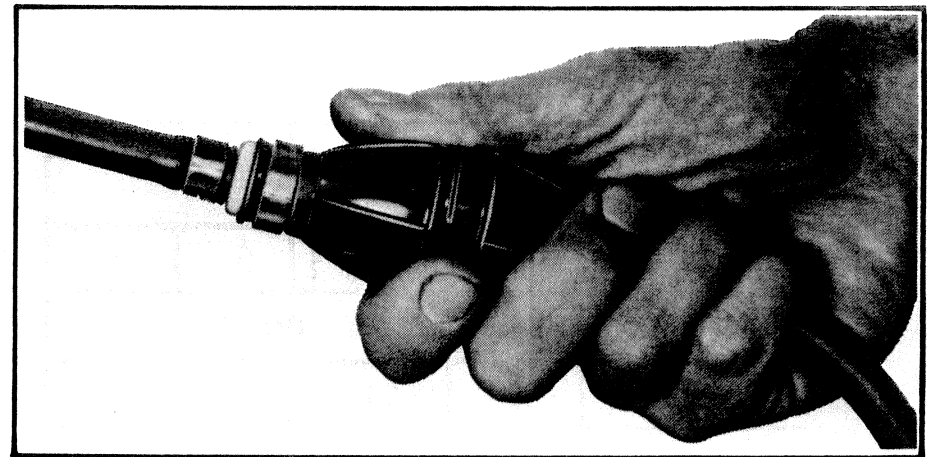
**IMPORTANT:** Be sure fuel tank contains a sufficient amount of fuel mixture and is properly secured in boat and that fuel line is connected to fuel tank.



1 - Fuel Line Connection  
2 - Engine Fuel Connection

**Figure 10. Fuel Line Connection  
(25 Model Shown)**

1. Connect fuel line connection (on end of fuel line coming from tank) to engine fuel connection (attached to front of bottom cowl.) See Figure 10. Open vent screw located on fuel tank cap. (Figure 9)
2. Feed fuel from fuel tank to carburetor by repeatedly squeezing and releasing the primer valve until it becomes hard. (Figure 11)



**Figure 11. Primer Valve**

### **SAFETY WARNING**

**Be sure that boat is tied to a dock securely or that there is adequate clear space in front of and behind the boat prior to starting engine.**

### 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.

### CAUTION

DO NOT operate motor out-of-water, as water pump will be damaged.

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

### CAUTION

DO NOT attempt to start engine with throttle set above "START" position. See "Step 3" preceeding.

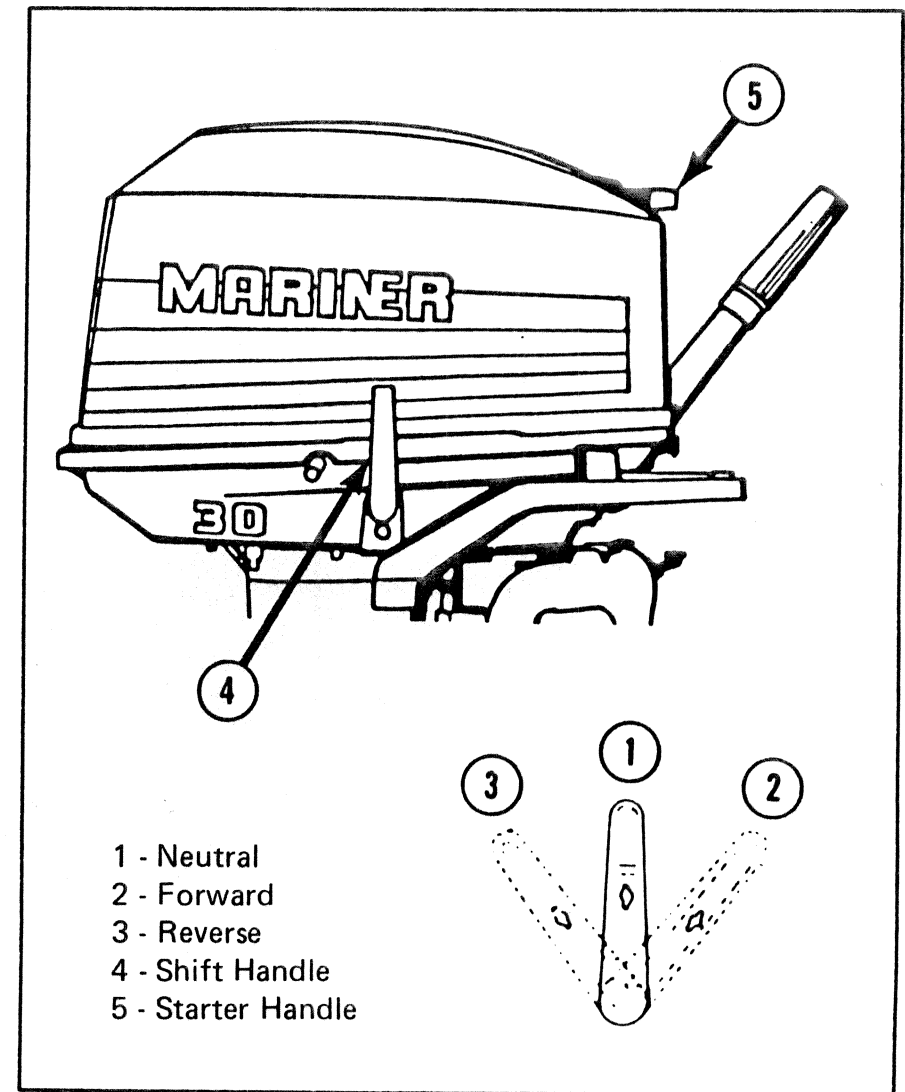


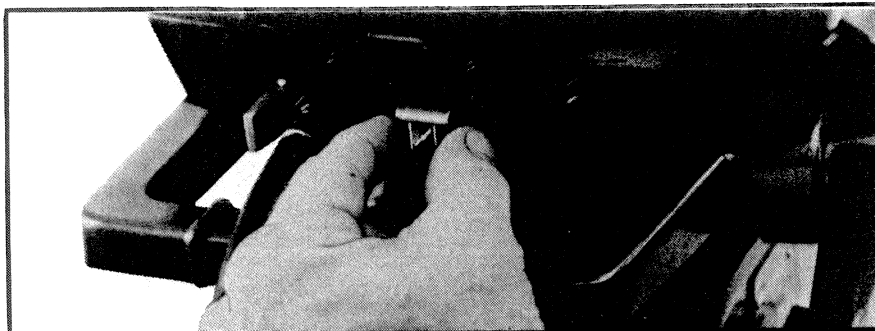
Figure 12. Shift Handle

4. Be sure shift handle is in "NEUTRAL" position. (Figure 12) A safety device prevents manual starter engagement unless shift handle is in "NEUTRAL" position.

#### Manual Start Procedure

**IMPORTANT:** Complete steps 1 thru 4 preceding.

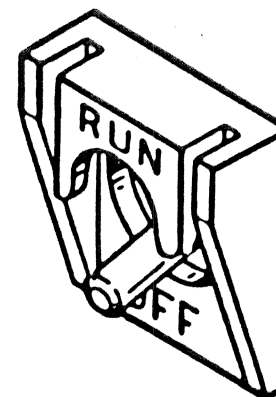
1. If engine is cold, operate choke by pulling out choke knob. (Figure 13) If engine is warm, do not pull out choke knob.



**Figure 13. Manual Choke Knob  
(25 Model Shown)**

2. Move ignition toggle switch (figure 14) to "RUN" position.

3. Hold top cowl firmly with one hand while SLOWLY pulling starter handle (Figure 12) 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 move ignition toggle switch (figure 14) to "OFF" position.



**Figure 14.  
Lanyard Ignition  
Switch**

#### **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.**



## Electric Start Procedure

1. Complete Steps 1 thru 4 of "Starting Procedure," check "Table of Contents" for page number.

### SAFETY WARNING

**Gear shift handle (Figure 12) must be in neutral gear position before attempting to start engine. If outboard starts while in gear, occupants may be thrown from boat.**

**IMPORTANT:** Mariner electric start models are equipped with two chokes; an "Electric Choke" operated by a switch on the switch panel (Figure 5), and a "Manual Choke" on the front of the engine (Figure 13). The manual choke is in the open position when the choke knob is pushed in, and is in the closed position when the choke knob is pulled all the way out. For operation of the electric choke, at the switch panel, the manual choke knob must be in the open position.

2. If the engine is cold, actuate the electric choke by moving the toggle switch upward and holding it in the up position while cranking the engine. Release choke switch when engine starts. If engine is warm, do not operate the choke.

### CAUTION

**DO NOT operate electric starter motor continuously for more than 30 seconds, wait three minutes and try again. Excessive operation of the electric starter motor could overheat it and also discharge the battery.**

3. Actuate electric starter by turning the key past the "ON" position (against spring pressure). Allow key to return to "ON" position when engine starts. If motor should falter, actuate choke.

### 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.**

4. If you wish to stop the engine at this time for any reason, close throttle and turn key (Figure 5) to "OFF" position.

## Faulty Electric Starter

If electric starter motor will not operate, the engine may be started by following the "Manual Start Procedure."

### Emergency Start Procedure

Information for emergency start procedure is also located under motor cowl.

### 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 moving ignition toggle switch (Figure 14) or turning key switch (Figure 5) to "OFF" position.

### FAULTY MANUAL STARTER

#### SAFETY WARNING

Care must be exercised when using emergency (manual) starting procedure. **DO NOT** attempt to install the cowl or rewind assembly after the motor starts. Stay clear of the flywheel. Loose clothing **SHOULD NOT BE WORN** by anyone near the motor when operating under these conditions. Proceed to the nearest boat landing for service.

1. Complete Steps 1 thru 4 of "Starting Procedure."
2. Remove top cowl.
3. Disconnect neutral start safety device from rewind assembly. (Figure 15)

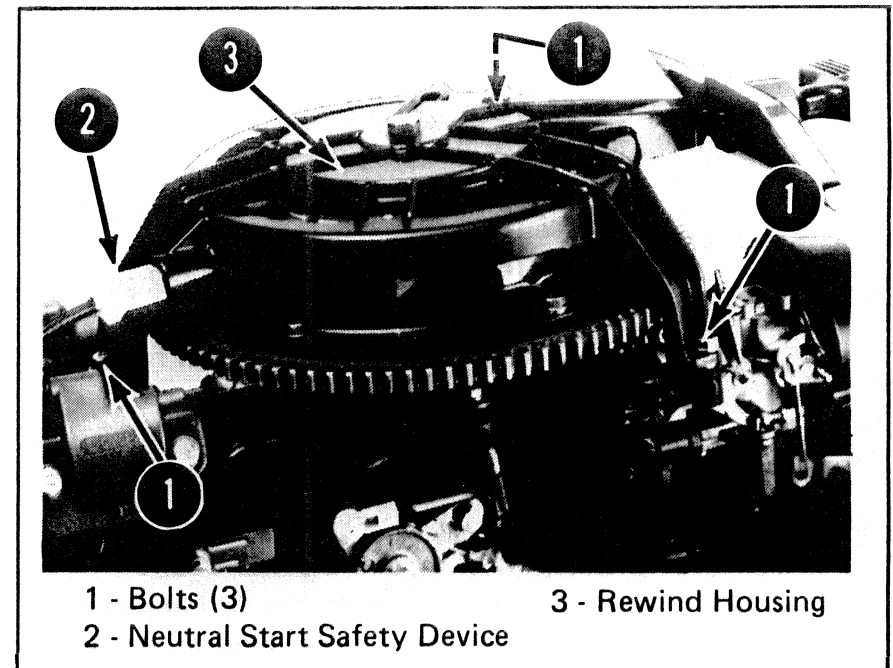


Figure 15. Emergency Starting (25 Model Shown)

4. Remove three bolts which secure rewind assembly to cylinder block.
5. Place gear shift lever in "NEUTRAL" gear position. On electric start models, turn key switch to "ON" position. On manual start models, move ignition toggle switch (Figure 14) to "RUN" position.
6. Wind starter rope two or three turns in a clockwise direction around pulley on top of flywheel, and give it a strong pull to start engine.

## WARMING UP

After engine has been started, allow it to warm up for a minimum of three minutes so that all moving parts receive sufficient lubrication. Failure to warm engine will shorten engine life. During warm up, gear shift handle should be in neutral position and throttle in slow position.

### 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.**

## BREAK-IN

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

### Break-in Period

5 hours.

### Fuel (gasoline/oil mixing ratio)

50:1

**IMPORTANT:** See "Gasoline and Lubricating Oil Recommendations," check "Table of Contents" for page number.

## Speed

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.

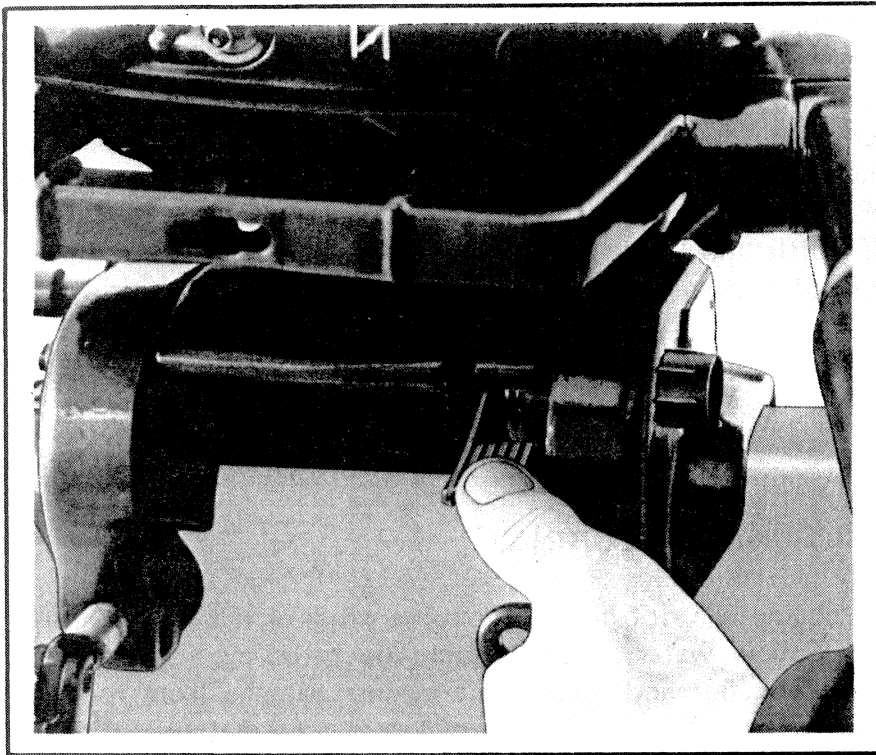
## TILT-UP AND MOORING

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.

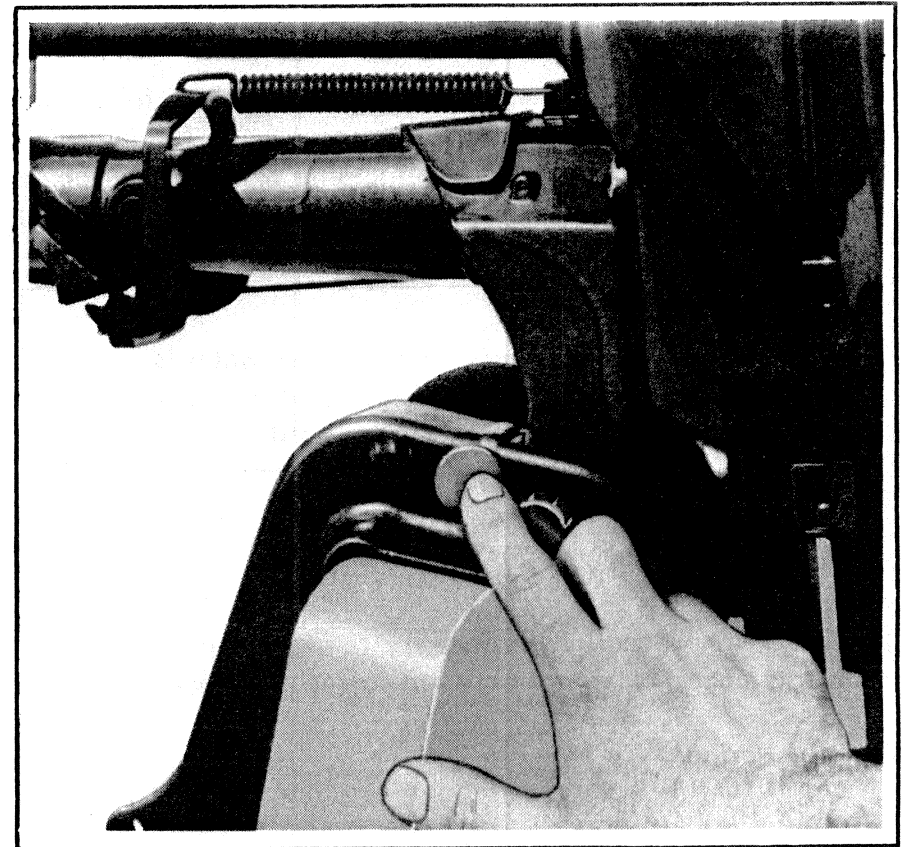
Push tilt lever down to "RELEASE." (Figure 16). Grasp rear of top cowl firmly and tilt engine forward. Push tilt support lever (Figure 17) into swivel bracket to lock the engine in tilted position.

### CAUTION

**Be sure to keep power unit higher than the propeller. See Figure 18.**



**Figure 16. Tilt Lever**



**Figure 17. Tilt Stop Knob**

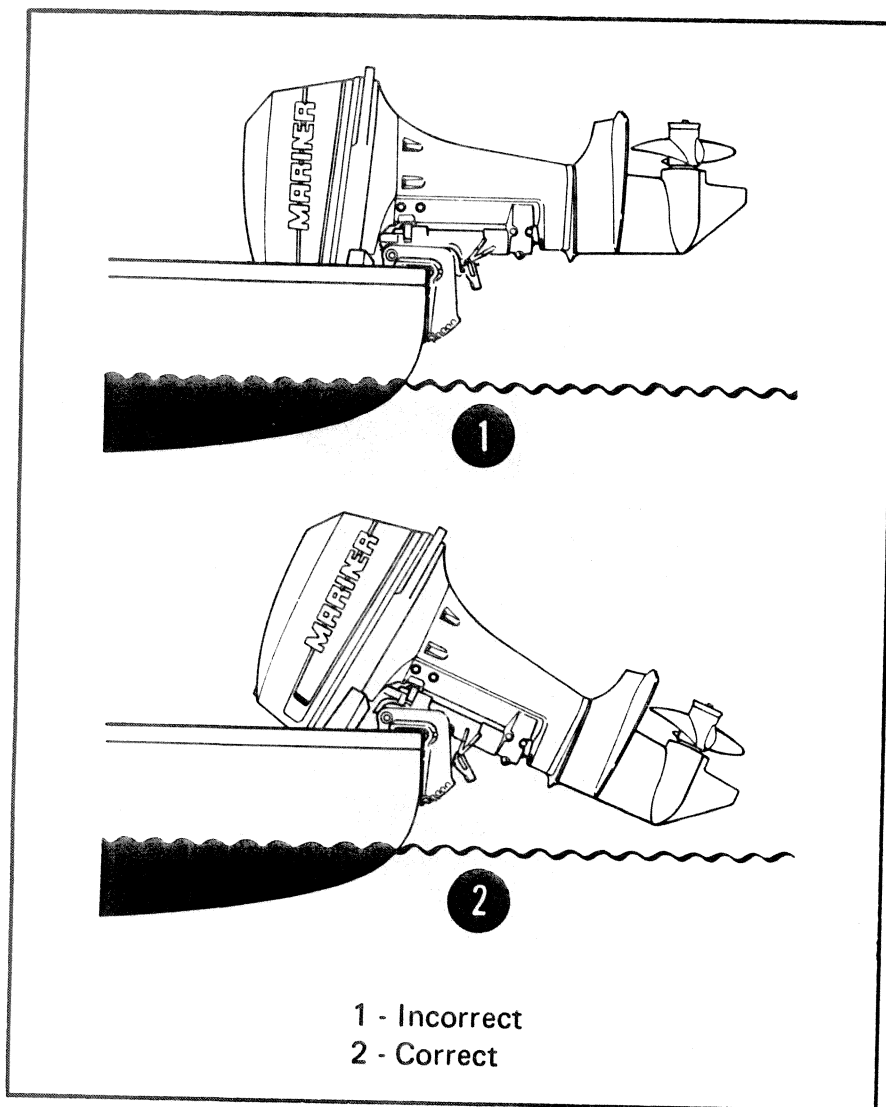


Figure 18. Correct and Incorrect Tilt

## ADJUSTABLE TRIM TAB (GALVANIC CORROSION INHIBITOR)

The trim tab (Figure 19) balances the “steering torque” so that the steering wheel will turn with equal tension in each direction. If the boat turns more easily to the left, loosen cap screw and move trim tab to the left when viewing motor from behind. Tighten cap screw. Reverse the procedure if boat turns more easily to right. This trim tab is made of a special alloy which has been developed to aid in protecting the surfaces of the drive shaft housing and gear housing from galvanic corrosion (corrosion and pitting of metal surfaces) on units operated in salt water areas. Surface erosion in salt water requires periodic replacement of the trim tab. Do not paint or place protective coating on the trim tab or its inhibiting value is lost.

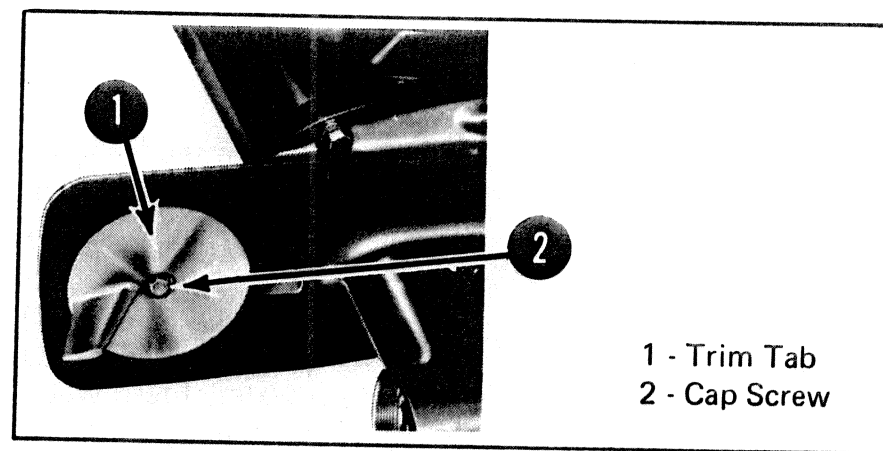


Figure 19. Trim Tab

## AFTER OPERATION

### Removal Preparations

Disconnect fuel line at engine. On electric start engines, disconnect plugs and sockets in wiring harnesses. Cover plugs and sockets with protective caps. Coil battery cables and wiring harnesses neatly and tie them to the engine.

### Removal and Carrying

Remove transom bolts, loosen clamp screw handles, and remove motor from the boat. Hold motor upright while resting lower unit on the ground and allow water to drain from lower unit. While carrying the motor be careful not to damage the propeller. Also be careful to hold motor so that power unit is higher than propeller.

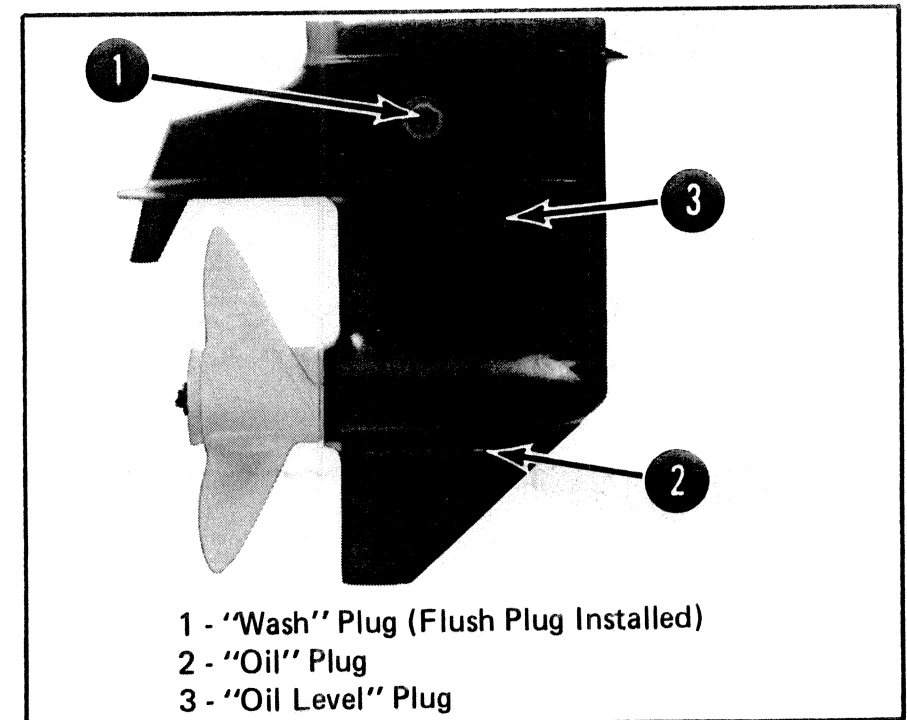
### Cleaning

When motor has been used in salt or polluted water, it should be thoroughly cleaned with fresh water. The cooling system should be flushed by operating the engine in fresh water or by using water flush device supplied with engine for three minutes. Remove the plug in the lower unit marked WASH (Figure 20). Install water flush plug in lower unit. Connect a hose to water flush plug and turn on water. Fresh water will be flushed through water passages, flushing out salt and dirt. Clean exterior thoroughly washing with fresh water.

Operate motor in neutral below 2000 RPM.

DO NOT EXCEED 2000 RPM.

**IMPORTANT:** When engine is being flushed, be sure water is flowing from water outlet. (Figure 1) If not, cooling system is plugged or faulty.



**Figure 20. Lower Unit Plugs**

# ADJUSTMENTS and MAINTENANCE

## ADJUSTMENTS

### Carburetor Adjustment

#### 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 21). 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  $850 \pm 50$  rpm. Idling speed (RPM) can be adjusted by turning throttle stop screw. (Figure 21)

**IMPORTANT:** Do not adjust carburetor unnecessarily.

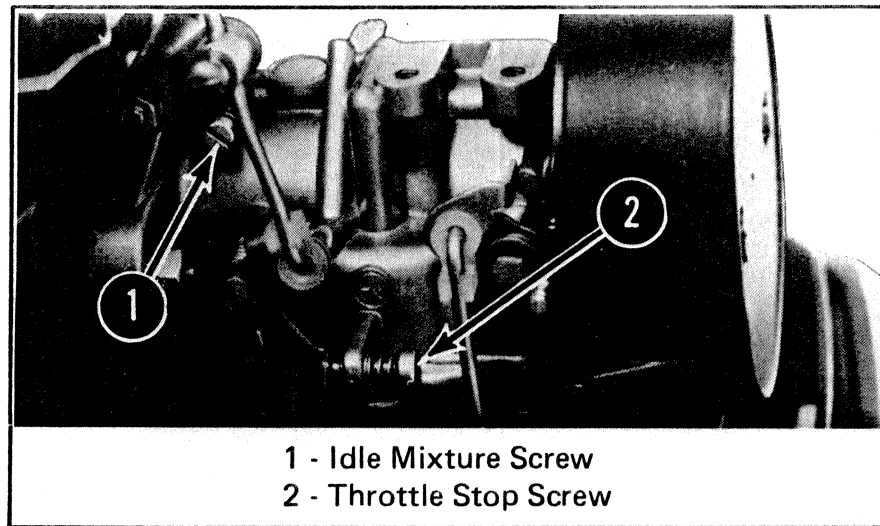


Figure 21. Carburetor Adjustment

### Steering Adjustment

#### SAFETY WARNING

Do not tighten steering so tight that it cannot be overcome in an emergency.

Tightness of steering handle movement can be adjusted by turning friction screw, which is in upper front of swivel bracket. To restrict movement, turn screw clockwise. To ease movement, turn screw counterclockwise. (Figure 22)

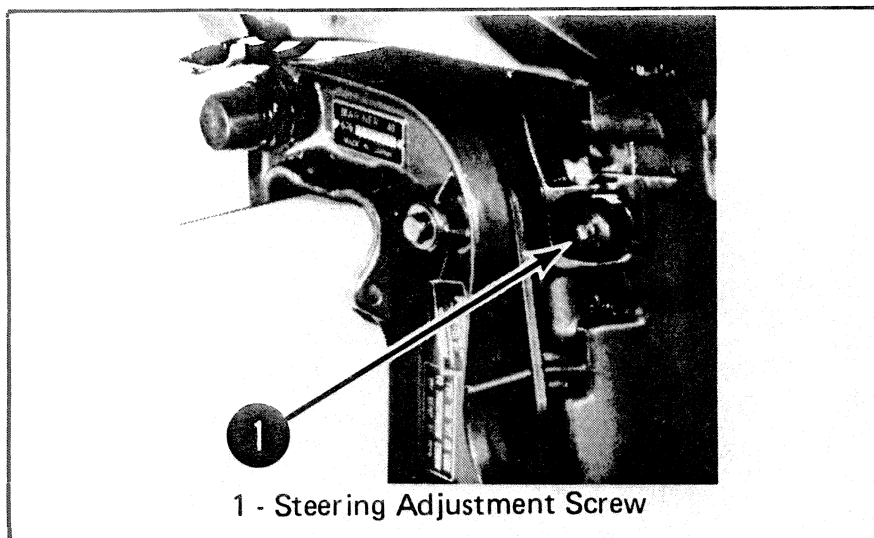


Figure 22. Steering Adjustment

### SERVICING FUEL TANK FILTER

1. Detach fuel line from fuel tank.
2. Remove fuel pickup tube from fuel tank.
3. Clean filter by rinsing in clean gasoline or kerosene.

#### SAFETY 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.

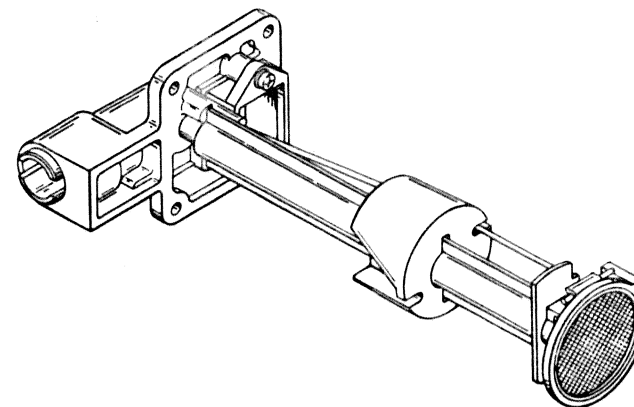


Figure 22A. Fuel Tank Filter

### SERVICING MOTOR FUEL FILTER

Motor fuel filter is more than adequate to take care of all requirements under normal use. If, after all other checks, fuel filter obviously is the cause of the trouble, replace the fuel filter. See your Authorized Dealer.

### IGNITION MAINTENANCE

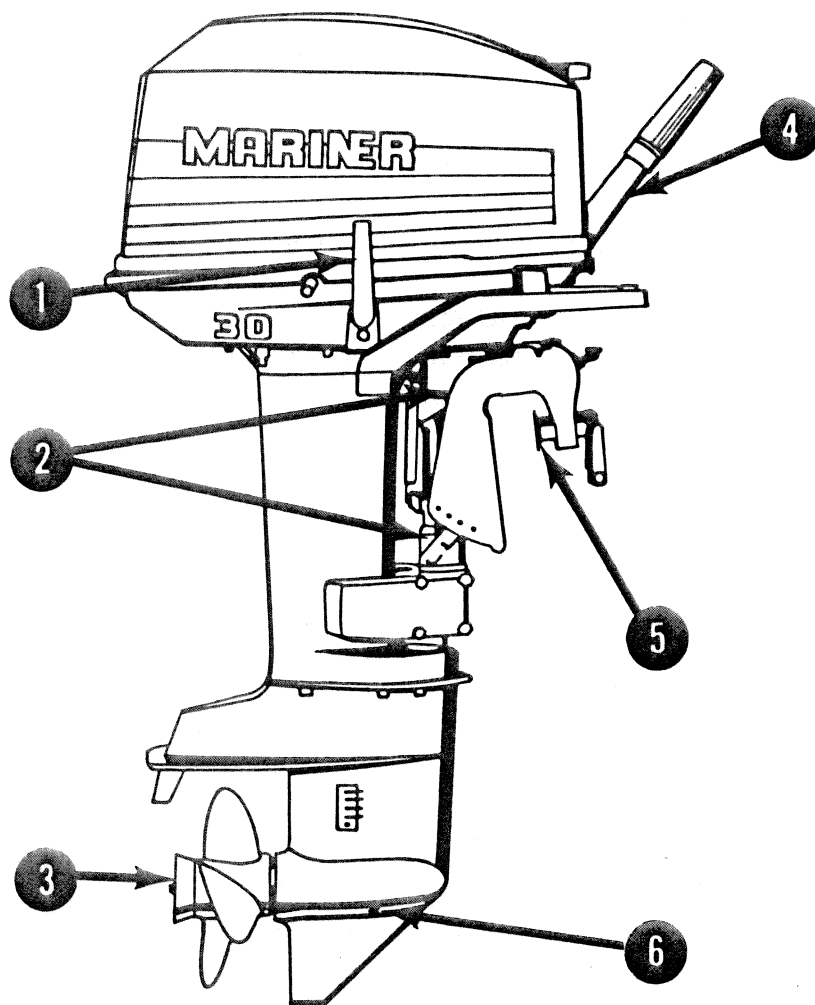
#### SAFETY WARNING

**DO NOT** touch or disconnect any ignition system parts while engine is running. **DO NOT** remove spark plug connectors and hold them in your hand to check for spark while engine is running, as high voltage is present.

If electrical system is not operating, do not attempt to fix it yourself, but refer to your nearest Authorized Dealer.



## LUBRICATION POINTS



- 1 - Shift Handle Water Resistant Grease Every 100 Hours
- 2 - Swivel Bracket Water Resistant Grease Every 50 Hours
- 3 - Propeller Shaft Perfect Seal or, Water Resistant Grease Every 30 Hours
- 4 - Steering Handle Shaft Water Resistant Grease Every 100 Hours
- 5 - Clamp Screws Water Resistant Grease Every 30 Hours
- 6 - Lower Unit High Quality Gear Lubricant Recommended by your Authorized Dealer Replace After First 20 Hours Check Level and Fill Every 50 Hours Replace Every 100 Hours

## GEAR OIL REPLACEMENT

### Draining Oil

#### **SAFETY WARNING**

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

#### **CAUTION**

If any water drains from the fill hole, if lubricant appears milky brown, or if large amounts of lubricant must be added to fill the gear housing, it should be checked promptly by your local servicing dealer.

Place an empty container under the lower unit and remove lower "OIL" plug (Figure 20), 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.)

### Refilling with Oil

**IMPORTANT:** DO NOT use automotive grease in the gear housing. Use only Quicksilver Super-Duty Gear Lubricant.

Feed Super-Duty Gear Lubricant 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.

## PROPELLER REPLACEMENT (Figure 23)

#### **SAFETY WARNING**

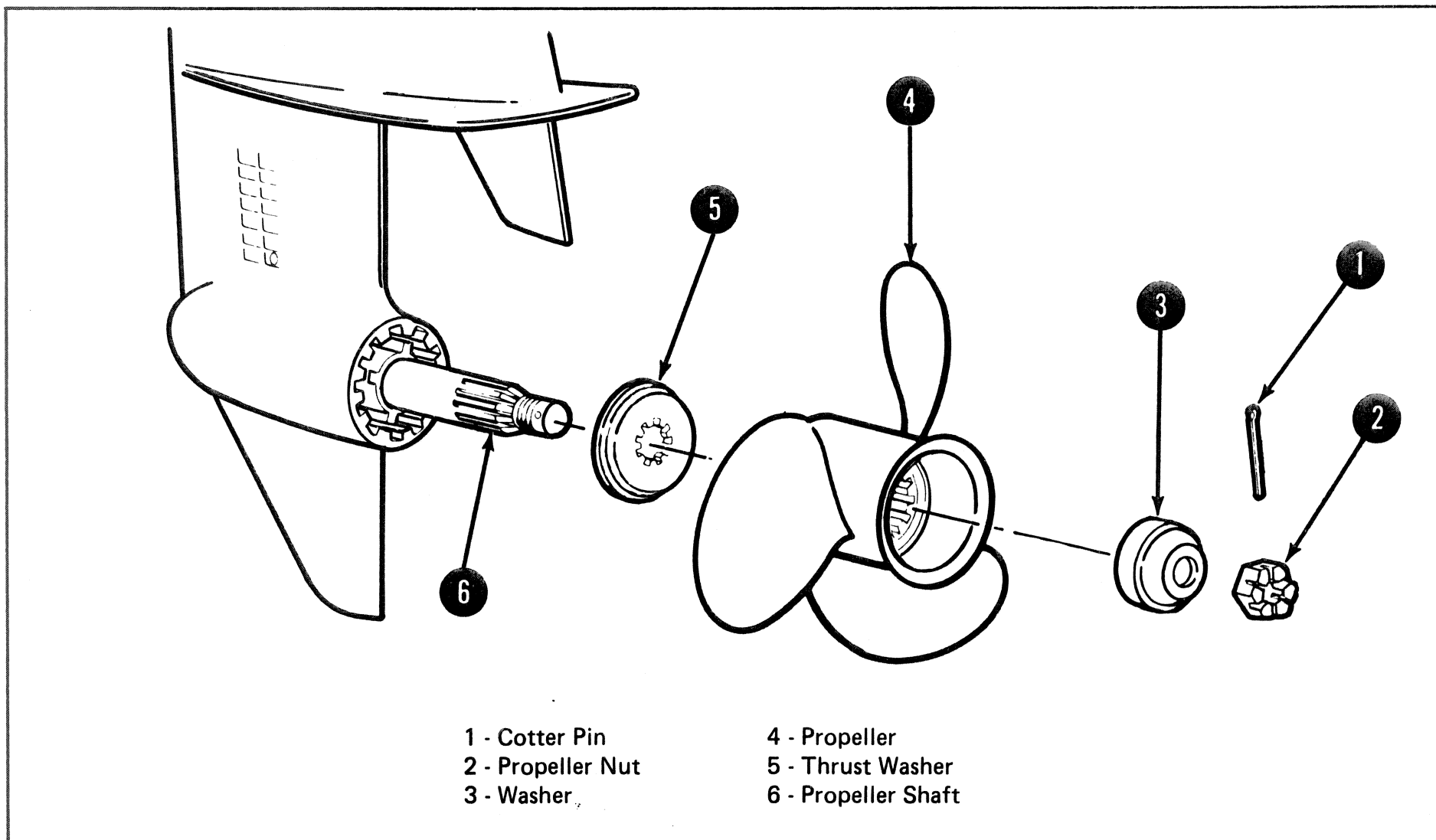
Disconnect spark plug ignition wires when working with the propeller to avoid accidental starting.

### Removal

Remove cotter pin, nut and washer. Notice the way the washer is facing. It must be installed the same way. Remove propeller, but leave thrust washer on shaft, unless it is damaged.

### Installation

Coat the propeller shaft with Perfect Seal or good quality water resistant grease. Install propeller against the thrust washer. Install washer and nut, and tighten securely. Install cotter pin thru nut and propeller shaft, then spread ends.



**Figure 23. Propeller Replacement**

## SERVICING SPARK PLUGS

Operation with old or wrong type spark plugs can result in poor operation. Replace as follows:

1. Remove top cowl.
2. Disconnect spark plug leads.
3. Remove spark plugs, clean and inspect. If center electrode is eroded, replace with new spark plug (listed in "Specifications") which has been properly gapped.
4. Install spark plugs. Be sure that gaskets are in good condition.
5. Start threads one or two turns with fingers to avoid danger of cross-threading.
6. Seat plug finger-tight on gasket; an additional 1/3-turn from seated [2.8mkg (20 ft. lbs.)] with a wrench will be sufficient to tighten a new spark plug. Do not overtighten, as insulator may crack, or threads may strip.
7. Connect spark plug leads. Be sure that each lead is connected to its respective spark plug.
8. Inspect high tension leads. If insulation is damaged or deteriorated, install new high tension lead.

## BATTERY MAINTENANCE

### SAFETY WARNING

Hydrogen gases, that escape from the battery during charging, are explosive. When charging batteries, be sure that the battery compartment or area (where batteries are located) is well-vented.

### SAFETY WARNING

Battery electrolyte is a corrosive acid and should be handled with care. If electrolyte is spilled or splashed on any part of the body, immediately flush the exposed area with liberal amounts of water and obtain medical aid as soon as possible. Safety glasses and rubber gloves are recommended when handling batteries or filling with electrolyte.

A strong battery must be maintained. All lead acid batteries have an inherent self-discharge characteristic when not in use. Cover plates with distilled water, but not over 4.8 mm (3/16") above perforated baffles. Recharge every 60 days or when specific gravity drops below 1.230. Recharge rate should not be over 6 amperes. Discontinue charging when gravity reaches 1.260.

Check also can be made with a hydrometer. If reading is below 1.230 (specific gravity), recharge or replace the battery.

# SPECIAL CARE REQUIRED

## DAILY INSPECTION

Check following items before each period of operation.

### Fuel

Before starting motor, be sure fuel tank is full. The fuel ratio must be 50:1 mixture of gasoline and oil.

### SAFETY WARNING

**Do not fill fuel tank completely full. Gasoline will expand as it warms, causing leakage and a fire hazard if there is no room for expansion.**

### Fuel Line Connections

Check fuel line connections from fuel tank to motor receptacle for leaks. Check fuel line connection at the carburetor for leaks. Make sure fuel line is firmly inserted into connectors.

### Propeller

Before starting motor, check propeller blades to be sure they are not bent or broken.

### Propeller Nut

Check propeller nut and cotter pin for damage. Be sure it is tight. If it should come off during operation the propeller will also come off.

### Spark Plug

Keep spark plugs clean and properly gapped. A fouled or incorrectly gapped spark plug can be the cause of serious engine problems. Make sure spark plug wire connections are tight.

### After Operation

Check propeller for damage.  
Clean exterior of engine.

## PERIODIC INSPECTION

### Every 30 Hours

Take out each spark plug and clean it thoroughly, removing all carbon. Adjust spark plug gap to 0.5 - 0.6 mm ( $0.021 \pm .003$  in.). Check fuel line for fuel leaks, damage or air bubbles. Clean fuel tank. Recharge battery.

### Every 50 Hours

Add lubricant to lower unit. Retighten all bolts and nuts. Clean the fuel strainer in the fuel tank.

### Every 100 Hours (By your Authorized Dealer)

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

## Every 100 Hours (continued)

### **SAFETY WARNING**

**Battery electrolyte is an acid solution and should be handled carefully. If electrolyte is spilled or splashed on any part of the body, immediately flush the exposed area with water. Obtain medical treatment as soon as possible.**

Check operation of electric starter motor. Clean battery with lukewarm water. Clean battery terminals with a wire brush or terminal cleaner. Check level of electrolyte solution. Add distilled water, if necessary, to bring it up to the correct level.

## **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.

## **Battery Storage**

1. Remove battery as soon as possible and remove all grease, sulfate and dirt.
2. Cover plates with distilled water, but not over 4.8mm (3/16") above perforated baffles.
3. Cover terminal bolts well with grease.
4. Store battery in a COOL, DRY place.

5. Remove battery from storage every 60 days. Check water level and place on charge for 5 to 6 hours at 6 amperes. DO NOT fast charge.

#### **CAUTION**

**A discharged battery can be damaged by freezing.**

6. When placing battery in service, remove excess grease from terminals (leaving small amount on), recharge as necessary and reinstall in your equipment.

If unable to have above performed by your Authorized Dealer, contact your local automotive garage.

### **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.

### **HOW TO START A FLOODED ENGINE**

#### **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. (Inward on manual start models or toggle switch down on electric start models.)
2. Disconnect fuel line connector from bottom cowl fuel connector. (Figure 10)
3. Place shift handle (Figure 12) in "NEUTRAL" position on manual start models or place remote control in "NEUTRAL" position and turn key switch to "ON" position on remote control/electric start models.
4. Place throttle at wide-open (FAST) position.
5. Hold top cowl firmly with one hand while SLOWLY pulling starter handle (Figure 12) 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.

**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

- A** Does Not Start
- B** Runs Irregularly or Misses
- C** Starts Momentarily and Cuts Out
- D** Does Not Idle Properly
- E** Motor Speed Faster Than Normal
- F** Motor Speed Slower Than Normal
- G** Does Not Develop Normal Boat Speed
- H** Motor Overheats

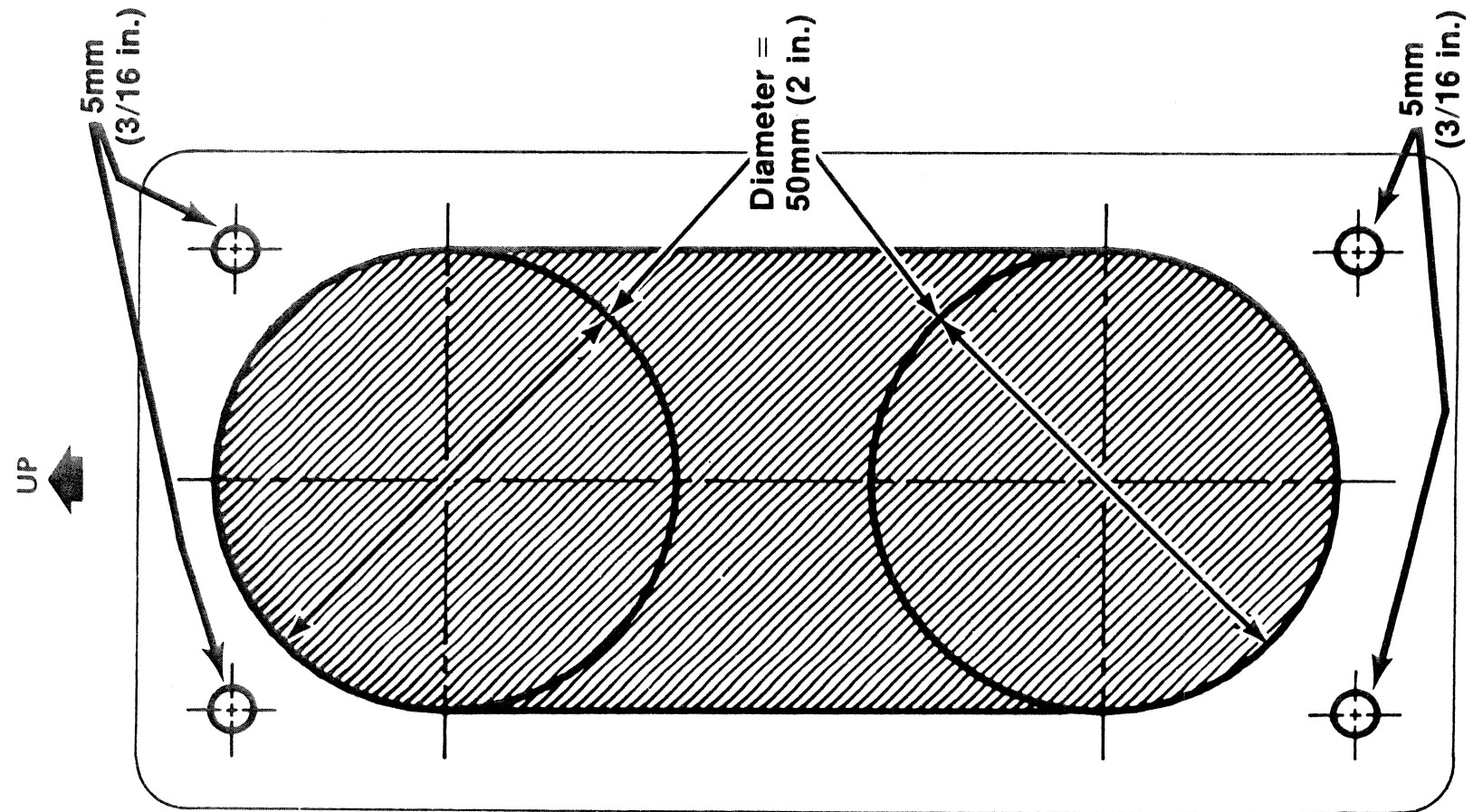
A	B	C	D	E	F	G	H	POSSIBLE CAUSE	Page Reference
●		●						Fuel Tank Empty or Vent Screw Closed	13-16
●			●					Motor Is Cold	16-19/21
●		●						Fuel Line Not Connected	16
●	●	●	●		●	●	●	Fuel Line Pinched or Kinked	13
●	●	●	●		●	●	●	Fuel Filter(s) in Need of Cleaning	26 *
●	●	●	●		●	●	●	Air Leak in Fuel System	13-17 *
●		●	●					Low Speed Mixture Screws Mal-Adjusted	25
			●		●	●	●	Wrong Oil in Fuel Mixture	13-15
	●		●		●	●	●	Wrong Gasoline in Fuel Mixture	13-15
			●		●	●	●	Not Enough Oil in Fuel Mixture	13-15
	●		●		●	●	●	Too Much Oil in Fuel Mixture	13-15
●								Motor Flooded	33
●	●		●		●	●	●	Spark Plugs Fouled or Defective	5/30/31
	●		●		●	●	●	Wrong Type Spark Plugs	5
●								No Spark	5/26/30 *
●	●	●	●		●	●	●	Weak Spark or Intermittent Spark	5/26/30 *
●								Spark Plug Leads Interchanged	26/30
					●	●	●	Water Pump Failure	*
					●	●	●	Cooling System Clogged	24 *
				●		●		Propeller Damaged	28/29/31
				●	●	●		Tilt Angle Not Correctly Adjusted	11
				●	●	●		Boat Improperly Loaded	—
					●	●		Transom Too Low	8/9
				●		●		Transom Too High	8/9
	●				●	●	●	Excessive Spark Advance	*
					●	●		Insufficient Spark Advance	*
				●	●	●		Propeller of Wrong Pitch or Diameter	12

\* Inspection should be performed by an Authorized Dealer.



CUT ALONG DOTTED LINE

SWITCH PANEL TEMPLATE



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**MARINER**

**QUICKSILVER**

## INTERNATIONAL WARRANTY

- I. We warrant each new production (not those made for high performance purposes) Mariner Outboard Motor and accessories attached thereto, (hereafter referred to as "Product"), to be free from defects in material and workmanship, but only when the consumer sale is made in the country to which distribution is authorized by us. 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 us; 3) Operation with fuels, oils, lubricants, or fuel/oil mixtures which are not suitable for use with the Product; 4) Participating in or preparing for racing or other competitive activity or operating with a racing type lower unit; 5) Alteration or removal of parts; or 6) Water entering engine cylinder/s through exhaust system or carburetor/s.
- 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 other consequential damages; 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 nearest Marine Power Service Office or Distributor. The Marine Power Service 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.
- V. Purchaser must provide "proof of purchase" and substantiate "date of purchase" by presenting the "Purchasers Copy" of the "Warranty Registration Card" or the plastic "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" is presented by purchaser and "date of purchase" has been substantiated.
- VI. Our obligation under this Warranty shall be limited to repairing a defective part or, AT OUR OPTION, refunding the purchase price or 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.
- VII. ALL INCIDENTAL AND/OR CONSEQUENTIAL DAMAGES ARE EXCLUDED FROM THIS WARRANTY. WARRANTIES OF MERCHANTABILITY AND FITNESS ARE EXCLUDED FROM THIS WARRANTY. IMPLIED WARRANTIES ARE LIMITED TO THE LIFE OF THIS WARRANTY. SOME COUNTRIES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.
- 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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