



**MERC 200•110•75•45**

**OPERATION and  
MAINTENANCE**



**OUTBOARDS**

*C-90-70189 (6/74)*



# IMPORTANT OWNER IDENTIFICATION and REGISTRATION INFORMATION



It is vitally important that your selling dealer fills out the Motor Registration Card completely and mails it to the factory immediately upon sale of the new product. It identifies name and address of the original purchaser, product model and serial number, date of sale, type of use and selling dealer's code, his name and address. The dealer also certifies that you are the original purchaser and user of the product.

Upon receipt at the factory, you, the original owner, will be issued a plastic Owner's Registration MERCARD (shown right) which is your only valid registration identification and must be presented to the servicing dealer should warranty service be required. Warranty claims will not be accepted without presentation of this MERCARD. Read copy carefully on front and back of sample, right.

A temporary Owner Registration MERCARD will be presented to you when you purchase the product. It is valid only for 15 days from date of sale while your plastic MERCARD is being processed. Should your product need service during this period, present this temporary MERCARD to the dealer. He will attach it to your warranty claim form.

If your new MERCARD is not received within 15 days from date of new motor sale, please contact your selling Mercury dealer. This program is in effect only in the United States, Canada and Australia.

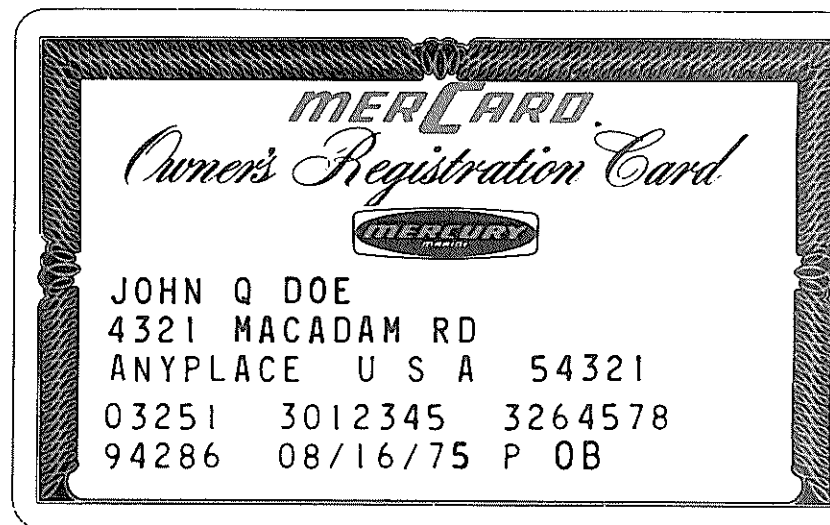
The product warranty is void if the product is not registered at the factory. See the Warranty Policy and information on the inside and outside back cover of this manual.

**NOTICE:** The U.S. FEDERAL BOAT SAFETY ACT requires that registration lists be maintained by the manufacturer and dealer on marine products sold in the United States.

**IMPORTANT:** Read this manual carefully and thoroughly, particularly **WARNING, CAUTION** and **IMPORTANT** information in bold type, such as this paragraph.

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.

(Front  
Side)



(Back  
Side)

This **MERCARD** is your only valid registration identification and must be presented to the servicing dealer should warranty service be required. Warranty claims will not be accepted without presentation of this **MERCARD**. Warranty information is contained in the "Operation and Maintenance Manual" which accompanies the product. While traveling, refer to the classified pages in the telephone directory for the nearest Mercury or MerCruiser authorized service dealer.

Carry your **MERCARD** with you at all times. If lost, a duplicate card is available from the factory for a nominal fee. Give product model, serial number and your name and address.

Mercury Marine, Fond du Lac, Wisconsin

Litho in U.S.A.

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# welcome...

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We welcome you to the family of Mercury Owners.

You have selected one of the finest products that money can buy and, with proper maintenance, you will enjoy countless days of carefree boating pleasure. For this reason, we ask that you read this manual thoroughly.

We are sincerely interested in your complete satisfaction; therefore, to protect your investment, we call your attention to the inside front and back covers of this manual which explain registration of your engine and our warranty.

Should a difficulty arise, we suggest that you follow the steps outlined in this manual by contacting your dealer, Mercury Marine Branch or Distributor or our factory Service Department. Our dealers and personnel are dedicated to serve you; however, if satisfaction is not obtained, please contact this office.

We thank you for purchasing our product and hope that your boating will be pleasant.

**MERCURY MARINE - Customer Relations Department**  
**P.O. Box 404, Fond du Lac, Wis. 54935**

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 Mercury Service facility and not to attempt the repair work himself.

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# SPECIFICATIONS

	Merc 200	Merc 110	Merc 75	Merc 45
Bore	2.56" (65mm)	2.00" (50.8mm)		
Stroke	2-1/8" (54mm)	1 3/4" (44.5mm)		
Cu. In. Displacement	22 (361cc)	11 (279cc)		5.5 (140cc)
Recommended Spark Plugs	AC-V40FFK or Champion L78V			
Recomm. Point Gap				.020 (.508mm)
Horsepower	20 HP	9.8 HP	7.5 HP	4.5 HP
Fuel Tank Capacity*				
U.S. Gallons	6		3	
Imperial Gallons	5		2 1/2	
Liters	22 1/2		11	

\* Additional Capacity for Oil Included

## LUBRICANTS

(From Your Mercury Dealer) Quicksilver Lubricant	Part No.	Container Size		
		U.S.	Imperial	Metric
Anti-Corrosion Grease	C-92-63290	8 Oz.	6.7 Oz.	240cc
Anti-Corrosion Oil	C-92-63281	8 Oz.	6.7 Oz.	240cc
Corrosion and Rust Preventive	C-92-63260	11 Oz.	9.2 Oz.	330cc
Engine Cleaner	C-92-47949	15.3 Oz.	12.7 Oz.	460cc
Multipurpose Lubricant	C-92-63250	8 Oz.	6.7 Oz.	240cc
Perfect Seal	C-92-34227	16 Oz.	13.3 Oz.	480cc
Storage Seal	C-92-63233	15 Oz.	12.5 Oz.	450cc
Super-Duty Gear Lubricant	C-92-68617	8 Oz.	6.7 Oz.	240cc
	C-92-68623	1 Qt.	0.2 Gal.	960cc

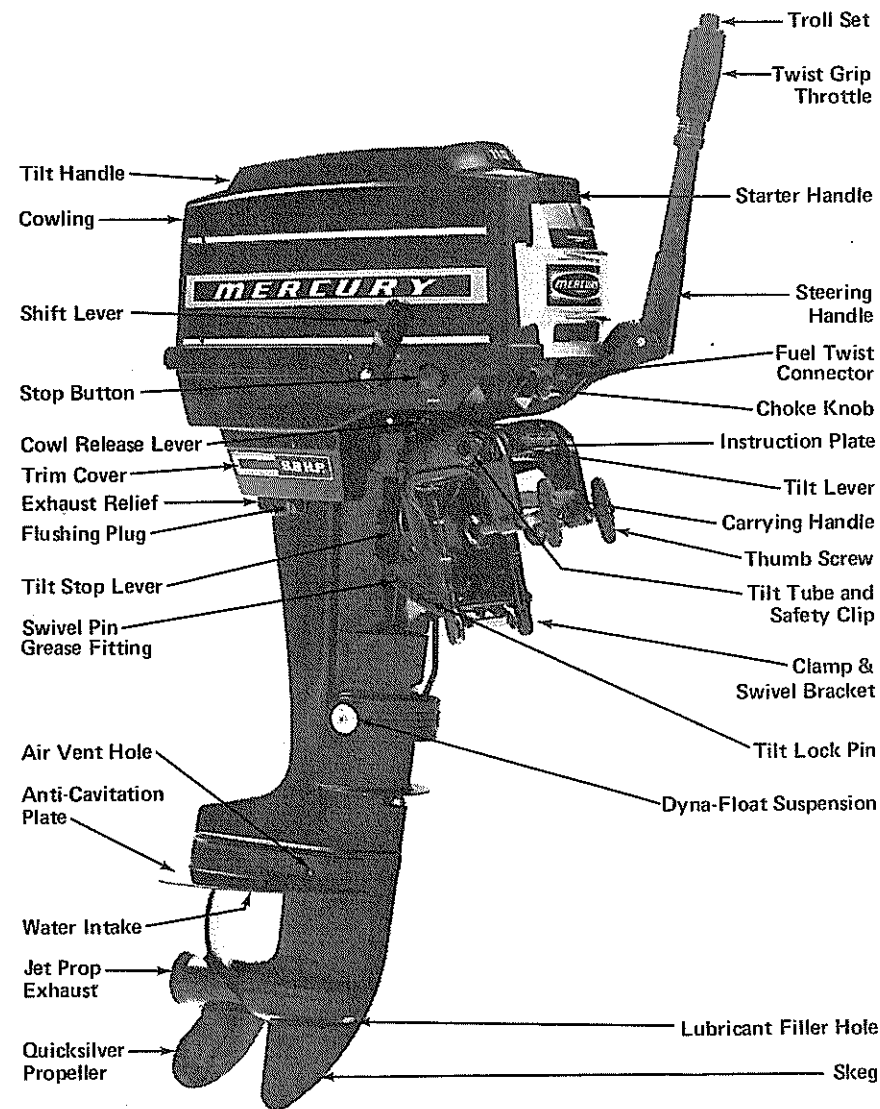


Figure 1. Merc 110

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# GENERAL INFORMATION

## DIRECTIONAL REFERENCES

Front of boat is bow: rear is stern. All directional references are given when viewing boat from stern, looking toward bow. (Figure 2)

## SERIAL NUMBER

The serial number (stamped into instruction plate on swivel bracket) is the manufacturer's key to numerous engineering details which apply to your motor. When corresponding with the manufacturer or dealer about service, always specify model and serial number.

## PERIODIC CHECKUP

After 20 hours, an inspection should be performed by an authorized Mercury Outboard dealer at local rates and paid for by the owner. After the 20-hour check, your outboard should be taken to an authorized Mercury dealer every six months or 100 hours of operation -- or at least once each year -- for lube change, tuneup, etc.

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

## WRITE a LETTER of EXPLANATION

When writing to the factory, 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.

**No Motor Is To Be Shipped to the Factory without Specific Written Authorization. All Shipping Charges Must Be Prepaid.**

## SERVICE RECOMMENDATIONS

This publication includes operating and service instructions for your Mercury Outboard Motor. Illustrations shown apply to all motors listed in this book, except where a model number is designated.

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 Mercury 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.



# MOTOR INSTALLATION

## OUTBOARD MOTOR MOUNTING

**CAUTION:** Before operating, Merc 200 motor must be secured to boat with 2 bolts placed through transom into holes provided at bottom of clamp bracket. On smaller horsepower models, it is advisable to bolt the motor to the transom as described above. Refer to Figure 1 and instructions on "Warning" tag attached to your new Merc outboard motor and shown below. During operation, clamp screws should be checked occasionally for tightness on the transom. Failure to bolt motor to transom may result in damage to boat, loss of motor and possible injury to occupants of boat.

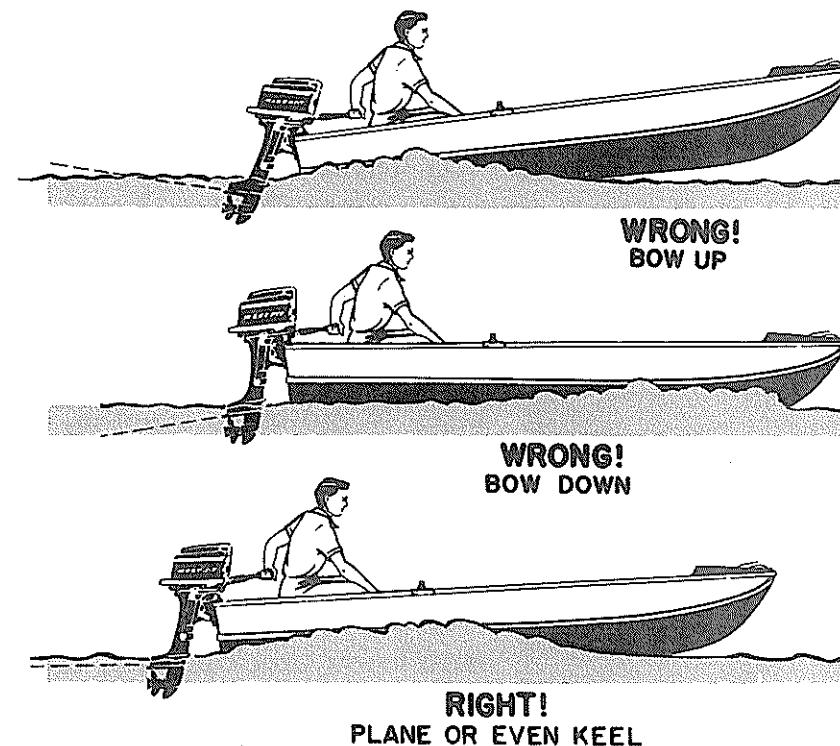
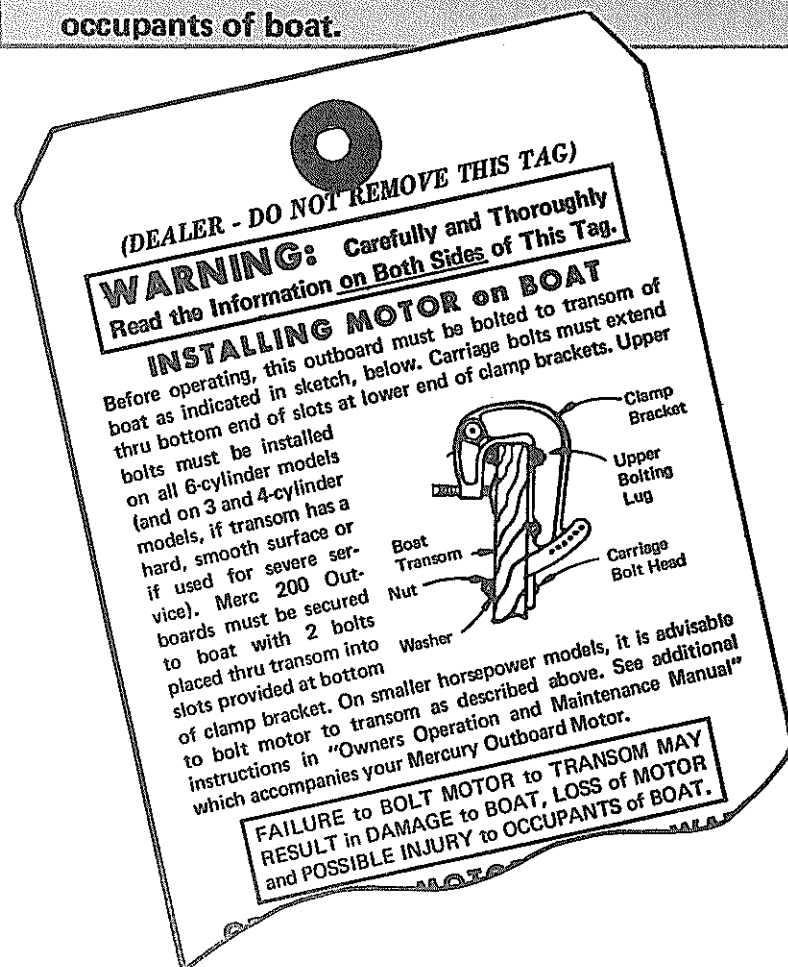


Figure 2. How to Plane a Boat

Your Mercury motor is designed for a recommended transom height. To avoid damage to transom and to prevent motor from working loose during operation, it is important that clamp screws are tightened securely and equally. Clamp screw grips should be in (or near) a horizontal plane to allow full tilt up and turn of motor. Failure to observe this clamp screw position could result in damage to steering parts.

## TILT PIN ADJUSTMENT

**DO NOT** operate motor with tilt lock pin removed.

Adjust tilt angle of motor on transom with tilt lock pin (Figure 1) so that anti-cavitation plate (Figures 1 and 2) is about parallel and even with bottom of boat. Speed sometimes

may be improved by tilting motor out one tilt pin hole to raise bow and reduce wetted surface. If motor is tilted-in, boat will ride with bow down, wetting more of the bottom and reducing speed, thus generally improving operation in rough water. Under ideal conditions, efficiency is best with lower unit operating in level position. (Figure 2)

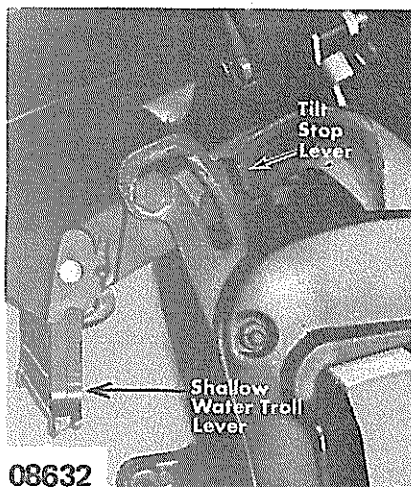


Figure 3. Tilt Stop

## TILT STOP LEVER

Motor can be locked in tilt-up position by pulling tilt stop lever (Figure 3) with motor fully tilted.

**IMPORTANT: DO NOT** use tilt stop lever while trailering. Tilt motor and place a block of wood between clamp and swivel bracket.

## ADJUSTING CO-PILOT

The co-pilot provides velvet-smooth friction control in the steering mechanism. Recommended adjustment is such that the motor will remain in a fixed-course position without the need of manual control, yet will not be too tight to allow free and easy steering. Adjustment is attained by means of hexagon head screw in bottom face of swivel bracket. (Figure 4) Tighten the screw to increase friction; loosen to decrease friction. Loosen friction when using remote controls.



Figure 4. Co-Pilot Adjustment  
110-75-45



# PROPELLER RECOMMENDATIONS

## PROPELLERS

Your outboard motor is equipped with a Quicksilver propeller which will give best overall performance under varying conditions of motor RPM, boat type, speed and load. See your dealer's listing for Quicksilver propellers available. For removal and installation instructions, refer to the following paragraphs.

**WARNING:** When installing or removing propeller, place a block of wood between the anti-cavitation plate and propeller to prevent accidental motor starting and to protect the hands from propeller blades while removing the propeller nut.

## INSTALLING PROPELLER

1. Apply a liberal coat of Perfect Seal or a water-proof type lubricant on propeller shaft splines.
2. Slide collar and propeller onto shaft and place wood block between propeller and cavitation plate.
3. Place washer and nut (Figure 5) on end of propeller shaft and tighten nut securely.

## REMOVING PROPELLER

1. Place a flat block of wood between anti-cavitation plate and propeller.
2. Remove propeller shaft nut and washer. (Figure 5)
3. Slide propeller off shaft.

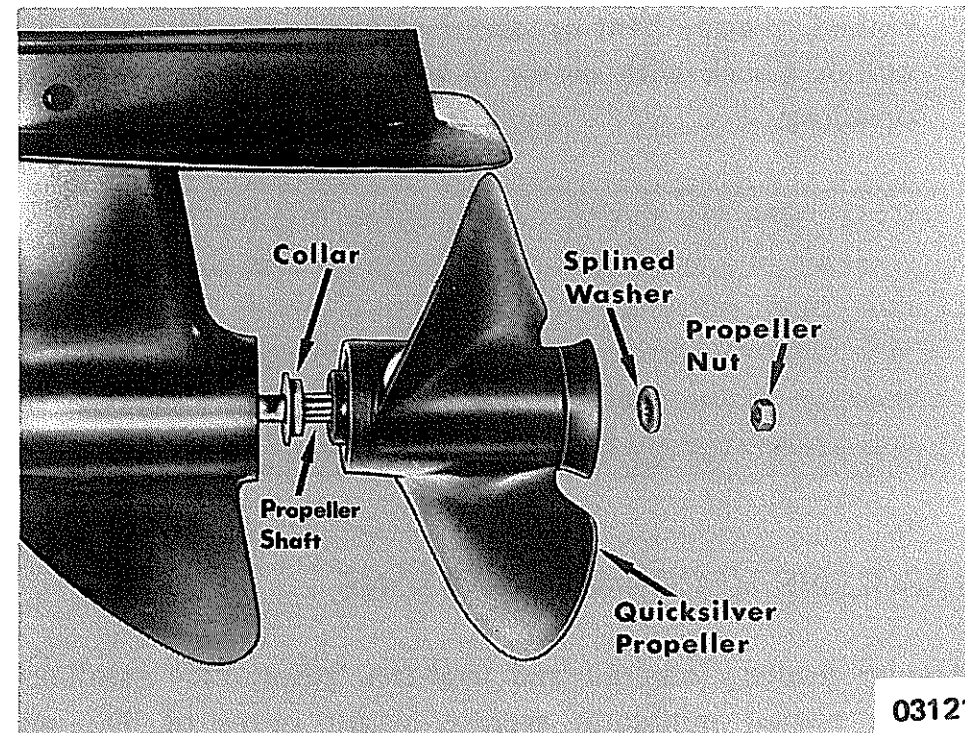


Figure 5. Propeller Removal and Installation

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# FUEL MIXTURE and FUEL SYSTEM

## INSTALLING FUEL TANK

1. Connect fuel line to motor by inserting twist connector into receptacle in bottom cowl (Figure 7) and lock by turning 1/8-turn clockwise.
2. Place fuel tank (Figure 6) 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.

**CAUTION:** 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 RECOMMENDATIONS

Regular leaded, low-lead and lead-free automotive gasolines with a posted minimum average octane rating of 86\* are satisfactory for Mercury Outboards.

\*New U.S. Regulations require posting of average octane (research and motor method) on gasoline pumps.

In some areas, where regular gasolines of adequate octane rating are not available, premium automotive gasoline should be used. Some fuel distributors pre-mix gasoline and oil for 2-cycle engines. Such fuels, if known to be of recommended quality, are acceptable. If in doubt, check with your local Mercury Dealer.

**CAUTION: DO NOT USE white gasolines or fuels intended for stoves and lanterns.**

Mercury Marine reserves the right to refuse warranty on parts which are damaged when using improper gasolines and/or lubricants.

## OIL RECOMMENDATIONS

Mix recommended gasoline with Formula 50 or Formula 50-D Quicksilver 2-Cycle Outboard Motor Oil in ratio shown in the following charts. In emergency, when Formula 50 or 50-D Quicksilver Oil are not available, substitute a high quality 2-cycle oil that is intended for outboard use and meets BIA rating TC-W, shown on oil container. BIA rating TC-W is the

Boating Industry Association's designation for approved, 2-cycle water-cooled outboard oils. Use oil manufacturer's recommended gasoline-oil mixture as shown on the label.

**CAUTION:** The use of other than recommended gasoline and Formula 50 or 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.

## BREAK-IN PROCEDURE and FUEL MIXTURE

Operate a new motor at ½-throttle (2500-3500 RPM) for two hours. After two hours, the motor may run at any speed, although sustained operation at full throttle should be avoided for an additional eight (8) hours. Mix gasoline and oil during the break-in period at a 25:1 ratio as shown in the following chart.

### BREAK-IN FUEL MIXTURE (25:1 RATIO)

	U.S. Measure	Imperial Measure	Metric Measure
Formula 50 or Formula 50-D	24 U.S. oz. oil to each 5 gallons of gasoline	30 imp. oz. oil to each 5 imp. gallons gasoline	800cc oil to each 20 liters of gasoline
Other Acceptable Oils	Use oil manufacturer's recommended gasoline/oil ratio.		

## FUEL MIXTURE after BREAK-IN

After motor break-in, use a 50:1 gasoline-oil ratio as shown in the following chart.

### AFTER BREAK-IN FUEL MIXTURE (50:1 RATIO)

	U.S. Measure	Imperial Measure	Metric Measure
Formula 50 or Formula 50-D	12 U.S. oz. oil to each 5 gallons of gasoline	15 imp. oz. oil to each 5 imp. gallons gasoline	400cc oil to each 20 liters of gasoline
Other Acceptable Oils	Use oil manufacturer's recommended 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.

## CORRECT FUEL MIXING PROCEDURE

**CAUTION:** Observe fire prevention rules, particularly the matter of smoking. Mix fuel outdoors or at least in a well-ventilated location.

Mix fuel directly and accurately in remote tank. Pour small, equal amounts of gasoline and oil into remote tank. (Figure 4) Mix thoroughly, then add balance of oil and 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:** Always use fresh gasoline. Gasoline forms gum and varnish deposits and, when kept in a tank for a length of time, may cause trouble.



Figure 6. Fuel Tank

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## OPERATION

**CAUTION:** DO NOT operate motor out-of-water, or water pump impeller will be damaged. Read flushing instructions carefully, following.

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

3. Connect fuel line to motor by inserting twist connector into receptacle on cowl. To lock, twist 1/8-turn clockwise. (Figure 7)
4. If remote controls are installed, be sure that control cables are attached properly.
5. Shift into neutral.
6. Prime fuel system by squeezing primer bulb on fuel line. (Figure 8) When fully primed, bulb will feel firm.

## STARTING PROCEDURE

1. Be sure that fuel tank contains a sufficient amount of fuel mixture and is properly secured in boat.
2. Open air vent screw on fuel tank cap. (Figure 6)

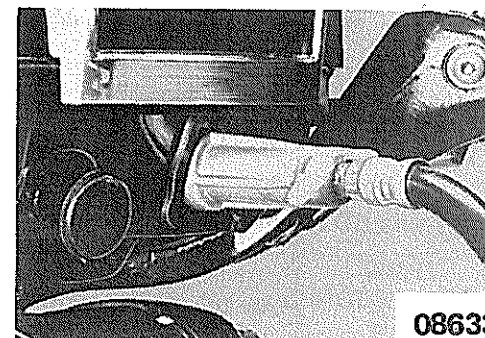
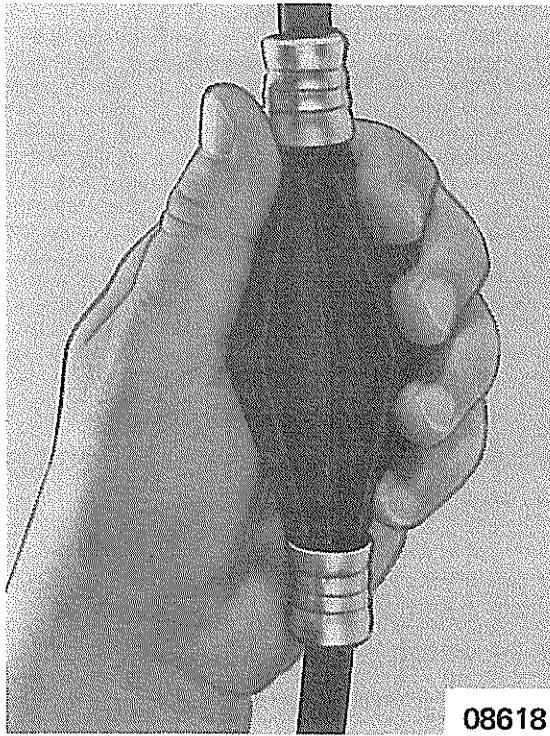


Figure 7. Twist Connector

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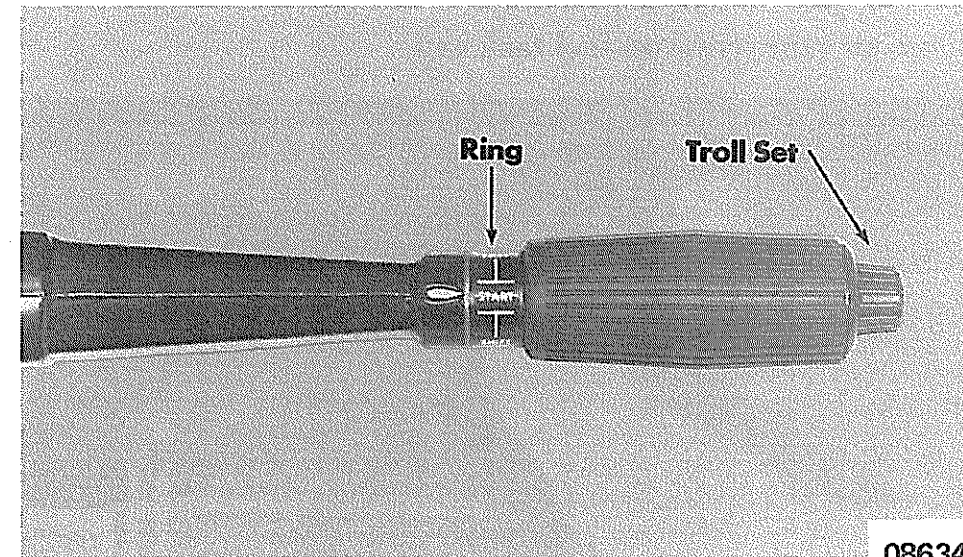
**Figure 8. Priming**  
08618 Fuel System

7. Rotate twist grip throttle to "Start" position. (Figure 9) If remote controls are used, raise neutral warmup lever (on side of remote control housing) to vertical position. Lower the lever after starting.
8. Pull out the choke knob to place choke in "On" position (on Merc 45, set choke in closed position as indicated by arrow on decal).

**IMPORTANT:** Avoid use of choke during normal operation or if motor is warm.

9. With shift lever in neutral, pull starter handle to prime motor.

**IMPORTANT:** Starter is automatic rewind type. Proper operating technique will add many hours of life to starter cable and to starter internal mechanism. Grasp handle firmly and pull outward slowly until engagement of ratchet mechanism can be felt. Then continue outward pull with a full, vigorous stroke. Do not release handle at end of stroke and allow it to snap back. Retain grip on handle and allow cable to rewind slowly. Ratchet release mechanism is designed so that starter cannot engage during rewind.



**Figure 9. Twist Grip Throttle**

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10. Place choke in "Off" position and again pull starter handle to start motor. Should a cold motor falter after starting, quickly move choke "On" and "Off" several times until motor runs steady. (Figure 10)

## STOPPING PROCEDURE

If the motor is to remain installed on the boat, ready for immediate restart, stop by shifting into neutral and depressing "Stop" button, as shown in Figure 11 or on single lever remote control unit. Hold "Stop" button down until motor has stopped running completely.

Close air vent screw on fuel tank cap.

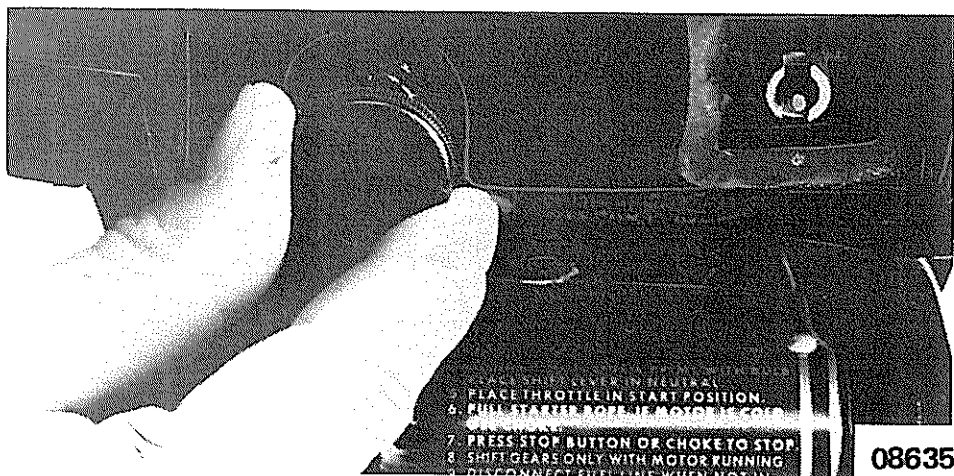


Figure 10. Operating Choke - Merc 200-110-75

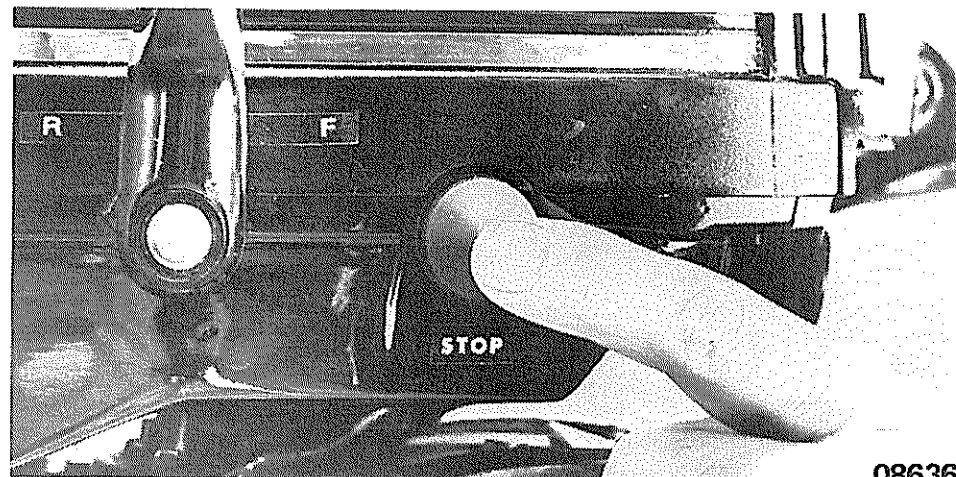


Figure 11. "Stop" Button

**WARNING:** If motor will not be operated for a period of time, if it is to be removed from the boat, or if it is to be tilted up, prevent spillage from carburetor throat and bowl and gum formations in carburetor during storage by stopping as follows:

1. Disconnect the fuel line.
2. Allow motor to run at idling speed until it stops of its own accord, indicating the carburetor has run dry.

## TILT-UP and SHALLOW WATER TROLL

**IMPORTANT:** Motor can be tilted-up manually only when placed in "Forward" gear. (Figure 12)



Place Merc 110-75-45 motors in shallow water "Troll" and release from this position as follows:

1. Retard twist grip throttle to "Shift Range" (Figure 9) and shift into "Forward" (Figure 12)
2. Push lever in direction of "Troll". (Figure 13)

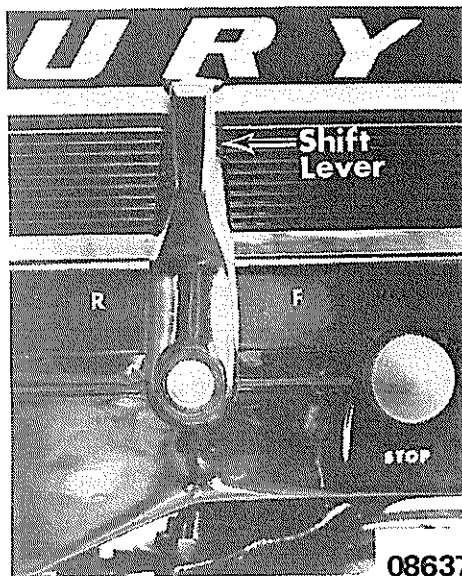


Figure 12. Shift Lever

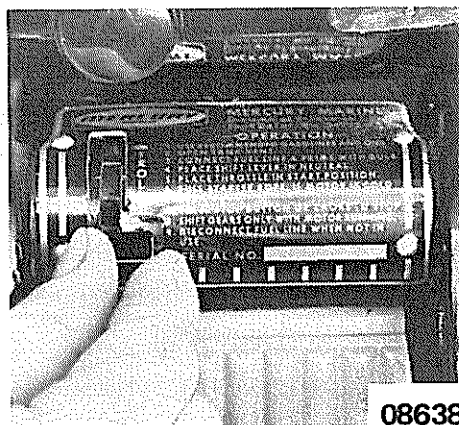


Figure 13. "Troll" Lever

3. Tilt motor up manually to engage in shallow water "Troll" position.
4. To release from shallow water "Troll", retard throttle and shift to "Forward". Push lever to the side and down, then tilt motor in manually by lifting up slowly to disengage from the "Troll" position.

## SHIFTING GEARS

Gear positions are FORWARD (toward front), NEUTRAL (vertical, as shown in Figure 12) and REVERSE (toward rear). If remote controls are used, approximately the first 45 degrees of control handle travel . . . forward and reverse . . . shifts the motor. The remainder of the control handle movement advances the throttle.

**CAUTION:** When shift lever is in "Neutral" or "Reverse" position, lower unit is locked in normal operating position. Shock load of impact could cause transom breakage, particularly when boat is backing up. Proceed cautiously when in reverse motion and be careful of underwater obstructions. Do not accelerate motor to high RPM.

## THROTTLE SETTINGS

Ring on twist grip throttle has three settings: "Fast", "Start" and "Shift Range". (Figure 9) The end of twist grip has a friction device ("Troll Set") to hold throttle at a desired boat speed. (Figure 9) To set desired speed, select the throttle setting by rotating the twist grip, then turn "Troll Set" clockwise. To release the drag, turn the "Troll Set" counter-clockwise. **FOR EMERGENCY THROTTLE OPERATION:** Even though the "Troll Set" has been set to maintain a constant speed, the twist grip still can be turned manually to over-ride the setting without releasing the "Troll Set".

**FOR EMERGENCY STOP:** Depress "Stop Button" on bottom cowl (Figure 11).

## DON'TS

1. Don't operate motor out-of-water or with flushing attachment, or water pump impeller will be damaged. Read "Flushing" instructions carefully, following.
2. Don't operate motor with tilt lock pin removed.
3. Don't try to shift gears unless twist grip throttle is in "Shift Range" position.
4. Don't ease gears into engagement. A firm, quick shift is recommended.
5. Don't force gears into engagement.
6. Don't tilt motor up with steering handle.

## OPERATION in SALT WATER

Prior to operation in salt water, remove cowl and spray entire powerhead with Quicksilver Rust and Corrosion Preventive.

## CAVITATION

Cavitation, which is evident when the motor speeds up but boat speed is reduced, is caused by one of the following:

1. Propeller operating too close to the water surface.
2. Transom too high.
3. Tilt angle adjusted so that lower unit is too high.

4. Boat riding stern-high because of improper loading. (Figure 2)
5. Propeller fouled by weeds, rope, etc.
6. Damaged or broken propeller blades. Broken blade usually is indicated by excessive vibration.
7. Propeller safety clutch slipping because of damage.

## WATER PUMP OPERATION

Normal water pump operation is indicated by a "tell-tale" stream of water issuing from a small hole at rear of bottom cowl. (Figure 1) If this stream is not evident during operation, check for a clogged hole with a piece of wire. If hole cannot be cleared with wire, stop motor and check water pump and cooling system for failure.

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

## REMOVING MOTOR from BOAT

When removing, keep motor in an upright position, resting on its skeg, until all water has drained from the drive shaft housing. If motor is placed on its side while water remains trapped in the drive shaft housing, some water may enter the cylinders through the exhaust ports and cause internal damage. Be sure that all water drain holes in gear housing are open, so that water will drain completely.

# ADJUSTMENTS and MAINTENANCE

## REMOVING COWLING

**MERC 200:** Press button above front cover plate (under starter handle) and remove plate. This exposes the two fastening clamps which secure the cowl (wrap-around) band. Release the two clamps and remove band.

**MERC 110-75:** Remove top cowl by pulling cowl release lever on bottom cowl and lifting cowl off (up and forward). (Figure 14) In emergency, cowl can be removed by pushing against the cowl release lever with a  $5/32$ " (4mm) maximum diameter rod through hole in right rear of bottom cowl, then lifting cowl off.

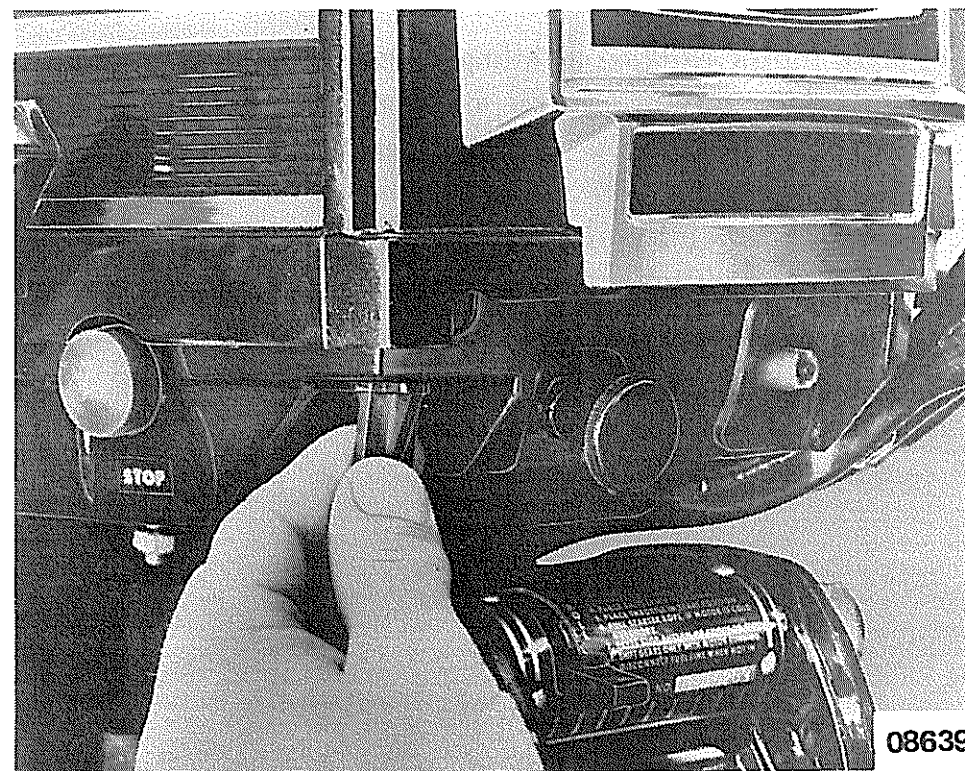
**MERC 45:** Pull the two latch pin levers outward from side of bottom cowl (Figure 15) and lift top cowl off (up and forward).

Avoid operation of motor with cowling removed.

## CARBURETOR ADJUSTMENT

Idle cannot be adjusted effectively while in "Neutral", or motor will sputter and stop when shifted to "Forward" because of "no load" condition while adjusting.

Each carburetor is provided with one adjustment (idle mixture screw, Figure 16) which turns clockwise for leaner mixture, counterclockwise for richer mixture. High speed has a fixed



**Figure 14. Removing Cowl - Merc 110-75**

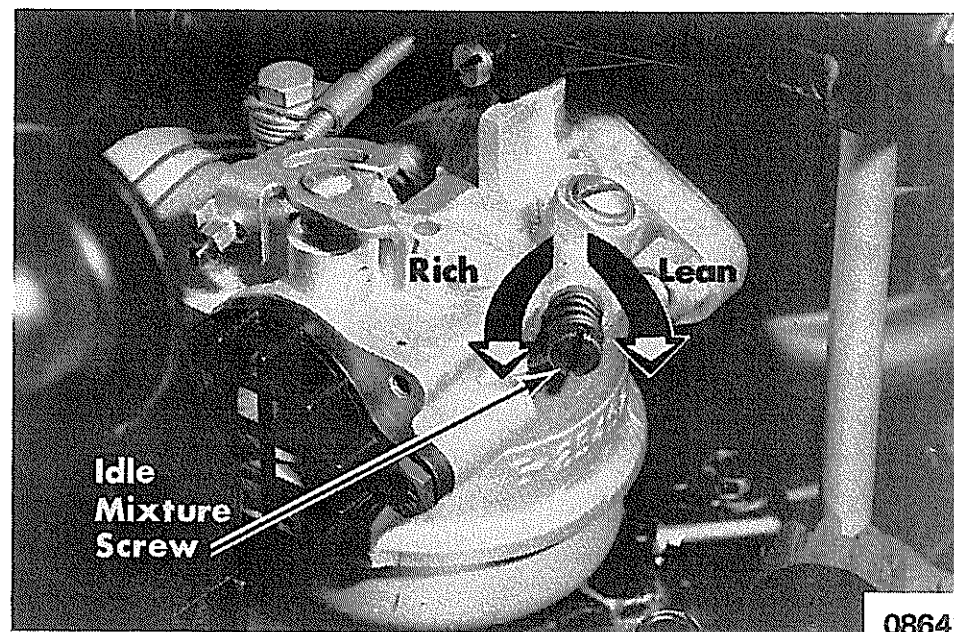
jet. If motor cannot be started, turn idle mixture screw inward (clockwise) until it seats lightly, then back out  $1\frac{1}{4}$ -turns. (Turning tight will damage needle and seat.) This approximate setting will permit starting. As soon as motor starts, allow for warmup (run for several minutes), throttle back to idle for

about one minute to elbow RPM to stabilize, then make final adjustment as follows:

1. With motor running at idling speed while in forward gear, turn idle mixture screw counterclockwise until motor starts to "load up" or fire unevenly from over-rich mixture. (Figure 16)
2. Slowly turn idle mixture screw back until cylinders fire evenly and motor picks up speed.



Figure 15. Removing Cowl - Merc 45



08641

Figure 16. Carburetor Adjustment

3. Continue turning clockwise until too lean a mixture is obtained, and motor slows down and misfires.
4. Set idle mixture screw halfway between rich and lean.
5. Do not adjust leaner than necessary to attain reasonably smooth idling. When in doubt, set mixture slightly rich rather than too lean.

## SERVICING FUEL TANK FILTER

1. Detach fuel line from fuel tank.
2. Remove fuel pickup tube. (Figure 17)
3. Clean filter by rinsing in clean benzol (benzine).



Figure 17. 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 Mercury Dealer.

## LOWER DRIVE UNIT LUBRICATION

Periodically (every 25 hours) lubricate lower drive unit with Super-Duty Quicksilver Outboard Gear Lubricant as follows:

**IMPORTANT: DO NOT** use automotive grease in the lower drive unit. Use only Super-Duty Quicksilver Gear Lubricant.

1. Remove lubricant filler plug and washer from gear housing. (Figure 18)
2. Insert lubricant tube into filler hole, then remove air vent screw and washer.

**IMPORTANT:** Never apply lubricant to lower unit without first removing air vent screw, or gear housing cannot be completely filled.

3. Fill gear housing with lubricant until excess starts to flow out of air vent screw hole.
4. Replace air vent screw and washer.
5. Remove lubricant tube from filler hole and install filler plug and washer.

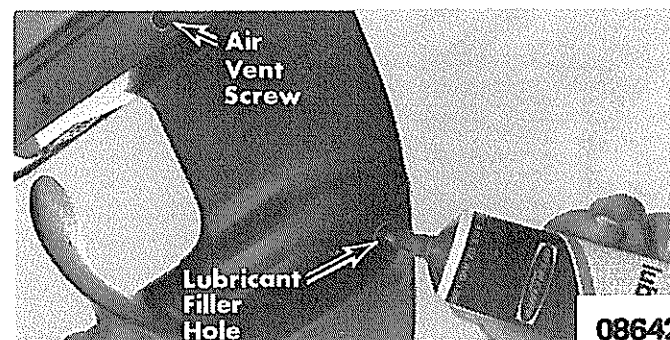


Figure 18. Lower Unit Lubrication



## LUBRICATION CHART

Location	Fig. No.	Lubricant	Frequency
Gear Housing	18	Super-Duty	Every 25 Hrs. of Operation or at Least Once a Year
Throttle-Shift Linkage	19	Anti-Corrosion Oil	
Stator Plate Clamps	--		
Swivel Pin	1	Multipurpose	100 Hrs. Operation

## SWIVEL PIN LUBRICATION

1. Remove air vent screw (Figure 18) and plastic grease fitting cap on clamp/swivel bracket. (Figure 1)
2. Pump Multipurpose Lubricant into fitting until lube "oozes" from vent hole.
3. Replace vent screw and grease fitting cap.

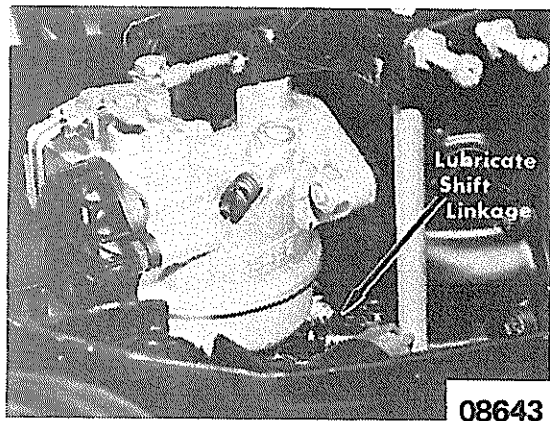


Figure 19. Throttle-Shift Linkage

## SERVICING SPARK PLUGS

**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.**

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

1. Remove cowls, as described previously.
2. Disconnect spark plug leads.
3. Remove spark plugs, clean and inspect. If electrode is burned away 1/32" (.8mm) below plug surface, replace with new spark plug (listed in "Specifications").
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 1/4-turn with a wrench generally will be sufficient to tighten. Do not over-tighten, 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.



# SPECIAL CARE REQUIRED

## PERIODIC INSPECTION

Conduct a periodic, systematic inspection to uncover and correct a failure before it can cause inconvenience or mechanical damage. Inspection interval is based on average operating conditions in utility service. Under severe conditions, the inspection interval should be shortened. Inspection includes:

1. Clean entire unit thoroughly, including all accessible powerhead parts.
2. Check entire unit for loose, damaged or missing parts. Tighten or replace as required.
3. Lubricate drive unit and other points, as instructed previously. (Figure 18)
4. Service spark plugs as explained previously. Inspect spark plug leads and electrical leads for damage or deterioration.
5. Inspect fuel lines for damage or deterioration and service fuel filters as indicated, preceding. (Figure 17)
6. Remove propeller and inspect. Trim nicks and burrs with a file, being careful not to remove more metal than absolutely necessary. Inspect for cracks, damage or bent condition. If condition is doubtful, refer to authorized Mercury Service facilities for inspection. Before reinstalling propeller, lubricate propeller shaft with Perfect Seal or a waterproof-type lubricant. (Figure 5)

7. Inspect the finish for damage or corrosion. Thoroughly clean damaged or corroded areas and apply matching paint (Quicksilver Spray Paints - see your local Mercury Dealer).
8. Check remote controls, if so equipped. Be sure that all connections and fittings are in good condition, properly secured and correctly adjusted.

## PREPARATION for STORAGE

In preparing a motor for storage, protect it from physical damage and from rust, corrosion and dirt. If sealed in a container, provide an air hole to prevent moisture accumulation which could cause external and internal rust and corrosion.

1. Lubricate lower drive unit and control linkage, as described previously. (Figures 18-19)
2. Remove spark plugs.
3. Apply Quicksilver Storage Seal into carburetors and spark plug holes (Figure 16), allowing time for some of the oil to drain into the crankcase.
4. Install spark plugs and operate manual starter vigorously to distribute oil around inside of crankcase and cylinders.
5. Connect spark plug cables. Be sure that each cable is connected to its respective spark plug.

6. Clean the motor thoroughly, including all accessible powerhead parts, and spray with Corrosion and Rust Preventive.
7. Install cowling and apply a thin film of clean, fresh engine oil to all painted surfaces.
8. Remove propeller, apply Perfect Seal or a waterproof-type lubricant to propeller shaft and re-install propeller. (Figure 5)

**IMPORTANT:** When storing outboard for the winter, be sure that all water drain holes in gear housing are open and free and that flushing plug is removed so that all water will drain out. Trapped water may freeze and expand, thus cracking gear housing and/or water pump housing. Check and refill lower unit with Super-Duty Quicksilver Gear Lubricant before storage to protect against possible water leakage into gear housing which is caused by loose air vent plug or loose grease filler plug. Inspect gaskets under air vent and flush plugs, replacing any damaged gaskets, before reinstalling plugs.

### **ATTENTION REQUIRED following OPERATION in SALT WATER or SILT**

Even though the interior surfaces of this outboard motor are treated to resist corrosion, there still is a possibility of a mechanical buildup of salt and silt deposits which no form of protective coating can prevent and which can be eliminated only by occasional flushing with fresh water.

1. When outboard is left on boat when moored, those models equipped with anodic trim tabs or plates should be left in a normal operating position. If partially tilted out-of-water, trim tab or anodic plate cannot act as a galvanic corrosion inhibitor. Merc 110-75-45 models should be fully tilted out-of-water or removed from boat.
2. Lubricate clamp screws with Anti-Corrosion Grease to ensure smooth operation. (Figure 1)
3. Lubricate propeller shaft splines occasionally with Perfect Seal or a waterproof-type lubricant, thus enabling propeller to be removed easily. (Figure 5)
4. Spray powerhead with a coat of Corrosion and Rust Preventive. Also spray or wipe exterior of motor to prevent salt corrosion from dulling the finish.
5. Flushing motor.

**WARNING:** When flushing, be certain that area in vicinity of propeller is clear and that no person is standing nearby (to avoid possible injury). It is advisable to remove propeller as a precautionary measure.

- a. With motor in an upright position, flush cooling system by removing plug in gear housing marked "FLUSH" (Figure 20) and washer.
- b. Thread flushing device into hole and attach hose coupling with hose.

- c. Turn on water but DO NOT operate outboard while flushing. Water flow is strong enough to flush with water pressure provided from water tap. DO NOT use full water pressure.
- d. While and after flushing, keep motor in upright position, resting on skeg, until all water has drained from drive shaft housing to prevent water from entering the powerhead via drive shaft housing and exhaust ports.

**CAUTION:** If outboard must be operated while flushing, in order to prevent damage to water pump impeller, use a Flush Test Device which attaches directly over the intake holes in gear housing strut and provides cooling water at this point. (Figure 1) DO NOT operate outboard above idle speed while flushing with Flush Test Device, or RPM cannot be controlled. See your local Mercury Dealer for this device.

Follow the preceding simple preventive maintenance operations at regular intervals for longer motor life when used in salt water.

## ATTENTION REQUIRED following COMPLETE SUBMERSION

A submerged motor must be completely disassembled for cleaning and inspection by an authorized Mercury Service facility and should be accomplished as soon as possible.



Figure 20. "FLUSH" Plug - Merc 45

If Mercury Service is not immediately available, try to retard rust and corrosion temporarily as follows:

1. Wash entire motor with fresh, clean water to remove salt, mud, silt, weeds, etc.
2. Get as much water as possible out of powerhead. Most of the water can be eliminated by removing spark plugs and operating manual starter with spark plug holes facing down.

If motor does not turn over freely when manual starter is operated, do not force. This may be an indication of internal damage.

3. Pour Quicksilver Engine Cleaner or Quicksilver Motor Oil into carburetor (Figure 16) and spark plug holes, allowing time for some of the oil to drain into the crankcase.
4. Rotate motor with manual starter.
5. Reinstall spark plugs.
6. Take motor to authorized Mercury Service.

# TROUBLE CHART

		A	B	C	D	E	F	G	H	POSSIBLE CAUSE	Page Reference
<b>A</b>	Does Not Start	•		•						Fuel Tank Empty or Vent Closed	8-9
		•								Motor Is Cold	11-12
<b>B</b>	Runs Irregularly or Misses	•		•						Fuel Line Not Connected	10
		•	•	•	•		•	•	•	Fuel Line Pinched or Kinked	10
			•		•		•	•		Fuel Filter in Need of Cleaning	16-17
		•	•	•	•		•	•	•	Air Leak in Vacuum Fuel System	10
<b>C</b>	Starts Momentarily and Cuts Out	•			•					Low Speed Needle Valves Mal-Adjusted	15
					•		•	•	•	Wrong Oil in Fuel Mixture	8
			•		•		•	•	•	Wrong Gasoline in Fuel Mixture	8
<b>D</b>	Does Not Idle Properly				•		•	•	•	Not Enough Oil in Fuel Mixture	9
			•		•		•	•	•	Too Much Oil in Fuel Mixture	9
		•								Motor Flooded	10-11
<b>E</b>	Motor Speed Faster Than Normal	•	•		•		•	•	•	Spark Plugs Fouled or Defective	18
			•		•		•	•	•	Wrong Type Spark Plugs	3
		•								No Spark	18
<b>F</b>	Motor Speed Slower Than Normal	•	•	•	•		•	•	•	Weak Spark or Intermittent Spark	18
		•	•		•		•	•		Spark Plug Leads Interchanged	18
							•	•	•	Water Pump Failure	14
							•	•	•	Cooling System Clogged	14
<b>G</b>	Does Not Develop Normal Boat Speed					•		•		Cavitation	14
						•		•		Propeller Damaged	7
						•		•		Tilt Angle Not Correctly Adjusted	5
						•	•	•		Boat Improperly Loaded	5
<b>H</b>	Motor Overheats						•	•		Transom Too Low	5
						•		•		Transom Too High	5
		•	•	•	•		•	•	•	Magneto Contact Points Need Attention	3

200-110-75-45-751

## — WHAT to DO if THERE IS a QUESTION REGARDING WARRANTY —

Your satisfaction and goodwill are of primary concern to Mercury Outboard dealers and Mercury Marine. In the event that a warranty matter is not handled to your satisfaction, the following steps are suggested:

1. Discuss the problem with your Mercury dealership management. If not satisfied,
2. Contact the Mercury Branch or Distributor closest to you (listed below) or,
3. Contact Mercury Customer Service at —

### **Mercury Marine**

**Division of Brunswick Corp.**

**Fond du Lac, Wisconsin 54935 U.S.A.**

**Mercury Marine Ltd.**

**Mississauga, Ontario, Canada**

**Mercury Marine Pty. Ltd.**

**Dandenong, Victoria 3175 Australia**

**Mercury Marine S.A.**

**4822 Petit-Rechain Belgium**

## **MERCURY MARINE BRANCHES and DISTRIBUTORS**

*(In Alphabetical Order)*

### **EAST**

Mercury Marine  
19 Technology Drive  
Phone 617-832-5381  
Auburn, MA 01501

Mercury Marine  
18 Kennedy Blvd.  
Phone 201-249-4400  
E. Brunswick, NJ 08816

### **SOUTH**

Mercury Marine  
2732 Sand Lake Road  
Phone 305-851-5030  
Orlando, FL 32809

Mercury Marine  
6582 Peachtree Ind. Blvd.  
Phone 404-449-4680  
Norcross, GA 30071

Bryce E. Dressel Co.  
7000 Washington Ave.  
Phone 504-486-6542  
New Orleans, LA 70125

Mercury Marine  
4134 Statesville Ave.  
Phone 704-596-6670  
Charlotte, NC 28213

Bill Bell  
9300 Hines Boulevard  
Phone 214-357-6531  
Dallas, TX 75220

### **MIDWEST**

Mercury Marine  
1818 Research Drive  
Phone 219-483-8111  
Ft. Wayne, IN 46809

United Marine Company  
4800 Blue Parkway  
Phone 816-861-2000  
Kansas City, MO 64130

Mercury Marine  
1939 Pioneer Road  
Phone 414-921-8220  
Fond du Lac, WI 54935

### **WEST**

Mercury Marine  
One Jackson Street  
Phone 415-886-4500  
Hayward, CA 94544

Mercury Marine  
2313 S. Susan Street  
Phone 714-549-2223  
Santa Ana, CA 92704

Mercury Marine  
8225 N. Valley Highway  
Phone 303-427-5300  
Denver, CO 80221

Pacific Marine Schwabacher  
P.O. Box 3084  
Phone 206-682-4848  
Seattle, WA 98114

### **HAWAII**

Child's Marine, Ltd.  
404 Piikoi Street  
Phone 808-538-7385  
Honolulu, Hawaii 96813

### **AUSTRALIA**

Mercury Marine Pty. Ltd.  
P.O. Box 80  
Dandenong, Victoria 3175

### **CANADA**

McLennan/McFeely/Prior Ltd.  
3525 Cornett Street  
Phone 604-433-2481  
Vancouver, B.C.

H. C. Paul Ltd.  
945 King Edward Street  
Phone 204-786-6951  
Winnipeg, Manitoba

Mercury Marine Ltd.  
1156 Dundas Highway East  
Phone 416-270-4481  
Mississauga, Ontario

Buccaneer Industries Ltd.  
520 Lafleur Street  
Phone 514-562-8551  
Lachute, Quebec



## SAFE BOATING SUGGESTIONS

You must, necessarily, observe a few minor inconveniences in order to SAFELY enjoy the waterways. It is advisable, therefore, to check with authorities in regard to local and other governmental boating REGULATIONS and RESTRICTIONS. In addition, here are suggestions of SAFETY EQUIPMENT to carry when boating:

- *Approved life jackets for each person on board*
- *Approved fire extinguisher(s); paddle or oar*
- *Signal devices: flashlight, rockets or flares, flag and whistle or horn*
- *Spare propeller; spare fuel tank (portable, under 7 gals.)*
- *Tools for necessary minor repairs; first aid kit and book*
- *Anchor and extra anchor line; waterproof storage containers*
- *Manual bilge pump and extra drain plugs; compass and map of area*
- *Spare operating equipment: batteries, bulbs, fuses, etc*

## WATER WISDOM

- *DO NOT overload! Know your boat's operating and loading limitations.*
- *Check safety equipment on board.*
- *Know your boating area and avoid hazardous locations.*
- *Know signs of weather change and avoid foul weather and rough-sea boating.*
- *Tell someone where you are going and when you expect to return.*
- *Know boating's "Rules of the Road" (signals and navigation).*
- *Be on the alert! Watch the other guy, the water and your wake.*
- *Check with authorities in regard to boating REGULATIONS and RESTRICTIONS.*



# **YOUR *MERCURY* OUTBOARD WARRANTY**

Things you should know about your MERCURY OUTBOARD warranty:

Mercury quality, and the generous terms of all Mercury product warranties, are among the superior features each Mercury owner enjoys. You should carefully read the "Warranty Agreement" on the back cover of this manual and note how replacement parts and labor will be handled.

To further assist you in total interpretation of warranty terms, the following are **NOT COVERED BY WARRANTY**:

1. Minor adjustments and tuneups, including checking, cleaning, replacing or adjusting spark plugs, breaker points, condensers, carburetor settings, filters, drive belts and controls or checking lubrication made in connection with normal services
2. Malfunctions resulting from misuse, negligence, alteration, accident or lack of required maintenance services
3. Additional service work requested by you other than necessary to satisfy the warranty obligation
4. Claims for replacing complete assemblies, unless the assembly cannot be placed in first class mechanical condition by the replacement of one or more parts
5. Transportation charges and/or travel time to and from servicing points, haul-out and lift costs, towing or rental charges of any type
6. Costs of delivery to any franchised Mercury dealer for service
7. Removal and/or replacement of boat structures or material (because of boat design) while removing and/or installing the product
8. Loss of time, inconvenience, loss of use of the product or other consequential damages



We cannot over-emphasize the importance of proper maintenance, care and operating habits. The little time which they require will help you enjoy the reliability and economy that are Mercury traditions. All the information you need is on the preceding pages.

## **MERCURY MARINE**

DIVISION OF BRUNSWICK CORPORATION  
FOND DU LAC, WISCONSIN 54935 U.S.A.

## **MERCURY MARINE PTY. LTD.**

DANDENONG, VICTORIA 3175 AUSTRALIA

## **MERCURY MARINE LTD.**

MISSISSAUGA, ONTARIO, CANADA

## **MERCURY MARINE S.A.**

PETIT-RECHAIN, BELGIUM

# WARRANTY

1. We warrant each new Mercury Motor and accessories thereto (hereinafter referred to as "Product"), manufactured by us and still owned by the original retail purchaser, to be free from defects in material and workmanship.
2. This warranty shall become effective only upon our receipt of a completed Product Registration Card, which shall identify the Product so registered by serial number. The Warranty shall remain in effect for a period one (1) year from date of purchase by the original non-commercial purchaser. In case of commercial use, said Warranty shall be for a period of six (6) months from date of first use but in no event for a longer period than one (1) year from date of the purchase by commercial user.
3. This warranty shall not apply to any Product which has been damaged due to: (1) Neglect, accident, abnormal operation, or by repairs or alterations performed elsewhere than at one of our authorized repair facilities; or (2) Operation with accessories or parts, such as, but not limited to, throttles, shift controls, cables and propellers, which have not been recommended by Mercury Marine for use on the Product and certified in writing by its Engineering Department as having design characteristics suitable for use with or on the Product; or (3) Operation with multi-grade or other highly detergent automobile oils or other oil which contains metallic detergents or oils which are not suitable for use with the Product; or (4) Improper fuels; or (5) Participating in or preparing for racing or other competitive activity or operating with a racing type lower unit.
4. Claim shall be made under this Warranty by delivering the Product for inspection to a franchised Mercury dealer or by giving notice in writing to the area Mercury distributor, branch manager, or to the Company. The Owner's Registration MerCard is the purchaser's only valid registration identification and must be presented to the franchised servicing dealer should warranty service be required. Warranty claims will not be accepted without presentation of the MerCard. Any Product or parts sent to us for inspection or repair must be shipped with transportation charges prepaid.
5. 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 of material or workmanship as covered by this warranty. Except as herein expressly provided, we make no other warranty, express or implied with respect to any Product manufactured by us, and we reserve the right to change or improve the design of any Products without assuming any obligation to modify any Product previously manufactured.
6. This warranty is in lieu of all other warranties expressed or implied and may not be modified or extended by anyone except pursuant to a written authorization signed by an officer of this Company. There are no warranties which extend beyond the description on the face hereof.

## MERCURY MARINE

DIVISION OF BRUNSWICK CORPORATION  
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