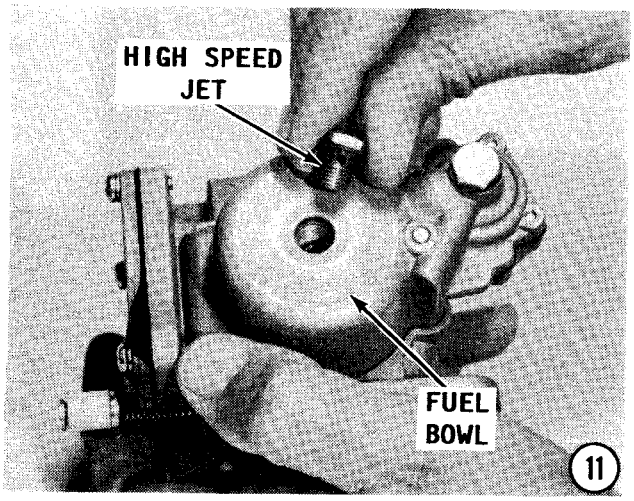


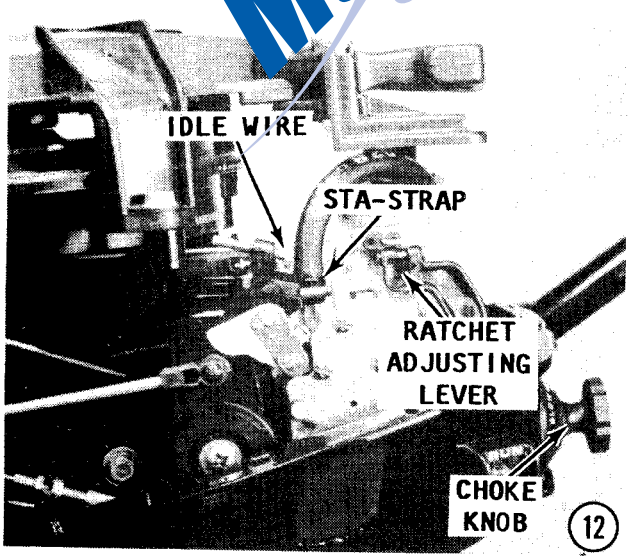
11- Slide a **NEW** gasket onto the high speed jet. Install the high speed jet. This jet also secures the bowl and primer system to the carburetor body.

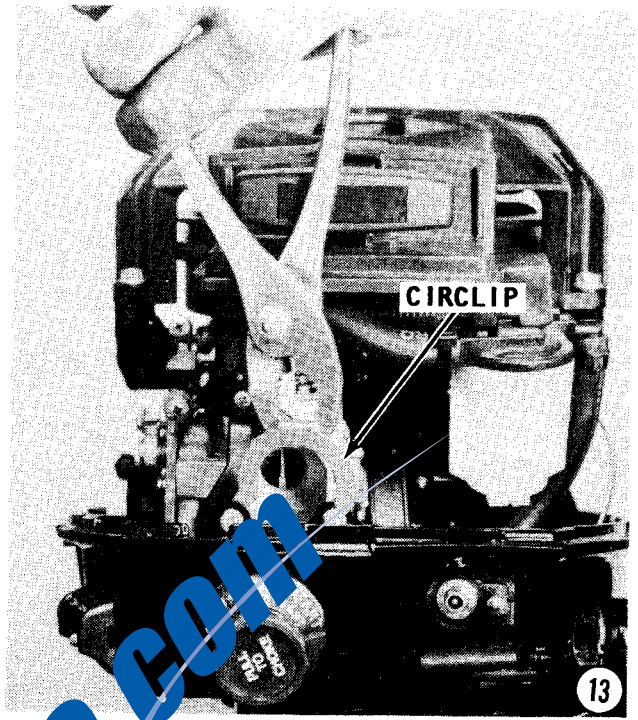
12- Position a **NEW** carburetor gasket onto the powerhead. Install the carburetor to the powerhead and secure it in place with the two nuts. Tighten the nuts to the torque value listed in the appendix. Connect the fuel hose and secure it with a **NEW** Sta-strap. Install the small primer bracket to the side of the carburetor with the two bolts. Snap the idle wire into place on the ratchet adjustment lever.

13- Position the choke knob in place through the opening in the lower cowling. Install the Circlip securing the choke knob.

Mount the outboard unit in a test tank or connect a flush attachment to the lower unit.

FIRST A WORD: Before fine carburetor adjustments can be properly made, the following conditions must exist:





a- The regular engine-propeller combination must be used.

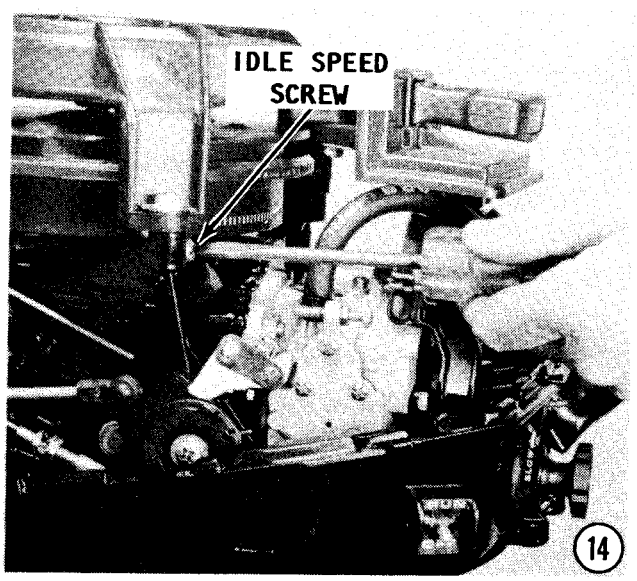
b- The power unit must be in forward gear.

c- The lower unit must be in the water.

d- The engine must be warmed to normal operating temperature.

Idle-Speed Adjustment

14- After the engine has been warmed to operating temperature, turn the idle speed adjusting screw on the stop bracket until the engine idles at approximately 700-800 rpm in forward gear in a test tank or 600-700 on a boat.



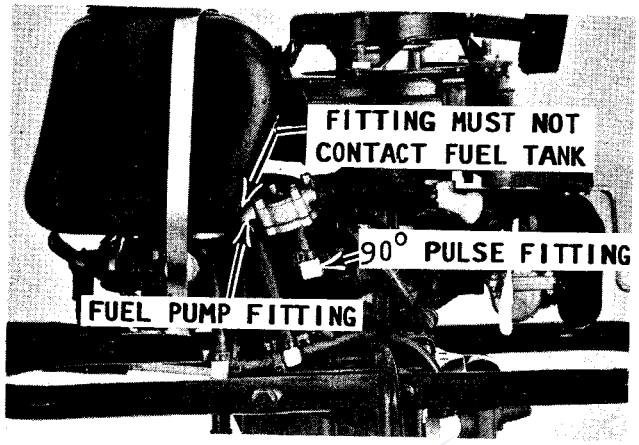
4-14 FUEL PUMP

FIRST, THESE WORDS

This section provides detailed instructions to service the fuel pump on powerheads equipped with a Carburetor **"A"** or **"C"** (as identified from the third to last column in the Tune-up Specifications in the Appendix). The fuel pump is usually installed on the transfer port/s.

The fuel pump on powerheads equipped with a Carburetor **"B"**, **"F"**, **"G"**, and **"H"** is an integral part of the carburetor. Therefore, do not search for a separate fuel pump on these powerheads

Powerheads equipped with Carburetor **"D"** and **"E"** may not have a fuel pump of any type. Fuel is provided to the carburetor by gravity flow from the fuel tank atop the powerhead. If the powerhead does have a fuel pump, it is a disposable Mikuni pump and cannot be serviced.

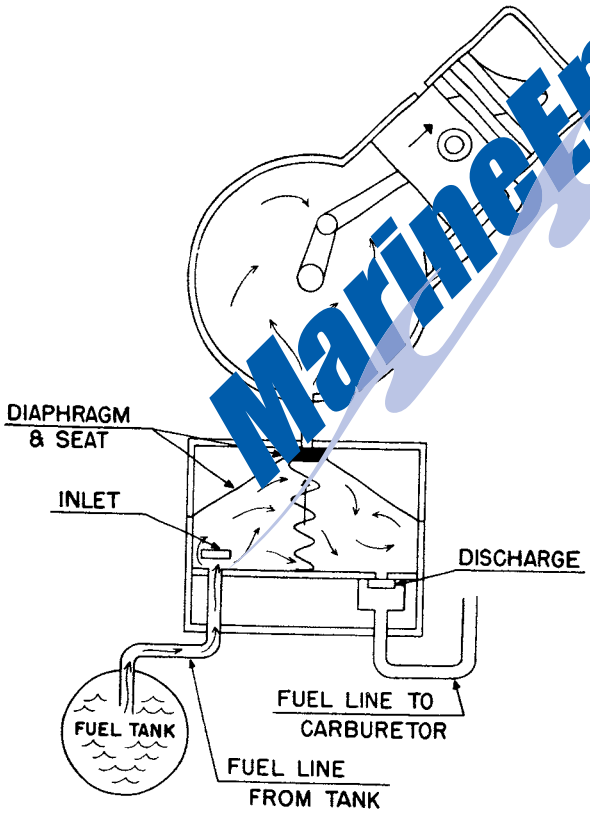


*Mikuni fuel pump installed on the Model 3.5 powerhead. The pump is disposable and **CANNOT** be serviced. Care **MUST** be taken to prevent the pump fitting from rubbing against the fuel tank. Adjust the 90° pulse fitting as required.*

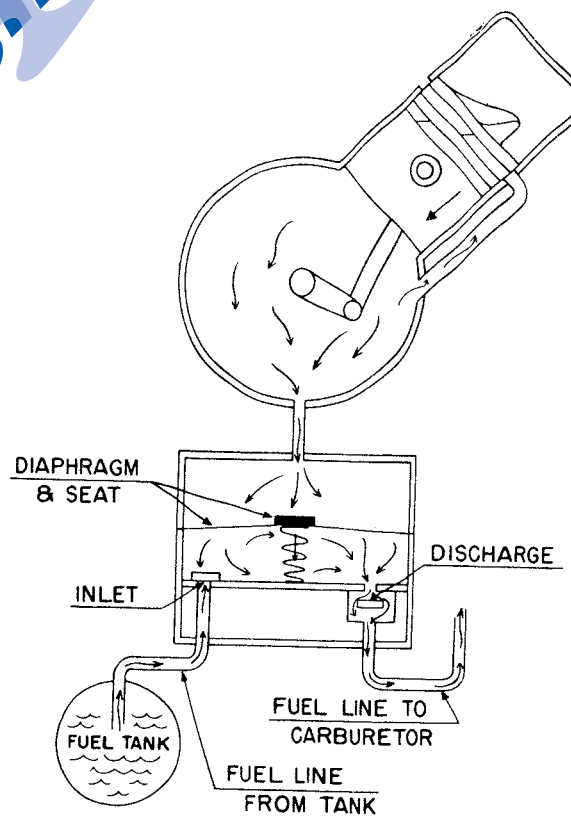
THEORY OF OPERATION

The next few paragraphs briefly describe operation of the fuel pump used on Mercury Outboard engines. This description is followed by detailed procedures for testing the pressure, testing the volume, removing, and installing the fuel pump.

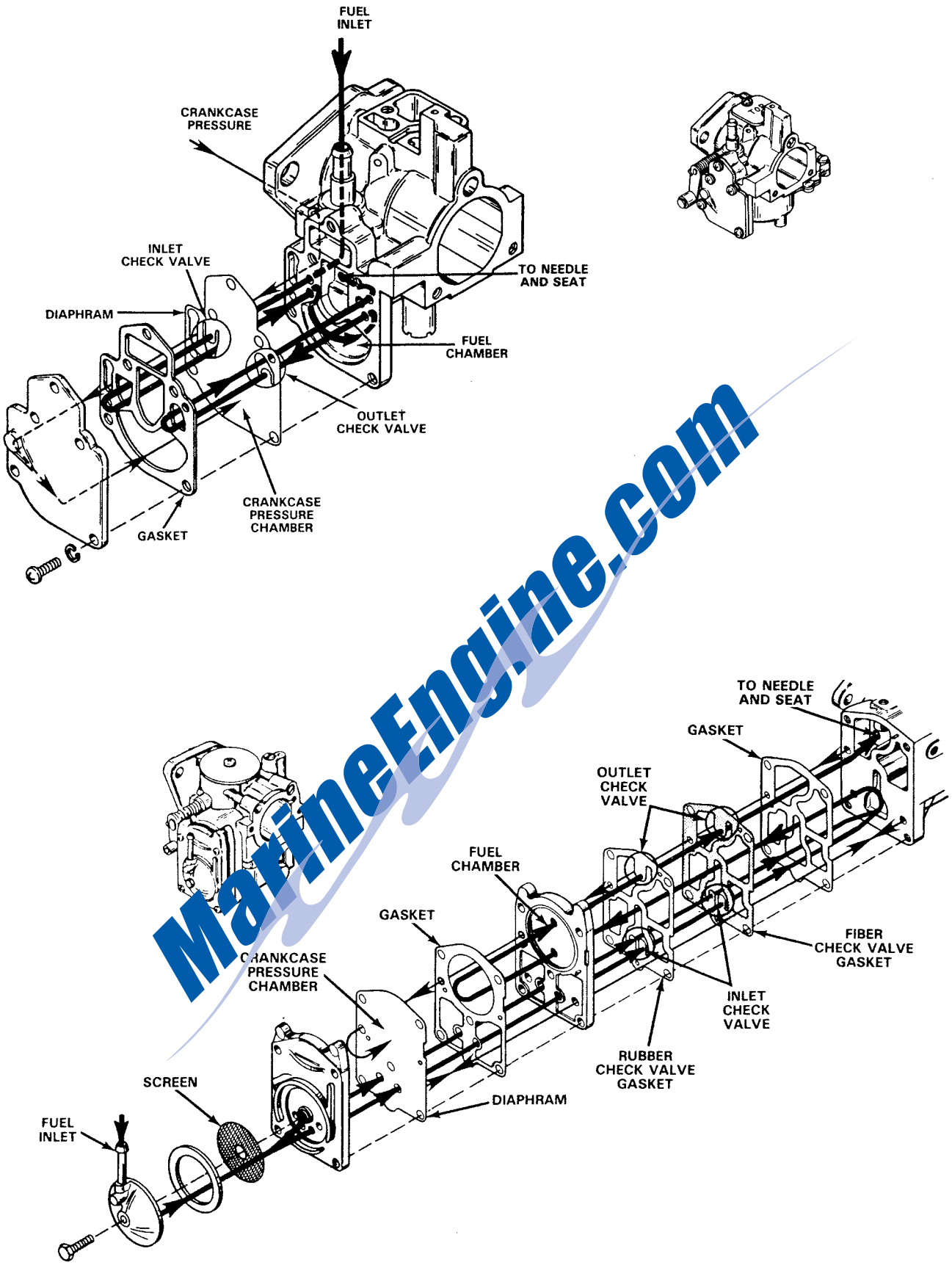
The fuel pump, installed on Mercury Outboard engines, is a diaphragm displacement type. The pump is attached to the crankcase bypass. Therefore, it is operated



Simplified drawing of the fuel pump with the powerhead piston on the upward stroke. Notice the position of the diaphragm; the inlet disc is open; and the discharge disc is closed. The springs to preload the discs are not shown for clarity.



Drawing similar to the one to the left, with the powerhead piston on the downward stroke. Notice the position of the diaphragm; inlet disc is closed; and the discharge disc is open. Again, the springs to preload the discs are not shown for clarity.



Layout of the various parts comprising the fuel pump on an integral fuel pump carburetor. The black arrows indicate fuel flow as pressure and vacuum from the crankcase move the diaphragm and check valves. The upper pump is used on carburetor identified in this manual as **"G"**. *The lower pump is part of carburetor* **"F"**. *Identification can be made instantly by the pump cover.*

Install the front cover by aligning the cover openings on both sides of the unit, and then pushing in on the cover until it snaps into place.

Oil may remain in the oil injection tank during storage without any harmful effects.

PREPARATION FOR USE

First, remove the front cover of the unit by simultaneously pushing in on the cutaway tabs located on both sides of the cover, and at the same time pulling the cover away from the unit. Check to be sure the fuel drain plug is tight. Replace the front cover by aligning the cover openings on both sides of the unit, and then pushing in on the cover until it snaps into place.

Next, fill the oil tank with 2-cycle outboard oil with a BIA rating of TC-W. Tighten the fill cap securely.

Remove any plugs in the fuel lines, and then connect the hoses to the fuel tank and the powerhead. Remember, the squeeze bulb **MUST** be in the hose between the oil injection unit and the fuel pump on the powerhead.

Connect the low oil warning wire harne[ss] to the battery. Connect the **RED** lea[d] to the positive battery terminal [and] **BLACK** lead to the negative batte[ry] nal.

Check to be sure the low oil warning system is functioning correctly. First, verify the tank is full of oil, and then the fill cap is tightened securely. Now, turn the oil injection unit upside down. This position will allow the float to activate the horn.

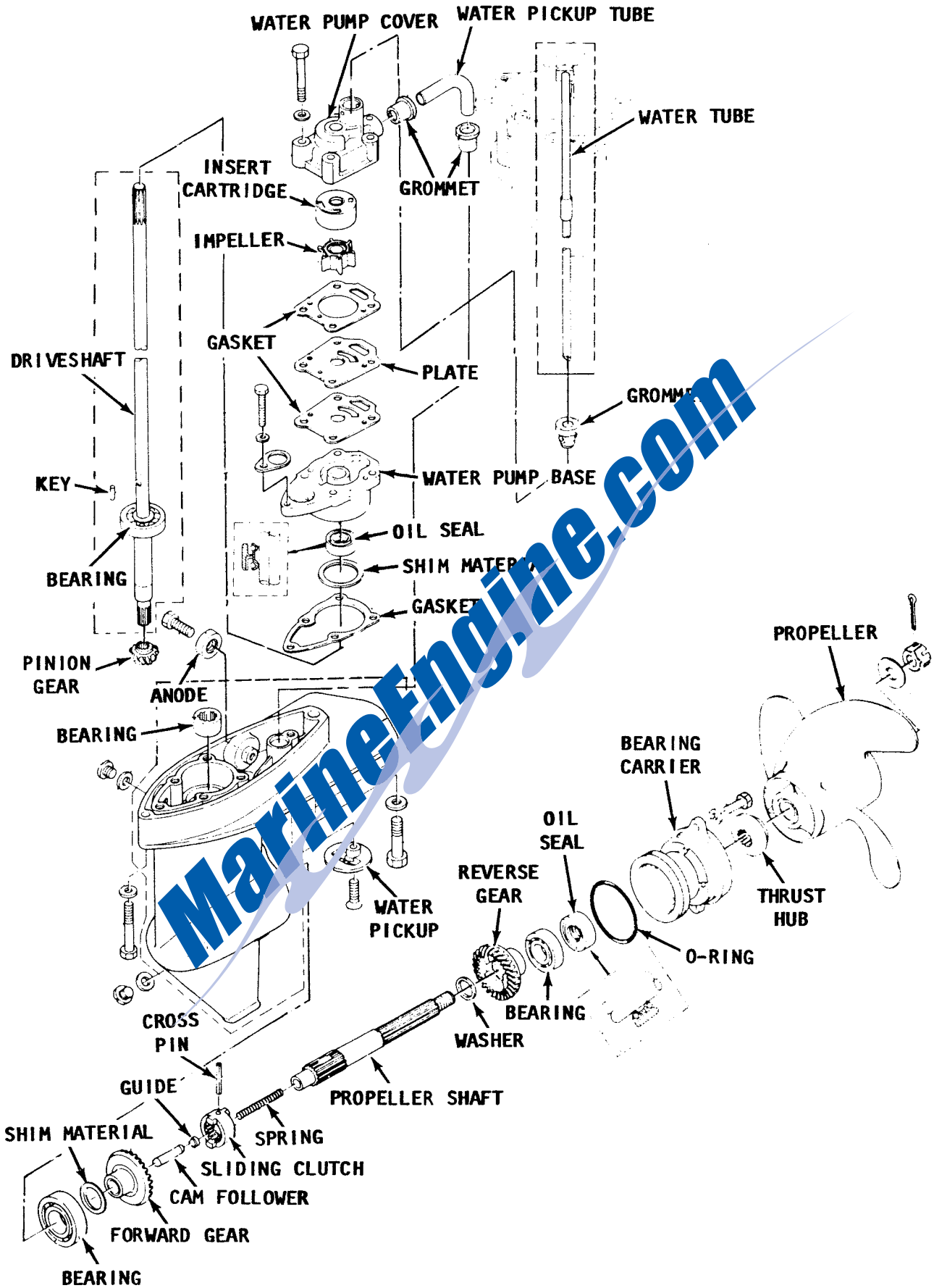
If the horn sounds, immediately turn the unit rightside up and position it in the mounting bracket. Secure it in place with the strap and Velcro material.

If the horn does not sound, check the 0.5 amp fuse in the fuse holder of the positive battery lead. Check both the battery connections and the charge condition of the battery.

GOOD WOR[DS]

The m[anufa]cturer recommends the fuel filter [be] placed at the start of each season [or] at least once a year. The manufa[cturer] also recommends oil be added to th[e] tank at the ratio of 50:1 for the [first] gallons of fuel used after the unit is [brought] out of storage. The oil in the fuel [tank] plus the 50:1 oil mixture in the oil [injection] unit will deliver a mixture of 25:1 [to] the powerhead. This ratio will **ENSURE** adequate lubrication of moving parts which have been drained of oil during the storage period.

Maximum enjoyment can only be obtained if the boat and power unit are properly maintained and adequate storage is provided during the off-season.



Exploded drawing of a "newer" lower unit (manufactured after mid 1987), with major parts identified.

tact surface on the propeller shaft for pitting, grooves, scoring, uneven wear, embedded metal particles, and discoloration caused from overheating.

Inspect the propeller shaft splines for wear and corrosion damage. Check the propeller shaft for straightness.

Inspect the shift cam for wear, corrosion, or other signs of damage.

Clean all parts with solvent, and then dry them with compressed air.

Inspect all bearing bores for loose fitting bearings.

Check the lower unit housing for impact damage.

Inspect the lower unit housing threads for cross-threading and corrosion damage.

Determine the condition of the labyrinth seal.

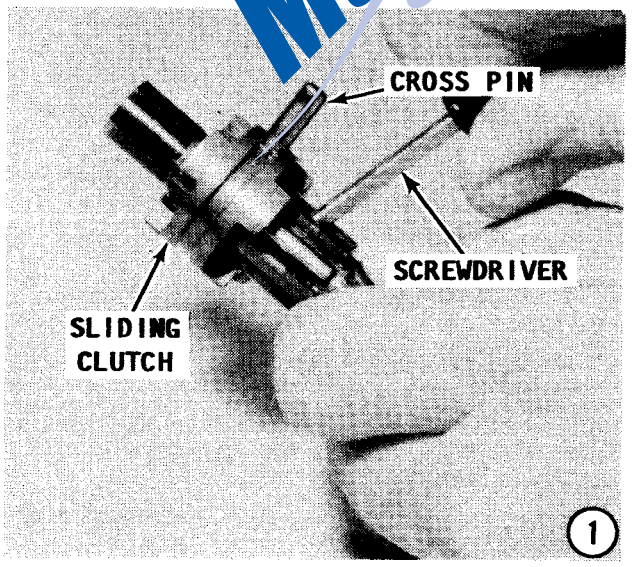
ASSEMBLING TYPE "C" UNIT

FIRST, THESE WORDS

As explained in the Description portion of this section, separate steps will be given for **"older"** and **"newer"** units. Models manufactured before mid 1987 are identified as **"older"** units. Units manufacturered since mid 1987 are identified as **"newer"** units.

Sliding Clutch Assembling

1- Slide the spring down into the propeller shaft. Insert a narrow screwdriver into the slot and compress the spring until approximately 1/2" (12mm) is visible between the top of the slot and the screwdriver.



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Hold the compressed spring, and at the same time, slide the sliding clutch over the splines of the propeller shaft with the hole in the clutch aligned with the hole in the propeller shaft. The clutch may be installed either way, preferably the side with the least amount of wear should face the forward gear.

Insert the cross pin into the sliding clutch and through the space held open by the screwdriver. Center the pin and then remove the screwdriver allowing the spring to pop back into place.

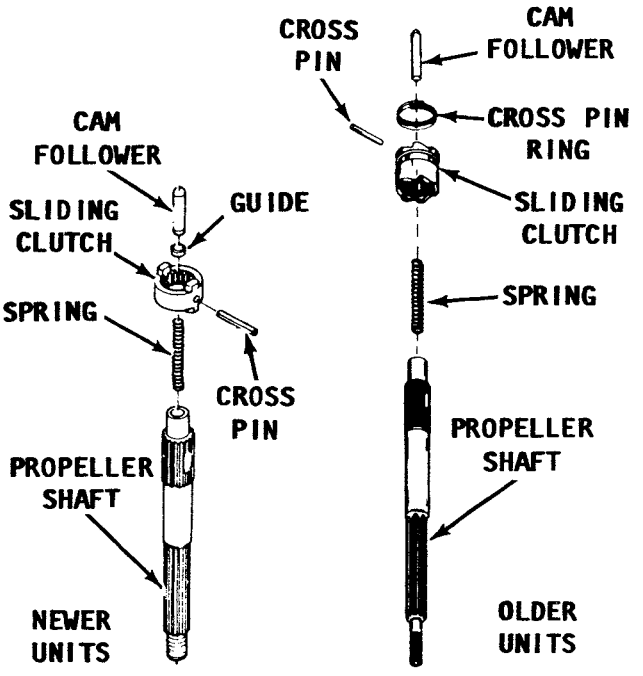
2- Older Units: Fit the cross pin ring into the groove around the sliding clutch, to retain the cross pin in place. Insert the flat end of the cam follower into the propeller shaft, with the rounded end protruding to permit the plate to slide along the cam of the shift rod.

Newer Units: Install the guide into the end of the propeller shaft, followed by the cam follower. As both ends of the cam follower are equally rounded, it may be installed either way.

Forward Gear and Bearing Installation

Older units: Install the bearing race using a suitable size mandrel and driver.

Newer units: Install the ball bearing assembly with the numbered side facing toward the installation tool P/N 91-8453M and driver P/N 91-8429M.



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