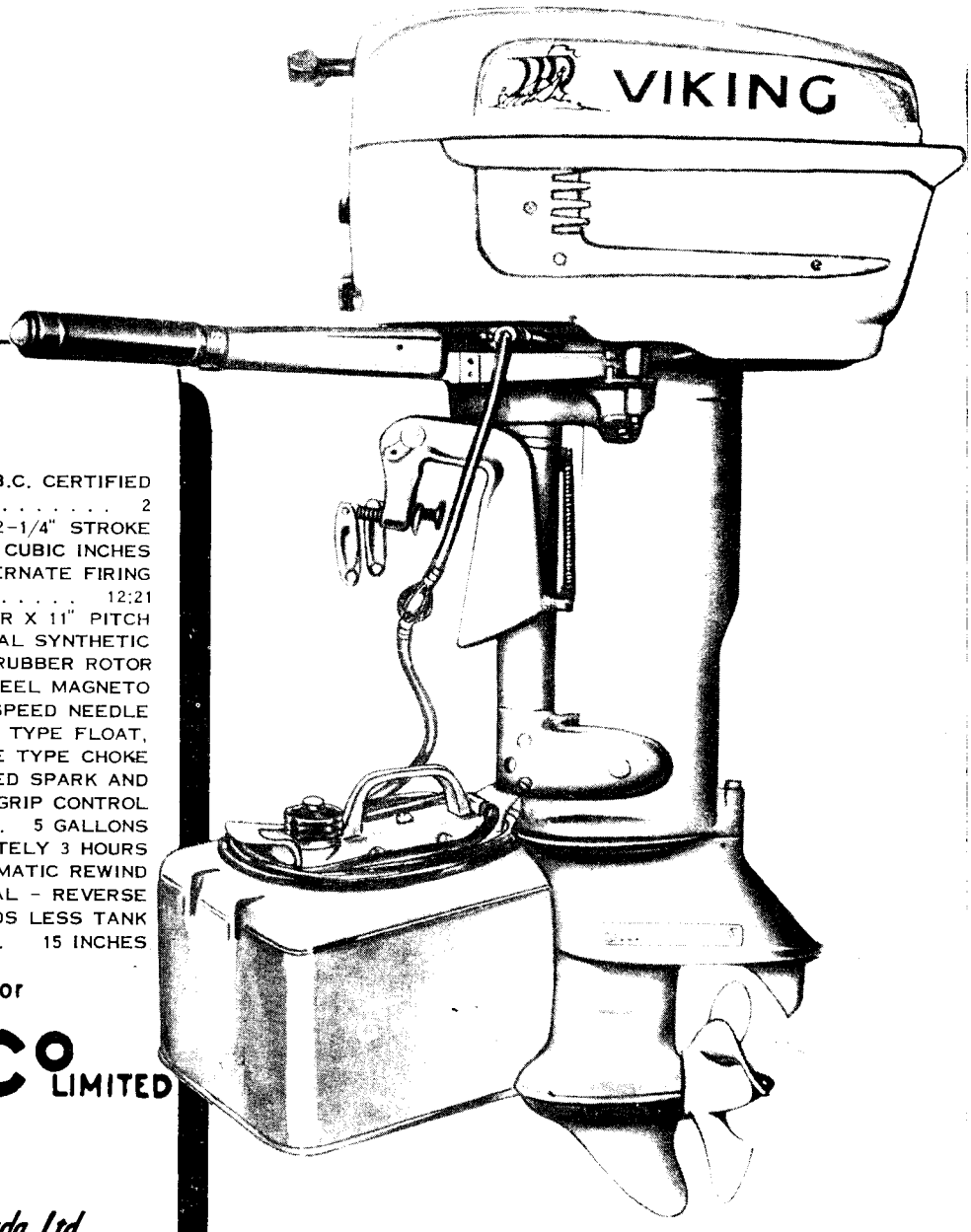
OWNER GUIDE

OPERATION • MAINTENANCE • PARTS LIST

EATON'S VIKING

12 H.P. DE LUXE OUTBOARD MOTOR

MODEL
12D13V



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SPECIFICATIONS

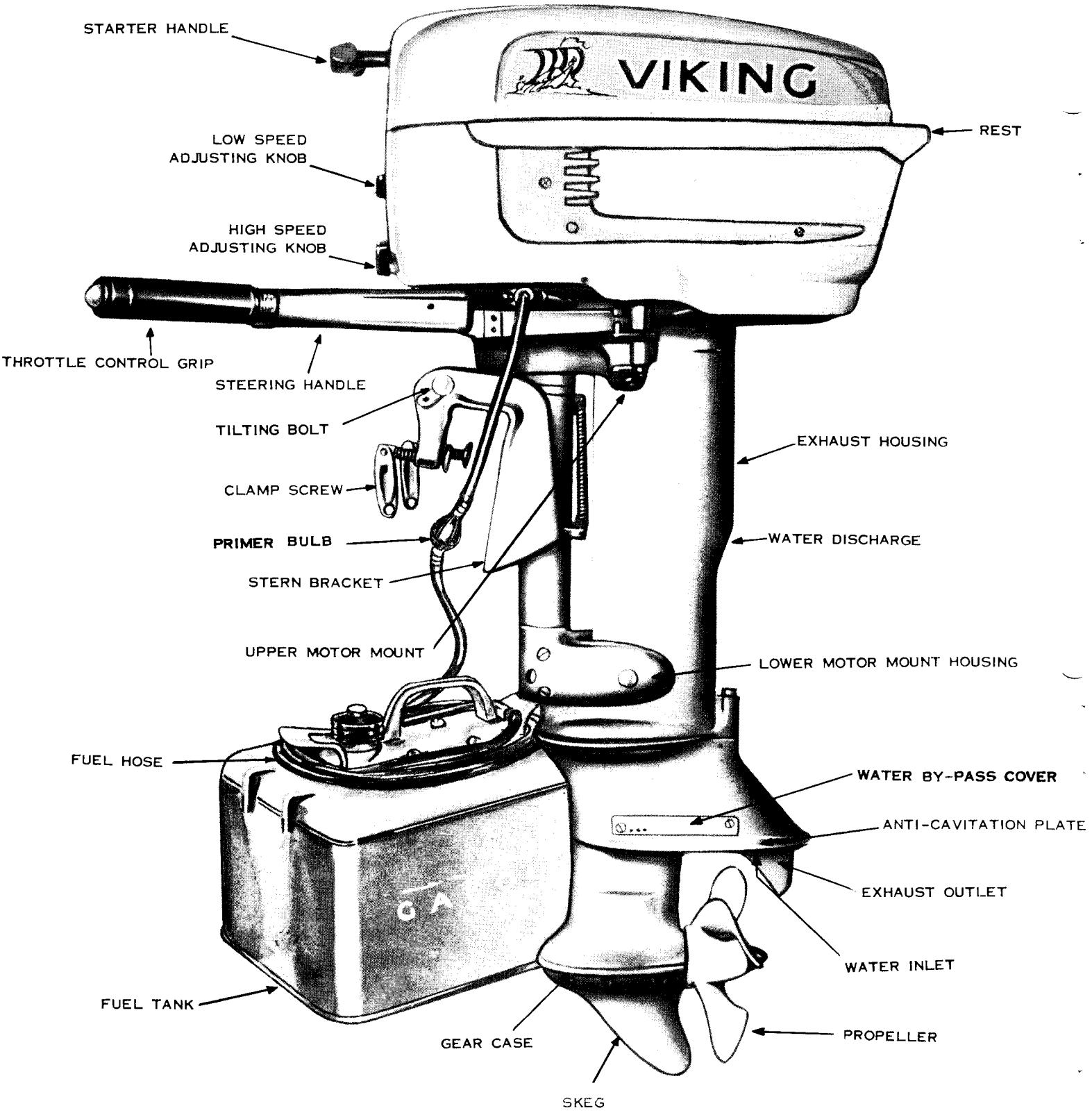
HORSEPOWER	12.0 AT 4000 RPM – O.B.C. CERTIFIED
NUMBER OF CYLINDERS	2
BORE AND STROKE	2-1/4" BORE X 2-1/4" STROKE
PISTON DISPLACEMENT	17.89 CUBIC INCHES
TYPE OF POWERHEAD	2 CYCLE 2 PORT ALTERNATE FIRING
GEAR RATIO	12:21
PROPELLER	3 BLADE 9" DIAMETER X 11" PITCH
COOLING	POSITIVE AND CENTRIFUGAL SYNTHETIC RUBBER ROTOR
IGNITION	BUILT-IN FLYWHEEL MAGNETO
CARBURETOR	FAST AND SLOW SPEED NEEDLE VALVES, CONCENTRIC TYPE FLOAT, AUTOMOTIVE TYPE CHOKE
SPEED CONTROL	SYNCHRONIZED SPARK AND THROTTLE, TWIST GRIP CONTROL
FUEL TANK CAPACITY	5 GALLONS
RUNNING TIME (FULL THROTTLE)	APPROXIMATELY 3 HOURS
STARTER	AUTOMATIC REWIND
GEARSHIFT CONTROL	FORWARD – NEUTRAL – REVERSE
WEIGHT	75 POUNDS LESS TANK
RECOMMENDED TRANSOM HEIGHT	15 INCHES

Manufactured expressly for

THE T. EATON Co LIMITED

by

Outboard Marine
Corporation of Canada Ltd.
PETERBOROUGH — CANADA



STARBOARD (RIGHT), PORT (LEFT) ARE DESIGNATED WHILE FACING BOW

FIGURE 1

NOTE

ALL BOATS EXEMPT FROM REGISTRY AND POWERED BY MOTORS OF 10 H. P. OR MORE MUST BE LICENSED. APPLICATION FORMS FOR BOAT LICENSING MAY BE OBTAINED FROM YOUR NEAREST COLLECTOR OF CUSTOMS OFFICE.

FOREWORD

When you first operate your motor, you will realize that here is outboarding at its best. Note the easy, quiet, powerful operation of your motor . . . . **EASY** because the operating controls, such as full gear shift (FORWARD, NEUTRAL, REVERSE) and twist grip throttle control, provide more maneuverability . . . . **QUIET** because the engine vibration is isolated from the boat hull by the new resilient mountings in the powerhead and lower unit - the powerhead is completely enclosed with the new bottom motor covers - the sound from air rushing into the carburetor is dampened effectively with the new air silencer . . . . **POWERFUL** because you have a full 12 horsepower engine at your command.

The fine materials and high standards of workmanship used in the manufacture of this motor assure you of durability and lasting performance.

The operating instructions in this manual are concise and easy to follow, even for the beginner. But if you have never operated an outboard motor before, it will be helpful to practice the step-by-step procedure a few times before putting the motor in actual operation.

Outboarding is great sport. Always remember, however, that you have friends on the water. Extend to them the courtesy of thoughtful, safe operation of your motor and boat and you will increase your own enjoyment.

INSTALLATION ON BOAT

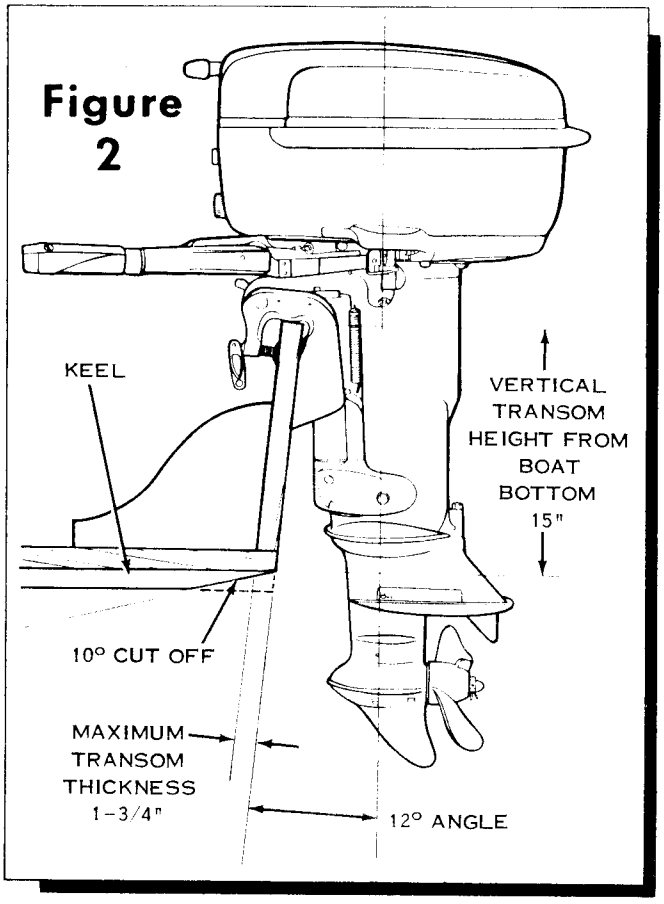


Figure 2

ATTACHING MOTOR TO BOAT

This motor is designed for use on a standard 15-inch transom. If transom is higher, it should be cut down to 15 inches so propeller will be at least 2 inches below bottom of boat. Best performance will be obtained by having the driveshaft vertical to boat travel and the propeller placed below bottom of the boat (see Figure 2). Performance can often be improved by cutting off the keel at a 10° angle as illustrated. This will prevent formation of spray and provide free running performance.

NOTE

A motor is also available with 5 inch longer lower unit, for use on boats with extra high transoms.

Place motor on stern of boat with stern bracket clamps inside the stern, centered on the transom or stern board. Tighten bracket clamp screws securely by hand.

CAUTION

When motor is running, occasionally check bracket clamp screws to be sure they are tight. We will not be responsible for any motor damaged or lost overboard due to loose clamp screws.

The use of a safety chain or rope attached to motor stern bracket safety chain link (item 1, Figure 7) and boat will guard against loss of motor overboard. Holes are provided in clamp screw handles through which a padlock may be applied to lock the motor on the boat.

OPERATION OF YOUR MOTOR

ANGLE ADJUSTMENT

A simple means is provided for adjusting the motor to a vertical position to make allowance for angle of the transom.

To accomplish this adjustment, tilt the motor slightly (tilt-up lock, item 6, Figure 7, must be in lower or "release" position), then lift up on angle adjustment lever (see item 3, Figure 7) and move it ahead or back in the slots in the stern bracket so that motor is in a vertical position when lower unit rests against the lever. On some boats it may be necessary to correct angle adjustment to maintain motor in a vertical position when changing load from one to more passengers. Always try to arrange load so boat runs on an even keel.

Transom (stern) angles may vary somewhat; however, range of adjustment is sufficient to accommodate angles found in most boats.

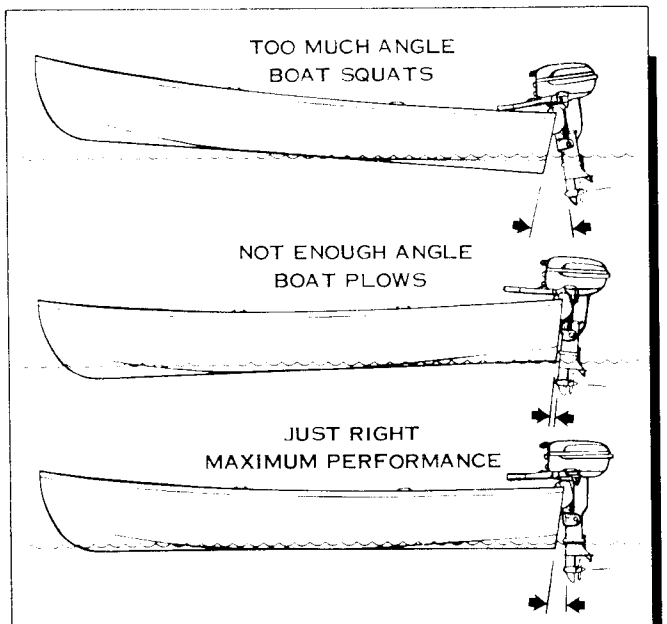


Figure 3

GEAR SHIFT

The motor is equipped with gear shift control to provide operation of the motor in Forward, Neutral, or Reverse by means of gear shift lever (Figure 5) located on starboard side of motor. Move the lever as far as possible toward front for "Forward" motion of boat -- toward rear as far as possible for "Reverse" motion of boat. The intermediate position is "Neutral" or out of gear.

When motor is not running the internal gear shift mechanism may be in such a position that gear shift lever cannot be moved from "Neutral" into "Forward" or "Reverse" --- DO NOT FORCE. This may be remedied by pulling on the starter cord with throttle control at STOP to turn gears slightly until the gear shift lever will move to desired position. Care should be taken to prevent bending or striking the lever.

TILT-UP LOCK

The manual tilt-up lock (item 6, Figure 7) has two positions, long slot for LOCK and short slot for RELEASE.

In RELEASE position, the motor can be tilted as desired for beaching and other purposes. In LOCK position, the motor is held in a semi-locked vertical position. The lock will maintain the motor in a vertical position while you are pulling the starter rope. In reverse gear, the lock will prevent the reverse thrust of the propeller from pulling the lower unit of the motor away from the boat. In forward gear, the lock will release upon sudden contact with underwater objects, permitting the lower unit to tilt up. When the lower unit has passed over the obstruction, the motor will return to a vertical position, locking automatically. The tilt-up lock also prevents the motor from tilting up when the boat is decelerating.

Before starting motor place tilt-up lock in-LOCK position and keep it there whenever motor is running.

LUBRICATION AND FUEL INSTRUCTIONS

Proper lubrication is an important factor in the performance and life of your outboard motor. The following instructions are therefore very important and should be followed carefully.

TYPE OF GASOLINE: Use a good grade of regular gasoline.

TYPE OF OIL. Use a high grade outboard oil, or, if that is not available, regular SAE 30 motor oil. Avoid use of low-priced third grade (ML) oils.

MIXTURE: Mix one quart of oil per full tank of gasoline, or mix 1/2 pint of oil per gallon of gasoline for smaller quantities.

PROCEDURE: Pour into the fuel tank approximately one-half the amount of gasoline required. All fuel should be poured through a fine mesh strainer to remove dirt and water which may be present. Add all the oil required at the ratio of 1/2 pint of oil to each gallon of gasoline. Shake the two together until they are thoroughly mixed. Add the balance of gasoline. Shake fuel tank briskly to insure mixing.

LUBRICATION OF GEAR CASE: The gear case has been filled at the factory with the correct lubricant. Check lubricant in gear case after first 5 hours of operation; then every 50 hours. For method of checking and refilling gear case, see page 5.

EQUIPMENT NECESSARY WHEN OUTBOARDING

Although the following articles may not always be needed, it is advisable to have them aboard when motoring.

1. Tools.
2. Starting Cord.

3. Rope or chain to tie motor to boat.

4. Extra spark plug.

5. Oars, and all other equipment required for safety afloat.

BREAK-IN PERIOD

Reasonable care in the operation of the motor during the first several hours of use will improve its performance and insure longer life. Follow the fuel and lubrication instructions carefully. After operating motor at part throttle for about one hour, it is permissible to run at full throttle for a few seconds followed by a few minutes of part throttle operation. Repeat frequently, gradually increasing the time of full throttle until another two hours of operation are completed. No special or extra oil is required for the break-in period.

STARTING INSTRUCTIONS

(See Figure 5 for reference.)
These instructions apply both with and without use of remote control. Complete remote control instructions come with remote control kits. Also see Figure 5 insert.

1. Attach fuel line connector from the fuel tank to motor. See Figure 4.

2. Open vent screw on fuel tank filler cap.

3. Squeeze bulb in fuel line several times. Note that the pressure required to squeeze the bulb increases as the fuel line and carburetor fill up. This is your signal to stop priming the motor. It is normally necessary to prime only after attaching the fuel line. Check valves in the line usually prevent the fuel from flowing back into the tank.

4. Move or turn throttle control to SLOW position, then move gear shift lever to NEUTRAL. NEVER START MOTOR IN GEAR.

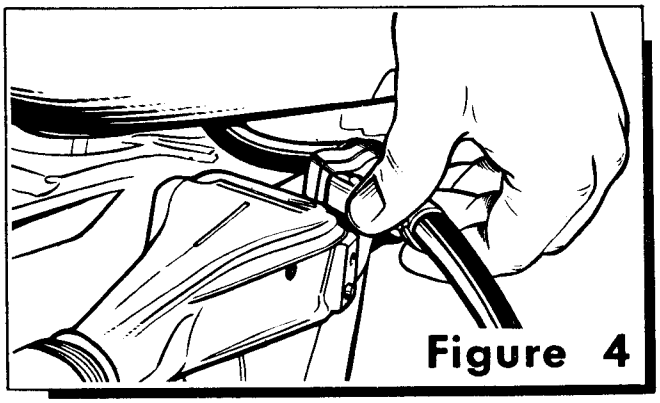


Figure 4

5. Move or turn throttle control toward FAST position until it stops. (Lock out should stop throttle control near START position when gear shift is in NEUTRAL.)

6. Set tilt-up lock in LOCK position.

7. Set high and low speed knobs with pointer straight up. In temperatures below 40° F, turn high speed knob 1/4 turn to the left.

8. Pull out choke knob all the way.

9. Pull starter handle slowly until starter engages, then pull forcibly. Repeat until motor starts. It is not necessary to pull cord out more than two feet.

10. After motor starts, push choke knob in slowly.

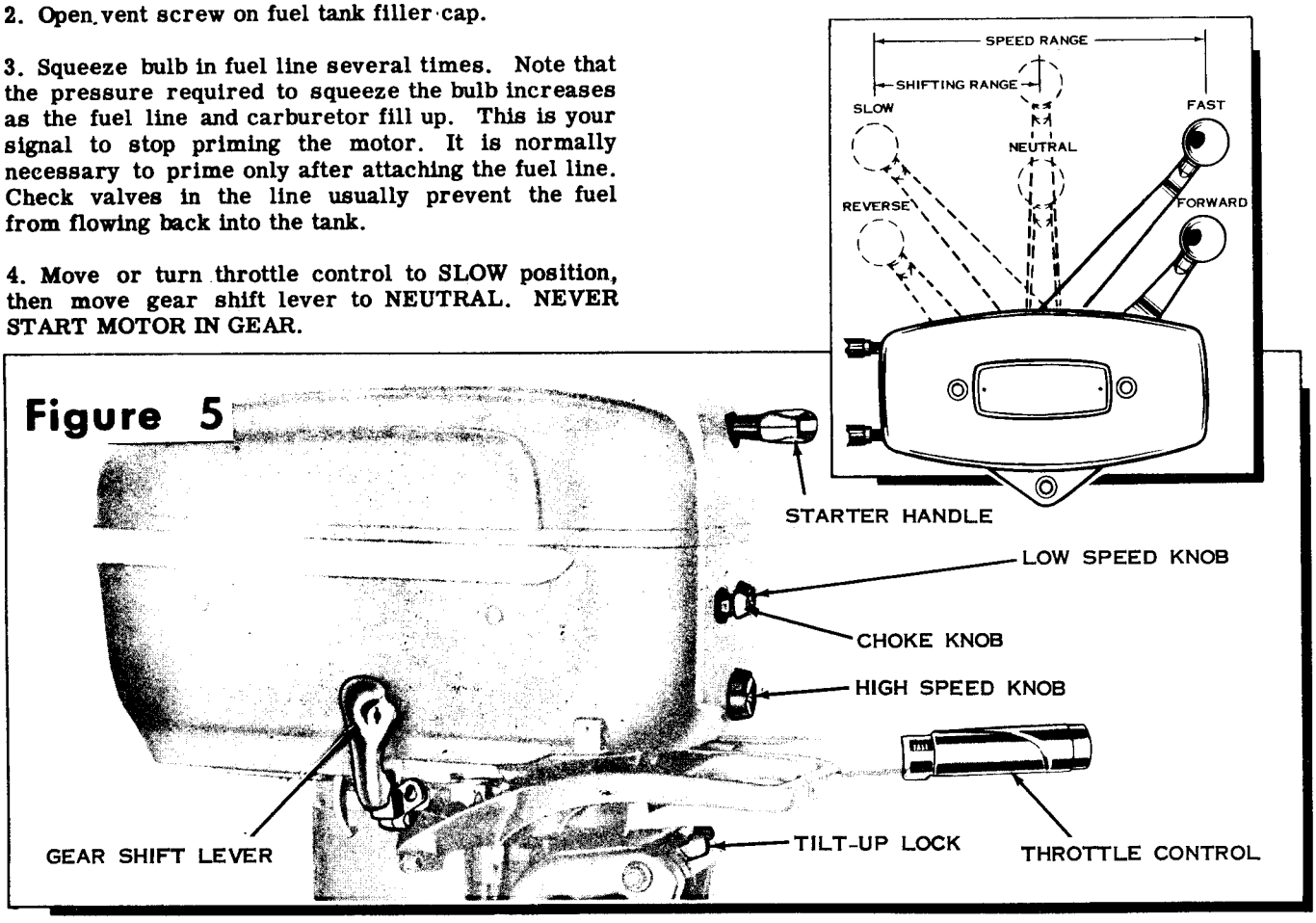


Figure 5

Operation of your Motor

11. Reduce motor speed before shifting into FORWARD or REVERSE. Speed control must be at START or slower position. Move gear shift lever quickly into desired position. DO NOT ease into position.

12. WHEN IN FORWARD ONLY, advance speed control to FAST position. Run motor a few minutes to warm up. Increase speed to full power and adjust high speed knob, turning to left or right, until motor runs smoothly.

13. Reduce speed and adjust slow speed knob by turning left or right, until motor idles smoothly.

14. To stop motor, turn speed control to STOP position.

WARM MOTOR

It is not necessary to choke motor when starting if motor has been warmed up. Motor can usually be started with carburetor knob in running position and pulling starter handle with speed control at START position.

FLOODING

Flooding may occur by over-choking or choking a warm motor. If this occurs, turn carburetor knob to extreme right (off position) and pull starter handle several times. When motor starts, allow to run until it stops. Then follow instructions for starting cold or warm motor, whichever applies.

CARBURETOR ADJUSTMENT

The carburetor is designed to operate efficiently at all speeds. Adjustments for high and slow speed are required. Adjustments can be made to your carburetor as received from the factory simply by turning the knobs to the left or right. Turning the knobs to the left (counter lockwise) enriches the mixture (increasing ratio of fuel to air); turning to the right (clockwise) leans the mixture (decreasing ratio of fuel to air). A rich mixture may cause the motor to run "rough," while a lean mixture is indicated by "coughing or spitting" in the carburetor.

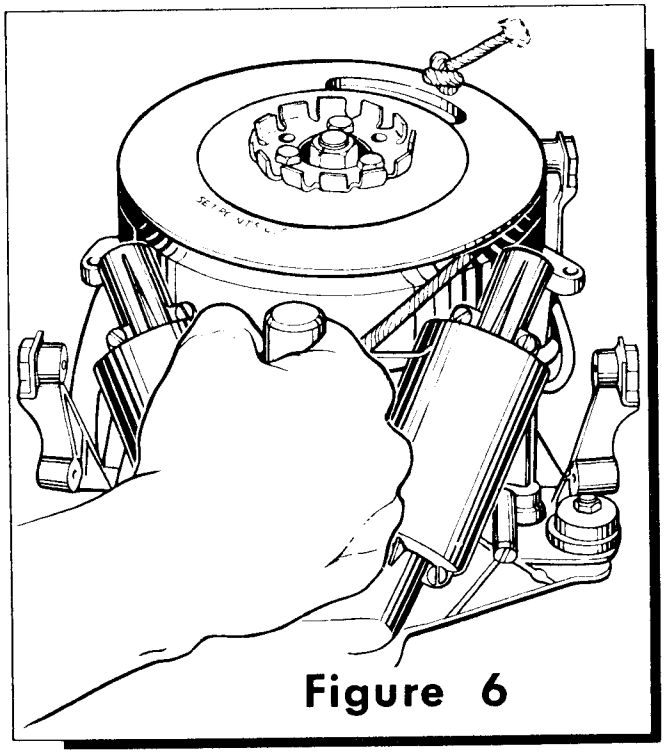


Figure 6

These adjustments are sufficient for average conditions. However, for unusual conditions (such as with heavy loads, very slow trolling, unusual atmospheric conditions, or after repairs) adjustment may be required. First loosen, but do not remove, screws in the center of both knobs. Pull knobs out past stops at rear of knobs so that they will turn freely. Then tighten screws. Turn both knobs to the right until needle seats gently. DO NOT FORCE, as needle may be damaged. Then back off both knobs about 1-1/2 turns.

HIGH SPEED ADJUSTMENT: Start motor as previously instructed and run at FAST until it has warmed up. Then operate motor at full power. Turn knob to left or right to obtain best high speed setting. Loosen center screw. DO NOT DISTURB POSITION OF NEEDLE. Adjust knob to point straight up. Push knob back on shaft to original position. Leave enough clearance so knob will turn without binding on motor cover. Tighten center screw to secure knob.

SLOW SPEED ADJUSTMENT: This adjustment should be performed after high speed adjustment. Operate motor at slow speed. Turn slow speed knob to left or right until top performance is obtained. Then reset the knob as described under High Speed Adjustment.

CO-PILOT

The co-pilot permits the motor to maintain a set course without holding steering handle. It can be adjusted by tightening or loosening the screw, located in front of the pivot bearing (item 7, Figure 7) to the desired tension.

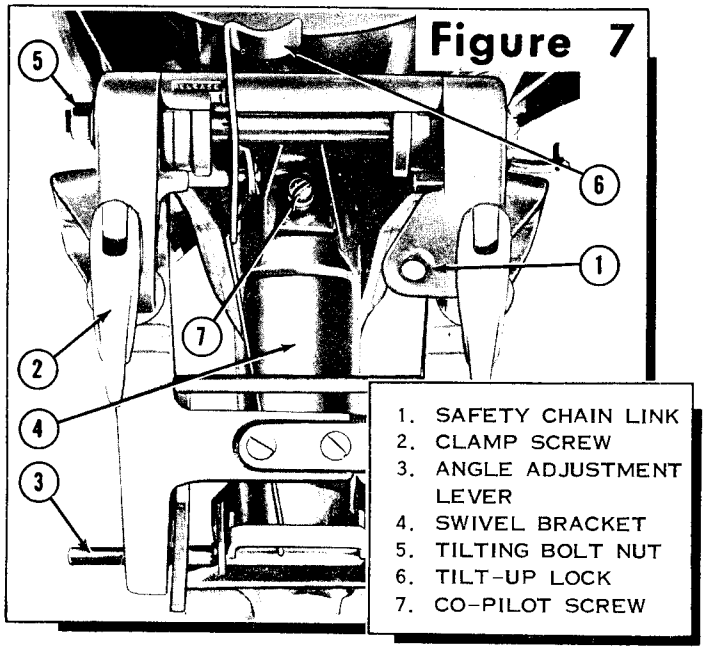
EMERGENCY STARTING

In case of starter failure, you can still use your motor in an emergency.

Remove the two side motor covers. See "Removing Side Motor Covers," page 6. Remove four screws mounting top motor cover to powerhead. Lift top cover off powerhead so that the screws attaching the starter are accessible. Remove three screws mounting starter assembly to powerhead and lift off top cover and starter assembly.

To start motor, wind a 1/4 inch rope, with a knot in one end, clockwise in the flywheel pulley. The knot in the rope should be placed in the notch on the flywheel pulley (see Figure 6).

Set controls as previously instructed before starting.



TILTING OF MOTOR

The tilting feature is also useful in boat launching, beaching or rowing in shallow waters. The motor can be tilted only when tilt-up lock is in RELEASE position. To tilt the motor, grasp the carrying handle and rear of motor covers and pull the motor toward you. Never try to tilt motor by bearing down on steering handle.

IMPORTANT

Before starting motor, be sure to place tilt-up lock in LOCK position.

TILTING FRICTION

Proper tilting friction is set at factory, but through continued use, friction may have to be adjusted. To adjust, loosen or draw up on tilting bolt nut (item 5, Figure 7) as required, using a wrench. Tension of tilt need not be too great, but just sufficient to maintain the motor in any position of tilt.

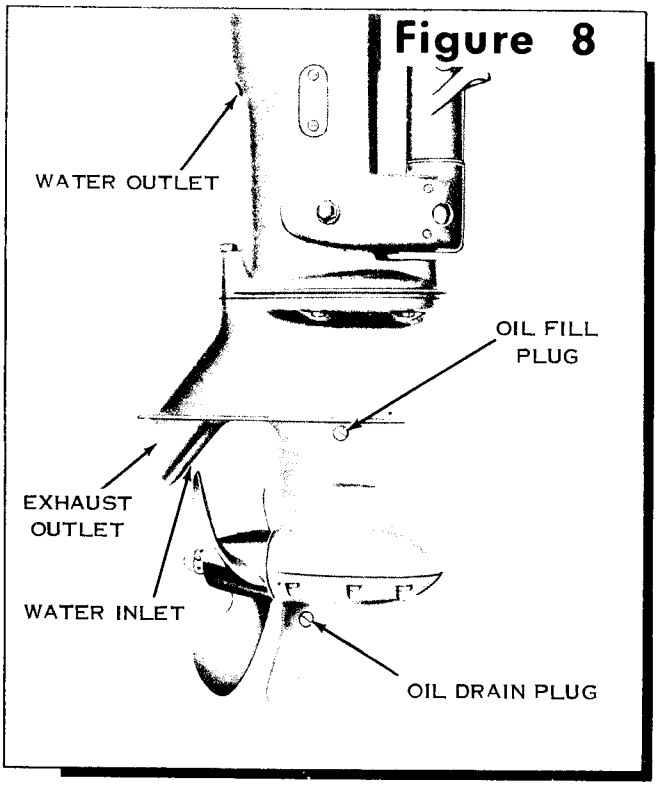
CARE OF YOUR MOTOR

GEAR LUBRICATION

Where a complete change of lubricant is required, remove both the fill and drain plugs (Figure 8) with motor in upright position. Drain out all of the oil, water, or residue, replace the drain plug, then fill the gear case through the fill plug with a pump type oil can. Replace plug. Check condition of gaskets on both plugs to avoid possibilities of leaks.

We recommend a good grade SAE 90 automotive (hypoid) gear lubricant. In case of emergency it is permissible to use a good grade SAE 30 engine oil, but only until such time as proper lubricant can be obtained.

The gear case should be checked for presence of water at frequent intervals. When checking, the motor must have been idle for some time to allow oil and water to separate. To check, remove the oil fill plug and loosen the oil drain plug partly to allow enough of the lubricant to drain out to determine whether or not water is present. If no water is present the drain plug may be retightened without excessive loss of lubricant. Be sure to refill the gear case to the fill plug level. If water is present, drain gear case and refill. After running motor for several hours, again check for water. If presence of water persists, have seals in gear case checked.



PROPELLER

Motors are equipped with a propeller which gives the best all around performance on the average boat. Adding a high speed propeller to a motor will not increase the speed of the boat unless the boat itself is light and designed to develop higher speed. We cannot be responsible for wear or damage to a motor used for racing or equipped with a racing propeller.

The propeller with which this motor is equipped employs the use of a rubber cushion between hub and propeller proper and is a part of the propeller itself. This aids in absorbing shock in case of propeller striking underwater obstructions. It also tends to reduce impact load on the reversing mechanism.

CAUTION

Do not, under any conditions, substitute propellers without this shock absorber as rapid wear of reverse mechanism may result.

Care of your Motor

GREASING

There are two Zerk type grease fittings on the motor which should be greased occasionally. These fittings are located on the exhaust tube and swivel bracket, on the starboard side. A good grade of waterproof grease is recommended for these fittings. Use an automotive type.

PROPELLER SHEAR PIN

Should the propeller strike an underwater obstruction, the propeller shear pin may shear. TURN OFF MOTOR IMMEDIATELY. Remove cotter pin, nut and propeller. Remove broken pin by driving with punch or new pin. Since the pin is provided with a raised portion to hold in place while installing propeller, it may be necessary to drive it in place. Center pin in shaft. Replace propeller, rotating it until it seats over pin. Tighten nut so that there is no play between propeller and nut. (Excessive tightening of nut will partially shear pin.) Replace cotter pin.

REMOVING MOTOR FROM BOAT

If you desire to drain carburetor at end of run, disconnect fuel line from motor with motor running in NEUTRAL, and permit motor to run until it stops. The motor can then be carried without fuel leakage. Also drain water thoroughly as in "Care of Motor in Cold Weather." When removing motor from boat, lift motor in a straight upward position and hold in an upright position for a brief period until all water is drained from the underwater exhaust tube and water cooling system. Do not stand motor on top or carry with the top down before draining water, as this may allow water to enter the powerhead from underwater exhaust tube.

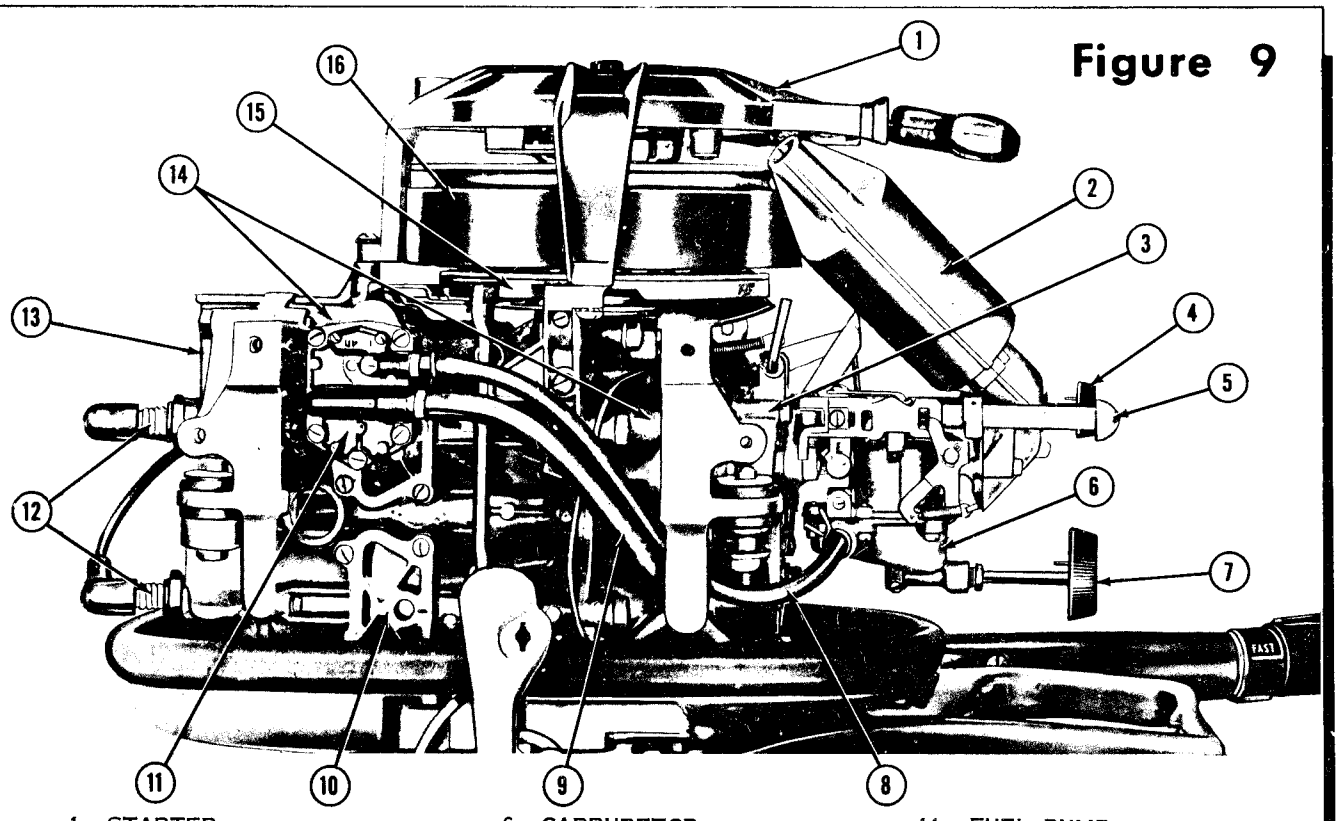
REMOVING SIDE MOTOR COVERS

You may desire to remove the side motor covers to inspect spark plugs or other parts of the powerhead. To remove port cover, simply remove two mounting screws and lift cover off. For the starboard cover, remove choke knob and two side mounting screws. Pull out hinged gear shift lever until it can be turned to point down. Then lift off cover.

SPARK PLUG

The correct spark plug gap is .030 inch. Plugs are set properly at the factory and are right when the motor is received. We recommend Champion J6J or Auto Lite A3X spark plugs, or equivalent for replacement. Keep the spark plug cables free from oil and do not permit them to become frayed or broken. Clean the spark plugs periodically and reset to the proper gap setting. Be sure gaskets are intact. For access to spark plugs, remove port motor cover.

Figure 9



1. STARTER
2. AIR SILENCER
3. CARBURETOR MANIFOLD
4. SLOW SPEED KNOB
5. CHOKE KNOB
6. CARBURETOR
7. HIGH SPEED KNOB
8. FUEL PRESSURE HOSE
9. FUEL SUCTION HOSE
10. BY-PASS COVER
11. FUEL PUMP
12. SPARK PLUGS
13. CYLINDER HEAD
14. CRANKCASE AND CYLINDER
15. ARMATURE PLATE
16. FLYWHEEL

COOLING SYSTEM

Water for cooling purposes is provided by action of the single stage rubber impeller centrifugal pump located between the upper and lower housing of the lower unit. This functions as a displacement pump at slow motor speeds and as a centrifugal pump during operation in the higher speed range. There are two water inlets in the gear case. During FORWARD operation of the motor, water enters the slot, equipped with a screen, located directly below exhaust outlet, and is forced through the cooling system, later to be discharged at the outlet in the exhaust tube provided for this purpose. Water enters the cooling system through the holes in the water bypass cover above the anti-cavitation plate when operating in REVERSE.

NOTE

If, while operating motor at full speed, it should show signs of slowing down, immediately check water discharge at water outlet (Figure 8) located at rear of the motor directly below cylinder. In case no water is being discharged, immediately shut off the motor and check water inlet (Figure 8) for obstruction. If no obstruction is found, it may indicate worn pump parts.

CARE OF MOTOR IN COLD WEATHER

The motor will not freeze while in use, but when it is idle, water in the cylinders or pump might freeze and damage the motor. Drain by setting the motor in an upright position and pulling starter cord several times with throttle control in STOP position. If the motor is to be stored during cold weather, be sure that no water is left in the motor or it may freeze. (See "Preparation for Storage.")

SALT WATER INSTRUCTIONS

This motor is designed for use in either fresh or salt water and through the use of various materials and finishes has been made as resistant to salt water corrosion as is possible. A little time spent in caring for your motor when used in salt water will aid in not only keeping it in good running order but help in retaining its finish and appearance.

Tilt the motor out of the water when it is not in use. At the end of the day or when not using the motor for a period of time it is advisable to remove it from the boat and to flush it by running it in a tank of fresh water. Wipe the motor dry and go over all parts with an oily cloth. This should be done as soon as possible after removing the motor from the boat.

RUNNING MOTOR IN TEST TANK

1. Do not run motor out of water.

2. Do not "break-in" motor in tank.

3. Remove water bypass cover (item 39, page 18).

4. When running in tank be sure gear housing and propeller are submerged.

5. Do not race motor in tank.

6. Use test propeller when testing motor in tank. Cavitation (air pocket around propeller) may occur when operating motor in tank with regular propeller. Motor will then not perform properly or it may race and be damaged as a result.

PREPARATION FOR STORAGE

No outboard motor should be placed in storage without considering the necessary precautions. If motor is operated in salt water, flush by running in a tank of fresh water. Drain and refill gear case with the proper lubricant. See page 5.

Prior to storing the motor, run it for about one-half (1/2) minute in choke position. Shut off motor without pushing choke back to normal position. Purpose of this operation is to flood the inner parts of the powerhead with oil (oil in fuel mixture) while in storage.

Drain all water from the cooling system. See "Care of Motor in Cold Weather."

Drain all fuel from fuel tank, gas line and carburetor.

Under no circumstances should the motor be stored in an inverted position. It should be hung on a rack similar to the manner in which it is mounted on the boat. Store in a dry place. Wrap the motor in a piece of canvas, old blanket, or heavy paper.

PUTTING MOTOR IN USE AFTER STORAGE

Pull off spark plug leads and remove spark plugs. If rubber spark plug hoods have been removed from ignition leads, be sure to ground leads to some part of motor to prevent possibility of spark. (THIS IS IMPORTANT.) Spin motor by pulling on starter cord to remove excess oil from cylinders. Clean spark plugs, check gap and replace. Install new plugs if they are cracked, broken, or badly burned. Tighten all screws and nuts. Check adjustments such as tilting friction, co-pilot, and carburetor knobs.

MOTORS THAT HAVE BEEN SUBMERGED

Precaution should be taken to prevent a motor going overboard (see page 1). However, if a motor has been submerged, recover as quickly as possible.

Since the motor is temporarily out of working order, do not attempt to operate it until the following procedure has been used to restore it to service.

1. Remove air silencer and dry out.

2. Remove plug at bottom of carburetor float chamber (item 9, Figure 12) thereby draining water and fuel from carburetor. Replace plug.

3. Remove and dry spark plugs. If rubber spark

plug hoods have been removed, be sure to ground wires somewhere on motor. Turn motor so that spark plug holes are down and crank motor until no further water is expelled.

4. Check spark by inserting screw or other small metal object into rubber spark plug hood to make contact with terminal spring in hood and holding screw about 1/4 inch from cylinder and cranking motor rapidly. Check spark from both leadwires. If rubber hoods are not on leadwires, be sure to ground one lead while checking the other.

5. Replace all parts removed, and start motor. It may be necessary to clean water from points of spark plugs several times as there is a possibility of small drops of water remaining in the cylinder which may short the plugs.

The above instructions are primarily for motors that have been submerged in fresh water. For motors submerged in salt water a few additional precautions may be necessary.

Remove carburetor, flywheel, magneto, and starter mechanism, wash with fresh water, and dry. Lubricate parts where needed. Internal working parts are lubricated by the fuel mixture.

If motor will not operate after the above instructions have been followed, disassemble and wipe all parts dry. Coat with oil to prevent rust and follow instructions under "How to Obtain Service." (See back cover.)

MAGNETO

It may be necessary to occasionally inspect the magneto. For access to magneto, first remove two side motor covers. See "Removing Side Motor Covers," page 6. Remove four screws mounting top motor cover to powerhead. Lift top cover off powerhead so that the screws attaching the manual starter are accessible. Remove three screws mounting starter assembly to powerhead and lift off top cover and starter assembly. If cleaning or adjusting of points only is required, remove the three screws, starter ratchet, and inspection hole cover from the flywheel. Access to the points for cleaning or adjusting is possible through the hole in opening on the top of the flywheel. If further servicing of the magneto is required flywheel must be removed.

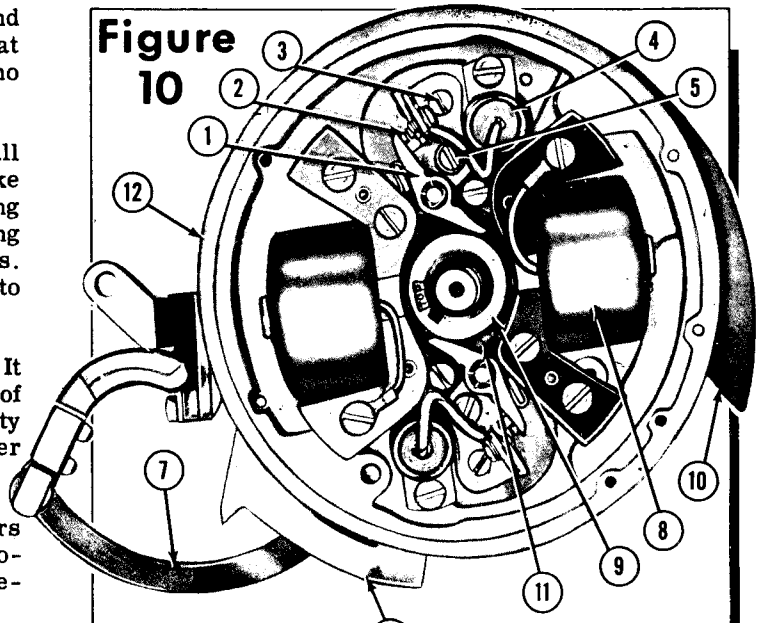


Figure 10

HOW TO REMOVE FLYWHEEL

Remove motor covers and manual starter as described under "Magneto." Use flywheel puller if available. If not, hold flywheel rigid and unscrew the flywheel nut about two full turns. Have someone lift up on the flywheel and then place a piece of bar solder or a block of lead over the flywheel nut and tap a sharp blow with a hammer. If flywheel does not come off, loosen nut a trifle more and repeat procedure.

CHECKING BREAKER POINT GAP

ADJUSTING BREAKER POINT GAP

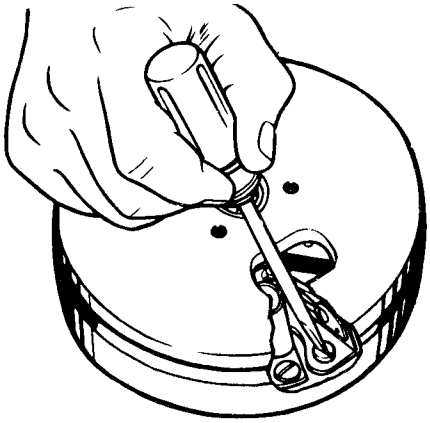


Figure 11

When flywheel comes off, use care not to lose key by which flywheel is held in engagement with shaft. When again replacing flywheel, be sure key is in place and fits snugly, then draw up nut as tight as possible. IMPORTANT: Tapers on flywheel and crankshaft must be perfectly clean and dry before reassembling.

CLEAN AND ADJUST BREAKER POINTS

After removing starter ratchet and flywheel cover, revolve flywheel until opening is directly over breaker (there are two breakers on this magneto). Carefully spread points with small screwdriver. Insert point dresser. (Sandpaper, fine coil file, nail file, etc., NEVER USE EMERY CLOTH.) Release points, work dresser up and down to smooth. Follow same procedure with piece of thick smooth paper to remove traces of foreign particles which might be left on points.

After cleaning, reset point gap to .020 inch maximum opening as follows: When hole in flywheel is directly over the breaker, maximum opening of the breaker is obtained. Check with .020 inch feeler gage. If opening is under or over .020 inch loosen breaker plate screws (item 5, Figure 10) slightly. Turn adjusting screw (item 3, Figure 10) to right or left until required setting is obtained. Tighten breaker plate screw and recheck with gage. See Figure 11.

MAGNETO LUBRICATION

The magneto is equipped with a felt oiler to lubricate the cam and reduce wear on the cam block of the breaker (item 11, Figure 10). A few drops of light oil should be put on the felt once or twice a year.

CARBURETOR AIR SILENCER

The air silencer does not function as a filter, therefore it is never necessary to remove it for cleaning purposes under normal use. Its only function is for quiet motor operation.

CARBURETOR ADJUSTING NEEDLES

Should the adjusting needles become so loose that the knobs will not remain in a set position they can usually be tightened by drawing down on the packing nuts (item 17, Figure 12).

NOTE

Turn carburetor knobs counterclockwise 1/2 turn before tightening packing nuts to prevent damage to needle seats.

If tightening of the packing nut will not help, it may be necessary to replace the packing. To replace packing remove the air silencer, needles, packing nuts, washers, and ALL of the old packing. Install new packing and reassemble.

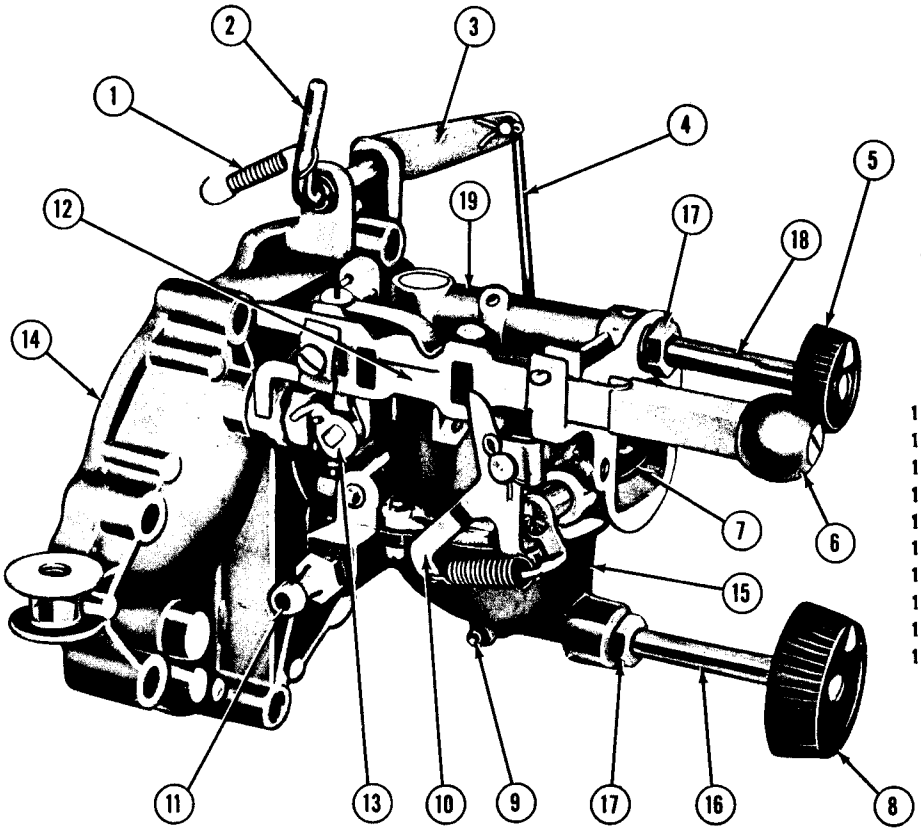
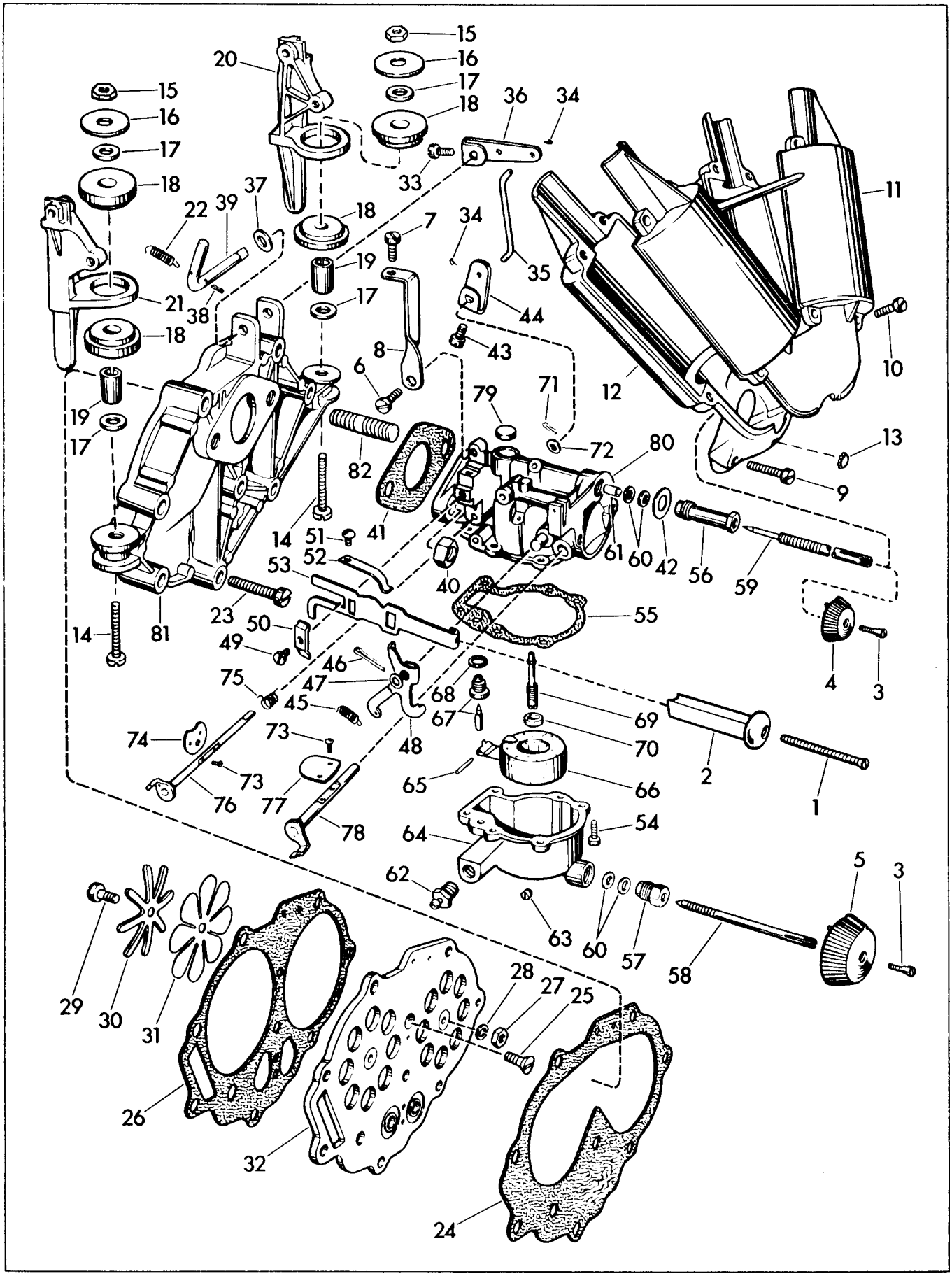


Figure 12

1 CAM FOLLOWER SPRING
2 CAM FOLLOWER
3 CAM FOLLOWER ARM
4 THROTTLE LINK
5 LOW SPEED KNOB
6 CHOKE KNOB
7 CHOKE VALVE
8 HIGH SPEED KNOB
9 DRAIN PLUG
10 CHOKE BELL CRANK
11 FUEL HOSE NIPPLE
12 CHOKE ROD
13 THROTTLE SHAFT
14 MANIFOLD
15 FLOAT BOWL
16 HIGH SPEED NEEDLE VALVE
17 PACKING NUTS
18 LOW SPEED NEEDLE VALVE
19 CARBURETOR BODY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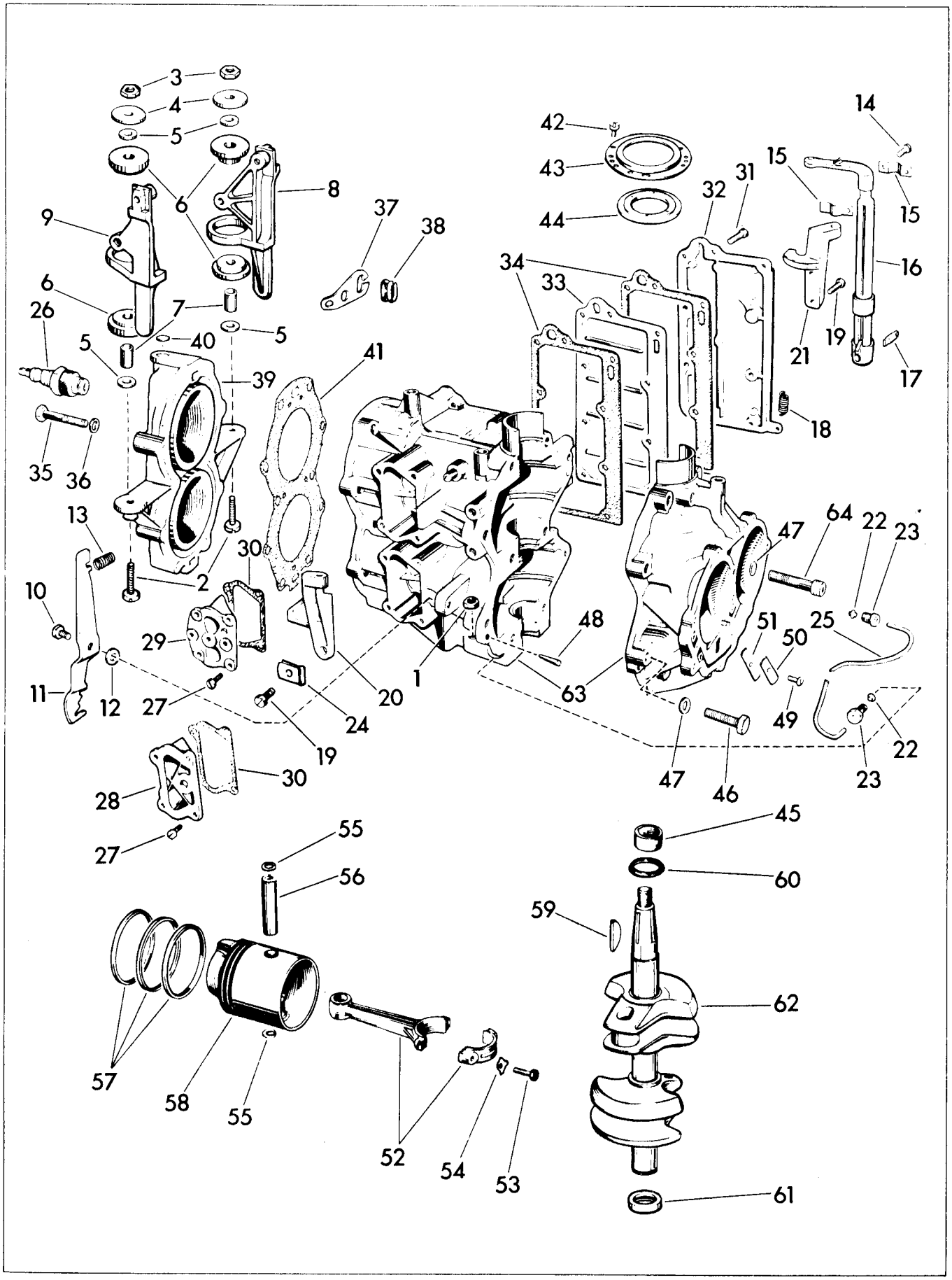
Ref. No.	Part No.	Description
1	552203	Screw - Choke Knob. . . . .
2	552204	Knob - Choke Control . . . . .
3	551517	Screw - Carburetor Knob . . .
4	591279	Slow Speed Control Knob Assy. .
5	591482	High Speed Control Knob Assy. .
6	43-147	Screw - Silencer Mtg. Bracket to Carburetor . . . . .
7	43-156	Screw - Silencer to Mtg. Bracket
8	303544	Bracket - Silencer Mtg. . . . .
9	43-110	Screw - Silencer to Carburetor .
10	43-259	Screw - Silencer Assy . . . . .
11	203352	Silencer - Air, Upper Half . . .
12	203683	Silencer - Air, Lower Half . .
13	203652	Plug - Button, Air Silencer . .
14	71-1084	Screw - Shroud Mounting . . . .
15	15-254	Nut - Shroud Mounting . . . . .
16	302407	Washer - Shroud Mtg., Large .
17	43-302	Washer - Shroud Mtg., Small .
18	302405	Grommet - Shroud Mounting . .
19	302406	Spacer - Shroud Mounting . . .
20	552635	Bracket - Shroud Mtg., Port, Front . . . . .
21	552636	Bracket - Shroud Mtg., Starboard, Front . . . . .
22	203276	Spring - Cam Follower . . . . .
23	130618	Screw - Manifold to Crankcase .
24	552182	Gasket - Leaf Plate to Manifold .
25	302104	Screw - Leaf Plate to Crankcase .
26	552180	Gasket - Leaf Plate to Crankcase
	591360	Leaf Plate Assy. . . . .
27	85-64	. Nut - Leaf to Leaf Plate Screw .
28	71-1487	. Washer - Lock . . . . .
29	301858	. Screw - Leaf Attaching . . . .
30	203234	. Stop - Leaf . . . . .
31	203246	. Leaf - Carburetor . . . . .
32	203267	. Plate - Leaf . . . . .
33	302346	Screw - Cam Follower Arm . .
34	41-110	Pin - Retaining . . . . .
35	552196	Link - Throttle Shaft Arm to Cam Follower Arm . . . . .
36	303540	Arm - Cam Follower . . . . .
37	303048	Washer - Cam Follower . . . .
38	41-163	Pin - Cotter . . . . .
39	203274	Follower - Throttle Cam . . . .
40	7-46	Nut - Carburetor . . . . .
41	203237	Gasket - Manifold to Carburetor .
42	203355	Washer - Packing Nut. . . . .
	591610	Carburetor Assy . . . . .
43	302346	. Screw - Throttle Shaft Arm . .
44	303491	. Arm - Throttle Shaft . . . . .
45	303629	. Spring - Bell Crank Choke Lever . . . . .
46	41-163	. Pin - Cotter, Bell Crank . . .
47	85-54	. Washer - Bell Crank . . . . .
48	302144	. Crank - Choke Bell. . . . .
49	131249	Screw - Choke Rod Bracket .
50	303117	. Bracket - Choke Rod . . . . .
51	302430	. Screw - Spring to Carburetor Body . . . . .
52	303132	. Spring - Choke Control Rod .
53	303143	. Rod - Choke Control . . . . .
54	71-1589	. Screw - Float Chamber to Carburetor Body . . . . .
55	302994	. Gasket - Float Chamber to Carburetor Body . . . . .
56	303291	. Nut - Slow Speed Valve . . . .
57	300179	. Nut - High Speed Valve . . . .
58	303159	. Valve - Needle, High Speed .
59	303945	. Valve - Needle, Low Speed .
60	43-123	. Packing - High and Low Speed Valves . . . . .
61	303947	. Bushing - Slow Speed Needle Valve . . . . .
62	303172	. Nipple - Float Chamber . . .
63	303041	. Screw - Float Drain. . . . .
64	303493	. Chamber - Float . . . . .
65	300096	. Pin - Hinge, Float Arm . . .
66	375919	. Float and Float Arm . . . . .
67	375985	. Float Valve and Seat Assy. . .
68	301996	. Washer - Float Valve Seat . .
69	303618	. Nozzle - High Speed . . . . .
70	302984	. Gasket - Float Chamber to Carburetor Body Boss . . . .
71	303049	. Pin - Cotter, Throttle Shaft .
72	303048	. Washer - Throttle Shaft . . .
73	303760	. Screw - Throttle and Choke Valves . . . . .
74	303495	. Valve - Throttle . . . . .
75	303765	. Spring - Throttle Shaft . . . .
76	376133	. Throttle Shaft and Lever Assy.
77	303126	. Valve - Choke . . . . .
78	375993	. Choke Shaft and Lever Assy. .
79	202310	. Plug - Expansion . . . . .
80	591781	. Carburetor Body and Bell Crank Shaft Assy. . . . .
81	277226	Manifold and Stud Assy. . . . .
82	302822	. Stud - Manifold to Carburetor.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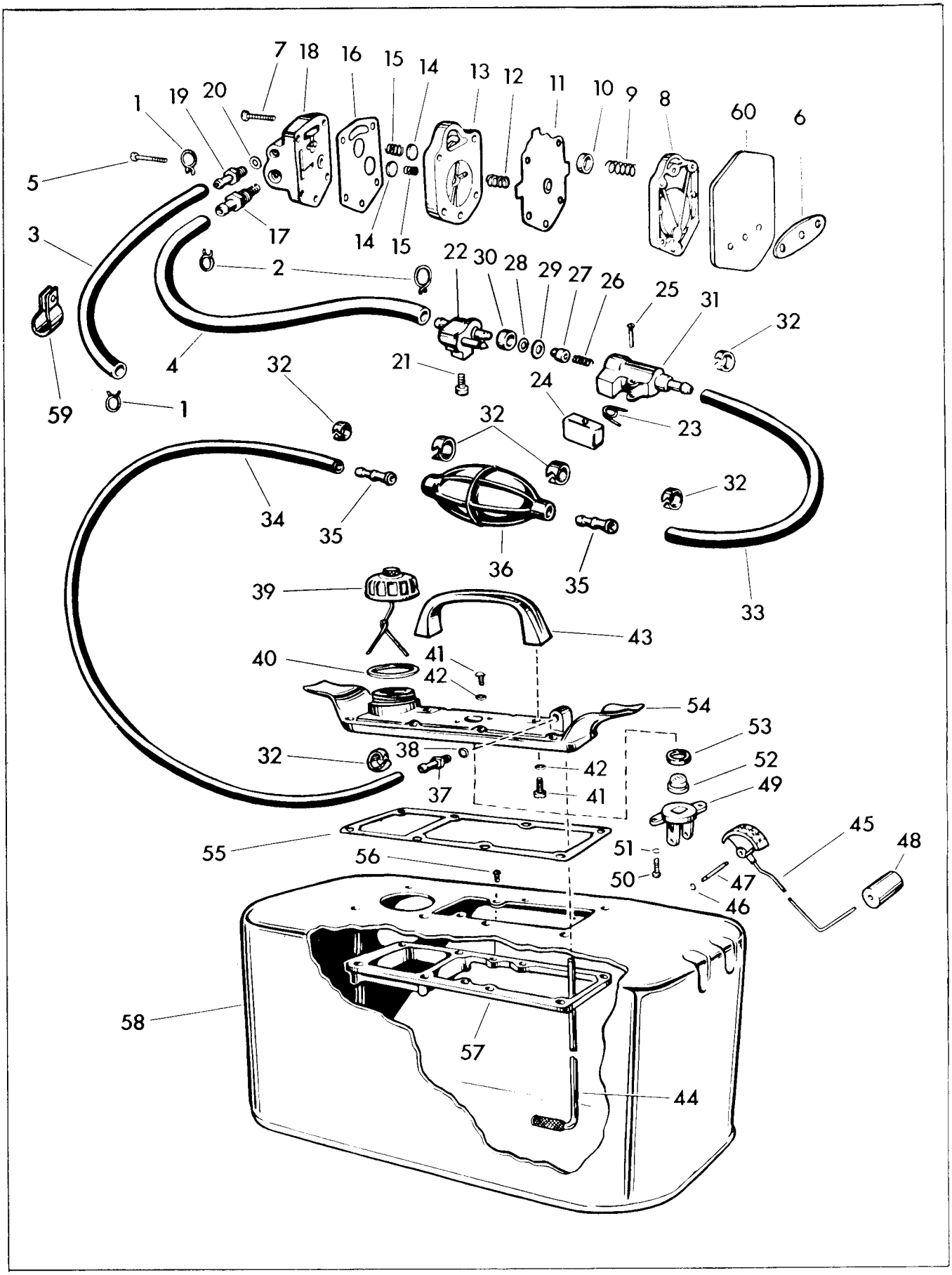
Ref. No.	Part. No.	Description
1	7-46	Nut - Flange to Cyl Stud
2	71-1084	Screw - Shroud Mtg.
3	15-254	Nut - Shroud Mtg.
4	302407	Washer - Shroud Mtg., Large
5	43-302	Washer - Shroud Mtg., Small
6	302405	Grommet - Shroud Mtg.
7	302406	Spacer - Shroud Mtg.
8	552633	Brkt. - Shroud Mtg., Port, Rear
9	552634	Brkt. - Shroud Mtg., Starboard, Rear
10	302592	Screw - Shift Lock to Cyl
11	203596	Lock - Shift
12	304051	Washer - Shift Lock
13	302587	Spring - Shift Lock
14	510193	Screw - Control Lever Bearing Clamp
15	303109	Clamp - Control Lever Bearing
16	203805	Lever - Control
17	304155	Pin - Lever to Throttle Control
18	302827	Spring - High Tension Lead
19	21-167	Screw - Starter Mtg. Brkt.
20	203678	Bracket - Starter Mtg., Starboard
21	203573	Bracket - Starter Mtg., Port
22	11-61	Gland - Oil Line
23	41-105	Nut - Oil Line
24	203285	Clip - Oil Line
25	203288	Tubing - Oil Line
26	200322	Spark Plug and Gasket (Champion J6J)
26	376290	Spark Plug and Gasket (Auto-Lite A3X)
27	43-259	Screw - By-pass Cover
28	203253	Cover - By-pass, Lower
29	552213	Cover - By-pass, Upper
30	203259	Gasket - By-pass Cover to Cylinder

Ref. No.	Part No.	Description
31	43-110	Screw - Exhaust Cover
32	203724	Cover - Exhaust
33	203258	Plate - Baffle, Exh. Cover
34	203257	Gasket - Baffle Plate to Cyl. and Exh. Cover
35	21-486	Screw - Cylinder Head
36	15-212	Washer - Cyl.Head Screw
37	300455	Anchor - Ignition Lead
38	300454	Grommet - Ignition Lead
39	591608	Cyl.Head and Core Plug Assy
40	202310	. Plug - Core
41	552181	Gasket - Cyl.Head
42	304442	Screw - Arm. Plate Support
43	303278	Support - Arm. Plate
44	303277	Ring - Arm. Plate Retaining
45	510168	Cam - Magneto
46	25-242	Screw - Cyl.to Crankcase
47	15-212	Washer - Crankcase to Cyl. Screw
48	300402	Pin - Taper
49	19-191	Screw - Oil Drain Leaf Valve
50	203248	Plate - Leaf Valve Oil Drain
51	203235	Valve - Leaf, Crankcase Oil Drain
52	591333	Connecting Rod and Lockplate Assy
53	552183	. Screw - Connecting Rod
54	552185	. Lockplate - Connecting Rod
55	120011	Ring - Spring, Piston Pin
56	552171	Pin - Piston
57	552172	Ring - Piston
58	591216	Piston and Dowel Pin Assy
59	120395	Key - Crankshaft
60	552173	Slinger - Oil
61	303804	Seal - Lower Crankshaft Bearing
62	552176	Crankshaft
63	591850	Cyl.and Crankcase Assy
64	203249	. Screw - Center, Crankcase to Cyl.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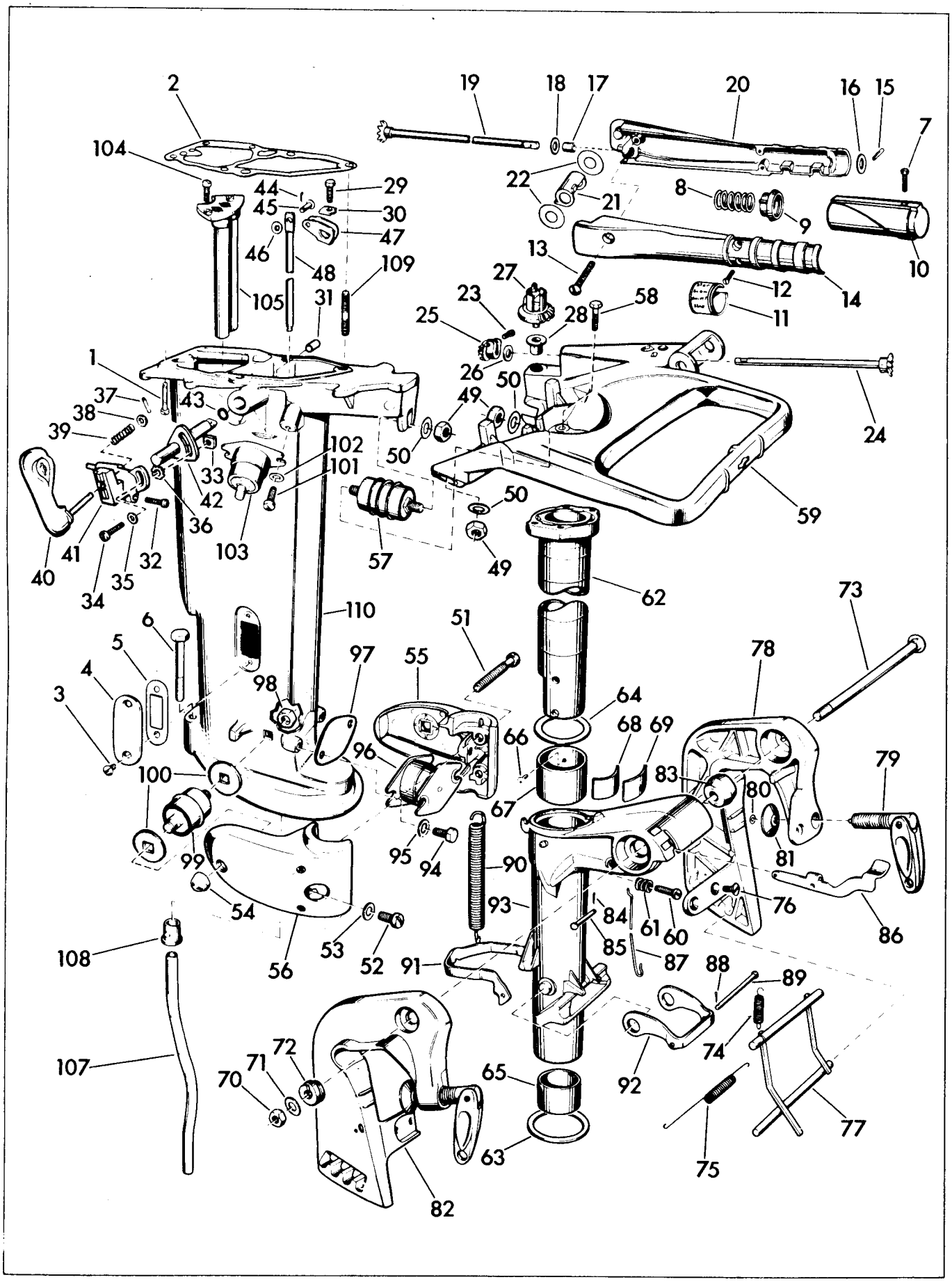
Ref. No.	Part No.	Description
1	302647	Clamp - Hose
2	552199	Clamp - Hose
3	304029	Hose - Fuel Pump to Carburetor
4	552646	Hose - Fuel Pump to Connector.
5	552649	Screw - Fuel Pump to Bypass Cover
6	303615	Gasket - Fuel Pump to Bypass Cover
	376620	Fuel Pump Assembly
7	133451	. Screw - Fuel Pump Assembly.
8	304089	. Housing - Outer
9	304486	. Spring - Diaphragm Support .
10	304094	. Support - Diaphragm
11	376619	. Diaphragm Assembly
12	303662	. Spring - Diaphragm
13	304090	. Housing - Inner
14	303643	. Valve - Disc
15	303642	. Spring - Inlet and Outlet
16	304092	. Gasket - Inner Housing to Valve Housing
17	376161	. Nipple and Screen Assembly .
18	304091	. Housing - Valve
19	303638	Nipple - Fuel Pump Outlet
20	303630	Washer - Outlet Nipple
21	21-359	Screw - Fuel Connector to Steering Bracket
22	376154	Fuel Connector Body Assembly .
	591969	Gas Tank Assembly
	376156	. Fuel Connector Housing Assembly
23	301829	. . Spring - Fuel Connector Lock
24	301830	. . Lock - Fuel Connector . .
25	301832	. . Rivet - Fuel Connector Lock
26	303594	. . Spring - Fuel Connector Valve
27	303595	. . Valve - Fuel Connector . .
28	303598	. . "O" Ring - Fuel Connector Seal
29	303599	. . Washer - Fuel Connector .
	591730	Fuel Pump Ass. Complete
30	303602	. . Retainer - Fuel Connector Seal
31	376155	. . Housing and Nipple Assembly
32	303596	. Clamp - Hose
33	303601	. Hose - Fuel Primer to Fuel Connector
34	552501	. Hose - Tank to Primer Bulb
35	591841	. Nipple and Valve Assembly .
36	552337	. Primer - Bulb
37	552237	. Nipple - Housing to Nose . .
38	303630	. Washer - Outlet Nipple
39	591312	. Filler Cap Assembly
40	552328	. . Gasket - Filler Cap
41	304137	. Screw - Housing to Support Plate and Handle
42	301814	. Gasket - Screw to Handle and Housing
43	101485	. Handle - Tank
44	591317	. Fuel Line and Screen Assembly
45	591854	. Indicator Assembly
46	302654	. Snap Ring - Indicator Pin . .
47	302653	. Pin - Indicator Assembly to Fuel Gage Housing
48	302559	. Float - Gas Tank
49	552763	. Housing - Fuel Gage
50	25-74	. Screw - Fuel Gage Housing to Upper Housing
51	120052	. Lock Washer - Fuel Gage Screw
52	302568	. Glass - Gas Tank
53	302571	. Seal - Gas Tank
54	552762	. Housing - Upper Gas Tank .
55	302557	. Gasket - Tank
56	53-85	. Screw - Support Plate to Tank
57	302556	. Plate - Tank Support
58	486252	. Fuel Tank Assembly
59	51-137	Lock Washer - Fuel Connector Screw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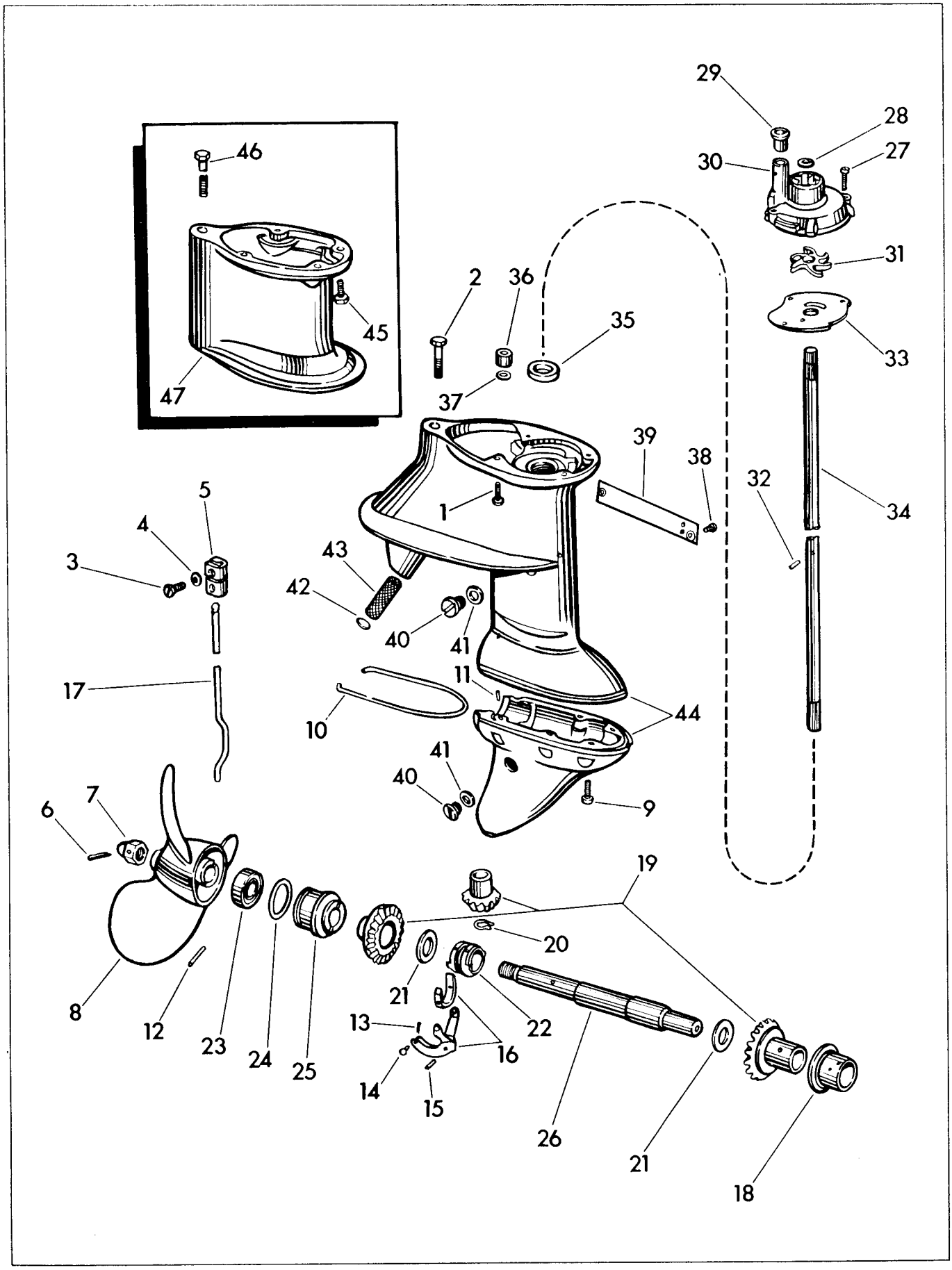
Ref. No.	Part No.	Description
1	25-238	Screw - Power Head to Exh. Hsg.
2	303892	Gasket - Exh. Tube
3	302509	Screw - Exh. Hsg. Cover Plate
4	303862	Plate - Cover, Exh. Hsg.
5	304023	Gasket - Exh. Hsg. Cover Plate
6	302871	Screw - Rear, Exh. Hsg. to Gearcase
7	302710	Screw - Twist Grip
8	301656	Spring - Twist Grip
9	303282	Block - Grip Friction
10	552209	Grip - Steering Handle
11	203260	Plate - Throttle Control
12	133452	Screw - Steering Handle Halves
13	303078	Screw - Steering Handle Halves
14	303093	Handle - Steering, Inner Half
15	300346	Pin - Groove, Gear and Shaft Assy
16	303252	Washer - Strg. Handle to Spring
17	302717	Bushing - Steering Handle
18	302712	Washer - Steering Handle
*19	376416	Throttle Control Gear and Shaft Assy, Long
20	376042	Handle - Steering, Outer Half
21	303096	Cover - Gears, Steering Handle
22	303079	Washer - Steering Brkt. to Handle
23	71-1352	Screw - Pinion
*24	376306	Throttle Control Gear and Shaft Assy, Short
25	303142	Pinion - Throttle Control
26	303107	Washer - Throttle Control Pinion
27	304157	Gear - Throttle Control
28	303854	Bushing - Throttle Control
29	303722	Screw - Shift Rod
30	303721	Clip - Shift Rod Lever
31	552644	Spacer - Adj. Lever Shaft
32	21-167	Screw - Shift Lever Clamp
33	303189	Nut - Shift Handle Adj. Screw
34	51-47	Screw - Shift Lever Adj.
35	303775	Washer - Shift Lever Adj. Screw
36	303480	Washer - Lock, Shift Lever Adj. Screw
37	552497	Pin - Straight, Gear Shift Lever
38	552499	Washer - Gear Shift Lever Pin
39	552498	Spring - Gear Shift Lever
40	591479	Gear Shift Handle and Pin Assy
41	591613	Follower - Shifter Lock and Pin Assy
42	591612	Adj. Lever and Shift Shaft Assy
43	303191	"O" Ring - Adj. Lever and Shift Shaft Assy
44	15-268	Pin - Cotter, Shift Lever Shaft
45	304377	Pin - Shift Rod to Lever
46	304380	Washer - Bow, Shift Rod Pin
47	304378	Lever - Shift Rod
48	303861	Rod - Shift, Upper
49	303889	Nut - Thrust Absorber to Strg. Brkt.
50	303884	Washer - Shock Absorber, Large
51	303898	Screw - Lower Hsg. to Pilot Shaft
52	303883	Screw - Rubber Mount to Hsg.
53	303886	Washer - Shock Absorber Screw, Med.
54	303890	Nut - Thrust Absorber to Lower Mount
55	303896	Housing - Lower Mount, Port
56	303897	Housing - Lower Mount, Stbd
57	303878	Mount - Exh. Tube, Upper Front
57	304153	Mount - Exh. Tube, Upper Front, for 5 in. Longer Lower Unit
58	21-171	Screw - Strg. Brkt. To Pilot Shaft
59	376583	Strg. Brkt. and Bushing Assy
60	132679	Screw - Co-pilot
61	551113	Spring - Co-pilot
62	303853	Shaft - Pilot, Steering Brkt.
63	303865	Washer - Thrust, Swivel Brkt. to Lower Hsg.
64	303842	Washer - Thrust, Steering Brkt. to Swivel Brkt.
65	303841	Absorber - Shock, Lower Swivel Brkt.
66	303696	Pin - Swivel Brkt. to Upper Liner
67	303846	Liner - Upper, Swivel Brkt.
68	303843	Spacer - Co-pilot Plate to Upper Liner
69	303844	Plate - Co-pilot
70	17-182	Nut - Tilting Shaft Bolt
71	25-196	Washer - Tilting Shaft
72	302051	Spring - Tilting Shaft
73	301984	Bolt - Tilting Shaft
74	202021	Spring - Tilting Lever
75	304095	Spring - Stabilizer
76	303396	Screw - Stern Brkt., Port to Stbd.
77	376312	Tilting Lever Assy
78	376284	Stern Brkt. and Clamp Screw Assy, Port
79	375742	. Clamp Screw, Swivel Plate and Retainer
80	302420	. . Retainer - Swivel Plate
81	41-48	. . Plate - Clamp Screw Swivel
82	376283	Stern Brkt. and Clamp Screw Assy, Stbd (Also Includes Items 79, 80 and 81)
83	301983	Washer - Conical, Tilting Shaft
84	303049	Pin - Cotter, Pivot Shaft
85	303930	Shaft-Reverse Locking Lever Pivot
86	303980	Arm - Manual Locking Lever
87	303978	Link - Reverse Lock Arm to Shaft
88	15-268	Pin - Cotter, Reverse Lock Rod
89	303949	Rod - Reverse Lock Rod
90	303979	Spring - Reverse Lock Locking Lever
91	303948	Lever - Reverse Locking
92	303950	Link - Reverse Lock
93	303840	Bracket - Swivel
94	303888	Screw - Lower Hsg. Front Mount to Exh. Tube
95	303886	Washer - Shock Absorber Screw, Med.
96	303881	Mount - Exh. Tube, Lower Front
97	304169	Gasket - Exh. Tube to Lower Mount
98	303890	Nut - Lower Side Mount Screw
99	303880	Mount - Exh. Tube, Lower Side
100	304168	Gasket - Rubber Mount to Exh. Tube and Mount Hsg.
101	39-176	Screw - Upper Thrust Absorber Mtg
102	303887	Washer - Shock Absorber Screw, Small
103	303879	Mount - Exh. Tube, Upper Side
104	25-74	Screw - Loading Tube Assy to Exh. Tube
105	376289	Exh. Loading Tube Assy
107	303917	Tube - Water
107	304037	Tube - Water, for 5 in. Longer Lower Unit
108	302497	Grommet - Water Tube
109	304517	Stud - Flange to Power Head
110	376295	Exh. Housing Assy

* Note: For Model 12D14V Order 376691 Ref. No. 19
376692 Ref. No. 24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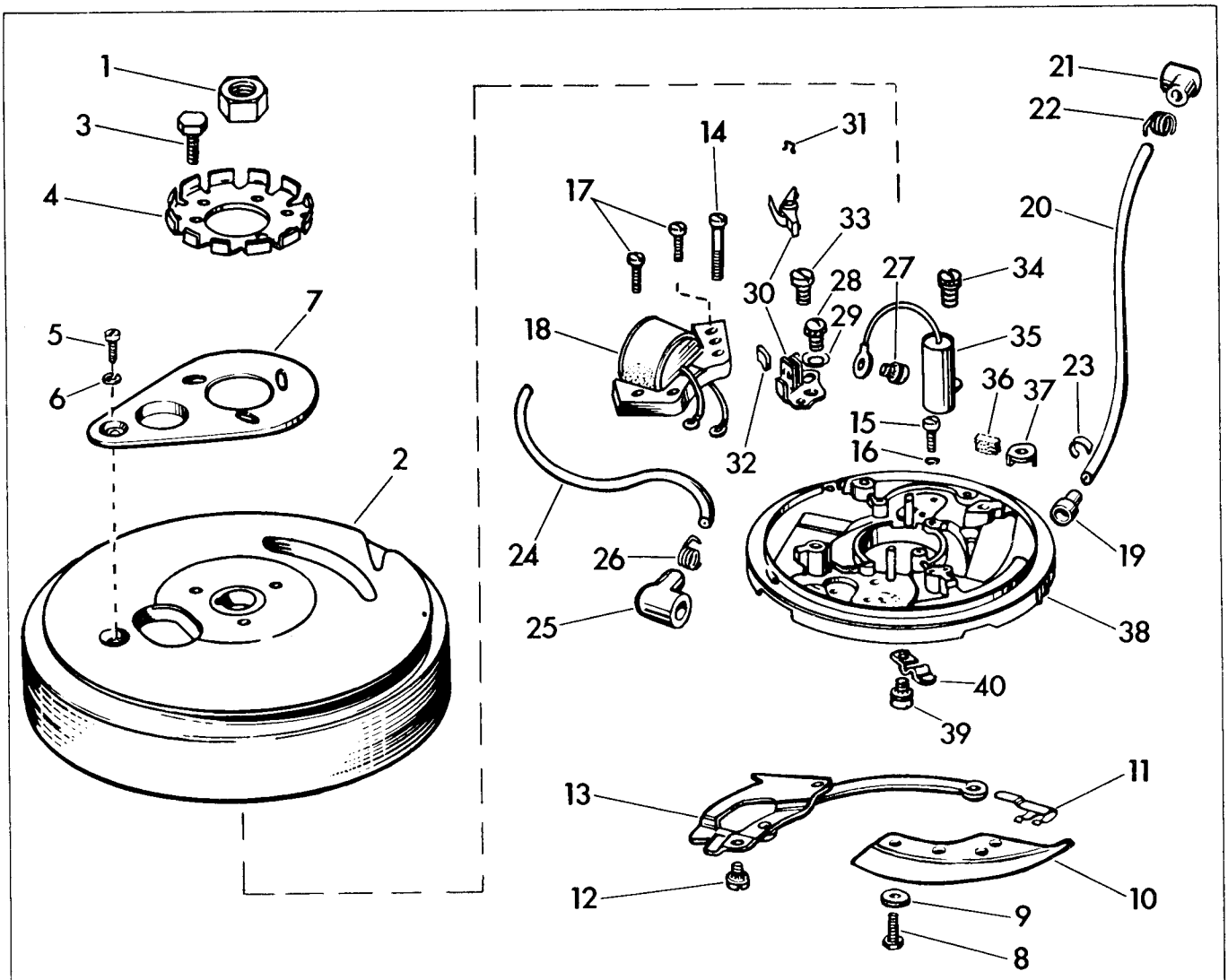
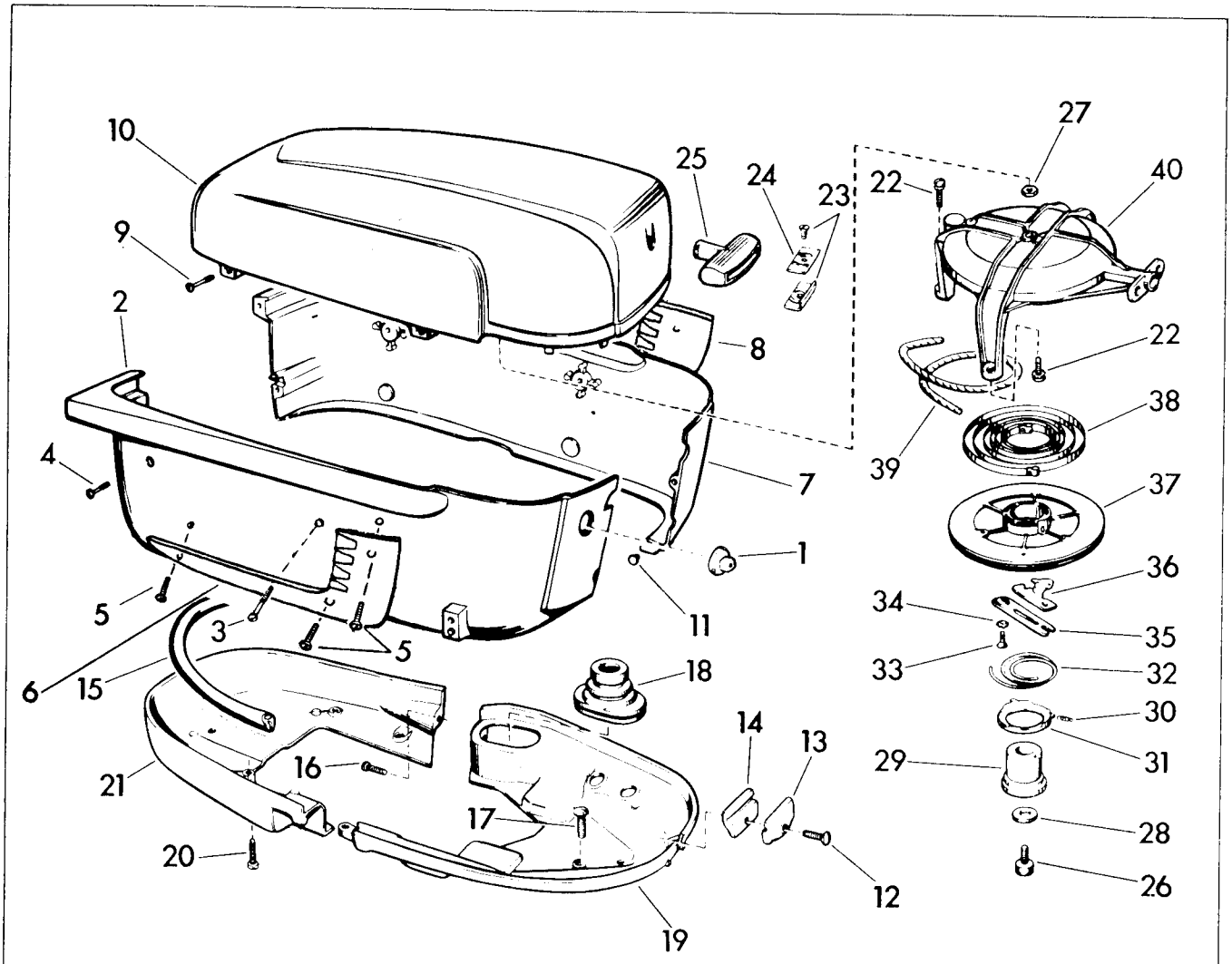
Ref. No.	Part No.	Description		Ref. No.	Part No.	Description	
1	302510	Screw - Upper Gear Hsg. to Exh. Housing		27	302508	Screw - Impeller Hsg. to Upper Gear Hsg.	
2	302871	Screw - Exh. Hsg. to Gear Case, Rear		28	303067	"O" Ring - Drive Shaft to Crankshaft	
3	304024	Screw - Shift Rod Connector		29	302497	Grommet - Water Tube, Lower	
4	301551	Washer - Lock, Shift Rod Connector		30	303070	Housing - Impeller	
5	303794	Connector - Shift Rod		31	375638	Impeller - Water Pump	
6	302381	Pin - Cotter		32	300771	Pin - Pump Impeller	
7	132477	Nut - Propeller		33	303069	Plate - Impeller Housing	
8	277443	Propeller and Bushing Assy		34	552643	Shaft - Drive	
9	304070	Screw - Gear Housing		34	552728	Shaft - Drive, for 5 in. Longer Lower Unit	
10	302513	Seal - Upper to Lower Gear Case		35	41-62	Seal - Drive Shaft	
11	300611	Dowel - Front and Rear Bearing		36	301878	Bushing - Shift Rod, Lower	
12	301923	Pin - Shear, Propeller		37	301877	"O" Ring - Lower Shift Rod Seal	
13	15-268	Pin - Cotter		38	302509	Screw - Water Bypass Cover	
14	302504	Pin - Yoke to Shift Rod		39	302505	Cover - Water Bypass	
15	302501	Pin - Shift Lever Pivot		40	27-283	Plug - Oil	
16	376164	Cradle and Lever Assy		41	27-284	Washer - Oil Plug	
17	303098	Rod - Shift, Lower		42	300314	Plug - Water Intake Screen	
17	303257	Rod - Shift, Lower, for 5 in. Longer Lower Unit		43	302757	Screen - Water Intake	
18	302496	Bearing - Front		44	376482	Housing - Gear, Upper and Lower	
19	376485	Set of Gears		45	302510	Screw - Gear Hsg. to Gear Case Extension, for 5 in. Longer Lower Unit	
20	301883	Ring - Pinion Retaining		46	304135	Screw - Rear, Gear Hsg. to Gear Case Extension, for 5 in. Longer Lower Unit	
21	301884	Washer - Thrust, Prop. Shaft		47	304136	Extension - Gear Case, for 5 in. Longer Unit	
22	375711	Clutch Dog Shifter Assy					
23	302495	Seal - Propeller Shaft					
24	302493	"O" Ring - Gear Case Head					
25	375751	Gear Hsg. Head and Brg. Assy					
26	552581	Shaft - Propeller					



Ref. No.	Part No.	Description		Ref. No.	Part No.	Description	
1	301988	Nut - Flywheel		20	580135	. High Tension Lead Assy, Upper . . . . .
2	580214	Flywheel and Cover Assembly		21	510232	. . Cover - Rubber, Spark Plug
3	302468	. Screw - Starter Ratchet . .		22	510231	. . Terminal - Spring, Lead .
4	202111	. Ratchet - Starter		23	120783	. Marker . . . . .
5	19-173	. Screw - Cover		24	580146	. High Tension Lead Assy, Lower . . . . .
6	41-338	. Washer - Lock, Cover . . .		25	510232	. . Cover - Rubber, Spark Plug . . . . .
7	510292	. Cover - Inspection Hole . .		26	510231	. . Terminal - Spring, Lead .
8	304441	Screw - Throttle Cam		27	510194	. Screw - Breaker Terminal .
9	300154	Washer - Throttle Cam Screw		28	510278	. Screw - Breaker Mounting .
10	203277	Cam - Throttle Control . . .		29	510208	. Washer - Bow . . . . .
11	303146	Clip - Spring, Armature Plate Link		30	580148	. Breaker Assy . . . . .
12	510193	Screw - Shifter Lock Stop . .		31	71-1052	. . Clip - Spring . . . . .
13	376313	Link and Stop Assy		32	510204	. . Clip - Spring, Breaker . .
	580207	Armature Plate Assy		33	510185	. Screw - Breaker Eccentric .
14	510191	. Screw - Armature Plate Mounting		34	510193	. Screw - Condenser Mounting
15	510192	. Screw - Armature Plate Mounting		35	510173	. Condenser . . . . .
16	3-28	. Washer - Lock		36	510189	. Wick - Oiler . . . . .
17	510195	. Screw - Lamination Mounting		37	510188	. Clip - Oiler . . . . .
18	580118	. Coil and Lamination Assy . .		38	580210	. Arm. Plate & Post Assy . .
19	510289	. Grommet, High Tension Lead		39	510193	. Screw - Lead Mtg. . . . .
				40	510190	. Clamp - High Tension Lead .



Ref. No.	Part No.	Description
1	203361	Grommet - Choke Knob
* 2	552652	Shroud Assy - Starboard
3	552224	. Screw - Shroud to Bracket
4	552654	. Screw - Shroud to Bracket
5	552223	. Screw - Applique to Shroud
6	552221	. Applique - Starboard
*7	552651	Shroud Assy - Port
8	552220	. Applique - Port
9	552224	Screw - Shroud Top to Bracket
*10	552629	Shroud - Top
11	203290	Bumper - Shroud
12	304022	Screw - Seal to Lower Motor Cover Clamp
13	304021	Clamp - Outer, Seal to Lower Motor Cover
14	304020	Clamp - Inner, Seal to Lower Motor Cover
15	304014	Seal - Lower Motor Cover
16	304013	Screw - Lower Motor Cover to Exh. Tube
17	304015	Screw - Lower Front Motor Cover to Exh. Tube
18	304019	Grommet - Control Shaft to Lower Motor Cover

Ref. No.	Part No.	Description
*19	552647	Cover - Front, Lower Motor
20	304012	Screw - Lower Rear Motor Cover to Exh. Tube
*21	304005	Cover - Rear, Lower Motor
22	303288	Screw - Starter Housing Mtg.
	591782	Starter Assy
23	591214	. Clamp and Screw - Rope
24	551205	. Clamp - Rope, Countersunk
25	551226	. Handle - Starter
26	51-223	. Screw - Spindle to Starter Hsg.
27	302103	. Nut - Spindle Screw
28	202356	. Washer - Starter Spindle
29	276643	. Starter Spindle and Pin Assy
30	202155	. Spring - Pawl
31	202114	. Cup - Equalizer
32	302222	. Spring - Friction
33	302104	. Screw - Starter Pawl Retainer
34	71-1026	. Washer - Lock
35	202317	. Retainer - Starter Pawl
36	202470	. Pawl - Starter
37	376376	. Pulley - Starter
38	41-197	. Starter Spring Assy
39	304096	. Rope - Starter
40	376339	. Starter Housing and Pin Assy

*IMPORTANT: Color of old parts must be specified when ordering new parts.

WARRANTY

VIKING OUTBOARD MOTOR

We warrant each new outboard motor to be free from defects in material and workmanship under normal use and when operated according to these instructions. Within 90 days from date of sale to the original purchaser we will exchange free of charge any part which our examination shall disclose to be defective.

This warranty shall not apply to any motor which has been subject to misuse, alteration, or accident; or which has been used for racing or equipped with a racing propeller.

All transportation charges on motors or parts returned to us must be prepaid.

EATON'S OF CANADA

How To Obtain Service

If your **VIKING** motor refuses to operate or perform properly and no instructions in this book cover the probable cause of failure, please follow this procedure.

1. Take your **VIKING** motor to a local outboard motor service station. Most service and repair work can be handled locally.

2. If no local service is available, contact the concern from which you purchased your motor stating type of failure, date of purchase, model number, motor serial number, and horsepower.

Do not return motor to the factory.

How To Order Repair Parts

This book gives you a complete repair parts list for your outboard motor. Should you need to order repair parts, they may be obtained direct from the concern from which you purchased your motor.

If you order repair parts the following information is needed to fill your orders properly:

1. Part number and description of part as shown in this catalog.

2. Complete motor model number and serial number. These numbers will be found stamped on the instruction plate located on the front of the stern bracket.

Do not order parts from the factory.

POWER HEAD. The entire power head of this motor is lubricated by oil mixed with the gasoline. It is important therefore to be sure the correct oil is used and that it is properly mixed.

We recommend Mobiloil Outboard, or other good grade outboard oil, or a regular SAE 30 grade automotive engine oil. Avoid use of low price third grade (ML) oils.

GEAR HOUSING. The gear housing is filled with hypoid gear oil for lubrication of gears and bearings. We recommend Mobilube GX90 or any other good grade of SAE 90 automotive (hypoid) gear lubricant. If hypoid lubricant is not available, in an emergency it is permissable to use Mobiloil Outboard or other SAE 30 engine oil until recommended lubricant can be obtained.