

EVINRUDE 



EVINRUDE 

first in outboards

EVINRUDE MOTORS, 4143 N. 27TH STREET, MILWAUKEE, WIS. 53216
DIVISION OF OUTBOARD MARINE CORPORATION



EVINRUDE

first in outboards

welcomes you aboard . . .

Outboard boating is one of America's most popular participation sports.

When you selected Evinrude, you selected a product that has gained a reputation as the quality leader since 1909. And, there is no doubt that this year's outboards are the finest ever produced.

Your new Evinrude outboard has all the most wanted features in outboard motors. Some of these features, such as quality of workmanship, engineering excellence, whisper quiet operation, and dependability, have long been standards at Evinrude. Your new Evinrude boasts many new features while retaining the best features developed in preceding years. These features, the old and the new, are designed to enhance your boating pleasure and add to your satisfaction in selecting Evinrude.

Your new Evinrude Motor is designed and constructed to give you the maximum in service and performance. Please study this manual so that you will have a complete understanding of its operation and to be able to take full advantage of its many built-in features. **EVERYONE WHO USES THIS EQUIPMENT SHOULD READ THIS MANUAL AND BE FAMILIAR WITH THE SAFETY WARNINGS MARKED ▲.**

This manual is dedicated as a mariner's companion to help more fully enjoy the sport in comfort and safety. For quick reference, keep it handy when operating your outboard.

HAPPY BOATING

EVINRUDE MOTORS

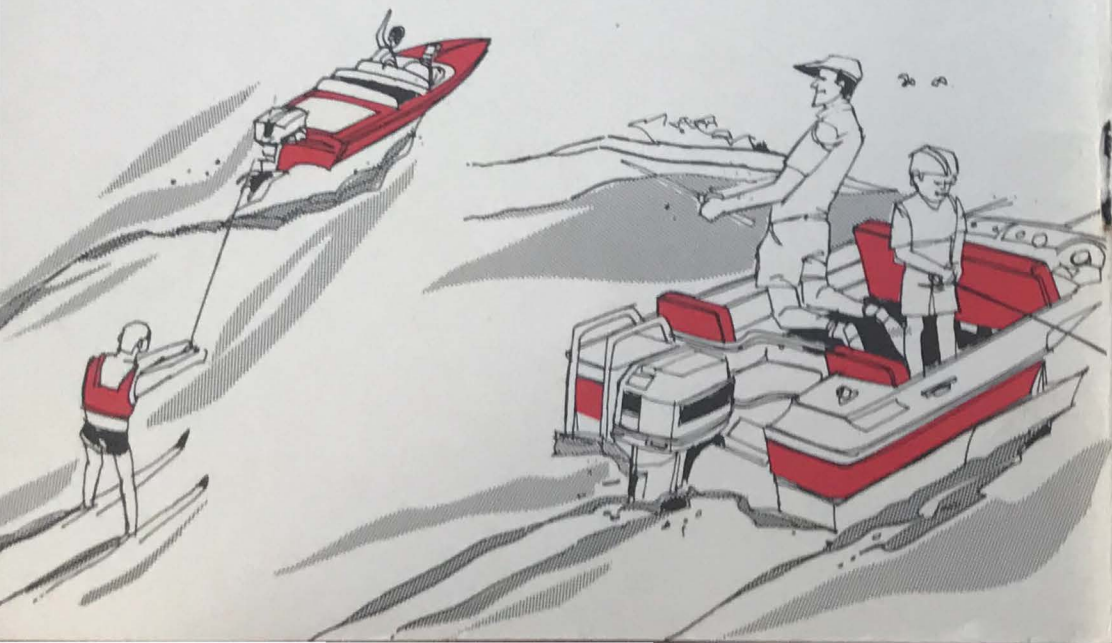


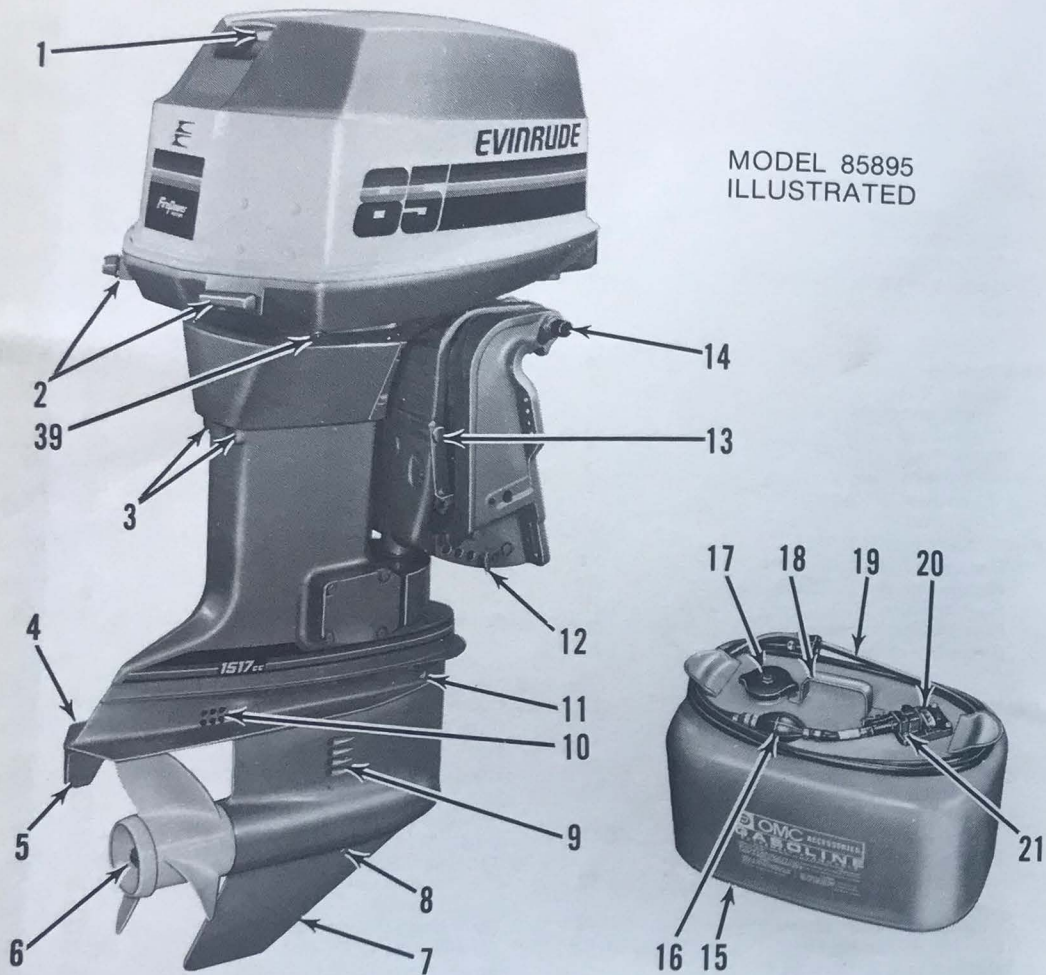
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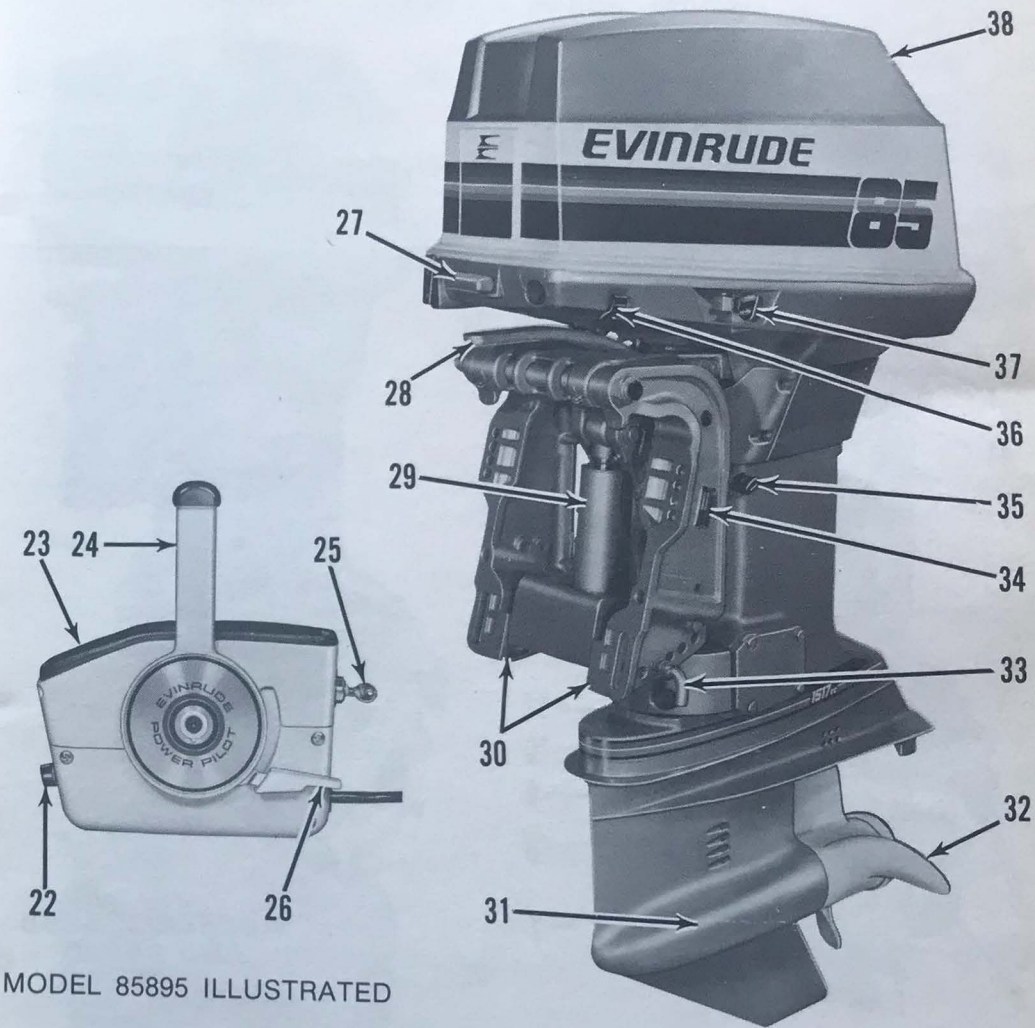
ITEM NO. 5351

PART NO. 20825B



STARBOARD VIEW

- | | |
|--|----------------------------------|
| 1. Tilt Grip | 11. Oil Level Plug |
| 2. Cover Lock Levers, Aft (2) | 12. Angle Adjusting Rod Retainer |
| 3. Exhaust Relief | 13. Tilt/Trail Lock |
| 4. Anti-Cavitation Plate | 14. Thru Tilt Pin Steering |
| 5. Steering Trim Tab | 15. Fuel Tank |
| 6. Underwater Exhaust Outlet | 16. Priming Bulb |
| 7. Skeg | 17. Filler Cap |
| 8. Oil Drain/Fill Plug | 18. Handle |
| 9. Water Intake (Port and Starboard) | 19. Fuel Line |
| 10. Water Discharge (Port and Starboard) | 20. Fuel Gauge |
| | 21. Drain Screw |

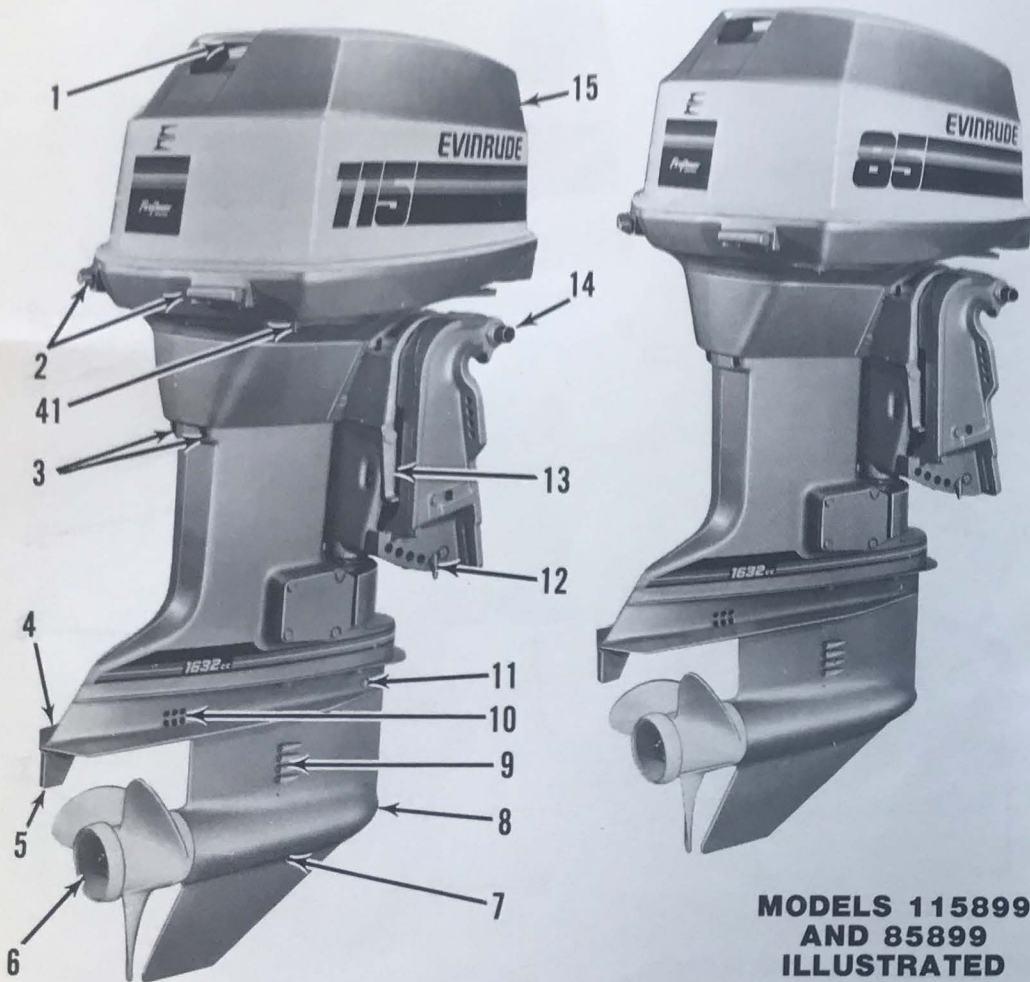


PORT VIEW

- | | |
|---|-----------------------------------|
| 22. Throttle Friction Adjustment | 30. Stern Brackets |
| 23. EVINRUDE POWER PILOT Remote Control and Electric Cable Assembly | 31. Gearcase |
| 24. Shift/Throttle Lever | 32. Propeller |
| 25. Starter/Choke Switch and Key | 33. Angle Adjusting Rod |
| 26. Warm-up Lever | 34. Model and Serial Number Plate |
| 27. Cover Lock Lever, Front | 35. Tilt/Run Lever |
| 28. Remote Steering Arm | 36. Fuel Line Retainer |
| 29. Tilt-Assist Shock | 37. Fuel Connector |
| | 38. Motor Cover |
| | 39. Overboard Pump Indicator |

FEATURES - POWER TRIM AND TILT MODELS

MODEL 85899 - 115899 - 140843

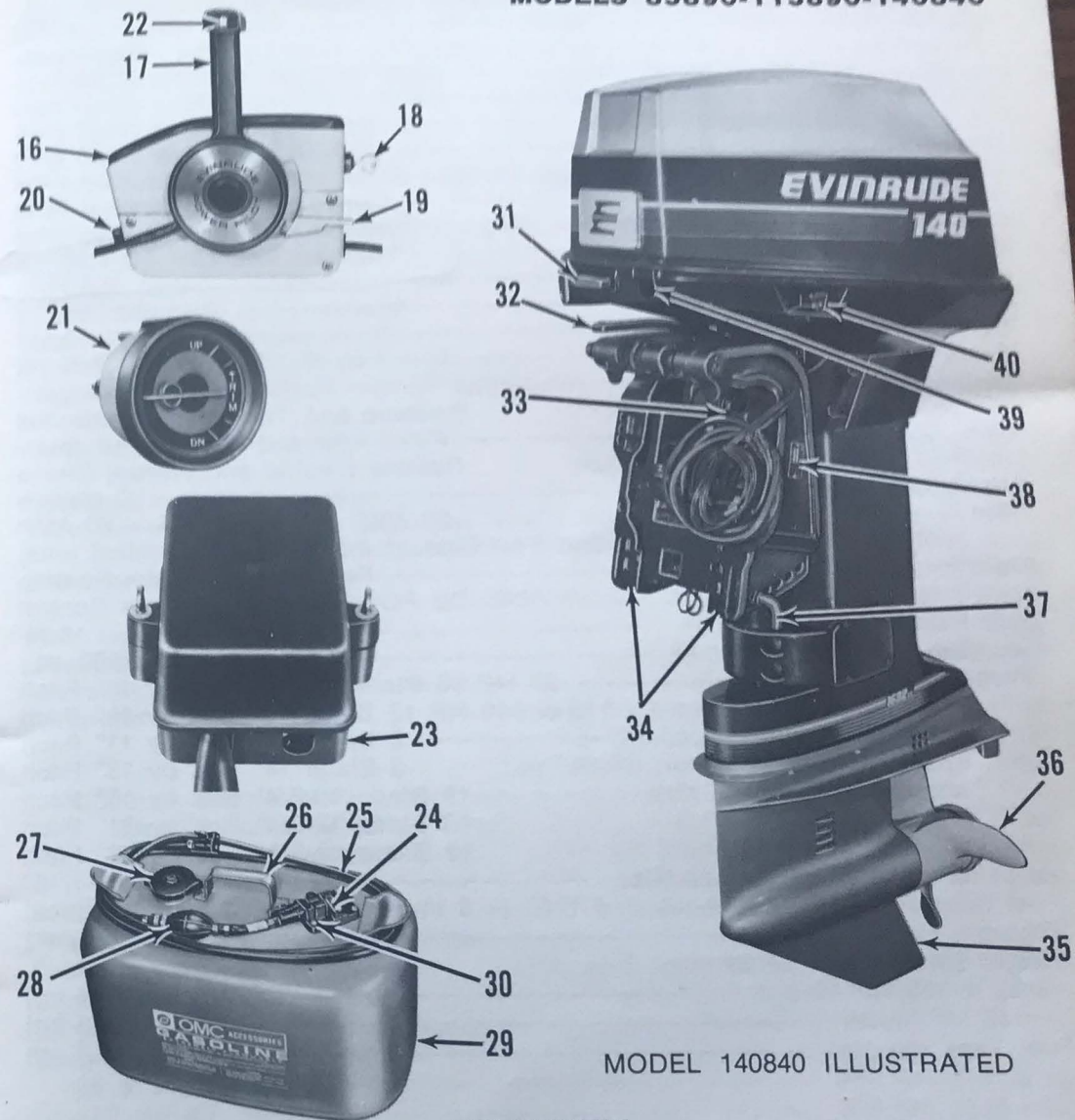


MODELS 115899
AND 85899
ILLUSTRATED

STARBOARD VIEW

- | | |
|--|---|
| 1. Tilt Grip | 11. Oil Level Plug |
| 2. Cover Lock Levers, Aft (2) | 12. Angle Adjusting Rod Retainer |
| 3. Exhaust Relief | 13. Tilt/Trail Lock |
| 4. Anti-Cavitation Plate | 14. Thru Tilt Pin Steering |
| 5. Steering Trim Tab | 15. Motor Cover |
| 6. Underwater Exhaust Outlet | 16. EVINRUDE POWER PILOT Remote Control and Electric Cable Assembly |
| 7. Oil Drain/Fill Plug | 17. Shift/Throttle Lever |
| 8. Gearcase | 18. Starter/Choke Switch and Key |
| 9. Water Intake (Port and Starboard) | 19. Warm-up Lever |
| 10. Water Discharge (Port and Starboard) | 20. Throttle Friction Adjustment |

MODELS 85890-115890-140840



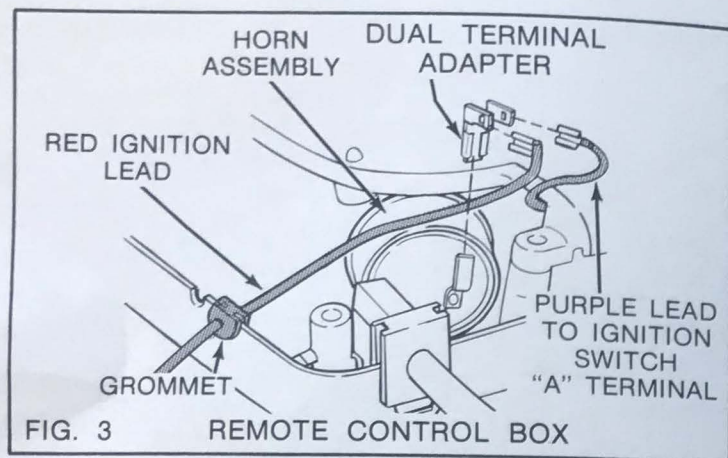
MODEL 140840 ILLUSTRATED

PORT VIEW

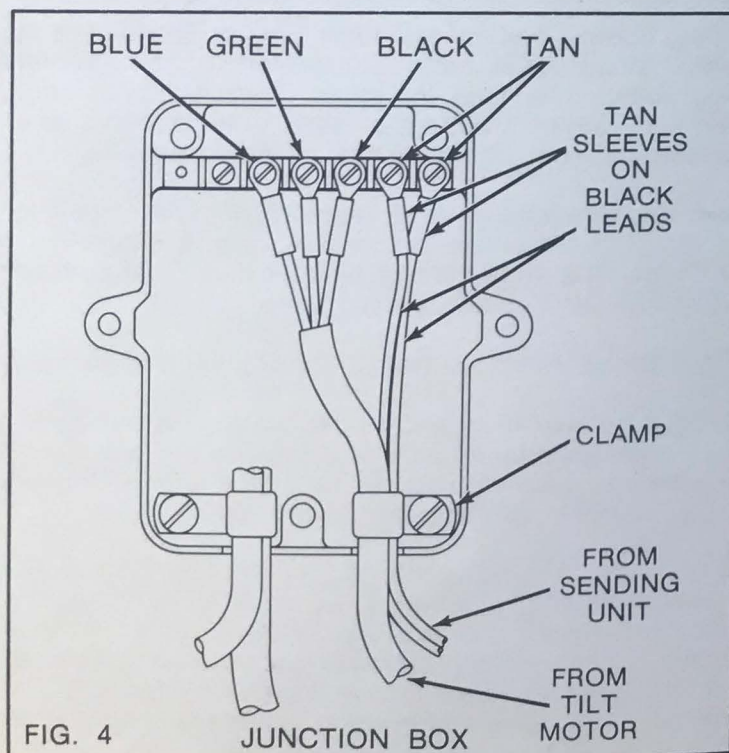
- | | |
|-------------------------------------|-----------------------------------|
| 21. Trim Gauge | 32. Remote Steering Arm |
| 22. Trim/Tilt Switch | 33. Power Tilt and Trim Assembly |
| 23. Junction Box and Cable Assembly | 34. Stern Brackets |
| 24. Fuel Gauge | 35. Skeg |
| 25. Fuel Line | 36. Propeller |
| 26. Handle | 37. Angle Adjusting Rod |
| 27. Filler Cap | 38. Model and Serial Number Plate |
| 28. Priming Bulb | 39. Fuel Line Retainer |
| 29. Fuel Tank | 40. Fuel Connector |
| 30. Drain Screw | 41. Overboard Pump Indicator |
| 31. Cover Lock Lever, Front | |

INSTALLATION INSTRUCTIONS

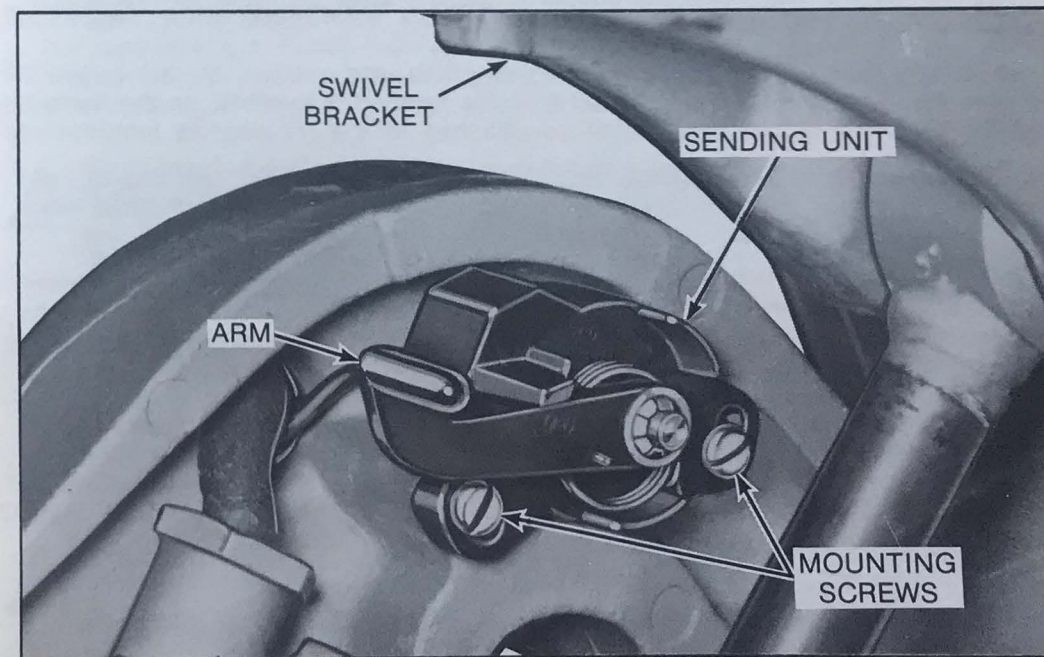
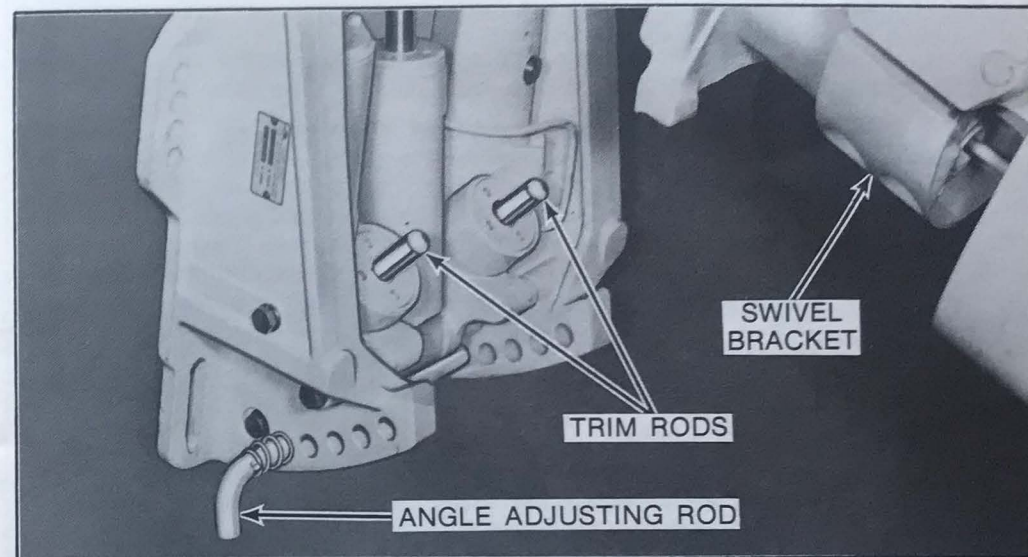
POWER TRIM AND TILT INSTALLATION AND OPERATION



12. Mount junction box in a protected area, such as inside of drywell or gunnel of boat, as far from fuel tank, battery (be sure cables will reach battery) and bilge as possible using screws provided.
13. Attach cover to junction box.
14. Connect red lead from junction box to battery positive (+) terminal. Connect black lead from junction box to battery negative (-) terminal. Reconnect battery cables after attaching two leads from junction box.



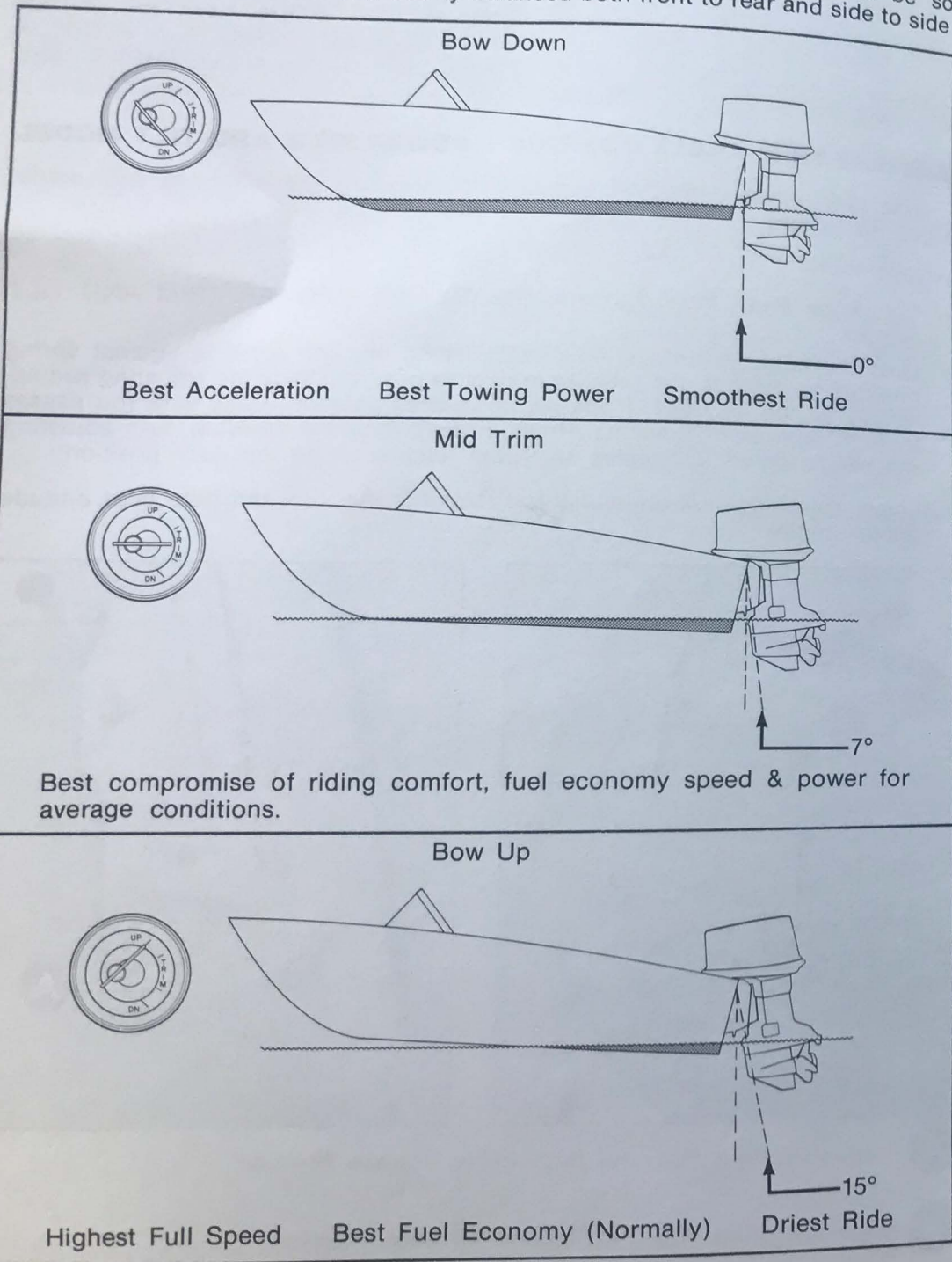
15. To insure satisfactory operation of trim unit, operate trim unit through several cycles using trim/tilt switch.
16. In some cases, it may be necessary to adjust the trim sending unit to coincide with the trim gauge at full up trim position. To do this, turn ignition key to ON position and raise the lower unit to full tilt position. Loosen the two sending unit mounting screws (leaving screws snug). Lower the lower unit until swivel bracket just touches the trim rods. Rotate sending unit so that the arm rests on the swivel bracket and the needle on gauge slightly moves off the upper line (with keyswitch in ON position). Tilt lower unit up and tighten sending unit mounting screws. After adjustment is completed turn ignition key to OFF position.



INSTALLATION INSTRUCTIONS

MINIMUM TRIM ANGLE POSITION - POWER TRIM AND TILT MODEL (CONT)

For best boat and motor performance, the boat should be driven as nearly parallel to the water as possible. Passengers and equipment should be so distributed in the boat that it is evenly balanced both front to rear and side to side



TILTING - MANUAL TILT MODEL

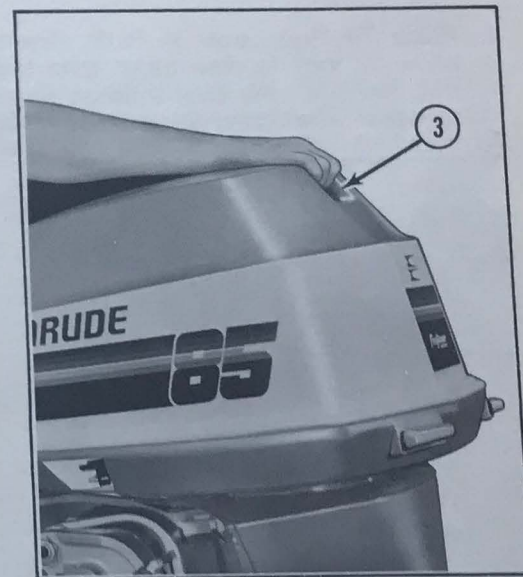
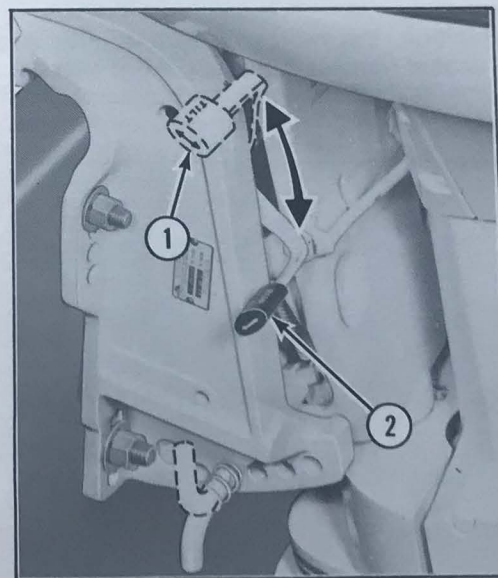
A tilt/trail lock is provided for launching, loading, beaching or trailering your boat. The Tilt/Run Lever is located on the port stern bracket. This lever releases the reverse lock for full tilt engagement.

This model is equipped with a shock absorber designed to assist in tilting the motor. To tilt motor, raise Tilt/Run Lever to TILT (up) position. Grasp tilt grip and tilt motor up until lock engages automatically.



SAFETY WARNING: WHEN MOTOR IS TILTED, ALWAYS LEAVE TILT/RUN LEVER IN TILT POSITION UNTIL READY TO LOWER MOTOR. WITH MOTOR TILTED AND THE LEVER IN RUN POSITION ANY SUBSEQUENT MOTION OF THE MOTOR COULD CAUSE IT TO SUDDENLY DROP TO RUN POSITION. LOWER MOTOR TO NORMAL RUNNING POSITION WHEN NOT USED FOR ANY LENGTH OF TIME.

To lower motor, move Tilt/Run Lever to RUN (down) position. Raise motor slightly to release lock, then lower motor completely. The reverse lock must engage as motor is lowered to run position. To be sure that the reverse lock is engaged grasp tilt grip and attempt to tilt motor.



1. Tilt Position
2. Run Position
3. Tilt Grip

An electric Power Trim and Tilt or Electric Power Tilt are available as an accessory for your motor. See your DEALER.

FUEL AND LUBRICANT (CONT)



SAFETY WARNING: GASOLINE IS EXTREMELY FLAMMABLE AND HIGHLY EXPLOSIVE UNDER CERTAIN CONDITIONS. ALWAYS STOP ENGINE AND DO NOT SMOKE OR ALLOW OPEN FLAMES OR SPARK NEAR THE BOAT WHEN REFUELING OR CHANGING FUEL TANKS. TO PREVENT FUEL SPILLAGE IN BOAT, REMOVE PORTABLE FUEL TANK FROM BOAT WHEN REFUELING. ALWAYS MIX IN WELL VENTILATED AREA.

ABOVE 32°F. (0°C)

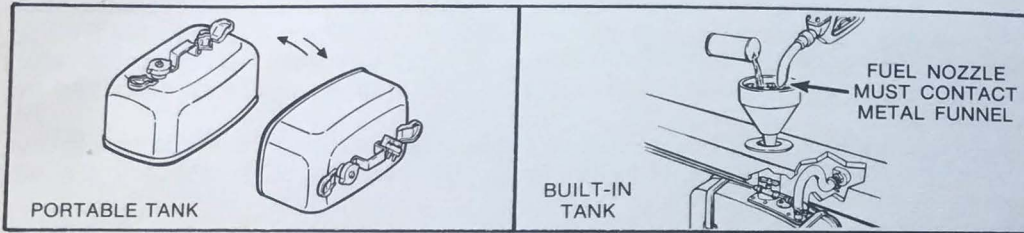
Portable Tank - Pour lubricant into tank, add gasoline. Replace filler cap securely. To mix fuel, tip tank on side as shown and back to upright position.

Built-in Tank - Use large funnel with a fine mesh strainer (100 mesh or finer). Pour lubricant slowly with the gasoline as tank is filled.

BELOW 32°F. (0°C)

Portable Tank - Pour approximately one gallon gasoline into tank, add required lubricant. Replace filler cap securely. Thoroughly mix by shaking tank. Add balance of gasoline.

Built-in Tank - In separate container mix all lubricant needed with one gallon or more of gasoline. Use large funnel with a fine mesh strainer (100 mesh or finer). Pour this mixture slowly with gasoline as tank is filled.



NOTE: Fuel systems with built-in tanks particularly those that include anti-siphon valves, primer/filter etc, may have restrictions that will not allow the engine fuel pump to deliver the proper amount of fuel under all conditions. This can result in a loss of performance and possible engine damage. Your dealer can help you determine if your boat's fuel system is restrictive and can advise you how to correct it.

BREAK-IN PROCEDURE

The 50:1 mixture is used during break-in. Use only EVINRUDE LUBRICANT or other BIA certified TC-W lubricants.

OPERATION (FIRST HOUR): For the first 5-10 minutes, operate engine at a fast idle. Check to see that a steady discharge of water is coming out of the water pump indicator to assure proper water pump operation.

NOTE: With easy planing boats, bring the boat into planing position with full power and then immediately reduce the throttle setting to approximately 3000 rpm (one-half throttle). BE SURE boat maintains planing attitude at this throttle setting.

OPERATION (SECOND HOUR): Bring boat into planing attitude and reduce power to 4000 RPM or three-quarter throttle (approximate) while maintaining planing attitude. At intervals during the second hour, apply full power for periods of one to two minutes, returning throttle to original setting (4000 RPM three-quarter throttle) for a cooling period.

Avoid continuous full throttle operation for extended periods during the next eight hours.

STARTING AND OPERATION WITH EVINRUDE POWER PILOT REMOTE CONTROL

FUEL TANK

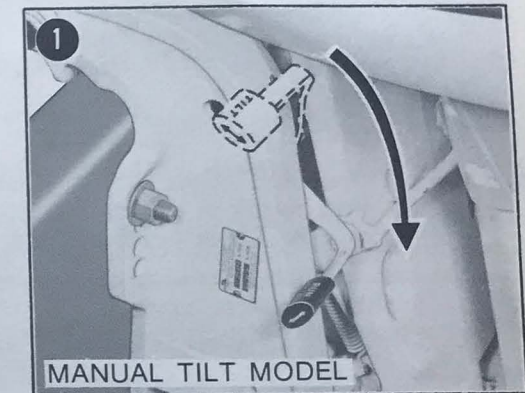
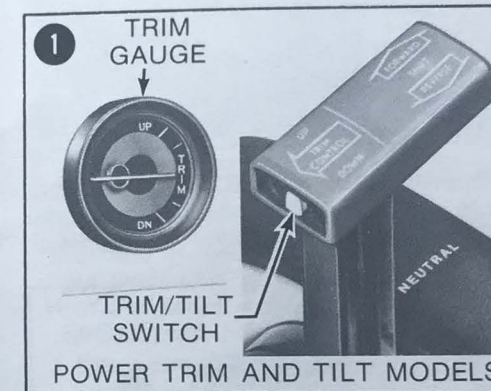
Place fuel tank in boat so tank will not shift around. Be sure fuel line is not wedged or under tank. Allow fuel line slack to permit steering.

SAFETY WARNING: DO NOT OPERATE MOTOR OUT OF WATER WITHOUT THE USE OF A RECOMMENDED ACCESSORY FLUSH KIT. DO NOT OPERATE MOTOR IN A TEST TANK WITHOUT THE PROPER TEST WHEEL. EITHER WILL RESULT IN DAMAGE TO WATER PUMP, OVERHEATING, TOO HIGH RPM, AND POSSIBLE EXPLOSION OF MOTOR PARTS.

STARTING

1 POWER TRIM AND TILT MODELS - Be sure motor is in normal running position.

MANUAL TILT MODELS - Be sure motor is in normal run position and Tilt/Run Lever is in RUN (down) position.



2 Slide fuel line connectors onto motor and tank couplings until locking lever snaps into position (PRIMER BULB AT TANK). Secure fuel line to retainer on lower motor cover to avoid interference with steering system. To disconnect fuel line depress locking lever on fuel line connector and pull off at motor or tank.

3 Squeeze fuel line primer bulb several times until resistance is felt.

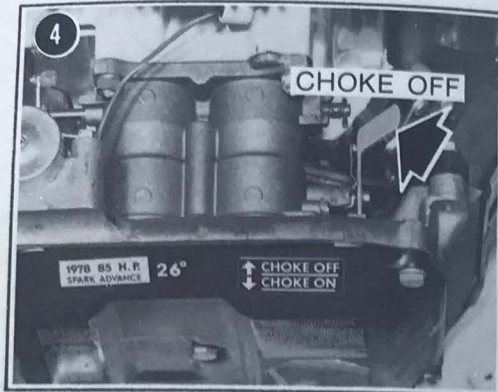
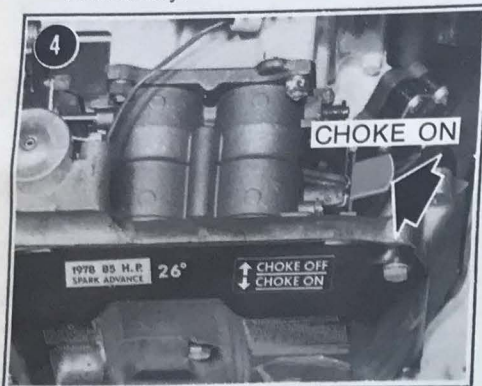


STARTING AND OPERATION

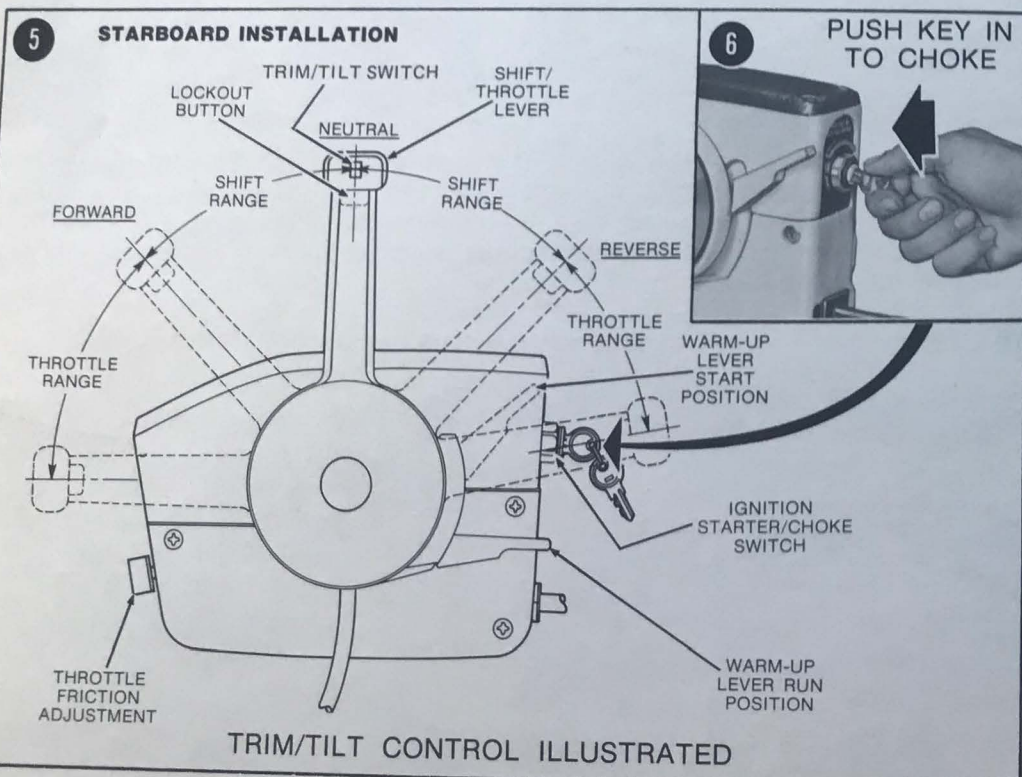
STARTING (CONT)

4 MANUAL CHOKE LEVER

The choke lever under the motor cover, (See REMOVING MOTOR COVER and SAFETY WARNING) can be set at CHOKE ON or CHOKE OFF positions. It will stay in any position it is set. Always set the choke lever at CHOKE OFF position for all normal operation. This allows motor to be choked as required at the remote control. The choke may also be operated at the motor if necessary.



- 5 Move EVINRUDE POWER PILOT shift/throttle lever to NEUTRAL position. Neutral start switch in control box prevents starting engine when shift/throttle lever is in gear. Move warm-up lever all the way up to START position.



- 6 COLD MOTOR - Starting a cold motor normally requires use of the choke. Turn starter key clockwise to ON position and push key in for full choke. Hold key in and continue to turn key to START position. Release key as soon as motor starts. If motor does not start, do not hold starter and choke on for over 10 seconds. Let go momentarily and then try again. After starting reduce throttle (IF NECESSARY TO AVOID EXCESSIVE HIGH SPEED IDLE) by moving warm-up lever toward RUN position. Additional choking (push key in to choke) may be required until motor warms up, then reduce speed by moving warm-up lever back to RUN position. Check to see that a steady discharge of water is coming out of the water pump indicator to assure proper water pump operation. See COOLING SYSTEM. If motor does not start, see TROUBLE CHECK CHART.
- WARM MOTOR
Follow cold motor procedure except warm motor does not normally require choke switch operation.

NOTE: NEVER TURN KEY TO START POSITION WHEN MOTOR IS RUNNING.

For special starting problems such as starting after long periods of shut-down or after running out of fuel, etc., use primer bulb (fuel to engine), push starter key in and hold for full choking action.

HOW TO SHIFT AND CONTROL SPEED

- 1 Move warm-up lever down to RUN position.

NOTE: Do not shift into FORWARD or REVERSE unless motor is running.

- 2 To shift into either gear, depress lock-out button and move shift/throttle lever briskly in the desired direction to the fully shifted position, which requires 45° of lever motion. A shift/throttle lever detent provides a "feel" at the forward and reverse positions. After shifting is completed, continue to move the shift/throttle lever slowly in the desired direction to increase speed.

A temperature WARNING HORN located in the EVINRUDE POWER PILOT control will sound if engine overheats. If horn sounds, stop engine immediately. Check water intake. See your DEALER if engine continues to overheat.

NOTE: When shifting from FORWARD to REVERSE or REVERSE to FORWARD, always pause at NEUTRAL until motor is at idle speed and boat has slowed, then depress lockout button and shift into gear.

NOTE: When operating in REVERSE additional care should be exercised as the motor has no automatic tilt protection if an underwater obstruction is hit.



STARTING AND OPERATION

STOPPING MOTOR

Move shift/throttle lever to NEUTRAL. Turn starter key counterclockwise to OFF position to stop motor. Always leave the key in the OFF position when motor is not running, to prevent battery from discharging. Remove key when boat is unattended.

SAFETY WARNING: DISCONNECT FUEL LINE AT MOTOR WHENEVER MOTOR WILL NOT BE USED FOR ANY LENGTH OF TIME (EXAMPLE: WHEN TRAILERING OR DOCKED). TO PREVENT SIPHONING ACTION, THE FUEL LINE SHOULD BE COILED ON TOP OF TANK. FAILURE TO DO SO COULD RESULT IN FUEL LEAKAGE INTO THE BOAT.

NOTE: Whenever engine will not be used for a period of time, disconnect positive (+) battery cable to reduce chance of battery running down and damage caused by electrolysis.

An Emergency Ignition Cut-Off Device is available as an OMC accessory. One end of cord is snap fastened to operator, the other end to cut-off device. When cord is pulled, it mechanically turns ignition key switch to "OFF" position. See your DEALER.

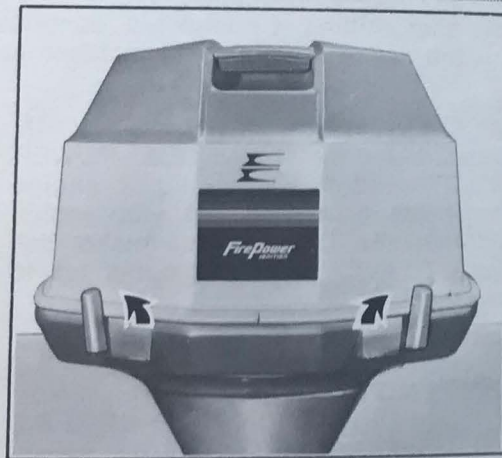
REMOVING MOTOR COVER

To remove motor cover turn front and rear locking levers 90°. Lift cover off. Reinstall cover assembly in reverse order, making certain rubber seal fits properly between cover and lower pan before turning locking levers.

SAFETY WARNING: DO NOT REMOVE OR INSTALL THE MOTOR COVER WHILE ENGINE IS RUNNING. THE MOTOR COVER IS A MACHINERY GUARD. ITS REMOVAL EXPOSES THE OPERATOR TO MOVING PARTS. KEEP HANDS, HAIR AND CLOTHING AWAY FROM FLYWHEEL, STARTER AND AIR INTAKE.



FRONT



REAR

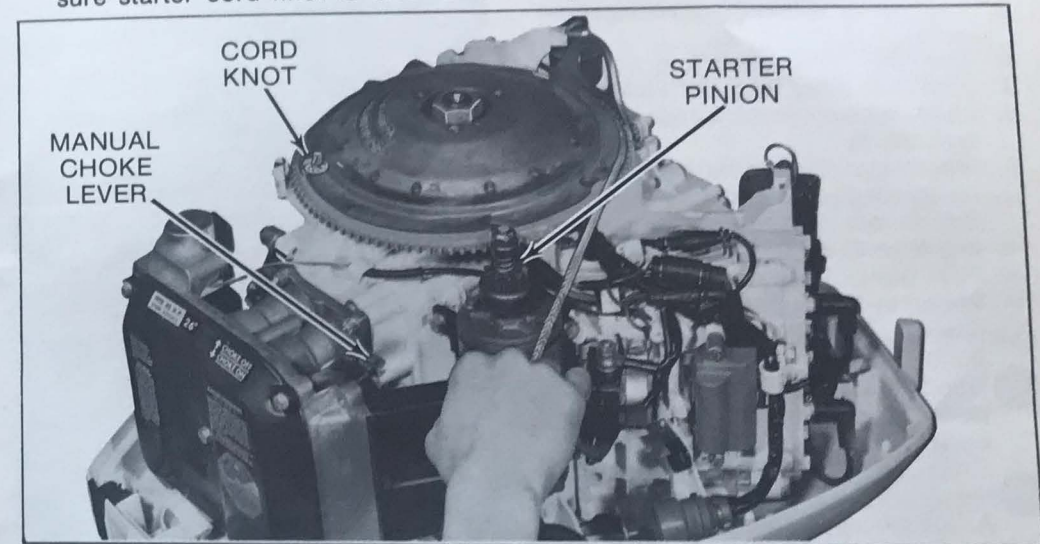
EMERGENCY STARTING

SAFETY WARNING: DO NOT USE JUMPER CABLES AND A BOOSTER BATTERY TO START ENGINE. DO NOT CHARGE A BATTERY IN THE BOAT. FUMES VENTED DURING BATTERY CHARGING CAN LEAD TO AN EXPLOSION. FOLLOW EMERGENCY STARTING PROCEDURE.

If the battery does not have sufficient charge to operate the electric starter, the motor can be started manually. Be sure motor is in normal operating position. If necessary to lower power trim and tilt model see MANUAL OPERATION - POWER TRIM/TILT MODEL. Follow steps 2 through 5 under STARTING. Then proceed as follows:

SAFETY WARNING: WHEN USING EMERGENCY STARTING PROCEDURE, THE START-IN-GEAR PROTECTION PROVIDED BY THE REMOTE CONTROL IS INOPERATIVE. MAKE SURE THROTTLE/SHIFT LEVER IS IN NEUTRAL POSITION TO PREVENT SUDDEN PROPULSION WHEN ENGINE STARTS. IF AVAILABLE, SOMEONE SHOULD BE AT STEERING WHEEL.

1. Place starter key in OFF position.
2. Remove motor cover. See REMOVING MOTOR COVER.
3. Remove the emergency starting cord from the plastic bag in motor cover. Place the knot on the end of cord in the notch of the pulley on top of the flywheel. Wrap the cord around the pulley clockwise as illustrated, making sure starter cord knot is clear of starter pinion.



SAFETY WARNING: TO PREVENT BODILY CONTACT WITH MOVING PARTS, DO NOT TURN FLYWHEEL BY HAND. USE STARTER CORD ONLY.

4. Turn starter key right to ON position.

SAFETY WARNING: DO NOT TOUCH HIGH VOLTAGE IGNITION COILS OR SPARK PLUG LEADS WHEN CRANKING MOTOR TO PREVENT ELECTRICAL SHOCK.

5. Pull forcibly on the emergency starting cord to start the motor. If motor is cold place manual choke lever in CHOKE ON position. Return to CHOKE OFF position as soon as motor starts.

After starting allow cold motor to run 2 minutes (warm-up). Reduce motor speed by moving warm-up lever down to RUN position.

If your electrical system is in operating order, the alternator should recharge your battery. If not, have the electrical system checked by your DEALER.

STARTING AND OPERATION

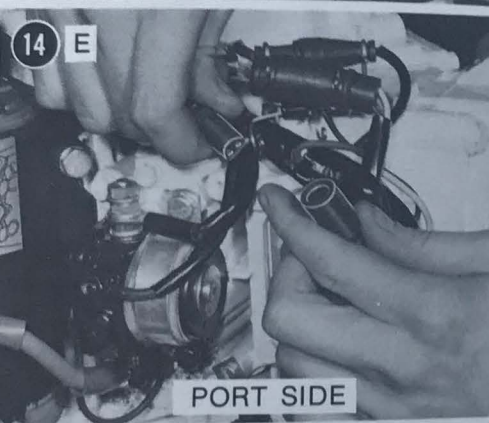
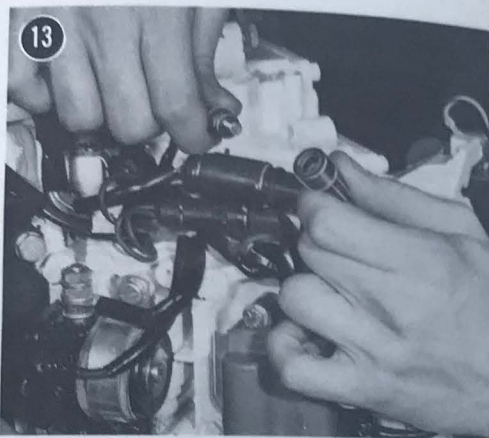
TROUBLE CHECK CHART



SAFETY WARNING: DO NOT REMOVE OR INSTALL THE MOTOR COVER WHILE ENGINE IS RUNNING. THE MOTOR COVER IS A MACHINERY GUARD. ITS REMOVAL EXPOSES THE OPERATOR TO MOVING PARTS. KEEP HANDS, HAIR AND CLOTHING AWAY FROM FLYWHEEL, STARTER AND AIR INTAKE.

MOTOR WILL NOT START, check for:

1. Shift/Throttle lever in NEUTRAL and warm-up lever in START position.
2. Fuel in tank
3. Fuel line connector properly attached
4. Fuel line primer bulb at tank end
5. Carburetor primed (squeeze primer bulb)
6. Fuel tank resting on fuel line
7. Fuel line clear and not kinked
8. Cold motor: Engine not choked sufficiently
9. Warm motor: Engine over-choked or flooded. (Do not choke motor, disconnect fuel line at motor, and crank until cleared.)
10. Fuel pump filter obstructed
11. Water in fuel system
12. Check battery and electrical connections
13. Check fuse at terminal strip on port side of motor. Always carry spare fuses. See SPECIFICATIONS
14. No spark:
 - A. Loose spark plug leads
 - B. Spark plugs carboned, burned or wet
 - C. Incorrect spark plug gap (85 and 115 HP, see SPECIFICATIONS)
 - D. Ignition system (see your DEALER)
 - E. Two ignition electrical connectors disconnected. Match connectors (with 2 wires, brown and brown with yellow stripe) and push together.
15. Loose spark plugs, causing poor compression (see SPECIFICATIONS for recommended torque)
16. Recheck starting instructions

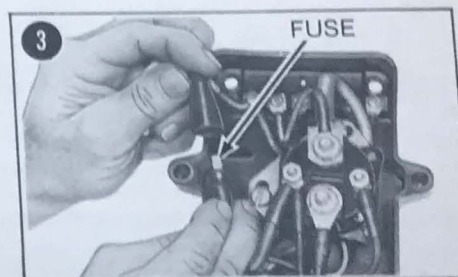


STARTING AND OPERATION

TROUBLE CHECK CHART (CONT)

POWER TRIM/TILT INOPERATIVE, check for:

1. Hydraulic fluid level (See LUBRICATION)
2. Manual release screw tightened securely
3. Check fuse in junction box. See SPECIFICATIONS.



MOTOR WILL NOT IDLE PROPERLY, check for:

1. Defective spark plugs
2. Improper fuel mixture

MOTOR LOSES POWER, check for:

1. Defective spark plugs
2. Fuel pump filter partially restricted or fuel contaminated
3. Obstruction at water intake. Cooling system not operating properly

MOTOR VIBRATES EXCESSIVELY, check for:

1. Bent or broken propeller
2. Weeds on propeller

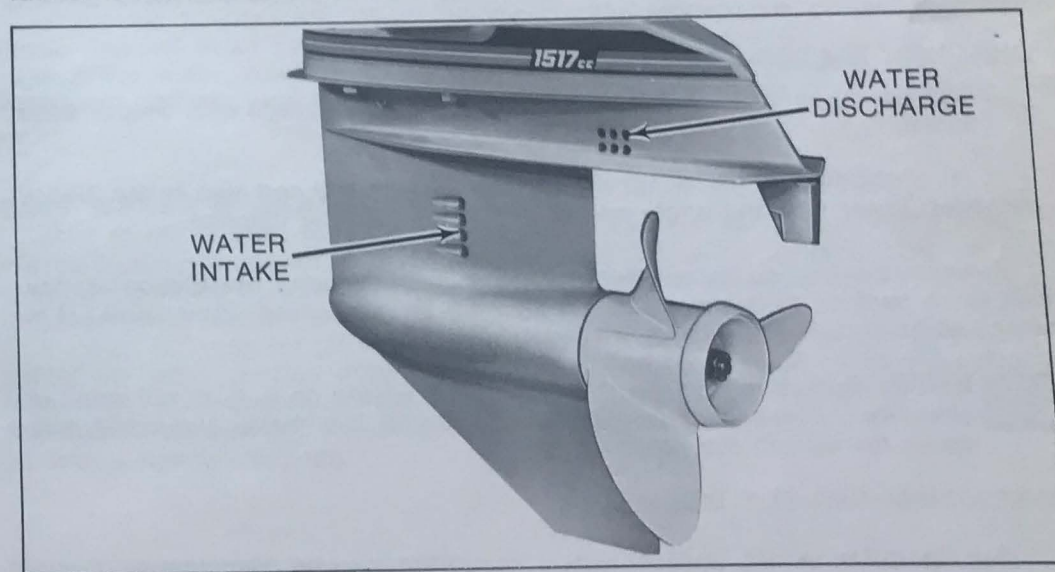
MOTOR RUNS, BUT MAKES LITTLE OR NO PROGRESS, check for:

1. Bent or broken propeller
2. Weeds on propeller

If this does not solve problem, then contact your DEALER.

COOLING SYSTEM

NOTE: Never start motor out of water as permanent damage can occur to water pump and powerhead.




The motor has a pressure and thermostatically controlled water cooling system. The water temperature is accurately controlled for best performance and long motor life. The water pump operates as a centrifugal pump at high speeds

STARTING AND OPERATION

COOLING SYSTEM (CONT)

and as a positive displacement pump at low speeds. Water is taken in through inlets located on the port and starboard side of the gearcase. A steady discharge from the water pump indicator will assure that the water pump is operating properly. After motor is warmed up, the water is expelled through the water discharge. The temperature warning horn in the remote control will alert the operator should the motor overheat. When horn sounds, stop the motor and check the water inlet. Remove any weeds or debris that may be clogging up the inlet and restart the motor. If horn sounds, stop motor immediately. Running an overheated motor may cause serious damage. See your DEALER for service.

 **NOTE:** For continuous operation in waters containing excessive amounts of salt, sand or silt, we recommend an OMC accessory chrome plated water pump kit. See your DEALER.


FUEL ECONOMY

The economy throttle position can affect fuel savings depending on boat load and hull design. When boat reaches top speed, slightly back off on throttle from FULL SPEED position. This will result in a fuel saving without noticeable loss in speed.

DUAL MOTOR MANEUVERING

When leaving or approaching the dock, or for any other close maneuvering at slow speed, start both engines. Leave the stand-by engine idling in NEUTRAL and use the engine with the control nearest the operator. The use of one control is very effective and more convenient.

In the event that this engine stops, you can immediately go to the other engine which has been on stand-by.


 **NOTE:** Stand-by engine must be running when maneuvering or water may be forced back through the underwater exhaust outlet and cause serious damage to the powerhead.

SHALLOW WATER OPERATION

When operating in shallow waters, proceed at slow speeds until deeper water is reached.

If an obstruction is hit, retard the throttle immediately and stop motor. Check propeller, lower unit and angle adjusting rod for possible damage.

If motor vibrates excessively after striking an underwater obstruction, it may indicate a bent or damaged propeller. Operate at slow speed. Your DEALER is equipped to check for propeller damage.

 **NOTE:** Operating motor with lower unit dragging on bottom will result in propeller wear, and cause sand to be forced into water pump and may cause damage to the pump.

POWER TRIM AND TILT MODEL

When operating in very shallow waters, the motor may be tilted slightly higher than normal trim range and operated at slow speeds. (Be sure the engine's water pump intake is in the water at all times.) The motor should be lowered immediately upon reaching deeper water.

MANUAL TILT MODEL

With tilt/run lever in RUN position the motor will automatically tilt up if an obstruction is hit while going forward at normal running speed. The motor may not release when running in shallow water at slow speeds. When tilt/run lever is in RUN position, the reverse lock is automatically engaged. When running in shallow water, place the tilt/run lever in TILT (up) position which allows the motor to "kick-up" more easily if an obstruction is hit. Before resuming normal running speed in deeper water, be sure to return tilt/run lever to RUN (down) position.



SAFETY WARNING: DO NOT OPERATE MOTOR IN REVERSE WITH TILT/RUN LEVER IN TILT (UP) POSITION AS MOTOR MAY TILT INTO BOAT RESULTING IN POSSIBLE LOSS OF CONTROL.



NOTE: If angle adjusting rod is bent it will INCREASE the breakaway force required to release the reverse lock when operating in forward gear, resulting in possible damage to stern brackets. It will also REDUCE the force required to release the reverse lock when operating in reverse causing motor to tilt out of the water. Replace bent angle adjusting rod.

OPERATING IN WEEDY WATER

Weeds on the propeller will cause motor to vibrate. Run at reduced throttle when weeds are thick. Reverse motor periodically to clear weeds from propeller. Stop motor, clear propeller and water intake completely of weeds before resuming speed in clear water.

OPERATING IN FREEZING WEATHER

In freezing temperatures, keep the lower unit submerged in the water at all times. This will avoid freezing and possible damage to the water pump or other parts of the motor. When removing the motor from the water, keep the motor in an upright position until water is completely drained from the cooling system.

SALT WATER OPERATION

Your motor is built for operation in either fresh or salt water. Fresh water internal flushing is not normally required, however, it may be desirable after use in especially polluted or brackish water. Your local dealer will assist you in securing the appropriate flushing device.

If motor is to remain on boat during long periods of inoperation, tilt gearcase out of the water (except during freezing temperatures). When removing motor from water, allow cooling system to drain thoroughly, by placing motor in upright position. We recommend that motor exterior be rinsed with fresh water and wiped off with a lightly oiled rag.

ANTI-CORROSION PROTECTION

It is important, especially in salt water areas, to protect the lower unit and propeller from galvanic corrosion. Your DEALER has accessory kits available which provide additional protection under adverse conditions.

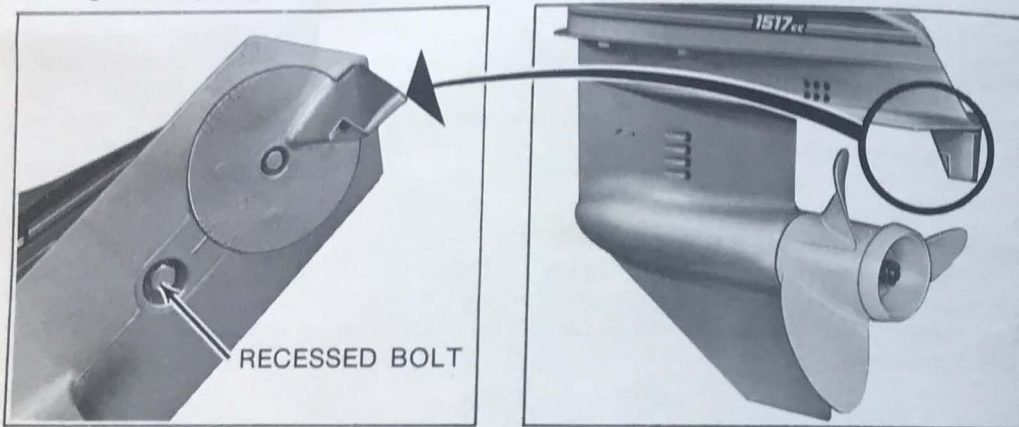
ADJUSTMENTS

TRIM TAB ADJUSTMENT

Your boat may tend to veer slightly to port or starboard due to steering forces or other reasons. To check this, run boat in a straight line with balanced load, in an area where current and wind will not be a factor. To correct, loosen trim tab bolt and adjust trim tab slightly in same direction in which boat is veering. Reference numbers (0 thru 6) are embossed on the trim tab for ease of adjustment. Align reference number with center of recessed bolt.

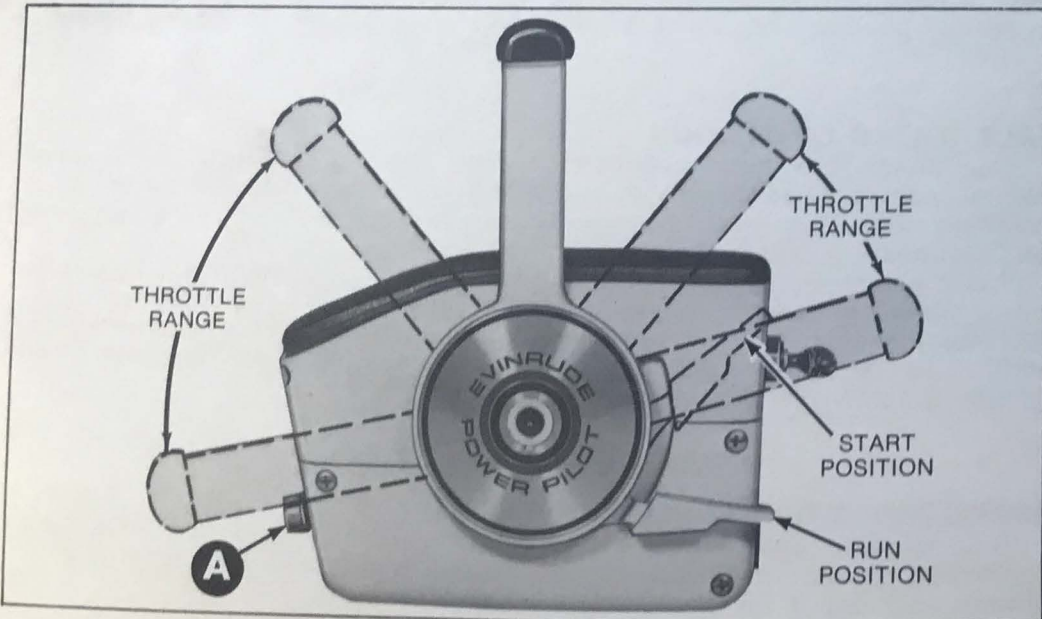
SAFETY WARNING: IMPROPER TRIM TAB ADJUSTMENT CAN CAUSE DIFFICULT STEERING. SEE YOUR DEALER.

Steering forces are affected by boat trim and by motor angle adjustment. Proper boat trim and correct motor angle adjustment will reduce steering effort. If the motor is not vertical, boat will tend to veer to one side. For example, if motor tilt angle is adjusted too low, boat will veer to the right.



THROTTLE FRICTION ADJUSTING KNOB (A)

This knob may be adjusted so that throttle setting will not wander while you are underway.



ADJUSTMENTS

THROTTLE FRICTION ADJUSTING KNOB (CONT)

To adjust, start engine move shift/throttle lever into throttle range and while you are underway turn adjustment knob as required for proper friction adjustment.

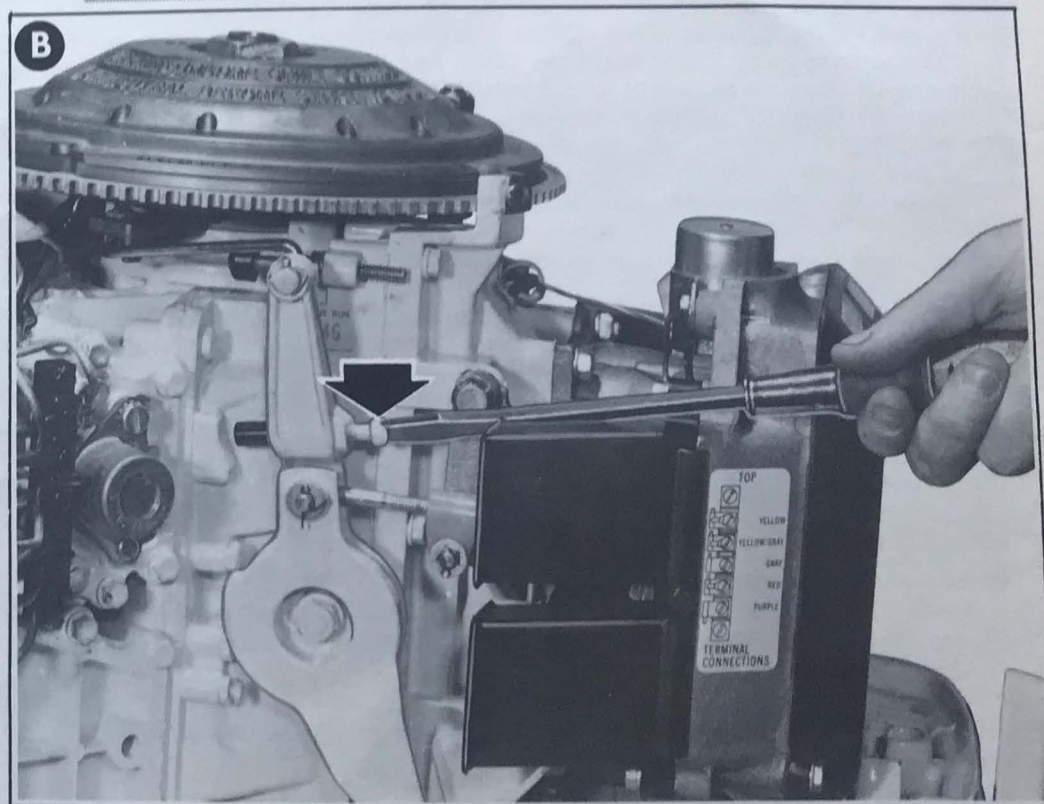
The friction device is only effective in the throttle range portion.

IDLE SPEED ADJUSTMENT (B)

Stop motor and remove motor cover. (See REMOVING MOTOR COVER.) Start motor.

The motor should be at normal operating temperature with the shift/throttle lever in NEUTRAL and warm-up lever in RUN (down) position, before making idle speed adjustment. Turn the screw clockwise to increase idle speed or turn counterclockwise to decrease idle speed. Stop motor. Replace motor cover.

SAFETY WARNING: THE MOTOR COVER IS A MACHINERY GUARD. ITS REMOVAL EXPOSES THE OPERATOR TO MOVING PARTS. KEEP HANDS, HAIR AND CLOTHING AWAY FROM FLYWHEEL, STARTER AND AIR INTAKE.







CARBURETOR ADJUSTMENT

HIGH SPEED AND LOW SPEED

Fuel ratio calibration is maintained through use of fixed high and low speed jets. No adjustment is required.

MAINTENANCE LUBRICATION

TYPES OF LUBRICANT		Contact your DEALER for OMC Lubricants.		
OMC ANTI-CORROSION LUBE	OMC HI-VIS GEARCASE LUBE	ANDEROL 766	OMC POWER TRIM/TILT FLUID	
				
TUBE	GREASE GUN			
1	2	3	4	5

LUBRICATION PICTURE SYMBOLS

GEARCASE LUBRICATION

SAFETY WARNING: BE SURE SHIFT/THROTTLE LEVER IS IN NEUTRAL POSITION AND DISCONNECT BOTH ELECTRICAL CONNECTORS (SEE PAGE 36, ITEMS 14E) TO AVOID ACCIDENTALLY STARTING MOTOR.

With motor in vertical position, remove oil drain/fill and oil level plugs from starboard side of gearcase. Allow lubricant to drain completely.

To refill, place tube of OMC HI-VIS Gearcase Lube in drain/fill hole. If OMC HI-VIS Gearcase Lube is not available, OMC Sea Lube* Premium Blend Gearcase Lube can be used as an alternate. Fill until lubricant appears at oil level hole. See SPECIFICATIONS for gearcase capacity.

NOTE: Recommended lubricants which have been formulated to protect against damage to bearings and gears must be used as extensive damage can result from improper lubrication.

Install oil level plug before removing lubricant tube from oil drain/fill hole. Drain/fill plug can then be installed without loss of lubricant. Tighten both plugs securely.

If the proper tube or filler type can is not available, install drain/fill plug. Slowly fill gearcase through oil level hole allowing trapped air to escape. Install oil level plug. Tighten both plugs securely.

Air still trapped inside gearcase will escape after motor is operated or allowed to stand in a vertical position for several hours. Recheck level and refill as required.

LUBRICATION POINTS

- A** Starter Pinion Shaft
- B** Cover Latches - Front and Rear
- ** C** Swivel Bracket Fitting and Trail Lock
- † C** Swivel Bracket Fitting, Tilt/Trail Lock, Tilt/Run Lever and Reverse Lock
- D** Carburetor, Cam and Choke Linkage
- E** Tilt Tube Shaft
- F** Control Shaft Bushings, Bearings and Shift Linkage

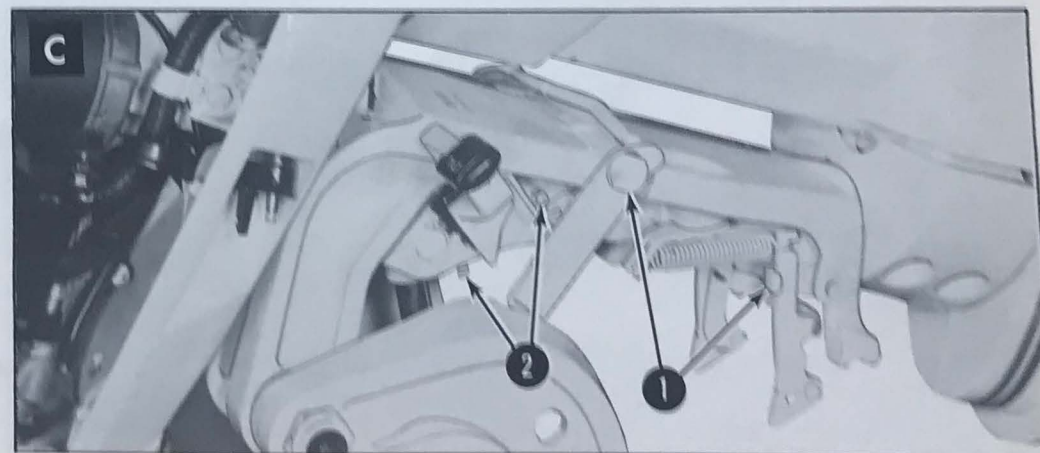
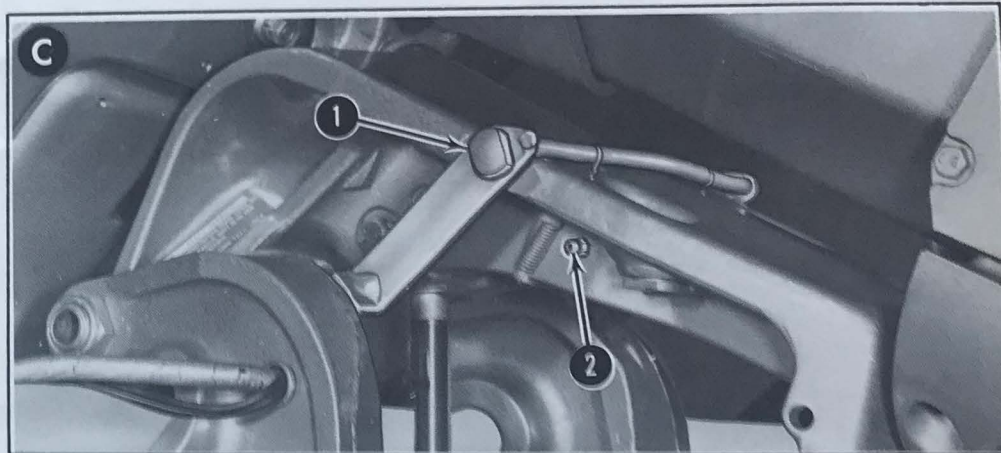
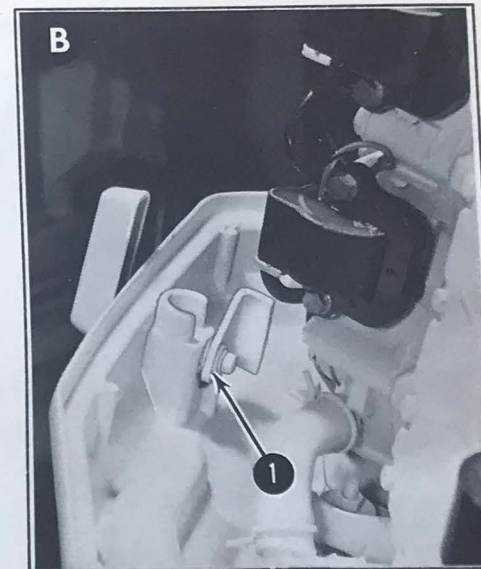
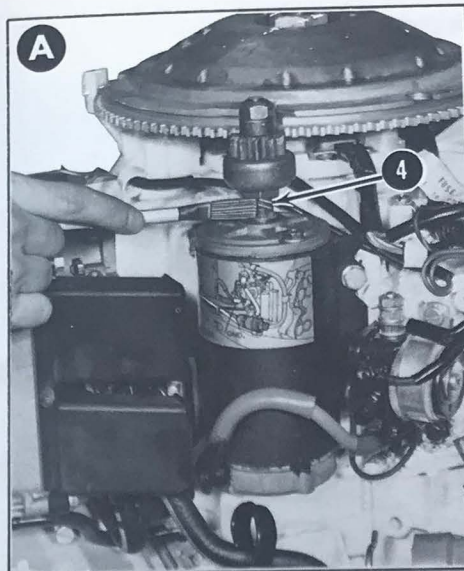
Frequency of Lubrication • Fresh Water-60 Days • Salt Water-30 Days (Some areas may require more frequent lubrication.)

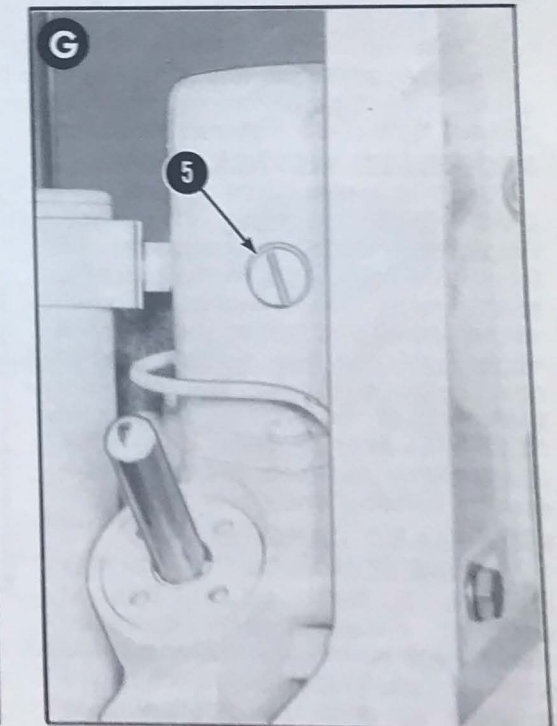
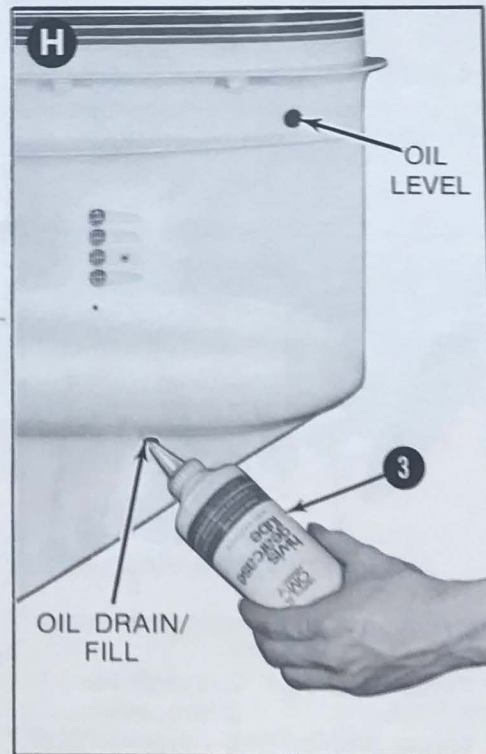
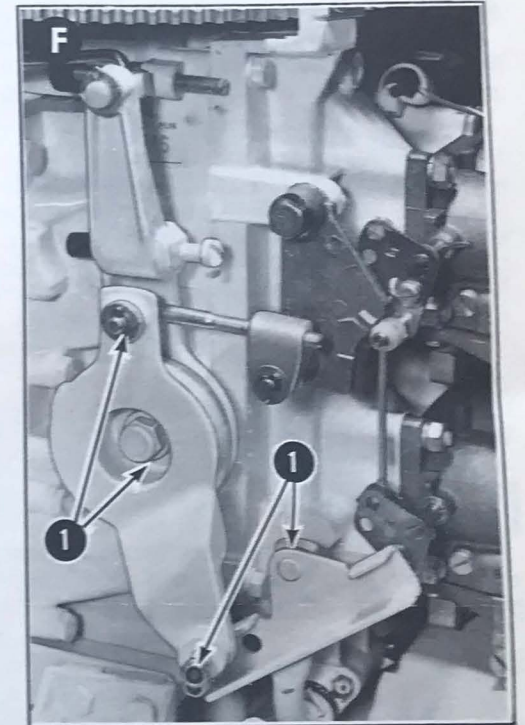
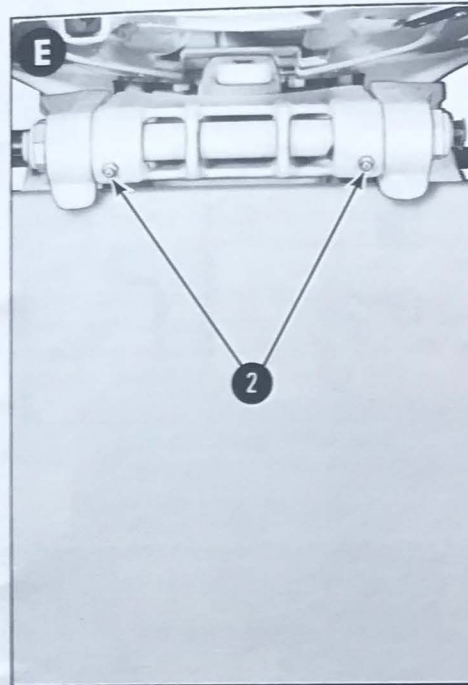
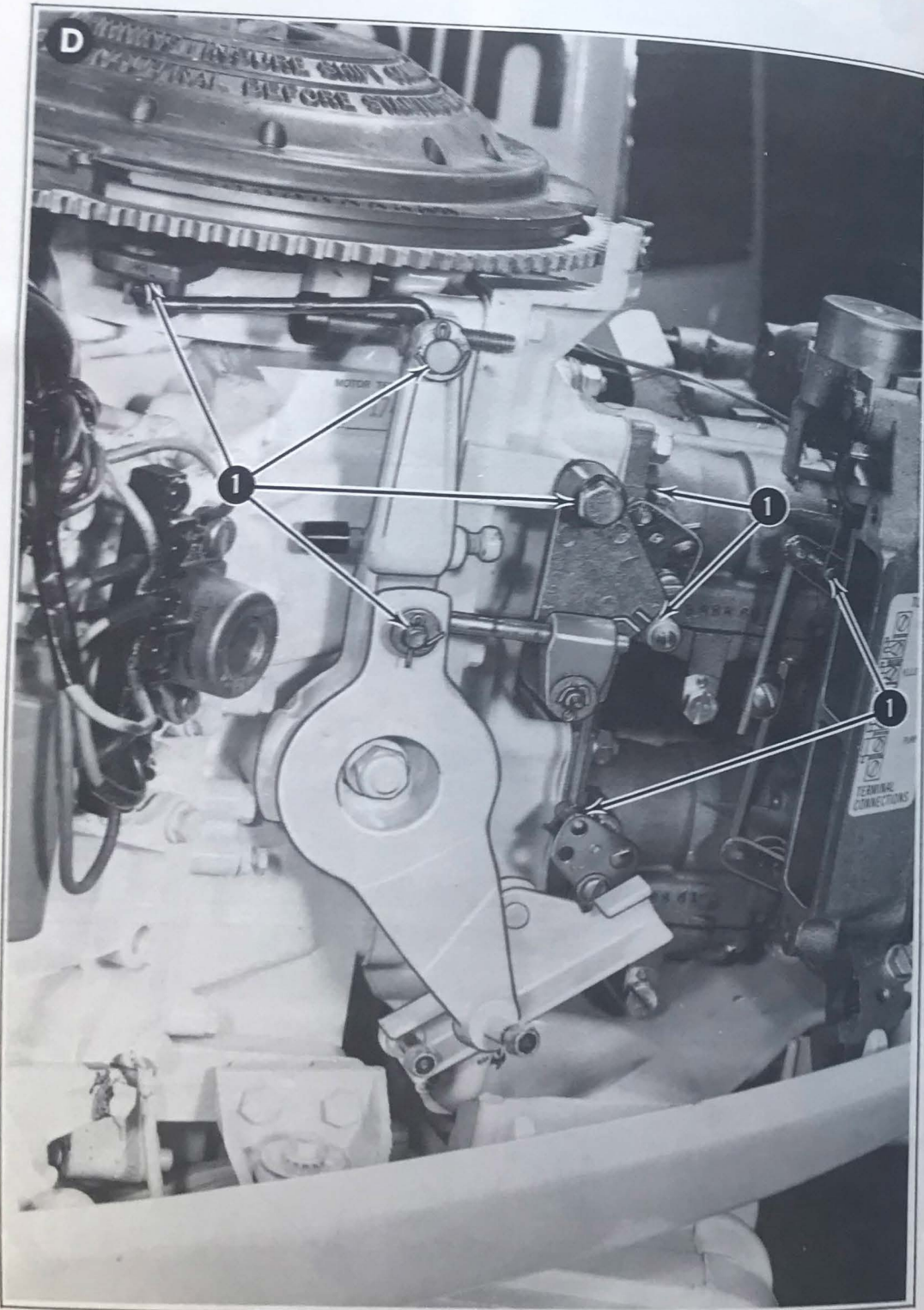
**** C** Power Trim and Tilt Oil Reservoir

With engine tilted up, remove the filler plug and check the fluid level. If necessary, add enough OMC Power Trim/Tilt Fluid to bring the fluid level even with the bottom of fill hole when unit is at full tilt.

F Gearcase: Change after first 20 hours of operation and check after 50 hours of operation. Add lubricant if necessary. Drain and refill every 100 hours of operation or once each season, whichever occurs first.

*Trademark **Power Trim and Tilt Model Only †Manual Tilt Model Only





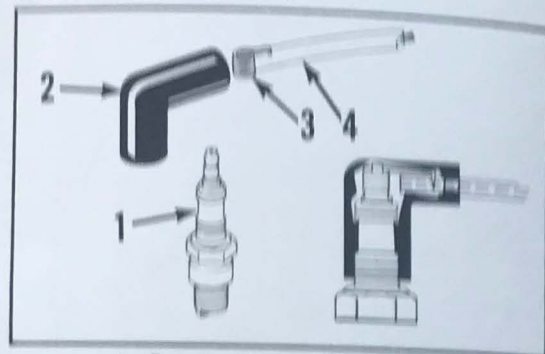
MAINTENANCE

SPARK PLUG INSPECTION AND REPLACEMENT

Using the correct spark plug is most important for efficient operation. See SPECIFICATIONS for recommended spark plug. 140 HP: For sustained slow speed operation use same spark plug as 85 HP or 115 HP.

To remove spark plugs, stop motor and remove motor cover. See REMOVING MOTOR COVER and SAFETY WARNING. Detach rubber covered spark plug terminal (twist slightly counterclockwise and pull off). Remove spark plugs for inspection or replacement as necessary.

When reinstalling spark plug, clean the spark plug seat in cylinder head. Install spark plug. See SPECIFICATIONS for spark plug wrench size and torque.



1. Spark Plug 3. Spring
2. Cover 4. Lead

NOTE: Do not overtighten, or damage may result to cylinder head.

The spring inside rubber terminal lead cover must be positioned to fit properly over spark plug terminal (see illustration).

PROPELLER REPLACEMENT

Your motor has a shock absorber in the propeller hub to minimize propeller damage when propeller strikes an object.

SAFETY WARNING: WHEN REMOVING PROPELLER BE SURE SHIFT/THROTTLE LEVER IS IN NEUTRAL POSITION AND DISCONNECT BOTH ELECTRICAL CONNECTORS (SEE PAGE 36, ITEMS 14E) TO AVOID ACCIDENTALLY STARTING MOTOR.

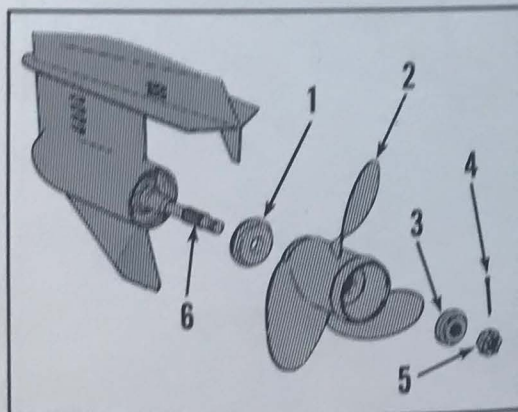
Remove cotter pin and propeller nut. See SPECIFICATIONS for propeller nut socket wrench size. Remove thrust washer and propeller. If thrust bushing is removed, it must be replaced as shown.

PROPELLER INSTALLATION

Coat propeller shaft splines with OMC Gasket Sealing Compound. Place thrust bushing in propeller and then slide assembly onto propeller shaft. Install thrust washer on shaft spline. Install and tighten propeller nut finger tight and then tighten to align finger tight and then tighten to align next cotter pin hole. The propeller shaft should turn freely (engine in NEUTRAL) after propeller is installed. Install cotter pin (use new pin if necessary) bending ends over nut.

PROPELLER CARE

Unusual or excessive vibration may indicate a bent or unbalanced propeller. Avoid or limit operation under these conditions. Carry a spare propeller and replace the damaged propeller as soon as practical. See your DEALER.



1. Thrust Bushing 4. Cotter Pin
2. Propeller 5. Propeller Nut
3. Thrust Washer 6. Propeller Shaft

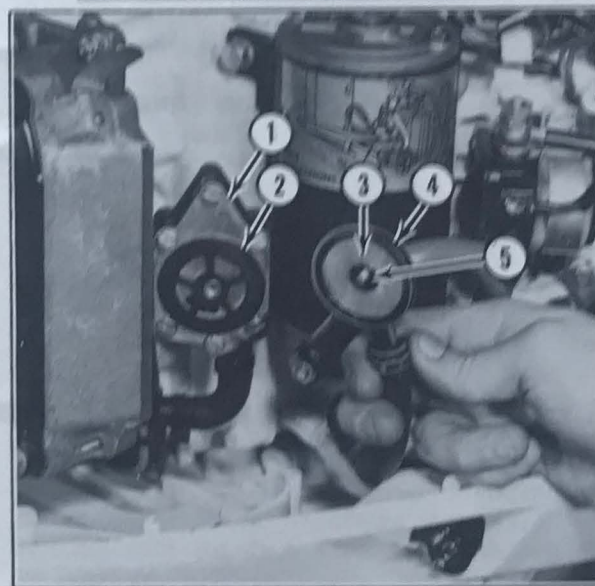
CLEANING FUEL PUMP FILTER

SAFETY WARNING: TO PREVENT EXCESSIVE FUEL SPILLAGE DISCONNECT FUEL LINE PLUG-IN CONNECTOR AT MOTOR BEFORE DISASSEMBLY.

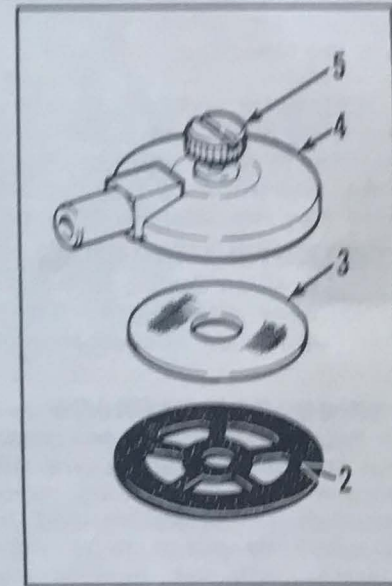
NOTE: We recommend that the fuel pump filter be cleaned every 100 hours of operation or once a season, whichever comes first.

The fuel filter assembly consists of the parts shown and is attached to the fuel pump by a screw. To inspect for sediment or water accumulation stop engine and remove motor cover (see REMOVING MOTOR COVER). Remove port side air silencer extension. Remove fuel pump cover screw. The filter will disassemble easily. Wash filter element with clean solvent and a brush. Assemble filter as shown being careful to assemble lip of filter screen toward fuel pump. Tighten cover screw securely. Check for leaks by connecting fuel line to motor and squeezing primer bulb until definite resistance is felt in the bulb. Reassemble air silencer extension.

SAFETY WARNING: DO NOT REMOVE OR INSTALL THE MOTOR COVER WHILE ENGINE IS RUNNING. THE MOTOR COVER IS A MACHINERY GUARD. ITS REMOVAL EXPOSES THE OPERATOR TO MOVING PARTS. KEEP HANDS, HAIR AND CLOTHING AWAY FROM FLYWHEEL, STARTER AND AIR INTAKE.



1. Fuel Pump
2. Gasket
3. Filter



4. Cover
5. Cover Screw

REPLACEMENT KEYS

Record your ignition key number.

KEY NO.

For replacement keys, send key number and \$1.00 for each key (minimum order of two keys) to Stevens Instrument Co., 111 Greenwood Avenue, P.O. Box 193, Waukegan, Illinois 60085.

MAINTENANCE

EXTERNAL FINISH

The finish on your outboard motor is a baked enamel designed for use in either fresh or salt water. The only care necessary when used in fresh water is an occasional wipe down with a dry cloth to maintain the lustre. It is advisable, after use in salt water, to wash the entire motor with fresh water, wipe dry and then apply a coating of automotive wax.

CONDITION OF BOAT BOTTOM

The condition of the boat bottom has much to do with performance. A bottom covered with slime, barnacles or other foreign matter will cause a loss of boat speed. It is therefore strongly suggested that a periodic cleaning of the boat bottom be done, the number of cleanings per season depends on the type of water in which the boat is run. See your DEALER for non-copper containing anti-fouling boat bottom paint suitable for your area.

REMOVING MOTOR FROM BOAT

Disconnect remote control, fuel line, battery cables from the battery and electrical cables. Support weight of motor preferably with use of a hoist. See your DEALER for optional lifting device. Remove the two upper motor mounting bolts, and two lower mounting nuts and washers. (Do not remove lower mounting bolts.)

Lift motor vertically from boat enough so that stern brackets will clear lower mounting bolts and transom. Lift motor clear of boat. Hold motor in upright position to allow water to drain out. Do not place motor in a position where the lower unit will be higher than the powerhead - any water remaining in the exhaust tube may run into the powerhead and cause serious damage.

NOTE: MANUAL TILT MODEL: TILT/RUN LEVER must be in RUN (down) position before lifting motor from boat. Otherwise shock absorbers will force stern bracket assembly to swing out, making it difficult to reinstall motor on boat or stand.

OFF SEASON STORAGE

Your warranty does not cover engine failures caused by neglect. It is important that you protect your engine with a well planned storage pattern. The off season storage of your outboard motor is important to its long life and trouble free operation. Temperature and humidity changes while in storage can cause corrosion of piston rings, cylinder walls, and bearing surfaces that are not properly protected. It is to your advantage to protect your motor as soon as possible before storage. We recommend that your DEALER prepare your motor for off season storage. Fuel and electrical systems require periodic cleaning and adjustment to maintain top performance. This is the best time to have your DEALER perform an engine tune-up.

If you desire to prepare your own engine for storage, proceed as follows:

See your DEALER for OMC 2+4 Fuel Conditioner and OMC Rust Preventative oil.

1. Use OMC 2+4 Fuel Conditioner in your fuel mixture to stabilize the gasoline. It eliminates need for draining fuel for up to one year of storage. Add one ounce of OMC 2+4 for every gallon of gasoline. Then operate motor in fresh water for a few minutes to allow fuel mixed with OMC 2+4 to enter carburetor.

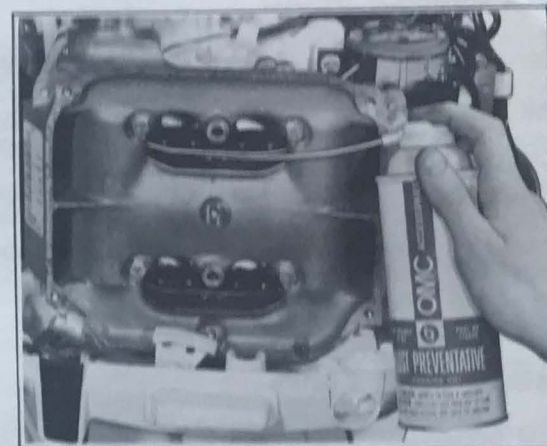


SAFETY WARNING: DO NOT OPERATE MOTOR OUT OF WATER WITHOUT THE USE OF A RECOMMENDED ACCESSORY FLUSH KIT. DO NOT OPERATE MOTOR IN A TEST TANK WITHOUT THE PROPER TEST WHEEL. OPERATING MOTOR WITHOUT EITHER WILL RESULT IN DAMAGE TO WATER PUMP, OVERHEATING, TOO HIGH RPM, AND POSSIBLE EXPLOSION OF MOTOR PARTS.

2. Remove motor cover. See REMOVING MOTOR COVER. Remove air silencer front cover (6 screws). Start engine. While engine is running disconnect fuel line at motor and rapidly inject OMC Rust Preventative Oil into (4) carburetor intakes until motor smokes excessively. Stop motor. Replace air silencer front cover.
3. Disconnect two (2) electrical connectors. See page 36, items 14E.



SAFETY WARNING: DISCONNECT FUEL LINE FROM MOTOR AND TANK. STORE FUEL LINE AND TANK IN A WELL VENTILATED AREA.



4. Remove spark plugs. Inject OMC Rust Preventative Oil into the spark plug holes. Turn engine through a number of revolutions. This will lubricate and protect internal parts of powerhead while motor is in storage.
5. Check spark plugs. Clean and check gap or replace if necessary. Torque to 17-1/2 to 20-1/2 ft. lbs. (24-27 N-m). Refer to SPARK PLUG INSPECTION AND REPLACEMENT. Leave spark plug leads disconnected.
6. Motor may be left on boat or placed on a stand. Motor must be stored in upright position.
7. Remove battery and check condition (water level and charge). Store on a board in a cool dry place and not in direct sunlight. Check water level and charge periodically during storage. Do not store battery on concrete or stone floor.
8. Service fuel filter. See CLEANING FUEL PUMP FILTER. If OMC 2+4 Fuel Conditioner has not been used in fuel mix, remove fuel tank drain screw and drain thoroughly. Replace drain screw securely.

MAINTENANCE

OFF SEASON STORAGE (CONT)

9. Remove propeller and have it checked by your DEALER. A slightly bent propeller blade may not be noticed on casual observation but will affect the performance of your motor. Clean and lubricate the propeller shaft with OMC Gasket Sealing Compound. See PROPELLER REPLACEMENT and PROPELLER INSTALLATION.
10. Drain and refill gearcase. Lubricate motor. See LUBRICATION.
11. Give motor thorough visual check for loose screws or damaged and worn parts. Replace motor cover.
12. Touch up paint. See your DEALER.
13. Apply a coat of automotive wax on external finish of the motor.

AFTER STORING - BEFORE USING

If you have properly stored your motor follow these suggestions.

1. Check lower unit lubrication. If leakage is evident, lower unit seals may need attention. See your DEALER. Check lubricant level in power trim/tilt reservoir (POWER TRIM/TILT MODEL). See LUBRICATION.
2. Connect spark plug leads. Reconnect two (2) electrical connectors. See page 36, items 14E.
3. Check water level in battery and charge. Install and connect battery. See ELECTRICAL INSTALLATION.

SUBMERGED MOTOR

MOTOR DROPPED OVERBOARD (NOT RUNNING)

If motor is recovered from water immediately, it must be serviced within 3 hours after recovery. See your DEALER. See PROLONGED SUBMERSION.

Since this motor is provided with needle bearings, it must be serviced within 3 hours after recovery to avoid costly repairs. Both fresh and salt water characteristically will start etching the highly machined bearing surfaces of the crankshaft and connecting rods as well as the bearings once exposed to the surrounding atmosphere.

If service is not readily available, proceed as follows:

1. Remove motor cover (see REMOVING MOTOR COVER) and rinse motor with fresh water.



SAFETY WARNING: BE SURE SHIFT/THROTTLE LEVER IS IN NEUTRAL POSITION AND DISCONNECT BOTH ELECTRICAL CONNECTORS (SEE PAGE 36, ITEMS 14E) TO AVOID ACCIDENTALLY STARTING ENGINE.

2. Place motor in horizontal position (spark plug openings down) and work out all of the water by rotating flywheel with emergency starter cord approximately 10 times.
3. Place motor in upright position. Remove four high speed orifice screw plugs from lower sides of carburetors. Drain carburetors.
4. Starters, electrical connectors and electrical equipment on motors that have been submerged should be completely disassembled, cleaned, flushed with fresh water if exposed to salt, and thoroughly dried before assembly.
5. Reassemble parts you removed and disconnected and follow starting instructions. After starting, permit motor to run 1/2 hour or longer.
6. If motor fails to start, remove spark plugs again to see if water is present on electrodes. Blow out any water from electrodes and reinstall or replace with new plugs. If the motor fails to start, HAVE IT SERVICED IMMEDIATELY. Motors which have been submerged must be started or disassembled as soon as possible or expensive repairs will be necessary. To minimize damage, motor must be started or serviced within approximately 3 HOURS after recovery.



NOTE: If motor cannot be started and if service is not readily available, the motor should be re-submerged immediately in fresh water to avoid exposure to the atmosphere. Make arrangements to have it serviced with the least possible delay.

MOTOR DROPPED OVERBOARD (RUNNING)

Follow the same procedure as MOTOR DROPPED OVERBOARD (NOT RUNNING). However, if there is any binding when flywheel is rotated it indicates a bent connecting rod and no attempt should be made to start the motor. HAVE IT SERVICED IMMEDIATELY.

MOTOR DROPPED OVERBOARD (IN SALT WATER)

Follow same procedure as MOTOR DROPPED OVERBOARD (NOT RUNNING) and (RUNNING) but take the motor to your DEALER as soon as possible, even if it can be started, as salt water can cause excessive corrosion of ignition system and internal parts.

PROLONGED SUBMERSION (FRESH OR SALT WATER)

If motor has been dropped overboard and not recovered immediately, then motor must be serviced within 3 hours after recovery. See your DEALER.

If sand has entered the motor, no attempt at starting should be made. Return it to your DEALER for disassembly and cleaning.