



OMC




EVINRUDE[®]
OUTBOARDS

211415



Models 5/6/8



Recommended Lubricant

ENGLISH

Use *Evinrude® Outboard Lubricant* or *OMC® 2-Cycle Motor Oil* which are *National Marine Manufacturer's Association - NMMA (BIA)* certified for service TC-W II (Two Cycle-Water Cooled). These lubricants are formulated to give best engine performance with least combustion chamber deposits, least piston varnish, maximum spark plug life, and best lubrication.

Always keep an ample supply of the recommended lubricant on hand. Additives such as "tune-ups," "tonics," "friction reducing compounds," etc., should not be used in your engine.

If *Evinrude Outboard Lubricant* or *OMC 2-Cycle Motor Oil* is not available, another NMMA (BIA) certified TC-W II lubricant may be used. Look for the certification information on the container label.

Note Failure to use a TC-W II certified lubricant could void your warranty.

For high performance boaters, we recommend *Evinrude XP™ High Performance Lubricant*. This custom blended outboard lubricant is TC-W II certified and is specially formulated for the extra stress and requirements of the high performance outboard.

See your *Evinrude* DEALER for OMC accessories and lubricant engineered specifically for use with your *Evinrude* outboard.

See **Fuel and Lubricant** section of this manual before operating this motor. If you have any questions, please contact your DEALER; he will be pleased to assist you.

Lubricante Recomendado

ESPAÑOL

Use el *Evinrude® Outboard Lubricant* o el *OMC® 2-Cycle Motor Oil*, los cuales son certificados por la *National Marine Manufacturer's Association - NMMA (BIA)*, para operar con los motores TC-W II (Dos ciclos enfriados por agua). Estos lubricantes fueron formulados para proporcionarle el mejor rendimiento al motor con un mínimo de depósitos en la cámara de combustión, menos barniz en los pistones, máxima vida a las bujías y la mejor lubricación.

Siempre mantenga a mano la cantidad necesaria del lubricante recomendado. Aditivos, tales como "tune-ups" (sincronizadores), "tónicos", "compuestos para reducir la fricción", etc., no deberán ser usados en su motor.

Si el *Evinrude Outboard Lubricant* o el *OMC 2-Cycle Motor Oil* no están disponibles, otro lubricante certificado por la NMMA (BIA) para TC-W II, podrá ser usado. Busque la información de certificación que se encuentra en la etiqueta del recipiente.

Nota El no usar un lubricante certificado para TC-W II podrá anular su garantía.

Para los aficionados a la navegación de alto rendimiento, nosotros recomendamos el *Evinrude XP™ High Performance Lubricant*. Este lubricante para fuera de borda es certificado TC-W II y fue preparado y formulado específicamente para resistir el uso recio, y para cumplir con los requisitos adicionales de los motores fuera de borda de alto rendimiento.

Vea a su AGENTE *Evinrude* para obtener los accesorios y lubricantes OMC que fueron diseñados específicamente para ser usados con su motor fuera de borda *Evinrude*.

Antes de operar éste motor, vea la sección de **Combustible y Lubricante** que se encuentra en éste manual. Si Usted tiene alguna pregunta, póngase en contacto con su AGENTE; él tendrá mucho gusto en ayudarle.



WELCOME ABOARD

Your new outboard motor has been engineered and manufactured by the world's leader in marine technology, *Outboard Marine Corporation*, to give you the maximum in service and performance.

Please study this manual to completely understand how your outboard motor operates and to enable you to take full advantage of its many built-in features.

COPYRIGHT OUTBOARD MARINE CORPORATION 1989.
ALL RIGHTS RESERVED.

Printed in USA

Table of Contents

About This Manual 1

General Information

Maximum Boat Horsepower 2
 Boating Responsibilities 2
 Basic Boating Safety Rules 2
 Owner's Identification Card 2
 Propeller Selection 2
 Insurance 2
 Stolen Motors 2
 Model and Serial Number 2
 Specifications 3
 Features/Quick Reference Index 4
 Fuel and Lubricant 6
 Fueling Instructions 6
 Engine Break-In Procedure 7
 Emergency Ignition Cut-Off Switch 7

Starting and Operation

Fuel Tank 8
 Starting Procedure 8
 Speed Control 9
 Shifting 9
 Stopping Motor 9
 Removing Engine Cover 9
 Cooling System 10
 Shallow Water Operation 10
 Shallow Water Drive 10
 Tilting 11
 Trailering 11
 Operating in Weedy Water 11
 Salt Water Operation 11
 Operating in Freezing Weather 11
 High Altitude Operation 11
 Emergency Starting 12
 Trouble Check Chart 12

Maintenance

Adjustments

Tilt Friction 13
 Steering Friction 13
 Idle Speed 13
 Carburetor 13
 Throttle Friction 13
 Motor Angle 14
 Spark Plug Inspection and Replacement 15
 Cleaning Fuel Pump Filter 15
 Anti-Corrosion Protection 15
 Lubrication 16
 Propeller
 Replacement 18
 Care 18
 External Finish 18

Installation Instructions


Maximum Boat Horsepower 19
 Motor Mounting Recommendations 19
 Lifting and Carrying Motor 20
 Installing Motor 20
 OMC Auxiliary Motor Bracket 20
 Exhaust Baffle Kit 20
 Battery Cable Installation, Sail Models 20
 Remote Controls (Optional Equipment) 20
 AC Lighting 21
 Removing Motor From Boat 21
 Off Season Storage 22
 Preseason Service 23
 Submerged Motor 23
 Dealer Service 23
 20-Hour Check 23
 Warranty Service 24
 Owner's Responsibility 24
 Maintenance Schedule Chart 24
 Symbols 25
 Warranty 27
 Service Literature Order Form 29


About This Manual

Read this manual thoroughly before attempting to operate this motor.

Safety


This manual contains certain information related to the personal safety of you the operator, your passengers and bystanders.

The safety symbol,  **Safety Warning**:, appears next to information important to prevent you and others from being hurt.

The note symbol, , appears next to information important to keep machinery from being damaged.

Important appears next to information that controls correct assembly and operation of the product.

Product References, Illustrations and Specifications

 **Safety Warning: When replacement parts are required, use genuine OMC parts or parts with equivalent characteristics including type, strength and material. Failure to do so may result in product malfunction and possible injury to the operator and/or passengers.**






Outboard Marine Corporation reserves the right to make changes at any time, without notice, in specifications and models and also to discontinue models. The right is also reserved to change any specifications or parts at any time without incurring any obligation to equip same on models manufactured prior to date of such change. Specifications used are based on the latest product information available at the time of publication.

The continuing accuracy of this manual cannot be guaranteed.

All photographs and illustrations used in this manual may not depict actual models or equipment and are intended as representative views for reference only.

Certain features or systems discussed in this manual might not be found on all models in all marketing areas.

How to Read Illustration Symbols

| | |
|--|---|
|  | Numbers in a rectangle indicate the photo described by that paragraph. |
|  | Look for circled letters A or circled numbers 9 , 10 to appear in text and on photos to indicate specific features or items. |
|  | White letters on dark circles appear with the description of the item and locate it on the various graphics, charts, or photos. |
|  | Dashed arrows indicate features not visible (hidden from view). |
|  | Other symbols on photos point to the subject of the text for that photo. |

DR2526 Eng

Want to know more about boating?

A Bibliography and source list on over 40 different boating related subjects is available, at a nominal fee, from:

American Boat and Yacht Council, Inc.
P.O. Box 747
405 Headquarters Dr., Suite 3
Millersville, MD 21108
(301) 923-3932

This is an excellent source list on subjects such as boat handling, piloting in fog, fitting-out small craft, emergency repairs afloat, survival for sportsmen and many others. The more you know about boating, the more you will enjoy it.

The Skippers Course

Our waterways are becoming increasingly crowded, and Skippers who are careless or ignorant of the Rules of the Road are a danger to themselves and other boaters.

To protect such people, and innocent bystanders, the Federal government, the states, and some communities have laws and regulations designed to keep boating safe. Much of what you need to learn is based on these **legal requirements**.

This publication "**The Skippers Course**" is a self-instructional program designed to help you learn the nautical Rules of the Road.

Send \$6.50, check or money order to:

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

Stock Number 050-012-00159-6

Service Literature

A service manual, parts catalog or extra owner's manual may be purchased from Outboard Marine Corporation. Use the instructions and order form provided in the English language owner's manual or see your DEALER.

General Information

Maximum Boat Horsepower

⚠ Safety Warning: Do not over-power by using a motor with a horsepower rating higher than the maximum stated on the boat's capacity plate. Doing so could result in loss of control. If boat is not equipped with capacity plate, see your DEALER.

Be sure you match this motor to a boat with a capacity plate stating it is rated for tiller steering and at least your motor's HP. This is because boats equipped with remote steering can have a much higher maximum horsepower rating than the same size boat meant for tiller steering.

Boating Responsibilities

The operator is responsible for the correct operation of the boat and for the safety of its occupants. Be sure that all operators read this manual before operating the boat. Show your passengers the location and use of emergency equipment. Instruct one of your passengers in how to handle your boat in case of emergency. Requirements for personal flotation devices vary, depending on the type of boat. Be sure to comply with the regulation which applies to your boat.

Basic Boating Safety Rules

- Know your boat, what it can do and what it can't do, how it will handle in all kinds of weather.
- Load your boat with the weight properly distributed. Don't overload or overpower your boat.
- On small lighter boats, avoid standing up or shifting weight suddenly.
- Have boat occupants seated and only on seats provided. Never allow anyone to sit on boat's bow, gunwales, transom, seat backs or other boat structure not intended for use as a seat.
- Leave a Float Plan with a friend or relative before you depart.
- Life vests or preservers should be worn by all occupants when boating conditions are hazardous, and by children and non-swimmers at all times.
- Keep a good lookout. Failure to do so is the cause of most collisions.
- Operate at safe speeds. Watch your wake.
- Know the marine traffic laws and obey them.
- Respect the weather. Listen to weather forecasts and heed weather warnings.
- If your boat capsizes, the occupants should stay with the boat.
- Prevent fires or explosions:
 - Be careful in handling volatile fuels.
 - Have a safe fuel system installation and maintain it in top condition.
- Keep your boat and equipment neat and in prime operating condition. Carry a sufficient number of spare parts.
- Don't operate a boat if intoxicated.
- Always have a suitable anchor and suitable emergency signaling device aboard.

Owner's Identification Card

At the time you purchase your motor, your dealer will complete the warranty and motor registration form. The owner's portion of this form will provide proof of ownership, as well as warranty validation, should warranty service be necessary. The procedure for warranty and motor registration will vary depending on your locality. Contact your DEALER or distributor for details.

Propeller Selection

The selection of a propeller is one of the most critical factors in achieving satisfactory performance of boat and motor. Propellers must be custom selected to match the motor to the boat, load or application.

To select the correct propeller for your boating application, your boat and motor must be water tested. Contact your DEALER for assistance. For selection procedure and available propellers, see the "Propeller Selection Guide" shipped with your motor.

See **Propeller Replacement** before removing or installing propeller.

Note The correct propeller for your boat (under normal load conditions) will allow the engine to run near the upper limit of the full throttle operating range. See "Propeller Selection Guide" for selection procedure.

Insurance

Insure your outboard motor and/or boat as soon as practicable for protection against loss by fire, theft, etc. Consult your local insurance agent.

Stolen Motors

In case of theft, report Model and Serial Number to local authorities, insurance agent and the manufacturer.

Model and Serial Number

The model and serial number are stamped on a nameplate attached to the stern bracket.

Record Model and Serial Number below.

Model Number 56RESR

Serial Number B2421261

Motor Installation

We recommend your DEALER install your motor. However, if you want to do the installation yourself, follow the instructions provided in this manual.

Belgium

| | Specifications | Page |
|---|---|-------|
| *Power at Propeller Shaft | 5 hp (3,7 kW) @ 5000 RPM 6 hp (4,5 kW) @ 5000 RPM 8 hp (6,0 kW) @ 5500 RPM | • |
| Full Throttle Operating Range | 5 & 6 Models: 4500 to 5500 RPM 8 Models: 5000 to 6000 RPM | 2 |
| Fuel Requirements | 67 AKI (69 RON), see Recommended Gasoline | 6 |
| Fuel/Oil Ratio | See Recommended Lubricant | 6 |
| Fuel Tank Capacity | 3 U.S. gallons (11,4 litres) | • |
| Spark Plug: | | |
| Normal Operation | QL77JC4 (Alternate: L77JC4) Gap Setting: 0.030" (0,8 mm) | 15✓ |
| Sustained High Speed Operation | QL16V Gap is Permanent | |
| Spark Plug Socket Size | 13/16"; Torque: 17-20 ft. lbs. (24-28 N·m) | • |
| Gearcase Lubricant Capacity | 11 fl. oz. (325 ml) | 16 |
| Propeller - 5, 6, 8 Models Sail Models | 8½" dia. x 9" pitch (22 cm dia. x 23 cm pitch) 9¼" dia. x 6½" pitch (24 cm dia. x 17 cm pitch) | 18 |
| Transom Height - Standard Models Long Models Sail Models | 14½ to 15" (368-381 mm) 19½ to 20" (495-508 mm) See Installing Motor, Sail Models | 19,20 |
| Weight - Standard Models Long Models 6 Sail Model 8 Sail Model | 56 lbs. (25 kg) 59 lbs. (27 kg) 61 lbs. (27 kg) 64 lbs. (29 kg) | • |

* Power ratings are determined after the break-in period and when an additional 4 hours minimum of wide open throttle has been accumulated. See **Break-in Procedure**.

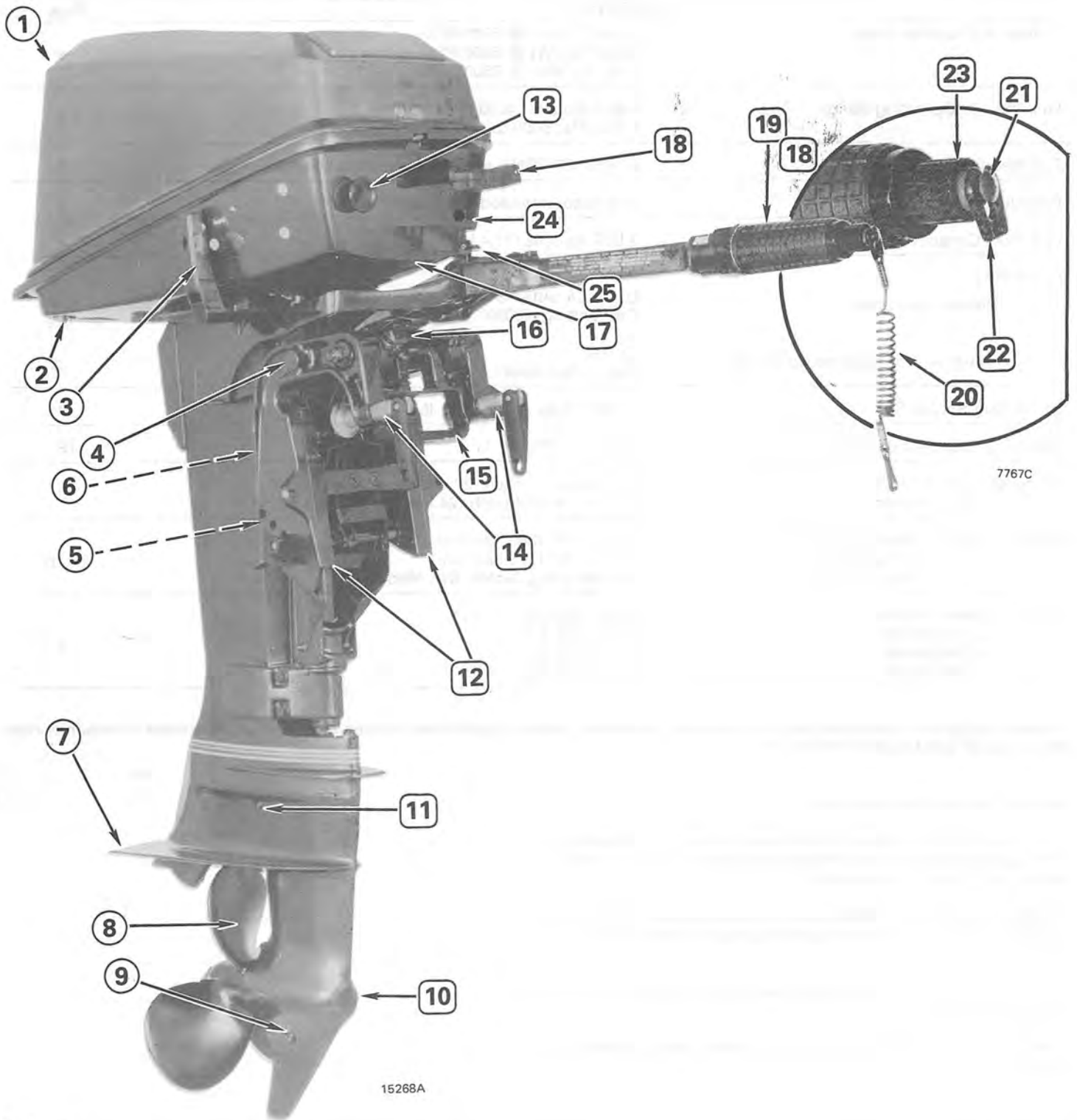
Battery (not supplied with motor)

For your safety, read and understand battery manufacturer's handling and first aid information supplied with the battery before installation is attempted.

Use a 12 volt battery with a 350 amperes cold cranking rating at -18° C (0° F) and 100 minutes reserve capacity rating at 27° C (80° F).

Install battery in a vented battery box. Secure box to the boat to prevent movement.

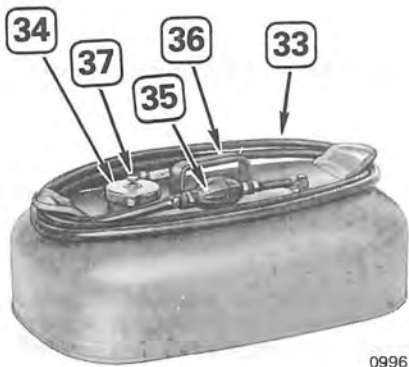
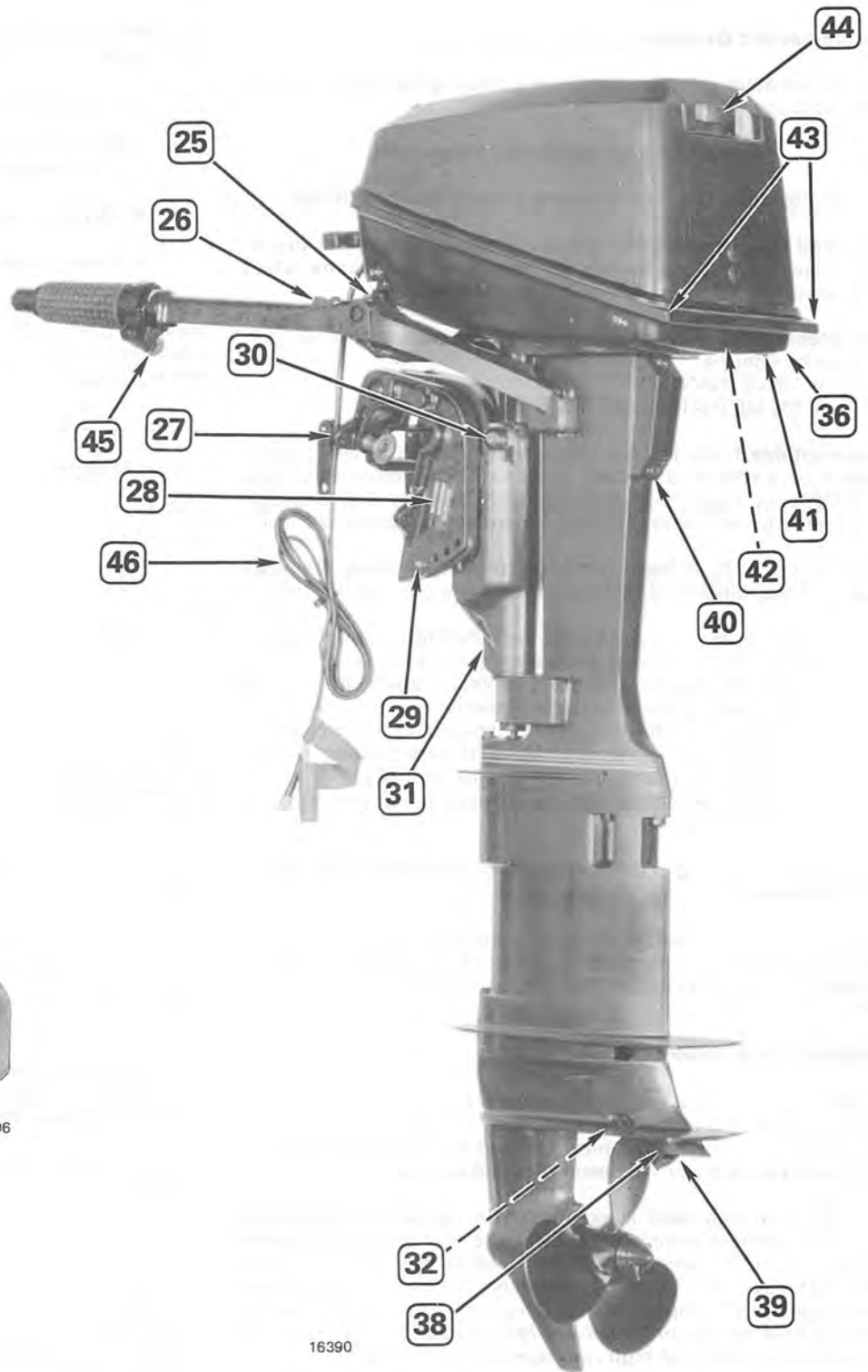
Do not use a maintenance-free or sealed battery with this motor.



Features

| Item | Description | Page |
|------|--|------|
| ① | Engine Cover | 9 |
| ② | Water Pump Indicator | 10 |
| ③ | Shift Lever | 8 |
| ④ | Tilt Friction Nut | 13 |
| ⑤ | Tilt Support | 11 |
| ⑥ | Shallow Water Drive Lever, If Equipped | 10 |
| ⑦ | Anti-Ventilation Plate | 19 |
| ⑧ | Propeller | 18 |
| ⑨ | Oil Drain/Fill Plug | 16 |
| ⑩ | Gearcase | 16 |
| ⑪ | Oil Level Plug | 16 |
| ⑫ | Stern Brackets | 20 |

| Item | Description | Page |
|------|---|------|
| ⑬ | Choke Knob | 8 |
| ⑭ | Clamp Screws | 20 |
| ⑮ | Carrying Handle | 19 |
| ⑯ | Tilt/Run Lever | 11 |
| ⑰ | Lift Grip, Front | 19 |
| ⑱ | Starter Handle | 8 |
| ⑲ | Steering Handle and Twist Grip Throttle | 8 |
| ⑳ | Clip and Lanyard Assembly | 7 |
| ㉑ | Stop Button/E.I.C.O.S. | 7 |
| ㉒ | Emergency Restart Clip | 7 |
| ㉓ | Idle Speed Adjusting Knob | 13 |
| ㉔ | AC Light Access, If Equipped | 21 |



0996

16390

| Item | Description | Page |
|------|---|------|
| 25 | Fuel Connector | 8 |
| 26 | Emergency Restart Clip (Storage) | 7 |
| 27 | Motor Retention Chain Lug | 20 |
| 28 | Model and Serial Number Plate | 2 |
| 29 | Angle Adjusting Rod | 14 |
| 30 | Steering Friction Adjusting Screw | 13 |
| 31 | Swivel Bracket | • |
| 32 | Anti-Corrosion Anode | 15 |
| 33 | Fuel Line | 8 |
| 34 | Filler Cap | 8 |
| 35 | Priming Bulb | 8 |

| Item | Description | Page |
|------|--|------|
| 36 | Handle | • |
| 37 | Vent Screw | 8 |
| 38 | Water Intake | 10 |
| 39 | Water Outlet | 10 |
| 40 | Exhaust Relief | 10 |
| 41 | Lift Grip, Rear | 19 |
| 42 | Latch (Engine Cover) | 9 |
| 43 | Motor Rests | • |
| 44 | Tilt Grip | 9 |
| 45 | Throttle Friction Screw, Sail Models | 13 |
| 46 | Electric Cable, Sail Models | 20 |

Fuel and Lubricant

Recommended Gasoline

Use automotive gasoline with the following minimum octane specifications:

In the U.S. - 67 Anti-Knock Index (AKI)

Outside the U.S. - 69 Research Octane Number (RON)

Preferred Fuel: Any regular unleaded, regular leaded, or premium unleaded gasoline having the recommended octane rating and not extended with alcohol is the preferred fuel.


Acceptable Fuel: Any of the above gasolines with up to 10% alcohol by volume:

- 10% ETHANOL
- 5% METHANOL with 5% cosolvents

Unacceptable Fuel: Do not use any regular unleaded, regular leaded or premium unleaded gasoline having more than 10% ETHANOL or more than 5% METHANOL even if it contains cosolvents or corrosion inhibitor, regardless of octane rating.

OMC products have been designed to operate using **Preferred Fuel** or **Acceptable Fuel**; however, be aware of the following:

- The boat fuel system may be different regarding use of alcohol fuels. Refer to boat owner's manual.
- Alcohol attracts and holds moisture which may cause corrosion of metallic parts of the fuel system.
- All parts of the fuel system should be inspected frequently and replaced if signs of deterioration or fuel leakage are found. Inspect at least annually.
- Alcohol extended fuels can cause engine performance problems.

 **Safety Warning:** Fuel leakage can contribute to a fire or explosion.

Note OMC 2+4® Fuel Conditioner is the only gasoline additive recommended by *Outboard Marine Corporation*. Use of other gasoline additives can result in poor performance or engine damage.


Recommended Lubricant

This is a two cycle engine that requires lubricant to be mixed with gasoline. The recommended fuel/oil mixture ratio is 50:1 (2% oil). A 50:1 (2% oil) mixture must be used during engine break-in. See inside front cover for **Recommended Lubricant**.

A 100:1 mixing ratio is acceptable in certain circumstances after the motor is completely broken-in and if the motor is used frequently. 100:1 should NOT be used if the motor is used intermittently and the periods of non-use involve storage in areas with significant temperature and humidity variations. Internal rusting may result. 100:1 should NOT be used if the motor is subjected to sustained high rpm operation.

Note Recommended lubricant and gasoline must be properly mixed or serious damage will result to the engine.

Fueling Instructions

 **Safety Warning:** Gasoline is extremely flammable and highly explosive under certain conditions.

- Always mix fuel outdoors, never indoors.
- Never smoke or allow open flame or sparks nearby when mixing or refueling.
- Always stop motor before refueling.
- Remove portable tanks from boat when refueling.

All gasoline should be poured through a fine mesh strainer (100 mesh or finer). This will eliminate water and dirt which might otherwise clog fuel passages. Use only clean containers for mixing. Always use fresh gasoline.

| Fuel Mixture | Lubricant | |
|-------------------|------------------------------|-------------------------------|
| | 6 U.S. Gallons (Gasoline) | 1 Litre (Gasoline) |
| 100:1 (1% Oil) | 8 Fl. Oz. (Lubricant) | 10 Millilitres (Lubricant) |
| 50:1 (2% Oil) | 16 Fl. Oz. (Lubricant) | 20 Millilitres (Lubricant) |

Above 32° F. (0° C)


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

2 Permanently Installed Tank - Pour lubricant slowly with the gasoline as tank is filled.

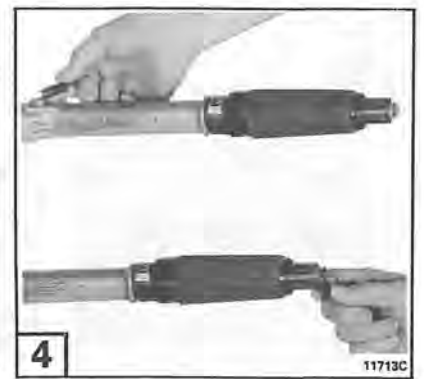
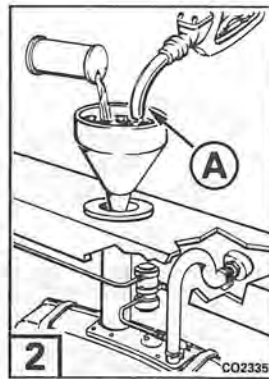
Below 32° F. (0° C)

1 Portable Tank - Pour approximately 4 litres (one gallon) gasoline into tank, add required lubricant. Replace filler cap securely. Thoroughly mix by shaking tank. Add balance of gasoline.

2 Permanently Installed Tank - In separate container, mix all lubricant needed with 4 litres (one gallon) or more of gasoline. Pour this mixture slowly with gasoline as tank is filled.

To prevent electrostatic spark, fuel nozzle  must contact metal funnel.

Note Fuel systems with built-in tanks, particularly those that include components such as anti-siphon valves and filter/primer units, 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.



Optional OMC Portable Fuel Tanks And Fuel Lines

OMC portable fuel tanks and fuel lines are designed to provide correct fuel flow for your engine requirements. OMC fuel tank hoses include a primer bulb assembly and a fuel line connector for attachment to your motor. See your DEALER.

Note Serious engine damage may occur from use of improper portable fuel tanks and/or fuel lines. If portable fuel tanks, fuel lines and primer bulbs other than genuine OMC parts are used, they must have equivalent characteristics for correct fuel flow for your engine. Your DEALER can advise you.

Engine Break-In Procedure - First Ten Hours Operation

First Ten Minutes:

- Operate engine at fast idle **only**.
- Check water pump indicator at rear starboard corner of lower engine cover. A steady stream of water indicates proper water pump operation.

Next 50 Minutes:

- DO NOT operate engine above one-quarter throttle (less than 3000 RPM).
- DO NOT hold a constant throttle setting. Change engine speed every 15 minutes.

Note With easy-planing boats, use full throttle to quickly accelerate boat onto plane. Immediately reduce throttle to one-quarter as soon as boat is on plane. BE SURE boat remains on plane at this throttle setting.

Second Hour:

- Use full throttle to accelerate boat onto plane then reduce throttle setting to three-quarters. BE SURE boat remains on plane at this throttle setting.
- At intervals, apply full throttle for periods of one to two minutes, returning to three-quarters throttle for a cooling period.
- Change engine speed every 15 minutes.

Note Frequently check water pump indicator during the break-in period. A steady stream of water indicates proper water pump operation.

Next Eight Hours:

- Avoid continuous full-throttle operation for extended periods.
- Change engine speed every 15 minutes.

Emergency Ignition Cut-Off Switch

The red emergency ignition cut-off switch is located on the end of the tiller handle. Use of this switch is highly recommended on any boat considered to have sensitive steering response. Examples of such boats would include smaller runabouts, high performance sport boats, and bass boats. In addition an emergency ignition cut-off switch should be used on any boat where the distance between the driver's seat cushion and the top edge of the boat next to the seat cushion is less than 305 mm (12 in.).

3 Attach clip and lanyard to the switch as shown. Motor will not start unless clip is in place. Attach the lanyard to a secure place on your clothing. Do not place the lanyard on any part of clothing that may be torn or will permit the lanyard to pull away rather than stop the engine.

Using the clip and lanyard will not interfere with normal operation. However, if the driver leaves the operator's area, the cut-off switch will stop the engine preventing the boat from becoming a runaway.

Make sure the lanyard is free to move and is away from obstructions or entanglements which could hinder its operation. Use care to avoid knocking or pulling the lanyard off the switch during normal operation. Unexpected loss of forward motion could allow occupants to be thrown forward.

When not in use, hook the loose end of lanyard in the hole in lanyard clip. This will keep the lanyard neatly out of the way.

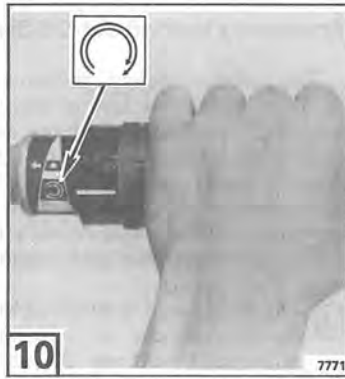
4 An extra clip for emergency restarting is attached to the tiller handle. Should the operator be thrown overboard, a remaining occupant can insert this clip in the cut-off switch so that the motor can be restarted.

! Safety Warning: The emergency ignition cut-off switch can only be effective if it is in good working condition. Observe the following:

- Lanyard must always have freedom of movement and be away from any obstructions or entanglements which could hinder its operation.

Once a month:

- Inspect switch for proper operation. With engine running, removal of the clip and lanyard must stop the engine. If engine does not stop, see your DEALER for replacement of switch.
- Inspect lanyard for cuts, fraying, worn clip, etc. Replace if in doubt.



Starting & Operation

During the initial operation of your new motor, you must follow the "Engine Break-In" procedure as described in **General Information**.

Note Failure to follow the "Engine Break-In" procedure can result in serious engine damage.

Fuel Tank

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

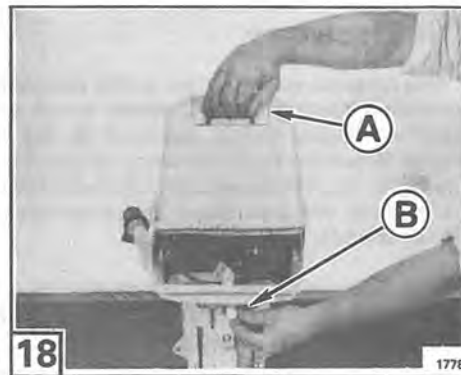
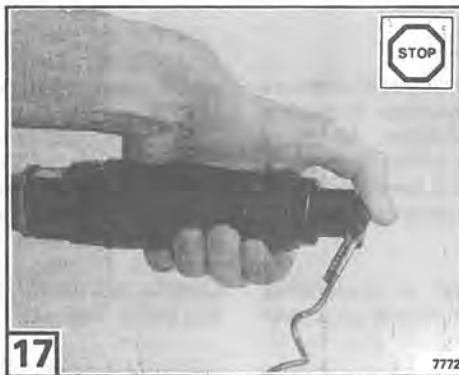
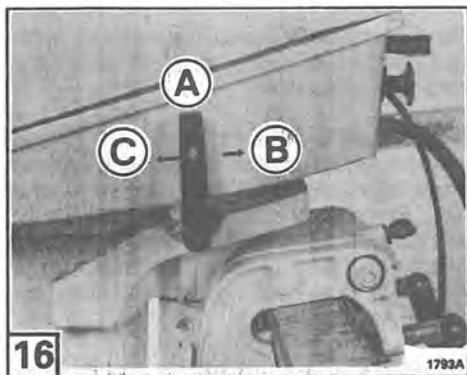
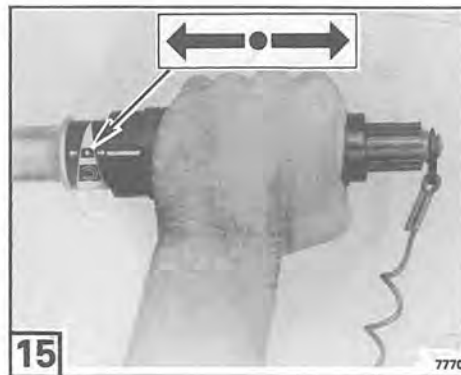
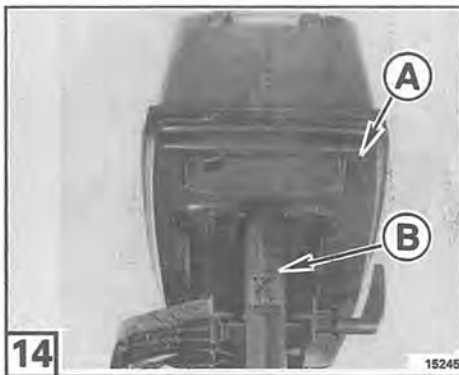
5 → 14 Starting Procedure

Note Do not operate motor out of water even momentarily. Water pump may be damaged or motor may overheat.

Make sure clip and lanyard assembly is in place as shown on previous page or motor will not start.

- 5 Place Tilt/Run Lever in RUN position.
 - 6 Slide fuel line connector onto motor coupling until locking lever snaps into position.
 - 7 Fully open vent screw on fuel tank filler cap.
- Holding the outlet end slightly up, squeeze fuel line primer bulb several times until resistance is felt.

- 8 Turn throttle grip to SHIFT position or slower.
 - 9 Move shift lever to NEUTRAL position. Motor can be started in gear at slow throttle. A lockout prevents starting in gear at fast throttle.
- ! Safety Warning: Always shift to neutral before starting to avoid sudden boat movement and a possible man overboard situation.**
- 10 Turn throttle grip to START position.
 - 11 **Cold Motor** - Pull choke knob out all the way.
Warm Motor - Do not use choke. If motor fails to start after cranking a few times, then use choke.
 - 12 While seated, pull starter handle slowly until starter engages, then pull forcibly. Repeat, if needed, until motor starts. To prevent damage to starter assembly, allow starter cord to rewind before releasing starter handle. If motor does not start, see **Trouble Check Chart**.
 - 13 After motor starts, push choke in gradually until motor is running smoothly.
 - 14 **A.** 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**.
B. The exhaust relief reduces the exhaust back pressure for smoother operation at slow and idle speeds.



Note To avoid possible powerhead damage, do not exceed 3000 RPM in neutral.

Speed Control

Turn throttle grip toward FAST (counterclockwise) or SLOW (clockwise) position as desired.

Note When operating in REVERSE, be careful because the motor has no automatic tilt protection if an underwater obstruction is hit.

Shifting

15 Turn throttle handle to SHIFT position or slower.

Note Always turn throttle to SHIFT position before shifting. To avoid damage to shifting mechanism, do not attempt shifting from NEUTRAL (A) to FORWARD (B) or REVERSE (C) when motor is NOT running. It is permissible to shift to NEUTRAL only.

16 With motor running, SNAP shift lever with QUICK ACTION to FORWARD or REVERSE position as desired.

! Safety Warning: Do not operate motor in reverse with Tilt/Run Lever in "Tilt" position as motor may tilt out of the water resulting in possible loss of control.

17 Stopping Motor

Turn throttle handle clockwise all the way. Shift to neutral position and depress stop button until motor stops. Do not pull the lanyard assembly to stop the motor under normal operating conditions. It is intended for emergency use only.

To disconnect fuel line, depress locking lever on fuel line connector and pull off at motor or fuel tank.

! Safety Warning: To help prevent possible fuel leakage, disconnect fuel line from motor and portable tank when boat is trailered, docked, or when motor is tilted for more than a few minutes.

Coil fuel line on top of tank when not in use. This will help protect fuel line and connectors from damage and help prevent sand or dirt from entering connectors.

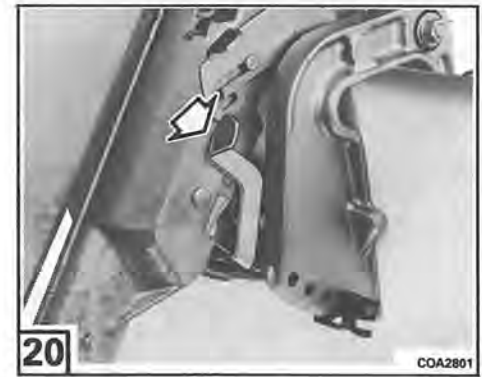
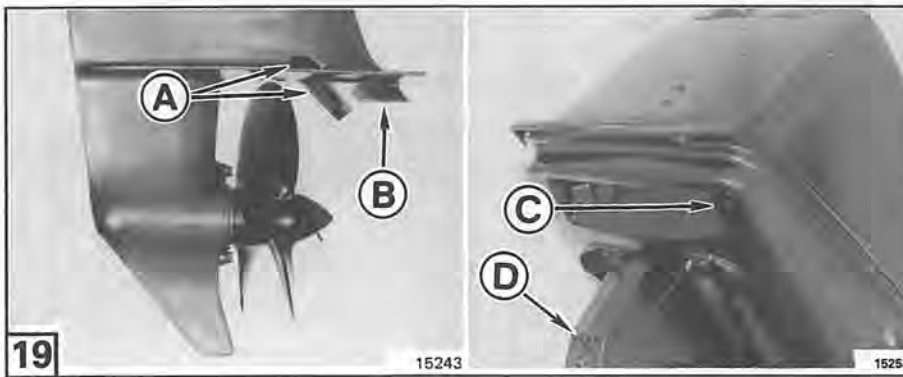
18 Removing Engine Cover

Release the latch counterclockwise (pull down 1/4 turn). Lift the rear of cover a little and move entire assembly slightly backward to release front hook from the lower pan. Lift entire cover assembly from motor. Reinstall cover assembly in reverse order, making certain rubber seal fits properly between cover and lower pan before securing the latch (push up).

Do not remove or install the engine cover while engine is running. The engine 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.

A. Tilt Grip

B. Latch Release Position



19 Cooling System

This motor is water cooled with a thermostatically and pressure controlled cooling system. Water enters the gearcase through a screened intake and is pumped to the powerhead. After the engine is warmed up, the water is discharged at the rear of the gearcase. The thermostat maintains a consistent temperature at low speeds, while pressure relief provides maximum cooling at higher speeds.

When operating motor, the water intake must be completely submerged so that it is in nonturbulent water. Observe proper transom height and boat trim.

A water pump indicator is provided and should be discharging a steady stream of water whenever the engine is running. Observe the indicator particularly when operating in weeds, mud or debris laden water. If engine overheats or the water pump indicator stops or becomes intermittent, stop the engine immediately and check for an obstructed water intake screen. Clear obstruction. Restart the engine and look for a steady discharge from the water pump indicator. Run engine at idle until engine returns to normal operating temperature. If no obstruction is apparent, it may indicate a worn water pump or other cooling system malfunction. See your DEALER.

Retorquing cylinder head screws is recommended anytime the engine overheats. If engine continues to overheat, see your DEALER for service.

Note For continuous operation in waters containing excessive amounts of sand or silt, we recommend an OMC Accessory Chrome Plated Water Pump Kit. See your DEALER.

- A. Water Intake
- B. Water Discharge
- C. Water Pump Indicator
- D. Exhaust Relief

Shallow Water Operation

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

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 the Tilt/Run Lever is in RUN position, the reverse lock is automatically engaged. When running in shallow water, at slow speeds, place the Tilt/Run Lever in TILT position which allows the motor to kick-up more easily if an obstruction is hit. Before resuming normal running speed in deeper waters, be sure to return Tilt/Run Lever to RUN position.

⚠ Safety Warning: Do not operate motor in reverse with Tilt/Run Lever in TILT position as motor may tilt out of the water resulting in possible loss of control.

Note If an obstruction is hit, retard the throttle immediately and stop motor. Check motor, propeller and angle adjusting rod for possible damage. If angle adjusting rod is bent it may alter the breakaway force required to release the reverse lock when operating in forward gear, resulting in possible damage to stern brackets. It may also affect 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.

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 gearcase dragging on bottom will result in propeller wear. It may also cause sand to be forced into water pump which may cause damage to the pump.

20 Shallow Water Drive

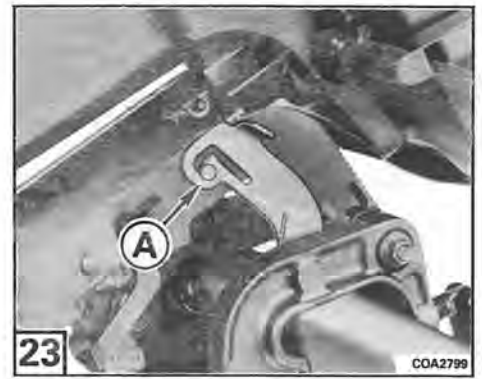
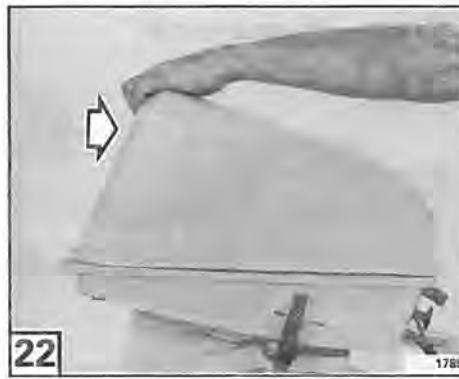
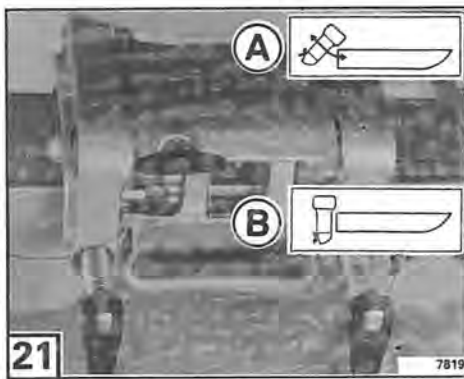
For extended shallow water operation use the shallow water drive bracket. The shallow water drive position is controlled by the angle adjusting rod. See **Motor Angle Adjustment**. To place motor in shallow water drive position proceed as follows.

- Stop motor.
- Move Tilt/Run Lever to TILT position.
- Grasp engine cover Tilt Grip and tilt motor toward you. See **Tilting**.
- Flip shallow water bracket (spring loaded) to up position. Lower motor so bracket will rest against angle adjusting rod as shown.

Note Operate motor at slow speed when shallow water bracket is used. Return motor to RUN position when reaching deeper water.

- To release motor from shallow water drive position, raise motor slightly to allow bracket to clear angle adjusting rod. Flip bracket down to stow position and lower motor to run position. Move Tilt/Run Lever to RUN position.

When operating in reverse using the shallow water drive, use caution and operate at slow speed only. Motor has no reverse lock in this position.



21 22 Tilting

The Tilt/Run Lever releases the reverse lock for full tilt engagement.

To tilt motor, move Tilt/Run Lever to TILT position. Grasp tilt grip at rear of engine cover and tilt motor up.

Note Do not use tiller handle to tilt motor.

To lower motor move Tilt/Run Lever to RUN position. Slowly lower motor completely. The reverse lock automatically engages as motor returns to RUN position.

During normal operation the Tilt/Run Lever should be in RUN position. The TILT position is used ONLY when tilting the motor or operating in shallow or obstructed waters.

21 Tilt/Run Lever

- A. Tilt
- B. Run

22 Tilt Grip

23 Tilt Support

The tilt support is used to hold the motor in full tilt position when loading or launching a boat. To engage the tilt support, place motor in full tilt position and pull the tilt support lever forward. While holding the lever forward, slowly lower motor to the supported position.

To disengage, move tilt support lever away from you. Grasp the tilt grip at rear of engine cover and pull motor to full tilt position, a spring will automatically disengage tilt support lever. Lower motor to RUN position and place the Tilt/Run Lever in the RUN position.

A. Tilt Support Engaged

Trailing

We recommend that the motor be in its normal running position with the Tilt/Run Lever in the RUN position when trailering. Additional road clearance may be obtained by placing angle adjusting rod in outer stern bracket position.

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. Check water pump indicator at intervals.

Salt Water Operation

Your motor is built for operation in either fresh or salt water. Fresh water internal flushing is recommended after use in salt, polluted or brackish water to prevent deposits from clogging cooling passages. 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 dry. See **External Finish**.

Operating in Freezing Weather

In freezing temperatures, keep the gearcase 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.

Prior to operation in freezing temperatures, check gearcase lubrication. If leakage is evident, gearcase seals may need attention. See your DEALER.

Note Any leakage of water into gearcase may result in freezing and damage to gearcase when motor is removed from water.

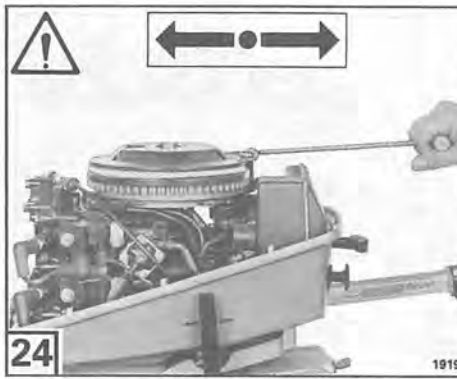
High Altitude Operation

The fuel calibration must be altered for operation at 900 m (3,000 feet) above sea level or higher.

See your DEALER for installation of High Altitude Performance Kit.

To maintain performance at high altitude, it may be necessary to replace the previously selected propeller with one of less pitch.

Note If a High Altitude Performance Kit is installed, the original carburetor parts must be installed before operating below 900 m (3,000 feet) above sea level. Serious powerhead damage could result if this is not done.



24 Emergency Starting

If the starting cord should break or the starter should fail, remove engine cover. If starter cord is broken it may be long enough to use as an emergency cord. If not, obtain a 6 mm (1/4 inch) cord and tie a knot to one end. Place knot in flywheel notch and wrap cord around clockwise. Follow **Starting Procedure**.

! Safety Warning: When using Emergency Starting procedure, make sure shift lever is in neutral position to prevent sudden propulsion when engine starts.

! Safety Warning: Avoid electrical shock. Do not touch high voltage ignition coils or spark plug wires when motor is being started or when running.

Trouble Check Chart

Motor Will Not Start, check for:

- Clip and lanyard in place
- Throttle in START position and shift lever in NEUTRAL position
- Fuel in tank and vent screw fully open
- Fuel line connector properly attached
- Fuel line primer bulb at tank end
- Carburetor primed (squeeze primer bulb)
- Fuel tank not resting on fuel line
- Fuel line clear and not kinked
- **Cold engine:** Engine choked sufficiently
- **Warm engine:** Engine flooded (correct by disconnecting fuel line at motor and cranking until cleared)
- Fuel pump filter unobstructed
- Fuel system clear of water
- If no spark:
 - ... Spark plug leads secure, not loose
 - ... Spark plugs carboned, burned, or wet
 - ... Spark plugs tight and gapped correctly. See **Specifications**.
- Correct starting procedure used. Recheck starting instructions.
- Faulty ignition system (see your DEALER)

Motor Will Not Idle Properly, check for:

- Choke not pushed in
- Improper idle adjustment
- Damaged spark plug (cracked insulator)
- Improper carburetor adjustment
- Improper fuel/oil mixture

Motor Loses Power, check for:

- Damaged spark plugs (insulator cracked)
- Fuel pump filter or auxiliary fuel filter partially restricted or fuel contaminated
- Obstruction at water intake. Cooling system not operating properly (See **Cooling System**)

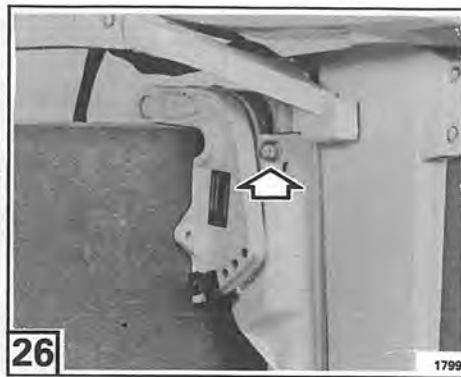
Motor Vibrates Excessively at idle or low speed, check for:

- Bent or broken propeller
- Carburetor slow speed adjustment improperly set
- Loose steering friction screw
- Weeds on propeller

Motor Runs, But Makes Little or No Progress, check for:

- Bent or broken propeller
- Weeds on propeller

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



Maintenance

25 Tilt Friction Adjustment

Use $\frac{1}{16}$ inch wrench to tighten the tilt shaft nut only enough to control the return of the gearcase from TILT to RUN position.

Note DO NOT overtighten, as doing so will increase the pressure required to tilt the motor when an obstruction is hit. Failure to tilt when hitting an obstruction can do serious damage to your motor.

26 Steering Friction Adjustment

The steering friction adjustment is preset at the factory, however, readjust after first 20 hours of operation or whenever adjustment becomes necessary.

The steering friction should be adjusted so that stable boat operation is maintained with a minimum of operator effort. Do not overtighten to allow for "hands off" steering which could result in loss of control.

Adjust steering friction with motor mounted to boat by simply loosening or tightening screw.

27 Idle Speed Adjustment

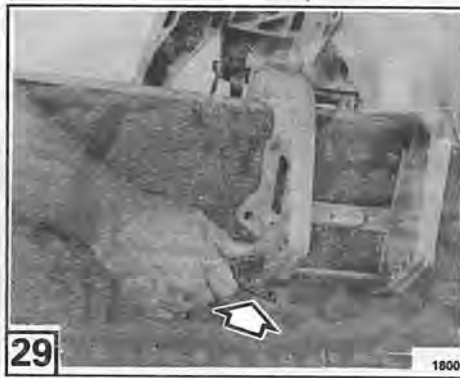
The idle speed adjusting knob is located on the steering handle. Turning clockwise on the knob increases idle speed, turning counterclockwise decreases idle speed. Make certain that throttle grip is in slow position and the motor is at normal operating temperature before making the idle speed adjustment.

If carburetor adjustment is required to compensate for fuel, altitude or climate, see your DEALER.

28 Throttle Friction Adjustment

Some models are equipped with a throttle friction adjustment knob located on the steering handle. Adjust the knob to reduce the effort required to hold a throttle setting.

! Tighten knob only enough to hold throttle at a constant engine speed. Overtightening will prevent quick throttle change in case of emergency.



Motor Angle Adjustment

The stern bracket has several positions for adjusting the motor to allow for transom angle and boat loading. The vertical angle of motor on boat must be adjusted for best performance. In most instances, the motor will be in proper adjustment if the angle adjusting rod is in the second position from the boat.

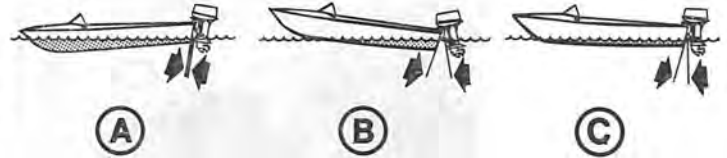
Motor should be perpendicular to water when boat is underway. This adjustment can only be determined by observing boat operation at full speed. Set angle adjustment for your usual load. Angle adjustment should be changed if boat loading results in improper motor angle.

Adjust motor angle as follows:

- Stop motor.
- Set Tilt/Run Lever in TILT (up) position and tilt motor away from transom until locked in full tilt position. See **Tilting**.
- Squeeze retainer portion of angle adjusting rod to release retainer from stern bracket. Slide the adjusting rod assembly all the way out. Place rod in desired position. Make sure rod passes through both stern brackets. Slide in, and make sure that retainer is locked to stern bracket.
- Place Tilt/Run Lever in RUN (down) position. Tilt motor forward slightly to allow tilt lock to disengage, then lower motor against angle adjusting rod. Make a trial run and note boat attitude (motor angle). Motor should be perpendicular to water when boat is underway.

29 Angle Adjusting Rod and Retainer - Release Position

⚠ Safety Warning: If engine is tilted forward so as to cause plowing (see A), swamping may occur in rough water. If engine is tilted aft so as to cause porpoising (see B), steering may be erratic or unstable. See correct angle adjustment (see C).



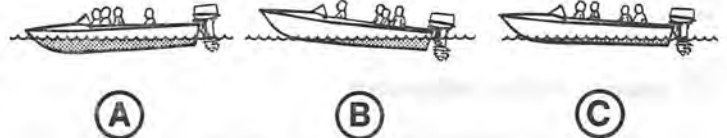
Incorrect
CAUSES BOAT
TO "PLOW"

Incorrect
CAUSES BOAT
TO "PORPOISE"

Correct
GIVES MAXIMUM
PERFORMANCE

Boat Trim

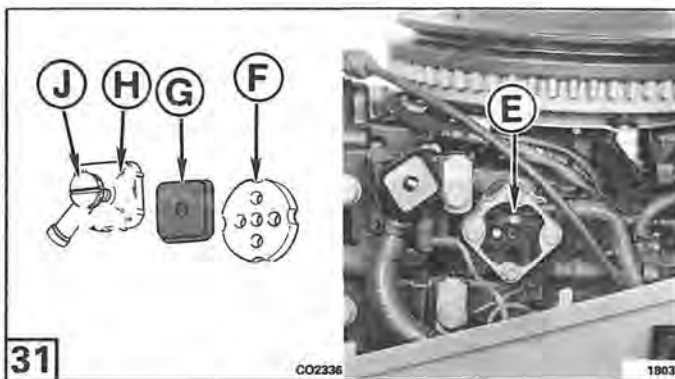
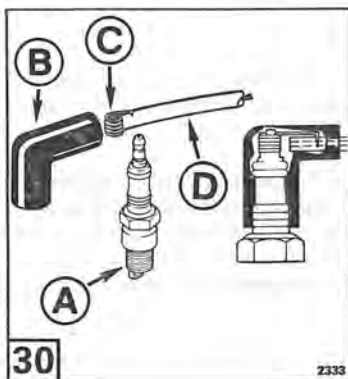
For best boat and motor performance, the boat should be driven as nearly parallel to the water as possible. Passengers and equipment should be so distributed in the boat that it is evenly balanced both front to rear and side to side.



Incorrect
OVERLOAD
FORWARD
CAUSES BOAT
TO "PLOW"

Incorrect
OVERLOAD AFT
CAUSES BOAT
TO "SQUAT"

Correct
BALANCED LOAD
GIVES MAXIMUM
PERFORMANCE



30 Spark Plug Inspection and Replacement

See **Specifications** for recommended spark plug and gap for your operating conditions.

To remove spark plug (A), detach rubber covered spark plug terminal (B) (twist slightly counterclockwise and pull off). Remove spark plug for inspection or replacement as necessary.

When reinstalling spark plug, clean the spark plug seat in cylinder head. Install spark plug and gasket finger tight plus 1/4 turn with wrench. See **Specifications** for spark plug wrench size and torque.

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

! Safety Warning: Avoid abusive handling which could crack ceramic portion of spark plug. Damaged spark plugs can emit sparks which could ignite fuel vapors under the engine cover.

When reinstalling the rubber cover on the spark plug or the ignition coil, apply approximately 1 cc of *OMC Triple-Guard*® grease, or equivalent, inside rubber cover. This will help prevent corrosion between the spring terminal and the ignition coil terminals or spark plug.

The spring (C) inside the rubber cover on the terminal lead (D) must be positioned to fit properly over spark plug terminal.

31 Cleaning Fuel Pump Filter

! Safety Warning: To prevent excessive fuel spillage, disconnect fuel line plug-in connector at motor before disassembly.

Note It is recommended that the fuel pump filter be cleaned every 100 hours of operation or once a season, whichever comes first.

- The fuel pump filter (G) is located under the fuel inlet cover (H) on the fuel pump (E).
- To inspect for sediment or water accumulation, remove the screw (J) and cover.
- Wash filter element with clean solvent and a brush.

- Reassemble filter with lip of filter screen toward fuel pump.
- Reassemble cover and gasket (E), locating inlet nipple between screw heads.
- Tighten cover screw securely and clean up any spilled fuel.
- Check for leaks by connecting fuel line to motor and squeezing primer bulb until definite resistance is felt in bulb.

! Safety Warning: Failure to inspect your work could allow fuel leakage to go undetected. This could become a fire or explosion hazard.

32 Anti-Corrosion Protection

Your motor is equipped with an anti-corrosion anode to protect your motor from galvanic corrosion. Galvanic corrosion may occur in fresh water or salt water, however, salt water usage will accelerate corrosion.

Erosion or disintegration of the anode indicates it is working.




Periodically inspect the condition of the anode and replace if necessary.

Replace the anode before it is completely eroded or corrosion to motor will increase. See your DEALER for replacement anodes.

Note Never paint or cover the anode with any coating. If you do, corrosion protection will be lost.

Do not use either copper or graphite base paints on boat bottom. These types could accelerate harmful galvanic corrosion. Anti-fouling paints containing tin (TBTA or TBTF) are acceptable.

Lubrication

| Types of Lubricant | | Contact your DEALER for OMC Lubricants |
|--|--|---|
| <p>OMC Triple-Guard® Grease</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>A Tube</p> </div> <div style="text-align: center;">  <p>B Grease Gun</p> </div> </div> | | <p>OMC Hi-Vis® Gearcase Lube</p> <div style="text-align: center;">  <p>C</p> </div> |
| Lubrication Picture Symbols | | |

DR2499 Eng

Frequency of Lubrication †

| TYPE OF USE | FREQUENCY |
|------------------------------|---------------------------|
| Fresh Water | Every 60 days |
| Salt Water | Every 30 days |
| Storage of 30 days or longer | Before placing in storage |

† Some areas may require more frequent lubrication

PCE0004

1 → 6 Lubrication Points

1 Gearcase

- ① Oil Drain/Fill Plug
- ② Oil Level Plug

2 Clamp Screws, Steering Handle and Tilt/Run Lever

3 Shift Lever Shaft, Swivel Bracket - Upper and Lower and Tilt Support

4 Rear Engine Cover Latch

5 Throttle Linkage

6 Carburetor Linkage and Roller (Cam Follower)

Note The recommended lubricants have been formulated to protect against damage to bearings and gears. They must be used since extensive damage can result from improper lubrication.

Gearcase

Remove oil drain/fill plug ① and oil level plug ② from side of gearcase. With motor in normal running position, allow oil to drain completely.

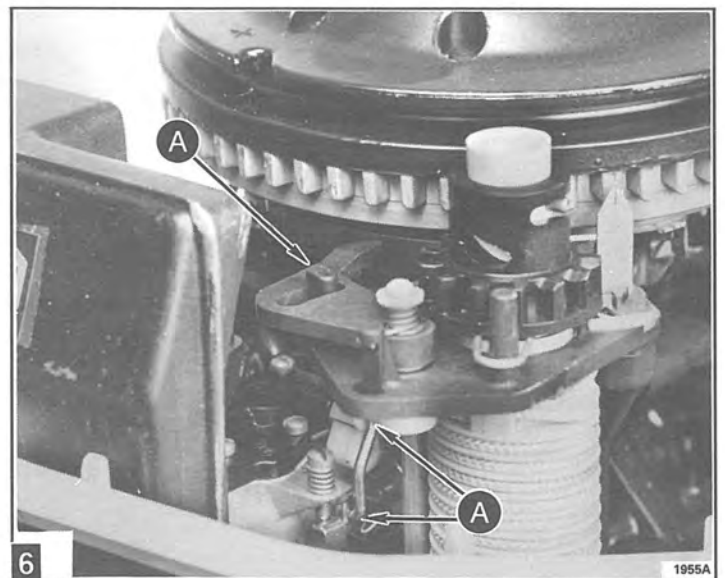
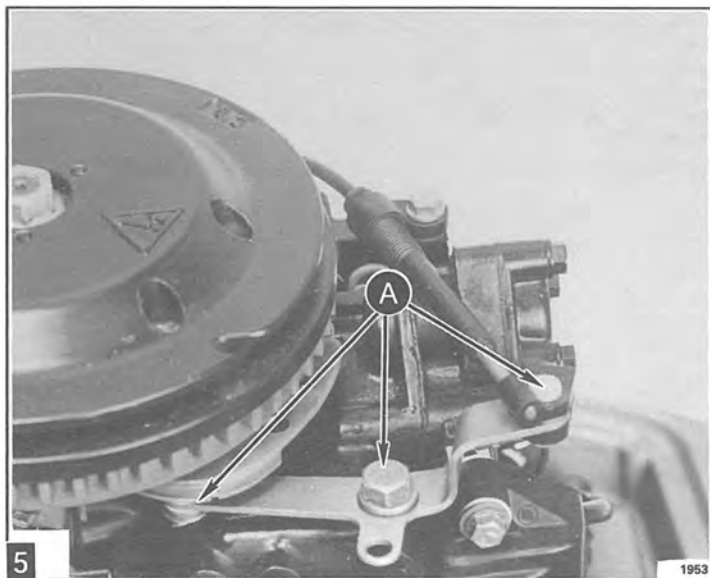
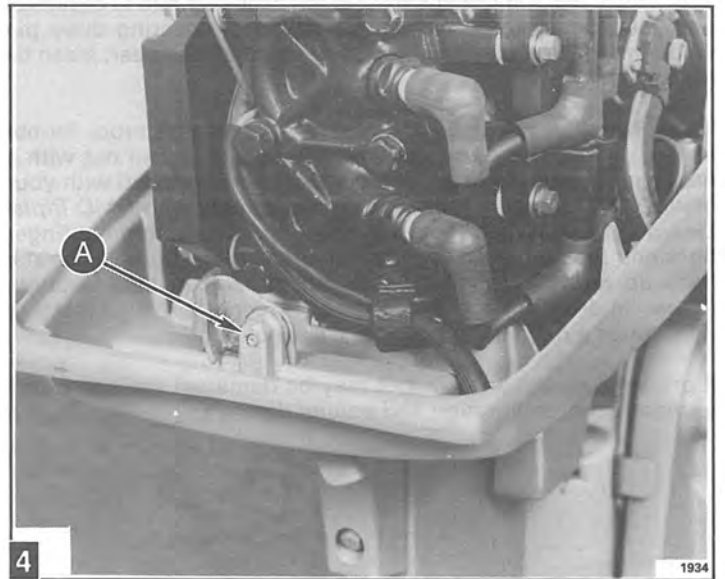
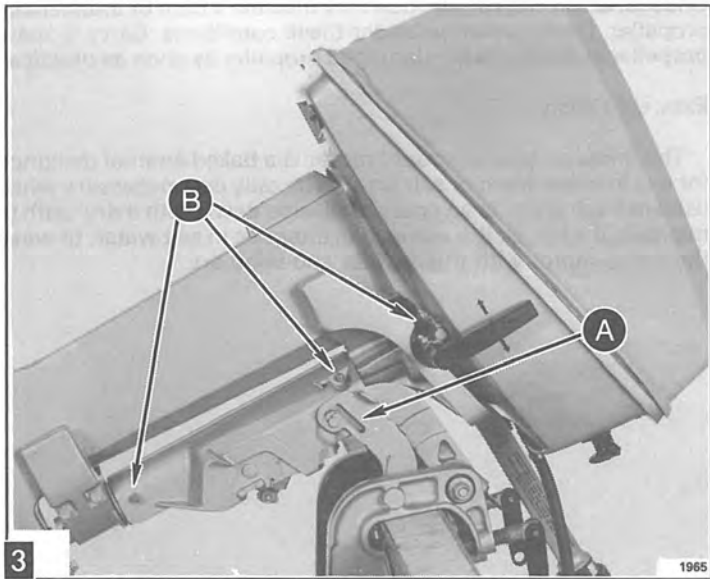
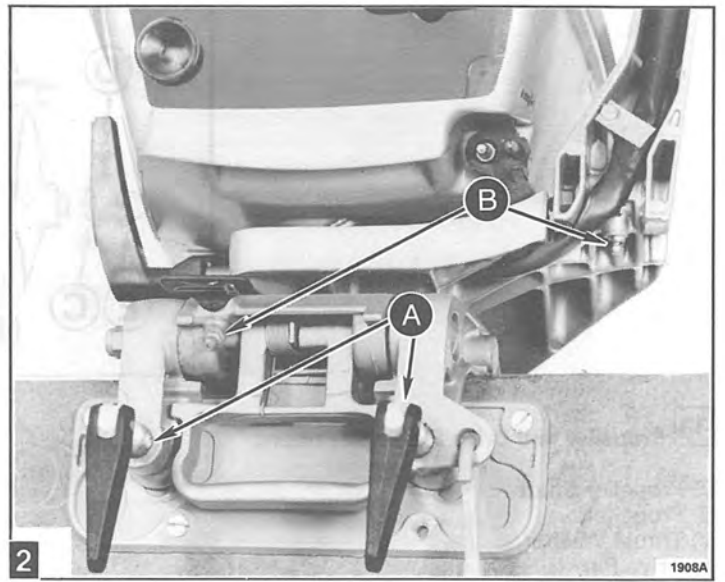
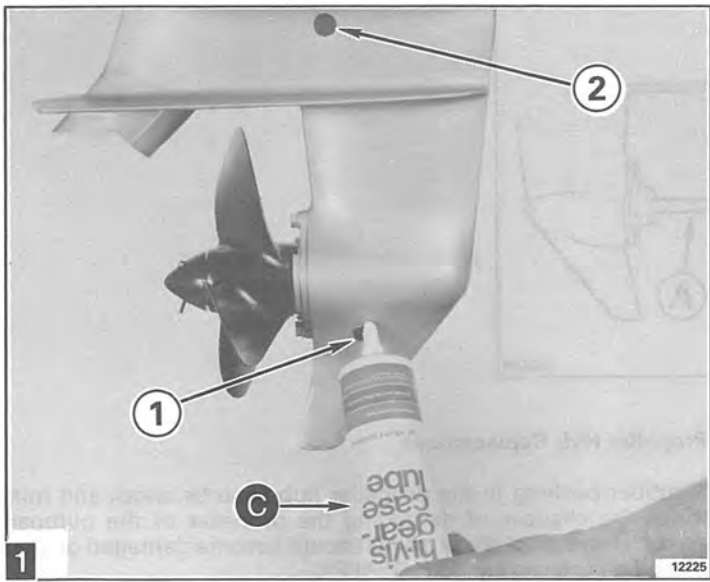
To refill, place tube of *OMC Hi-Vis®* gearcase lube or equivalent in drain/fill hole. If *OMC Hi-Vis®* gearcase lube is not available, *OMC Premium Blend Gearcase Lube* or equivalent can be used as an alternate. With motor in normal running position, fill until lubricant appears at oil level hole. See **Specifications** for gearcase capacity.

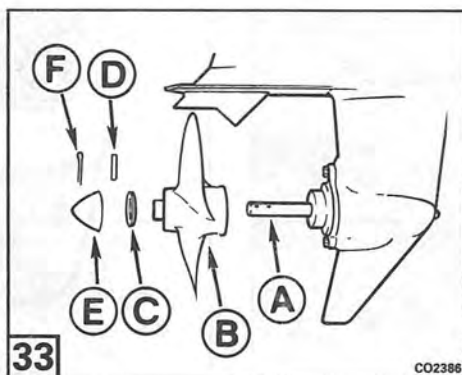
Install oil level plug before removing lubricant tube from oil drain/fill hole. Drain/fill plug can then be securely installed without oil loss.

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.





33 Propeller and Drive Pin Replacement

- Ⓐ Propeller Shaft
- Ⓑ Propeller
- Ⓒ Thrust Washer
- Ⓓ Drive Pin
- Ⓔ Propeller Nut
- Ⓕ Cotter Pin

Your motor has a shock absorber in the propeller hub to minimize propeller damage and reduce possibility of shearing drive pin when propeller strikes an object. If drive pin does shear, it can be replaced.

To replace drive pin, pull out cotter pin and remove propeller nut and propeller. The damaged drive pin can be driven out with a new pin. A spare drive pin and cotter pin are supplied with your owner's kit. Lubricate propeller shaft sparingly with *OMC Triple-Guard®* grease. When replacing propeller nut, tighten nut finger tight and then advance (tighten) to align cotter pin hole. Do not back up nut. (If propeller nut is not drawn up tight enough, excessive drive pin and propeller hub wear will result.) Install a new cotter pin, bending ends over against nut.

If propeller strikes an object, it may be damaged and can cause excessive motor vibration and engine damage.

Propeller Hub Replacement

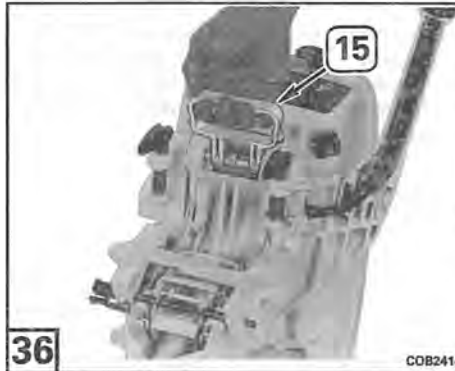
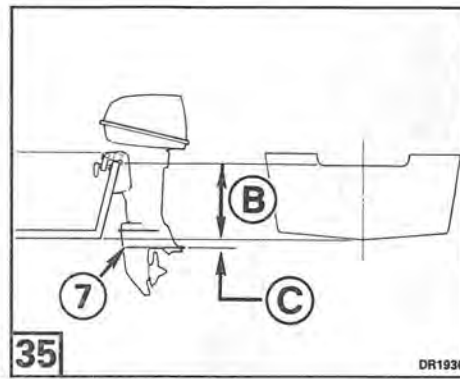
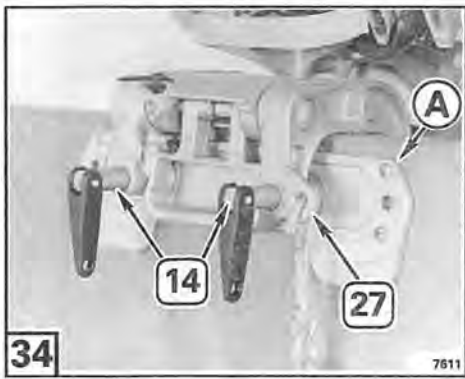
A rubber bushing in the propeller hub absorbs shock and minimizes the chances of damaging the propeller or the outboard motor. However, if the bushing should become damaged or slips, it can be replaced by your DEALER.

Propeller Care

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

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 luster. It is advisable, after use in salt water, to wash the entire motor with fresh water and wipe dry.



Installation Instructions

Maximum Boat Horsepower

⚠ Safety Warning: Do not over-power by using a motor with a horsepower rating higher than the maximum stated on the boat's capacity plate. Doing so could result in loss of control. If boat is not equipped with capacity plate, see your DEALER.

Be sure you match this motor to a boat with a capacity plate stating it is rated for tiller steering and at least your motor's HP. This is because boats equipped with remote steering can have a much higher maximum horsepower rating than the same size boat meant for tiller steering.

Motor Mounting Recommendations

Curved transoms do not lend themselves to proper mounting of outboard motors. SUITABLE SHIMS MUST BE USED to obtain a flat surface for mounting of these motors to ensure the proper engagement of the motor to the boat transom. This will insure that the motor will not come loose from the boat's transom or that no part of the motor mounting assembly or boat will be damaged when maximum power is applied. Contact your DEALER or boat manufacturer for assistance, if necessary.

⚠ Safety Warning: Curved transoms will not allow proper motor clamping. Loose clamp screws can result in loss of speed, steering and shift control of the motor.

34 Note We recommend using an accessory transom plate **A** to protect your boat. See your DEALER. To prevent loss of motor, attach a chain or cable between motor chain lug **27** and boat.

35 Transom Height **B**, listed in **Specifications**, is the correct boat transom height needed for a particular model outboard. This dimension is measured at the transom centerline, perpendicular to the bottom of the boat.

Important Correct boat transom height **B** is essential to obtain best boat performance.

- If the motor is installed and the anti-ventilation plate **7** is even with or higher than the boat's bottom, you may want to make some test runs to check the performance of the boat and motor before making any transom modifications. If the motor is mounted too high in relation to the boat's bottom, propeller ventilation (slippage) may occur.

Interference from the keel is occasionally the cause of propeller ventilation. Tapering the keel can eliminate interference. See your DEALER.

- If the motor is mounted too low in relation to the boat's bottom, poor boat performance and excessive water spray will result.

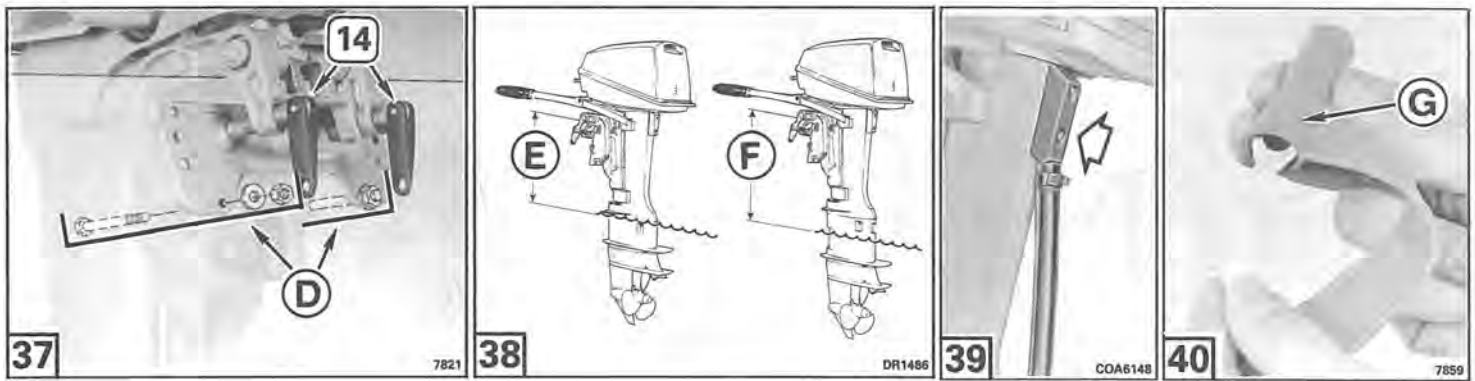
⚠ Safety Warning: The motor must not be installed with the anti-ventilation plate **7** more than 2 in. (51 mm) **C** below the boat's bottom, as shown. Doing so can result in:

- Possible loss of boat control,
- Boat rolling excessively when the motor is turned,
- Boat capsizing.

See **Installing Motor, Sail Models** for special information about Sail models.

36 Lifting and carrying Motor

A spring loaded handle **15**, located at the balance point of your motor, is convenient to use for carrying. To lift your motor from boat or motor stand, use front and rear lift grips **17** & **41** located in lower engine cover. The steering handle may be placed in the stow position.



34 35 Installing Motor

Some boats are extremely unstable in the water, even when secured to a dock. Do not stand erect. Stay as close as possible to center line of boat while installing motor.

When mounting the motor on the boat in shallow water, place stern bracket in full tilted position before lifting motor onto transom. This will avoid dragging propeller in sand or silt. Also be sure carrying handle is in stowed position before motor is lowered into position.

Center motor on transom before tightening clamp screws (14). Turn clamp screws securely. Tighten again after 15 minutes of operation. Do not use tools to tighten clamp screws.

37 Installing Motor, Sail Models

Be sure carrying handle is in stowed position. Lift motor onto transom and tighten clamp screws (14) securely. Tighten again after 15 minutes of operation. Do not use tools to tighten clamp screws.

To prevent lateral movement or loss of motor overboard, the motor must be secured to the boat transom or motor bracket using the hardware (D) supplied. Using the stern brackets as template, locate and drill two 5/16" (8 mm) diameter holes through transom. Lubricate bolt threads with *OMC Triple-Guard®* grease or equivalent. Insert bolts through stern brackets as illustrated and secure motor to transom using two washers and nuts supplied. When mounting to boat transom, use a good waterproof caulking compound between bolts and transom to make installation watertight.

Note Because Sail Models use a special high thrust propeller, have a lower submerged operating depth and can be operated at full throttle in reverse gear, it is necessary that all mounting hardware supplied with motor be used to ensure a secure installation of the motor. If hardware is lost, see **Product References, Illustrations and Specifications** before obtaining new hardware.

38 Recommended submerged depth:

- (E) 6 Sail Model - 34.29 cm (13½" ± 1")
- (F) 8 Sail Model - 46.99 cm (18½" ± 1")

OMC Auxiliary Motor Bracket

OMC has an auxiliary motor bracket available for mounting your outboard auxiliary power to your transom. The OMC bracket is designed to aid lifting by taking up to 50% of the effort out of raising the motor. The OMC bracket has a lifting range of 11" (28 cm). See your DEALER.

When installing motor on an OMC Auxiliary Bracket, use only the spacers (supplied with Sail Models only), bolts and locknuts supplied in the owner's kit. The spacers are to be placed between the locknuts and the OMC Auxiliary Bracket to provide a flat mounting surface.

39 Exhaust Baffle Kit

An exhaust baffle kit is available for motors mounted on inboard constructed wells. This kit reduces exhaust buildup around the engine air intake and prevents starving engine of fresh air needed for combustion. This kit is available from Hansen Machining Inc., 23426 Apollo Court, Lake Villa, Illinois 60046, U.S.A.

Battery Cable Installation, Sail Models

We recommend your DEALER make the electrical installation for you. If you do this yourself, follow cable connecting instructions outlined below.

An alternator is provided on your motor and will keep the battery charged during operation. The motor may be operated without being connected to a battery.

40 ⚠ Safety Warning: When not connected to battery, cover the positive cable terminal with boot (G) (attached to red cable) to prevent electrical spark from alternator. Do not run motor with cable wrapped around it. This may cause steering restriction and/or cable damage.

Note Connecting the cables to the battery should be the last step in your installation. BE SURE NEGATIVE (-) BATTERY CABLE, BLACK, IS SECURELY ATTACHED TO NEGATIVE TERMINAL ON BATTERY AND POSITIVE (+) BATTERY CABLE, RED, IS SECURELY ATTACHED TO POSITIVE TERMINAL ON BATTERY. This is very important. If cables are reversed, the charging unit will be immediately damaged. DO NOT attempt to connect or disconnect any part of the electrical circuit while the motor is running. This motor has a negative (-) ground.

All accessories (except as indicated in OMC Installation Instructions) MUST BE PROPERLY FUSED and connected DIRECTLY TO BATTERY. See your DEALER.

Note If motor is run without a battery, do not connect any electrical equipment to the motor's charging system as electrical damage could result.

Remote Controls (Optional Equipment)

See your DEALER for OMC accessory kits which enable you to control your engine from a remote location.

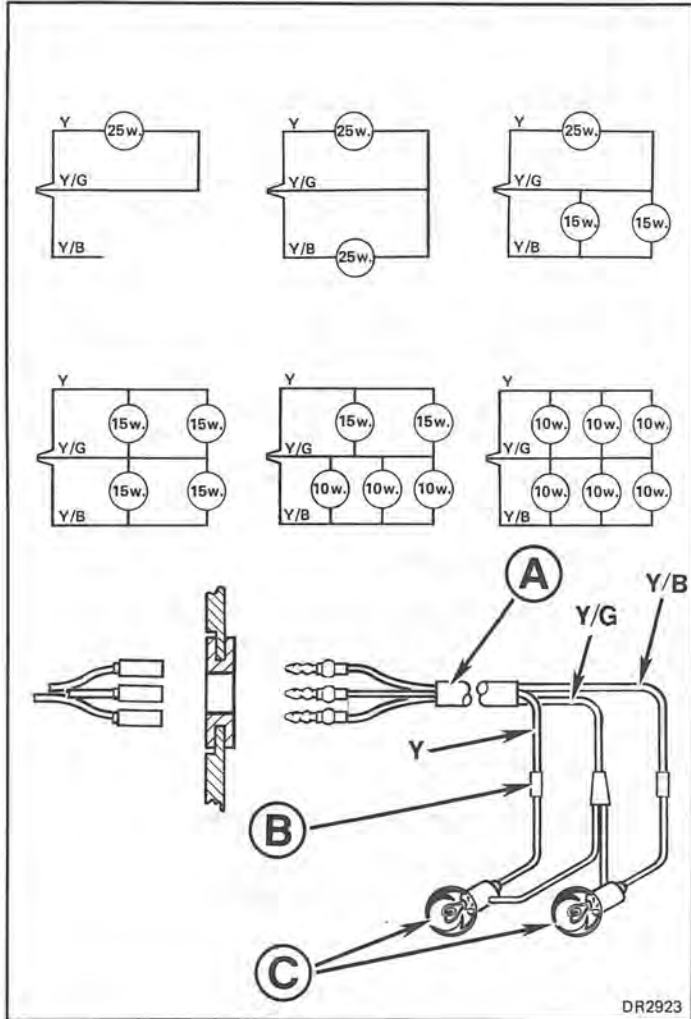
AC Lighting

Some models are equipped with an AC (Alternating Current) lighting system. This system is intended for operating lights on a boat.

Follow the illustrations for proper installation of lead wires.

Note The current generated is alternating current (AC) and cannot be connected directly to a battery. For battery charging, use an *OMC* Battery Charging Kit. See your DEALER.

Various combinations of light bulbs can be used. Use 12-volt light bulbs of wattage sizes indicated on the diagrams.



Wire Colors:

Y - Yellow
 Y/G - Yellow/Gray
 Y/B - Yellow/Blue

Legend:

(A) Sleeve
 (B) Cover connections with electrical tape
 (C) 25-watt bulbs

Removing Motor From Boat

! Safety Warning: Gasoline is extremely flammable and highly explosive under certain conditions. To prevent fire and explosion, before removing motor from boat:

- **Separate Fuel Tanks without Gauge** - Close vent screw on fuel tank filler cap.
- **All Separate Fuel Tanks** - Remove fuel hose from motor and coil hose on top of tank when not in use.

Loosen clamp screws, disconnect motor retention chain (not supplied) and lift motor vertically from boat. See **Lifting and Carrying Motor**.

Hold motor in upright position to allow water to drain out.

Note Do not place motor in a position where the gearcase will be higher than the powerhead. Any water remaining in the exhaust tube may run into the cylinder and cause serious damage.

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 system requires 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 Storage Fogging Oil*.

- Use *OMC 2+4* fuel conditioner, or equivalent, in your fuel mixture to stabilize the gasoline. It eliminates need for draining fuel for up to one year of storage. Add 1 oz. of *OMC 2+4* fuel conditioner for every gallon (8 ml for every litre) of gasoline. Then operate motor in fresh water for a few minutes to allow fuel mixed with *OMC 2+4* fuel conditioner to enter carburetor.

Note Do not operate motor out of water even momentarily. Water pump may be damaged or motor may overheat.

- Remove engine cover. See **Removing Engine Cover**.
- Remove air silencer.
- Start engine.
- While engine is running, disconnect fuel line at motor.
- Rapidly inject *OMC Storage Fogging Oil*, or equivalent, into carburetor until motor smokes excessively.
- Stop engine.

! **Safety Warning:** To prevent accidental starting of engine, disconnect spark plug leads from spark plugs before servicing motor.

- Remove spark plugs. Inject *OMC Storage Fogging Oil* or equivalent 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.
- Check spark plugs. Clean or replace if necessary. Refer to **Spark Plug Inspection and Replacement**.

- Motor may be left on boat or placed on a stand. Motor must be stored in upright position.
- See **Cleaning Fuel Filter**. If *OMC 2+4*[®] fuel conditioner, or equivalent, has not been used in fuel mix, drain fuel tank through filler cap opening.
- Remove propeller and check for damage; if damaged, see your DEALER. A damaged propeller will affect the performance of your motor. Clean the propeller shaft and lubricate with *OMC Triple-Guard* grease, or equivalent. See **Propeller and Drive Pin Replacement**.
- Slowly crank several times to drain water from the water pump.
- Drain and refill gearcase. Lubricate motor. See **Lubrication**.
- Touch up paint. See your DEALER.
- Give motor visual check and make sure:
 - Screws and nuts are tight (torque as specified in service manual).
 - Spark plug boots and connector sleeves are in place.
 - Electrical leads are clamped in place to prevent contact with moving motor parts.
 - Deteriorated (cut, cracked, abraded) or damaged parts such as wires, boots, sleeves are replaced.
 - Deteriorated or damaged fuel system parts (hoses and gaskets) are replaced.
- Replace engine cover.

Note Do not place motor in a position where the gearcase will be higher than the powerhead. Any water remaining in the exhaust tube may run into the cylinder and cause serious damage.

After Storing - Before Using

If you have properly stored your motor, proceed as follows:

- Check gearcase lubrication. If leakage is evident, gearcase seals may need attention. See your DEALER.
- Connect spark plug lead(s).
- After starting, check to see that a steady stream of water is discharged from the water pump indicator. This indicates proper water pump operation.
- If motor was removed from boat during storage, install motor. See **Installation Instructions**.

Submerged Motor

Motor Dropped Overboard

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

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.

Note If service is not readily available, the motor should be resubmerged immediately in fresh water to avoid exposure to the atmosphere. Make arrangements to have it serviced with the least possible delay.

Dealer Service

When away from home and in need of an authorized DEALER to service your OMC product, consult the local telephone directory. If no listing is available in the U.S. (except Alaska and Hawaii) call 800-255-2550.

20 Hour Check

This is important. After the first 20 hours of operation, we recommended that you return your motor to your DEALER for minor inspection and adjustment (if necessary).

20 Hour Check Includes.

- Drain, flush and refill gearcase. See **Lubrication**.
- Torque cylinder head and spark plugs
- Adjust carburetor
- Check propeller
- Check timing (where applicable) and ignition
- Adjust remote control and linkage (where applicable)

This is an opportune time to discuss with your DEALER any questions on your outboard motor which have arisen in the first 20 hours of operation, and establish a routine preventative maintenance schedule.

This inspection will be performed at local DEALER rates and paid for by the owner. After the DEALER 20-hour check-up, your unit should be taken to an authorized DEALER every 6 months or 100 hours of operation, whichever occurs first.

Warranty Service

Warranty

The warranty covering this product is located at the end of this handbook. Read your warranty carefully to understand the terms and conditions that apply to your particular area.

To make a claim under warranty, contact the authorized DEALER from whom the outboard motor was originally purchased, or the nearest authorized DEALER. Remember, your outboard motor must be delivered to an authorized DEALER within the warranty period, and all warranty work must be performed by an authorized DEALER. Proof of purchase may be required by the DEALER to substantiate any warranty claim.

Owner's Responsibility

See your DEALER for proper maintenance and care of your outboard motor. Normal maintenance service and replacement of service items are the owner's responsibility. Replacement of service items such as spark plugs, water pumps, propellers, clutch parts (where applicable), and belts are not considered defects in material or workmanship within the terms of the warranty.

Examples Of Items Not Covered By Warranty

Provisions of the Warranty Will Not Apply to:

Normal Service requirements arising during the warranty period, such as carburetor or ignition adjustment or repair, or wear to piston ring, or cylinder, or water pump.

Outboard motors that have been altered or modified so as to adversely affect their operation, performance or durability or to change their intended use.

Repairs made necessary by the use of parts or accessories which are either incompatible with the outboard motor or adversely affect its operation, performance or durability.

Outboard motors not operated or maintained in accordance with the instructions in the Owner's-Operator's Manual.

Twenty-hour check-up, service check-up, tune-up, or diagnosis.

Normal cleaning, adjusting or replacing of spark plugs in the outboard motor.













Periodic checking or adding of oil to the gearcase of the outboard motor.

Expense of returning the outboard motor to the DEALER and expense of delivering it back to the owner.

Removal of the outboard motor from a boat and reinstallation, mechanic's travel time, and in-and-out-of-water charges.

Replacement of anode(s).

Maintenance Schedule Chart

| Service Point | Frequency † | | | See Page |
|----------------------|----------------|---|---|----------|
| | First 10 Hours | First 20 Hours | Every 100 Hours or Once every season | |
| Fuel Filter | * | | * | 15 |
| Gearcase | ● |  |  | 16 |
| Cylinder Head Screws | ● |  |  | ● |
| Carburetor | ● |  |  | 13 |
| Propeller | ● |  |  | 18 |
| Timing & Ignition | ● |  |  | ● |
| Lubrication Points | ● | ● | See Lubrication Chart | 16 |
| Spark Plugs | ● |  | * | 15 |
| Engine Tune-Up | ● | ● |  | ● |
| Motor Adjustments | ● | * | * | 14 |

DR2414ENG

† Severe usage may require more frequent service. See your DEALER.

● Not applicable

* Owner performed service



Recommended DEALER performed service.

Symbols

Certain symbols or combinations of symbols may appear on your new outboard motor or on its accessories. It is very important that you understand their meaning or purpose. If any symbol is not clearly understood, see your DEALER.

"Safety Warning" Symbols



Means risk of **SERIOUS** injury is present. Follow instructions in the Owner's/Operator's Manual before using motor or accessory.



Means place shift control in **NEUTRAL** before starting motor. Follow instructions in Owner's/Operator's Manual before starting motor.



Indicates that **ELECTRICITY** of more than 50 volts is present.



Indicates that contents are under pressure.




Identifies poisonous material.




Indicates a potential fire hazard.

"Position Indicator" Symbols



Indicates upward movement. Example: While boat is at planing speed, activating trim switch to  raises the bow of the boat.



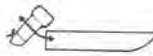
Indicates downward movement. Example: While boat is at planing speed, activating trim switch to  lowers the bow of the boat.



Indicates gear shift control positions. **FORWARD**, **NEUTRAL** and **REVERSE**.



Indicates a continuous regulating function. Example: Moving engine speed control in direction of increasing symbol width will continuously increase engine speed.



Identifies **TILT/RUN** (or **REVERSE LOCK**) control lever position that allows motor to be raised (or tilted) from the water.



Identifies **TILT/RUN** (or **REVERSE LOCK**) control lever position that engages **REVERSE LOCK** mechanism. Motor must be in normal running position to engage lock.



Identifies the priming device or the priming position. Pump that provides starting fuel.



Identifies the **PRIME OFF** position of the control knob after engine warm-up, and primer function is no longer required.



Indicates position of throttle control device during starting. May also identify **STARTING** control.

"Condition" Symbols



Identifies the meter which indicates accumulative running hours of engine.



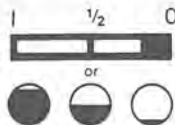
Identifies the meter which indicates battery voltage, or amperage.



Identifies the meter which indicates engine speed expressed in revolutions per minute.



Identifies battery or a meter which indicates status of battery-generator charging system.



Indicates the amount of liquid in tank.



Identifies the meter which indicates engine coolant pressure.



Identifies the meter which indicates engine coolant temperature.

"Functional Description" Symbols



FILTER: Identifies a device which removes contaminants from fuel.



Identifies the **EMERGENCY IGNITION CUT-OFF SWITCH.** Emergency engine stop.



FUSE: Identifies a device which protects the electrical system from overload.



Identifies the negative ground or negative voltage connection.



CHOKE control.



Identifies a **VALVE** used to control the flow of liquid or gas.



Identifies the **STOP SWITCH.** It may also identify **STOP** position of the throttle control.



Identifies the operating device for starting the motor.



Identifies the location of the alternating current source.



Identifies the device used to **LATCH** or **UNLATCH** the engine cover.



FUEL SHUT OFF identifies the device used to cut off the fuel supply to the engine.



Identifies control used to fill or prime fuel system.

"Instructional" Symbols



Indicates **GASOLINE** is to be used or **GASOLINE** is present.



Means read your **Owner's/Operator's Manual** before operating the product. It contains information or instructions vital for operation of product.



Indicates areas to be lubricated.



Indicates **OIL** is to be used or **OIL** is present.



Identifies **KEROSENE/OIL** mixture ratio for 2-stroke engines. Indicates 30 parts of **KEROSENE** are to be mixed with 1 part of **OIL**.



Indicates the **GASOLINE/OIL** mixture ratio for certain 2-stroke engines. Indicates 50 parts of **GASOLINE** are to be mixed with 1 part **OIL**.



Indicates the **GASOLINE/OIL** mixture ratio for certain 2-stroke engines. Indicates 100 parts of **GASOLINE** are to be mixed with 1 part **OIL**.