

# **Operator's Guide**

**30 HORSEPOWER MFE**

**E30MRL**

**AA Model**

NSN 2805-01-585-6914





# FEATURES AT A GLANCE

## Easy to Own and Operate

- Multi-Fuel Capable
- De-Watering System
- Low Reflection Paint and Decals
- One-Year Limited Warranty
- No Operational Break-In Procedure
- Easy Starts (no choking or priming)
- Self Flushing Cooling System
- Simplified Winterization Procedure
- Digital Diagnostics

## Durable and Reliable

- Full Corrosion Protection
- Multi-Point Lubrication System
- Auto-Calibrated Linkage
- Robust, Heavy-Duty Design
- Posi-Lock Latches
- Extra Capacity Water Pump
- Iridium Spark Plugs
- Vibration Isolated Electronics
- Stainless Steel Thermostat
- Nickel/Chrome-Faced Piston Rings
- Micro Finished Connecting Rods/Crankshaft
- *MFE S.A.F.E.* Warning System—maximum engine operation in critical situations

## Cleaner and Quieter

- EPA Emissions Compliance
- European Union Emissions Compliance
- Sealed Fuel System
- Low Friction Design (No powerhead gears, belts, cams, oil scraping rings, or mechanical oil pump)
- Full Length Insulated Lower Pans
- Quiet Signature Sound
- Air Intake/Silencer
- Idle Air Bypass

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*Evinrude®*

*Evinrude® MFE*

*I-Command™*

*Evinrude® E-TEC®*

*2+4™ Fuel Conditioner*

*S.A.F.E.™*

*Evinrude®/Johnson® Genuine Parts*

*Evinrude®/Johnson® XD100™*

*SystemCheck™*

*BRP Logo*

*HPF Pro™ Gearcase Lubricant*

*Triple-Guard™ Grease*

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# ABOUT THIS GUIDE

This Operator's Guide is an essential part of your *Evinrude MFE* outboard. It contains pertinent information which, if followed, will provide you with a thorough understanding needed for proper operation, maintenance, care, and—above all—safety. Safety is our first priority and it should be yours too. It is strongly recommended you read this Guide from cover to cover. The more you know and understand about your *Evinrude MFE* outboard, the greater the safety and pleasure you will get from using it. Following this recommendation will assure the completeness of the information essential to your safety, the safety of any passengers, and other water users.

This Operator's Guide identifies important safety messages.

Although the mere reading of such information does not eliminate the hazard, the understanding and application of the information will promote the correct use of your outboard engine.

## Safety Alert Symbol

**This is the Safety Alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.**

This Guide should be kept in a waterproof bag with the outboard at all times during operation. If the product ownership is transferred, this Guide should be forwarded to the new owners.

A responsible, educated boater will fully appreciate the pleasures of boating and will be a safe boater. Boating Safety Classes are conducted by the U.S. Coast Guard Auxiliary, the U.S. Power Squadron and some Red Cross Chapters. For information about classes, call toll free 1-800-336-BOAT.

For additional information about boating safety and regulations, call:

- U.S. Coast Guard Boating Safety Hotline  
1-800-368-5647.

Outside North America please contact your Dealer or distributor for details about boating safety.


This Operator's Guide uses the following signal words identifying important safety messages.


## DANGER

**Indicates a hazardous situation which, if not avoided, will result in death or serious injury.**

## WARNING

**Indicates a hazardous situation which, if not avoided, could result in death or serious injury.**

 **CAUTION** Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

 **NOTICE** Indicates an instruction which, if not followed, could severely damage engine components or other property.

**IMPORTANT:** Identifies information that will help with assembly and operation of the product.

# IMPORTANT SAFETY MESSAGES

This Operator's Guide contains essential information to help prevent personal injury and damage to equipment. Safety messages appear throughout this Guide in the applicable section.

Be careful! Human error is caused by many factors: carelessness, fatigue, overload, pre-occupation, unfamiliarity of operator with the product, drugs and alcohol to name a few. Damage to your boat and outboard can be fixed in a short period of time, but injury or death, has a lasting effect.

## WARNING

**For your safety and the safety of others, follow all safety warnings and recommendations. Do not disregard any of the safety precautions and instructions.**

**Anyone operating your boat should first read and understand this guide before they operate your boat and outboard.**

### **SAFETY MEASURES — General**

- To fully appreciate the pleasures, enjoyment and excitement of boating there are some basic rules that should be observed and followed by any boater. Some rules may be new to you and others may be common sense or obvious... irrespective, take them seriously!
- Be sure at least one of your passengers knows how to handle your boat in case of an emergency.
- All passengers should know the location of emergency equipment and how to use it.
- Know the marine traffic laws and obey them.
- All safety equipment and personal floatation devices must be in good condition and suitable for your type of boat. Always comply with the regulations that apply to your boat.
- Remember, gasoline fumes are flammable and explosive. Always adhere to the fueling procedure contained in this Operator's Guide and those given to you by the fueling station. Always verify fuel level before use and during the ride. Apply the principle of 1/3 fuel to destination, 1/3 back and 1/3 reserve fuel supply. Do not carry spare fuel or flammable liquids in any storage or engine compartments.
- Whenever running the engine, assure there is proper ventilation to avoid the accumulation of carbon monoxide (CO), which is odorless, colorless, and tasteless, and can lead to unconsciousness, brain damage, or death if inhaled in sufficient concentrations. CO accumulation can occur while docked, anchored, or underway, and in many confined areas such as the boat cabin, cockpit, swim platform, and heads. It can be worsened or caused by weather, mooring and operating conditions, and other boats. Avoid exhaust fumes from your engine or other boats, provide proper ventilation, shut off your engine when not needed, and be aware of the risk of backdrafting and conditions that create CO accumulation. In high concentrations, CO can be fatal within minutes. Lower concentrations are just as lethal over long periods of time.
- Avoid standing up or shifting weight suddenly in light weight boats.
- Keep your passengers seated in seats. The boat's bow, gunwale, transom and seat backs are not intended for use as seats.
- Insist on the use of personal floatation devices, approved by the U.S. Coast Guard, by all passengers when boating conditions are hazardous, and by children and nonswimmers at all times.
- Proceed with caution and at very low speed in shallow water. Grounding or abrupt stops may result in personal injury or property damage. Also be alert for debris and objects in the water.

- Be familiar with the waters you are operating in. The gearcase of this outboard extends below the water surface and could potentially come in contact with underwater obstructions. Contact with underwater obstructions may result in loss of control and personal injury.
- Respect no wake zones, rights of other water users and the environment. As the "skipper" and owner of a boat you are responsible for damage to other boats caused by the wake of your boat. Allow no one to throw refuse overboard.
- Do not operate your boat if you are under the influence of drugs or alcohol.
- High performance boats have a high power-to-weight ratio. If you are not experienced in the operation of a high performance boat, do not attempt to operate one at, or near, its top speed until you have gained that experience.
- Become completely familiar with the control and operation of your boat and outboard before embarking on your first trip or taking on a passenger(s). If you have not had the opportunity to do so with your Dealer, practice driving in a suitable area and feel the response of each control. Be familiar with all controls before applying the throttle above idle speed. As the operator, you are in control and responsible for safe operation.

## **SAFETY MEASURES — Installation and Maintenance**

- The outboard must be correctly installed. Failure to correctly install the outboard could result in serious injury, death or property damage. We strongly recommend that your Dealer install your outboard to ensure proper installation.
- Do not overpower your boat by using an engine that exceeds the horsepower indicated on the boat's capacity plate. Overpowering could result in loss of control. If your boat has no capacity plate, contact your Dealer or the boat's manufacturer.
- When replacement parts are required, use *Evinrude/Johnson Genuine Parts* or parts with equivalent characteristics, including type, strength and material. Using substandard parts could result in injury or product malfunction.
- Only perform service procedures which are detailed in this Operator's Guide. Attempting to perform maintenance or repair on your outboard if you are not familiar with the correct service and safety procedure could cause personal injury or death. Further information can be obtained from your authorized *Evinrude/Johnson* Dealer. In many instances proper tools and training are required for certain service or repair procedures.
- Maintain your boat and engine in top condition at all times. Adhere to the **Maintenance Schedule** on page 37.
- Operate your boat and outboard prudently and have fun. Do not forget that all persons must assist other boaters in case of emergency.
- Prevent injury from contact with rotating propeller; remove propeller before flushing or before performing any maintenance.



## PRODUCT REFERENCES, ILLUSTRATIONS AND SPECIFICATIONS

BRP reserves the right to make changes at any time, without notice, to features, specifications and model availability, and to change any specification or part at any time without incurring any obligation to update older models. The information in the Guide is based on the latest specifications available at the time of publication.

Photographs and illustrations used in this Guide might not depict actual models or equipment but are intended as representative views for reference only.

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

### ***Owner's Identification***

**United States and Canada** — At the time of purchase, your Dealer will complete your outboard registration forms. Your portion provides proof of ownership and date of purchase.

**Outside United States and Canada** — See your Dealer or distributor for details.

### ***Model and Serial Numbers***

The model and serial numbers appear on a plate attached to the stern bracket or swivel bracket. Record your outboard's:

Model Number \_\_\_\_\_

Serial Number \_\_\_\_\_

Purchase Date \_\_\_\_\_

Date of Delivery \_\_\_\_\_

### ***Stolen Outboards***

**United States and Canada** — Report stolen outboards to your local dealer or distributor.

**Outside United States and Canada** — Report the theft to the Bombardier Recreational Products distributor where the outboard was registered.

### ***Technical Literature***

BRP offers technical literature specifically for your outboard. A service manual, or an extra Operator's Guide can be purchased from your selling Dealer. For the name and location of the nearest *Evinrude* Dealer in the United States and Canada visit [www.evinrude.com](http://www.evinrude.com).

### ***Technical Support***

Technical support is available Monday through Friday from 0800 to 1630 U.S. Central Time. When calling, have the engine serial number available. You will also need your 6-digit account number.

For technical support call 1-800-888-4662. After selecting your language, you are required to enter your 6-digit account number. When prompted, select option 1 (two times), then option 2.

# DECLARATION OF CONFORMITY

- **Application of Council Directives and their relevant harmonized standard(s):**

Recreational Craft Directive 94/25/EC as amended by 2003/44/EC

- EN ISO 8178-1:1996
- EN ISO 14509

Electromagnetic Compatibility Directive 2004/108/EC

- EN 55012:2007
- EN 61000-6-1:2007
  - EN 61000-4-2:2008
  - EN 61000-4-3:2006

Machinery Directive 2006/42/EC

- ISO 12100:2010

- **Product Type:**

Marine Outboard 2-Stroke Cycle SI Engine sold under the *Evinrude* name

**Manufacturer:**

BRP US Inc  
10101 Science Drive  
Sturtevant, WI, USA 53177

**Authorized Representative:**

BRP Europe N.V.  
Geert De Brandt, Operations Manager  
Skaldenstraat 125  
Gent, Belgium, B-9042

I, the undersigned, hereby declare that the product conforms to the above Directive(s) and Standard(s).

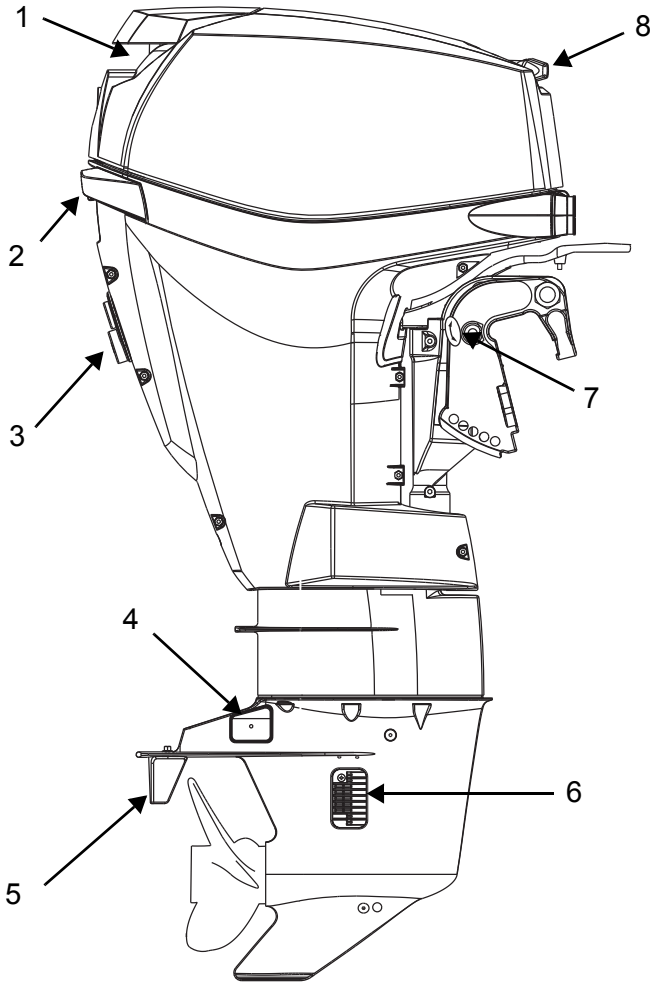


George Broughton  
Director of Engineering – Outboards

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# Using The *Evinrude MFE* Outboard

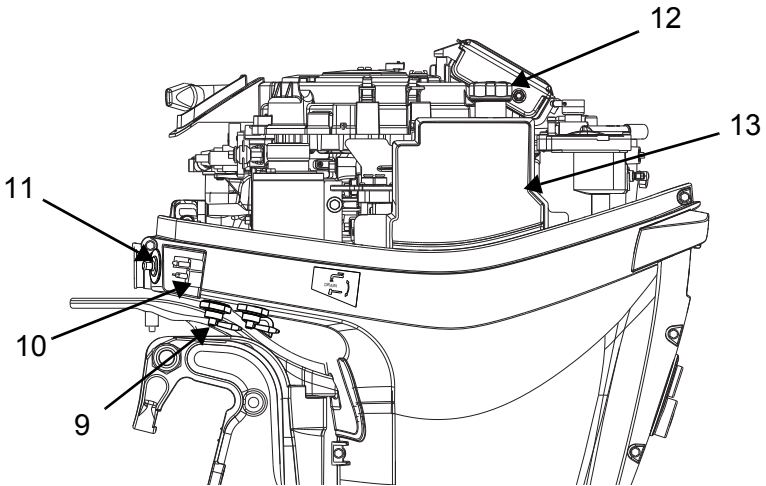
## COMPONENT IDENTIFICATION



008493M

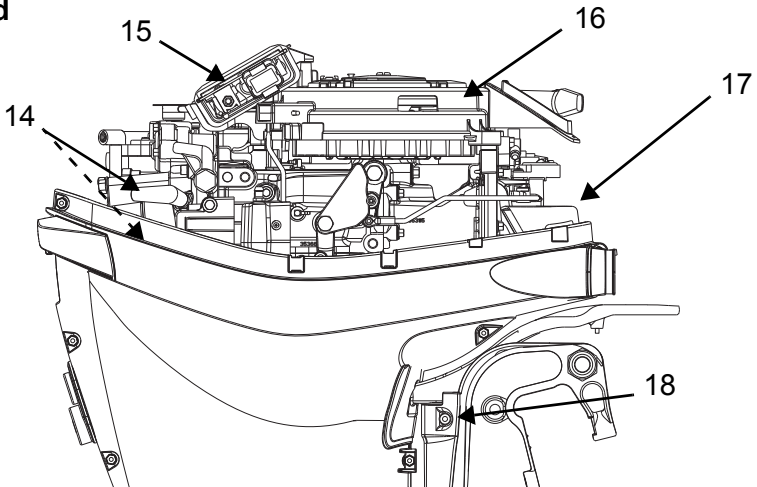
Item	Description	Item	Description
1	Air Inlet, Tilt Handle	5	Trim Tab
2	Engine Cover Latch	6	Water Intake Screens
3	Water Pump Indicator, Flushing Port	7	Tilt / Run Lever
4	Anti-Corrosion Anodes	8	Rope Pull Start Handle

**Port**



008897M

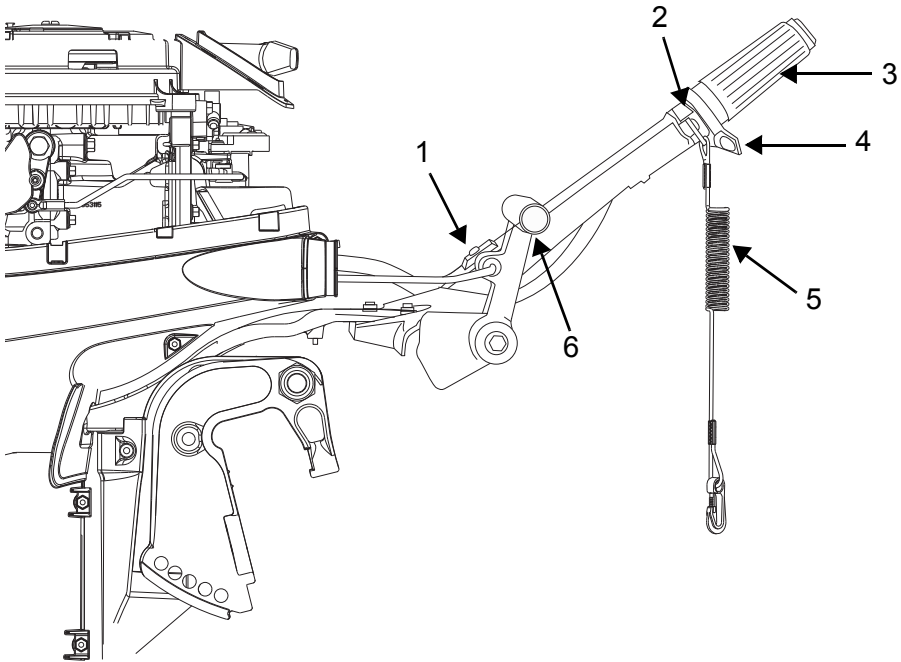
**Starboard**



008495M

Item	Description (Port)	Item	Description (Starboard)
9	De-Water Valves	14	Spark Plugs
10	Fuel Connector	15	EMM (Engine Management Module)
11	Fuel Selector Switch	16	Rewind Starter / Flywheel Guard
12	Oil Fill Cap	17	Air Silencer
13	Oil Tank	18	Steering Friction Adjustment Screw

## COMPONENT IDENTIFICATION – TILLER ARM



008898

Item	Description	Item	Description
1	Emergency Start Clip	4	Throttle Friction Adjustment
2	Stop Button/Engine Cut-off Switch	5	Clip and Tether Cord Assembly
3	Steering Handle <i>Twist Grip™</i> Throttle	6	Shift Lever

# FUEL AND OIL

## FUEL REQUIREMENTS

### **⚠ WARNING**

Gasoline is extremely flammable and highly explosive under certain conditions. Follow the instructions in this section explicitly. Improper handling of fuel could result in property damage, serious injury or death.

Leaking fuel is a fire and explosion hazard. All parts in the fuel system should be inspected frequently and replaced if signs of deterioration or leakage are found. Inspect the fuel system each time you refuel, each time you remove the engine cover and annually.

Follow these instructions to ensure safety when handling fuel:

- Always turn off the engine before fueling.
- Never permit anyone other than an adult to refill the fuel tank.
- Do not fill the fuel tank all the way to the top or fuel may overflow when it expands due to heating by the sun.
- Remove portable fuel tanks from the boat before fueling.
- Always wipe off any fuel spillage.
- Do not smoke, or allow open flames, or sparks or use electrical devices such as cellular phones in the vicinity of a fuel leak or while fueling.

Always work in a well ventilated area.

Evinrude MFE models are designed to use several different fuel types. Refer to **Fuel Selector Switch** on page 14.

### **Heavy Fuels**

Approved heavy fuels include:

- JP4, JP5, JP8
- Jet A, Jet B
- Kerosene

**IMPORTANT:** Evinrude/Johnson XD100 outboard oil **MUST** be used when outboard is run on heavy fuels. **DO NOT** use Diesel DFM-F76 or BioDiesel fuels. For combat emergency situations see **Emergency Fuel** on p. 13.

### **Gasoline**

Use fresh, unleaded automotive gasoline with the following octane rating:

<b>Minimum Octane Rating</b>	
Inside North America	87 (R+M)/2 AKI
Outside North America	90 RON

Use unleaded gasoline that contains methyl tertiary butyl ether (MTBE) **ONLY** if the MTBE content does not exceed 15% by volume.

Alcohol-extended fuel is acceptable **ONLY** if the alcohol content does not exceed:

- 10% ethanol by volume; or
- 5% methanol with 5% cosolvents by volume.

### **Emergency Fuel**

In a combat emergency when no other fuel is available, diesel DFM-F76 or BioDiesel can be used. Operating time should be limited to the duration of the combat emergency and the operator should return to operating on one of the approved fuels as soon as possible.

Idle and low speed operation (below 3000 RPM) should be avoided to prevent spark plug fouling when operating on diesel DFM-E76 or BioDiesel.

**IMPORTANT:** If the outboard **MUST** be run on diesel, the de-carbon procedure **MUST** be performed immediately after return from the mission. Refer to **De-Carboning Procedure** on p. 38.

### **Fuel Additives (gasoline only)**

The only fuel additives approved for use are:

- Evinrude/Johnson 2+4 Fuel Conditioner
- Evinrude/Johnson Fuel System Cleaner

**Use of other fuel additives can result in poor performance or engine damage.**

Evinrude/Johnson 2+4 Fuel Conditioner will help prevent gum and varnish deposits and will remove moisture from the fuel system. It can be used continuously and should be used during any period when the outboard is not being operated on a regular basis.

Evinrude/Johnson Fuel System Cleaner helps keep fuel injectors in good condition.

## FUEL SYSTEM OPERATION

### ⚠ WARNING

If engine is equipped with a quick-disconnect fuel hose, you **MUST** disconnect the fuel hose from the engine and the fuel tank to prevent fuel leaks:

- Whenever the engine is **NOT** being used
- Whenever the engine is being trailered
- Whenever the engine is in storage

**NOTE:** A small amount of fuel may be released when the fuel connector is disconnected.

Store portable fuel tanks in well-ventilated areas, away from heat sources and open flames. Close the vent screw of the fuel tank cap, if equipped, to prevent escape of fuel or fuel vapors which could accidentally ignite. Do not allow disconnected fuel hoses to leak fuel.

**IMPORTANT:** The minimum inside diameter of the fuel hose from the fuel tank to the outboard must be 3/8 in. (9 mm). Be sure the boat's fuel system provides adequate fuel to the outboard. Fuel systems with anti-siphon valves, filters or primer units may restrict fuel flow to the outboard and effect engine performance.

## FUEL SYSTEM PRIMING

If the outboard is run out of fuel, refill the fuel tank and squeeze the primer bulb until firm.

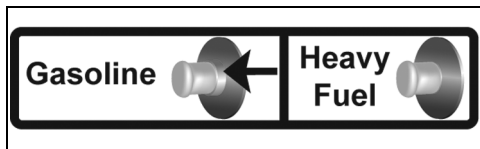
Prime the electric fuel pump by first removing the engine cut-off switch clip and then pulling the rope at least two times. This will cause the fuel pump to fill the injectors. Replace the engine cut-off switch clip and follow the normal starting procedure.

## FUEL SELECTOR SWITCH

**NOTICE** Operation with the fuel selector switch in the wrong position could cause internal engine damage not covered by the outboard's limited warranty

The *Engine Management Module (EMM)* includes programs allowing the engine to run on several types of fuel. You **MUST** select the correct program for the fuel being used. Refer to **Fuel Requirements** on p. 13.

- To use jet fuel, or kerosene, press the fuel selector switch **IN**.
- To use gasoline, pull the fuel selector switch **OUT** to expose the red indicator ring.



006550

When switching from one fuel to another:

- Connect the fuel supply hose to the desired fuel supply.
- Adjust the selector switch on the port side of the outboard for the new fuel.
- Restart the engine to reset the *EMM*—changing the switch has no effect while the engine is running.
- The *EMM* calculates when the previous fuel remaining in the engine has been used and switches the program at that time.
- The engine may run noticeably rough during the transition period.

**IMPORTANT:** Diesel fuel should be used as an emergency fuel **ONLY**. If diesel fuel must be used, the fuel selector switch should be in the Heavy Fuel position. Refer to **Emergency Fuel** on p. 13 and **De-Carboning Procedure** on p. 38.



## OIL REQUIREMENTS

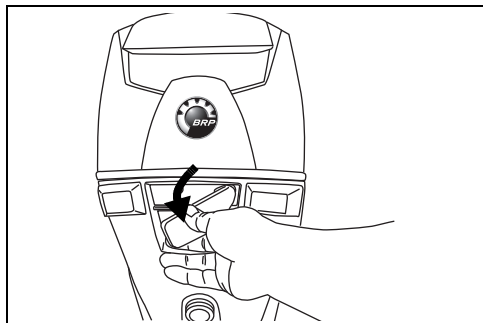
*Evinrude/Johnson XD100* is the ONLY outboard oil recommended for use with *Evinrude MFE* outboards. *Evinrude/Johnson XD100* outboard oil MUST be used when outboard is run on heavy fuels. *Evinrude/Johnson XD100* oil MUST be used when operating in temperatures under 32°F (0°C).

In combat emergency if *Evinrude/Johnson XD100* oil is not available, you must use an oil that meets NMMA TC-W3 certification standards. Operating time should be limited to the duration of the combat emergency and the operator should return to operating on *Evinrude/Johnson XD100* as soon as possible.

**IMPORTANT:** Failure to follow oil specifications could void the engine warranty if a lubrication-related failure occurs.

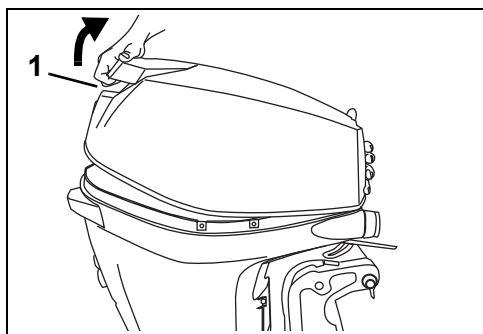
### Filling the Oil Tank

Release rear engine cover latch by pulling the handle back and turning downward.



007000

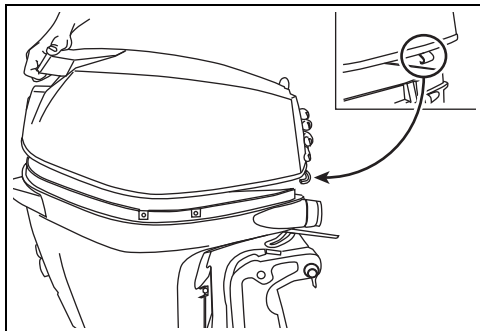
Pull up on the tilt handle to release the engine cover seal on the engine cover.



1. Tilt handle

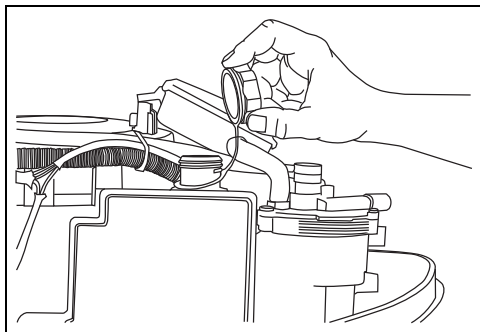
007001

Release the hook from its catch in the front and remove the engine cover to access the oil tank.



007002

Remove the filler cap and fill the tank with the recommended outboard lubricant, as specified in **Oil Requirements** on page 15.



007003

Replace the filler cap and tighten securely. Reinstall the engine cover.

**IMPORTANT:** The oil tank capacity is 1.5 quarts (1.4 liters).

## OIL SYSTEM PRIMING

**NOTICE** The oiling system **MUST** be primed to avoid engine damage from a lack of lubrication.

Prime the oiling system to remove air from the system before operating the outboard if:

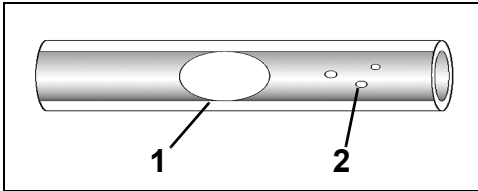
- The outboard is new;
- The oil tank is emptied or outboard is run out of oil;
- The outboard is laid down for transportation or storage.

If available, use the *Evinrude* Diagnostics Software program oil priming function for a minimum of 90 seconds.

If the diagnostics program is not available, prime the oiling system by using the winterization procedure. Refer to **Long-Term Storage (Winterization)** on page 42.

Observe oil flow through the oil distribution hoses.

Small bubbles are acceptable. Large bubbles must be eliminated through continued priming.



1. Large bubble
2. Small bubbles

004398

## OILING SYSTEM OPERATION

### Break-In

New outboards are programmed to use additional oil during the first two hours of operation above 2000 RPM. No other action is required by the operator.

**IMPORTANT:** DO NOT add oil in the fuel tank.

### NO OIL Warning System

When the level in the oil tank falls below one-quarter:

- The *EMM* interrupts the ignition periodically to signal the operator.

The *EMM* then calculates remaining oil level based on oil pump pulse cycles. When it determines the oil has been used, the *EMM*:

- Limits engine speed.

To recover from NO OIL mode, stop the outboard and add oil to tank. The warning resets after the pump cycles for a minimum of three pulses with the oil level above one-quarter.

# OPERATION

## SAFETY INFORMATION

### ⚠ DANGER

Serious injury or death can result from contact with a rotating propeller or moving boat and outboard.

Blades can be sharp and the propeller can continue to turn even after the engine is off.

Assure the engine and prop area is clear of people and objects before starting engine or operating the boat.

Be alert of people in the water.

Always shift the outboard to NEUTRAL and shut off the engine immediately when your boat is in an area where there might be people in the water.

### ⚠ DANGER

DO NOT run the engine indoors or without adequate ventilation or permit exhaust fumes to accumulate in confined areas. Engine exhaust contains carbon monoxide which, if inhaled, can cause serious brain damage or death.

### ⚠ WARNING

The engine cover is a machinery guard. DO NOT operate your outboard with the cover off unless you are performing maintenance or emergency starting, and then be careful to keep hands, hair, and clothing clear of all moving parts. Contact with moving parts could cause injury.

### ⚠ WARNING

Be familiar with the waters you are operating in. The gearcase of this outboard extends below the water surface and could potentially come in contact with underwater obstructions. Contact with underwater obstructions may result in loss of control and personal injury.

## ENGINE STARTING

Refer to the **Pre-Ride Inspection** on page 34. Complete the inspection before using your *Evinrude E-TEC* outboard.

Before starting the outboard:

- Check fuel and oil levels
- Make sure fuel selector switch is in the correct position for the fuel being used.

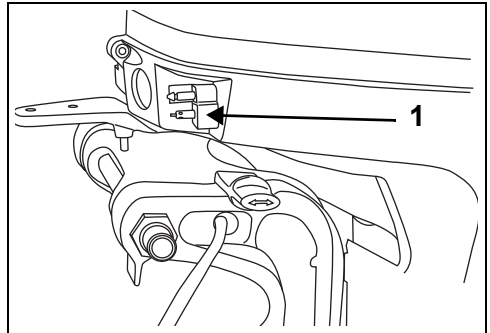
Move the tilt/run lever to the RUN position

**NOTICE** You MUST supply water to the engine before attempting to start it. Engine damage can occur quickly.

Be sure the water intake screens are below the water surface.

### Connecting the Fuel Hose

Connect the fuel hose to the fuel connector.



1. Fuel connector

007004

If equipped, open vent screw on fuel tank cap.

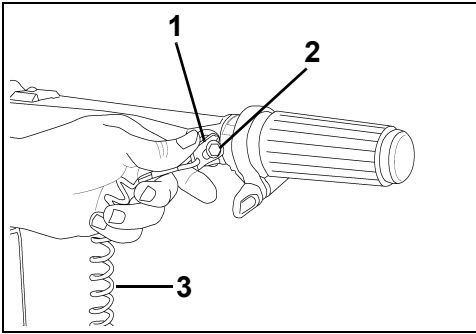
Squeeze fuel primer bulb, outlet end up, until firm.

### Engine Cut-off Switch

The engine cut-off switch is on the steering handle. Use of the engine cut-off switch feature is highly recommended on all boats.

## Using The Evinrude MFE Outboard

Connect the clip to the engine cut-off switch.



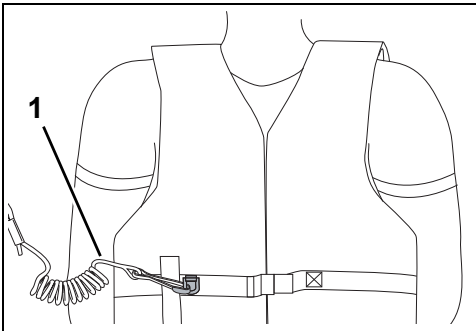
1. Clip
2. Engine cut-off switch clip / switch
3. Tether cord

002405

### ⚠ WARNING

**Always use the tether cord when operating your boat to help prevent a runaway boat and reduce the risk of personal injury or death.**

Snap the tether cord to a **secure** place on the operator's clothing or life vest — not where it might tear away instead of activating the engine cut-off switch.

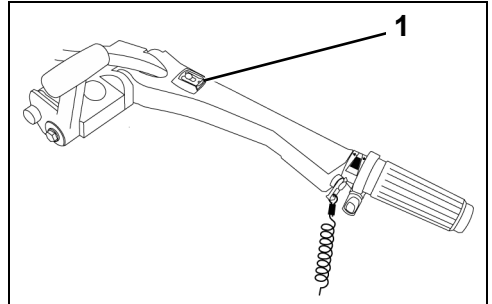


1. Tether cord

008489

Disconnecting the clip and tether cord will stop the engine and prevent the boat from becoming a runaway if the driver moves beyond the range of the tether cord. If the tether cord is too long, it can be shortened by knotting or looping it. **DO NOT** cut and retie the tether cord.

An extra clip is stored on the tiller handle. If the operator is thrown from the boat, another person can insert the extra clip in the engine cut-off switch and start the outboard.



1. Extra clip

008925

### ⚠ WARNING

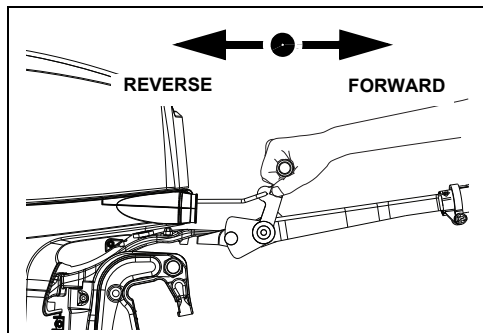
**Avoid knocking or pulling the clip off the engine cut-off switch during normal boating. The resulting unexpected loss of forward motion can throw occupants forward, causing injury.**

**Keep the tether cord free from obstructions and entanglements.**

**At each outing, test the system's operation. With the engine running, remove the clip from the switch by pulling the tether cord. If the engine does not stop running, see your Dealer.**

**NOTICE** Carefully check the function of all control and engine systems before leaving the dock. **DO NOT** shift the engine into **FORWARD** or **REVERSE** while it is shut off.

Move the shift lever to NEUTRAL. Refer to **Shifting and Speed Control** on page 21.



1. NEUTRAL

002415M

If the outboard is started with the throttle advanced, the outboard will be in a safety mode. It will not respond to throttle until the throttle twist grip is returned to slowest speed position.

After the engine starts, the engine management module (EMM) automatically increases idle speed slightly. Idle speed will decrease as the engine warms up.

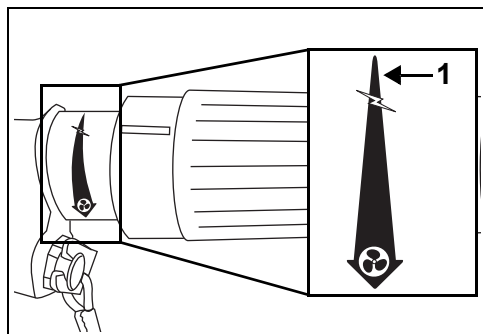
While seated, grasp the starter handle and pull slowly until the starter engages, then pull hard.

Repeat, if needed, until outboard starts.

**NOTICE** To prevent damage to starter assembly, allow starter cord to rewind before releasing starter handle.

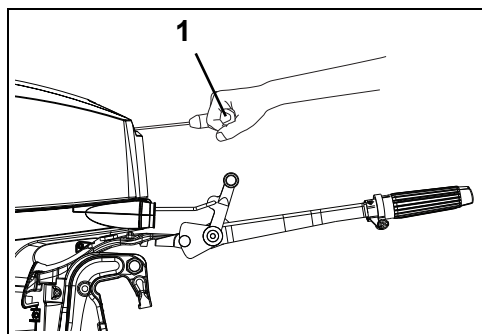
**▲ WARNING**  
Always shift to NEUTRAL before starting the outboard to prevent sudden boat movement, which can cause injury.

Twist throttle grip to SLOWEST speed position.



1. SLOWEST speed position

007067



1. Starter handle  
2. NEUTRAL

008927M

**IMPORTANT:** Engine will not start if outboard is in gear or if tether cord is not in place.

If your outboard does not react normally to this starting procedure or if it fails to start, refer to **Troubleshooting** on page 44.

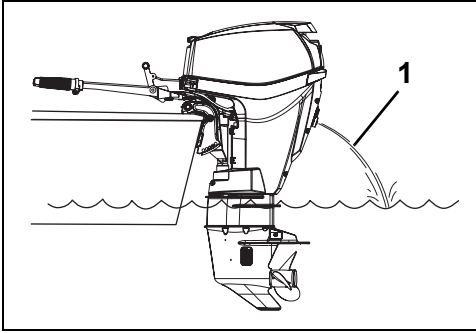
**DO NOT** advance the throttle before start-up. Advancing the throttle overrides the electronic idle control system.

**After Engine Starts**

Check the water pump indicator. A steady stream of water indicates the water pump is working. If a steady stream of water from the water pump indicator is not visible, stop the

## Using The Evinrude MFE Outboard

engine. Refer to **Engine Overheating** on page 26.



1. Water pump indicator

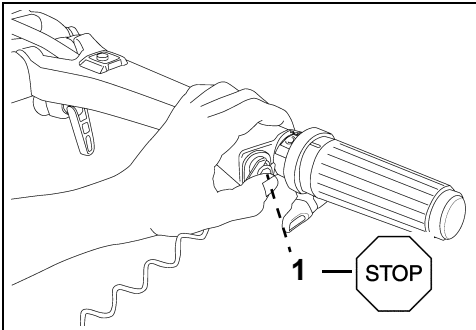
007011M

### Engine Stopping

Twist the throttle grip to SLOWEST speed position.

Move shift lever to NEUTRAL.

Press the engine cut-off switch until the outboard stops running. If equipped, close the vent screw on the fuel tank's filler cap.



1. STOP button

002413

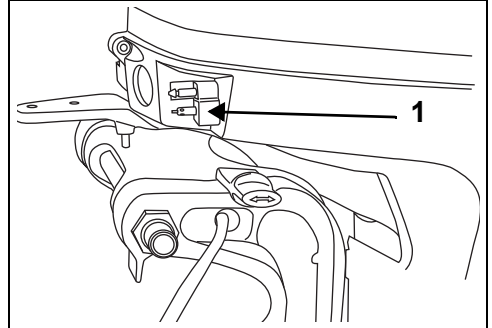
### Disconnecting the Fuel Hose

#### ⚠ WARNING

A small amount of fuel may be released when the fuel connector is disconnected.

Always wipe off any fuel spillage.

Disconnect the fuel hose from the fuel connector.



1. Fuel connector

007004

If equipped, close vent screw on fuel tank cap.

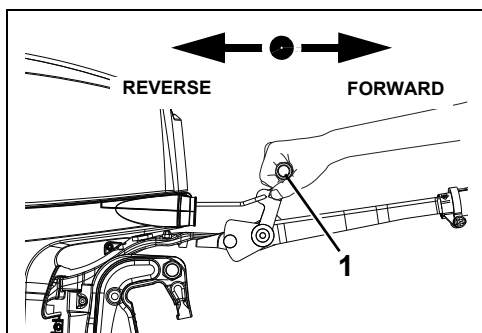
## SHIFTING AND SPEED CONTROL

**NOTICE** Carefully check the function of all control and engine systems before leaving the dock. **DO NOT** shift the outboard into FORWARD or REVERSE while it is shut OFF.

### Shifting

With engine running, twist the throttle grip to SLOWEST speed position.

Move the shift lever with a firm, quick motion, to FORWARD or REVERSE gear.



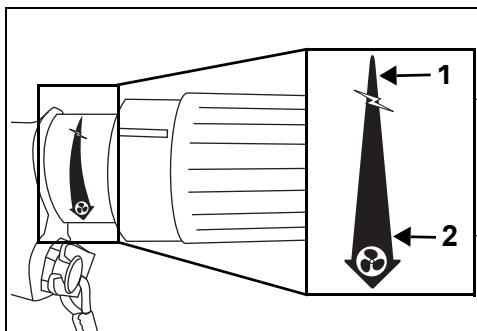
1. Shift lever

002415M

### Speed Control

With the outboard running, twist throttle grip:

- Clockwise to decrease speed; or
- Counterclockwise to increase speed



1. Decrease speed

2. Increase speed

007067

## FUEL ECONOMY

Fuel economy can vary depending on boat load, hull design, and throttle setting. When boat reaches top speed, throttle back from FULL SPEED to a lower throttle setting. You will save fuel with a minimal loss of speed.

### Throttle Friction

#### ▲ WARNING

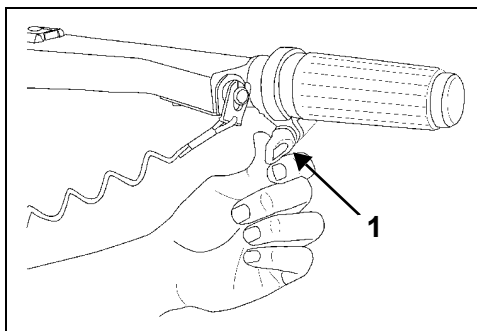
Do not operate the outboard in REVERSE with the tilt/run lever in TILT. The outboard may tilt out of the water, resulting in loss of control.

#### ▲ WARNING

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

**NOTICE** When shifting from FORWARD to REVERSE or from REVERSE to FORWARD, pause at NEUTRAL until the engine is at idle speed and the boat has slowed.

Adjust the throttle friction knob to reduce the effort required to hold a throttle setting.



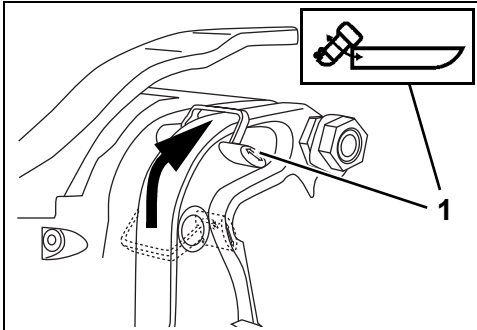
1. Throttle friction screw

002412

## TILTING AND TRIM

### TILT UP

Move the tilt/run lever to TILT position.

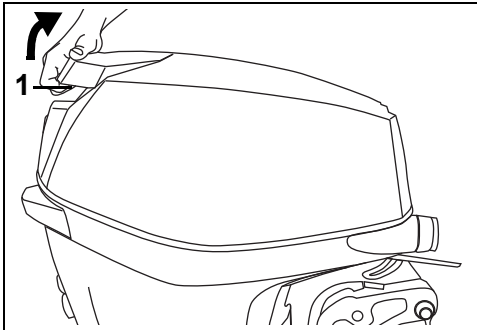


1. TILT position

007022

Grasp the tilt grip on engine cover and tilt outboard to the full tilt position.

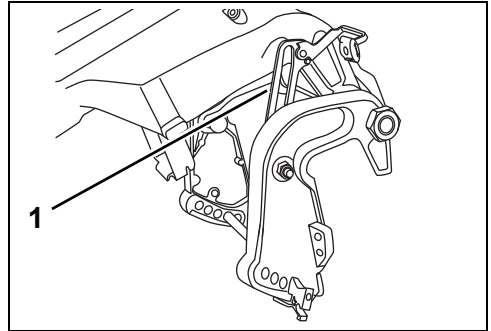
**IMPORTANT:** Use the tilt grip to tilt your outboard. Do not use the tiller handle as a lever.



1. Tilt grip

007023

The tilt support bracket will automatically engage.



1. Tilt support bracket

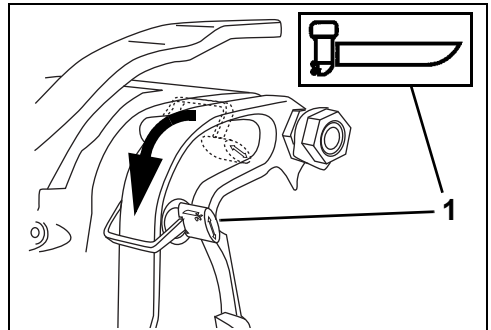
007025

### ⚠ WARNING

Leave tilt/run lever in the TILT position while outboard is tilted. If the tilt/run lever is moved to the RUN position, the tilt support bracket can release and the outboard could drop down unexpectedly.

### TILT DOWN

Move tilt/run lever to RUN position.



1. RUN position

007024

Grasp the tilt grip on engine cover and raise outboard slightly. The tilt support will automatically disengage. Slowly lower outboard to its normal operating (RUN) position.

**NOTICE** Operate outboard in normal operating position with tilt/run lever in the RUN position.



## TRIM ANGLE ADJUSTMENT

### ⚠ WARNING

Boat stability and steering torque can vary due to changing water conditions. If any adverse conditions occur, reduce throttle and/or adjust tilt angle to maintain control. If you experience boat instability and/or high steering torque, see your Dealer to correct these conditions.

If the bow of the boat plows the water at high speeds, the boat may bow steer or spin suddenly, possibly ejecting or otherwise seriously injuring occupants.

Trim angle adjustment is accomplished by changing the location of the tilt pin.

Run the boat in the water to determine the best trim angle.

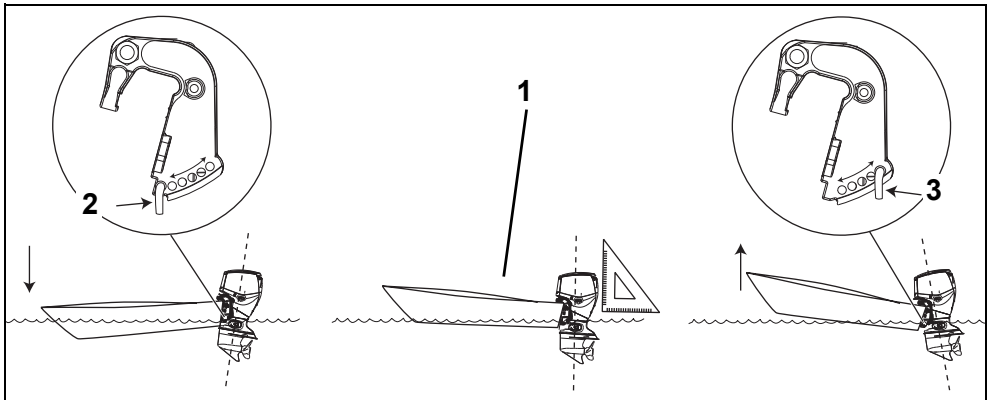
**IMPORTANT:** Weight distribution can affect the performance of the boat. Distribute weight evenly in the boat before adjusting trim angle.

The boat should accelerate quickly, plane easily, and run parallel to the surface of the water at high speeds.

If tilt pin is positioned too LOW the front of boat will be DOWN and push water.

If tilt pin is positioned too HIGH the front of boat will be UP and bounce.

To adjust the trim angle, refer to **Tilt Pin** on page 24.



1. Parallel to the surface of the water
2. Tilt pin – LOW position
3. Tilt pin – HIGH position

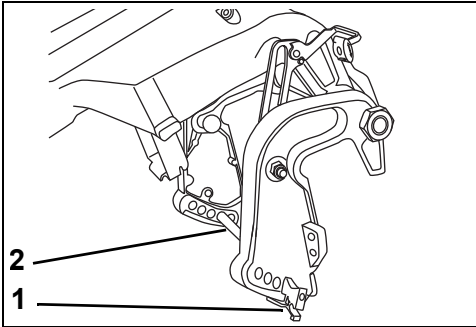
007026

## Tilt Pin

To adjust the trim angle:

Place the outboard in full TILT position. Refer to **Tilt UP** on page 22.

- Grasp the tilt pin retainer and squeeze to release. Slide tilt pin all the way out.
- Insert tilt pin in desire position. Make sure the trim angle adjustment rod passes through both stern brackets.
- Push in against retainer to lock in place. Make sure the tilt pin is locked on the stern bracket.



007025

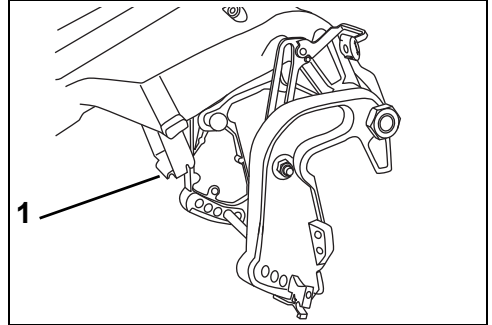
1. Tilt pin retainer
2. Tilt pin

## Engaging Shallow Water Drive

Slow the engine and shift to NEUTRAL before engaging or disengaging shallow-water drive. Move tilt/run lever to TILT position.

Grasp tilt grip on engine cover and tilt outboard until shallow water drive link engages tilt pin.

Relocate the tilt pin if necessary. Refer to **Tilt Pin** on page 24.



1. Shallow water drive link

007025

**NOTICE** When operating a tilted outboard, do not run above idle speed. Keep the water intakes submerged at all times to prevent the engine from overheating.

## SHALLOW WATER DRIVE

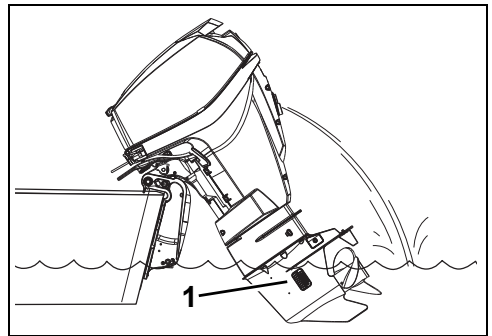
### ⚠ WARNING

When in shallow water drive, your motor has no protection from the effects of underwater impact.

Operate the motor in FORWARD and ONLY at slow speed. The motor can tilt up forcibly and drop suddenly if it hits an underwater object or if you shift to REVERSE and apply throttle. You could lose control.

Tilt the outboard to any position within the tilt range for shallow water operation.

**NOTICE** When operating a tilted outboard, do not run above idle speed. Keep the water intakes submerged at all times to prevent the engine from overheating.



1. Water intakes

007069

## Disengaging Shallow Water Drive

Move tilt/run lever to RUN position. Grasp tilt grip on engine cover and raise outboard slightly. The shallow water drive link will automatically disengage. Slowly lower outboard to its normal operating position.

## IMPACT DAMAGE PROTECTION

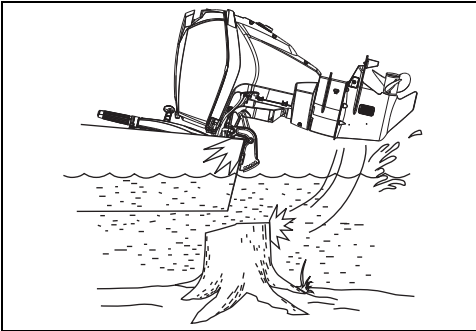
### ⚠ WARNING

Failure to inspect for damage after an accident or striking an object could result in sudden, unexpected component failure, loss of boat control, and personal injury. Unrepaired damage could reduce your boat and outboard's ability to resist future impacts.

Your outboard has a shock absorption system designed to help withstand damage from impact with underwater objects at low to moderate speeds. High speed impacts with rigid underwater objects like pilings or boulders can be beyond the capability of the absorption system. Such impacts can result in serious damage to your outboard and injury to boat occupants from the outboard or its parts entering the boat. Occupants can also be ejected or injured by falling against portions of the boat as a result of rapid deceleration following impacts.

When boating in unfamiliar, shallow, or debris-laden waters, seek information on safe boating areas and navigation hazards from a reliable local source. Reduce your speed and keep a sharp lookout!

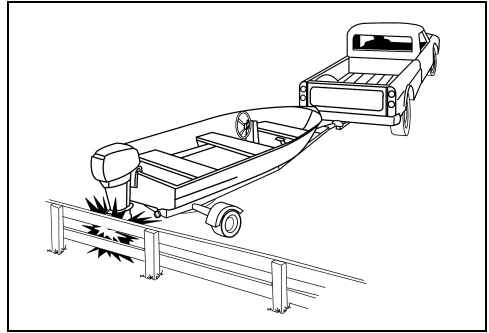
**IMPORTANT:** Impact damage is NOT covered by the outboard warranty.



007021

**NOTICE** The outboard's shock absorption system does not work while operating in reverse. If you back into an object, either in the water or while trailering, your

boat and outboard can be seriously damaged.



DR4412

If you hit any object:

- STOP immediately and examine the outboard for loosening of attaching hardware.
- INSPECT for damage to swivel and stern brackets, and steering components.
- EXAMINE the boat for structural damage.
- TIGHTEN any loosened hardware.

If the collision occurred in the water, proceed slowly to harbor. Before boating again, have your Dealer thoroughly inspect all components.

## ENGINE MONITORING

### ENGINE WARNING SYSTEM

This outboard is equipped with an Audible Misfire Alert (A.M.A.) and Speed Adjusting Failsafe Electronics (S.A.F.E.).

#### A.M.A. / S.A.F.E. Mode Recovery

The engine will operate in A.M.A. or S.A.F.E. modes as long as the fault condition exists. To recover normal operation, the sensor or switch readings must return to normal limits.

A.M.A. and S.A.F.E. are engine warning systems controlled by the Engine Management Module (EMM). The EMM monitors engine sensors. If the EMM detects conditions which could cause:

- engine damage it activates A.M.A., which alerts the operator that a fault condition exists.
- permanent engine damage, the EMM activates S.A.F.E. which limits engine torque output and reduces engine RPM.

### LOW OIL WARNING

The LOW OIL warning indicates the oil in the oil tank is at the reserve level. The EMM will initiate the following failsafe actions:

Engine Speed	Failsafe Action
Idle to 1500 RPM	Activate A.M.A.
1500 to 6500 RPM	Activate A.M.A.

Fill the oil tank as soon as practical. Refer to **Filling the Oil Tank** on page 15.

### CRITICAL LOW OIL WARNING

#### WARNING

**Do not run the engine in a critical low oil condition for a long period of time. If run BELOW the reserve oil level, the engine will run out of oil, causing severe engine damage.**

The CRITICAL LOW OIL warning indicates oil in the oil tank is BELOW the reserve oil level. The EMM will initiate the following failsafe action:

Engine Speed	Failsafe Action
1500 to 6500 RPM	Activate A.M.A. Activate S.A.F.E. – Limits engine torque output and RPM.

Fill the oil tank **AS SOON AS POSSIBLE**. Refer to **Filling the Oil Tank** on page 15 and **Priming the Oil System** on page 16.

**NOTICE** Although S.A.F.E. mode can help prevent engine damage, it does not guarantee you can run the engine indefinitely without engine damage.

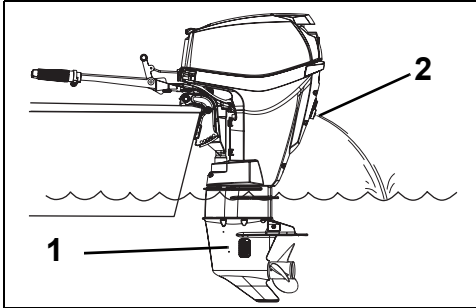
### OVERHEAT WARNING

The OVERHEAT warning indicates an engine or EMM overheat condition.

**NOTICE** Do not run your outboard—even for a brief start-up—without supplying water to it. Refer to **Flushing** on page 39.

While in operation, the outboard's water intakes must stay completely submerged and unobstructed. Observe proper transom height and tilt angle. While the outboard is running, the outboard's water pump indicator must discharge a steady stream of water. Check the indicator often, especially when operating in

weeds, muddy and debris-laden water, and at extreme trim angles.



1. Water intake screens 007011M  
2. Water pump indicator

If an overheat occurs, the *EMM* will initiate the following failsafe actions:

Engine Speed	Failsafe Action
Idle RPM	<i>EMM</i> adjusts idle speed to increase cooling water flow.
Above Idle RPM	Activate A.M.A. If engine temperature continues to rise, activates S.A.F.E.

**IF** S.A.F.E. mode activates and the stream from the water pump indicator becomes intermittent or stops, as soon as possible reduce speed to idle and:

- 1) Shift to NEUTRAL.
- 2) SHUT OFF the engine.
- 3) Tilt the outboard up.
- 4) Clean the intake screens of any blockage.
- 5) Clean the water pump indicator of any blockage.
- 6) Lower the outboard.
- 7) Restart the engine and run at idle.

**IF** cleaning the screens and indicator *does NOT* restore the water pump indicator's steady discharge, the engine will continue to operate in S.A.F.E. mode. Return to safe harbor immediately.

After an overheat service the engine as soon as possible:

- Inspect the water pump for excessive wear or damage.
- Inspect the thermostat.

**NOTICE** Although S.A.F.E. mode can help prevent engine damage, it does not guarantee you can run the engine indefinitely without engine damage.

## DIAGNOSTIC LEDS

The Engine Management Module (*EMM*) has four LED indicators located on the top corner of the circuit board. The LEDs provide quick reference to the status of several outboard systems.

The LEDs can be used to identify specific warning functions of S.A.F.E. mode activation.

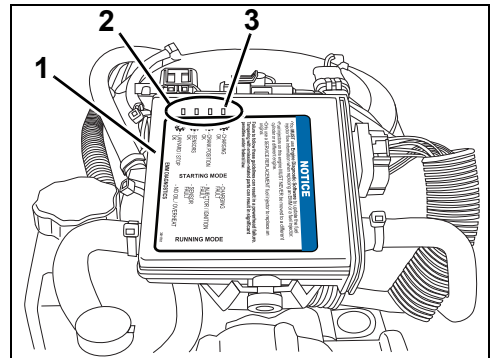
**IMPORTANT:** LED 1 is closest to the center of the *EMM*.

Remove the engine cover to view the LEDs.

## ▲ WARNING

The engine cover and flywheel guard are machinery guards. Use caution when the engine is running.

**DO NOT wear jewelry or loose clothing. Keep hair, hands and clothing away from rotating parts.**



1. *EMM* 007056  
2. LEDs  
3. LED 1

The LEDs identify system functions in two modes, Start Mode and Running Mode.

As the outboard is being started, all four LEDs should light and then go OFF in sequence.

When the outboard is running, all LEDs should be OFF.

## Running Mode

If any LED is ON while the outboard is running, it may indicate a system problem. Refer to *EMM* Diagnostics Label.

LED 1, 2, or 3 ON, return to port as soon as practical to avoid operational difficulties. Service the engine as soon as possible.

LED 4 ON indicates:

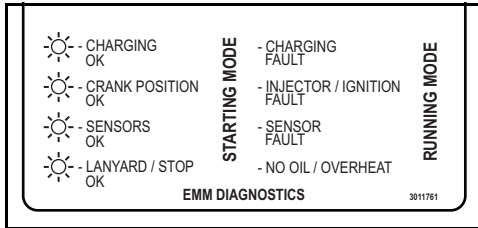
- Engine temp. ABOVE range, refer to **Engine Overheating** on page 26.
- Low / No Oil condition. Refer to **Filling the Oil Tank** and **Priming the Oil System** on page 16.

## Start Mode

If any of the LEDs does NOT light during starting, it may indicate an engine problem. Refer to *EMM* Diagnostics Label.

LED 1, 2, or 3 OFF, seek assistance to return to port. See your Dealer.

LED 4 OFF indicates the stop circuit is activated, make sure the engine cut-off switch tether cord is attached.



EMM Diagnostics Label

008539

# SPECIAL OPERATING CONDITIONS

## COLD AND FREEZING WEATHER

**NOTICE** When operating in conditions under 32°F (0°C), *Evinrude/Johnson XD100* oil, must be used.

During operation in freezing weather, keep the gearcase submerged at all times.

Upon removing your outboard from the water, leave it in a vertical position until its cooling system is drained. Store the outboard vertically.

If the outboard's gearcase is equipped with an integral speedometer pickup, all water must be cleared from the hose to prevent gearcase damage. Refer to **Transporting / Storage** on page 33.

**NOTICE** Water remaining in the gearcase, cooling system or other components can freeze, causing serious engine damage.

## DUAL OUTBOARD OPERATION

When in reverse above slow speed, be sure both outboards are running, even if one is NEUTRAL.

If it is necessary to return to harbor with one outboard not running, tilt the inoperative outboard high enough to keep its propeller out of the water.

## HIGH ALTITUDE

Your outboard's *EMM* will automatically compensate for changes in altitude. However, if you boat above 3000 ft. (900 m), you will experience a slight loss of power due to reduced air density.

If your engine drops below the recommended RPM operating range at full throttle, have your Dealer select a lower pitch propeller.

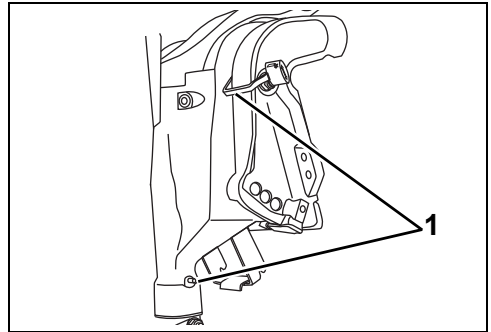
If you return to sea level, have your Dealer install the original propeller and verify correct RPM operating range.

## SALT WATER

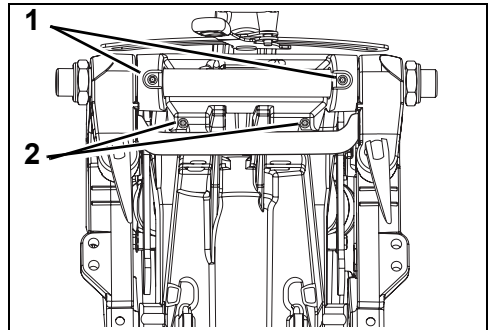
Anode protection for the outboard has been provided for use in salt or brackish water.

Upon removal from salt water, leave outboard in a vertical position until its cooling system has drained. During long periods of mooring, tilt the gearcase out of the water, except in freezing temperatures. Flush the outboard, if desired. Refer to **Flushing** on page 39.

### Salt Water Lubrication Points



1. Tilt lever and swivel bracket lubrication points (annually) 007032



1. Tilt tube lubrication points (annually) 007033  
2. Tilt lever shaft (annually)

### SHALLOW WATER

Gearcase damage can occur if the gearcase is allowed to drag on the waterway bottom. Use caution when operating in shallow water.

**IMPORTANT:** Impact damage is NOT covered by the outboard warranty.

### UNDER TOW

Should you require a tow from another boat:

- Shift your engine to NEUTRAL;
- Tilt its gearcase out of the water;
- Off-load all persons into another boat; and
- Keep speed slower than planing speed.

### WEEDY WATER

Weeds block water intakes and may cause your outboard to overheat. Weeds on the propeller create vibration and reduce boat speed.

When operating in weedy water, run at slow speeds and in REVERSE frequently to clear weeds from the propeller and water intakes. Check the water pump indicator often.

If REVERSE operation does not clear away weeds, SHUT OFF the engine. Remove weeds from propeller area and water intakes before operating at higher speed.



# ENGINE DE-WATER

The *MFE* outboard is **NOT** a submersible engine. However, due to the extreme operating conditions this engine may experience, a crankcase drain system has been provided to de-water the engine should water intrusion occur during deployment or accidental roll-over.

This system allows the operator to quickly remove water and re-start the engine in an emergency situation. In most cases the engine can be returned to normal operation without damage.

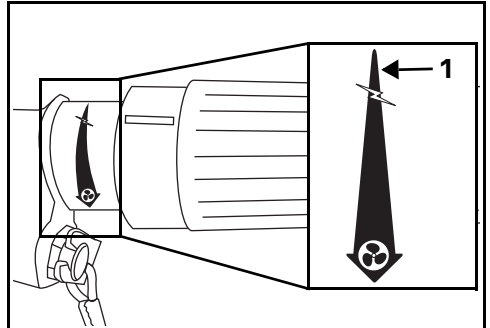
Avoid submersion of the outboard. Damage could occur to the engine wiring harness and water could contaminate the oiling system. Extended submersion, particularly in salt water, could result in corrosion of internal components such as piston rings, cylinder sleeves, and bearings.

Once an outboard has been under water (fresh or salt water), it must be serviced and started within three (3) hours of recovery. Immediate service can minimize the corrosive effect that air has on the polished surfaces of the crankshaft, connecting rods, and internal powerhead bearings.

**IMPORTANT:** If the outboard cannot be started or serviced immediately, it should be re-submerged in fresh water to avoid exposure to the atmosphere.

## DE-WATER PROCEDURE

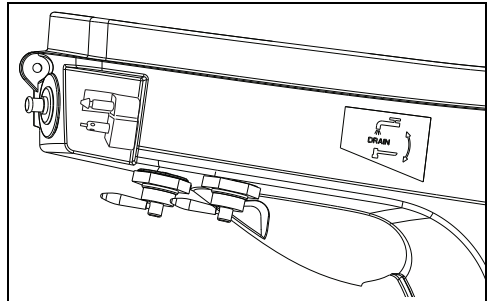
- 1) Place shift lever in NEUTRAL and remove the engine cut-off switch clip and tether cord.
- 2) Twist throttle grip to **slowest** speed position.



1. Slowest speed position

007067

- 3) Turn the drain valves forward to the DRAIN position.



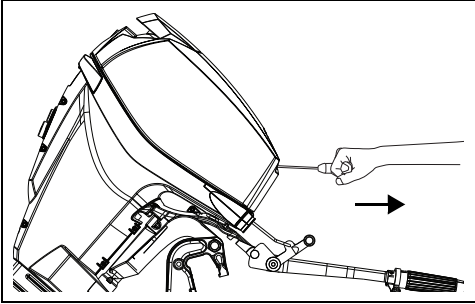
008900

- 4) Tilt outboard to the full tilt position and turn so the drain valves are on the lowest side.

**⚠ CAUTION** To avoid outboard falling during de-water procedure, tilt/run lever **MUST** remain in the TILT position.

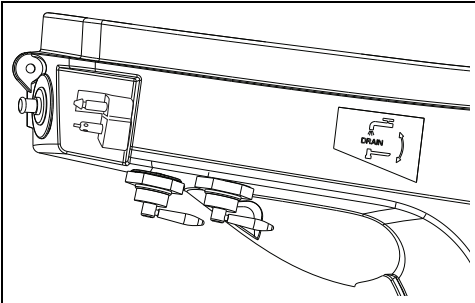
## Using The Evinrude MFE Outboard

- 5) Pull starter handle slowly until starter engages. Continue pulling with firm pressure to force water out of the engine.



008927M

- 6) When the engine begins to turn freely, pull an additional 8-20 times. This will help drain water that might be trapped in the cylinders.
- 7) Tilt outboard to the normal running position.
- 8) Replace engine cut-off switch clip and tether cord.
- 9) Squeeze primer bulb several times until definite resistance is felt.
- 10) With twist grip in the slowest position, pull starter handle to start engine.
- 11) After engine has run at IDLE speed for 30-60 seconds, turn drain valves to the RUN position.



008899

**NOTICE** DO NOT run the outboard with the drain valves in the DRAIN position more than 3 minutes. Engine damage can result.

- 12) Continue to run under normal operating conditions (boat on plane) for at least 30 minutes (2500 RPM or above).

**IMPORTANT:** You MUST run the outboard after the de-water procedure to dry out internal moisture.

- 13) Stop engine and run the **Winterizing Procedure** on p. 42.

## POST-SUBMERSION SERVICING

When an outboard has been submerged, it MUST be serviced before storage.

If the outboard has been in salt water:

- Run the engine for approximately five minutes in fresh water at full operating temperature. Refer to **Short-Term Storage (Between Uses)** on p. 41.
- Spray the entire engine with fresh water to remove salt deposits.

After five submersions, the flywheel must be removed and the valley between the crankshaft and the stator windings must be cleaned.

## PROLONGED SUBMERSION

Prolonged submersion at depths beyond one meter may cause engine damage.

If prolonged submersion occurs, even if the engine can be started, the engine must be disassembled and cleaned.

DO NOT attempt to start the outboard if sand or silt may have entered the engine. Disassemble and clean.

# TRANSPORTING THE OUTBOARD

## ⚠ WARNING

If engine is equipped with a quick-disconnect fuel hose, you **MUST** disconnect the fuel hose from the engine and the fuel tank to prevent fuel leaks:

- Whenever the engine is **NOT** being used
- Whenever the engine is being trailered
- Whenever the engine is in storage

A small amount of fuel may be released when the fuel connector is disconnected.

Always wipe off any fuel spillage.

Store portable fuel tanks in well-ventilated areas, away from heat sources and open flames. Close the vent screw of the fuel tank cap, if equipped, to prevent escape of fuel or fuel vapors which could accidentally ignite. Do not allow disconnected fuel hoses to leak fuel.

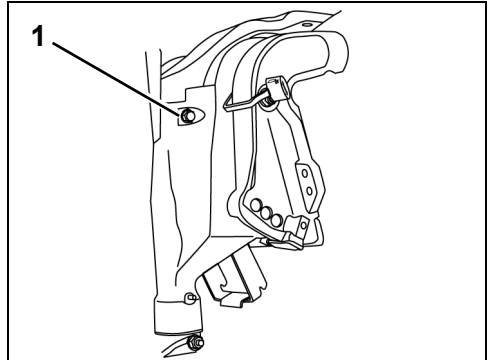
## TRAILERING

Trail your boat with the outboard in a vertical position. If your trailer does not provide adequate road clearance, tilt the outboard as needed and support the outboard with an accessory trailering bracket.

**NOTICE** The outboard must be restrained when trailering. Bouncing during transport may damage the outboard and the boat's transom.

**NOTICE** Use of the tilt support bracket or tilt lock lever when trailering may cause damage to the outboard.

**NOTICE** Use of the steering friction adjustment screw to position the outboard for trailering may cause damage to the outboard.



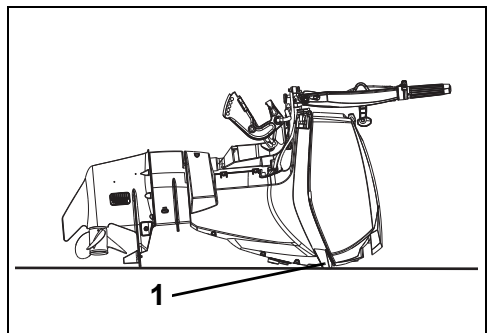
1. Steering friction adjustment screw 008926

## TRANSPORTING / STORAGE

If the outboard is laid down for transportation or storage it should be laid on its back.

**IMPORTANT:** The oiling system must be primed before reusing the outboard. Refer to **Priming the Oil System** on page 16.

If the engine is transported laying on its side, protect the motor covers, by laying it on an old blanket or other soft cloth.



1. Transport outboard resting on bumpers 007043

## PRE-RIDE INSPECTION

### ⚠ WARNING

Always perform a pre-ride inspection before operating the boat. Check the proper operation of critical controls, safety features and mechanical components. Correct any problems BEFORE leaving the dock. Make sure all safety equipment required by local law is onboard.

### ⚠ WARNING

The engine(s) should be OFF and the tether cord must always be removed from the engine cut-off switch before verifying any of the following. Only start the engine(s) after all items have been checked and operate properly.

ITEM	OPERATION	✓
Hull	Inspect.	
Propeller	Inspect condition of propeller. Repair or replace damaged propeller.	
Cooling system	Inspect water intake screens.	
Safety equipment	Ensure safety equipment is onboard.	
Oil level	Check. Refill as needed.	
Bilge	Drain. Ensure drain plug(s) are securely installed.	
Battery	Check battery connections are clean, tight, and insulated. Ensure battery/battery box are secure.	
Fuel level	Check. Refill as needed.	
Navigation lights	Check operation.	
Steering system	Check operation.	
Boat systems (horn, pumps, radio)	Check operation.	
Engine cut-off tether cord	Inspect condition. Attach tether cord to key switch (remote control) or engine cut-off switch (tiller control).	
Operator's Guide	Confirm this Operator's Guide is onboard and readily accessible.	
Engine Start switch (tiller control)	Test operation.	
Engine cut-off switch (tiller control)	Test operation.	
Key switch (remote control)	Test operation.	
Engine cut-off switch/ tether cord	Test operation. Reattach tether cord to key switch (remote control) or engine cut-off switch (tiller control).	
Shift and Throttle	Check operation.	
Cooling system	Confirm operation (water pump indicator).	

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# Maintenance

## ENGINE EMISSIONS INFORMATION

**Maintenance, replacement, or repair of the emission control devices and systems may be performed by any marine SI (spark ignition) engine repair establishments or individual.**

### **Manufacturer's Responsibility**

Beginning with 1999 model year outboards, manufacturers of marine engines must determine the exhaust emission levels for each engine horsepower family and certify these outboards with the United States of America Environmental Protection Agency (EPA). An emissions control information label, showing emission levels and engine specifications, must be placed on each outboard at the time of manufacture.

### **Dealer's Responsibility**

When performing service on all 1999 and more recent *Evinrude* outboards that carry an emissions control information label, adjustments must be kept within published factory specifications.

Replacement or repair of any emission related component must be executed in a manner that maintains emission levels within the prescribed certification standards.

Dealers are not to modify the outboard in any manner that would alter the horsepower or allow emission levels to exceed their predetermined factory specifications.

Exceptions include manufacturer's prescribed changes, such as altitude adjustments, for example.

### **Owner Responsibility**

The owner/operator is required to have engine maintenance performed to maintain emission levels within prescribed certification standards.

The owner/operator is not to, and should not allow anyone to, modify the engine in any manner that would alter the horsepower or allow emissions levels to exceed their predetermined factory specifications.

Tampering with the fuel system to change horsepower or modify emission levels beyond factory settings or specifications will void the product warranty.

### **EPA Emission Regulations**

All new 1999 and more recent *Evinrude* outboards manufactured by BRP are certified to the EPA as conforming to the requirements of the regulations for the control of air pollution from new watercraft marine spark ignition engines. This certification is contingent on certain adjustments being set to factory standards. For this reason, the factory procedure for servicing the product must be strictly followed and, whenever practicable, returned to the original intent of the design. The responsibilities listed above are general and in no way a complete listing of the rules and regulations pertaining to the EPA requirements on exhaust emissions for marine products. For more detailed information on this subject, you may contact the following locations:

### **VIA U.S. POSTAL SERVICE:**

Office of Mobile Sources  
Engine Programs and Compliance Division  
Engine Compliance Programs  
Group (6403J)  
401 M St. NW  
Washington, DC 20460

### **VIA EXPRESS or COURIER MAIL:**

Office of Mobile Sources  
Engine Programs and Compliance Division  
Engine Compliance Programs  
Group (6403J)  
501 3rd St. NW  
Washington, DC 20001

### **EPA INTERNET WEB SITE:**

[www.epa.gov](http://www.epa.gov)

# MAINTENANCE SCHEDULE

Routine inspection and maintenance is necessary to prolong outboard life. The following chart provides guidelines for inspection and maintenance.

**IMPORTANT:** Outboards used in high hour applications require more frequent inspections and maintenance. Adjust schedule for operating and environmental conditions.

Description	Engine Care Product	Every 100 Hours or Annually	Every 300 Hours or 3 Years <sup>(1)</sup>
Anti-corrosion anodes <sup>(2)</sup>			✓
De-carbon engine - required for "heavy fuel" use	C	✓	✓
Electrical and ignition wires, inspect for wear or chafing			✓
Engine to transom mounting hardware, re-torque			✓
Fasteners, inspect any loosened components			✓
Fuel and oil system components, inspect and repair leaks			✓
Fuel filter, replace <sup>(3)</sup>		✓	
Gearcase lubricant, replace	A		✓
Grease fittings, lubricate <sup>(2)</sup>	B		✓
Propeller shaft splines, inspect and lubricate <sup>(2)</sup>	B		✓
Spark plugs, inspect and replace if necessary		✓	✓
Steering handle, inspect and lubricate	B		✓
Steering system, inspect and lubricate	B		✓
Thermostat and pressure valve, inspect <sup>(2)</sup>			✓
Throttle cable and shift cable inspect			✓
Water pump, inspect or replace if necessary			✓

(1) Average use. Commercial use, heavy use, or use in salt or polluted water requires more frequent inspection and maintenance (annual checks are recommended).

(2) Annually in salt water applications – Refer to **Service** on page 38.

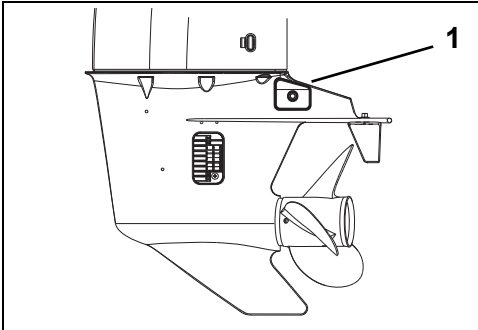
(3) Replace boat-mounted fuel filter annually.

- A. *HPF Pro* Gearcase Lubricant in high performance or commercial applications
- B. *Triple-Guard* Grease
- C. *Evinrude/Johnson Engine Tuner*

## SERVICE

## ANTI-CORROSION ANODES

Your outboard is equipped with one or more anodes that protect it from galvanic corrosion. Disintegration of the anode is normal and indicates it is working. Check each anode periodically. Replace anodes smaller than 2/3 their original size. See your Dealer for replacements.



1. Anti-corrosion anode

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Galvanic corrosion destroys underwater metal parts and can occur in fresh or salt water; however, salt, brackish, and polluted waters will accelerate corrosion.

Metal-based antifouling paint on the boat or outboard and the use of improperly installed shore power in the area of your moored boat will also accelerate corrosion.

**NOTICE** NEVER paint the anode, its fasteners, or its mounting surface. Painting will reduce its corrosion protection.

## DE-CARBONING PROCEDURE

**⚠ DANGER**

**DO NOT** run the engine indoors or without adequate ventilation or permit exhaust fumes to accumulate in confined areas. Engine exhaust contains carbon monoxide which, if inhaled, can cause serious brain damage or death.

**⚠ WARNING**

**To prevent injury from contact with rotating propeller; remove the propeller before de-carbon procedure.**

This procedure is required every 100 hours or annually for MFE 30 outboards operated using heavy fuels, including JP5, JP8, Jet A, or kerosene.

If the outboard has been operated on an emergency fuel, such as diesel, the de-carbon procedure must be performed immediately after return from the mission.

For maximum benefit, the outboard should be run on unleaded gasoline during this procedure if possible.

Outboard should be on the boat and in the water. If outboard cannot be run in the water, make sure to supply adequate cooling water.

**NOTICE** DO NOT run outboard without a water supply to the outboard's cooling system. Cooling system and/or powerhead damage could occur.

- 1) Remove air silencer.
- 2) Set the fuel selector switch to the gasoline position and run the outboard on gasoline during the de-carboning procedure.
- 3) Start and run outboard long enough to reach normal operating temperature.
- 4) Set engine speed to approximately 1500 RPM.



- 5) Spray the entire contents of a can of *Engine Tuner*, P/N 777185, into the throttle body. Do not let the engine stall until the can is empty.
- 6) STOP engine and allow Engine Tuner to soak in powerhead for a minimum of 8 hours to 16 hours maximum.

**NOTICE** DO NOT allow Engine Tuner to stay in powerhead for more than 16 hours. Extended exposure can damage internal engine parts.

- 7) Restart engine and run at 1500 RPM for 15 minutes.
- 8) Next, run outboard on boat, at high speed, for 30 to 60 minutes. Boat should be on plane and outboard should be running at least 2500 RPM.

If outboard will not run at high RPM, make sure that spark plugs are not fouled. Replace spark plugs if necessary. Refer to **Spark Plugs** on p. 40.

## FLUSHING

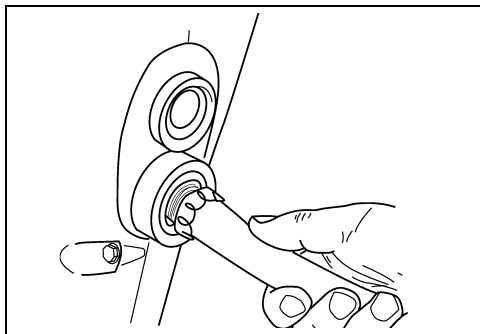
Flush the outboard with fresh water following use in brackish, salt or polluted water to minimize the accumulation of scale and silt deposits in cooling system passages. The outboard can be flushed on the trailer or at dockside. Place outboard in vertical (down) position in a well ventilated area.

**NOTICE** If you cannot store the outboard in the recommended vertical position, be sure the cooling system is drained completely. Never place the gearcase higher than the powerhead. Any water remaining in the exhaust passages can run into the cylinders and cause serious damage.

### Using Lower Engine Cover Flushing Port

- 1) Place the outboard in an area with good drainage.
- 2) Connect garden hose to flushing port.

- 3) Turn on the water. It is **not** necessary to run the engine for a good flushing.

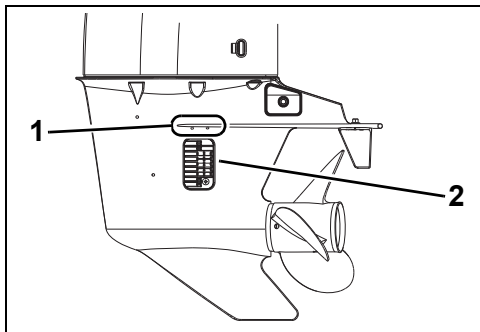


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- 4) Leave the outboard in vertical position long enough to completely drain the powerhead.

### Using Gearcase Flushing Device

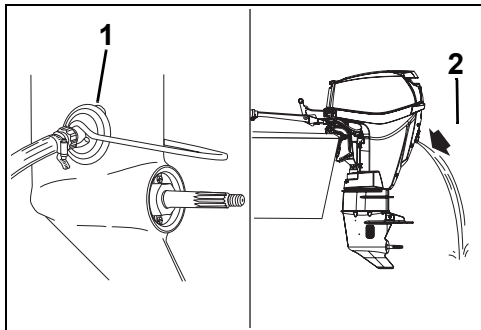
- 1) Place the outboard in an area with good drainage.
- 2) Temporarily cover the two small auxiliary water inlet holes on each side of the gearcase with heavy tape to insure enough water travels to the powerhead from the water intakes. Water can drain from auxiliary inlets, resulting in engine overheat. Remember to uncover the holes after flushing the engine.



1. Auxiliary water inlet holes
2. Water intakes

007035

- 3) Remove propeller and place the shift lever in NEUTRAL position.
- 4) Connect garden hose to flushing device and install flushing device on gearcase.
- 5) Turn on the water. Keep the water pressure between 20 and 40 psi (140 to 300kPa).
- 6) Start the engine and RUN AT IDLE SPEED. Flush engine for at least five minutes. A steady stream of water must flow from exhaust relief port of outboard.



1. Flushing device
2. Stream of water

008032

- 7) Turn engine OFF. Leave the outboard in vertical position long enough to completely drain the powerhead.

## SPARK PLUGS

**CAUTION** The ignition system presents a serious shock hazard. Use caution to avoid injury from shock or injury resulting from your reaction to shock. Do not handle primary or secondary ignition components while the engine is cranking or running.

Spark plugs should be serviced by qualified personnel. Incorrect spark plug maintenance can lead to engine damage.

**NOTICE** Replacement spark plugs **MUST** be indexed correctly.

## Marine Engine Duty Cycles

The International Council of Marine Industry Associations (ICOMIA) Standard No. 36-88 specifies a marine engine duty cycle based on documented studies. A duty cycle is a profile of engine running and usage. This duty cycle is used to determine average spark plug longevity and maintenance requirements for Evinrude E-TEC outboards.

ICOMIA Marine Engine Duty Cycle	
Engine Speed as Percentage of Rated Speed (RPM)	Time at Specified RPM (Percentage of total engine running time)
IDLE	40%
40%	25%
60%	15%
80%	14%
100%	6%

**NOTICE** Some running profiles and conditions can lead to spark plug wear sooner than expected. Depending on your specific usage, the spark plug maintenance schedule may require adjustment.

## SUBMERGED OUTBOARD

If your outboard has been under water, **have it serviced immediately upon recovery**. If immediate service is unavailable, re-submerge it in fresh water to avoid prolonged exposure to the atmosphere.

After submersion, all boat and engine electrical, fuel, and oiling systems must be inspected for signs of water intrusion. A qualified technician should perform this service.

# STORAGE

## ⚠ WARNING

**DO NOT** run the engine indoors or without adequate ventilation or permit exhaust fumes to accumulate in confined areas. Engine exhaust contains carbon monoxide which, if inhaled, can cause serious brain damage or death.

You must protect against natural environmental conditions that can be damaging to an outboard. Your warranty does not cover engine failure caused by these conditions.

**NOTICE** Temperature and humidity changes during storage period can cause corrosion of internal engine components.

Winterization prepares your outboard for long-term off-season storage. During winterization, the engine is “fogged” and extra oil is used to coat internal engine components. Refer to **Long-Term Storage (Winterization)** on page 42.

**Stabilize the fuel supply.** Fuel remaining in your fuel tank can oxidize, resulting in loss of octane and fuel system deposits.

Use *Evinrude/Johnson 2+4 Fuel Conditioner* to prevent gum and varnish deposits from forming in fuel system components. Refer to **Operation** on page 17.

## ⚠ WARNING

**Prevent injury from moving engine components. Before starting the outboard:**

- Shift it to **NEUTRAL**.
- Keep hands, clothes, and hair clear of powerhead.
- Remove the propeller.

## ⚠ WARNING

If engine is equipped with a quick-disconnect fuel hose, you **MUST** disconnect the fuel hose from the engine and the fuel tank to prevent fuel leaks:

- Whenever the engine is **NOT** being used
- Whenever the engine is being trailered
- Whenever the engine is in storage

**NOTE:** A small amount of fuel may be released when the fuel connector is disconnected.

Store fuel tanks in well-ventilated areas, away from heat sources and open flames.

Prevent escape of fuel or fuel vapors which could accidentally ignite.

Close the vent screw of the fuel tank cap (if equipped).

Do not allow disconnected fuel hoses to leak fuel.

If the outboard is laid down for transportation or storage, the oiling system must be primed before reusing the outboard. Refer to **Priming the Oil System** on page 16.

## SHORT-TERM STORAGE (BETWEEN USES)

If you must tilt the outboard to remove it from the water, lower it and allow the cooling system to drain completely as soon as you clear the launch area. Between uses, store your outboard in a vertical position.

## LONG-TERM STORAGE (WINTERIZATION)

### ⚠ WARNING

**Outboard must be in NEUTRAL before performing winterization. Starting outboard in gear can cause personal injury. If winterizing on a trailer, the propeller must be removed before performing procedure. Failure to remove propeller can cause personal injury or death.**

Winterization prepares your outboard for long-term off-season storage. During winterization, the engine is “fogged” and extra oil is used to coat internal engine components.

**Note:** The Long-Term Storage procedure can be used to prime the oiling system.

Winterization requires a specific process of steps.

Closely follow the applicable winterization procedure for your outboard:

- Remote control
- Tiller control
- Remote control with foot throttle

If you are unsure which procedure is right for you, contact your Dealer for assistance.

You can confirm your outboard enters winterization mode when the engine runs at fast idle and:

- The *SystemCheck* gauge lights flash (if equipped).
- The *I-Command* gauge displays winterization message (if equipped).

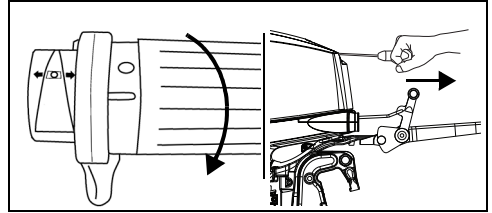
### Preparation

Your outboard can be winterized in the water. **If winterizing in water**, make sure the water intake screens are completely submerged.

- 1) Stabilize the engine’s fuel supply. Add 2+4 *Fuel Conditioner* following instructions on container. Fill fuel tank.
- 2) **If winterizing on a trailer**, remove the propeller. Attach a garden hose to flushing port and turn on the water. Refer to **Flushing** on page 39.
- 3) Outboard **must** be in NEUTRAL, and remote control and shift linkage must be in NEUTRAL position at all times during winterization procedure.

### Winterizing Procedure

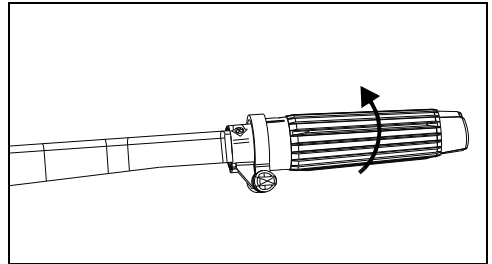
- 1) Fully advance throttle grip. Start the outboard. Outboard runs at slow idle speed.



Tiller Control – Typical

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- 2) After outboard runs for at least 15 seconds, move throttle grip to IDLE position. Outboard continues to run at slow idle speed.



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- 3) After outboard runs for another 15 seconds, fully advance the throttle grip again. Outboard will accelerate to fast idle speed and fog itself.
- 4) Allow outboard to run until it shuts itself OFF automatically (one to two minutes).

Winterization is complete when outboard shuts itself off.

- **If the outboard DOES NOT shut itself off**, you may not have properly advanced throttle grip.
- **If the engine exceeds 3000 RPM**, the outboard may have been shifted into gear.

In either event, immediately press the engine cut-off switch to turn outboard OFF and re-start the procedure.

### After Winterization – All Outboards

- 1) After the outboard shuts itself off, turn key switch OFF. (For tiller models, remove engine cut-off clip / key switch.) Do not start the outboard again after winterization is completed.
- 2) **If winterizing on a trailer**, turn off water and detach garden hose. Grease propeller shaft splines with recommended lubricant, and re-install propeller.

**NOTICE** When winterizing is finished, leave the outboard in vertical position long enough to completely drain the powerhead. If equipped, disconnect the speedometer pickup at the upper connection and blow all water out of the hose using air pressure of 25 psi or less. Reconnect speedometer pickup after all the water has been removed.

- 3) Top off oil tank.

Extra engine oil is used during the winterization procedure. Some excess oil may appear on the skeg below the gearcase area. **This is normal.**

Avoid potential oil stains by placing a shop towel or suitable container under the propeller and skeg for the duration of the storage.

## PRE-SEASON CHECK

Remove your outboard from storage and prepare it for a season of reliable service by performing a general check and a few preventive maintenance procedures.

Examine all loosened or removed hardware. Replace damaged or missing parts with *Evinrude/Johnson Genuine Parts* or equivalent. Check the gearcase for leakage. If leakage is evident, the gearcase seals should be replaced. See your Dealer.

**IMPORTANT:** Gearcase lubricant is **thick and clear**. Do not confuse this with engine oil, which may normally appear on the skeg after performing the long-term (winterization) storage procedure.

**Anticorrosion anodes** — Check condition. Refer to **Anti-Corrosion Anodes** on page 38.

**NOTICE** Do not run your outboard—even for a brief start-up—without supplying water to it.

Following **Engine Starting** on page 17, start the outboard. If the outboard was auto-winterized, it will emit a puff of smoke on the first start of the season.

Let engine idle while you:

Observe running quality. If poor, refer to **Troubleshooting** on page 44 or see your Dealer.

Confirm water pump operation. Water must flow from the water pump indicator in a steady stream. If it does not, shut off the outboard and investigate. Refer to **Engine Overheating** on page 26.

Stop the outboard and check the fuel system for leaks.

### **▲ WARNING**

**Failure to check for fuel leakage could allow a leak to go undetected, resulting in fire or explosion.**

## TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE
Engine will not start	<ul style="list-style-type: none"> <li>• Not following starting instructions. Refer to <b>Engine Starting</b> on page 17.</li> <li>• Fuel system not primed after running out of fuel. Refer to <b>Operation</b> on page 17.</li> <li>• Fuel tank empty.</li> <li>• Fuel hose kinked.</li> <li>• Fuel system contaminated with water or dirt.</li> <li>• Fuel filter obstructed.</li> <li>• Spark plugs incorrect. Refer to <b>Service</b> on page 38.</li> <li>• Spark plugs improperly gapped, carboned, burned, or wet.</li> <li>• S.A.F.E. protection mode activated. Refer to <b>Engine Monitoring</b> on page 26.</li> </ul>
Engine will not idle properly	<ul style="list-style-type: none"> <li>• Debris on propeller.</li> <li>• Spark plugs damaged or incorrect. Refer to <b>Service</b> on page 38.</li> <li>• Fuel system contaminated with water or dirt.</li> </ul>
Engine loses power	<ul style="list-style-type: none"> <li>• S.A.F.E. protection mode activated. Refer to <b>Engine Monitoring</b> on page 26.</li> <li>• Water intakes obstructed and cooling system not operating correctly. Refer to <b>OVERHEAT Warning</b> on page 26.</li> <li>• Spark plugs damaged or incorrect. Refer to <b>Service</b> on page 38.</li> <li>• Fuel filter obstructed.</li> <li>• Fuel system contaminated with water or dirt.</li> <li>• Oiling system malfunction.</li> </ul>
Engine runs, but makes little or no progress	<ul style="list-style-type: none"> <li>• Throttle needs to be reset, refer to Refer to <b>Operation</b> on page 17.</li> <li>• Propeller hub loose, slipping.</li> <li>• Propeller blades bent or missing.</li> <li>• Propeller shaft bent.</li> <li>• Propeller debris.</li> </ul>
Warning system activates	<ul style="list-style-type: none"> <li>• Refer to <b>OVERHEAT Warning</b> on page 26.</li> </ul>

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# Product Information

# INSTALLATION

## ⚠ WARNING

Your outboard must not exceed the maximum horsepower indicated on the boat's capacity plate. Such overpowering can cause loss of control. Contact your Dealer or the boat's manufacturer if your boat lacks a capacity plate.

Boats designed for remote-steered outboards might be overpowered by a tiller-steered outboard of the maximum rated horsepower. Ask your Dealer or boat manufacturer if you are unsure about your boat's suitability.

Incorrectly matched boat and outboard transom heights can cause boat instability and loss of control. Refer to Transom Height.

Prevent lateral movement and possible outboard loss by using the mounting hardware supplied or hardware of sufficient size, strength, and quality. Refer to Installing the Outboard on page 47.

A mounting surface that is damaged or too thin to support your outboard while underway might fail during operation, causing a loss of control. Be sure the boat's transom or mounting bracket is structurally sound and between 1 5/8 in. (41 mm) and 2 3/4 in. (70 mm) in thickness.

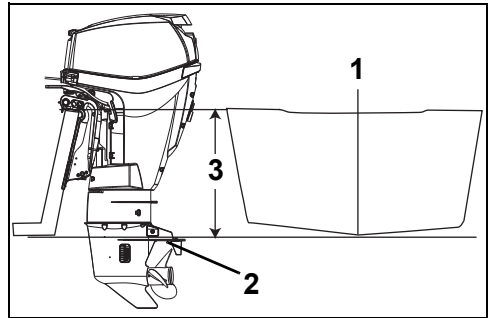
**NOTICE** Use an appropriate hoist to lift the engine. Refer to Specifications on page 50 for engine weight.

## TRANSOM HEIGHT

Make sure the transom height matches the length of the outboard to be installed.

- A 19 to 21 in. (48.3 to 53.3 cm) transom height uses a 20 in. (50.8 cm) shaft outboard.
- The shaft length of the outboard being installed should come close to matching the transom height of the boat.
- Refer to **Specifications** on page 50 for transom height.

Determine transom height by measuring from the top edge of the transom, along the centerline.



1. Centerline
2. Antiventilation plate
3. Transom Height

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Boat performance depends on outboard mounting height.

Generally, the anti-ventilation plate of the gearcase should align with the bottom of the hull. Conventional V-hulls often perform well with the anti-ventilation plate approximately 1 in. (25 mm) above the bottom of the hull.

The anti-ventilation plate should NOT extend more than 2 in. (5 cm) BELOW the bottom of the hull.

Test outboard and boat performance at different heights until the best performance is achieved.

**IMPORTANT:** Be sure that outboard water pressure is not adversely affected by the mounting height of the outboard.



## INSTALLING THE OUTBOARD

### ⚠ WARNING

The outboard must be correctly installed. Failure to correctly install the outboard could result in serious injury, death or property damage. We strongly recommend that your Dealer install your outboard to ensure proper installation.

**IMPORTANT:** Follow all directions carefully. The outboard's warranty will not cover product damage or failure that results from incorrect outboard installation.

Refer to **Priming the Oil System** on page 16.

### Mounting

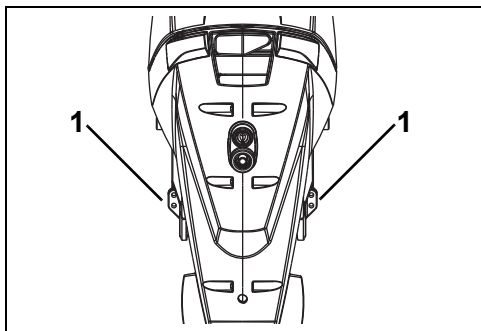
### ⚠ WARNING

Even if equipped with clamp screws, your outboard must be bolted to the boat to prevent it from "working off the transom" during operation.

Center the outboard on the transom (or mounting bracket) and tighten clamp screws by hand.

Use the outboard stern brackets as a template for location and size of holes to drill in the transom.

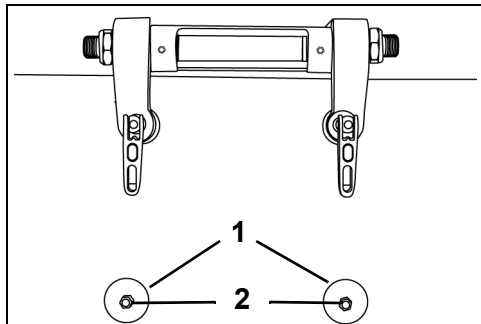
Use each stern bracket's mounting holes as a guide to drill 5/16 in. (7.9 mm) holes through the transom. Drill two (2) mounting holes.



1. Drilled transom holes

007040

Install the mounting bolts through the stern brackets and transom. Install large washers and locknuts onto bolts and tighten securely.



1. Large washers

2. Bolts

18961

### ⚠ WARNING

When replacing bolts, screws, or other fasteners, use *Evinrude/Johnson* parts or parts of equivalent strength and material.

## PROPELLER

### Propeller Selection

#### ▲ WARNING

When servicing the propeller, always shift the outboard to **NEUTRAL** position, turn the key switch **OFF**, and twist and remove all spark plug wires so the outboard cannot be started accidentally.

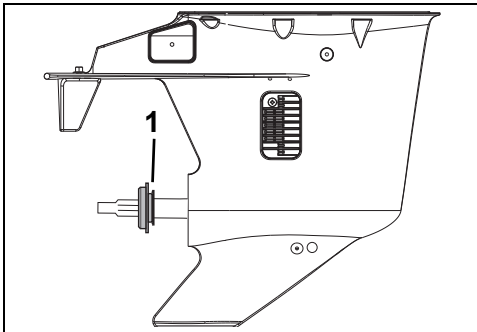
To select the correct propeller for your boating application, your boat and outboard **MUST** be water tested. See your Dealer for assistance.

**IMPORTANT:** The correct propeller for your boat, under normal load conditions, will allow the engine to run near the midpoint of the RPM operating range at full throttle. Refer to **Specifications** on page 50.

### Installation

**NOTICE** Apply *Triple-Guard* grease to the entire propeller shaft before installing the propeller. At least annually, remove the propeller and check for debris. Clean the shaft and regrease it before reinstalling a propeller.

Slide thrust washer onto shaft with fishline trap groove facing forward.

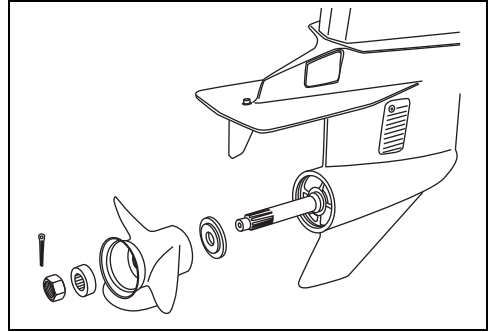


1. Groove

007054

Slide propeller onto shaft, engaging the splines and seating it on the thrust bushing.

Slide spacer onto the shaft and engage the propeller shaft splines.



007055

Wedge a block of wood between the propeller blade and the anti-ventilation plate.

Install propeller nut and tighten to a torque of 120-144 in. lbs. (13.6-16.3 N·m).

**IMPORTANT:** If cotter pin holes in the propeller nut and propeller shaft are not aligned, tighten the nut until they are in line. Do not loosen.

Install new cotter pin and bend ends to secure.

Remove block of wood. Make sure engine is in **NEUTRAL**; give propeller a spin. It must turn freely.

### Repair

**NOTICE** Avoid or limit operation using a damaged propeller. Carry a spare propeller.

If your propeller hits a solid object, the impact is partially absorbed by the bushing in the hub to help prevent damage to the outboard. A strong impact can damage the hub and propeller blades. Damage to blades can cause unusual and excessive vibration. Damage to the hub can cause excessive engine RPM with little forward movement.

Keep your propeller in good condition. Use a file to smooth slight damage to blade edges. See your Dealer for repair of serious damage.

# ADJUSTMENTS

## Trim Tab

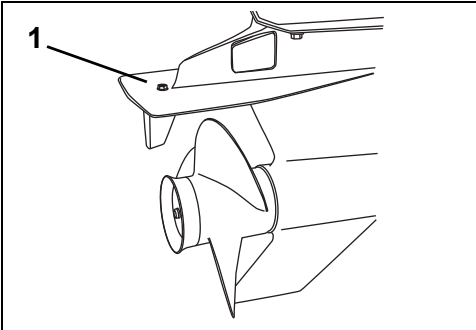
### **⚠ WARNING**

**Improper trim tab adjustment can cause difficult steering.**

A propeller will generate steering torque when the propeller shaft is not running parallel to the water's surface. The trim tab is adjustable to compensate for this steering torque.

**IMPORTANT:** A single trim tab adjustment will relieve steering effort under only one set of speed, outboard angle and load conditions. No single adjustment can relieve steering effort under all speed, outboard angle and load conditions. If the boat pulls to the left or right when its load is evenly distributed, adjust the trim tab as follows:

**With the outboard shut OFF**, loosen the trim tab screw. If the boat pulled to the right, move the rear of the trim tab slightly to the right. If the boat pulls to the left, move the rear of the trim tab slightly to the left.



1. Trim tab screw

007044

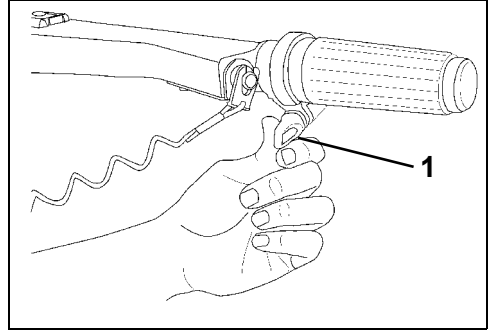
Tighten the trim tab screw to a torque of 60-84 in. lbs. (7-9 N·m).

Test the boat and, if needed, repeat the procedure until steering effort is as equal as possible.

**High outboard installations** — The trim tab might be above the water when the outboard is trimmed out. Steering effort might increase. Steering effort will be reduced if you trim the outboard in and submerge the trim tab.

## Friction

**Throttle Friction** — Adjust until a slight drag is felt when accelerating or decelerating only. DO NOT overtighten.



1. Throttle friction screw

002412

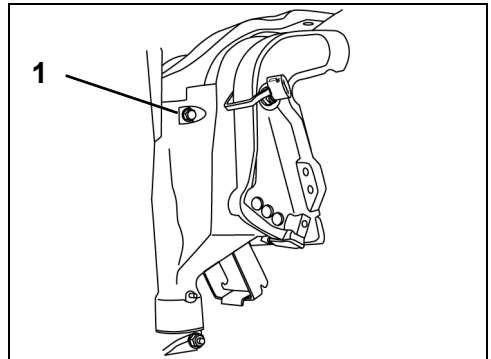
**Steering Friction** — The steering friction was set on your outboard at the factory. A slight drag should be felt when turning the outboard with the steering handle.

### **⚠ WARNING**

**DO NOT overtighten for "hands-off" steering. Reduced steering control could result.**

If adjustment is necessary, turn the adjustment screw:

- Clockwise to increase friction; or
- Counterclockwise to decrease friction.



1. Steering friction adjustment screw

008926

## SPECIFICATIONS

30 MFE Models	
Displacement	35.1 cu. in. (576 cc)
Engine Type	In-line, 2 Cylinder, Two-Cycle, <i>Evinrude E-TEC</i>
Full Throttle Operating Range	<b>30 HP</b> – 5500 TO 6000 RPM
Power <sup>(1)</sup>	<b>30 HP</b> – 30 HP (22.1 kw) @ 5800 RPM
Idle RPM in Neutral <sup>(2)</sup>	750 ± 50
Ignition Timing <sup>(2)</sup>	EMM controlled, not adjustable
Emission Control System: per SAE J1930 <sup>(2)</sup>	ECM, <i>E-TEC</i> (Engine Control Module, <i>E-TEC</i> )
Fuel Requirements <sup>(2)</sup>	Heavy Fuels— JP4, JP5, JP8, Jet A, Jet B, Kerosene Gasoline—87 Pump Posted AKI (90 RON) – Refer to <b>Fuel Requirements</b> on page 13
Oil – Lubricant – Capacity	<i>Evinrude/Johnson XD100</i> oil – Refer to <b>Oil Requirements</b> on page 15 1.5 qt. (1.4 l)
Warning Signals	Controlled by the outboard's <i>EMM</i>
Spark Plug <sup>(2)</sup>	Refer to Parts Catalog for engine model, or ECI Label
Fuel Filter	In-line Replaceable
Gearcase – Lubricant <sup>(3)</sup> – Capacity – Gear Ratio	<i>Evinrude HPF Pro</i> 11 fl. oz. (325 ml) 0.465 / 13:28 / 2.15:1
Propeller	Refer to <b>Propeller Selection</b> on page 48
Weight	MRL Models 161 lbs. (73 Kg)
Sound at Drivers Ear (LpA) ICOMIA 39.94	80 dB(A)
Transom Height	MRL Models – 19.5 to 20 in (495 to 508 mm)

(1) Rated following the standards of ICOMIA 28.83, ISO 3046 and NMMA.

(2) Emission Control Information.

(3) Use *Evinrude/Johnson HPF Pro* Gearcase Lubricant for high performance outboards and commercial applications. *Evinrude/Johnson HPF Pro* Gearcase Lubricant delivers exceptional durability and reliability and promotes long gearcase life in marine use.

# PRODUCT WARRANTY INFORMATION

## BRP LIMITED WARRANTY FOR *EVINRUDE* MULTI FUEL ENGINES SOLD IN THE UNITED STATES AND CANADA (NOT FOR SALE IN CALIFORNIA)

### 1. SCOPE OF THE LIMITED WARRANTY

BRP US Inc.\* ("BRP") warrants its *Evinrude*® Multi Fuel Engines sold for recreational or commercial use in the United States (except California) and Canada ("Product") from defects in material or workmanship for the period and under the conditions described below.

### 2. EXCLUSIONS — *The following are not warranted under any circumstances:*

- Replacement of parts due to normal wear and tear;
- Routine maintenance parts and services including but not limited to: maintenance requirements, lower unit oil changes, lubrication, linkage adjustments and replacement of fuses, zinc anodes, thermostats, starter motor bushings, trim motor brushes, filters, propellers, propeller bushings and spark plugs;
- Damage caused by improper or lack of installation, maintenance, winterization and/or storage, failure to follow the procedures and recommendations in the Operator's Guide;
- Damage resulting from removal of parts, improper repairs, service, maintenance, or modification, or use of parts or accessories not manufactured or approved by BRP, which in its reasonable judgment, are either incompatible with Product or adversely affect its operation, performance, or durability, or resulting from repairs done by a person that is not an authorized Dealer;
- Damage caused by abuse, misuse, abnormal use, neglect, racing, improper operation or operation of the Product in a manner inconsistent with the recommended operation described in the Operator's Guide;
- Damage resulting from external damage, accident, submersion, water ingestion, fire, theft, vandalism or any act of God;
- **Operation without proper fuel, oil or lubrication, or with fuels, oils or lubricants which are not suitable for use with the Product (see the Operator's Guide);**
- Damage resulting from rust or corrosion;
- Damage caused from cooling system blockage by foreign material;
- Damage resulting from sand or debris in the water pump;
- Damage resulting from sand or debris in the jet pump assembly;
- Cosmetic or paint changes due to exposure to the elements.

This warranty will be **voided in its entirety and rendered null and void** where:

- Product has been altered or modified in such a way so as to adversely affect its operation, performance or durability, or change its intended use, horsepower or emission levels; or
- Product is or has operated on improper fuels, oils, or lubricants for extended periods of time.
- Product is or has been used for racing at any point, even by a prior owner.

### 3. LIMITATIONS OF LIABILITY

**ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION TO THE LIFE OF THE EXPRESS LIMITED WARRANTY.**

**ALL INCIDENTAL, CONSEQUENTIAL, DIRECT, INDIRECT OR OTHER DAMAGES OF ANY KIND ARE EXCLUDED FROM COVERAGE UNDER THIS WARRANTY INCLUDING, BUT NOT LIMITED TO:** expense for gasoline, expense for transporting Product to and from an authorized Dealer, removal of Product from a boat and reinstallation, mechanic's travel time, in-and-out of water charges, slip or dock fees, trailering or towing, storage, telephone, cell phone, fax or telegram charges, rental of a like or replacement Product or boat during warranty services or down time, taxi, travel, lodging, loss of or damage to personal property, inconvenience, cost of insurance coverage, loan payments, loss of time, loss of income, revenue or profits, or loss of enjoyment or use of Product.

**SOME STATES, PROVINCES, OR JURISDICTIONS DO NOT ALLOW FOR THE DISCLAIMERS, LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR OTHER EXCLUSIONS IDENTIFIED ABOVE. AS A RESULT, THEY MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC RIGHTS, AND YOU MAY ALSO HAVE OTHER LEGAL RIGHTS WHICH MAY VARY FROM STATE TO STATE, OR PROVINCE TO PROVINCE.**

No distributor, authorized Dealer or any other person is authorized to make any affirmation, representation or warranty regarding Product other than those contained in this limited warranty and, if made, shall not be enforceable against BRP. BRP reserves the right to modify this warranty at any time, being understood that such modification will not alter the warranty conditions applicable to the Products sold while this warranty is in effect.

#### **4. WARRANTY COVERAGE PERIOD**

This limited warranty will be in effect from the date of delivery to the first retail consumer or the date the Product is first put to use, whichever occurs first, for a period of TWELVE (12) CONSECUTIVE MONTHS.

Except that exhaust emission-related components are warranted for sixty (60) consecutive months or one hundred seventy five (175) hours of engine use, whichever occurs first; and evaporative emission related components are warranted for twenty-four (24) consecutive months. *Please see your Authorized Evinrude Outboard Engine Dealer for emission-related service.*

The repair or replacement of parts or the performance of service to Product under this warranty does not extend the life of this limited warranty beyond its original expiration date. All *Evinrude/Johnson® Genuine Parts* and accessories installed by an authorized dealer at the time of sale bear the standard BRP parts and accessories one-year limited warranty.

#### **5. CONDITIONS TO HAVE WARRANTY COVERAGE**

This warranty coverage is available only on *Evinrude* Multi Fuel Engines purchased as new and unused from a dealer authorized to distribute *Evinrude* products in the country in which the sale occurred ("Dealer"), and then only after the BRP specified pre-delivery inspection process has been completed and documented by the purchaser and Dealer. Warranty coverage only becomes available upon proper registration of Product by Dealer or owner.

Only the original purchaser and any subsequent owners who reside in the United States and Canada and have purchased Product from BRP or an authorized U.S. or Canadian Dealer are eligible for warranty registration and warranty coverage hereunder. Such limitations are necessary in order to allow BRP to protect the safety of its products, its consumers, and the general public.

As outlined in the Operator's Guide, timely routine required maintenance must be performed to maintain warranty coverage. BRP may require proof of proper maintenance prior to authorizing warranty coverage.

#### **6. WHAT TO DO TO OBTAIN WARRANTY COVERAGE**

The registered owner must notify an authorized Dealer within two (2) days of the appearance of a defect. The potentially defective Product must not be used until it has been inspected by an Authorized Service Point. BRP is not responsible for damages caused by the use of a Product after the appearance of a defect. Owner must bring Product, including any defective part therein, to Dealer promptly after the appearance of the defect, and in any event, within the warranty period, and must provide Dealer with reasonable opportunity to repair the defect. The expenses of transporting Product to and from Dealer for warranty service are to be borne by the owner.

If the Product has not previously been registered, the owner may also be required to present proof of purchase to Dealer for warranty repairs. Owner is required to sign the repair/work order prior to the start of the repair in order to validate the warranty repair.

All parts replaced under this warranty become the property of BRP.

#### **7. WHAT BRP WILL DO**

BRP's obligations under this warranty are limited to, at its sole discretion, repairing or replacing parts of Product found to be defective in material or workmanship, in the reasonable judgment of BRP. Such repair or replacement of parts will be done without charge for parts and labor, at any authorized Dealer. BRP's responsibility is limited to making the required repairs or replacements of parts with new or BRP-certified re-manufactured parts. No claim of breach of warranty shall be cause for cancellation or rescission of the sale of Product to owner.

In the event that warranty service is required outside of the fifty United States or Canada, owner will bear responsibility for any additional charges due to local practices and conditions, such as, but not limited to, freight, insurance, taxes, license fees, import duties, and any and all other financial charges, including those levied by governments, states, territories and their respective agencies.

BRP reserves the right to improve, modify or change Products from time to time without assuming any obligation to modify Products previously manufactured.

#### **8. TRANSFER**

If the ownership of Product is transferred during the warranty coverage period, this warranty shall be transferred and be valid for the remaining coverage period provided that the former or new owner promptly contacts BRP or Dealer and gives the name and address of the new owner.

#### **9. CONSUMER ASSISTANCE**

In the event of a controversy or dispute in connection with this BRP limited warranty, BRP recommends that you first try to resolve the issue at the dealership level by discussing the issue with Dealer's service manager or owner;

If further assistance is required, please contact BRP US Inc. / Outboard Engines Division, After Sales Support, P.O Box 597, Sturtevant, WI 53177, 1-262-884-5993.

\* In Canada, products are distributed and serviced by Bombardier Recreational Products Inc.

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**BOMBARDIER RECREATIONAL PRODUCTS LIMITED WARRANTY  
FOR *EVINRUDE* MULTI FUEL ENGINES  
SOLD OUTSIDE THE UNITED STATES AND CANADA**

For a copy of the Limited Warranty, see your Bombardier Recreational Products ("BRP") distributor/dealer authorized to distribute *Evinrude* products in the country in which the sale occurs.

If further assistance is required, please contact BRP US Inc. / Outboard Engines Division, After Sales Support, P.O. Box 597, Sturtevant, WI 53177, or the affiliate of BRP where the Product was registered for warranty.





# CHANGE OF ADDRESS / CHANGE OF OWNERSHIP

If your address has changed or if there has been a change of ownership, be sure to fill out and mail the form provided on this page.

This notification is necessary for your own safety even after expiration of the original warranty, since BRP will be in a position to contact you if correction to your outboard is required. Outside the U.S. and Canada, this card should be sent to the Bombardier Recreational Products division where the outboard was registered. Please contact your Dealer or Distributor.

<b>Change of Address</b>	<input type="checkbox"/>	<b>Change of Ownership</b>	<input type="checkbox"/>
Model number	<input style="width: 100%;" type="text"/>		
Serial Number	<input style="width: 100%;" type="text"/>		
<b>Old Address / Previous Owner</b>			
Last name	<input style="width: 100%;" type="text"/>		
First name	<input style="width: 80%;" type="text"/>	M.I.	<input style="width: 10%;" type="text"/>
Address	<input style="width: 100%;" type="text"/>		
City	<input style="width: 70%;" type="text"/>	State	<input style="width: 10%;" type="text"/>
Zip code	<input style="width: 20%;" type="text"/>	Country	<input style="width: 100%;" type="text"/>
Phone number	<input style="width: 100%;" type="text"/>		
Signature	<input style="width: 80%;" type="text"/>		Date
<b>New Address / New Owner</b>			
Type of Use	<input type="checkbox"/> Recreational	<input type="checkbox"/> Commercial	<input type="checkbox"/> Government
Last name	<input style="width: 100%;" type="text"/>		
First name	<input style="width: 80%;" type="text"/>	M.I.	<input style="width: 10%;" type="text"/>
Address	<input style="width: 100%;" type="text"/>		
City	<input style="width: 70%;" type="text"/>	State	<input style="width: 10%;" type="text"/>
Zip code	<input style="width: 20%;" type="text"/>	Country	<input style="width: 100%;" type="text"/>
Phone number	<input style="width: 100%;" type="text"/>		
Signature	<input style="width: 80%;" type="text"/>		Date
<b>Dealer Information</b>			
Dealer name	<input style="width: 100%;" type="text"/>		
Dealer number	<input style="width: 100%;" type="text"/>		
Phone number	<input style="width: 100%;" type="text"/>		
Contact name	<input style="width: 100%;" type="text"/>		

In the U.S. or Canada, mail completed form to: BRP US Inc. / Outboard Engines Division  
 After Sales Support  
 P.O. Box 597  
 Sturtevant, WI 53177

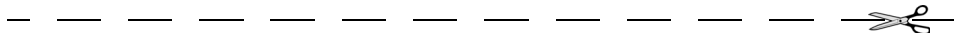


# CONFIRMATION OF RECEIPT

## Your Dealer

Name:	_____
	_____
Address:	_____
	_____
	_____

Upon delivery of your new *Evinrude/Johnson* outboard, complete and sign the form below. Your Dealer will take receipt of the form for their records.



## Receipt

Name:	_____
	_____
Address:	_____
	_____
Owner of Model No:	_____
Serial No:	_____
	(To be completed by customer or selling Dealer)
<p>The Dealer named on this document has instructed me on the operation, maintenance, safety features and warranty policy, all of which I understand and agree to be bound with. I am also satisfied with the predelivery set-up and inspection of my <i>Evinrude/Johnson</i> outboard. I have also received a copy of the Operator's Guide.</p>	
Signature:	_____
Date:	_____

