

**⚠ WARNING**

Read this Guide thoroughly. It contains important safety information.  
Minimum recommended operators age: 16 years old.  
Keep this Operators Guide in the boat.

# *Operator's Guide*

40, 50, 60, 65, 75, 90 HORSEPOWER



Original

***EVINRUDE***<sup>®</sup>  
*E-TEC*<sup>®</sup>





**⚠ WARNING**

**This product contains or emits chemicals known to the state of California to cause cancer and birth defects or other reproductive harm.**

## **Operator's Guide**

**40 / 50 / 60 / 65 / 75 / 90 HORSEPOWER**

Original instructions



Original



# Features at a Glance

## Easy to Own and Operate

- Three-Year Limited Warranty
- No Scheduled Dealer Maintenance for Three Years of Normal Recreational Use
- No Operational Break-In Procedure
- Easy Starts (no choking or priming)
- Digital Engine Management
- Self Flushing Cooling System
- Long Term Storage Design
- Simplified Winterization Procedure
- Digital Diagnostics
- Low Oil Usage

## Durable and Reliable

- Full Corrosion Protection
- *Evinrude E-TEC* Lubrication System
- Auto-Calibrated Linkage
- Robust, Heavy-Duty Design
- Posi-Lock Latches
- Extra Capacity Water Pump
- Iridium Spark Plugs
- Vibration Isolated Electronics
- Beltless Charging System
- Stainless Steel Thermostat
- Nickel/Chrome-Faced Piston Rings
- Micro Finished Connecting Rods/Crankshaft

## Cleaner and Quieter

- EPA Emissions Compliance
- European Union Emissions Compliance
- California 3-Star 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

The following trademarks are the property of Bombardier Recreational Products Inc. or its affiliates:

*Evinrude®*

*Evinrude® E-TEC®*

*Evinrude® Genuine Parts*

*Evinrude® XD100™*

*Evinrude® XD50™*

*PowerSync™*

*Evinrude® XD30™*

*BRP Logo*

*2+4™ Fuel Conditioner*

*HPF Pro™ Gearcase Lubricant*

*Evinrude ICON™ Remote Control*

*I-Command™*

*S.A.F.E.™*

*SystemCheck™*

*Triple-Guard™ Grease*

*RPM Tune™*

# Table of Contents

<b>About This Guide</b> .....	<b>4</b>
<b>Important Safety Messages</b> .....	<b>5</b>
Product References, Illustrations and Specifications .....	7
Declaration of Conformity .....	8
 <b>Using Your <i>Evinrude E-TEC</i> Outboard</b>	
<b>Safety Information</b> .....	<b>10</b>
Safety Information on the Outboard .....	10
Warning Symbols .....	10
Hang Tags .....	10
Remote Control Decals .....	11
<b>Component Identification –</b>	
DRL Models .....	12
DHL, DHS, DPL, DPX, DSL, DTL, SL & SNL Models .....	14
Tiller Handle, DRL Models .....	16
Tiller Handle, DTL Models .....	17
<b>Oil and Fuel</b> .....	<b>18</b>
Oil Requirements .....	18
Oiling System information .....	18
Priming the Oil System .....	20
Fuel Requirements .....	21
Fuel System Information .....	23
<b>Operation</b> .....	<b>24</b>
Safety Information .....	24
Tiller Models .....	24
Remote Control Models .....	30
Remote Controls - <i>Evinrude</i> (BRP) Controls .....	33
Emergency Starting .....	35
<b>Tilting and Trim – Manual Tilt Models</b> .....	<b>37</b>
<b>Tilting and Trim – Power Trim and Tilt Models</b> .....	<b>40</b>
<b>Engine Monitoring</b> .....	<b>44</b>
S.A.F.E. – Speed Adjusting Failsafe Electronics .....	44
Engine Overheating .....	46
<b>Special Operating Conditions</b> .....	<b>47</b>
Cold and Freezing Weather .....	47
Multiple Outboard Operation .....	47
High Altitude .....	47
Salt Water .....	47
Shallow Water .....	48
Under Tow .....	48
Weedy Water .....	48

<b>Transporting the Outboard</b> .....	<b>49</b>
Trailerling .....	49
Transporting / Storage .....	50
<b>Pre-Ride Inspection</b> .....	<b>51</b>

## **Maintenance**

<b>Engine Emissions Installation Information</b> .....	<b>54</b>
<b>Maintenance Schedule</b> .....	<b>56</b>
<b>Service</b> .....	<b>57</b>
Anti-Corrosion Anodes .....	57
Flushing .....	57
Fuse .....	58
Hull Finish .....	58
Outboard External Finish .....	58
Scratch Repair .....	59
Spark Plugs .....	59
Submerged Outboard 59	
<b>Storage</b> .....	<b>60</b>
Short-Term Storage (Between Uses) .....	60
Long-Term Storage (Winterization) .....	61
Pre-Season Check .....	64
<b>Troubleshooting</b> .....	<b>65</b>

## **Product Information**

<b>Installation</b> .....	<b>68</b>
Transom Height .....	68
Installing the Outboard .....	69
Boat-Mounted Fuel Filters .....	70
Battery - Electric Start Models .....	70
Water Pressure .....	71
Propeller .....	72
<b>Adjustments</b> .....	<b>73</b>
<b>Specifications</b> .....	<b>75</b>
<b>Specifications</b> .....	<b>76</b>
<b>Product Warranty Information</b> .....	<b>77</b>
<b>Readiness Test</b> .....	<b>89</b>
<b>Frequently Asked Questions</b> .....	<b>91</b>
<b>Change of Address / Change of Ownership</b> .....	<b>93</b>
<b>Confirmation of Receipt</b> .....	<b>95</b>

# About This Guide

This Operator's Guide is an essential part of your *Evinrude E-TEC* 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 E-TEC* 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.**

### ENVIRONMENTAL NOTE

A note which provides tips and behaviors related to protecting the environment.

**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 flotation 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 flotation 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.

## **Safety Measures — Installation and Maintenance**

- 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.
- 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 56.
- 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 \_\_\_\_\_

Ignition Key Number \_\_\_\_\_

### ***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)**.

## **Declaration of Conformity**

The EC Declaration of Conformity does not appear in this version of the Operator's Guide. Please refer to the printed version that was delivered with your engine.

# Using Your *Evinrude E-TEC* Outboard

## Safety Information

### Safety Information on the Outboard

This outboard comes with hang tags and labels containing important safety information about the operation of the outboard. Any person who operates this outboard should read and understand this safety information.

### Warning Symbols

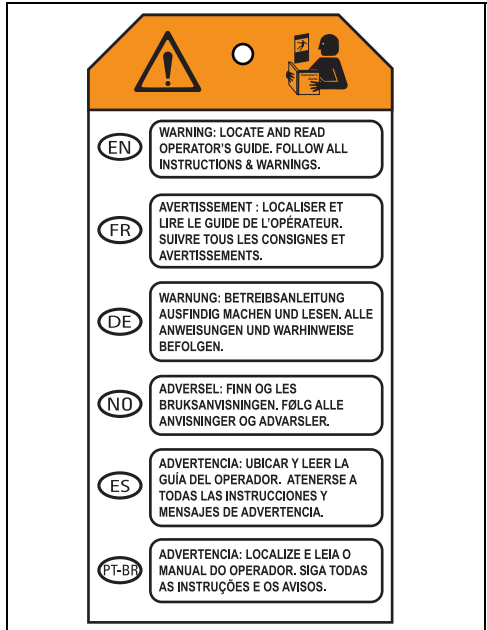
The following symbols are used together to indicate “CAUTION: Read the engine’s Operator’s Guide before proceeding.”



355633

### Hang Tag

All outboards are shipped with the following hang tag attached.



355926

## Hang Tag – PONTOON SERIES OUTBOARDS

**⚠ WARNING**

Pontoon Series outboards are intended to be installed **ONLY** on pontoon boats.

Boat hulls other than pontoons may experience instability and steering torque if operated above certain speeds. 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.

All Pontoon Series outboards are shipped with the following hang tag attached.

**NOTICE**

PONTOON SERIES OUTBOARDS ARE OPTIMIZED FOR USE ON PONTOON BOATS. USE ON OTHER TYPES OF BOATS CAN RESULT IN LESS THAN OPTIMUM PERFORMANCE.

0357258-00

**AVIS**


LES MOTEURS HORS-BORD DE LA SÉRIE PONTON SONT OPTIMISÉS POUR ÊTRE UTILISÉS SPÉCIFIQUEMENT SUR DES PONTONS. LES UTILISER SUR D'AUTRES TYPES DE BATEAUX POURRAIT RÉDUIRE LA PERFORMANCE DE FAÇON SIGNIFICATIVE.

357258

## Remote Control Decals

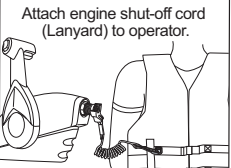
All remote controls have the following labels attached.

**⚠ WARNING**




Locate, read and understand operator's guide and all warnings. Failure to do so could result in serious injury.

Attach engine shut-off cord (Lanyard) to operator.



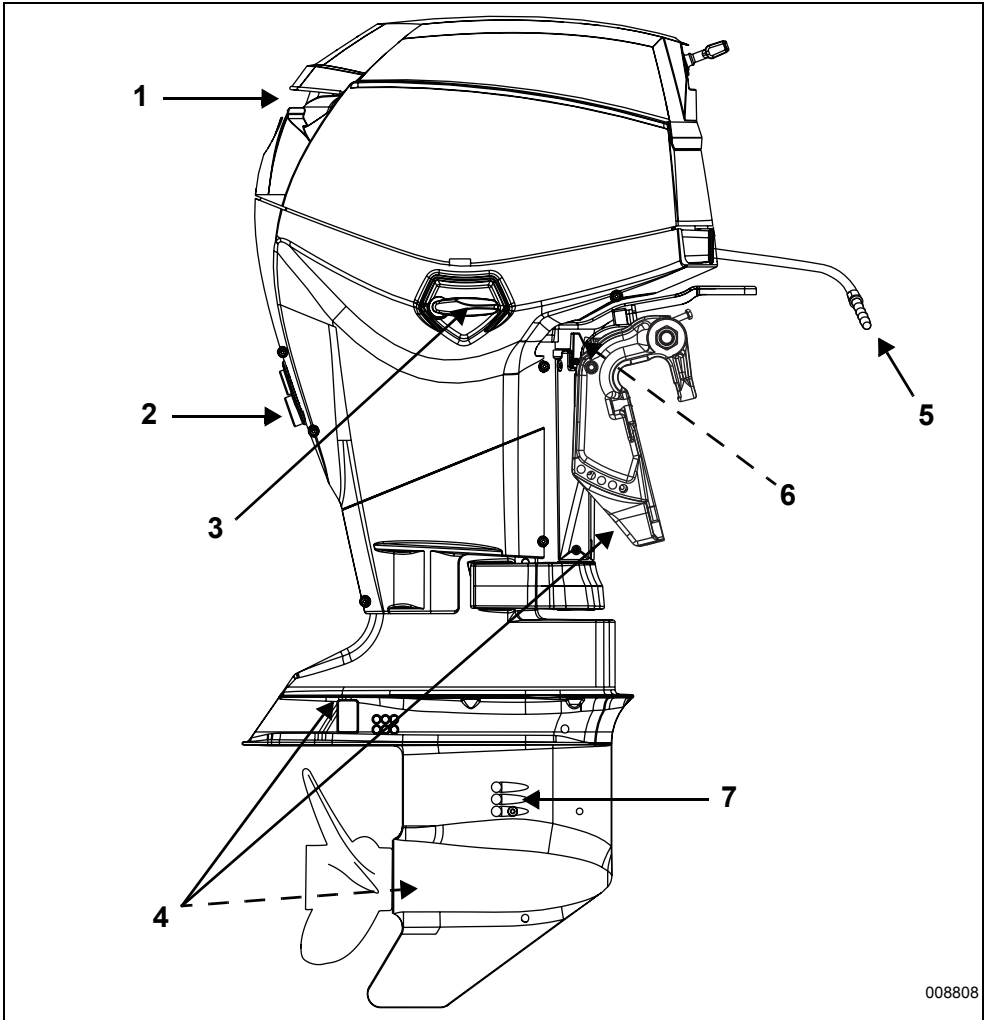
**⚠ WARNING**

Shift position  
Reverse / Neutral / Forward



008488

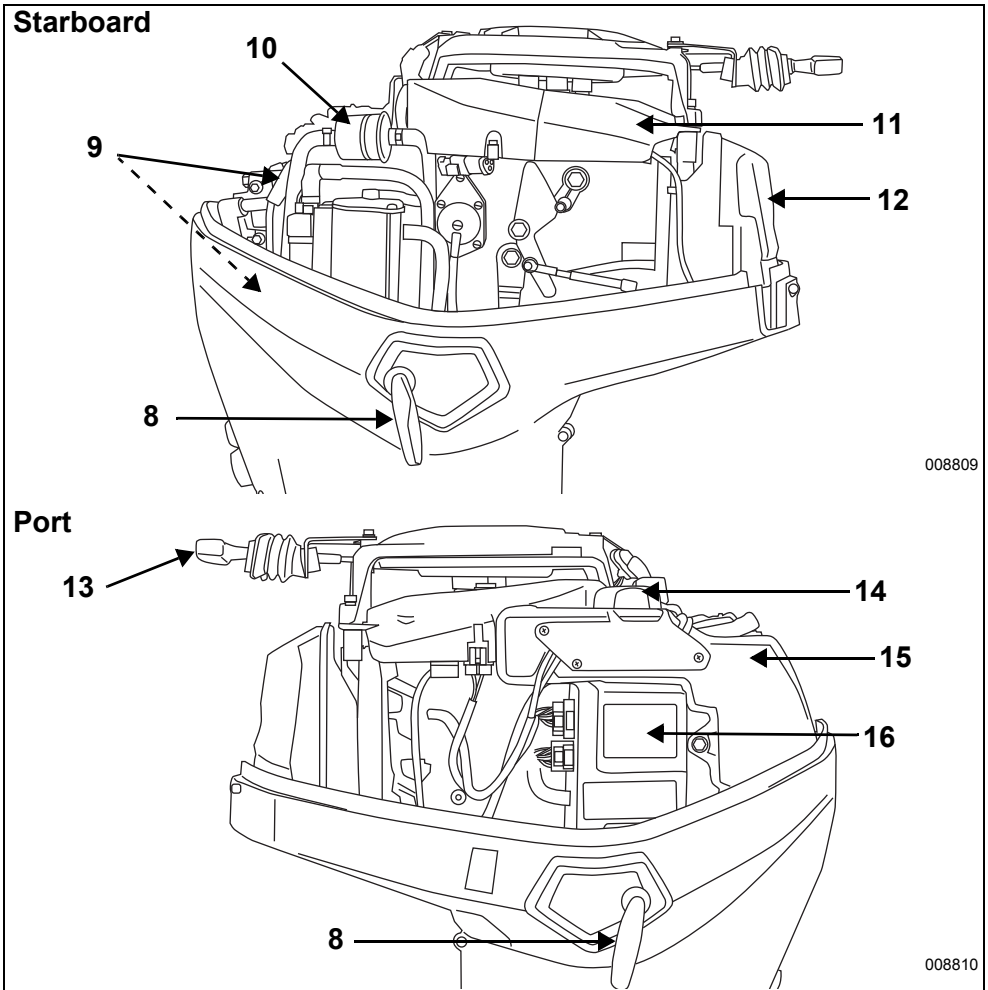
## Component Identification – DRL Models



008808

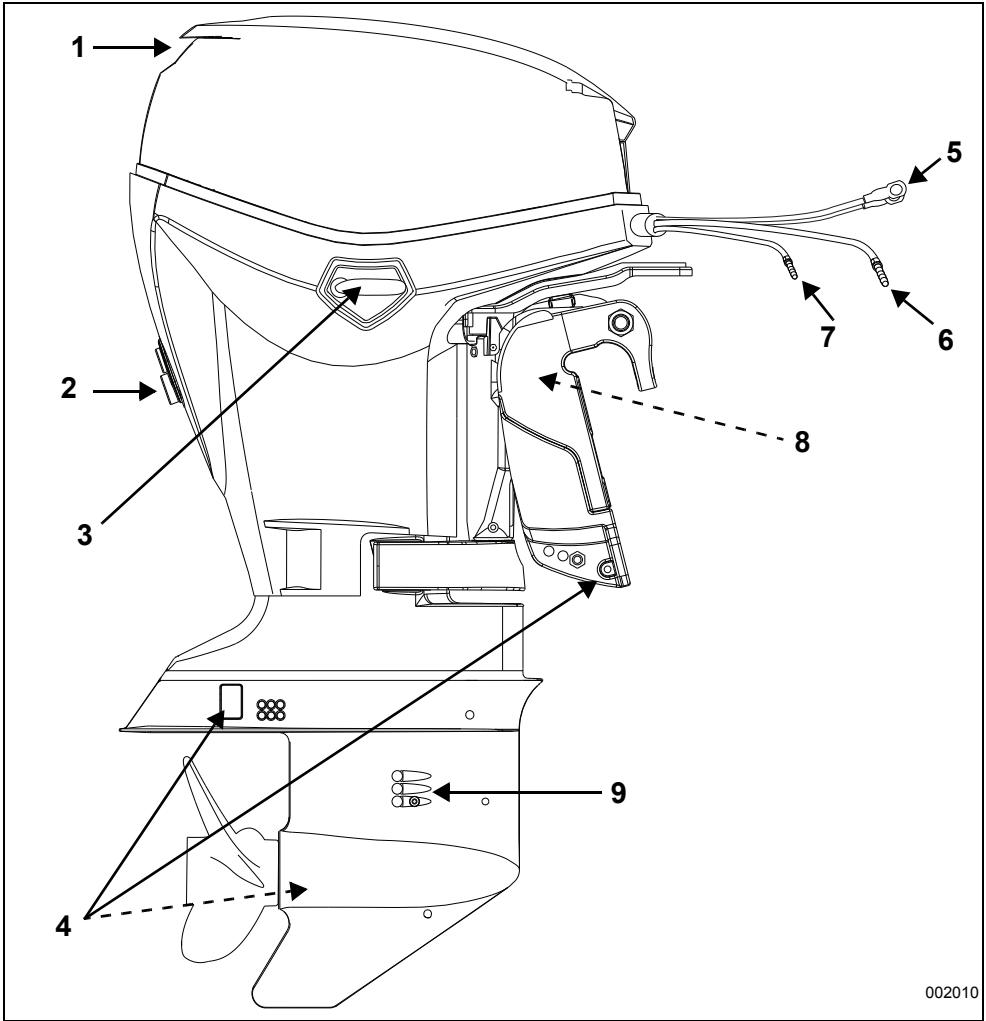
Item	Description	Item	Description
1	Air Inlet, Tilt Handle	5	Fuel Fitting
2	Water Pump Indicator, Flushing Port	6	Tilt Support
3	Engine Cover Latch	7	Water Intake Screens
4	Anti-Corrosion Anodes		





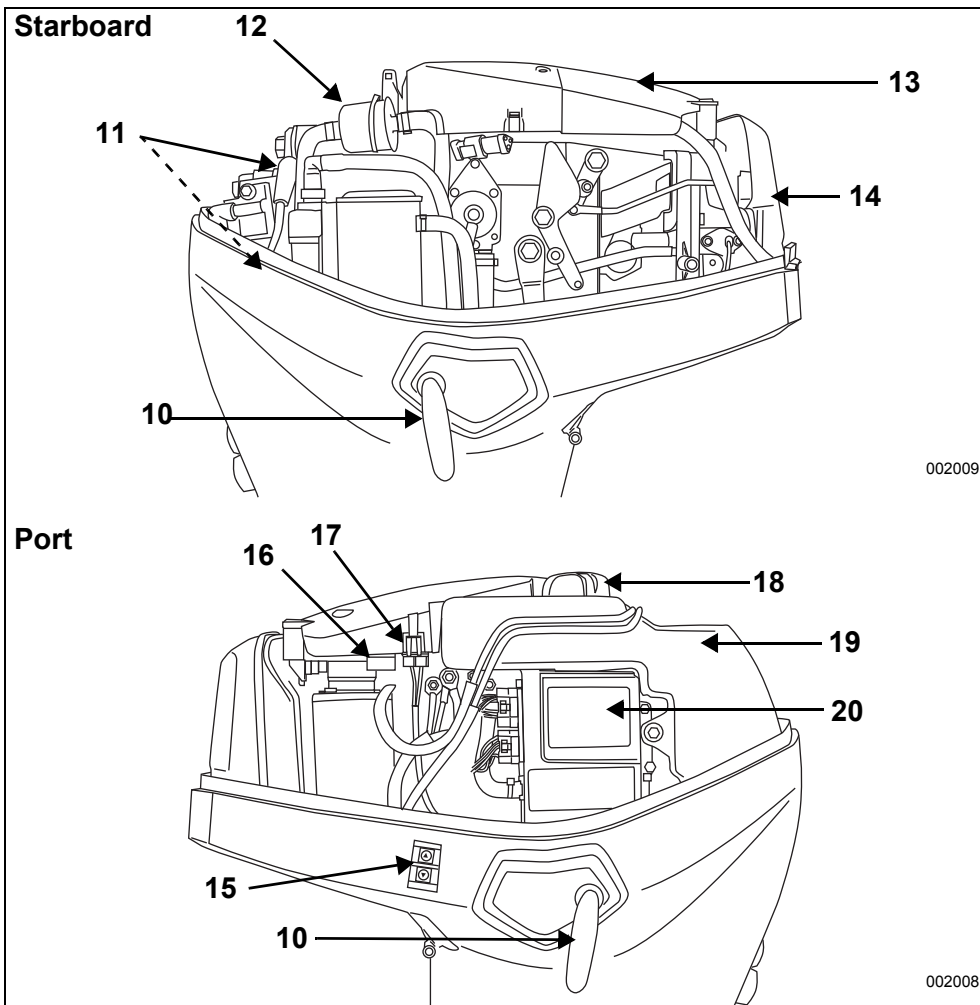
Item	Description	Item	Description
8	Engine Cover Latch	13	Starter handle
9	Spark Plugs	14	Oil Fill Cap
10	Fuel Filter	15	Oil Tank
11	Flywheel Guard	16	EMM (Engine Management Module)
12	Air Silencer		

## Component Identification – DHL, DHS, DPL, DPX, DSL, DTL, SL & SNL Models



002010

Item	Description	Item	Description
1	Air Inlet, Tilt Handle	6	Fuel Fitting (3/8 inch)
2	Water Pump Indicator, Flushing Port	7	Oil Fitting (1/4 inch) Pontoon Series only
3	Engine Cover Latch	8	Tilt Support
4	Anti-Corrosion Anodes	9	Water Intake Screens
5	Battery Cables		

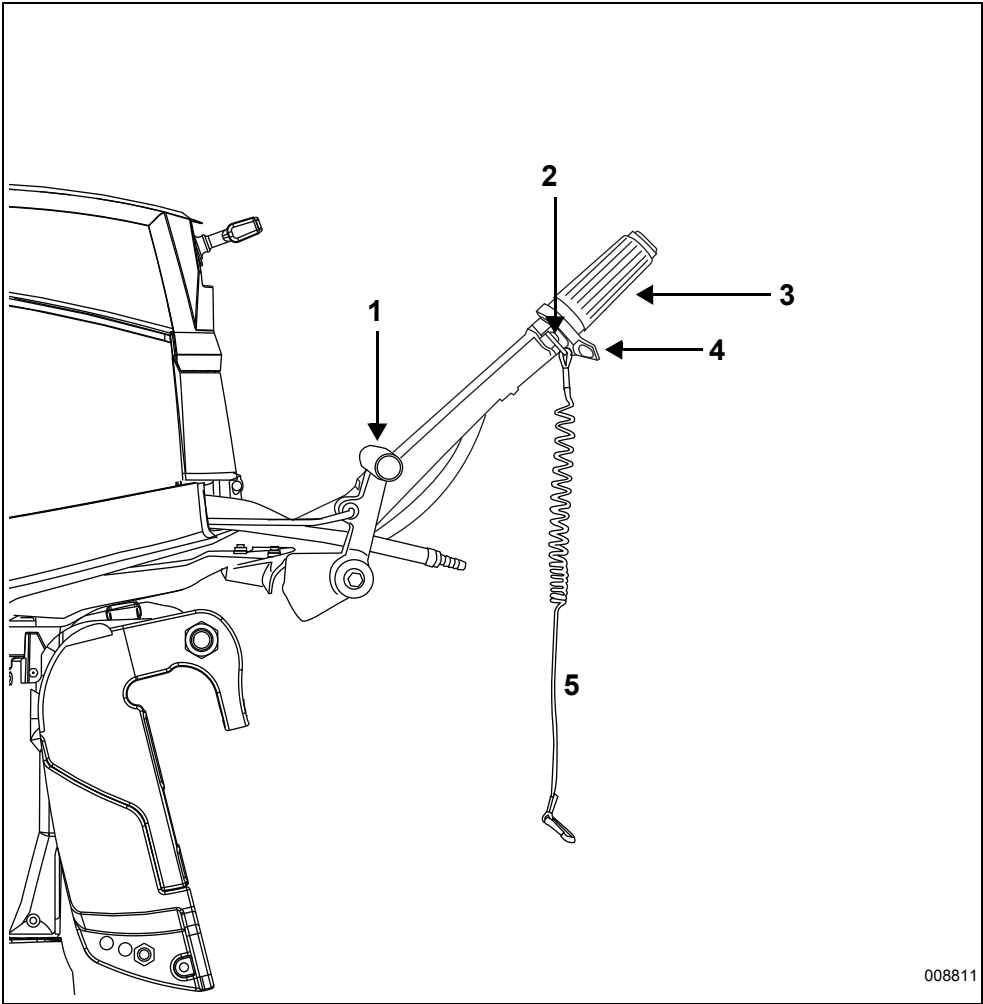


002009

002008

Item	Description	Item	Description
10	Engine Cover Latch	15	Trawlering Tilt Switch
11	Spark Plugs	16	Spare Fuse
12	Fuel Filter	17	Fuse
13	Flywheel Guard	18	Oil Fill Cap
14	Air Silencer	19	Oil Tank
		20	EMM (Engine Management Module)

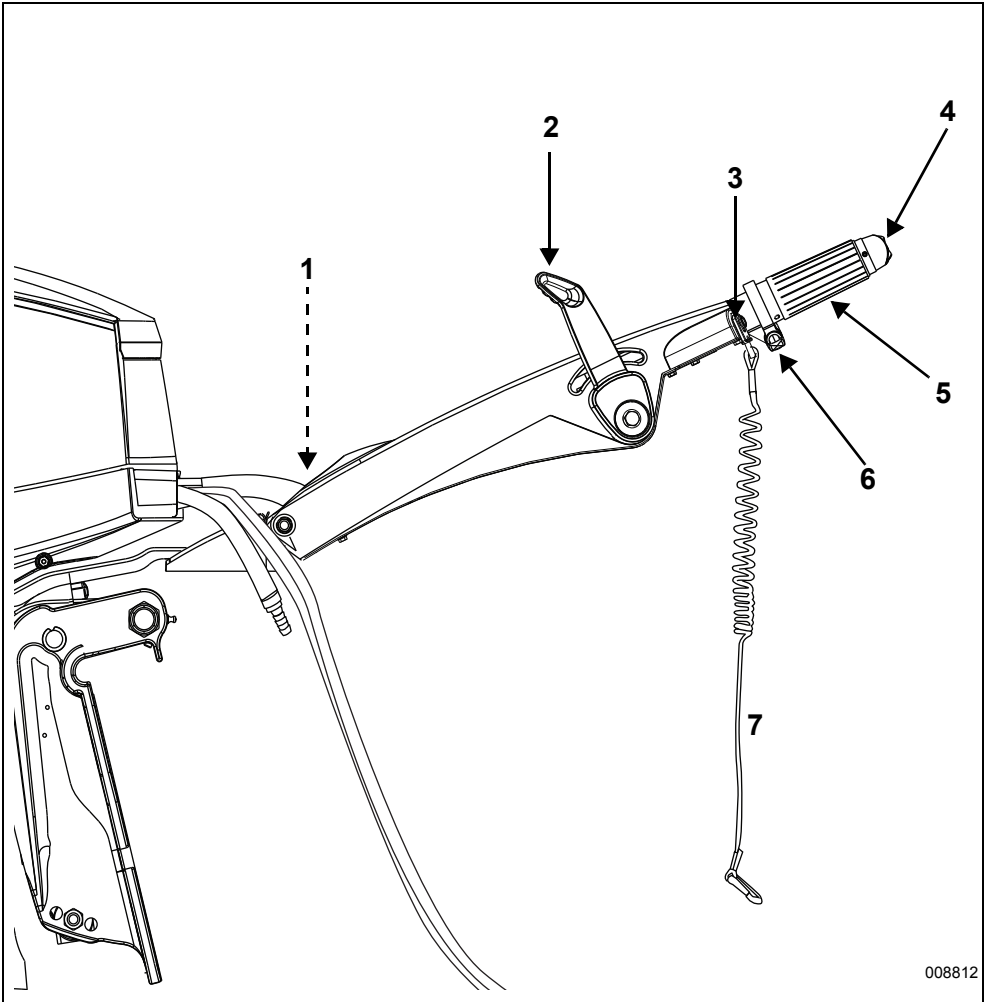
## Component Identification – Tiller Handle, DRL Models



008811

Item	Description	Item	Description
1	Shift Lever	4	Throttle Friction Screw
2	Stop Button/Engine Cut-out Switch	5	Clip and Tether Cord Assembly
3	Steering Handle <i>Twist Grip</i> Throttle		

## Component Identification – Tiller Handle, DTL Models



008812

Item	Description	Item	Description
1	Key Switch	5	Steering Handle <i>Twist Grip</i> Throttle
2	Shift Lever	6	Throttle Friction Screw
3	Stop Button/Engine Cut-out Switch	7	Clip and Tether Cord Assembly
4	Trim Switch (DTL Models Only)		

## Oil and Fuel

### Oil Requirements

#### Evinrude Brand Oils

#### NOTICE

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

Evinrude outboard oils are formulated to give best engine performance while controlling piston and combustion chamber deposits, providing superior lubrication, and ensuring maximum spark plug life.

The following outboard oils are recommended for use in your Evinrude E-TEC outboard:

- Evinrude XD100;
- Evinrude XD50; or
- Evinrude XD30.

#### Evinrude XD100 Oil

**Evinrude XD100 oil is preferred for your Evinrude E-TEC outboard.** This synthetic formula oil provides uncompromised lubrication and superior performance, even in extreme conditions—especially in cold temperatures down to 0°F (-17°C).

If requested, an authorized dealer can program your Evinrude E-TEC outboard EMM for the exclusive use of Evinrude XD100. **Only an authorized Evinrude dealer can program your outboard for this optional benefit.** Oil consumption is reduced if the outboard is programmed for exclusive use of Evinrude XD100 as compared to using a conventional oil. The XD100 oil setting is not available on all models.

**IMPORTANT: If your EMM has been programmed for Evinrude XD100, DO NOT** use any other oil unless in an emergency. If Evinrude XD100 is temporarily unavailable, a **one-time-only use** of an oil that meets NMMA TC-W3 certification standards is allowed. If you discontinue using Evinrude XD100, you **MUST** first return to your Dealer to have the EMM reprogrammed back to the original factory setting.

#### Other Oils

If Evinrude brand oils are not available, you must use an oil that meets NMMA TC-W3 certification standards.

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

#### Oiling System information

If a “LOW OIL” warning occurs, you have a limited amount of time of normal operation before running out of oil. Refill the oil tank with approved oil as soon as possible.

Refer to **Engine Monitoring** on page 44.

Check the oil tank level frequently. Always “top off” your oil tank prior to prolonged usage or long trips.

New outboards are programmed to use additional oil during the first two hours of operation above 2000 RPM.

Always keep an extra supply of outboard oil in the boat. Refer to **Oil Requirements** on page 18.

If you run the oil tank empty, you **MUST** refill the oil tank and prime the oil system before using the engine. Refer to **Filling the Oil Tank** on page 19, **Filling the Remote Oil Tank System** on page 20 and **Priming the Oil System** on page 20.

#### Oil Tank Capacities

##### Standard outboards

**40–60 HP:** 2.0 quarts (1.9 liters).

**75–90 HP:** 2.4 quarts (2.3 liters).

##### Pontoon Series outboards

**WITHOUT** remote oil tank: 2.4 quarts (2.3 liters).

**WITH** remote oil tank: 1.4 quarts (1.3 liters).

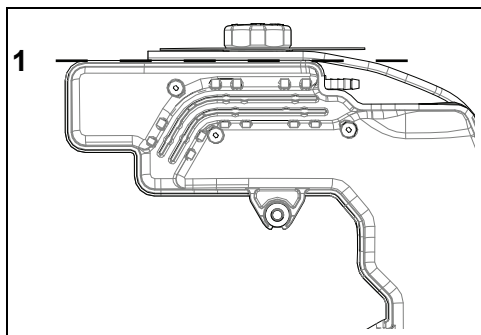
**Remote oil tank:** 1.8 gallons (6.8 liters).

**NOTE:** It is not necessary to fill the on-engine oil tank if the outboard is equipped with a remote oil tank. Refer to **Filling the Remote Oil Tank System** on page 20.

Use the following illustrations as a guideline when filling oil tanks. Do **NOT** overfill oil tanks.

### Outboards Without Remote Oil Tank

Fill to bottom of filler neck.

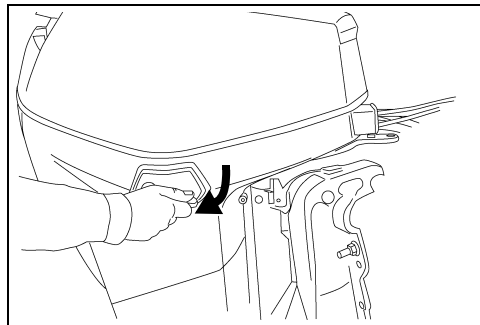


1. Bottom of filler neck

C04-09054

### Filling the Oil Tank

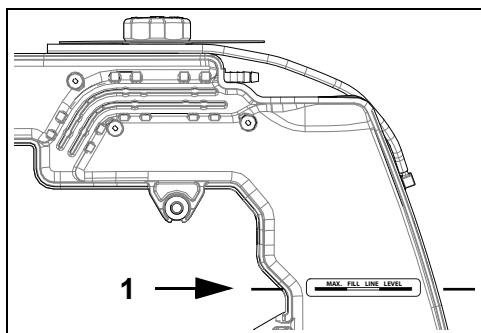
Release the port and starboard engine cover latches by turning each handle downward.



002015

### Outboards With Remote Oil Tank

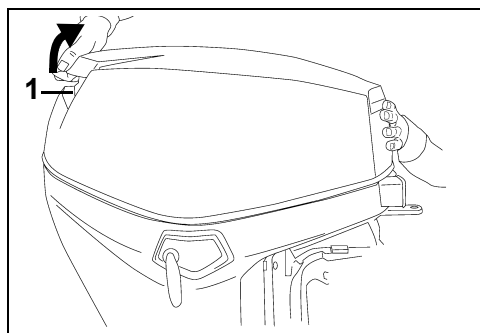
Fill to "Max Fill Line."



1. Max fill line

C04-09084

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

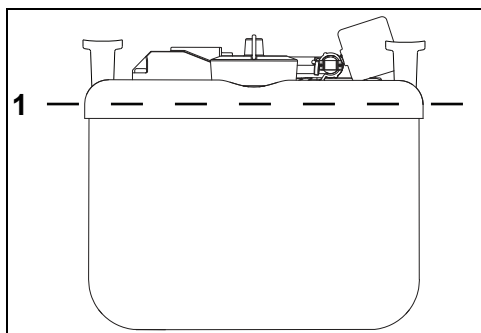


1. Tilt handle

002016

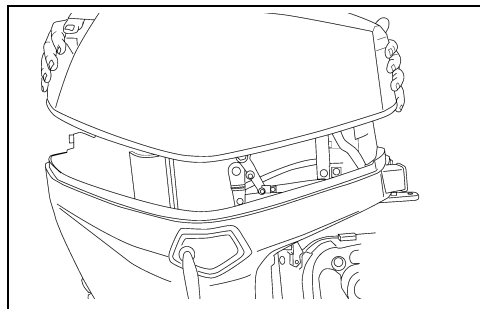
### Remote Oil Tank

Fill to bottom of filler neck.



1. Bottom of filler neck

C04-09055

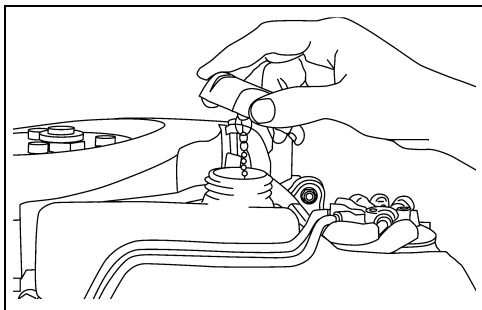


002017

Remove the filler cap and fill the tank with the recommended outboard lubricant, as speci-

## Using Your Evinrude E-TEC Outboard

fied in **Oil Requirements** on page 18.

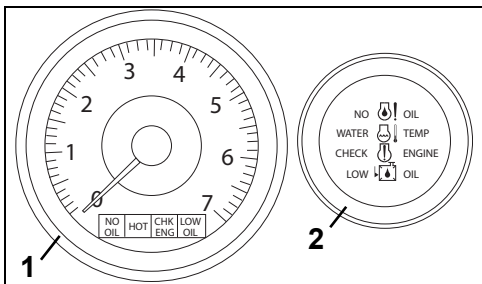


002007

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

### Remote Oil Tank System

Pontoon series outboards with remote oil tanks **MUST** be equipped with a *SystemCheck* engine monitor system.



008491

1. *SystemCheck* tachometer
2. *SystemCheck* 2 inch gauge

The *SystemCheck* engine monitor system will automatically turn on the oil pump in the remote oil tank, when the oil level of the on-engine tank becomes low.

The time to fill the on-engine oil tank can vary depending on oil temperature. Refer to the following table.

Oil Temperature °F (°C)	Approximate Time to Fill to Max Level (minutes)
90°– 120° (32°– 49°)	5
60°– 80° (16°– 27°)	6
50° (10°)	7
35° (2°)	10
25° (-4°)	15
15° (-9°)	20
0° (-18°)	33

### Filling the Remote Oil Tank System

**IMPORTANT:** The remote oil tank system must be primed after installation, or if run empty.

Remove the filler cap and fill the tank with recommended outboard lubricant. Replace the filler cap and tighten securely.

Start the outboard to begin priming. The **LOW OIL** warning should be indicated on the *SystemCheck* gauge and the horn should sound.

The remote oil tank will begin to pump oil to the outboard-mounted oil tank. Run the outboard for 5 minutes.

Turn the outboard **OFF**. Restart the outboard. The **LOW OIL** warning should turn **OFF**. If the **LOW OIL** warning does not shut off, run at idle speed for an additional five minutes. Under most conditions the remote oil tank will fill in two to three start/run cycles.

### Priming the Oil System

#### 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 – Dealer must prime the oiling system using *Evinrude Diagnostic* software;
- The oil tank is emptied or outboard is run out of oil;
- The outboard is laid down for transportation or storage.
- Perform winterization to prime the oil system. See **Long-Term Storage (Winterization)** on page 61.



## 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.

### **NOTICE**

Always use fresh gasoline. Gasoline will oxidize; the result is loss of octane, volatile compounds, and the production of gum and varnish deposits which can damage the fuel system.

Fuel blending varies by country and region. Your outboard has been designed to operate using the recommended fuels; however, be aware of the following:

- The boat's fuel system may have different requirements regarding the use of alcohol fuels. Refer to the boat's owner guide.
- Alcohol blended fuels attract and hold moisture which may lead to fuel phase separation and can result in engine performance problems or engine damage.
- Use of fuel containing alcohol above the percentage specified by government regulation can result in the following problems in outboard engines and fuel system components:
  - Vapor lock or fuel starvation
  - Starting and operating difficulties
  - Deterioration of rubber or plastic parts
  - Corrosion of metal parts
  - Damage to internal engine parts
- Have your dealer inspect for fuel leaks or other fuel system abnormalities if you suspect the presence of alcohol in gasoline exceeds the current government regulation limits.

**Recommended Fuel:** Use unleaded gasoline with an AKI (R+M)/2 octane rating of 87, or an RON octane rating of 90.

### *Use in North America*

### **NOTICE**

**Do NOT use fuel from fuel pumps labeled E85. Never experiment with other fuels.**

The use of unleaded gasoline containing alcohol above the percentage specified by government regulations is not recommended. Use of fuel labeled E15 is prohibited by U.S. EPA Regulations.

Use of a boat mounted water separating fuel filter is strongly recommended.

### *Use Outside North America*

The use of unleaded gasoline containing alcohol above the percentage specified by local government regulations is not recommended.

Use of a boat mounted water separating fuel filter is strongly recommended.

## Fueling Procedure

### **⚠ WARNING**

**Fuel is flammable and explosive under certain conditions. Follow these instructions to ensure safety when handling fuel:**

- **Always work in a well ventilated area.**
- **Always turn off the engine before fueling.**
- **Never permit anyone other than an adult to refill the fuel tank.**
- **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.**
- **When fueling, keep boat level.**
- **Remove portable fuel tanks from the boat before fueling.**
- **Fuel tank may be pressurized, turn cap slowly when opening.**
- **Do not overfill or top off the fuel tank and leave boat in the sun. As temperature increases, fuel expands and might overflow.**

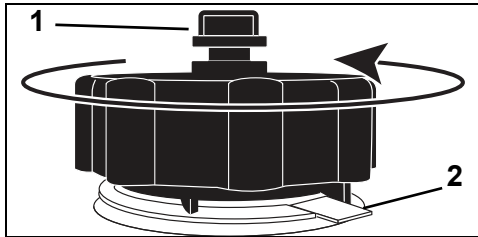
**Always wipe off any fuel spillage.**

# Using Your Evinrude E-TEC Outboard

## Portable Fuel Tank Cap

Allow fuel vapor to escape before removing the fuel tank cap.

- 1) Open the vent screw on fuel tank cap.
- 2) Turn the cap counterclockwise until the cap contacts the pressure relief tab.
- 3) Press down on the tab and turn the cap one-quarter turn counterclockwise until the cap contacts the pressure relief tab again.
- 4) Allow fuel vapor to escape.
- 5) Press down on tab to remove cap.



1. Vent screw  
2. Pressure relief tab
- 008556

Always follow the instructions provided with the fuel tank and cap.

## On a Trailer

### ⚠ WARNING

**To prevent fuel back-flow, fill the fuel tank slowly so air can escape from tank.**

- 1) Make sure the boat is level.
- 2) Slowly turn the fuel tank cap counterclockwise to remove it.
- 3) Insert the gas pump nozzle into the filler neck of the fuel tank.
- 4) Fill the fuel tank.
- 5) Stop filling immediately when the automatic shut-off feature of the gas pump handle activates.
- 6) Wait a moment before removing the gas pump nozzle from the filler neck. Do not retract the gas pump nozzle from the filler neck to top off the fuel tank.
- 7) Install the fuel tank cap and turn clockwise to fully tighten it.

## In the Water

### ⚠ WARNING

**To prevent fuel back-flow, fill the fuel tank slowly so air can escape from tank.**

- 1) Turn off engine.
- 2) Tie boat securely to the fueling pier.
- 3) Do not allow anyone to remain in or on the boat.
- 4) Have a fire extinguisher close at hand.
- 5) Slowly turn the fuel tank cap counterclockwise to remove it.
- 6) Insert the gas pump nozzle into the filler neck of the fuel tank.
- 7) Fill the fuel tank.
- 8) Stop filling immediately when the automatic shut-off feature of the gas pump handle activates.
- 9) Wait a moment before removing the gas pump nozzle from the filler neck. Do not retract the gas pump nozzle from the filler neck to top off the fuel tank.

Install fuel tank cap and turn clockwise to fully tighten it.

## Fuel Additives

### NOTICE

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

The only fuel additives approved for use in your *Evinrude E-TEC* outboard are:

- *Evinrude 2+4 Fuel Conditioner*
- *Evinrude Fuel System Cleaner*

*Evinrude 2+4 Fuel Conditioner* will help prevent gum and varnish deposits from forming in fuel system components 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. Its use will help reduce spark plug fouling and deterioration of fuel system components.

*Evinrude Fuel System Cleaner* will help keep fuel injectors in optimal operating condition.

## Fuel System Information

### ⚠ WARNING

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.

Always wipe off any fuel spillage.

In the United States, the U.S. EPA requires "low permeability" fuel hose, fuel primer bulbs, portable fuel tanks and fuel caps to be used with outboard engines.

**IMPORTANT:** Fuel distribution hoses in the boat must deliver fuel at a specific flow rate. Minimum inside diameter of fuel hoses must be 3/8 in. (9 mm).

Fuel systems with built-in tanks, particularly those that include antisiphon valves and filter/primer units, may have restrictions not allowing the engine fuel pump to deliver sufficient fuel under all conditions. This can result in a loss of performance. If a performance problem exists, see your Dealer.

### Fuel Filters

A boat-mounted water-separating fuel filter assembly will help prevent water and other contaminants from entering the engine fuel system.

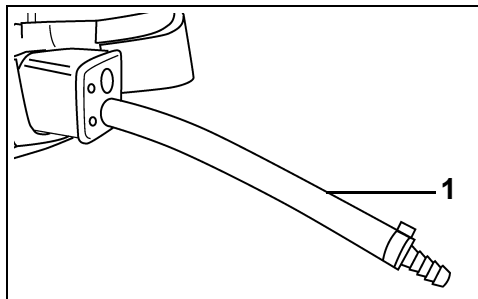
Use of a boat mounted water-separating fuel filter is highly recommended on all boats.

Boat-mounted water-separating fuel filter assemblies must meet the required fuel flow and filter specification. Refer to **Boat-Mounted Fuel Filters** on page 70.

### Fuel Hose Connections

- 1) If the fuel hose is disconnected for any reason, seal it to prevent spillage. Cap the fuel fitting to prevent contamination.
- 2) Connect the fuel hose to the 3/8 in. (9 mm) fuel fitting. Fasten hose securely with clamp (18.5 mm) from owner's kit.

- 3) Squeeze fuel primer bulb, outlet end up, until firm.



1. Fuel hose – 3/8 in. (9 mm)

002018

### Fuel System Priming

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

### Rope Start Models

Prime the electric fuel pump by first removing the engine cut-out 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-out switch clip and follow the normal starting procedure.

# Operation

## Safety Information

### **⚠ DANGER**

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

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

Assure the engine propeller 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.

## Tiller Models – Engine Starting / Stopping

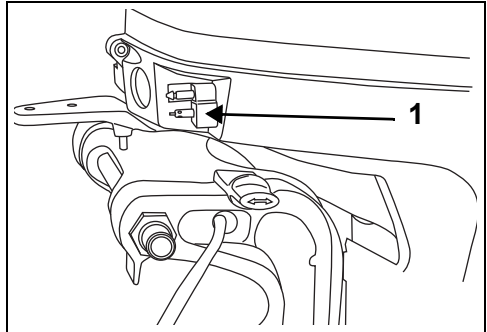
### **NOTICE**

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.

Refer to the **Pre-Ride Inspection** on page 51. Complete the inspection before using your Evinrude E-TEC outboard.

### **Connecting the Fuel Hose**

Connect the fuel hose to the fuel connector.



1. Fuel connector (typical)

007004

If equipped, open vent screw on fuel tank cap.

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

## Engine Cut-off Switch

### ⚠ 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.

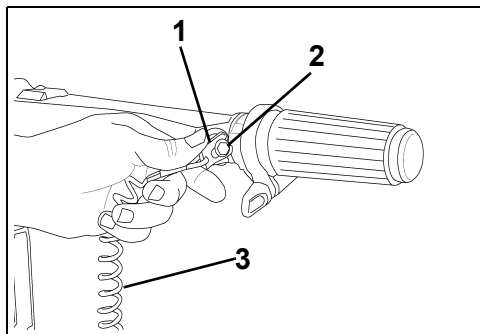
Avoid knocking or pulling the clip off the engine cut-off switch during normal boating. Avoid bumping the key if operating without the clip on the switch. The resulting unexpected loss of forward motion can throw occupants forward, causing injury.

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.

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

Connect the clip to the engine cut-out switch.

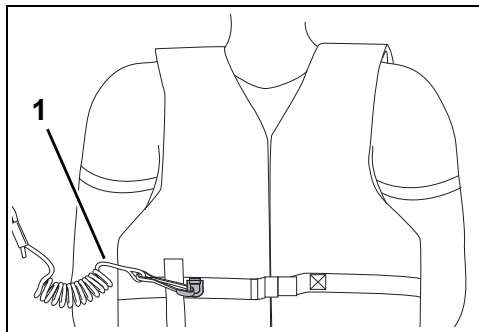


1. Clip
2. Engine cut-off clip / switch
3. Tether cord

002405

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.



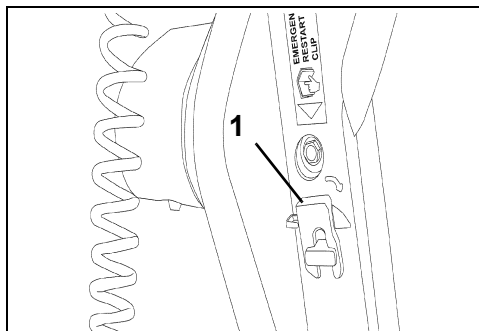
1. Tether cord

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

005105

# Using Your Evinrude E-TEC Outboard

## Starting

### **⚠ WARNING**

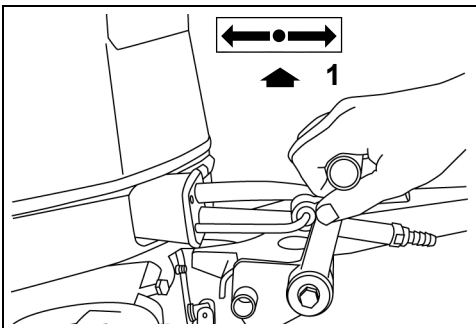
**Always shift to NEUTRAL before starting the outboard to prevent sudden boat movement, which can cause injury.**

### **NOTICE**

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

Move the shift lever to NEUTRAL. Refer to **Shifting and Speed Control - Tiller Models** on page 28.

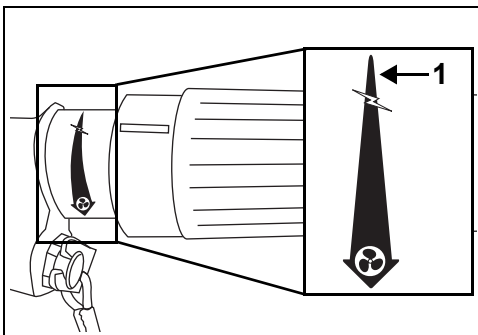
Be sure the water intake screens are below the water surface.



1. NEUTRAL

002415  
008496

Twist throttle grip to SLOWEST speed position.



1. SLOWEST speed position

007067

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

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.

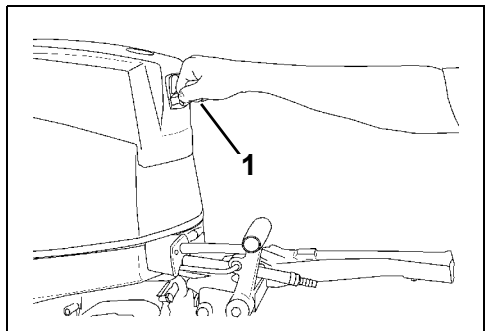
After the engine starts, the engine management module (EMM) automatically increases idle speed slightly. Idle speed will decrease as the engine warms up.

### Tiller Rope Models

### **NOTICE**

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

While seated, grasp the starter handle and pull slowly until the starter engages, then pull hard. Repeat, if needed, until outboard starts.



1. Starter handle

002416

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

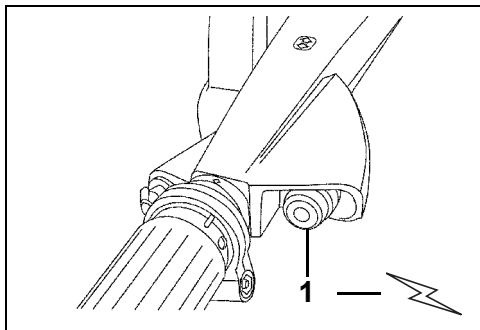
If your outboard does not react normally to this starting procedure or if it fails to start, refer to **Troubleshooting** on page 65.

Tiller Electric Models

**NOTICE**

**The starter motor can be damaged if operated continuously for more than 20 seconds.**

While seated, press the start button. (If equipped with a key switch, it must be in the ON position.) Crank the engine no longer than 20 seconds.



1. Start button

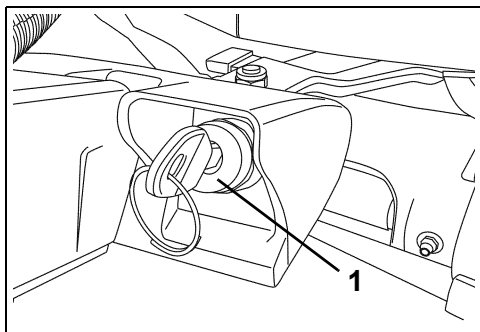
005104  
008497

Upon start-up, release the button.

If the engine did not start, release the button momentarily, then try again.

**Key Switch**

While seated, turn the key switch fully clockwise to the start position. Crank the engine no longer than 20 seconds. Starter can be activated using the key switch or the start button.



1. Key switch

005118

Upon start-up, release the key.

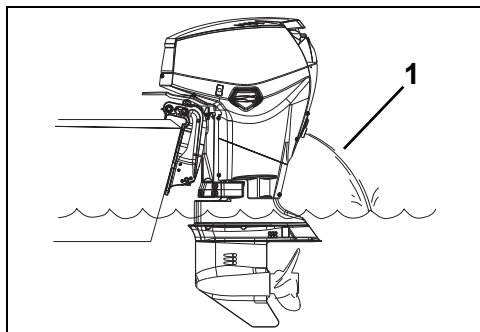
If the engine did not start, release the key momentarily, then try again.

**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 65.

**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 engine. Refer to **Engine Overheating** on page 46.



1. Water pump indicator

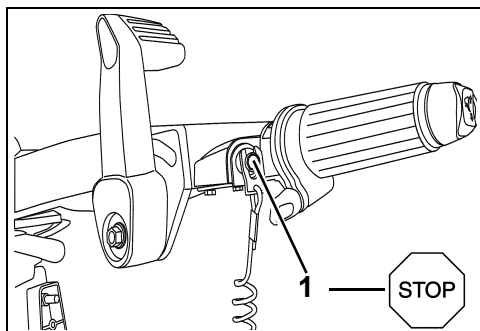
008469

**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.



1. Engine cut-off switch

002413  
008498

## Using Your Evinrude E-TEC Outboard

Outboard may be stopped by turning the key switch to the OFF position, or by pressing the engine cut-off switch until the outboard stops running.

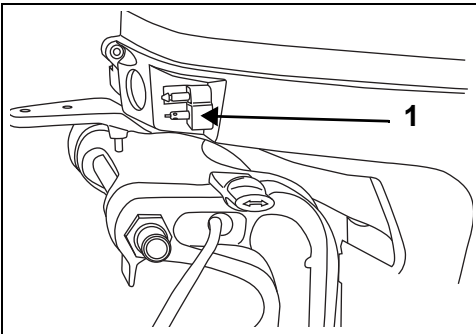
**IMPORTANT:** Be sure to turn key OFF when outboard is not in use to avoid discharging the battery.

### 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 (typical)

007004

If equipped, close vent screw on fuel tank cap.

### Shifting and Speed Control - Tiller Models

#### **⚠ 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.**

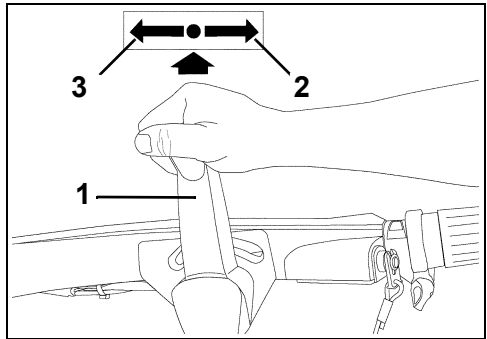
### Shifting

#### **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.**

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.



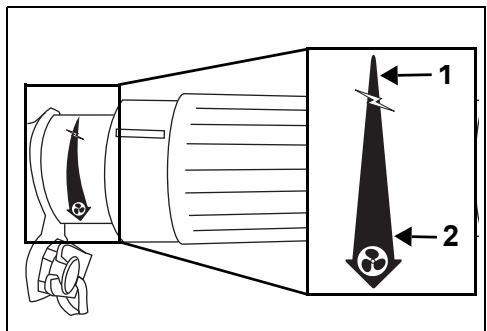
1. Shift lever
2. FORWARD
3. REVERSE

005100

### Speed Control

With the outboard running, twist throttle grip:

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



1. Decrease speed
2. Increase speed

007067A



## 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.

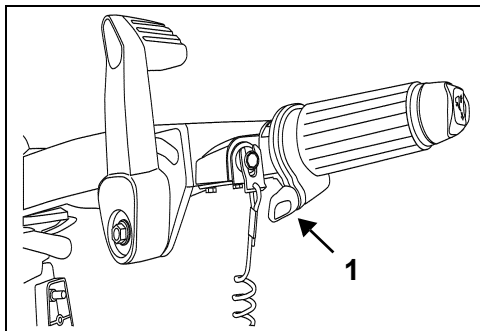
## Adjustments

### Throttle Friction

#### **⚠ WARNING**

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

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

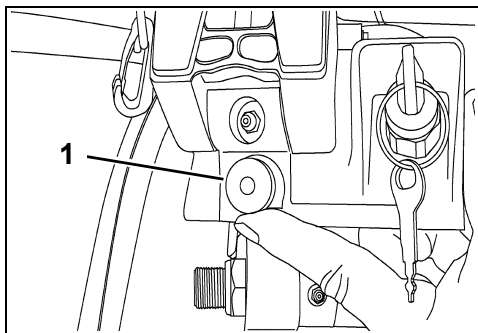


1. Throttle friction screw

005099

### Tiller Handle Angle

Tiller handle angle can be raised or lowered by turning the adjustment screw under the handle.

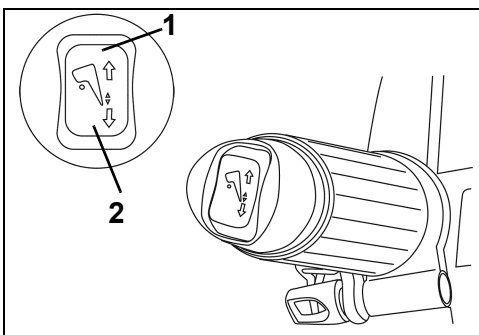


1. Adjustment screw

005108

### Trim/Tilt Switch

If equipped, the trim/tilt switch is located in the end of tiller handle. Press switch as indicated for UP and DOWN operation.



1. Trim/tilt switch UP

2. Trim/tilt switch DOWN

005107

## Remote Control Models – Engine Starting / Stopping

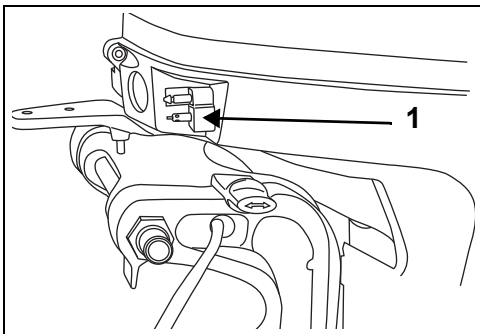
### NOTICE

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.

Refer to the **Pre-Ride Inspection** on page 51. Complete the inspection before using your Evinrude E-TEC outboard.

### Connecting the Fuel Hose

Connect the fuel hose to the fuel connector.



1. Fuel connector (typical)

007004

If equipped, open vent screw on fuel tank cap.

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

### Engine Cut-off/Key Switch

### ⚠ 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.**

### ⚠ WARNING

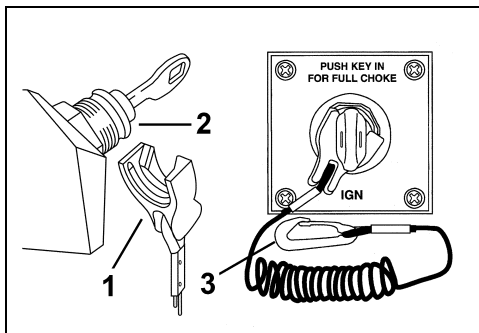
Avoid knocking or pulling the clip off the engine cut-off switch during normal boating. Avoid bumping the key if operating without the clip on the switch. The resulting unexpected loss of forward motion can throw occupants forward, causing injury.

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.

A combination engine cut-off switch and key switch is a feature of Evinrude prewired remote controls and all Evinrude control wiring kits. Use of the engine cut-off feature is highly recommended on all boats.

Connect the clip to the engine cut-off/key switch.



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

DR6819

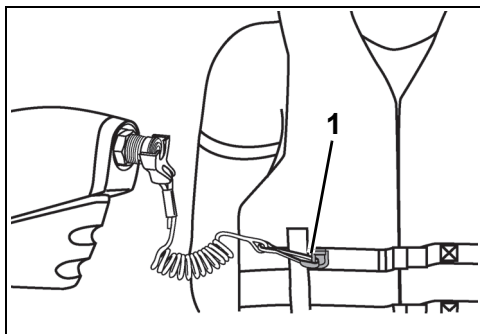
DR5592

In an emergency situation, the engine can be started without the clip in place. Follow the normal starting procedure. Reinstall a clip as soon as possible. **The operator should always use the clip and tether cord anytime the engine is running.** Refer to **Engine Cut-off/Key Switch** on page 30.

**IMPORTANT:** Your engine cut-out switch can be effective only when in good working condition. At each outing, inspect clip and

tether cord for cuts, breaks, or wear. Replace worn or damaged parts.

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

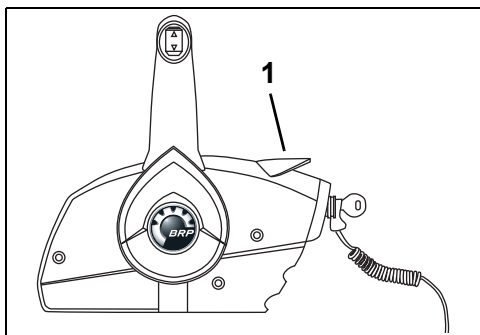
004850

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.

If the following directions are not suitable for your boat's control, see your Dealer before proceeding.

Move the remote control handle to NEUTRAL.

Set control to SLOWEST speed position.



1. SLOWEST speed position

007071

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

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 is returned to slowest IDLE position

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

### Engine Starting

#### **⚠ WARNING**

**If you are using a remote control that does not have start-in-gear prevention, the outboard can be started while it is in gear. Always shift to NEUTRAL before starting the outboard to prevent sudden boat movement, which can cause injury.**

#### **NOTICE**

**The starter motor can be damaged if operated continuously for more than 20 seconds.**

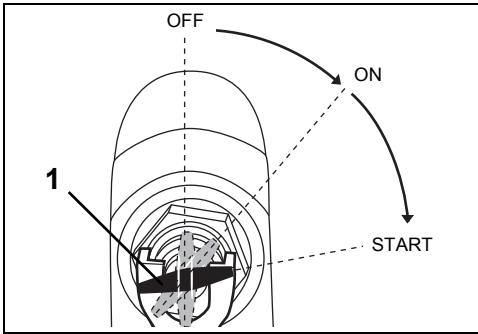
#### **NOTICE**

**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.

Turn the key switch fully clockwise to the START position.

# Using Your Evinrude E-TEC Outboard



1. Key switch **START** position 007015A

Upon start-up, release the key.

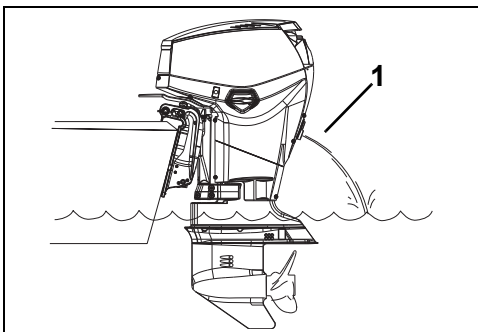
If the engine did not start, release the key momentarily, then try again.

Each time the key switch is turned from OFF to ON, the warning system will self-test. Refer to **Engine Monitoring** on page 44. If the warning system fails to self-test during start-up, see your Dealer.

If your outboard does not react normally to this starting procedure or if it fails to start, refer to **Troubleshooting** on page 65.

## 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 engine. Refer to **Engine Overheating** on page 46.

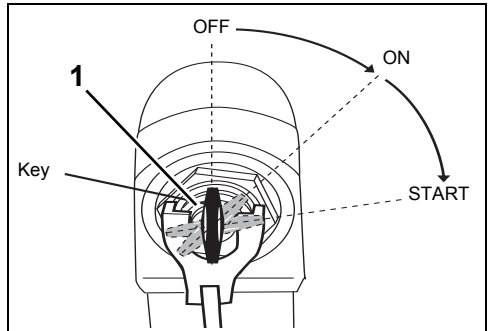


1. Water pump indicator 008469

## Engine Stopping

Move control handle to NEUTRAL.

Turn key switch counterclockwise to the OFF position.



1. Key switch, **OFF** position 007072

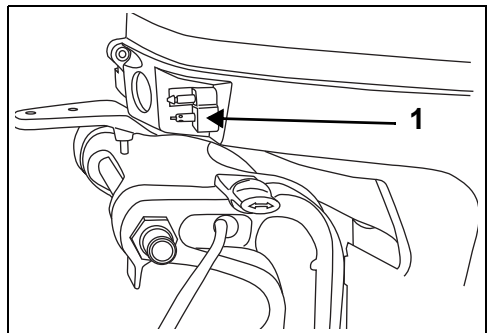
Remove the key when the boat will be unattended.

## 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 (typical) 007004

If equipped, close vent screw on fuel tank cap.

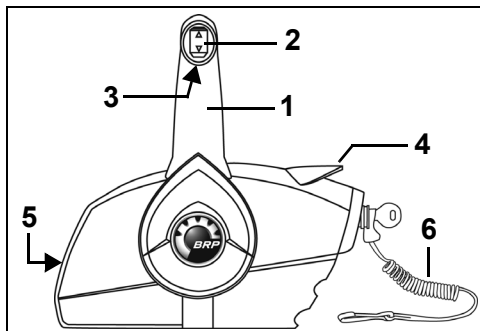
## Remote Controls - *Evinrude* (BRP) Controls

### ⚠ WARNING

If you choose a non-*Evinrude* remote control, it must have a start-in-gear prevention feature. This feature can prevent injuries resulting from unexpected boat movement when the engine starts.

**IMPORTANT:** When selecting the remote control system for your boat, specify *Evinrude* components. *Evinrude* controls deliver the cable stroke your outboard needs for positive shift and throttle control, and they incorporate such safety and convenience features as:

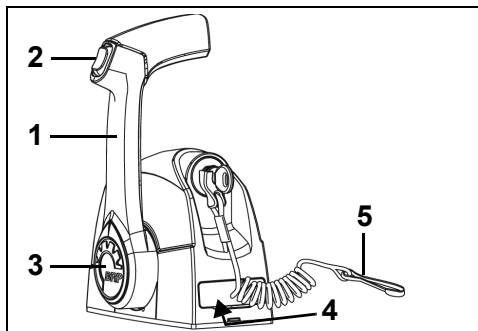
- Start-in-gear prevention
- Plug-in compatibility with *Evinrude* Modular Wiring System (MWS)



Side Mount Control

006448

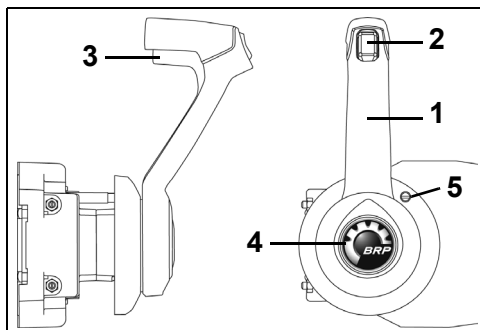
1. Handle – shift and throttle
2. Trim/tilt switch (where equipped)
3. Neutral lock lever
4. Fast idle lever (warm-up)
5. Throttle friction adjusting screw
6. Engine cut-off clip and tether cord



Single Lever Binnacle Mount Control

006446

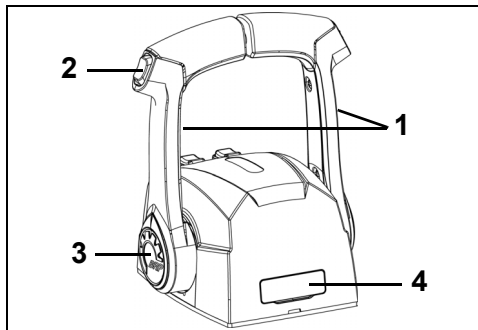
1. Handle – shift and throttle
2. Trim/tilt switch (where equipped)
3. Fast idle button (warm-up)
4. Throttle friction adjusting screw (under cover)
5. Engine cut-off clip and tether cord



Concealed Side Mount Control

006447

1. Handle – shift and throttle
2. Trim/tilt switch (where equipped)
3. Neutral lock lever
4. Fast idle button (warm-up)
5. Throttle friction adjusting screw



Dual Lever Binnacle Mount Control

006445

1. Handle – shift and throttle
2. Trim/tilt switch (where equipped)
3. Fast idle button (warm-up)
4. Throttle friction adjusting screw (under cover)

# Using Your Evinrude E-TEC Outboard

## Shifting

### NOTICE

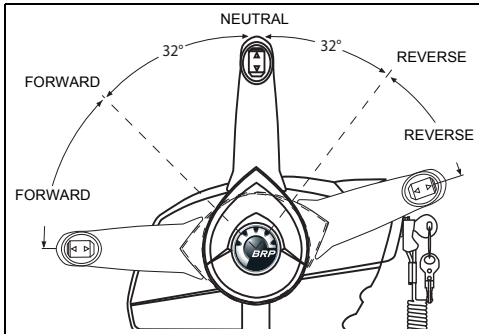
When shifting from FORWARD to REVERSE or from REVERSE to FORWARD, pause at NEUTRAL until the engine is at idle speed and the boat has slowed.

If the following directions are not suitable for your boat's control, see your Dealer before proceeding.

With engine running and control handle in NEUTRAL:

### Side Mount Controls

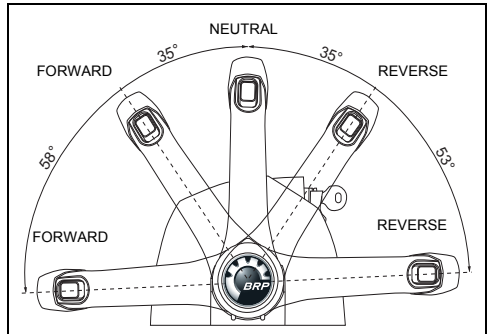
Unlock the control handle by lifting the neutral lock lever on the hand grip. Move the control handle with a firm, quick motion, forward or aft until it engages the forward or reverse gear detent.



004854

### Binnacle Mount Controls

Move the control handle with a firm, quick motion, forward or aft until it engages the forward or reverse gear detent.



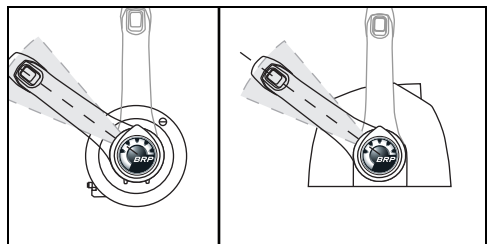
005502

### Speed Control

After gear engagement, move the control handle slowly in the same direction to increase speed.

### 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.



Typical Fuel Economy Throttle Range

DR6472

1. Side mount control
2. Binnacle mount control

DR6506

## Emergency Starting

### ⚠ WARNING

Move the shift lever to **NEUTRAL** before performing emergency starting procedures. Failure to do so may result in unexpected boat movement.

The engine cover is a machinery guard. To prevent injury from moving engine components, keep hands, clothes, and hair clear of powerhead.

Prevent electric shock by keeping clear of the ignition coils and spark plug leads when the outboard is being started or is running. Shock can cause serious personal injury under certain conditions.

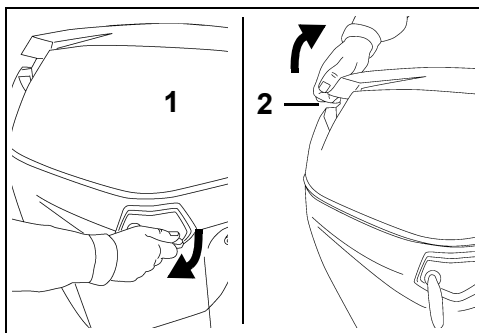
**DO NOT** turn flywheel by hand to start the engine. Use the starter cord only.

If the starter fails, your engine can be started using a 1/4 in (6 mm) cord about 4 ft. (1.2 m) long.

Be **sure** the:

- Key switch is OFF.
- Engine is in normal operating position.
- Shift lever is in **NEUTRAL**.

- 1) Release port and starboard side engine cover latches downward. Pull up on the tilt handle to release the engine cover seal and remove the engine cover.



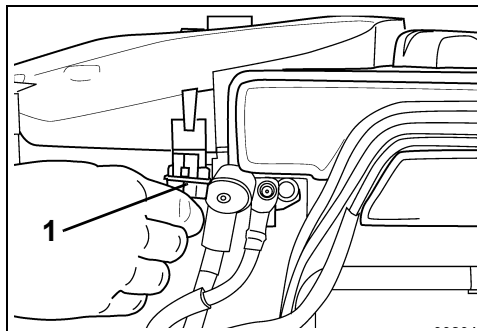
1. Engine cover latch

2. Tilt handle

002015

002016

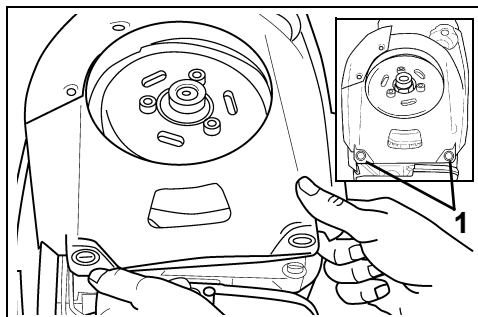
- 2) Remove fuse holder from flywheel cover.



1. Fuse

002019

- 3) Raise flywheel guard from the fittings by pulling up on the front two fastening tabs.



1. Fastening tabs

002021

- 4) Move the flywheel guard out of the way. Turn the flywheel in a clockwise direction until one of the notches is aligned with the starter shaft.

## Using Your Evinrude E-TEC Outboard

- 5) Hook the knot of the emergency start cord into the notch on the flywheel that is opposite the starter shaft.
- Next, wind the cord clockwise in the groove of the flywheel. Place the start cord between the notch of the flywheel and the starter shaft.

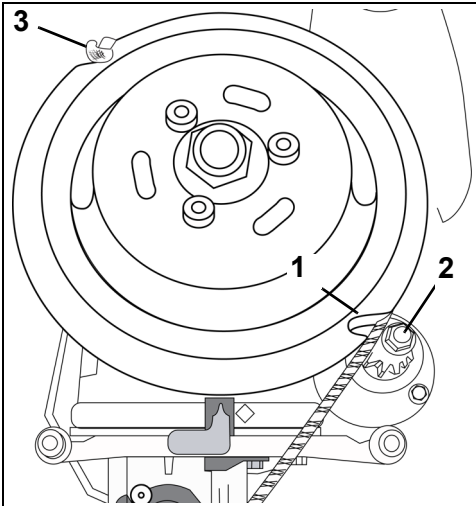
- 7) Turn key switch ON.

### **⚠ CAUTION**

**Keep everyone clear of your immediate area when pulling on emergency starting cord, especially behind you.**

- 8) From a secure position in the boat, pull hard on emergency starting cord to start engine.
- Repeat procedure, if necessary, until engine starts.

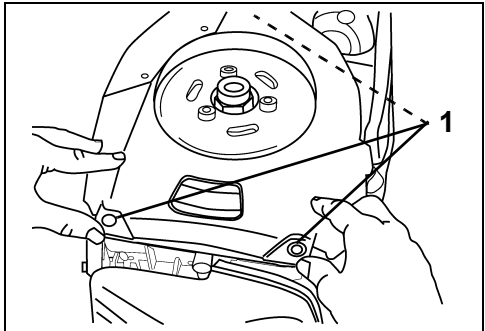
- 9) Refasten flywheel guard in place by pushing the three fastening tabs back onto the fittings.



1. Notch  
2. Starter shaft  
3. Knot

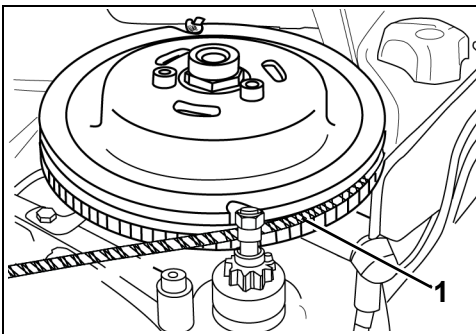
008843

- 6) Continue winding the cord clockwise in the flywheel groove, making one and a half full windings with the cord.



1. Fastening tabs

002023



1. Cord in flywheel groove

008844

### **⚠ DANGER**

**Contact with a rotating flywheel can cause severe personal injury. Use extreme care in re-fastening the flywheel guard on the fastening tabs. Keep hands, hair, and clothing away from coming in direct contact with rotating parts.**

If equipped, snap engine cut-out switch tether cord to secure place on clothing. Proceed immediately to nearest landing for service.



# Tilting and Trim – Manual Tilt Models

## 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.

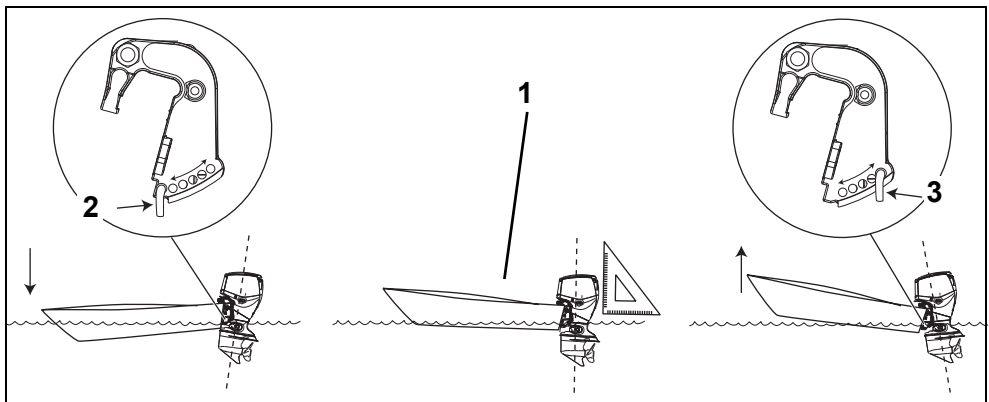
The boat should accelerate quickly, plane easily, and run parallel to the surface of the water at high speeds.

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:

- Place the outboard in full TILT position. Refer to **Tilt UP** on page 38 (40 HP models).
- Turn the tilt pin handle up. Push in against the spring so the retainer will release, then slide tilt pin assembly all the way out.
- Insert tilt pin in desire position. Make sure the tilt pin passes through both stern brackets.
- Push in against spring and turn tilt pin handle down. Make sure the tilt pin assembly is locked on the stern bracket.



1. Parallel to the surface of the water

2. Tilt pin – LOW position

3. Tilt pin – HIGH position

007026

# Using Your Evinrude E-TEC Outboard

## 40DRL Models

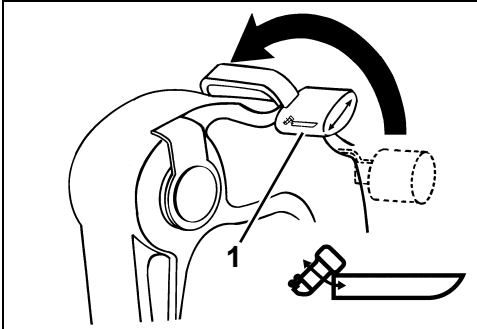
### **⚠ WARNING**

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.

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

### **Tilt UP**

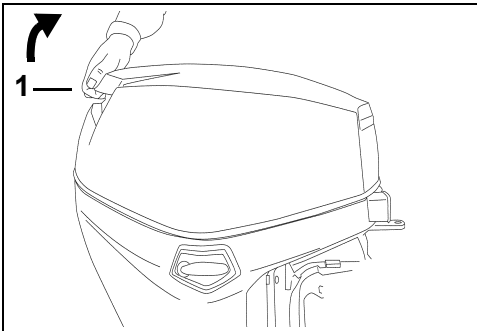
Move the tilt/run lever to TILT position.



1. TILT position

DR3774

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



1. Tilt grip

002035

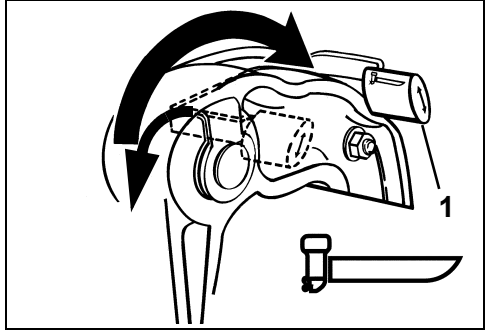
The tilt support bracket will automatically engage.

## **Tilt DOWN**

### **NOTICE**

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

Move tilt/run lever to RUN position.



1. RUN position

DR3772

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.

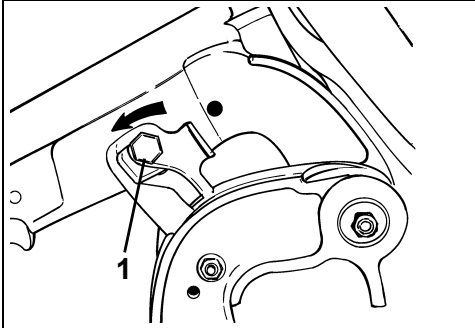
### **Tilt Support**

If you intend to leave the outboard tilted for a period of time, engage the tilt support.

**IMPORTANT: DO NOT** use the tilt support while trailering. Refer to **Impact Damage Protection** on page 43.

## Engage

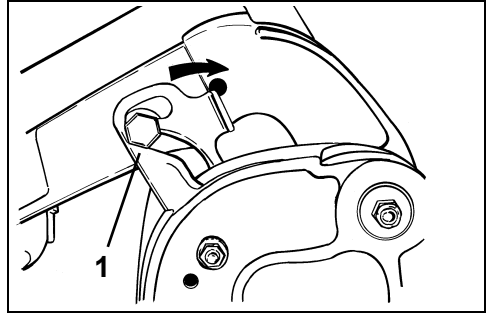
- 1) Move the tilt/run lever to TILT position.
- 2) Tilt the outboard UP.
- 3) Push tilt support bracket to “lock” position. Flip the tilt lock lever down.
- 4) Lower the outboard until the tilt lock lever rests solidly on the stern brackets.



1. Tilt support bracket – lock position DR3937

## Disengage

- 1) Move tilt/run lever to RUN position.
- 2) Tilt the outboard UP.
- 3) Pull tilt support bracket to “unlock” position. Flip the tilt lock lever up.
- 4) Lower the outboard to operating position.



1. Tilt support bracket – unlock position DR3938

## Tilting and Trim – Power Trim and Tilt Models

### **⚠ WARNING**

Any malfunction of the power trim and tilt unit could result in loss of shock absorber protection if an underwater obstruction is hit. Malfunction can also result in loss of reverse thrust capability.

Correct fluid level must be maintained to ensure operation of the impact protection on this unit.

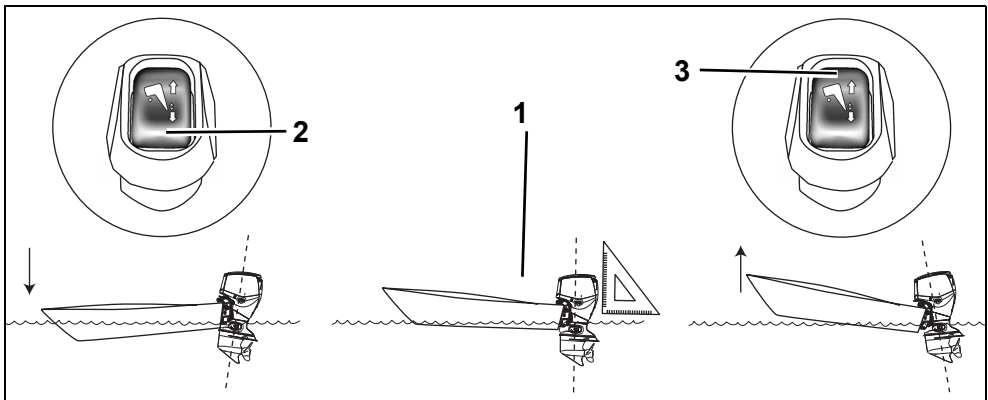
When operating in rough water or crossing a wake, excessive bow-up trim may result in the boat's bow suddenly rising skyward, possibly ejecting or otherwise seriously injuring occupants.

Some boat/outboard/propeller combinations may encounter boat instability and/or high steering torque when operated at high speed at or near the outboard's trim range limits (full bow-up or bow-down). Boat stability and steering torque can also vary due to changing water conditions. If any adverse conditions occur, reduce throttle and/or adjust trim angle to maintain control. If you experience boat instability and/or high steering torque, see your Dealer to correct these conditions.

### **⚠ WARNING**

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.

Some boats plow, or are difficult to plane, when operated in the trim's lowest position. If your boat handles unsuitably when trimmed fully bow-down, adjust transom angle or limit the travel of the power trim.



1. Parallel to the surface of the water
2. Trim switch, DOWN
3. Trim switch, UP

007027

## Trim Angle Adjustment

Use the trim/tilt switch to adjust the outboard position in the tilt range or trim range.

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.

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

If trim position is too LOW the front of boat will be DOWN and push water.

If trim position is too HIGH the front of boat will be UP and bounce.

### Tilt

The tilt range allows the operator to tilt the outboard for clearance when beaching, mooring, launching, or trailering.

### Trim

In most operating conditions, it is recommended to **trim** the outboard to the full down position when accelerating. Once on plane, trim the outboard up for best performance.

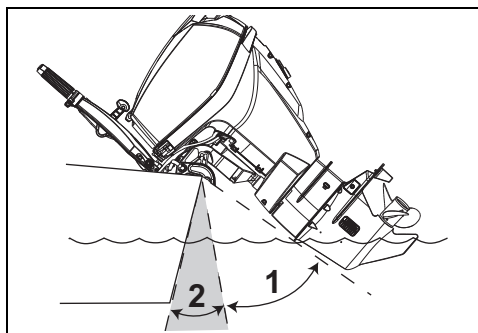
Over-trimming increases engine RPM while decreasing speed. The best trim setting is when the highest speed is achieved with the lowest engine RPM.

### Shallow Water Drive

#### NOTICE

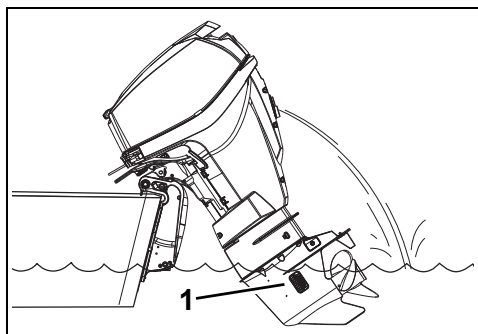
**When operating a tilted outboard, do not run above idle speed. Keep the water intakes submerged at all times to prevent the engine from overheating.**

Adjust the outboard position within the tilt range for shallow water operation.



1. Tilt range
2. Trim range

007028



1. Water intakes

007069

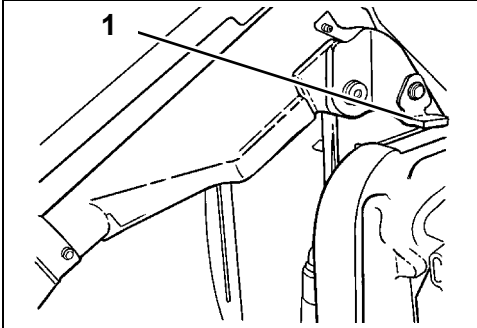
### Tilt Support Lever

If you intend to leave the outboard tilted for a period of time, engage the tilt support lever:

- 1) Tilt the outboard UP using the trailering tilt switch.
- 2) Flip the tilt support lever down.

## Using Your Evinrude E-TEC Outboard

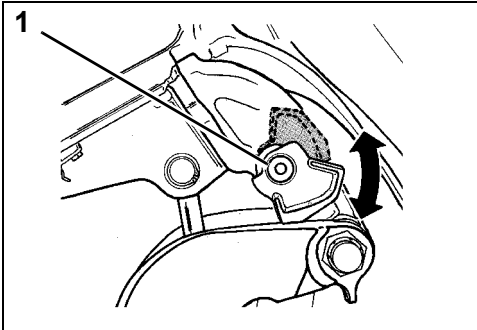
- 3) Lower the outboard until the tilt support lever rests solidly on the stern brackets.



40–60HP Models

DR31329

1. Tilt support lever



75–90 HP Models

DR5071

1. Tilt support lever

When you are finished tilting the outboard, disengage the tilt support lever:

- 1) Tilt the outboard UP.
- 2) Flip the tilt support lever up.
- 3) Lower the outboard to operating position.

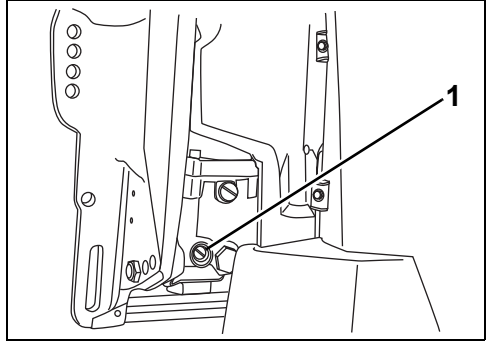
### Manual Release Valve

#### **⚠ WARNING**

Keep everyone clear of a tilted outboard when backing out the manual release screw. The outboard could drop suddenly and forcibly. Be sure to tighten the manual release screw after manually repositioning the outboard. Tightening the screw also reactivates the outboard's impact protection and reverse thrust capability.

If needed, the outboard will tilt up or down manually, using the manual release valve.

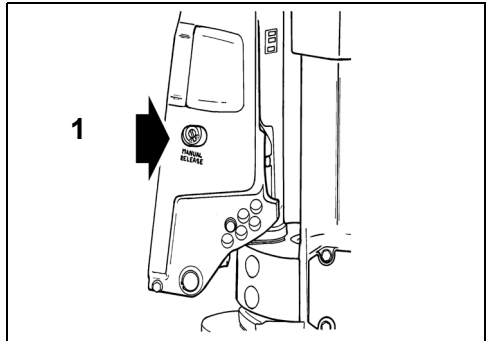
- 1) Turn the manual release screw counter-clockwise, slowly (about 3 1/2 turns), until it **lightly** contacts its retaining ring.
- 2) Reposition the outboard.
- 3) Tighten the manual release valve to hold the outboard in its new position.



40–60HP Models

007030

1. Manual release screw



65–90 HP Models

DR5076

1. Manual release screw

## Impact Damage Protection

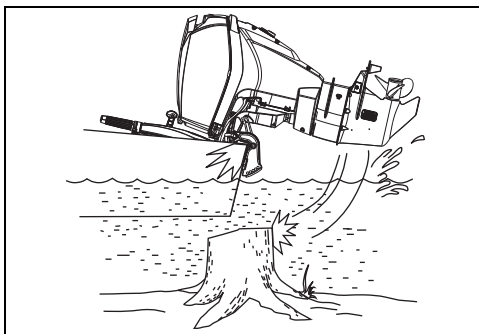
### ⚠ WARNING

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!

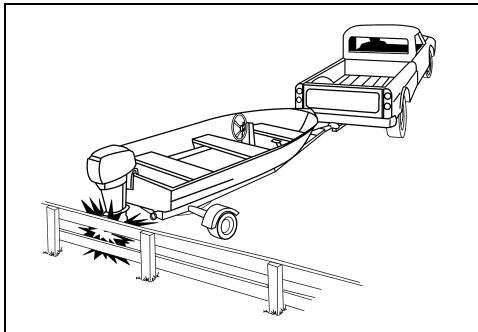
**IMPORTANT:** Impact damage is NOT covered by the outboard warranty.



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

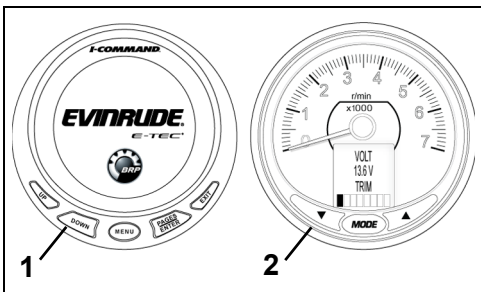
**IMPORTANT:** Your outboard must be equipped with an engine monitoring system such as *I-Command*, *SystemCheck*, or equivalent. Operating your outboard without an engine monitor will void your warranty for failures related to monitored functions.

The engine monitoring system provides engine operating information and alerts you of abnormal conditions that could damage your outboard. The monitoring system consists of a dash-mounted display or gauge, a warning horn, sensors on the engine and oil tank, and related wiring.

The system is compatible with the *Evinrude* Modular Wiring System (MWS) or can be connected to an *I-Command* system, or other NMEA 2000 compliant CANbus instruments.

### Gauges

Gauges are available in several styles, such as a digital LCD displays or a basic *SystemCheck* gauge.



1. Typical I-Command Digital gauge 008536  
2. Typical ICON Pro Digital gauge

### System Self-Test

During engine start-up, pause with the key switch in the ON position.

**SystemCheck** — The *SystemCheck* monitor self-tests by sounding a half-second beep. *SystemCheck* gauges self-test by turning the indicator lights on simultaneously, then off in sequence.

**I-Command** — The *I-Command* system self-tests by displaying the *Evinrude E-TEC* welcome screen, followed by the tachometer display.

**ICON** — The *ICON* system self-tests by sounding a beep. The *ICON* tachometer and speedometer LCD screens display SELF TEST MODE IN OPERATION. When the self test is complete, the gauges will beep a final time and then display SELF TEST COMPLETE!

**IMPORTANT:** If the self-test does not happen as stated, see your Dealer.

### Engine Monitor Warnings

Engine monitor system warnings activate the horn for 10 seconds and the appropriate gauge light for a minimum of 30 seconds, or until alarm is acknowledged. If the failure is momentary (for example, oil moving in the tank), the engine monitor gauge light or display may remain ON for a full 30 seconds before going out. If the unsafe operating condition continues, a light or display remains ON until the key is turned OFF or the failure is corrected.

The warning will reoccur at the next startup if the problem is not corrected.

### S.A.F.E. – Speed Adjusting Fail-safe Electronics

#### ⚠ WARNING

In the S.A.F.E. mode, engine speed is limited. Under certain conditions, the engine's limited speed may reduce maneuverability of your boat. If the S.A.F.E. mode is activated and you are unable to correct the problem, seek assistance and/or return to safe harbor. Serious engine damage, engine shutoff, and/or reduced maneuverability may be imminent.

If the *EMM* senses a problem could cause permanent engine damage, it will limit engine speed to 1200 RPM. This additional protection feature is referred to as S.A.F.E. (Speed Adjusting Failsafe Electronics).

If the engine was running faster than 1200 RPM when the S.A.F.E. mode activated, it will shake noticeably.



Under certain operating conditions the *EMM* will shut OFF the engine.

The following warnings may appear on the engine monitor gauge.

### “LOW OIL”

The LOW OIL warning indicates the oil in the oil tank is at the reserve level (about 1/4 full). The *EMM* will initiate the following failsafe actions:

- activate the LOW OIL indicator

If the LOW OIL warning activates:

- Fill the oil tank with recommended outboard oil soon to avoid emptying the tank. See **Filling the Oil Tank** on page 19.

### “NO OIL”

The NO OIL warning indicates there is an oil delivery problem. The *EMM* will initiate the following failsafe actions:

- activate the NO OIL indicator
- activate *S.A.F.E.* mode

If the No OIL warning activates:

- If the oil tank is empty, add the recommended oil. Prime oil system. See **Priming the Oil System** on page 20.
- Engines with remote oil tank: Check the oil level and fill the remote oil tank with recommended outboard oil as needed.
- If the oil tank is not empty, seek assistance and/or return to safe harbor.

Your outboard is designed to run in *S.A.F.E.* mode at reduced speed for up to 5 hours in the event you run out of oil.

### “WATER TEMP” or “HOT”

The TEMP warning indicates the engine is overheating. Depending on the severity of the overheating, the *EMM* may initiate one or more of the following failsafe actions:

- activate the TEMP warning or HOT indicator
- activate *S.A.F.E.* mode
- activate shut down

If the TEMP warning activates:

- A **continuous** light with *S.A.F.E.* mode — The *EMM* has identified an overheating condition. Check the water pump indicator for a steady stream of water. Shut OFF the engine. Clear the water intake screens of any debris. If the overheat condition still exists, the engine will operate in “get home” mode. Return to harbor immediately.
- A **flashing** light — The *EMM* has identified a damaging overheating condition. The engine will not operate. Allow the engine to cool for 20 minutes and return to harbor immediately. See your Dealer.

### “CHECK ENGINE” or “CHK ENG”

The CHECK ENGINE warning indicates an abnormal engine condition. Depending on the severity of the condition, the *EMM* may initiate any of the following failsafe actions:

- activate the CHECK ENGINE indicator
- activate *S.A.F.E.* mode
- activate shut down

If the CHECK ENGINE warning activates:

- A **flashing** light — The *EMM* has identified an abnormal operating condition related to the fuel system. The engine will shut OFF and cannot be restarted.
- A **continuous** light with *S.A.F.E.* mode — The *EMM* has identified a problem with the outboard. Seek assistance and/or return to harbor. See your Dealer.
- A **continuous** light without *S.A.F.E.* mode — The *EMM* has identified a problem that should be addressed by your Dealer as soon as practical to avoid operational difficulties.

### **WARNING**

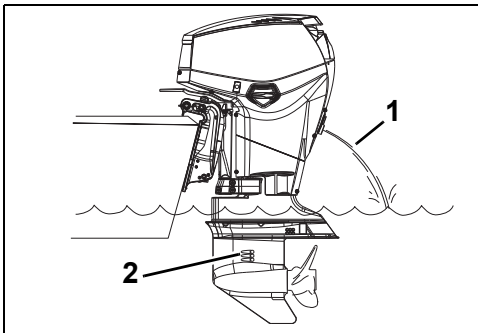
**If the outboard shuts OFF and the “CHECK ENGINE” or “CHK ENG” light is flashing, the outboard cannot be restarted. A hazardous fuel condition may exist. Seek assistance to return to port. See your Dealer.**

## Engine Overheating

### NOTICE

**Do not run your outboard—even for a brief start-up—without supplying water to it. Refer to Flushing on page 57.**

While boating, the outboard's water intakes must stay completely submerged and unobstructed. Observe proper trim 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, mud, debris-laden water, and at extreme trim angles.



1. Water intake screens  
2. Water pump indicator

008469

If the engine overheats, the engine monitor will sound the warning horn and turn on the "WATER TEMP" or "HOT" light. Also, the S.A.F.E. mode will immediately limit the engine's speed to 1200 RPM. If the engine was running faster than 1200 RPM when the S.A.F.E. mode activated, it will shake noticeably. The system must be **RESET** before the engine will operate at speeds over 1200 RPM. Under certain conditions the *EMM* will shut off the engine.

**IF** the S.A.F.E. mode activates and the stream from the water pump indicator becomes intermittent or stops, 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 operate only in "get home" mode. Return to harbor immediately. See your Dealer.

**IF** cleaning the screens and indicator *does* restore the water pump indicator's steady discharge, allow the engine to run for two minutes in NEUTRAL to cool and the light to go off.

**IMPORTANT:** If cooling is not restored, the *EMM* will identify a progressive overheating condition and shut off the engine. The "WATER TEMP" or "HOT" light will flash. The engine will not restart until the engine is allowed to cool.

After any overheat causing engine shutdown, see your Dealer for:

- Inspection of the water pump for excessive wear or damage.
- Inspection of the thermostats.

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

### NOTICE

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

The engine will operate in S.A.F.E. as long as the fault condition exists. To recover normal operation, two conditions must be met:

- Sensor or switch readings must return to normal limits
- The throttle setting must return to IDLE

**IMPORTANT:** Under some conditions, normal operation may not be restored, or the lights of the *SystemCheck* gauge may not turn OFF.

- Some *ICON* fault conditions require the *ICON* system be reset.
- The *SystemCheck* gauge requires power OFF to reset
- If either of these conditions exist, turn the key switch OFF, then restart the engine.

# Special Operating Conditions

## Cold and Freezing Weather

### NOTICE

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

### NOTICE

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

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 50.

## Multiple Outboard Operation

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

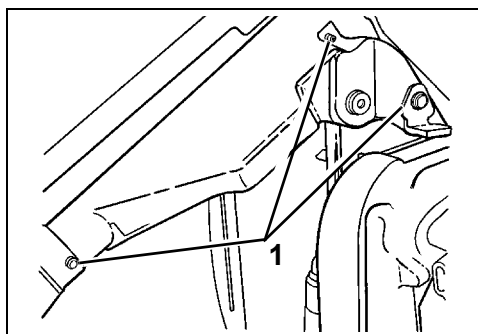
## Salt Water

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 57.

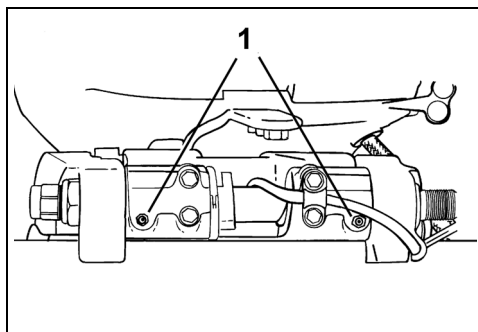
## Salt Water Lubrication Points

### 40 – 60 HP Models



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

DR31329

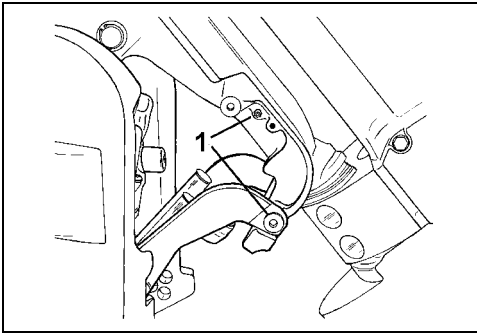


1. Tilt tube lubrication points (annually)

DR38798

# Using Your Evinrude E-TEC Outboard

75–90 HP Models



Power Trim and Tilt Models

DR5073A

1. Tilt lever and swivel bracket lubrication points (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:

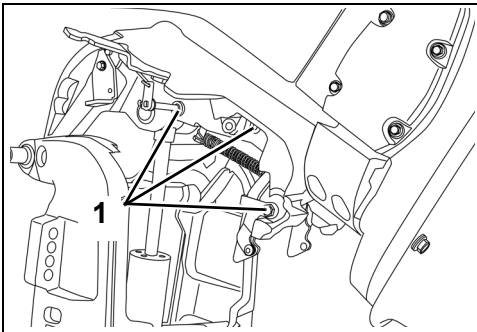
- Shift your engine to NEUTRAL;
- Tilt its gearcase out of the water;
- Off-load all persons into another boat; and
- Keep speed slower than planing speed.

## 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.

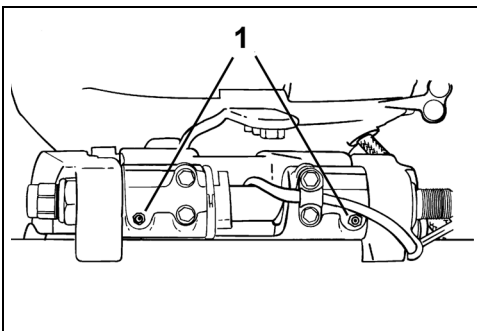
If REVERSE operation does not clear away weeds, SHUT OFF the engine. Remove weeds from propeller area and water intakes before operating at higher speed.



Manual Tilt Models

008521

1. Swivel bracket lubrication points (annually)



1. Tilt tube lubrication points (annually) DR38798

# 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

### Manual Tilt Models

## NOTICE

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

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

Trailer 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.

### Power Trim and Tilt Models

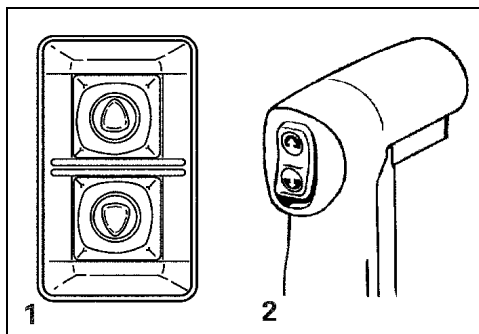
## ⚠ WARNING

Keep everyone clear of stern area when raising or lowering the outboard. Personal injury or death can result from contact with moving parts of the outboard.

### Trailering Bracket

The outboard is designed to be trailered in a vertical position or tilted, using the trailering bracket. Use the position best suited for your boat.

**To engage bracket** — Tilt the outboard fully using the tilt switch inside the boat or the trailering tilt switch (on port or starboard side of engine, depending on configuration).

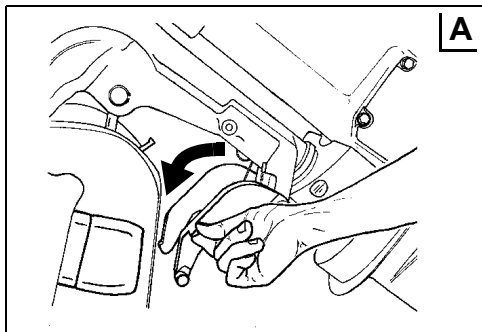


1. Trailering tilt switch
2. Tilt switch inside boat

DR3964  
DRC4014

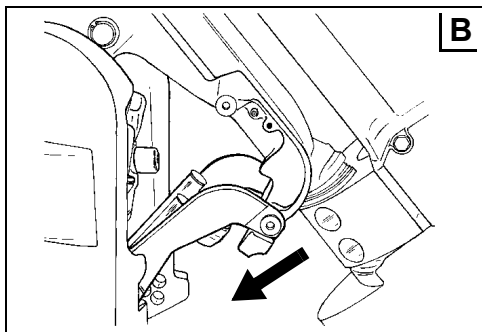
## Using Your Evinrude E-TEC Outboard

Pull down the trailing bracket. A detent will hold the bracket in position.



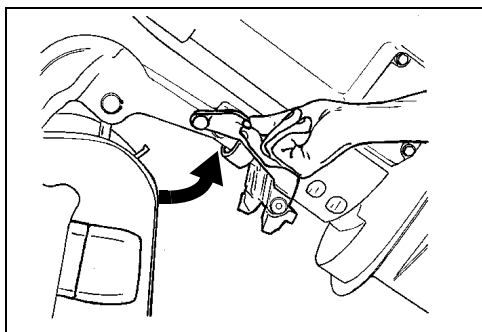
DR5081

Lower the outboard until the trailing bracket locks into place in the stern brackets (see "B" below).



DR5073

**To disengage bracket** — Tilt the outboard fully. Return the trailing bracket to its stowed position. Lower the outboard to its vertical position.



DR5074

## Transporting / Storage

### **WARNING**

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

Always wipe off any fuel spillage.

Gasoline is extremely flammable and highly explosive under certain conditions. Do not allow disconnected fuel hoses to leak fuel.

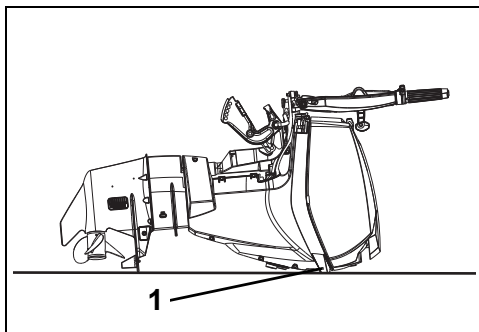
Use caution when working on the fuel system. Wear safety glasses and work in a well ventilated area. Extinguish all smoking materials and make certain no open flames or ignition sources exist.

Always wipe off any fuel spillage.

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

The oiling system must be primed before re-using the outboard. Refer to **Priming the Oil System** on page 20.

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

If the outboard is removed from the boat for transportation or storage, you **MUST** seal the fuel lines on the boat and on the outboard to prevent leaks and prevent contaminants from entering the fuel system.

# 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.**

**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 stop switch (tiller control).	
Operator's Guide	Confirm this Operator's Guide is onboard and readily accessible.	
Engine Start switch (tiller control)	Test operation.	
Engine Stop 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).	

***EVINRUDE***®  
***E-TEC***®





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# Maintenance

# Engine Emissions Installation Information

A repair shop or person of the owner's choosing may maintain, replace, or repair emission control devices and systems. These instructions do not require components or service by BRP or authorized *Evinrude* dealers. Although an authorized Evinrude dealer has the in-depth technical knowledge and tools to service *Evinrude* outboard engines, the emission-related warranty is not conditioned on the use of an authorized *Evinrude* dealer or any other establishment with which BRP has a commercial relationship.

For emission-related warranty claims, BRP is limiting the diagnosis and repair of emission-related parts to authorized *Evinrude* dealers. For more information, please refer to the US EPA EMISSION-RELATED WARRANTY contained herein. Proper maintenance is the owner's responsibility. A warranty claim may be denied if, among other things, the owner or operator caused the problem through improper maintenance or use.

You must follow the instructions for fuel requirements in the **FUEL REQUIREMENTS** section of this manual. Even if gasoline containing greater than ten volume percent ethanol is readily available, the US EPA has issued a prohibition against the use of gasoline containing greater than 10 vol% ethanol that applies to this engine. The use of gasoline containing greater than 10 vol% ethanol with this engine may harm the emission control system.

## 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:

U.S. Environmental Protection Agency  
Office of Transportation and Air Quality  
1200 Pennsylvania Ave. NW  
Mail Code 6403J  
Washington D.C. 20460

#### **EPA Internet Web Site:**

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

## Maintenance Schedule

Routine inspection and maintenance is necessary to prolong outboard life. The following chart provides guidelines for inspection and maintenance to be performed by an authorized Dealer.

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

Description	Engine Care Product	Every 300 Hours or 3 Years <sup>(1)</sup>
Anti-corrosion anodes <sup>(2)</sup>		✓
Electrical and ignition wires, inspect for wear or chafing		✓
Engine to transom mounting hardware, re-torque (40 ft. lbs.)		✓
Fasteners, inspect any loosened components		✓
Fuel and oil system components, inspect and repair leaks <sup>(3)</sup>		✓
Fuel filter, replace <sup>(4)</sup>		✓
Gearcase lubricant, replace	A	✓
Grease fittings, lubricate <sup>(2)</sup>	C	✓
Muffler foam, inspect, replace if necessary (40–90 HP models only)		✓
Oil Filter, replace (V4 & V6 models only)		✓
Power trim/tilt system and fluid level, inspect	B	✓
Propeller shaft splines, inspect and lubricate <sup>(2)</sup>	C	✓
Spark plugs, inspect and replace if necessary <sup>(3)</sup>		✓
Starter pinion shaft, inspect and lubricate (electric start models only)	D	✓
Steering system, inspect and lubricate	C	✓
Thermostat and pressure valve, inspect <sup>(3)</sup>		✓
Throttle cable and shift cable inspect		✓
Water pump, inspect or replace if necessary		✓

(1) Average recreational 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 57.

(3) Emission-related component. Refer to **Owner Responsibility** on page 54, **Product Warranty Information** on page 77 and, if applicable, **California Emission Control Warranty Statement** on page 82.

(4) Replace boat-mounted fuel filter annually. Refer to **Boat-Mounted Fuel Filters** on page 70.

- A. *HPF Pro* Gearcase Lubricant in high performance or commercial applications
- B. *Evinrude* Biodegradable TNT Fluid
- C. *Triple-Guard* Grease
- D. Starter Bendix Lube ONLY, P/N 337016

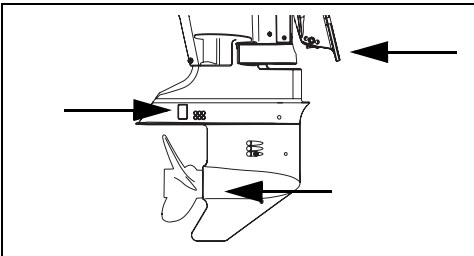
# Service

## Anti-Corrosion Anodes

### NOTICE

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

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.



Anti-corrosion Anodes

008486

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.

## Flushing

### NOTICE

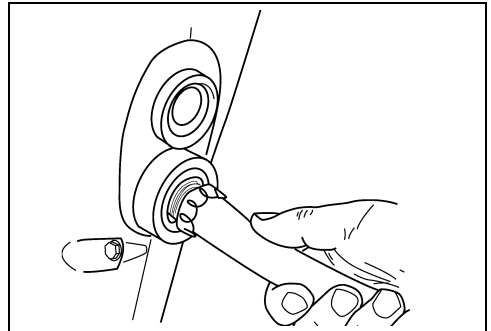
**If you cannot store the outboard in the recommended vertical position, be sure the cooling system is drained completely. Never place the gearcase higher than the powerhead. Any water remaining in the exhaust passages can run into the cylinders and cause serious damage.**

Flush the outboard with fresh water following use in brackish, salt or polluted water to mini-

mize 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.

### 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.



002024

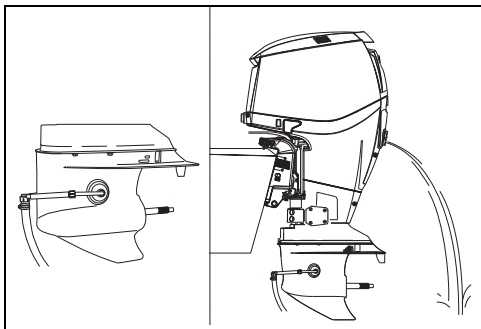
- 4) Leave the outboard in vertical position long enough to completely drain the powerhead.

### Using Gearcase Flushing Device

- 1) Place the outboard in an area with good drainage.
- 2) Remove propeller and place the shift lever in NEUTRAL position.
- 3) Connect garden hose to flushing device and install flushing device on gearcase.
- 4) Turn on the water. Keep the water pressure between 20 to 40 psi (140 to 300 kPa).

## Maintenance

- 5) 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

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

## Fuse

A blown fuse will not allow the engine to start. Replace it with a fuse of the same rating. A spare fuse is provided.

Repeated fuse failures indicate a potentially serious problem. Do not replace it with higher rated fuse; see your Dealer for service.

In an emergency, the engine may be rope-started and run, this will not harm the engine.

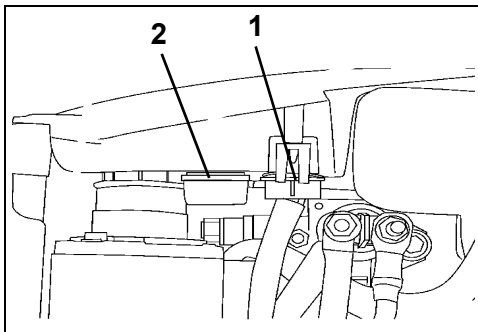
## Fuse Replacement

### NOTICE

**Use only fuses of the same rating. Your Evinrude E-TEC outboard uses 10-amp fuses. Failure to install the fuse cover securely may cause electrical problems.**

Remove engine cover. Install spare fuse in place of failed fuse.

Detach fuse from plug by pulling down on fuse connector clip. Install spare fuse in place of failed fuse.



1. Fuse
2. Spare fuse

002001

## Hull Finish

The condition of your boat's bottom affects performance. Marine growth or bottom painting may reduce speed and fuel efficiency.

For maximum performance, keep the boat's running surface clean by rinsing it with fresh water and wiping it dry. Apply *Evinrude* anti-corrosion spray to any surface subject to corrosion, but avoid the anti-corrosion anode(s).

## Outboard External Finish

### NOTICE

**When trailering your outboard, DO NOT cover the engine with canvas—it will dull the finish of the outboard's engine covers.**

Your outboard's upper and lower engine covers use molded-in color technology, providing a deep, durable gloss with maximum ultraviolet (sunlight) protection.

The high gloss finish will show polish marks when viewed closely in certain light conditions. This glossing is NORMAL.

Periodically, wash the entire boat and outboard with soapy water and apply a coat of automotive wax. Leave the engine cover in place when washing the outboard.

## Scratch Repair

### NOTICE

Your Dealer has the professional materials to properly repair scratches. Do not attempt to paint over marks or scratches in the composite material. See your Dealer to repair any deep scratches or gouges.

Surface scratches on the upper and lower engine covers can be polished out with buffing compound.

Treat affected areas using these steps:

- 1) Sand the affected area with 800-grit sandpaper.
- 2) Wet sand the area with 1200-grit sandpaper.
- 3) Using a composite material buffing compound, polish the area, closely following the product directions.

## 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.

### NOTICE

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

Spark plugs should be serviced by an *Evinrude E-TEC* Dealer. Incorrect spark plug maintenance can lead to engine damage.

## Marine Engine Duty Cycles

### 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.

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%

## Submerged Outboard

If your outboard has been under water, **have it serviced immediately upon recovery**. If immediate service is unavailable, resubmerge 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. Your Dealer 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.

**⚠ 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.

**NOTICE**

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

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.

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 61.

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

Use *Evinrude 2+4 Fuel Conditioner* to prevent gum and varnish deposits from forming in fuel system components. Refer to **Operation** on page 24.

**⚠ 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

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 20.

**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.

**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).

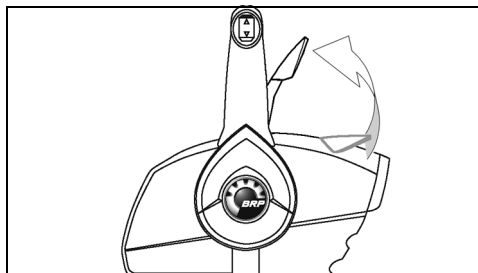
### Preparation

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 57.
- 3) Outboard **must** be in NEUTRAL, and remote control and shift linkage must be in NEUTRAL position at all times during winterization procedure.

## Remote Control Outboards

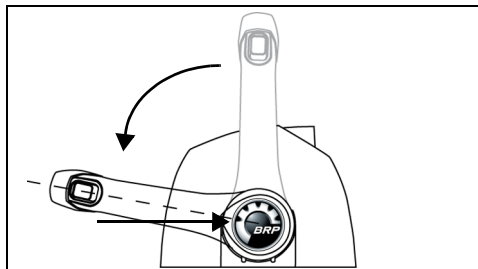
- 1) **For side mount controls**, fully lift the fast idle lever. Start the outboard. Outboard runs at slow idle speed.



Side Mount Control – Typical

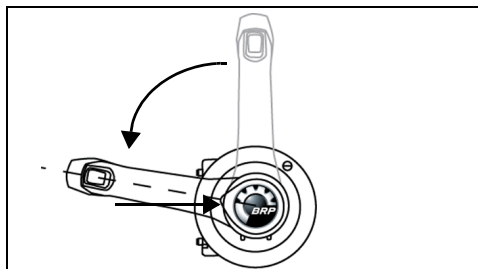
006455A

**For binnacle or concealed side mount controls**, press fast idle button and fully advance throttle handle. Start the outboard. Outboard runs at slow idle speed.



Binnacle Control – Typical

006456



Concealed Side Mount Control – Typical

006457

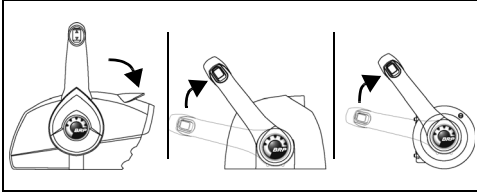
- 2) After outboard runs for at least 15 seconds:

**For side mount controls**, lower fast idle lever.

**For binnacle or concealed side mount controls**, return throttle handle to IDLE position.

## Maintenance

Outboard continues to run at slow idle speed.



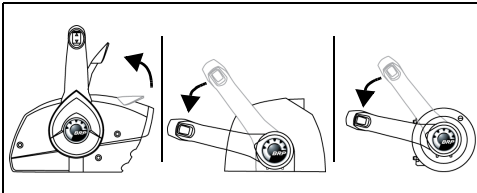
006458

- 3) After outboard runs for another 15 seconds:

**For side mount controls**, fully raise the fast idle lever again.

**For binnacle or concealed side mount controls**, fully advance throttle handle again.

Outboard will accelerate to fast idle speed and fog itself.



006459

- 4) Allow outboard to run until it shuts itself OFF automatically (one to two minutes).

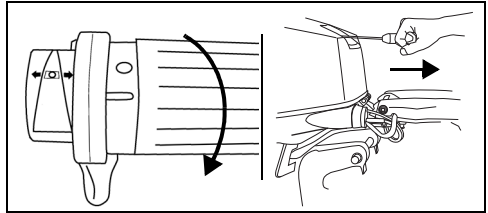
Winterization is complete when outboard shuts itself off.

- **If the outboard DOES NOT shut itself off**, you may not have used the fast idle lever or button and the outboard was shifted into gear.
- **If the engine exceeds 3000 RPM**, the outboard may have been shifted into gear.

In either event, immediately turn the key switch OFF and re-start the procedure.

## Tiller Control Outboards

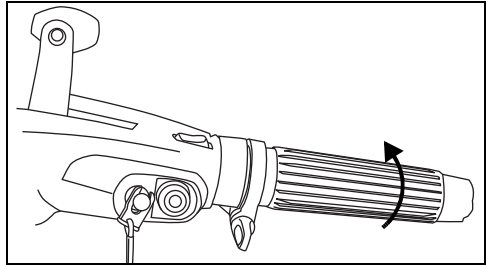
- 1) Fully advance throttle grip. Start the outboard. Outboard runs at slow idle speed.



Tiller Control – Typical

007036  
007037

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



007038

- 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).

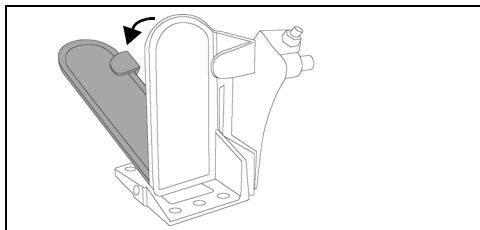
Winterization is complete when outboard shuts itself off.

- **If the outboard DOES NOT shut itself off**, you may not have used the fast idle lever or button and the outboard was shifted into gear.
- **If the engine exceeds 3000 RPM**, the outboard may have been shifted into gear.

In either event, immediately turn the key switch OFF and re-start the procedure.

## Remote Control Outboards with Foot Throttle

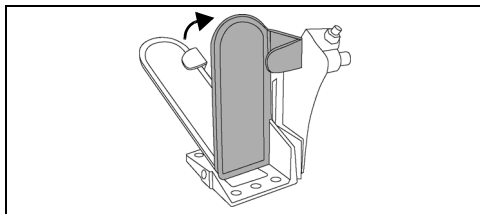
- 1) Fully advance the foot throttle. Start the outboard. Outboard runs at slow idle speed.



Foot Throttle – Typical

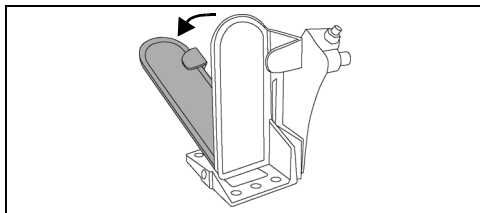
006454

- 2) After outboard runs for at least 15 seconds, remove foot from foot throttle and allow throttle to return to IDLE position. Outboard continues to run at slow idle speed.



006466

- 3) After outboard runs for another 15 seconds, fully advance the foot throttle again. Outboard will accelerate to fast idle speed and fog itself.



006454

- 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 used the fast idle lever or

button and the outboard was shifted into gear.

- **If the engine exceeds 3000 RPM,** the outboard may have been shifted into gear.

In either event, immediately turn the key switch OFF and re-start the procedure.

## After Winterization – All Outboards

### 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.**

- 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.
- 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.

## Maintenance

### 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 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 57.

**Battery** — Charge fully. Refer to **Battery - Electric Start Models** on page 70.

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 46.

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.**

#### **WARNING**

**Do not use a booster battery and jumper cables to start the outboard. Gasoline fumes can cause explosion and fire, resulting in property damage, personal injury or death.**

Review your outboard's warning system self-test routine. During your preseason start-up, make sure the warning system self-tests properly. If it does not, see your Dealer.

#### **NOTICE**

**Do not run the outboard, even for a brief start-up without supplying water to it.**

Following **Tiller Models – Engine Starting / Stopping** on page 24 or **Remote Control Models – Engine Starting / Stopping** on page 30, 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 65 or see your Dealer.

# Troubleshooting

SYMPTOM	POSSIBLE CAUSE
Starter motor will not operate	<ul style="list-style-type: none"> <li>• Shift handle not in NEUTRAL.</li> <li>• Fuse blown.</li> <li>• Battery is dead.</li> </ul>
Engine will not start	<ul style="list-style-type: none"> <li>• Not following starting instructions. Refer to <b>Operation</b> on page 24.</li> <li>• Fuel system not primed after running out of fuel. Refer to <b>Operation</b> on page 24.</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 57.</li> <li>• Spark plugs improperly gapped, carboned, burned, or wet.</li> <li>• Flashing “Water Temp” or hot light, refer to <b>Engine Monitoring</b> on page 44 and <b>Engine Overheating</b> on page 46.</li> <li>• Flashing “Check Engine” or “Chk Eng” light, refer to <b>Engine Monitoring</b> on page 44.</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 57.</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 44.</li> <li>• Water intakes obstructed and cooling system not operating correctly. Refer to <b>Engine Overheating</b> on page 46.</li> <li>• Spark plugs damaged or incorrect. Refer to <b>Service</b> on page 57.</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 24.</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>Engine Overheating</b> on page 46.</li> </ul>
Engine will not winterize.	<ul style="list-style-type: none"> <li>• The throttle position sensor MUST attain a throttle position above 50% to enter the winterization mode. Advance the throttle lever farther towards WOT.</li> </ul>

***EVINRUDE***®  
***E-TEC***®



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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 69.

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 75 for engine weight.

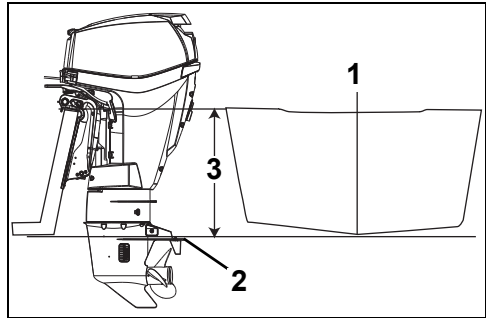
### Transom Height

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 75 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

007039

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.

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 20.

### Mounting R and RL Models

### ⚠ 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.

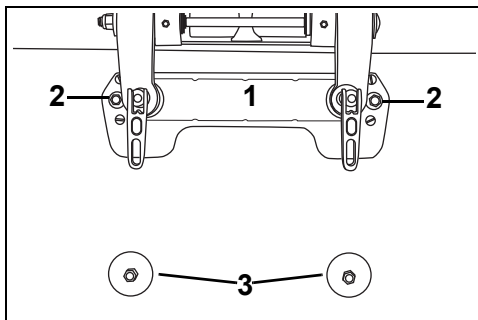
When replacing bolts, screws, or other fasteners, use *Evinrude* parts or parts of equivalent strength and material.

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.

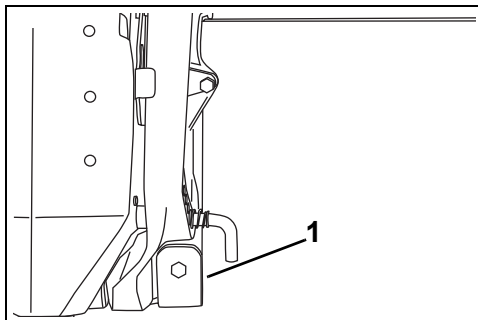
Use each stern bracket's mounting holes as a guide to drill four 11/32 in. (8.7 mm) holes through the transom.

Use the supplied Transom Mounting Kit to securely mount the outboard. The kit includes a transom mounting plate and hardware for fastening outboard to transom.

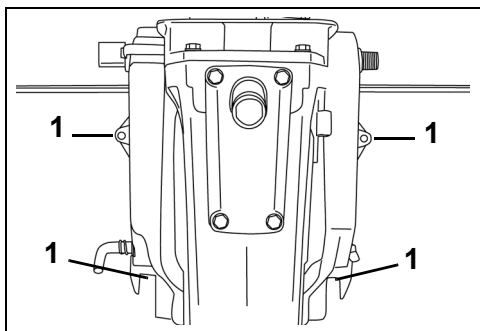


1. Transom mounting plate 0018961P
2. Small washers
3. Large washers

The kit also includes clamp pads which must be used to secure mounting bolts in slots at the bottom of the outboard stern brackets for fastening outboard to transom.



1. Clamp pad COB2505



1. Drilled transom holes 002215

## Product Information

### Boat-Mounted Fuel Filters

Boat-mounted fuel filters and water-separating fuel filter assemblies must meet the following requirements:

- **Fuel flow** – 0.4 in. Hg maximum pressure drop at 20 gph (76 l/hr) flow.
- **Filter area** – 150 in.<sup>2</sup> (1290 cm<sup>2</sup>) of filter area.

The filter must be mounted to a rigid surface above the full level of the fuel tank and accessible for servicing.

Fuel Filter Assembly, P/N 174176, meets all requirements for a water-separating fuel filter.

If equipped, replace the boat-mounted fuel filter annually. See your dealer for replacement Fuel Filter (25 micron), P/N 502905.

### Battery - Electric Start Models

#### **⚠ WARNING**

**Keep the battery connections clean, tight, and insulated to prevent their shorting or arcing and causing an explosion. If the battery mounting system does not cover the connections, install covers. Check often to see that connections stay clean and tight.**

#### **Requirements**

- 12-volt, heavy-duty, designated for "marine" use;
- Vented/refillable or maintenance-free; and
- Rated according to the minimum requirements in **Specifications** on page 75.

Deep-cycle batteries are suitable **IF** they meet or exceed the minimum CCA requirements.

Ask your Dealer about your outboard's requirements before installing longer battery cables or a battery switch.

### Installation

#### **⚠ WARNING**

**Read and understand the safety information supplied with your battery BEFORE you begin installation.**

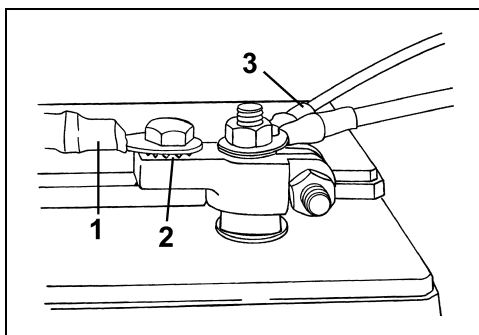
#### **NOTICE**

**Make sure all components are clean and free of corrosion. Connect the RED (+) cable to the positive (+) battery post first. Connect the BLACK (-) cable to the negative (-) battery post last.**

#### **NOTICE**

**DO NOT use wing nuts on battery connections even if they came with the battery. Wing nuts can loosen and cause errant warning signals or electrical system damage.**

If you have marine battery posts, install each main cable on the clamp adapter with a starwasher below it. Install all wires from accessories on the threaded portion of the post.



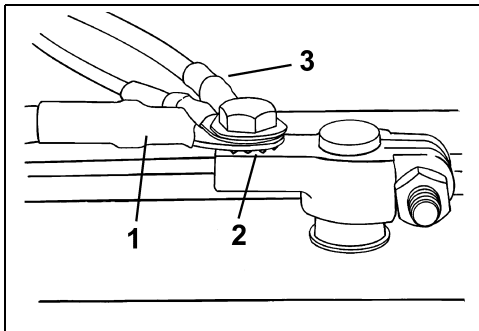
1. Main cable
2. Starwasher
3. Accessory wires

DR6495

If you have automotive battery posts, place a starwasher on the clamp adapter first, then

the main cable, and then the wires from the accessories.

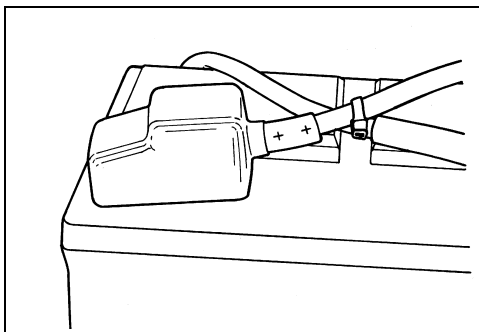
## Service



1. Main cable
2. Starwasher
3. Accessory wires

DR6496

Tighten all connections securely and coat the installation with *Triple-Guard* grease.



DR5104

## ⚠ WARNING

**Battery electrolyte is acidic — handle with care. If electrolyte contacts any part of the body, immediately flush with water and seek medical attention.**

**Do not use a booster battery and jumper cables to start the outboard. Gasoline fumes can cause explosion and fire, resulting in property damage, personal injury or death.**

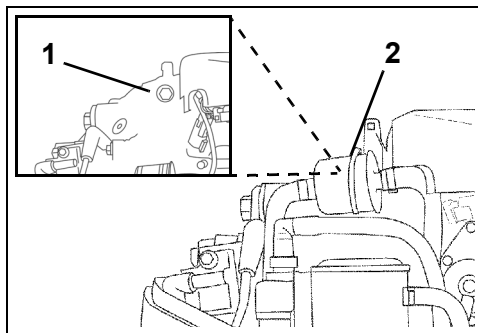
## NOTICE

**Service electrical components only while the outboard is NOT running. Be careful when identifying positive and negative battery cables and posts.**

Before servicing the battery or the outboard, remove both battery cables from the battery, battery negative (–) cable first. Keep metal objects from contacting either battery post.

## Water Pressure

An optional water pressure gauge is recommended to monitor cooling system pressures. Noticing changes in water pressure can help prevent engine overheating. The water pressure gauge must be connected at the correct point to ensure the most accurate pressure readings. Follow the installation instructions included with the water pressure gauge.



1. Water pressure port (behind fuel filter) 002166
2. Fuel filter 002009

## Product Information

### 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 75.

#### Installation

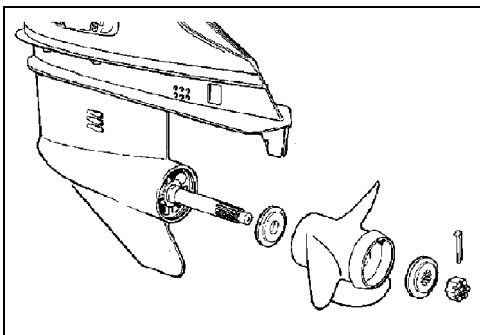
#### **NOTICE**

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 re-grease it before reinstalling a propeller.

Slide thrust washer onto shaft with shoulder facing aft.

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.



CO2917

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

**20 Inch 40–90 HP Models** — Install propeller nut and tighten to a torque of 120-144 in. lbs. (13.6-16.3 N·m).

**25 Inch 90 HP Models** — Install propeller nut and tighten to a torque of 70 to 80 ft. lbs. (95 to 109 N·m). Install keeper on propeller nut, align keeper slots and cotter pin hole.

**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

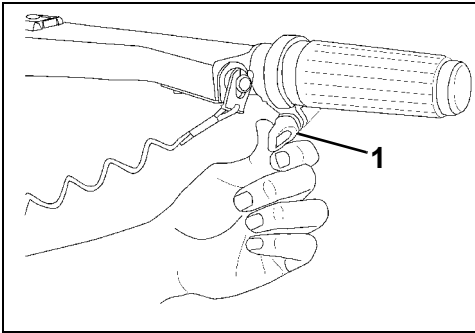
## Friction

### Throttle Friction

#### **⚠ WARNING**

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

Adjust until a slight drag is felt when accelerating or decelerating only. **DO NOT** over tighten.



1. Throttle friction screw

002412

### Steering Friction

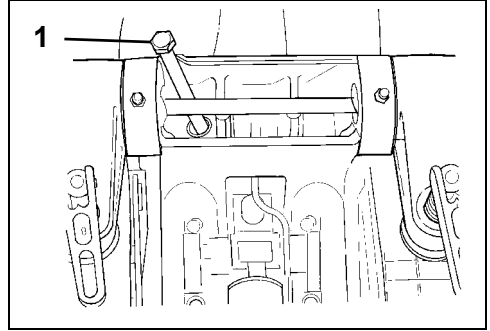
#### **⚠ WARNING**

**DO NOT** over tighten for “hands-off” steering. Reduced steering control could result.

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.

If adjustment is necessary, turn the adjustment screw:

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



1. Steering friction lever

DR31473

### 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.

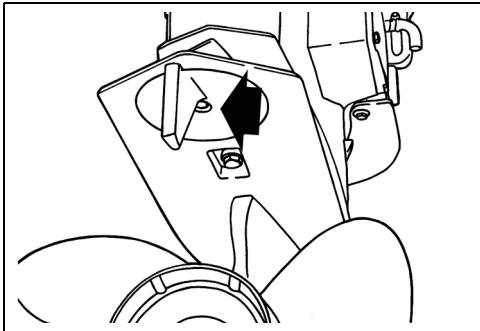
The trim tab is adjustable to compensate for this steering torque.

**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

## Product Information

the boat pulled to the left, move the rear of the trim tab slightly to the left.



Trim Tab Screw

DR5158

Tighten the trim tab screw to a torque of 35-40 ft. lbs. (47-54 N·m).

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

### Idle RPM in Gear

The idle RPM in gear setting can be adjusted, if desired, to provide more idle control, steering, and quietness in certain applications.

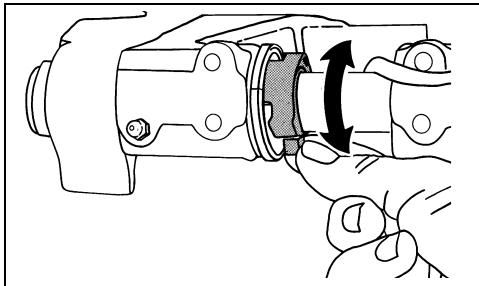
**IMPORTANT:** Only your Dealer can adjust the idle RPM in gear setting.

### Tilt Limiter Cam – 75/90 HP Models With Power Trim and Tilt

#### **WARNING**

Adjusting the tilt limiter cam will **NOT** prevent the outboard from tilting fully and contacting the motor well if the gearcase hits an object at high speed. Such contact could damage the outboard and boat and injure boat occupants.

If your outboard contacts the boat's motor well while tilting, adjust the tilt limiter cam to limit maximum tilt-up.



DR5157

Place the outboard in its normal operating position. Rotate the tilt limiter cam — pull its tab forward and up to **REDUCE** the amount of tilt UP.

Check your adjustment — tilt the outboard fully and adjust further, if necessary. Return the outboard to vertical position for each adjustment, and repeat your check after each adjustment.

# Specifications

40, 50, 60, Models	
Displacement	52.7 cu. in. (864 cc)
Engine Type	In-line, 2 Cylinder, Two-Cycle, <i>E-TEC</i>
Full Throttle Operating Range	<b>40 HP</b> – 5000 to 6000 RPM <b>40 HO</b> – 5500 to 6000 RPM <b>50 HP</b> – 5500 to 6000 RPM <b>60 HP</b> – 5500 to 6000 RPM
Power <sup>(1)</sup>	<b>40 HP</b> – 40 HP (29.4 kw) @ 5500 RPM <b>50 HP</b> – 50 HP (37.3 kw) @ 5500 RPM <b>60 HP</b> – 60 HP (44.7 kw) @ 5500 RPM
Idle RPM in Neutral Gear <sup>(2)</sup>	750 ± 50
Ignition Timing <sup>(2)</sup>	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>	87 Pump Posted AKI (90 RON) – Refer to <b>Fuel Requirements</b> on page 21
Oil – Lubricant – Capacity	TC-W3 NMMA-certified oil or <i>Evinrude XD100</i> oil – Refer to <b>Oil Requirements</b> on page 18 2.0 qt. (1.9 l)
Warning Signals	Controlled by the outboard's <i>EMM</i>
Battery, Minimum <sup>(3)</sup>	640 CCA (800 MCA) 12 volt or 800 CCA (1000 MCA) 12 volt below 32°F (0°C)
Spark Plug <sup>(2)</sup>	Refer to Parts Catalog or engine ECI Label
Fuses	P/N 967545 – Refer to <b>Fuse</b> on page 58
Fuel Filter (12 to 15 micron)	P/N 5007335 – In-line Replaceable
Battery Charging	25-Amp, Fully Regulated
Gearcase – Lubricant <sup>(4)</sup> – Capacity	<i>Evinrude HPF-XR</i> 22 fl. oz. (650 ml)
Power Trim/Tilt – Fluid – Capacity	<i>Evinrude</i> Biodegradable Trim/Tilt Fluid 11.7 fl. oz. (345 ml)
Propeller	Refer to <b>Propeller Selection</b> on page 72
Weight	<b>L Models</b> – 240 lbs. (109 kg)
Sound at Driver's Ear (LpA) ICOMIA 39.94	76.8 dB(A)
Vibration at Tiller (arms)	Less than 2.5 m/s <sup>1</sup>
Transom Height	<b>L Models</b> – (20 in. shaft) 19 1/2 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 a 800 CCA (1000 MCA) battery when operating in temperatures below 32°F (0°C).

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

## Specifications

<b>65, 75, 90 Models</b>	
Displacement	79.1 cu. in. (1296 cc)
Engine Type	In-line, 3 Cylinder, Two-Cycle, <i>E-TEC</i>
Full Throttle Operating Range	<b>65 HP</b> – 5000 to 5500 RPM <b>75 HP</b> – 5000 to 5500 RPM <b>90 HP</b> – 5000 to 5500 RPM
Power <sup>(1)</sup>	<b>65 HP</b> – 65 HP (47.8 kw) @ 5000 RPM <b>75 HP</b> – 75 HP (56 kw) @ 5000 RPM <b>90 HP</b> – 90 HP (67.1 kw) @ 5000 RPM
Idle RPM in Gear <sup>(2)</sup>	700 ± 50
Idle RPM in Neutral <sup>(2)</sup>	600 ± 50
Ignition Timing <sup>(2)</sup>	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>	87 Pump Posted AKI (90 RON) – Refer to <b>Fuel Requirements</b> on page 21
Oil – Lubricant – Capacity	TC-W3 NMMA-certified oil or <i>Evinrude XD100</i> oil – Refer to <b>Oil Requirements</b> on page 18 2.4 qt. (2.3 l)
Warning Signals	Controlled by the outboard's <i>EMM</i>
Battery, Minimum <sup>(3)</sup>	640 CCA (800 MCA) 12 volt or 800 CCA (1000 MCA) 12 volt below 32°F (0°C)
Spark Plug <sup>(2)</sup>	Refer to Parts Catalog or engine ECI Label
Fuses	P/N 967545 – Refer to <b>Fuse</b> on page 58
Fuel Filter (12 to 15 micron)	P/N 5007335 – In-line Replaceable
Battery Charging	25-Amp, Fully Regulated
Gearcase – Lubricant <sup>(4)</sup> – Capacity	<i>Evinrude HPF-Pro</i> <b>Pontoon Series</b> – 32.1 fl. oz. (950 ml) <b>L Models</b> – 31.6 fl. oz. (935 ml) <b>X Models</b> – 32.8 fl. oz. (970 ml)
Power Trim/Tilt – Fluid – Capacity	<i>Evinrude</i> Power Trim/Tilt and Power Steering Fluid 21 fl. oz. (622 ml)
Propeller	Refer to <b>Propeller Selection</b> on page 72
Weight	<b>L Models</b> – 320 lbs. (145 kg) <b>X Models</b> – 335 lbs. (152 kg)
Sound at Driver's Ear (LpA) ICOMIA 39.94	76.8 dB(A)
Transom Height	<b>L Models</b> – 19 1/2 to 20 in. (495 to 508 mm) <b>X Models</b> – 24 1/2 to 25 in. (622 to 635 mm)

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

(2) Emission Control Information.

(3) Use a 800 CCA (1000 MCA) battery when operating in temperatures below 32°F (0°C).

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



# PRODUCT WARRANTY INFORMATION

## BRP US INC. LIMITED WARRANTY FOR EVINRUDE® OUTBOARD ENGINES SOLD IN THE UNITED STATES AND CANADA

### 1. SCOPE OF THE LIMITED WARRANTY

BRP US Inc.\* ("BRP") warrants its *Evinrude*® outboard engines sold by authorized *Evinrude* dealers in the fifty United States 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, engine and lower unit oil changes, lubrication, valve and linkage adjustments and replacement of fuses, zinc anodes, thermostats, timing belts, 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 (as described below);
- 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;
- 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 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 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, 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:

1. THIRTY-SIX (36) CONSECUTIVE MONTHS for private, recreational use; or
2. TWELVE (12) CONSECUTIVE MONTHS for commercial use. The Product is used commercially when it is used in connection with any work or employment that generates income, during any part of the warranty period. The Product is also used commercially when, at any point during the warranty period, it is installed on a boat that has commercial tags or is licensed for commercial use. In cases where the delivery date is not established to BRP's satisfaction, the date of sale will be used to determine the warranty start date.
3. For emission-related components; please also refer to the US EPA EMISSION-RELATED WARRANTY contained herein.
4. For *Evinrude* outboard engines produced by BRP for sale in the State of California that are originally sold to a resident or subsequently warranty registered to a resident in the State of California, please also refer to the applicable California Emissions Control Warranty Statement contained herein.

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. For All *Evinrude/Johnson*® Genuine Parts and accessories installed by an authorized dealer at the time of sale, reference the BRP parts and accessories limited Warranty Statement.

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

This warranty coverage is available only on *Evinrude* outboard 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 a 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 cover-age. 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. 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 also be transferred and be valid for the remaining coverage period provided that BRP is notified of such transfer of ownership in the following way:

1. The former owner contacts BRP (at the phone number provided below) or a Dealer and gives the coordinates of the new owner; or
2. BRP or a Dealer receives a proof that the former owner agreed to the transfer of ownership, in addition to the coordinates 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. / Marine Propulsion Systems,  
After Sales Support,  
P.O. Box 597,  
Sturtevant, WI 53177,  
1-262-884-5993

## **BRP US INC. LIMITED WARRANTY FOR EVINRUDE OUTBOARD 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., Attn: After Sales Support, P.O. Box 597, Sturtevant, WI 53177, or the affiliate of BRP where the Product was registered for warranty.

\* Engines sold in Canada are distributed and serviced by Bombardier Recreational Products Inc.  
Limited Warranty Revision US/CA July 2014

## US EPA EMISSION WARRANTY

BRP US Inc. ("BRP")\* warrants to the ultimate purchaser and each subsequent purchaser that this new engine, including all parts of its exhaust emission control system and its evaporative emission control system, meets two conditions:

1. It is designed, built, and equipped so it conforms at the time of sale to the ultimate purchaser with the requirements of 40 CFR 1045 and 40 CFR 1060.
2. It is free from defects in materials and workmanship that may keep it from meeting the requirements of 40 CFR 1045 and 40 CFR 1060.

Where a warrantable condition exists, BRP will repair or replace, as it elects, any part or component with a defect in materials or workmanship that would increase the engine's emissions of any regulated pollutant within the stated warranty period at no cost to the owner, including expenses related to diagnosing and repairing or replacing emission-related parts. All defective parts replaced under this warranty become the property of BRP.

For all emission-related warranty claims, BRP is limiting the diagnosis and repair of emission-related parts to the authorized Evinrude dealers, unless for emergency repairs as required by item 2 of the following list.

As a certifying manufacturer, BRP will not deny emission-related warranty claims based on any of the following:

1. Maintenance or other service BRP or BRP's authorized facilities performed.
2. Engine/equipment repair work that an operator performed to correct an unsafe, emergency condition attributable to BRP as long as the operator tries to restore the engine/equipment to its proper configuration as soon as possible.
3. Any action or inaction by the operator unrelated to the warranty claim.
4. Maintenance that was performed more frequently than BRP specify.
5. Anything that is BRP fault or responsibility.
6. The use of any fuel that is commonly available where the equipment operates unless BRP written maintenance instructions state that this fuel would harm the equipment's emission control system and operators can readily find the proper fuel. See maintenance information section and fuel requirements section.

### ***Emission Related Warranty Period***

The emission-related warranty is valid for the following period whichever comes first:

	<b>HOURS</b>	<b>MONTHS</b>
Exhaust emission-related components	175	60
Evaporative emission-related components	N/A	24

## **Components Covered**

The emission-related warranty covers all components whose failure would increase an engine's emissions of any regulated pollutant, including the following listed components:

1. For exhaust emissions, emission-related components include any engine parts related to the following systems:
  - Air-induction system
  - Fuel system
  - Ignition system
  - Exhaust gas recirculation systems
2. The following parts are also considered emission-related components for exhaust emissions:
  - After-treatment devices
  - Crankcase ventilation valves
  - Sensors
  - Electronic control units
3. The following parts are considered emission-related components for evaporative emissions:
  - Fuel tank
  - Fuel cap
  - Fuel line
  - Fuel line fittings
  - Clamps\*
  - Pressure relief valves\*
  - Control valves\*
  - Control solenoids\*
  - Electronic controls\*
  - Vacuum control diaphragms\*
  - Control cables\*
  - Control linkages\*
  - Purge valves
  - Vapor hoses
  - Liquid/vapor separator
  - Carbon canister
  - Canister mounting brackets
  - Carburetor purge port connector
4. Emission-related components also include any other part whose only purpose is to reduce emissions or whose failure will increase emissions without significantly degrading engine/equipment performance.

\*As related to the evaporative emission control system

## **Limited Applicability**

As a certifying manufacturer, BRP may deny emission-related warranty claims for failures that have been caused by the owner's or operator's improper maintenance or use, by accidents for which the manufacturer has no responsibility, or by acts of God. For example, an emission-related warranty claim need not be honored for failures that have been directly caused by the operator's abuse of the engine/equipment or the operator's use of the engine/equipment in a manner for which it was not designed and are not attributable to the manufacturer in anyway.

# CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT

Your *Evinrude E-TEC* outboard has a special environmental label required by the California Air Resources Board. The label has one, two, three, or four stars. A hangtag, provided with your outboard, describes the meaning of the star rating system.

## *The Star Label Means Cleaner Marine Engines*



The Symbol for Cleaner Marine Engines:

### **Cleaner Air and Water**

For a healthier lifestyle and environment.

### **Better Fuel Economy**

Burns up to 30 to 40 percent less gas and oil than conventional carbureted two-stroke engines, saving money and resources.

### **Longer Emission Warranty**

Protects consumer for worry free operation.

## ***One Star – Low Emission***

The one-star label identifies Personal Watercraft, Outboard, Sterndrive and Inboard engines that meet the Air Resource Board's Personal Watercraft and Outboard marine engine 2001 exhaust emission standards. Engines meeting these standards have 75% lower emissions than conventional carbureted two-stroke engines. These engines are equivalent to the U.S. EPA's 2006 standards for marine engines.

## ***Two Stars – Very Low Emission***

The two-star label identifies Personal Watercraft, Outboard, Sterndrive and Inboard engines that meet the Air Resources Board's Personal Watercraft and Outboard marine engine 2004 exhaust emission standards. Engines meeting these standards have 20% lower emissions than One Star – Low Emission engines.

## ***Three Stars – Ultra Low Emission***

The three-star label identifies engines that meet the Air Resources Board's Personal Watercraft and Outboard marine engine 2008 exhaust emission standards or the Sterndrive and Inboard marine engine 2003 exhaust emission standards. Engines meeting these standards have 65% lower emissions than One Star – Low Emission engines.

## ***Four Stars – Super Ultra Low Emission***

The four-star label identifies engines that meet the Air Resources Board's Sterndrive and Inboard marine engine 2009 exhaust emission standards. Personal Watercraft and Outboard marine engines may also comply with these standards. Engines meeting these standards have 90% lower emission than One Star – Low Emission engines.

For more information: Cleaner Watercraft – Get the Facts

1-800-END-SMOG

[www.arb.ca.gov](http://www.arb.ca.gov)

## YOUR EMISSION CONTROL WARRANTY RIGHTS AND OBLIGATION

The California Air Resources Board and Bombardier Recreational Products ("BRP") are pleased to explain the emission control system warranty on your *Evinrude E-TEC* outboard. In California, new outboard engines must be designed, built, and equipped to meet the State's stringent anti-smog standards. BRP must warrant the emission control system on your outboard for the periods of time listed below provided there has been no abuse, neglect, or improper maintenance of your outboard.

Your emission control system may include parts such as the carburetor or fuel injection system, the ignition system, and catalytic converter. Also included may be hoses, belts, connectors, and other emission-related assemblies.

Where a warrantable condition exists, BRP will repair your outboard at no cost to you including diagnosis, parts, and labor provided that such work is performed by an authorized BRP dealer.

### Manufacturer's Limited Warranty Coverage

This emission limited warranty covers *Evinrude* outboards certified and produced by BRP for sale in California, that are originally sold in California to a California resident, or subsequently warranty-registered to a California resident. The BRP U.S. and Canada limited warranty conditions for *Evinrude* outboards are still applicable to these models with the necessary modifications.

Select emission control parts of your *Evinrude E-TEC* outboard are warranted from the date of purchase by the first retail consumer or the date the product is first put to use, whichever occurs first, for a period of: 4 years, or for 250 hours of use, whichever occurs first.

However, warranty coverage based on the hourly period is only permitted for outboards equipped with the appropriate hour meters or their equivalent. If any emission-related part on your engine is defective under warranty, the part will be repaired or replaced by BRP.

Parts covered are:

<b>1. Electrical System</b>	<b>4. Air Induction System</b>
A. EMM (Engine Management Module)	A. Reed Valves
B. Spark Plugs and Wires	B. Throttle Body Assembly
C. Ignition Coils	C. Intake Manifold
D. Wiring Harness	
	<b>5. Oil System</b>
<b>2. Exhaust System</b>	A. Oil Injector
A. Inner Exhaust Housing	B. Oil Lines, Fittings, and Clamps
B. Adapter (Exhaust Manifold)	
C. Megaphone (Inner Exhaust)	<b>6. Sensors</b>
	A. Air Temperature Sensor
<b>3. Fuel System</b>	B. Crank Position Sensor
A. Fuel Lift Pump	C. Throttle Position Sensor
B. Fuel Supply Pump	D. Water Temperature Sensor
C. Fuel Injectors	E. Thermostat
D. Vapor Separator	
E. Fuel Lines, Fittings, and Clamps	<b>7. Gaskets</b>
	A. All Emission Component Gaskets

The emission warranty covers damage to other engine components that is caused by the failure of a warranted part.

The BRP Operator's Guide provided contains written instructions for the proper maintenance and use of your outboard. All emission warranty parts are warranted by BRP for the entire warranty period of the outboard, unless the part is scheduled for replacement as required maintenance in the Operator's Guide.

Emission warranty parts that are scheduled for replacement, as required maintenance, are warranted by BRP for the period of time before the first scheduled replacement date for that part. Emission warranty parts that are scheduled for regular inspection but not regular replacement are warranted by BRP for the entire warranty period of the outboard. Any emission warranty part repaired or replaced under the terms of this warranty statement is warranted by BRP for the remainder of the warranty period of the original part. All parts replaced under this limited warranty become the property of BRP.

Maintenance receipts and records should be transferred to each subsequent owner of the outboard.

### **Owner's Warranty Responsibilities**

As the outboard owner, you are responsible for the performance of the required maintenance listed in your Operator's Guide. BRP recommends that you retain all receipts covering maintenance on your outboard, but BRP cannot deny warranty solely for the lack of receipts or your failure to ensure the performance of all scheduled maintenance.

As the outboard owner, you should however be aware that BRP may deny you warranty coverage if your outboard or a part has failed due to abuse, neglect, improper maintenance, or unapproved modifications.

You are responsible for presenting your outboard to an authorized BRP dealer as soon as a problem exists. The warranty repairs will be completed in a reasonable amount of time, not to exceed 30 days.

For any questions regarding your warranty rights and responsibilities or for the name and location of the nearest authorized BRP dealer, contact:

BRP US Inc. / Marine Propulsion Systems,  
After Sales Support,  
P.O Box 597,  
Sturtevant, WI 53177,  
1-262-884-5993

or visit [www.evinrude.com](http://www.evinrude.com).



## **BRP US INC. INTERNATIONAL LIMITED WARRANTY: EVINRUDE®/JOHNSON® OUTBOARD ENGINES**

### **1. SCOPE OF THE LIMITED WARRANTY**

BRP US Inc. ("BRP") warrants its *Evinrude®/Johnson®* outboard engines ("Product(s)") sold by distributors or dealers authorized by BRP to distribute *Evinrude®/Johnson®* outboard engines ("OE Distributor/Dealer") outside of the fifty United States or Canada from defects in material or workmanship for the period and under the conditions described below.

All genuine *Evinrude®/Johnson®* parts and accessories, including but not limited to propellers, gauges, oil tanks, remote controls, wiring and key switches that installed by an authorized OE Distributor/Dealer at the time of delivery of the Product bear the standard BRP limited warranty for *Evinrude®/Johnson®* genuine parts and accessories. See your authorized OE Distributor/Dealer for a full copy of such limited warranty.

This limited warranty will become null and void if: (1) the Product was used for racing or any other competitive activity, at any point, even by a previous owner; or (2) the Product has been altered or modified in such a way so as to adversely affect its operation, performance or durability, or (3) the Product has been altered or modified to change its intended use.

### **2. LIMITATIONS OF LIABILITY**

TO THE EXTENT PERMITTED BY LAW, THIS WARRANTY IS EXPRESSLY GIVEN AND ACCEPTED IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. TO THE EXTENT THAT THEY CANNOT BE DISCLAIMED, THE IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE LIFE OF THE EXPRESS WARRANTY. INCIDENTAL AND CONSEQUENTIAL DAMAGES ARE EXCLUDED FROM COVERAGE UNDER THIS WARRANTY. SOME JURISDICTIONS DO NOT ALLOW FOR THE DISCLAIMERS, LIMITATIONS AND 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 COUNTRY TO COUNTRY. (FOR PRODUCTS PURCHASED IN AUSTRALIA SEE CLAUSE 4 BELOW).

Neither the OE Distributor/Dealer nor any other person has been authorized to make any affirmation, representation or warranty regarding the 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. If the Products were purchased under a governmental contract, the terms of such contract supersede the terms stated herein.

### **3. EXCLUSIONS - ARE NOT WARRANTED**

The following are not warranted under this limited warranty under any circumstances:

- Normal wear and tear;
- Routine maintenance adjustments including but not limited to: maintenance requirements, lower unit oil change, lubrication, linkage adjustments and replacement of fuses, zinc anodes, thermostats, starter motor bushings, trim motor brushes, filters and spark plugs;
- Negligence or failure to provide proper maintenance including winterization and/or storage or failure to follow the procedures and recommendations in the Operator's Guide;
- Damage resulting from removal of parts, improper repairs, service, maintenance, modification, or use of parts or accessories not manufactured or approved by BRP, which in its reasonable judgment, are either incompatible with the Product or adversely affect its operation, performance, or durability, or resulting from repairs done by a person that is not an authorized OE Distributor/Dealer;
- Damage caused by abuse, misuse, abnormal use, neglect, racing or operation of the Product in a manner inconsistent with the recommended operation described in the Operator's Guide;
- Damage resulting from accident, submersion, water ingestion, fire, theft, vandalism or any act of God;

- Operation 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;
- Cosmetic or paint changes due to exposure to the elements; or
- Incidental or consequential damages, or damages of any kind including without limitation towing, storage, transportation expenses, telephone, rental, taxi, inconvenience, insurance coverage, loan payments, loss of time, loss of income or time missed for downtime experience due to service work.

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

This warranty will be in effect from (1) the date of delivery to the first retail consumer or (2) the date the Product is first put to use, whichever occurs first, for a period of:

36 CONSECUTIVE MONTHS for private, recreational use; or

12 CONSECUTIVE MONTHS OR 750 HOURS OF OPERATION as determined by Product Engine Management Module (EMM), whichever occurs first, for commercial use.

The Product is used commercially when it is used in connection with any work or employment that generates income, during any part of the warranty period. The Product is also used commercially when, at any point during the warranty period, it is installed on a boat that has commercial tags or is licensed for commercial use.

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.

Note that the duration and any other modalities of the warranty coverage are subject to the applicable national or local legislation in the customer's country.

#### **FOR PRODUCTS SOLD IN AUSTRALIA ONLY**

Nothing in these Warranty terms and conditions should be taken to exclude, restrict or modify the application of any condition, warranty, guarantee, right or remedy conferred or implied under the Competition and Consumer Act 2010 (Cth), including the Australian Consumer Law or any other law, where to do so would contravene that law, or cause any part of these terms and conditions to be void. The benefits given to you under this limited warranty are in addition to other rights and remedies that you have under Australian law.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

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

This warranty coverage is available only if each of the following conditions has been fulfilled:

- The Product must be purchased as new and unused by its first owner from an OE Distributor/Dealer authorized to distribute Product in the country in which the sale occurred;
- The BRP specified pre delivery inspection process must be completed and documented;
- The Product must have undergone proper registration by an authorized OE Distributor/Dealer;
- The Product must be purchased within the country or union of countries in which the purchaser resides; and
- Routine maintenance outlined in the operator's guide must be timely performed in order to maintain warranty coverage. BRP reserves the right to make warranty coverage contingent upon proof of proper maintenance as outlined in the maintenance schedule, proper service, pre ride inspection and storage conditions.

BRP will not honor this limited warranty to any private use owner or commercial use owner if one of the preceding conditions has not been met. Such limitations are necessary in order to allow BRP to preserve both the safety of its products, and also that of its consumers and the general public.

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

The customer must cease using the Product upon the appearance of an anomaly.

The customer must notify an authorized servicing OE Distributor/Dealer within 2 days of the appearance of a defect. The customer must bring the Product, including any defective part therein, to the OE Distributor/Dealer promptly after the appearance of the defect, and in any event, within the warranty period, and provide it with reasonable access to the product and reasonable opportunity to repair it. The customer must also present to the authorized OE Distributor/Dealer proof of purchase of the product and must sign the repair/work order prior to starting the repair in order to validate the warranty repair. The expenses of transporting Product to and from OE Distributor/Dealer for warranty service are to be borne by the owner.

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

Note that the notification period is subject to the applicable national or local legislation in customer's country.

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

To the extent permitted by law, BRP's obligations under this warranty are limited to, at its sole discretion, repairing parts found defective under normal use, maintenance and service, or replacing such parts with new genuine Product parts without charge for parts and labour, at any authorized OE Distributor/Dealer during the warranty coverage period under the conditions described herein. BRP's responsibility is limited to making the required repairs or replacements of parts. No claim of breach of warranty shall be cause for cancellation or rescission of the sale of the Product to the owner. You may have other legal rights which may vary from country to country.

In the event that service is required outside of the country of original sale, the 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 or modify products from time to time without assuming any obligation to modify products previously manufactured.

## **8. TRANSFER**

If the ownership of a Product is transferred during the warranty coverage period, this limited warranty, subject to its terms and conditions, shall also be transferred and be valid for the remaining coverage period provided BRP or an authorized OE Distributor/Dealer receives a proof that the former owner agreed to the transfer of ownership, in addition to the co-ordinates of the new owner.

## **9. CONSUMER ASSISTANCE**

1. In the event of a controversy or a dispute in connection with this limited warranty, BRP suggests that you try to resolve the issue at the OE Distributor/Dealer level. We recommend discussing the issue with the authorized OE Distributor/Dealer's service manager or owner.

2. If further assistance is required, the OE Distributor/Dealer service department should be contacted in order to resolve the matter.

3. If the matter still remains unresolved then contact BRP by writing to us at the address listed below:

For countries within EEA, Middle East, Africa & CIS, please contact our European office:

### **BRP EUROPE N.V.**

Customer Assistance Center  
SKALDENSTRAAT 125  
9042 GENT  
Belgium  
Tel.: +32 9 218 26 00

For Scandinavian countries, please contact our Finland office:

**BRP FINLAND OY**

Service Department  
Ahjotie 30  
Fin-96320 Rovaniemi  
Finland  
Tel.: +358 16 3208 111

For all other countries, please contact your local Distributor/Dealer or contact our Canadian office at:

**BOMBARDIER RECREATIONAL PRODUCTS INC.**

Customer Assistance Center  
75, J.-A. Bombardier Street  
Sherbrooke, Québec J1L 1W3  
Canada  
Tel.: +1 819 566 3366

You will find your Distributor's/Dealer's coordinates on [www.brp.com](http://www.brp.com).

\* In the European Economic Area ("EEA") and elsewhere, Products are distributed and serviced by BRP European Distribution S.A. and other subsidiaries of BRP.

\*\* The BRP limited warranty offered on Products sold in the USA and Canada is different than the one offered in the EEA and elsewhere.

***ADDITIONAL TERMS AND CONDITIONS FOR FRANCE ONLY***

The following terms and conditions are applicable to products sold in France only:

The seller shall deliver goods that are complying with the contract and shall be responsible for defects existing upon delivery. The seller shall also be responsible for defects resulting from packaging, assembling instructions or the installation when it is its responsibility per the contract or if accomplished under its responsibility. To be compliant with the contract, the good shall:

1. Be fit for normal use for goods similar thereto and, if applicable:
  - Correspond to the description provided by the seller and have the qualities presented to the buyer though sample or model;
  - Have the qualities that a buyer may legitimately expect considering the public declarations of the seller, the manufacturer of its representative, including in advertising or labeling; or
2. Have the characteristics mutually agreed upon as between the parties or be fit for the specific use intended by the buyer and brought to the attention of the seller and which accepted.

The action for failure to comply is prescribed after two years after delivery of the goods. The seller is responsible for the warranty for hidden defects of the good sold if such hidden defects are rendering the good unfit for the intended use, or if they diminish its use in such a way that the buyer would not have acquired the good or would have given a lesser price, had he known. The action for such hidden defects shall be taken by the buyer within 2 years of the discovery of the defect.

International Limited Warranty Revision 2015

# Readiness Test

The Operator's Readiness Test...

1. Did you read this Guide from front cover to rear cover?
2. Are you ready to take responsibility for the safe operation of your boat and outboard?
3. Do you understand all the safety precautions and instructions contained in this Guide?
4. Do you understand that this Guide contains essential information to help prevent personal injury and damage to equipment?
5. Are you ready to follow the recommendations in this Guide and take a boating safety course before you operate your boat and outboard?
6. Do you know who to ask if you have any questions about your boat and outboard?
7. Do you know your local marine traffic laws?
8. Do you understand that human error can be caused by carelessness, fatigue, overload, preoccupation, unfamiliarity of operator with the product, drugs and alcohol, just to name a few?

## **WARNING**

**It is impossible for this Guide to cover every hazardous situation you may encounter; however, your understanding of and adherence to essential information contained in this Guide will build good judgment when boating. Always be alert and careful: a good foundation for safety.**

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***E-TEC***®



## FREQUENTLY ASKED QUESTIONS

*No dealer-scheduled maintenance for three years or 300 hours of normal recreational use? Really?*

- Yes! BRP knows you want to spend your time out on the water, not servicing your *Evinrude E-TEC* outboard. There are no valves to adjust, belts to service, chains to replace, or oil to change. We do recommend pre-launch inspections of your outboard at each use and at regular intervals. Salt water applications require minimal additional inspections and lubrication.

*What fuel octane is recommended for my Evinrude E-TEC outboard?*

- *Evinrude E-TEC* outboards require a minimum octane of 87 (U.S.). Use of higher octane fuels is not harmful, but also not necessary.

*What kind of oil does my Evinrude E-TEC outboard require?*

- *Evinrude XD100 Direct Injection Oil* and *Evinrude XD50 2-Stroke Oil* are recommended for your *Evinrude E-TEC* outboard.

*Do I need to mix oil into my fuel?*

- No. *Evinrude E-TEC* outboards do not require any mixing of oil and fuel.

*Can I order replacement parts and accessories for my Evinrude E-TEC outboard?*

- Yes. When replacement parts are required, use *Evinrude* Genuine Parts or parts with equivalent characteristics, including type, strength, and material. Using substandard parts could result in injury or product malfunction. Your dealer can order the parts and accessories you desire.

*Do I need to complete any paperwork when I move or sell my Evinrude E-TEC outboard?*

- Yes. In order to maintain contact with you or the new *Evinrude E-TEC* owner, BRP requests you complete the form outlining **Change of Address / Change of Ownership** on page 93. This will ensure you or the new owner is made aware of any product announcements and keep the warranty coverage up-to-date.

*What do I need to do before storing my Evinrude E-TEC outboard for the winter?*

- Winterization is minimal. Refer to **Storage** on page 60 for step-by-step instructions to store your *Evinrude E-TEC* outboard for the off-season.

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# 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.



**Change of Address**  **Change of Ownership**

**Model number**

**Serial Number**

**Old Address / Previous Owner**

**Last name**

**First name**  **M.I.**

**Address**

**City**  **State**

**Zip code**  **Country**

**Phone number**

**Signature** \_\_\_\_\_ **Date** \_\_\_\_\_

**New Address / New Owner**

**Type of Use**  **Recreational**  **Commercial**  **Government**

**Last name**

**First name**  **M.I.**

**Address**

**City**  **State**

**Zip code**  **Country**

**Phone number**

**Signature** \_\_\_\_\_ **Date** \_\_\_\_\_

**Dealer Information**

**Dealer name**

**Dealer number**

**Phone number**

**Contact name**

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

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# CONFIRMATION OF RECEIPT

## Your Dealer

Name:	_____
Address:	_____
	_____
	_____

Upon delivery of your new *Evinrude* 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)	
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</i> outboard. I have also received a copy of the Operator's Guide.	
Signature:	_____
Date:	_____
	_____

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