

**⚠ 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 Supplement*

40 Jet  
60 Jet  
105 Jet



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 Supplement

40 Jet  
60 Jet  
105 Jet



Revision – Original

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*Evinrude® Genuine Parts*

*Evinrude® XD100™*

*Evinrude® XD50™*

*BRP Logo*

*2+4™ Fuel Conditioner*

*HPF Pro™ Gearcase Lubricant*

*Triple-Guard™ Grease*

*I-Command™*

*S.A.F.E.™*

*SystemCheck™*

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# About This Guide

This Operator's Guide Supplement 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 Supplement 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 Supplement 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.

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

- Insist on the use of personal floatation devices, approved by the U.S. Coast Guard, by all passengers when boating conditions are hazardous, and by children and nonswimmers at all times.
  - Proceed with caution and at very low speed in shallow water. Grounding or abrupt stops may result in personal injury or property damage. Also be alert for debris and objects in the water.
  - Be familiar with the waters you are operating in. The gearcase of this outboard extends below the water surface and could potentially come in contact with underwater obstructions. Contact with underwater obstructions may result in loss of control and personal injury.
  - Respect no wake zones, rights of other water users and the environment. As the "skipper" and owner of a boat you are responsible for damage to other boats caused by the wake of your boat. Allow no one to throw refuse overboard.
  - Do not operate your boat if you are under the influence of drugs or alcohol.
  - High performance boats have a high power-to-weight ratio. If you are not experienced in the operation of a high performance boat, do not attempt to operate one at, or near, its top speed until you have gained that experience.
  - Become completely familiar with the control and operation of your boat and outboard before embarking on your first trip or taking on a passenger(s). If you have not had the opportunity to do so with your Dealer, practice driving in a suitable area and feel the response of each control. Be familiar with all controls before applying the throttle above idle speed. As the operator, you are in control and responsible for safe operation.
- The outboard must be correctly installed. Failure to correctly install the outboard could result in serious injury, death or property damage. BRP recommends 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 Genuine Parts* or parts with equivalent characteristics, including type, strength and material. Using sub-standard 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* Dealer. In many instances proper tools and training are required for certain service or repair procedures.
  - 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.

### ***Jet Drive Model and Serial Numbers***

The model number is located on the starboard, rear of the jet drive housing. The serial number is located on the port, rear. Record your jet drive's:

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

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

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

### ***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)**.

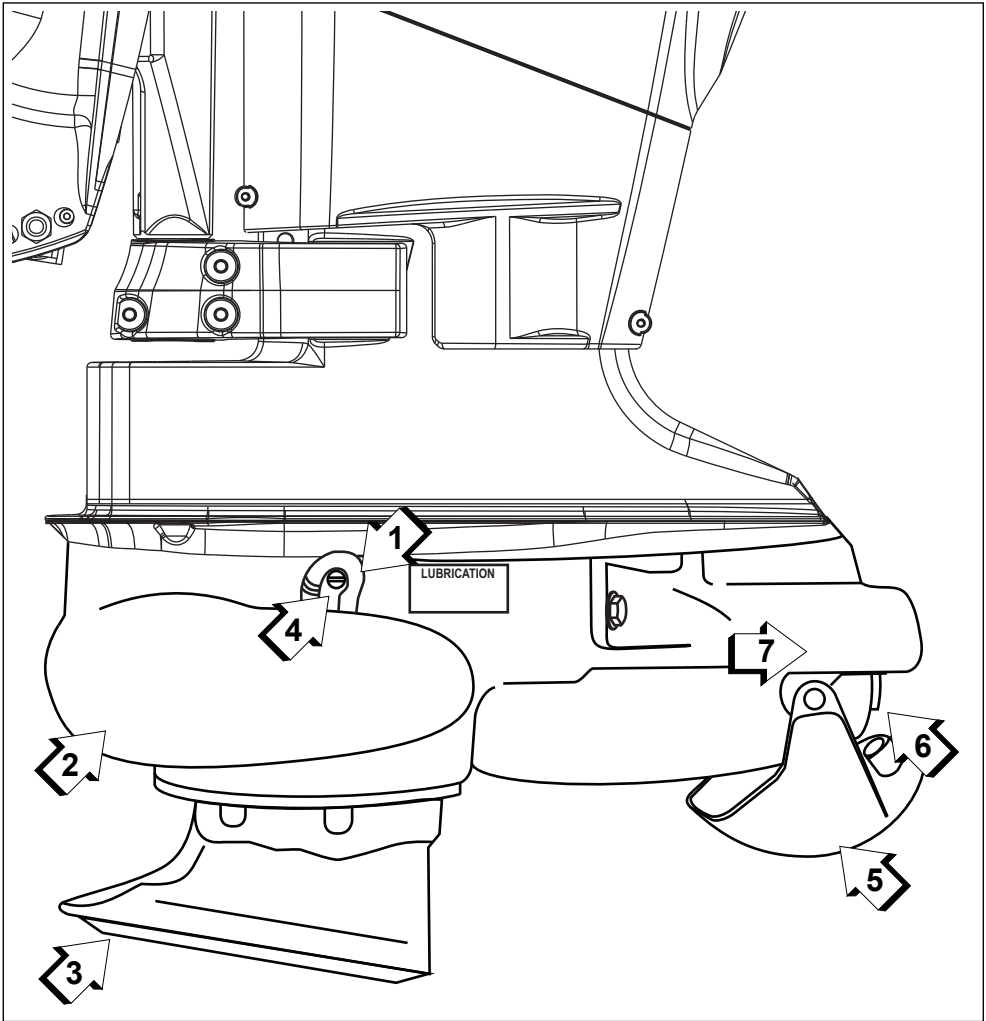


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# **Outboard Jet Supplement**

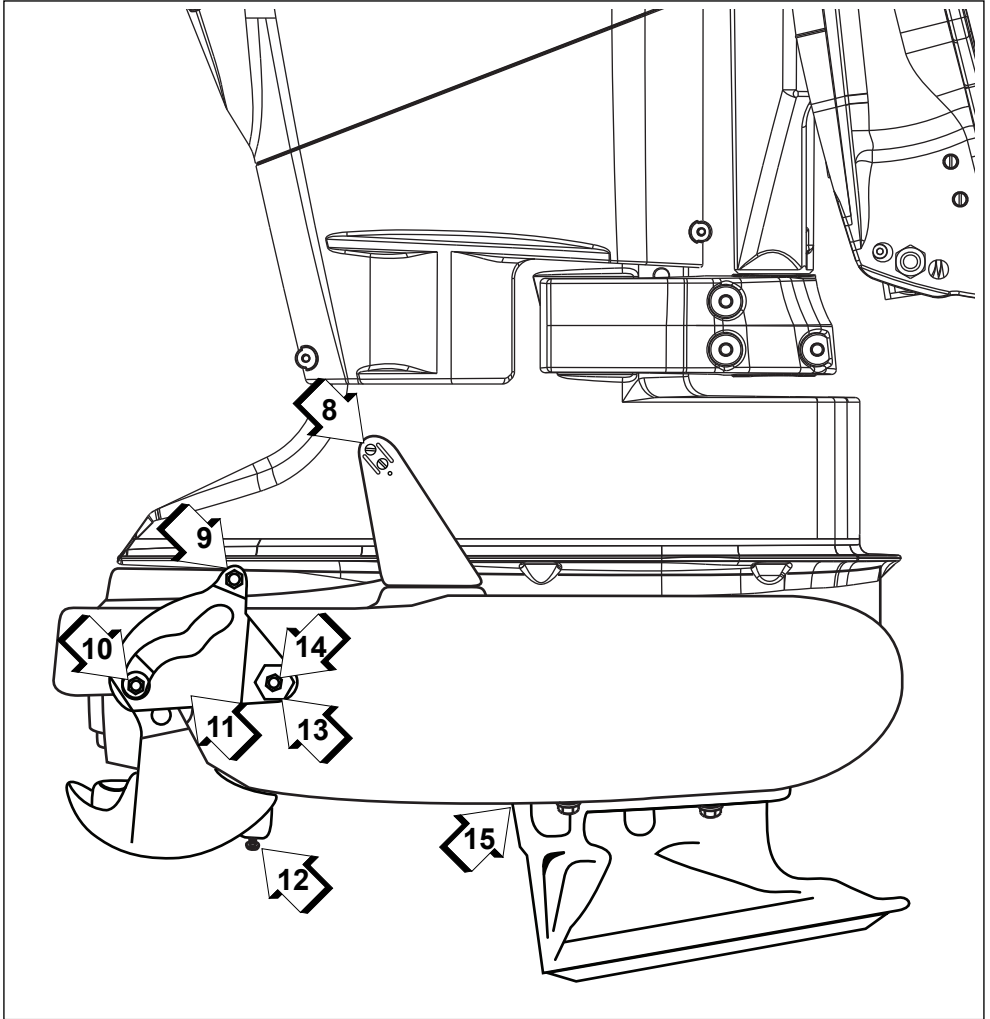
# Jet Drive Component Identification

## Port



Item	Description	Item	Description
1	Grease Fitting Vent Hose	5	Reverse Gate
2	Jet Drive Housing	6	Water Flow Control tabs
3	Water Intake Grate	7	Jet Drive Serial Number
4	Flushing Inlet Screw		

## Starboard



Item	Description	Item	Description
8	Shift Cable Anchor	12	Reverse Gate Stop
9	Reverse Gate Cam Stud	13	Cam Eccentric Nut
10	Cam Roller	14	Cam Screw
11	Reverse Gate Cam	15	Impeller (Remove inlet grate for access)

## Application

### Boat, Outboard and Load

#### **WARNING**

**Do not overpower your boat by using an outboard with a jet horsepower rating that exceeds the horsepower indicated on the boat's capacity plate. Overpowering could result in loss of control.**

**If the boat does not have a capacity plate, contact your Dealer or the boat's manufacturer.**

**Replacing the jet pump assembly with a propeller-driven gearcase will increase the effective horsepower of the unit to the outboard horsepower value listed in "Specifications" on page 26. Do NOT overpower your boat. Overpowering can contribute to loss of boat control.**

Your jet outboard will deliver top performance when installed on a boat that:

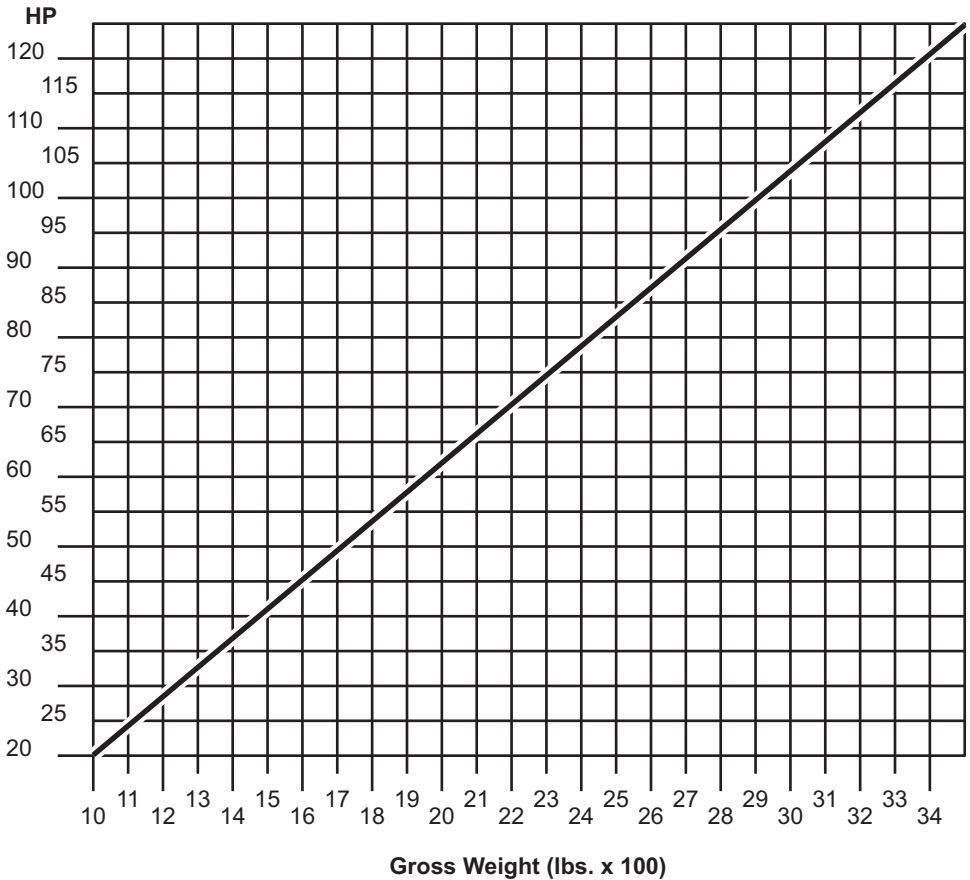
- is lightweight
- planes easily and quickly
- has a flat, wide bottom or a shallow "V"
- has a 25 inch (635 mm) transom for 20 in. (508 mm) shaft outboard.

Vee shaped hulls are generally not suitable due to their greater water depth requirements and the size and shape of the outboard's jet housing, though a shallow "V" will provide improved directional stability and a more controlled turn. If you have questions about the suitability of your boat, see your Dealer.

To maintain performance and efficiency, jet horsepower should be evenly matched with the boat's gross weight and load. Load can significantly affect performance and efficiency.

Do NOT load the boat beyond its ability to plane.

Use the table below to determine the maximum load your boat can carry and still perform effectively. The table's Gross Weight figure reflects the combined weights of the boat, outboard, fuel, the passengers and their gear.



Boats designed specifically for tiller steered outboards have special requirements for horsepower capacity. If you have any questions about the application of your outboard, ask your Dealer or boat manufacturer.

# Installation

## Recommendations

If you are installing your outboard, order the current ***Installation and Predelivery Guide*** from your Dealer and follow its instructions.

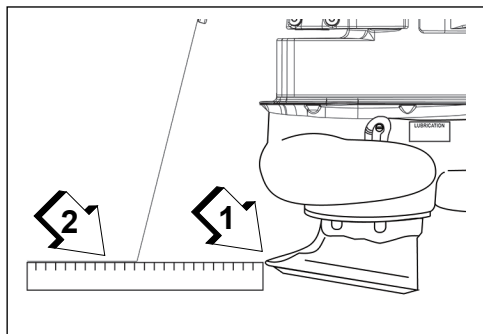
When installing a jet outboard, two critical areas must be addressed:

1. Mounting height
2. Outboard trim angle

**1. Mounting height** — Your jet outboard must be mounted higher on the transom than a propeller-driven outboard. For best results, start with the standard transom height:

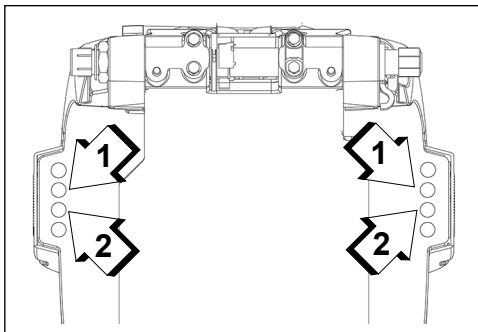
- Mount a 20 in. (508 mm) shaft outboard on a 25 in. (635 mm) transom.

The optimum outboard height for most applications is achieved when the top of the leading edge of the water intake is in line with the boat bottom (not the keel). Use a straightedge as shown, and install the outboard initially at this height.



1. Leading edge of water intake  
2. Bottom of boat

- If you operate in mostly shallow water - drill the upper-center mounting holes to easily raise the outboard.
- If you operate in mostly rough water - drill the lower-center mounting holes to easily lower the outboard.



1. Upper-center mounting holes  
2. Lower-center mounting holes

If your boat's transom is too low to mount your outboard at the required height, seek professional advice to modify the transom. Check into and follow marine standards for waterproofing the mounting hardware and all mounting holes.

**⚠ WARNING**

**If your boat's transom must be modified, make sure the modification is strong and durable enough to withstand the outboard's weight and power during operation.**

**Failure to do so could result in transom failure and sudden loss of boat control.**

You must test run your installation after each change. See **Testing Your Installation**.

Make it easy to change the outboard's height setting for testing. Use the following method to select which stern bracket mounting holes to drill:

**2. Outboard trim angle** — To operate as intended, the jet outboard must be perpendicular to the water when the boat is on plane. If your boat tends to ride bow high, adjust the outboard's angle accordingly. However, each time the outboard's angle is changed the mounting height must be checked.



Once you've determined the optimum outboard angle, position the angle adjusting rod so the outboard contacts it when fully trimmed down for operating. Correct rod positioning will eliminate "searching" for the optimum outboard angle with the power trim and tilt switch.

After installing your outboard, follow the procedures in **Testing Your Installation**.

## Testing Your Installation

### **WARNING**

**The jet outboard does not have an exact NEUTRAL. When the outboard is running, the jet unit's impeller always produces thrust.**

**Before starting your outboard, secure the boat to prevent movement. This will minimize the possibility of collision with nearby objects and loss of balance by occupants.**

Refer to "Shift Cable Installation" on page 14, and review all topics in **Operation** before attempting any test runs.

**IMPORTANT:** Check the water pump indicator after starting the outboard. A steady stream of water indicates the water pump is working.

Because of differences in hull designs, we cannot tell you precisely where on your boat's transom to mount the outboard. Use the guidelines in MOTOR INSTALLATION, then test run your boat and outboard. Consult your operator's manual for starting and operating instructions.

If the unit is mounted too high:

- Air will mix with the water entering the water intake. Aerated water causes high and possibly erratic RPM levels (over-speeding) and decreased thrust (ventilation).
- If the outboard is allowed to over-speed, its RPM limiter will activate, causing a "high-speed misfire."

If the unit is mounted too low:

- Extra drag will reduce your outboard's performance and generate excess spray.

If your initial height setting produces symptoms of ventilation or over-speeding:

- Verify outboard angle adjustment.
- Move the outboard DOWN one hole and re-test.
- Continue moving the outboard down one hole at a time and retesting until it runs smoothly.
- Secure it at that height.

If your initial height setting produces no symptoms of ventilation:

- Move the outboard UP one hole and retest.
- Continue moving the outboard up one hole at a time and retesting until it ventilates, then move it down one hole and secure it at that height.

If your boat's transom will not permit the outboard to be installed as high as is needed, seek professional advice to install a higher transom or an auxiliary transom plate on your boat.

## Spray Plate, White Water Wedge

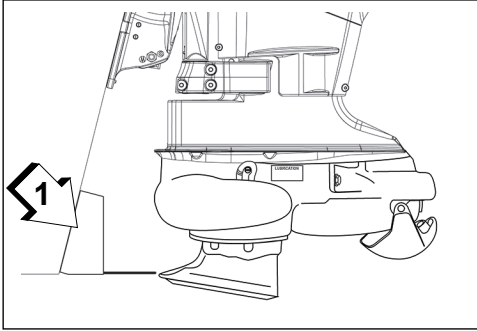
It may be impossible to achieve optimum performance on some boats without the use of either a spray plate or a white water wedge.

If testing results in a lower than recommended outboard mounting height due to excessive outboard ventilation, consider the following:

**Rough Water** — install a spray plate to span the distance between the transom and the water intake to control the water entering. The

## Outboard Jet Supplement

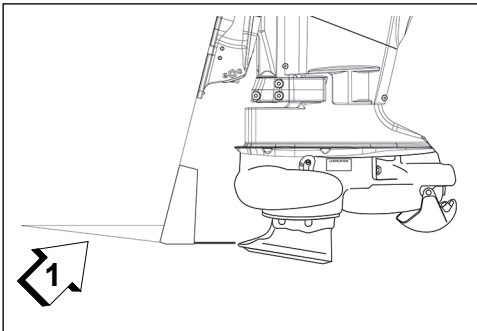
spray plate should allow the outboard to be mounted at the optimum height.



1. Spray plate

009410

**White Water Wedge** — The outboard may have to be mounted lower, to reach non-aerated water. Install a wedge as shown to re-configure the boat bottom. The wedge **MUST** be 0.5 inch (13 mm) narrower than the water intake. This type of application will not allow you to run in very shallow water. Seek professional advice before modifying your boat's bottom.



1. Water wedge

009411

**IMPORTANT:** Always retest adjustments to outboard mounting height and outboard angle to ensure optimum performance. Remember, excessive ventilation at the water intake can cause impeller slippage and excessive RPM, resulting in eventual outboard damage unless corrected.

## Shift Cable Installation

### **WARNING**

Correct shift cable adjustment will help prevent water pressure from the forward motion of the boat forcing the reverse gate out of the FORWARD position into REVERSE.

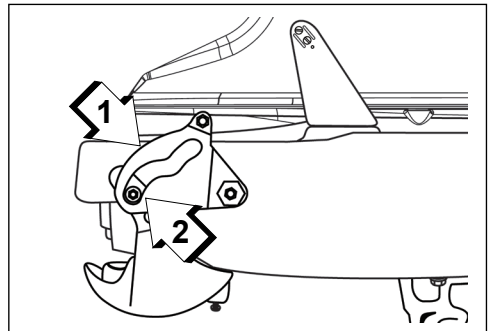
This could cause the boat to stop abruptly and the operator or passengers could be thrown about or ejected.

### **NOTICE**

Use a single-lever remote control. It will provide positive positioning of the reverse gate during FORWARD operation.

It will also prevent the reverse gate from shifting into NEUTRAL or REVERSE at high throttle settings.

Pull up on the shift cam until cam roller is at the far end of the FORWARD detent range.



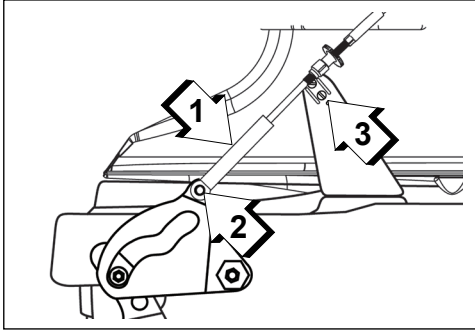
1. Shift cam

2. FORWARD detent range

009412

Shift remote control to FORWARD position. Temporarily push cable guide onto shift cam stud. Pull firmly on cable casing to remove

free-play. Adjust cable trunnion to align with trunnion anchor bracket. Pull cable off stud.



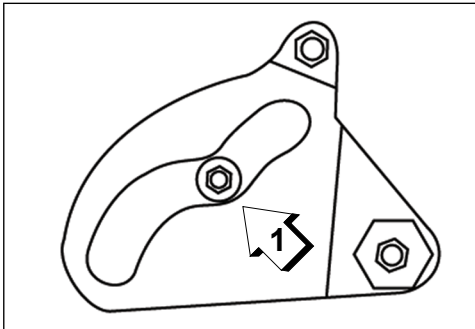
1. Cable guide
2. Shift cam stud
3. Trunnion anchor bracket

009413

Insert cable trunnion in anchor bracket and turn 90° to lock trunnion in place.

Push cable guide onto stud. Install washer and hand tighten locknut.

Shift remote control to NEUTRAL. The cam roller should snap into NEUTRAL detent when you pull up on the reverse gate with moderate pressure.



1. NEUTRAL detent

009414

## NOTICE

**It is very important that the reverse gate remains locked in the FORWARD detent range when remote control is in FORWARD. When properly adjusted, the reverse gate cannot be pulled out of the FORWARD detent range by hand.**

Tighten locknut and loosen 1/8 to 1/4 of a turn to permit free movement of cam.

After the correct adjustment is achieved, loosely secure the shift cable to the steering cable with a tie strap. Do Not restrict movement of the shift cable.

If you cannot achieve NEUTRAL detent, lengthen cable slightly and recheck your adjustment.

# Operation

## Shifting

### WARNING

Do not use a foot throttle or a dual-lever remote control. Independent shift lever operation could permit immediate full-thrust REVERSE operation. The operator or passengers could be thrown about or ejected.

A jet outboard does not have an exact NEUTRAL. When the outboard is running, the jet unit's impeller always produces thrust. Before starting your outboard, secure the boat to prevent movement. If the boat moves suddenly during starting, the operator or passengers could be thrown about or ejected. Be alert!

Using REVERSE to stop boat movement must be done cautiously and ONLY during low speed maneuvering. If REVERSE is used at high boat speeds, the boat will stop abruptly. The operator or passengers could be thrown about or ejected.

### NOTICE

Use a single-lever remote control. It will provide positive positioning of the reverse gate during FORWARD operation. It will also prevent the reverse gate from shifting into NEUTRAL or REVERSE at high throttle settings.

## Steering

### WARNING

Do not attempt sharp turns at high speed. Such turns can result in sudden spins or other loss of boat control. You or others could be injured or ejected.

Steering with a jet outboard will not be as responsive as a conventional outboard; the

stern will slide more in turns. Thrust from the outboard provides steering control. If power is reduced suddenly, so is your ability to steer. Start turning early and maintain adequate power to sustain steering control. Become familiar with the boat's control limitations before attempting to steer in narrow bodies of water or congested areas.

Adjustable water flow control tabs allow steering effort to be balanced when turning in either direction. Refer to "Steering Effort Adjustment" on page 23.

## Power Trim and Tilt

Using the power trim and tilt at speeds above SLOW while maneuvering will result in ventilation and can cause outboard damage.

Use the power trim and tilt primarily in SLOW speed maneuvering:

- while drifting
- when in extremely shallow water to avoid underwater objects.

Using the power trim and tilt to gain speed will only result in more spray and ventilation conditions. Optimum performance is achieved by mounting the outboard at the proper transom height.

Position the angle adjusting rod at the point where the outboard performs best. Refer to the outboard *Operator's Guide*. When the power trim and tilt is used, you can easily return the outboard to its optimum angle by trimming down until it rests against the rod. If your outboard is not equipped, purchase a rod from your Dealer.

## Manual Tilt

Position the outboard's angle adjusting rod so the outboard is vertical when the boat is on plane. Refer to the directions for tilting the outboard in the outboard *Operator's Guide*.

## RPM Limiting Circuit

The ignition system is equipped with an "RPM limiting" circuit to help prevent outboard damage caused by excessive RPM. If the outboard over-speeds, a circuit in the *EMM* will limit outboard RPM and could cause an ignition "misfire" at full throttle.

Over-speeding can be caused by:

- Wear of the jet pump impeller or intake liner.
- Improper impeller clearance adjustment. See "Impeller Clearance" on page 21.
- Ventilation of the impeller due to rough or "white water" conditions.
- Mounting the outboard too high on the boat's transom. See "Application" on page 10.
- Attempting to trim up the outboard with the power trim while underway.

Do not operate your outboard above its recommended full-throttle RPM range. See "Specifications" on page 26. Serious outboard damage can result from excessive outboard RPM. If you cannot determine or correct the cause of over-speeding, see your Dealer.

## Intake Grate and Impeller Blockage

When traveling through very shallow water; sand, gravel and other debris can become trapped in the intake grate or impeller. This will cause the outboard to lose power.

## Removing Debris from the Intake Grate

### WARNING

**Always shift the outboard to NEUTRAL, turn the key switch OFF and remove the key, so the outboard cannot be started accidentally.**

**Always shut OFF the outboard before attempting to remove objects from the intake grate to prevent the possibility of contact with rotating impeller.**

Slow down and turn OFF the outboard. This might loosen whatever is on the intake grate allowing it to fall off. If objects are firmly trapped in the intake grate, it may be necessary to remove them with a suitable tool.

Occasionally, especially when the outboard is being slowed, debris may lodge in the impeller. In that case, the flywheel will not move.

A shear key is used to reduce severe damage to the impeller from jammed debris. Debris must be clear before the outboard will operate.

## Removing Debris from Impeller

### WARNING

**Always shift the outboard to NEUTRAL, turn the key switch OFF and remove the key, so the outboard cannot be started accidentally.**

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

Turn OFF the outboard and remove the outboard cover.

Repeatedly rotate the flywheel counter-clockwise and clockwise. This will move the jet impeller and should free the blockage.

## Outboard Jet Supplement

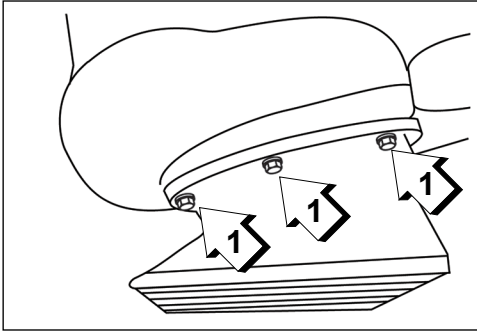
If it doesn't, it may be necessary to remove the intake grate housing.

To remove the intake grate housing:

### **⚠ WARNING**

**Do not attempt to start the outboard with the intake housing removed to prevent the possibility of contact with rotating impeller.**

- 1) Remove the screws retaining the intake grate housing. Then remove the intake grate housing.



1. Screws

009417

- 2) Rotate the flywheel counter-clockwise or back and forth. After jam is cleared, replace intake housing and screws.
- 3) Tighten screws in a criss-cross pattern to a torque of 10 to 12 ft. lbs. (14 to 16 N·m).

Replace the outboard cover.

## Mooring And Beaching

When the boat is tied to a dock or pulled onto a beach and the outboard is not in use, tilt it clear of the water to prevent sand or debris from being washed into the jet pump's impeller.

STOP the outboard before you beach. DO NOT continue to run outboard when you are beached. Always start your outboard in deeper water, away from the beach. Debris in the impeller can damage many parts of the drive unit. If debris becomes lodged in the impeller, the outboard will not crank and other parts can be damaged.

# Special Operating Conditions

## Cold and Freezing Weather

Avoid freeze damage to your outboard. Between periods of operation during freezing temperatures:

- Turn outboard fully to starboard.
- Raise to full TILT. Refer to Tilting.
- Remove clip and lanyard from emergency stop switch.
- Turn ignition key clockwise to the START position and crank outboard for no more than 10 seconds.
- Leave outboard in full TILT position when moored.

When starting outboard after freezing conditions, check the water pump indicator. A steady stream of water indicates the water pump is working.

If a steady stream of water from the indicator is not visible, STOP the outboard and see your Dealer for service.

## Saltwater

Fresh water internal flushing is recommended after use in salt, polluted, or brackish water to prevent deposits from clogging cooling passages. See your Dealer for a flushing device, P/N 435299.

To flush the unit:

- Remove flushing inlet screw from jet housing.
- Tighten flushing device in jet housing.
- Attach water hose. Turn on water to begin flushing.
- Start outboard and run at IDLE ONLY.
- Stop outboard and replace flushing screw after flushing has been completed.

Do not flush outboard with a water system that exceeds 40 psi (275 kPa).

Salt water leaves a residue that will harden and may make future disassembly procedures very difficult. Reduce the amount of

time your outboard is in salt water by tilting it clear of the water when not in use. At every opportunity, wash and rinse as much of the outboard as possible with fresh water.

Every six months, remove all mounting hardware and coat it with *Gasket Sealing Compound* to ease disassembly during future servicing.

## Shallow Water

During operation in water of any depth, the water intake must be submerged at all times and the water pump indicator must discharge a steady stream of water. Be sure the water intake is submerged when operating in very shallow water and check the water pump indicator often.

DO NOT operate your outboard with its drive unit dragging on bottom. Operate at SLOW speeds only, sand and debris can be drawn into the water intake causing possible impeller damage and blockage.

Operating even two or three inches off the bottom can result in sand and gravel being drawn into the water intake. When operating in very shallow water, the outboard may be tilted up slightly and run at slow speed only. See "Power Trim and Tilt" on page 16.

Remember to return the outboard to normal running position before attempting to plane the boat.

## Maintenance

### Jet Pump Maintenance Schedule

Routine inspection and maintenance is necessary to prolong the jet pump life.

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

### Driveshaft Bearing

#### ***Frequency Of Lubrication:***

- After each day's use AND every 10 operating hours
- Before a period of non-use
- More often, as experience indicates

Driveshaft bearing grease must be replaced on a regular basis to avoid bearing damage caused by the accumulation of moisture.

#### ***Frequency Of Grease Replacement:***

- Every 30 hours of fresh water operation
- Every 15 hours of salt water operation



# Service

## Driveshaft Bearing Lubrication

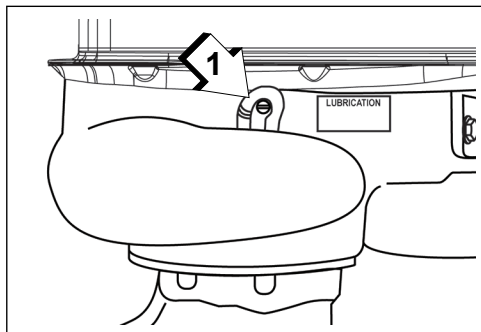
Use *Extreme Pressure Wheel Bearing Grease*, P/N 508303, with Grease Gun, P/N 434697.



1. Grease Gun, P/N 434697 009421
2. Extreme Pressure Wheel Bearing Grease, P/N 508303

## Bearing Lubrication Procedure

- 1) Remove the vent hose from the grease fitting.
- 2) Add enough grease to fill the vent hose.
- 3) Replace vent hose on the fitting.



1. Vent hose 009421

## Grease Replacement Procedure

- 1) Remove the vent hose from the grease fitting.
- 2) Add enough grease to fill the vent hose.
- 3) Continue to pump in enough grease to force out all the old grease. Moisture in the bearings will be contained in the old grease.

- 4) Visually inspect the purged grease for:
  - a gradual increase in moisture content - indicates seal wear.
  - discoloration (dark, dirty gray) - can indicate worn seals. Inspect seals; replace if worn or if condition is doubtful - to reduce possibility of severe outboard damage. HOWEVER, discoloration of grease is common during break-in of new seals.
- 5) Replace vent hose on fitting.

## ENVIRONMENTAL NOTE

Dispose of used grease and shop towels in an environmentally friendly manner, or according to local regulation.

The recommended lubricants are formulated to protect bearings and gears. They should be used to avoid damage caused by improper lubrication.

## Impeller Clearance

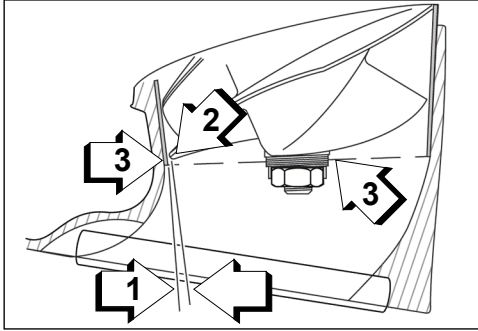
If a loss of performance combined with a higher than normal wide-open-throttle RPM is noted (or the RPM limiter actuates), check for wear between the impeller's edge and the water intake casing liner.

Accelerated impeller wear can occur when operating in waterways which have bottoms composed largely of sand and gravel.

To check the clearance between the impeller and the intake casing liner, place a feeler gauge through the intake grate and measure

## Outboard Jet Supplement

the clearance between the impeller's edge and the liner.



1. Clearance
2. Impeller edge
3. Liner

009416

Correct clearance is:

- 0.020 in. (0,51 mm) minimum
- 0.030 in. (0,76 mm) maximum

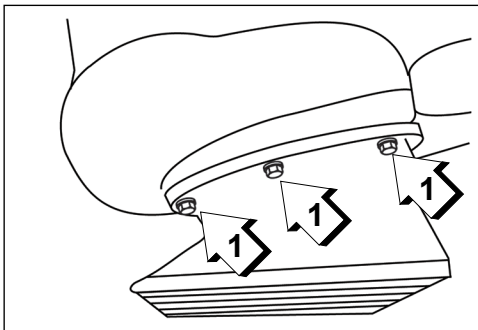
If the clearance is more than 0.030 in. (0,76 mm), adjustment is required.

### Adjustment Procedure

#### **⚠ WARNING**

**To avoid accidental starting of outboard while servicing, twist and remove all spark plug leads.**

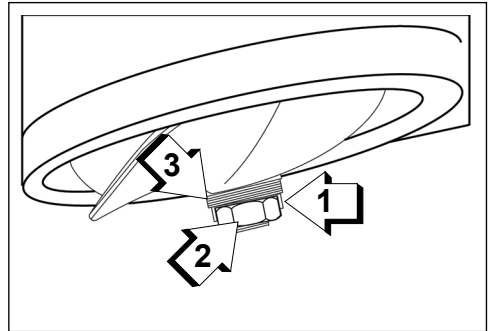
Remove the six screws that retain the intake housing. Separate it from the main housing.



1. Screws

009417

Bend the tabs on the tab-lock washer back from the driveshaft nut. Remove the driveshaft nut, tab-lock washer, and shim washers from the driveshaft.



1. Tabs
2. Drive shaft nut
3. Shim washers

009418

Remove the impeller, key, and impeller sleeve from the driveshaft.

Use a flat file and remove all nicks and burrs from the edge of the impeller.

Transfer one or more shims from below the impeller to above the impeller. This will move the impeller down and decrease the clearance.

**2 and 3-cylinder models** — one shim reduces clearance approximately 0.004 in. (0,10 mm).

**V6 models** — one shim reduces clearance approximately 0.007 in. (0,18 mm).

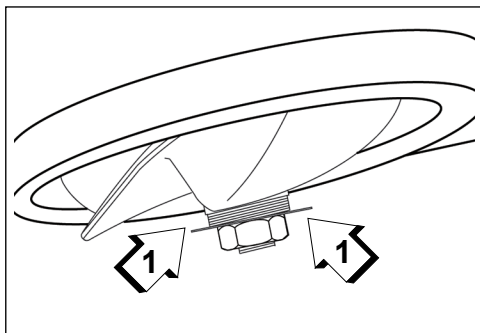
Lubricate impeller driveshaft hole, impeller sleeve, and key with *Triple-Guard* grease before assembling parts.

Place impeller back onto driveshaft, aligning impeller key and sleeve in impeller.

Assemble remaining shim washers, new tab-lock washer, and impeller nut onto driveshaft.

Torque impeller nut to 17 ft. lbs. (23 N·m). Bend tabs around driveshaft nut to secure.

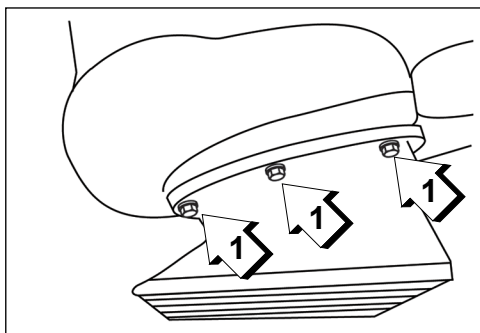
## Steering Effort Adjustment



1. Tabs

009419

Assemble intake housing to main housing. Apply *Gasket Sealing Compound* to the threads of the six retaining screws and install them FINGER TIGHT ONLY.



1. Screws

009417

Check for any rubbing or binding between the casing liner and the impeller. If clearance is greater on one side, verify that the intake housing is centered. Torque screws in a criss-cross pattern to 10-12 ft. lbs. (14-16 N·m).

Recheck impeller clearance after shimming adjustment has been performed.

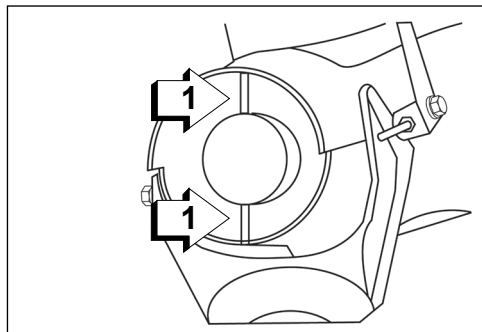
### **⚠ WARNING**

**Improper steering torque adjustment can cause difficult steering.**

On some boat and outboard combinations, the steering may pull to starboard.

Correct this condition by adjusting the water flow control tabs located at the top and bottom of the exhaust tube.

Bend the tabs 1/6 inch (1,6 mm) toward the starboard side of the outboard.



1. Water flow control tabs

009420

## Troubleshooting

SYMPTOM	POSSIBLE CAUSE
Engine RPM is excessive	<ul style="list-style-type: none"><li>• Height improperly set</li><li>• Angle adjustment improperly set</li><li>• Impeller worn</li><li>• Intake grille blocked</li><li>• Anti-ventilation plate required (See “Spray Plate, White Water Wedge” on page 13.)</li></ul>
Bearing lubricant discolored	<ul style="list-style-type: none"><li>• Inadequate lubrication maintenance</li><li>• seals worn</li><li>• Bearings worn</li></ul>
Engine loses power or thrust	<ul style="list-style-type: none"><li>• Impeller worn</li><li>• Shift cable slack</li><li>• Reverse gate improperly set</li></ul>
Engine will not crank, flywheel will not rotate	<ul style="list-style-type: none"><li>• Debris jammed in impeller</li></ul>

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# Product Information

## Specifications

<b>40 Jet Models</b>	
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 Jet</b> – 5500 to 6000 RPM
Power <sup>(1)</sup>	<b>Jet Drive Power</b> – 40 HP (29.4 kw) @ 5500 RPM <b>Engine HP</b> – 60 HP (44.7 kw) @ 5500 RPM
Idle RPM in Neutral Gear <sup>(2)</sup>	750 ± 50
Idle RPM in Neutral <sup>(2)</sup>	650 ± 50
Weight	<b>With Jet Drive</b> – 260 lbs. (118 kg)
Transom Height	<b>L Models</b> – 24 1/2 to 25 in. (622 to 635 mm)

<b>60 Jet Models</b>	
Displacement	79.1 cu. in. (1.3 L/1296 cc)
Engine Type	In-line, 3 Cylinder, Two-Cycle, <i>E-TEC</i>
Full Throttle Operating Range	<b>60 Jet</b> – 5000 to 5500 RPM
Power <sup>(1)</sup>	<b>Jet Drive Power</b> – 60 HP (44.7 kw) @ 5000 RPM <b>Engine 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
Weight	<b>With Jet Drive</b> – 334 lbs. (151 kg)
Transom Height	<b>L Models</b> – 24 1/2 to 25 in. (622 to 635 mm)

<b>105 Jet Models</b>	
Displacement	158.2 cu. in. (2.6 L/2592 cc)
Engine Type	60° V, 6 Cylinder, Two-Cycle, <i>E-TEC</i>
Full Throttle Operating Range	<b>105 Jet</b> – 5300 to 6000 RPM
Power <sup>(1)</sup>	<b>Jet Drive Power</b> – 105 HP (110 kw) @ 5300 RPM <b>Engine HP</b> – 150 HP (110 kw) @ 5300 RPM
Idle RPM in Gear <sup>(2)</sup>	500 ± 50
Idle RPM in Neutral <sup>(2)</sup>	500 ± 50
Weight	<b>With Jet Drive</b> – 428 lbs. (194 kg)
Transom Height	<b>L 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.

# Product Warranty Information

## ***Evinrude E-TEC* Outboard**

Product warranty information is included in the ***Operator's Guide*** provided with your *Evinrude E-TEC* outboard.

## **Jet Drive Unit**

For warranty information on the jet drive unit, contact the jet drive manufacturer:

Outboard Jets  
2035 Edison Avenue  
San Leandro, CA 94577  
Tel.: 510.562.6049  
Fax.: 510.562.0309  
[www.outboardjets.com](http://www.outboardjets.com)

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