



INSTALLATION INSTRUCTIONS OUTBOARD JET PUMP – SECONDARY SHIFT CABLE

APPLICATION

This instruction sheet is intended to supplement the aftermarket jet pump manufacturer's installation instructions. *Evinrude® E-TEC™* outboards require a secondary shift cable and hardware to actuate the powerhead shift linkage when outboard jet pump kit is installed.

SAFETY INFORMATION

For safety reasons, this part should be installed by an authorized *Evinrude®/Johnson®* dealer. This instruction sheet is not a substitute for work experience. Additional helpful information may be found in other service literature for your engine.

This instruction sheet uses the following signal words identifying important safety messages.



DANGER



Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.



WARNING



Indicates a potentially hazardous situation which, if not avoided, **CAN** result in severe injury or death.



CAUTION



Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate personal injury or property damage. It also may be used to alert against unsafe practices.

IMPORTANT: Identifies information that will help prevent damage to machinery and appears next to information that controls correct assembly and operation of the product.

These safety alert signal words mean:

ATTENTION!
BECOME ALERT!
YOUR SAFETY IS INVOLVED!

Always follow common shop safety practices. If you have not had training related to common shop safety practices, you should do so to protect yourself, as well as the people around you.

It is understood that this instruction sheet may be translated into other languages. In the event of any discrepancy, the English version shall prevail.

DO NOT do any repairs until you have read the instructions and checked the pictures relating to the repairs.

Be careful, and never rush or guess a service procedure. Human error is caused by many factors: carelessness, fatigue, overload, preoccupation, unfamiliarity with the product, and drugs and alcohol use, to name a few. Damage to a boat and outboard can be fixed in a short period of time, but injury or death has a lasting effect.

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.

Torque wrench tightening specifications must be strictly followed. Replace any locking fastener (locknut or patch screw) if its locking feature becomes weak. Definite resistance to turning must be felt when reusing a locking fastener. If replacement is specified or required because the locking fastener has become weak, use only authorized *Evinrude/Johnson Genuine Parts*.



If you use procedures or service tools that are not recommended in this instruction sheet, **YOU ALONE** must decide if your actions might injure people or damage the outboard.

TO THE INSTALLER: Give this sheet to the owner. Advise the owner of any special operation or maintenance information contained in the instructions.

TO THE OWNER: Save these instructions in your owner's kit. This sheet contains information important to the future use and maintenance of your outboard.

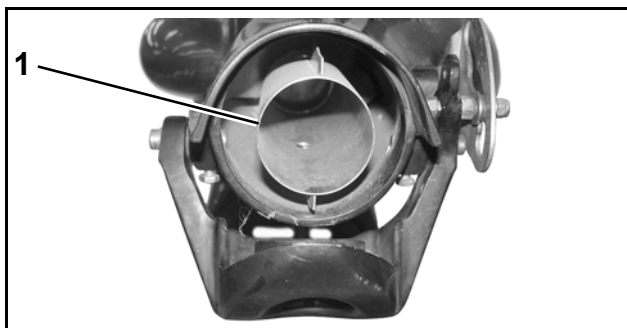


JET PUMP MOUNTING MODIFICATION

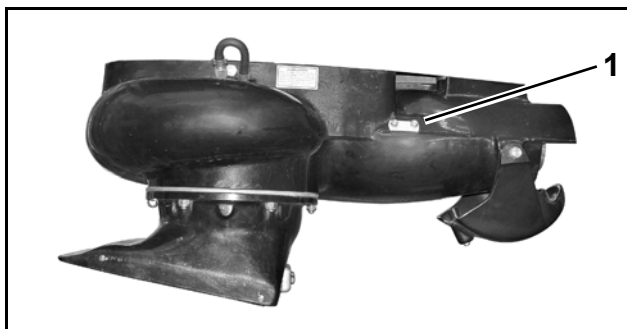
**WARNING**

To prevent accidental starting while servicing, disconnect the battery cables at the battery. Twist and remove all spark plug leads.

Remove jet pump housing exhaust tube retainer assembly and exhaust tube.

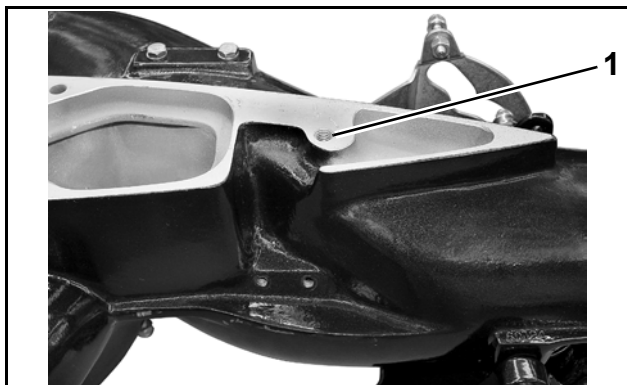


1. Exhaust tube



1. Retainer assembly

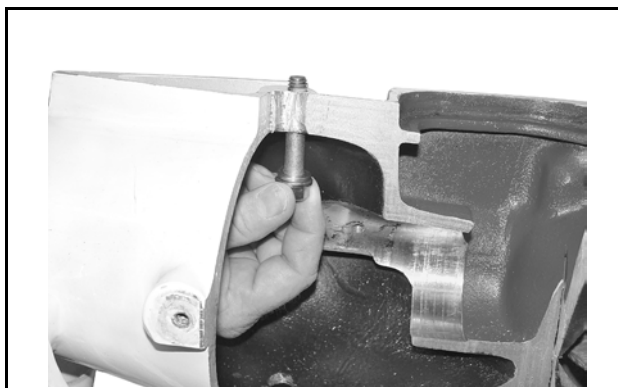
Drill the threaded mounting hole at rear of jet pump housing to 0.386 in. (25/64 in.)



1. Rear mounting hole

Refer to appropriate service manual for water pump installation and gearcase mounting screw torques. Install jet pump housing on outboard.



Use the 2 in. x 3/8 in. screw in the rear mounting hole of jet pump.



Cutaway view

Reinstall exhaust tube in jet pump housing.

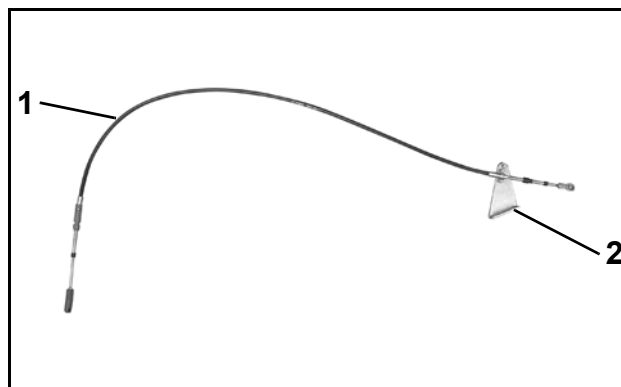
SECONDARY SHIFT CABLE INSTALLATION

**CAUTION**

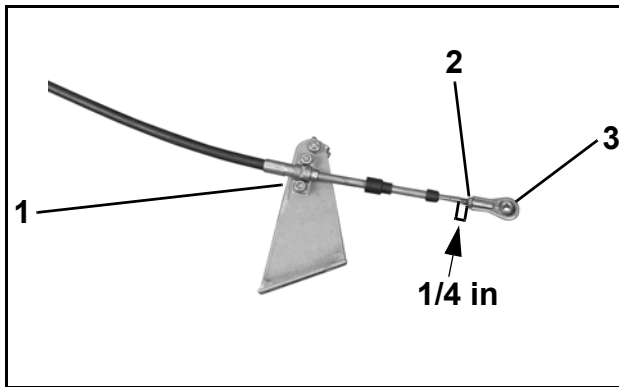
Failure to install and adjust the secondary shift cable will affect outboard operation. Neutral idle run quality may be adversely affected and outboard will not accelerate in gear.

Assemble secondary shift cable components as follows.

Secure secondary cable (5 ft.) to jet pump cable bracket with mounting hardware. Install locking nut and cable end provided. Secure cable end with locking nut with approximately 1/4 in. of threads exposed.

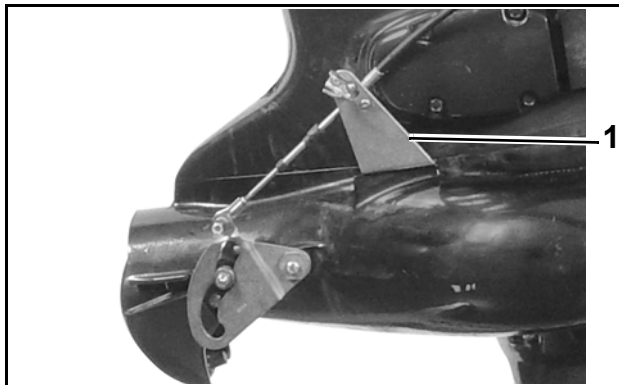


1. Cable
2. Bracket



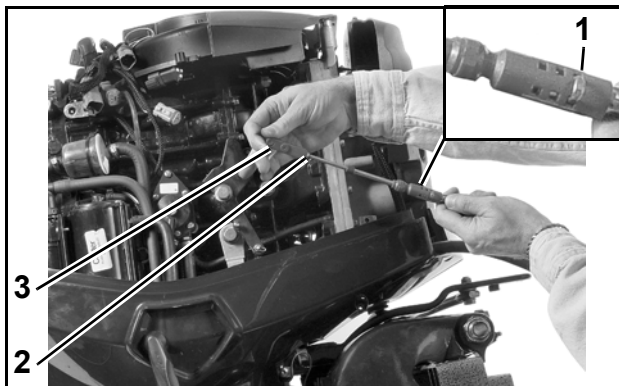
1. Mounting hardware
2. Locking nut
3. Cable end

Secure cable bracket to jet pump housing and cable end to shift cam. Position shift cam in NEUTRAL position as shown.



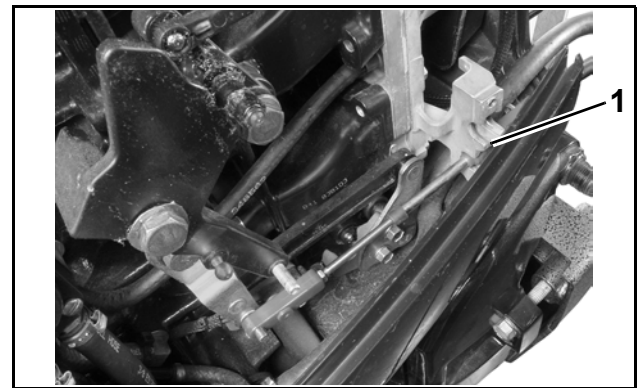
1. Cable bracket

Secure cable trunnion with retainer in end position as shown. Install locking nut and cable end provided.



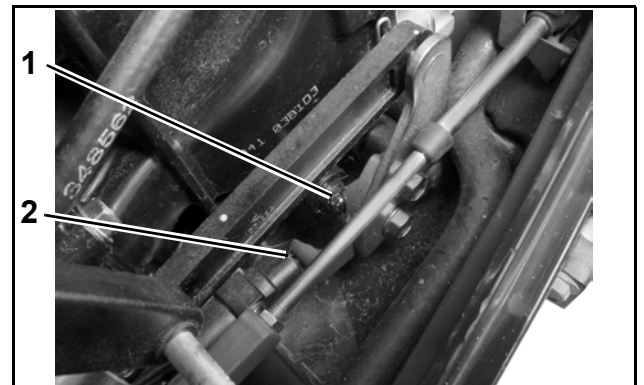
1. Cable trunnion w/retainer
2. Locking nut
3. Cable end

Position trunnion in bracket on powerhead.



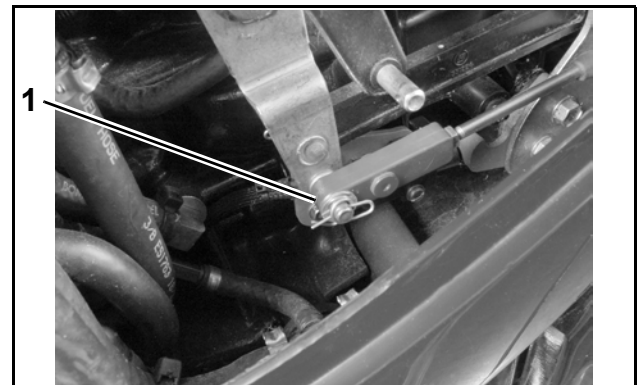
1. Bracket

Adjust cable end (or ends) to position shift linkage in NEUTRAL position. Neutral detent must be centered in shift lever detent and neutral switch must be centered on cam of detent. Tighten locking nut.



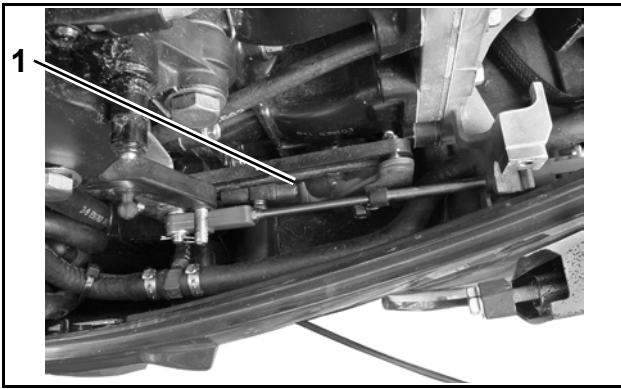
1. Shift lever detent
2. Neutral switch/cam

Secure cable on shift lever pin with flat washer and retainer clip.



1. Flat washer and retainer clip

Verify shift linkage is adjusted properly.



1. Neutral switch depressed with shift actuator in NEUTRAL position

SHIFT GATE ADJUSTMENT

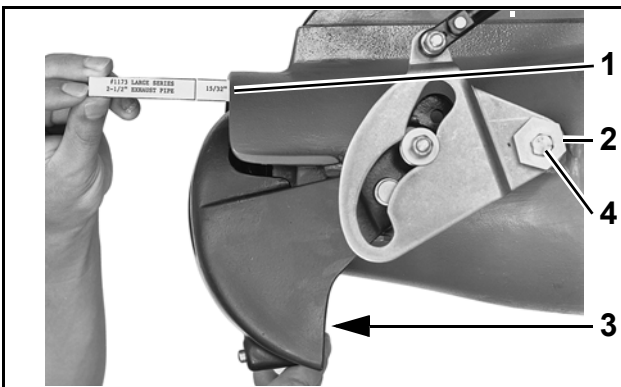
Move remote control handle to NEUTRAL detent.

Hold reverse gate up and check for proper clearance between reverse gate and water flow passage:

- 15/32 in. (11.9 mm)

If adjustment is required:

- Loosen shift cam screw
- Rotate cam eccentric nut while holding reverse gate up, until proper clearance is achieved. Tighten cam screw and recheck adjustment.

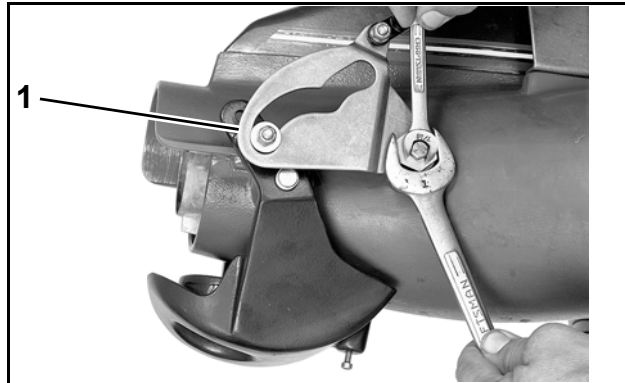


1. CLEARANCE
2. Eccentric nut
3. Reverse gate
4. Screw

Move remote control handle to FORWARD detent.

When roller is in FORWARD position, apply hand pressure to move the reverse gate up, toward NEUTRAL. If properly adjusted, reverse gate should not move toward NEUTRAL.

If gate can be moved toward NEUTRAL, readjust eccentric to hold reverse gate in FORWARD position.



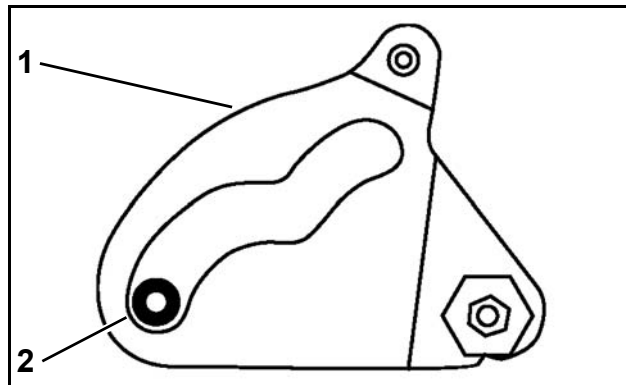
1. FORWARD position

SHIFT CABLE ADJUSTMENT

⚠ **WARNING** ⚠

The shift cable must be adjusted correctly or water pressure from forward boat travel could move the gate into REVERSE, causing the boat to stop abruptly. Occupants could be thrown about or ejected.

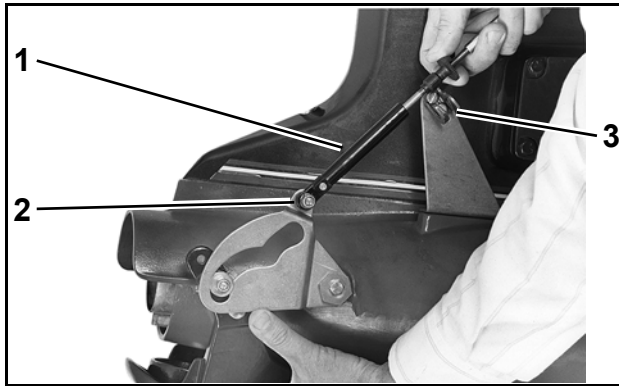
Pull up on shift cam until cam roller is at the far end of the FORWARD detent range.



1. Shift cam
2. FORWARD detent range

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 bracket. Pull cable off the stud.

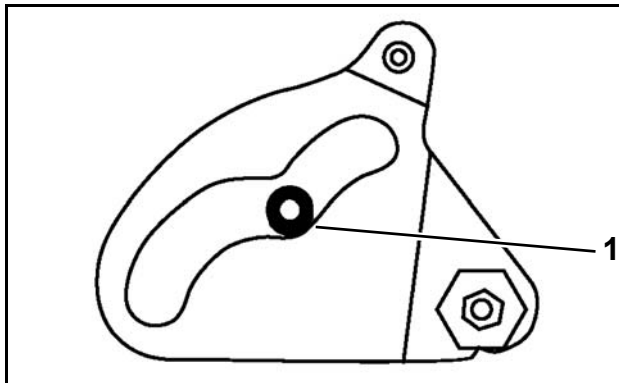


- 1. Cable guide
- 2. Stud
- 3. Trunnion anchor bracket

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

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

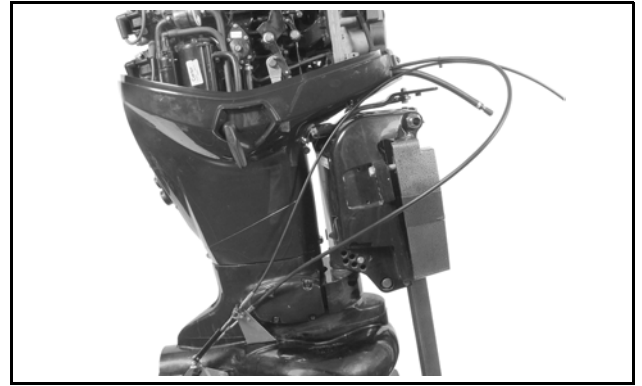


- 1. NEUTRAL detent

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

IMPORTANT: The reverse gate must remain 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.

Do not restrict movement of shift cables. Route cables carefully and secure with tie straps.



Refer to the appropriate service manual and the remote control installation instructions for additional installation information.

Connect battery cables, positive cable first and then negative cable. Connect spark plug wires to spark plugs.

Test outboard operation before returning or delivering to customer.

	WARNING	
<p>The shift cables and linkage must be correctly installed and adjusted. Failure to correctly install the outboard could result in property damage, serious injury or death.</p>		