



# EVINRUDE Johnson

## TILT ASSIST KIT, P/N 5006139 INSTALLATION INSTRUCTIONS

### APPLICATION

This kit is designed for use on the following **2-cylinder** outboards with manual tilt:  
**2004 and newer Evinrude® E-TEC™ 40 HP recreational and 60 HP commercial models and 1982 and newer Evinrude®/Johnson® 40-60 HP models (including 55 HP commercial and 55 HP military models) with single-piece lower motor cover.** DO NOT install on any other models.

### SAFETY INFORMATION

For safety reasons, this kit 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.

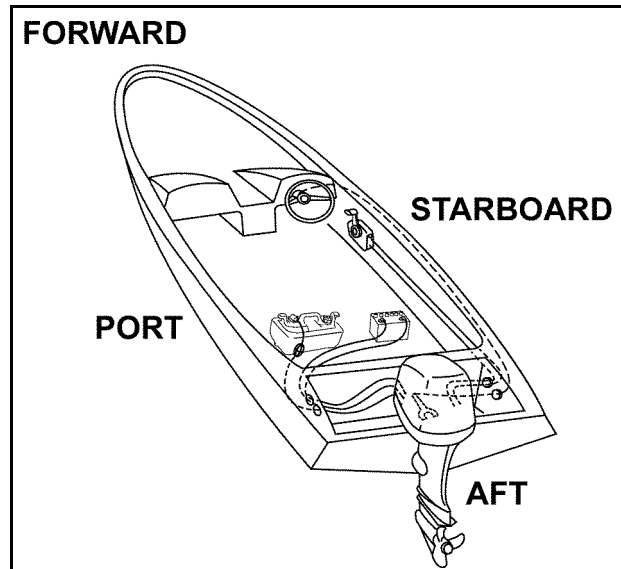
Torque wrench tightening specifications must be strictly followed. Replace any locking fastener (locknut or patch screw) if its locking feature becomes weak. Definite resistance to turning must be felt when reusing a locking fastener. If replacement is specified or required because the locking fastener 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.

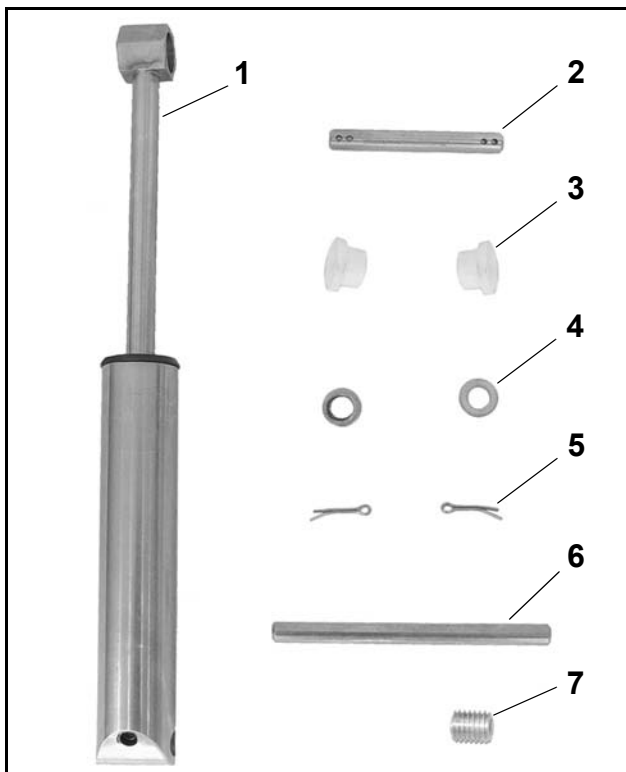
**TO THE OWNER:** Save these instructions in your owner's kit. This sheet contains information important to the future use and maintenance of your engine.





Nautical Orientation

## KIT CONTENTS



Tilt Assist Kit Contents

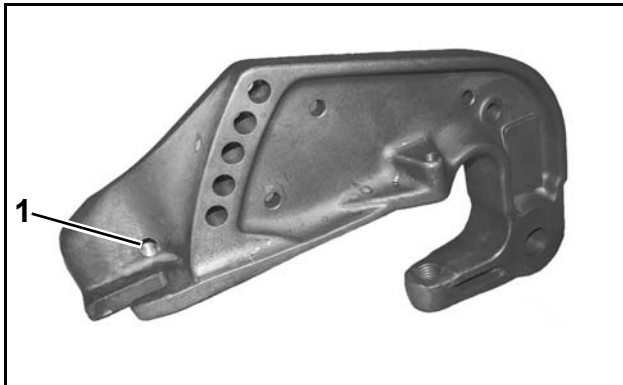
003927

Ref.	P/N	Name of Part	Qty
1	172908	CYLINDER ASSY	1
2	351272	PIN, Upper pivot	1
3	329904	BUSHING, Upper pivot	2
4	308688	WASHER, Upper pivot pin	2
5	552906	COTTER PIN, Upper pivot	2
6	122877	PIN, Lower pivot	1
7	352207	SET SCREW	<b>A</b> 1

**A** May not be used in some applications

## INSTALLATION INSTRUCTIONS - STARBOARD SIDE STERN BRACKET WITH LOWER PIVOT PIN HOLE

**IMPORTANT:** Use the following instructions if your outboard has a hole for the lower pivot pin bored all the way through the **starboard** side stern bracket.



1. Lower pivot pin hole

004124



### WARNING



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

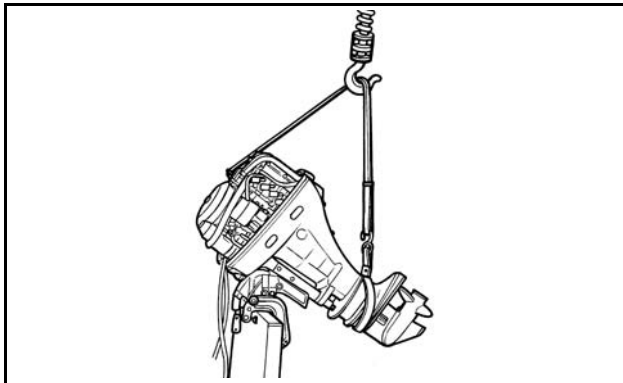
To prevent injury from contact with a rotating propeller, remove propeller before servicing.



### WARNING



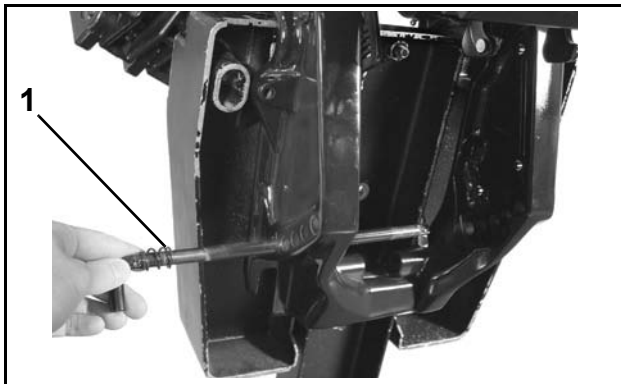
During service, the outboard may drop unexpectedly. To avoid personal injury, always support the outboard's weight with a suitable hoist.



TYPICAL

001731

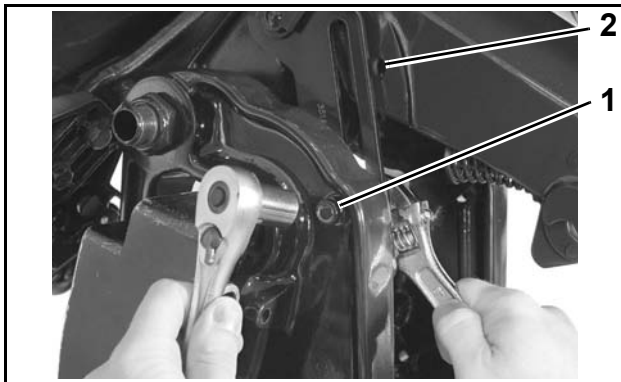
Remove thrust rod.



1. Thrust rod

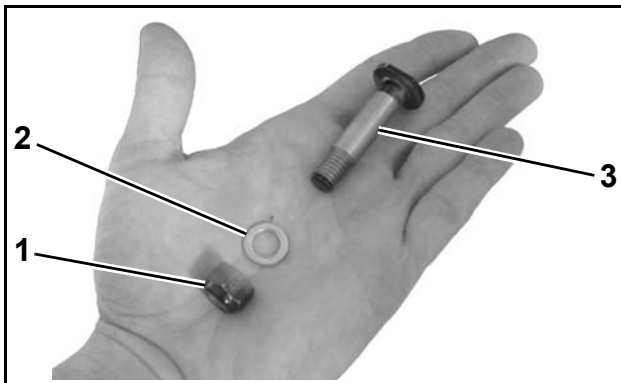
004309

Remove nut, washer, and stop link screw from port side stern bracket. This will loosen the stop link so you can access the upper pivot pin hole.



1. Nut  
2. Upper pivot pin hole

004310

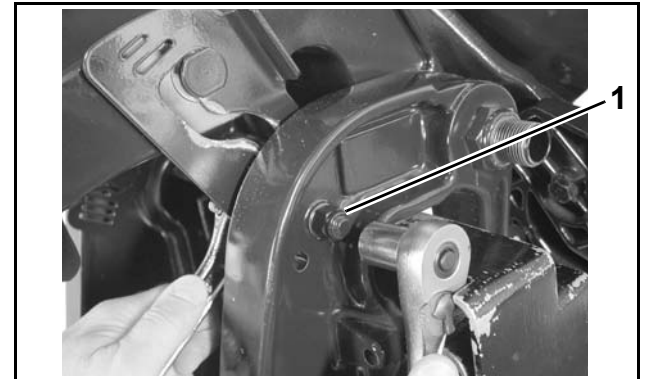


1. Nut  
2. Washer  
3. Stop link screw

004311

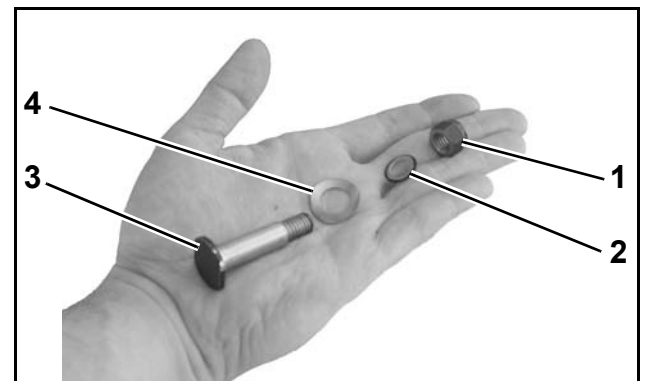
Remove nut, washer, stop link screw, and spring washer from starboard side stern bracket. The spring washer is located between the stop link and the stern bracket.

With both stop links loosened, there will be enough tilt play to install the tilt assist cylinder.



1. Nut

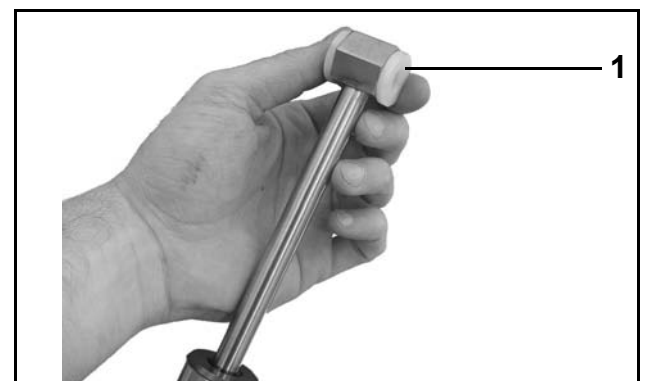
004312



1. Nut  
2. Washer  
3. Stop link screw  
4. Spring washer

004313

Install two (2) bushings in end of cylinder.



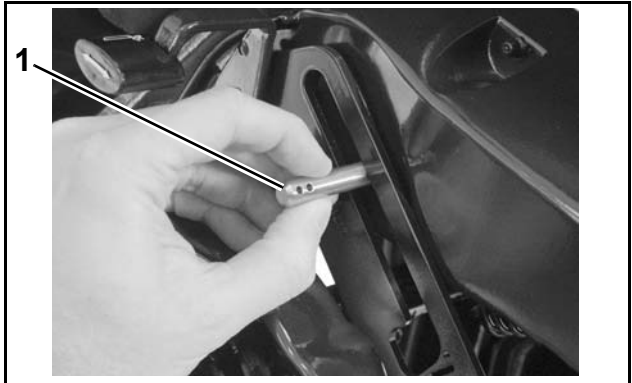
1. Bushing (2)

003936

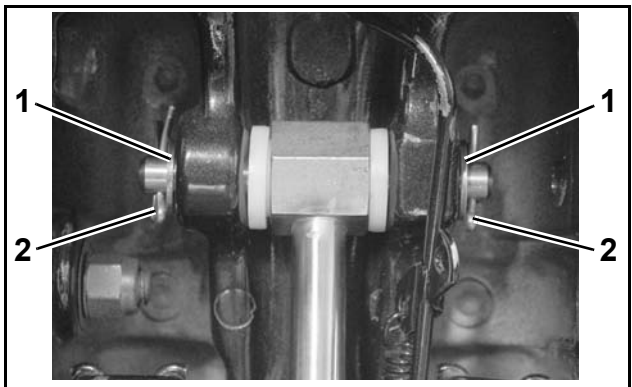
**IMPORTANT:** During installation and assembly, apply a light coat of *Triple-Guard®* grease to all pivot points.

Position cylinder between stern brackets. Insert upper pivot pin through port side stop link.

Install two (2) washers on upper pivot pin. Install two (2) cotter pins in upper pivot pin holes. There are four (4) holes in upper pivot pin. Depending on engine model, use innermost available holes.

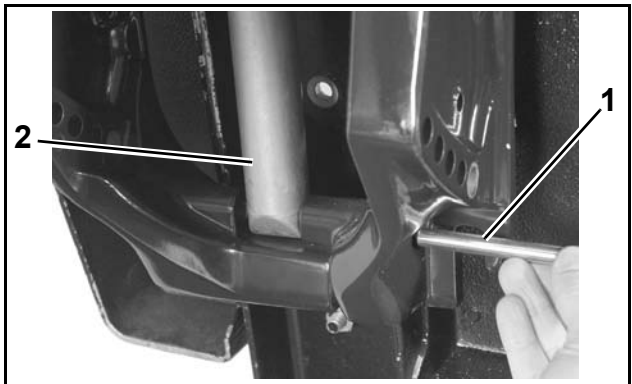


1. Upper pivot pin 004314



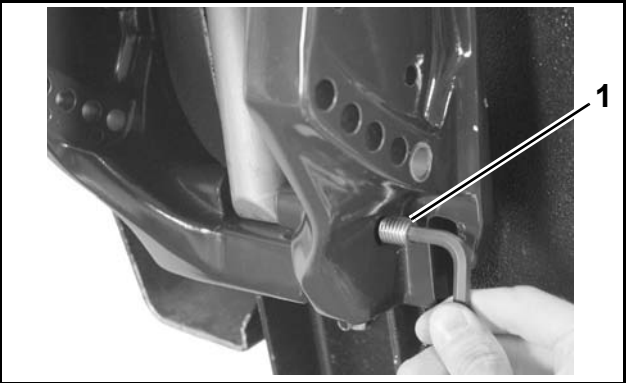
1. Washers (2) 003939  
2. Cotter pins (2)

Install lower pivot pin through hole in starboard stern bracket to secure other end of cylinder.



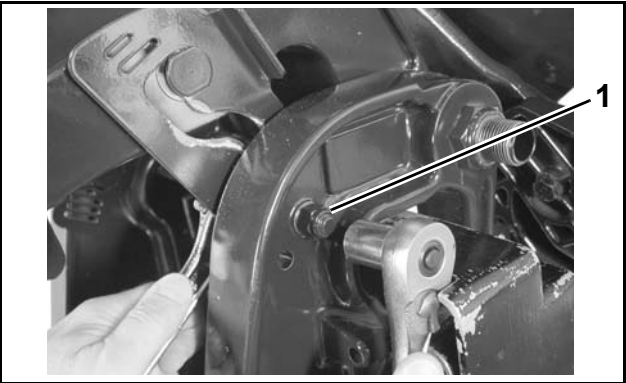
1. Lower pivot pin 004259  
2. Cylinder

Use allen head wrench to install set screw into lower pivot pin hole until screw bottoms out.



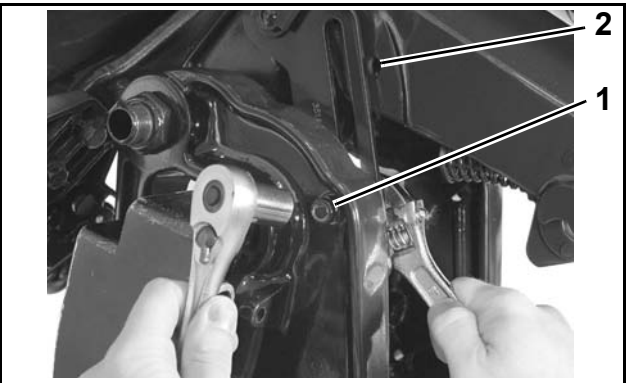
1. Set screw 004260

Install previously removed spring washer, stop link screw, washer, and nut through stop link and stern bracket on starboard side. **Make sure the spring washer is installed between the stop link and the stern bracket.** Tighten nut to 144 to 168 in. lbs. (16 to 19 N·m).





1. Nut 004312

Install previously removed stop link screw, washer, and nut through stop link and stern bracket on port side. Tighten nut to 144 to 168 in. lbs. (16 to 19 N·m).

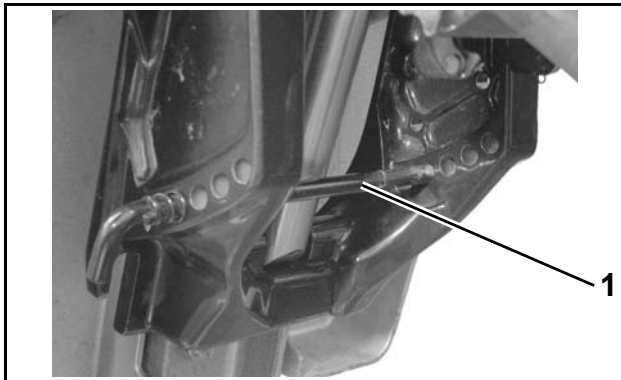


1. Nut 004310  
2. Upper pivot pin hole

Install thrust rod.

**WARNING**



When the tilt assist cylinder is installed, the thrust rod cannot be installed in the lowest position. The thrust rod must be installed in one of the other positions. Otherwise, the outboard's reverse thrust lock will not engage and/or the cylinder may be damaged.



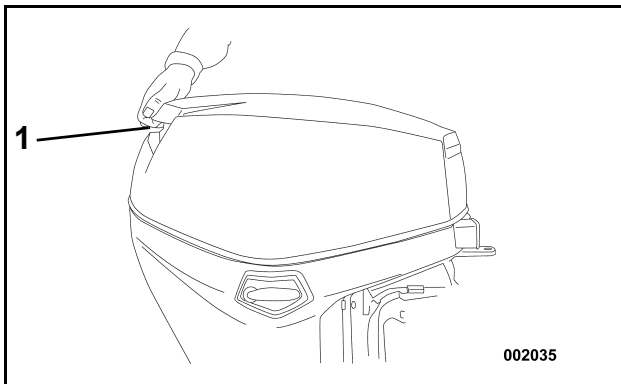
1. Thrust rod

003950

## CHECK OPERATION

**CAUTION**

Use the tilt grip on the engine cover to tilt the outboard. **DO NOT** use the steering handle to tilt the outboard.





1. Tilt grip

002035

Before delivering to customer, make sure outboard tilts fully up and down and turns freely from side to side. Also, make sure reverse thrust lock engages fully.

## INSTALLATION INSTRUCTIONS - STARBOARD SIDE STERN BRACKET WITHOUT LOWER PIVOT PIN HOLE

**IMPORTANT:** Use the following instructions if your outboard does **not** have a hole for the lower pivot pin bored all the way through the port side stern bracket.

**WARNING**

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

To prevent injury from contact with a rotating propeller, remove propeller before servicing.

**IMPORTANT:** For applications other than *Evinrude E-TEC* 40 HP models, this procedure may be performed from the starboard side of the outboard.

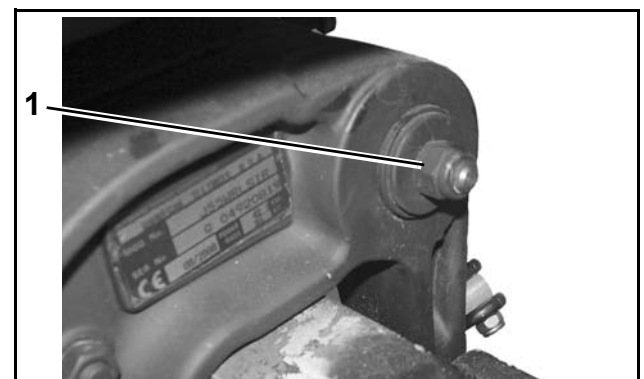
**Models with tilt tube:** While outboard is still mounted, remove cap (if equipped) and tilt tube nut from **port side only**.



1. Cap  
2. Tilt tube nut

003928

**Models with tilt bolt:** While outboard is still mounted, remove tilt bolt nut and washer from starboard side.




1. Tilt bolt nut (55 HP commercial and military)


003955



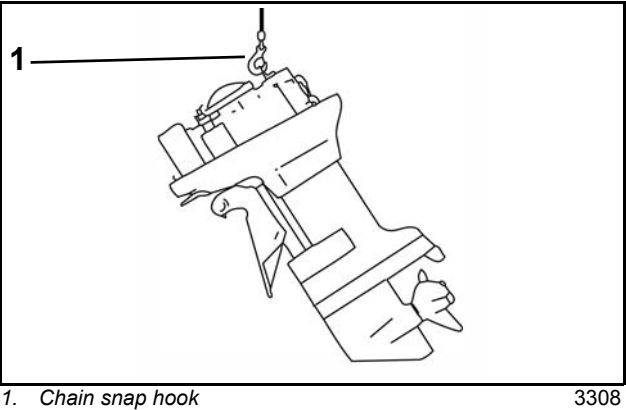
Loosen clamp screws and fasten appropriate chain and snap hook to lifting eye on engine block. Use hoist to lift outboard from transom.



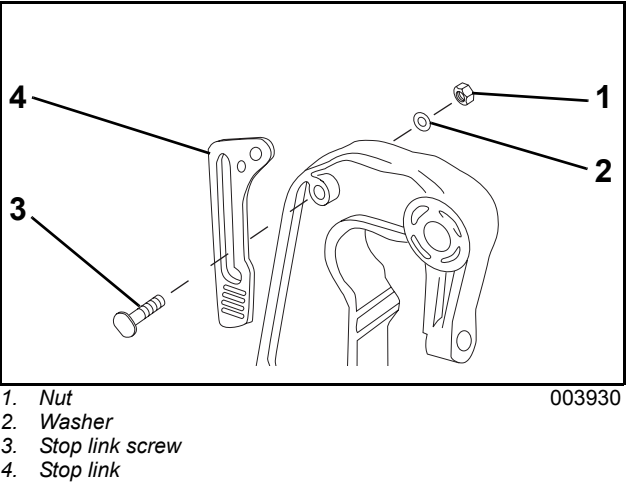
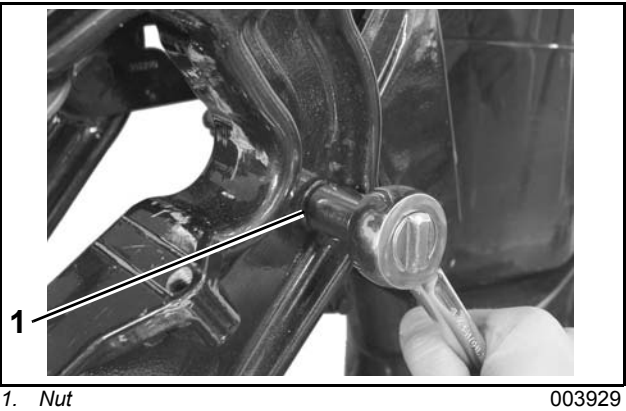
**CAUTION**



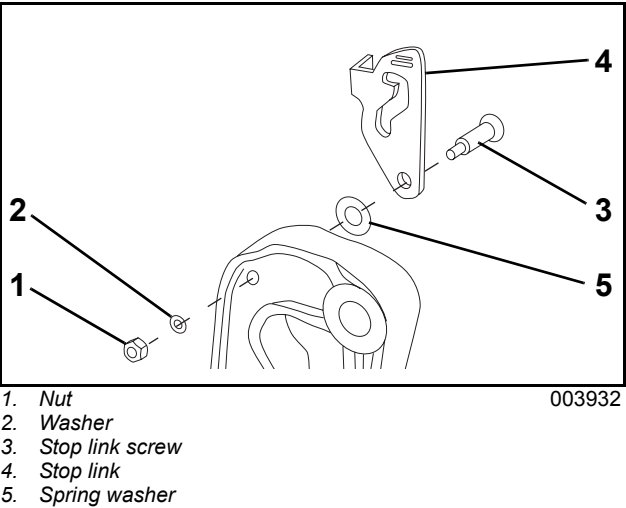
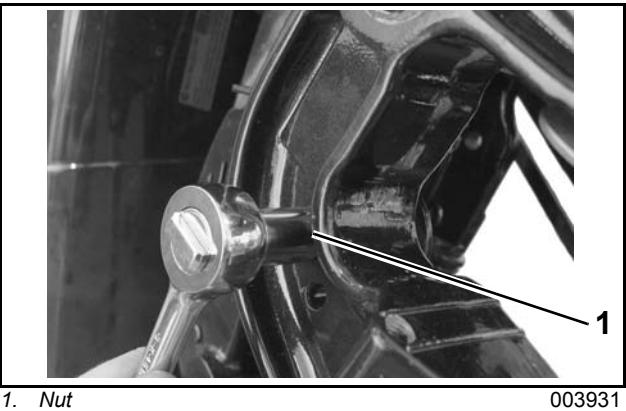
If the chain hook or snap hook is too large, the lifting eye could break. The outboard could drop suddenly and cause serious damage.



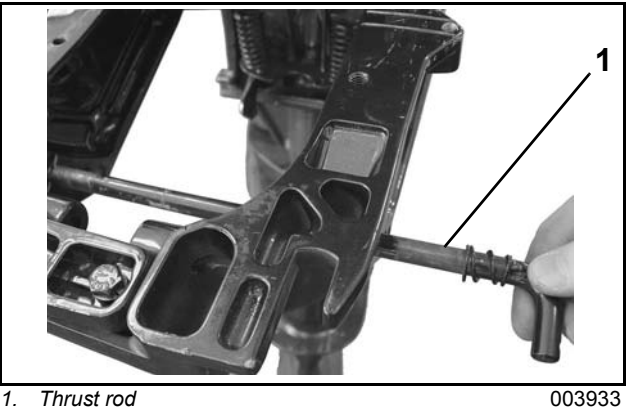
Remove nut, washer, and stop link screw from port side stern bracket.



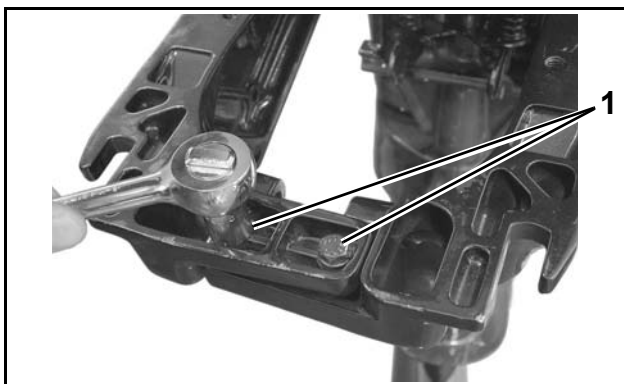
Remove nut, washer, stop link screw, and spring washer from starboard side stern bracket.



Remove thrust rod.



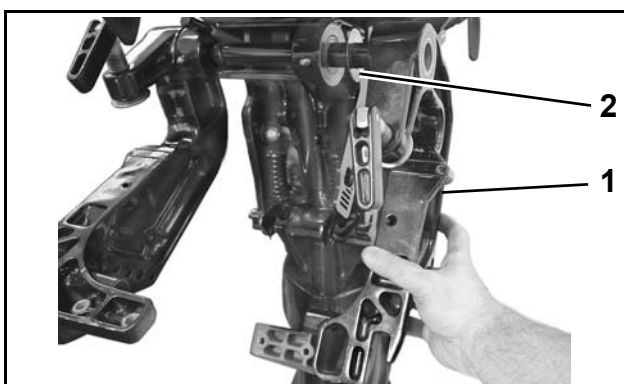
Remove two (2) stern bracket screws and lock washers.



1. Stern bracket screws (2)

003934

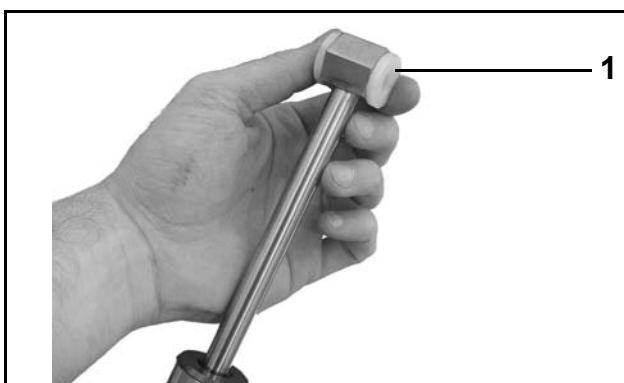
Remove port stern bracket and thrust washer from tilt tube.



1. Stern bracket  
2. Thrust washer

003935

Install two (2) bushings in cylinder.

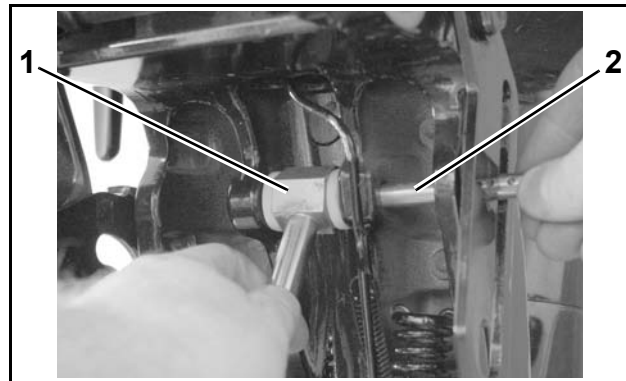


1. Bushing (2)

003936

**IMPORTANT:** During installation and assembly, apply a light coat of *Triple-Guard*® grease to all pivot points.

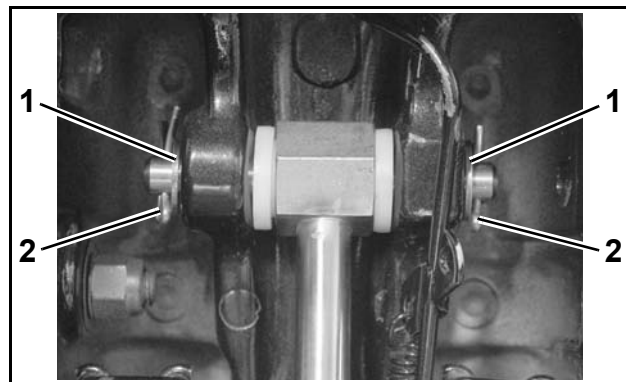
Position cylinder between stern brackets, as shown. Insert upper pivot pin from port side.



1. Cylinder  
2. Upper pivot pin

003937

Install two (2) washers on upper pivot pin. Install two (2) cotter pins in upper pivot pin holes. There are four (4) holes in upper pivot pin. Depending on engine model, use innermost available holes.



1. Washers (2)  
2. Cotter pins (2)

003939

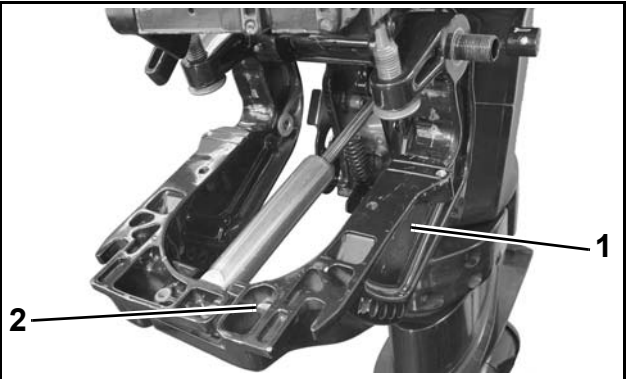
Install lower pivot pin through other end of cylinder and into recess in starboard stern bracket.



1. Lower pivot pin

003940

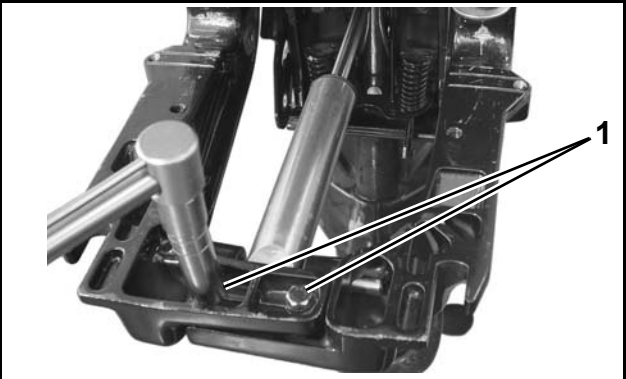
Install thrust washer and port stern bracket on tilt tube. Make sure lower pivot pin engages hole in port stern bracket.



1. Port stern bracket  
2. Lower pivot pin hole

003941


Install two (2) stern bracket screws with lock washers. Tighten screws to 144 to 168 in. lbs. (16 to 19 N·m).



1. Stern bracket screws (2)


003942

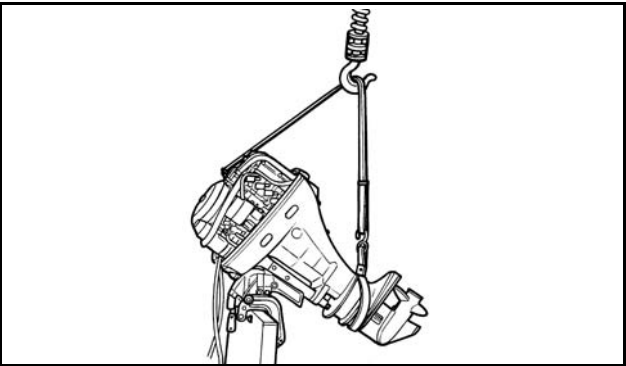
**IMPORTANT:** Before installing the remaining parts, lower outboard onto transom to slightly compress the cylinder.



**WARNING**

During service, the outboard may drop unexpectedly. To avoid personal injury, always support the outboard's weight with a suitable hoist.

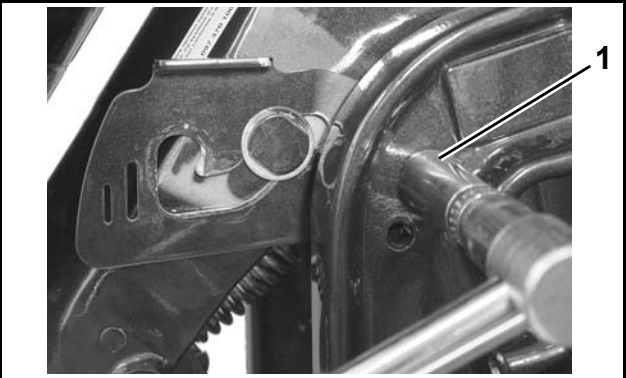




TYPICAL

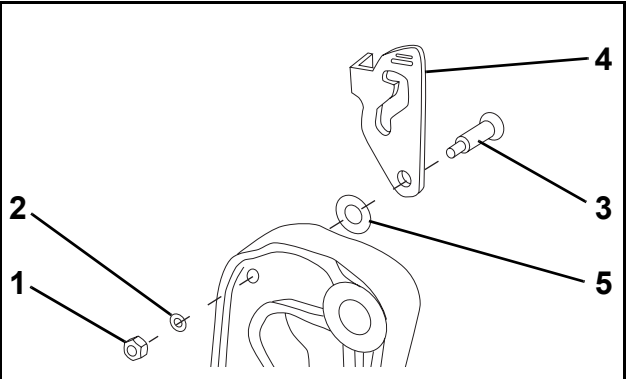
001731

Install previously removed spring washer, stop link screw, washer, and nut through stop link and stern bracket on starboard side. **Make sure the spring washer is installed between the stop link and the stern bracket.** Tighten nut to 144 to 168 in. lbs. (16 to 19 N·m).



1. Nut

003948



1. Nut  
2. Washer  
3. Stop link screw  
4. Stop link  
5. Spring washer

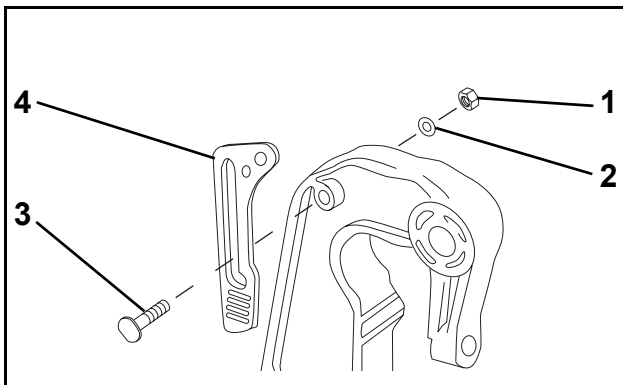
003932



Install previously removed stop link screw, washer, and nut through stop link and stern bracket on port side. Tighten nut to 144 to 168 in. lbs. (16 to 19 N·m).



1. Nut 003949

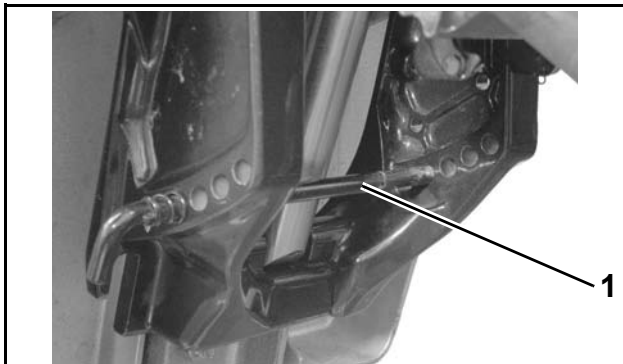


1. Nut  
2. Washer  
3. Stop link screw  
4. Stop link 003930

Install thrust rod.

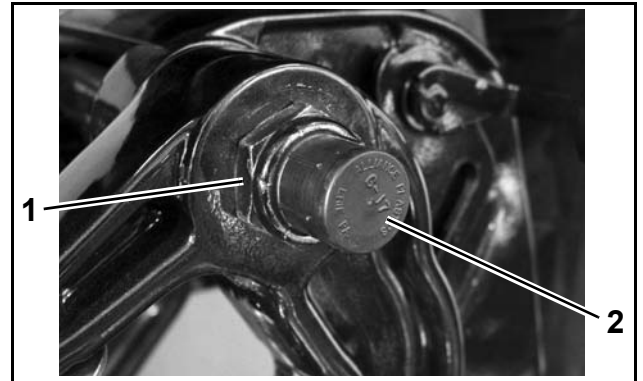
⚠ **WARNING** ⚠

**When the tilt assist cylinder is installed, the thrust rod cannot be installed in the lowest position. The thrust rod must be installed in one of the other positions. Otherwise, the outboard's reverse thrust lock will not engage and/or the cylinder may be damaged.**



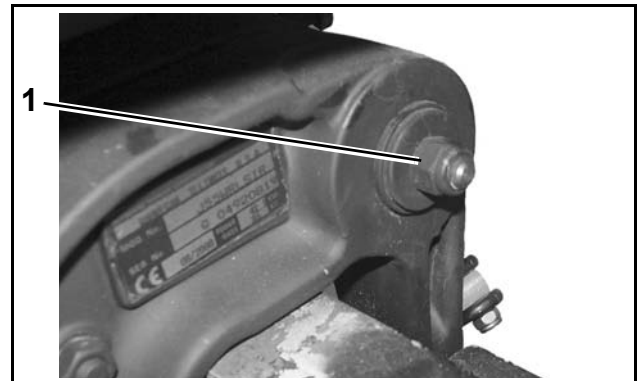
1. Thrust rod 003950

**Models with tilt tube:** Install tilt tube nut. Tighten nut to 40 to 45 ft. lbs. (54 to 61 N·m), then back off 1/8 to 1/4 turn. Install cap on end of tilt tube.



1. Tilt tube nut  
2. Cap 003928

**Models with tilt bolt:** Install tilt bolt washer and nut. Tighten nut to 14 to 16 ft. lbs. (19 to 22 N·m).



1. Tilt bolt nut 003955

Tighten clamp screws securely.

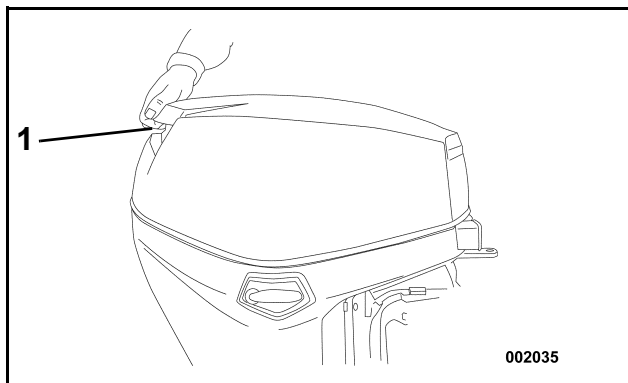
## CHECK OPERATION



### CAUTION



Use the tilt grip on the engine cover to tilt the outboard. **DO NOT** use the steering handle to tilt the outboard.



1. Tilt grip

002035

Before delivering to customer, make sure outboard tilts fully up and down and turns freely from side to side. Also, make sure reverse thrust lock engages fully.