

# INSTALLATION MANUAL

## 75, 90 AND 115 HP (4-Stroke)

**NOTICE TO INSTALLER:** After completing assembly, these instructions should be placed with the product for the owner's future use.

**IMPORTANT:** If the boat is to be water tested, the operator should be familiar with the operation procedures in the Operation and Maintenance Manual.

Electric Fuel Pump . . . . . 1	Remote Wiring Harness . . . . . 7
Boat Horsepower Capacity . . . . . 1	Battery Cable Connections . . . . . 8
Start in Gear Protection . . . . . 2	Fuel Hose . . . . . 9
Selecting Accessories For The Outboard . . . . . 2	Speedometer (Optional) Water Pick-up . . . . . 9
Installation Specifications . . . . . 2	75 and 90 Hp Shift Cable Installation . . . . . 10
Lifting Outboard . . . . . 3	75 and 90 Hp Throttle Cable Installation . . . . . 12
Steering Cable . . . . . 3	115 Hp Shift Cable Installation . . . . . 13
Steering Link Rod . . . . . 4	115 Hp Throttle Cable Installation . . . . . 15
Installing Outboard . . . . . 5	Propeller Installation . . . . . 16
Electrical, Hoses and Control Cables . . . . . 7	Trim-In Stop Adjustment . . . . . 17
Front Cowl Grommet . . . . . 7	Trim Tab Adjustment . . . . . 18

### Electric Fuel Pump

If an electric fuel pump is used, the fuel pressure must not exceed 4 psig at the engine. If necessary, install a pressure regulator to regulate the pressure.

### Boat Horsepower Capacity

U.S. COAST GUARD CAPACITY	
MAXIMUM HORSEPOWER	XXX
MAXIMUM PERSON CAPACITY (POUNDS)	XXX
MAXIMUM WEIGHT CAPACITY	XXX

Do not overpower or overload the boat. Most boats will carry a required capacity plate indicating the maximum acceptable power and load as determined by the manufacturer following certain federal guidelines. If in doubt, contact your dealer or the boat manufacturer.

**WARNING**

**Using an outboard that exceeds the maximum horsepower limit of a boat can:**  
**1. cause loss of boat control 2. place too much weight at the transom, altering the designed flotation characteristics of the boat or 3. cause the boat to break apart, particularly around the transom area. Overpowering a boat can result in serious injury, death, or boat damage.**

## Start in Gear Protection

The remote control connected to the outboard must be equipped with a start-in-gear protection device. This prevents the engine from starting in gear.

### **⚠ WARNING**

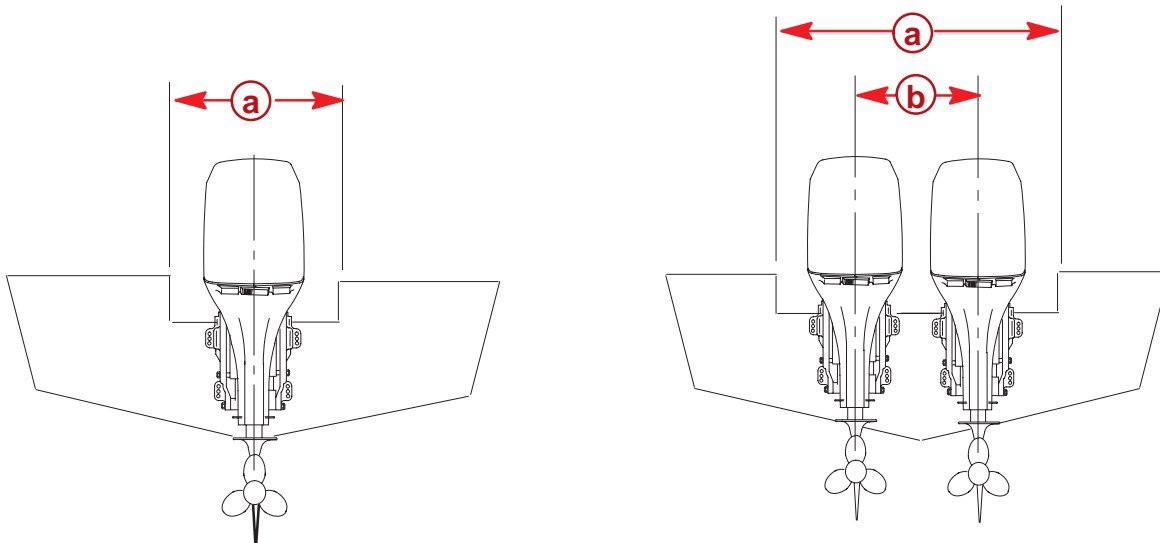
**Avoid serious injury or death from a sudden unexpected acceleration when starting your engine. The design of this outboard requires that the remote control used with it must have a built in start-in-gear protection device.**

## Selecting Accessories For The Outboard

Genuine Quicksilver Parts and Accessories have been specifically designed and tested for this outboard.

Some accessories not manufactured or sold by Quicksilver are not designed to be safely used with this outboard or outboard operating system. Acquire and read the Installation, Operation, and Maintenance manuals for all selected accessories.

## Installation Specifications



### **a – Transom Opening – Minimum**

Single Engine – 33 in. (838.2)

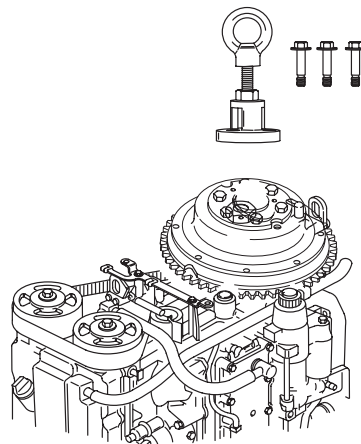
Dual Engines – 59 in. (1498.6 mm)

### **b – Engine Center Line For Dual Engine**

26 in. (660mm) Minimum

# Lifting Outboard

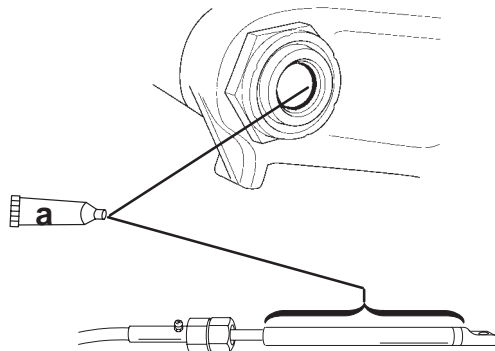
Use Flywheel Puller/Lifting Eye (91-83164M).



## Steering Cable

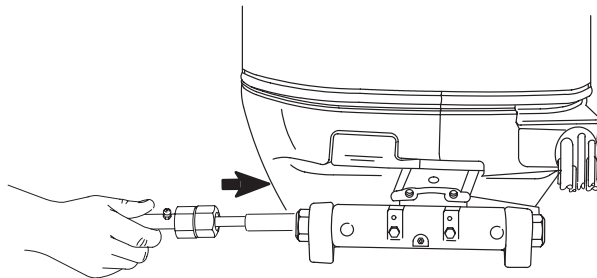
### STARBOARD SIDE ROUTED CABLE

1. Lubricate O-ring seal and entire cable end.

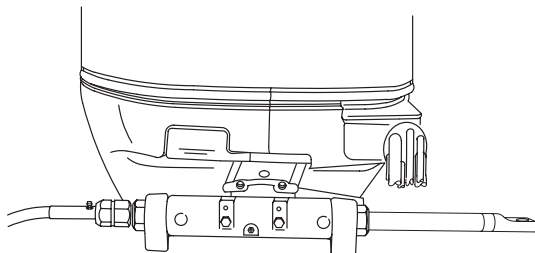


**a** - Quicksilver 2-4-C Marine Lubricant with Teflon

2. Insert steering cable into tilt tube.



3. Torque nut to 35 lb. ft. (47.5 N-m).

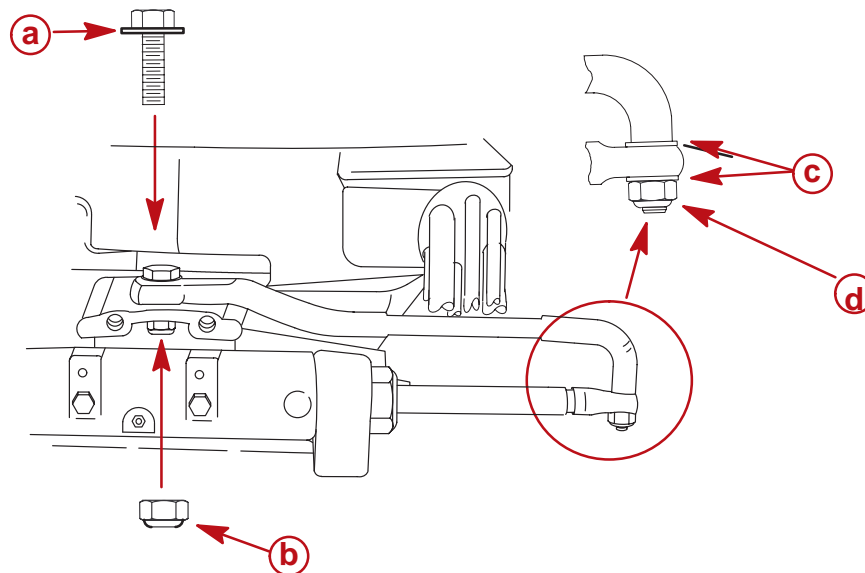


## Steering Link Rod

### Installation Note

**NOTE:** For ease of installation of special bolt (a) separate the front end of the bottom cowl.

1. Install steering link rod per illustration.



- a** - Special Bolt (10-90041) Torque to 20 lb. ft. (27.1 N·m)
- b** - Nylon Insert Locknut (11-34863) Torque to 20 lb. ft. (27.1 N·m)
- c** - Flat Washer (2)
- d** - Nylon Insert Locknut (11-34863) Tighten Locknut Until it Seats, Then Back Nut Off 1/4 Turn

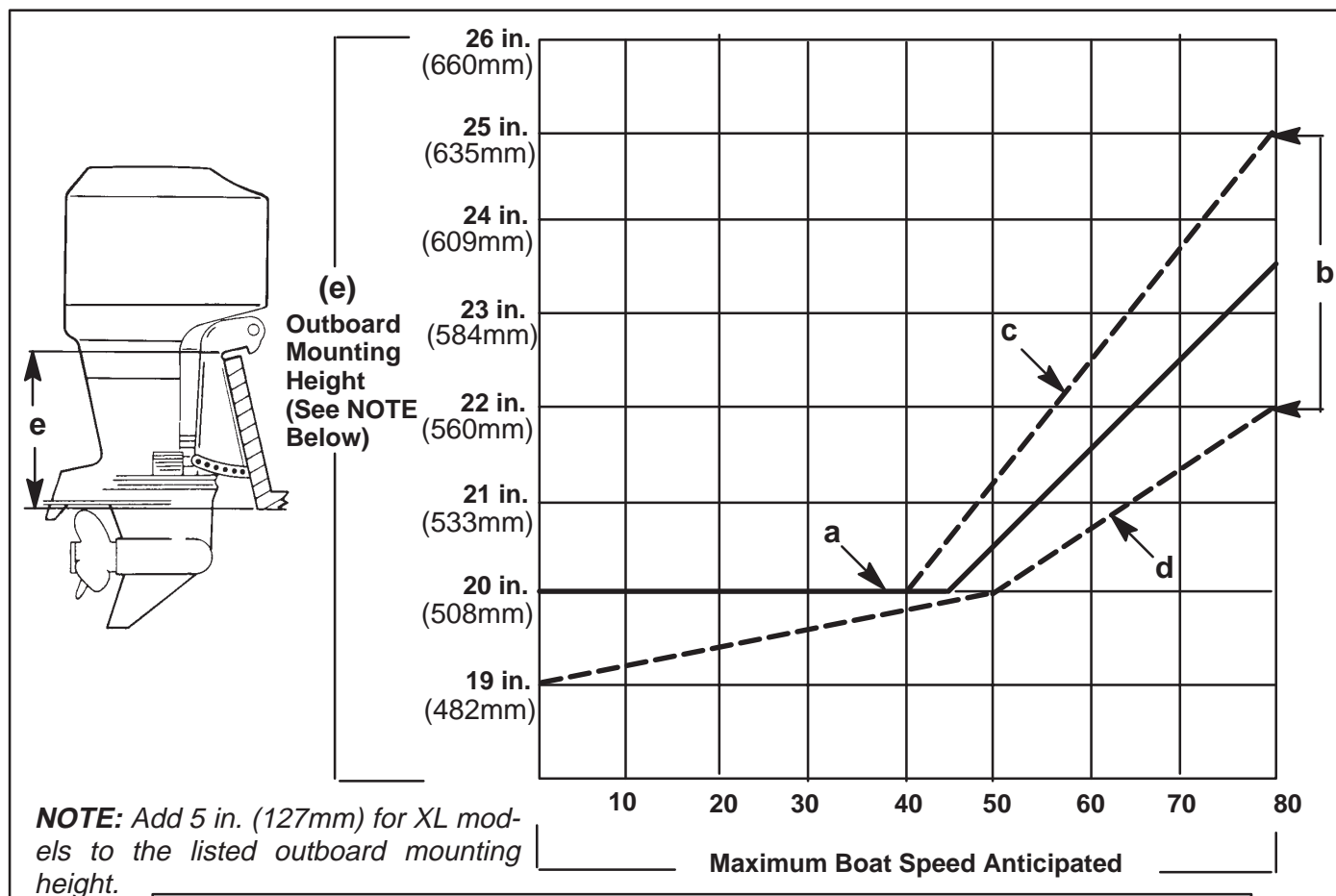
**IMPORTANT:** The steering link rod that connects the steering cable to the engine must be fastened using special bolt (“a” - Part Number 10-90041) and self locking nuts (“b” & “c” - Part Number 11-34863). These locknuts must never be replaced with common nuts (non locking) as they will work loose and vibrate off, freeing the link rod to disengage.

### **⚠ WARNING**

Disengagement of a steering link rod can result in the boat taking a full, sudden, sharp turn. This potentially violent action can cause occupants to be thrown overboard exposing them to serious injury or death.

# Installing Outboard

## Determining Recommended Outboard Mounting Height



### IMPORTANT

#### NOTICE TO INSTALLER

1. The outboard should be mounted high enough on the transom so that the exhaust relief hole will stay at least 1 in. (25.4 mm) above the water line when the engine is running at idle speed. Having the exhaust relief hole above the water line will prevent exhaust restriction. Exhaust restriction will result in poor performance at idle.
2. However, keep in mind that the mounting height (e) of the outboard must not exceed 25 in. (635 mm) for L models, 30 in. (762 mm) for XL models. Mounting the outboard higher may cause damage to the gear case components.

**a.** This solid line is recommended to determine the outboard mounting height.

**IMPORTANT:** Increasing the height of outboard generally will provide the following: 1) Less steering torque, 2) more top speed, 3) greater boat stability, but, 4) will cause more prop "break loose" which may be particularly noticeable when planing off or with heavy load.

These broken lines represent the extremes of known successful outboard mounting height dimensions.

**b.**

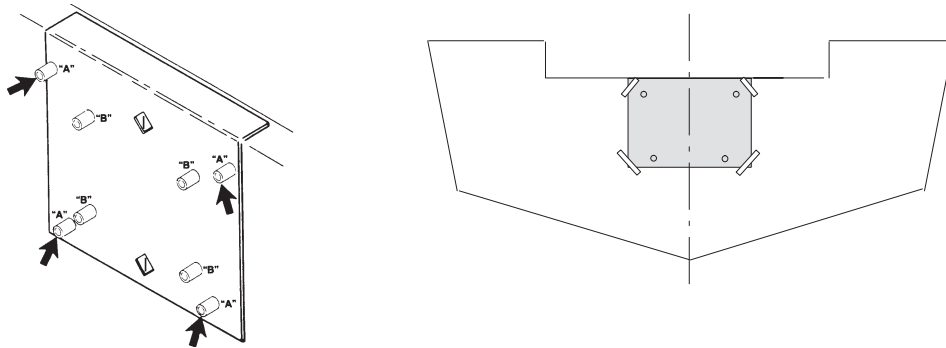
**c.** This line may be preferred to determine outboard mounting height dimension, if maximum speed is the only objective.

**d.** This line may be preferred to determine outboard mounting height dimension for dual outboard installation.

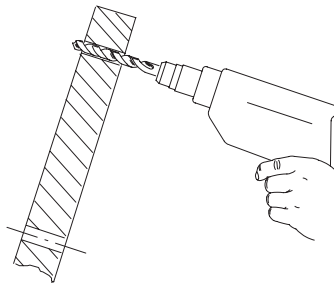
**e.** Outboard mounting height (height of outboard transom brackets from bottom of boat transom). For heights over 22 in. (560mm), a propeller, that is designed for surfacing operation is usually preferred.

# Installing Outboard

1. Use transom drilling fixture (91-98234A2) or attach (tape) engine mounting template (located in this manual) to boat transom.

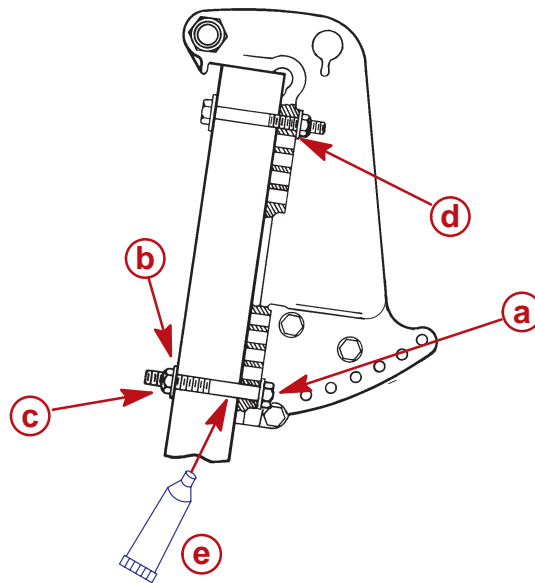


2. Mark and drill four 17/32 in. (13.5mm) mounting holes.



3. Refer to “Determining Recommended Outboard Motor Mounting Height”, preceding, and install outboard to the nearest recommended mounting height.
4. Fasten outboard with provided mounting hardware shown.

**NOTE:** The addition of the four flat washers (d) is a manufacturing running change. Outboards built before the running change will not have the flat washers.



- a** - 1/2 in. Diameter Bolts (4)
- b** - Flat Washers(4)
- c** - Locknuts (4)
- d** - Flat Washers(4)
- e** - Marine Sealer - Apply to Shanks of Bolts, Not Threads

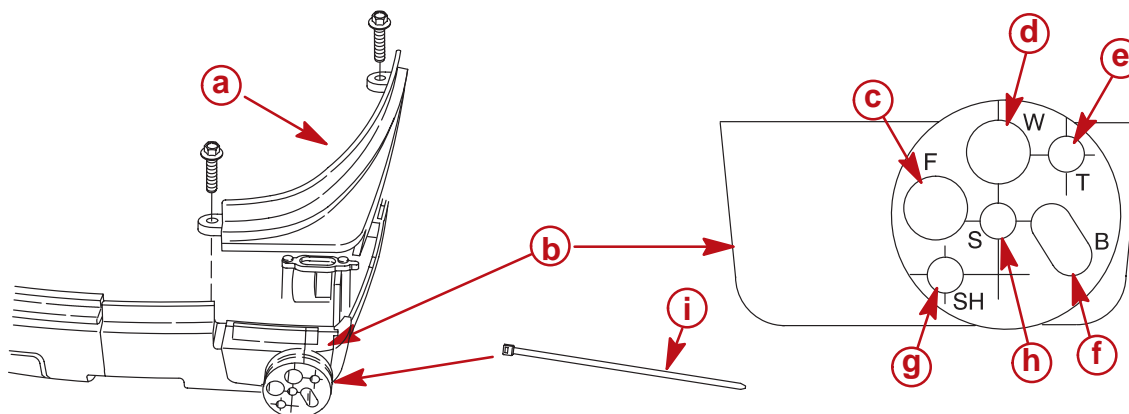
## Electrical, Hoses, and Control Cables

**IMPORTANT: Warning Horn Requirement** – The remote control or key switch assembly must be wired with a warning horn. This warning horn is used with the engine warning system.

### Front Cowl Grommet

Pull up the cowl seal and remove the cover from the bottom cowl.

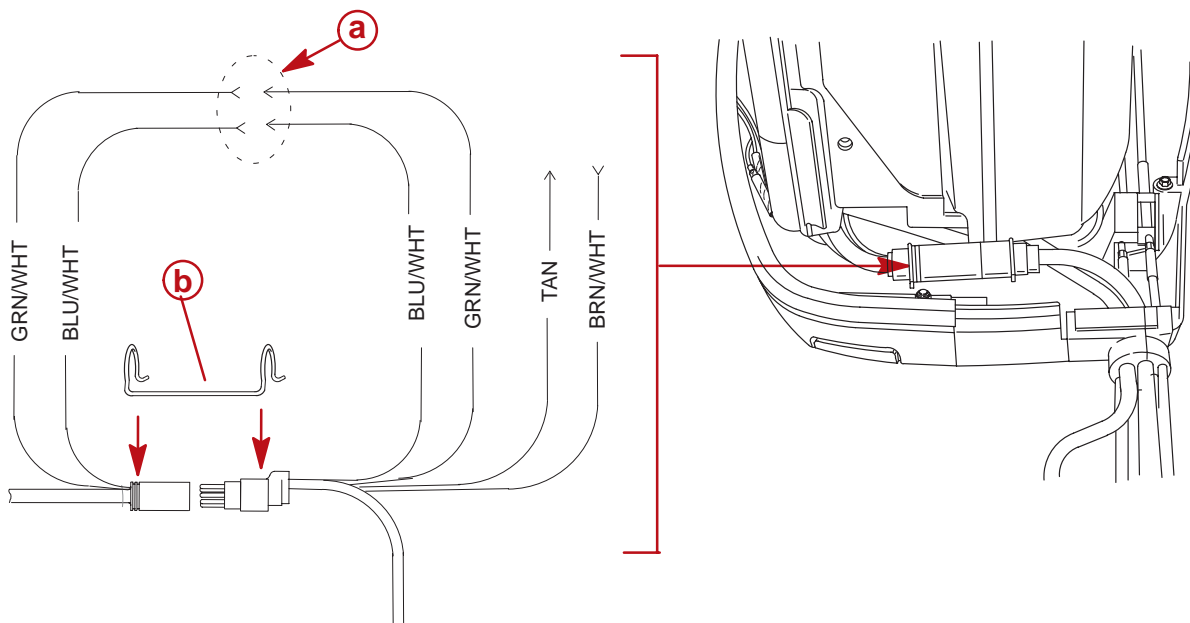
Route the hoses, wiring and cables through the correct openings in the rubber grommet as shown.



- a** - Cover
- b** - Rubber Grommet
- c** - Fuel Hose Opening
- d** - Remote Wiring Harness Opening
- e** - Throttle Cable Opening
- f** - Battery Cables Opening
- g** - Shift Cable Opening
- h** - Speedometer Tube
- i** - Sta-Strap (Included in Parts Bag) – Tie Around Grommet After Components are Installed

### Remote Wiring Harness

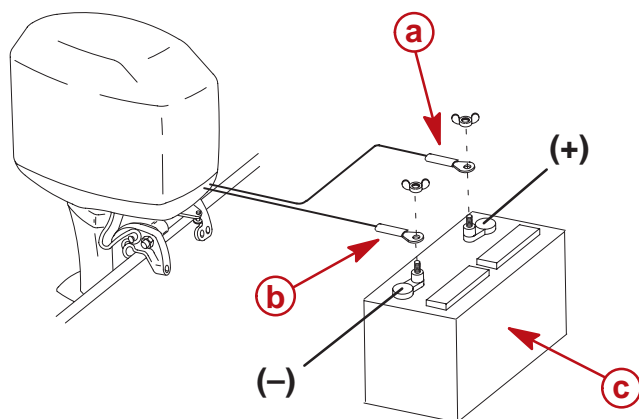
Route wiring harness through the rubber grommet. Connect wiring. Push the retainer over the exposed ends of the connectors. This will hold the connectors together.



- a** - Power Trim Connections
- b** - Retainer – Push Over Connector Ends

## Battery Cable Connections

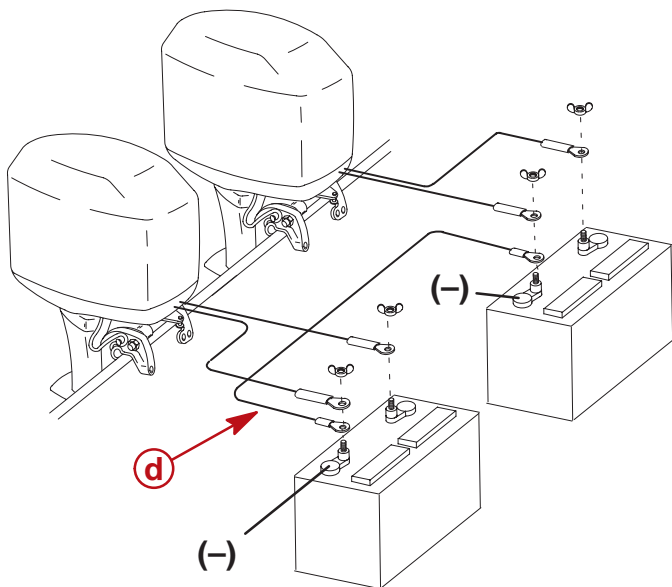
### SINGLE OUTBOARD



- a** - Red Sleeve (Positive)
- b** - Black Sleeve (Negative)
- c** - Starting Battery

### DUAL OUTBOARDS

Connect a common ground cable (wire size same as engine battery cables) between negative (-) terminals on starting batteries.



- d** - Ground Cable (Same Wire Size As Engine Battery Cable) – Connect Between Negative (-) Terminals



## Fuel Hose

### PORTABLE FUEL TANK

Select a suitable location in boat within engine fuel line length limitations and secure tank in place.

### PERMANENT FUEL TANK

These should be installed in accordance with industry and federal safety standards which include recommendations applicable to grounding, anti-siphon protection, ventilation, etc.

### FUEL HOSE SIZE

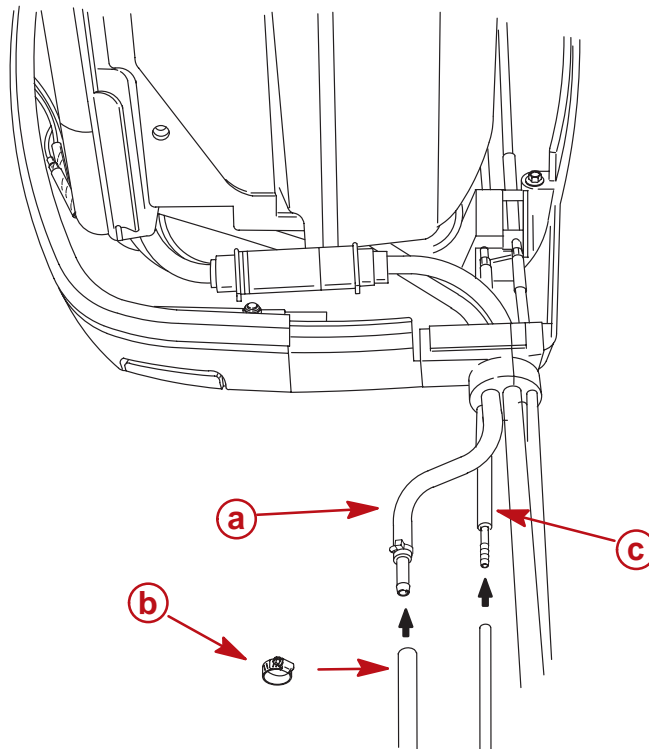
Minimum fuel line inside diameter (I.D.) is 5/16 in. (8mm), with separate fuel line/fuel tank pickup for each engine.

### FUEL HOSE CONNECTION

Fasten remote fuel hose to fitting with hose clamp.

## Speedometer (Optional) Water Pick-up

This outboard is equipped with a speedometer water pick-up located in the leading edge of the gear case. If this water pick-up is to be used, locate the hose coming out of the front grommet. Cut off the end of the hose fitting and make the connection.



**NOTE:** If the speedometer water pick-up hose is not used, keep the hose routed out of the rubber grommet.

- a** - Fuel Hose
- b** - Hose Clamp – Secure Remote Fuel Hose
- c** - Speedometer Water Pick-up Hose for Optional Speedometer

### **CAUTION**

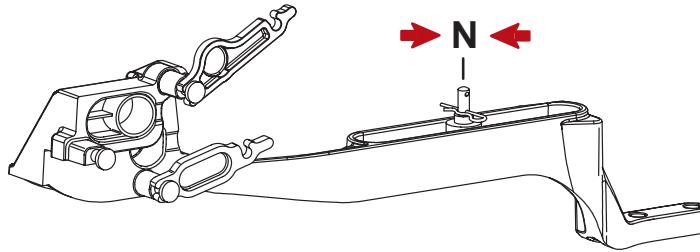
Prevent possible water leakage. Water pick up hose must be routed through grommet and outside of lower cowl at all times.

## 75 and 90 Hp Shift Cable Installation

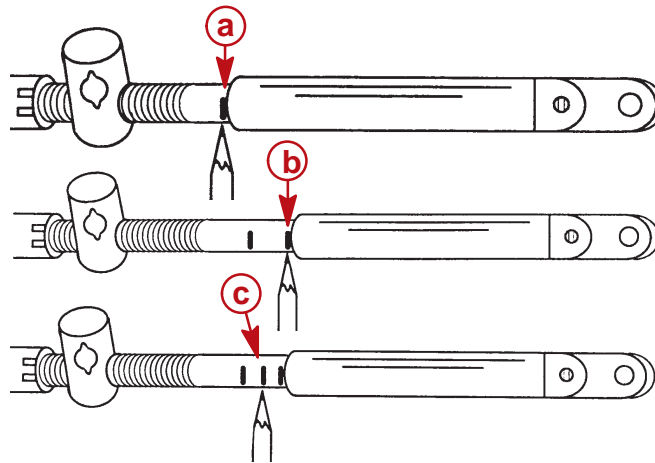
Install cables into the remote control following the instructions provided with the remote control.

**NOTE:** Install the shift cable to the engine first. The shift cable is the first cable to move when the remote control handle is moved out of neutral.

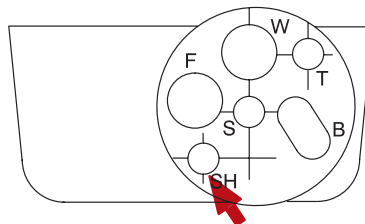
1. Position the shift mechanism into the neutral position.



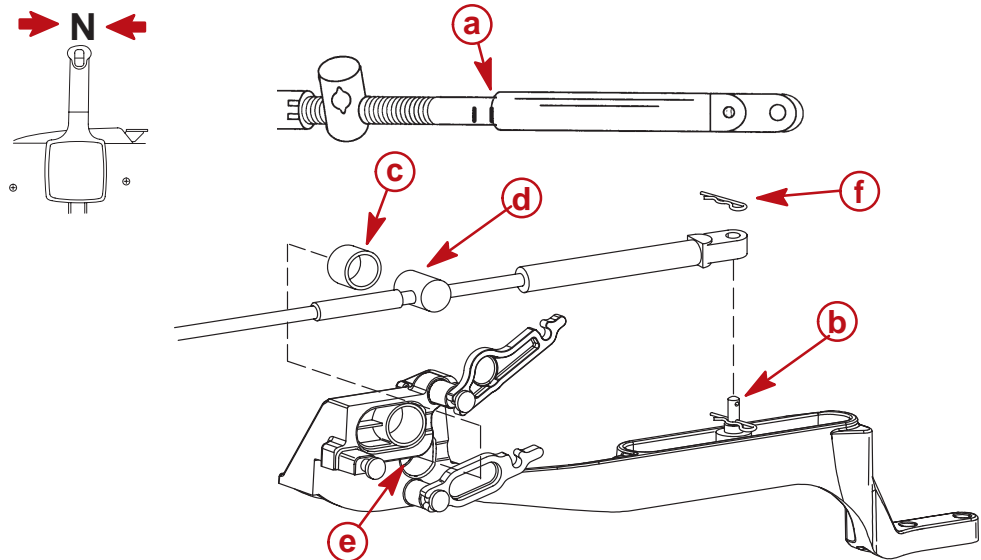
2. Locate the center point of the slack or lost motion that exists in the shift cable as follows:
  - a. Move the remote control handle from neutral into forward and advance the handle to full speed position. Slowly return the handle back to the neutral. Place a mark (a) on the cable against the cable end guide.
  - b. Move the remote control handle from neutral into reverse and advance the handle to full speed position. Slowly return the handle back to the neutral. Place a mark (b) on the cable against the cable end guide.
  - c. Make a center mark (c), midway between marks ("a" and "b"). Align the cable end guide against this center mark when installing cable to the engine.



3. Fit shift cable through rubber grommet.

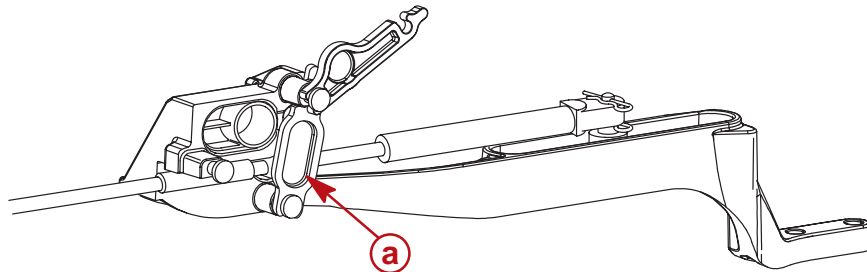


4. Position remote control into neutral.
5. Align the shift cable end guide with the center point made in Step 2. Place shift cable on anchor pin. Adjust cable barrel so it slips freely into the barrel holder.
6. Secure shift cable to the anchor pin with hair pin retainer.



- a** - Center Mark
- b** - Anchor Pin
- c** - Barrel Insert
- d** - Cable Barrel
- e** - Barrel Holder
- f** - Hair Pin Retainer

7. Lock cable barrel in place with cable latch.



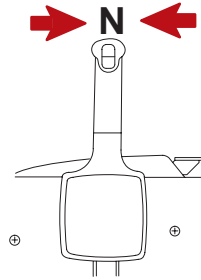
- a** - Cable Latch

8. Check shift cable adjustments as follows:
  - a. Shift remote control into forward. The propeller shaft should be locked in gear. If not, adjust the barrel closer to the cable end.
  - b. Shift remote control into neutral. The propeller shaft should turn freely without drag. If not, adjust the barrel away from the cable end. Repeat steps a and b.
  - c. Shift remote control into reverse while turning propeller. The propeller shaft should be locked in gear. If not, adjust the barrel away from the cable end. Repeat steps a thru c.
  - d. Shift remote control back to neutral. The propeller shaft should turn freely without drag. If not, adjust the barrel closer to the cable end. Repeat steps a thru d.

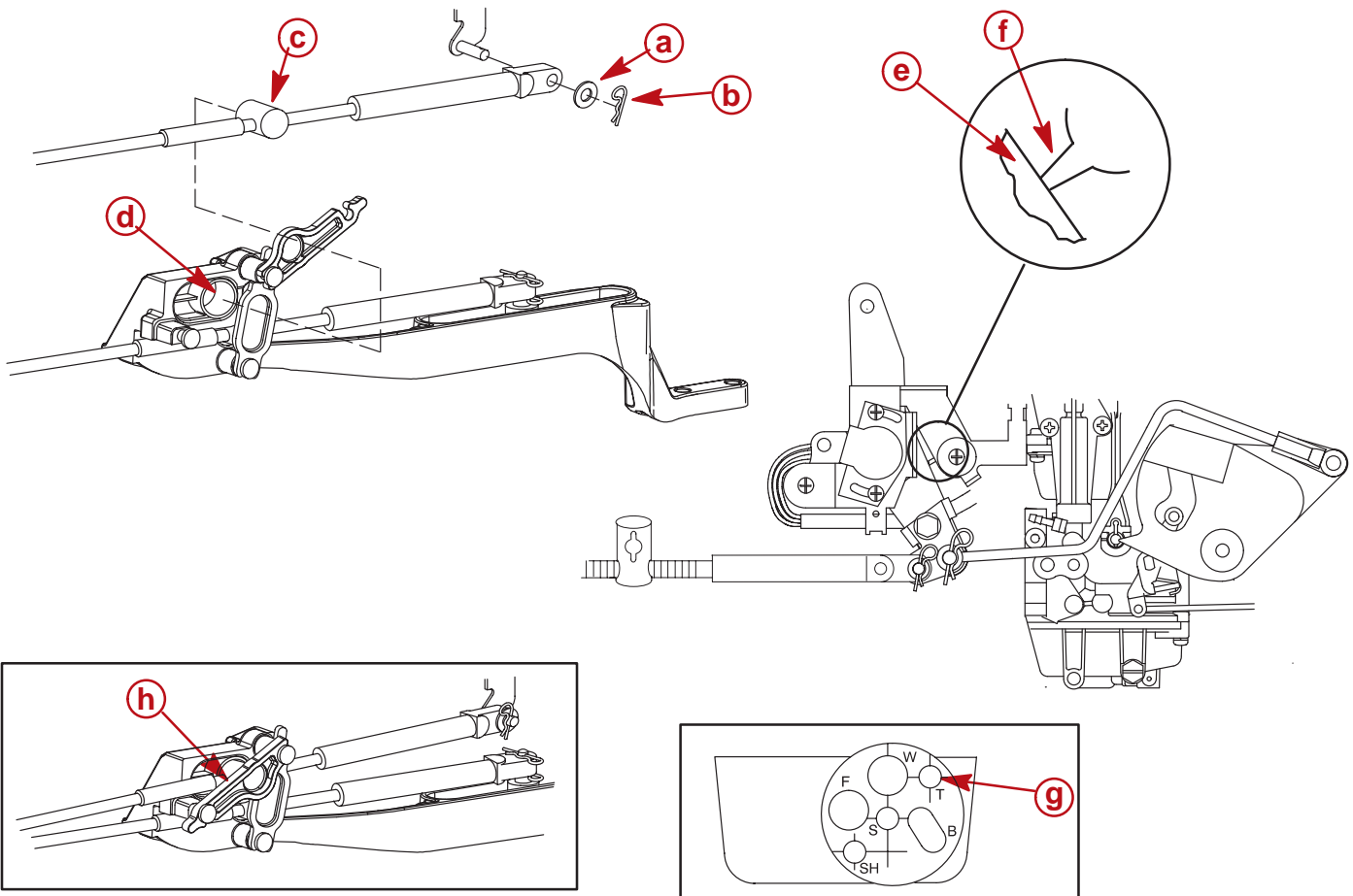
## 75 and 90 Hp Throttle Cable Installation

Install cables into the remote control following the instructions provided with the remote control.

1. Position remote control into neutral.



2. Install throttle cable to the throttle arm with hairpin cotter.
3. Adjust the cable barrel so that the installed throttle cable will hold the throttle arm against the idle stop.
4. Place cable barrel into retainer and install.
5. Fit throttle cable through the rubber grommet.
6. Lock the cable barrel in place with the cable latch.



- a** - Flat Washer
- b** - Hairpin Cotter
- c** - Cable Barrel
- d** - Barrel Retainer –  
Toward Rear

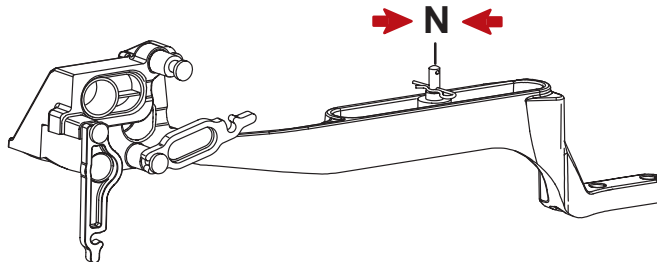
- e** - Throttle Arm
- f** - Idle Stop
- g** - Throttle Cable Opening
- h** - Cable Latch

## 115 Hp Shift Cable Installation

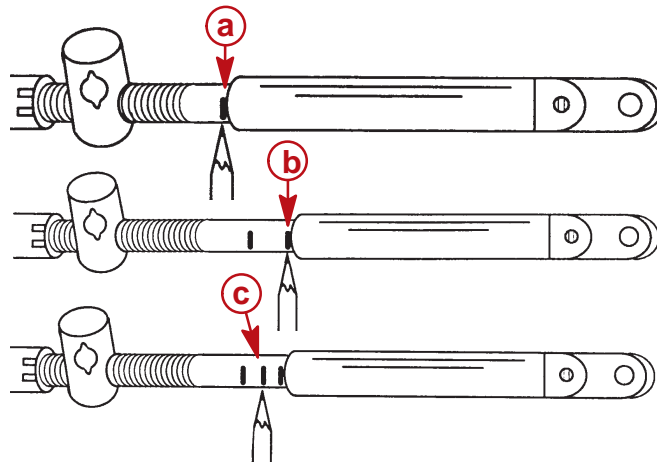
Install cables into the remote control following the instructions provided with the remote control.

**NOTE:** Install the shift cable to the engine first. The shift cable is the first cable to move when the remote control handle is moved out of neutral.

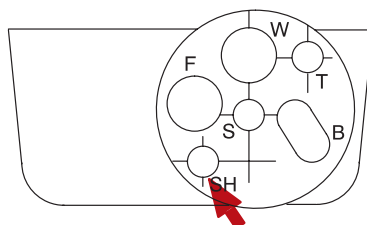
1. Position the shift mechanism into the neutral position.



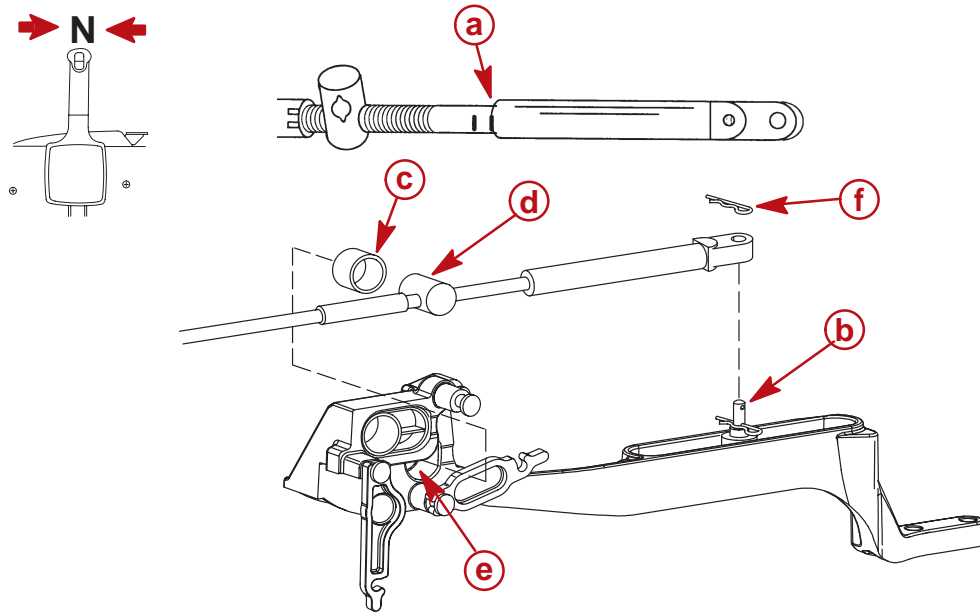
2. Locate the center point of the slack or lost motion that exists in the shift cable as follows:
  - a. Move the remote control handle from neutral into forward and advance the handle to full speed position. Slowly return the handle back to the neutral. Place a mark (a) on the cable against the cable end guide.
  - b. Move the remote control handle from neutral into reverse and advance the handle to full speed position. Slowly return the handle back to the neutral. Place a mark (b) on the cable against the cable end guide.
  - c. Make a center mark (c), midway between marks ("a" and "b"). Align the cable end guide against this center mark when installing cable to the engine.



3. Fit shift cable through rubber grommet.

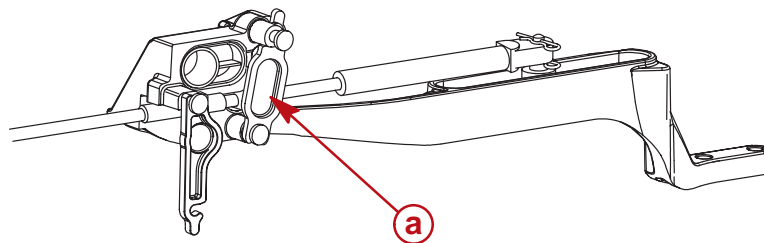


4. Position remote control into neutral.
5. Align the shift cable end guide with the center point made in Step 2. Place shift cable on anchor pin. Adjust cable barrel so it slips freely into the barrel holder.
6. Secure shift cable to the anchor pin with hair pin retainer.



- a** - Center Mark
- b** - Anchor Pin
- c** - Barrel Insert
- d** - Barrel
- e** - Barrel Holder
- f** - Hair Pin Retainer

7. Lock barrel in place with cable latch.



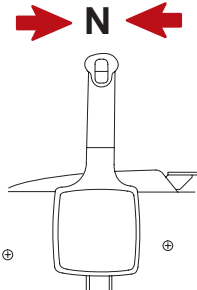
- a** - Cable Latch

8. Check shift cable adjustments as follows:
  - a. Shift remote control into forward. The propeller shaft should be locked in gear. If not, adjust the barrel closer to the cable end.
  - b. Shift remote control into neutral. The propeller shaft should turn freely without drag. If not, adjust the barrel away from the cable end. Repeat steps a and b.
  - c. Shift remote control into reverse while turning propeller. The propeller shaft should be locked in gear. If not, adjust the barrel away from the cable end. Repeat steps a thru c.
  - d. Shift remote control back to neutral. The propeller shaft should turn freely without drag. If not, adjust the barrel closer to the cable end. Repeat steps a thru d.

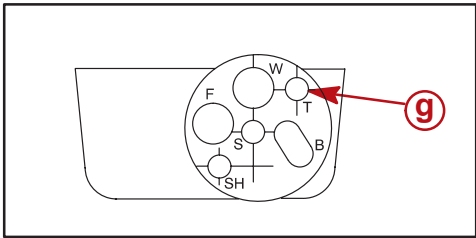
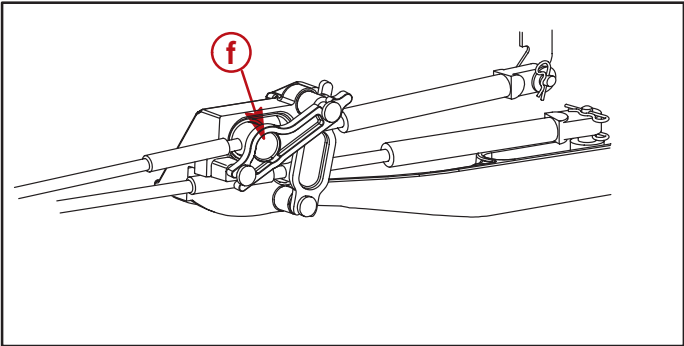
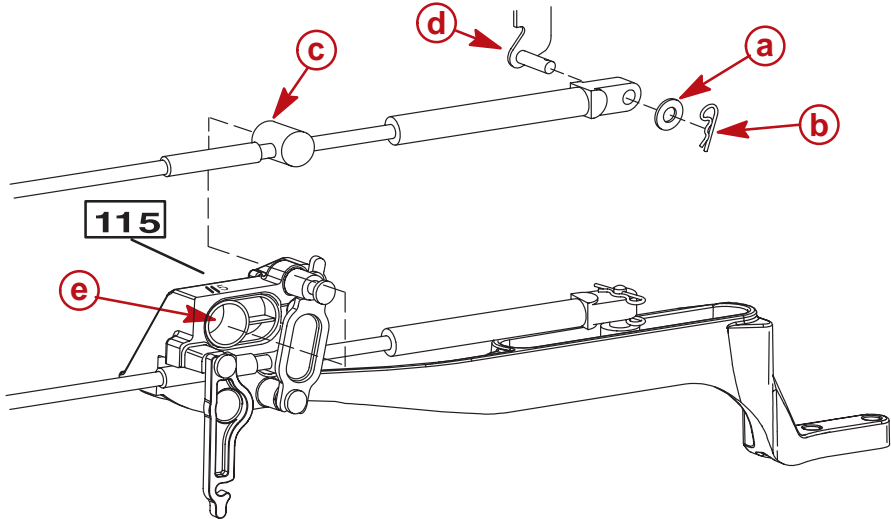
# 115 Hp Throttle Cable Installation

Install cables into the remote control following the instructions provided with the remote control.

1. Position remote control into neutral.



2. Install throttle cable to the throttle arm with hairpin cotter.
3. Adjust the cable barrel so that the installed throttle cable will hold the throttle arm against the idle stop.
4. Place cable barrel into retainer and install.
5. Fit throttle cable through the rubber grommet.
6. Lock the retainer in place with the cable latch.



- a - Flat Washer
- b - Hairpin Cotter
- c - Cable Barrel
- d - Throttle Arm

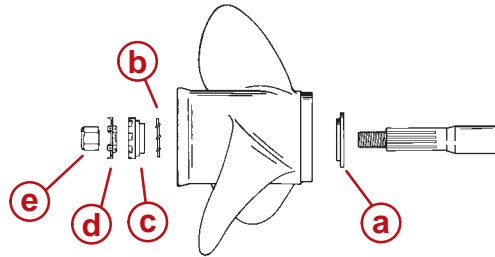
- e - Barrel Retainer – Align with “115” Mark
- f - Cable Latch
- g - Throttle Cable Opening

## Propeller Installation

### ⚠ WARNING

If the propeller shaft is rotated while the engine is in gear, there is the possibility that the engine will crank over and start. To prevent this type of accidental engine starting and possible serious injury caused from being struck by a rotating propeller, always shift outboard to neutral position and remove spark plug leads when you are servicing the propeller.

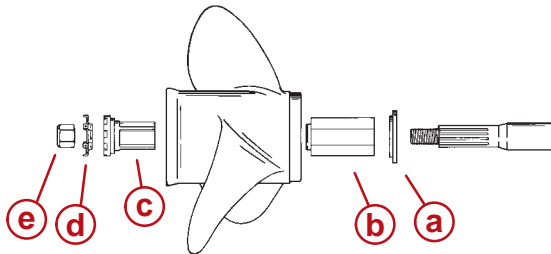
#### Flo-Torq I Drive Hub Propellers



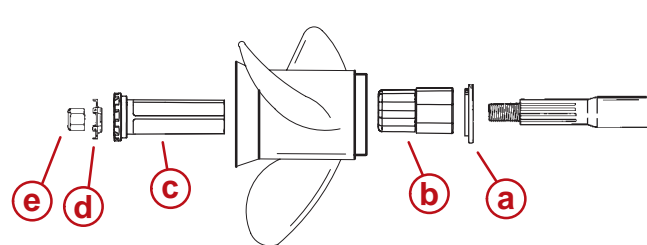
- a** - Forward Thrust Hub
- b** - Continuity Washer
- c** - Thrust Hub
- d** - Propeller Nut Retainer
- e** - Propeller Nut

#### Flo-Torq II and Flo-Torq III Drive Hub Propellers

##### Flo-Torq II

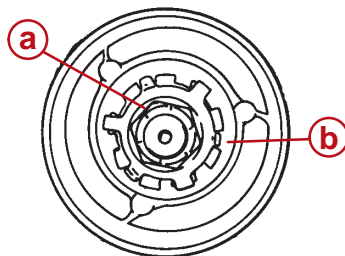


##### Flo-Torq III



- a** - Forward Thrust Hub
- b** - Replaceable Drive Sleeve
- c** - Rear Thrust Hub
- d** - Propeller Nut Retainer
- e** - Propeller Nut

7. Tighten propeller nut to 55 lb-ft (75 Nm). Bend tabs against nut.



- a** - Propeller Nut - Torque To 55 lb- ft (75 Nm)
- b** - Bend Tabs Into Grooves



## Trim-In Stop Adjustment

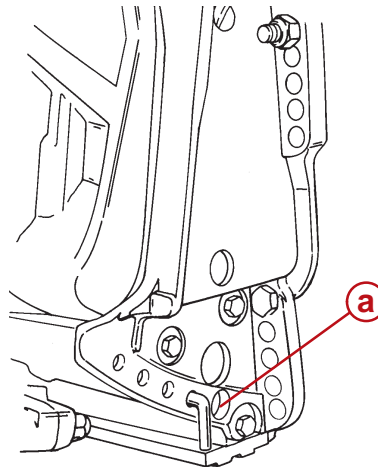
Some outboard boats, particularly some bass boats, are built with a greater than normal transom angle which will allow the outboard to be trimmed further “in” or “under”. This greater trim “under” capability is desirable to improve acceleration, reduce the angle and time spend in a bow high boat attitude during planing off, and in some cases, may be necessary to plane off a boat with aft live wells, given the variety of available propellers and height range of engine installations.

However, once on plane, the engine should be trimmed to a more intermediate position to avoid a bow-down planing condition called “plowing”. Plowing can cause “bow steering” or “over steering” and inefficiently consumes horsepower. In this condition, if attempting a turn or encountering a diagonal, moderate wake, a more abrupt turn than intended may result.

In rare circumstances, the owner may decide to limit the trim under. This can be accomplished by purchasing a stainless steel tilt pin (P/N 17-49930A1) and inserting it through whatever pin hole is desired. The non-stainless steel shipping bolt should not be used in this application other than on a temporary basis.

### **⚠ WARNING**

**Avoid possible serious injury or death. Adjust outboard to an intermediate trim position as soon as boat is on plane to avoid possible ejection due to boat spin-out. Do not attempt to turn boat when engine is trimmed extremely under or in.**



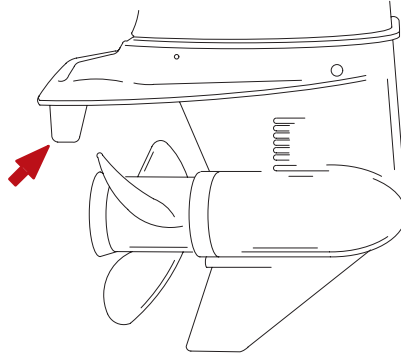
**a** - Stainless Steel Tilt Pin

## Trim Tab Adjustment

The trim tab can be adjusted within limits to help compensate for steering torque.

Adjust trim tab as follows:

1. If boat tends to pull to the right, move the rear edge of the trim tab to the right.
2. If boat tends to pull to the left, move the rear edge of the trim tab to the left.



**NOTE:** Trim tab adjustment will have little effect reducing steering torque if the anti-ventilation plate is raised 2 inches (50mm) or more above the boat bottom.