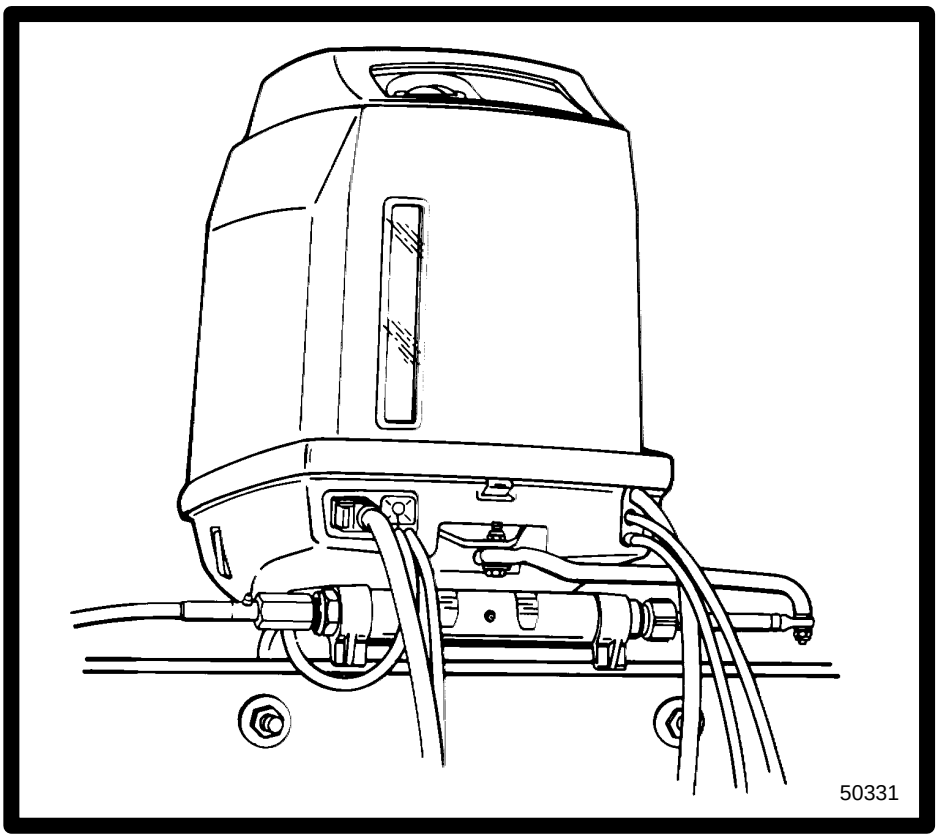
OUTBOARD INSTALLATION/ ATTACHMENTS



RIDE-GUIDE STEERING - THROTTLE/SHIFT CABLES & ELECTRICAL CONNECTIONS

7

A

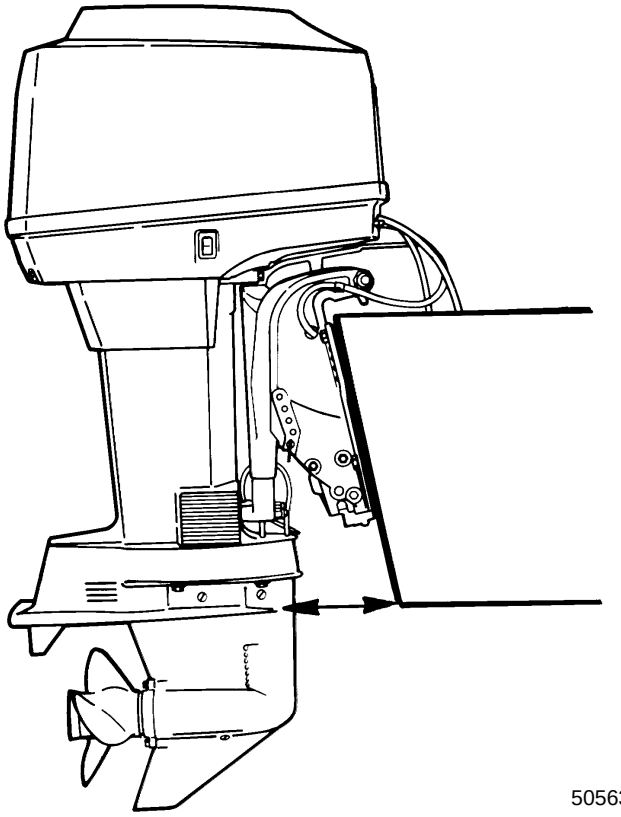
Table of Contents

Installing Outboard Motor on Transom

Determining Recommended Outboard Mounting Height

It is recommended for best-all-around boating performance, the outboard should be mounted with the anti-ventilation plate parallel to and at the same level as the boat bottom.

On boats with a 20 in. (508mm) transom height, this will require that the outboard be mounted approximately 1 in. (25.4mm) high on the transom as the outboard has a 21 in. (533mm) shaft length.



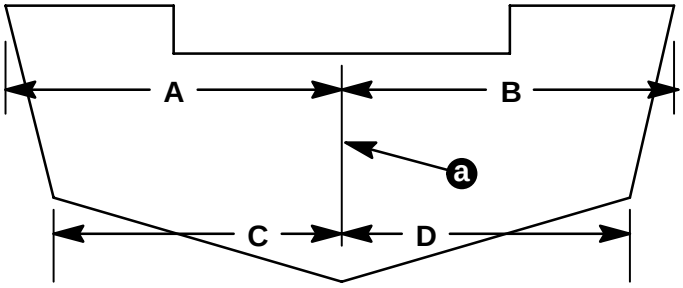
50563

If, with the outboard mounted so that the anti-ventilation plate is level with the bottom of the boat, excessive propeller slippage/cavitation is experienced, it is recommended that the outboard be lowered one position on the transom to increase propeller “BITE” at a slight loss at top end speed and increase spray.

NOTE: *Raising or lowering the outboard by one mounting hole will change outboard height by approximately 3/4 in. (19mm).*

Locate Centerline of Boat Transom

Locate (and mark with a pencil) vertical centerline (a) of boat transom, as shown.



NOTE: *Dimension “A” & “B” and “C” & “D” are Equal Length.*

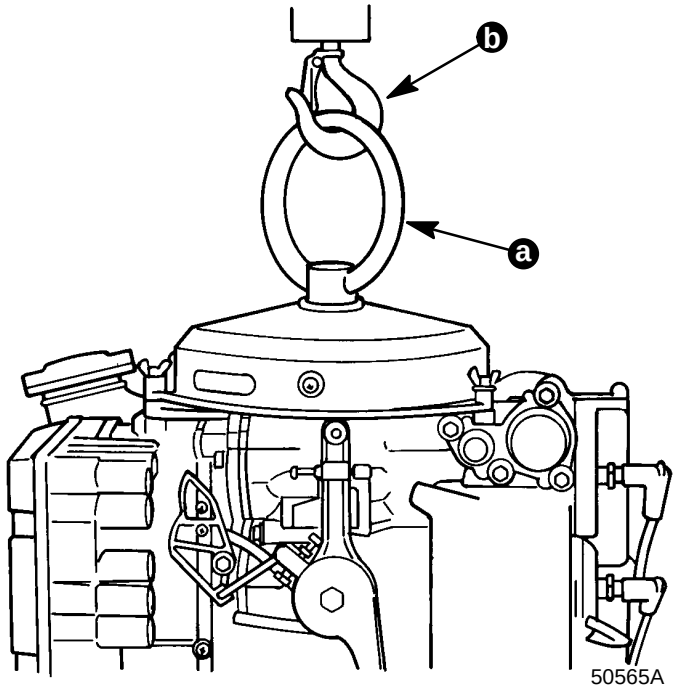
Lifting Outboard (Electric Start Models)

⚠ WARNING

Make sure that lifting eye is threaded into flywheel a minimum of 5 turns and that hoist has a minimum lift capacity of at least 500 lbs. (227 kg) BEFORE lifting outboard.

Remove cowling from outboard and plastic cap from center of flywheel. Thread lifting eye (a) into flywheel hub a minimum of 5 turns. Replace plastic cap after installation.

Connect hoist [minimum lift capacity of 500 lbs. (227 kg)] to lifting eye or rings of lift harness and lift outboard onto boat transom.

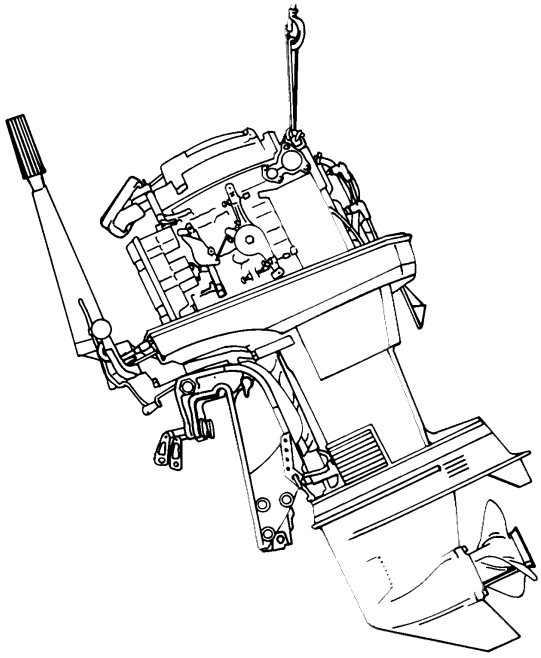


50565A

a - Lifting Ring (P/N 91-75132)
b - Hoist

Lifting Outboard (Manual Start Models)

Remove cowling from outboard. Use lifting eye on outboard and lift outboard on boat transom.



51456

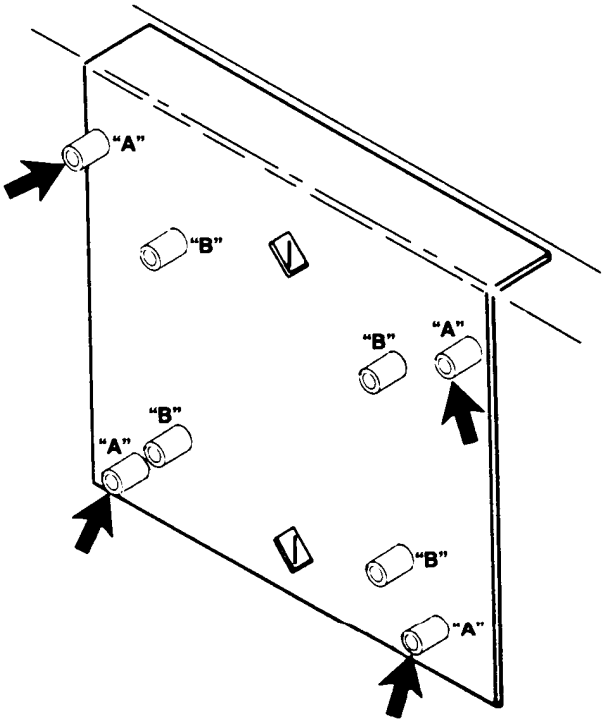
Drilling Outboard Mounting Holes (Electric Start Models)

IMPORTANT: Before drilling any mounting holes, carefully read "Determining Recommended Outboard Motor Mounting Height", preceding. There is a 3/4 in. (19mm) difference between outboard mounting holes in transom bracket.

⚠ WARNING

DO NOT under any circumstances, allow upper outboard mounting bolts to be closer than 1 in. (25.4mm) from top of boat transom. Upper mounting bolts must never be installed thru shims.

IMPORTANT: If using "Transom Drill Fixture" (91-98234A2), use drill guide holes marked "A" when drilling outboard mounting holes.

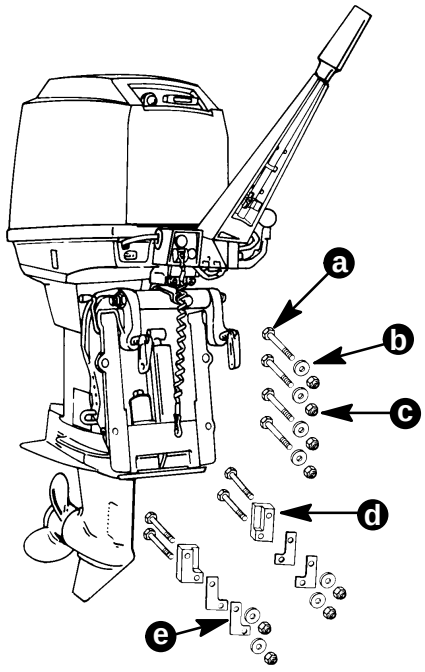


1. Secure (tape) "Outboard Mounting Template" (located in center of Installation Manual) to outside of boat transom.
2. Align "Top of Boat Transom Line" of template with top edge of (real) boat transom, not shim(s).
3. Align vertical centerline of template with centerline of transom.
4. Use a 17/32 in. (13.5mm) diameter drill bit and drill 4 mounting holes perpendicular to and thru transom at marked hole centers on template.

Fastening Outboard on Boat Transom (Manual Start Models)

⚠ WARNING

Outboard must be fastened to boat transom with transom clamp handles and transom clamp retainers or mounting bolts as shown in installation A or B should the outboard strike an underwater object or be steered into a sharp turn. Failure to tighten transom clamp handles along with installing transom clamp retainers or mounting bolts could result in outboard ejecting suddenly off boat transom causing serious injury or death, boat damage or loss of outboard.



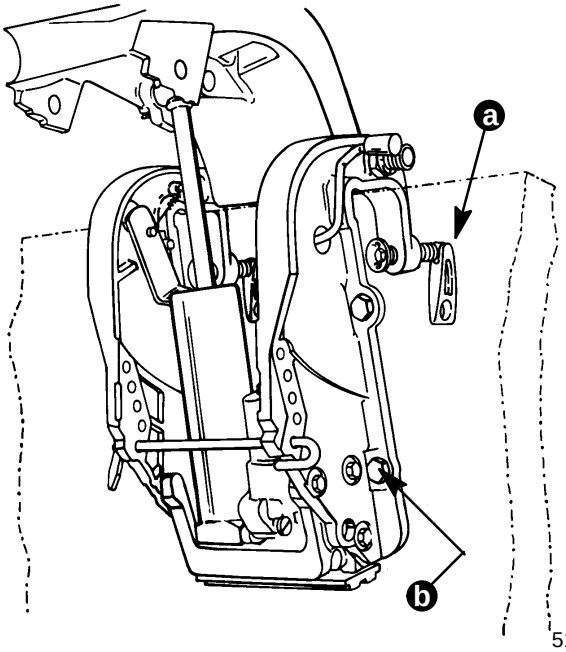
51509

a - Mounting Bolts (4)
b - Flat Washers (4)
c - Locknuts (4)
d - Transom Clamp Retainers With Mounting Hardware
e - Shims - Transom Clamp Retainers (If Required)

Fasten outboard to boat transom following installation A or B shown below.

Installation A

Use for permanent installation.

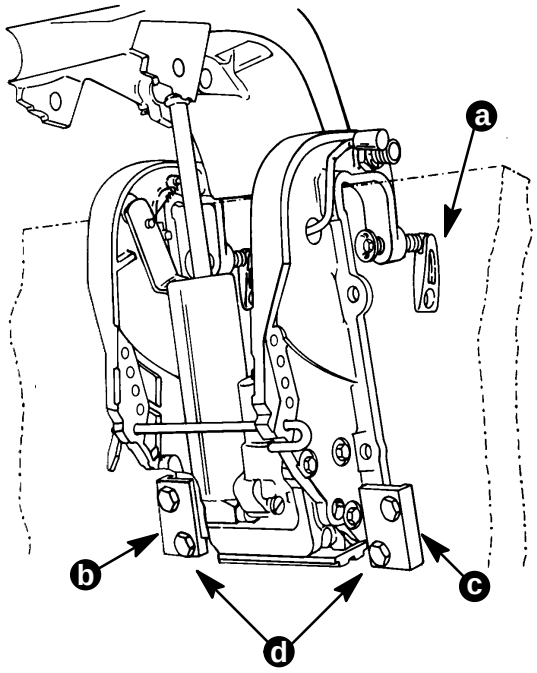


51462

a - Tighten Transom Clamp Handles
b - Mounting Bolts (Supplied with Outboard

Installation B

Use for easy removal and installation of outboard.



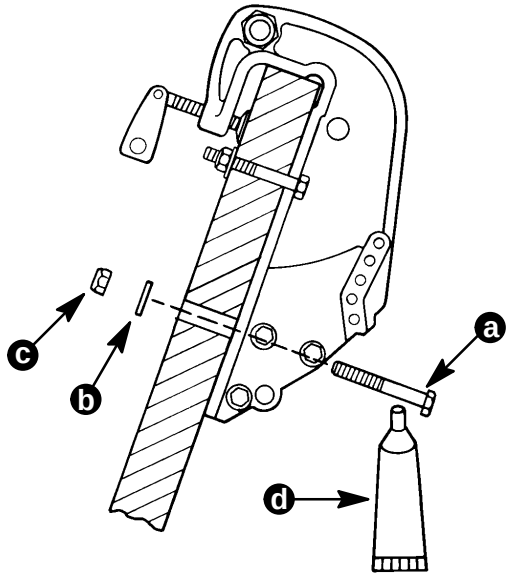
51462

a - Tighten Transom Clamp Handels
b - Part Number 812433-C1
c - Part Number 812432-C1
d - Transom Clamp Retainers (Opitional)

Installation A

Fastening outboard for permanent installation.

Drill four 1/2 in. (12.5mm) holes and fasten outboard to boat transom.



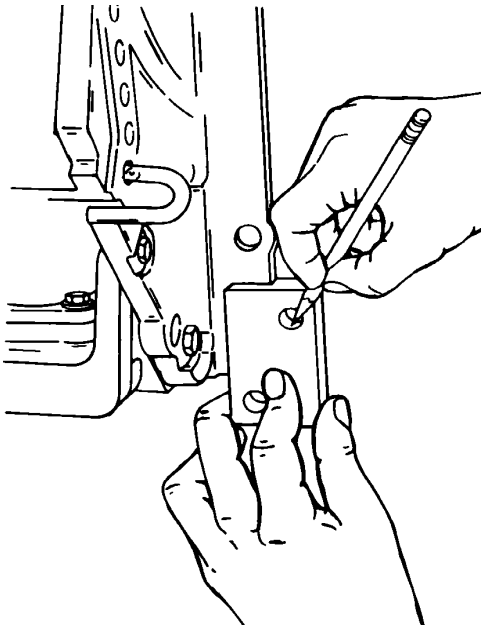
51489

a - Bolts (4)
b - Flat Washers (4)
c - Locknuts (4)
d - Marine Sealer

Installation B

Fastening outboard for easy removal and installation.

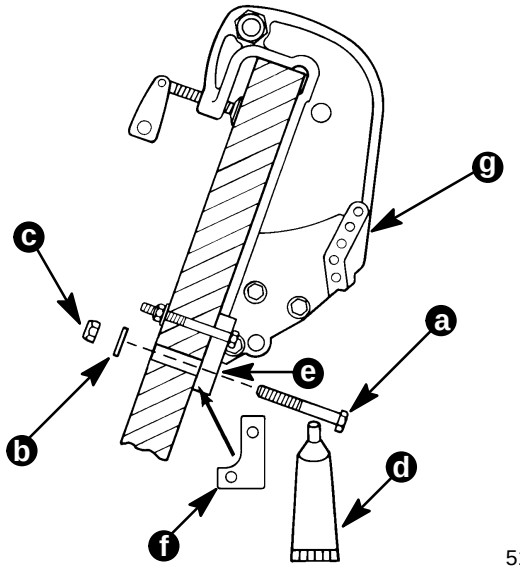
Mark hole location.



51393

Drill four 3/8 in. (9.5mm) holes and fasten transom clamp retainers to transom.

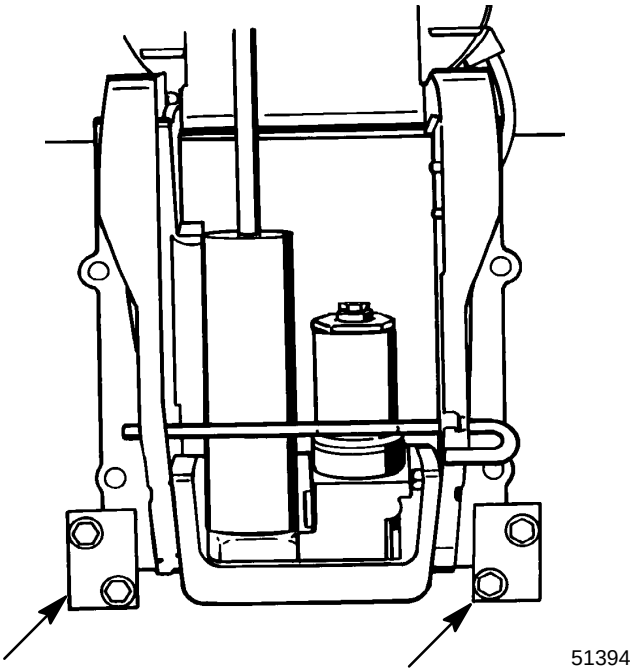
Add shims (if necessary) to allow for a small amount of clearance between transom clamps and retainers.



51489

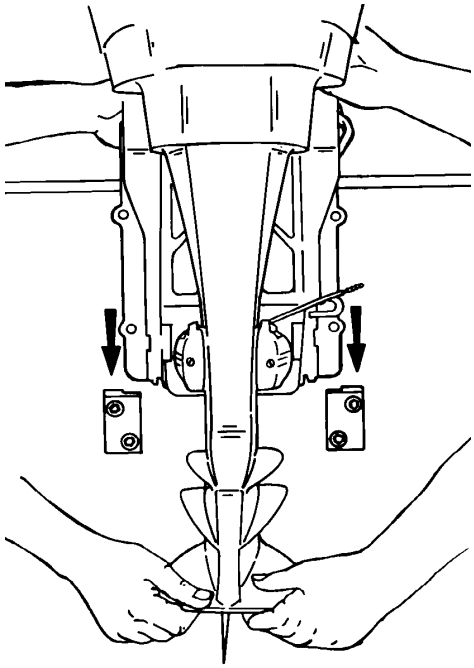
a - Bolts (4)
b - Flat Washers (4)
c - Locknuts (4)
d - Marine Sealer
e - Transom Clamp Retainers (2)
f - Shims (4)
g - Transom Clamp

Retainers installed.



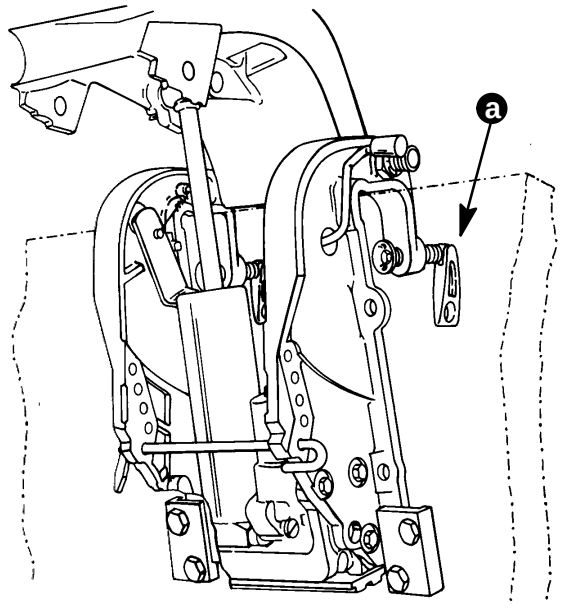
51394

Outboard can be easily removed and installed.



51395

Outboard installed.



51462

a - Tighten transom clamp, handles. Retighten every 1/2 hour.

Securing Outboard to Boat Transom (Electric Start Models)

IMPORTANT: If boat is equipped with thru tilt tube steering, steering cable end must be installed into tilt tube of outboard before securing outboard to transom. Refer to "Steering Cable and Steering Link Rod Installation", following.

Refer to "Determining Recommended Outboard Motor Mounting Height", and position outboard on boat transom aligning mounting holes in transom bracket.

⚠ CAUTION

Marine sealer must be used on shanks of mounting bolts to make a water-tight installation.

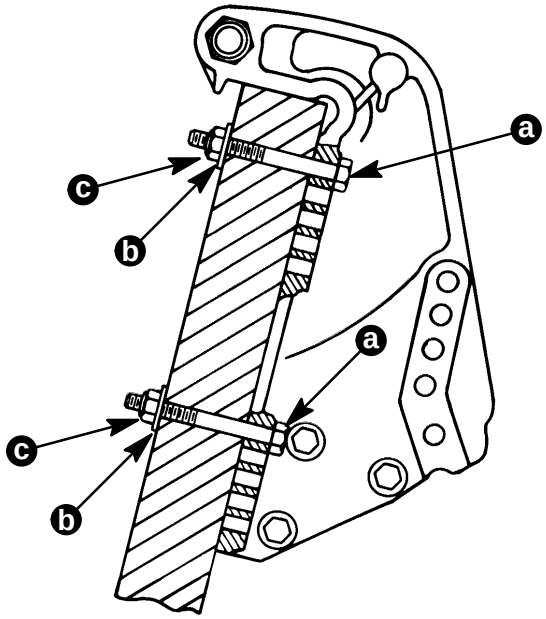
IMPORTANT: In order to avoid transom damage DO NOT use an impact driver when tightening transom mounting bolts.

Apply marine sealer to shanks of mounting bolts (not threads) secure outboard to transom with 4 bolts, flat washers and locknuts, as shown. Be sure that installation is water-tight.

⚠ WARNING

Before operating, outboards(s) MUST BE SECURED to boat transom with four 1/2 in. diameter bolts and locknuts, as follows: 2 bolts must be installed thru upper mounting holes and 2 bolts thru lower mounting holes.

Installation must be water-tight, and outboard should be checked for tightness on the transom during operation. Failure to bolt outboard to transom (using 4 bolts and locknuts, as shown) may result in damage to boat and/or loss of outboard and possible injury to occupants of boat.



50181

a - Mounting Bolt 4 in. Long (4 Req'd)
b - Flat Washer (4 Req'd)
c - Locknut (4 Req'd)

Steering Cable Installation

Refer to "Quicksilver Accessories Guide" to determine correct length of steering cable and remote control cables.

IMPORTANT: Steering cable and remote control cables must be the correct length. Cables which are too short or too long will result in unwanted cable stress.

Install steering mount and steering wheel in accordance with installation instructions that accompany each.

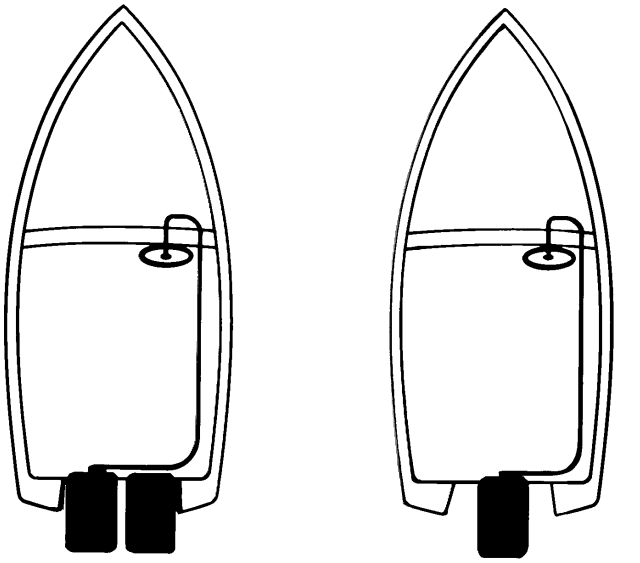
Dual Outboard

IMPORTANT: The distance from each outboard's centerline to the side of transom opening or gunnel MUST BE a minimum of 16 in. (406mm).

With a dual steering system installation, a minimum outboard centerline distance of 21 in. (533mm) must be attained to assure interference-free movement.

Ride-Guide steering cable can be routed on either side of boat. If steering cable is routed on starboard side of boat, cable attaches to port outboard. If steering cable is routed on port side of boat, cable attaches to starboard outboard.

Cable Installation to Tilt Tube - Cable Routed on Starboard Side of Boat



51130

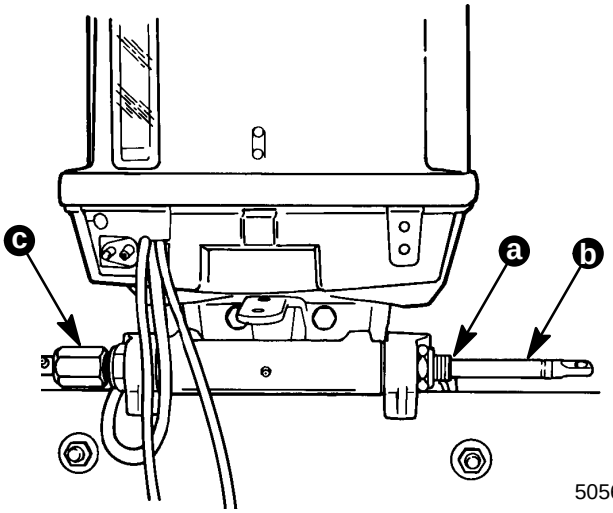
Single Cable-Dual Outboard

Single Cable-Single Outboard

IMPORTANT: Before installing steering cable tilt tube, lubricate entire cable end with Quicksilver 2-4-C Marine Lubricant.

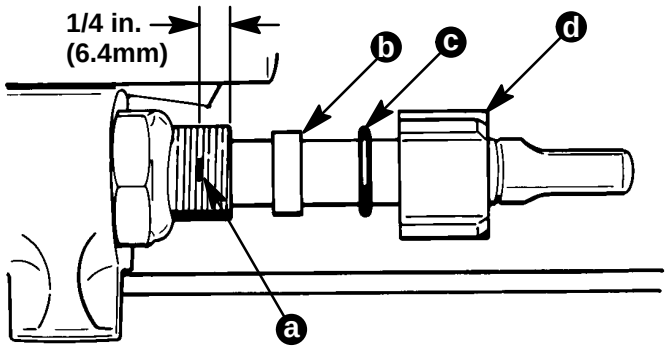
NOTE: *Ride-Guide Steering cable is lubricated at the factory and requires no additional lubrication at initial installation.*

1. Lubricate inside of outboard tilt tube (a) and steering cable end (b) with Quicksilver 2-4-C Marine Lubricant.
2. Insert steering cable end thru outboard tilt tube and secure with steering cable attaching nut (c). Torque to 35 lb. ft. (41 N·m).



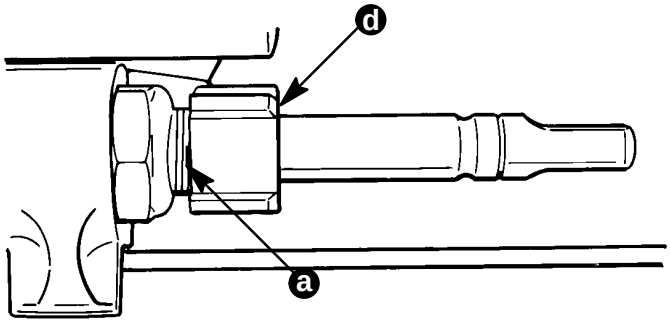
50564B

3. Make pencil mark (a) on tilt tube 1/4 in. (6.4mm) from port end of tube. Slide spacer (b), O-ring (c) and cap (d) over steering cable end.



50180

4. Thread cap (d) onto tilt tube, up to mark (a).



50180

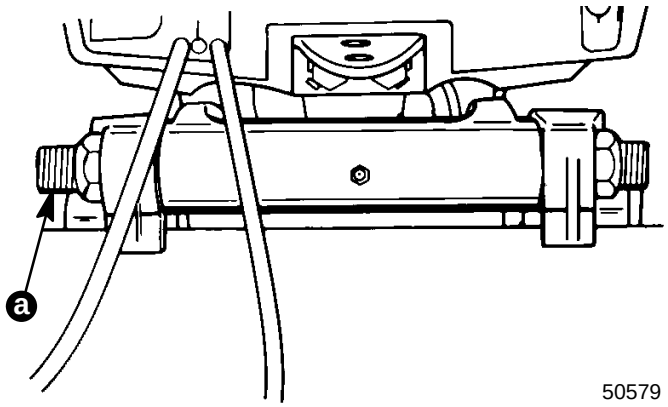
Cable Installation to Tilt Tube - Cable Routed on Port Side of Boat

TILT TUBE REVERSAL

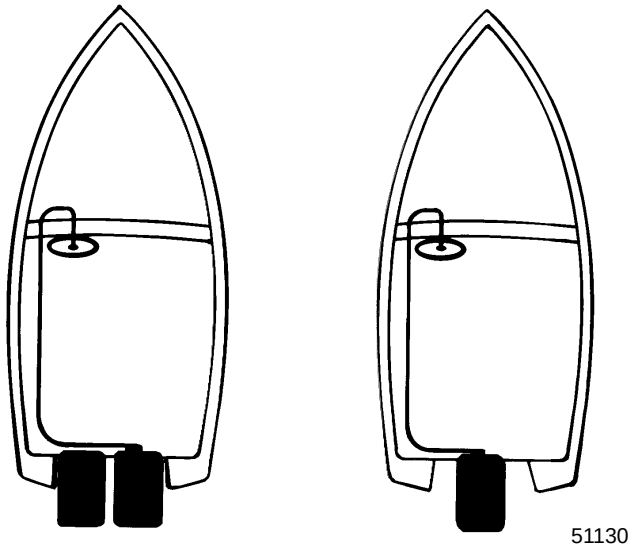
⚠ CAUTION

Outboard tilt tube MUST BE removed and re-installed in the opposite direction. When re-assembled, longer threaded end of tilt tube extends out port side of outboard approximately 3/4 in. (19mm). Failure to reposition outboard tilt tube as described could interfere with steering system operation.

Remove outboard tilt tube and re-install in the opposite direction (turn end for end). When re-assembled, longer threaded end (a) of tilt tube extends out port side of outboard approximately 3/4 in. (19mm). Refer to Section 5A “Midsection”.



50579



51130

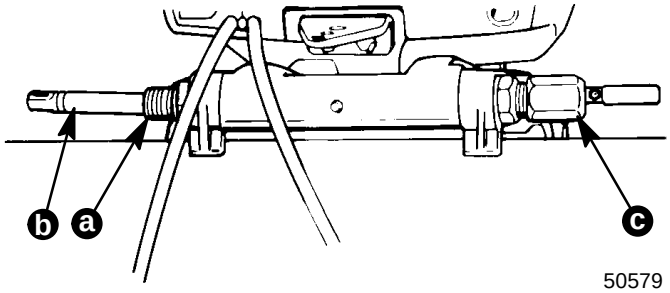
Single Cable-Dual Outboard

Single Cable-Single Outboard

IMPORTANT: Before installing steering cable tilt tube, lubricate entire cable end with Quicksilver 2-4-C w/Teflon Marine Lubricant.

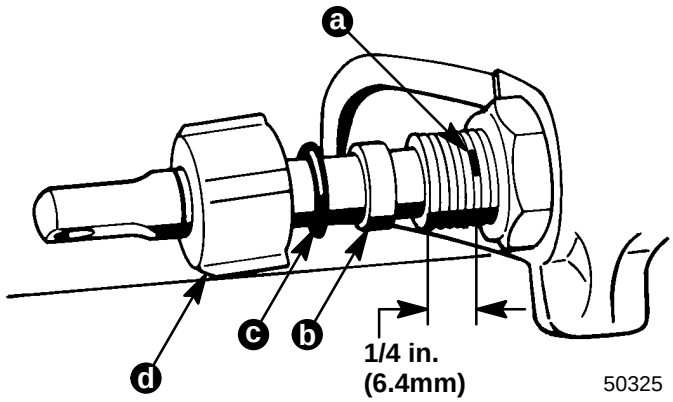
NOTE: *Ride-Guide Steering cable is lubricated at the factory and requires no additional lubrication at initial installation.*

1. Lubricate inside of outboard tilt tube (a) and steering cable end (b) with Quicksilver 2-4-C w/Teflon Marine Lubricant.
2. Insert steering cable end thru outboard tilt tube and secure with steering cable attaching nut (c). Torque to 35 lb. ft. (41 N·m).



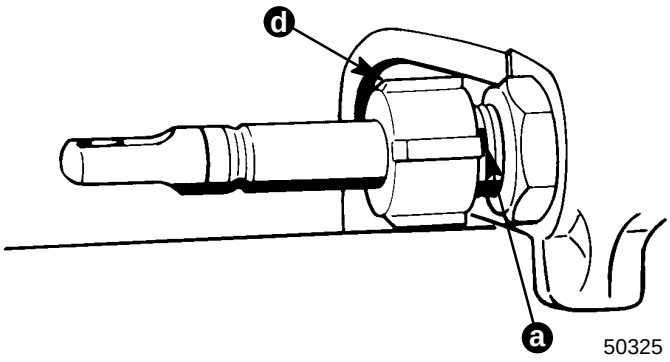
50579

3. Make pencil mark (a) on tilt tube 1/4 in. (6.4mm) from starboard end of tube. Slide spacer (b), O-ring (c) and cap (d) over steering cable end.



50325

4. Thread cap (d) onto tilt tube, up to mark (a).



50325

Installing Steering Link Rod

⚠ WARNING

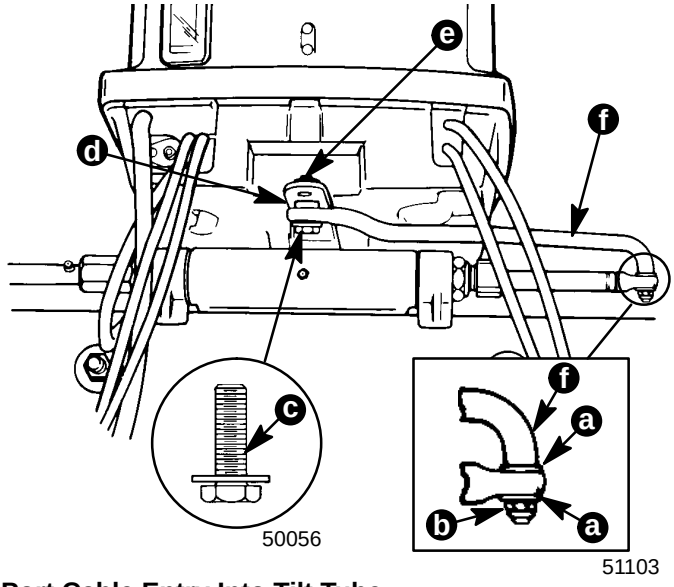
Steering link rod MUST BE secured between outboard steering arm/bracket and steering cable end using a special washer head bolt, spacer and nylon locknuts as shown. Both special washer head bolt and locknuts MUST BE tightened as specified.

Lubricate hole in end of cable with Quicksilver 2-4-C w/Teflon Marine Lubricant. Assemble steering link rod to steering cable end using 2 flat washers and nylon insert locknut. Tighten locknut until it seats [DO NOT exceed 120 lb. in. (13.5 N·m) of torque], then back off 1/4 turn.

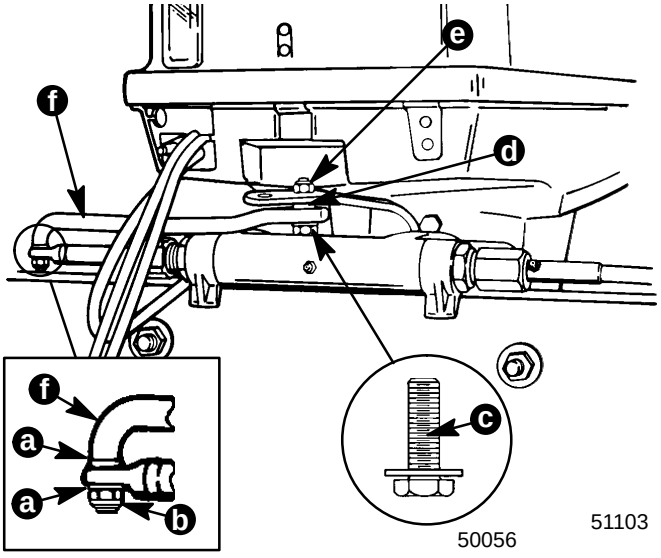
Lubricate ball joint in steering link rod with SAE 30W motor oil. Secure link rod to outboard steering arm (inner hole) using special washer head bolt and nylon insert locknut as shown. Torque bolt to 20 lb. ft. (27 N·m), then torque nut to 20 lb. ft. (27 N·m).

MODELS WITH ONE-PIECE STEERING ARM

Starboard Cable Entry Into Tilt Tube



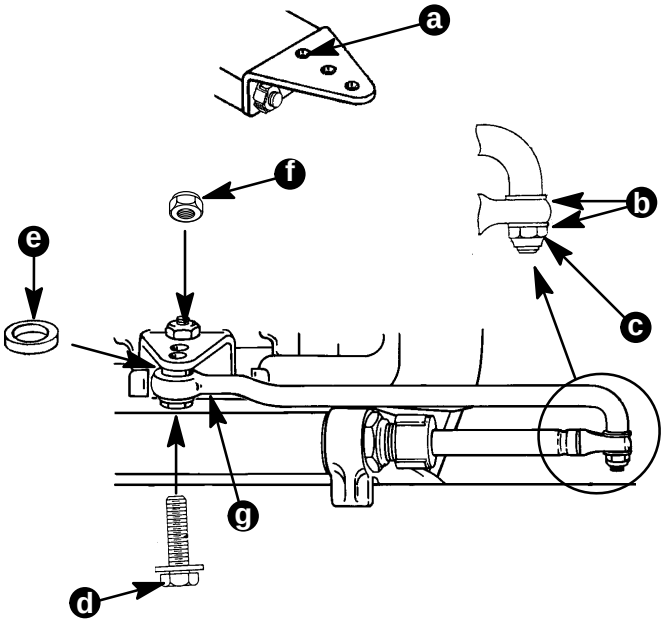
Port Cable Entry Into Tilt Tube



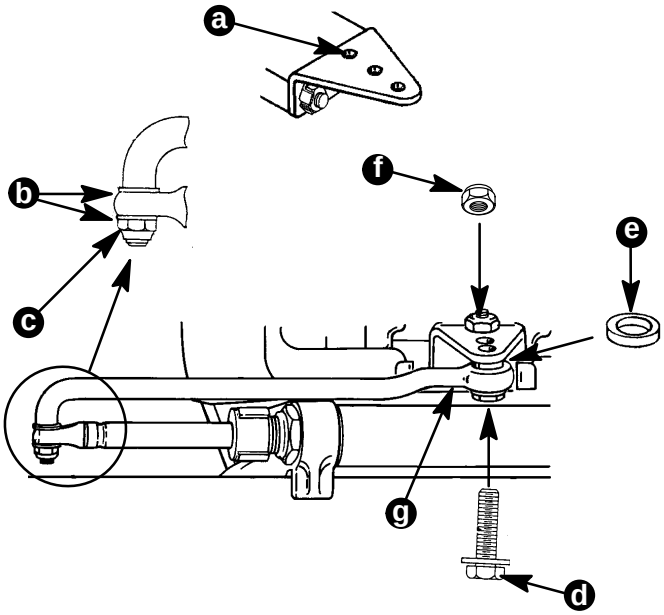
a - Flat Washer (2)
b - Nylon Insert Locknut - Torque until it seats [DO NOT Exceed 120 lb. in. (13.5 N·m) or Torque], Then back off 1/4 Turn
c - Special Washer Head Bolt, Torque to 20 lb. ft. (27 N·m)
d - Spacer
e - Nylon Insert Locknut, Torque to 20 lb. ft. (27 N·m)
f - Steering Link Rod

MODELS WITH TWO-PIECE STEERING ARM/BRACKET

Starboard Cable Entry Into Tilt Tube



Port Cable Entry Into Tilt Tube



a - Two-Piece Steering Bracket, Mount Steering Link Rod in Back Hole
b - Flat Washer (2)
c - Nylon Insert Locknut - Torque until it seats [DO NOT Exceed 120 lb. in. (14 N·m) or Torque], Then back off 1/4 Turn
d - Special Washer Head Bolt, Torque to 20 lb. ft. (27 N·m)
e - Spacer
f - Nylon Insert Locknut, Torque to 20 lb. ft. (27 N·m)
g - Steering Link Rod

⚠ WARNING

After installation is complete and before operating outboard, check that boat will turn right when steering wheel is turned right and that boat will turn left when steering wheel is turned left. Check steering thru full range (right and left) at all tilt angles to assure interference-free movement.

Maintenance Instructions

Maintenance is the owner's responsibility and must be performed at intervals specified.

Normal Service - Every 50 hours of operation or 60 days (whichever comes first).

***Severe Service -** Every 25 hours of operation or 30 days (whichever comes first).

*Operation in salt water is considered "Severe Service".

1. Carefully check steering system components for wear. Replace worn parts.
2. Check steering system fasteners to be sure that they are torqued to correct specifications.

***NOTE:** Ride-Guide Steering cable is lubricated at the factory and requires no additional lubrication at initial installation.*

⚠ WARNING

Core of steering cable (transom end) must be fully retracted into cable housing before lubricating cable. If cable is lubricated while extended, hydraulic lock of cable could occur.

3. With core of Ride-Guide Steering cable (transom end) fully retracted, lubricate transom end of steering cable thru grease fitting and exposed portion of cable end with 2-4-C Marine Lubricant. Lubricate all pivot points with SAE 30W engine oil.

Dual Steering Installation

Steering Coupler Assembly

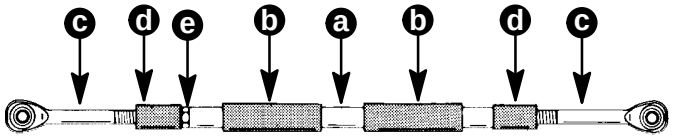
Position outboards so that they are pointing straight ahead. (Distance between threaded hole centers of steering arm/brackets MUST BE equal to distance between propeller shaft centerlines.)

Lubricate inside of rubber sleeves with 2-4-C w/Teflon Marine Lubricant and slide sleeves on steering coupler.

Work rubber bushings onto threaded ends of steering eyes.

Thread jam nut on starboard steering eye.

Thread steering eyes equally into coupler, so that distance between hole centers of steering eye ball joints is equal to distance between threaded hole centers of steering arms/brackets. Exposed threads of steering eyes MUST BE of equal length and threads MUST NOT extend out from coupler more than 2-3/4 in. (70mm).



a - Coupler
b - Rubber Sleeve
c - Steering Eye
d - Rubber Bushing
e - Jam Nut

⚠ WARNING

Both steering eyes must be threaded into coupler 3/4 in. (19mm) minimum. Thread length of steering eye is 3-1/2 in. (89mm), so exposed thread must not extend out of coupler more than 2-3/4 in. (70mm). Failure to adhere to this requirement could result in steering system failure.

Assemble steering coupler between outboard steering arms/brackets, as shown on the following pages.

IMPORTANT: With assembled steering coupler installed and before tightening special washer head bolts/locknuts, check outboard alignment. Distance between hole centers of steering eye ball joints MUST BE equal to distance between propeller shaft center lines, for proper steering. If adjustment is necessary, temporarily remove special washer head bolt/locknut from one steering eye and turn eye in or out to correct alignment.

⚠ WARNING

Both steering eyes MUST BE threaded into coupler 3/4 in. (19mm) minimum, and jam nut must be tightened against coupler to prevent coupler from turning. Torque "jam" nut to 20 lb. ft. (27 N·m).

Tighten "jam" nut against coupler. Torque "jam" nut to 20 lb. ft. (27 N·m).

Spray Quicksilver Corrosion Guard on exposed threads of steering eyes and position rubber bushings and rubber sleeves to cover exposed threads of steering eyes.

⚠ WARNING

After installation is complete (and before operating outboard(s), check that boat will turn right when steering wheel is turned right and that boat will turn left when steering wheel is turned left. Check steering thru full range (left and right) at all tilt angles to assure interference-free movement.

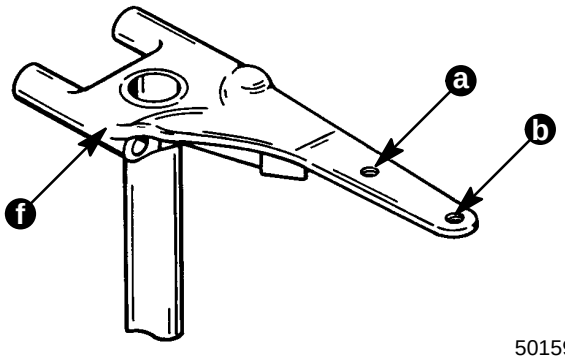
Adjust trim tabs of both outboards, as outlined in "Trim Tab Adjustment", following.

Installation

IMPORTANT: Lubricate all moving parts with Quicksilver 2-4-C w/Teflon Marine Lubricant.

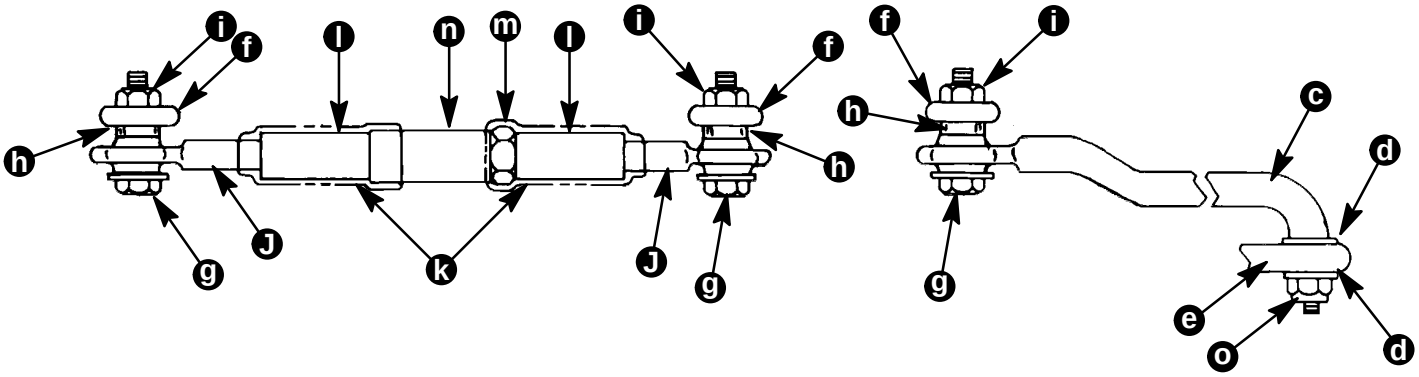
IMPORTANT: All 50-60 models with one piece top cowl require a minimum centerline distance of 21 in. (533mm) during dual outboard installation to assure interference-free movement.

MODELS WITH FORGED TWO HOLE STEERING ARM AND ONE PIECE TOP COWL

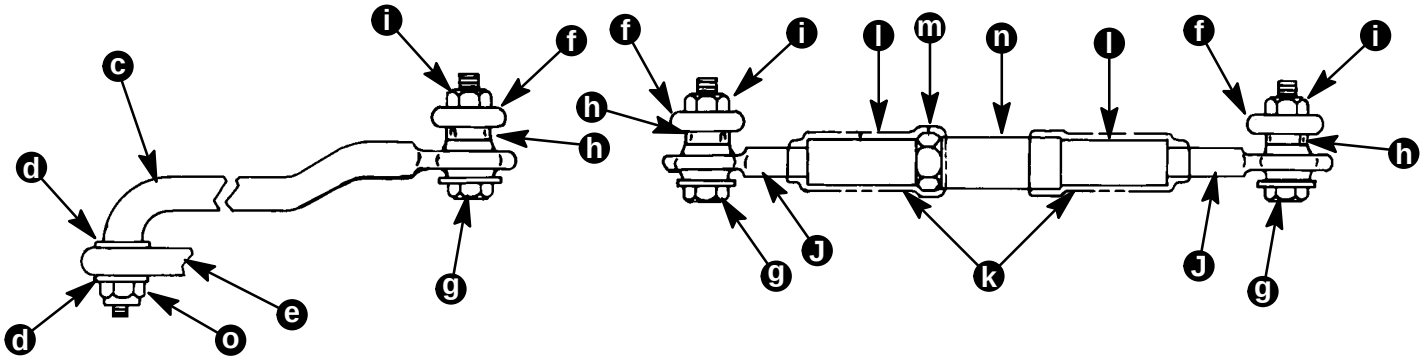


50159

Steering Cable Routed on Starboard Side of Boat Connected to Port Outboard

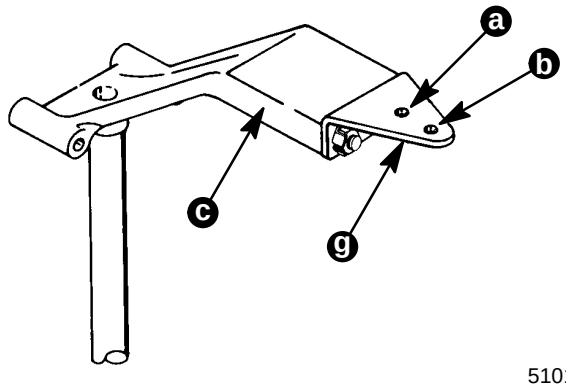


Steering Cable Routed on Port Side of Boat Connected to Starboard Outboard



a - Steering Link Connecting Hole
b - Coupler Assembly Connecting Hole
c - Steering Link
d - Washer
e - Ride-Guide Cable
f - Steering Bracket
g - Special (Washer Head) Bolt (3/8" x 1-5/8"; P/N 10-90041), Torque to 20 lb. ft. (27.1 N·m)
h - Special Washer (P/N 12-71970)
i - Lock Nut P/N 11-34863, Torque to 20 lb. ft. (27 N·m)
j - Steering Eye
k - Rubber Sleeve
l - Rubber Bushing
m - Jam Nut, Torque to 20 lb. ft. (27.1 N·m)
n - Dual Steering Coupler
o - Lock Nut P/N 11-34863, Torque Until it Seats [Do Not Exceed 120 lb. in. (14 N·m) of Torque], Then Back Off 1/4 Turn

MODELS WITH TWO HOLE TWO PIECE STEERING ARM/BRACKET AND ONE PIECE TOP COWL

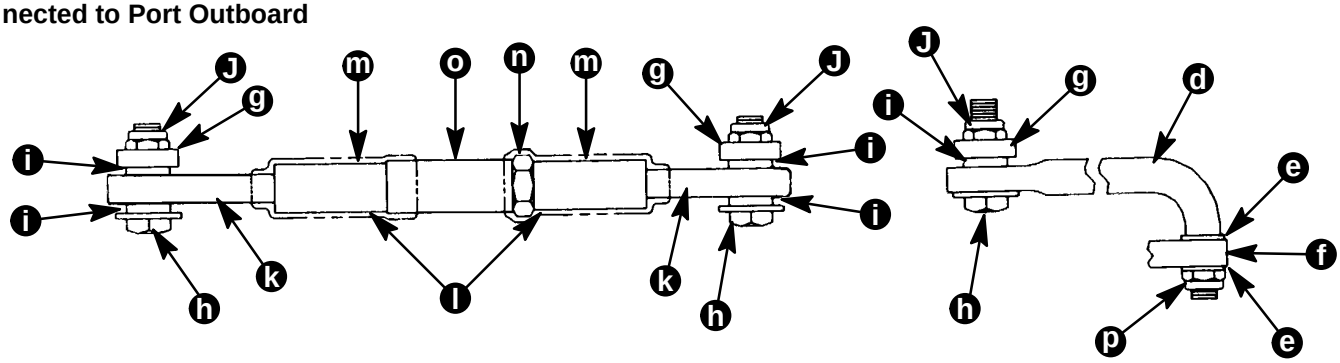


51011

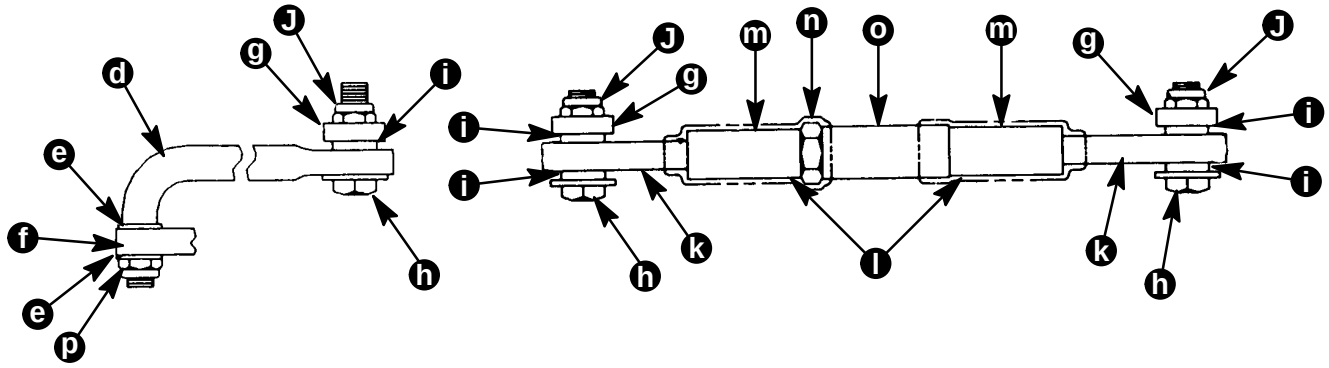
IMPORTANT: Lubricate all moving parts with Quicksilver 2-4-C w/Teflon Marine Lubricant.

IMPORTANT: All 50-60 models with one piece top cowl require a minimum centerline distance of 21 in. (533mm) during dual outboard installation to assure interference-free movement.

Steering Cable Routed on Starboard Side of Boat Connected to Port Outboard



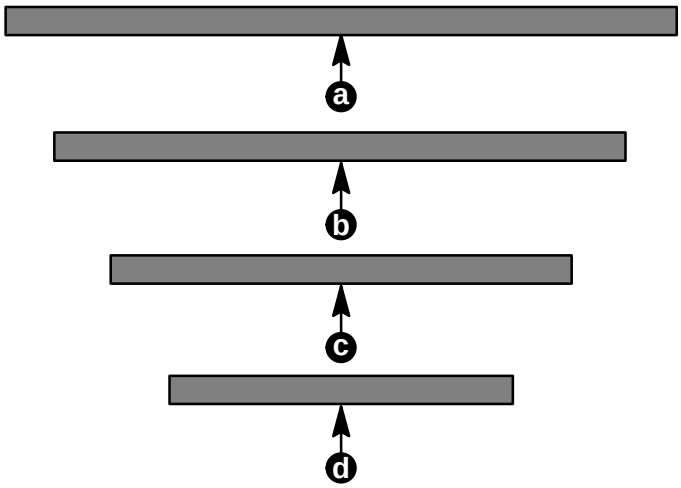
Steering Cable Routed on Port Side of Boat Connected to Starboard Outboard



a - Steering Link Connecting Hole
b - Coupler Assembly Connecting Hole
c - Steering Arm
d - Steering Link
e - Washer
f - Ride-Guide Cable
g - Steering Bracket
h - Special (Washer Head) Bolt (3/8" x 1-5/8"; P/N 10-90041), Torque to 20 lb. ft. (27 N·m)
i - Special Washer (P/N 12-71970)
j - Lock Nut P/N 11-34863, Torque to 20 lb. ft. (27 N·m)
k - Steering Eye
l - Rubber Sleeve
m - Rubber Bushing
n - Jam Nut, Torque to 20 lb. ft. (27.1 N·m)
o - Dual Steering Coupler
p - Lock Nut P/N 11-34863, Torque Until it Seats [Do Not Exceed 120 lb. in. (13.5 N·m) of Torque], Then Back Off 1/4 Turn

Ride-Guide Steering Attachment Extension Couplers

Outboard Center Line Distance	Required Coupler(s) Between Steering Eyes (Shown Below)
18 in. thru 22-1/2 in. (457mm thru 572mm)	9 in. (229mm) Coupler (p/n 814951--1)
22-1/2 in. thru 24-1/2 in. (572mm thru 622mm)	12 in. (305mm) Coupler (p/n 814951--2)
23-1/2 in. thru 27-1/2 in. (597mm thru 699mm)	15 in. (381mm) Coupler (p/n 814951--3)
26-1/2 in. thru 30-1/2 in. (673mm thru 755mm)	18 in. (457mm) Coupler (p/n 814951--4)



a - 18 in. (457mm) Coupler (P/N 814951--4)
b - 15 in. (381mm) Coupler (P/N 814951--3)
c - 12 in. (305mm) Coupler (P/N 814951--2)
d - 9 in. (229mm) Coupler (P/N 814951--1)

Trim Tab Adjustment

DUAL OUTBOARD

1. Check trim tab position as follows:

IMPORTANT: Initial trim tab setting for both outboards should be straight to rear of outboard, so that tabs are aligned with gear housing centerline. Refer to "If necessary, adjust trim tab as follows".

a. Operate boat at normal cruise throttle setting and adjust trim to optimum setting.

b. If boat pulls to the right (starboard), trailing edge of trim tab must be moved to the right (when viewing outboard from behind). If boat pulls to the left (port), trailing edge of trim tab must be moved to the left.

2. If necessary, adjust trim tab as follows:

a. Shift outboard into neutral and make sure ignition key is at "OFF" position.

b. Remove plastic cap from rear of drive shaft housing and loosen bolt and trim tab.

IMPORTANT: Trim tabs MUST BE set in the same position on both outboards.

c. If boat pulls to the right, adjust trailing edges of both trim tabs to the right. If boat pulls to the left, adjust trailing edges of both trim tabs to the left.

d. Tighten both trim tab bolts securely and replace plastic caps.

e. Operate boat following trim tab adjustment. Readjust trim tab if necessary.

Maintenance Instructions

Maintenance inspection is owner's responsibility and must be performed at intervals specified, following:

Normal Service - Every 50 hrs. of operation or 60 days (whichever comes first)

***Severe Service -** Every 25 hrs. of operation or 30 days (whichever comes first)

*Operation in a salt water area is considered "Sever Service".

1. Carefully check steering system components for wear. Replace worn parts.
2. Check steering system fasteners to be sure that they are torqued to correct specifications.

***NOTE:** Ride-Guide Steering Cables are lubricated at the factory and require no additional lubrication at initial installation.*

⚠ WARNING

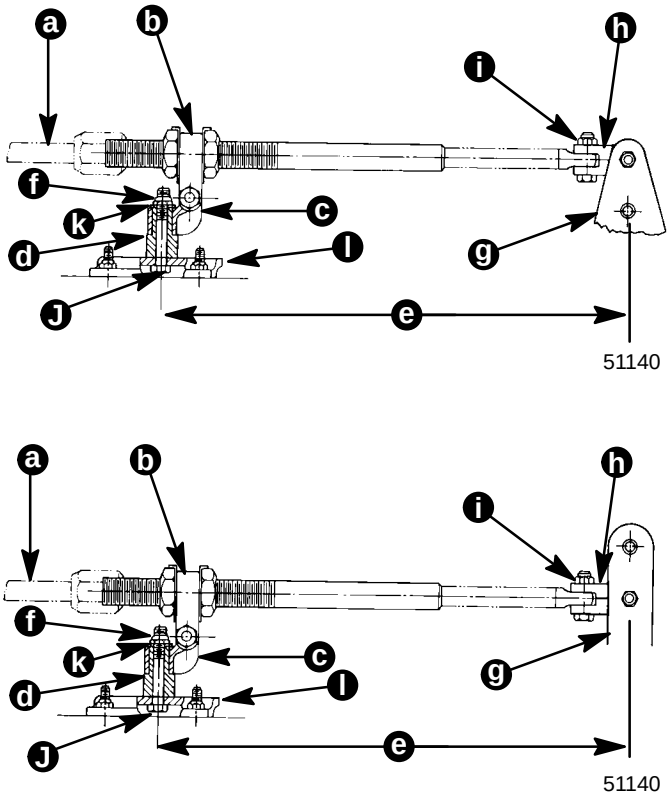
Core of each steering cable (transom end) must be fully retracted into cable housing before lubricating cable. If cable is lubricated while extended, hydraulic lock of cable could occur.

3. With core of Ride-Guide Steering Cable (transom end) fully retracted, lubricate transom end of steering cables thru grease fittings with 2-4-C w/Teflon Marine Lubricant. Lubricate exposed portion of cable ends with 2-4-C w/Teflon Marine Lubricant.
4. Lubricate pivot points of steering link rods and ball joints of link rods/steering coupler with Quicksilver 2-4-C w/Teflon Lubricant.
5. Inspection and lubrication of steering head assembly (rotary or straight rack) should be performed once each year (by your Authorized Dealer) or whenever steering mount and/or steering head are disassembled, or if steering effort has increased. Lubricate with 2-4-C w/Teflon Marine Lubricant.

Transom Mounted Ride-Guide Attaching Kit Installation

Attaching Kit Installation

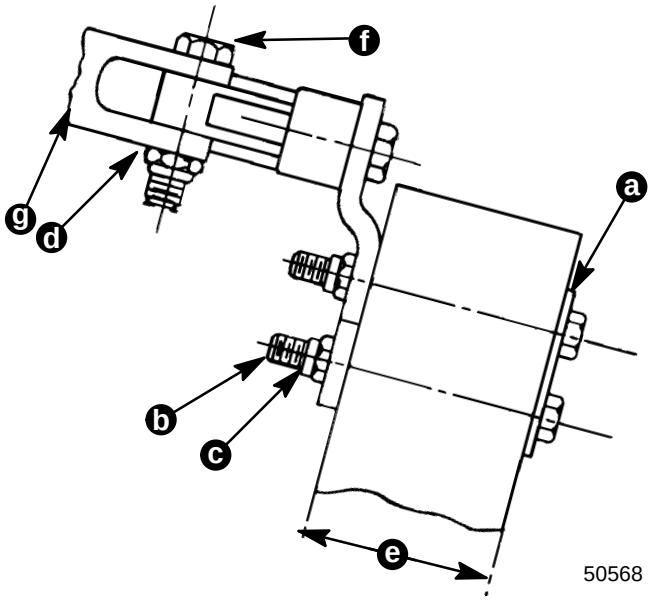
1. Lubricate both holes in pivot block (Figure 1) with Quicksilver 2-4-C w/Teflon Marine Lubricant.
2. Place pivot block on pivot spacer and secure to transom bracket with 3/8 in. x 2-1/2 in. bolt, flat washer and locknut, as shown in Figure 1. Torque locknut to 20 lb. ft (27 N·m).



a - Ride-Guide Cable
b - Ride-Guide Yoke
c - Pivot Block
d - Pivot Spacer
e - 15 in. (Centerline of Attaching Kit Pivot to Centerline of Outboard)
f - Pivot Attaching Locknut [Torque to 20 lb. ft. (27.1 N·m)]
g - Outboard Steering Arm or Steering Arm/Bracket
h - "Clevis Kit"
i - Ride-Guide Cable Attaching Locknut [Torque to 10 lb. ft. (13,5 N·m)
j - Bolt (3/8 in. x 2-1/2 in.)
k - Flat Washer
l - Transom Bracket

Figure 1. Installing Attaching Kit

3. Place Ride-Guide yoke on pivot block and secure with 7/16 in. x 1-3/4 in bolt and locknut, as shown in Figures 1 and 2. Torque locknut to 10 lb.ft. (13.5 N·m), **then back off 1/4 turn.**
4. Install one cable tube jam nut onto steering cable tube. Place tab washer over Ride-Guide yoke, then insert cable tube thru tab washer and yoke. Install second cable tube jam nut onto cable tube but do not tighten at this time. (Figure 3)
5. Position transom attaching kit on transom as follows:
   a. Determine centerline of outboard, then measure 15 in. (38.1cm) over from this centerline and draw a vertical line on transom. (Figure 1)
   b. Position attaching kit on transom so that **transom bracket is centered on the 15 in. line** (Figure 1) at a height where the **center of Ride-Guide yoke is even with, or not more than 1/2 in. (12.8mm)** above, top edge of transom. (Figure 3)



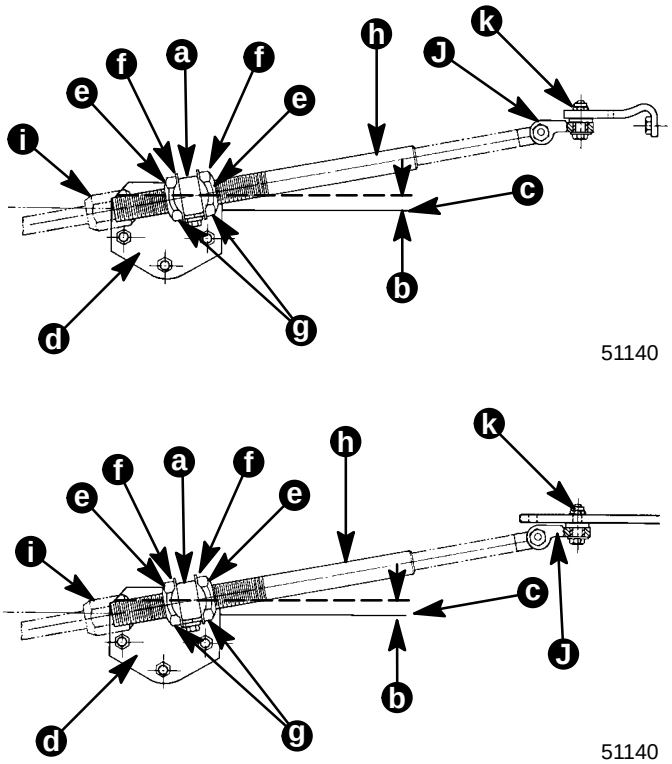
a - Transom Backing Plate
b - Bolt (5/16 in. x 3-1/4 in.)
c - Locknut (Torque to 10 lb. ft.)
d - Ride-Guide Yoke Attaching Locknut (Torque to 10 lb. ft. **Then Back Off 1/4-Turn**
e - 2-3/8 in. Maximum Transom Thickness
f - Bolt (7/16 in. x 1-3/4 in.)
g - Ride-Guide Yoke

Figure 2. Installing Attaching Kit

NOTE: *When drilling thru transom, be sure that holes are drilled perpendicular to transom.*

6. With attaching kit positioned as outlined preceding, use 3 holes in transom bracket as a guide and drill three 11/32 in. (8.7mm) holes thru transom.

7. Use a marine-type sealer on three 5/16 in. x 3-1/4 in. bolts. Secure attaching kit to transom, using transom backing plate, 3 bolts (with sealer) and 3 locknuts, installed as shown in Figure 2. Torque locknuts to 10 lb. ft. (13.5 N·m).



a - Ride-Guide Yoke
b - 0 in. to 1/2 in. (12.7 mm) (Center of Ride-Guide Yoke to Top of Transom)
c - Top of Transom
d - Transom Bracket
e - Cable Tube Jam Nuts [Torque to 35 lb. ft. (47.5 N·m)]
f - Tab Washer
g - After Jam Nuts are Torqued to Specification, Bend Locking Tabs Against Nuts
h - Cable Guide Tube
i - Ride-Guide Cable Attaching Nut [Torque to 35 lb. ft. (47.5 N·m)]
j - "Clevis Kit"
k - Clevis Attaching Locknut [Torque to 20 lb. ft. (27.1 N·m)

Figure 3. Installing Attaching Kit

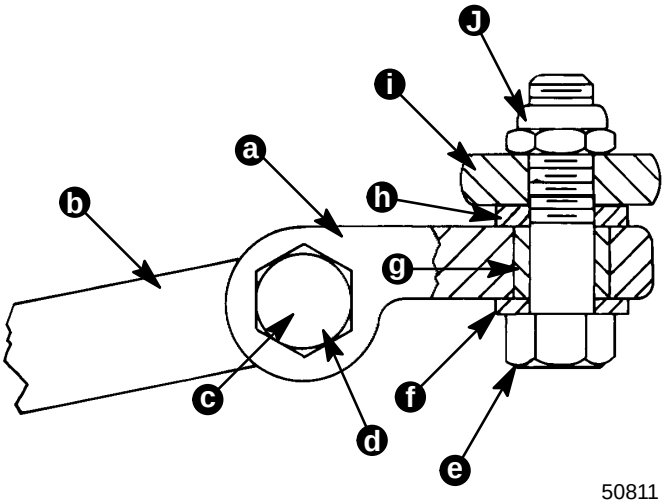
Clevis Attaching Kit Installation

NOTE: *This kit is used to attach Ride-Guide cable to outboard steering arm ONLY when "Transom Mounted Ride-Guide Attaching Kit" is being used. If Ride-Guide cable is installed thru outboard tilt tube, then "Steering Link Rod" must be used.*

Installation Instructions

⚠CAUTION

Models with two hole two piece steering arm require outer connection hole to be used when connecting clevis to steering arm.



a - Clevis
b - Steering Cable
c - Bolt (3/8 in. x 1-3/8 in.)
d - Clevis to Steering Cable Locknut [Torque to 10 lb. ft. (13.5 N·m)]
e - Bolt 3/8 in. x 1-1/4 in. [Torque to 20 lb. ft. (27.0 N·m)]
f - Thin Washer [1/16 in. (1.6mm) Thick]
g - Spacer
h - Thick Washer [1/8 in. (3.2mm) Thick]
i - Outboard Steering Arm (use Inner Hole on Models with One Piece Steering Arm or Outer Hole on Models with Two Hole Two Piece Steering Arm)
j - Clevis to Outboard Locknut [Torque to 20 lb. ft. (27.0 N·m)]

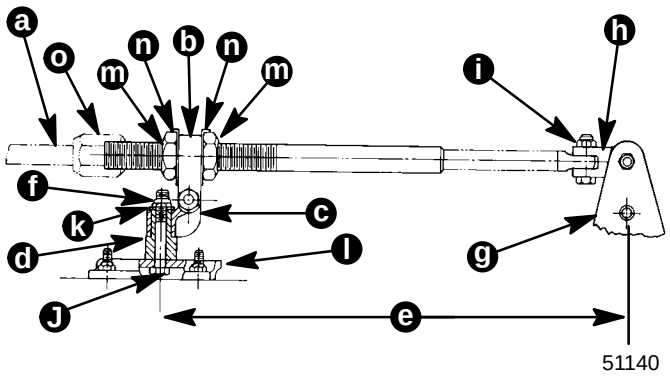
1. Lubricate shank of bolt (c) with 2-4-C w/Teflon Marine Lubricant, then secure clevis to steering cable with this bolt and locknut. Torque locknut (d) to 10 lb. ft (13.5 N·m).

2. Lubricate spacer (supplied with kit) with 2-4-C w/Teflon Marine Lubricant.

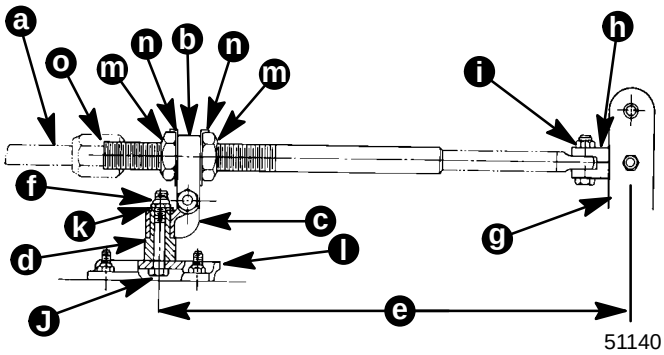
3. Attach clevis to steering arm bolt using thin washer, spacer, thick washer (positioned between clevis and steering arm) and locknut, as shown. Torque bolt (e) to 20 lb. ft (27.0 N·m), then torque locknut (j) to 20 lb. ft. (27.0 N·m).

Steering Cable Installation

1. Lubricate steering cable end with Quicksilver 2-4-C w/ Teflon Marine Lubricant.
2. Install steering cable thru steering cable tube and secure to cable tube with cable attaching nut. (See below.) Do not tighten cable attaching nut at this time.
3. Attach ride-guide cable to outboard steering bracket (middle hole) using clevis kit (P/N 70599A4).
4. Adjust 2 large jam nuts on cable tube of attaching kit, so that **steering wheel** is in normal straight-driving position with outboard in straight- driving position. Torque each jam nut to 35 lb. ft. (47.5 N·m), then bend a side of tab washer against flat of each jam. (below)
5. Torque Ride-Guide cable attaching nut (which secures cable to guide tube) to 35 lb. ft. (47.5 N·m). (below) Install locking sleeve over cable attaching nut and secure with cotter pin. Spread ends of cotter pin.



51140



51140

a - Ride-Guide Cable
b - Ride-Guide Yoke
c - Pivot Block
d - Pivot Spacer
e - 15" (Centerline of Attaching Kit Pivot to Centerline of Engine)
f - Pivot Attaching Locknut; Torque to 20 lb. ft. (27 N·m)
g - Engine Steering Arm
h - Clevis Kit
i - Ride-Guide Cable Attaching Locknut; Torque to 10 lb. ft. (13.5 N·m)
j - Bolt (3/8" x 2-1/2")
k - Flat Washer
l - Transom Bracket
m - Cable Tube Jam Nut; Torque to 35 lb. ft. (47.5 N·m)
n - Tab Washers (Bend Over Flat of Jam Nuts)
o - Cable Attaching Nut

NOTE: *Some Ride-Guide steering cables may not be equipped with locking sleeve and cotter pin. If cable being installed does not have these parts, disregard instructions to install them.*

⚠ WARNING

After installation is completed (and before operating outboard), check that boat will turn right when steering wheel is turned right and that boat will turn left when steering wheel is turned left. Check steering thru full range (left and right) at all tilt angles to assure interference-free movement.

6. Lubricate outboard end of Ride-Guide steering cable (thru grease fitting next to cable attaching nut) with Quicksilver 2-4-C w/Teflon Marine Lubricant.

NOTE: *Ride-Guide steering cable is lubricated at the factory and requires no additional lubrication at initial installation.*

7. Lubricate all steering system pivot points (and exposed portion of steering cable core) with Quicksilver 2-4-C w/Teflon Marine Lubricant. Lubricate at intervals specified preceding.
8. Carefully check steering system components for wear (at intervals specified, preceding). Replace worn parts.
9. Check steering system fasteners (at intervals specified, preceding) to be sure that they are torqued to correct specifications. (Figures 1, 2 and 3)

Maintenance Instructions

Lubrication and maintenance inspection is owner's responsibility and must be performed at intervals as specified following:

Normal Service - Every 50 hours of operation or 60 days (whichever comes first).

***Severe Service -** Every 25 hours of operation or 30 days (whichever comes first).

*Operation in salt water is considered "Severe Service".

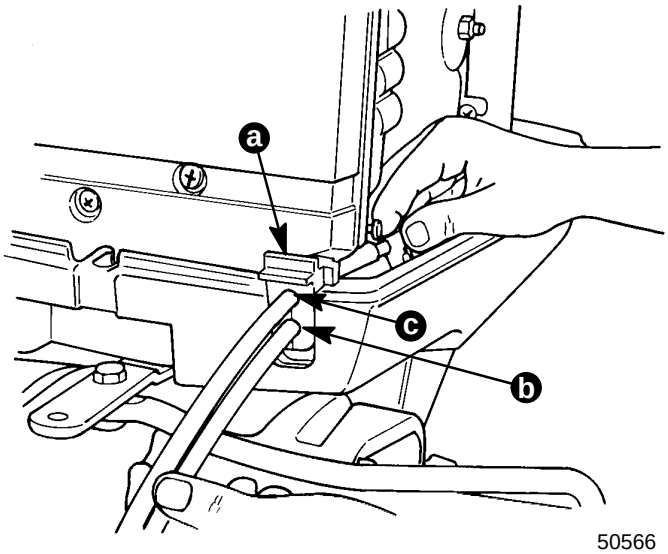
1. Carefully check steering components for wear. Replace as necessary.
2. Check steering system fasteners to be sure that they are torqued to correct specifications.
3. Lubricate clevis points with a drop of light oil.
4. Inspection and lubrication of steering system should be performed once each year or whenever steering components are disassembled, steering effort has increased or steering seems loose.

Remote Control Installation

IMPORTANT: Connect control cables to remote control and mount remote control BEFORE attaching control cables to engine.

Install throttle and shift cables to remote control and mount remote control as outlined in the installation instructions which accompany the remote control.

NOTE: *It will be necessary to lift control cable rubber grommet out of opening in bottom cowl. so that control cables can be routed thru grommet and into bottom cowl.*



50566

a - Control Cable Rubber Grommet
b - Shift Cable Opening
c - Throttle Cable Opening

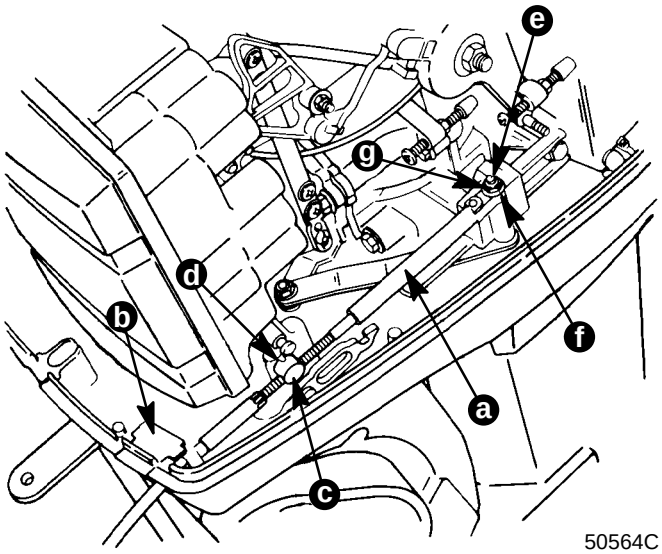
Shift Cable Installation and Adjustment to Engine

NOTE: *Attach shift cable to engine first. Shift cable is the first cable to move when remote control handle is advanced from neutral position toward in-gear position.*

If remote control has a neutral lock release, secure the release in the depressed position using a piece of tape. Now the true neutral detent can be found.

NOTE: *Move remote control handle back and forth. You will feel three detent positions; center detent is neutral.*

1. Position remote control handle into neutral detent.
2. Manually shift outboard into neutral (propeller will rotate freely).
3. Route shift cable (a) thru control cable grommet (b).
4. Adjust cable barrel (c) to attain the same length between cable barrel and hole in end of cable as exists between barrel receptacle (d) and shift actuator stud (e), keep a slight preload toward reverse.
5. Place end of shift cable on actuator stud (e), then place plastic washer (f) on stud and secure with locknut (g).

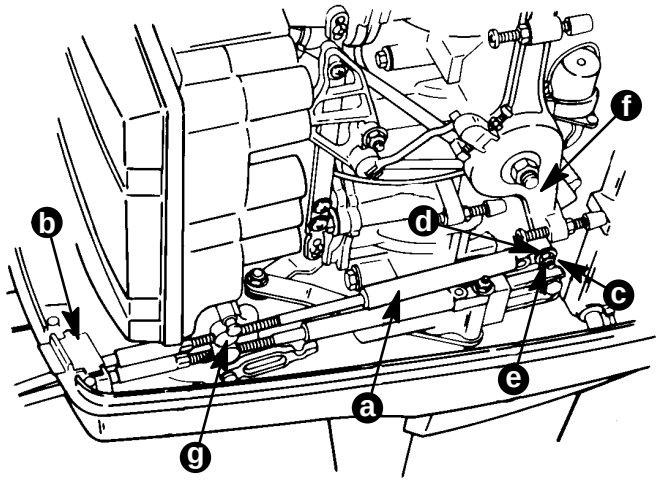


50564C

6. Check shift cable adjustment as follows:
   a. **Shift remote control into forward gear.** Now, check prop shaft, the shaft should not be able to turn counterclockwise. If it does, adjust cable barrel closer to cable end guide.
   b. **Shift remote control into neutral.** The prop shaft now should turn freely without drag. If not, adjust cable barrel away from cable end guide. Repeat steps a and b.
   c. **Shift remote control into reverse as the prop shaft is rotated by hand.** The prop shaft should not be able to turn clockwise. If it does, adjust cable barrel away from cable end guide. Repeat steps a thru c.
   d. **Shift remote control into neutral.** The prop shaft should turn freely without drag. If not, adjust cable barrel closer to cable end guide. Repeat steps a thru d.

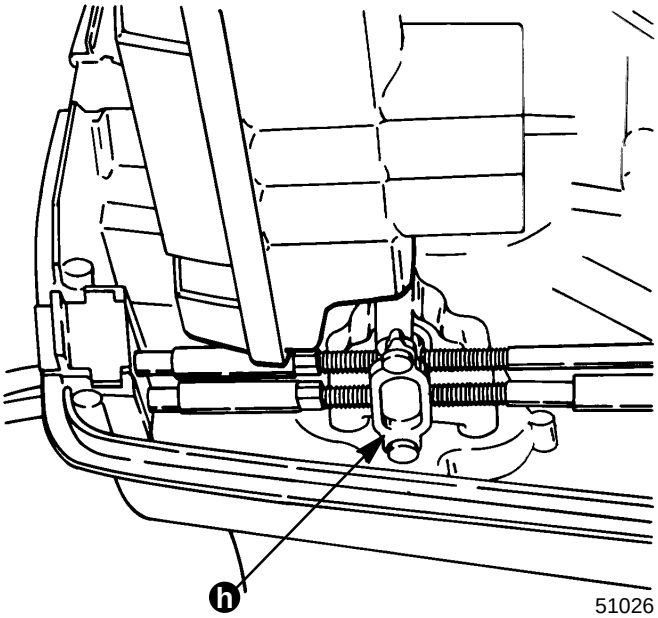
Throttle Cable Installation and Adjustment to Engine

1. Shift remote control into neutral.
2. Route throttle cable (a) thru control cable grommet (b).
3. Install throttle cable end (a) onto stud (c) of throttle lever. Place nylon washer (d) over stud and install locknut (e). Tighten locknut against throttle cable end to snug cable end against throttle lever, then back locknut off 1/4 turn.
4. Holding engine throttle lever (f) against idle stop, adjust throttle cable barrel (g) to slip into upper hole of barrel receptacle, with a very light preload of throttle lever against idle stop.



50564D

5. Lock barrels in place with barrel retainer (h).
6. Check preload on throttle cable by placing a thin piece of paper between idle stop screw and idle stop. Preload is correct when paper can be removed without tearing, but has some drag on it. Re-adjust cable barrel, if necessary.

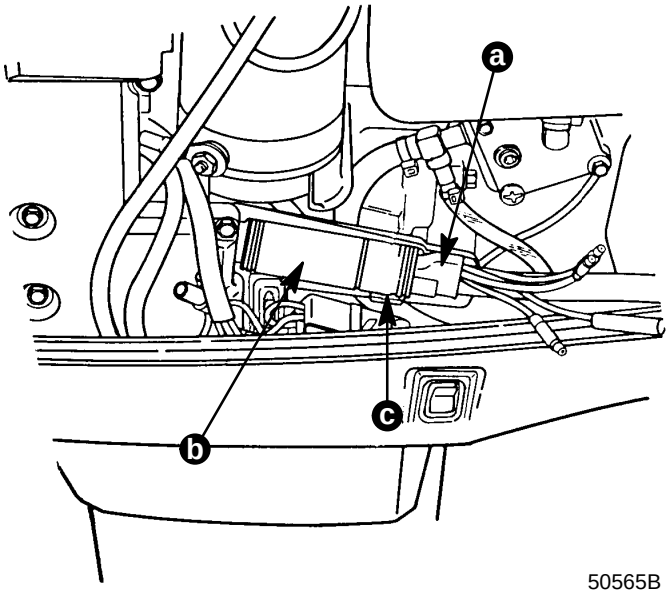


51026

Connecting Remote Control Wiring Harness to Engine Wiring Harness (Electric Start Models)

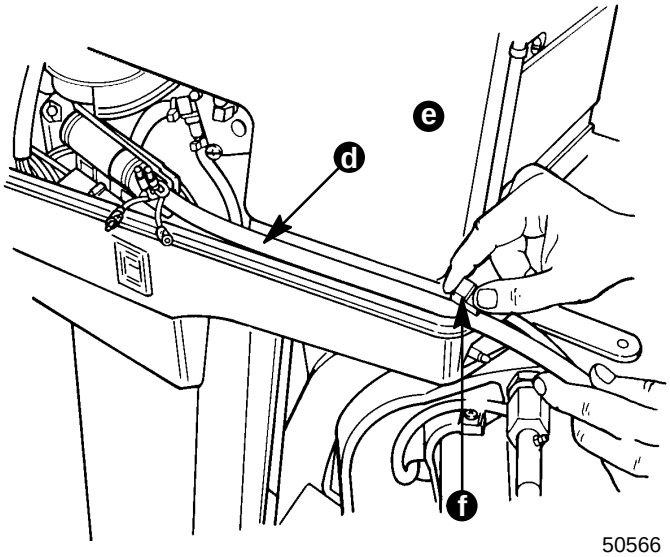
Route remote control harness or key switch harness along side of boat to engine, fastening harness to boat. Be sure that harness does not rub, get pinched or come in contact with bilge water.

Plug remote control harness or key switch harness connector (a) into engine harness connector (b) and push connection securely into retainer (c).



50565B

Route remote control harness or key switch harness (d) along side oil tank (e) and out of bottom cowl thru opening (f) in battery cable grommet.



50566

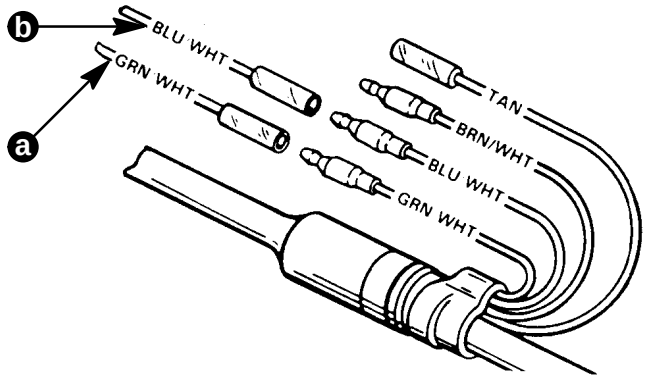
⚠ CAUTION

Remote control wiring harness and key switch wiring harness must be routed between control cable rubber grommet and engine harness connector, so that harness will not interfere with engine throttle and shift operation.

Power Trim Wiring Connections (Models So Equipped)

Make bullet connector wiring connection, between remote control wiring harness/key switch wiring harness and engine wiring.

IMPORTANT: Tape back and isolate any unused wiring harness leads.



a - Lead From Trim Solenoid (Down Solenoid)
b - Lead From Trim Solenoid (Up Solenoid)

Battery Connections

⚠ CAUTION

Failure to observe correct polarity when connecting battery cables to battery will result in damage to the charging system.

1. Connect battery cables (from engine) to battery. Connect red battery cable to positive (+) battery terminal and black battery cable to negative (-) battery terminal.