



ENGINE ATTACHMENTS/ ENGINE INSTALLATION

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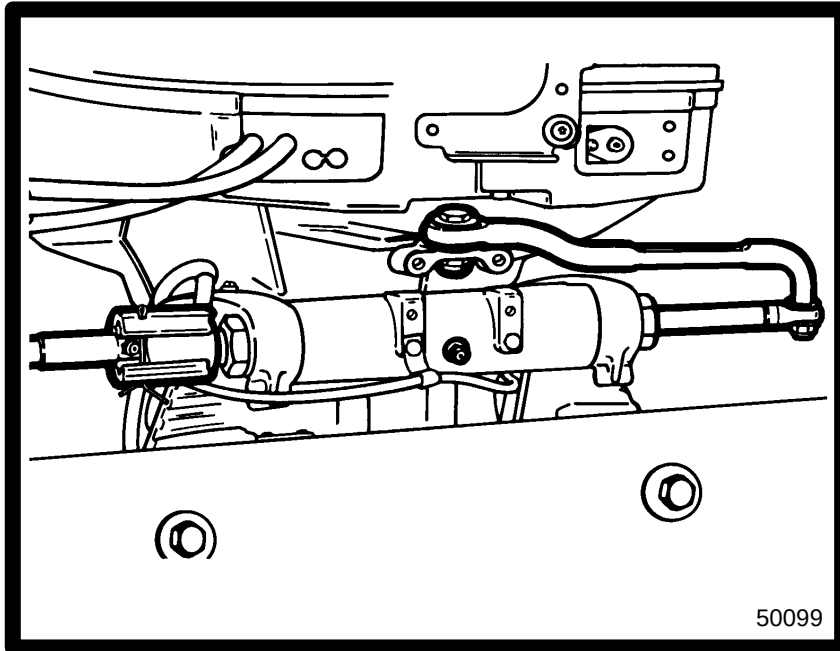




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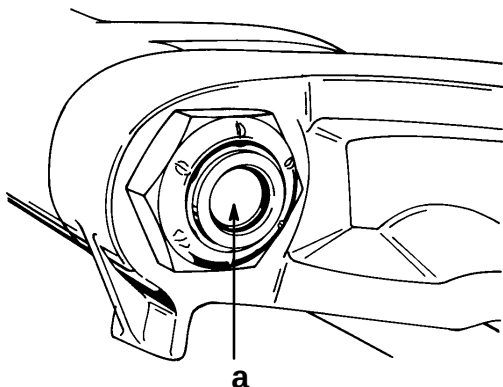


Steering Cable and Steering Link Rod Installation

⚠ CAUTION

Control cables must be the correct length when installed. Cables that are too long may bind or kink putting extra stress on cables.

1. Install steering mount and steering wheel in accordance with installation instructions that accompany each.
2. Lubricate seal inside of engine tilt tube and entire steering cable end with Quicksilver 2-4-C w/Teflon.



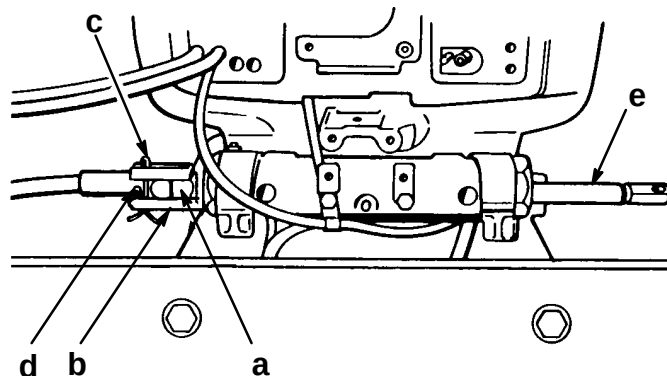
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a - Seal

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

3. Insert steering cable end thru engine tilt tube and secure steering cable to tilt tube with steering cable attaching nut as shown. Torque nut to 35 lbs. ft. (47.5 N·m).

4. Install rubber bumper on inside of locking sleeve, then install locking sleeve over steering cable attaching nut) and secure with cotter pin . Spread ends of cotter pin. Be sure to install cotter pin so that it is located in-between attaching nut and grease fitting , as shown.



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a - Cable Nut
b - Locking Sleeve
c - Cotter Key

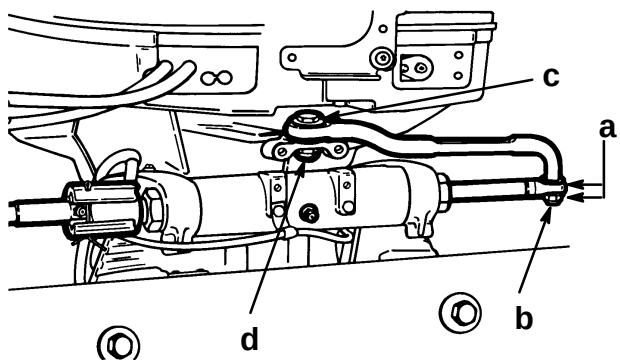
d - Grease Fitting
e - Steering Cable



⚠ CAUTION

Steering link must be installed in rear hole in engine steering arm. Failure to install in rear hole may cause damage to steering system.

5. Lubricate hole in end of steering cable with Quicksilver 2-4-C w/Teflon and assemble steering link rod to steering cable with 2 flat washers and locknut as shown. Torque locknut to 120 lbs. in. (13.5 N·m) maximum and back off 1/4- turn.
6. Lubricate ball joint in steering link rod with 30W oil and assemble to rear hole in engine steering arm with pivot bolt and locknut. Torque pivot bolt, then locknut to 20 lbs. ft. (27.1 N·m).



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- a - Flat Washers (2)
 b - Locknut
 c - Pivot Bolt
 d - Locknut

Ride-Guide Attachment – Dual Front Installation (92876A2)

⚠ WARNING

Quicksilver Super Ride-Guide Steering (Dual Cables) must be used with this attaching kit. Failure to adhere to this requirement could result in steering system failure.

Installation and Maintenance

IMPORTANT: The distance from each engine's centerline to the side of transom opening must be a minimum of 16" (40.6cm).

This kit contains all necessary parts to connect both engines to Ride-Guide Steering cables for 22-1/2" thru 24-1/2", refer to Figure 14, page 7A-14 for additional extension couplers.

Cable Routing Types

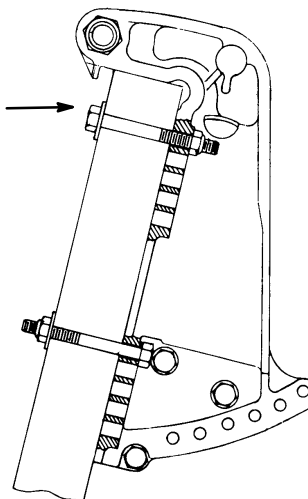
Use "1" or "2", following, to route steering cables:

1. Parallel cable routing: Cables routed together down starboard side of boat. Refer to "Parallel Routed Steering Cables and Attaching Kit Installation," immediately following.
2. Opposite side cable routing: One cable routed down starboard side of boat and one cable routed down port side of boat. Refer to "Opposite Side Routed Steering Cables and Attaching Kit Installation," page 7A-8.

⚠ CAUTION

With this kit installed, the upper (engine) mounting bolts must be installed so that hex head end of bolts is on the inside of boat transom, as illustrated below. Failure to install upper mounting bolts, as shown in illustration, could result in interference between outer steering cable locking sleeve and ends of mounting bolts when engine is tilted up.

Install Upper Bolts so that Hex Head End of Bolts Are on the Inside of Boat Transom





Parallel Routed Steering Cables and Attaching Kit Installation

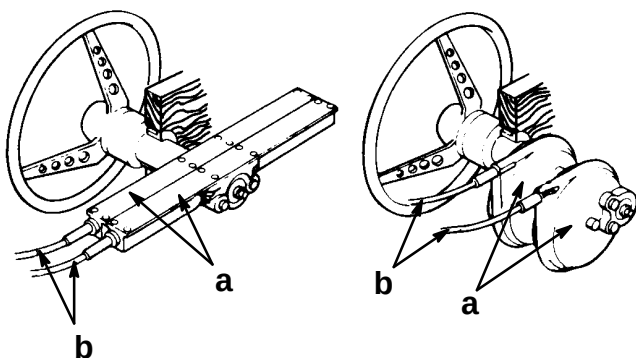
(Both Steering Cables Routed Together Down Starboard Side of Boat)

Super Ride-Guide Steering Kit Installation

IMPORTANT: It may be necessary to install steering cable into tilt tube of starboard engine before mounting engine.

Both gear racks or rotary steering heads must be installed so that both steering cables will be routed together on the same side of the boat and will push-and-pull together.

1. Install Super Ride-Guide Steering Kit in accordance with instructions included with Super Ride-Guide Kit.
2. Make sure that both gear racks or rotary steering heads are installed so that both steering cables are routed together and will push-and-pull together (Figure 1).



a - Straight Rack (Left); Rotary Steering (Right)
b - Steering Cables (Install so that Both Cables Will Push-and-pull Together.)

Figure 1. Super Ride-Guide Steering Kits Installed

⚠ WARNING

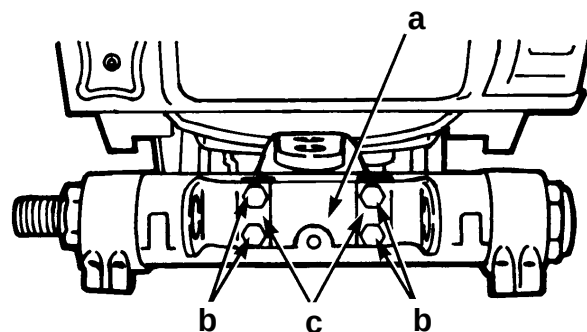
Before using engine after installation of cables, check to see that boat will turn right when steering wheel is turned right and that boat will turn left when wheel is turned left. Do this check at all tilt angles and thru full range of turn angles.

Installing Steering Cables and Steering Link Rods to Engines

1. Install tube mounting bracket (Figure 2) to starboard mounted engine with 2 locking retainers and 4 bolts. Torque bolts to 100 lbs. in. (11.3 N-m) and bend end of locking retainers up and against flat on each bolt, as shown in Figure 2.

⚠ WARNING

Locking retainer ends must be bent up and against flat on each bolt, that secures mounting bracket to engine, to prevent bolts from turning out.



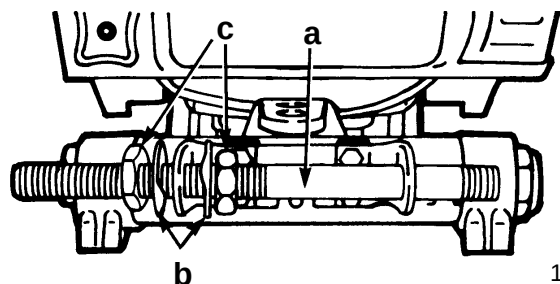
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a - Tube Mounting Bracket
b - Bolts
c - Locking Retainers (Bend Ends Up and Against Flat on Bolts.)

Figure 2. Tube Mounting Bracket Installed



2. Install steering cable mounting tube into mounting bracket with 2 adjustment nuts and tab lock washers, as shown in Figure 3. Be sure that longer threaded end of tube is toward steering cable attaching nut side of engine.
3. Temporarily adjust tube so that longer threaded end of tube is extended out the same distance as engine tilt tube. Do not tighten adjustment nuts at this time.



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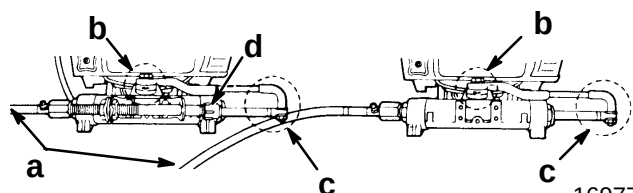
- a - Steering Cable Mounting Tube
- b - Tab Lock Washers
- c - Adjustment Nuts (Rounded Edge Facing Out)

Figure 3. Steering Cable Mounting Tube Installed

4. Install steering cables, as follows:

IMPORTANT: Before installing steering cables, lubricate inside of port mounted engine tilt tube and inside of steering cable mounting tube with Quicksilver 2-4-C w/Teflon. Verify that rubber O-ring seal (located in engine tilt tube) also is lubricated.

- a. Lubricate inside of (port) engine tilt tube with Quicksilver 2-4-C w/Teflon. Make sure that rubber O-ring seal (located in engine tilt tube) also is lubricated.
- b. Lubricate inside of steering cable mounting tube with Quicksilver 2-4-C w/Teflon.
- c. Insert ends of steering cables thru engine tilt tube and cable mounting tube (Figure 4). Thread steering cable attaching nuts onto tubes hand-tight.



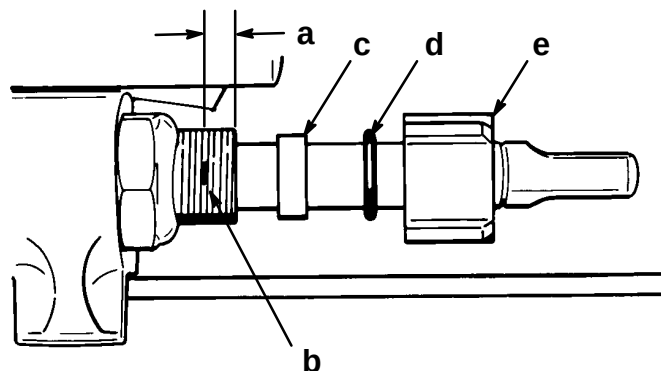
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- a - Steering Cables Routed Down Starboard Side
- b - See Figure 7 for Correct Parts Sequence
- c - See Figure 8 for Correct Parts Sequence
- d - Seal

Figure 4. Steering Cables and Steering Link Rods Installed

NOTE: Torque steering cables attaching nuts and install locking sleeve after final tension adjustment.

5. Install steering cable seal to steering cable mounting tube, as follows:
 - a. Place a mark on steering cable mounting tube 5/8" (15.8mm) from end of tube (Figure 5).

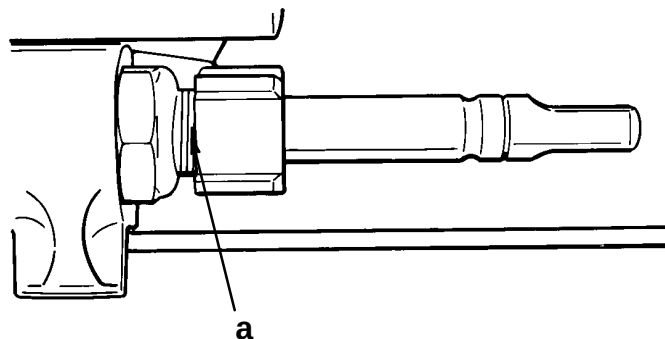


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- a - 5/8" from End of Tube
- b - Place Mark on Tube Here.
- c - Nylon Spacer
- d - O-ring
- e - Cap

Figure 5. Seal Installation Sequence

- b. Slide nylon spacer, O-ring and cap (from kit) over steering cable (Figure 5).
- c. Thread cap onto steering cable mounting tube up to mark (made on tube in Step "a" (Figure 6)).

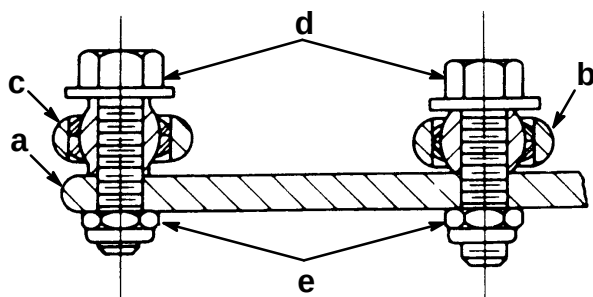


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- a - Mark Made in Step 5a

Figure 6. Steering Cable Seal Installed

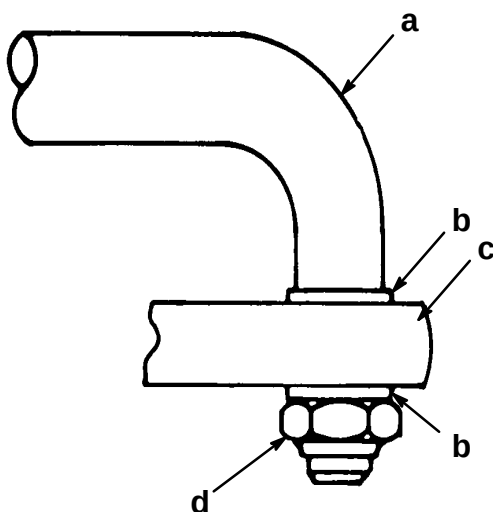
6. Install link rods (Figure 4) to engine steering arms. Fasten each link rod to steering arm onto top side rear hole with pivot bolt and locknut, as shown in Figure 7. Torque each pivot bolt to 20 lbs. ft. (27.1 N·m), then thread locknut onto pivot bolt and torque nut to 20 lbs. ft. (27.1 N·m).



- a - Engine Steering Arm
- b - Steering Link Rod
- c - Steering Eye and Coupler
- d - Pivot Bolts - Torque to 20 lbs. ft. (27.1 N·m)
- e - Locknuts - Torque to 20 lbs. ft. (27.1 N·m)

Figure 7. Steering Link Rod and Steering Eye with Coupler Installed on Engine Steering Arm

7. Lubricate hole(s) in end of steering cable(s) with Quicksilver 2-4-C w/Teflon and assemble steering link rod(s) to steering cable end, as shown in Figure 8. Tighten self-locking nut until it seats [DO NOT exceed 120 lbs. in. (13.5 N·m)], then back nut off 1/4-turn.



- a - Steering Link Rod
- b - Flat Washer (5/8" O.D.)
- c - Steering Cable End
- d - Locknut; Tighten Until it Seats [DO NOT Exceed 120 lbs. in. (13.5 N·m)], then Back Nut Off 1/4-Turn.

Figure 8. Steering Link Rod Assembled on Steering Cable

Steering Eyes and Coupler Installation

1. Position engines so that they are facing straight forward. (Distance between centers of threaded pivot bolt holes in engine steering arms must be equal to distance between propeller shaft centers.)
2. Lubricate inside of rubber sleeves (Figure 9) and slide onto coupler.
3. Slide rubber bushings (Figure 9) onto steering eyes.
4. Thread steering eyes (Figures 9 and 10) into coupler and adjust steering eyes so that distance between centers of pivot bolt holes in steering eyes is the same distance as between centers of threaded pivot holes in engine steering arms. Exposed steering eye threads should be equal at both ends of coupler and must not extend out of coupler more than 2-3/4" (70mm).

⚠ WARNING

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

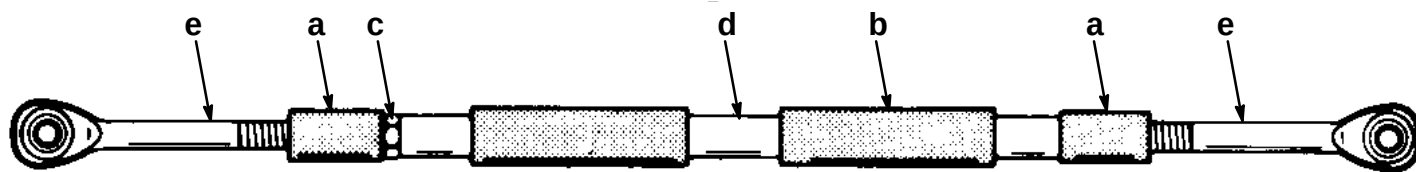
5. Lubricate steering eye threads, pivot bolts, and ball joints with Quicksilver Anti-Corrosion Grease (92-78376-12) before assembling.
6. Assemble steering eyes and coupler to top side, front holes of steering arm with pivot bolts and locknuts, as shown in Figures 7 and 10.

IMPORTANT: With steering eyes and coupler installed and before tightening pivot bolts, check engine alignment. Distance between pivot bolts centers and distance between propeller shaft centers must be equal for proper steering. If adjustment is necessary, remove pivot bolt from one steering eye and turn eye in or out to correct alignment. Both steering eyes **MUST BE** threaded into coupler 3/4" (19mm) minimum.

7. Torque pivot bolts to 20 lbs. ft. (27.1 N·m), then thread self-locking nut (Figure 7) onto bolts and torque nuts to 20 lbs. ft. (27.1 N·m).

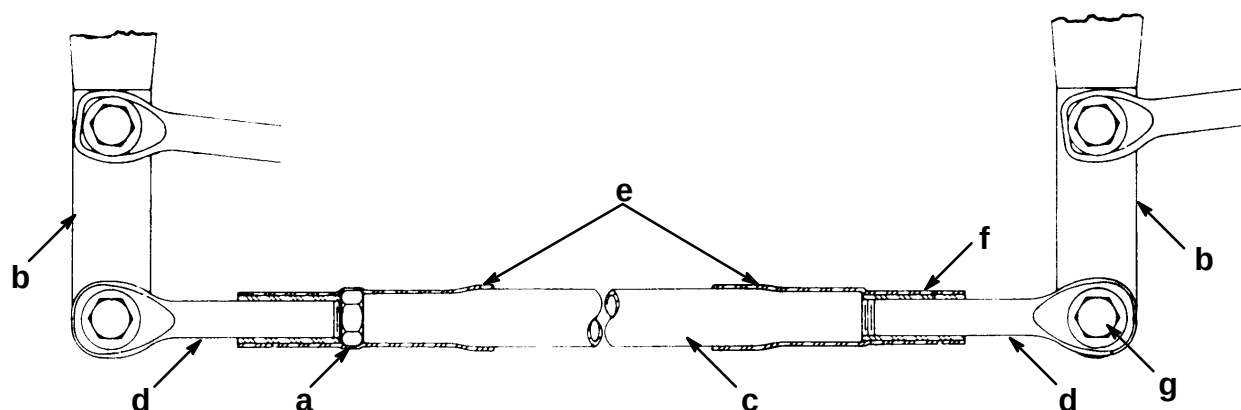
⚠ WARNING

Both steering eyes **MUST BE** threaded into coupler 3/4" minimum, and jam nut (Figure 9) must be secured against coupler to prevent coupler from turning. Torque jam nut to 20 lbs. ft.



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- a - Rubber Bushing
- b - Rubber Sleeve
- c - Jam Nut; Torque to 20 lbs. ft. (27.1 N·m)
- d - Coupler
- e - Steering Eye

Figure 9. Coupler Assembled

- a - Jam Nut; Torque to 20 lbs. ft. (27.1 N·m)
- b - Engine Steering Arm
- c - Coupler
- d - Steering Eye
- e - Rubber Sleeves
- f - Rubber Bushings
- g - Pivot Bolt and Locknut

Figure 10. Coupler Parts Sequence

8. Secure coupler with jam nut, as shown in Figures 9 and 10, and torque to 20 lbs. ft. (27.1 N·m).
9. Position rubber bushings as shown above.
10. Slide both rubber sleeves over exposed threads on each steering eye (Figure 10).

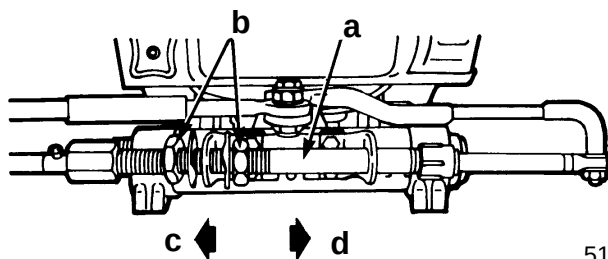
⚠ WARNING

Tension adjustment – steering cable mounting tube must be adjusted away from end of steering cable when adding tension to steering system (to remove slack). Failure to adjust tube this way may result in hard steering, if one engine is tilted up while operating boat.

Steering System Tension Adjustment (Parallel Routed Steering Cables)

IMPORTANT: After this Ride-Guide Attachment Kit is installed, there must be proper tension in the steering system. Not enough tension will cause slack (play) in steering system. Too much tension will cause steering cables to bind. Perform Step 1, following, to adjust for correct tension.

1. Loosen adjustment nuts and push steering cable mounting tube (by-hand) toward end of steering cable (to remove slack in steering system). Tighten adjustment nuts and check system for slack (play) or too much tightness. If steering system is too tight, readjust tube away from end of steering cable (Figure 11) or, if too much slack (play) exists in system, readjust tube toward end of steering cable (Figure 11). Tighten nuts and readjust, if necessary.

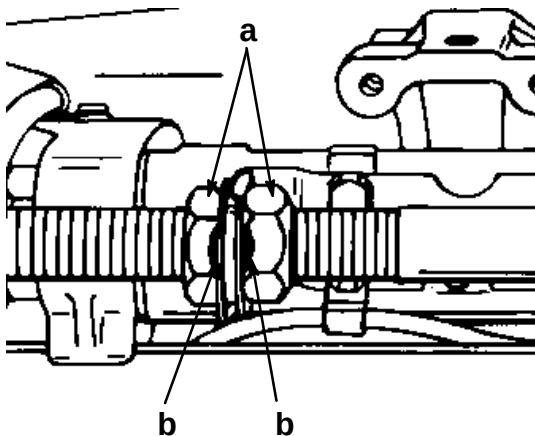


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- a - Steering Cable Mounting Tube
- b - Adjustment Nuts
- c - Adjust Tube in This Direction to Remove Slack from Steering System
- d - Adjust Tube in This Direction to Reduce Tightness from Steering System

Figure 11. Steering System Tension Adjustment (Parallel Routed Steering Cables)

2. After steering system tension is adjusted correctly, torque adjustment nuts (Figure 12) to 35 lbs. ft. (47.5 N·m) and bend a tab lockwasher against a flat on each nut.

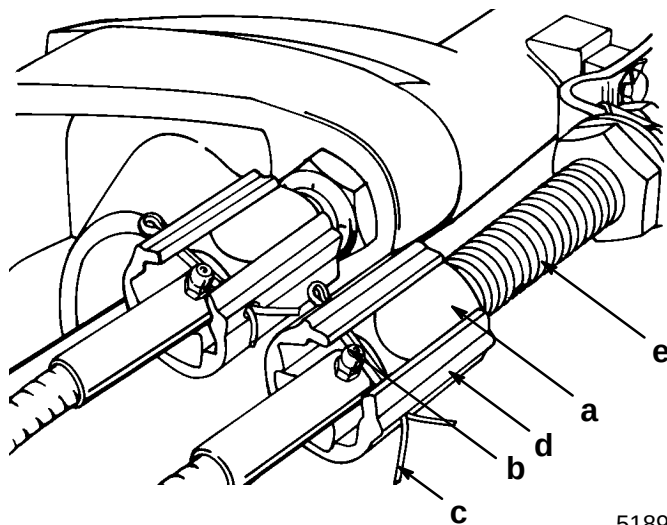


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- a - Adjustment Nuts - Torque to 35 lbs. ft. (47.5 N·m)
- b - Tab Lockwasher (Bend Against Flat on Each Nut.)

Figure 12. Adjustment Nuts Secured with Lock-tabs

3. Secure each steering cable attaching nut to tubes by torquing steering cable attaching nuts (Figure 13) to 35 lbs. ft. (47.5 N·m).
4. Install rubber bumpers on inside of locking sleeves, then install a locking sleeve over each steering cable attaching nut and secure with cotter pin. Spread ends of cotter pin. Be sure to install cotter pin so that it is located in-between attaching nut and grease fitting (Figure 13).

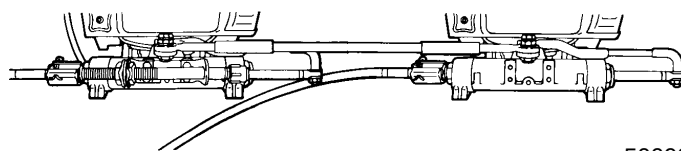


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- a - Steering Cable Attaching Nut -Torque to 35 lbs. ft. (47.5 N·m)
- b - Grease Fitting
- c - Cotter Pin
- d - Locking Sleeve
- e - Cable Mounting Tube

Figure 13. Steering Cables Fastened to Tubes

5. Install new trim tabs as outlined in "Trim Tab Installation," following.



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Figure 14. Attachment Kit Installation Complete

⚠ WARNING

After installation is complete (and before operating engine), 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.



Opposite Side Routed Steering Cables and Attaching Kit Installation

(ONE CABLE ROUTED DOWN STARBOARD SIDE OF BOAT AND ONE CABLE ROUTED DOWN PORT SIDE OF BOAT)

IMPORTANT: Steering cable must be installed into tilt tube of “port” engine before engine is mounted.

Super Ride-Guide Steering Kit Installation

Install Super Ride-Guide Steering Kit in accordance with instructions included with Super Ride-Guide Kit.

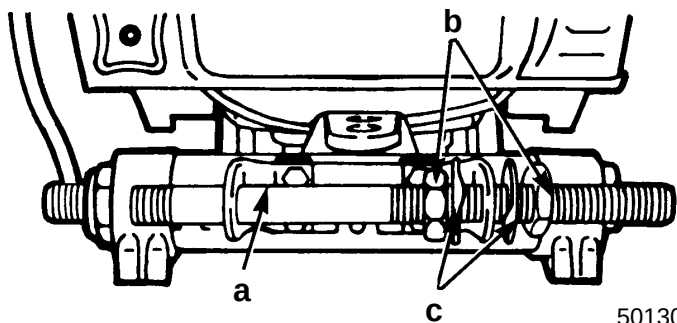
Installing Steering Cables and Steering Link Rods to Engines

1. Install tube mounting bracket to (starboard) mounted engine with 2 locking retainers and 4 bolts. Torque bolts to 100 lbs. in. (11.3 N·m) and bend end of locking retainers up against flat on each bolt, as shown in Figure 1.

⚠ WARNING

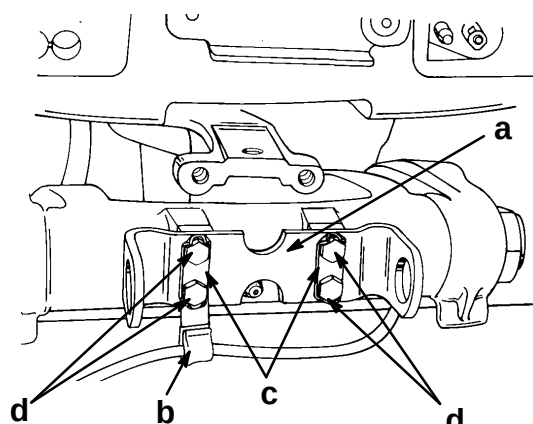
Locking retainer ends must be bent up and against flat on each bolt, that secures tube mounting bracket to engine, to prevent bolts from turning out.

2. Install steering cable mounting tube into mounting bracket with 2 adjustment nuts and tab lockwashers, as shown in Figure 2. Be sure that longer threaded end of tube is toward steering cable attaching nut side of engine.
3. Temporarily adjust tube so that longer, threaded end of tube is aligned with outward edge of transom bracket. DO NOT tighten adjustment nuts at this time.



- a - Tube Mounting Bracket
- b - Bolts
- c - Locking Retainers (Bend Ends Up and Against Flat on Bolts.)

Figure 1. Tube Mounting Bracket Installed



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- a - Mounting Bracket for Steering Cable Mounting Tube
- b - “J” Clip - Supplied with Outboard
- c - Locking Retainers (2)
- d - Bolts (4) - 5/8 in. (16mm) Long - Torque to 100 lb. in. (11.3 N·m), then Bend Corner Tabs of Locking Retainers Up and Against Flats on Each Bolt

Figure 2. Steering Cable Mounting Tube Installed

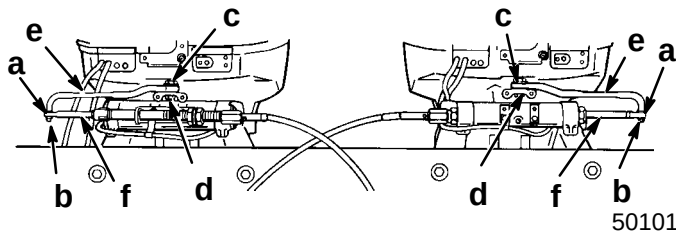
4. Install steering cables, as follows:

IMPORTANT: Lubricate inside of (port mounted) engine tilt tube and inside of steering cable mounting tube with Quicksilver 2-4-C w/Teflon. Make sure that rubber O-ring seal (located in engine tilt tube) is lubricated.

- a. Lubricate inside of (port) engine tilt tube with Quicksilver 2-4-C w/Teflon. Make sure that rubber O-ring seal (located in engine tilt tube) is lubricated.
- b. Lubricate inside of steering cable mounting tube with Quicksilver 2-4-C w/Teflon.



- c. Insert ends of steering cables thru engine tilt tube and cable mounting tube (Figure 3). Thread steering cable attaching nuts hand-tight onto tubes.



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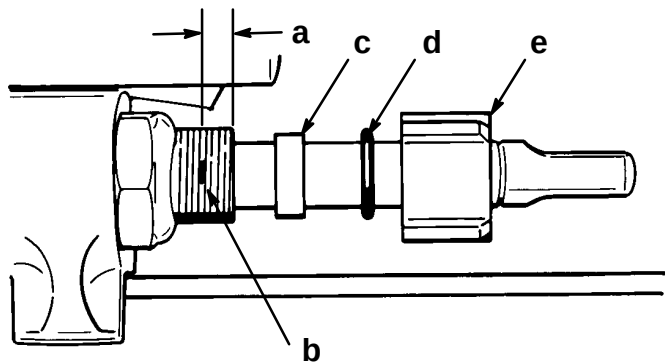
- a - Flat Washer (2 Each Link Rod)
b - Nylon Insert Locknut - Torque Until it Seats [DO NOT Exceed 120 lb. in. (13.5 N·m) of Torque], then Back Off 1/4-Turn
c - Special Washer Head Bolt (10-14000) - Torque to 20 lb. ft. (27.1 N·m)
d - Nylon Insert Locknut - Torque to 20 lb. ft. (27.1 N·m)
e - Steering Link Rod
f - Steering Cable End

Figure 3. Steering Cables and Link Rod Installed

NOTE: Torque steering cables' attaching nuts and install locking sleeves after final tension adjustment.

5. Install steering cable seal to steering cable mounting tube, as follows:

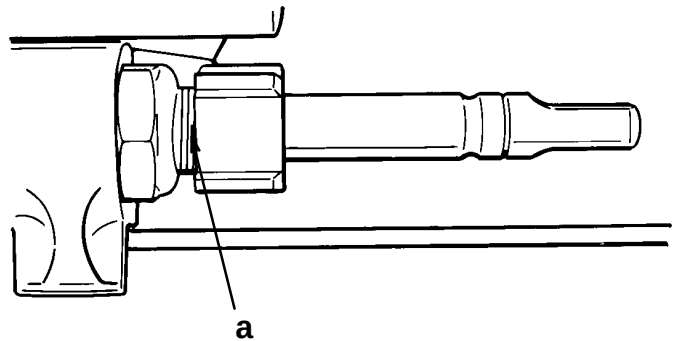
- a. Place a mark on steering cable mounting tube 5/8" (16mm) from end of tube (Figure 4).



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- a - 5/8" from End of Tube
b - Place Mark on Tube Here.
c - Nylon Spacer
d - O-ring
e - Cap

Figure 4. Seal Installation Sequence

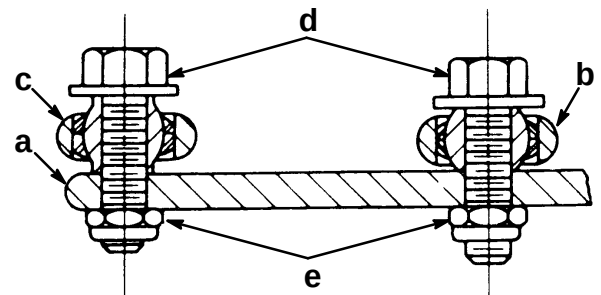


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- a - Mark Made in Step 5a

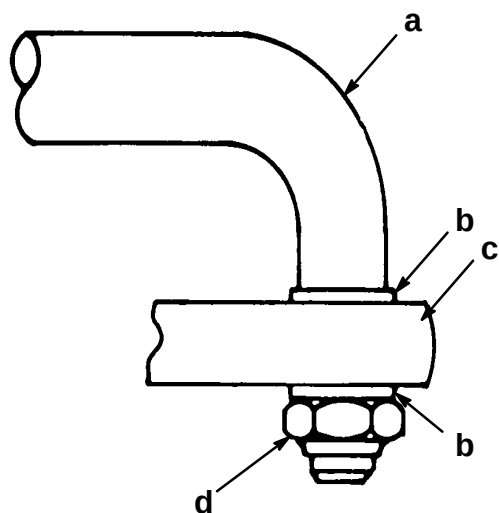
Figure 5. Steering Cable Seal Installed

- b. Slide plastic spacer, O-ring and cap (from kit) over steering cable (Figure 4).
c. Thread cap onto steering cable mounting tube up to mark (made on tube in Step "a" (Figure 5).
6. Install link rods (supplied with engines) to engine steering arms (Figure 3). Fasten each link rod to steering arm onto topside rear hole with pivot bolt and locknut, as shown in Figure 6. Torque each pivot bolt to 20 lbs. ft. (27.1 N·m), then thread locknut onto pivot bolt and torque nut to 20 lbs. ft. (27.1 N·m).



- a - Engine Steering Arm
b - Steering Link Rod
c - Steering Eye and Coupler
d - Pivot Bolts - Torque to 20 lbs. ft. (27.1 N·m)
e - Locknuts - Torque to 20 lbs. ft. (27.1 N·m)

Figure 6. Steering Link Rod and Steering Eye with Coupler Installed on Engine Steering Arm



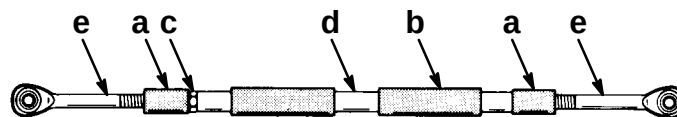
- a - Steering Link Rod
- b - Flat Washer (5/8" O.D.)
- c - Steering Cable End
- d - Locknut; Tighten Until it Seats [DO NOT Exceed 120 lbs. in. (13.5 N·m)], then Back Nut Off 1/4-Turn.

Figure 7. Steering Link Rod Assembled on Steering Cable

7. Lubricate hole(s) in end of steering cable(s) with Multi-purpose Lubricant and assemble steering link rod(s) to steering cable end, as shown in Figure 7. Tighten self-locking nut until it seats [DO NOT exceed 120 lbs. in. (13.5 N·m)], **then back nut off 1/4-turn.**

Steering Eyes and Coupler Installation

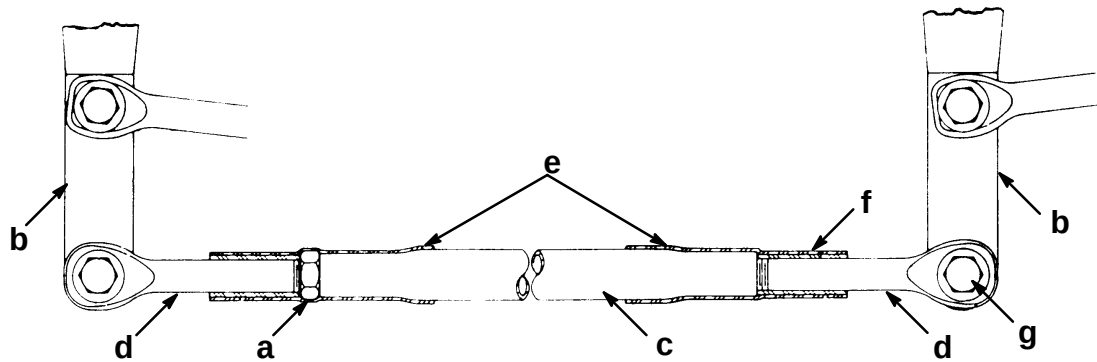
1. Position engines so that they are facing straight forward. (Distance between centers of threaded pivot bolt holes in engine steering arms must be equal to distance between propeller shaft centers.)
2. Lubricate inside of rubber sleeves (Figure 8) and slide onto coupler.
3. Slide rubber bushings (Figure 8) onto steering eyes.



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- a - Rubber Bushing
- b - Rubber Sleeve
- c - Jam Nut; Torque to 20 lbs. ft. (13.5 N·m)
- d - Coupler
- e - Steering Eye

Figure 8. Coupler Assembled



- a - Jam Nut; Torque to 20 lbs. ft. (27.1 N·m)
- b - Engine Steering Arm
- c - Coupler
- d - Steering Eye
- e - Rubber Sleeves
- f - Rubber Bushing
- g - Pivot Bolt and Locknut; Torque to 20 lbs. ft. (27.1 N·m)

Figure 9. Coupler Parts Sequence

4. Thread steering eyes (Figures 8 and 9) into coupler and adjust steering eyes so that distance between centers of pivot holes in steering eyes is the same distance as between centers of threaded pivot holes in engine steering arms. Exposed steering eye threads should be equal at both ends of coupler and must not extend out of coupler more than 2-3/4" (70mm).

⚠ WARNING

Both steering eyes must be threaded into coupler 3/4" (19mm) minimum. Thread length of steering eye is 3-1/2" (89mm), so exposed thread must not extend out of coupler more than 2-3/4" (69.8mm). Failure to adhere to this requirement could result in steering system failure.

5. Lubricate steering eye threads, pivot bolts and ball joints with Quicksilver Corrosion Grease (92-78376-12) or Corrosion Guard (92-78379-12) before assembling.
6. Assemble steering eyes and coupler to top side front holes of steering arm with pivot bolts and locknuts, as shown in Figures 6 and 9.

IMPORTANT: With steering eyes and coupler installed and before tightening pivot bolts, check engine alignment. Distance between pivot bolts' centers and distance between propeller shaft centers must be equal for proper steering. If adjustment is necessary, remove pivot bolt from one steering eye and turn eye in or out to correct alignment. Both steering eyes **MUST BE** threaded into coupler 3/4" (19mm) minimum.

7. Torque pivot bolts to 20 lbs. ft. (27.1 N·m), then thread self-locking nut onto bolts and torque nuts to 20 lbs. ft. (27.1 N·m).

⚠ WARNING

Both steering eyes **MUST BE** threaded into coupler 3/4" minimum, and jam nut (Figures 8 and 9) must be secured against coupler to prevent coupler from turning. Torque jam nut to 20 lbs. ft. (13.5 N·m).

8. Secure coupler with jam nut, as shown in Figure 9. Torque to 20 lbs. ft. (27.1 N·m).
9. Position rubber bushings as shown above.
10. Slide both rubber sleeves over exposed threads on each steering eye (Figure 9).

⚠ WARNING

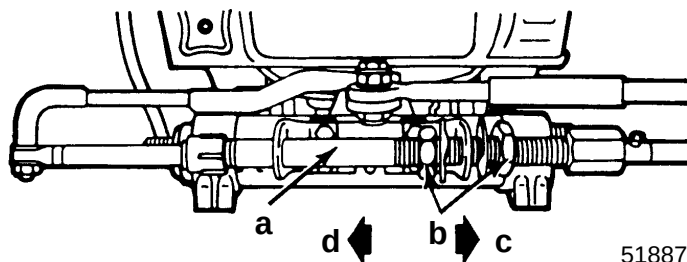
Tension adjustment – steering cable mounting tube must be adjusted away from end of steering cable when adding tension to steering system (to remove slack). Failure to adjust tube this way may result in hard steering, if one engine is tilted up while operating boat.

Steering System Tension Adjustment

OPPOSITE SIDE ROUTED STEERING CABLES

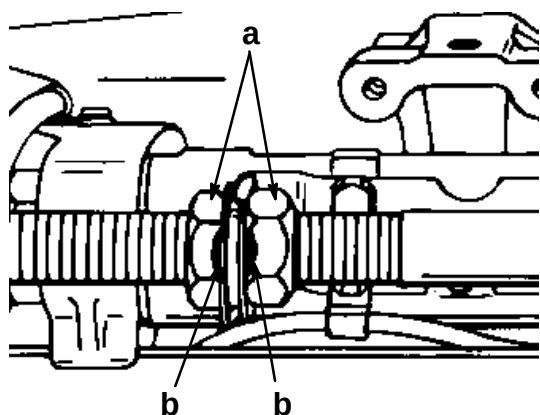
IMPORTANT: After this Ride-Guide Attachment Kit is installed, there must be proper tension in the steering system. Not enough tension will cause slack (play) in steering system. Too much tension will cause steering cables to bind. Perform Step 1, following, to adjust for correct tension.

1. Loosen adjustment nuts and pull steering cable mounting tube (by hand) away from end of steering cable (to remove slack in steering system). Tighten adjustment nuts and check system for slack (play) or too much tightness. If steering system is too tight, readjust tube toward end of steering cable (Figure 10) or, if too much slack (play) exists in system, readjust tube away from end of steering cable (Figure 10). Tighten nuts and readjust, if necessary.



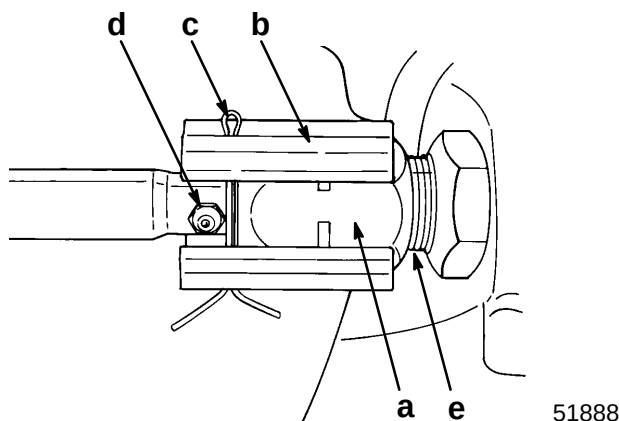
- a - Steering Cable Mounting Tube
 b - Adjustment Nuts
 c - Adjust Tube in This Direction to Remove Slack from Steering System
 d - Adjust Tube in This Direction to Reduce Tightness from Steering System

Figure 10. Steering System Tension Adjustment (Opposite Side Routed Steering Cables)



- a - Adjust Nuts; Torque to 35 lbs. ft. (47.5 N·m)
 b - Tab Lockwashers (Bend Against Flat on Each Nut.)

Figure 11. Adjustment Nuts Secured with Lock-tabs



- a - Steering Cable Attaching Nut; Torque to 35 lbs. in. (47.5 N·m)
 b - Locking Sleeve (Provided with Ride-Guide Steering Cables)
 c - Cotter Pin
 d - Grease Fitting
 e - Cable Guide Tube

Figure 12. Steering Cables Fastened to Tubes

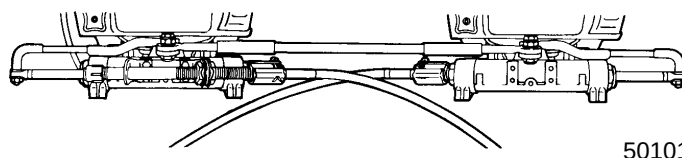


Figure 13. Attachment Kit Installation Complete

- After steering system tension is adjusted correctly, torque adjustment nuts (Figure 11) to 35 lbs. ft. (47.5 N·m) and bend a tab lockwasher against a flat on each nut.
- Secure each steering cable attaching nut to tubes by torquing steering cable attaching nuts (Figure 12) to 35 lbs. ft. (47.5 N·m).
- Install rubber bumpers on inside of locking sleeves, then install a locking sleeve over each steering cable attaching nut and secure with cotter pin. Spread ends of cotter pin. Be sure to install cotter pin so that it is located in-between attaching nut and grease fitting (Figure 12).
- Install new trim tabs as outlined in "Trim Tab Installation," following.

⚠ WARNING

After installation is complete (and before operating engine), 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.

Trim Tab Installation

IMPORTANT: With dual engine installation, existing trim tabs **MUST BE** replaced with new trim tabs (supplied with kit).

- Install new trim tabs as follows:
 - Shift engine controls into neutral and turn ignition keys to "Off" position.
 - Remove plastic cap from rear of both drive shaft housings, loosen bolt, that secures trim tab to gear housing, and remove both trim tabs from gear housing.
 - Install special trim tabs (supplied with kit) to both gear housings, using existing bolts. Tighten bolts securely. Initial trim tab setting should be straight to rear of engine. Replace plastic caps on drive shaft housing.



2. Check trim tab position as follows:
 - a. Operate boat at normal cruise throttle setting and adjust trim to optimum setting. Turn steering wheel to left and right, noting in which direction wheel turns more easily.
 - b. If wheel turns more easily to left, then the trailing edge of trim tab must be turned to left (when viewing motor from behind). Reverse procedure if boat turns more easily to right.

Trim Tab Adjustment

1. Shift engine controls into neutral and turn ignition keys to "Off" position.

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

2. Remove plastic cap from rear of drive shaft housing and loosen bolt and trim tab.
3. Position trailing edge of trim tab to left (viewing motor from behind), if steering wheel turns more easily to left. Position trailing edge of trim tab to right (viewing motor from behind), if steering wheel turns more easily to right.
4. Tighten both trim tab bolts securely and replace plastic caps.
5. Operate boat per "Check trim tab position as follows," preceeding, to check trim tab setting. Readjust trim tabs, 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 "**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 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 cables (transom end) fully retracted, lubricate transom end of steering cables thru grease fittings (Figure 12) with Quicksilver 2-4-C w/Teflon. Lubricate exposed portion of cable end with 2-4-C w/Teflon.
4. Lubricate pivot points and ball joints in link rods and coupler steering eyes with Quicksilver Anti-Corrosion Grease or Corrosion Guard.
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 Quicksilver 2-4-C w/Teflon.

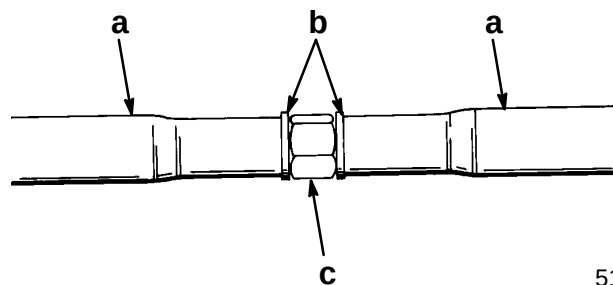
WARNING

When 2 couplers are connected together with coupler link rod, a lockwasher must be used on each side of coupler link rod, and link rod must be torqued to 20 lbs. ft. (27.1 N-m) into end of each coupler.



Ride Guide Steering Attachment Extension Couplers

Outboard Center Line Distance	Required Coupler(s) Between Steering Eyes (Shown Below)
22-1/2 in. thru 24-1/2 in. (57.2cm thru 62.2cm)	12 in. (30.5cm) Coupler
23-1/2 in. thru 27-1/2 in. (59.7cm thru 69.9cm)	15 in. (38.1cm) Coupler (Supplied with this kit)
26-1/2 in. thru 30-1/2 in. (67.3cm thru 75.5cm)	18 in. (45.7cm) Coupler
30 in. thru 34 in. (76.3cm thru 86.4cm)	9 in. (22.9cm) Coupler and 12 in. (30.5cm) Coupler (Connected together with coupler link rod)
33 in. thru 37 in. 83.8cm thru 94.0cm)	12 in. (30.5cm) Coupler and 12 in. (30.5cm) Coupler (Connected together with coupler link rod)



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a - Couplers Connected Together

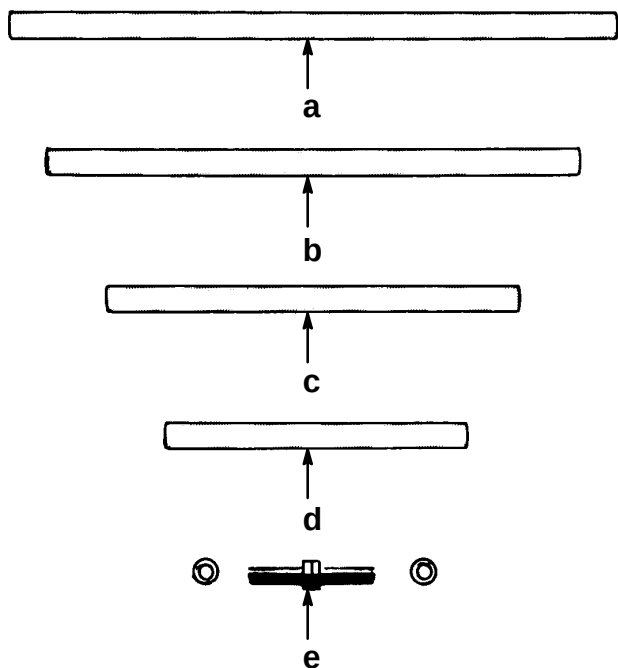
b - Lockwashers

c - Coupler Link Rod - Torque to 20 lbs. ft. (27.1 N·m) into End
of Each Coupler.

Couplers Connected Together with Coupler Link Rod

Transom Mounted Ride-Guide Attaching Kit Installation (73770A1)

Attaching Kit Installation



a - 18 in. (45.7cm) Coupler (97932-3)

b - 15 in. (38.1cm) Coupler (97932-2)

c - 12 in. (30.5cm) Coupler (97932-1)

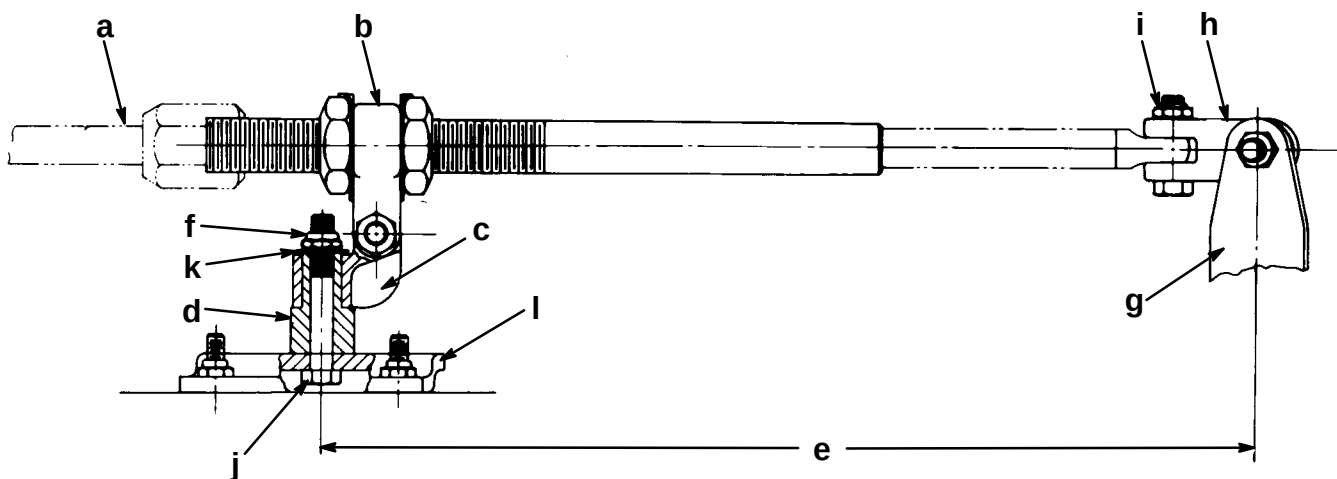
d - 9 in. (22.9cm) Coupler (97932-4)

e - Coupler Link Rod (98181A1)

Figure 14.



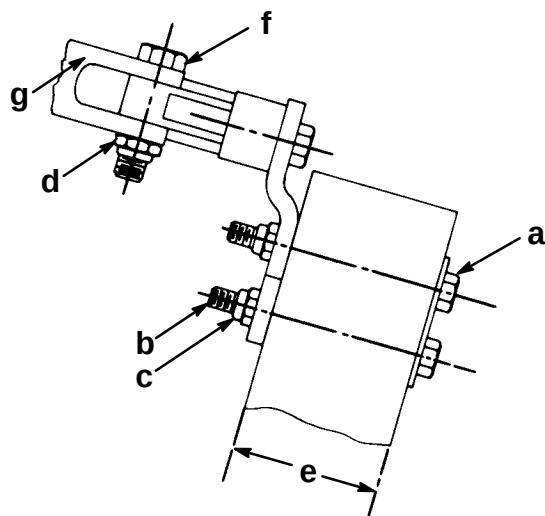
1. Lubricate both holes in pivot block (Figure 1) with Quicksilver 2-4-C w/Teflon.
2. Place pivot block on pivot spacer and secure to transom bracket with 3/8 in. x 2-1/2 in. (9.5mm x 63.5mm) bolt, flat washer and locknut, as shown in Figure 1. Torque locknut to 20 lbs. ft. (27.1 N·m).



- | | |
|---|---|
| a - Ride-Guide Cable | g - Outboard Steering Arm |
| b - Ride-Guide Yoke | h - "Clevis Kit" |
| c - Pivot Block | i - Ride-Guide Cable Attaching Locknut - Torque to 10 lbs. ft. (13.5 N·m) |
| d - Pivot Spacer | j - Bolt - 3/8 in. x 2-1/2 in. (9.5mm x 63.5mm) |
| e - 15 in. (38.1cm) (Centerline of Attaching Kit Pivot to Centerline of Outboard) | k - Flat Washer |
| f - Pivot Attaching Locknut - Torque to 20 lbs. ft. (27.1 N·m) | l - Transom Bracket |

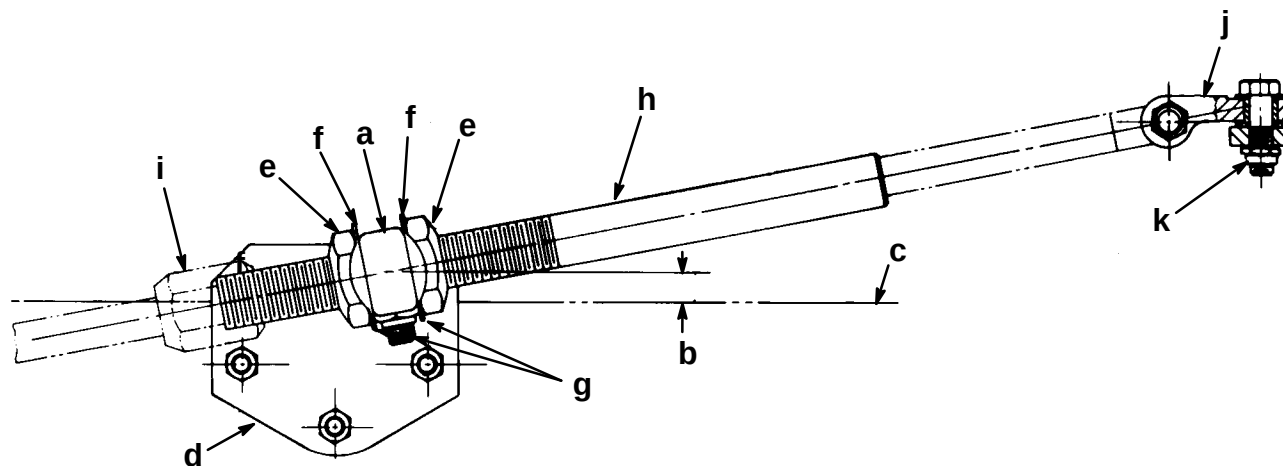
Figure 1

3. Place Ride-Guide yoke on pivot block and secure with 7/16 in. x 1-3/4 in. (11.1mm x 44.5mm) bolt and locknut, as shown in Figures 1 and 2. Torque locknut to 10 lbs. 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. (38.1cm)** (Figure 1) at a height where the **center of Ride-Guide yoke is even with, or not more than 1/2 in. (12.7mm) above top edge of transom** (Figure 3).



- | |
|---|
| a - Transom Backing Plate |
| b - Bolt - 5/16 in. x 3-1/4 in. (7.9mm x 82.5mm) |
| c - Locknut - Torque to 10 lbs. ft. (13.5 N·m) |
| d - Ride-Guide Yoke Attaching Locknut - Torque to 10 lbs. ft. (13.5 N·m) Then Back Off 1/4-Turn. |
| e - 2-3/8 in. (60.3mm) Maximum Transom Thickness |
| f - Bolt - 7/16 in. x 1-3/4 in. (11.1mm x 44.5mm) |
| g - Ride-Guide Yoke |

Figure 2



- a - Ride-Guide Yoke
- b - 0 in. to 1/2 in. (0mm to 12.8mm) (Center of Ride-Guide Yoke to Top of Transom)
- c - Top of Transom
- d - Transom Bracket
- e - Cable Tube Jam Nuts - Torque to 35 lbs. ft. (47.4 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 lbs. ft. (47.4 N·m)
- j - "Clevis Kit"
- k - Clevis Attaching Locknut - Torque to 20 lbs. ft. (27.1 N·m)

Figure 3

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. (7.9mm x 82.6mm) 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 lbs. ft. (13.5 N·m).

STEERING CABLE INSTALLATION

1. Lubricate steering cable end with Quicksilver 2-4-C w/Teflon.
2. Install steering cable thru steering cable tube and secure to cable tube with cable attaching nut (Figure 3). Do not tighten cable attaching nut at this time.
3. Attach Ride-Guide cable to outboard steering arm, using the proper "Clevis Kit." Installation instructions for clevis are with "Clevis Kit."
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-running position. Torque each jam nut to 35 lbs. ft. (47.4 N·m), then bend a side of tab washer against flat of each jam nut (Figure 3).

5. Torque Ride-Guide cable attaching nut (which secures cable to guide tube) to 35 lbs. ft. (47.4 N·m) (Figure 3). Install locking sleeve over cable attaching nut and secure with cotter pin. Spread ends of cotter pin.

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.

Maintenance Instructions

Lubrication and 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 "**Severe Service.**"



⚠ CAUTION

Core of steering cable must be fully retracted into cable housing when lubricating cable. If cable is lubricated while extended, hydraulic lock of cable could occur.

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

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

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

Ride-Guide Steering Cable/Attaching Kit Installation (92876A3)

Dual Cable - Single Outboard

⚠ WARNING

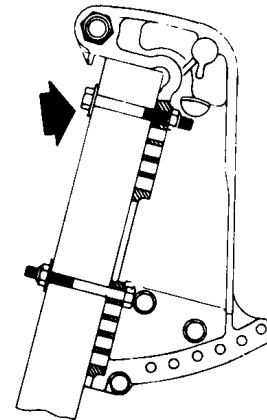
Quicksilver Super Ride-Guide Steering (dual cables) **MUST BE USED** with this attaching kit. Failure to adhere to this requirement could result in steering system failure.

Refer to “**Quicksilver Accessories Guide**” to determine correct length of steering cables and remote control cables.

IMPORTANT: Steering cables and remote control cables **MUST BE THE CORRECT LENGTH**, sharp bends on too-short cables result in “kinks”; too-long cables require unnecessary bends and/or loops. Both conditions place extra stress on the cables.

⚠ CAUTION

With this kit installed, the upper (outboard) mounting bolts **MUST BE** installed so that hex head end of bolts is on the inside of boat transom, as illustrated. Failure to install upper mounting bolts, as shown in illustration, could result in interference between outer steering cable locking sleeve and ends of mounting bolts when outboard is tilted up.

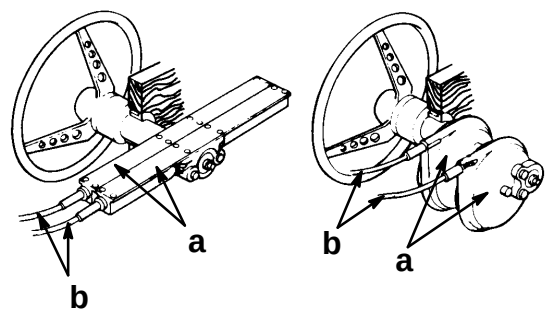


Install upper bolts so that hex head end of bolts is on the inside of boat transom.

Super Ride-Guide Steering Kit Installation

IMPORTANT: Both gear racks or rotary steering heads must be installed so that both steering cables will be routed together on the same side of the boat and will push-and-pull together.

1. Install Super Ride-Guide Steering Kit in accordance with instructions included with Super Ride-Guide Kit.
2. Make sure that both gear racks or rotary steering heads are installed so that both steering cables are routed together down starboard side of boat and will push-and-pull together.



- a - Straight Rack (Left); Rotary Steering (Right)
b - Steering Cables (Install so that Both Cables Will Push-and-pull Together.)



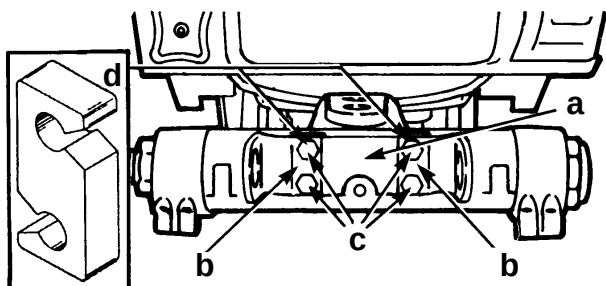
Mounting Bracket Installation

IMPORTANT: Spacers (d) must be installed between engine and mounting bracket.

1. Install mounting bracket (a) to engine with 2 spacers (d), 2 locking retainers (b) and 4 bolts (c). Torque bolts to 100 lb. in. (11.3 N·m) and bend end of locking retainers up and against flat on each bolt, as shown.

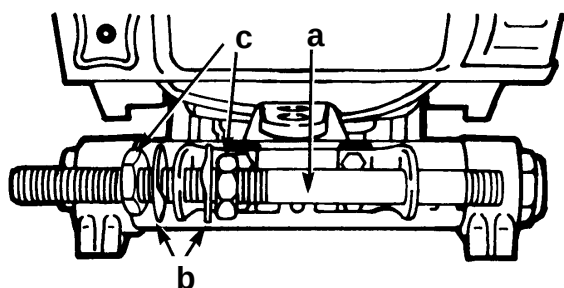
⚠ WARNING

The locking retainer ends must be bent up and against flat on each bolt, that secures mounting bracket engine, to prevent bolts from turning out.



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2. Install steering cable mounting tube (a) into mounting bracket with 2 adjustment nuts (c) and locking tab washer (b), as shown. Be sure that longer, threaded end of tube is toward steering cable attaching nut side of engine.
3. Temporarily adjust tube so that longer, threaded end of tube is extended out the same distance as engine tilt tube. Do not tighten adjustment nuts at this time.

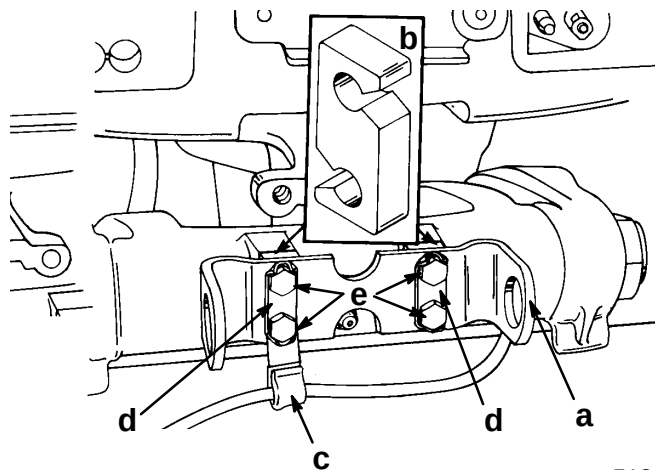


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Steering Cable Mounting Tube Installation

IMPORTANT: Spacers (b) must be installed between outboard swivel bracket and mounting bracket for steering cable mounting tube to provide proper spacing between steering cables.

Secure mounting bracket for steering cable mounting tube on to swivel bracket of outboard.



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- a - Mounting Bracket for Steering Cable Mounting Tube
- b - Spacer (2)
- c - "J" Clip (Supplied with Outboard.)
- d - Locking Retainer (2)
- e - Bolts (4) - 7/8 in. (22.2mm) Long - Torque to 100 lb. in. (11.3 N·m), then Bend Corner Tabs of Locking Retainers Up and Against Flats on Each Bolt.

⚠ WARNING

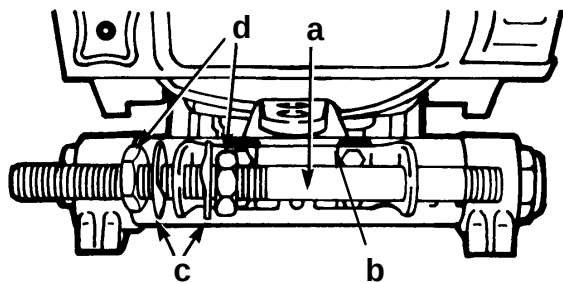
Locking retainer corner tabs, **MUST BE** bent up and against flats on each bolt that secures mounting bracket for steering cable mounting tube to outboard swivel bracket, to prevent bolts from turning out.

COUPLER INSTALLATION

Install steering cable mounting tube into mounting bracket with 2 adjusting nuts and 2 locking tab washers. Verify longer threaded end of tube is toward star-board side of boat.



Temporarily adjust tube so that longer threaded end of tube extends out the same distance as the outboard tilt tube. Do not tighten adjustment nuts at this time.



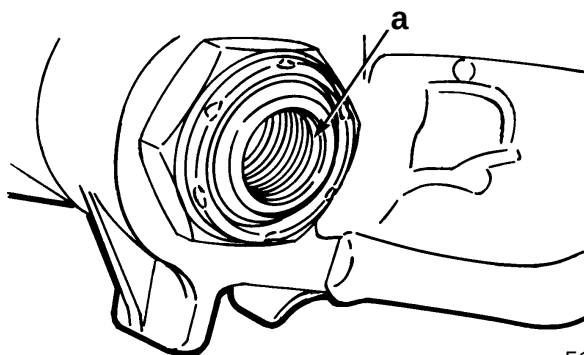
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- a - Steering Cable Mounting Tube (End of Tube with Longer Threads Toward Starboard Side of Boat)
- b - Mounting Bracket
- c - Locking Tab Washers (2)
- d - Adjustment Nuts (Flats of Nuts Facing Toward Locking Tab Washer)

Installing Steering Cables

IMPORTANT: Lubricate inside of outboard tilt tube, inside of steering cable mounting tube and rubber O-ring seal (located in outboard tilt tube) with Quicksilver 2-4-C w/Teflon before installing steering cables.

Lubricate inside of outboard tilt tube and inside of steering cable mounting tube with Quicksilver 2-4-C w/Teflon. Verify rubber O-ring seal (located in outboard tilt tube) is lubricated.

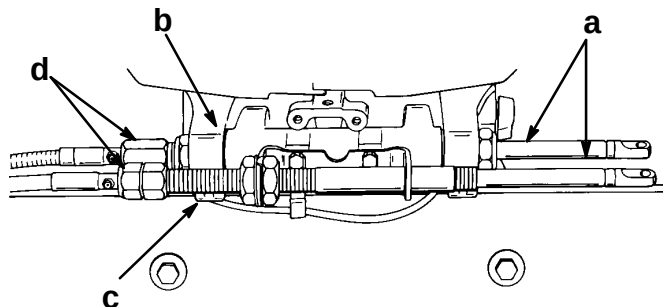


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- a - Seal

Insert steering cable ends thru outboard tilt tube and cable mounting tube. Thread steering cable attaching nuts on to tubes hand tight.

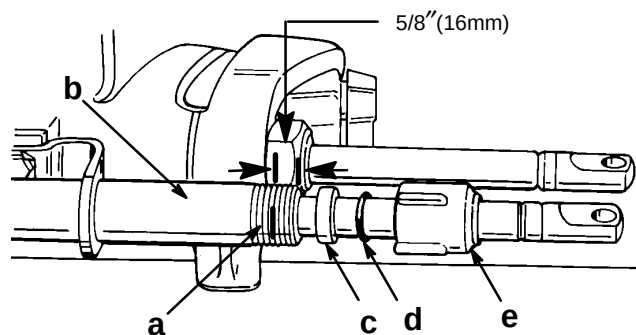
Torque steering cable attaching nuts only after final steering adjustments have been made.



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- a - Steering Cable Ends
- b - Outboard Tilt Tube
- c - Cable Mounting Tube
- d - Cable Attaching Nuts

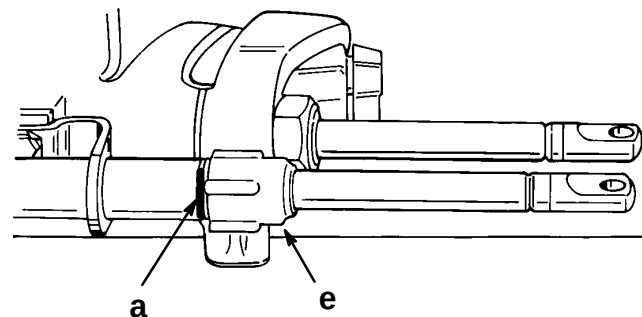
Place a mark on steering cable mounting tube 5/8 in. (16mm) from end of mounting tube. Slide plastic spacer, O-ring and cap over steering cable.



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- a - Mark
- b - Steering Cable Tube
- c - Spacer
- d - O-ring
- e - Cap

Thread cap (e) onto steering cable mounting tube, up to mark (a).



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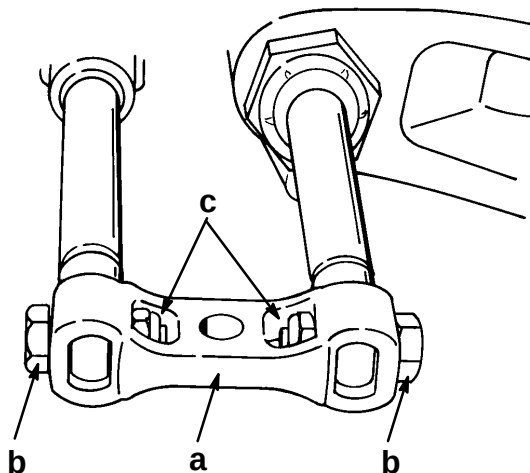


Coupler Installation

⚠ WARNING

Locknuts must be used with bolts to secure steering cables to coupler. Failure to adhere to this requirement could result in steering system failure.

Slide coupler onto steering cable ends and secure each steering cable to coupler with bolt and locknut as shown. Tighten to a torque of 20 lb. ft. (27.1 N·m).



- a - Coupler
- b - Bolt
- c - Locknut

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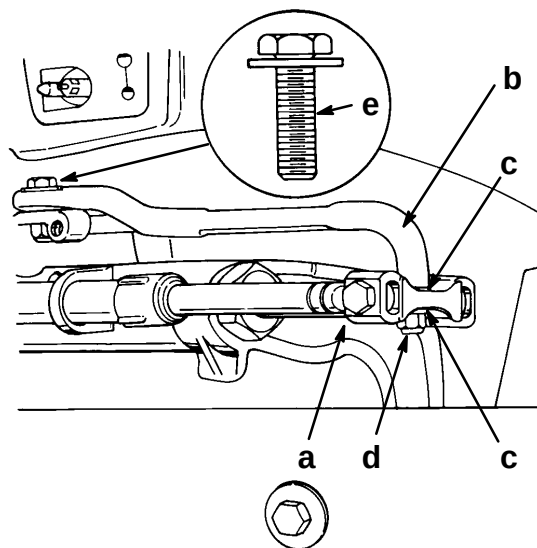
Installing Link Rod

⚠ WARNING

Steering link rod **MUST BE** secured between outboard steering arm and steering coupler, using special washer head bolt (10-14000) and two nylon insert locknuts (11-34863), as shown. Both special washer head bolt and nylon insert locknuts **MUST BE** tightened as specified.

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

Lubricate ball joint in steering link rod with SAE 30W Motor Oil. Secure link rod to outboard steering arm, using special washer head bolt (10-14000) provided and nylon insert locknut as shown. Torque special bolt to 20 lb. ft. (27.1 N·m), then torque locknut to 20 lb. ft. (27.1 N·m).



51790

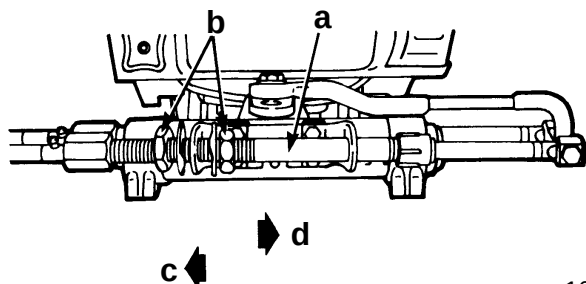
- a - Steering Coupler
- b - Steering Link Rod
- c - Flat Washer (2)
- d - Nylon Insert Locknut - Torque until it seats [DO NOT exceed 120 lb. in. (13.5 N·m) of torque], then back nut off 1/4 turn.
- e - Special Washer Head Bolt (10-14000) - Torque to 20 lb. ft. (27.1 N·m)

STEERING SYSTEM TENSION ADJUSTMENT

IMPORTANT: After this dual steering cable attachment kit is installed, there must be proper tension in forward mounted steering cable for this attachment kit to operate properly. Not enough tension will cause slack (or play) in steering system. Too much tension will cause steering cables to bind. Perform the following steps to adjust for correct tension.



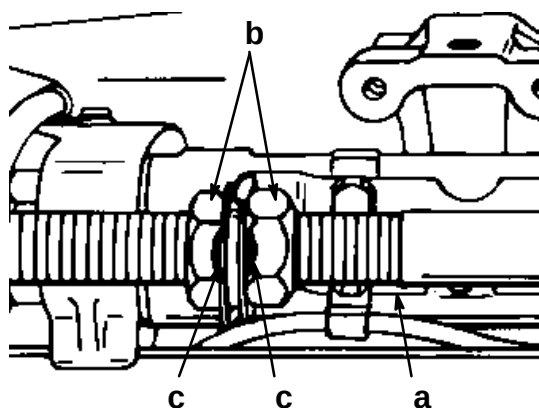
Loosen adjustment nuts and pull steering cable mounting tube (by hand) away from end of steering cable (to remove slack in steering system). Tighten adjustment nuts against mounting bracket and check system for slack (play). If steering system is too tight, readjust tube toward end of steering cable or, if too much slack (play) exists in system, readjust tube away from end of steering cable. Tighten nuts against mounting bracket and readjust, if necessary.



16961

- a - Steering Cable Mounting Tube
- b - Adjustment Nuts
- c - Adjust Tube in This Direction to Remove Slack from Steering System.
- d - Adjust Tube in This Direction to Reduce Tension from Steering System.

After steering system tension is adjusted correctly, tighten adjustment nuts against mounting bracket, to a torque of 35 lb. ft. (47.4 N·m) and bend a tab lock washer against a flat on each nut.

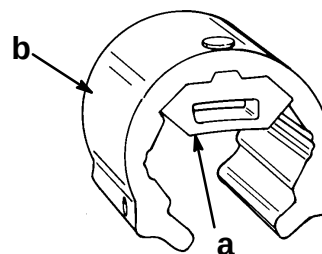


51887

- a - Steering Cable Mounting Tube
- b - Adjustment Nuts; Torque to 35 lb. ft. (47.4 N·m)
- c - Tab Lock Washer (Bend Against Flat on Each Adjustment Nut)

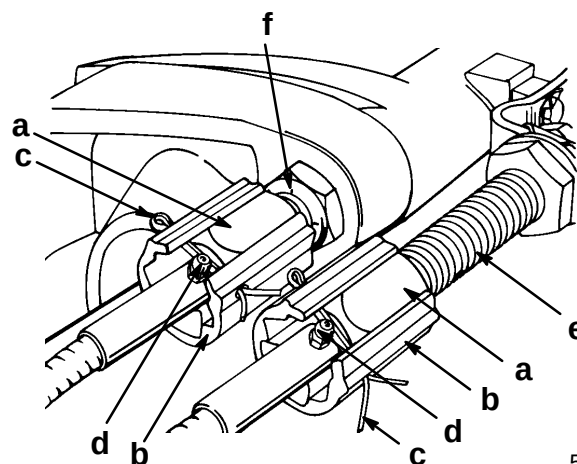
Tighten steering cable attaching nuts of each steering cable to a torque of 35 lb. ft. (47.4 N·m).

Install rubber bumpers (a) on inside of each locking sleeve (b).

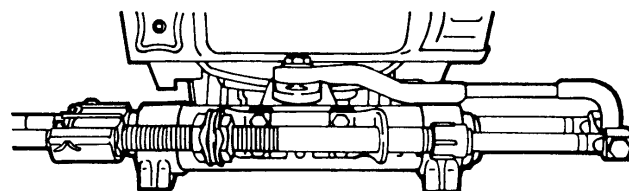


51889

Install locking sleeves over steering cable attaching nuts and secure with cotter pins. Spread ends of cotter pins. Be sure to install cotter pin so that it is located in between attaching nut and grease fitting.



51890



51452

- a - Steering Cable Attaching Nut - Torque to 35 lb. ft. (47.4 N·m)
- b - Locking Sleeve (If So Equipped)
- c - Cotter Pin
- d - Grease Fitting
- e - Steering Cable Mounting Tube
- f - Outboard Tilt Tube

⚠ 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.

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 “**Severe Service.**”

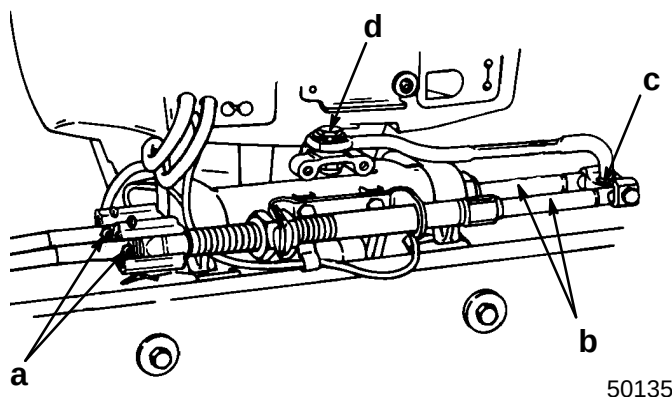
1. Carefully check steering system components for wear. Replace worn parts.
2. Check steering system fasteners to be sure that they are torqued to correct specifications.

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 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. Lubricate exposed portion of cable ends with 2-4-C w/Teflon.
4. Lubricate pivot point of steering link rod and ball joint of link rod/steering coupler with SAE 30W Motor Oil.
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.



- a - Grease Fitting
- b - Cable Ends
- c - Pivot Point
- d - Ball Joint

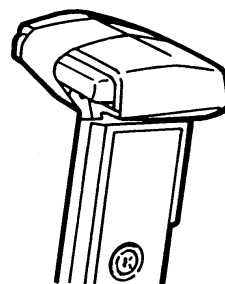
Remote Control Installation

Shift Cable Installation and Adjustment to Engine

IMPORTANT: Install control cables to remote control and mount remote control **BEFORE** attaching control cables 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, as shown. Now you can locate the true neutral detent.



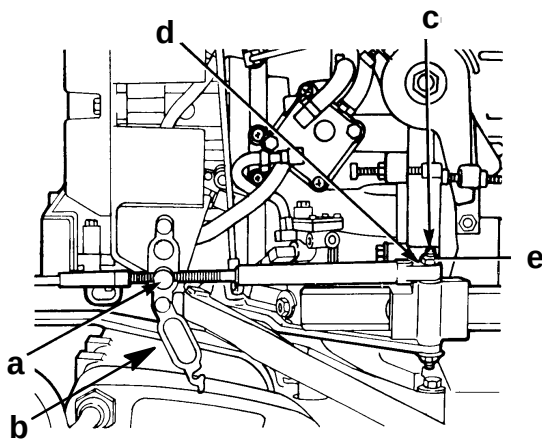
22752

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

1. Position remote control handle in neutral detent.
2. Manually shift engine into neutral (propeller will rotate freely).



3. Adjust cable barrel to attain the same length between cable barrel and hole in end of cable guide as exists between barrel retainer and shift actuator stud, with a slight preload toward reverse.
4. Place end of shift cable on shift actuator stud then place plastic washer on stud and secure with locknut.
5. If used, remove tape from control handle.
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 in either direction. 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.

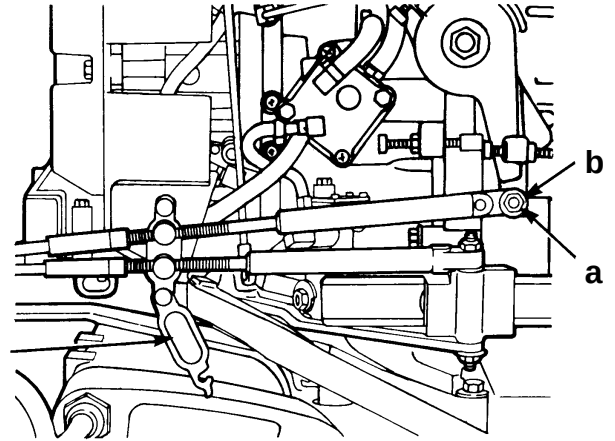


22888

- a - Cable Barrel
b - Barrel Retainer
c - Shift Actuator Stud
d - Plastic Washer
e - Locknut

Throttle Cable Installation and Adjustment to Engine

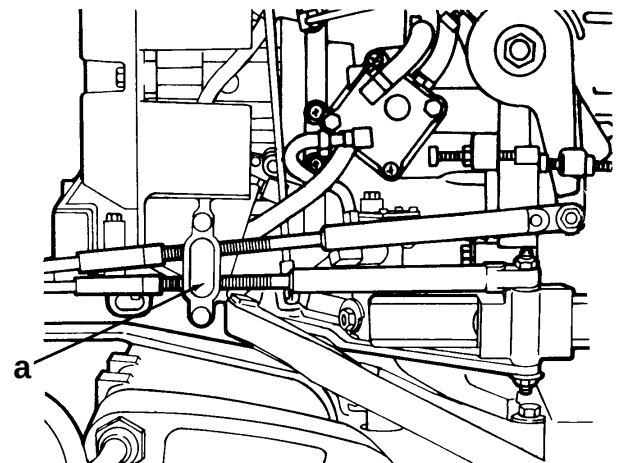
1. Shift remote control into neutral.
2. Attach end of throttle cable to stud on throttle lever and secure with locknut as shown. Be sure to first put on the cable end, then the plastic washer and finally the locknut. Snug up the locknut and then back off 1/4-turn.



22888

- a - Locknut
b - Plastic Washer

3. Hold engine throttle lever against idle stop. Adjust brass barrel so that there will be a slight preload of throttle lever against the idle stop. Lock brass barrels in place with barrel retainer.
4. Proper preload on throttle cable can be checked by placing a piece of paper between idle stop screw and idle stop. Preload is correct when the paper can be removed without tearing but has some drag on it. If necessary, readjust brass barrel.



18432

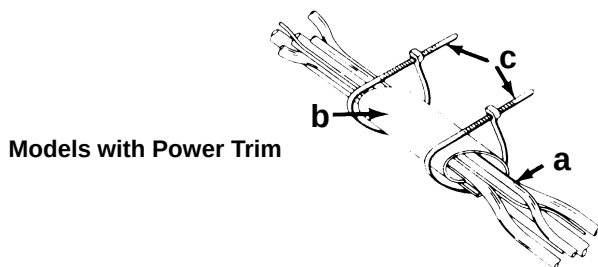
- a - Barrel Retainer



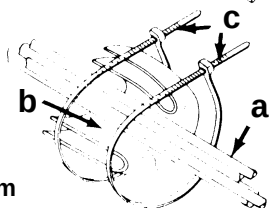
Connecting Engine Wiring Harness and Routing of Engine Cables

⚠ WARNING

Wiring passing through cowl must be protected from damage by using a neoprene sheet as shown. Failure to protect wiring could cause chafing or cuts in wiring resulting in electrical system failure and/or possible bodily injury.



Models with Power Trim



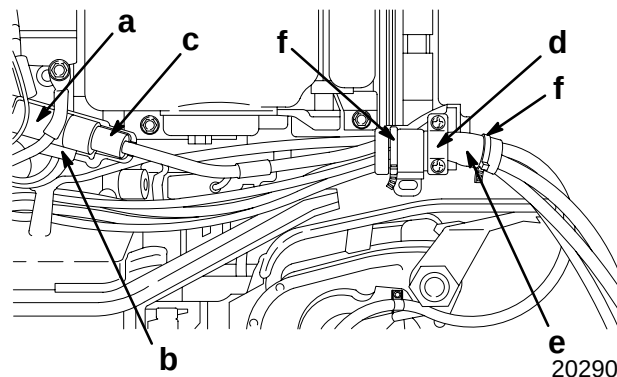
Models without Power Trim

- a - Wiring Harness
- b - Neoprene Sheet
- c - Sta-Straps

1. Plug remote control harness connector into engine harness connector, then secure connector in place with retainer as shown.

IMPORTANT: On Models without Power Trim, the neoprene sheet must be folded once and then wrapped around cables as shown.

2. Wrap neoprene sheet around cable bundle and secure each end with a sta-strap. Secure to bracket with retainer.



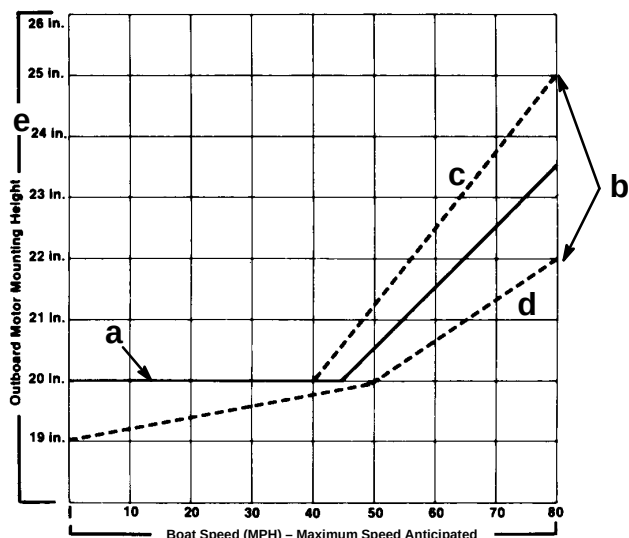
- a - Engine Connector
- b - Retainer
- c - Harness Connector
- d - Harness Retainer
- e - Neoprene Sheet
- f - Sta-Strap(s)

Models with Power Trim

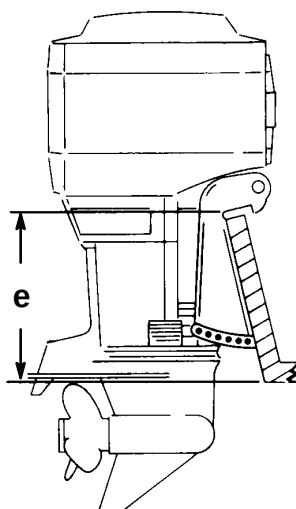


Installing Outboard Motor on Transom

Determining Recommended Outboard Mounting Height



1 in. = 25.4mm
1 MPH = 1.6 Km/h



IMPORTANT: Add 5 in. (12.7cm) to Mounting Height for "XL" Models.

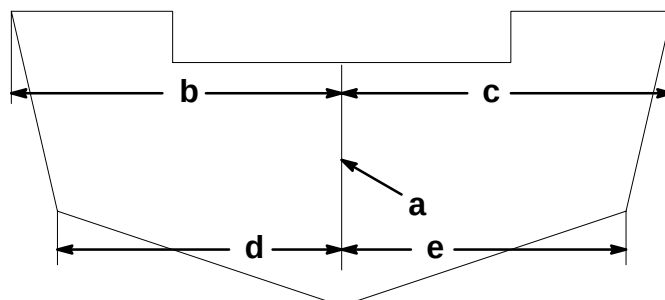
- a - This solid line is recommended to determine the outboard mounting height dimension. Use transom mounting bolt holes that will position outboard nearest to the recommended height. After engine break-in (if necessary), raise or lower outboard one position at a time to attain best performance. See "Important" immediately following.

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 load.

- b - These broken lines represent the extremes of known successful outboard mounting height dimensions.
- 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 bracket from bottom of boat transom). For heights over 22 in. (560mm), a propeller, that is specifically designed for surfacing operation, such as the "Chopper" series, usually is preferred.

Locate Centerline of Boat Transom

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



NOTE: Dimensions "b" and "c" and "d" and "e" are equal length.



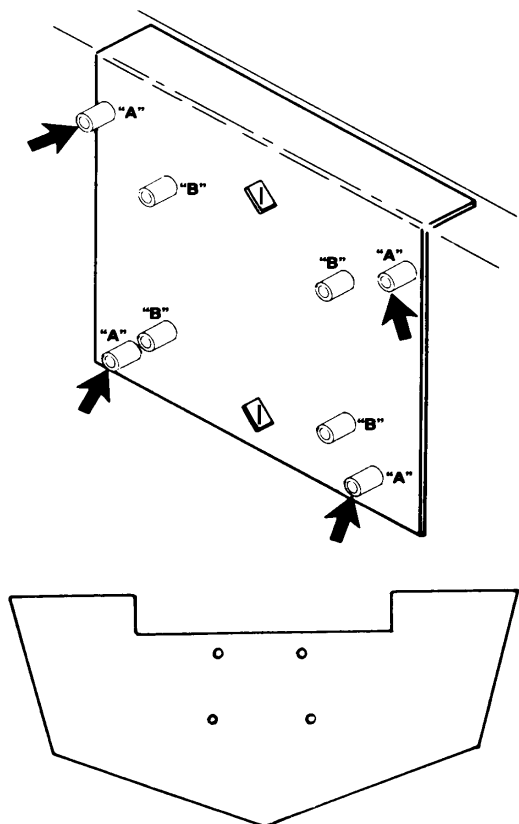
Drilling Outboard Mounting Holes

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.

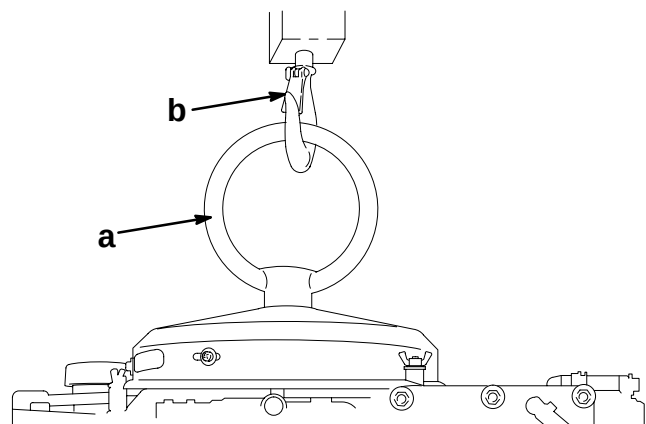


Lifting Engine

⚠ 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 engine.

1. Remove cowl from engine and plastic cap from center of flywheel. Thread lifting eye into flywheel hub a minimum of 5 turns. Replace plastic cap after installation.
2. Connect hoist [minimum lift capacity of 500 lbs. (227 kg)] to lifting eye. Lift engine and place on boat transom.



25929

a - Lifting Eye (C-91-75132)

b - Hoist

Installing Engine to Transom

⚠ CAUTION

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

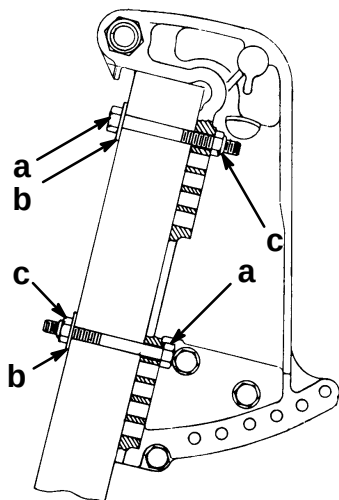
NOTE: Because of clearance on some boats it will be necessary to install steering cable on engine before installing engine to transom. Refer to page 1 of this instruction.

IMPORTANT: DO NOT use an impact driver when tightening transom mounting bolts.

1. Determine engine mounting height dimension from graph (STEP 1) and use engine mounting holes that will position engine nearest to recommended height.



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



- a - Mounting Bolt - 4-1/2 in. (11.4mm) long (4 Req'd.)
- b - Flat Washer (4 Req'd.)
- c - Locknut (4 Req'd.)

⚠ WARNING

Before operating, motor(s) **MUST BE SECURED** to boat transom with four 1/2" diameter bolts and locknuts, as follows: 2 bolts must be installed thru upper mounting holes and 2 bolts thru lower mounting holes, as shown in step 5. Installation must be water-tight, and engine should be checked for tightness on the transom during operation. Failure to bolt engine to transom (using 4 bolts and locknuts, as shown in step 5) may result in damage to boat and/or loss of motor and possible injury to occupants of boat.