



2 Lever Side Mount Shifter 620-60350 I

Congratulations on purchasing the finest side mount shifter available. This shifter is made from 6061 billet aluminum and is hand assembled in the USA. The sterndrive shifter is assembled to match the standard Mercury installation which will pull the throttle open and will pull the cable into forwards and push the cable into reverse. The jet boat shifter is assembled to pull the throttle open and will push the cable into forwards and pull the cable into reverse. This configuration can be changed simply by moving the shift arms to correspond to your applications need of pushing or pulling. These changes are outlined in the illustrations below as are the wiring instructions for the neutral safety switch, engine kill switch, trailer position switch, and trim switches.

This shifter is designed to use 33c series cables or the newer Mercury Gen II cables on sterndrive installations for both the throttle and shift functions. Cables adapters are used for Mercury applications if your boat uses the 33c style of cables, use part number 620-30212 for these adapters. The jet boat shifter will use a 33c series cable for the throttle acuation and a 43 series cable for the shift function. The older Mercury KM styles cables WILL NOT work with this shifter and you will have to change the cables to one of the above mentioned.

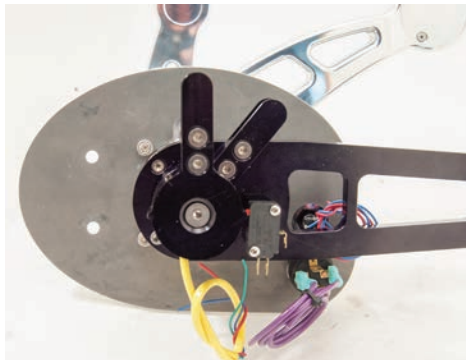
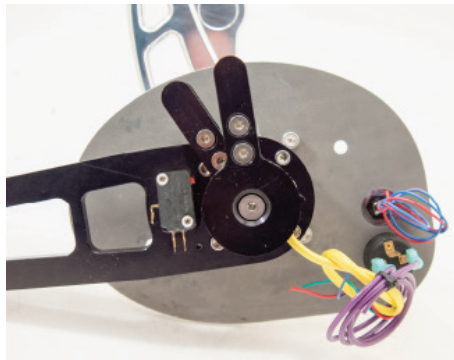
The Hardin Marine side mount shifter requires a minimum clearance of 3 1/8" from the mounting surface to the inside of the gunwale as to not have any shift arm interference.

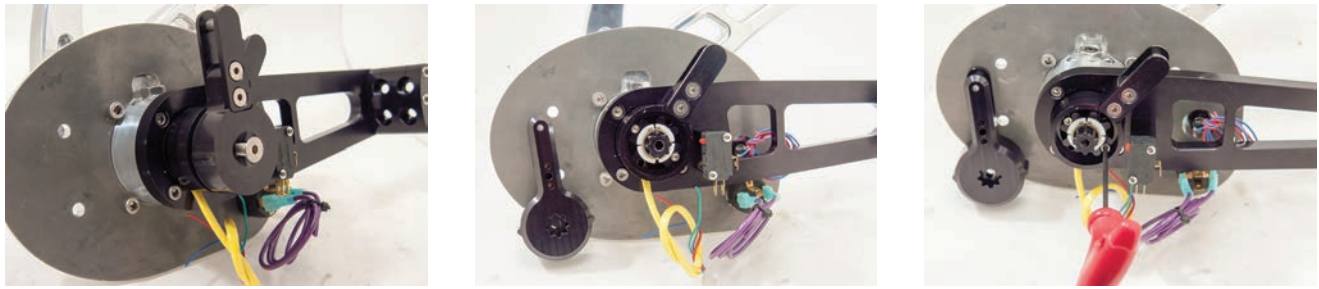
Please follow all instructions completely to make sure that you will have trouble free operation of your new Hardin Marine shifter.

Installation

A cutout template is supplied with these instructions for new installations and can also be used to check that an existing cutout is correct to fit the new shifter. Follow the instructions on the cutout template for the correct cutout procedure.

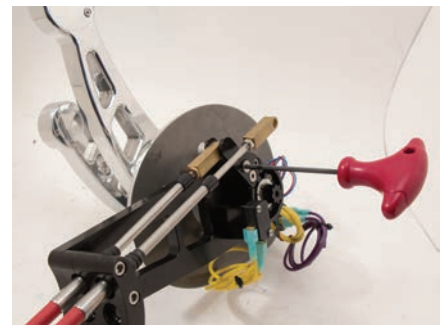
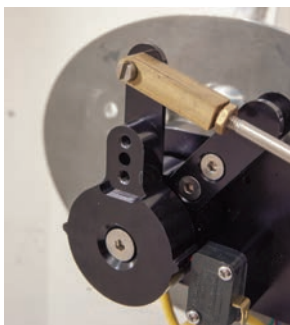
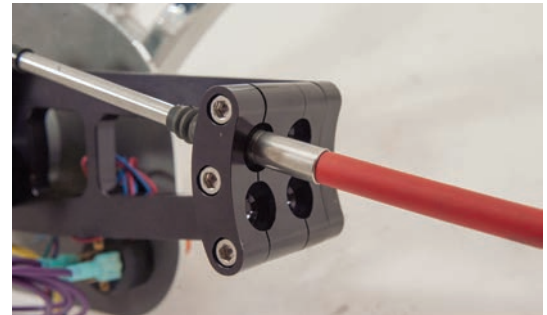
The cable bracket on the shifter can be positioned so the cable entry is from the rear, front, or bottom depending on available space behind the shifter. This position is changed by removing the 2 shift arms on the back of the shifter and then loosening the 4 allen bolts that retain the cable bracket. When the bolts have removed position the bracket into the desired position either back, forward, or down and tighten the the four bolts. The shift arms will need to be repositioned as well into the push/pull direction that is required for your application.





The neutral safety switch needs to be positioned so the connections point away from the shift cable connection as to not have any interference.

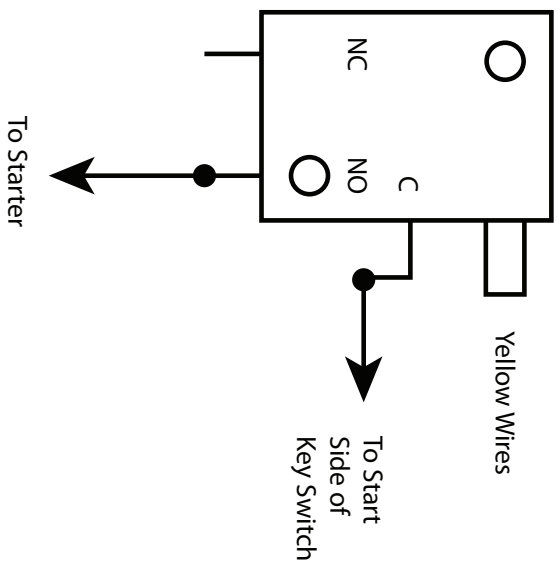
Installing the cables is done by removing the 3 allen bolts that retain the cable clamp in place and the 2 bolts on the shift arms for each cable. Thread the brass cable end onto the cable (if using the 33c or 43 style cables) as this will also be used for fine tuning the adjust as well if needed. **If you are using the Mercury GenII cable then the you will not use the brass cable ends as the GenII cable has the correct end already.** The cable goes into the clamp that is on the same side as the pin on the shift lever with the throttle cable mounting closet to the bracket and the shifter cable mounting in the hole further from the bracket. Reposition the cable clamp on the bracket and tighten the 3 allen bolts. Slip the brass cable ends over the lever pins and reposition the the retainer and bolts and tighten. If you are already running the 33c cables then the engine connections will already be done. If you are installing new cable follow the instructions with the cable adapters for the correct installations.



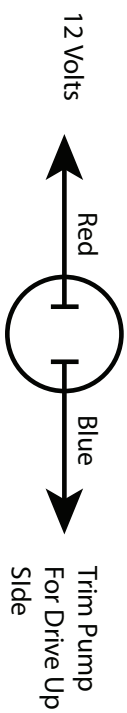
The shifter can be mounted to the side panel by either thru bolting with 1/4" x 1 1/4" flat head bolts and nuts or #14 x 1" oval head screws. Make sure that the shifter is mounted solid to the side panel and that the levers can operate freely without any interference. Follow the wiring diagrams below for the correct connections for each of the components.

Once installed, see page 9 for Mercury service manual on adjusting cables on Mercury applications. Adjustments to the cables will be required for proper operation.

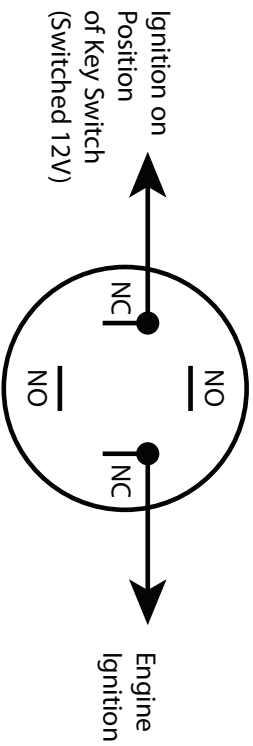
Neutral Safety Switch



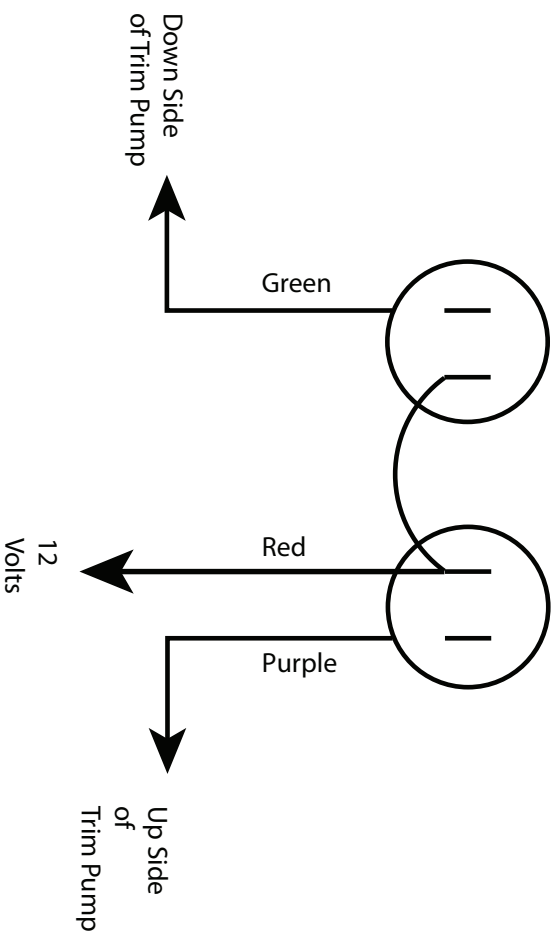
Trailer Up Button



Kill Switch Purple Wires



Trim Switches



HARDIN 11 Industry Dr. Palm Coast, FL 32137
MARINE 386-445-2500 / FAX 386-445-1122

PART NO.
620-60350

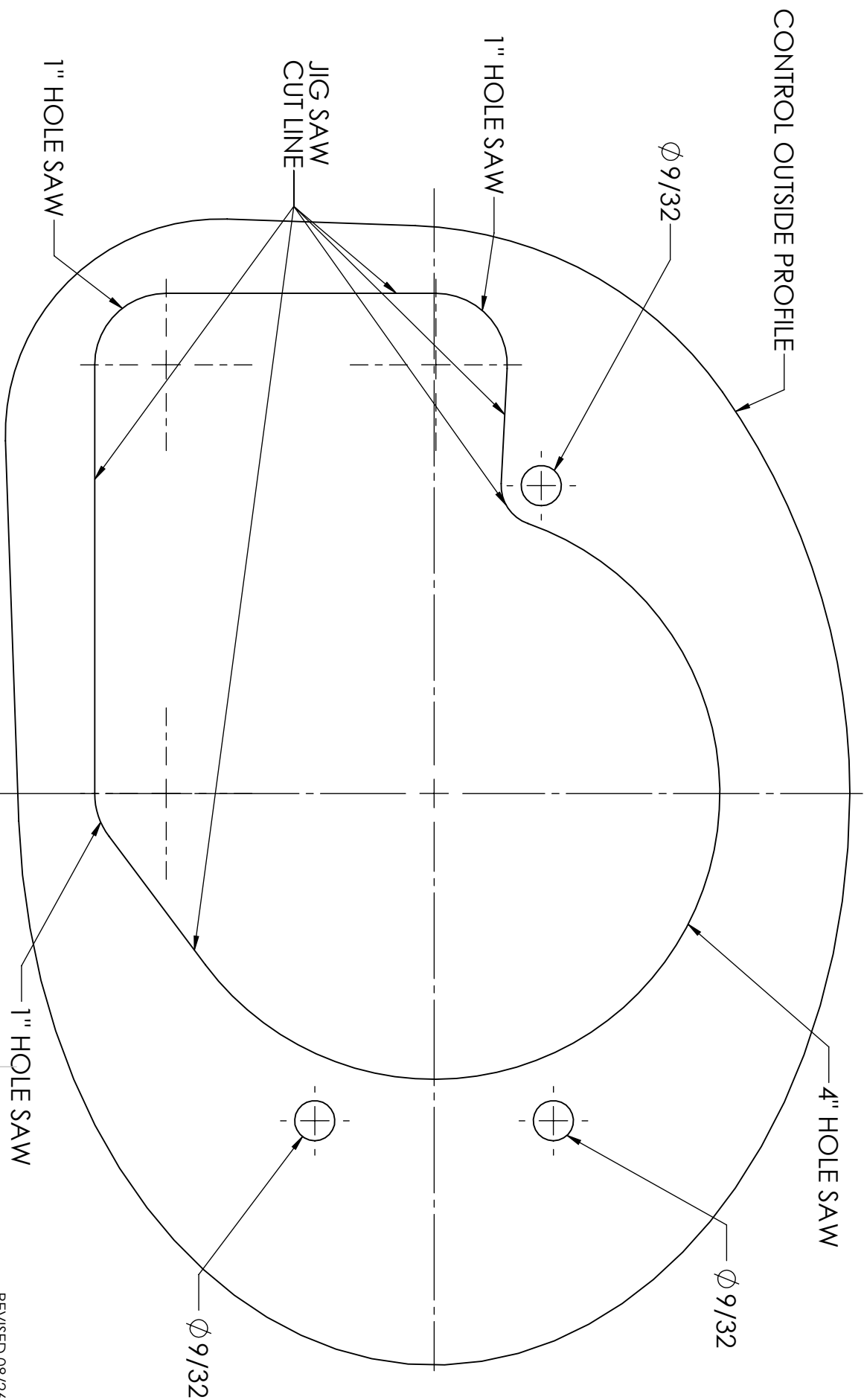
TITLE:

SIDE MOUNT CONTROL CUTOUT TEMPLATE

www.hardin-marine.com

TEMPLATE USAGE:

- 1) TAPE TEMPLATE TO MOUNTING POSITION. USE THE OUTSIDE PROFILE TO INSURE CONTROL HAS FLAT MOUNTING SURFACE.
- 2) DRILL OUT CENTER WITH 4" HOLE SAW.
- 3) DRILL THE (3) 1" HOLE SAW HOLES.
- 4) DRILL THE (3) CONTROL 9/32 MOUNTING HOLES.
- 5) USE A JIG SAW TO CUTOUT THE REMAINING HOLES FOLLOWING THE LINES.
- 6) DEBURR ALL HOLES AND CUT LINES PRIOR TO INSTALLATION.

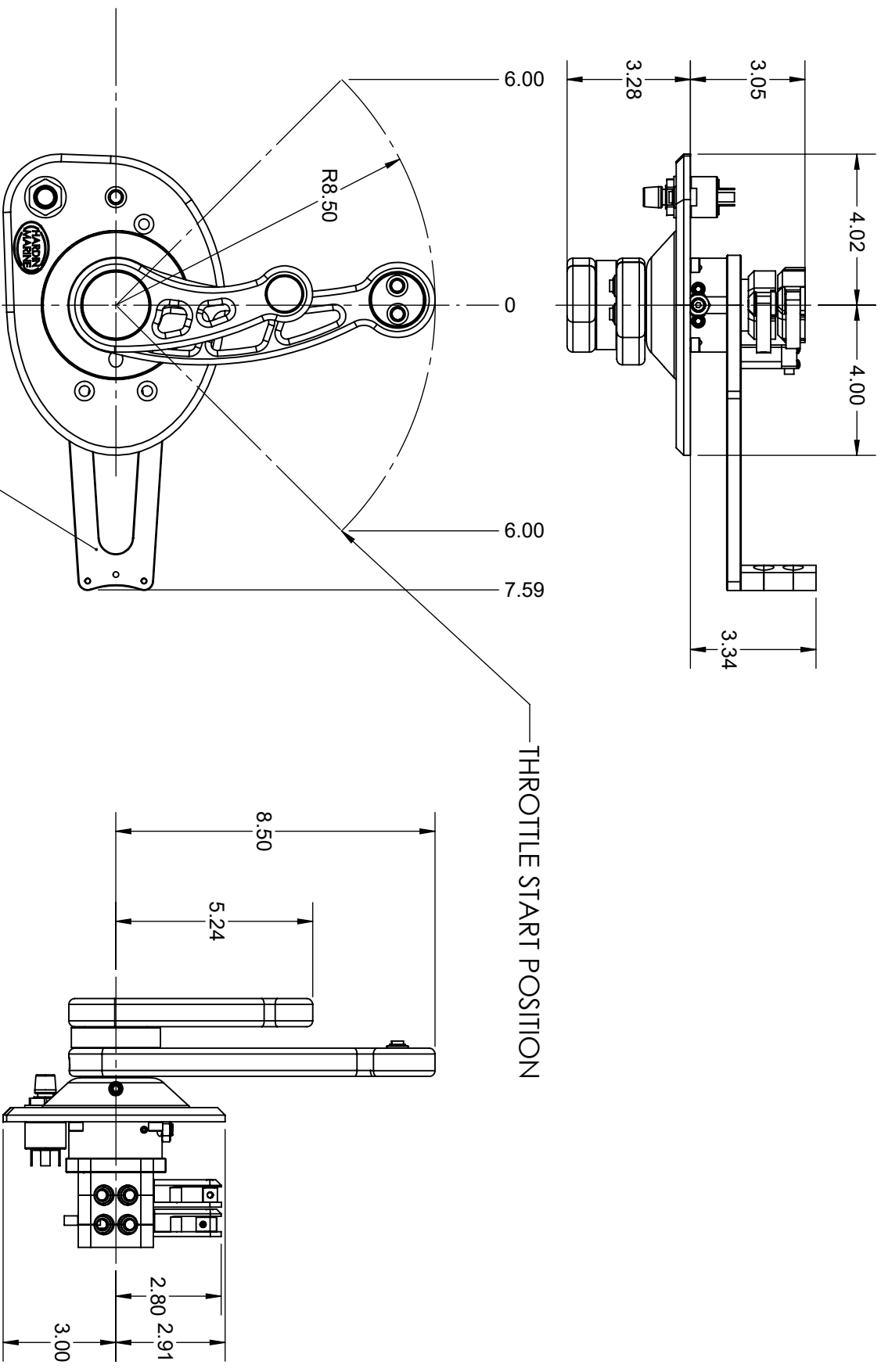


HARDIN 11 Industry Dr. Palm Coast, FL 32137
MARINE 386-445-2500 / FAX 386-445-1122

PART NO.
620-60350

www.hardin-marine.com

TITLE: SIDE MOUNT CONTROL INSTALLATION
DIMENSIONS



CABLE ATTACHMENT CAN BE ROTATE EVERY 45°

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CABLE USE GUIDE



33C CABLE



MERCURY GEN II



MERCURY KM



HARDIN 11 Industry Dr. Palm Coast, FL 32137
MARINE 386-445-2500 / FAX 386-445-1122

620-603350

TITLE: STILETTO SIDE MOUNT CONTROL -
THROTTLE TENSION

www.hardin-marine.com



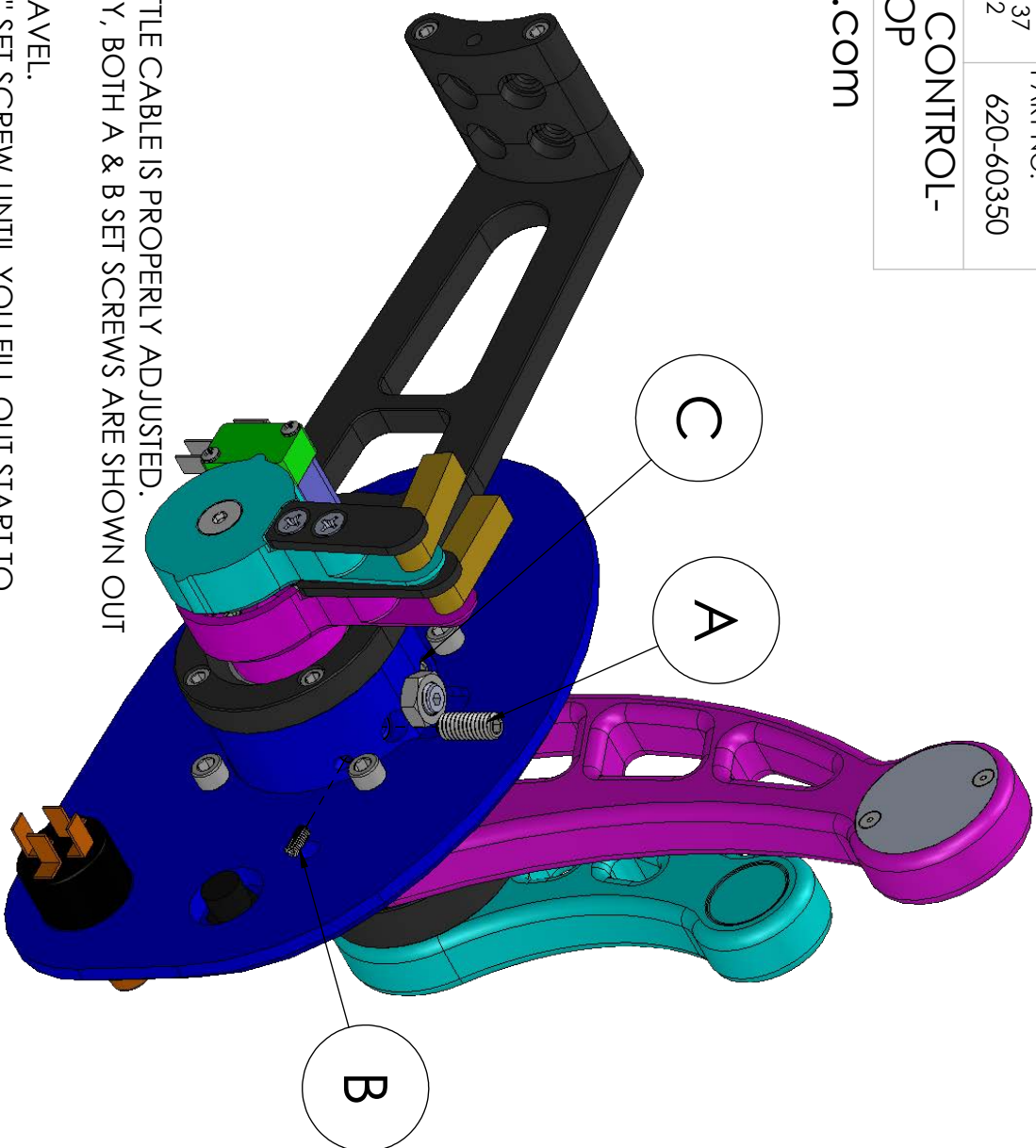
ADJUSTING THROTTLE TENSION:

- 1) INSERT 5/32 ALLEN KEY INTO SET SCREW, FIG. A.
- 2) TURN CLOCKWISE TO APPLY MORE TENSION.
- 3) TURN COUNTER CLOCKWISE TO LOOSEN TENSION.
- 4) DO NOT TOUCH SET SCREW AT THE BOTTOM OF THE THROTTLE LEVER, FIG. B.

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TITLE: STILETTO SIDE MOUNT CONTROL-
THROTTLE STOP

www.hardin-marine.com



ADJUSTING THROTTLE STOPS

- 1) DO NOT ADJUST STOPS TILL THROTTLE CABLE IS PROPERLY ADJUSTED.
- 2) FOR INSTRUCTIONS PURPOSE ONLY, BOTH A & B SET SCREWS ARE SHOWN OUT OF THE BODY.
- 3) PUSH THROTTLE TO END OF THE TRAVEL.
- 4) USING A 5/32 ALLEN KEY, TURN "A" SET SCREW UNTIL YOU FEEL IT START TO FEEL THE THROTTLE LEVER MOVE.
- 5) NOW, USING A 5/64 ALLEN KEY, TURN "B" SET SCREW UNTIL IT TOUCHES "A" SET SCREW. THIS LOCKS THE POSITION.
- 6) NOW PULL THROTTLE LEVER ALL THE WAY BACK AND ADJUST THE SAME SET SCREWS IN THE SAME ORDER ON THE OTHER SIDE, SEE FIG C.

Remote Control Shift Cable Adjustment (Drive Unit Installed)

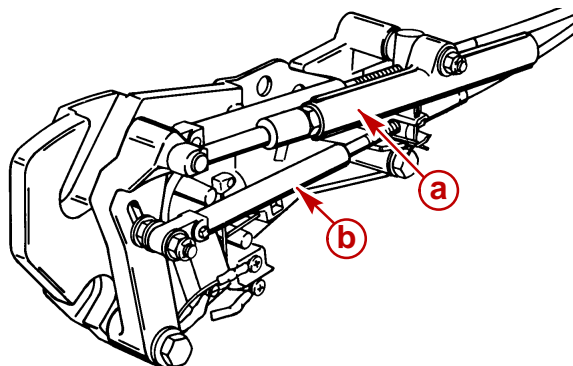
NOTE: The illustrations on the following pages show models that have a shift plate that is mounted on the exhaust elbow. The shift mechanism components on the 3.0L model are located on the top of the valve cover or on the starboard harness bracket. The procedure for making the adjustments is the same.

IMPORTANT: Shift cable adjustment for a right hand (RH) rotation drive unit is different than the procedure for adjusting a left hand (LH) rotation drive unit. Be sure to refer to the appropriate procedure when performing the following steps.

IMPORTANT: Drive unit must be installed.

IMPORTANT: DO NOT run engine.

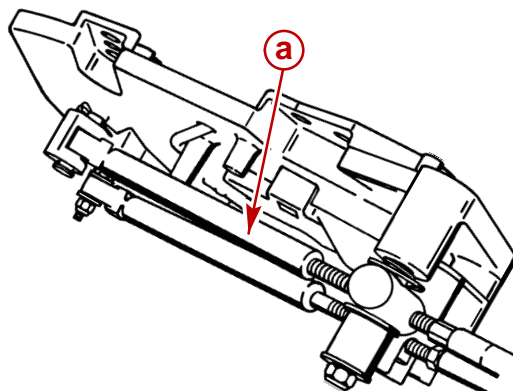
1. Remove remote control shift cable and shift assist assembly (if installed).



50308

With Shift Assist Assembly

- a** - Shift Assist Assembly
- b** - Remote Control Shift Cable

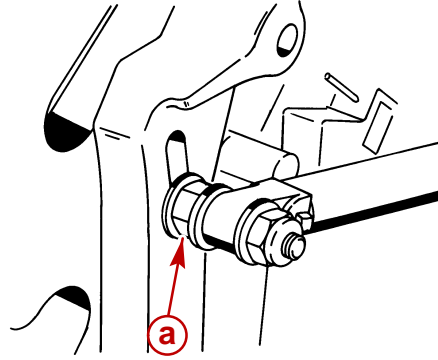


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Without Shift Assist Assembly

- a** - Remote Control Shift Cable

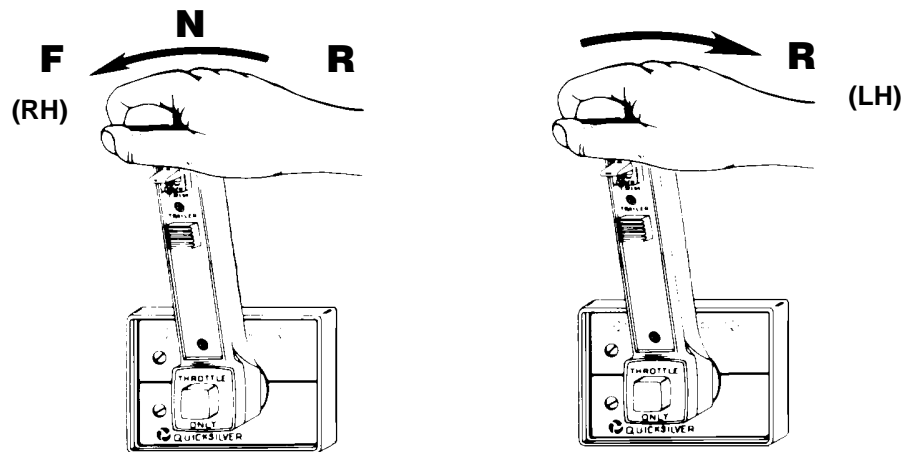
2. Ensure shift lever adjustable stud is located in the slot at the end closest to the shift lever pivot point. If necessary, loosen stud and align stud in the slot, then retighten stud.



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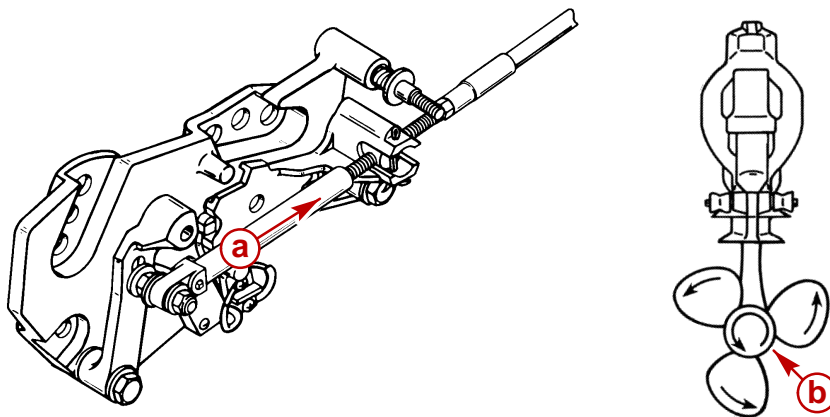
a - Adjustable Stud

3. Shift remote control as stated in a. or b.:
 - a. **Right Hand (RH) Rotation Drive Unit** - forward gear, past detent, into wide-open-throttle position.
 - b. **Left Hand (LH) Rotation Drive Unit** - reverse gear, past detent, into wide-open-throttle position.



4. Place drive unit into gear by pushing in on drive unit shift cable, while simultaneously rotating propeller shaft counterclockwise until shaft stops, to ensure full clutch engagement. Maintain a light pressure on the drive unit shift cable to hold it at the end of its travel (this removes all slack from the cable).

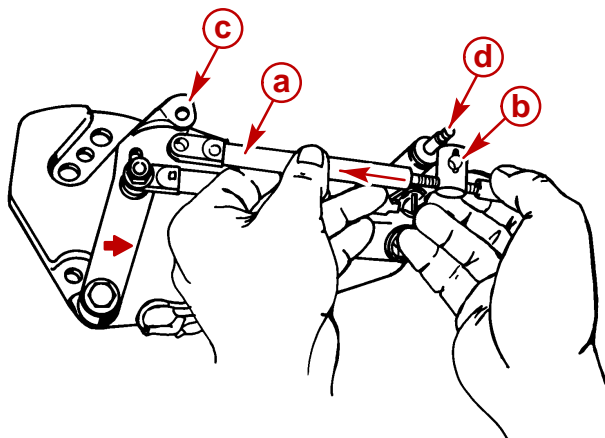
IMPORTANT: Do not use excessive force when holding pressure on the drive unit shift cable. Excessive force would be indicated by movement of the V-notch of the actuator lever assembly.



22266

- a** - Drive Unit Shift Cable - Push In
- b** - Propeller Shaft - Rotate Counterclockwise

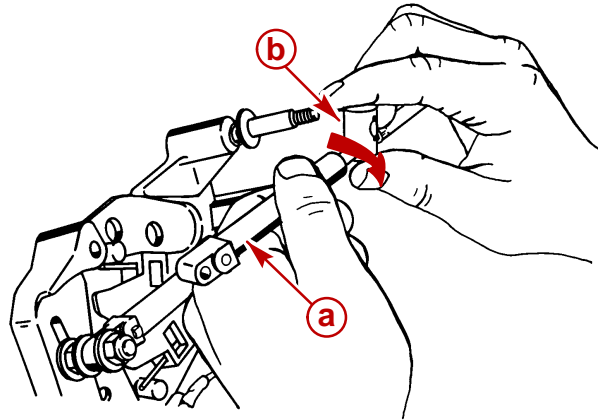
5. Lightly pull on remote control shift cable end guide (to remove slack from remote control and cable) and adjust brass barrel as necessary to align attaching points with shift lever clevis pin hole and stud. Be sure to maintain light pressure on drive unit shift cable.



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- a** - End Guide
- b** - Brass Barrel
- c** - Shift Lever Clevis Pin Hole
- d** - Stud

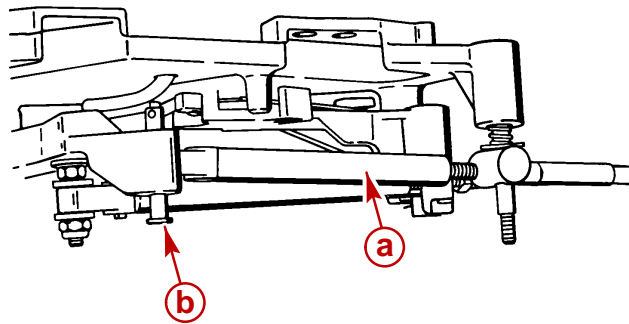
6. After cable has been aligned, turn brass barrel 4 turns **away** from cable end guide.



50308

- e** - End Guide
- f** - Brass Barrel

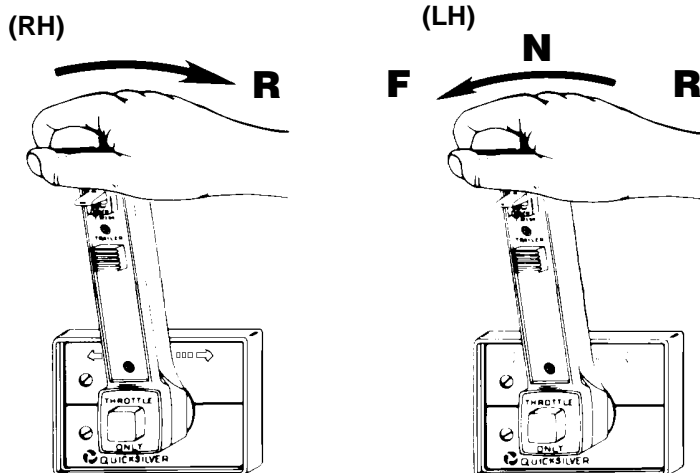
7. Temporarily install remote control shift cable on stud and install clevis pin.



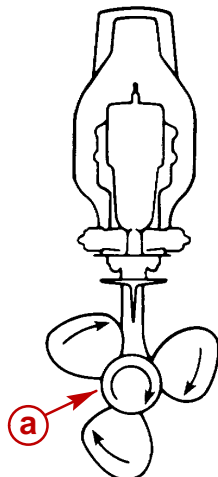
50308

- a** - Remote Control Shift Cable
- b** - Clevis Pin

8. Shift remote control as stated in a. or b. :
 - a. **Right Hand (RH) Rotation Drive Unit** - reverse gear, past detent, into wide-open-throttle position.
 - b. **Left Hand (LH) Rotation Drive Unit** - forward gear, past detent, into wide-open-throttle position.



9. Simultaneously rotate propeller shaft clockwise until shaft stops to ensure full clutch engagement.

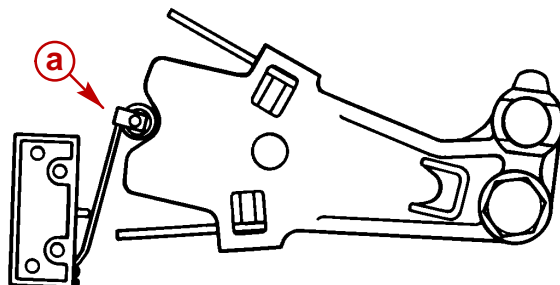


22267

a - Propeller Shaft - Rotate Clockwise

10. Perform a. or b. as appropriate:

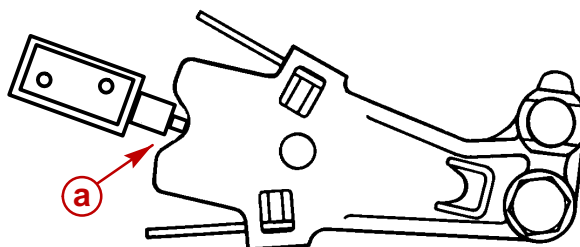
- a. **On Models with Earlier Type Switch:** check shift cutout switch lever position. Roller must be centered.



22058

a - Shift Cutout Switch Roller

- b. **On Models with Later Type Switch:** check shift cutout switch plunger position. Pin must be centered.



75128

a - Shift Cutout Switch Plunger

11. If roller or plunger pin is not centered:

- a. Ensure adjustable stud is at bottom of slot in shift lever.
- b. Check remote control for proper shift cable output [3 in. (76 mm) \pm 1/8 in. (3 mm)].
- c. If a and b are correct, ensure drive unit shift cable is not crushed or kinked. (If drive unit shift cable is binding, the shift cutout switch roller or plunger pin will move off center when shifting "into" and "out of" forward **and** reverse).

NOTE: If shift cable was damaged during installation, install new shift cable assembly, then repeat shift cable adjustment procedure.

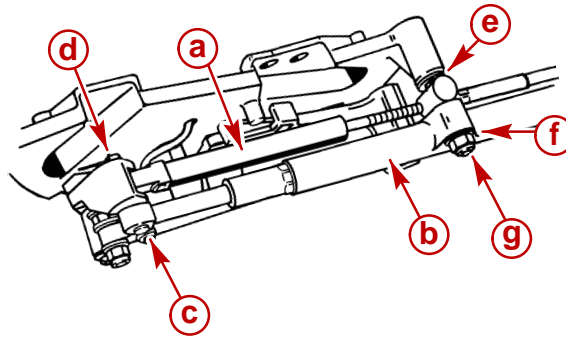
⚠ CAUTION

Improper installation of the shift assist assembly could result in damage or malfunction to the shift control box.

For Commander 3000 Controls, if shift assist assembly attaching points do not align, verify controller is in the neutral position. Remove the shift cable and reposition the adjustment barrel as required to allow the shift assembly to be installed with no effort.

For ALL other controls, if shift assist assembly attaching points do not align, push in or pull out on end of shift assist assembly to install. Do not attempt to readjust shift cable.

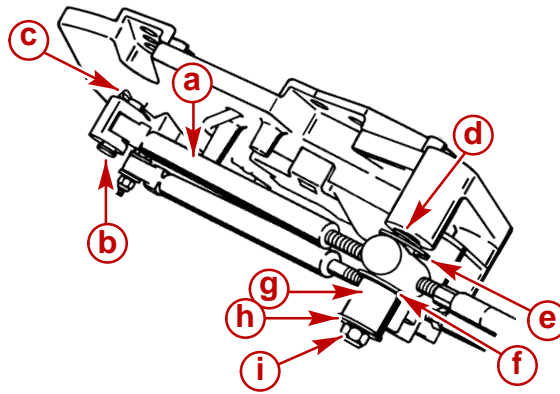
12. After remote control shift cable has been properly adjusted, reinstall cable and shift assist assembly (if applicable) and secure with hardware. Tighten locknut completely then back off 1/2 turn.



50308

With Shift Assist Assembly

- a** - Remote Control Shift Cable
- b** - Shift Assist Assembly
- c** - Clevis Pin
- d** - Cotter Pin
- e** - Large I.D. Washer
- f** - Small I.D. Washer
- g** - Locknut



50310

Without Shift Assist Assembly

- a** - Remote Control Shift Cable
- b** - Clevis Pin
- c** - Cotter Pin
- d** - Spring
- e** - Washer
- f** - Washer
- g** - Spacer
- h** - Washer
- i** - Locknut

IMPORTANT: If an extra long remote control shift cable is used, or if there are a large number of bends in remote control shift cable, or remote control has inadequate output travel, an additional adjustment may be necessary. Refer to step 13 or 14 as applicable.

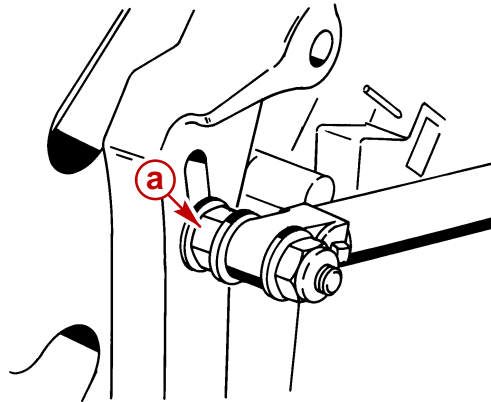
13. Remote Control with Single Lever Shift/Throttle Control:

- a. **RIGHT HAND (RH) propeller rotation drive unit** - Shift remote control into reverse gear, wide-open-throttle position while simultaneously rotating propeller shaft clockwise. Clutch should engage and cause propeller shaft to lock. If clutch does not engage, loosen adjustable stud on shift lever and move it upward in slot until clutch engages with reverse gear. Retighten stud. Shift remote control several times and stop in reverse to recheck shift cutout switch position. Roller or pin must be centered.
- b. **LEFT HAND (LH) propeller rotation drive unit** - Shift remote control into forward gear, wide-open-throttle position while simultaneously rotating propeller shaft clockwise. Clutch should engage and cause propeller shaft to lock. If clutch does not engage, loosen adjustable stud on shift lever and move it upward in slot until clutch engages with forward gear. Retighten stud. Shift remote control several times and stop in forward to recheck shift cutout switch position. Roller or pin must be centered.

14. Two Lever Remote Control with Separate Shift and Throttle Levers:

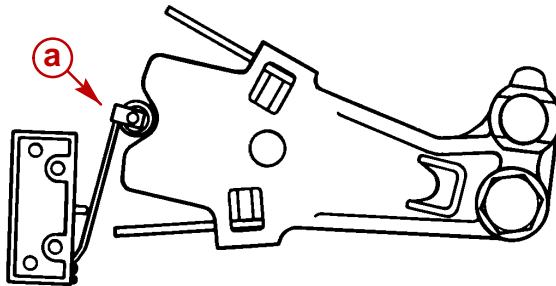
- a. **RIGHT HAND (RH) propeller rotation drive unit** - While turning propeller shaft clockwise, move remote control shift handle into full reverse position. Clutch should engage before shift lever comes to a stop. If clutch does not engage, loosen adjustable stud on shift lever and move it upward in slot until clutch engages with reverse gear. Retighten stud. Shift remote control several times and stop in reverse to recheck shift cutout switch position. Roller or pin must be centered.
- b. **LEFT HAND (LH) propeller rotation drive unit** - While turning propeller shaft clockwise, move remote control shift handle into full forward position. Clutch should

engage before shift lever comes to a stop. If clutch does not engage, loosen adjustable stud on shift lever and move it upward in slot until clutch engages with forward gear. Retighten stud. Shift remote control several times and stop in forward to re-check shift cutout switch position. Roller or pin must be centered.



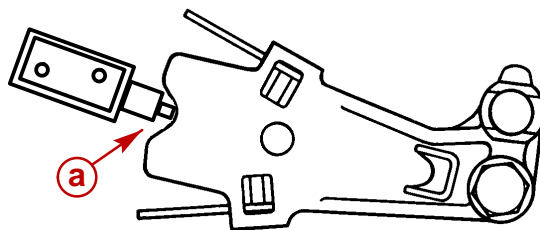
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a - Adjustable Stud



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a - Shift Cutout Switch Roller



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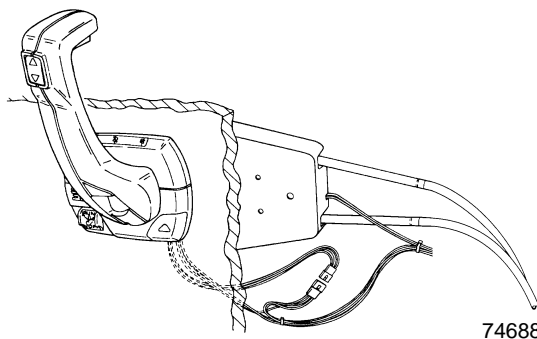
a - Shift Cutout Switch Plunger

Troubleshooting Shift Problems

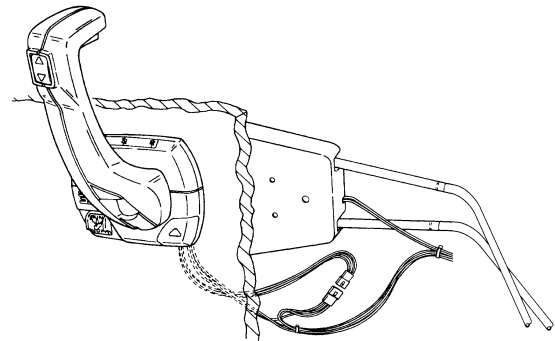
NOTE: The following information is provide to assist an installer in troubleshooting if hard shifting or chocking/racheting is encountered when shifting into FORWARD gear.

1. When installing the control box in the side panel of the boat, make sure that the cables have enough clearance to operate. This is necessary because the cables move up and down when the shift handle is moved. If the control box is mounted too far back towards any fiberglass structure, the cables will be interfered with, this will cause very hard shifting.

NOTE: The control box housing can be rotated in 30° increments to improve cable routing.



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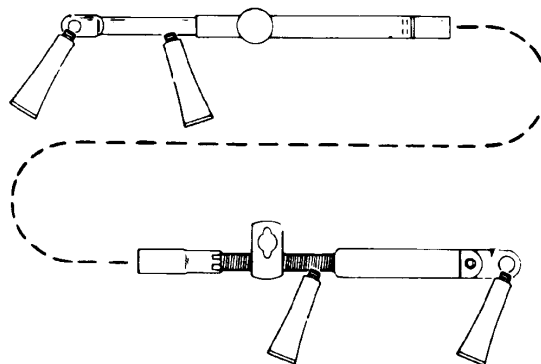


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Proper Cable Bend

Improper Cable Bend

2. Ensure that when the shift cable from the control box is led through the side gunnel of the hull, it does not have any extremely sharp bends in it as this will cause the stiff shifting.
3. Before installing the shift cable into the control box, extend the stainless rod eye end of the cable and grease it with 2-4-C Marine Lubricant with Teflon. Move it back and forth to allow even distribution of the grease.

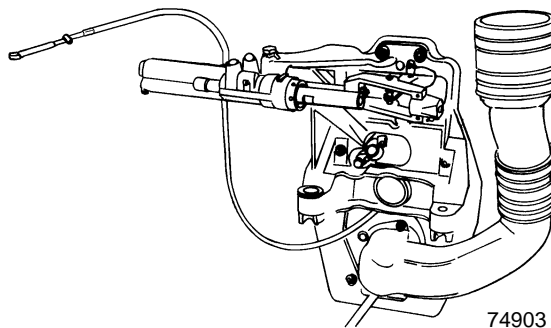


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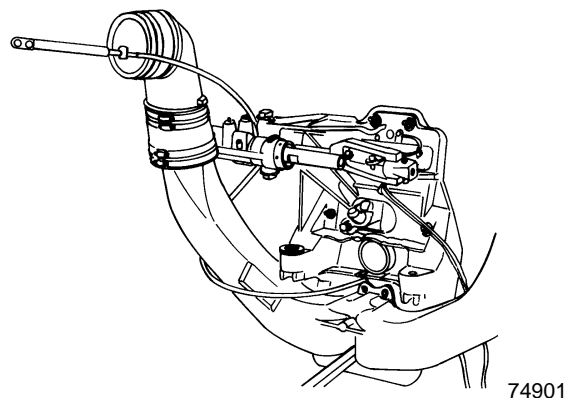
4. Do not strap or clamp the control cables to any other cables or rigid structure within **3 ft. (914 mm)** of the control box.
5. Be sure the cable is not permanently kinked.
6. Make sure there is proper clearance for cable movement when the control box is installed in the side panel. The cables must have room to move up and down when the control handle is shifted into either FORWARD or REVERSE.
7. Ensure that the engine was not set down on the intermediate shift cable during installation, as this will crush the inner cable tubing and cause improper and / or stiff shifting.

8. DO NOT fasten the shift cable with straps or clamps to any other cable within **5 ft. (1524 mm)** of the shift plate.
9. DO NOT fasten the shift cable to the transom with any type of plastic clips or fasteners within **5 ft. (1524 mm)** of the shift plate.
10. DO NOT overtighten the throttle or shift cable attaching nuts at the engine end. Barrel and cable end must be free to rotate on the mounting stud.
11. Check the intermediate shift cable routing from the transom assembly to the shift plate as follows:
 - a. The cable should come through the transom, above the exhaust pipe and make a turn towards the starboard side of the boat between the exhaust pipe and the engine flywheel housing.
 - b. The cable should then be routed under the starboard rear engine mount, and turn towards the transom.
 - c. Then go up behind the power steering valve and loop over to the shift plate on the engine, where it is connected to the anchor points on the shift plate.

Following this routing will prevent the engine coupler from damaging the cable.



4 Cylinder Inline Model



V6 and V8 Models

Propeller Installation

⚠ WARNING

Be sure that remote control is in the neutral position and ignition key is removed from switch.

⚠ WARNING

Place a block of wood between the antiventilation plate to protect hands from propeller blades and to prevent propeller from turning.

1. To aid in future propeller removal, liberally coat the propeller shaft splines with one of the following lubricants; then, install propeller.
 - Special Lubricant 101
 - 2-4-C Marine Lubricant with Teflon
 - Perfect Seal