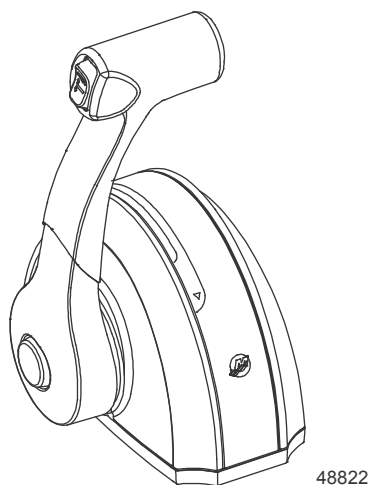


CONSOLE REMOTE CONTROL INSTALLATION INSTRUCTIONS

IMPORTANT: This document is written to aid our dealers, boatbuilders, and company service personnel in the proper installation or service of our products. Persons who are not familiar with these or similar products produced by Mercury Marine, and who have not been trained in the recommended servicing or installation procedures should have the work performed by an authorized Mercury Marine dealer technician. Improper installation or servicing of the Mercury product could result in damage to the product or personal injury to the installer or persons operating the product.

NOTE: After completing installation, place these instructions with the product for the owner's future use.

Console Remote Control



Notice to Installer

Throughout this publication, Warnings and Cautions (accompanied by the International Hazard Symbol) are used to alert the installer to special instructions concerning a particular service or operation that may be hazardous if performed incorrectly or carelessly. Observe them carefully.

These "Safety Alerts," alone, cannot eliminate the hazards that they signal. Strict compliance to these special instructions when performing the service, plus common sense operation, are major accident prevention measures.

WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates a situation which, if not avoided, could result in engine or major component failure.

IMPORTANT: Indicates information or instructions that are necessary for a particular step or action.

NOTE: Indicates information that helps in the understanding of a particular step or action.

This instruction sheet has been written and published by the service department of Mercury Marine to aid installers when installing the products described herein.

It is assumed that these personnel are familiar with the installation procedures of these products, or like or similar products manufactured and marketed by Mercury Marine. Also, that they have been trained in the recommended installation procedures of these products, which includes the use of mechanics' common hand tools and the special Mercury Marine or recommended tools from other suppliers.

We could not possibly know of and advise the marine trade of all conceivable procedures by which an installation might be performed and of the possible hazards and/or results of each method. We have not undertaken any such wide evaluation. Therefore, anyone who uses an installation procedure or tool that is not recommended by the manufacturer must first completely satisfy himself that neither his nor the product's safety will be endangered by the installation procedure selected. All information, illustrations, and specifications contained in this manual are based on the latest product information available at time of publication. As required, revisions to this manual will be sent to all OEM boat companies.

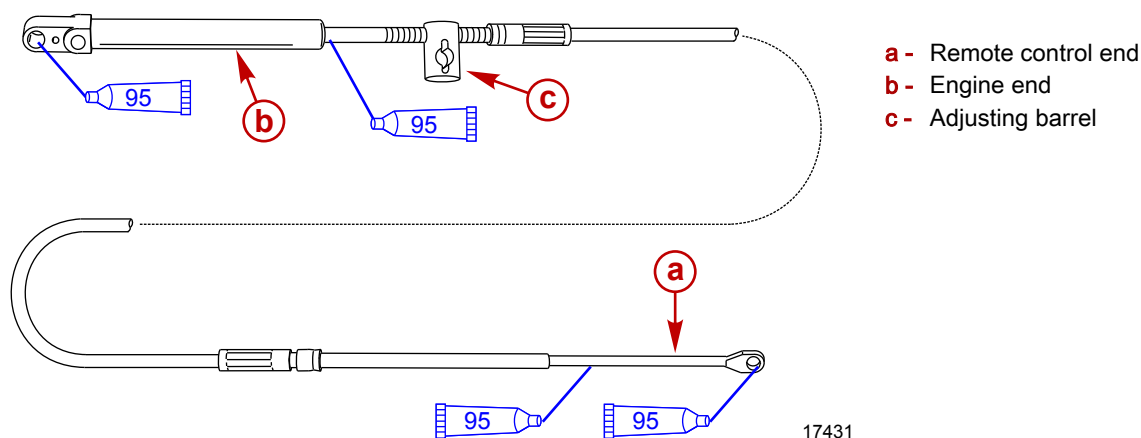
Selecting GEN II Remote Control Cables


Mercury - Mariner - Force - Mercury MerCruiser

Refer to the **Mercury Precision Parts Accessories Guide** for the available shift and throttle cables for your application. This control requires the use of Mercury/Quicksilver GEN II shift and throttle cables.

IMPORTANT: Remote control cables must be the correct length. Sharp bends on too-short of cables result in kinks. Too-long of cables require unnecessary bends and/or loops. Both conditions place extra stress on the cables.

IMPORTANT: Use 2-4-C with PTFE to lubricate the shift cable and throttle cable.



Tube Ref No.	Description	Where Used	Part No.
 95	2-4-C with PTFE	Shift cable/throttle cable lubrication points	92-802859A 1

NOTE: Allow for clearance of the cables directly behind the remote control. Cable radius at any one point must not be less than 305 mm (12 in.).

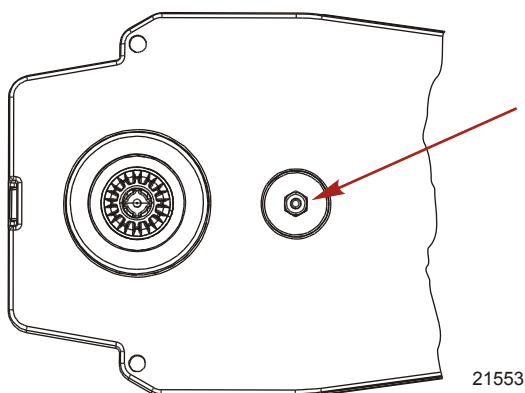
General Installation Information

IMPORTANT: The control handle friction adjustment must be made prior to installation.

Control Handle Friction Adjustment

The control handle friction is preset from the factory. However, it can be adjusted.

- Use an 11/32 in. nut driver or socket wrench to carefully adjust the control handle friction. To increase friction, turn the adjusting nut clockwise. To decrease friction, turn the adjusting nut counterclockwise.
- IMPORTANT:** Control handle friction is necessary for proper mechanical control operation. Insufficient friction may cause undesirable control arm operation.




Reinstallation of Control Handle

⚠ WARNING

Improper installation can result in sudden, unexpected loss of throttle and shift control, resulting in serious injury or death. Install all control components properly.

1. If the control handle is removed and reinstalled for any reason, apply Loctite 271 Threadlocker on the threads of the control handle retaining screw.
2. Tighten the control handle retaining screw to the specified torque.

Tube Ref No.	Description	Where Used	Part No.
 7	Loctite 271 Threadlocker	Control handle retaining screw threads	92-809819

Description	Nm	lb-in.	lb-ft
Control handle retaining screw	17	150	–

Control Module Mounting

IMPORTANT: The control handle friction adjustment must be made prior to the installation of the remote control.

NOTE: The gasket and mounting base must be placed over the console control mount opening prior to installing the shift and throttle cables to the control module.

1. Select the mounting area for the remote control. Select the template for the type of application. Follow the template directions when cutting and drilling the mounting surface.
2. Connect the control cables and install the rear cover to the remote control. Refer to the **Throttle and Shift Cable Installation** in this instruction sheet.
3. Install the remote control following the mounting instructions. Make necessary wiring connections by selecting the correct wiring diagram for the remote control model installed.
4. Install and adjust the shift and throttle cables to the power package as outlined in the instructions which accompany the power package or refer to the **Product Service Manual**.

Final Checks and Adjustments

1. Recheck the tightness of the control handle retaining screw. Tighten to the specified torque.

Description	Nm	lb-in.	lb-ft
Control handle retaining screw	17	150	–

2. Before installing the back cover, recheck the throttle cable and shift cable retaining screws to ensure they are secure.
3. Ensure the back cover screws are securely tightened.
4. Before the remote control is securely fastened, verify the control cables and the control wiring harness are routed correctly.

NOTICE

Failure to rotate the propeller shaft when shifting gears or forcing the shift mechanism while the engine is not operating can result in product damage. If you must shift gears with the engine off, manually rotate the propeller shaft in the appropriate direction.

5. Operate the control handle several times (see **Notice** preceding). Any binding or stiffness in the operation of the control handle is usually caused by the following:
 - a. Bends or tension on the control cables near the control.
 - b. Excessive number of bends in the cables.
 - c. Bends are too small in the cables.
 - d. Tight engine linkage.
 - e. Cable ties strapped too close to the control module.
 - f. Control handle friction adjustment.
 - g. Improper adjustment at the engine.

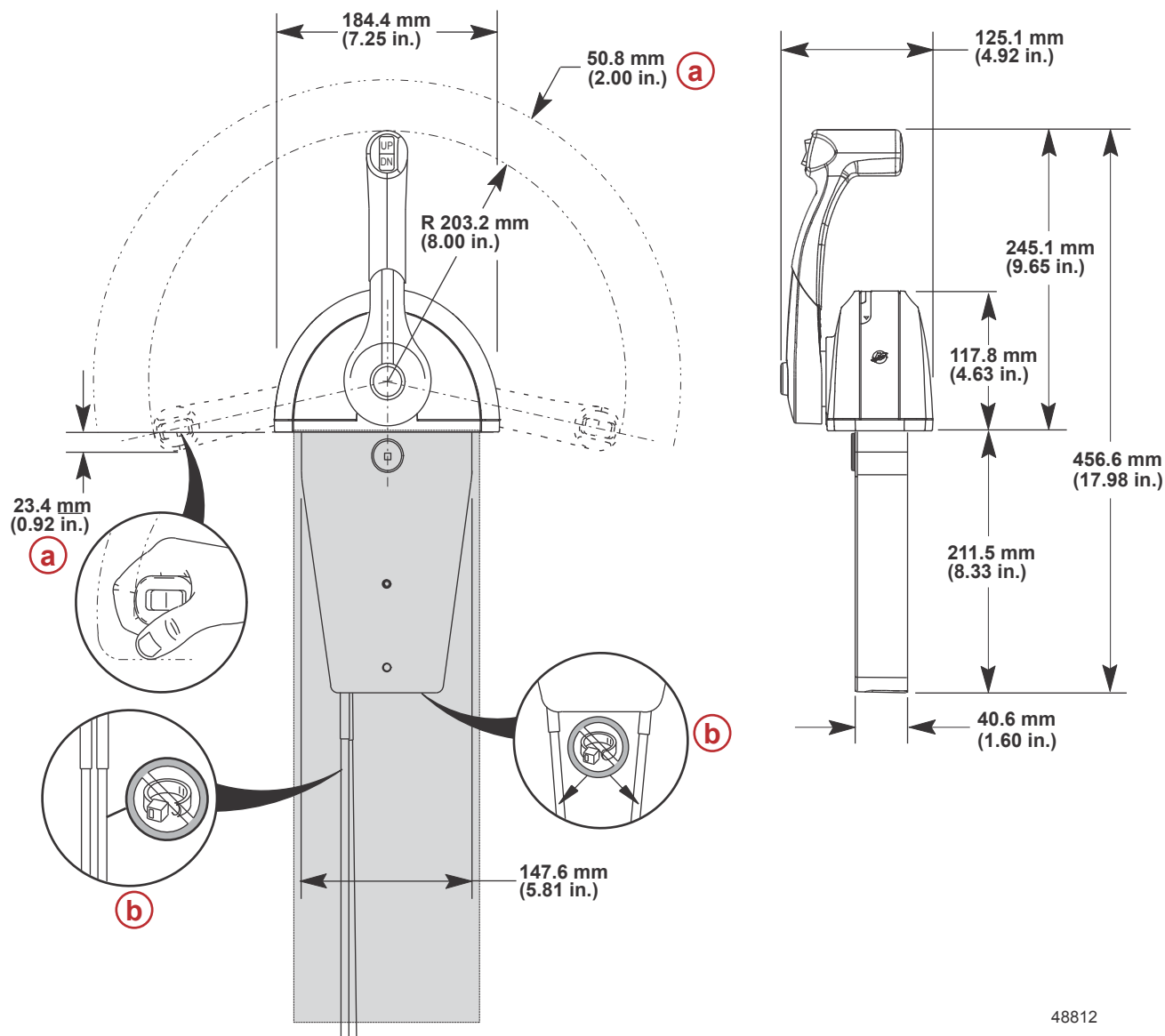
⚠ WARNING

Performing tests with the engine running may cause the propeller to rotate and result in serious injury or death. Use caution when performing a test that requires the engine running, and remove the propeller to avoid injury.

6. Check the operation of the neutral start safety switch. The engine must only crank when the remote control is in the neutral position.

Required Mounting Clearance for Single Handle Remote Control

IMPORTANT: Ensure the remote control has adequate clearance and does not contact other components. The cable path should be free of obstructions. See shaded area.



48812

a - Hand clearance

b - If the shift and throttle cables are not mounted in the same housing slot position, do not use cable ties to secure the control cables - an increase in the shift and throttle load will be noticed

Drilling Mounting Area Location

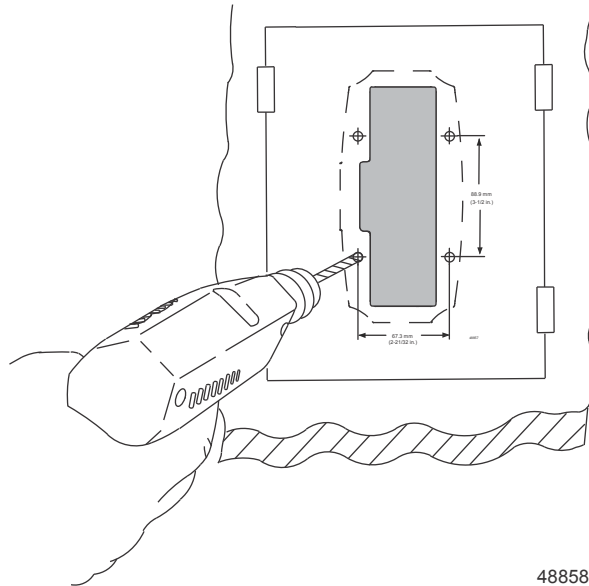
IMPORTANT: When selecting a mounting area for the remote control, the area directly behind the mounting panel must have sufficient clearance for the control module, wiring harness, control cables, and control cable movement. Refer to the required mounting clearances.

IMPORTANT: Allow sufficient clearance for the handle movement to avoid interference with boat components or other accessories. Ensure the control handle clears the dash, seats, steering wheel, and any other obstructions when rotating the control handle.

1. Remove the cutout template page located at the end of these installation instructions.
2. Ensure the area of the boat where the remote control will be mounted is clear of obstructions and wiring prior to drilling the mounting area.
3. Place the cutout template onto the control mounting surface. Secure the cutout template to the desired location with adhesive tape.

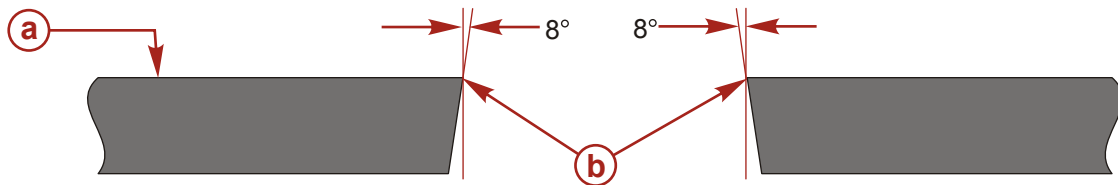
IMPORTANT: Before drilling the mounting holes to 7 mm (5/16 in.) to accommodate the use of well nuts, ensure the thickness of the mounting area does not exceed the gripping range of the well nuts used. If the thickness is beyond the gripping range of the well nuts, drill the mounting holes to the correct diameter of a common flange head type screw.

4. Drill and cut the mounting area as directed on the cutout template.



48858

5. The control module can be rotated 8° from perpendicular relative to the remote control mounting surface. An 8° undercut must be made to the mounting location to allow for adequate clearance for the control module.
6. After cutting out the mounting area, remove all sharp edges with a suitable tool.

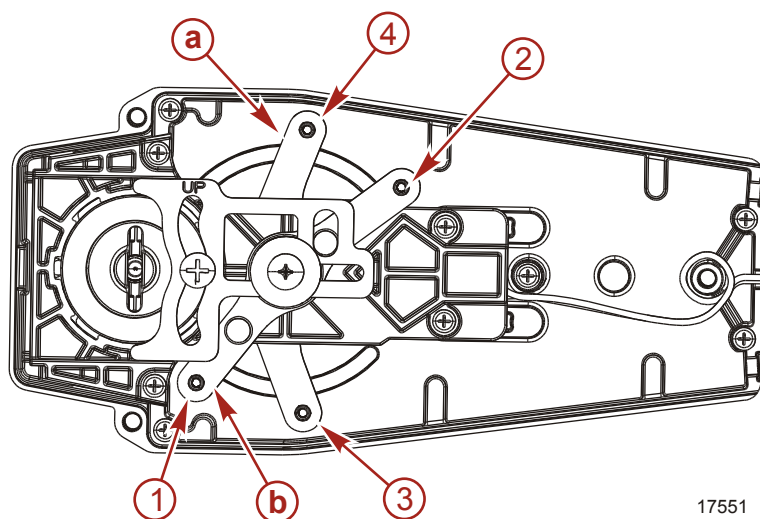


21603

- a** - Control mounting surface
- b** - 8° undercut

Throttle and Shift Cable Installation

Control Cable Anchor Attaching Location

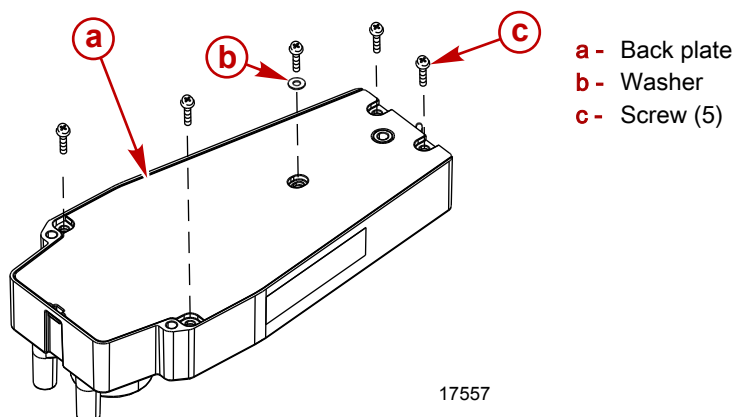


- a - Shift arm
b - Throttle arm

17551

Outboard Models (U.S. and Belgium Models Only)	Starboard Mount Control		Port Mount Control	
	Anchor Attaching Location		Anchor Attaching Location	
	Shift Cable	Throttle Cable	Shift Cable	Throttle Cable
Force outboards, except 9.9 and 15 hp	4	2	3	2
Mercury and Mariner outboards - standard rotation models, all models through 300 XS with pull throttle, includes 1994-1/2 20/25 hp	4	2	3	2
Mercury and Mariner outboards - 18 hp, 20 hp, and 25 hp of U.S. origin, with push throttle cable	4	1	3	1
Mercury and Mariner outboards - counterrotation gearcase, all models through 300 XS, unless listed below	3	2	4	2
Mercury and Mariner outboards - standard rotation gearcase, 250 hp/275 hp 3.4L	3	2	4	2
Mercury and Mariner outboards - counterrotation gearcase, 250 hp/275 hp 3.4L	4	2	3	2
Mercury outboards - standard rotation gearcase, 3.0L EFI, OptiMax S/N 1B752547 and above	4	2	3	2
Mercury outboards - counterrotation gearcase, 3.0L EFI, OptiMax S/N 1B752547 and above	4	2	3	2
Mercury 3.0L outboards with Torque Master gearcase S/N 1B973743 and below	4	2	3	2
Mercury 3.0L outboards with Torque Master II gearcase S/N 1B973744 and above	4	2	3	2

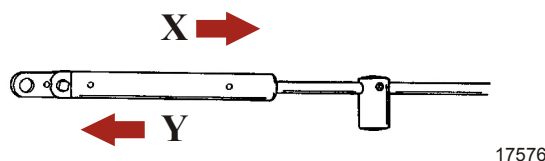
1. Remove the screws securing the back plate to the control module.



IMPORTANT: Determine the type of drive unit rotation the cable is installed onto. The shift cable must be correctly installed at the remote control assembly for the appropriate drive unit rotation; standard or counterrotation.

NOTE: For Bravo Three, Blackhawk Drive, and for 3.0 Liter EFI GEN II and OptiMax GEN II outboard models, refer to the instructions for standard rotation control cable installation.

2. **Mercury MerCruiser models standard rotation** - The control cable must be installed in the remote control so the cable end will move in the direction of "X" when the shift handle is placed in the forward position.
3. **Mercury MerCruiser models counterrotation** - The control cable must be installed in the remote control so the cable end will move in the direction of "Y" when the shift handle is placed in the forward position.



Direction of arrow (viewed at shift plate)

Mercury MerCruiser Models	Standard Rotation		Counterrotation	
Starboard Mount Mechanical Control	Anchor Attaching Location		Anchor Attaching Location	
	Shift Cable	Throttle Cable	Shift Cable	Throttle Cable
Direction of arrow	X	X	Y	X
Lever number	4	2	3	2

Typical Throttle and Shift Cable Installation, Outboard and Mercury MerCruiser

⚠ WARNING

Improper installation can result in sudden, unexpected loss of throttle and shift control, resulting in serious injury or death. Install all control components properly.

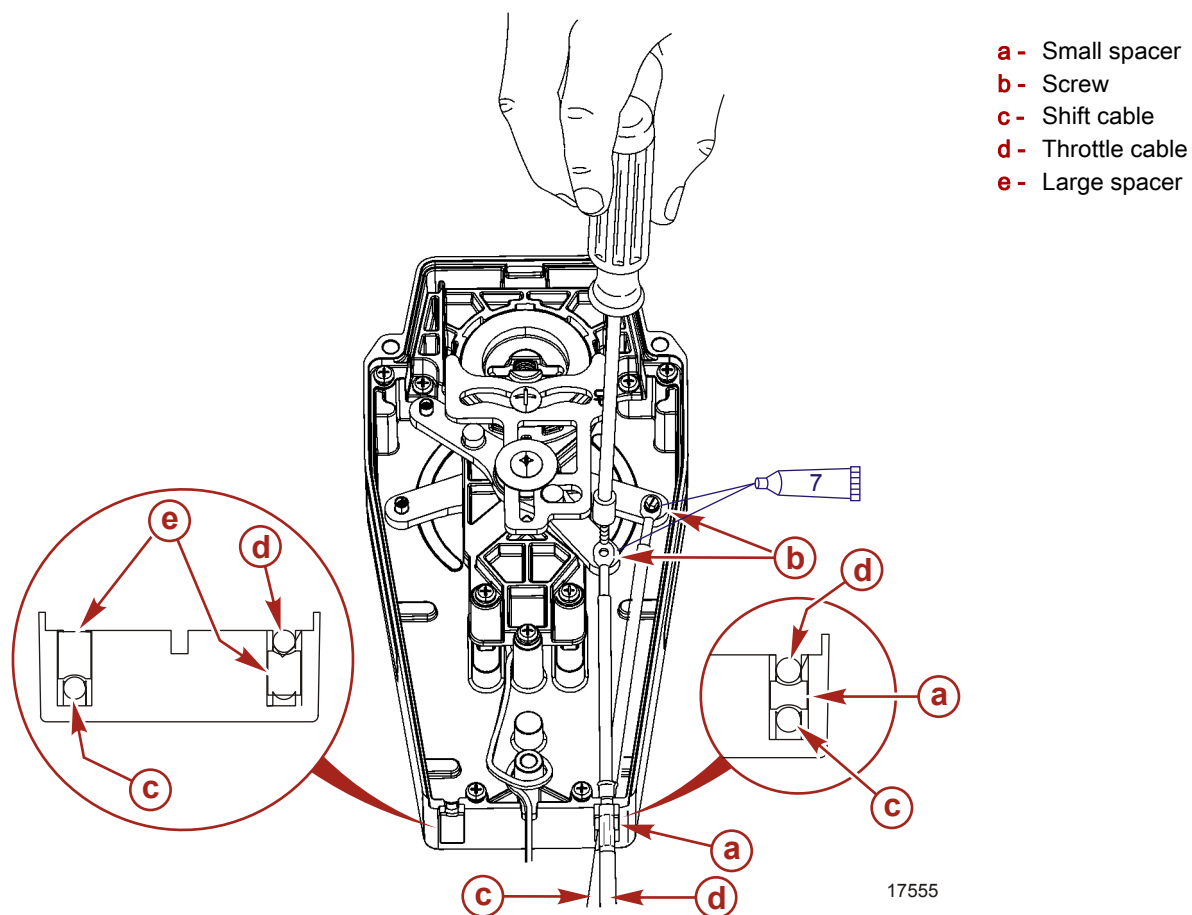
IMPORTANT: Threads of the control cable fastener screws contain a threadlocker. Additional threadlocker should not be applied during the original installation. If the screws are installed and then removed for any reason, apply an appropriate amount of Loctite 271 Threadlocker on the screw threads and tighten to the specified torque. Failure to apply Loctite 271 Threadlocker on the cable fastener screw threads, or to tighten screws to the specified torque, can lead to the screws loosening, which could result in loss of throttle or shift control.


IMPORTANT: Applying too much Loctite can result in the locking agent contacting other moving parts of the control, preventing or limiting proper operation.

Description	Nm	lb-in.	lb-ft
Control throttle and shift cable screws	2.8	25	–

1. Apply Loctite 271 Threadlocker to the threads of the cable fastener screws.
2. Connect the control cables to the appropriate arm in the remote control module.

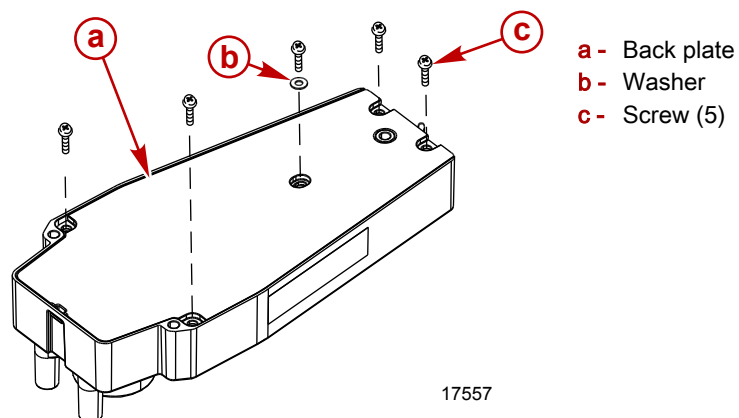
- Tighten the cable fastener screws to the specified torque.



Tube Ref No.	Description	Where Used	Part No.
 7	Loctite 271 Threadlocker	Control cable fastener screw threads	92-809819

Description	Nm	lb-in.	lb-ft
Control cable fastener screws	2.8	25	–

- After installing the control cables, secure the back plate with five screws and the washer. Tighten the screws to the specified torque.



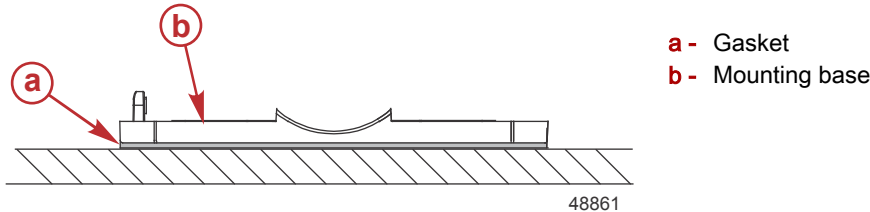
Description	Nm	lb-in.	lb-ft
Back plate screws (5)	1.1	10	–

Mounting the Remote Control

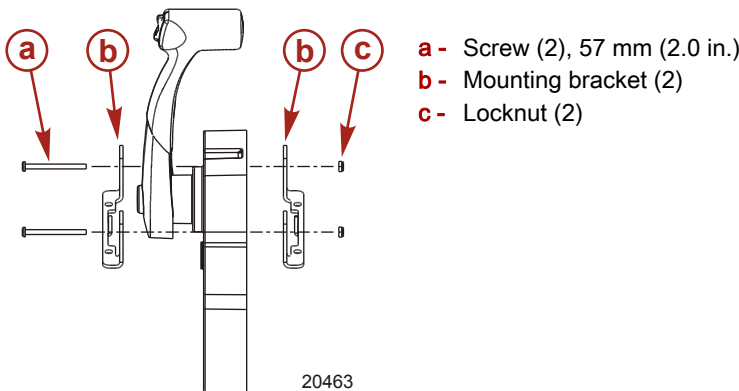
Single Handle Console Control Models

NOTE: The gasket and mounting base must be placed over the console control mount opening prior to installing the shift and throttle cables to the control module.

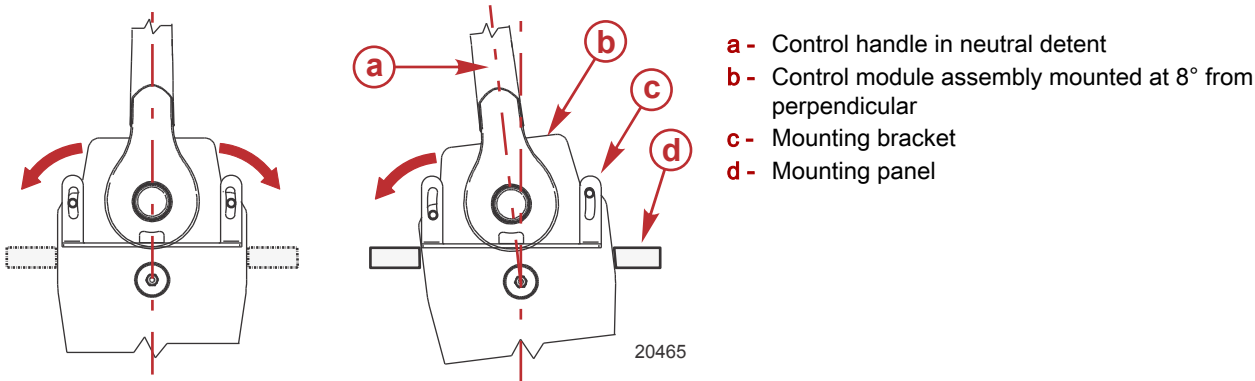
- 1. Place the gasket and mounting base over the console control mount opening prior to installing the shift and throttle cables to the control module.



- 2. Install the mounting brackets to the control module with two 57 mm (2.0 in.) screws and locknuts. Do not tighten the screws at this time.



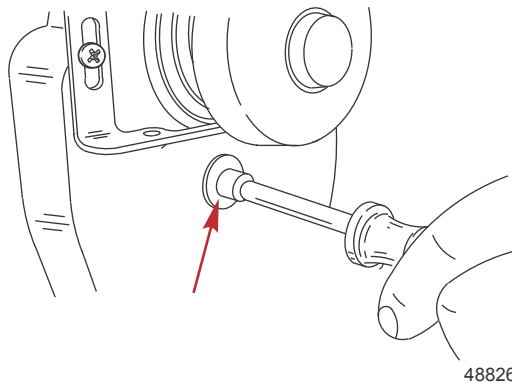
- 3. Place the control module assembly in the mounting cutout and select the desired angle of the control handle relative to the mounting surface. The maximum angle is 8° from perpendicular. After the angle of the handle is selected, secure the mounting brackets with the screws and locknuts. Tighten the screws to the specified torque.



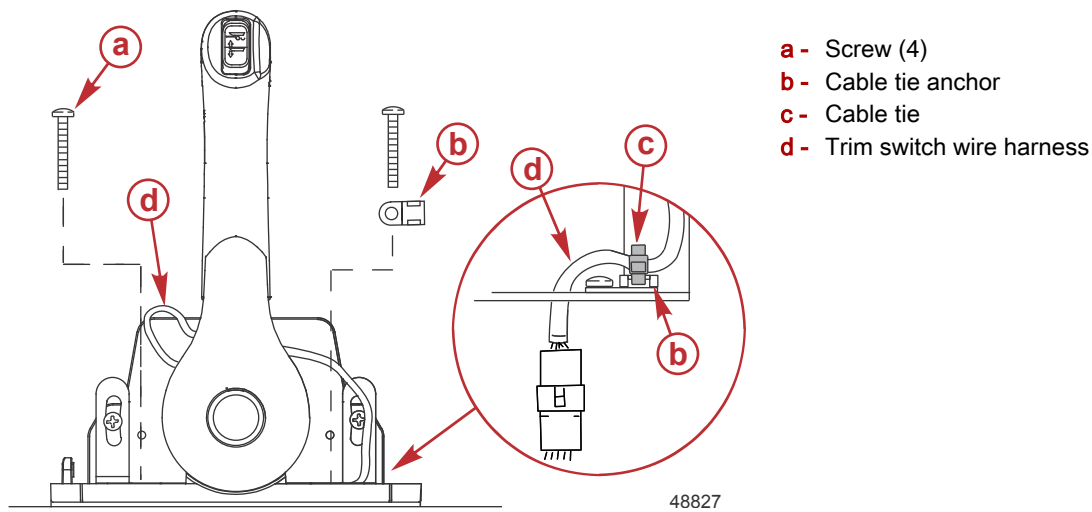
Description	Nm	lb-in.	lb-ft
Mounting bracket screws and locknuts	4	35	–

- 4. Adjust the control handle friction to the desired resistance.
 - Turn the control friction adjustment nut clockwise to increase the resistance.

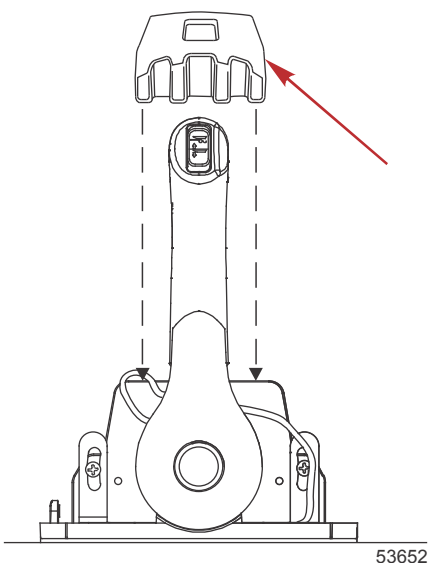
- Turn the control friction adjustment nut counterclockwise to decrease the resistance.



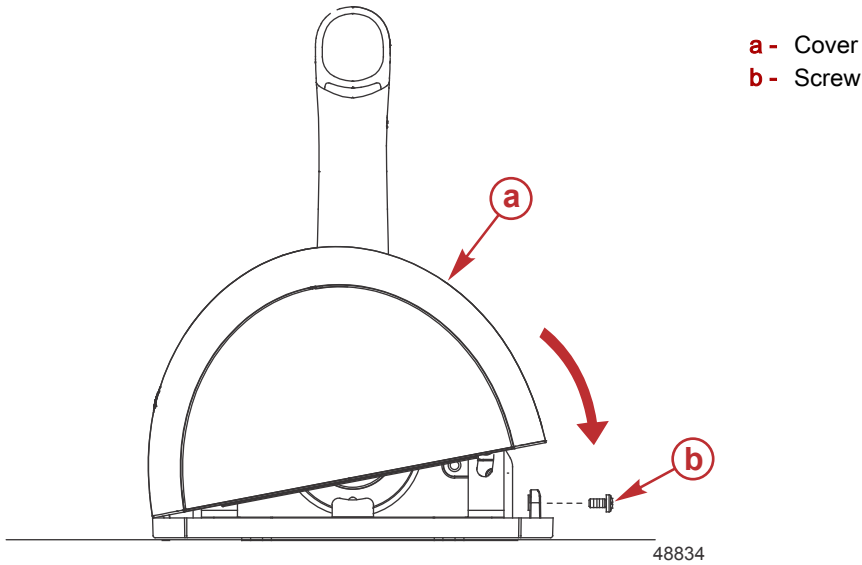
5. Install a cable tie anchor onto the mounting screw located at the right side of the handle.
6. Secure the remote control module assembly to the console with four mounting screws 38 mm (1.5 in.). Tighten the screws securely.
IMPORTANT: Ensure the trim switch wire harness has enough slack so that it will move freely with the full range of the control handle.
7. Provide the needed slack in the trim switch wire harness and then fasten the trim switch wire harness to the cable tie anchor with a cable tie.



8. Install the spacer on top of the remote control.



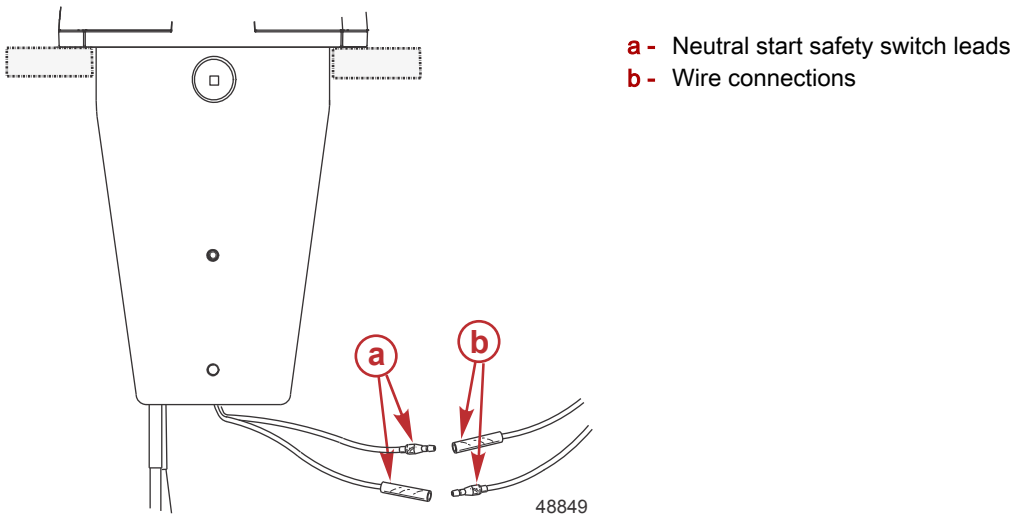
9. Hook the rear of the cover into the base and fasten the front of the cover to the base with a screw. Tighten the screw securely.



10. Connect the remote control neutral start safety switch leads to the correct wire connections. Refer to **Wiring Diagrams**.

⚠ WARNING

Starting the engine with the drive in gear can cause serious injury or death. Never operate a boat that does not have a neutral-safety-protection device.

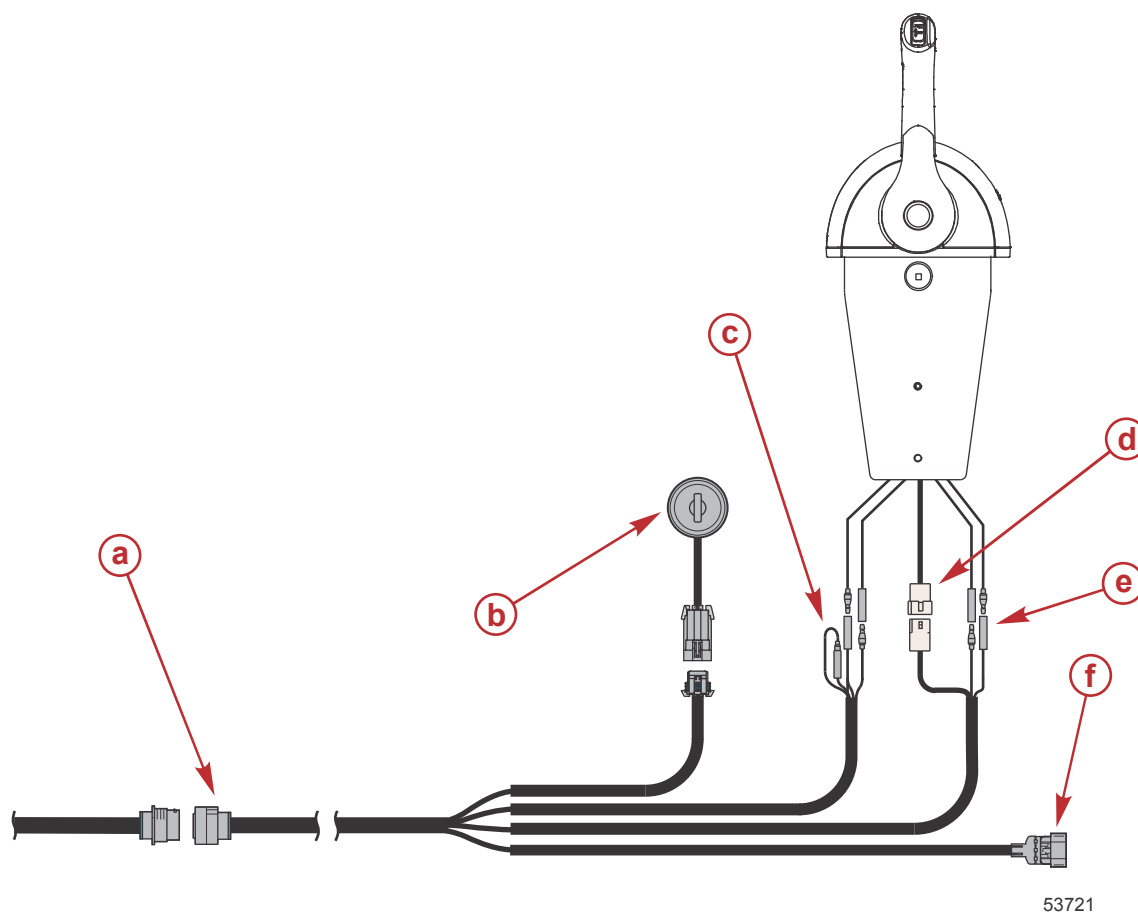


Wire Color Code Abbreviations

Wire Color Abbreviations				
BLK	Black		BLU	Blue
BRN	Brown		GRA	Gray
GRN	Green		ORN	Orange
PNK	Pink		PPL	Purple
RED	Red		TAN	Tan
WHT	White		YEL	Yellow
LT	Light		DK	Dark

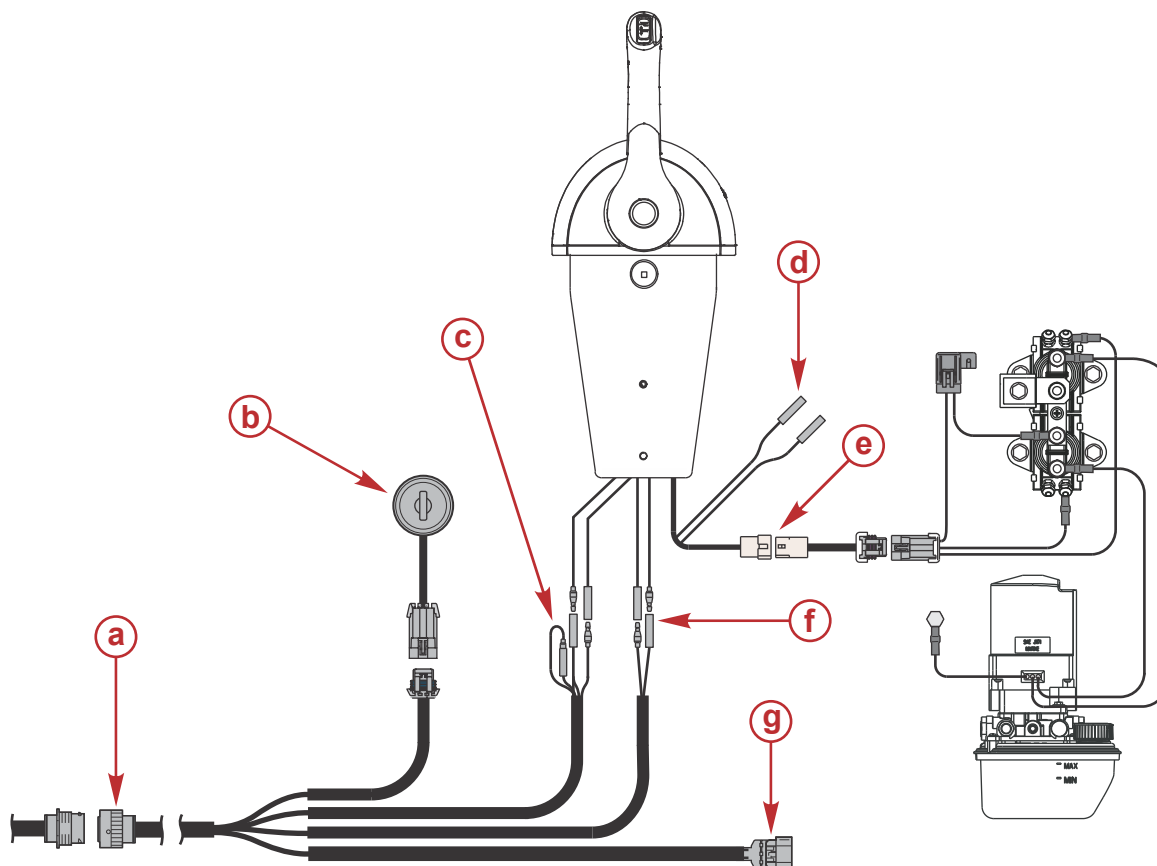
Wiring Diagrams

Single Outboard



- a** - 14-pin connector
- b** - Ignition key switch
- c** - Lanyard connection for MCM models
- d** - Power trim connector
- e** - Neutral start safety switch leads
- f** - Analog gauge harness

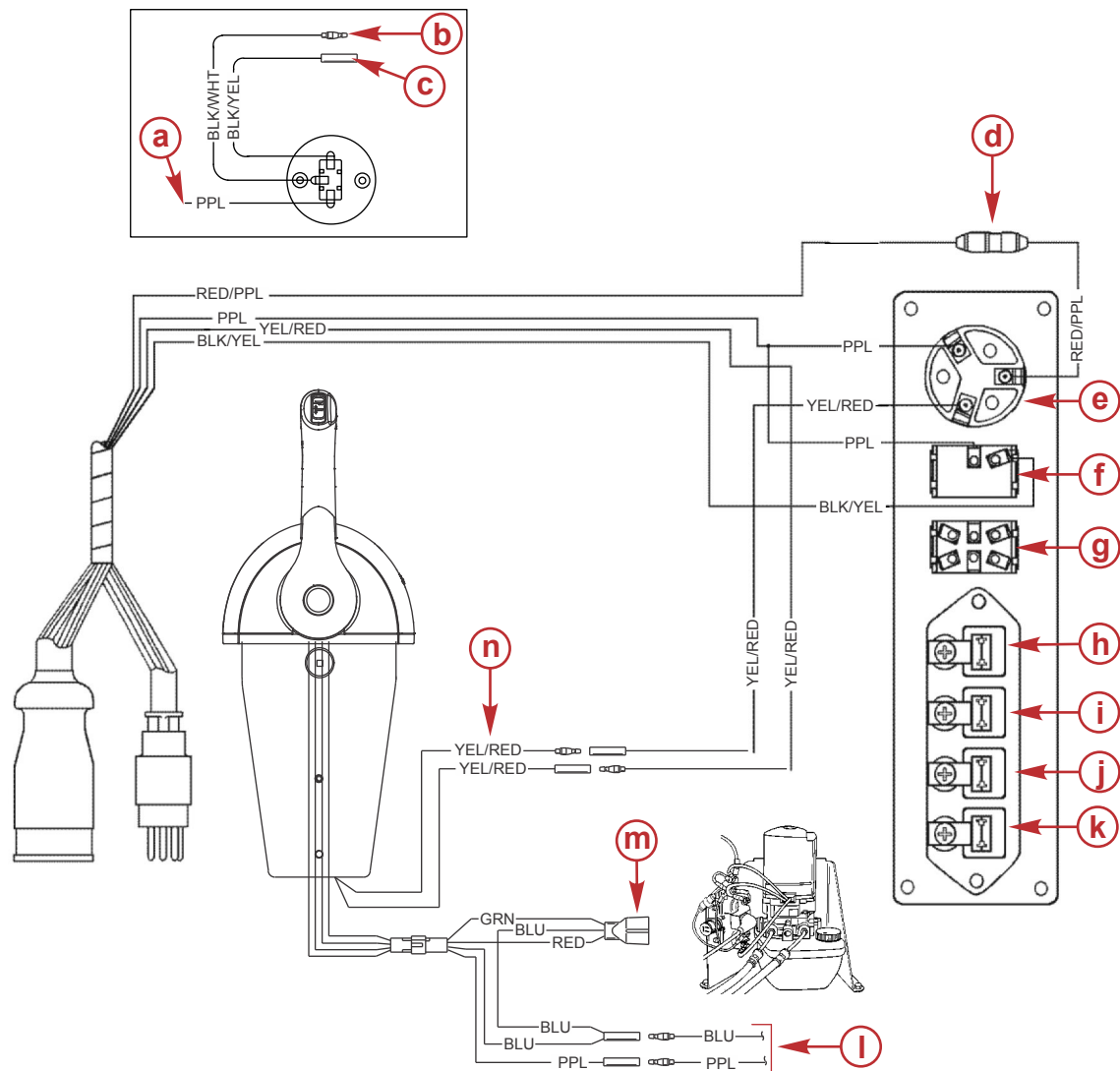
Single Mercury MerCruiser - Gasoline Models



53722

- a** - 14-pin connector
- b** - Ignition key switch
- c** - Lanyard connection for MCM models
- d** - Trim limit switch
- e** - Power trim harness connector
- f** - Neutral start safety switch leads
- g** - Analog gauge harness

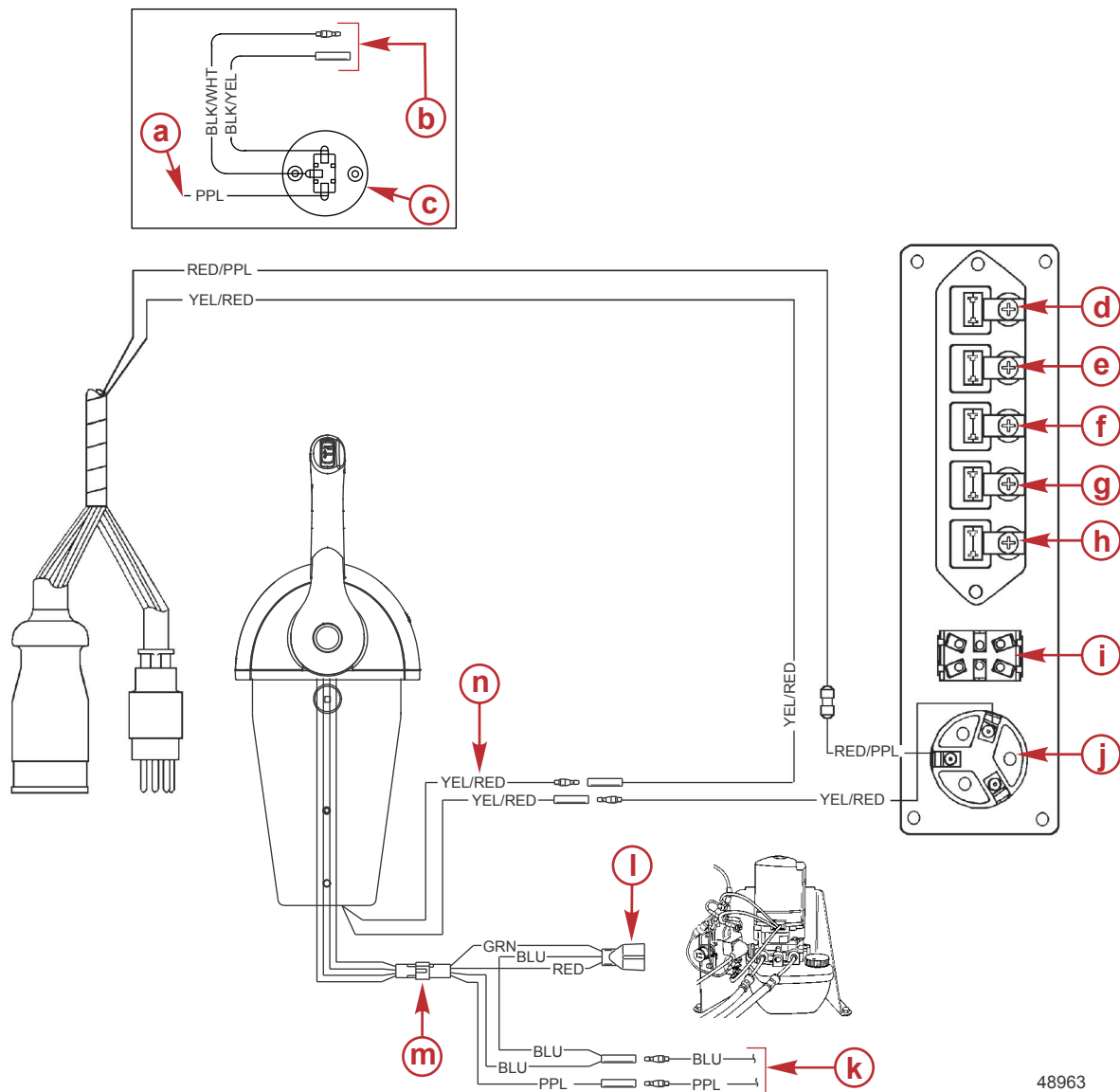
Single Mercury MerCruiser - Diesel Models D3.0L/150, D3.6L/180, D4.2L/220



48961

- a** - 12 volt source
- b** - Preheat
- c** - Alternator
- d** - Fuse
- e** - Ignition key switch
- f** - Stop switch
- g** - Light switch and audio test
- h** - Preheat indicator
- i** - Alternator indicator
- j** - Oil pressure indicator
- k** - Coolant temperature indicator
- l** - To trim limit switch
- m** - Power trim harness connector
- n** - Neutral start safety switch leads

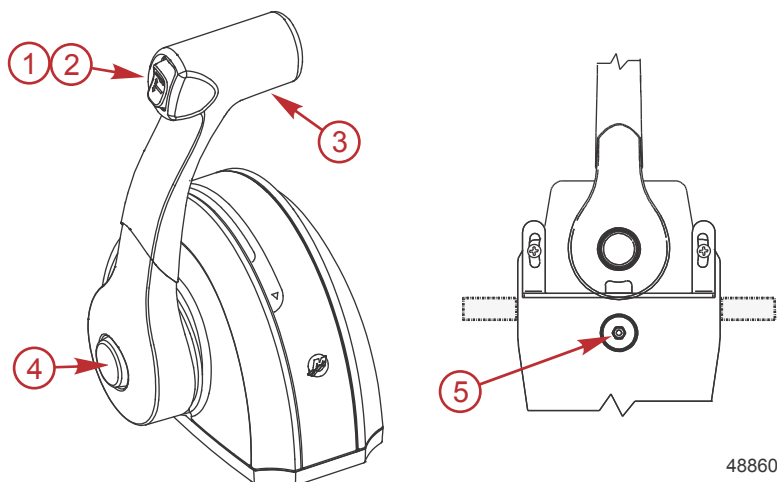
Single Mercury MerCruiser - Diesel Model D7.3L/270



48963

- a** - 12 volt source
- b** - Lanyard stop switch leads
- c** - Lanyard stop switch
- d** - Water in fuel indicator
- e** - Coolant temperature indicator
- f** - Oil pressure indicator
- g** - Alternator indicator
- h** - Preheat indicator
- i** - Light switch and audio test
- j** - Ignition key switch
- k** - To trim limit switch
- l** - Power trim harness connector
- m** - Plastic connector
- n** - Neutral start safety switch leads

Features and Operation



48860

1. **Power trim switch (if equipped)** - Used to trim or raise drive unit for trailering, launching, beaching, or shallow water operation. Refer to the **Operation and Maintenance Manual** for detailed power trim/tilt operating procedures.
2. **Trailer switch (if equipped)** - Used to raise the drive unit beyond the maximum trim position. Refer to the **Operation and Maintenance Manual** for detailed trailer switch operation.
3. **Control handle** - Operation of the shift and throttle are controlled by the movement of the control handle. Push the control handle forward from neutral with a quick firm motion to the first detent for forward gear. Continue pushing forward to increase speed. Pull the control handle back from neutral with a quick firm motion to the first detent for reverse gear. Continue pulling back to increase speed.

NOTICE

Failure to rotate the propeller shaft when shifting gears or forcing the shift mechanism while the engine is not operating can result in product damage. If you must shift gears with the engine off, manually rotate the propeller shaft in the appropriate direction.

4. **Throttle only button** - Allows the engine throttle advancement without shifting the engine. This is done by disengaging the shift mechanism from the control handle. The throttle only button can be depressed only when the remote control handle is in the neutral position and should only be used to assist in starting the engine. Refer to the **Operation and Maintenance Manual** for correct throttle setting for starting the engine.
5. **Control handle throttle friction adjustment nut** - This nut can be adjusted to increase or decrease the friction on the control handle. This will help prevent creep of the remote control handle. Turn the nut clockwise to increase friction and counterclockwise to decrease friction. Adjust to the desired friction.

Mechanical Remote Control Maintenance



⚠ WARNING

Neglect or improper maintenance, repairs, or inspections of the power package can result in product damage or serious injury or death. Perform all procedures as described in this manual. If you are not familiar with proper maintenance or service procedures, consign the work to an authorized Mercury Marine dealer.

Maintenance and safety instructions are the owner's responsibility and must be performed at the following specified intervals:

- After the first 25 hours of use, follow the instructions in 1, 2, and 3, below.
 - A regular 100-hour or yearly (whichever comes first) maintenance schedule should be followed, involving all of the instructions listed below.
1. Check all fasteners which secure the control housing to the control module, and the control and module to the boat. Tighten any loose fasteners to the specified torque listed in the installation instructions.
 2. Check the control handle retaining screw to ensure that it is tightened to the specified torque. If the screw has been removed for any reason, Loctite 271 Threadlocker should be applied to the screw threads before installation.
 3. Check electrical connections to be sure that they are tight, free of corrosion, and that all harnesses are properly secured and kept away from water.
 4. Inspection and lubrication of the remote control assembly should be performed once each year by your authorized dealer. Lubrication should also be performed if the remote control is disassembled, or if control operating effort has increased. Lubricate with 2-4-C with PTFE or equivalent.

5. Yearly inspection of the cables for free-play should coincide with the dealer inspection and lubrication. Cable ends should be disconnected from both the engine and the control. Cable ends should be manually manipulated to feel for stiffness, binding, or tightness affecting the cable core. Worn, pinched, or corroded cables should be replaced. Mercury/Quicksilver GEN II throttle and shift cables are required for use in this remote control.

Tube Ref No.	Description	Where Used	Part No.
 7	Loctite 271 Threadlocker	Control handle retaining screw threads	92-809819
 95	2-4-C with PTFE	Remote control internal moving parts and control cable ends	92-802859A 1

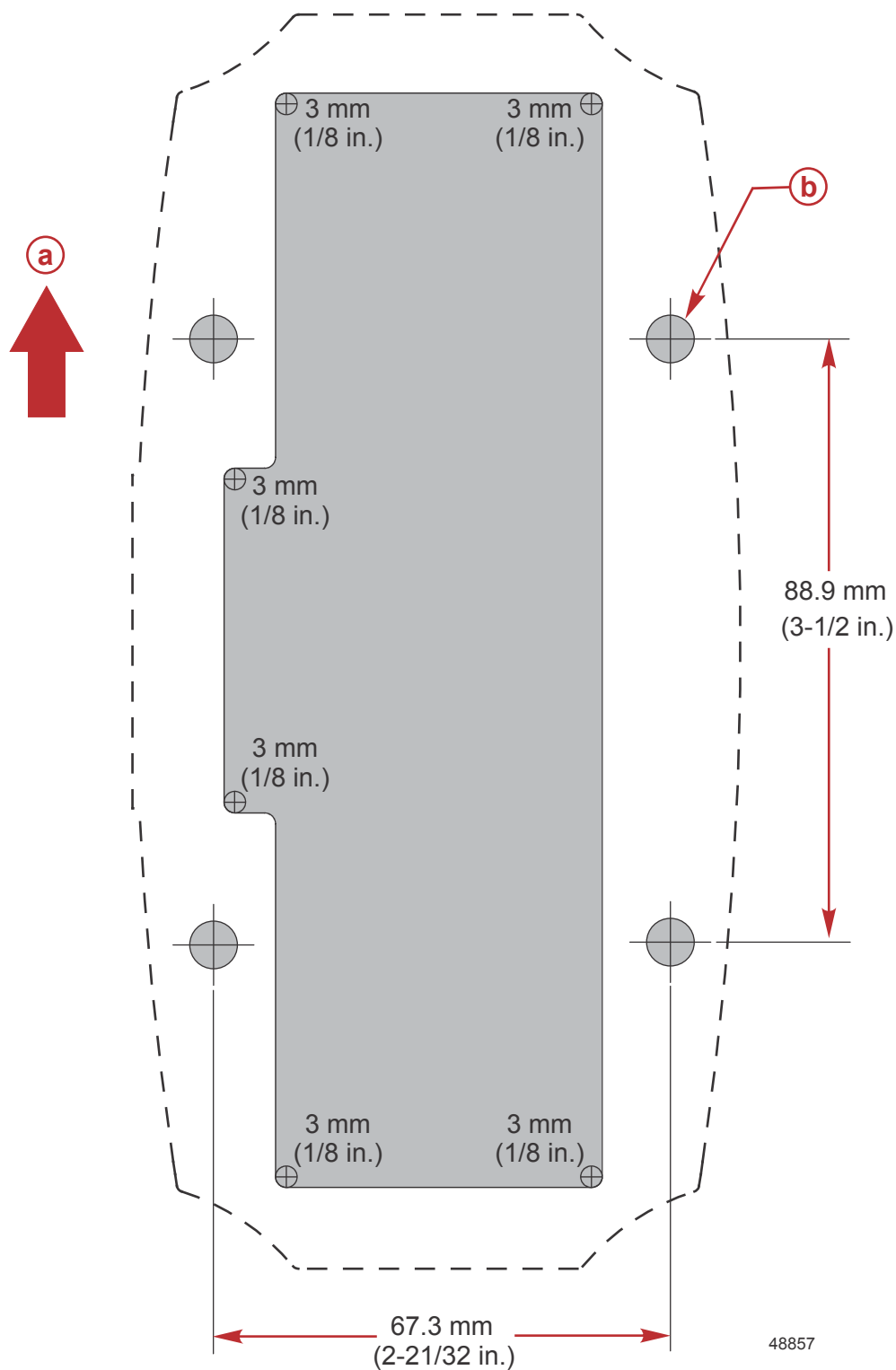
Description	Nm	lb-in.	lb-ft
Control handle retaining screw	17	150	–

Single Handle Mounting Template

IMPORTANT: Due to printing variables, the image may have changed from the actual size. Check this template with the mounting base before drilling or cutting the mounting surface, or use the mounting base as a guide to mark the mounting surface.

CONSOLE REMOTE CONTROL INSTALLATION INSTRUCTIONS

Drill the holes and cutout the shaded area.



a - Front of boat

b - Drill to the correct diameter for the fasteners used

Products of Mercury Marine
W6250 Pioneer Road
Fond du Lac, WI 54936-1939

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