PREWIRED SURFACE MOUNT REMOTE CONTROL INSTALLATION INSTRUCTIONS

APPLICATION
This surface mount remote control assembly is designed for use on Evinrude® and Johnson® outboards.

SAFETY INFORMATION
For safety reasons, this kit should be installed by an authorized Evinrude® / Johnson® dealer. This instruction sheet is not a substitute for work experience. Additional helpful information may be found in other service literature for your engine.

This instruction sheet uses the following signal words identifying important safety messages.

**DANGER**
Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.

**WARNING**
Indicates a potentially hazardous situation which, if not avoided, CAN result in severe injury or death.

**CAUTION**
Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate personal injury or property damage. It also may be used to alert against unsafe practices.

**IMPORTANT**: Identifies information that will help prevent damage to machinery and appears next to information that controls correct assembly and operation of the product.

Always follow common shop safety practices. If you have not had training related to common shop safety practices, you should do so to protect yourself, as well as the people around you.

It is understood that this instruction sheet may be translated into other languages. In the event of any discrepancy, the English version shall prevail.

DO NOT do any repairs until you have read the instructions and checked the pictures relating to the repairs.

Be careful, and never rush or guess a service procedure. Human error is caused by many factors: carelessness, fatigue, overload, preoccupation, unfamiliarity with the product, and drugs and alcohol use, to name a few. Damage to a boat and outboard can be fixed in a short period of time, but injury or death has a lasting effect.

When replacement parts are required, use Evinrude/Johnson Genuine Parts or parts with equivalent characteristics, including type, strength and material. Using substandard parts could result in injury or product malfunction.

Torque wrench tightening specifications must be strictly followed. Replace any locking fastener (locknut or patch screw) if its locking feature becomes weak. Definite resistance to turning must be felt when reusing a locking fastener. If replacement is specified or required because the locking fastener has become weak, use only authorized Evinrude/Johnson Genuine Parts.

If you use procedures or service tools that are not recommended in this instruction sheet, YOU ALONE must decide if your actions might injure people or damage the outboard.

**TO THE INSTALLER**: Give this sheet to the owner. Advise the owner of any special operation or maintenance information contained in the instructions.

**TO THE OWNER**: Save these instructions in your owner’s kit. This sheet contains information important to the future use and maintenance of your outboard.
## CONTENTS OF KIT

**Ref** | **P/N** | Name of Part | **Qty**
--- | --- | --- | ---
* | 5006180 | REMOTE CONTROL w/ TRIM SW | 1
* | 5006181 | REMOTE CONTROL | 1
1 | NA | *REMOTE CONTROL AY | 1
2 | 176360 | *HORN | 1
3 | 175974 | *SWITCH, KEY & LANYARD | 1
4 | 176288 | **LANYARD Assy. | 1
5 | 514696 | *CONNECTOR, 3-Pin | 1
6 | 514697 | *LOCK WEDGE, 3-Pin connector | 1
7 | 5006550 | *MOUNTING BOLT & SPACER KIT | 1
REMOTE CONTROL FEATURES

List of Features

- Neutral Lock
- “Start in gear prevention” switch
- Warning horn included
- Adjustable throttle friction
- Pigtail wiring harness – correct ignition wiring harness must be ordered separately
- Uses standard Evinrude / Johnson control cables (1979 and newer type)
REMOTE CONTROL OPERATION

Read and familiarize yourself with the complete operation of the remote control before attempting to start the outboard.

IMPORTANT: The operation of this remote control may vary from one outboard model to another. Refer to outboard’s operator’s guide for specific instructions related to outboard.

Emergency Stop Feature of Key Switch

Push clip of emergency stop lanyard onto key switch as shown.

Lanyard MUST be securely attached to operator.

If operator is thrown from helm, lanyard will pull clip from key switch to stop outboard.

IMPORTANT: In an emergency, a passenger can put control handle in NEUTRAL and restart outboard without lanyard.

Fast Idle Lever

Use of the fast idle lever is not required on all models. Refer to operator’s guide for outboard.

The fast idle lever can be used to open throttle without shifting into gear. With control handle in NEUTRAL, lift fast idle lever to open throttle for starting and warm-up. The control is locked in NEUTRAL when fast idle lever is raised to prevent shifting into gear at higher than IDLE RPM. The control handle is unlocked when fast idle lever is all the way down.

Key Switch

Turn key switch from OFF to ON position. The warning horn should sound momentarily to indicate it is working. Turn key to START position. To use PRIME feature, push and hold key IN and turn switch to START position.

Release key as soon as motor starts. DO NOT turn key to START while outboard is running.

Push key IN momentarily (in ON position) for additional enrichment (PRIME) to keep outboard running. Not used on all models.

DO NOT run a cold outboard any faster than necessary to keep it from stalling. DO NOT exceed 2500 RPM in NEUTRAL. If raised for starting, push fast idle lever part way down as soon as outboard starts. For outboards with Quikstart™, wait until engine slows to IDLE RPM before shifting into gear. Refer to operator’s guide for specific instructions related to outboard.
Control Handle

IMPORTANT: Outboard must be OFF. If remote control cables are connected to outboard, turn propeller shaft while shifting remote control.

With control handle in NEUTRAL and fast idle lever DOWN, lift the neutral lock lever, and move control handle to FORWARD gear or REVERSE gear position. Release neutral lock lever and continue movement of control handle in same direction to open (advance) throttle.

Refer to Remote Control Configuration for remote control handle set-up.

Control Lever Friction Adjustment

![Diagram](image)

1. NEUTRAL
2. Fast idle lever
3. Neutral lock lever

**WARNING**

DO NOT adjust control lever friction adjustment screw with outboard running.

Move the control lever to FORWARD throttle range. Control lever should move freely. Adjust control lever friction adjustment to prevent vibration from changing throttle setting.

Use a flat head screwdriver to adjust control lever friction adjustment screw. This adjustment is used to increase or reduce the force required to move the control lever.

Turn adjustment screw clockwise to increase the friction or counterclockwise to reduce the friction.

**Warning Horn**

The warning horn sounds to alert operator when certain engine problems occur. A 1/2-second self-test beep should sound when the key switch is turned ON.

IMPORTANT: The warning horn must connect to wiring harness with a *SystemCheck*™ gauge or an audible horn driver module to be functional. Refer to Operator’s Guide and instrumentation instructions for additional information related to the outboard’s warning system.

**Trim/Tilt Switch**

Push top of switch to trim out and tilt up, or push bottom of switch to trim in and tilt down.
INSTALLATION INSTRUCTIONS

Read and familiarize yourself with the complete installation instructions of the remote control before attempting to install the remote control. Always test operation of remote control once installed.

**WARNING**

Failure to properly install and test remote control may result in remote control malfunction and loss of control of boat.

**IMPORTANT:** Refer to specific outboard installation instructions for information related to connecting remote controls to outboard.

**Select Mounting Location**

This remote control can be mounted on the starboard side of the boat, or port side of center console. In the "**starboard side mount**" position, the starboard side of the control is next to the boat mounting surface.

The control can be mounted on the port side of the boat, or starboard side of center console if the control handle is relocated to the opposite side on control. In the "**port side mount**" position, the port side of the control is next to the boat mounting surface.

Refer to **Remote Control Configuration**.

**IMPORTANT:** Remote control MUST be mounted where the key switch is readily accessible. Also, the mounting location must be a flat surface and must be strong enough to provide a rigid support. Strengthen mounting surface as necessary.

Place remote control at proposed location and check clearance around remote control handle at full throttle in FORWARD and then at full throttle in REVERSE. There must be at least 4 in. (10 cm) of clearance between the handle and any part of the boat throughout the control handle travel.

There must be at least 12 in. (30.5 cm) of clear space behind the remote control for cable routing. Control cables must be straight as they exit the remote control. Allow at least 6 in. (15.2 cm) to the beginning of the first bend of control cables.
**Determine Cable Length**

Measure from center of control handle with remote control in mounting position, along intended cable route to engine centerline at transom height as illustrated by dotted lines in diagram. Add 40 in. (1.0 m) to the measurement. This dimension is the required cable length.

*Evinrude/Johnson Genuine Parts* outboard control cables are available in one-foot increments from 5 ft. to 20 ft. lengths and two-foot increments from 20 ft. to 50 ft. lengths. Use cables that are equal to your calculated length, or are the next longer available length.

**IMPORTANT:** Route cables with fewest number of bends. Bends must never be less than 6 in. (15 cm) radius.

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**Remote Control Configuration**

The remote control lever can be positioned on either side of remote control, and the trim/tilt switch can be oriented to face the port or starboard side of remote control.

**Starboard Side Mount**

1. Port side trim/tilt switch (standard configuration)
2. Starboard side trim/tilt switch

**Port Side Mount**

1. Port side trim/tilt switch
2. Starboard side trim/tilt switch

**IMPORTANT:** Determine the required control handle orientation prior to installing remote control cables.
**Remote Control Configuration Diagrams**

**IMPORTANT:** Refer to the following diagrams for proper trim/tilt switch wire routing. Route the trim/tilt wiring through the correct hole in control housing to allow proper movement of lever and to prevent trim/tilt switch wire damage.

**Starboard Mount w/Port Side Trim/Tilt Switch**
*(Standard/Original Configuration)*

1. Port side view of remote control
2. Forward view of remote control
3. Shield
1. Port side view of remote control
2. Forward view of remote control
3. Shield
Port Mount w/Starboard Side Trim/Tilt Switch

1. Starboard side view of remote control
2. Forward view of remote control
3. Shield
Port Mount w/Port Side Trim/Tilt Switch

1. Starboard side view of remote control
2. Forward view of remote control
3. Shield
Control Lever Removal

IMPORTANT: Refer to Trim/Tilt Switch Wire Routing. Route trim/tilt wiring carefully when remote control lever and trim/tilt switch wiring are repositioned.

Refer to Remote Control Configuration Diagrams before performing the following steps. Remove back control cover. Compress tabs of trim wire cover to remove cover. Remove cover (standard configuration) and trim wire and retainer from remote control.

Loosen control lever retaining screw (12 mm) three to four rotations counterclockwise.

Support the remote control housings. Strike the screw head with a center punch and hammer to unseat control lever.

Remove the screw and washer. Detach remote control lever and joint from remote control. Place flat tip screwdriver in notch of joint to pry from control.

Loosen and remove two screws and neutral lock plate from remote control housing.

Position neutral lock plate on appropriate side of remote control housing. Install two screws with lock washers through plate and torque screws to 35 in. lbs. (4 N·m).
Trim/Tilt Switch Wire Routing

Refer to Remote Control Configuration Diagrams. Note wire positions and routings.

CAUTION

To prevent trim tilt switch wiring from being damaged, route wires carefully and provide adequate slack in wiring. Refer to Remote Control Configuration Diagrams.

Remove control lever cover and note wire position and routing and position of wiring shield. Route wire based on diagram for your specific control lever configuration. The standard configuration is shown below (starboard side mount with port side trim/tilt switch).

Route trim/tilt switch wires based on diagram for your specific control lever configuration. Use the trim/tilt wire retainer in all configurations. Route wire through the correct cutout of control housing cover. Refer to Remote Control Configuration Diagrams.

IMPORTANT: Remote control cables must be installed to check routing of tilt/trim wiring. Refer to Install Remote Control Cables.
Position lever on remote control joint. Align splines of lever with splines of joint. Neutral lock lever must align with neutral lock plate. Secure lever with screw and washer. Torque screw to 7 ft. lbs. (10 N·m).

Align wire and shield to prevent rubbing before installing control lever cover.

**IMPORTANT:** Trim/tilt wire must be routed as shown in diagrams. Refer to Remote Control Configuration Diagrams.

**Install Remote Control Cables**

Remove two screws and back cover from remote control housing.

Use *Triple-Guard*® grease to lubricate all moving mechanisms, trunnion pockets, and remote control cables.

**WARNING**

Always use new cotter pins and bend both sides of cotter pin as shown to prevent interference with remote control housing or possible dislodging of cotter pin from mounting pin.

Install shift cable and flat washer on to shift pin and secure with **new** cotter pin. Bend cotter pin as shown.
IMPORTANT: Use Evinrude/Johnson Genuine Parts or parts with equivalent characteristics, including type, strength, and material.

Install throttle cable and flat washer on to throttle pin and secure with new cotter pin. Bend cotter pin as shown.

Align throttle cable trunnion and wiring grommet with back cover. Install back cover and screws. Apply Triple-Guard grease to assembly screws. Torque screws to 36 in. lbs. (4 N·m).

If removed, position remote control joint on drive assembly and install remote control lever.

Align splines and position lever on joint. Neutral lock lever must align with neutral lock plate. Make sure trim/tilt wire shield is in position.

Secure lever with screw and washer. Torque screw to 7 ft. lbs. (10 N·m). Align wire and install cover.

Check operation and movement of control levers. Make sure control locks in NEUTRAL position and shift and throttle functions operate smoothly. Refer to REMOTE CONTROL OPERATION TEST.
Install Remote Control in Boat

Hold remote control(s) in selected position. Refer to specific outboard installation instructions for information related to connecting remote controls to outboard. Mark three mounting hole locations on mounting surface. Refer to profile drawing and use drill template if needed.

Drill three 1/4 in. (6 mm) holes.

Fasten control box in position with mounting hardware provided. Install using three each of screws, spacers, washers, lock washers, and nuts. Tighten mounting screws to 7 ft. lbs. (10 N·m).

IMPORTANT: After remote control is installed, check that at least three threads of the mounting screws are extended beyond the nut. Be sure remote control assembly is secure and does not move during operation.

Electrical Connections

Install trim and tilt wiring into electrical connector. Position wiring terminals in connector housing as indicated:

- Terminal for green/white wire in position “A”
- Terminal for blue/white wire in position “B”
- Terminal for red/white wire in position “C”

Insert lock, wedge after terminals are positioned in connector.

IMPORTANT: Apply a light coat of Electrical Grease™ onto the electrical connector seals. Push connectors together until latched.

Fasten warning horn bracket to mounting stud of gauge, or tie strap it to wiring harness. Carefully route wiring and connect two-pin position horn connector to two-socket horn connector of ignition harness. Connect six-pin key switch harness connector to six-socket connector of ignition harness.
REMOTE CONTROL OPERATION TEST

IMPORTANT: Disconnect all spark plug wires and/or disconnect crankshaft position sensor (CPS) connector to prevent outboard from starting during test procedure. If remote control cables are connected to outboard, turn propeller shaft while shifting remote control.

Depress neutral lock lever and shift control lever into FORWARD and advance throttle to FULL THROTTLE. Next, move lever back to IDLE position and then back into NEUTRAL. Notice shift detent function of lever and make sure control lever locks at NEUTRAL position. Repeat process moving control lever into REVERSE.

Remote control must shift smoothly and accurately into FORWARD, NEUTRAL, and REVERSE and throttle must move smoothly through the entire throttle range from IDLE to FULL THROTTLE (WOT). Check throttle operation in both FORWARD and REVERSE.

NEUTRAL START TEST

IMPORTANT: Disconnect all spark plug wires and/or disconnect crankshaft position sensor (CPS) connector to prevent outboard from starting during test procedure.

With control lever in NEUTRAL position, turn key switch to START. The starter should operate. With the key switch in START position and the starter cranking the engine, lift the neutral lock lever and move control lever to FORWARD. The starter should stop as lever leaves NEUTRAL.

Release key and move control lever to NEUTRAL. Turn key to START. The starter should operate.

With key switch in START position and starter cranking engine, lift neutral lock lever and move control lever to REVERSE. The starter should stop as lever leaves NEUTRAL.

WARNING

Make certain starter will not operate when the outboard is in gear. The start-in-gear prevention feature is required by the United States Coast Guard to help prevent injuries.

Remote control is designed to crank outboard in NEUTRAL only.

Use this “non running” test to make certain the starter motor will NOT operate when control lever is in FORWARD or REVERSE.

The lanyard clip may be attached to key switch or removed for the following test.

IMPORTANT: Disconnect all spark plug wires and/or disconnect crankshaft position sensor (CPS) connector to prevent outboard from starting during test procedure.

With control lever in NEUTRAL position, turn key switch to START. The starter should operate. With the key switch in START position and the starter cranking the engine, lift the neutral lock lever and move control lever to FORWARD. The starter should stop as lever leaves NEUTRAL.

Release key and move control lever to NEUTRAL. Turn key to START. The starter should operate.

With key switch in START position and starter cranking engine, lift neutral lock lever and move control lever to REVERSE. The starter should stop as lever leaves NEUTRAL.
OPERATOR TESTS AND ADJUSTMENTS

IMPORTANT: Test operation of emergency stop switch at each outing. Refer to EMERGENCY STOP SWITCH TEST. If outboard does not stop, return control to dealer for repair.

Check throttle friction. When properly adjusted, control lever should have low friction to allow easy movement in FORWARD throttle range, and not allow vibration to change throttle setting. Refer to Control Lever Friction Adjustment.

ON-WATER TEST

Secure boat to dock to prevent motion. Attach lanyard to key switch. Place control lever in NEUTRAL position. If needed, use fast idle lever. Turn key ON. Warning horn should sound momentarily as self-test. Turn key to START. Release key as soon as outboard starts. Push in on key for enrichment function if outboard is equipped. Do not turn key to START while outboard is running. Refer to outboard’s operator’s guide.

IMPORTANT: Do not exceed 2500 RPM in NEUTRAL during warm-up.

With fast idle lever all the way down, check shift operation. Check that motor shifts to FORWARD when control is shifted to FORWARD, and shifts to REVERSE when control is shifted to REVERSE.

Check that remote control operates freely and equal friction is felt in FORWARD and REVERSE throttle range of control lever.

EMERGENCY STOP SWITCH TEST

WARNING

Always use the safety lanyard when operating boat to help prevent a runaway boat and reduce the risk of personal injury or death. Check emergency stop function often.

Check emergency stop function. Install lanyard clip on key switch and start outboard.

With outboard running, remove emergency stop lanyard. Outboard must STOP. If outboard does not stop, check key switch and wiring. Repair as needed.
MAINTENANCE

CAUTION

Inspection and maintenance must be performed with outboard stopped. Disconnect emergency stop lanyard, disconnect battery cables, and remove spark plug wires from spark plugs to prevent accidental starting of outboard.

Check mounting of remote control. Tighten screws or secure as needed.

While turning propeller, check for smooth and correct operation of remote control. Observe linkages at outboard and be sure shift and throttle linkages move accurately and completely for each remote control setting.

If an abnormal condition is found, repair as needed. Replace all damaged parts. Recheck operation of remote control after servicing. Remote control must shift smoothly and accurately into FORWARD, NEUTRAL, and REVERSE, and throttle must move smoothly through the entire throttle range from IDLE to FULL THROTTLE (WOT). Check throttle operation in both FORWARD and REVERSE.

Check remote control for looseness, damage, and corrosion. Clean and replace parts as needed.

Use Triple-Guard grease to lubricate all moving mechanisms and remote control cables.

Reassemble all components disassembled for inspection and servicing. Check operation of remote control.

Start outboard and check shift and throttle operation.

With outboard running, remove emergency stop lanyard. Outboard must STOP. If outboard does not stop. Check key switch and wiring. Repair as needed.
Surface Side Mount Control

P/N 5006180/5006181

Drill Template