

## CoPilot Wireless Accessory

A good way to help determine if a malfunction is in the trolling motor or the CoPilot accessory is to remove/bypass the CoPilot system. If the motor operates correctly with a corded footpedal and the CoPilot receiver is removed from the system, then the problem is in the remote or the receiver assembly. If the motor does not operate correctly with a corded pedal and the CoPilot receiver is removed from the system, then the problem is in the trolling motor. Consult the appropriate chapter of the repair manual for information on servicing that specific model trolling motor.

**Do NOT replace the complete CoPilot as a boxed marine accessory** – just replace the defective part as shown on appropriate CoPilot parts list!

*Click on blue Case to jump to the linked discussion/resolution:*

**Case I.** Remote is not transmitting.

**Case II.** Multiple receivers have failed / been replaced on a customer's CoPilot / trolling motor combination.

**Case III.** Terrova motor equipped with CoPilot, but CoPilot doesn't work.

# CoPilot Wireless Accessory

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## **Case I. Remote is not transmitting.**

**Step 1.** The battery may be discharged. Replace battery, if needed.

**Step 2.** Receiver may not have “learned” the ID number of the remote.

- A. Remote needs to be learned. (see **ADDING / REMOVING REMOTES** below)

**Step 3.** With the foot pedal connected, the MOM-CON switch is in the CON position. An audio response will be heard if a button is pressed with the foot pedal in the CON position.

- A. The foot pedal switch must be placed in the MOM position. The receiver will not accept any commands from the remote with the switch in the CON position.

**Step 4.** If remote has been taken apart, the keypad and top case may have been installed backwards.

- A. Take remote apart (see **BATTERY REPLACEMENT** below) and reinstall case halves with the proper orientation.

## **Case II. Multiple receivers have failed / been replaced on a customer’s CoPilot / trolling motor combination.**

**Step 1.** Replace the servo motor in the drive housing assembly (or complete drive housing assembly) on the trolling motor. It is suspected that the transient voltage suppressor (TVS) on the servo motor is faulty or damaged.

## **Case III. Terrova motor equipped with CoPilot, but CoPilot doesn’t work.**

**Step 1.** Remove right motor sideplate and inspect network connection from CoPilot receiver board to main control board. Check to ensure that the five plug pins (on the main control board side) are not missing or bent and that the plug connection is fully engaged and properly seated. NOTE: when fully engaged, no yellow space will be seen between the plug ends and the plug connection will “snap” twice as they are pushed together. Reconnect power to motor or deploy motor to turn on the system ready LED and enable the system. Test for motor function using CoPilot remote transmitter. If motor does not function proceed to **Step 2**.

**Step 2.** Test motor with known good corded foot pedal. If motor functions properly with test pedal, the CoPilot remote transmitter may be faulty. Disassemble the transmitter to check battery voltage (battery is 3-volt lithium coin cell). Replace battery if voltage is low. Inspect the gold plated switch contacts on the transmitter circuit board for corrosion. If any corrosion is noted, replace the transmitter. Clean the conductive rubber contacts on the transmitter switch pads with rubbing alcohol. Reassemble and retest.

- A. If motor still does not respond to the remote transmitter try “relearning” the receiver to the transmitter.
- B. If motor still does not respond, then reprogram/relearn the receiver to a known good remote transmitter.
- C. If the CoPilot responds properly, the customer’s transmitter is faulty and needs to be replaced.
- D. If, after “learning” or programming the receiver to the “test” transmitter it still does not function, the CoPilot receiver board is faulty and needs to be replaced.

<b><u>Audio Pattern</u></b>	<b><u>What Condition Causes It</u></b>	<b><u>Occurs in Which Audio Mode</u></b>
When receiver is powered up, it sounds a beep pattern. (1 long beep, 2 short beeps, pause, repeat)	The foot pedal MOM-CON Switch is in the CON position.	All
2 second long beep	Every time the receiver is powered up and there are no remote IDs learned.	All
5 beeps	Foot pedal speed control is moved after speed has been adjusted with remote.	All
Steady tone	Hear while holding down the learn button on the receiver.	All
4 beeps	After a remote button is pressed while the receiver learns its ID.	All
A ten second long warbling sound that transitions into a steady tone.	Heard during the process used to clear all stored remote IDs. After the learn switch is released, a 2 second long beep will be heard.	All
1 beep	Pressing the INCREASE SPEED or DECREASE SPEED button.	Modes 2 and 3
1 beep	Pressing the PROP ON/OFF button to turn the prop on.	Modes 2 and 3
2 beeps	Pressing the PROP ON/OFF button to turn the prop off.	Modes 2 and 3
Single tick every 1.5 seconds	When the prop is active including when speed is set to 0.	Mode 3
1 beep	Switching to Audio Mode 1 (pressing the INCREASE SPEED and DECREASE SPEED buttons simultaneously for 1 second).	All
2 beeps	Switching to Audio Mode 2 (pressing the INCREASE SPEED and DECREASE SPEED buttons simultaneously for 1 second).	All
3 beeps	Switching to Audio Mode 3 (pressing the INCREASE SPEED and DECREASE SPEED buttons simultaneously for 1 second).	All
1 chirp	Every time the receiver is powered up and there is at least one remote ID learned.	All

### **OPERATING FREQUENCY**

- The CoPilot system operates on 433.92 MHz frequency. It has a 24-bit digital signal totaling 16 million possible combinations.

## SYSTEM FEATURES

- CoPilot is a wireless, “plug and play” accessory that allows the angler to control most corded Minn Kota PowerDrive or PowerDrive AutoPilot trolling motors from anywhere on the boat.
- CoPilot may be used with or without the corded foot pedal.
- Legacy CoPilot is compatible with any PowerDrive or AutoPilot motor with the flat foot pedal plug. There is also a CoPilot system for V2 PowerDrive units and Terrova models.
- CoPilot will not affect AutoPilot operation.
- Up to 10 remotes may be used interchangeably with the same receiver.
- The CoPilot provides finer steering control than the corded foot pedal.
- The receiver and remote are environmentally sealed and will not be affected by rain, wind or snow.
- System includes three rod mounts which allows the angler to move the remote from rod to rod.

## MISCELLANEOUS INFORMATION

- The five buttons are for PROP ON/OFF, STEER LEFT, STEER RIGHT, INCREASE SPEED, and DECREASE SPEED.  
(Terrova CoPilot has two additional buttons – HIGH BYPASS and AUTOPILOT ON/OFF.)  
(If the Terrova model does not have AutoPilot, the AUTOPILOT ON/OFF button will be non-functional.)
- Pressing the PROP ON/OFF button will turn the propeller on or off. The button does not need to be held down.  
(Press the button once to turn the motor ON; press button a second time to turn it OFF.)
- Pressing either STEERING button will cause the motor to turn in the desired direction as long as the button is held down. If a steering button is held for more than seven seconds, the steering will automatically stop.
- Pressing and releasing the INCREASE SPEED or DECREASE SPEED buttons will cause the speed to increase or decrease by one level. The speed is adjustable from level 0-10. (The prop will not turn at level 0.)

## GENERAL OPERATION Using the CoPilot with the corded foot pedal

- When the MOM-CON switch is in the MOM position, the angler may begin using the remote at any time.
- As soon as any remote button is pressed, the initial speed setting will be approximately the same as the foot pedal’s speed control position. However, the prop will not automatically turn on until the remote’s prop on/off button is pressed.
- Pressing the corded foot pedal switches will override the remote and receiver function and control will automatically go to the corded foot pedal. The prop speed will also revert to the current position of the speed control on the foot pedal.

## ADDING / REMOVING REMOTES

- The CoPilot kit already has the receiver “learned” to the ID number of the remote it is packaged with.
- To “learn” the ID number of additional remotes, follow these steps:
  - 1.) Press and hold the LEARN button located on the side of the receiver (receiver will emit a continuous tone.)
  - 2.) Press any button on the remote (receiver will beep 4 times confirming that it has “learned” the ID number of the remote and that the programming is valid and complete.)
- “Re-learning” the ID number of the same remote will not overwrite previously “learned” remotes.
- If the receiver has “learned” the ID number of ten remotes, “learning” an eleventh remote will erase or over write the first “learned” remote.
- The CoPilot allows the angler to erase all stored remote ID numbers for the receiver. To do so, follow these steps:
  - 1.) Remove power from the receiver by unplugging the receiver from the motor.
  - 2.) Press and hold the LEARN button and power up the receiver by plugging it back into the motor. Hold the learn button down for 10 seconds. During this time the receiver audio will emit a warble sound, slowly transitioning to a constant beep, and then shut off.
  - 3.) Release the LEARN button and the receiver will reboot. The receiver will chirp 4 times followed by a 1 second long beep indicating memory is empty. This audio pattern will occur each time the receiver powers up until a remote ID number is learned.

## AUDIO MODES UNIT IS FACTORY PRE-SET TO AUDIO MODE 2.

- There are three receiver audio modes available. To switch from one audio mode to another, press and hold both the INCREASE and DECREASE speed buttons on the remote down for one second. The receiver will respond with 1, 2, or 3 audible beeps indicating the corresponding receiver audio mode change.

Audio Mode 1 = All of the normal audible sounds mentioned in this owners manual.

Audio Mode 2 = Same as audio mode 1 plus an audible beep for speed increase / decrease and prop on/off.

Audio Mode 3 = Same as audio mode 2 plus the prop on audible click every few seconds.

NOTE: when the corded foot pedal is in control and the propeller is on, the prop on indicator click will be heard if the receiver is set to audio mode 3.

## BATTERY REPLACEMENT THE REPLACEMENT BATTERY MUST BE A MODEL CR2032 COIN CELL TYPE

- 1.) Temporarily ground yourself by touching a grounded metal object in order to discharge any static electricity in your body.
- 2.) Remove the four screws on the bottom of the remote case.
- 3.) Separate the case halves to access the circuit board.
- 4.) Pull back the retaining fingers of the battery holder to remove the battery (underside of circuit board).
- 5.) Install the new battery with the positive (+) side of the battery facing up (away from the circuit board). Ensure battery is snapped securely in place.
- 6.) Reassemble the remote. Note that the alignment peg in the remote case must line up with the corresponding alignment hole in the circuit board. Also note that the keypad must be positioned so that the buttons are over the end of the circuit board opposite from the alignment peg and hole. Reinstall the four case screws and tighten them as required.