

COOPER Wiring Devices

Installing and Testing a GFCI Receptacle

Please read this leaflet completely before getting started.

150AAD (REV. C)

⚠ CAUTION

- To prevent severe shock or electrocution, always turn the power OFF at the service panel before working with wiring.
- Use this GFCI receptacle with copper or copper-clad wire. Do not use it with aluminum wire.
- Do not install this GFCI receptacle on a circuit that powers life support equipment because if the GFCI trips it will shut down the equipment.
- For installation in wet locations, protect the GFCI receptacle with a weatherproof cover that will keep both the receptacle and any plugs dry.
- Must be installed in accordance with national and local electrical codes.

1. What is a GFCI?

A GFCI receptacle is different from conventional receptacles. In the event of a ground fault, a GFCI will trip and quickly stop the flow of electricity to prevent serious injury.

Definition of a ground fault:

Instead of following its normal safe path, electricity passes through a person's body to reach the ground. For example, a defective appliance can cause a ground fault.

A GFCI receptacle does not protect against circuit overloads, short circuits, or shocks. For example, you can still be shocked if you touch bare wires while standing on a non-conducting surface, such as a wood floor.

3. Should you install it?

Installing a GFCI receptacle can be more complicated than installing a conventional receptacle.

Make sure that you:

- Understand basic wiring principles and techniques
- Can interpret wiring diagrams
- Have circuit wiring experience
- Are prepared to take a few minutes to test your work, making sure that you have wired the GFCI receptacle correctly

4. LINE vs. LOAD

A cable consists of 2 or 3 wires.



LINE cable:

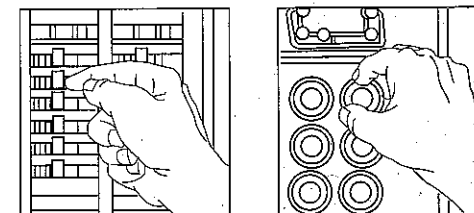
Delivers power from the service panel (breaker panel or fuse box) to the GFCI. If there is only one cable entering the electrical box, it is the LINE cable. This cable should be connected to the GFCI's LINE terminals only.

LOAD cable:

Delivers power from the GFCI to another receptacle in the circuit. This cable should be connected to the GFCI's LOAD terminals only. The LOAD terminals are under the yellow sticker. Do not remove the sticker at this time.

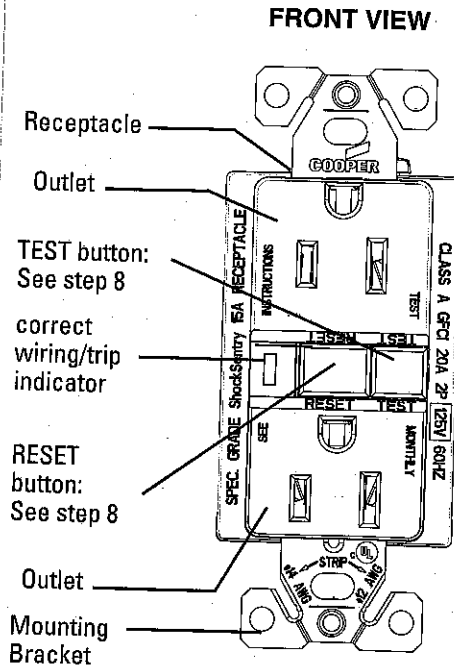
5. Turn the power OFF

Plug an electrical device, such as a lamp or radio, into the receptacle on which you are working. Turn the lamp or radio on. Then, go to the service panel. Find the breaker or fuse that protects that receptacle. Place the breaker in the OFF position or completely remove the fuse. The lamp or radio must turn OFF.



Next, plug in and turn ON the lamp or radio at the receptacle's other outlet to make sure the power is OFF at both outlets. If the power is not OFF, stop work and call an electrician to complete the installation.

2. The GFCI's features



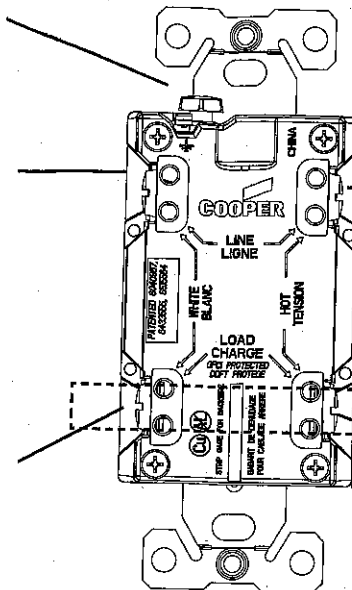
Grounding Terminal (Green):
Connection for bare copper or green wire

LINE
White terminal (Silver):
Connection for the LINE cable's white wire

LOAD
White terminal (Silver):
Connection for the LOAD cable's white wire

BACK VIEW

Screw (terminal) colors:
Green = grounding terminal
Silver = white terminals
Brass = hot terminals



6. Identify cables/wires

Important:

Do not install the GFCI receptacle in an electrical box containing (a) more than 4 wires (not including the grounding wires) or (b) cables with more than two wires (not including the grounding wire). Contact a qualified electrician if either (a) or (b) is true.

If you are replacing an old receptacle, pull it out of the electrical box without disconnecting the wires.

• If you see one cable (2-3 wires), it is the LINE cable. The receptacle is probably in position C (see diagram to the right). Remove the receptacle and go to step 7A.

• If you see two cables (4-6 wires), follow the procedure to the right. The receptacle is probably in position A or B (see diagram to the right).

Procedure: box with two cables (4-6 wires)

(a) Detach one cable's white and hot wires from the receptacle and cap each one separately with a wire connector. Make sure that they are from the same cable.

(b) Re-install the receptacle in the electrical box, attach the faceplate, then turn the power ON at the service panel.

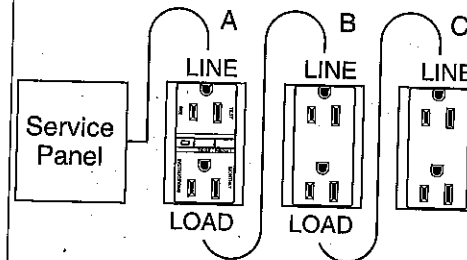
(c) Determine if power is flowing to the receptacle. If so, the capped wires are the LOAD wires. If not, the capped wires are the LINE wires.

(d) Turn the power OFF at the service panel, label the LINE and LOAD wires, then remove the receptacle.

(e) Go to step 7B.

Placement in circuit:
The GFCI's place in the circuit determines if it protects other receptacles in the circuit.

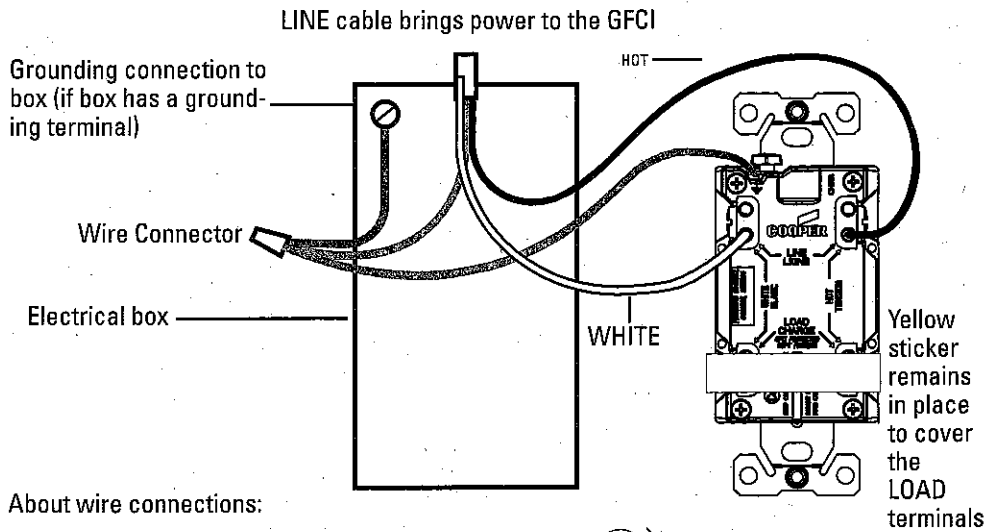
Sample circuit:



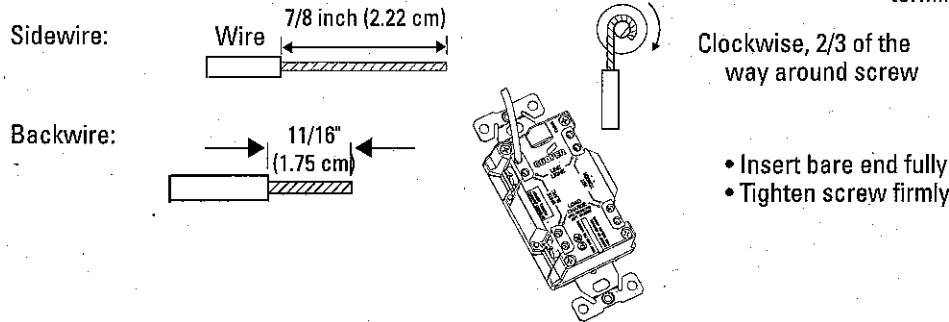
Placing the GFCI in position A will also provide protection to "load side" receptacles B and C. On the other hand, placing the GFCI in position C will not provide protection to receptacles A or B. Remember that receptacles A, B, and C can be in different rooms.

7. Connect the wires (choose A or B) ... only after reading other side completely

A: One cable (2 or 3 wires) entering the box



About wire connections:



Connect the LINE cable wires to the LINE terminals:

- The white wire connects to the White terminal (Silver)
- The black wire connects to the Hot terminal (Brass)

Connect the grounding wire (only if there is a grounding wire):

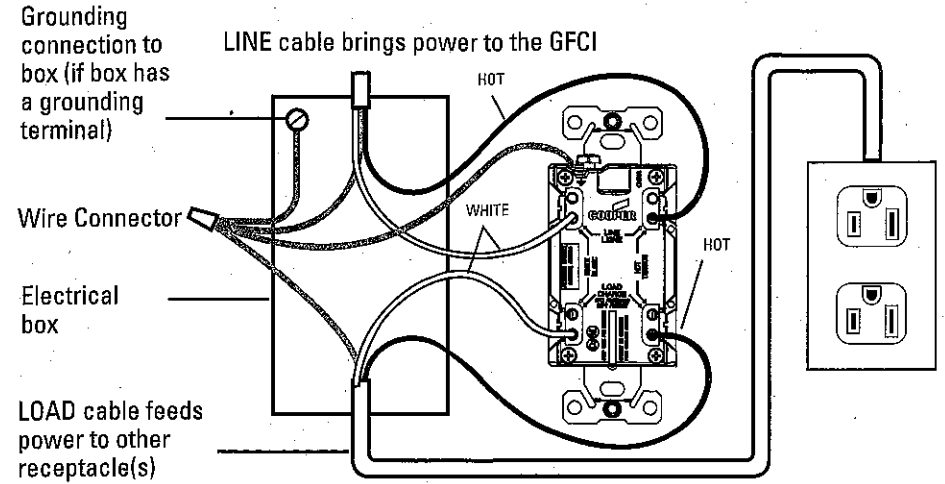
- For a box with no grounding terminal (diagram not shown): Connect the LINE cable's bare copper (or green) wire directly to the grounding terminal on the GFCI receptacle
- For a box with a grounding terminal (diagram shown above): Connect a 6-inch bare copper (or green) 12 or 14 AWG wire to the grounding terminal on the GFCI. Also connect a similar wire to the grounding terminal on the box. Connect the ends of these wires to the LINE cable's bare copper (or green) wire using a wire connector. If these wires are already in place, check the connections.

Complete the installation:

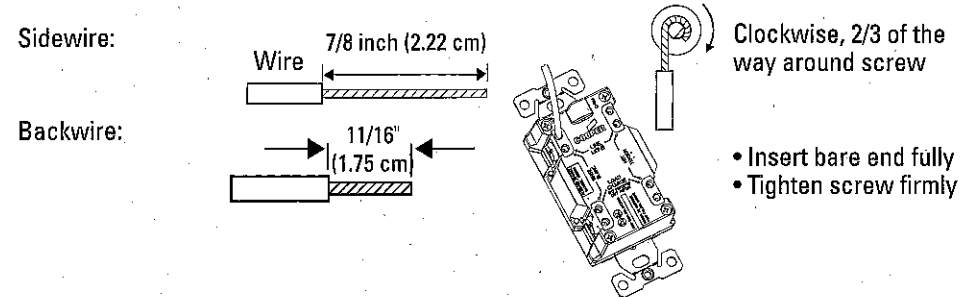
- Fold the wires into the box, keeping the grounding wire away from the White and Hot terminals. Screw the receptacle to the box and attach the faceplate.
- Go to step 8

OR

B: Two cables (4 or 6 wires) entering the box



About wire connections:



Connect the LINE cable wires to the LINE terminals:

- The white wire connects to the White terminal (Silver)
- The black wire connects to the Hot terminal (Brass)

Connect the LOAD cable wires to the LOAD terminals:

- Remove the yellow sticker to reveal the LOAD terminals
- The white wire connects to the White terminal (Silver)
- The black wire connects to the Hot terminal (Brass)

Connect the grounding wires (only if there is a grounding wire):

- Connect a 6-inch bare copper (or green) 12 or 14 AWG wire to the grounding terminal on the GFCI. If the box has a grounding terminal, also connect a similar wire to the grounding terminal on the box. Connect the ends of these wires to the LINE and LOAD cable's bare copper (or green) wire using a wire connector. If these wires are already in place, check the connections.

Complete the installation:

- Fold the wires into the box, keeping the grounding wire away from the White and Hot terminals. Screw the receptacle to the box and attach the faceplate.
- Go to step 8

8. Test your work

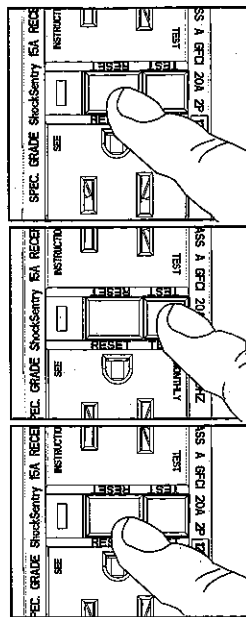
Why perform this test?

If you miswire the GFCI, it may not prevent personal injury or death due to a ground fault (electric shock).

Upon initial installation, if you mistakenly connect the LINE wires to the LOAD terminals, this Cooper GFCI will not be able to be reset, and will therefore not provide power to its receptacle face or load terminals.

Procedure:

- Turn the power ON at the service panel. Press the RESET button fully. Plug a lamp or radio into the GFCI (and leave it plugged-in) to verify that the power is ON. If there is no power, go to Troubleshooting.
- Press the TEST button in order to trip the device. This should stop the flow of electricity, making the radio or lamp shut OFF and the yellow Correct Wiring/Trip Indicator come on. To restore power, press the RESET button.
- If you installed your GFCI using step 7B, now plug a lamp or radio into surrounding receptacles to see which one(s), in addition to the GFCI, lost power when you press the TEST button. Do not plug life saving devices into any receptacles that lost power. Place a "GFCI Protected" sticker on every receptacle that lost power.
- Press the TEST button (then RESET button) every month to assure proper operation.
- Note that this Cooper GFCI is shipped in the Tripped state and cannot be Reset until it is wired correctly and powered from its Line terminals.
- Note that the RESET button will pop-out. If the power goes OFF and the correct wiring/trip indicator stays on, you have installed the GFCI receptacle correctly.
- LINE/LOAD reversal will be indicated by the reset button not staying in after being pressed. Such LINE/LOAD reversal will also be indicated by failure of the Correct Wiring/Trip Indicator to be on while the GFCI is tripped.



TROUBLESHOOTING

Turn the power OFF and check the wire connections against the appropriate wiring diagram in step 7A or 7B. Make sure that there are no loose wires or loose connections. Also, it is possible that you reversed the LINE and LOAD connections. Reverse the LINE and LOAD connections if necessary. Start the test from the beginning of step 8 if you rewired any connections to the GFCI.

NOTE: If this Cooper Wiring Devices GFCI has tripped and no longer can be reset, it has reached its "End of Life" and will no longer provide power. Replace with the same model Cooper Wiring Devices GFCI to continue to provide ground fault protection.

General Information

GFCI ratings:
15A-125V AC Duplex Receptacle
20A-125V AC Duplex Receptacle
20A-125V AC Blank Face
All rated 20A feed-through
125V Class A

COOPER'S LIMITED 2 YEAR WARRANTY

Cooper Wiring Devices warrants its Ground Fault Circuit Interrupter (GFCI) to be free of defects in materials and workmanship in normal use and service for a period of two years from date of original purchase. THIS TWO (2) YEAR LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, OBLIGATIONS, OR LIABILITIES, EXPRESSED OR IMPLIED (INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE THAT IS IN DURATION IN EXCESS OF TWO YEARS FROM THE DATE OF ORIGINAL CONSUMER PURCHASE). NO AGENT, REPRESENTATIVE, OR EMPLOYEE OF COOPER WIRING DEVICES HAS AUTHORITY TO INCREASE OR ALTER THE OBLIGATIONS OF COOPER WIRING DEVICES UNDER THIS WARRANTY.

To obtain warranty service for any properly installed Cooper GFCI that proves defective in normal use send the defective GFCI prepaid and insured to Quality Control Dept. Cooper Wiring Devices, 203 Cooper Circle, Peachtree City, GA 30269.

Cooper Wiring Devices will repair or replace the defective unit, at its option. Cooper Wiring Devices will not be responsible under this warranty if examination shows that the defective condition of the unit was caused by misuse, abuse, improper installation, alteration, improper maintenance or repair of damage in shipment to Cooper Wiring Devices.

COOPER WIRING DEVICES SHALL HAVE NO RESPONSIBILITY FOR INSTALLATION OF THE GFCI, OR FOR ANY PERSONAL INJURY, PROPERTY DAMAGE, OR ANY SPECIAL, INCIDENTAL, CONTINGENT, OR CONSEQUENTIAL DAMAGES OF ANY KIND, RESULTING FROM DEFECTS IN THE GFCI OR THE FAILURE OF THE PRODUCT TO FUNCTION IN THE EVENT OF A GROUND FAULT ON ITS PROTECTED CIRCUIT, OR FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS PRODUCT.

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