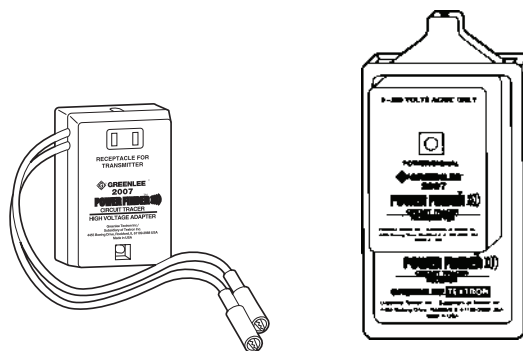
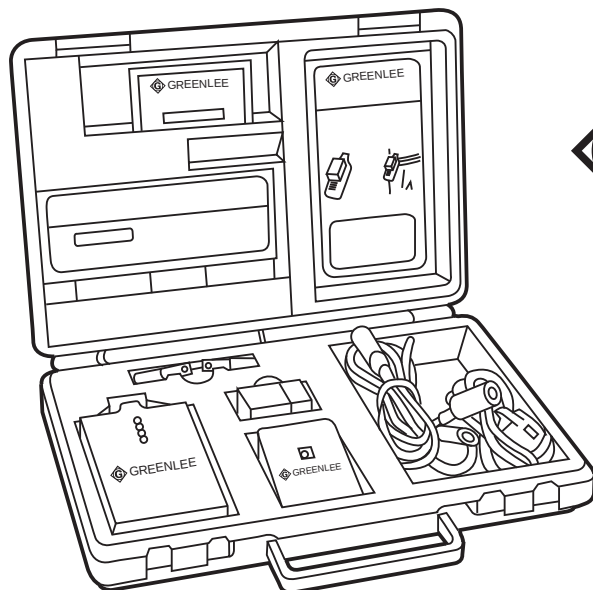


INSTRUCTION & SAFETY MANUAL MANUEL D'INSTRUCTIONS ET DE SÉCURITÉ MANUAL DE INSTRUCCIONES Y SEGURIDAD



2007 POWER FINDER™ CIRCUIT TRACER AND 38583 HIGH VOLTAGE ADAPTER

DÉTECTEUR DE CIRCUIT POWER FINDER^{MC} 2007 ET ADAPTATEUR HAUTE TENSION 38583

RASTREADOR DE CIRCUITOS POWERFINDER^{MR} 2007 Y ADAPTADOR DE ALTO VOLTAJE 38583



Read and understand this material before operating or servicing the circuit tracer. Failure to understand how to safely operate the circuit tracer could result in an accident causing serious injury or death. This tool should only be operated by qualified personnel.

Assurez-vous que vous avez lu et compris la documentation avant d'utiliser ou de faire l'entretien de ce détecteur de circuit. Si vous ne comprenez pas comment utiliser le détecteur de circuit en toute sécurité, vous pourriez provoquer un accident entraînant des blessures graves, voire mortelles. Cet outil ne doit être utilisé que par un personnel qualifié.

Leer y comprender este material antes de operar o prestar mantenimiento al rastreador de circuitos. La falta de comprensión acerca de cómo operar con seguridad el rastreador de circuitos puede ocasionar un accidente que cause lesiones graves o muerte. Esta herramienta debe ser operada solamente por personal calificado.



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INTRODUCTION

The PowerFinder™ Circuit Tracer is designed to be used by experienced, trained electrical workers to identify and/or trace circuits. This requires that the transmitter be integrated into the circuit being traced or identified and that the circuit is powered by 9 to 300 volts AC or DC (680 VAC or 1000 VDC when using the 38583 High Voltage Adapter). The transmitter is designed to plug into a standard 120 V outlet. For all other uses, a transmitter plug adapter with alligator clips and attachable receptacle blades are included.





SAFETY ALERT SYMBOL

The symbol above is used to call your attention to instructions concerning your personal safety. Watch for this symbol. It points out important safety precautions. It means “**ATTENTION! Become Alert! Your personal safety is involved!**” Read the message that follows and be alert to the possibility of personal injury or death.

DANGER

Immediate hazards which **WILL** result in severe personal injury or death.

WARNING

Hazards or unsafe practices which **COULD** result in severe personal injury or death.

CAUTION

Hazards or unsafe practices which **COULD** result in minor personal injury or property damage.

SAVE THESE INSTRUCTIONS!

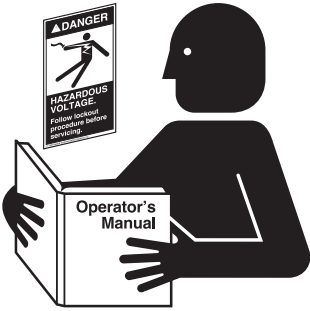
**Additional copies of this manual are available
upon request at no extra charge.**





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2007 POWER FINDER™ Circuit Tracer



! DANGER

Read and understand all operating and safety instructions before using this tracer.

Failure to read and understand instructions may result in electrocution and death.

WHAT THE POWERFINDER™ WILL DO

NOTE: All examples of circuit connections are shown in Sections 3 and 4.

The Greenlee PowerFinder™ circuit tracer will find:

CIRCUIT BREAKERS

FUSES

POWER PANELS

LIGHTING PANELS

JUNCTION BOXES

SHORTS TO GROUND

With the PowerFinder™ you can trace HOT, NEUTRAL and GROUND WIRES IN WALLS, IN CONDUIT and UNDER-GROUND.





HOW THE POWERFINDER™ OPERATES

The PowerFinder is composed of two primary components: the receiver and the transmitter. When the transmitter is plugged into any 9-300 Volt AC or DC source (680 VAC or 1000 VDC when using the 38583 High Voltage Adapter), it draws a very small current (8-100 mA) in a very unique manner: the current drawn is a crystal-controlled, precision combination of four separate frequencies. This composite signal gives it a specialized Signature.

To be received, the signal must have this exact combination of frequencies.

This feature greatly reduces the possibility of interference from electrical noise, which is often caused by lamps, appliances, fluorescent fixtures, or machinery that is supplied by the same power source as the circuit being traced.

The current drawn by the transmitter generates a magnetic field signature around the conductor being traced which matches the current itself. This magnetic signature is present the entire length of the current path, including through breakers, fuses, switchgear, and transformers.

The PowerFinder™ receiver is tuned to pick up only that magnetic signature produced by the transmitter.





HOW TO TRACE LIVE CIRCUITS

IMPORTANT

Prior to plugging the transmitter into the circuit to be traced, use an approved voltage tester, such as the Greenlee 6706, 6708, or 6709, to determine the voltage present. If the voltage is less than 300 volts AC or DC, you may continue.

CAUTION

Do not connect the PowerFinder to power in excess of 300 volts! Connecting to more than 300 volts will cause damage to the unit.

NOTE: For circuits other than 120 volts, use the accessory leads provided with the unit.

Following are examples of possible connections:

EXAMPLE 1

Connection to a live 120 volt receptacle (one with voltage present)

- 1) Plug the transmitter into the receptacle. The Green LED light will blink intermittently.
- 2) Place the receiver RANGE switch in the HIGH position. Turn the GAIN knob ON by rotating in a clockwise position (when facing the front of the receiver).



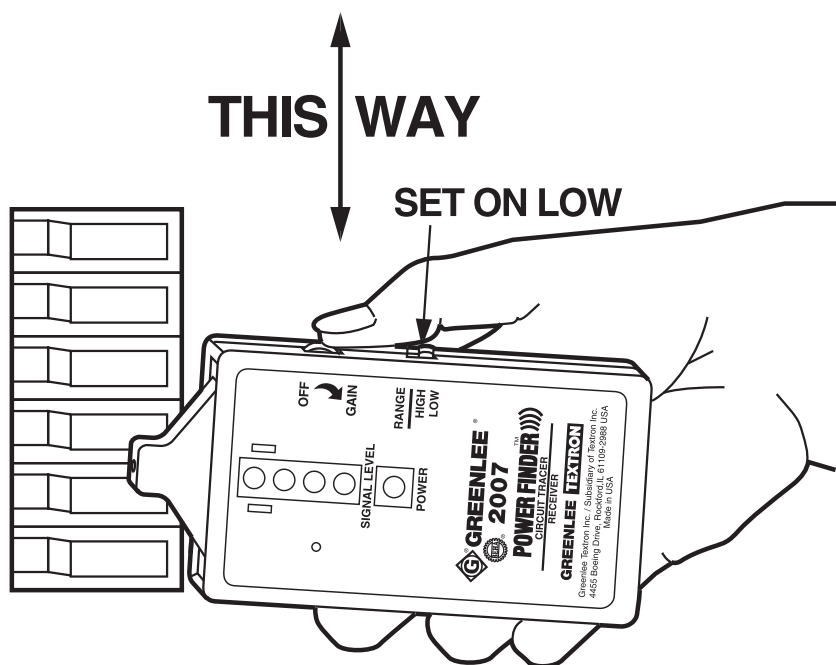


The green POWER LED will glow. (If it doesn't, remove and replace the 9 volt battery, which is accessed by sliding the small battery door on the rear of the receiver to the open position).

Continue to move the GAIN knob in the clockwise direction until it has reached its maximum travel. Move the receiver to within a few inches of the transmitter. All 4 red LEDs will intermittently glow, and the unit will emit a beeping sound. The 2007 is now ready to operate.

- 3) Take the receiver to the vicinity of the suspected power source for the circuit being tested. If a signal is received, move the receiver toward the equipment, producing the increase in signal strength. (The receiver will pick up a signal within 12 to 18 inches of a panel, even with the panel cover closed).
- 4) If the signal is present, open the door, position the RANGE switch to LOW and move the receiver slowly down the row of breakers or fuses as shown below.

NOTE: The receiver must be held in the position shown here to be properly aligned with the magnetic field produced by the transmitter and provide maximum performance.



CIRCUIT BREAKERS





- 5) If the signal is strong enough to cause all 4 red LEDs to glow, the GAIN knob should be rotated in a counterclockwise direction until only 2 or 3 LEDs are lit. Lowering the GAIN permits the 2007 to zero-in on the only hot wire or neutral of the circuit being tested.

NOTE: Since any wire carrying the load from the transmitter will have the magnetic signature around it, both the hot and the neutral will carry the signal.

- 6) The breaker or fuse providing the strongest signal (lighting the most LEDs) is the one powering the transmitter, and hence, the receptacle or device to which it is connected.

If there is any doubt as to which is the correct breaker or fuse (due to unusual breaker design, wiring, or the possibility that two breakers are feeding the same circuit) remove the panel trim and check the wires.

NOTE: If the hot and neutral are close together as in a conduit or multi-conductor cable, the electrical signals tend to cancel each other out. Although the PowerFinder receiver is sensitive enough to trace the signal at short distances from the conduit or cable in question, maximum distance is acquired by separating the current paths.

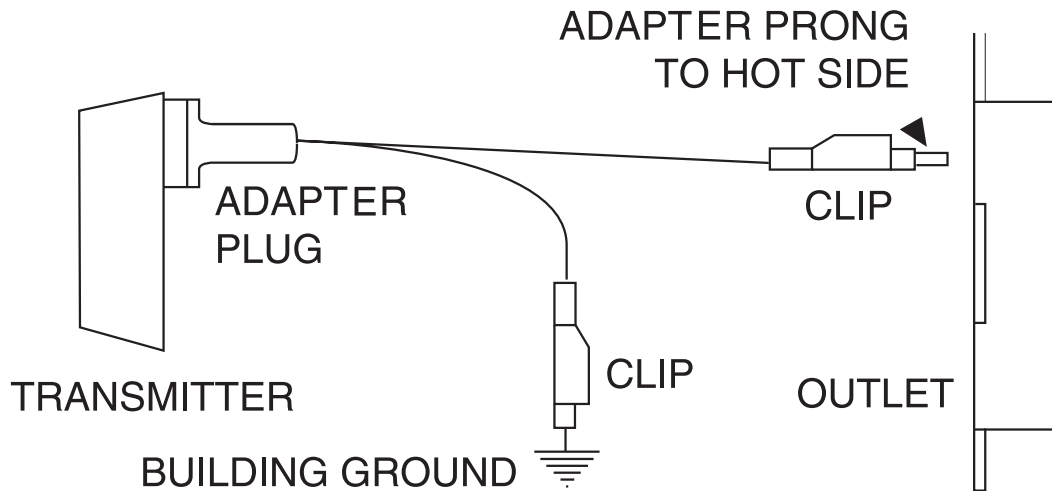
“Separating the current paths” simply means drawing current through the cable or conduit in one direction by using a remote ground path as shown in the following diagram.





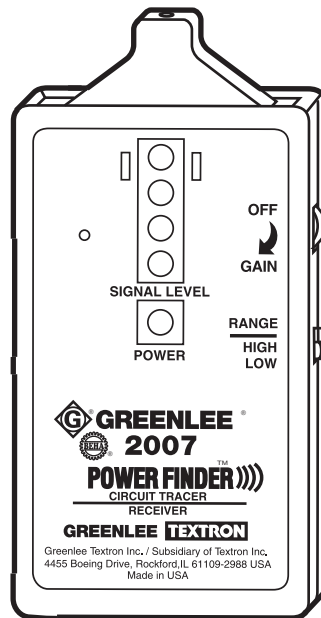
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USING A REMOTE GROUND

By creating a separate ground path, it is possible to trace wiring from up to 20 feet away. When tracing cable in this manner, the receiver should be held as shown below.



**⚠ IMPORTANT**

Prior to plugging the transmitter into the circuit to be traced, use an approved voltage tester, such as the Greenlee 6706, 6708, or 6709, to determine the voltage present. If the voltage is less than 300 volts AC or DC, you may continue.

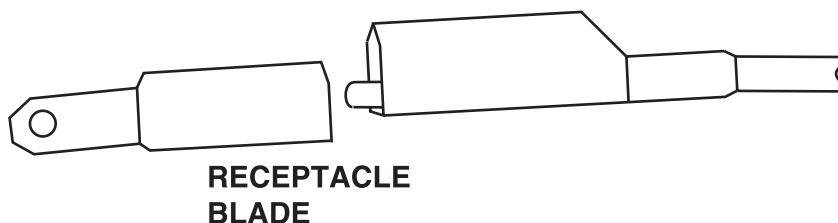
⚠ CAUTION

Do not connect the PowerFinder to power in excess of 300 volts! Connecting to more than 300 volts will cause damage to the unit.

EXAMPLE 2

Connection to a live receptacle supplied by more than 120 volts (208, 220, 230, 240, etc.)

- 1) Using the transmitter adapter plug, connect one alligator clip to one of the receptacle blades by opening the clip slightly and fastening it to the small prong inside the round portion of the receptacle blade.

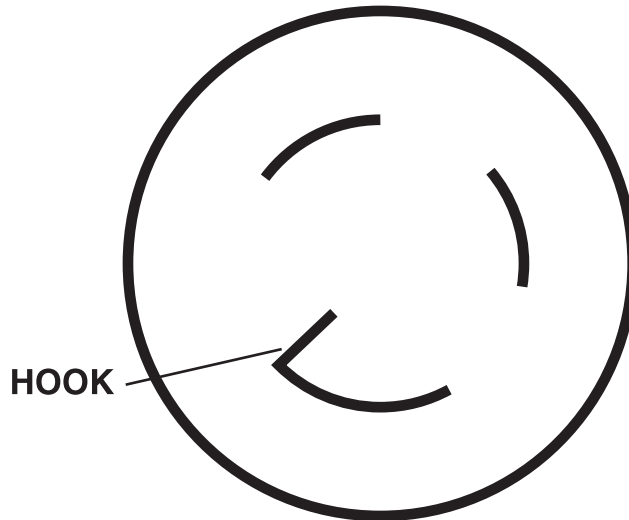


Connect the other alligator clip to the other receptacle blade in the same fashion.



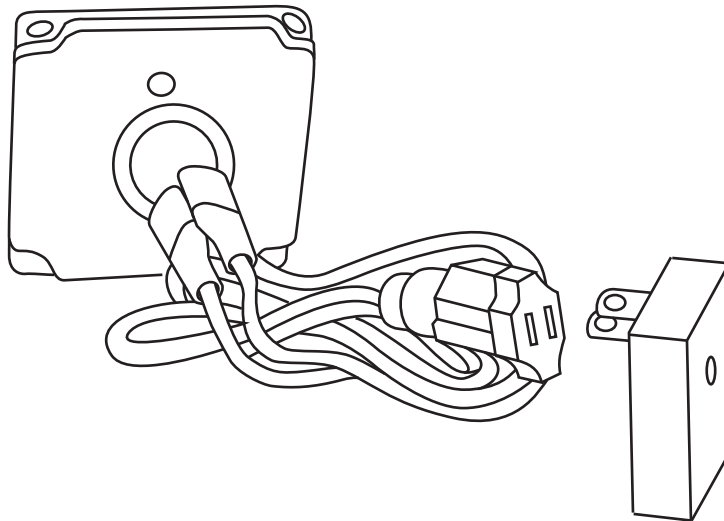


- 2) Plug the receptacle blades into any of two of the rectangular openings in the receptacle being traced. (If the receptacle is a twist-lock type, use two of the curved slots other than the one with the hook on the end).



TWIST LOCK RECEPTACLE

- 3) Plug the transmitter into the transmitter adapter plug.
4) Operate receiver as in EXAMPLE 1.



**⚠ IMPORTANT**

Prior to plugging the transmitter into the circuit to be traced, use an approved voltage tester, such as the Greenlee 6706, 6708, or 6709, to determine the voltage present. If the voltage is less than 300 volts AC or DC, you may continue.

⚠ CAUTION

Do not connect the PowerFinder to power in excess of 300 volts! Connecting to more than 300 volts will cause damage to the unit.

EXAMPLE 3**Connection to a live circuit with no receptacle**

- 1) Connect the alligator clips of the transmitter adapter plug to the hot and neutral. If the neutral is not present, connect to hot and known ground.
- 2) Plug transmitter into transmitter adapter plug.
- 3) Operate receiver as in EXAMPLE 1.

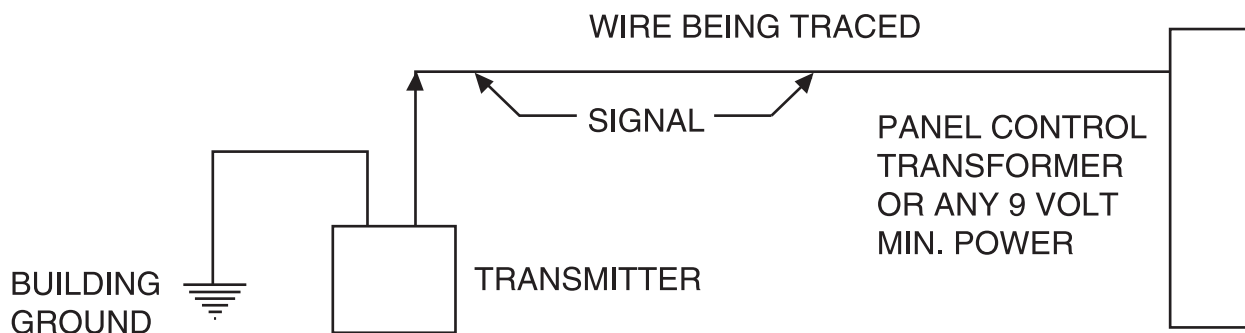




EXAMPLE 4

Tracing low voltage circuits (TEL-COM, HVAC CONTROLS, SECURITY SYSTEMS, etc.)

- 1) To trace low voltage circuits (those typically of 50 volts or less), connect one side of the transmitter adapter plug to a known ground, and the other side to the low voltage HOT conductor, as shown below.
- 2) Plug the transmitter into the transmitter adapter plug.
- 3) Operate the receiver as stated in EXAMPLE 1.



TRACING A LOW VOLTAGE WIRE





HOW TO TRACE DEAD AND SHORTED CIRCUITS

IMPORTANT

Prior to plugging the transmitter into the circuit to be traced, use an approved voltage tester, such as the Greenlee 6706, 6708, or 6709, to determine the voltage present. If the voltage is less than 300 volts AC or DC, you may continue.

CAUTION

Do not connect the PowerFinder to power in excess of 300 volts! Connecting to more than 300 volts will cause damage to the unit.

EXAMPLE 5

A Dead Circuit

A DEAD circuit caused by an open breaker or blown fuse can be traced by utilizing the dead circuit's neutral.

- 1) Take power from a battery of 9 volts or greater potential and return it through the neutral of the dead circuit as follows:

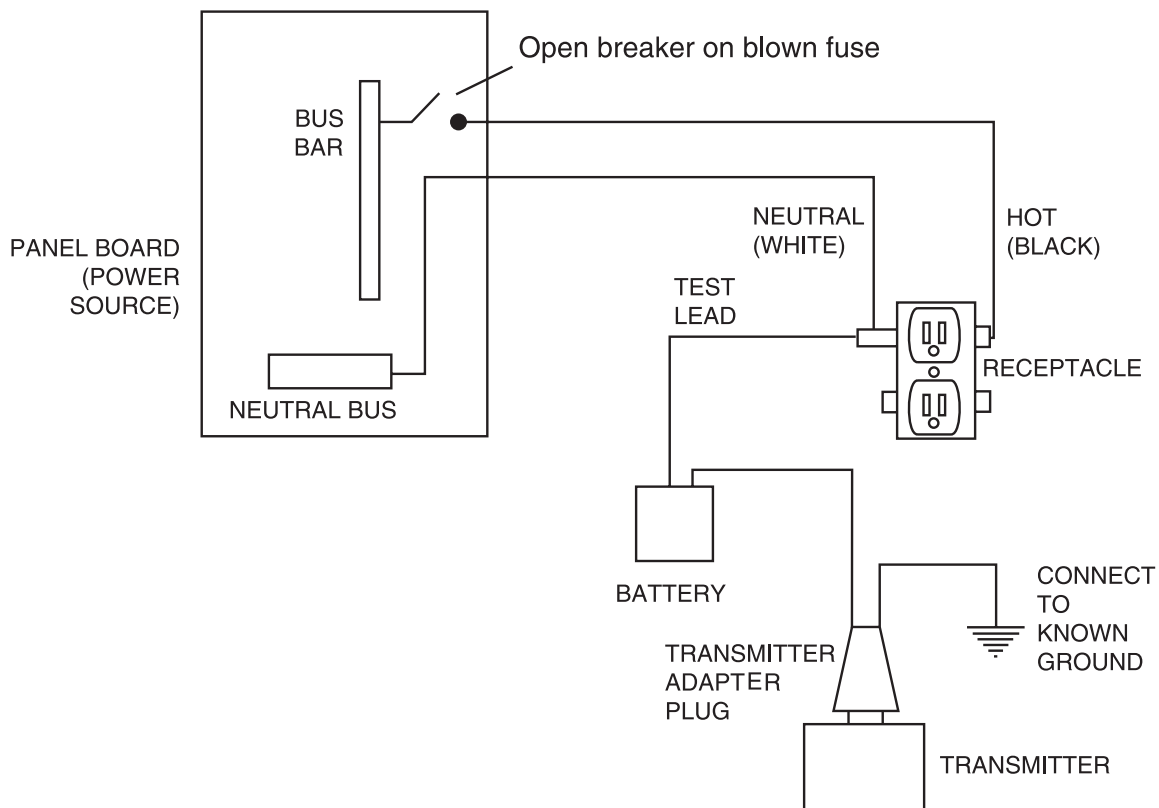
Connect one lead of the transmitter adapter plug to a known ground, and the other lead to the battery.

Connect the other side of the battery to the dead circuit's neutral using the test lead provided, as shown on the following page.





TRACE A DEAD CIRCUIT



- 2) Plug the transmitter into the adapter plug.
- 3) You may now operate the receiver as described in “HOW TO TRACE LIVE CIRCUITS” (EXAMPLE 1), except that the signal generated will be carried back to the panel by the neutral.



**⚠ DANGER**

Lockout electric power to any circuit before connecting or disconnecting. Alert any persons present of your work. Only you may restore power!

Failure to lockout power may result in electrocution or death.

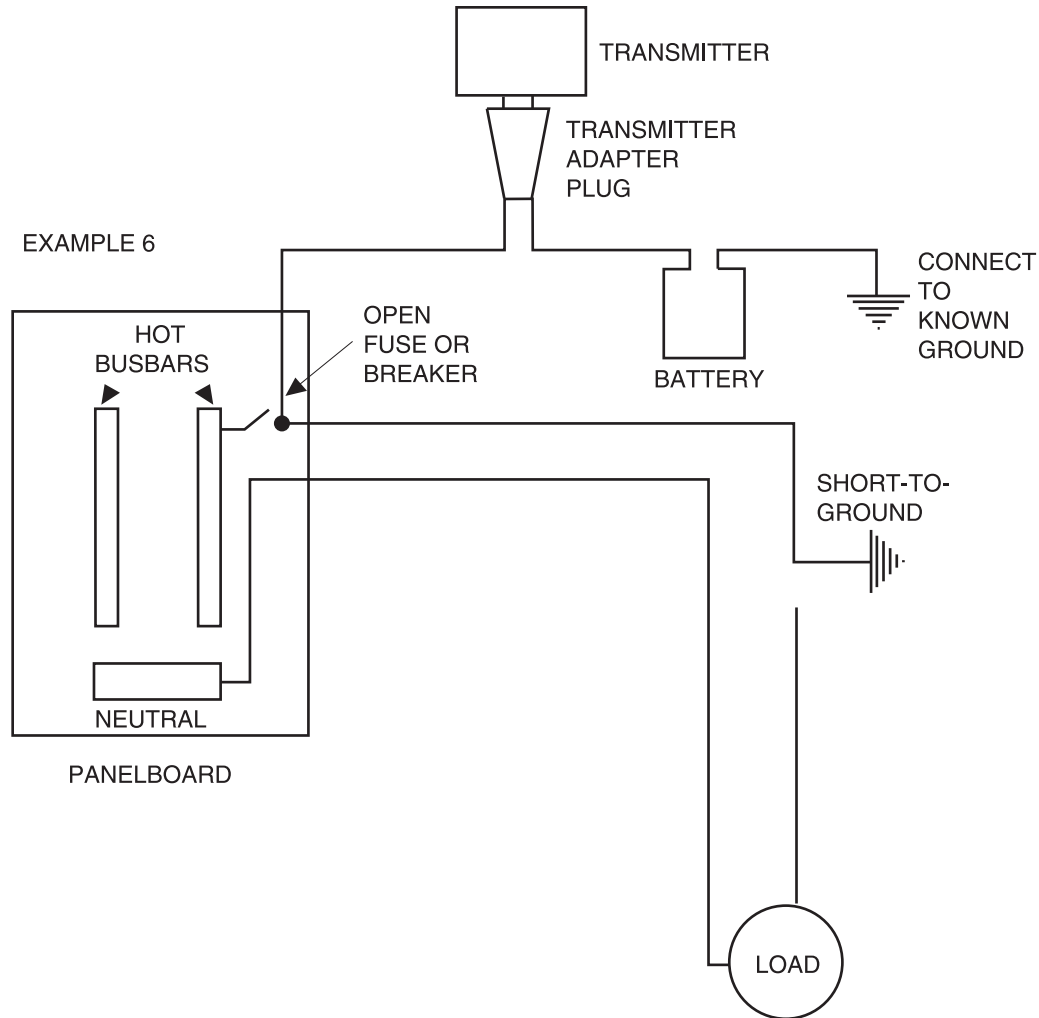
⚠ IMPORTANT

An appropriate voltage tester, such as the Greenlee 6706, 6708, or 6709, must be used to verify the absence of voltage.

EXAMPLE 6**Connection for finding a short to ground**

- 1) Turn the tripped breaker to the full off position. (If in a fuse panel, remove, but do not replace, the blown fuse!)
- 2) Disconnect the shorted hot wire at its source (the fuse panel, breaker panel, safety switch, power panel, switchgear, etc.).
- 3) Using an approved continuity-tester or multimeter, check the affected wire to ensure that a short-to-ground exists.
- 4) Using the transmitter adapter plug, connect one alligator clip to the shorted lead at its connection point in the panel.





5) Connect the other alligator clip to one side of a battery.

Connect the test lead from the other side of the same battery to a known ground.

Plug in transmitter.

6) Using the receiver, follow the wire until the signal disappears, indicating the location of the short.



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POWERFINDER HIGH VOLTAGE ADAPTER

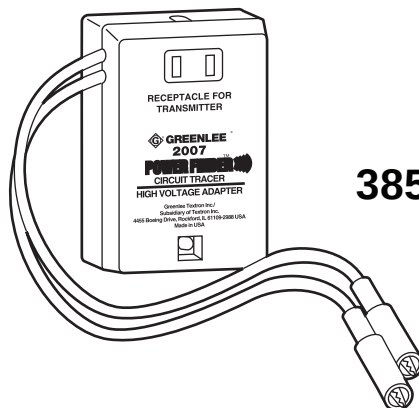
WARNING

- Avoid contact with live circuits.
- Never make connection on a live circuit.
- Do not use this tracer if you are not a qualified, trained electrical worker.

Electric shock can result in injury or death.

The 38583 Adapter is an electronic high voltage adapter for use with the PowerFinder™ Circuit Tracer. Using this adapter will increase the operating voltage rating of your PowerFinder™ to 680 volts AC or 1000 volts DC.

To use this unit simply plug the PowerFinder™ transmitter into the face of the adapter. Next, connect the adapter clip leads to the circuit to be traced. Both the transmitter and adapter LEDs will flash indicating the units are operating. The PowerFinder™ may be connected using the methods previously shown in this instruction manual.



38583 High Voltage Adapter





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2007 POWER FINDER™ Circuit Tracer

POWERFINDER SPECIFICATIONS

Transmitter

Operating Voltage:

9-300 Volts, AC/DC

(200-680 VAC, 200-1000 VDC when
using the 38583 High Voltage Adapter)

Current:

8 mA Avg.; 100 mA Peak

Operating Temperature:

0°-120° F

Size:

2-3/4" x 2" x 1.5"

Receiver

Power:

Standard 9 Volt Battery
(included)

Range:

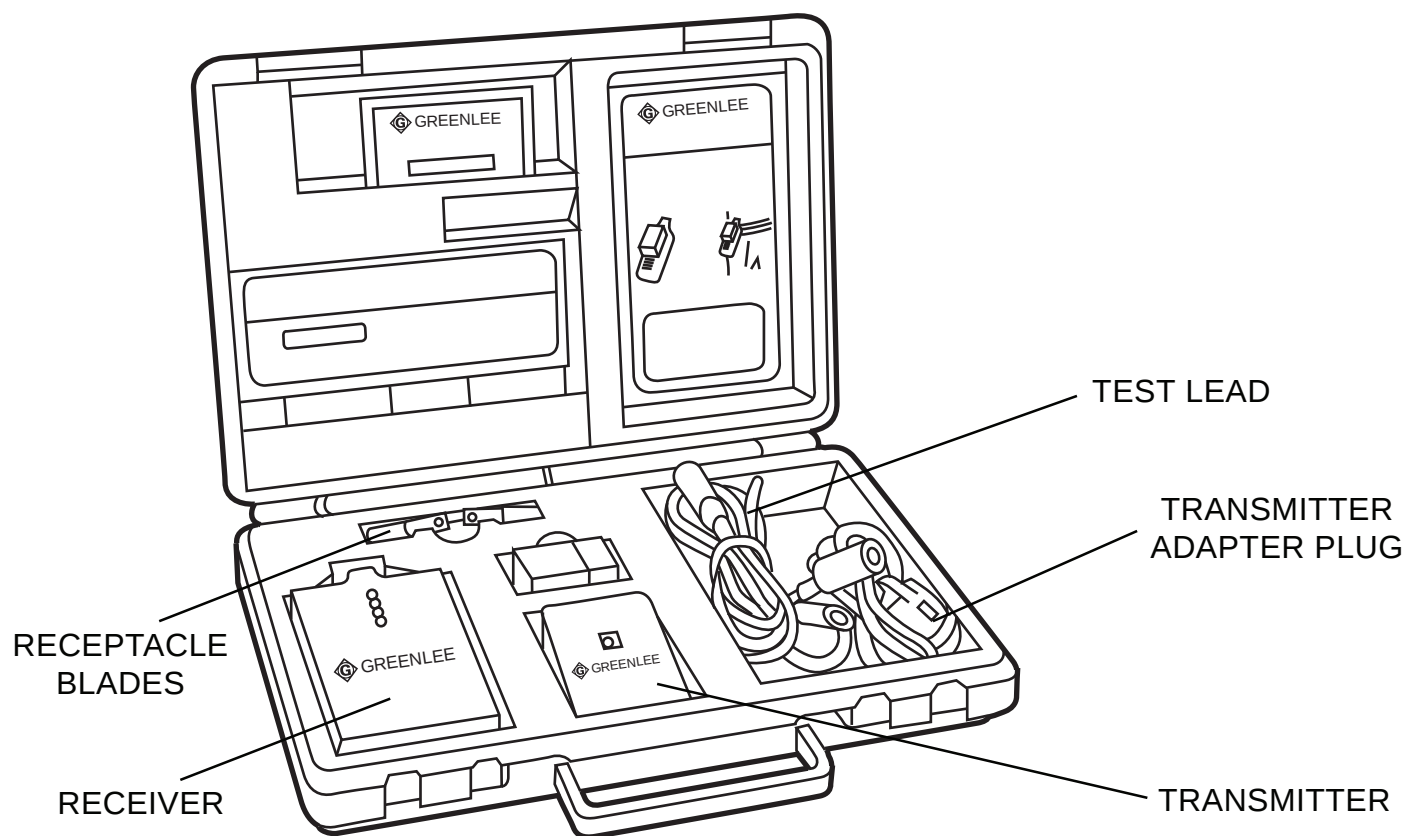
Up to 20 feet from circuit

Operating Temperature:

0° - 120° F

Size:

5-1/2" x 2-3/4" x 1"



**GREENLEE®****2007 POWER FINDER™ Circuit Tracer**

WARRANTY

Greenlee warrants to the original purchaser of these goods for use that these products will be free from defects in workmanship and material for their useful life, excepting normal wear and abuse. This warranty is subject to the same terms and conditions contained in Greenlee's standard one year limited warranty.

For all test instrument repairs, ship units Freight Prepaid to:

Greenlee Textron Inc. at 4411 Boeing Drive, Rockford, IL
61109-2932 USA.

Mark all packages: Attention TEST INSTRUMENT REPAIR. For items not covered under warranty (such as dropped, abused, etc.), repair cost quote available on request.

Note: Prior to returning any test instrument, please check replaceable batteries or make sure battery is at full charge.

For additional copies of this manual at no extra charge, write Greenlee Textron Inc., 4455 Boeing Drive, Rockford, IL USA 61109 or send fax to (815) 397-1865.

