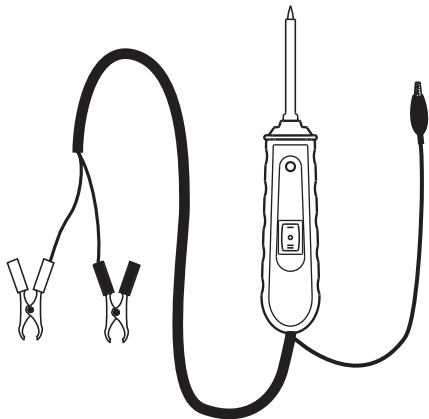




# POWER PROBE

## Users Manual

CT3227



CE

Read this owners manual thoroughly before use



# EC DECLARATION OF CONFORMITY

We, CANNON TOOLS LTD  
20 Station Road, Rowley Regis, West Midlands, B65 0JU.U.K

Declare that the following machine complies with the appropriate basic safety and health requirements of the EC Directive based on its design and type, as brought into circulation by us.

In case of alteration of the machine, not agreed upon by us, this declaration will lose its validity.

Product description: POWER PROBE

Model: CT3227

Appropriate EC directives:  
EC-EMC Directive 2014/30/EU

Applicable Harmonized Standards:  
EN 61326-1:2013

CANNON TOOLS LTD  
20 Station Road, Rowley Regis, West Midlands, B65 0JU.U.K.  
Managing Director

Sign



Mr. Gurcharan Tony Singh Sanghera



2017-12-01

# INTRODUCTION

This unit is the best electrical tester for reducing diagnostic time in automotive electrical systems. After a simple hook-up of the unit to the vehicle's battery, automotive technician can conduct a positive or negative battery current to the tip by rocking the power switch forward or backward. The unit is short-circuit protected and can test for bad ground contacts instantly. It allows you to follow and locate short circuits. It can also test for continuity with the assistance of its auxiliary ground lead. The unit's long cable allows you test easily.

## **Applications:**

1. Test for continuity
2. Test for polarity of a voltage
3. Check lamp
4. Check electric motor.
5. Power supply function may be selected
6. Follow and locate short circuits
7. Test for bad ground contacts

## FEATURES

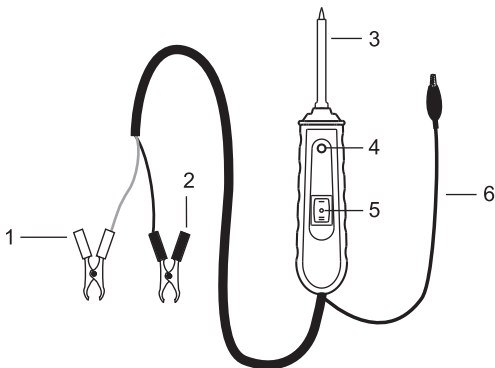
1. Operation voltage: 6~24Vdc
2. Cable length: about 5m
3. Overload protection: 8A ( When the current exceeds 8A, the unit will disconnect the current automatically. )
4. Weight: about 340g

## WARNING

1. Do not use the unit around explosive gas, vapor, or dust.  
When the power switch is pressed (or rocked ), battery current is conducted directly to the tip which may cause sparks when contacting ground or certain circuits.
2. The unit is not to be used with 110/220-volt house current, it is only for use with dc 6~24V systems.
3. Do not use on AC voltage.
4. After you finish checking vehicle, correctly restored all the connections which you disconnected.
5. Always follow the instructions and procedures indicated in the vehicle's service manual before attempting to disconnect any part or subsystem of the electrical circuit.

6. Use caution when using the unit to perform measurement. Never touch any dangerous part of the vehicle with you hand for safety. Don't touch any live conductor with hand or skin.
7. Don't use it if it is damaged.
8. Some components of vehicle work on lower voltage, they can not withstand the voltage applied by the unit. To avoid damage to these components, don't use the unit to apply voltage to them directly or indirectly.
9. Before you drive vehicle, always make sure that the vehicle is safe and reliable.
10. Don't use the unit if the vehicle is being driven.

# INTRODUCTION



1. Red clip
2. Black clip
3. Probe
4. LED indicator
5. Power switch

It includes a front part "—", and a rear part "=".

When you press the front part "—", the probe is connected to the red clip directly. When you press the rear part "=", the probe is connected to the black clip directly.

6. Auxiliary ground lead

It is connected to the black clip directly.

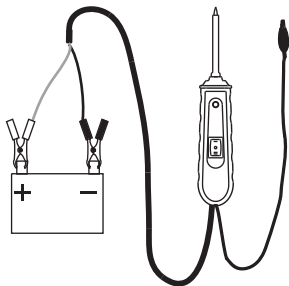
# OPERATION INSTRUCTION

## Hook-up

Unroll the unit's cable.

Clamp the red clip to the positive terminal of the vehicle's battery.

Clamp the black clip to the negative terminal of the vehicle's battery.



## 1. Quick self-test

Press the front part ( " - " ) of the power switch, the LED indicator should light RED.

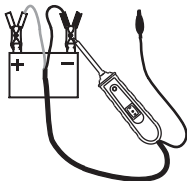
Press the rear part ( " = " ), the LED indicator should light GREEN.

The unit is now ready to use.

If the LED indicator did not light, the cause may be that the clip connections are not good or the unit is damaged.

## 2. Polarity testing

Contacting the probe's tip to a positive (+) circuit will light the LED indicator RED. Contacting the probe's tip to a negative (-) circuit will light the LED indicator GREEN. Contacting the probe's tip to an open circuit will be indicated by that the LED indicator is off.



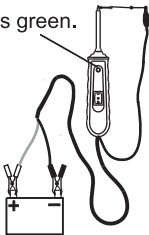
## 3. Continuity testing

By using the probe tip together with the auxiliary ground lead, continuity can be tested on wires and components which are disconnected from the vehicle's electrical system.

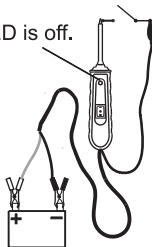
When continuity is present, the LED indicator will light GREEN.

Note: Don't press the power switch.

LED turns green.



LED is off.



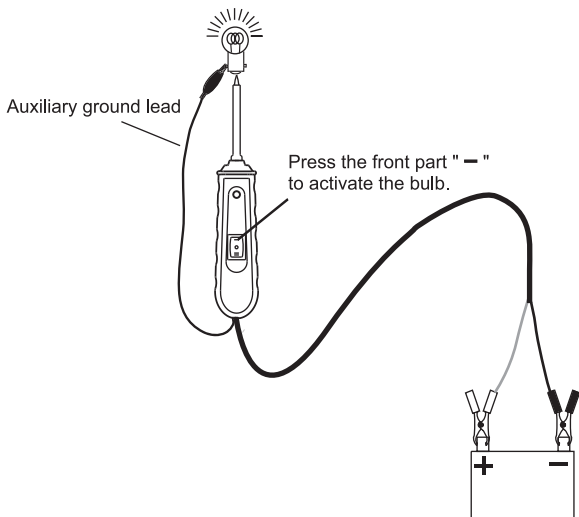
#### **4. Activating components out of the vehicle's electrical system**

By using the probe tip together with the auxiliary ground lead, components can be activated, thereby testing their function. Connect the auxiliary ground lead's clip to the negative terminal of the component to be tested. Contact the probe to the positive terminal of the component, the LED indicator should light GREEN indicating continuity through the component.

While keeping an eye on the green LED indicator, quickly press and release the power switch's front part ("—"). If the green indicator changed instantly from GREEN to RED, you may proceed with further activation. If the green indicator went off at that instant or if the unit sounds, the unit has been overloaded. This could happen for the following reasons:

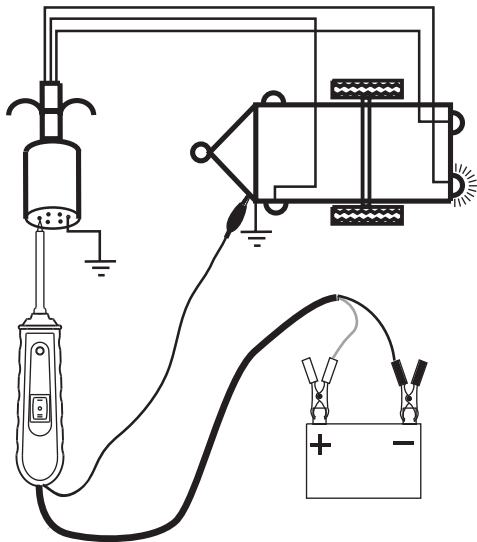
- a. The contact of the tip is a direct ground or negative voltage.
- b. The component is short-circuited.
- c. The component is a high amperage component ( i.e. starter motor).

**Activate fuel pumps, starter solenoids,  
magnetic clutches, blower motors,  
cooling fans, lights etc.**



## **5. Testing trailer lamps and connections**

1. Connect the unit to a good battery.
2. Clip the clip of the auxiliary ground lead to the trailer ground.
3. Probe the contacts at the jack while pressing the power switch's front part (" - "). This lets you check the function and orientation of the trailer lamps.



## 6. Activating electrical components

### a. To activate components with positive (+) voltage:

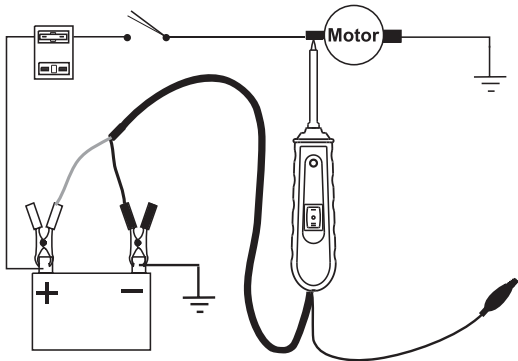
Contact the probe tip to the positive terminal of the component, the LED indicator should light GREEN.

While keeping an eye on the green indicator, quickly press and release the power switch's front part (" - "). If the green indicator changed instantly from GREEN to RED, you may

proceed with further activation. If the green indicator went off at that instant or if the unit sounds, the unit has been overloaded. This could happen for the following reasons:

1. The tip's contact is a direct ground.
2. The component is short-circuited.
3. The component is a high current component (i.e. starter motor).

**Warning: Haphazardly applying voltage to certain circuits can cause damage to a vehicle's electronic components. Therefore, it is strongly advised to use the correct schematic and diagnosing procedure while performing test.**



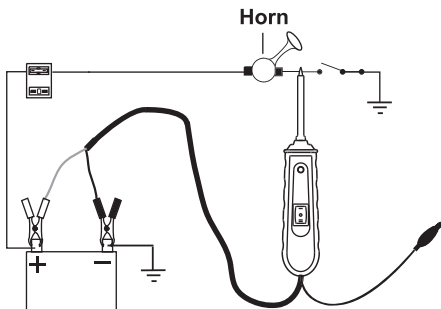
## b. Activating electrical components with negative (-) voltage

Contact the probe tip to the negative terminal of the component, the LED indicator should light RED.

While keeping an eye on the red LED indicator, quickly press and release the power switch's rear part ( " = " ). If the red indicator changed instantly from RED to GREEN, you may proceed with further activation. If the LED indicator went off at that instant or if the unit sounds, the unit has been overloaded. This could have happened for the following reasons:

1. The tip's contact is a direct positive voltage.
2. The component is short-circuited.
3. The component is a high amperage component (i.e. starter motor).

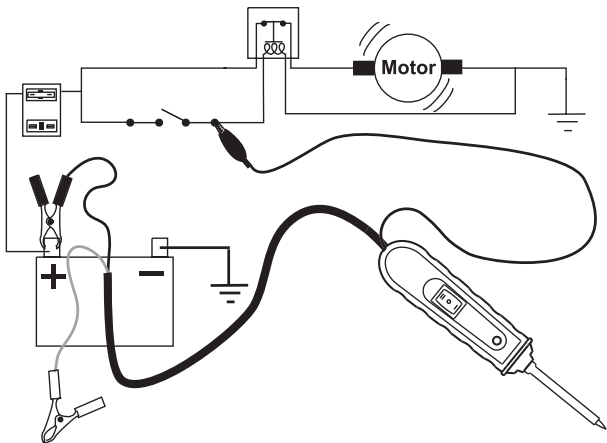
**WARNING: With this function a vehicle's fuse can be blown or tripped if grounding the contact in series with it.**



## 7. Jumper lead feature

The black clip and the auxiliary ground lead are connected directly through the unit. By leaving the red clip disconnected from the vehicle's battery, the unit can be used as a long jumper lead.

Be careful to avoid short circuits and overloading when using this jumper function. In this configuration, the leads are not protected by the unit's circuit breaker.



## 8. Checking for bad ground contacts

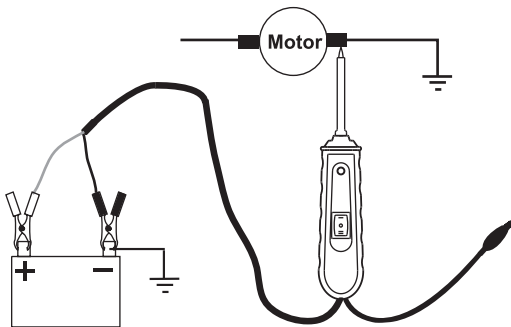
Probe the suspected ground wire or contact with the probe tip.  
Observe the green LED indicator.

Press the power switch's front part (" - ") then release.

If the LED indicator changed from GREEN to RED, this is not a true ground.

If the unit sounds, this circuit is more than likely a direct ground.

Keep in mind that high current components such as starter motors will also cause the unit to sound.



## 9. Following and locating short circuits

In most cases a short circuit causes a fuse blowing or a circuit breaker tripping. Here is the best place to begin the search. Remove the blown fuse from the fuse box. Connect the probe tip to each of both contacts in the fuse box and press the power switch's front part ( " — " ). The side which causes the LED indicator to turn off or causes the unit to sound is the shorted circuit. Note this wire's identification code or color. Follow the wire as far as you can along the wiring harness, for instance if you are following a short in the brake light circuit you may know that the wire must pass through the wiring harness at the door sill. Locate the color-coded wire in the harness and expose it.

Probe through the insulation of the wire with the probe tip and press the power switch's front part ( " — " ) to energize the wire. If the LED indicator turns off or the unit sounds, you have verified the shorted wire. Cut the wire and energize each end with the probe tip. The wire which causes the LED indicator to turn off or causes the unit to sound will lead you to the shorted area. Follow the wire in the shorted direction and repeat this procedure until you find the exact position of the short.

# NOTE

1. When the unit sounds, the circuit breaker of the unit trips.
2. After the circuit breaker trips, it will be reset automatically 3 to 5 seconds later.
3. When the unit sounds, the circuit breaker trips. If the unit remains the connection with the circuit under test and you keep holding down the same part of the power switch, the circuit breaker will repeat the process of " trip and then be reset automatically ".

## DISPOSAL OF THIS ARTICLE

Dear Customer,

If you at some point intend to dispose of this article, then please keep in mind that many of its components consist of valuable materials, which can be recycled. Please do not discharge it in the garbage bin, but check with your local council for recycling facilities in your area.





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