

DRAPER

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Original Instructions
Version 2 – January 2026

AUTO PROBE

61820



UK
CA



Stock Nos: 61820

Part Nos: AP1

Version 1: January 2021
First release

Version 2: January 2026

1. Intended Use

This product is designed as a diagnostic tool for automotive electrical systems. The following tests can be carried out on vehicle electrical systems from 6V up to 24V: Polarity test, powering up components, continuity tests, short circuit detection and bad earth tracing.

Any other application beyond the conditions established for use will be considered misuse. Draper Tools accepts no responsibility for improper use of this product.

Read this manual in full before using this product and retain it for future use. Always use the latest version of the manual. Please visit drapertools.com/manuals for the latest version.

2. Specification

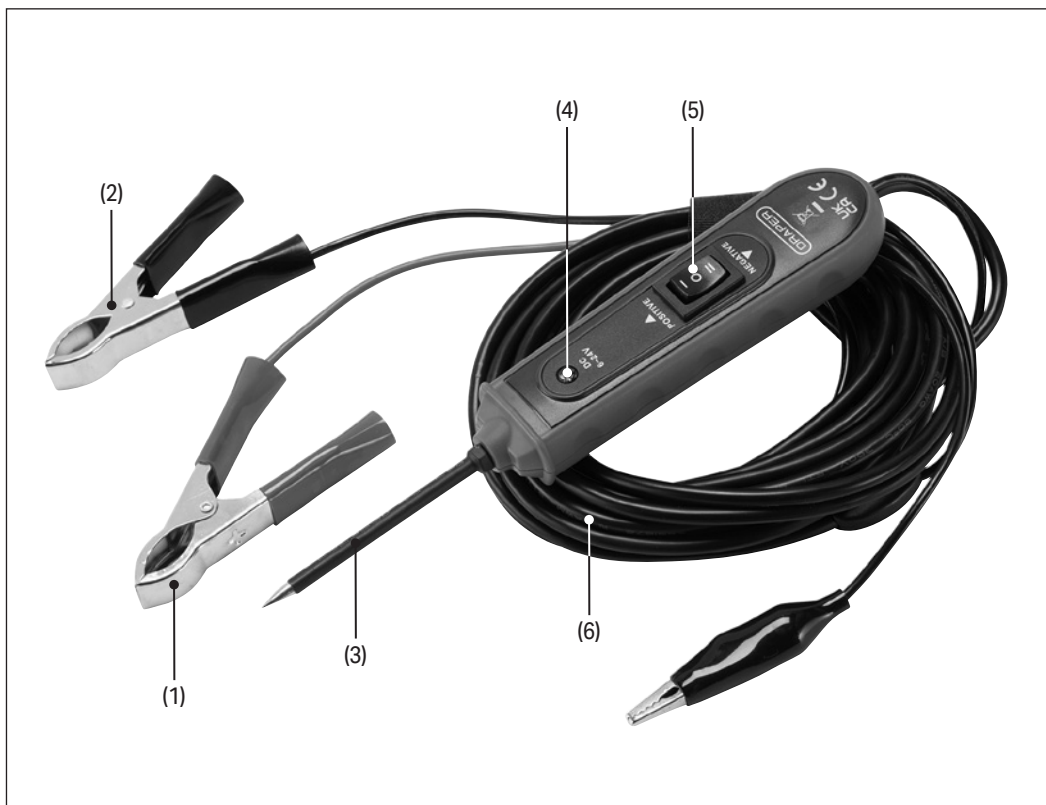
Stock No.	61820
Part No.	AP1
Rated Voltage	6 – 24V DC
Overload protection	8A
Probe length	68mm
Net Weight	340g
Cord Length (approx:)	3.45M

3. Health and Safety Information

Important: Read all the Health and Safety instructions before attempting to operate, maintain or repair this product. Failure to follow these instructions may result in injury or damage to the user or the product.

- **DO NOT** use the probe around explosive gases, vapours or dust. When the probe is switched on, current is conducted directly to the tip which may cause a spark when contacting ground or certain circuits.
- The probe is only suitable for use with 6 – 24V DC systems. **DO NOT** use with 110/220V house current.
- **DO NOT** use on AC voltage.
- After checks are completed on your vehicle ensure the disconnected connections are correctly restored.
- **ALWAYS** follow the instructions and procedures indicated in the vehicle's manual before disconnecting any part of its electrical circuit.
- Take care when using the probe to perform any measurement. **NEVER** touch any dangerous parts of the vehicle with your hands. **DO NOT** touch any live conductors.
- **DO NOT** use the probe if the casing, cable or probe tip are damaged.
- **DO NOT** use the probe if the vehicle is being driven.
- Some vehicles components work on a lower voltage and are not suitable for use with this probe voltage range. To avoid damage, **DO NOT** use this probe to apply voltage directly or indirectly to them.
- Before you drive the vehicle ensure that it is safe and reliable.

4. Identification



- (1) Red positive (+) spring clip
- (2) Black negative (-) spring clip
- (3) Probe
- (4) LED indicator
- (5) **ON/OFF** power switch
- (6) Auxiliary ground lead

Please visit **drapertools.com** for our full range of accessories and consumables.

5. Preparing the Auto Probe (Fig.1)

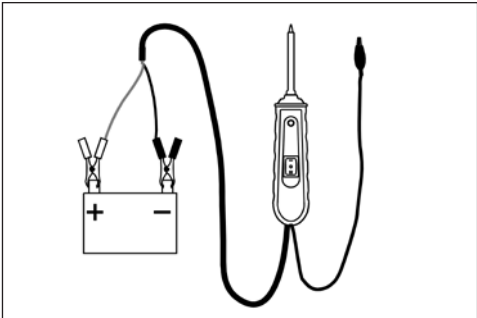


Fig.1

- Unwind the Auto probe's auxiliary ground lead (6).
- 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.

6. Operating the Auto Probe

6.1 Self-Testing Mode

- Press the **ON/OFF** switch (5):

Press	LED Indicator (4)
'I'	RED
'II'	GREEN

- The Auto probe is now ready to use.
- If the LED indicator (4) does not light up, the clips are either not connected correctly, or the device is damaged.

6.2 Polarity Testing (Fig.2)

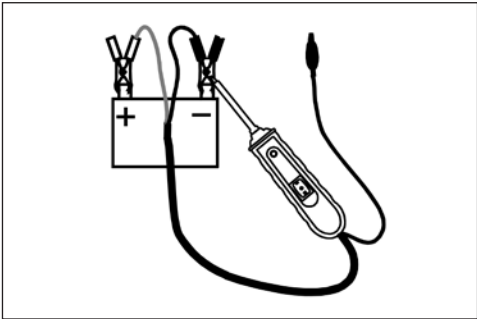


Fig.2

- Contact the probe (3) to the circuit to be tested for polarity:

Probe Tip Contact	LED Indicator (4)
Positive (+) circuit	RED
Negative (-) circuit	GREEN
Open circuit	Light off

6.3 Continuity Testing (Fig.3)

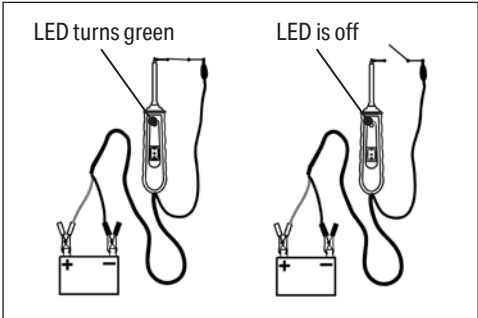


Fig.3

- Use the probe tip (3) and the auxiliary ground lead (6) together to test the continuity of wires and components which are disconnected from the vehicle's electrical system.
- When continuity is present, the LED indicator (4) will light up 'GREEN'.

Note: DO NOT press the **ON/OFF** power switch (5) during continuity testing.

6.4 Activating Components out of the Vehicle's Electrical System (Fig.4)

- Use the probe tip (3) and the auxiliary ground lead (6) together to activate and test components function out of the vehicle's electrical system.

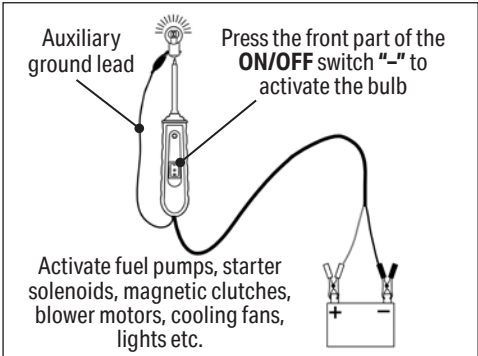


Fig.4

1. Connect the auxiliary ground lead's clip (6) to the negative terminal of the component to be tested.
 2. Contact the probe (3) to the positive terminal of the component, the LED indicator should light **'GREEN'** indicating continuity through the component.
 3. Observe the green LED indicator, then quickly press and release the front of the power switch (**II**).
- If the green indicator changes immediately from **'GREEN'** to **'RED'**, you can now proceed with further activation.
 - If the **'GREEN'** indicator goes out, the probe unit will sound and the probe has been overloaded.

This could happen for the following reasons:

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

6.5 Testing Trailer Lights and Connections (Fig.5)

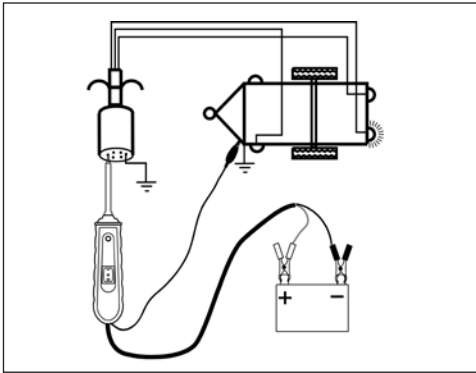


Fig.5

To check the function and orientation of the trailer lights

1. Connect the unit to a good battery.
2. Connect the auxiliary ground lead clip (6) to the trailer's ground.
3. Probe the jack contacts while pressing the **ON/OFF** switch to **'I'**.

6.6 Activating Electrical Components with Positive Voltage (Fig.6)

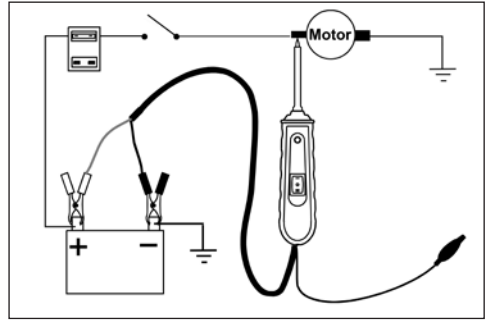


Fig.6

To activate components with positive (+) voltage

1. Contact the probe tip to the positive terminal of the component, the LED indicator should light up **'GREEN'**.
 2. Observe the **'GREEN'** indicator, then quickly press and release the **ON/OFF** switch **'I'**.
- If the **'GREEN'** indicator changes immediately from **'GREEN'** to **'RED'**, you can now proceed with further activation.
 - If the **'GREEN'** indicator goes out the probe unit will sound and the probe has been overloaded.

This could happen for the following reasons:

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



WARNING!: Applying voltage to certain circuits incorrectly, can cause damage to a vehicle's electronical components. **ALWAYS** use the correct schematic and diagnosing procedure while performing testing.

6.7 Activating Electrical Components with Negative Voltage (Fig.7)

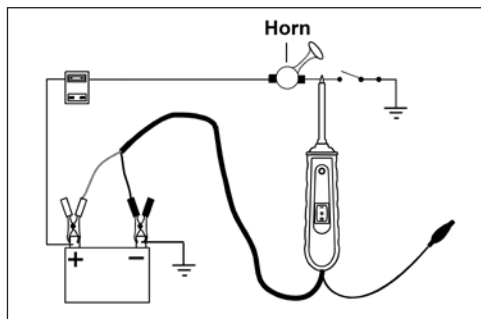


Fig.7

Activating electrical components with negative (-) voltage

1. Contact the probe tip to the negative terminal of the component, the LED indicator should light up **'RED'**.
 2. Observe the **'RED'** indicator, then quickly press and release the rear of the **ON/OFF** switch (II).
- If the red indicator immediately changes from **'RED'** to **'GREEN'**, you may proceed with further activation.
 - If the LED indicator goes out or if the unit sounds, the unit has been overloaded. This could have happened for the following reasons:
 - The tip's contact is a direct positive voltage.
 - The component is short-circuited.
 - 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.

6.8 Jump Lead Feature (Fig.8)

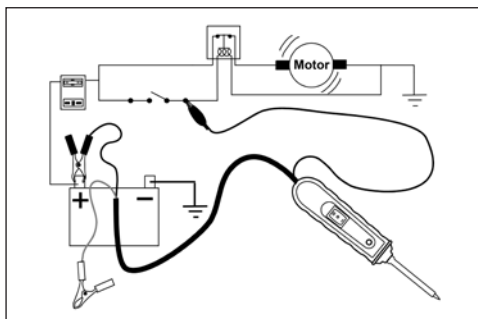


Fig.8

- The black clip and the auxiliary ground lead are connected directly through the Auto probe. Leave the red clip disconnected from the vehicle's battery to allow the unit to be used as a long jump lead.



CAUTION! Take care to avoid short circuits and overloading when using the jump starter function. In this configuration, the leads are not protected by the Auto probe's circuit breaker.

6.9 Checking for Bad Ground Contacts (Fig.9)

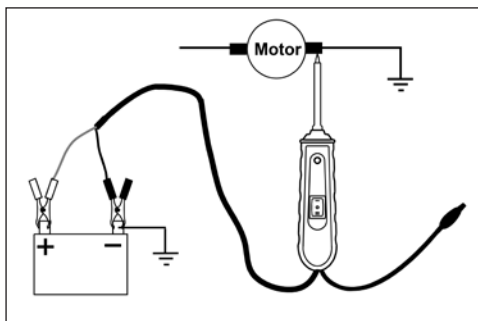


Fig.9

1. Probe the suspected ground wire or contact with the probe tip.
 2. Observe the **'GREEN'** LED indicator.
 3. Press the front part of the **ON/OFF** switch 'I' then release.
- If the LED indicator changes from **'GREEN'** to **'RED'**, this is not a true ground.
 - If the unit sounds, this circuit is most likely a direct ground. **Note:** high current components such as starter motors will also cause the unit to sound.

6.10 Following and Locating Short Circuits

- In most cases a short circuit causes a fuse to blow or a circuit breaker to trip.
- Remove the blown fuse from the fuse box.
- Connect the probe tip to each of both contacts in the fuse box and press the front part of the **ON/OFF** switch 'I'.
- 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 colour.

- 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 front part of the **ON/OFF** switch 'I' to energise the wire. If the LED indicator turns off or the unit sounds, you have verified the shorted wire.
- Cut the wire and energise 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.
- When the unit sounds, the circuit breaker of the unit trips.
- After the circuit breaker trips, it will be reset automatically after 3 to 5 seconds.

7. Disposal

- At the end of its working life, dispose of the product responsibly and in line with local regulations. Recycle where possible.
 - **DO NOT** dispose of this product with domestic waste; most local authorities provide appropriate recycling facilities.



*Waste Electrical & Electronic Equipment.

8. Warranty

12 months from date of purchase -
Visit [drapertools.com/warranty](https://www.drapertools.com/warranty) for full details.

9. Explanation of Symbols



Warning!
For use on DC circuits only.



WEEE –
Waste Electrical & Electronic Equipment

Do not dispose of Waste Electrical & Electronic Equipment
in with domestic rubbish



European conformity



UK Conformity Assessed

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