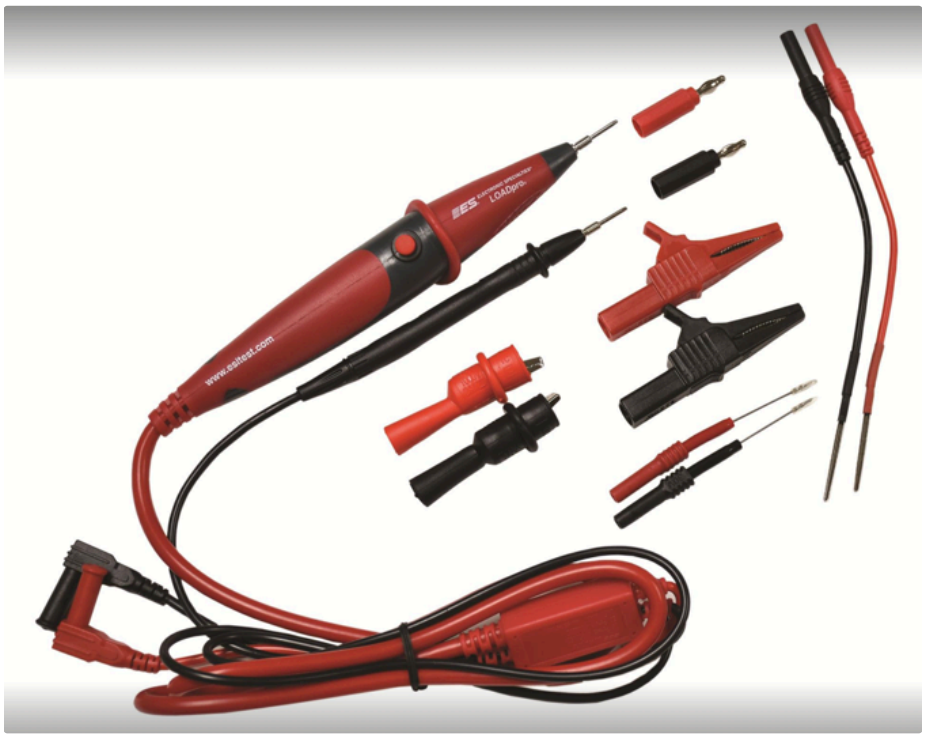
TSN01479-100 | LOADPRO AND BACK PROBE KIT



PURPOSE:

Used to help diagnose problems with low voltage system. Tool can be used to:

- Find High Resistance Due to Corroded Wires/Connectors
- Shorts to Ground
- Open Circuits
- Perform Voltage Drop Test

Refer to Tool usage section for testing examples.

> This is a set of normal multimeter leads that has a special function of locating high resistance in wiring by applying a 40mA/V dynamic load with EVERY VOLTAGE TEST. Remove your normal multimeter leads and install these. Works with any digital multimeter with standard banana plugs!

Kit Contents:

Description	Image

LOADpro® Test Leads	
LOADpro® Tip Adapters	
Flexible Silicon Back Probes	
Spoon Probe Curved Back Probes	
Large Crocodile Clips	
Push-on Alligator Clips	

LABOR CODE:

780099012 Low Voltage Electrical General Diagnostic

OTHER TOOLS REQUIRED:

TSN00021-100-A: FLUKE 179 DIGITAL MULTIMETER

PRIOR TO USAGE:

⚠ It is highly recommended that the tech that will be using the LOADpro has some basic knowledge of Automotive Low Voltage systems as well as familiar with the specific Low Voltage vehicle architecture platform that they will be working on prior to performing any testing or diagnostics to the vehicle's low voltage system!

Visual Inspection

1. Visually inspect TSN01479-100-A | LOADpro AND BACK PROBE KIT for any damage and replace immediately before performing any Low Voltage diagnosing
2. Inspect hardware (clamps, probes etc.) for any damage and replace as necessary
3. Verify presence of all clamps and probes in the kit before using. Replace all missing equipment immediately!

Testing your LOADpro Leads:

Install your LOADpro Leads into your digital meter, and set the meter to measure Ohms (Ω). **DO NOT TOUCH LEADS** Together. Depress the LOADpro button. Your meter should read approx 25Ω. If the reading is outside of this range, or reads 0Ω or OLΩ, your LOADpro Leads are not working. Replace immediately!

⚠ **CAUTION: Do not perform procedure if any equipment is missing or damaged. Contact tooling team with any questions or requests for replacement parts. ServiceToolEngineering@rivian.com**

WARNINGS AND CAUTION:

1. Primarily designed as a replacement for the component.
2. **Don't use the LOADpro Probe (positive) in the negative side of the circuit. You may inadvertently operate a component switched in ground. Know where you are!**
3. Use up to 28.5V (DC or AC) only. **Max 5-8 seconds per test**

⚠ Prolonged use may overheat/damage LOADpro.

4. **NOT** for computer (ECM) INPUT circuits. This tool has been tested successfully and will test computer (ECM) sensor driver circuits (B+ and Gnd/Return).
5. **NOT** designed for high voltage circuits.
6. **DO NOT** use positive LOADpro probe (positive) in the negative side of the circuit. Use the **BLACK** lead on ground with LOADpro probe energized (powered "test light" mode)
7. Use only with the DIGITAL multimeter
8. LOADpro will **NOT** function with AMMETER or OHMMETER

GENERAL INFORMATION:

LOADpro multimeter Leads are designed to replace the load in an electrical circuit so a load test (voltage drop test) can be made with the component removed. This is the best way to make the initial test. The normal drop in a clean circuit varies, and you'll need to develop a sense of how much drop constitutes a fault. A drop of 0.5V in a 12V system is an effective resistance of 5Ω.

Things to consider:

The digital multimeter function in the multimeter is the best diagnostic tool you can use. The system voltage is more powerful than the 3V the ohmmeter supplies. Testing with voltage drop is more accurate and easier. Don't use the LOADpro Probe (positive) in the negative side of the circuit. You may inadvertantly operate a component switched in ground.

HANDY TIPS:

1. Read VOLTAGE like you normally do.
2. Push button.
3. Read VOLTAGE again.
4. Did VOLTAGE drop? If yes - you have a problem in the wire.
5. Did VOLTAGE NOT drop? - Wire is clean.

How To Calculate LOADpro Amp Draw

1. Measure your LOADpro voltage

2. Divide by 100 - this is the mA draw

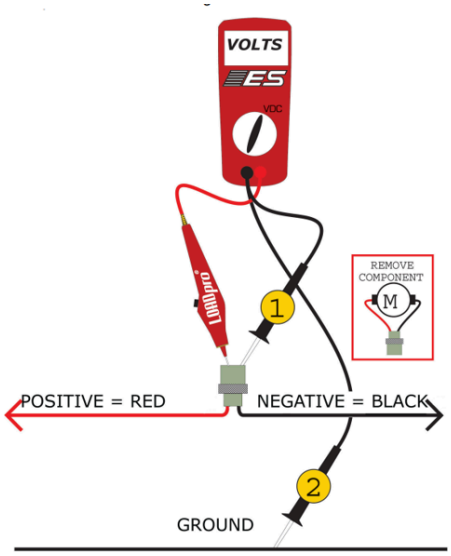
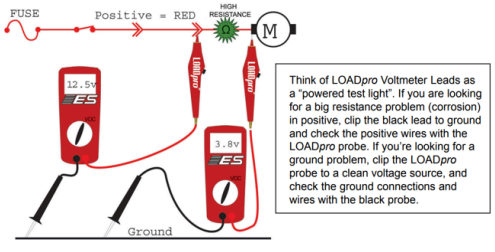
3. Example - 5VDC ÷ 100 = 50mA

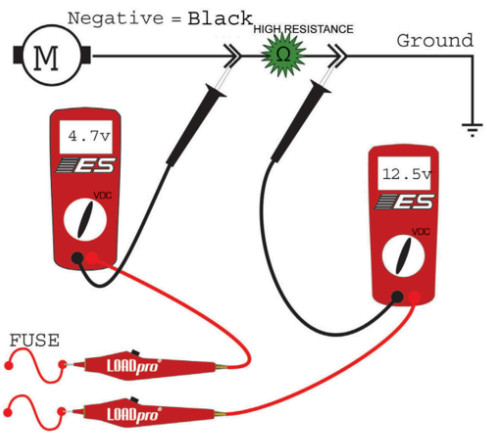
How To Calculate Your Actual Circuit Resistance:

1. Measure your actual system voltage
2. Measure LOADpro voltage
3. Divide LOADpro Voltage by 100 - this is the LOADpro Amperage
4. Subtract voltage 2 from voltage 1 — this is the resistance voltage drop
5. Divide resistance voltage drop by LOADpro Amperage — this is the circuit resistance (Ω). V÷A=Ω
6. Multiply the circuit resistance (Ω) by your normal circuit amperage — this is the actual voltage drop.

TOOL USAGE:

Test Procedure	DIRECTIONS	VISUAL AID
BASIC SYTEM TEST PROCEDURE: **Used to identify:** • Voltage drop test	1. Disconnect the load component (light bulb, etc.) from the wiring harness. 2. Insert both the LOADpro probe and the negative probe into the wiring Harness connector. See diagram provided for polarity. 3. Read system voltage and compare to manufacturer's specifications. Zero (0.000) volts, is a SHORT-TO-GROUND in the positive circuit. **GHOST voltage:** is an OPEN circuit in either the positive or negative circuit. To determine if the	

• Shorts to ground • Find open circuits	OPEN is on the positive or negative circuit: Move the black lead to a known good ground. If voltage rises, the OPEN is in the ground side of the circuit. If the ghost voltage remains, then the OPEN is in the positive side. **System voltage:** the circuit is complete, but may have HIGH RESISTANCE	
Test for **HIGH RESISTANCE** in the positive or negative circuit: **Used to identify:** • Find High resistance due to corroded wires/connectors • To determine if the High resistance is on the positive or negative circuit	1. Depress LOADpro probe button (maximum of 5 to 8 seconds). If system voltage does not change or drops very little, the wiring is good If the voltage drops, there is HIGH RESISTANCE in the wiring circuit. 1. Move the black probe to a known good ground and depress LOADpro probe button (maximum of 5 to 8 seconds). If the voltage drops, then the resistance is in the positive side of the circuit. If system voltage is present, then the resistance is in the ground side of the Circuit	
TESTING FOR RESISTANCE IN THE POSITIVE	1. Use the positive LOADpro Probe in the RED side of the circuit 2. Use the LOADpro Leads just like a test light - black to ground, and test with the LOADpro Probe. 3. Break the circuit at connectors as needed to test each segment 4. Depress the LOADpro button with each voltage test 5. Any drop in voltage indicates a problem (high resistance) in the circuit.	
TESTING FOR RESISTANCE IN THE NEGATIVE	1. Use the LOADpro Leads just like a POWERED test light - connect the LOADpro probe to a clean voltage supply.	

	2. Use the black probe in the ground circuit to check for a “bad ground”. Break the circuit as needed to test each segment 3. Depress the LOADpro button with each voltage test 4. A constant voltage means the ground is clean. 5. A drop in voltage means the ground has high resistance (corrosion).	

Maintenance:

- Inspect all components in the kit prior to using the tool. Replace any damaged component immediately and do **NOT** use unless kit is complete and functioning as designed!
- There is no battery in the tool, it is powered by the circuit and the multimeter
- There is no scheduled maintainance for this tool, just inspection and replacement of any damaged copmponents prior to usage