



TT405: Heated Hand Grip Function

March 26, 2009



Electrical

APPLIES TO	SYMPTOMS
Any model that can use heated hand grips.	• Intermittent or Erratic Electrical Operation

Heated Hand Grip Function

Harley-Davidson heated grips are simple components that are easy to diagnose if you understand how they work. Just like any other electrical component, they need a complete circuit to function. We know that a circuit is made up of four parts. It is a good idea to identify these four parts of any circuit you are diagnosing.

1. Source power (Battery)
2. Path (wires)
3. Load (internal coils)
4. Control (switch)

Whether you are working with a CVO or P&A kit, the CVO Ultra Service Manual Supplement and heated grip instruction sheets are great resources for trouble shooting heated grip concerns.

You will see in the diagram below that Harley-Davidson heated grips connect to three wires from the vehicle. One of them is a ground, and the other two provide power. To function properly, the grips will need a good path to ground and power on both of the power wires.

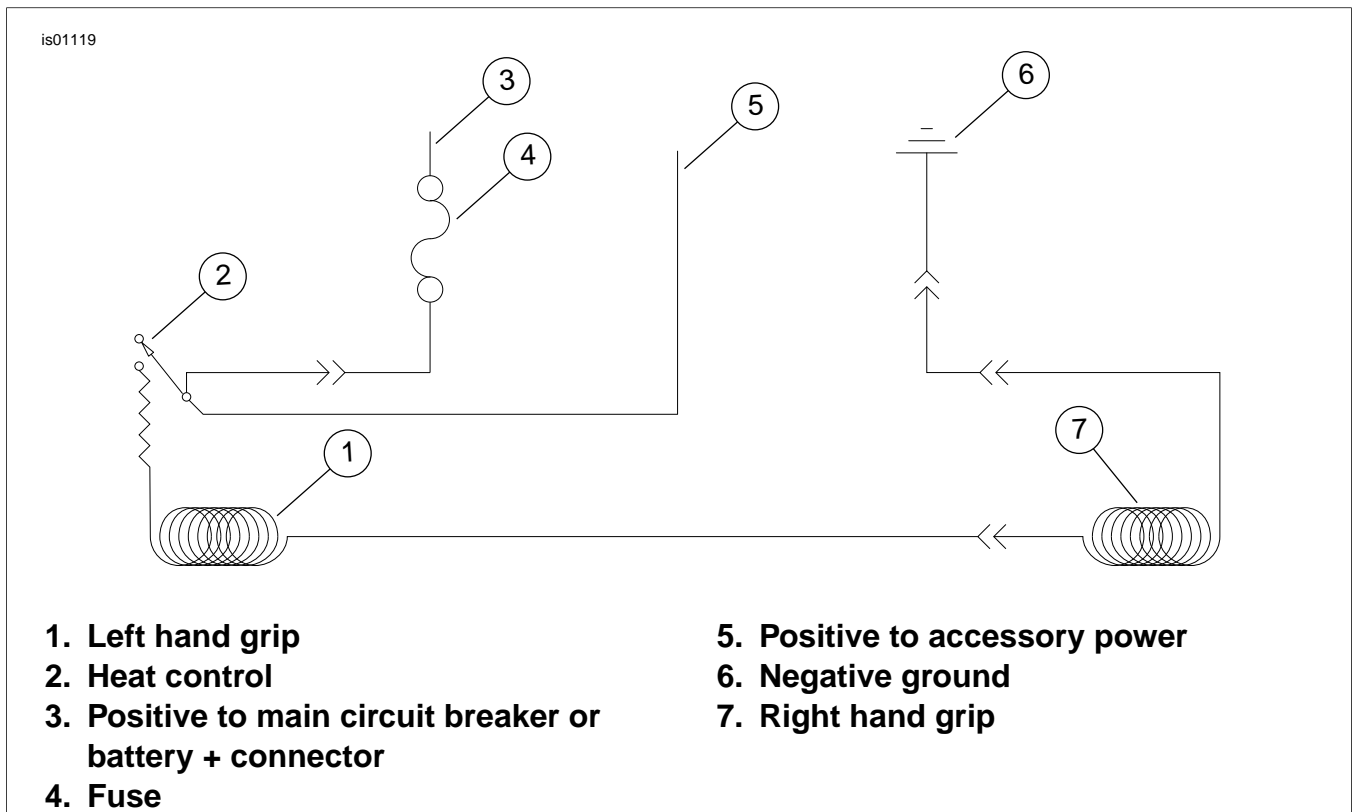


Figure 1. Heated Hand Grip Schematic

Tips to diagnose common heated grip symptoms

Low or no heat - both grips

Disconnect the ground wire, and two power wires, from the vehicle and carefully inspect the fuses, connectors, and pins for damage, corrosion, and tightness.

Turn the ignition switch ON and use your test light to verify power from the motorcycle's battery connector and accessory wire. If you are using the ground wire to supply ground to your test light, you are effectively verifying the ground circuit as well.

We do not provide any temperature specification for our heated grips; however, the grips should draw a total of 1-3 amps. That can easily be verified with an inductive amperage clamp while the grips are on. You can also see that the grips must be connected to each other in order to complete the circuit.

If the motorcycle is providing good power and ground, and the connections are good, the issue may be with one or both of the heated grips.

Low or no heat - only right grip

If only the right-hand grip is not heating, disconnect the right grip from the left and test continuity on the black and black/white wires from the right grip. If the vehicle is a CVO touring model that utilizes internally wired grips with electronic throttle control, you will need to leave the grip connected to the Twist Grip Sensor (TGS) for this test. The TGS contains the wires for these right grips. You should measure 1 to 9 ohms through the RH grip. If the resistance is higher, the grip should be replaced.

Low or no heat - only left grip

If only the left-hand grip is not heating, follow the steps described in "low or no heat - both grips".

Tips for installation and replacement

Use caution when installing heated handgrips. Damage to the wires from improper installation or modifications to the parts could result in a rejected warranty claim. (see images below)

There are no heated handgrips offered through P&A that are compatible with internally wired handlebars. Do not modify heated grips for fitments that are not recommended.

Heated Hand Grips returned to the warranty department with severed or damaged leads will not be considered warrantable.

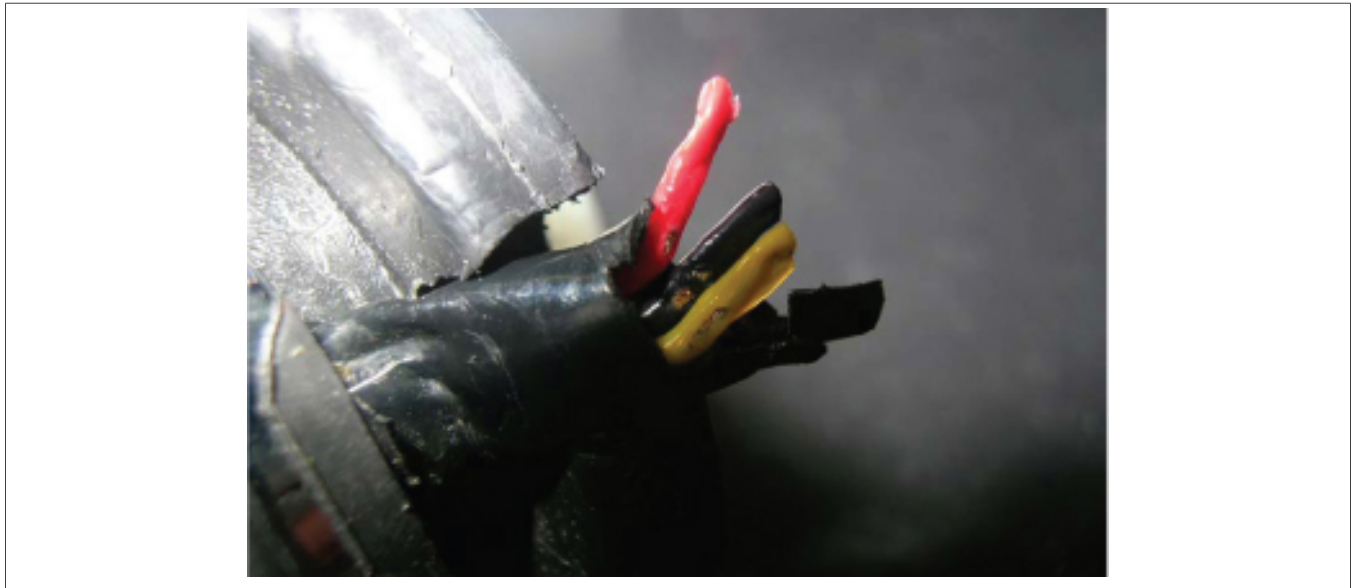


Figure 2. Physical Damage (not warrantable)



Figure 3. Good Return Part With Wires

Always include the complete grip with its attached wires when returning parts for warranty.