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Coding Information

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Title: General Circuit Load Testing and Voltage Drop Test

Applies To: All Models

CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

06/08/2015 - Initial Article Release

DESCRIPTION

This document will guide the user through performing general circuit load testing and voltage drop testing.

SYMPTOM(s)

Diagnostic Trouble Code(s) & Dashboard Indicator Light(s):

DTC/Light	Description
N/A	
N/A	

Customer Observations or Concerns:

NA

SPECIAL TOOL(s) / SOFTWARE

Tool Description	Tool Number	Comments	Instructions
Fluke DVOM	ZTSE4357		
Head Lamp	GE9006	Recommended	

SERVICE PARTS INFORMATION

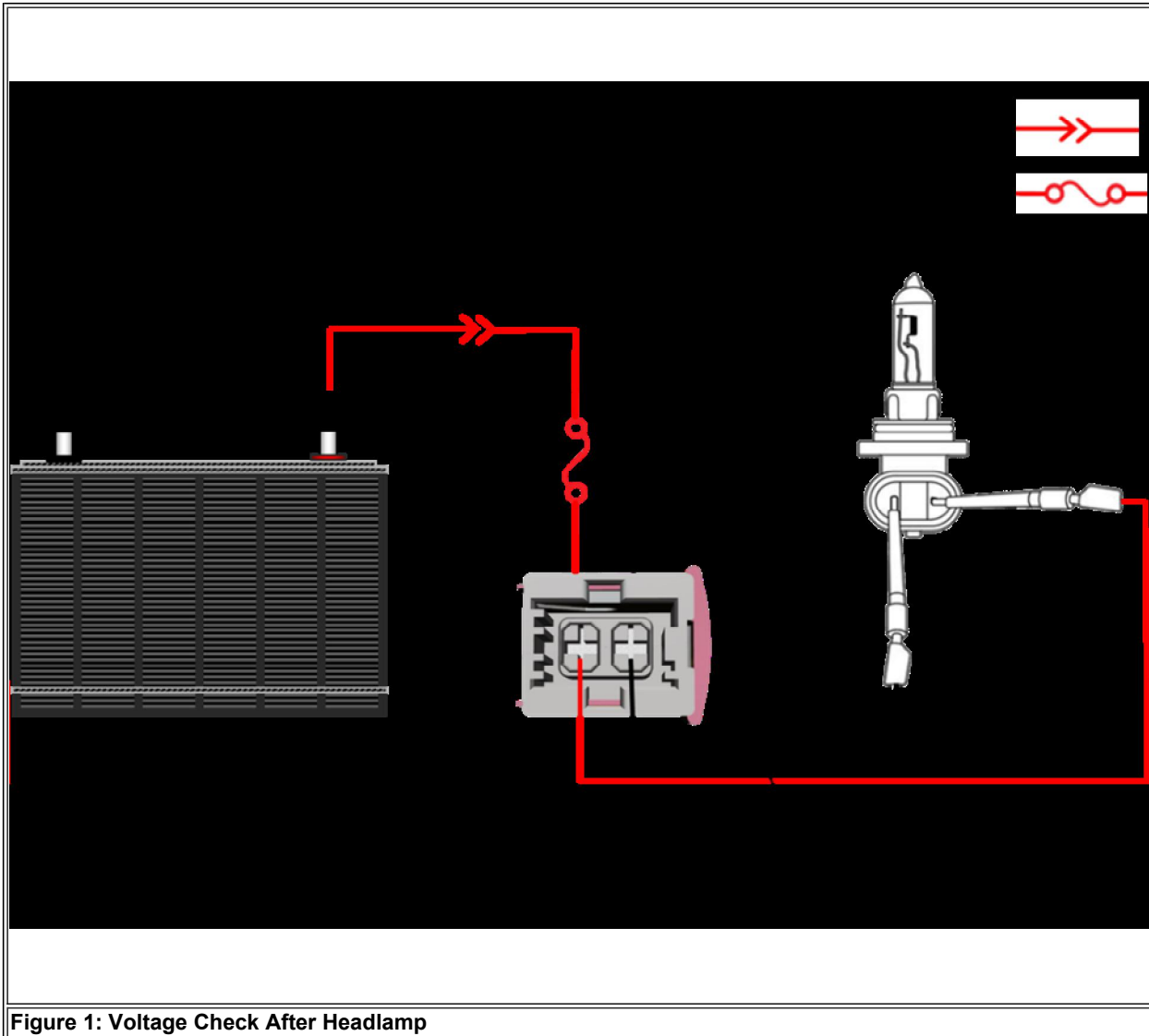
Kit Description	Part Number	Quantity Required	Notes
NA			

DIAGNOSTIC STEP(s)

 WARNING:	
To prevent property damage, personal injury, and / or death, keep flames or sparks away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases.	

 WARNING:	
To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.	

Step	Action	Decision
#1	DIAGNOSTIC: Identify power and ground circuit being tested, load will need to be applied in series Please refer to figure 1. With circuit set up as figure 1. Does the head lamp illuminate? Note: It is good practice to wiggle test harness while observing lamp. If lamp flickers possible bad connection or intermittent defect is present in harness.	Yes. Proceed to step 2 No. Make certain test leads are connected correctly. If so, you have isolated a circuit concern that needs to be further diagnosed /repaired.

**NOTE:**

Although resistance-free connections, wires and cables would be ideal, most of them will contain at least some voltage drop. Use the following as maximum limits recommendations:

- 0.00V across a connection
- 0.20V across a wire or cable
- 0.30V across a switch
- 0.10V at a ground

Step	Action	Decision
#2	DIAGNOSTIC: With head lamp illuminated measure voltage from B+ to head lamp input terminal and record voltage. <i>Refer to figure 2</i> Is voltage drop greater than .5V?	Yes. You have isolated a circuit concern that needs to be further diagnosed /repaired.
		No. Proceed to step 3 B+ side of circuit does not exhibit evidence of fault or failure.

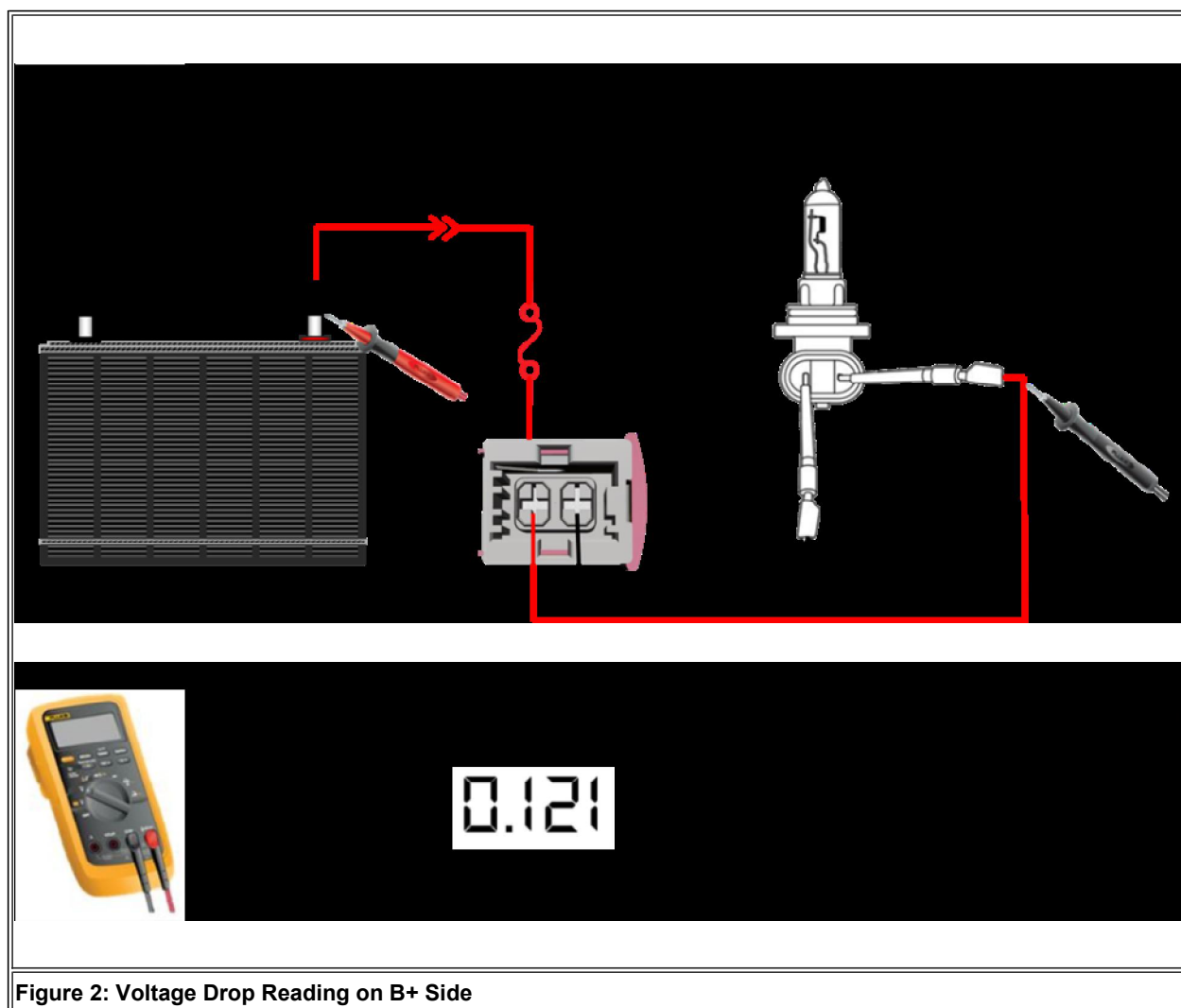


Figure 2: Voltage Drop Reading on B+ Side

Step	Action	Decision
#3	DIAGNOSTIC: With head lamp illuminated measure voltage from head lamp output to ground. <i>Refer to figure 3.</i>	Yes. you have isolated a circuit concern that needs to be further diagnosed /repaired.
	Is voltage drop greater than .5V?	No. Ground side of circuit does not exhibit evidence of fault or failure.

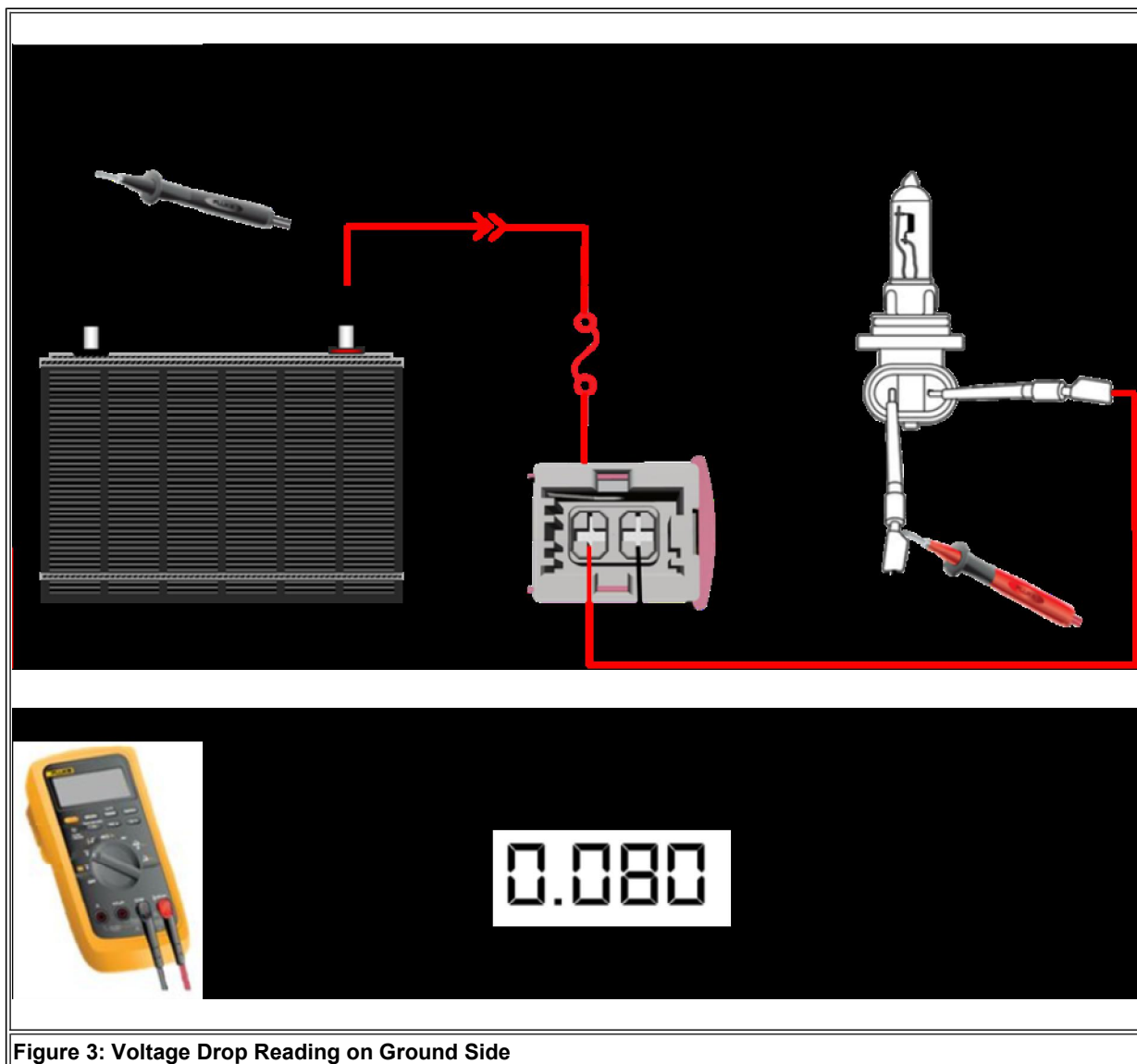


Figure 3: Voltage Drop Reading on Ground Side

REPAIR STEP(s)

N/A

WARRANTY INFORMATION

N/A

OTHER RESOURCES

[Master Service Information Site](#)

[Fluke® Voltage Drop Article](#)

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Staff ID	Client ID	Comments	Created Date
	DY14825	You received the following feedback From: dy14825 - Matt Rahn Email Address: mrahn_87@hotmail.ca Job Classification: SE008, Service Technician Dealer: TRU-NOR TRUCK CENTRES Feedback: Thank you for providing a simple explanation that I can use to show other techs who don't understand this procedure. Is there any way we can make other articles that explain the other simple DMM procedures?	6/8/2016 8:11:35 AM

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