

Vehicle



Test Guide

The "hands on" Reference

Vehicle How To Test Guide for DMMs

Master your DMM!

Application Notes

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Meters

12. Tell how accurate your test meter is.
16. Set the digital meter for reading: open circuit, charging, or source voltage.
18. Place the meter probes to find open circuit, charging, or source voltage.
20. Set the meter for reading: the amount of source voltage available to any load on the vehicle.
22. Place the meter probes to find the amount of source voltage available to any load.
24. Set the meter for reading the voltage drop between the battery positive (+) terminal and the input pin to any load on the vehicle.
26. Place the probes to find the voltage drop between the battery positive (+) terminal and the input pin to any load on the vehicle.
28. Set the meter for reading the voltage drop between the battery negative (-) terminal and the output pin or case ground from any load.
30. Place the probes to find the voltage drop between the battery negative (-) terminal and the output pin or case ground from any load on the vehicle.
32. Calibrate an inductive pick up that plugs into a voltmeter.
34. Read a 100 millivolts-per-amp inductive pick up.
36. Make and use a 10x inductive multiplier.
38. Extend meter leads when testing a long distance from the battery.

Battery testing.

"How to": test for voltage drop:

40. Between the battery (+) post and clamp.
42. Between the battery (-) post and clamp.
44. Test the open circuit voltage of the battery.
46. Charge the battery.
48. Do a battery load test using a VAT 40 or 45.
50. Do a battery load test without a load tester.
52. & 97 Find the parasitic drain on any battery using an auxiliary battery.
54. Do a 3 - minute charge test on a battery
56. Between the battery (+) terminal and the starter motor armature lead.
58. Of a battery positive + pigtail wire.
60. Between the wire and the clamp material in a battery positive (+) pigtail wire.

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62. Between the battery negative (-) terminal and where the negative (-) cable attaches to the frame or the block.

64. Between the battery negative (-) cable conductor and its end connectors.

Computer/module testing.

66. Test for voltage drop of computer voltage feed wires that can be back-probed.

68. Test for voltage drop of computer ground wires that can be back-probed.

70. Load test computer voltage feed wires that cannot be back-probed.

72. Load test computer ground wires that cannot be back-probed.

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Current path, connections, and switch contact testing.

79. Test for voltage drop of any length of wire.

80. Test for available voltage to a "hot at all times" connection.

82. Test for available voltage to a "hot in start or run" connection.

84. Load test a "hot at all times" connection.

86. Load test a "hot in start or run" connection.

88. Test any mechanical switch using an ohmmeter.

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100. Find a short to ground, that resulted in a blown fuse, using a light bulb load.

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102. Test a suspect circuit breaker.

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106. Test for voltage drop between the generator output and the battery positive (+) terminal.

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118. Test for shorted diodes in the generator using the "micro amp range" of the meter.

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- 132. Between the battery negative (-) terminal and the starter motor housing.
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2. About the author

Joe Glassford, MA taught at Triton College in River Grove, IL. Overall he has spent 29-years as a public school teacher and 15-years as an instructor for various companies including Allen Test Products, Delta Corporate Services and engineering personnel at the GM factory.

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