

Lucas Generator Tests

For models: C39PV, C39Q, C40A, C40/1, C40AL, C40L, C40LQ, C42, C45PV-5, C45PV-6, C47, C48

The following tests should be carried out with a good quality Moving Coil Voltmeter. The meter should have a full scale deflection of at least 20 volts, with divisions suitable for taking readings to within 0.5 of a volt. A meter of this standard will be suitable for both 6 and 12-volt LUCAS equipped cars, trucks, etc., and 6 volt systems on motor cycles.

ALWAYS CHECK BATTERY CONDITION BEFORE COMMENCING TESTS

GENERATOR TESTS WITH THE MACHINE IN POSITION ON THE VEHICLE

Inspect generator mounting for tightness of bolts, etc.

Inspect the fan belt for correct tension, adjust if necessary. If worn or frayed fit a new belt. Make sure drive pulleys are correctly aligned.

If the belt and generator mounting are satisfactory and pulleys correctly aligned then proceed to Test 1.

Voltmeter Connections	Reading	Action
TEST 1. Disconnect leads from generator. Connect one lead of voltmeter to D terminal and the other to a good ground. Start engine and raise speed until generator is running at approx. 3,000 rev/mi n. When vehicle has a positive ground system positive meter lead must be grounded.	A. 2-4 volts as generator is run up to charging speed (approx. 3,000 rev/mIn) (6 and 12 volt systems).	Armature and brush connections ok proceed to Test 2.
	B. Zero volts.	Examine brushes and make sure they are free in their boxes making good contact on the commutator. If still no reading fault is in armature which has to be replaced.
	C. Rising volts with rising speed.	Internal short between D and F terminals, examine field coils and rectify as necessary or fit replacement.
TEST 2. Connect meter as in. Test 1. Link terminals D and F on generator. Gradually speed up engine to fast "tick-over" speed. If an ammeter is used to link D and F, reading should not be more than* 2 amps, when normal voltage of system is registered on voltmeter. *2.5 for C42 with 4.5 ohm field.	A. Rising volts with rising speed—full scale reading at fast tick-over.	Generator in order, proceed to Test 3.
	B. 2 – 4 volts as engine is revved up (6 and 12 volts systems).	Open circuit in field coils, rectify as necessary or fit replacement.
	C. Zero volts.	Grounded field coils or field connection, rectify as necessary or fit replacement,
TEST 3. Reconnect leads of generator. Remove leads from D and F terminals at the control box. Connect one side of voltmeter to end of D lead, the other to a good ground, speed generator up to approx. 3,000 rev/mIn.	A. 2 – 4 volts (6 and 12 volts systems).	D lead from generator to control box is in order, proceed to Test 4.
	B. Zero volts.	Rewire D lead which is open-circuited or earthed.
	C. Rising volts with rising speed.	Locate short between D and F cables.
TEST 4, Leave voltmeter connected as in Test 3. Join D and F wires together. Gradually speed up engine to fast "tick-over" speed.	A. Rising volts with rising speed.	Cables from generator to control box are in order. Proceed to Test 5 in Control Box Tests.
	B. Zero volts.	Earthed F lead.
	C. 2 – 4 volts (6 and 12 volts systems).	Open circuit in field lead between generator and control box.