

The TRIUMPH Corporation

SERVICE BULLETIN

TO ALL EASTERN TRIUMPH DEALERS

November 9, 1965

65/17

12 Volt Lucas Equipment Testing - 1966 Triumph Motorcycles - T120/R, TR6/R, 6T, T100/R using Tri-Cor Model 102 Electrical Test Set.

Earlier Models Note: Refer to Tri-Cor Service Bulletin Index to select the appropriate instructions for testing older Triumph models.

Battery Condition Note: For Test purposes the battery must be in good condition. If any doubt exists, fit a battery that you know to be good.

CAUTION: POSITIVE terminal of battery is ALWAYS GROUNDED. If battery connections are reversed the rectifier and rotor can be damaged.

Test No. 1 Testing Charge Rate. (D.C. current in-put to battery).

1. Plug Black test lead into Yellow Socket (AMPS). Position test set toggle switch for Test No. 1 (D.C. AMPS).
2. Disconnect positive side of battery by removing fuse (or remove red ground wire at (+) battery terminal).
3. Connect COMMON Red Test lead to a good ground on motorcycle frame.
4. Connect Black test lead to battery positive terminal.
5. Turn on key, start engine and check maximum readings according to Light Switch position shown below. (Engine speed approximately 3,000 RPM, a fast idle).

LIGHT SWITCH POSITION

Off
Pilot
Head

TEST METER READING

1. 5 AMPS
1. 0 "
1. 0 "

Above readings are average. All readings with switch in "Head" position are with the dip switch in high beam position. All lights normally fitted should be working. If extra lights are fitted, meter readings will be reduced accordingly.

NOTE: Incorrect out-put can be due to faulty battery, faulty Zener Diode, defective alternator, defective rectifier, poor or incorrect wiring and connections, defective ammeter, defective ignition switch, or defective light switch.

Proceed to Test No. 2 if the above D.C. Current readings are not obtained.

Test No. 2 Testing Alternator. You are reading A.C. VOLTS on the meter for this test.

1. Reconnect motorcycle wiring as normal.
2. Plug Black test lead into Black Socket (VOLTS). Position test set toggle switch for Test No. 2 (A.C. VOLTS with 1 Ohm Load).
3. Disconnect the three alternator wires, White/Green, Green/Yellow and Green/Black from the alternator side of the alternator cable junction block (Underneath Gearbox).

Continued.....

12 Volt Lucas Equipment Testing - Test No. 2 cont'd.

4. Start engine and connect test leads to wires as shown below. At a fast idle (approx. 3,000 RPM), the average A.C. voltage readings should be obtained as follows:

<u>Connect Black</u> <u>Test Lead to:</u>	<u>Connect Red (COMMON)</u> <u>Test Lead to:</u>	<u>A.C. Voltage</u> <u>A.C. Voltage</u>
Green/Black	White/Green	4.7 VOLTS
Green/Yellow	White/Green	8.1 "
Green/Black & Green/Yellow (CONNECTED TOGETHER)	White/Green	10.2 "

NOTE: Low readings on any of the above three TESTS indicate grounded or shorted coils in the A.C. stator assembly. Zero readings indicate open circuit, broken wires, or shorted coils. Remove and clean stator using Tri-Cor Metal Cleaner and compressed air. Repair any obvious wire breaks, or replace stator assembly.

5. IMPORTANT

With engine running, connect Red (COMMON) test lead to ground and connect Black test lead to each of the three alternator wires in turn. There should be no reading between any one wire and ground. ANY reading indicates "grounded" stator coils or cable and the stator assembly must be repaired, or be replaced.

Proceed to Test No. 2A if the alternator Tests are satisfactory.

Test No. 2A Testing Rectifier. Using No. 2 Test position of the toggle switch, you are reading D.C. VOLTS on the meter for this Test No. 2A.

1. Reconnect motorcycle wiring as normal.
2. Position Test Set toggle switch for Test No. 2 (D.C. VOLTS, 1 Ohm Load).
3. Disconnect Brown/White colored wire from middle rectifier terminal.
4. Connect Red (COMMON) Test lead to a good ground on the motorcycle frame.
5. Connect Black test lead to middle rectifier terminal.
6. Start engine and look for maximum indicated voltage of 12.0 volts, (at fast idle, approx. 3,000 RPM). If this reading is obtained, it proves that the rectifier is OK.

NOTE: If no reading or low reading is found check rectifier for good ground to motorcycle frame. If no reading or low reading persists, replace rectifier and re-check. When fitting a new rectifier (Part #49072) always hold the top hexagon bolt head (above the top plate) when tightening the bottom fixing nut.

Zener Diode Test All 12 Volt system Triumph models employ the Zener Diode to control the charging rate. CAUTION! The body of this Zener Diode is made of copper to insure maximum heat conductivity and the fixing stud can be easily broken by over-tightening. The recommended maximum torque is 17 inch lbs. (1-1/2 ft. lb.).

Detailed testing procedure for the Lucas Zener Diode as fitted to 1966 Triumph 12 Volt Battery ignition models will be found on page H24 of latest Triumph Workshop Manual (Part No. CD411).

A quicker means of testing the Diode is by substituting a new one (Part No. 49345) and comparing meter readings as in the first test of this bulletin.