SERVICE BULLETIN

M1507 **2020-01-23**

M1507: 2014–2020 SPORTSTER - LOW/NO CHARGING DIAGNOSTICS

Reason for Revision

Refer to Table 1.

Table 1. Document History

Date	Revision Description
2020-01-24	Main fuse
	* Updated CONNECTOR SOCKET ADJUSTMENT
2020-01-17	Initial release

Purpose for Service Bulletin

To inform the dealers of updated and **new** symptom-based diagnostics for the low or no charging symptom on the Sportster® platform.

Motorcycles Affected

2014-2020 Sportster platform.

Markets Affected

All markets are affected.

Required Dealer Action

Use the **new** diagnostics on all 2014-2020 Sportster platforms.

Replace the LOW OR NO CHARGING symptom based diagnostic in the electrical diagnostic manual with the updated LOW OR NO CHARGING and new CONNECTOR SOCKET ADJUSTMENT sections.

LOW OR NO CHARGING

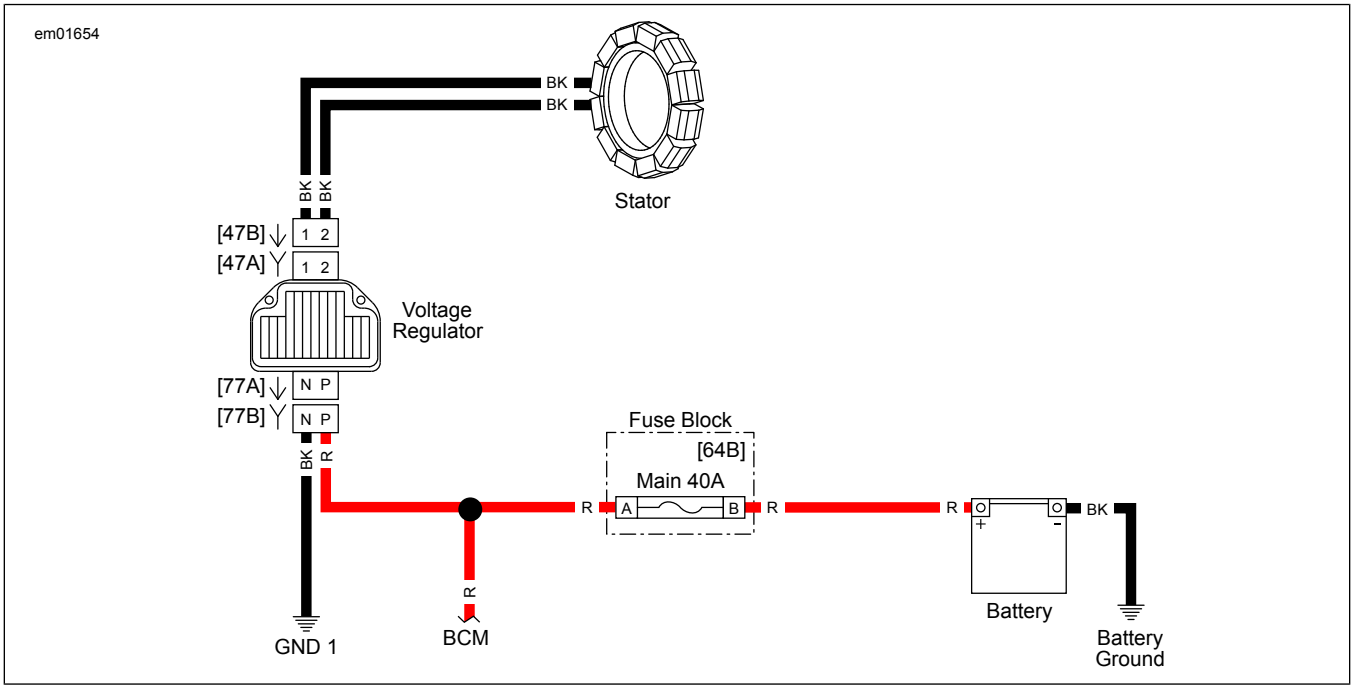

Figure 1. Charging System Circuit

NOTE

When a connector is disconnected always inspect the socket and pin terminals for damage or corrosion.

1. Battery Test

1. Perform battery test. See BATTERY TESTING.

NOTE

In the interest of preserving customer safety and satisfaction, always check for outstanding recalls whenever any motorcycle is brought into your dealership for either maintenance or service.

ROUTING	SERVICE MANAGER	SALES MANAGER	PARTS MANAGER	WARRANTY PROCESS MANAGER	LEAD TECHNICIAN	TECHNICIAN NO. 1	TECHNICIAN NO. 2	TECHNICIAN NO. 3	RETURN THIS TO
INITIAL HERE									

2. Did battery pass test?

   a. **Yes.** Go to Test 2.

   b. **No.** Replace battery.

2. Off Idle Voltage Test

1. Start engine and run at 3,000 rpm for 30 s.
2. With the engine still running at 3,000 rpm, test battery voltage.
3. Is voltage above 14 V?

   a. **Yes.** Go to Test 8.

   b. **No.** Go to Test 3.

3. AC Output Test

1. Perform AC (Alternating Current) output test. See BATTERY CHARGING TESTS.
2. Did output test pass?

   a. **Yes.** Go to Test 6.

   b. **No.** Go to Test 4.

4. Stator Test

1. Perform stator test. See BATTERY CHARGING TESTS.
2. Is the stator good?

   a. **Yes.** Go to Test 5.

   b. **No.** Replace stator.

5. Rotor Inspection Test

1. Turn IGN OFF.
2. Inspect rotor magnets for damage.
3. Remove rotor assembly and inspect rotor and shaft splines for excessive wear.
4. Verify stator bolts have not backed out and contacted rotor.
5. Is rotor in good condition?

   a. **Yes.** Go to Test 6.

   b. **No.** Replace rotor.

6. Voltage Regulator Power Circuit Test

1. See Figure 1. Disconnect voltage regulator [77].
2. See Figure 2. Using TEST CONNECTOR KIT (PART NUMBER: HD-41404), test resistance between [77B] terminal (+) and battery.
3. Is resistance less than 0.5 Ω?

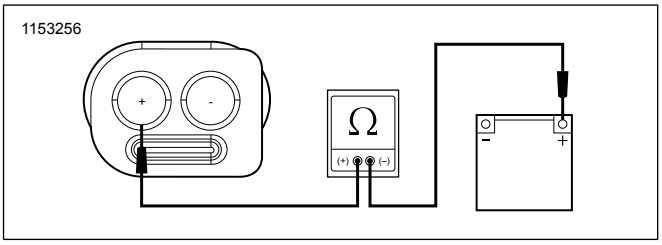

Figure 2.

   a. **Yes.** Go to Test 7.

   b. **No.** Repair open wire between voltage regulator [77B] terminal (+) and battery.

7. Voltage Regulator Ground Circuit Test

NOTE

Voltage regulator ground must have a clean, tight connection for proper grounding.

1. See Figure 3. Test resistance between [77B] terminal (-) and ground 1.
2. Is resistance less than 0.5 Ω?

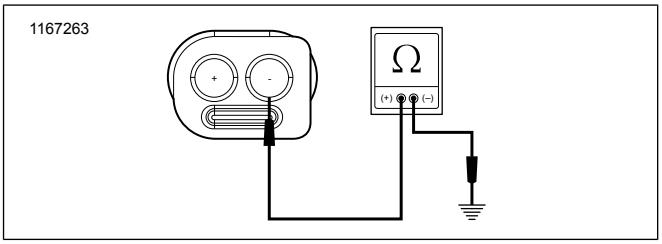

Figure 3.

   a. **Yes.** Go to Test 8.

   b. **No.** Repair open wire between voltage regulator [77B] terminal (-) and ground 1 (BK) wire.

8. Voltage Regulator [77] Test

1. **If necessary:** Connect all connectors.
2. Start engine and run at 2,000 rpm for 30 s.
3. With the engine still running at 2,000 rpm, test battery voltage.
4. While testing battery voltage, perform a wiggle test on voltage regulator [77].
5. Did voltage stay at or fluctuate below 13.5 V?

   a. **Yes.** Connector socket issue. See CONNECTOR SOCKET ADJUSTMENT.

   b. **No.** Go to Test 9.

9. Voltage Regulator [47] Test

1. With the engine still running at 2,000 rpm, test battery voltage.
2. While testing battery voltage, perform a wiggle test on voltage regulator [47].
3. Did voltage stay at or fluctuate below 13.5 V?

   a. **Yes.** Connector socket issue. See CONNECTOR SOCKET ADJUSTMENT.

   b. **No.** Charging system working properly.

CONNECTOR SOCKET ADJUSTMENT

1. Clean both pins and sockets with contact cleaner.

2. Test socket terminal.

    a. Using **GREEN** probe from test connector kit.

    Special Tool: TEST CONNECTOR KIT (HD-41404)

    b. Insert and remove probe from socket terminal of connector.

    c. Slight drag should be felt throughout the complete terminal.

    d. **Drag is felt:** No adjustment necessary.

    e. **No drag is felt:** Go to Step 3.

3. Adjust socket terminal.

    a. Remove main fuse.

    b. Use a small flat tipped screw driver to slide down the length of the socket, 90° from terminal gap.

NOTE

Use caution not to tear or damage the socket housing.

    c. Rock and twist screw driver so that the terminal tightens along the entire length of terminal.

    d. Test drag using **GREEN** probe. Adjust if necessary.

    e. Verify that socket terminal is even with end of the connector housing.

    f. Install main fuse.

4. Perform wiggle test.

    a. **Passed wiggle test:** Repair completed, charging system working properly.

    b. **Failed wiggle test:** Go to Step 5.

5. Failed wiggle test voltage of:

    a. **Fluctuating voltage below 13.5 V on [77]:** Replace [77] assembly (Part No. 74120-08).

    b. **Fluctuating voltage below 13.5 V on [47]:** Replace stator.

    c. **No voltage difference between engine running or engine off at battery:** Replace voltage regulator.