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<http://www.cannondale.com/motorsports>

Cannondale Motorsports Service Bulletin

BULLETIN : SB02-009

MODELS : All 2002 ATVs and Motorcycles

ISSUED : 5/16/02

SUBJECT : Stator output wire shielding

CONDITION : The stators of both ATV and Motorcycle units produced prior to 5/16/02 may have an incorrect length of shielding of the stator output leads. Stator were received from our vendor in the period prior to 5/16/02 with varied shielding lengths. A short length of shielding result in the stator output leads passing through the clip, unshielded. See "Incorrect" on page 2.

Unshielded leads passing through the stator clip increase the chances that crankcase heat and wire vibration will produce damage the stator output lead insulation. When this happens, the leads can short circuit directly to ground through contact with the clip or short circuit between the individual output wires. This may result in a failure of the vehicle charging system. If the charging systems fails to supply voltage to the rectifier/regulator during engine operation, the battery voltage can drop triggering the engine management power latch to drop supply to the engine control unit (ECU). When this happens, the engine will shut down.

Cannondale has received field reports of damage to the stator output lead insulation where the leads pass through the stator clip.

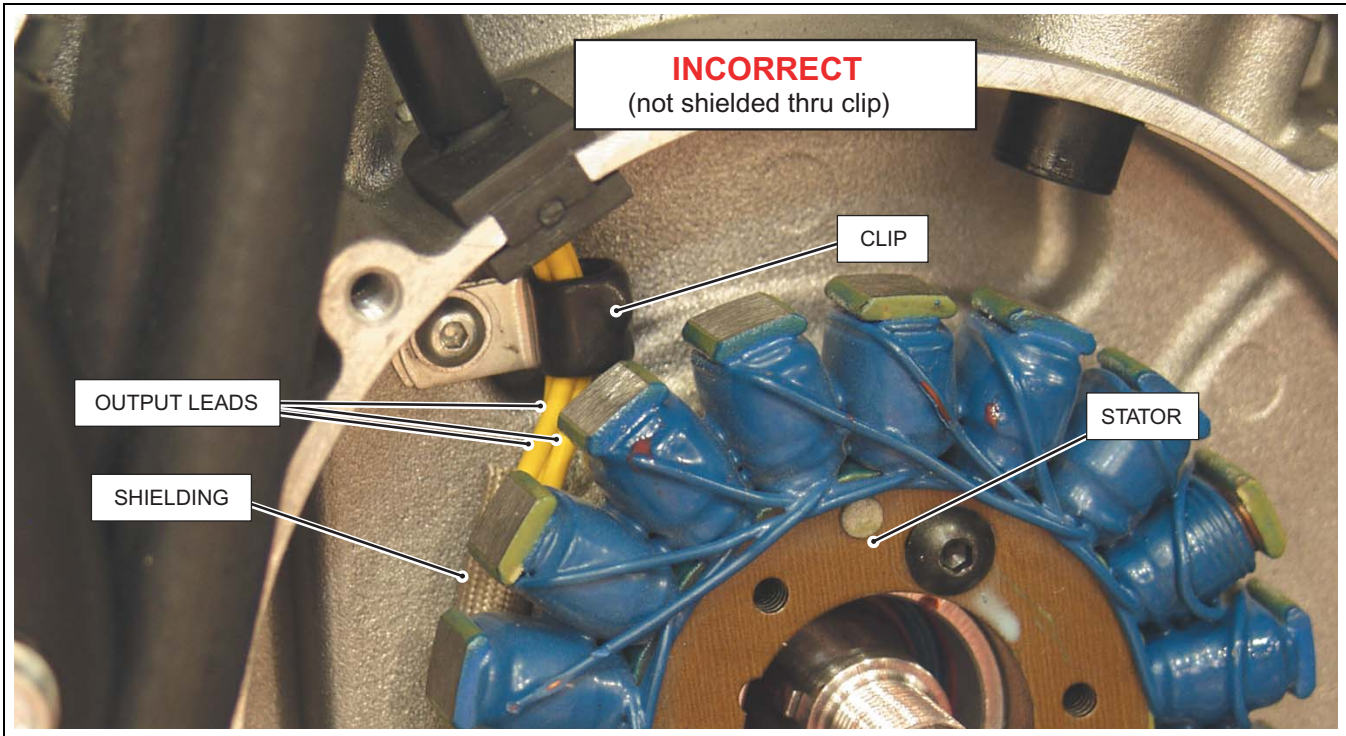
SOLUTION : The stator output leads of affected vehicles must be inspected to confirm that the shielding extends through the stator clip.

If an inspected unit is found to have a short length of shielding, the stator leads should be carefully examined for any damage that might have occurred. If damage is found, take corrective action, install the add on length of shielding as directed by this bulletin and test the stator for proper operation. See "Corrected" on page 2. Perform the static and dynamic tests described in this bulletin.

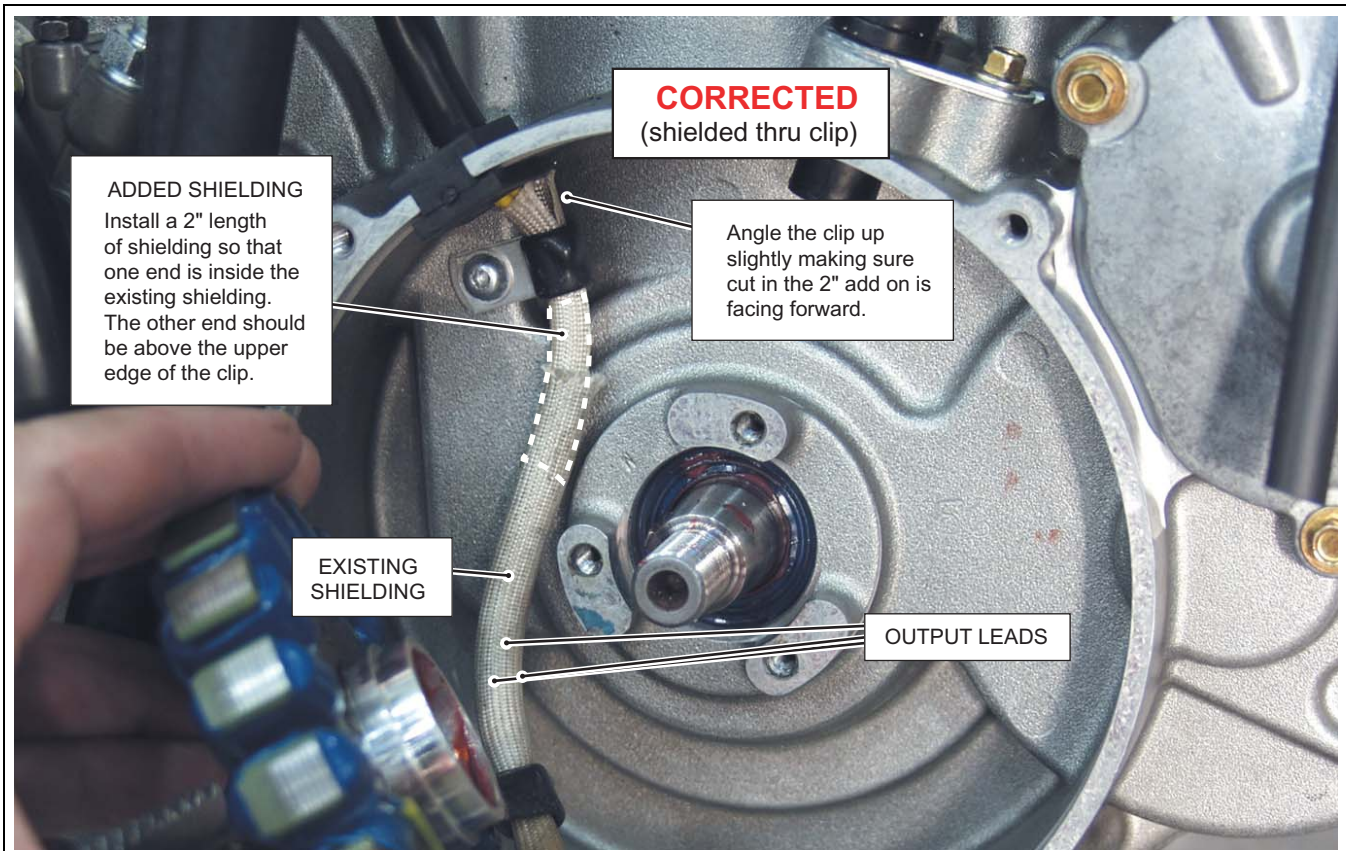
PARTS : Contact Cannondale Dealer Service for replacement parts information.
A standard length of the add-on shielding which can be cut to service multiple units is available under P/N 5002408.

If you have any questions about this service bulletin, call toll free 1-800-MOTO-USA.

INCORRECT



CORRECTED



ACCOMPLISHMENT INSTRUCTIONS

The following procedure can be performed as described on either a motorcycle or ATV.

1. Remove the flywheel cover screws, cover, and gasket.
2. Remove the flywheel nut and lock washer.
3. Remove the flywheel with the flywheel puller. When using the puller, be sure back off the driving bolt adequately so that the tool can be threaded into the flywheel completely. When the flywheel is removed put it in a place where the magnet will not pick up any metallic debris. Be sure to look for and remove any contaminants when reinstalling the flywheel later.

TOOL : **P/N CM-503877**
Flywheel puller

4. With the stator installed, carefully inspect the installed stator output leads where they pass through the stator clip. The length of woven shielding should extend above the top of the clip. Refer to the illustrations "Incorrect" and "Corrected" on page 2 of this bulletin. Move the stator output lead at a point above the crankcase seal exit to make sure any small movement present does not change the proper position of the shielding through the clip.

NOTE :

Both coated and uncoated stator clips were installed on affected units. Either clip is OK. The loop of either clip should face outward when installed properly.

5. If the shielding extends above the clip and not signs of other damage are present, stop.

If the shielding does not extend above the clip, a length of "add-on" shielding must be installed. Go to the next step.

6. To install the add-on length, start by removing the three stator mounting bolts. See note below.

NOTE :

Carefully impact the heads of each of the three mounting bolts with a flat head punch and mallet to ease removal. The mounting bolts are installed with Loctite #242 (blue). Removing without "shocking" the heads in this manner may make removal difficult or strip the bolt head. When loosening the bolts, use a T-handle; turn slowly counterclockwise allowing break away pressure to build. A sudden application of force may strip the bolt head.

7. When the stator mounting bolts are removed, carefully remove the stator and sleeve from the crankcase. The sleeve will probably remain in the stator body hole. Note which end of the sleeve installs into the stator body at this point so that reassembly later is easier should the two separate.
8. Use the same method described for removal of the stator mounting bolts and remove the stator clip bolt, washer, and clip from the crankcase. The clip bolt (2.5mm) is installed using Loctite #242.
9. At this point, examine the insulation of each of the stator output leads for burning, melting, or other damage and take corrective action if necessary.
10. Install the add-on length of shielding (2"). Make a lengthwise cut in the shielding and wrap it around the output wires. Slide the lower end of the cut shielding into the existing "un-cut" shielding. Slip the open end of the clip over the "add-on" shield and install the clip with the loop facing out (away from the crankcase). Be sure to install the washer with the clip bolt. See "Corrected" on page 2.

TORQUE : **Stator clip, Hand tighten**
Use Loctite #242 (blue)

11. Reinstall the stator (with sleeve) as removed onto the crankcase. Be sure not to twist the stator which would produce a coil in the output leads.

TORQUE : **Stator mounting bolts, 4.5 N•m**
Use Loctite #242 (blue)

12. Install the flywheel onto the crankshaft end. Make sure the crankshaft key is installed and that the flywheel is free of any contaminants.

13. Install the lock washer and nut.

TORQUE : **Flywheel nut, 50.0 N•m**

14. Perform the stator static and dynamic tests to confirm proper operation.
15. Be sure to reinstall the flywheel cover when the testing is completed.

STATOR STATIC TEST

NOTE :

If vehicle is equipped with a single phase stator, complete the steps described, but omit the references made to the third wire (three phase stator).

1. Disconnect the stator connector from the vehicle harness.
2. Set multi meter to the lowest Ohms setting.
3. Measure the resistance between all three stator output leads. Start with one wire and read resistance between it and the other two. Repeat for remaining two wires.
4. If all readings are within 0.5 to 2.0 Ohms, go to the next step.
5. If one of the readings is lower than 0.5 Ohms or higher than 2.0 Ohms, replace the stator.
6. Connect one of the multi meter leads up to one of the three yellow wires. Connect the other multi meter lead up to the crankcase or to a grounding point on stator core if it has been removed. Check the reading on the meter. Make sure the connection of the lead to the crankcase or stator core is a good one.

If no reading or "OL" is displayed, go to the next step. Install the add-on shielding and re-install the stator. Be sure to perform the dynamic test.

If you have any reading between 100 Ohms and zero Ohms, replace the stator.

DYNAMIC TEST - AC OUTPUT

WARNING

Make sure that the flywheel cover and gasket are installed before performing this test.

1. Switch the multi meter to the AC voltage (range at least 100 VAC). Make sure you do not switch to DCV or Vdc by mistake.
2. Connect the multi meter leads between two of the yellow wires emerging from the stator. Start the engine and bring to 5000 r/min. Check the reading on the meter. Switch one of the multi meter leads to another yellow wire and check the reading again.
3. If three equal readings are obtained, all higher than 50 VAC, the stator is ok.