

THUNDER MAX

EFI made simple.

Improving Conductivity of Your Electrical System

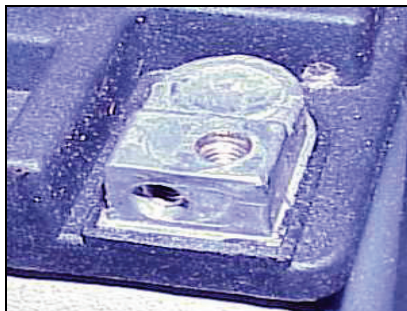
Throttle By Wire Instructions - Version 11.09.2011

Our Product Support Team has identified poor conductivity as a major source of problems that might falsely lead the user to believe there could be a problem with their ThunderMax® Throttle-By-Wire EFI system. Interruption of 12v power to the EFI module causes some unusual problems with the engine management system. This condition, which can also induce voltage spikes, can occur during operation of the motorcycle.

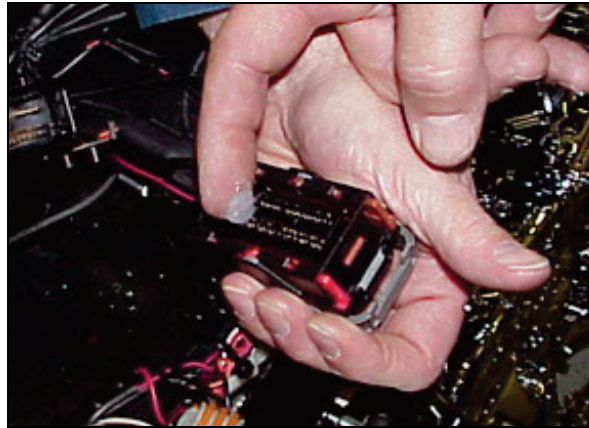
Occasionally we hear reports of anomalies where performance has changed or diminished, or momentary gauge loss has occurred. These issues have been reported on a relatively small number of motorcycles yet this is abnormal and should be corrected. If this type of condition does occur, simply cycling the main power switch restores the gauge functionality. Addressing the root cause of the conductivity problem is required.

The #1 enemy of your motorcycle's electrical system is a bad or inconsistent GROUND connection which will cause a variety of problems. Corrosion/oxidation is routinely found in the field and can cause problems related to insufficient or interrupted voltage that will affect the performance of your motorcycle. Corrosion has been found on battery cables, fuse connections and relays or completely hidden on the ECM connector. We recommend that all ECM related wiring connectors be inspected and cleaned by swabbing with alcohol and a q-tip, and then applying dielectric grease on the connector before reconnecting to the module. This will improve conductivity and prevent future corrosion or scale from forming on the pins.

- 1) **Remove the ECM Fuse** and disconnect the battery cables; clean and prepare them for re-installation.
- 2) Make sure the battery cables are tight, routed correctly and that any non-original electrical accessories wired on the vehicle are connected to a second, separate mount on the battery, if available (see image below). Temporarily removing or bypassing any non O.E accessory device may be a valid test when troubleshooting.



- 3) Inspect/clean the fuse panel and ECM and power fuse spades if required. If corrosion is present, clean as described above then apply dielectric grease.
- 4) Remove the ECM 73-pin connector. Swab the connector with alcohol; apply provided dielectric grease to the 73-pin ECM connector as shown below. Re-install the TBW ThunderMax ECM and ECM fuse.



- 5) Re-initialize the system - Turn the ignition switch on and the handlebar rocker switch to run for 20 seconds, uninterrupted. Cycle the ignition switch off and on, and then start the engine. Let the engine idle on its own for 15 seconds. Cycle the ignition off and restart the motorcycle
- 6) Diagnostic Trouble Codes can be viewed through the odometer or from within the ThunderMax® TMax Tuner software to verify that there are no other problems on the motorcycle that could cause the issue.
- 7) If you are experiencing any irregular performance as the engine temperature changes, inspect the connections on the cylinder head temperature sensor. A poor connection or a bad sensor will send erroneous data to the AutoTune system. This condition can easily be identified by running a monitor log during the operation of the engine to observe steady engine temperature changes as the engine warms up.
- 8) If Inconsistent performance continues after servicing electrical connections, next step is to check for proper fuel pressure using a fuel pressure gauge at the fuel line connection to the fuel tank. Consult your service manual for the proper procedure or see a service provider for this simple check.