Tri-Spark Trouble Shooting Guide

Triple system – TRI-0001

Thank you for purchasing a Tri-Spark ignition system for your triple. Here at Tri-Spark we have an ongoing commitment to monitor and improve our methods wherever possible to achieve the highest standards for our products. Your comments, favourable or otherwise are always welcome and needed to assess our standards and methods.

Our goal is to provide you with the best possible product that will give you many miles of trouble free service at a reasonable cost. We have many satisfied customers in Australia, New Zealand, America, England and Europe.

For your own safety, we strongly recommend that you engage a qualified technician to install your new ignition system. The following information is provided as guidance to assist them in the installation and setup.

General troubleshooting tips, installation notes, and cautions.

- Take care! Do not probe around the terminals in the box or sensor plate with the power on. Disconnect the fuse before attempting any adjustments or disassembly.
- Do not attempt to test for spark by 'hot wiring' or 'sparking' the coils as this can damage the Tri-Spark ignition.
- Do not run the bike without all spark plugs connected as this can damage the Tri-Spark system. If you wish to run the engine without all plugs firing, such as for tuning the carburettors, connect and earth a spare plug outside of the engine.
- Suppressor caps must be used with this system otherwise the ignition may cut out randomly. Use 5k Ohm caps such as NGK LB05EP. This is not optional.
- Starting the engine: In order for the engine to run you need compression, fuel and spark.

If the engine does not run, you should double check the following:

- Spark plug leads (high tension leads) connected to the correct plug
- Earth connection to the frame is sound
- Engine must also be earthed
- Check that fuel is getting through to carburettors
- Ensure that the battery is fully charged
- Ensure that there is compression, there should be resistance felt on the kick start lever – pay particular attention to the valve clearances.

- If there seems to be an ignition problem, reinstall the rotor from the beginning of the installation procedure, this is the most common installation error and also the most easily corrected.
- Always use the bolt provided to remove the rotor.
- The red LED in the trigger box should go on and off as you turn over the engine. The LED should come on as the piston rises on the compression stroke.
- Check that the tip of the rotor is 2-3mm below the ledge that the sensor plate sits on. If it is too high, remove the rotor and file it to the correct height so that it does not strike the screws on the sensor plate.
- You can tell if the rotor is striking the sensors by placing your finger on the sensor plate when the engine is running. If this is apparent it should be corrected. It is possible that the rotor has been bent; the tip should be at 90 degrees to the flange.
- Get someone else to double check the wiring.
- Check for 12 volts reaching the trigger box.

The Tri-Spark electronic ignition kit has an LED installed as a trouble-shooting and tuning measure. There are a variety of ways this can be utilised and we will cover those below. If, after following these trouble-shooting tips, you are still experiencing ignition problems we highly recommend you consult a qualified motorcycle electrician as the issues are likely to be related to another area in the system.

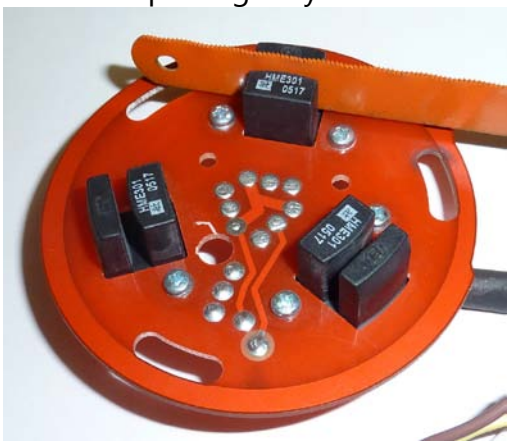
The most basic way to test the Tri-Spark unit is with the system still installed in the engine.

- To do this you will need to access the LED, this requires demounting the control box and carefully prying off the back cover.
- With the LED visible, very slowly kick over the engine. At each point of high resistance from the pedal (compression), the LED should illuminate. At all other points the LED should be dark.
- If the LED behaves in any other way, or the LED behaves as described, but there are still ignition problems, continue to the next tests.

The next level of troubleshooting will identify if there are any issues within the Tri-Spark system components.

- Remove the sensor plate from the engine with the wiring left connected.
- Using a hacksaw blade, or some other thin ferrous object, test each of the sensors. To do this, insert the blade into the gap in each sensor (see photo), the LED should be lit while the blade is in place.

Please note: It's normal for the LED to pulse slightly about every 2 seconds when lit. This pulsing may not be evident with the version 2 systems.



Testing the sensor with a steel blade

- Repeat this test for each sensor
- If the LED behaves as described, but there are still ignition problems, continue to the next tests. If the LED behaves in any other way, contact your Tri-Spark dealer.

To find a misfire issue, the spark plugs can be tested individually

- Testing for spark in each plug uses the same technique as outlined above, with the addition of having the plugs resting on the head, or similarly earthed position.
- Repeat the hacksaw blade test, this time look for a spark from one plug to coincide with each sensor being tested.
- If the LED lights as it should but the plug does not spark, first ensure that the plug body is earthed correctly. If there is still no spark, try installing a new plug, then try swapping the high tension leads and ignition coils.
- If either of these swaps corrects the problem, replace the offending part.
- If there remains no spark contact your Tri-Spark dealer.

Troubleshooting FAQ

Q: My engine's running badly - what should I do?
A: With the fuel we get now our older bikes often suffer with fouled spark plugs. Try a new set of plugs (really new - out of the box) before anything else. If the problem clears even temporarily it was probably due to fouled plugs.

Q: The engine runs but doesn't idle - is this the ignition?
A: The Tri-Spark system offers excellent idle stability but it will not tune the engine. A variable idle and stalling out are often indications of worn out carburettors.

Q: Why is Tri-spark truly a digital system?
A: Starting right from the sensor plate inside the engine the signal is digital which gives excellent accuracy and stability to the timing.

Q: I have no knowledge of electronics or wiring - can I install an ignition system?
A: We recommend that you get expert help.

Q: What causes some of the most commonly reported faults?
A: Wiring faults are common with old bikes. Battery trouble too.

Common places to look for a fault are, the main fuse (melted, bent or dirty contacts), inside the headlight shell (particularly the nylon connector blocks), ignition switch, kill switch, wire chaffing (under fuel tank, inside the rear mudguard, behind side covers), wires melted on the exhaust, ignition coil connections and earth connections (frame and engine).

Q: How do I test for signals within the control box?
A: Apart from the power connections, all other signals are electronic pulses and should not be tested for with simple lamp testers and meters. Refer to the test procedure using the built in LED along with checking for sparks at the plugs to see if the system is functioning correctly.

Please note: the information in this document relates to the Tri-Spark British Triple system (p/n TRI-0001) only and should not be applied to any other product.