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Stator Test Procedure by Ricks Motorsports

2006 – 2009 GSXR 600 Stator Test Procedure

These bikes utilize a 3-phase permanent magnet system; however, due to the unique way they are wound and the configuration of the magnets in the flywheel, it is essential that the stator and flywheel are both the correct parts for this bike. If you believe your GSXR stator may need to be replaced, use the following procedure to properly diagnose it:

1. Unplug the stator from the main harness and label the three AC output wires "A", "B", and "C". Order does not matter. Check the stator wires, connector, and terminals to ensure there is no corrosion or wear on either as this will produce inaccurate results.
2. Check the resistance of all three to ground (negative battery terminal or a solid frame ground). Any reading other than OL (no connection) means the stator is shorted and needs to be replaced. If all three show OL, stator is not shorted and proceed to step 3.
3. Measure the three possible combinations of wires (A-B, B-C, A-C) for resistance. All should show between .2-.9 ohms of resistance and be within .1 ohm of each other. If you have a manual-ranging meter you will need to set it to the appropriate range. If any of the three wires have no continuity to the other two, or there is significant difference in resistance values, the stator needs to be replaced*. If all three measurements are in spec and close to each other, move on to Step 4.
4. Start the motorcycle. Set your meter to measure AC voltage across the same three combinations as in Step 3 (again, if using a manual-range meter, you will need to identify the appropriate range on your meter and set it accordingly). At 1,500 RPMs, you should measure at least 20 VAC, at 3,000 RPMs at least 45 VAC, and at 5,000 RPMs at least 70 VAC on all three phases, and all three should be within 5% of each other. If the stator passes all these tests it is functioning properly.

*-any time you perform a resistance test, especially when comparing two or more measurements, be sure to cross your meter leads to "tare" the measurement by subtracting any resistance provided by the meter and leads themselves from your reading.