



ELECTRICAL PART GREMLIN GUIDE

PLEASE READ BEFORE INSTALLING ELECTRICAL PARTS

All electrical components must be fitted by a qualified technician.

Before fitting electrical components the root cause of the original failure must be established and addressed.

A battery condition report should be taken prior to installation and retained for future reference.

The absence of any of the above can void warranty.

MELTED CONNECTORS CIRCLE OF DEATH



The solution to this problem:

Inspect each connector before replacing any electrical components.

Stage 1

If corrosion is just beginning, use sand paper to clean the terminals (pins) this will create a better contact and eliminate problems in the future. A corroded terminal/pin is one of the most frequent causes for melted connectors. This may result in electrical failure of the ignition or charging systems parts.

Stage 2

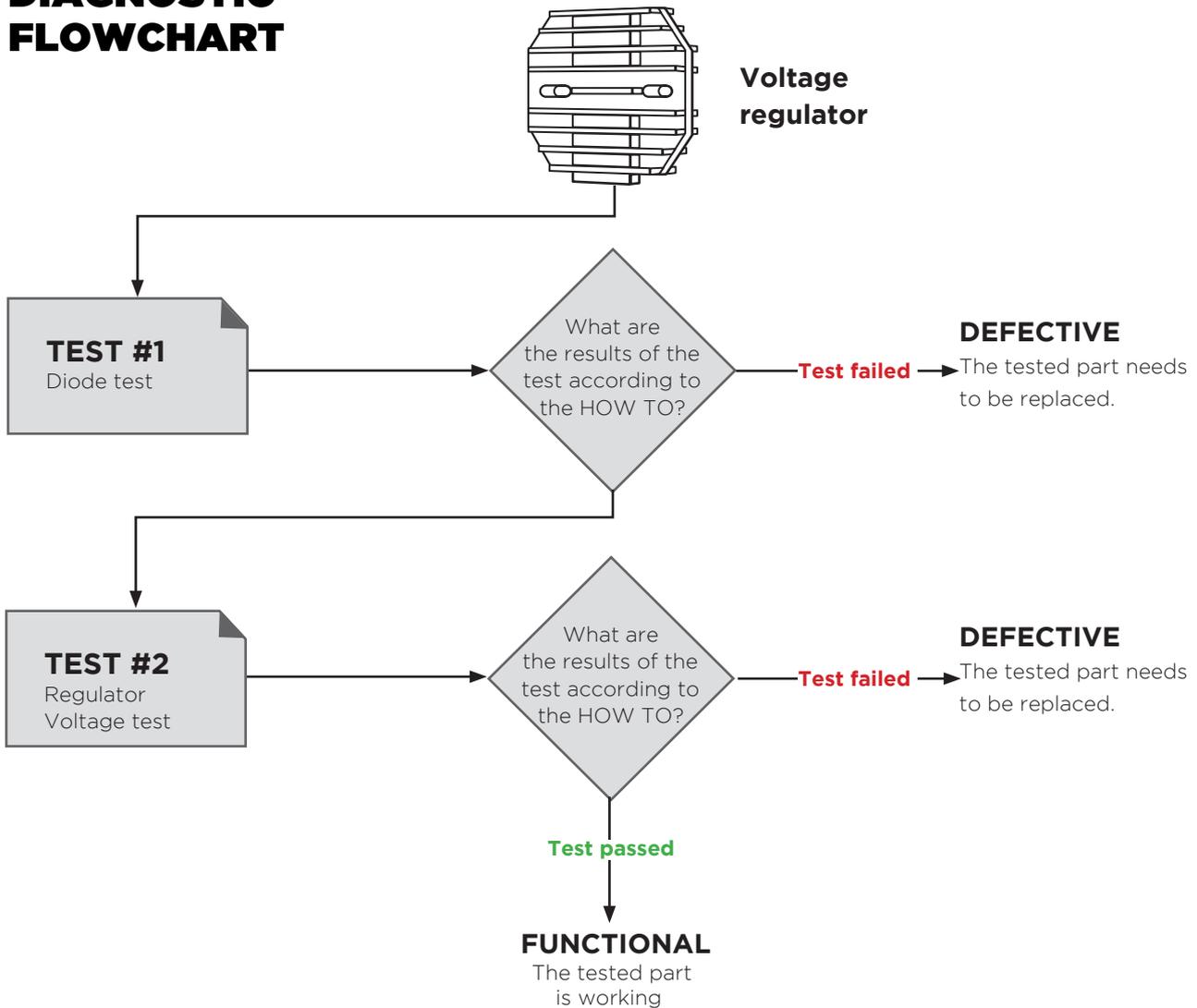
If the connector is melted or if the corrosion on the terminals is too severe, remove all connectors and terminals and replace them

Always use high quality dielectric grease that resists to high temperature on all electrical connections to avoid future problems.



Dielectric grease

VOLTAGE REGULATOR DIAGNOSTIC FLOWCHART



Test #1 - Diode test

Note: If you are testing a MOSFET regulator, pay attention to the MOSFET Notes on the chart below!

Note: This test ONLY verifies if the rectifier function is working. It DOES NOT test the regulation function.

- Set multimeter to **Diode test mode**. Your multimeter MUST have a diode function to perform this test.
- Locate the **Battery +** (Often RED) and **Battery -** (Often BLACK or GREEN) wires on your regulator. If your regulator has a built-in connector, you can identify the terminals by the wire color in the connector.
- Locate the stator wires on your regulator. There are usually three wires, all the same color (often YELLOW or WHITE). If your regulator has a built-in connector, you can identify the terminals by the wire colors in the connector.
- Connect your multimeter per the chart on the back, and write down each measurement.

PASS

Your rectifier is in the acceptable range for each measurement in the chart on the back.

FAIL

Your rectifier fails one or more of the steps in the chart on the back.

VOLTAGE REGULATOR DIAGNOSTIC FLOWCHART

	Meter BLACK To:	Specification:	Result:
Meter	Stator Wire 1	'OL' or '1 . '	
RED To	Stator Wire 2	'OL' or '1 . '	
Battery +	Stator Wire 3	'OL' or '1 . '	

	Meter BLACK To:	Specification:	Result:
Meter	Stator Wire 1	0.2-0.8V	
RED To	Stator Wire 2	0.2-0.8V	
Battery -	Stator Wire 3	0.2-0.8V	

	Meter RED To:	Specification:	MOSFET Specification:	Result:
Meter	Stator Wire 1	0.2-0.8V	0.090-0.110V	
BLACK To	Stator Wire 2	0.2-0.8V	0.090-0.110V	
Battery +	Stator Wire 3	0.2-0.8V	0.090-0.110V	

	Meter RED To:	Specification:	MOSFET Specification:	Result:
Meter	Stator Wire 1	'OL' or '1 . '	'OL' or '1 . '	
BLACK To	Stator Wire 2	'OL' or '1 . '	'OL' or '1 . '	
Battery -	Stator Wire 3	'OL' or '1 . '	'OL' or '1 . '	

Test #2 - Regulator Voltage Test

- Set multimeter to DC Voltage setting and the 20 volt range if available.
- Connect multimeter RED lead to the battery + terminal.
- Connect multimeter BLACK lead to the battery - terminal.
- Note battery voltage with motor off. Battery should measure 12.0-13.0 Volts at rest.
- Start the motor, and let idle (~1000 RPM). Battery voltage should measure 12.0-13.5 Volts.
- Increase motor speed to ~5000 RPM. Battery voltage should measure up to 14.6-14.8 Volts.
- If any of these tests fail, the regulator is faulty and should be replaced.

PASS

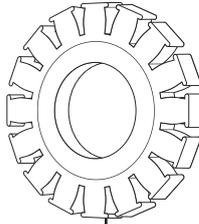
Your rectifier is in the acceptable range for each measurement in the chart on the back.

FAIL

Your rectifier fails one or more of the steps in the chart on the back.

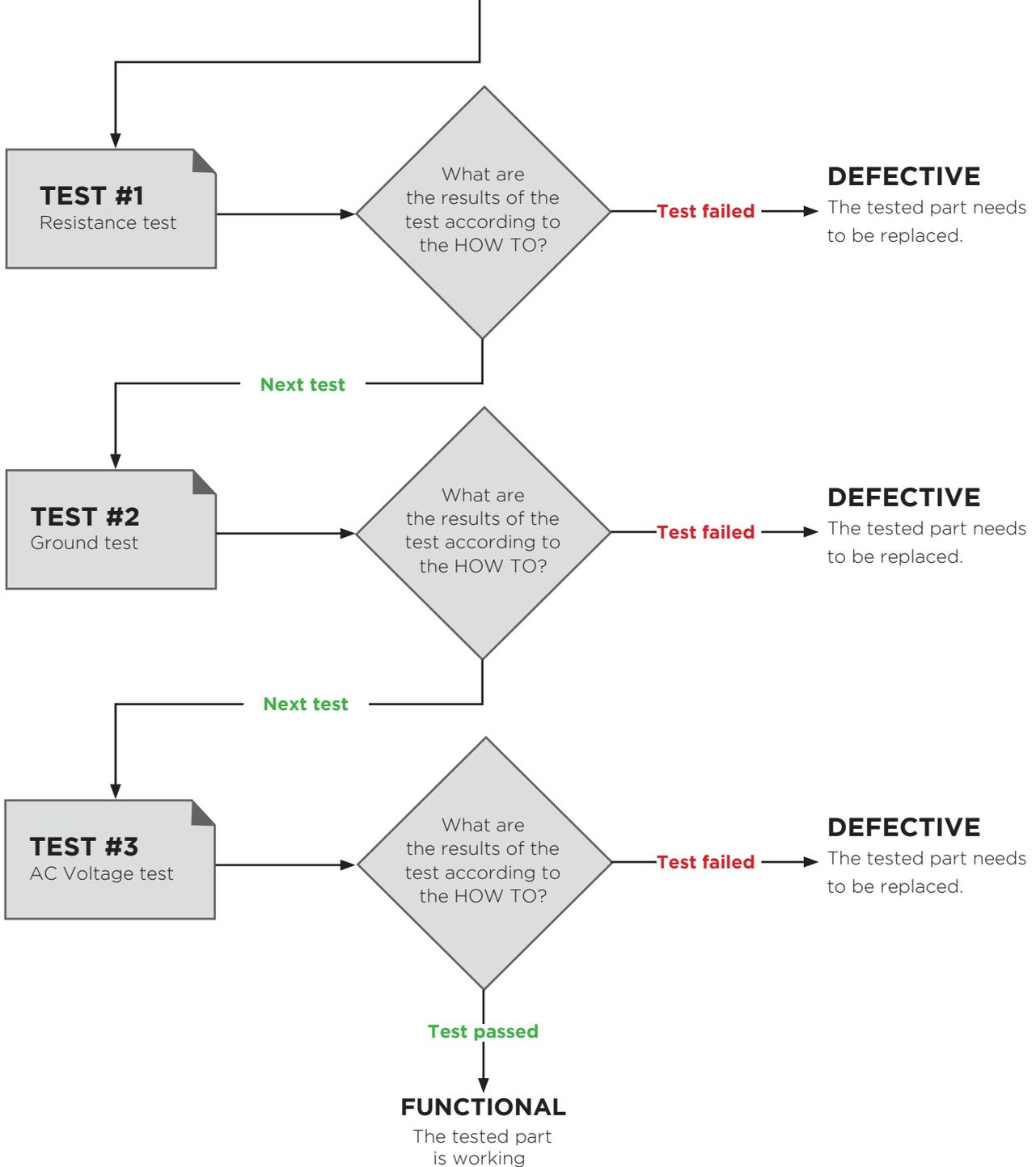
RPM	Battery voltage
Motor off	12-13 volts
1000 RPM	12-13.5 volts
5000 RPM	14.6-14.8 volts

STATOR DIAGNOSTIC FLOWCHART



STATOR

We strongly recommend you perform all three tests below to fully diagnose a stator failure.



STATOR DIAGNOSTIC FLOWCHART

Test #1 - Resistance test

- Set multimeter to lowest resistance range available.
- The stator will have three wires of the same color. Take three resistance measurements total, between each pair of two out of the three wires. It does not matter which color meter lead goes to which wire.

PASS

All three measurements are the same (within 0.1 ohms of each other) & are within 0.2-0.9 ohms.

FAIL

One or more measurements are not the same (within 0.1 ohms of each other) & are outside of 0.2-0.9 ohms.

Test #2 - Ground test

- Set multimeter to lowest resistance range available.
- Connect BLACK (Ground or Negative) meter lead to a good unpainted frame ground, or battery negative terminal.
- Connect RED (Positive) meter lead to each of the three stator wires of the same color in turn.

PASS

All three measurements measure 'OL' (Open Loop), (1.), or No Connection. There should be no connection at all between each stator wire and frame ground.

FAIL

One or more measurements measure ANY resistance at all between a stator wire and frame ground.

Test #3 - AC Output test

Note: This test can be useful, but is often not accurate depending on your multimeter. Please make sure to perform the Resistance and Ground tests above, as they are much more accurate to determine a stator problem.

- Set multimeter to the AC Voltage range closest to 100VAC.
- The stator will have 3 wires of the same color. Measure the AC Voltage between each pair of 2 out of the 3 wires (3 measurement total). It does not matter which meter lead goes to which stator wire. You will need to perform this test at idle (~1000 RPM) and ~5000RPM, with the 3-wire stator connector plugged in to the bikes harness/regulator, and unplugged. You can insert the meter leads from the back of the connector to touch the terminals inside.

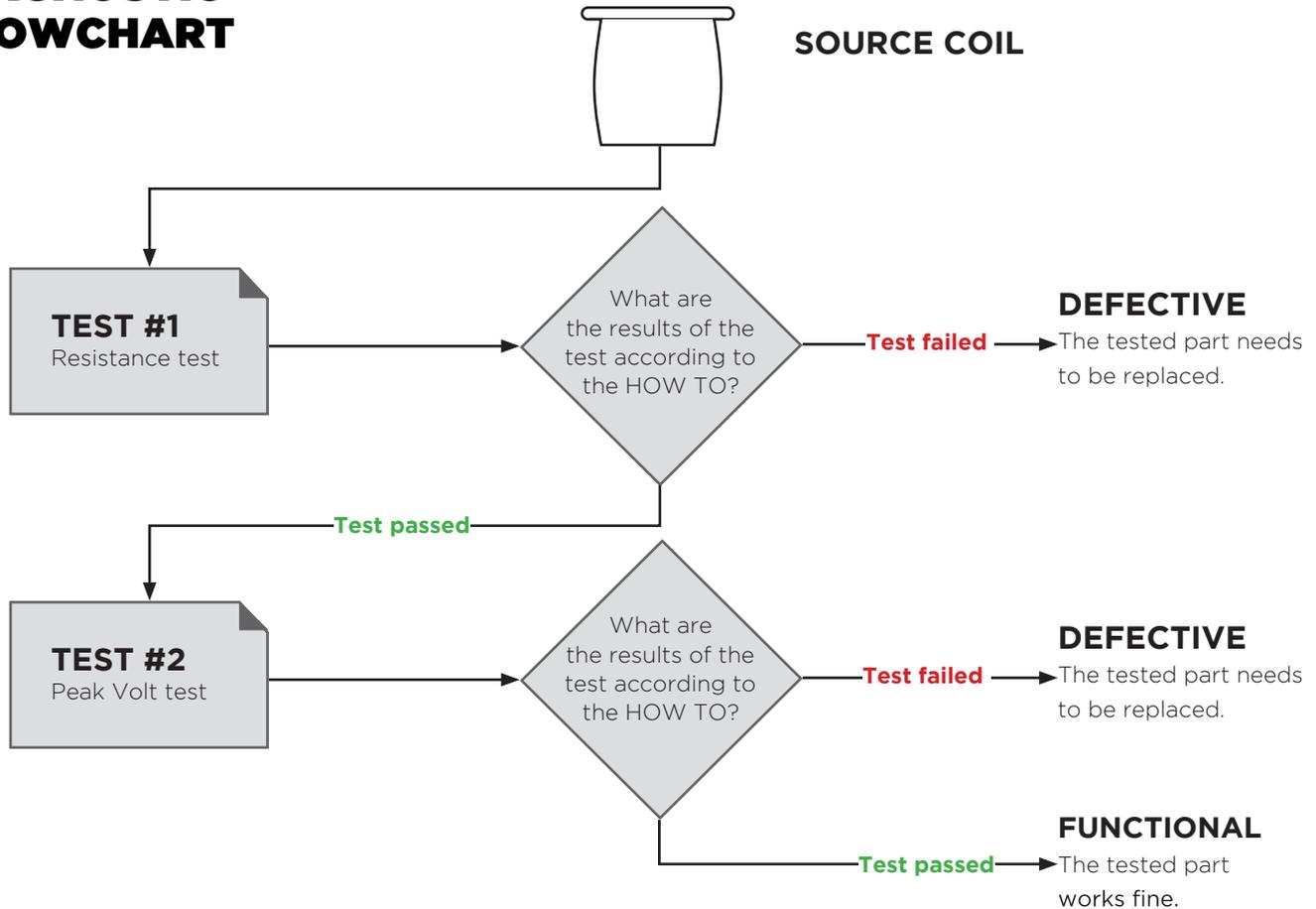
PASS

	STATOR UNPLUGGED	STATOR PLUGGED
1000 RPM	All three measurements are the same (within 3VAC of each other) & between 10-25VAC.	All three measurements are the same (within 3VAC of each other) & between 5-15VAC.
5000 RPM	All three measurements are the same (within 3VAC of each other) & between 40-70VAC.	All three measurements are the same (within 3VAC of each other) & between 30-60VAC

FAIL

The numbers above are universal and will apply to most stators. If your stator fails one or more of the above tests by a large amount, it most likely is bad. It is most important that the measurements are the same, and close to ranges listed above.

SOURCE COIL DIAGNOSTIC FLOWCHART



Test #1 - Resistance test

Note: Before performing Peak Voltage Test, measure source coil resistance and compare to specification.

- Look up resistance specification for your Make/Model/Year.
- Set multimeter to nearest resistance range HIGHER than the specification (example: specification is 120ohms, use the metres 200 ohm setting / specification is 300ohms, use the metres 2k ohm setting)
- Connect multimeter RED & BLACK leads to the two source Coil wires. If there is only 1 wire, connect one meter lead to frame ground. It does not matter which lead goes to which wire.

PASS

Measurement is within +/- 20% of specification resistance.

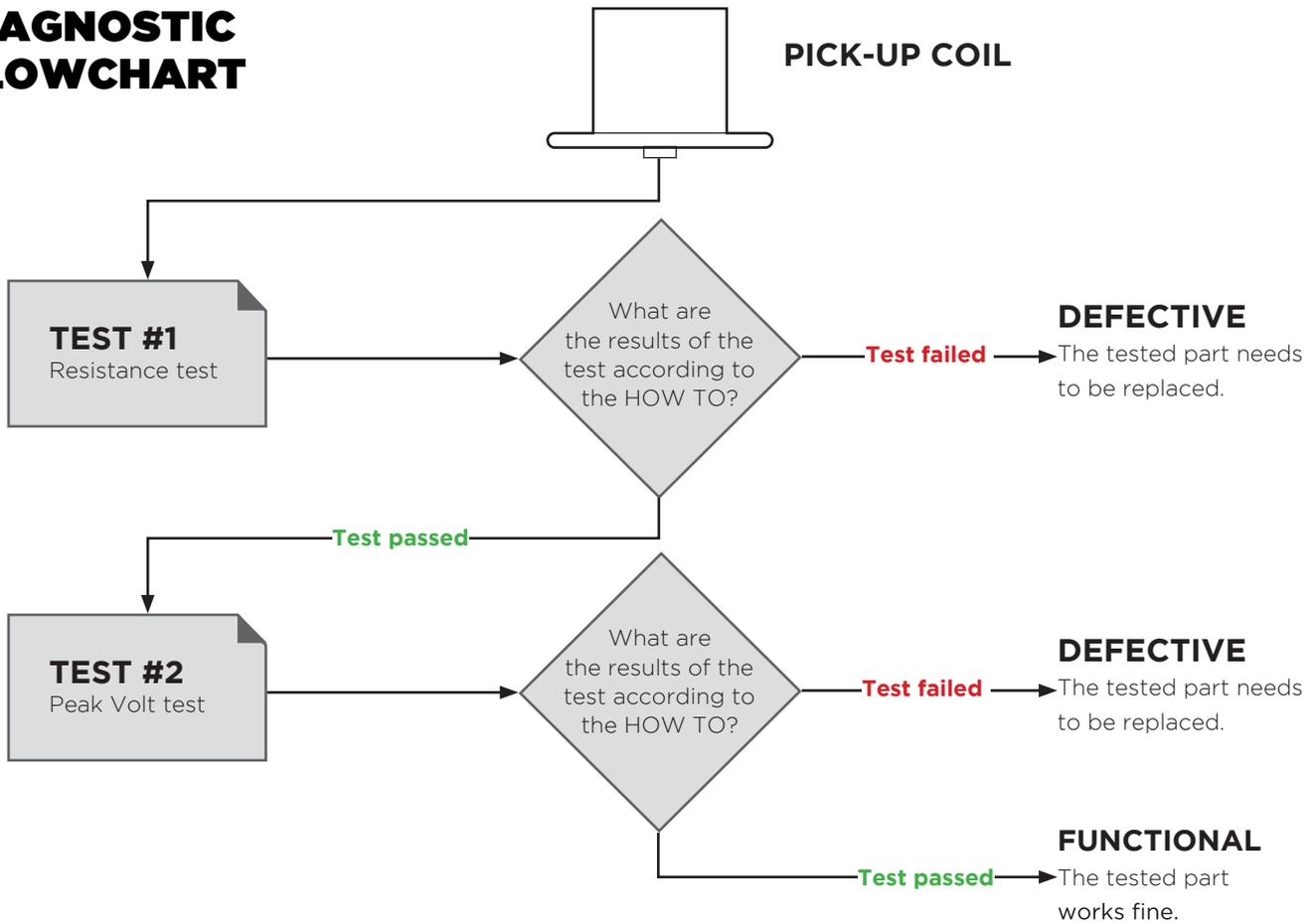
FAIL

Measurement is NOT within +/- 20% of specification resistance.

Test #2 - Peak Volt Test

- Set your meter on DC volts mode.
- For this test you will need a RMSTATOR Peak Voltage Adapter. (RM22980)
- Plug the adapter into your meter, and your leads to your source coil harness.
- Start your vehicle.
- The voltage needed to either pass or fail the source coil test depends on the year /make / model of your vehicle. It usually is half the resistance of the source coil plus or minus 10V.
- For example, on a 1995 Yamaha 350 Warrior, the source coil is 320ohms. For that specific model, you should get a reading between 150-170 volts at cranking speed to charge the CDI box properly. If it's less than 150 volts, then the source coil is defective.

PICK-UP COIL DIAGNOSTIC FLOWCHART



Test #1 - Resistance test

Note: Before performing Peak Voltage Test, measure pick-up coil resistance and compare to specification.

- Look up resistance specification for your Make/Model/Year.
- Set multimeter to nearest resistance range HIGHER than the specification. (example: Specification is 120 ohms, use the meter's 200 ohm setting. Specification is 300 ohms, use the meter's 2k ohm setting.)
- Connect multimeter RED & BLACK leads to the 2 Pick-Up Coil wires. If there is only 1 wire, connect one meter lead to frame ground. It does not matter which lead goes to which wire.

PASS

Measurement is within +/- 20% of specification resistance.

FAIL

Measurement is NOT within +/- 20% of specification resistance.

Test #2 - Peak Volt Test

- Set your meter on DC volts mode.
- For this test you will need a Peak Voltage Adapter .
- Plug the adapter into your meter, and your leads to your pick-up coil harness.
- Start your vehicle.

PASS

Measurement is at least four volts.

FAIL

Measurement is less than four volts