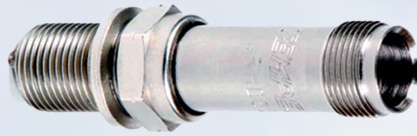


# TEMPEST<sup>™</sup>

excellence



## How many Ohms of Resistance are your Spark Plugs creating?

**WHAT?** Spark Plugs deliver spark energy, they don't create resistance to energy...do they? Well, they don't exactly create it - or do they? Read on to find out why more and more engineers and mechanics are now checking the resistance as part of their scheduled spark plug maintenance.

For the past two years Tempest has been educating the general aviation industry on the importance of checking the resistance of spark plugs. Here are some common myths and misconceptions about spark plugs and resistors:

1. *Resistors are used in spark plugs to reduce radio noise*

**FALSE** - resistors, although they may help with radio noise reduction, are used primarily to reduce the electrode erosion effects caused by capacitance after-fire. This is a known after-firing of the plug caused by the residual energy built up through the harness leads and magnetos..

2. *Spark plugs are considered in good condition if they spark in a tester*

**FALSE** - Bomb or bench testers can not adequately simulate the conditions of the engine cylinder, altitude and condition of the magneto. It is a fact that plugs with high resistance have tested as 'good' in a bench test environment

3. *The resistance in the spark plug doesn't matter, because my magneto has the ability to put out more energy than is required.*

**FALSE** - The typical aircraft magneto will put out 20-25kV. Let's go back to science class for a moment and revisit Ohm's Law. It takes 1 Volt to push 1 Amp through 1 Ohm of resistance. Based on Ohm's Law a magneto cannot deliver adequate energy to the spark plug if the system resistance is above 20-25kΩ. Tempest recommends any spark plug over 5kΩ needs to be replaced with a new plug. Experience suggests that any resistance over 5kΩ ohms causes the voltage to bleed through the path of least resistance rather than ionize the gap.

4. *All aviation spark plugs are made the same, therefore there is no difference in resistance.*

**FALSE** - Tempest uses a 21st century proprietary FISS resistor design which results in consistent resistance values of 1-2kΩ. Our competitor uses an old style stack up design which can cause extremely high and inconsistent values, resulting in misfiring and a rough running engine.

For more information, contact Airpart Supply Ltd

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