

Joshua Young
Air Safety Investigator
AS-ERA

Date: 4/1/2025

Subject: ERA25FA020, Electronic Magneto Examination

Contact: Trent Ibarra, E-Mag Electronic Ignitions

On April 1, 2025, the IIC and party members traveled to the E-Mag Electronic Ignitions manufacturing facility in Azle, Texas to perform an inspection of the ignition system for N510G. The following is a summary of that examination:

- Both electronic magnetos were removed from the shipping box and were observed in the same condition as they were in when shipped.
- The left electronic magneto was tested first. The magneto produced spark to each bank (1&2) and (3&4) successfully through a multitude of RPM settings.
- Internal Permanent Magnet Alternator System for the left electronic magneto performed nominally with an RPM drop out around 800 rpm.
- The left electronic magneto also produced spark below 800 rpm when external power was applied to the magneto.
- Even with the broken coil towers spark was achieved from all towers.
- The right electronic magneto was tested second. The magneto produced spark to each bank (1&2) and (3&4) successfully through a multitude of RPM settings.

- Internal Permanent Magnet Alternator System for the right electronic magneto performed nominally with an RPM drop out around 820 rpm.
- The right electronic magneto also produced spark below 800 rpm when external power was applied to the magneto.
- All top and bottom accident sparkplugs were tested using the accident electronic magnetos and a surrogate ignition harness. Spark was observed on all sparkplugs through a multitude of rpm settings.
- The accident ignition harness exhibited impact damage to multiple wires and was not able to be tested, each coil and sparkplug attachment point were tested and worked as intended.