

IGNITION COIL RELIABILITY

The coils supplied with the Plasma CDI are miniature high performance coils made with a wind ratio specific to the Light Speed Engineering Plasma CD ignitions. In normal use they should be replaced at Engine TBO.

The following installation issues and operating conditions can cause these coils to fail prematurely.

Excessive heat exposure:

Maximum continuous operating temperature is 160 F. This means that they should not be installed inside a cooling plenum box since they can get very hot there when taxiing down wind.

Excessive output resistance:

If one of your spark plug wires is not installed all the way and it vibrates off of the coil or the spark plug, the resistance goes to infinity and the coil will eventually break down internally.

Other factors that increase the resistance are:

- Wrong or broken spark plug wires. Note that the maximum spark plug wire resistance is 800 Ohms/ ft.
- Increased spark plug resistance: The Denso plugs supplied with your system have a high quality 5k resistor built in. Lower quality plugs can burn out their resistor causing the coil to fail. Use only Denso spark plugs for best performance and reliability.
- Worn spark plug gaps: The longer spark required to jump a bigger gap requires a higher voltage. For this reason it is important to maintain the plug gap. Precious metal spark plug electrodes do not wear as fast as nickel electrodes. The spark plugs should be replaced or re-gapped at annual. If the gap grows to over .050" and you have high compression pistons, you will probably lose a coil before TBO.
- High compression ratio: The Plasma CDI system has been flight tested in many high compression race engines with great success. The increased combustion pressure does increase the stress on the coils. For Turbo / Super charged engines using more than 45" of manifold pressure we recommend using the much larger "GM" style ignition coils. The cost is the same, they weigh 16 oz. each versus 6 oz. each for the small LSE coils. The "GM" style coils must be mounted on the firewall due to their size.