Passive Pre-Chamber Spark Plugs for Natural Gas-Fueled Engines

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- **Dramatically reduces in-cylinder misfire associated with lean air/fuel ratio operation, light load, and/or low fuel gas btu content**
- **Capable of reducing engine fuel consumption by improving the speed of combustion through flame-jet ignition**
- **Simple to install and operate**
- **No independent fueling system required**
- **Optimized for individual engine models utilizing advanced computational fluid dynamics (CFD) and extensive field testing**
- **An ideal complement to any emissions/fuel control solution for many lean-burn natural gas engine applications**

Working closely with a number of leading industry partners and operating companies, Altronic is developing a comprehensive line of passive pre-combustion chamber spark plug designs for use on lean-burn, gas-fueled engines.

Unlike conventional, fueled pre-combustion chambers, Altronic passive pre-chamber (PPC) spark plugs require no independent fueling system. Instead, the Altronic PPC spark plugs operate on the basis of capturing the necessary air/fuel charge during the compression stroke of the engine within an engine-specific pre-combustion chamber built into the the spark plug. Flame jets are formed upon ignition of the pre-combustion chamber. They provide a robust, high energy source of ignition to the air/fuel mixture within the cylinder. The result is the ability to operate at low emissions, with reduced fuel consumption, and/or other extreme operating conditions—all of which equals combustion assurance.

Utilizing advanced computational fluid dynamic modeling (CFD), each PPC sparkplug design is developed and optimized for a given engine type and operating condition. This approach assures effective, in-limits operation of the engine across the normal load and operating range of the engine.

Models for the Caterpillar 3500-Series TALE and ULB engines are available in both iridium "J" electrode (P1863IP-1 and P1863IP-2) and "double stick" platinum (P1863DP-1) configurations.

Please contact the Altronic factory for additional application details.

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