ADVANCED PISTON TECHNOLOGY FOR NATURAL GAS ENGINES

By: Karen Teslovich, CNG One Source, Inc.

CNG ONE SOURCE INC announces advanced piston technology for natural gas engines. CNG engines operate at higher temperatures, and the engine components must therefore be more durable. The latest piston improvements introduced by CNG One Source reduce friction, reject heat, and reduce the time excess oil is in contact with the cylinder walls. These subtle improvements go a long way towards increasing durability.

An internal combustion engine is a heat machine. Chemical energy (the fuel) is converted to thermal energy (the heat) and is then converted to mechanical energy to perform work. The heat either performs work, goes out the exhaust or creates a heat sink. In attempts to comply with ecological standards, modern engines are developing more heat and higher pressures. Piston design, including material choice for the piston is important in order to achieve durability and reliability, however there are many other reasons pistons fail. Assembly errors, improper air/fuel ratios, inadequate cooling, exhaust restrictions as well as poor maintenance continue to plague engine performance and exposes itself through piston failures. The new piston technology improves the piston to operate under harsh conditions, but it is still important for a trained technician to properly assemble and tune the engine. These pistons provide superior protection against heat and friction, and we can provide this technology for many different applications that continue to suffer failures from heat and friction.

It’s still important to not overlook the obvious. Natural gas engines must utilize the proper engine oil and proper engine coolant. CNG One Source Inc works directly with oil manufacturers and coolant manufacturers to offer a coolant that doesn’t boil until reaching 375°F. The coolant temperatures will not boil until reaching such a high temperature, which gives added protection when the machinery is running hard. The operator still should not run at elevated temperatures as oil coking and thermal growth become significant factors against the machinery. In addition, failure to adequately control the heat can lead to thermal fatigue, and other failures within an engine.

While leaders in the engine industry are looking for additional ways to improve components within the engines, it will always remain important to focus on good lubricants and adequate cooling systems. The new pistons offered through CNG One Source Inc are just a small part of the company’s technology advancements. Just as technology from the aerospace program has enhanced aviation and other industries, this technology is expected to ultimately be used in other engine applications as well.

Engines and machinery are typically designed for normal use, not tough duty. When an operator is seventy-five miles away from the repair shop, problems become more complicated. Of course, everyone wants the machine up and running, but replacing parts with similar parts just doesn't make good sense. One of CNG One Source Inc’s core philosophies is to design the toughest, most durable parts to keep down time to a minimum. Further, when parts fail prematurely, they often take out other parts with them, and time and labor becomes a race. Often times disassembly and reassembly include the original failed parts, additional parts, possibly machining parts, and more time and labor is spent than planned. If the company is experiencing premature parts replacement, it is important to analyze why the failures have occurred, and what types of improvements will work best for the company.

Whether running heavy machinery or managing a fleet, CNG and LNG are both great options, but the decisions to use natural gas engines should not be based strictly on fuel cost savings alone. Choosing the proper natural gas engine, components, and fluids can be more costly than with the diesel engines. However, utilizing improper or inferior components will cost the company far more when the engines become inoperable. To avoid unnecessary costs and downtime, choose the proper components and fluids in conjunction with adhering to a proper maintenance schedule. Remember, the engine is a system, not a collection of parts. Everything works together.

In addition to advanced piston design, CNG One Source recently announced new spark plug wires and coil over plug designs as well. The improved spark plug wires were designed for natural gas applications at the request of an OEM, and considering the environment where the spark plug wires are housed, they needed to withstand the added heat and perform reliably. CNG One Source will continue to announce product advancements to serve the existing CNG market in advance of introducing its new natural gas engine.

To have a superior engine, you must first have superior parts. CNG One Source takes every component, compares it to existing technology, and decides how advanced technology can improve it. CNG engines require superior designing to ensure the vehicles and equipment spend more time on the road and in the field, and spend less time in the shop.

To learn more about CNG One Source, the company’s products, and discuss how their technologies can be used in your applications, feel free to contact CNG One Source directly at info@cngonesource.com or 814-835-0200.

Karen Teslovich
CNG One Source, Inc.
1620 Harper Drive
Erie, PA 16505
USA
814.835.0200
www.cngonesource.com