SERVICE NOTES GTI-103

9/16/08

This technical bulletin is intended to inform GTI dealers, distributors and OEMs of recent changes to the GTI Bi-Fuel system, to share information, and to offer guidance and clarification on a number of topics that have resulted or been anticipated based on feedback from the market place.

FACTORY DEFAULT SETTINGS
(Panels Shipped from Altronic after September 1, 2008)

All GPN panels shipped from Altronic have control and shutdown set-points adjusted to a factory default setting. **NEVER ASSUME THAT THESE SETTINGS CAN BE LEFT AT THEIR CURRENT VALUE AND RESULT IN SAFE OPERATION OF THE GTI SYSTEM.** It is imperative that the commissioning technician review each setting and evaluate/adjust the value for optimal and safe operation of each individual application.

In keeping with this requirement, please note that for every GTI panel shipped, the factory default **LOW MANIFOLD PRESSURE SHUTDOWN** control and safety setpoint has been changed to **+20.0 PSIG (239.1 kpA)**. The goal of this is to disable the GTI system from allowing gas flow to the engine until the technician reviews and adjusts the control and safety setpoints at the time of commissioning.

Terminal software for the **DE1510 (GPN1000 panel)** and **DE-3010 (GPN2010, GPN2212, GPN2213 and GPN2214 panels)** has also been changed such that a reset of any of these panels back to the factory default settings will return the **LOW MAP** Shutdown setpoint to this new value.

A complete listing of the factory default set-points and configurations is included in each of the GPN panel manuals of the **09-01-08** vintage or later, which are all available for download from the GTI website.

Finally, the **BI-FUEL DELAY TIMER f**eature (minimum required time required after all setpoints are satisfied before the GTI system will activate the output to open the gas solenoid valve) has been has been changed so that the minimum time that can be entered is **60** seconds.

DIESEL GAS RATIO

The maximum safely achievable gas substitution rate on each application will vary depending on fuel gas quality and composition, engine configuration, engine condition, engine load rate, ambient/site conditions and engine duty cycle. Gas-diesel ratios should be determined by engine operating parameters such as exhaust gas temperature, knock limits and general engine performance (see GTI IOM for additional information) which cannot be firmly determined until the time of commissioning. GTI cannot guarantee that the actual maximum safely achievable diesel gas ratio at any given site will not vary from the estimated target ratio for the reason outlined above.

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The gas substitution level should never, under any circumstances, be set higher than **70%** in the most ideal conditions. Literature references to typical gas substitution levels are simply reflections of field experience. **CARE SHOULD BE TAKEN TO NEVER INTERPRET OR REPRESENT THESE REFERENCES AS ANY DEGREE OF GUARANTEE.**

GAS SUPPLY PIPING

GTI cannot accept any responsibility for the design, specification and installation of the supply gas piping and primary regulation system, even in cases where the customer purchases a primary regulator or filter from GTI. The supply piping system must be designed and installed to provide the required constant pressure (free from fluctuations and oscillations) to the inlet of the GTI gas train for the full rated power of the genset taking into account the full gas load of the facility. Failure to do so can seriously compromise the performance of the GTI Bi-Fuel system or result in permanent damage.

NON-TURBOCHARGED APPLICATIONS

With the release of the new Series A GTI kits targeted at engines under **150 Kw**, distributors may from time to time encounter small gensets that utilize non-turbocharged diesel engines. It is important to be aware that the absence of a turbocharger results in a **MAP** signal that does not vary significantly with engine load. This makes the set-up procedure of the GTI system that will result in a safe diesel-gas ratio under all operating loads very different from the procedure used in turbocharged applications, and may result in engine damage if not performed properly by an experienced technician. Consult GTI prior to selling any GTI Bi-Fuel system on any non-turbocharged application.

ISOCHRONOUS GOVERNORS

Proper operation of the GTI Bi-Fuel system requires that the diesel engine governor system have the freedom to reduce the diesel rate to the engine when the Bi-Fuel system is **ON** in order to maintain target speed and the proper diesel-gas ratio. These governors are referred to as **ISOCHRONOUS** or **CONSTANT SPEED** governors, and represent the vast majority of the diesel genset market. However, there are limited applications (primarily in small diesel engines) that use **NON-ISOCHRONOUS** or **DROOP** type governors, or other **NON-ASTATIC** speed control systems that have very limited control range. These are generally not compatible with GTI Bi-Fuel applications and can result in serious engine damage.