

Guascor Energy MODs&UPs: Electronic carburation system

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Background

In engines with mechanical carburetion control, decarburation can occur primarily due to the following reasons:

1. Change of gas supply conditions such as pressure, temperature, humidity, and composition.
2. Change of the ambient temperature or air intake manifold temperature.
3. Clogging of air filters.

At present, the G-FL engine features a mechanical carburetion system equipped with a screw that allows for precise adjustment of carburetion based on the required emission levels, especially when specific circumstances arise

The primary difference between mechanical and electronic control lies in the carburetion system and the control system, encompassing the ignition system and its components.

The transition to an electronic control system allows for superior carburetion control at every engine operation point and enables automatic carburetion adjustment when necessary.

Product Overview

The kit consists of an electronic gas supply valve and a control system, GCS-E. This control system features a more flexible and comprehensive ignition system compared to the ones installed in G-FL engines.

The choice of the electronic valve to be implemented depends on the Lower Heating Value (LHV) of the fuel gas, the supply gas pressure, and the engine power.

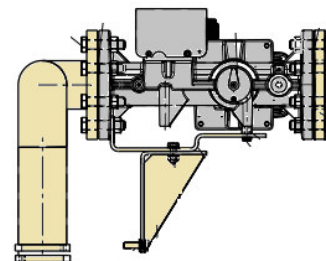


Figure 1 - Electronic gas supply valve

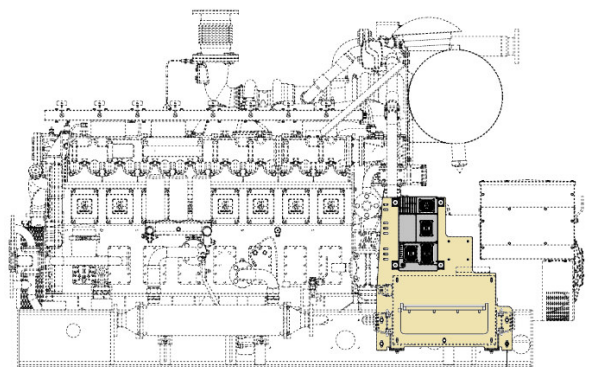


Figure 2 - Control System GCS-E

Considering that an engine equipped with electronic carburation using GCS-E includes specific instrumentation, a new set of sensors and wiring is also included in the kit.

Application

The kit is available for all engines from the G-FL series (formerly known as FGLD) that are equipped with mechanical carburation systems, as illustrated in Figure 3.

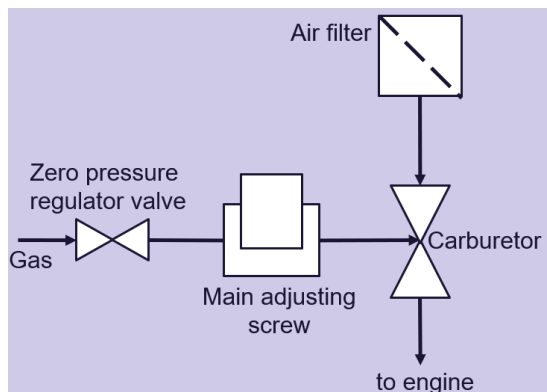


Figure 3 – Mechanical carburation system

Prior to installation, a thorough inspection of the existing setup must be conducted to ensure there are no mechanical interferences that could hinder the implementation of the kit in the engine.

Here is a schematic representation of how the system will appear after the transformation

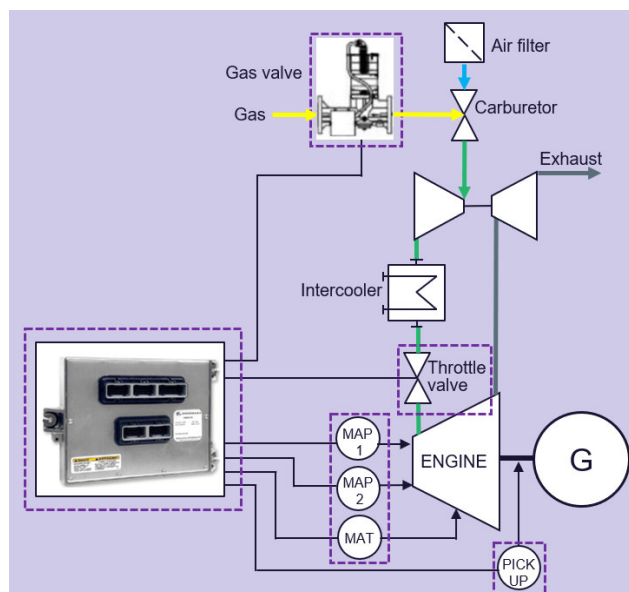


Figure 4 – Electronic carburation system

Benefits

There are numerous benefits associated with the implementation of this kit:

- Improved emissions stability and control.
- Increased tolerance for variations in gas quality.
- Reduced need for human intervention to recalibrate the engine when gas quality changes, leading to greater engine availability and operational safety.
- Enhanced performance, enabling operation at the optimal carburetion point

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