



*World leader in alternative fuel systems*



## Discover the **Direct LiquiMax system**

### **Advanced calibration possibilities** **Optimal integration with the OEM systems**

Parallel to the OEM fuel system, the Prins Direct LiquiMax system has been designed for bi-fuel or mono-fuel LPG operation on vehicles with Direct Fuel Injection technology.

The Direct LiquiMax system is designed for engines with direct fuel injection systems, which means that fuel is injected under high pressure (20-250 bar) directly into the cylinder instead of being injected into the manifold (port injection).

Taking advantage of the existing OEM-DI components, the Direct LiquiMax performance is equal to that of petrol. With the Direct LiquiMax system the driver will experience no driveability difference between LPG and petrol.

### **Important to know:**

- Adjustable LED colours for seamless integration with the dashboard
- Extensive diagnostic functions, both during vehicle operation and for the workshop
- Modular Plug & Play wiring loom
- Freeze frame information of the first 2 errors
- 32-bits ECU of OEM quality
- One diagnostic tool for all Prins systems
- LPG fuel level also visible when driving on petrol
- Complies with R67-01 and R115 regulations
- Direct start on LPG
- 2 years warranty

## **Components**

### Fuel Module



- High pressure turbine pump
- Jet pump function
- Long life filter for both fuel pump and Jet pump
- Integrated Pressure/Temperature sensor
- Gas tight sealing between tank and fuel module by o-ring
- Fuel level metering
- 80% fill stop
- Electric Lock off valve
- Pressure Relief Valve ( PRV )
- Non Return Valve ( NRV )
- Excess flow valve

### Boost Pump



- High pressure turbine pump
- Installed in series with the OEM petrol fuel pump
- Increasing the petrol pressure during switch over procedure above LPG pressure, for smooth switch over
- High flow capacity
- Compact design for easy installation
- Durable leight weight plastic housing

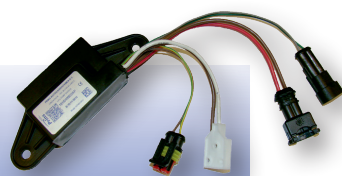


## Fuel Management Unit (FMU)



- Makes it possible to switch between LPG and petrol
- Complete with electronic lock-off valves controlled by ECU
- Integrated LPG supply filter (service filter)
- Integrated permanent inlet filters
- Integrated Pressure/Temperature sensor
- Compact design for easy installation

## Pump Driver



- Controlled by the AFC by means of PWM signal (Pulse Width Modulation)
- Enables full linear control of the LPG supply pump
- Fault code detection and feedback to the ECU
- Run dry detection
- Voltage limiter by means of compensation PWM signal
- Integrated current limiter
- Reduces the output current when it detects high temperature and turns off when the temperature gets too high

## AFC 2 Computer



- The AFC computer is the heart of the system and controls all the functions of the Direct LiquiMax system for safety, switch over strategy, fuel quantity and diagnostics
- Controls the fuel module, pump driver, boost pump, FMU and fuel selector switch
- OEM watertight case with ventilation plug
- One plug and play 81-pins connector for the wiring loom
- A number of different communication interfaces for more advanced OEM engine integration.
- High performance 32-bits automotive controller combined with full diagnostic and self protected power-output circuits for high reliability and durability
- Diagnostics, service and parameter-load software

## Fuel selector switch



- Small and compact design suits all interiors
- Fuel selection via smart touch control. Informs operator of LPG tank contents, audible buzzer to alert low level switching or fault codes plus illuminated fault code warning with LED
- Possibility to adjust LED colours

## Tank dimensions



- Cylindrical and toroidal tanks available:
- Center Filled Toroidal tanks diameter 600, 630 and 650mm with height of 230, 250-and 270 mm.
- Cylindrical; tanks with diameter 320, 360 and 450 with different lengths.



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