



VSI-3 DI Product introduction



VSI-3 DI system

Unique and future proof LPG system for latest DI engines up to Euro 6D emission standards. The system is equipped with AFC-3.0 DI computer and eVP-500 LPG reducer.

AFC-3.0 DI computer

Advanced ECU with integrated DI injector emulation and full limp-home functionality.

eVP-500 LPG reducer

Compact full electronic LPG reducer for low to high power engines which gives smooth and optimal driveability performance.



Technology evolution



NEDC

New European Driving Cycle



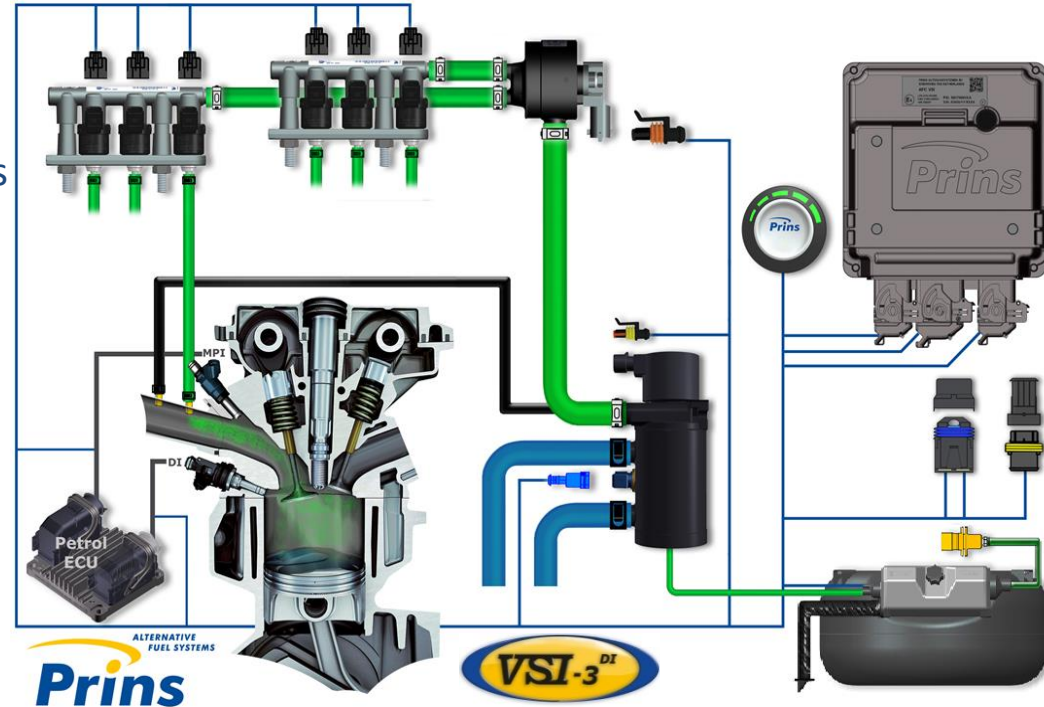
WLTP

Worldwide Harmonised Light
Vehicle Test Procedure



VSI-3 DI Unique Selling Points

- 🌱 For DI and DI-MPI engine technology
- 🌱 Minimal petrol consumption (<5%)
- 🌱 Maximum performance, lowest emissions
- 🌱 For vehicles including latest Euro 6D WLTP technology
- 🌱 New AFC-3.0 DI computer
 - Single AFC for 3 - 6 cylinder
 - Master-Slave for 8 - 12 cylinder
- 🌱 OEM quality LPG components
- 🌱 R115/EPA certified
- 🌱 Plug & Play wiring harness (optional)
- 🌱 ValveCare-DI (optional)



AFC-3.0 DI computer



2 Versions:

- 4 Cylinder DI+MPI
[180/700040]
- 6 Cylinder DI+MPI
[180/700041]



DI-MPI compatibility



Full limp-home functionality



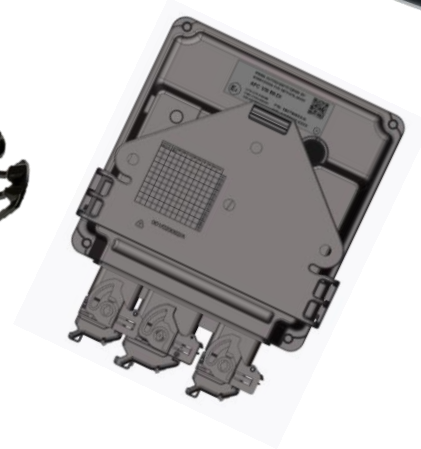
Future proof I/O design



OBD-CAN gateway



Flexible 3-way mounting system



VSI-3 DI wiring harness



3 Connectors – 112 pin header

- GAS injectors / Reducer / Tank -> Grey [1]
- Supply / Ground / OEM sensors -> **Brown [2]**
- DI - MPI Petrol injectors -> Black [3]



Simple – clean – efficient routing



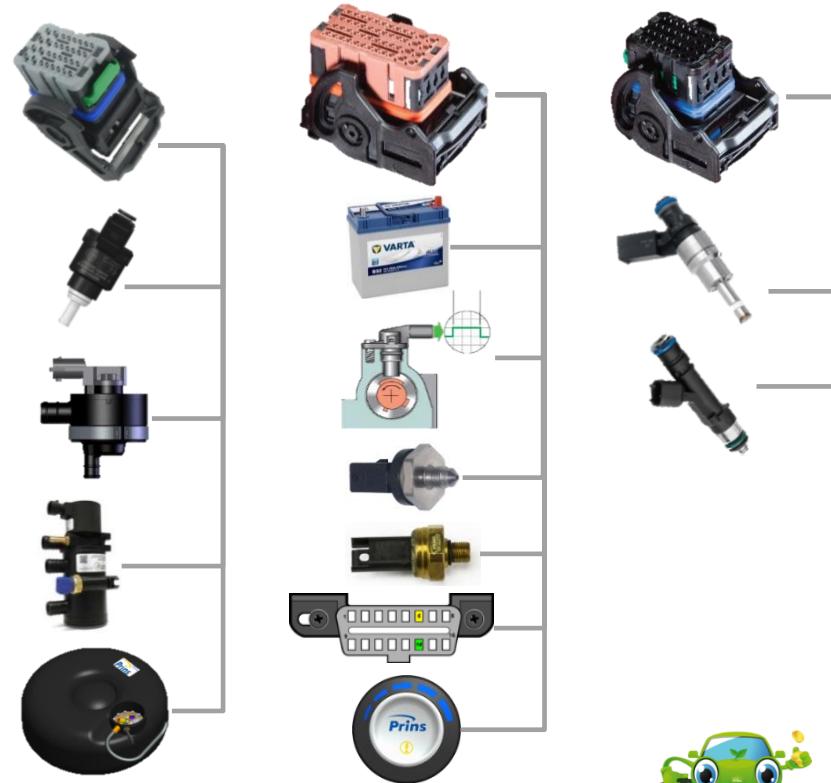
Modular wiring harness system



Grey [1]

Brown [2]

Black [3]



eVP-500 LPG reducer



Compact design



Lightweight housing



Integrated components

- Lock-off-valve
- Temperature sensor
- Filter
- Pressure Relief Valve (R67-01)



Flow capacity exceeding 500hp

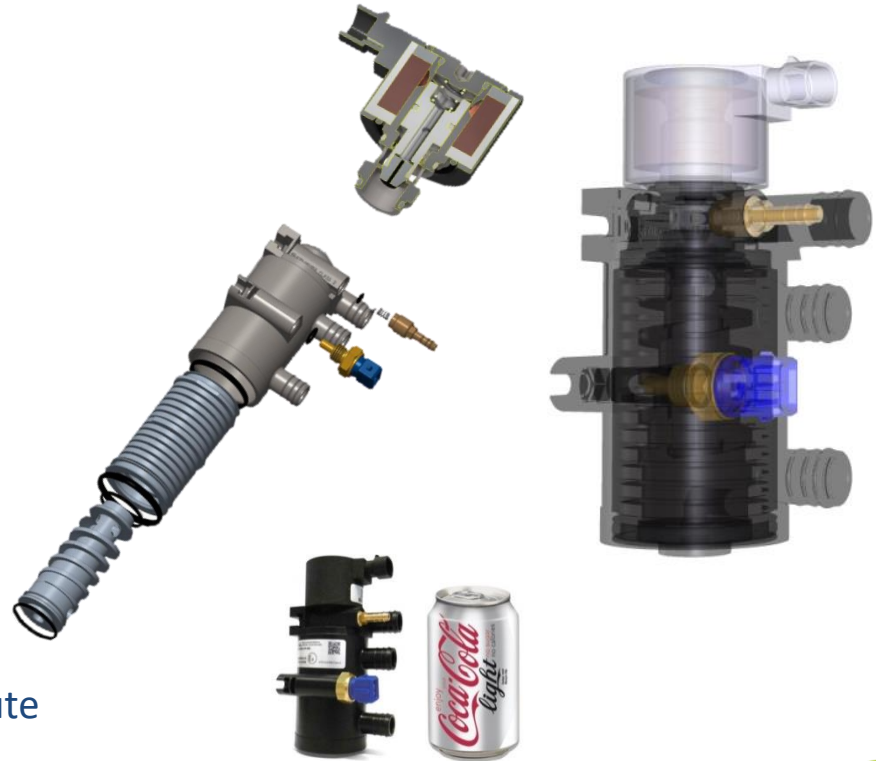


Single step pressure regulation



Software regulated pressure

- Adjustable pressure: 50-380kPa absolute
- No pressure drift or peaks





Compact design with single or dual delivery outlets



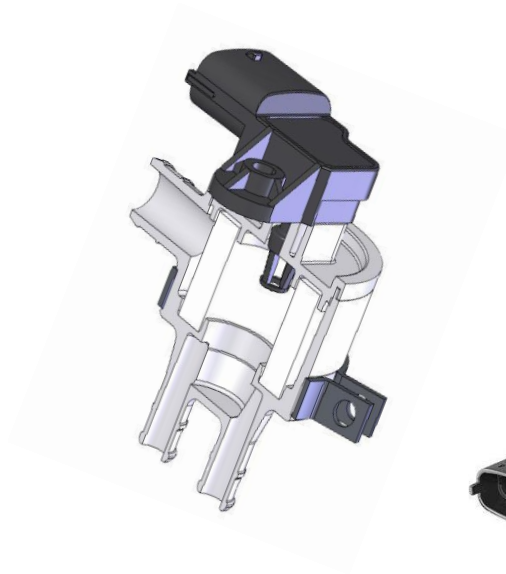
Fitted with 10-micron ($\beta_{10} > 75$) dry gas filter



Protecting the fine tolerance of the injectors from pollutants



Combined temperature and pressure sensor



Keihin injectors



Developed by Keihin Corp. Japan

- Excellent linear 'flow range'
- Linear flow starting from 2,6 msec.



2% accuracy from min. to max. flow



7 injector sizes



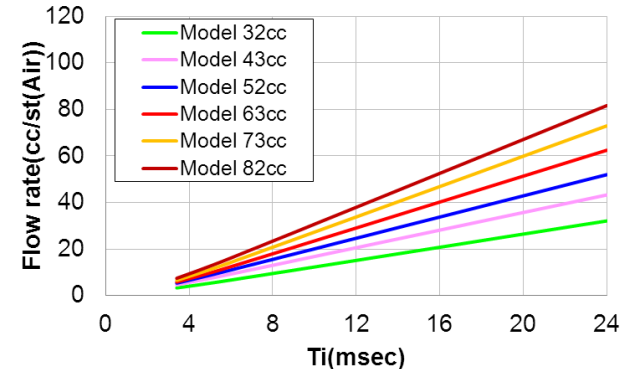
Engine capacities from 9 kW up to 45 kW / cyl.









Lifespan exceeding 290 million cycles or 240.000 km



Low coil resistance (1,25Ω)



Fuel selector switch

-  Small and compact design suits all interiors
-  Fuel selection via smart touch control
-  Informs operator on LPG tank content
-  Audible buzzer to alert for an empty tank or fault codes
-  Illuminated fault code warning with LED
-  Fully programmable LED colors



Multiple tank options



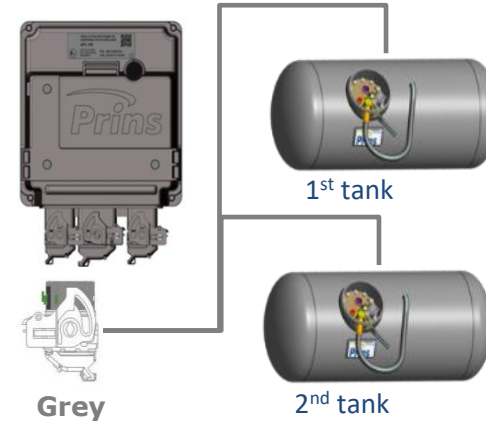
Multiple tank option

- Direct connection of tank valves and level sensors to AFC-3.0 DI without any relays
- Use identical tank level sensors for both tanks

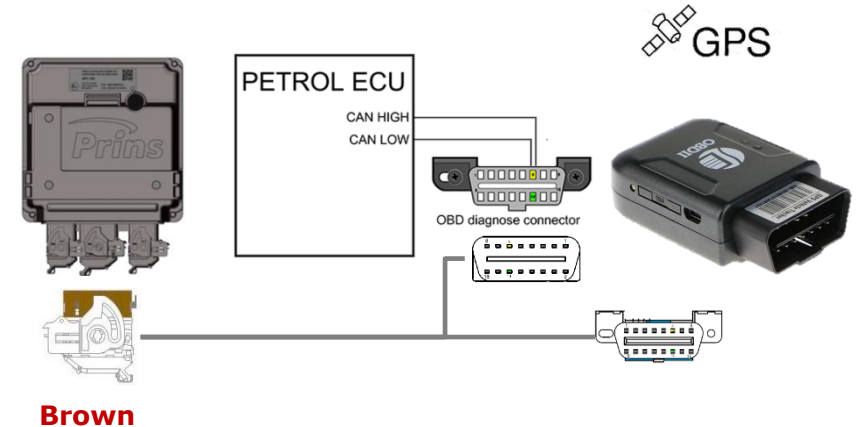


Tank level sensor options

- Resistive
- Hall 2-wire 0-10 [V]
- Hall 3-wire 5 [V]



- 🚗 Possible to connect tracking devices, external tester and other OBD devices during LPG mode
- 🚗 Optimal vehicle OBD-CAN-bus communication
- 🚗 Easy Plug & Play OBD wiring harness available
- 🚗 Standard OBD-CAN gateway support





Protects and cleans

- Valves and valve seats
- DI Petrol injectors



Sequential electronic additive delivery



Dedicated blue Prins additive



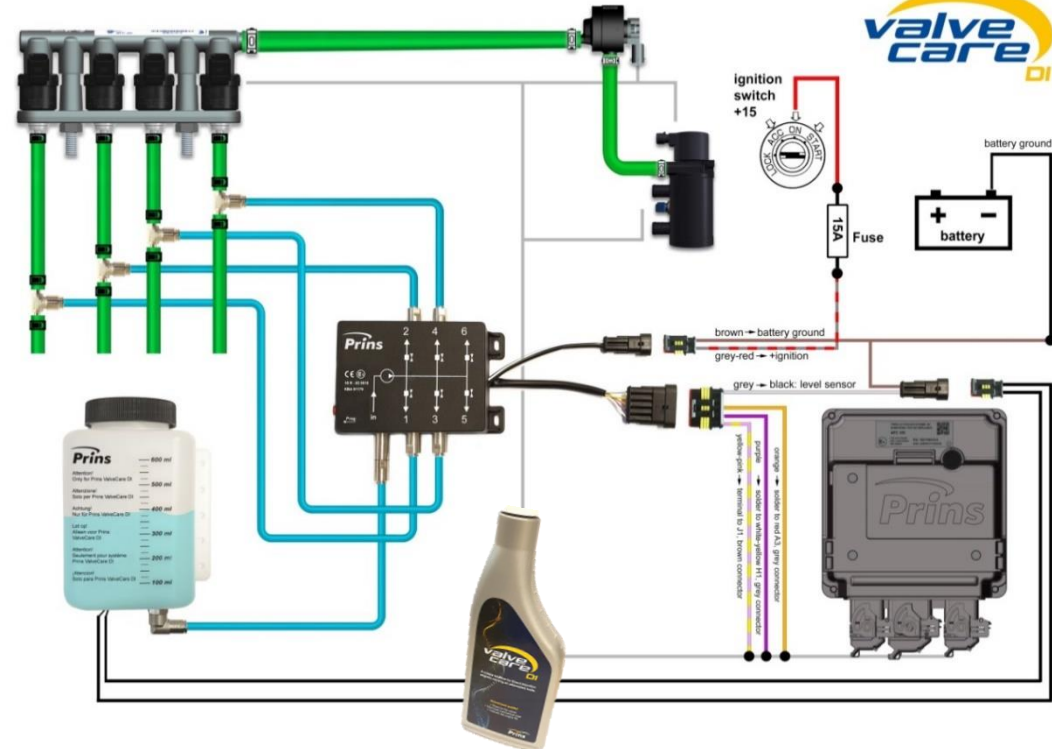
Easy installation (Plug & Play)



Easily refillable additive reservoir



Self-diagnosis





Cleans effectively

- Petrol injectors
- LPG and CNG injectors
- Inlet and valves (MPI engines)



Optimizes performance, reliability and fuel consumption



Prevents high repair costs



Quick and easy servicing procedure



Injector nozzle before cleaning



Injector nozzle after cleaning





Ford

- Transit 3.5 V6 Duratec 2020
- F-150 / Explorer 3.3 V6 Duratec 2018-2020
- Raptor / F-150 / Explorer 3.5 V6 Ecoboost Gen2 2017-2020



Renault / Nissan/ Dacia 1.3 TCE (Euro 6D)



Volkswagen Group 2.0 DI+MPI (Euro 6D)



Peugeot/Citroen 1.2 THP (Euro 6D) – **Expected Q4**



GM 1.4/1.5/1.6 DI 4 cylinder (Euro 6D)



Hyundai/Kia (Euro 6D)

- 1.0 T-GDI
- 1.4 T-GDI **Expected Q4**
- 1.6 GDI **Expected Q4**
- 1.6 T-GDI **Expected Q4**



FCA FireFly 1.3, 1.0 & 2.0 T-GDI (Euro 6D) **Expected Q4**



Volvo 2.0T VEP engine (B4204)









Land Rover Velar 2.0T (PT204)



Mazda 2.0 & 2.5 Skyactiv **Expected Q4**



-  Universal VSI-3 DI kits (ABC kits) will be available from Q1-2021
-  Future vehicle applications will be done always with VSI-3 DI, both LPG & CNG
-  The VSI-3 DI system is R115 & EPA compliant
-  No additional training required. See manual VSI-3 DI for all info
-  Ford USA kits 3.3 & 3.5 will have P&P wiring loom, some other make/models will follow
-  Some VSI-2.0 DI kits will be transferred to VSI-3 DI in the forthcoming months





**Thank you
for your attention**

