PAN LEARNING CENTRE

AUTOGAS TEXT DESCRIPTION AND TANK PRESURES

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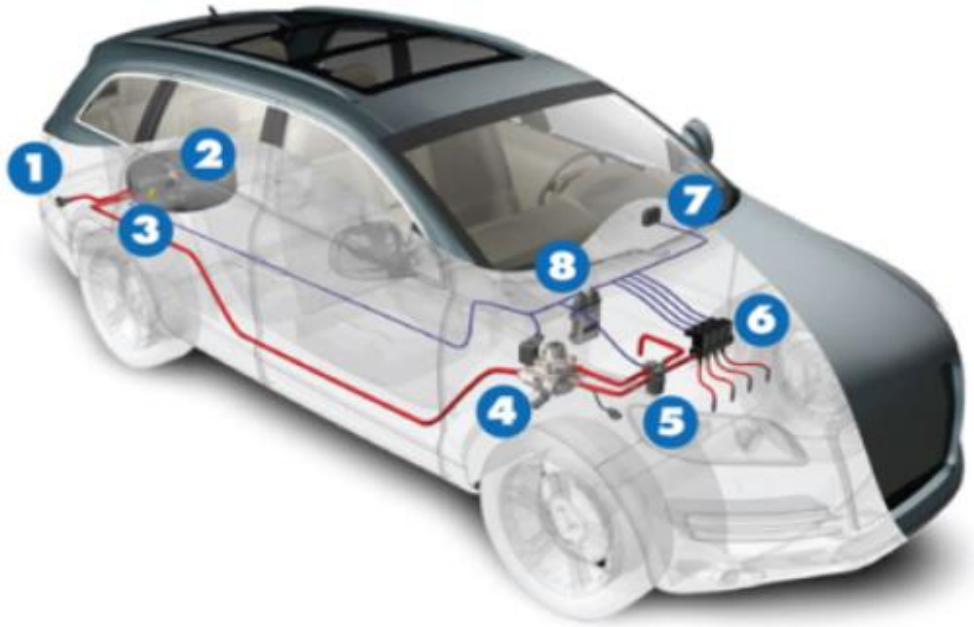
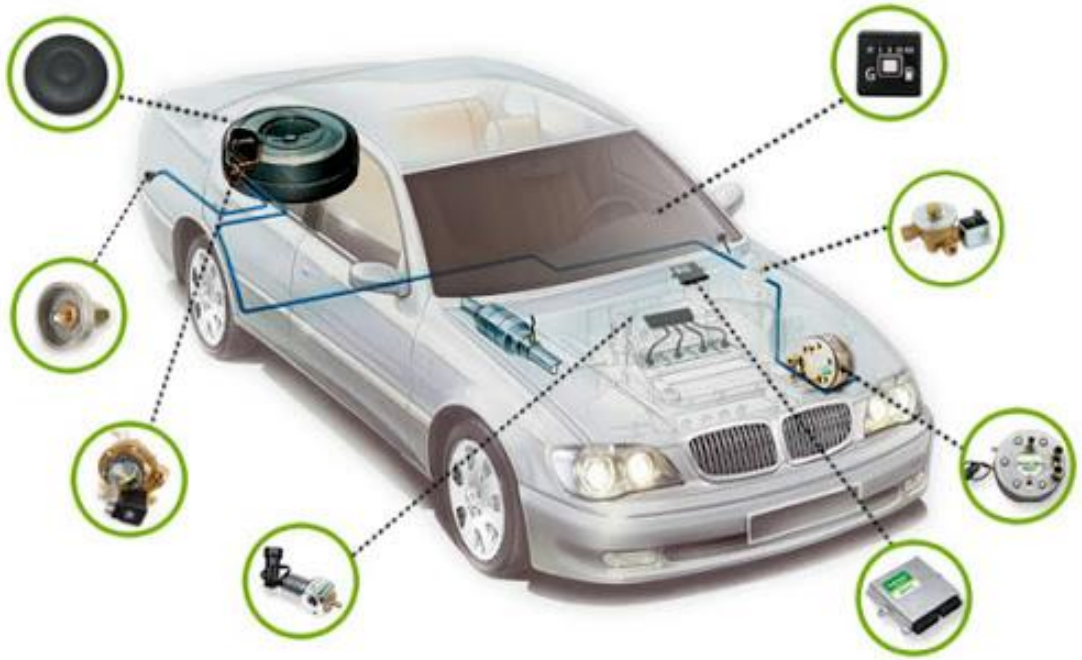
Pictorial presentation of Autogas System





1. Filling valve
2. Gas tank
3. Multivalve
4. Reducer
5 Gas filter
6. Gas injectors
7. Change over switch
8. Gas controllers

1. THE FILLING VALVE

1. Filling valve

This valve allows for the filling of the tank with autogas. The valve allows the tank to be filled only to 80% of its volume.

2. THE GAS TANK

Made of thermally treated high resistance electro welded steels. The tank is the container for the gas.

3. THE MULTIVALVE

The multivalve performs the following functions:

i. Allows gas to enter the tank during fueling
ii. Prevents backflow of gas from the tank
iii. Electronically controlled solenoid valve for gas exit to the engine compartment
iv. Manual valve to intercept gas flow in the event of solenoid valve failure.
v. Relief valve to prevent excessive pressure built up

A level gauge is also mounted on the multivalve to indicate gas level during fueling.

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4. REDUCER

- The reducer is responsible for reducing gas pressure and stabilizing it to the optimum level for injection.
- It is fitted with a safety electro valve. Electro valve closes the circuit when ever the engine is switched off. The valve function is also controlled by the gas controller

5. GAS FILTER

- This removes impurities and oil residues from the gas before reaching the injector rails.

- The gas filter is fitted with a temperature and pressure sensor which communicates with the gas ECU for automatic shut off of the solenoid valve when pressure drop is detected in the system below a defined threshold.

6. GAS INJECTORS

For the injection of the right quantity of gas into the cylinders. Function is controlled by the gas controller

7. CHANGE OVER SWITCH

- For the seamless switchover between PMS/Diesel and gas.
- Also shows level of gas in the tank

8. GAS CONTROLLER

- Communicates with the main vehicle ECU
- Controls gas injection and electrical circuits

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TANK PRESSURES AND MATERIALS

LPG	
Working Pressure	20 bar
Design Pressure	30 bar
Regulation	ECE 67.01 and TSEN ISO 9001
Material	Heat treated high resistance electro welded steels
Design Life	10 years

CNG	
Working Pressure	250 bar
Test Pressure	375 bar
Burst Pressure	750 bar
Regulation	ANSI/NGV2(2007) and FMVSS 304 compliant
Material	• Carbon fiber composites with non metallic liners • Seamless steel tubes. (34CrMo4)
Design Life	20 years