

SHIGAN CNG & LNG RETRO-FITMENT KIT

Upgrade Your Existing BS-III & BS-IV Diesel Commercial Vehicles (Buses & Trucks) to CNG/LNG BS-IV with SHIGAN KIT (OEM Standard)



CNG Retro-Fitment Vehicle with Shigan Kit



LNG Retro-Fitment Vehicle with Shigan Kit



Dual-Fuel Conversion- Locomotive (Indian Railway)

SHIGAN TECHSOLUTIONS PRIVATE LIMITED

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About Shigan Group

SHIGAN Group is a global manufacturing company with the objective of providing integrated solutions in alternate fuel systems & fire protection systems to automotive/locomotive/Marine/Mining & industrial customers.

Shigan Techsolutions Private Limited

Shigan Techsolutions Private Limited (STPL) is a Shigan Group company providing solutions to after-market customers by conversion of their existing in-use BS-III and BS-IV diesel vehicles into CNG & LNG BS-IV via retro-fitment as per Rule No. 115-B, sub (B), Clause (II), Para (IV) of CMVR 1989.

STPL Speciality

- Conversion of in-use Diesel Vehicles to CNG via Retro-Fitment up to 55 Ton .
- Conversion of in-use Diesel Vehicles to LNG via Retro-Fitment up to 60 Ton.
- Conversion of Dual Fuel (Diesel + CNG) for Heavy Duty Engine for Gensets & Various Application.
- Conversion of Dual Fuel (Diesel + LNG) for Heavy Duty Engine for Locomotive/Gensets/Dump Trucks/HEMM Equipment's & Various Application.

Shigan CNG/LNG Retro-Fitment Kit for Buses & Truckes

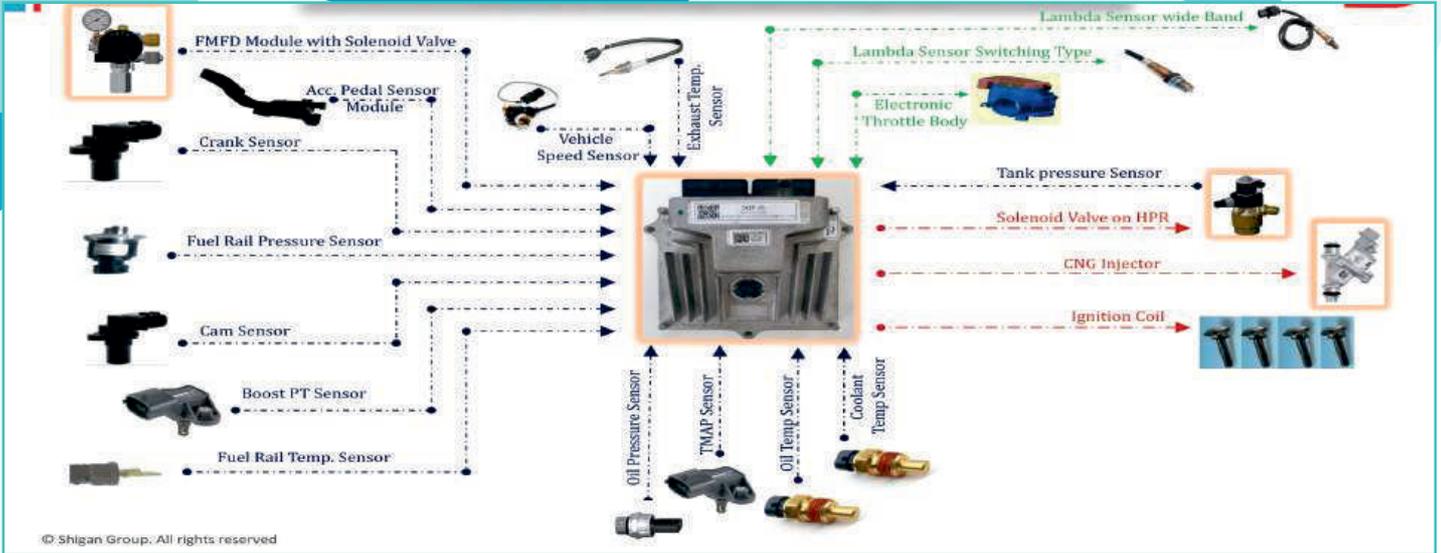


Shigan CNG/LNG Retro-Fitment Kit for Buses & Trucks

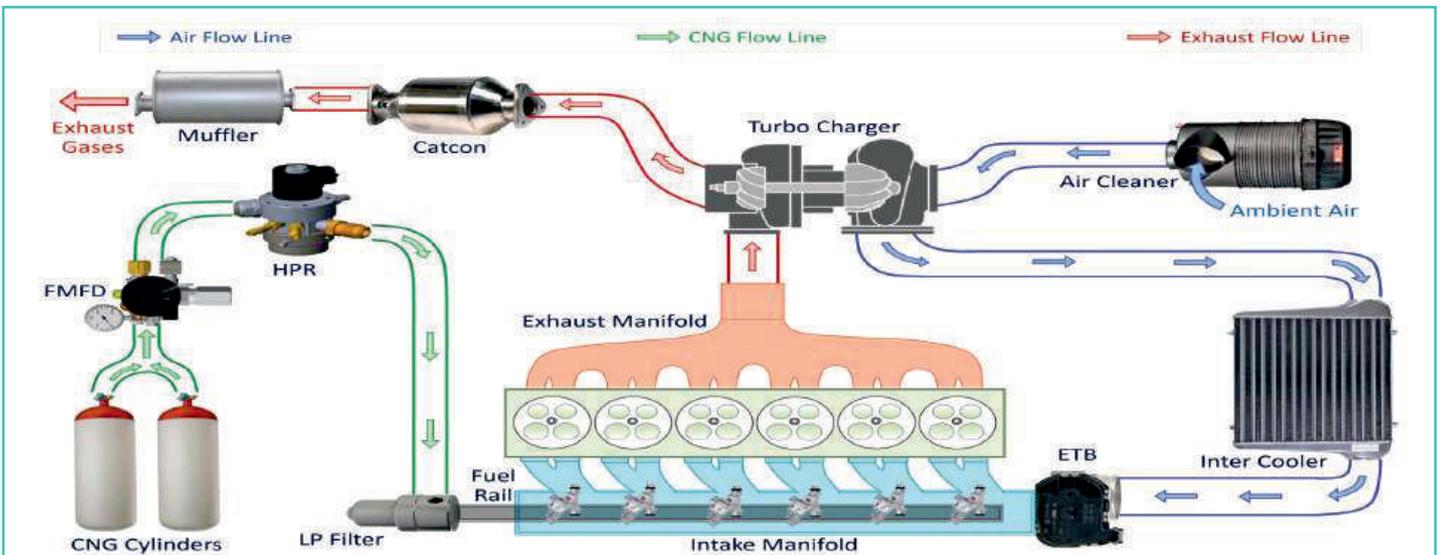
- Multi Point Injection Technology
- Close Loop Fuel Control
- Engine over-heating Protection
- Over-speed Protection
- De-acceleration fuel cut off
- Best-in-class Mileage
- Same Power & Torque w.r.t Diesel
- AC Integration with ECU

- ECU Controlled Road Speed Limiter
- Superior Drivability
- BSIV Emission Compliance
- OEM Standard Quality
- Genuine OEM Parts
- Longer Engine Life
- High Reliability
- Lower Maintenance Cost

Shigan Fuel System Layout



Natural Gas Engine Layout with Shigan Retro-Fit Kit



Fuel System Technology Trend for SI Engines

Carburetion System

Single Point Injection System

Multi Point Fuel Injection System

Direct Injection System

Non-Standard Retro-fitment (Carburetion System)

Standard Retro-fitment (MPFI)



Venturi (Carburetion) Vs MPFI Technologies

	Venturi (carburetion) System	Multi-point Fuel Injection System (MPFI)
Technology	Obsolete Technology	Latest Technology , most Commonly used in BS-IV and BS-VI CNG and engines by OEMs.
Regulation	Non-Compliance with CMVR Regulation	Compliance with CMVR Regulation
Vehicle Pick-up & Response	Delayed vehicle response and pick-up as fuel injection is far from intake port.	Faster vehicle response and pick-up as fuel injection is closer to intake port.
Fuel Economy	Poor Fuel Economy , due to higher pumping loses and non-uniform fuel distribution.	Superior Fuel Economy
On-Board Diagnostic (OBD)	No OBD	Fully-functional OBD-II, helps identifying root of any component, sensor or actuator malfunction.
Backfire	In Carburetion system, intake manifold is always filled with air-fuel mixture and there is a possibility of exhaust gases pulled back into the intake manifold during the valve overlap period, which can cause backfire.	Backfire almost eliminated

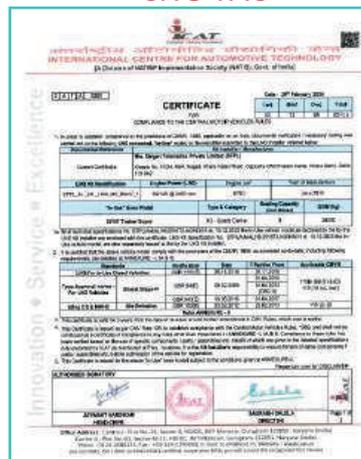
ICAT Certificates with Shigan CNG and LNG Kit

Type Approval Certificate

CNG TAC

LNG TAC

Fuel Type	Vehicle Make	Engine CC	Engine Model	Vehicle Category
CNG	VECV (EICHER)	3298	E483	Bus & Truck
	VECV (EICHER)	3770	E494	Bus & Truck
	TATA MOTORS	3783	TATA 497	Bus & Truck
	TATA MOTORS	5583	Cummins 5.9L	Bus & Truck
	ASHOK LEYLAND	5760	Hino-6	Bus & Truck
LNG	TATA MOTORS	5583	Cummins 5.9L	Bus & Truck
	ASHOK LEYLAND	5760	Hino-6	Bus & Truck



Benefits of CNG/LNG Conversion

- Highest Fuel of Safety.
- 25-35% less operation cost w.r.t Diesel.
- 10% better fuel Efficiency.
- ROI with 1* year for CNG & 1.5* year for LNG.
- Reduce Carbon Emission

Why Choose Shigan Kit?

- OEM Standard CNG/LNG Kit.
- More than 200 vehicle models TACs received from ICAT.
- All vehicles are certificated to BS-IV OBD-II emission norms.
- CNG/LNG Kit Supplier for TATA, Eicher & Ashok Leyland.
- Over 20 Years of Expertise.
- Warranty: 1 year or 1 Lakh km.

Shigan Retro-Fitment Centre



Shigan Experience in Retro-Fitment

- **CNG Conversion** - 150 MSRTC Buses, 21 BSRTC Buses, 250+ Buses & Trucks(Retail Customer),6+ Locomotive (Indian Railway).
- **LNG Conversion** - 30+ Trucks(Retail Customer), 2+Locomotive (Indian Railway).