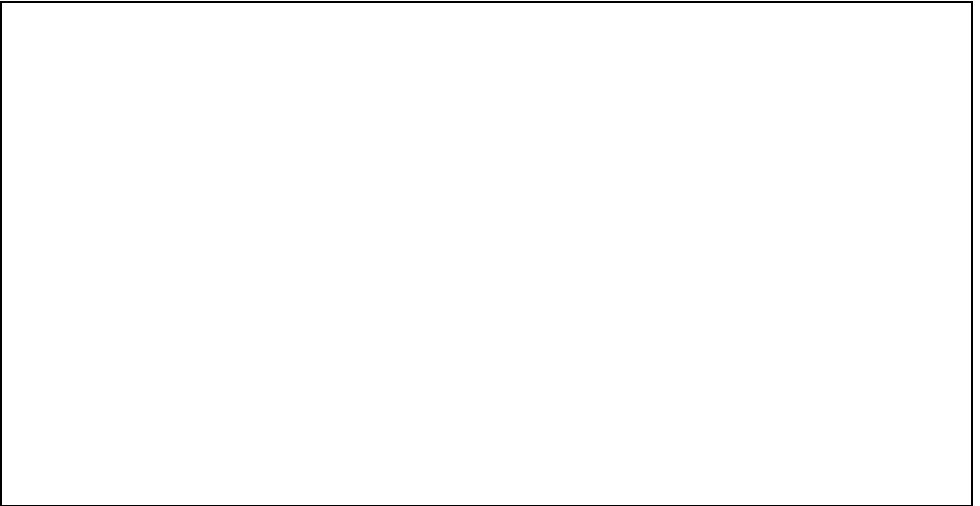


Installation Facility

**The Technocarb CNG EcoDiesel
System on your vehicle has been
professionally installed by:**

A large, empty rectangular box with a thin black border, intended for the user to write the name of the installation facility.

Contents

- 1. Introduction**
- 2. Components**
- 3. Operation**
- 4. Maintenance**
- 5. Troubleshooting**
- 6. Maintenance Log**

1. Introduction

Your vehicle has been outfitted with a Technocarb EcoDiesel System™ that will provide supplemental natural gas injection to your diesel engine. This manual will acquaint you with some of the features and functions.

The EcoDiesel fuel management system is designed to enhance the performance and efficiency of your diesel engine.

Designed as tamper-proof, the EcoDiesel System™ control unit utilizes various engine sensors to supply the onboard microprocessors with live data to properly control the natural gas injection. The initial system programming provides all the necessary setup for the system and does not require further adjustment under normal conditions. There are no user mechanical adjustments on the system, thus all maintenance and repairs MUST BE performed by a Technocarb recognized repair facility.

The advanced EcoDiesel System™ controller monitors all the sensors and unit parameters for faults. Should any sensor report conditions that are out of the programmed parameters, the unit will evaluate the results and take appropriate action. Actions can range from simply setting a diagnostic code to shutting the system down to avoid damage. Regardless of the action taken by the controller, the ability of your engine to continue to run as normal (without increased efficiency) will not be hindered.

2. Components

EcoDiesel System™ Controller

The EcoDiesel System™ controller is a software programmable unit that incorporates two microprocessors. Utilizing our unique laptop interface program, the controller is set up for your specific engine based on entered parameters to ensure calibration is optimum for your application and needs. The system is automatically adjusted by sensor data that measures ambient conditions as well as engine speed and load. Various onboard data recorders are present to aid in diagnostics and keep your system functioning at an optimal level.

Fuel Selector Switch



A switch with a CNG level gauge has been installed on your dashboard or control panel. This multifunction device allows for disabling of the system as well as a live fuel level indication. Refueling should be considered on at least the last green light and becomes necessary when the red light is active. If you should inadvertently run out of CNG, the system will automatically shutdown, and vehicle performance and economy will return to a stock level.

As the system is fully automatic, the power switch should be left on at all times to ensure the full benefit of the system.

An automatic onboard dimmer makes night driving more comfortable, while providing an easily seen indicator during daytime conditions.

The driver/operator is alerted when a fault is recorded, as a steady yellow LED will glow in top left corner of the switch indicating service is required by an authorized facility. A flashing LED indicates that a temporary shutdown has occurred, such as for high EGT, while a double blink on the LED indicates the system is shut down due to lack of fuel, such as an empty CNG tank.

Component	Action	Comment
CNG Filter (if equipped) 1- HP coalescing filter Located before the Lock-off	Replace every 50,000 miles or sooner.	Or more frequently if fuel quality is poor
Pressure regulator	Inspect and service every 50,000 miles	Or more frequently if fuel quality is poor
Natural gas injectors	Inspect every 50,000 miles	Or more frequently if fuel quality is poor

CNG fuel composition and quality can vary seasonally and regionally. Therefore fuel filter and regulator/converter maintenance will be dependant upon the fuel quality in your region. As a minimum, every 50,000 miles the CNG coalescing filter (if equipped) should be replaced, and the converter should be inspected for fuel contaminant deposits.

5. Troubleshooting

The EcoDiesel System™ will indicate a problem on the CNG fuel level indicator switch. A yellow LED located in the top left hand corner of the switch will illuminate if more in depth service is required other than regular maintenance.

Should the fault indicator illuminate the vehicle will need to be returned to a Technocarb authorized facility for service. Your vehicle will continue to operate during this time at a reduced efficiency until the problem is remedied.

The unit is protected by a 10 amp fuse located in the main power connections. The original supplied Luma-Fuse™ will illuminate if a problem with the fuse exists.

Technocarb’s interface software is required for all diagnostics and repairs to the system. Due to the complexity of all modern day engine families, technical support cannot be provided to anyone other than Technocarb certified installation and repair facilities. For a list of these facilities near you please contact our technical department directly, or your original installer.

There are several new components installed under the hood of your vehicle. These components comprise the mechanical portion of the conversion and should only be serviced by a qualified technician who has been trained in the installation and operation of the EcoDiesel System™.

CNG Regulator

This regulator reduces the high pressure CNG stored in the tank to a lower pressure suitable for injection into the engine. The output pressure is compensated by the engine's turbo boost to provide a consistent gas flow under all loads.



CNG Fuel Tank

This special tank stores compressed natural gas (CNG) at a very high pressure (up to 3600 PSI) and is equipped with a manual shut off valve. This valve controls the fuel flow out of the tank to the fuel lock-off in the engine compartment. Have your conversion dealer show you the location and operation of this valve.

This valve should be all the way open (counter clockwise) for system operation and there is no need to manually shut off the fuel supply under normal conditions. In the unlikely event that you can detect the odor of natural gas (similar to rotten eggs), you should turn this valve all the way off (clockwise), switch the EcoDiesel System™ off and arrange to have a qualified conversion shop check your fuel system for the cause of the natural gas odor. Any servicing on this high pressure tank, or the fuel lines requires the services of a certified gas technician.

CNG Refueling Valve

This valve is for refueling the vehicle. The fuel filler valve can be remotely mounted or installed directly into the fuel tank. Have your conversion dealer show you the location and operation of this valve.

Fuel Lock-Off

This valve shuts off the supply of CNG from the storage tank to the vapor regulator when your vehicle is not running. The fuel lock-off is controlled through the EcoDiesel System™ controller. The CNG lock-

off is closed unless the engine is running or unless system enabled with the power switch.

Injectors

The injectors of your EcoDiesel System™ are part of the controller assembly. These injectors fire on an alternating basis delivering a specifically spaced flow and precise volume of natural gas to your engine's intake system. These injectors are specifically designed for this application and engineered to deliver years of trouble free service.

System Sensors

The EcoDiesel System™ utilizes various sensors to determine the current load demand and speed of the engine. The data supplied by these sensors is not only crucial data to the efficient running of your engine but also monitor for faults or potential service issues. The importance of accurate and reliable data is ensured, as only top quality sensors being utilized.

3. Operation

Starting

Starting your vehicle is in no way different than the normal recommended procedure by the vehicle manufacturer. The EcoDiesel System™ is fully automatic and will enable itself when its sensors have recorded the correct data.

Driving

Drive your vehicle as you normally drive on diesel to achieve the highest level of economy. Should you deplete you CNG supply your vehicle will continue to run at the original power and efficiency level. Once the CNG is refueled, normal operation of the EcoDiesel System™ will return.

Fuel Level Indicator

The CNG fuel level is indicated on the electronic gauge built into the dash mounted power switch.

Refueling Your Vehicle

CNG stations have special refueling nozzles to safely fill your CNG tank. Have your system installer review the proper procedure for re-fueling your vehicle along with any safety pre-cautions. It is normal to smell a slight odor of natural gas when refueling.

4. Maintenance

Diesel Components

Follow your vehicle manufacturer's maintenance schedule.

Natural Gas Components

There are no user serviceable components. Should you require service or maintenance, go to an authorized service facility such as the conversion center where the Technocarb EcoDiesel System™ was installed. The system should be inspected at least once per year or at the recommended inspection/maintenance interval shown on the following page: