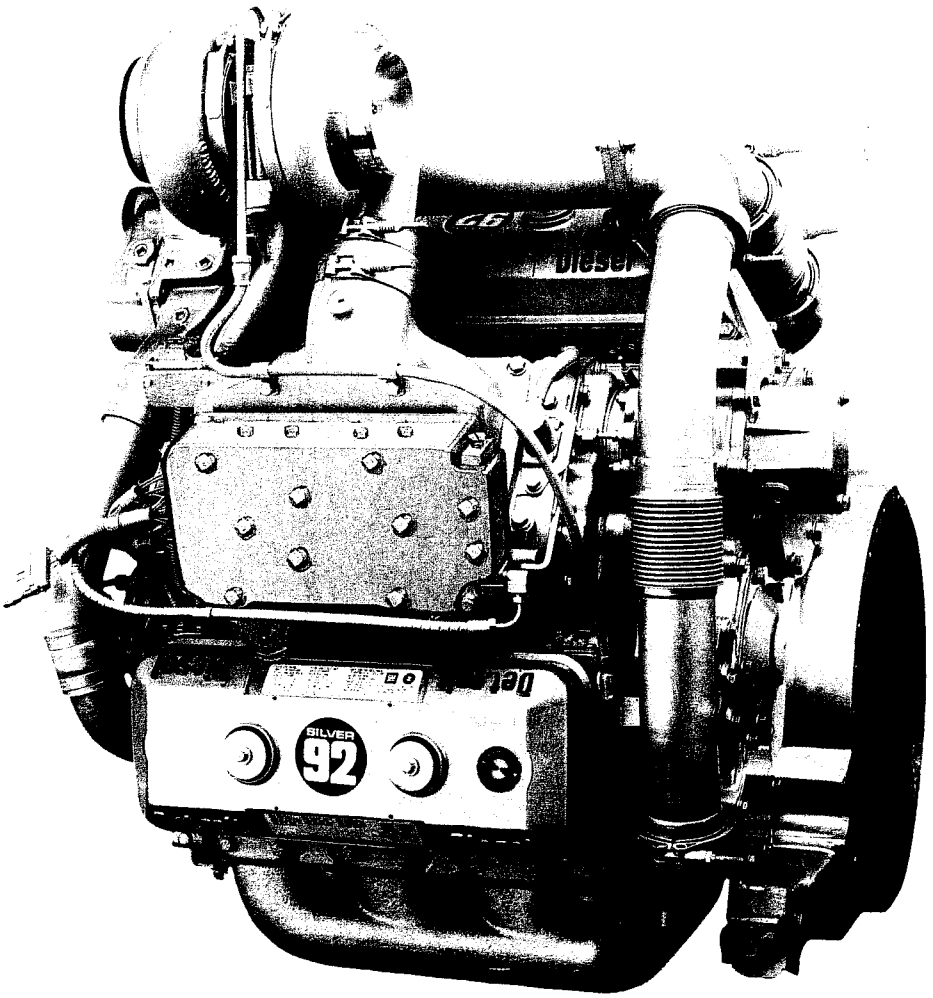
DETROIT DIESEL

The Number One Engine for Buses



The Majority Of North America's Bus Builders And Operators Specify Detroit Diesel Engines For Their Buses

Reliability, responsive performance, efficiency of operation and experienced parts and service support are just a few of the reasons why Detroit Diesel's are so widely used in bus applications. To keep this loyalty, we're constantly updating, testing and evaluating our engines to make sure they give buses the optimum blend of performance and fuel economy.

It started with our legendary 6-71 50 years ago. As horsepower needs increased, we developed the 6V-71 and 8V-71 naturally aspirated engines, which became the most widely used bus engines in North America. But, times change. Emission standards got tougher and fuel prices increased. To meet this new challenge, we introduced the highly efficient Silver 92 bus engine, plus Silver components were added to the 71 models.

The Silver 71 and 92 models have established new standards of performance and fuel economy. That's why over 50,000 buses from the deserts of Arizona to the ice fields of Alaska move with Detroit Diesel power.

As the recognized industry sales leader we put millions of miles of expertise into each bus diesel we build, which gives our engines a head start in performance. For example,no other bus diesel can meet the same performance levels of our 6V-92 while operating under such conservative load factors.

When you spec a Detroit Diesel you're buying an engine that mechanics know, that's easy to service and where unequalled parts and service support is always available from your local Detroit Diesel Distributor. You can rely on him to assist you in keeping your engines in prime condition.

Electronic Controls

To maintain our leadership position we now offer engines with electronic controls. DDEC — Detroit Diesel Electronic Controls — the most advanced electronic fuel injection and engine management system available on production bus diesels in the world. Detroit Diesel engines equipped with electronics have established new standards for:

Fuel Economy

Most users have experienced a 5 to 8 percent fuel economy improvement over conventional mechanically controlled engines, with some as high as 10 percent improvement.

Cold Startability

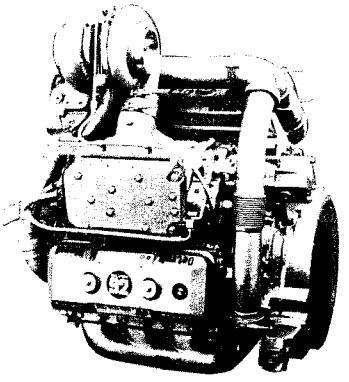
Due to electronics, the ability to provide pinpoint control of timing and fuel flow is easily accomplished. By monitoring coolant temperature, fuel quantity and injection timing are adjusted during engine cranking to provide optimum cold starting.

Reduced Cold Smoke

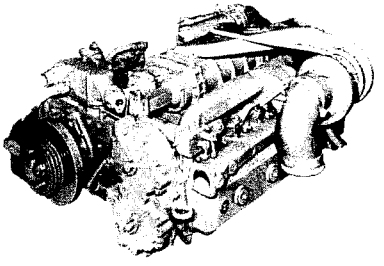
After startup, white smoke – or cold smoke – is virtually eliminated by adjusting injection timing and controlling idle speed as a function of temperature. As the engine warms, idle is slowed and timing is retarded to normal settings.

Driveability

Throttle response is improved, providing quicker engine reaction to driver's demands. It enables precise vehicle control in any terrain or traffic pattern.



Series 92



Series 71


8510
50'

Economy Of Operation

DDEC provides outstanding performance with economy by precisely controlling injection timing and fuel to each individual cylinder. DDEC is the only electronic control system that uses electronic unit injectors to precisely control fuel input.

Elimination of Tuneups

By applying electronic technology to Detroit Diesel's proven unit injector, DDEC greatly reduces maintenance time and cost.

For example, the mechanical governor and injector fuel control rods have been replaced by the electronic control module and electronic unit injectors.

The result is the virtual elimination of costly tuneups required when mechanical parts wear.

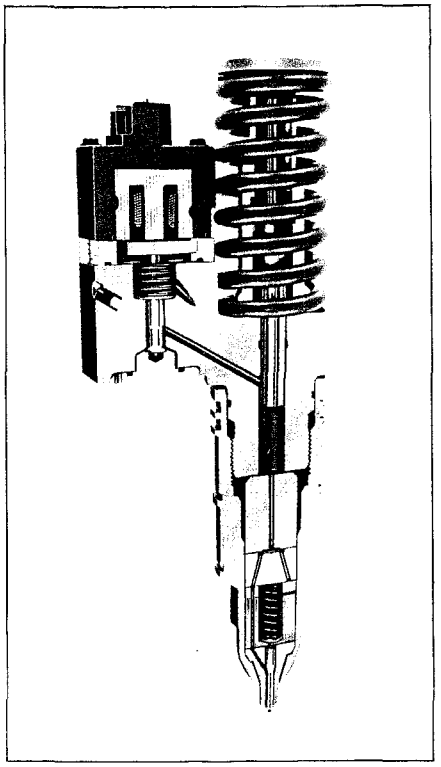
In addition, troublesome throttle linkages are unnecessary because electronic signals are sent from the electronic foot pedal direct to the ECM.

If problems occur, DDEC's Diagnostic Data Logging System in conjunction with the hand held Diagnostic Data Reader quickly help you identify and correct problems.

Engine Protection System

The automatic Engine Protection System is one of DDEC's most valuable standard features. Warning lights are triggered by low engine coolant, high coolant temperature or low oil pressure. An initial light alerts the driver to "Check Engine". If the problem persists, a second light instructs the driver to "Stop Engine".

If additional protection is desired, an automatic shutdown option can be specified when the vehicle is ordered or added any time after delivery.



Electronic Unit Injector (EUI)

Diagnostic Data Logging System

The diagnostics capabilities of DDEC not only contribute to the reliability and durability of the engine but also serve to dramatically reduce vehicle downtime.

In continually monitoring the engine's 54 critical functions, DDEC stores data of intermittent low or high oil pressure, coolant level, coolant temperature and overspeeding in the system's memory.

The ability to remember troublesome, on-off problems is a feature that sets Detroit Diesel's electronic control system apart from all others on the market today.

This audit trail of information provides an indication of the engine's performance that helps your maintenance technicians quickly diagnose and correct a minor problem before it becomes a major one.

A self-diagnostic feature of DDEC enables the system to check itself each time the engine is started to ensure that all sensors, warning lights and electronics are functioning properly.

DDEC Is The Most Sophisticated, Tested And Innovative Advancement Ever Developed For Diesel Engine Control

When introduced in 1985 as an option on the Silver 92, it was the only electronic engine system offered on a production diesel anywhere in the world.

DDEC is the product of the joint efforts of Detroit Diesel Corporation engineers and the Delco Electronics Division of General Motors, the largest and most experienced producer of electronic controls for automotive applications.

DDEC's reliability and durability have been extensively proven in laboratory and field testing equivalent to over 30 million miles. Today there are several thousand DDEC-equipped engines in service, providing users with increased fuel economy, improved driveability and greater engine protection.

How It Works

The operation and function of DDEC is simple.

The Electronic Control Module (ECM) is the brain of the system receiving inputs from engine-mounted sensors as well as the driver. It processes this information and sends electronic signals to the Electronic Unit Injectors (EUI).

The EUIs in turn perform the injection timing and metering functions that ensure peak engine performance and excellent fuel economy.

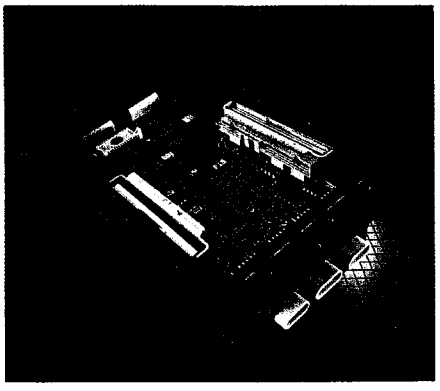
The Function of EEPROM

EEPROM is an acronym for Electrically Eraseable Programmable Read Only Memory that contains all vital engine operating characteristics and control functions.

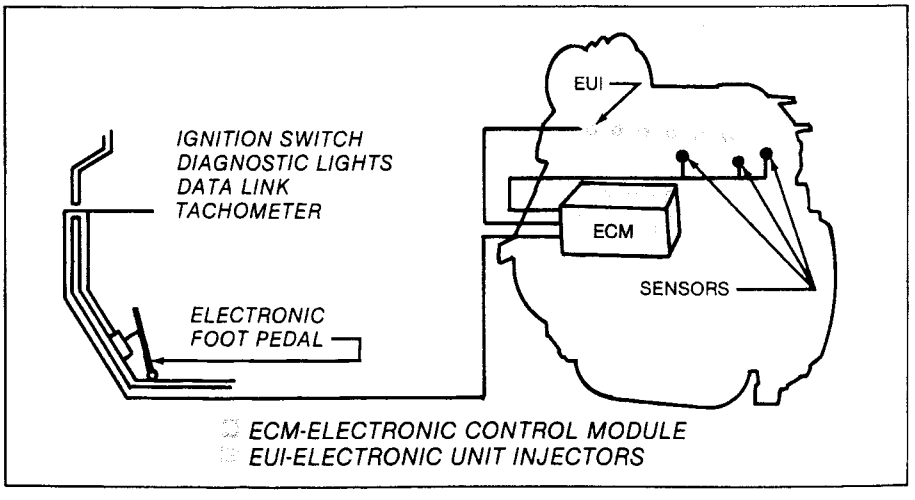
Included in EEPROM's memory is information that controls the engine's horsepower rating, torque curve, maximum engine speed and other DDEC features selected by the bus operator.

The entire DDEC system has been thoroughly tested to be troublefree.

However, if a malfunction should occur to the primary ECM control chip, a backup microprocessor chip maintains the primary fuel control and governing features to keep the vehicle operating.

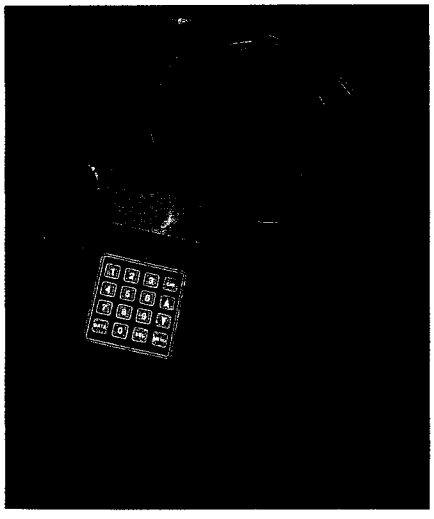


Electronic Control Module (ECM)



Diagnostic Data Reader (DDR)

The new Diagnostic Data Reader (DDR) is a multifunction device developed specifically for DDEC to enhance diagnostics, reduce service time and provide users with flexibility.



Diagnostic Data Reader (DDR)

The DDR allows system options such as cruise control and road speed governing to be easily changed by reprogramming the EEPROM within the ECM.

When used in diagnostic mode, the reader displays a word description of a problem that the system has sensed. Performance diagnostics, such as individual cylinder cutout, can also be accomplished.

In functioning as part of the engine management system, the DDR can display data on total engine hours and total fuel consumed.

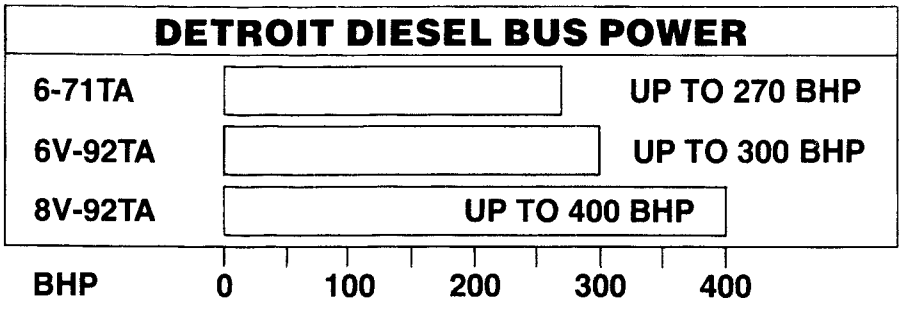
A Leader In Service As Well As Diesels

When you spec a Detroit Diesel, you are assured of expert support before and after our engines become part of your bus fleet. You can rely on our factory authorized service and training to help your mechanics maintain your engines in prime condition.

So when you are in the market for engines with the powerful advantages that Detroit Diesel can offer, spec the leader. You won't find our equal anywhere.

Service Coverage

DDEC is fully covered under the outstanding warranty and power protection plans that cover Detroit Diesel truck and bus engines. Details and additional information about Power Protection Plans (P3) are available from any authorized DDC outlet.



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