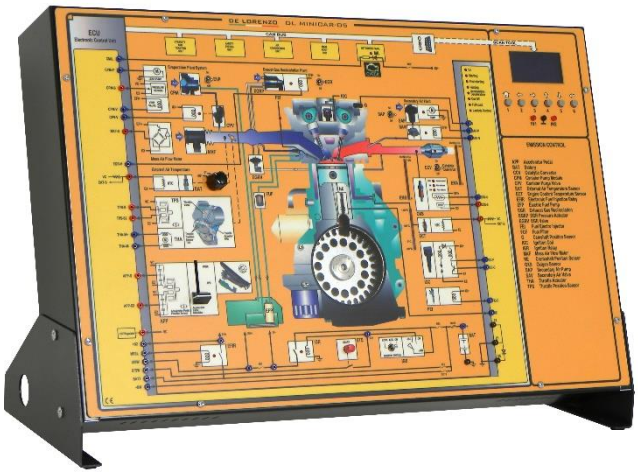
AUTOTRONICS

EMISSION CONTROL



DL MINICAR-05

AUTOTRONICS - SIMULATORS

LEARNING EXPERIENCE

This simulation panel deals with studies the devices and the systems used for controlling and reducing the emissions of gasoline engines. In fact, the combustion of the fuel inside the cylinders of an engine is incomplete. The more it is incomplete, the higher the emission of noxious components that are present in the exhaust gas of the engine.

The trainer is provided with an electric motor, with phonic wheel and magnetic sensor for position and rotation speed. The electric motor 'simulates' the operation of the real engine (all the operations are made at a speed 10 times lower than the real one of the engine: between 80 and 600 rpm).

This allows visualizing on LED the operation of the different devices: spark plugs, injectors, etc. On the LCD display the actual speeds are visualized (rpm from 800 to 6000). All the signals (on LED and terminals) are synchronized with the rotation of the phonic wheel and this makes 'real' the operation of the trainer.

GENERAL CHARACTERISTICS

- Dim. mm approx (HxLxW) : 400x600x100
- Weight approx. kg 15
- Input power supply: AC 220V±10% 50 Hz
- Working temperature: -40°C ~ +50°C.

MAIN CHARACTERISTICS

It is possible to cover the following subjects:

- General structure of the management system for a gasoline engine
- Composition of the exhaust gases in Otto cycle engines
- Preparation and control of the fuel
- Lambda regulation
- Re-circulation of the exhaust gases, anti-evaporation of the fuel and thermal post-combustion
- Sensors and actuators used in the systems for reducing the exhaust gas
- Control unit (ECU) and CAN-BUS
- Analysis of the electric signals of sensors and actuators
- Troubleshooting with traditional instruments
- Troubleshooting with OBD self-diagnosis

'Real' signals :

All the signals at the test points are real. They are equal in value, shape, time to the signals found in a real automobile.

Graphic Display and Keyboard

The trainer uses a graphic display and a keyboard for the visualization of the interesting parameters during the operation and for the

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selection of quantities and functions to be visualized.

'Integrated' Instrumentation

The Trainer contains the Instruments that are normally used on the field for the operation of troubleshooting in automobiles, both the 'traditional' ones, such as the multimeter, and the 'new' ones, such as the ScanTool for the OBD diagnosis.

Digital voltmeter

It allows performing all the voltage measurements on the system, without the need for external instrumentation.

Digital oscilloscope

It allows checking the waveforms at all the Test Points of the system and to operate in the same modes of a real oscilloscope.

Tester OBD-II (SCANTOOL)

It allows operating in the activities of fault finding in the same modes of a Scantool connected to an automobile through the OBD socket.

This vertical frame bench-top trainer is specially designed to show to students how automotive systems work. The simulator consists of a panel operated by the support of a computer with a coloured silk-screen diagram that clearly shows the structure of the system and allows the location of the components on it.

The display of the information available on the computer screen allows the continuous control of the educational system. The operational conditions can be entered by the students and the insertion of faults can be carried out through the computer by the teacher.

The trainer is supplied with a CAI Software and the supported documentation guides the students to the study and the performance of the simulation exercises.

All components installed and given leads are made to protect the safety of the students.

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