



GASOLINE ENGINE TEST BENCH – FOR ADVANCED TRAINING



DL DKD011

LEARNING EXPERIENCE

The system is designed for the study and the understanding of the four-stroke gasoline combustion engine. It is possible to perform the necessary tests to obtain the engine characteristic data referred to the performance of the engine. Experiments can be performed manually or automatically by students who have to just indicate the required variables and the number of points for the realization of the graph.

Training objectives:

Motor - characteristic of the curves:

- Torque - Rotational speed.
- Brake horsepower - Rotational speed.
- Temperature - Rotational speed.
- Air/fuel ratio - Rotational speed.
- Specific fuel consumption - Rotational speed.

GENERAL CHARACTERISTICS

- Two training benches
- Weight approx. 300 kg
- Input power supply: A.C. 3-phase 400V $\pm$ 10% 50Hz
- Operating functioning temperature: -40°C to +50°C

MAIN CHARACTERISTICS

The test bench is supplied in two parts:

- a four-stroke gasoline engine
- a breaking system

(a three-phase asynchronous motor which can work as motor and generator, controlled by an inverter). The engine test bench is supplied with a complete computer system, in order to carry out several practical experiments. All the characteristics of the curves can be monitored and recorded.

OTHER CHARACTERISTICS

Technical data - Motor bench

- Framework made of aluminum.
- Wheels for easy displacement.
- Bench legs equipped with cushioning system to avoid vibrations.

Technical data - Digital sensors

- Load cell for mechanical torque measurement.
- Thermocouple for exhaust gas temperature measurement.
- Electronic speed tachometer.



AUTOTRONICS



- Pattern flowmeter for air consumption.
- Digital scale 3500gr x 0.01gr to calculate the fuel consumption.

Technical data - engines

- Combustion engine
- 4 stroke combustion engine
- Maximum motor speed: 3600rpm
- Maximum power: 4.0kW at 3600rpm
- Maximum torque: 10.8Nm at 2500rpm
- Overhead valves
- Displacement: 163cc
- Cooling system: forced ventilation system
- Weight: 15kg

Electric motor

- Type: Asynchronous three phase motor
- Power: 7500W
- Voltage: 380V
- Motor speed: 2880 rpm at 50Hz

Additional features:

- Fuel tank: 3l
- Brake resistance: 21 Ohms

AUTOTRONICS - DEMONSTRATORS