



## DIESEL ENGINE TEST BENCH – FOR ADVANCED TRAINING



**DL DKD012**

### LEARNING EXPERIENCE

The system is designed for the study and the understanding of the four-stroke single-cylinder diesel combustion engine. It is possible to perform the necessary tests to obtain the engine characteristic data referred to the performance of the engine.

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.

#### 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 diesel engine
- a breaking system

(a three-phase asynchronous motor which can work as motor and generator, controlled by an inverter)

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## 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.
- Flow meter for air consumption.
- Flow meter for fuel consumption.

### Technical data - Four-stroke single-cylinder diesel combustion engine

- Maximum motor speed: 3600rpm
- Maximum power: 3.5kW at 3600rpm
- Maximum torque: 10.5Nm at 2000rpm
- Displacement: 243cc
- Stroke: 65mm
- Compression ratio: 22:1
- Weight: 28kg

### Electric motor

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