



## INTERNAL COMBUSTION ENGINE TEST STAND - GASOLINE and DIESEL

C100/220/A/B



Year 1  
study

### Features

- A Regenerative Engine Test Bed supplied with both:
- Four Stroke Diesel Engine.(fitted)
- Four Stroke Gasoline Engine.
- Designed to operate on US style 3 Phase (220V)
- Allows Investigation of Torque-Speed, Power-Speed, Specific Fuel Consumption, Mechanical (gasoline only) and Thermal Efficiency Over a Wide Range of Conditions.
- Optional Engines Are Quickly Installed
- Quick connect couplings and breaked wheels for ease of movement.
- Able to be tested from adjacent room once engine is set up running.
- High quality efficient engine
- Decompression lever for ease of starting (diesel only)
- Exhaust extension provided

- Research opportunity to investigate BIO fuels.

### Description

A robust floor mounted engine test stand with modular instrumentation and control system. A regenerative dynamometer includes both torque and speed control together with direct reading dynamometer digital display. The dynamometer will accept engines up to 4kW shaft power output.

Engine speed and all relevant temperatures are also displayed on digital panel meters on the remote instrumentation console. Air to the engine passes through an intake orifice and pulsation damper. The flow measurement orifice is connected to a panel mounted manometer to allow differential pressure measurement. Fuel flow is measured using a calibrated volumetric fuel gauge. Each of the optional engines are pre-installed on a standard mounting plate that is designed to allow quick

and easy installation on the test bed. Each engine is supplied with a suitable fuel tank and supply system with quick release self sealing fuel couplings.

Operator safety is ensured by a range of interlocks and safety cut out devices.

#### Related laws

- Research
- Thermodynamics
- Energy Conservation
- Mechanical Engineering
- Plant and Process Engineering
- Automotive Engineering
- Fluid Mechanics
- BIO Fuels

#### Learning capabilities

- Measurement of the Torque - Speed and Power - Speed for an Internal Combustion Petrol Engine at a Range of Throttle Settings.
- Measurement of the Specific Fuel Consumption at Constant Speed and Varying Power Output.
- Measurement of Air-Fuel Ratio and Engine Thermal Efficiency at Constant Speed and Range of Throttle Settings.
- Measurement Of Engine Internal Friction At A Range Of Engine Speeds.
- Measurement of the Specific Fuel Consumption at Constant Speed and Varying Power Output on a Diesel Engine
- Measurement of Air-Fuel Ratio and Engine Thermal Efficiency at Constant Speed and Range of Injector Settings on a Diesel Engine
- Measurement of the Torque - Speed and Power - Speed for an Internal Combustion Diesel Engine at a Range of Injector Settings.

#### Technical Specification

- Air-cooled Four Stroke Gasoline Engine
- Engine Maximum output 3.5HP (2.6kW)
- Engine rated speed: 3600rpm
- Engine Displacement: 118cc

- Engine Bore and Stroke: 60 x 42mm
- Engine Cylinders: 1
- Gasoline – Unleaded RON 91 –US-PON 86
- Vertical cylinder, 4 cycle, air-cooled Four Stroke Diesel Engine
- Engine Maximum output 4.6HP (3.5kW)
- Engine rated speed: 3600rpm
- Engine Displacement: 211cc
- Engine Bore and Stroke: 70 x 55mm
- Engine Cylinders: 1

#### What's in the Box?

- 1 x C100 (Diesel Engine fitted)
- 1 x Gasoline Engine (not fitted)
- 1 x Engine Mount
- 1 x Dynamometer console
- Transformer
- Fuel pumps
- Air Supply chamber
- 1 x Engine Exhaust
- 1 x Carbon Monoxide Sensor
- 1 x Stop watch
- 1 x Manometer Fluid
- Instruction manual
- Packing list
- Test sheet
- Spares

#### You might also like

- C100/415/A/B

#### Weights & Dimensions

- Weight: 160 kg
- Length: 1900mm
- Width: 600mm
- Height: 700mm

#### Essential Services

- 210-220 Volts, 3 Phase 50/60Hz (With earth/ground). Line current up to 32A

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COUNTRY OF ORIGIN - UK WARRANTY PERIOD - 2 YEARS

- Gasoline Engine Fuel Type: Unleaded RON 91 –US-  
PON 86
- Diesel Engine Fuel Type: Diesel

**Ordering information**

To order this product, please call PA Hilton quoting the following code:  
C100/220/A/B

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