

**Description :**

- The setup shall consists of 16 cylinder, four stroke, Diesel engine connected to Eddy Current dynamometer for loading& is provided with necessary instruments for measurements. Provision shall be made for interfacing airflow, fuel flow, temperatures and load measurement. The set up shall have stand-alone panel box consisting of air box, fuel tank, manometer, fuel measuring unit, process indicator and engine indicator. Rotameter shall be provided for cooling water and calorimeter water flow measurement.

**Engine Details**

- Engine Model: DV16ETA G3
- Make: Kirloskar
- Rated Output: 1210 HP
- Number of Cylinders: 16
- Rated Speed: 1500 rpm
- Cooling System: Water-cooled

*Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.*



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### Load Details

- Type : Eddy Current Water Cooled Dynamometer
- Maximum Power Output : 1000 BHP @ 1500 to 3500 rpm
- RPM Range : 500 to 3500 rpm , Max Speed 3500
- Maximum Torque : 4500 Nm@1500 rpm
- Maximum Speed : 3500 RPM
- Direction of Rotation : Bi-directional
- Water Supply : 300 LPM @ 2 kg/cm<sup>2</sup>
- Foundation mounting : Fabricated base with water Inlet ,Outlet connection
- Power transmission : Through high precision strain gauge type load cell
- Loading & unloading : By excitation DC Power supply.
- Coil Excitation : By 200 VDC @ 5 Amp , continuously adjustable
- Torque display : In Nm. 4 Digit Display
- Speed Display : In RPM 4 Digit Display
- Speed Sensor : 60 Teeth Wheel & 60 pulse per revolution sensor
- Communication : Through RS485 , Modbus protocol
- Protection : Water flow switch for dry run protection
- Temperature controller for over heat protection.

### Rotary Encoder with Mounting Arrangement

- Model : 8.5020.885A.0360.0030
- Make : KUBLER Gemen
- Operating Volt : 10-30VDC
- Revolution : 360PPR With coupling adapter for mounting on Dyno Shaft

### Combustion Pressure Sensor

- Pressure range : 0 to 100 or 250 Bar
- Sensitivity ( $\pm 0,5\%$ ) : 40 mV/bar
- Frequency range (-3 dB) : 0,016 to 20 Hz
- Operating temperature range : -50 to 300°C
- Supply voltage : 7 to 32 VDC

### Combustion Analyzer Software Specification

- This Software is suitable for Single Cylinder / Multi Cylinder
- Fuel Test for Diesel/ Petrol/ Dual Fuel

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- Any type of Load(Electrical, Eddy current, Hydraulic)
- Read the Engine Cylinder Pressure

### The Following Graphs are generated using this Software

- Crank Angle Vs Pressure
- Crank Angle Vs Rate of Pressure Rise
- Volume Vs Pressure
- log (volume) Vs log(pressure)
- Crank Angle Vs Heat Release Rate
- Crank Angle Vs Cumulative Heat Release Rate
- All the Output Result are Stored in one Excel Sheet

### Performance measurement

- Brake thermal efficiency
- Volumetric efficiency
- Mechanical efficiency
- measurement Heat balance measurement

### Panel And Instruments

- Heat Balance Measurement System : Pipe In Pipe Colorimeter Type .
- Temperature Measurement System : 12 No's K Type Thermocouple to with 8 Channel
- Temperature Indicator Measuring the Different Point of Temperature In Engine test setup.
- Load Measurement System : Load cell to Measure Dyno Load Indicate the Load Indicator.
- Fuel Measurement System : CC Tube With Photoelectric Sensor
- Air Intake Measurement System : Air Intake Measuring U Tube Mnanometer with DPT
- Water Flow Measurement : 2 No's Rota Meter 0-600 LPH Used to Measuring Water Flow
- In The Setup

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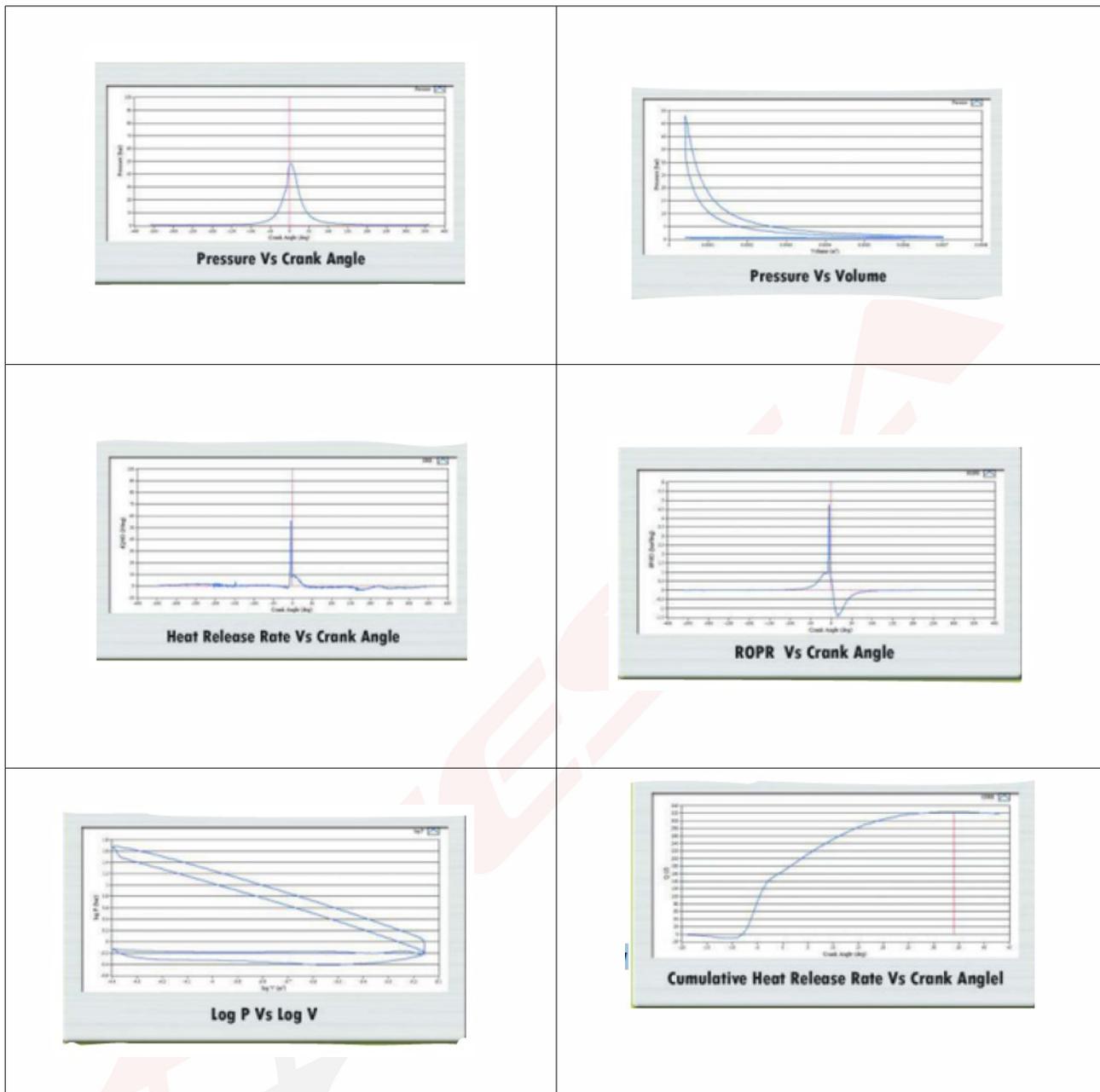
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