



MMI
Solution Provider

Since 2011

COMPUTERIZED FOUR STROKE SINGLE CYLINDER PETROL ENGINE WITH WATER COOLED EDDY CURRENT DYNAMOMETER USING COMBUSTION ANALYZER

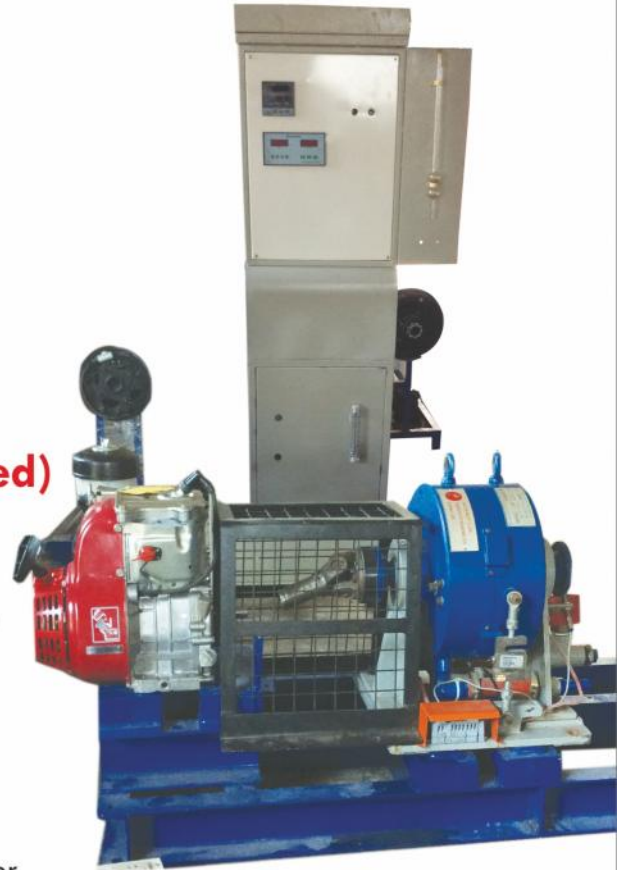
MAKE : MMI
Model : MMI ICE 039
Specifications :

Make : HONDA, GX 200 QTB
Type : 4 stroke, Air Cooled,
Single Cylinder, Horizontal Shaft
BHP : 4.1 KW @ 3600 RPM & 12.4 NM
Displacement : 260 cc
Compression ratio : 8.5:1
Ignition : Magneto ignition
Fuel : Gasoline
Speed control : Manual
Starting system : Manual start

Eddy Current Dynamometer (WaterCooled)

Make: TECHNOMECH
Model – TME – 10

Type : Eddy Current Water Cooled Dynamometer
Maximum BHP : 5 HP @ 1500 rpm
Maximum Torque : 25 Nm @ 1500 rpm
Accuracy : $\pm 4\%$ FS
Speed range : 6000 RPM
Direction of rotation : Bi-directional
Power transmission : Through 0 – 50 Kg load cell sensor
Loading & unloading : By solid state microprocessor base Controller
Foundation mounting : fabricated or C.I. casted Base plate with Provision of water Inlet & Outlet Connection.
Torque display : Digital indicator/controller 4½ digit display in Nm
Field coil excitation : by 0-100V DC with 5A Current continuously Adjustable.
Accessories : 2 No's pressure gauge & Temperature sensor
RPM indicator : 0-10000 rpm indicator with non-contact rpm Sensor With calibration set-up with certificate & dead weights.



Electrical clutch : Electrical clutch will be attached to engine shaft and dynamometer shaft to reduce to engine shaft load.

Temperature Measurement system : 3 No's 'K' Type Thermocouple and to measure the different points of temperature for intake air (PT 100), Engine cylinder body (K type) and Exhaust gas (K type).

Fuel measurement system : Burette with digital stop watch will be provided to measure the fuel consumption with tank and 0.1% FS accuracy optical fuel flow encoder will be provided to measure the fuel flow rate digitally in Kg/s or g/s with calibration certificate

Ph : 044 - 28389151, 82200 45908, 99404 90163



MICRO MECH INSTRUMENTS

An ISO 9001 : 2015 Certified Company

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Air intake measurement system : Air intake measure using 'U' Tube manometer and air tank through manual mode, Mass flow rate in g/s, for selected engine using Differential Pressure transmitter with the $\pm 0.1\%$ FS

Sensor indicator : 8 channel MASIBUS controller for sensing pressure, temperature, load, speed for automatic and manual mode.

Testing panel and Engine frame: MS powder coated engine testing panel will be provided with attachment of Air tank, Fuel tank, temperature indicator, Load indicator, Speed indicator, CC tube, U tube and PU painted self contained structure frame.

DATA ACQUISITION SYSTEM

Make : NATIONAL INSTRUMENTS

Model : NI USB 6210

- Analog Input : 16 Single Ended, 8 Differential
- Analog input resolution : 16 Bits
- Analog Input/output : 4 A/I & 4 A/O
- Analog output : 2 channel
- Ground reference : AI GND For Analog Input
- ADC resolution : 16 bits
- Frequency : 250 KHZ

EXHAUST GAS PRESSURE TRANSDUCER

Make: MEASUREMENT SPECIALTIES

- Pressure range : - 0.5 to 5 BAR
- Input : 24 VDC
- Output : 4 to 20 mA
- Accuracy : $\pm 0.1\%$ FS with Calibration certificate

COMBUSTION ANALYZER SOFTWARE Technical data :

Make: MMI SOFT 001

Engine combustion analyzer will be consisting of educational Software for online representation for P-V & P- θ diagram and data logging package interfacing with PC for real time data acquisition and it was store EXCEL, PDF format.

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

Experiment to Performance :

Specific fuel consumption, Brake power, Indicated power, BMEP, IMEP, brake thermal efficiency, Indicated thermal efficiency, mechanical efficiency, volumetric efficiency, air/fuel ratio.

ROTARY ENCODER WITH MOUNTING ARRANGEMENT

- Make : KUBLER Germen
- Operating Volt : 10-30VDC
- Revolution : 360PPR With coupling adapter for mounting on Dynamometer Shaft

COMBUSTION PRESSURE TRANSDUCER

Make: KISTLER

- Pressure range : 0 to 100 Bar with integral inline Charge amplifier and mounting Tool, including Connecting cable $\pm 1\%$ FSO
- Accuracy : 7 to 32 VDC
- Supply voltage :

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