



Since 2011



**COMPUTERIZED
FOUR STROKE FOUR CYLINDER
CRDI ENGINE WITH WATER
COOLED EDDY CURRENT
DYNAMOMETER
TEST RIG USING DAQ**

**Make : MMI
Model : MMI ICE 018**

Engine :

This brand new engine will be consists of the ECU, On Board Diagnostic (OBD) connector, Flywheel sensor, Air filter, Fuel filter, Common rail pump, injectors, Pedal sensor, Dashboard etc.

Engine make : **MARUTI ERTIGA (BRAND NEW)**
Displacement : **1248 cc**
Power : **90 BHP @ 4000 RPM**
Torque : **200 NM @ 1750 RPM**
No. of cylinder : **4 cylinders (4 strokes)**
Fuel system : **Common Rail Direct Injection**

EDDY CURRENT DYNAMOMETER :

Make	TECHNOMECH
Model	TME – 100
Cooling	By Water
Maximum Power Output	100 BHP @ 1750 RPM to 6000 RPM
Maximum RPM	0-6000 RPM
Maximum Torque	200Nm@2500 RPM
Loading Unloading	By Solid state Microprocessor Controller
Water Required	200 Lit/min.
Direction of Rotation	Bi - directional
Torque Controller	4 1/2 Digits, Load Controller cum Indicator

PANEL AND INSTRUMENTS :

- **Heat Balance measurement system** : Pipe in pipe type calorimeter type
- **Temperature Measurement system** : 7 No's 'K' Type Thermocouple to with 8 channel temperature indicator measure the different points of temperature in engine setup.
- **Load Measurement system** : Load cell to measure Dyno load and indicate the load indicator.
- **Fuel measurement system** : Fuel is measure using Weighing balance machine
- **Air intake measurement system** Air intake measure using 'U' Tube and Differential Pressure transmitter.
- **Water flow measurement** : 2 No's Rota meter 0 – 600 LPM used to measure water flow in the setup.
- **Speed Measurement** : Speed will be measured by using Proximity sensor and Digital Tachometer. Range of the speed will be indicated by using speed indicators

DATA ACQUISITION SYSTEM

MMI V2.2 engine combustion analyzer consisting of Software package for Data Acquisition and Analysis with the following

Make	: National Instruments
Model	: NI USB- 6210
Analog Input	: 16 Single, 8 Differential
Ground reference	: AI GND For Analog Input
Digital Input/output	: 8 Digital I/O
Output range	: ± 10 V

Rotary Encoder with Mounting Arrangement

Make	: KUBLER Germen
Operating Volt	: 10-30VDC
Revolution	: 360PPR

Combustion Pressure Sensor

Make : KISTLER

Pressure range	: 0 to 250Bar
Sensitivity ($\pm 0,5$ %)	: 40 mV/bar
Linearity	: ± 1 %FSO
Operating temperature range	: -50 to 300°C

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



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MICRO MECH INSTRUMENTS

An ISO 9001 : 2015 Certified Company

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