



### Specifications:-

#### A. ENGINE -

- Make : TATA SUPER ACE MINT ,
- BS IV Type : 4 stroke cycles, water cooled ,CRDI
- Number of cylinders : 4
- Type of Fuel : Diesel
- Piston displacement : 1396 cc Maximum
- Torque : 140 Nm @1800-3000 rpm Max Engine Output : 70 bhp @ 4000rpm

#### B. EDDY CURRENT DYNAMOMETER :

- 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

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



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- Loading Unloading : By Solid state Microprocessor
- Controller Water Pressure Required : 3 Kg/cm sq.
- Water Required : 200 Lit/min.
- Water Pipe line : 1 1/2" BSP
- Water Inlet : 1 1/2" BSP
- Water Outlet : Open to tank
- Water Outlet Temperature : Max.60°C
- Overall Dimension : 400 (D) x 660 (L) x 620 (H) mm, +/- 1 mm Mounting Dimension : 285(D) x 605 (L) mm CTC, +/-1mm Mounting Bolt Size : M16 x 150 mm
- Weight : 300 Kg Approx.
- Direction of Rotation : Bi - directional
- Power Supply : 0-75VDC 5A,
- Continuously Adjustable For Field Coil Excitation
- Torque Controller : 4 1/2 Digits,
- Load Controller cum Indicator
- Calibration Setup : 2 Nos. Cali. Arms with Weights
- Load Measurement system
- 50 Kg "S" type Load cell will be provided to measure Dyno load and indicate Using
- Load Indicator
- Load test will be done by manual mode only.
- NOTE: - The Dyno will be constant torque type though RPM is variable.

### C. Panel with instruments

- Temperature measurement:
- 7 No's of "K" type thermocouples provided to measure temperature at various points
- 8 Channel digital indicator provided to display the temperatures of various point
- Fuel measurement system -Burette with digital stop watch will be provided to measure the fuel consumption with 4 liter fuel tank capacity.
- Air intake measurement system-Air intake measure using 'U' Tube manometer and air
- tank through manual mode Using Air tank, 2 meter length Air duct hose.
- Differential Pressure transmitter will be provided to measure the air flow through digital mode.

### D.ENGINE COMBUSTION ANALYZER KIT

- Model : Engine Analyzer soft Make : MMI

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- MMI V4.5 engine combustion analyzer consisting of Software package for Data Acquisition and Analysis with the following specification.
- Make : National Instruments
- Model : NI USB- 6210
- Analog Input : 16 Single Ended, 8 Differential
- Ground reference : AI GND For Analog Input
- Digital Input/output : 8 Digital I/O
- Ground reference : D GND For Digital
- Counter Input : 2
- Timing accuracy : 50 ppm of sample rate
- Timing resolution : 50 ns
- Output range :  $\pm 10$  V
- Output coupling : DC
- Input high voltage (VIH) : 2.2 V -5.25 V
- Input low voltage (VIL) : 0 V 0.8 V
- Frequency : 250 KHZ

#### **Rotary Encoder with Mounting Arrangement**

- Model : 8.5020.885A.0360.0030
- Make : KUBLER German
- Operating Volt : 10-30VDC
- Revolution : 360PPR
- With coupling adapter for mounting on Dyno Shaft
- Combustion Pressure Sensor 1 No
- Make: Kistler
- Pressure range : 0 to 250 Bar
- Sensitivity ( $\pm 0,5$  %) : 0.05 mV/bar
- Linearity :  $\leq \pm 0.5$
- Operating temperature range : -50 to 350°C
- Supply voltage : 18 to 32 VDC

#### **Combustion Analyzer Software Specification**

This Software is suitable for

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- ü Single Cylinder / Multi Cylinder
- ü Fuel Test for Diesel/ Petrol/ Dual Fuel
- ü Any type of Load(Electrical, Eddy current, Hydraulic)
- ü Read the Engine Cylinder Pressure
- The Following Graphs are generated using this Software
- ü Crank Angle Vs Pressure
- ü Crank Angle Vs Rate of Pressure Rise
- ü Volume Vs Pressure
- ü log (volume) Vs log(pressure)
- ü Crank Angle Vs Heat Release Rate
- ü Crank Angle Vs Cumulative Heat Release Rate
- ü All the Output Result are Stored in one Excel Sheet

## 2. FIVE GAS ANALYSER

- Make : AVL Model : AVL444N
- Low Maintenance
- Low Warm Up & Response Time
- Wide Range Ac/Dc Operation : With Power Save And Auto Switch Off Mode Rs 232 Interface provision With Special Adaptation Can Be Used For Diesel Engine
- Technical Specifications :
- Display : LCD display
- Interface : RS 232
- Operating voltage : 100....300vac,50-60Hz
- Power consumption : MAX 25w
- Dimensions: 270X85X320mm(wxhi)
- Weight : 4.5KG
- Approval(India) : ARAI , PUNE
- Approvals (international) : OIML Class 1/CE/ISO 3930:2000/PTB (Europe)
- MEASUREMENT DATA
- GAS Measurement Resolution CO 0....10% VOL 0.01% VOL
- HC 0....20000 PPM VOL 1PPM/10PPM (0- 2000PPM)/(>2000PPM)
- CO2 0....20% VOL 0.1 % VOLO2 0....22% VOL 0.01 % VOL

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- NO\* 0....5000 PPM VOL 1 PPM VOL
- Equipment (5 Gas Analyzer ) -Accessories :
- Power Supply
- Adaptor
- Carry Case Probe & Hoses
- Allen Key Size 8 Mains Cord
- RS 232 CABLE
- 2 tube filter
- Pre filter 5
- Round filter100

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