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Product Name : Astra Scientific 4s Diesel Engine with ECU RBD (RIG With Open Electronic Control Unit)	**Product Code :** Thermodynamics0001

Description :

Astra Scientific 4s Diesel Engine with ECU RBD (RIG With Open Electronic Control Unit)

Technical Specification :

Description:

IC engines are widely used in automobile, domestic and industrial sector. They are classified according to cycle, number of cylinders, arrangement of cylinders, fuel used, type of ignition, valve arrangement, cooling system. Test rigs are used to find out the performance of an IC engine. It consists of an IC Engine, dynamometer, fuel measuring, air intake measuring and various other arrangements.

Experimentation:

To determine specific fuel consumption.

To determine Brake Horse Power.

To determine Brake Thermal Efficiency.

To determine volumetric efficiency measurement.

Utilites Required:

Electric Supply: Single Phase, 220 V, 10Amp.

Continuous Water Supply: 10 LPM Approx. at ½ kg/cm2 Pressure for Engine cooling.

Fuel : 20 Ltrs. Diesel

Floor Area : 3m X 2m

Technical Details:

Type of Engine : Single cylinder, four stroke, vertical
water cooled, crank start,diesel engine developing 5 HP at 1500 rpm

Type of Loading : Rope Brake Dynamometer

Fuel Measuring System : Fuel measuring system consists of a fuel tank, a burette and a three way cock arrangement.

Air Intake Measuring System: Air tank fitted with orifice and water manometer.

Measurement of Heat Carried: It consists of inlet outlet piping
with flow control valve, water away by Cooling Water meter and

temperature sensor.

Temperature Measurement : Digital Temperature Indicator with multi-channel switch

Temperature Sensors : RTD PT-100 type

RPM measurement : RPM Indicator with Proximity sensor

Exhaust Gas Calorimeter : Made of Stainless Steel including the body & the tube for cooling water circulation and designed to get maximum temperature difference. The body of the calorimeter is insulated on all sides to prevent heat losses due to radiation.

Open ECU : System consists of-

• Torque control based on driver demand

• Speed control mode

• Start control, Glow control

• Closed loop control for Idle RPM

• Closed loop EGR control

• Closed loop Boost pressure control

• Closed loop Fuel pressure control

• Multiple injection (upto 5)

• Injection Timing control

• Separation control among multiple injections

• CAN calibration

• Flexibility to connect additional sensors

• Coolent/Fuel/Air/ temperature sensors, Air flow sensor, Boost/Fuel/Ambient pressure sensors.

Astra Scientific

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