

## THD-002 TWO STAGE RECIPROCATING AIR COMPRESSOR TEST RIG



### **RANGE OF EXPERIMENTS TO BE CARRIED OUT:**

1. To study all components/Accessories used in Reciprocating Air Compressor.
2. To study & determine Isothermal Work, Isentropic Work, Actual Work Volumetric Efficiency, Isothermal Efficiency, Isentropic Efficiency & Free Air Delivery at different delivery pressure.
3. To Plot Volumetric Efficiency/Isothermal Efficiency Isentropic Efficiency against Delivery Pressure & comment on the nature of the plot.

### **TECHNICAL DESCRIPTION :**

The test rig consists of Air Compressor with an air suction tank, is fitted with an orifice at one end & other end connected to cylinder. The orifice pressure tapping is connected to one limb of U -Tube manometer on panel. Thermocouple  $T_1$ ,  $T_2$ ,  $T_3$ ,  $T_4$ ,  $T_5$  reads temperature at inlet ( $T_1$ ) outlet Temperature from 1<sup>st</sup> cylinder ( $T_2$ ) & after intercooler temperature ( $T_3$ ), after 2<sup>nd</sup> cylinder ( $T_4$ ) and Tank Temperature ( $T_5$ ) records temperature of air.

Energy meter is used to record the power input to motor & in turn the work required for compression. The control panel houses starter for motor, main switch, Temperature Indicator .

**DIMENSIONS AND WEIGHT :**

Size :1.5 m.(L)x 1.0 m(W) X 2.0 m ( H )

Weight :Approx. 250 Kg

**SERVICE REQUIRED :**

Power Supply : 440v, AC ,Three Phase , 50HZ

**SCOPE OF DELIVERY:**

1. Experimental Setup
2. Instructional Manual

**OPTIONAL FACILITY:** Data logging Facility