

AIR CONDITIONING TEST RIG

The Air Conditioning Test rig works on simple vapour compression refrigeration cycle and uses 134a/R22 as a refrigerant. It is environment friendly. The experimental Air conditioning test rig consist of a compressor unit, condenser, evaporator, cooling chamber, controlling devices and measuring instruments those are fitted on a stand and a control panel. The apparatus is fabricated in such a way; to refrigeration system hermetically sealed compressor is fitted on stand with the help of flexible foundation bolts to minimize vibrations. Electric power input to the compressor is given through thermostatic switch. The system is fabricated such that students can observe and study vapor compression cycle, its component principle & working. The arrangement of parts such that, all the parts are visible and working can be easily understood.

SCOPE OF EXPERIMENTATIONS:

- To study about the Air conditioning test rig.
- To determine the coefficient of performance of Air conditioning Test rig.

UTILITIES REQUIRED:

- Water Supply.
- Drain
- Electricity 220V AC, Single Phase.
- Space required: 2 x 2 m.



TECHNICAL SPECIFICATIONS:

- Refrigeration system : Cooling capacity (450 watt at rated test condition (0.3 TR))
- Compressor : 1/2 HP, Hermetically sealed, Standard make
- Condenser : Forced convection Air cooled
- Condenser fan : Axial flow type (Standard make)
- Expansion Device : Capillary Tube
- Evaporator : Forced convection Air cooled type
- Evaporator fan : Axial flow type (standard make)
- Refrigerant : 134a/R22 Type
- Pressure Indication : 2 No.s dial type pressure gauges. One fitted at suction side and another at discharge side
- Temperature Sensors : RTD PT-100 type (6Nos.)
- Control panel : Digital Voltmeter: 0-300 Volt.
: Digital Ammeter: 0-2 Amp.
: Digital Temperature Indicator: 0-300°C
(With multichannel switch)
On/Off switch, Mains Indicator etc
- The whole set-up is well designed and arranged on a good quality painted structure.