

CASCADE REFRIGERATION TEST RIG (EE-1608)

The CASCADE REFRIGERATION test rig works on simple vapour compression refrigeration cycle and uses R134a as a refrigerant. It is environment friendly. The experimental refrigeration cycle test rig consist of two compressor unit, condenser, evaporator, controlling device 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 the vapour compression refrigeration cycle.
-) To Study the about cascade refrigeration System.
-) To determine the Individual coefficient of performance of cycle.

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 (1/8 TR))
- Compressor : 1/3 HP, Hermetically sealed, Standard make (2 No.s)
- Condenser : Forced convection Air cooled
- Condenser fan : Axial flow type (Standard make)
- Expansion Device : Capillary Tube
- Evaporator : shell and coil type (Jacketed type with 60 ltrs capacity)
- Refrigerant : 134a Type
- Pressure Indication : 4 No.s dial type pressure gauges. One fitted at suction side and another at discharge side
- Temperature Sensors : RTD PT-100 type (10Nos.)
- 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.