

## ICE PLANT TEST RIG (EE-1601)

The Ice Plant Test Rig works on simple vapour compression refrigeration cycle and uses 134a / R22 Gas as a refrigerant. It is environment friendly. The experimental Ice Plant Test rig consist of a compressor unit, condenser, evaporator with Stirrer, 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 about the Ice Plant test rig.
- To determine the coefficient of Performance of Ice Plant Tutor.

### UTILITIES REQUIRED:

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

### TECHNICAL SPECIFICATIONS:

- Refrigeration system : 25 kg in a day of 24 hrs. after attaining brine solution Temperature of -5 deg Celsius.
- Compressor : 1/2 HP, Hermetically sealed, Emerson/ Tecumseh/ Danfoss or equivalent make. India Hermetically sealed compressor shall be provided with its standardized electrical accessories
- Condenser : Forced convection Air cooled
- Condenser fan : Axial flow type (Standard make)
- Expansion Device : Capillary Tube
- Evaporator : Make S.S, fitted with Agitator & Ice Cube (To make Brine Solution)
- Refrigerant : 134a/R-22 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.

