

# 52, Industrial Estate, Ambala Cantt - 133006 Mb : 098963 33447, 098961 33557, 090340 83447

Website: www.etherengineers.com

Email: etherengineers@rediffmail.com, info@etherengineers.com

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# MECHANICAL HEAT PUMP TEST RIG (EE-1604)

The Mechanical Heat Pump Test rig works on simple vapour compression refrigeration cycle and uses R134a as a refrigerant. It is environment friendly. The experimental water to water pump test rig consist of a compressor unit, water cooled condenser, evaporator, controlling devices and measuring instruments those are fitted on a stand and a control panel. The 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 observe the working principle of heat pump cycle.
- To determine the coefficient of performance of Heat pump Test rig.

### **UTILITIES REQUIRED:**

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

# **TECHNICAL SPECIFICATIONS:**

•	Compressor	:
•	Condenser	:
•	Expansion Device Evaporator	:
•	Refrigerant Pressure Indication	:
•	Temperature Sensors	:
•	Control panel	: : :



- 1/2 HP, Hermetically sealed, Standard make Emmelsion-coplend/equivalent Water cooled (Copper coil is merged in water tank to cool down the gas temp. Continuous water flow circulation is required to extract the heat of gases.) Capillary Tube Coiled Tube Heat Exchanger copper coil is merged in Water tank to extract the heat from water tank 134a Type 2 No.s dial type pressure gauges. One fitted at suction side and another at discharge side RTD PT-100 type (8Nos.) Suitable filter/drier Make (Standard) 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.