

**DESCRIPTION:**

- Heat Pump and the refrigerating machine basically work on one and the same principle and with the same components. Heat pump is a machine, which delivers heat at a temperature suitable for domestic, Industrial and Commercial purposes.
- By added work input from the motor or engine it extracts heat from low-grade source. In many circumstances heat pumps can make valuable contribution to energy conservation.
- The majority of heat pumps operate on the vapour compression cycle using a refrigerant as the working fluid.
- Heat pump is fully sealed R-134A refrigerant system using water-to-water pumping principle.
- The equipment produces realistic results and has low thermal inertia so that unit stabilizes very quickly and enables student's maximum experimentation.

EXPERIMENTATION:

- Determination of co-efficient of performance of the unit when working as water-to-water heat pump.
- To Construction of Energy balances for completed system over a range of operating conditions.
- To determine overall heat transfer co-efficient for condenser and evaporator.

UTILITY REQUIRED:

- Electric supply 5A-220 V AC
- Water supply and drainage
- Floor area : 1.5 m x 1m

TECHNICAL DETAIL:

- Compressor : Hermitically sealed compressor.Capacity 1/3 Ton, Kirloskar make.

Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.



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- Condenser : Water cooled type shell and coil condenser with refrigerant inside the tube.
- Water flow measurement : Provided with individual rotameters and four temperature sensor for both condenser and evaporator.
- Expansion Valve : Capillary Tube, Compatible Capacity.
- Safety Control : Overload and over current protectors for compressor and Time delay circuit.
- Evaporator : Water cooled Compatible capacity.
- Temperature Sensor : RTD PT-100 Type.
- Control Panel comprises of :
 - Digital Voltmeter : 0-300 V
 - Digital Ammeter : 0-5 Amp.
 - Temperature Measurement : Digital Temperature Indicator with multi-channel switch.
- Instruction Manual : An ENGLISH instruction manual will be provided along with the Apparatus
- All the accessories will be mounted on a rigid base frame made of M.S. and it will be powder coated.

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