LAB ENGINEERING

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Product Name :	**Product Code :**
MECHANICAL HEAT PUMP	Conditioning0005

Description :

MECHANICAL HEAT PUMP

Technical Specification :

All the components of heat pump Test Rig are displayed on powder coated fabricated stand. The primer consists of a hermetically sealed compressor, heat rejection chamber, drier-filter, expansion device, and heat absorption chamber. Hot vapours from the heat absorption chamber in the tank are sucked by the compressor, are compressed & sent to the heat rejection chamber. Liquid emerging out from the heat rejection chamber passes through the expansion device; it is throttled to low pressure & temperature & sent to heat absorption device where it boils. A drier filter is in the way to throttling device. Separate pressure gauges are provided to measure heat absorption device & heat rejection device Pressures at various locations. Energy meter is provided to measure energy consumed by compressor. Rotameter in the liquid line is incorporated to measure the refrigerant flow. Digital temperature indicator displays temperatures at various locations as per the selection viz. temperature before & after compressor and before & after expansion.

SPECIFICATIONS OF THE HEAT PUMP TEST RIG:

HEAT PUMP RATING	:	500 WATTS GROSS HEAT REJECTION AT RATED TEST CONDITIONS
compressor	:	HERMETICALLY SEALED emerson climate technologies make INDIA LTD.OR EQ. MAKE
HEATREJECTION CHAMBER	:	WATER COOLED PROVIDED
drier filter	:	provided
EXPANSION DEVICE	:	CAPILLARY TUBE
HEATABSORPTION	:	Immersed TYPE (REFRIGERANT GRADE COPPER TUBE)

CHAMBER		DIRECT EXPANSION TYPE PROVIDED
REFRIGERANT	:	R-134 A
REFRIGERANT flow measurement	:	GLASS TUBE ROTAMETER.
temp. indicator	:	DIGITAL TEMP. INDICATOR provided
pressure INDICATION	:	DIAL TYPE PRESSURE GAUGES: 2 NOS
ENERGYMETER	:	PROVIDED FOR THE COMPRESSOR
SUPPLY	:	230 VOLTS, 1 PH, 50 HZ AC

LIST OF EXPERIEMNTS:

- To evaluate the COP of the system of heating & cooling cycle.
- To calculate CARNOT COP.
- To plot the actual Refrigeration Cycle on P-H chart.
- To study various components and controls used in heat pump