

Heat Exchanger Teaching Setup



Product Categories: [Engineering Equipment](#), [Heat Transfer Lab](#)

Product Page:

<https://www.labappara.com/product/heat-exchanger-teaching-setup/>

Product Description

Heat Exchanger Teaching Setup

The present set-up is designed to accommodate different types of heat exchangers using one at a time, most commonly used in industries. These Heat Exchangers can alternatively be installed on the same set-up. For hot water circulation through the heat exchanger, a temperature controlled heating system and a fixed speed circulating pump with by-pass to vary the hot water flow rate through the heat exchanger, are provided. Cold water supply is to be provided externally by the user. The set-up is designed with quick release hot and cold-water connection, which allows rapid connection to the heat exchanger under experiment and for changing the run either parallel to counter or counter to parallel. Suitable and appropriate instrumentation is provided for measuring the temperature of both fluids at inlet and outlet. Flow meters are provided for each fluid to observe fluid flow rate.

Objectives/Experiments:

To demonstrate the indirect heating cooling by transfer of heat from one fluid stream to another when separated by a solid wall.

To determine the energy balance.(heat balance)

To calculate the efficiency of heat exchanger by measuring the flow rates and temperatures change in the hot an cold fluid streams.

Use logarithmic mean temperature difference (LMTD) in heat transfer calculation.

To calculated the heat transfer co-efficient.

To study the effect of flow rates of hot and cold fluids on heat transfer co-efficient.

To study the effect of the temperature drop (driving force) on heat transfer co-efficient.

Required for Operation:

Water supply 20 lit/min (approx.) and floor drain.

Electricity Supply: 1 Phase, 220 V AC, 4 kW.

Floor area of 1.5 m x 0.75 m.

Control Panel:

Digital Temp. Controller: 0-199.9°C, (For Hot Water Tank)

Digital Temp. Indicator: 0-199.9°C, with multi-channel switch

Standard make On/Off switch, Mains Indicator