

## ► KHT-04 Heat Transfer from a Pin Fin

### Specifications:

- Fin – 12.5 mm (approx) 15 cm. Long (approx). One each of mild steel, Aluminum and brass. Duct size – 10 cm x 15 cm x 80 cm long Blower of suitable capacity with 0.5 H.P. single phase motor.



Heater – Nichrome wire type bank heater of suitable capacity

- Control panel comprising of :
  - a) Voltmeter – 0 – 200 Volts.
  - b) Ammeter – 0 – 2 Amp.
  - c) Dimmer stat for heater 0-230 Volts 2 Amp.
  - d) Temperature indicator – 0 – 300°C with 10°C least count. Using chromel alumel thermocouples, provided with cold junction compensation. Orifice meter on blower outlet with water manometer.

Fins of other materials can be supplied at extra cost.

### Range of Experiments:

To study of temperature distribution along the length of fin in both natural & forced convection. Comparison of theoretical temperature distribution with experimentally obtained distribution. Comparison of performance of fins of various materials supplied.

## ► KHT-05 Heat Transfer in Forced Convection

### Specifications:

- Dia & length of test section – 28 (Approx.) x 40 cms.
- No. of thermocouples – 6 Nos.
- Nichrome heater of suitable capacity
- Blower 0.5 H.P. with motor with 12" of WGP.
- Orifice & U tube manometer.
- Control Panel comprising of
  - i) Dimmer stat 240 V, 2 Amp., A.C.
  - ii) Voltmeter 0 - 200 V., A.C.
  - iii) Ammeter 0 - 200 V., A.C.
  - iv) Digital Temperature indicator 0 to 300°C using Chrome-I Allumel thermocouples, provided with cold junction compensation.

### Range of Experiments:

- To determine average surface heat transfer coefficient for a pipe losing heat by forced convection.
- Comparison of heat transfer coefficient for different air flow rates & heat flow rates.
- To calculate Reynolds number and Nusselt number for each experimental conditions.
- To plot surface temperature distribution along the length of pipe

