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 7 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-l 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 Nusset number for each experimental conditions.
- To plot surface temperature distribution along the length of pipe