



The heat transfer in forced convection is one of the most important heat transfer modes present in many engineering applications. Heat Apparatus is designed to find out the value of heat transfer coefficient under different air flow sections. Heat is transferred from heated test section of the pipe to the air flowing through it. The apparatus consists mainly of a centrifugal blower, electrically heated test section, control valve, to regulate the air flow and an orifice and U tube water manometer for flow measurement. Thermocouples are used to measure the pipe wall temperature & also the air temperature at inlet and exit.

FEATURES:

- Test section is completely enclosed.
- Control and measurement of electrical input by complete panelised instruments.
- Digital temperature indicator for temperature measurements

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 and heat flow rates.
- To calculate Reynolds number and Nusselt number for each experimental condition.
- To plot surface temperature distribution along the length of the pipe

SPECIFICATION:

- Test section of 400mm L x 1" dia.
- No of thermocouples 6 Nos.
- Band heater of 400 watt capacity.
- Blower with motor 60 No velocity 6m/s.
- Orifice and U tube manometer of D/2.
- Digital Control Panel
 - a) LCD Display.
 - b) Thyristor based power control.
 - c) Power Measurement using CT / PT
 - d) PC interface on RS 232 / 485– **(Optional At extra cost)**
 - e) Data Acquisition and Calculation software – **(Optional At extra cost)**

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



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- f) RTD(PT 100) for temperature measurement

INSTRUCTION MANUAL:

- A manual is supplied which gives details of the apparatus and procedure of experiments along with sample calculations.

SERVICES REQUIRED:

- AC. 230 V single phase stabilized supply with earthing connection
- Space required : 1 mtr X 2 mtr approximately at working height.

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