

HT-008. HEAT TRANSFER IN FORCED CONVECTION



RANGE OF EXPERIMENTS TO BE CARRIED OUT:

1. Average surface heat transfer coefficient for a pipe losing heat by forced convection to air flowing through Pipe and it can be obtained for different air flow & heat flow rates.
2. To Calculate the Reynold's number & Nusselt number for each experimental condition. To Plot these values on Log - log graph. To Plot on the same graph the Dittus-Boelter correlation.
3. To plot & comment on the surface temperature distribution along the length of pipe.

TECHNICAL DESCRIPTION

The apparatus consists of Blower unit fitted with a test pipe. The test section is surrounded by Nichrome band heater. Thermocouples are fixed on the test section also in the air stream at the entrance & exit of the test section to measure the temperature. Test pipe is connected to the delivery side of the blower along with an orifice to measure flow of air through pipe Auto transformer is provided for varying the input to the heater & measurement of input is carried out by a voltmeter, ammeter

DIMENSIONS AND WEIGHT :

Size :1.5 m.(L)x 1.0 m(W) X 1.5m (H)

Weight :Approx. 65 Kg

SERVICE REQUIRED :

230 v Ac Supply 50 Hz

SCOPE OF DELIVERY:

1. Experimental Setup
2. Instructional Manual

OPTIONAL FACILITY: Data logging Facility