



PITOT TUBE



DESIGN

Pitot Tube is a standard Air velocity meter. It consists of two concentric tubes. Inner one measures total or impact pressure existing in the fluid stream, the outer measures static pressure only.

When these tubes are connected to a Manometer the static pressure is automatically nullified and only Velocity pressure is registered. This pressure is a measure of linear velocity of air/gases.

REASONS FOR USE

- 1) The pitot tube, unless made excessively large in relation to the size of the main, produces no appreciable pressure loss.
- 2) It is only necessary to drill a few small holes in the duct at the point where the flow measurement is to be made, and this feature makes the method the unquestioned choice for site work such as commissioning number of in-duct measurement may have to be made at different points in the system .
- 3) By comparison with some other Velocity indicating devices, the pitot static tube and manometer have further advantages that no flow of air passes through the instrument. This eliminates worries about pressure drop through the tubes to the indicating instruments, and for practical purpose, there is no limit to the

distance between the pitot tube and the manometer. The absence of flow through the equipment also means that dust is unlikely to build up in pressure lines, and the equipment can be used to measure the Velocity in extreme hostile environments such as the stacks, where elevate temperatures, dust and corrosion might otherwise be a problem.

MATERIAL OF CONSTRUCTION:

Pitot tube are generally supplied in stainless steel

METHOD OF USE:

The duct is drilled and tapped corresponding to the thread of glands provided with the pitot tube. Now gland is threaded in the duct with one limb of pitot tube inside the duct.

METHOD OF FINDING AIR VELOCITY:

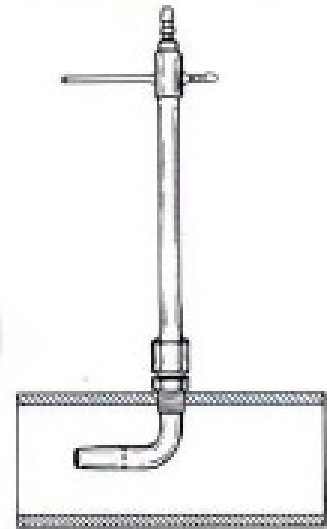
Gas velocity in a duct is minimum at the duct wall and maximum at the centre. For every accurate measurement of gas Velocity the instrument is moved along the section of the pipe and gas Velocity readings are taken at 10 to 20 location in centers of equal annual area. An average of these reading is used for industrial requirement, fairly accurate value of average fluid velocity can be found by taking the reading at the centre of the duct and multiplying it with 0.90. For better reading accuracy, this reading should be taken at least 10 diameters of the straight duct from a bend, valve or a damper in the pipeline.

RANGE:

Pitot tubes are available in the following sizes: -

- a) .30 M
- b) .50 M
- c) 1.00 M
- d) 1.20 M
- e) 1.50 M
- f) 2.00 M

OTHER SIZES ARE AVAILABLE ON SPECIFIC REQUEST



METHOD OF FITTING ARRANGEMENT

VELOCITY RANGE:

These tubes are suitable for measuring velocity from 0-25 meter per sec. in conjunction with suitable manometer.

Pitot tube can be fitted to the duct by means of glands and as illustrated.



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