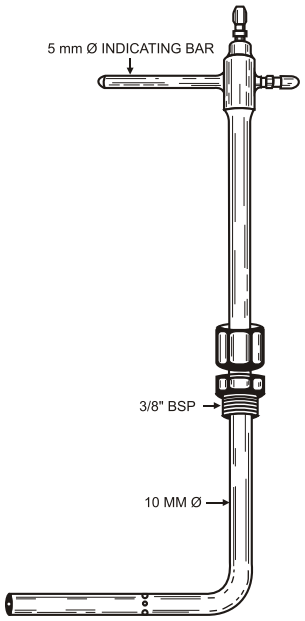
PITOT TUBE

DESIGN

Pitot Tube is standard air velocity meter. It consists of two concentric tubes. Inner one measures total pressure existing in the fluid stream, the outer measures static pressure only. When these tubes are connected to Manometers only the velocity pressure is registered. This pressure is a measure of linear velocity of gases.



PITOT-STATIC TUBE

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 and trouble-shooting, where time is at a premium and a large number of in-duct measurements 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 has further advantages, that no flow of air passes through the instrument. This eliminates worries about pressure drop through the tubes to the indicating instrument and for practical purpose there is no limit to the distance between the pilot tube and the manometer. The absence of flow through the equipment also means that dust is unlikely to build up in the pressure lines, and the equipment can be used to measure the velocity in extremely hostile environments such as flue stacks, where elevated temperatures, dust and corrosion might otherwise be a problem.

MATERIALS OF CONSTRUCTION

Pitot tube are supplied in stainless steel. Pilot tube in other materials are also available on specific request.

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 zero at the duct wall and maximum at the centre. For very 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 locations in centre of equal annular area. An average of these reading is used.

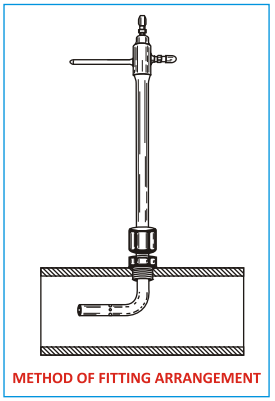
For industrial requirement, fairly accurate value of average fluid velocity can be found by taking the reading at the centre of the duct and multiplying it with 0.90. For better reading accuracy, this should be taken at least 10 diameters of the straight duct from a bend, valve or a damper in the pipeline.

RANGE Pitot tubes are available in the following sizes :—

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

OTHER SIZES ARE AVAILABLE IN SPECIFIC REQUEST.

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



METHOD OF FITTING ARRANGEMENT

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