NMC PORTABLE INCLINED MANOMETER

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Pitot readings are very small for the common range of air velocities. Ordinary U-tube manometers are not useful for measurement of gas velocities below 12 m/s. For this,use of inclined tube manometer is suggested. These manometers are well-type with single limb indication. "NMC" Inclined Manometer can be swivelled in 4 positions-- 1 in 20, 1 in 10, 1 in 5 & vertical (Approx) Maximum limit of pressure measurement is 250 mm wg.

Connecting Tubing : Two PVC tubing of 10m length has been provided. Extra lengths available on request & at cost.

Manometer Fluid : A bottle of monometer fluid with the density labelled on it and a funnel for topping up the reservoir fluid is included in the scope of supply.

Levelling Arrangements : Levelling is accurately and conveniently done by means of screw threaded feet in conjunction with spirit levels.

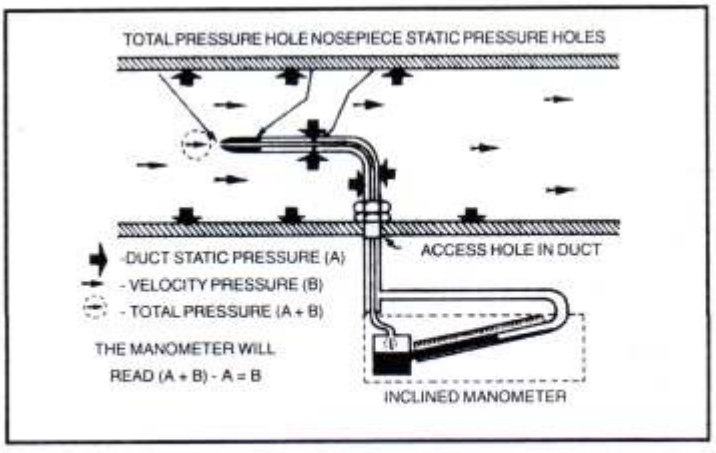
PITOT TUBE ARRANGEMENT IN DUCT WITH MANOMETER

Pressure Range : 0-125/250/500/2500 Pascals (N/M^2)
0-12.5/25/50/250 mm Wg

Velocity Range : 0-14.2 0-28 m/sec.

Accuracy : ± 1% of range in use.

This Manometer can be used in conjunction with Pitot Tubes for measurement of velocity, as shown in our Sketch.



OTHER VENTILATION INSTRUMENTATION

1) Anemometer 2) Aneroid Barometer 3) Gas Sampling apparatus 4) Incline Manometer 5) Kata Thermometer 6) Max. & Min. Thermometer 7) Pitot Tube 8) Pit water Gauge 9) Stop Watch 10) Smoke Generator 11) Stroboscope Tachometer 12) Thermometer Dumb-Bell Type 13) Velometer (Electronic) 14) Wet & Dry Bulb Hygrometer 15) Whirling Hygrometer.

OPERATIONAL MANUAL

1. **Open up case and Remove Fluid tight Caps**

   It is safer to remove the cap from the tank connection first to release any slight pressure set up by a change in atmospheric conditions.

2. **Make the necessary connections to the Manometers**

   Gauge may be used for positive, negative or differential readings and the necessary connections are shown in Diagrams.

3. **Level Up with Rapid Levelling Device**

   The manometer panel is connected to the casing base by means of a centrally disposed flexible mounting at the rear and two widely space levelling screws at the front. The two sensitive spirit level are set substantially parallel to lines between the flexible mounting and the two levelling screws. Thus each spirit level is affected by only one levelling screw and complete levelling in all directions is carried out quickly and accurately by operating the two knobs in front of the panel. Each leg top fitting is provided with a grub screw for adjusting the limit of its travel. These screws may be reset if, at any time, the panel appears to be out of adjustment with the casing when set up on a level floor.

4. **Zero Manometer Fluid**

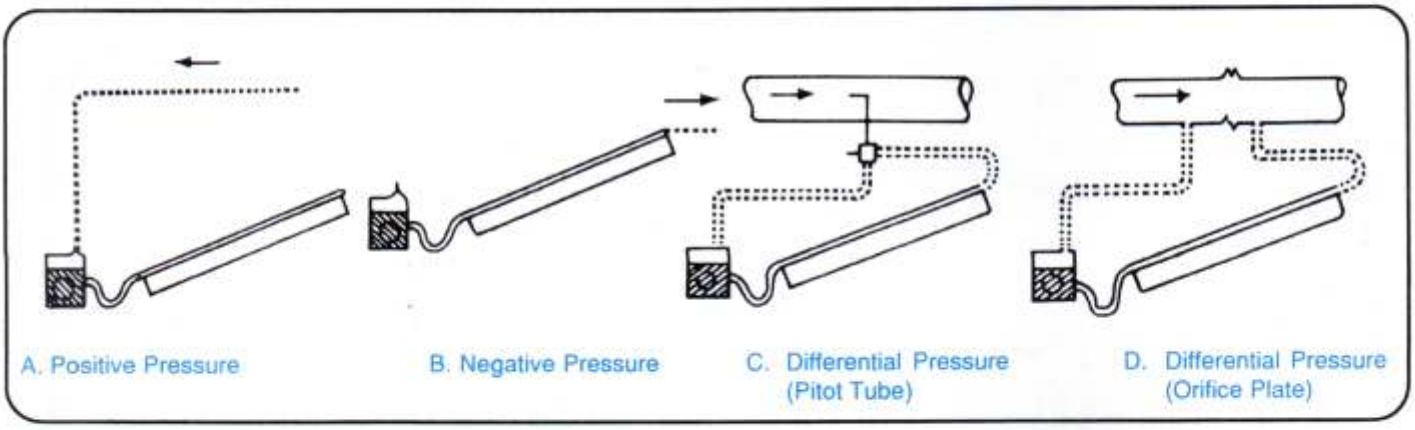
   Zero adjustment of manometer is effected by, raising or lowering fluid reservior tank, DO NOT operate this adjustment before removing the screw caps from the appropriate manometer connections otherwise pressure may be set up in the reservior tank resulting in possible loss of fluid when one of the caps is removed.

Note : It is important to remember that when the inclination of a manometer limb has been altered it is essential to re-zero the liquid. If this is not carried out a false reading will be obtained.

The operating fluid in the manometers is a dyed blend of petroleum derivatives having a specific gravity labelled on bottle. The initial filling should last indefinitely unless spillage occurs. A bottle of replacement, fluid of the same specific gravity is provided. To avoid an air lock in adding fluid it is preferable to fit the funnel to the tube connection, blow some of the fluid from the gauge up into the funnel and add further fluid from the bottle before allowing it to return. Repeat if necessary.

SCALE READING

It will be noted that the scale is ranged 0-250 mm water gauge. When using the manometer limb in the inclined and vertical position, it is necessary to multiply the reading by the appropriate factor. These factors will be found on the label fixed to the inside of the test set lid.



A. Positive Pressure | B. Negative Pressure | C. Differential Pressure (Pitot Tube) | D. Differential Pressure (Orifice Plate)

USEFUL CONVERSIONS

Pressure : 250 Pascals = 250 N/m^2 = 2.5 m bar
= 25.5 mm H^2O = 25.5 kg/mm^2 = 1.004 Wg
= 0.036 lb/in^2

Volume : 100 m/hr^3 = 58.8 cfm = 27.78 l/s

Velocity : 1 m/s = 197 ft/min = 2.24 mph.

Portability and storage : The equipment is housed in a teak-wood casing and is light in weight (about 8 kg.)

NANDA MANUFACTURING CO.

32A, Chittaranjan Avenue, Kolkata - 700 012
Phone : 236-3530, 237-0070, 221-6783
Fax : 91-33-2363531, E-mail : nmc@nandagroup.com
Web site : www.nandagroup.com

108/04/02