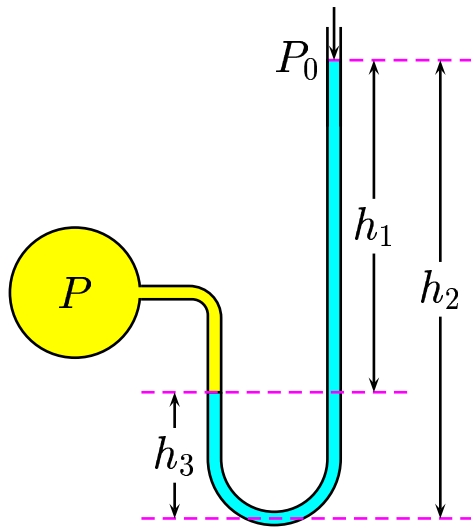


An open-tube manometer is simple device for measuring pressure. It has a U-shaped tube containing liquid with a density ρ . One end opens to the air, and the other is connected to a system of unknown pressure P . Here P is the absolute pressure. The Gage pressure is defined to be $P_g = P - P_0$,



Which is equal to

- A) $P_g = \rho g h_1$.
- B) $P_g = \rho g h_2$.
- C) $P_g = \rho g h_3$.

Since

$$P + \rho g h_3 = P_0 + \rho g h_2 .$$

So

$$P_g = P - P_0 = \rho g (h_2 - h_3) = \rho g h_1 .$$

Answer A

15.03-01 Gauge Pressure 2007-4-26