



()

3) (Dead Weight Tester) 가

(1)

10%

ex) Max 100kgf/cm²

10~90kgf/cm²

(2)

0.2~3000kgf/cm²

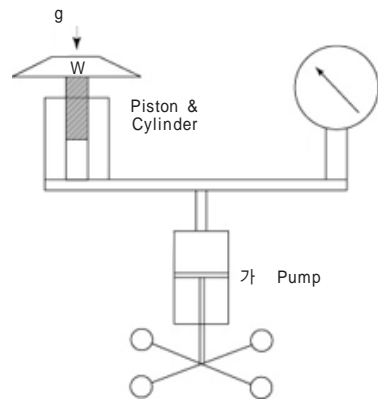
(3)

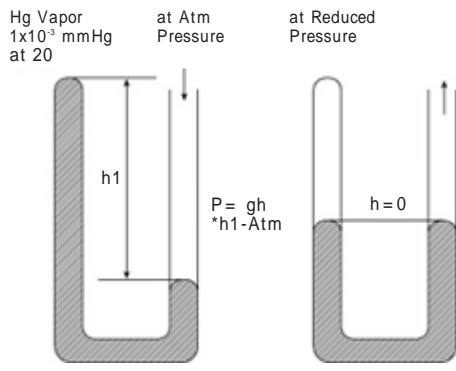
(4)

Ram Cylinder가

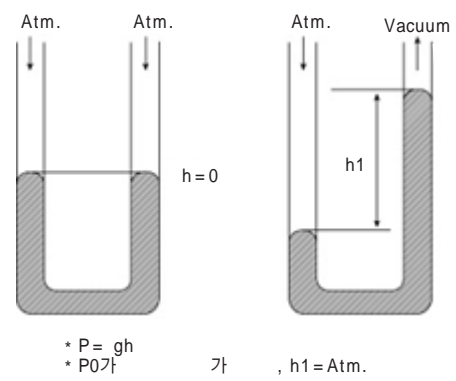
가

가





18.



19.

4)

0mmHg
Torr, Pa, mbar,
mmHg, 1Torr
1/760, 1mmHg
"0" ()
"0"

(1)

- a. : 760~5mmHg abs
- b. :
- c. : 가 .

- a. : 5~760mmHg
- b. : ()
- c. : 가 , 가

McLeod Gauge

- a. : $10 \sim 1 \times 10^{-5}$ mmHg(Torr)
- b. :
- c. : , ,
- d. : ,

e.

$P = h + P_0$, Boil

$P \cdot Ah = P_0 \cdot V_1$.

$(h + P_0) \cdot Ah = P_0 \cdot V_1$

$Ah^2 = P_0 \cdot (V_1 - Ah)$

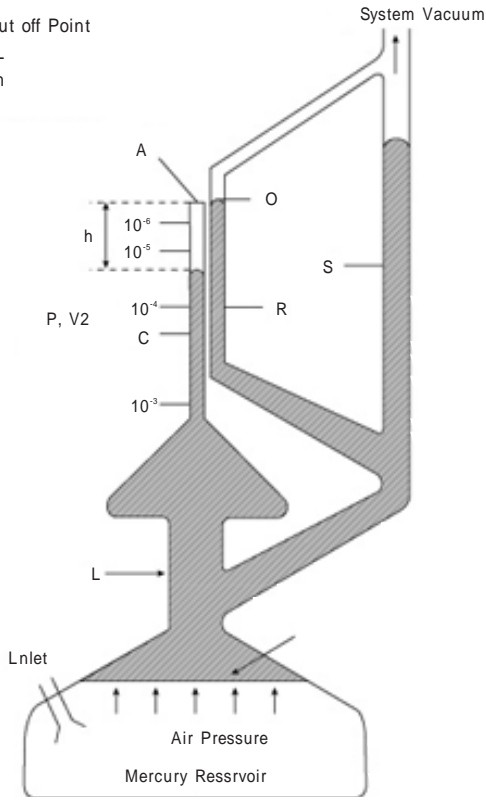
$$(h + P_0) \cdot Ah = P_0 \cdot V_1$$

$$Ah^2 = P_0 \cdot (V_1 - Ah)$$

$P_0 = \frac{A}{V_1 - Ah} h^2$ 이고, $Ah = V_2$ 이므로,

$$P_0 = \frac{A}{V_1 - V_2} h^2$$
 이 된다.

L : Cut off Point
 V1 : L
 V2 : h
 A :
 P : h



20. McLeod gauge

V1 V2가 ,

$$P_0 = \frac{A}{V_1} h^3 \text{ 이 되고,}$$

A V1
 P0 h

- a.
- b.
- c.

d. , 가 Trap

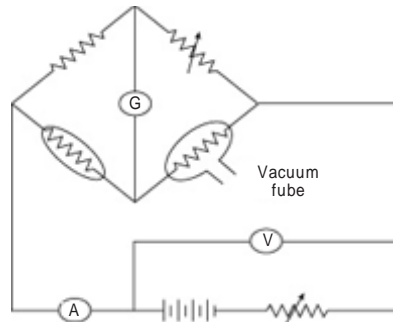
e.

(2) _____
 Pirani Gauge

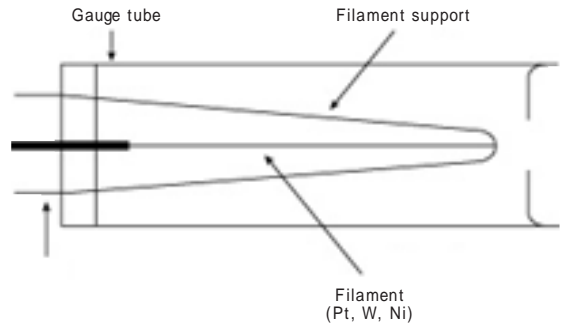
a. : 50 ~ 1 × 10⁻⁴ mmHg(Torr)

b. : 가

가 ,



21. Pirani



22. Pirani sensor

- c. : , ,
- d. : Filament 가
 , Gas 가
 Filament 가 , Gas

- c. Sensor가 가 , 가
- d. Gas
- e. Sensor
- f. 가

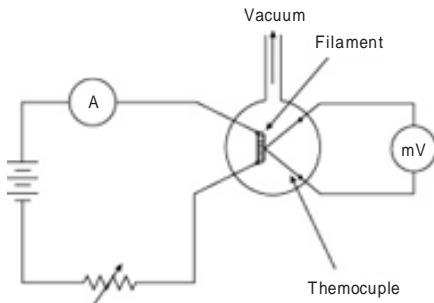
(Thermocouple type Vacuum Gauge)

- a. : Atm. ~ 1×10^{-3} mmHg(Torr)
- b. : 가 , Gas 가
- c. : Filament Hot Junction Filament
- d. Thermocouple Thermister Thermister

- (3) Ion Gauge 가 가
- Ion Gauge Anode, Cathode, Grid 3 Cathode Anode (-) 가 Anode 가

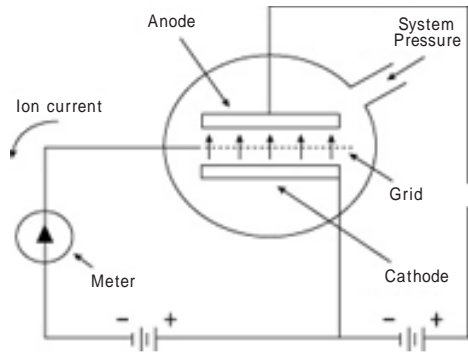
- a. Sensor 가 Gas 가
- b. Sensor가 Filament가

- Grid
- $1 \times 10^{-2} \sim 1 \times 10^{-10}$ Torr 가 Gauge 가
- Gauge Tube가 Ion Vacuum Pump



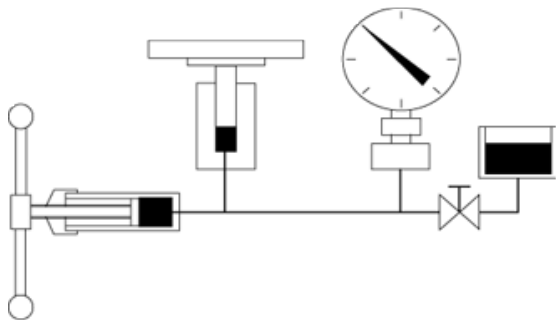
23.

(4)



Spinning Rotor Viscosity Gauge,
24.

Piezo Type



25.

, ,
1 가
, 2 가
System
가 가