SCREW GAUGE

AIM

1) To measure the diameter of a wire body and hence calculate its Volume
2) To measure the thickness and area of a glass plate and hence calculate its Volume

APPARATUS

The Screw Gauge, scale, graph paper , the given wire and given glass plate etc.

THEORY

Dimensions Measured = PSR + (Corrected HSR x LC)

Where L C = $\frac{Pitch}{Total\ number\ of\ divisions\ on\ the\ head\ scale}$

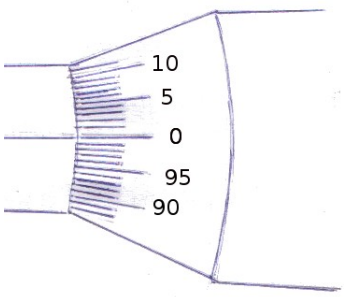
The LC of the Screw Gauge is the distance through which the screw advances when it is rotated through one division of the head scale. The Pitch of the screw is the distance through which the screw advances in one complete rotation of the head scale

Volume of the wire $\mathbf{V = \pi r^2 l}$

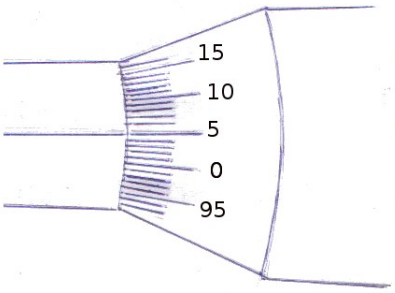
where radius of the wire r = $\frac{d}{2}$ where d is the diameter of the sphere and l is the length of the wire

Volume of the Glass Plate = area x thickness

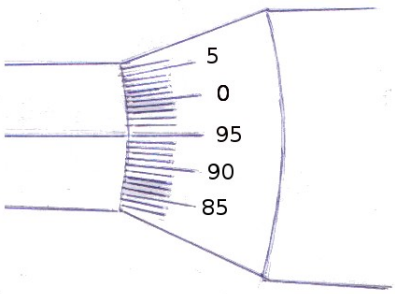
OBSERVATIONS



Zero Coincidence : Nil
Zero Correction : Nil



Zero Coincidence : 5
Zero Correction : -5



Zero Coincidence : 95
Zero Correction : +5

Value of One Pitch Scale Division = mm

Pitch of the screw P = $\frac{Distance\ Moved}{Number\ of\ Rotations}$ = mm

Number of Divisions on the head scale N =

Least Count LC = $\frac{Pitch}{N}$ = mm

Zero Coincidence = Divisions Zero Correction = Divisions

Dimensions Measured	Sl No	Pitch Scale Reading (**PSR**) mm	Observed Head Scale Reading (**HSR**)	Corrected Head Scale Reading (**Corr. HSR**)	Total Reading PSR + (Corr. HSR x LC)	Mean mm
Diameter of the Wire	1 2 3 4 5 6					
Thickness of the Glass Plate	1 2 3 4 5 6					

Length of the Wire l = cm = m

Area of the Glass Plate from the graph A = mm^2 = m^2

CALCULATIONS:

a) To find the Volume of the wire

Length of the Wire l = cm = m

Radius of the Wire r = $\frac{d}{2}$ = mm = m

Volume of the Wire V = = m^3

b) To find the Volume of the Glass Plate

Thickness of the Glass Plate t = cm = m

Area of the Glass Plate A = cm^2 = m^2

Volume of the Glass Plate V =A x t = m^3 = m^3

RESULTS:

1. Volume of the given Wire = m^3
2. Volume of the given Glass Plate = m^3