

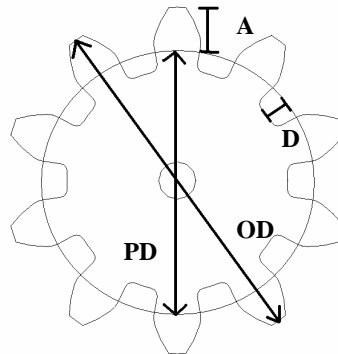


## Quality Control Workshop

# Gear Measurement

### Objective

To perform measurement functions on profile dimension of the gear.



$$PD = \frac{N \times OD}{N + 2}$$

Parameter	Description
Outside diameter (OD)	Overall diameter of the gear.
No. of teeth (N)	No. of teeth of the gear.
Pitch diameter (PD)	Diameter of the pitch circle.
Addendum (A)	Radial distance between pitch circle and outside diameter.
Dedendum (D)	Radial distance from pitch circle to bottom of tooth space.
Thickness (T)	Thickness of the gear part.
Tooth Profile	Compare the profile of the gear tooth with specification
Gear runout	Runout of the gear

### Activities

You are provided with a part with a gear feature of unknown dimensions. In this lab, you will measure this required profile dimension of the gear using three different methods, compare the accuracy of the results and draw a conclusion on a most suitable method and instrument for the gear profile measurement .

1. **Caliper** – Using a vernier caliper measure the parameter of the gear part
2. **Optical Profile projector**.-
3. **Microscope**

Have each member in your group repeat the measurement. Also use the micrometer to measure the thickness of the part. Record results.