Bangladesh University of Engineering and Technology

ME 260 - AutoCAD

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♣ Draw a CAM profile of the following specification:

1. Outstroke during 60° of cam rotation
2. Dwell for the next 30° of cam rotation
3. Return stroke during next 60° of cam rotation
4. Dwell for the remaining 210° of cam rotation

The stroke of the follower is 40 mm and the minimum radius of the cam is 50 mm (base circle radius).
**The follower moves with uniform velocity both in outstroke and return stroke.**
Hub is of 15 mm outside radius and 10 mm inside radius.
There is keyway o 2 mm depth and 4 mm width to fix a shaft for cam rotation.

STEPS

1. Go through the lecture slides
2. Draw the displacement diagram of the cam
3. Draw the base circle of radius 50 mm
4. Draw line AB = 40 mm as shown below. You can just copy the line AB from the displacement diagram.
5. Make a polar array of 7 elements and 60° angle (outstroke).
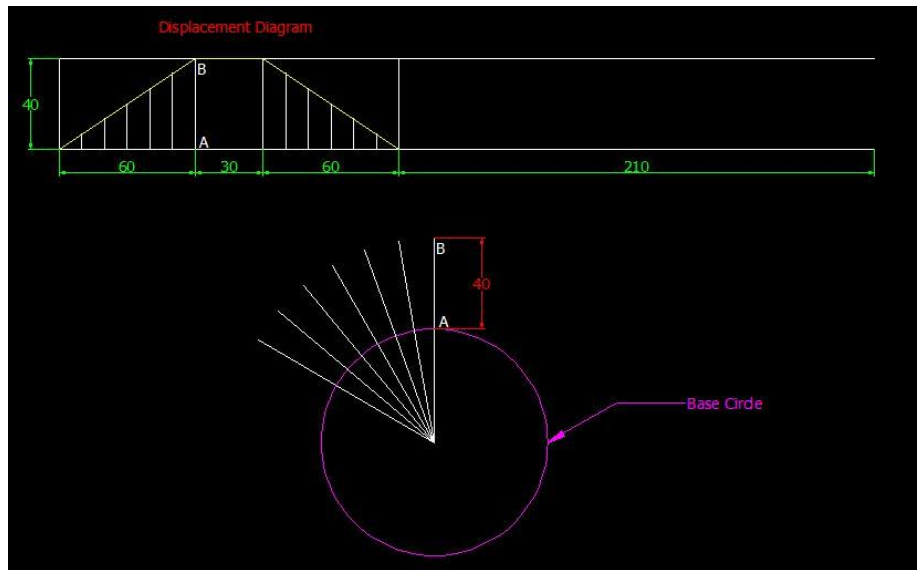
6. Delete the AB from the base circle.
7. Copy the first line from the displacement diagram to the point A on base circle.
8. Draw a circle at the center of the base circle with a radius whose end point will be at the end point of the copied line.
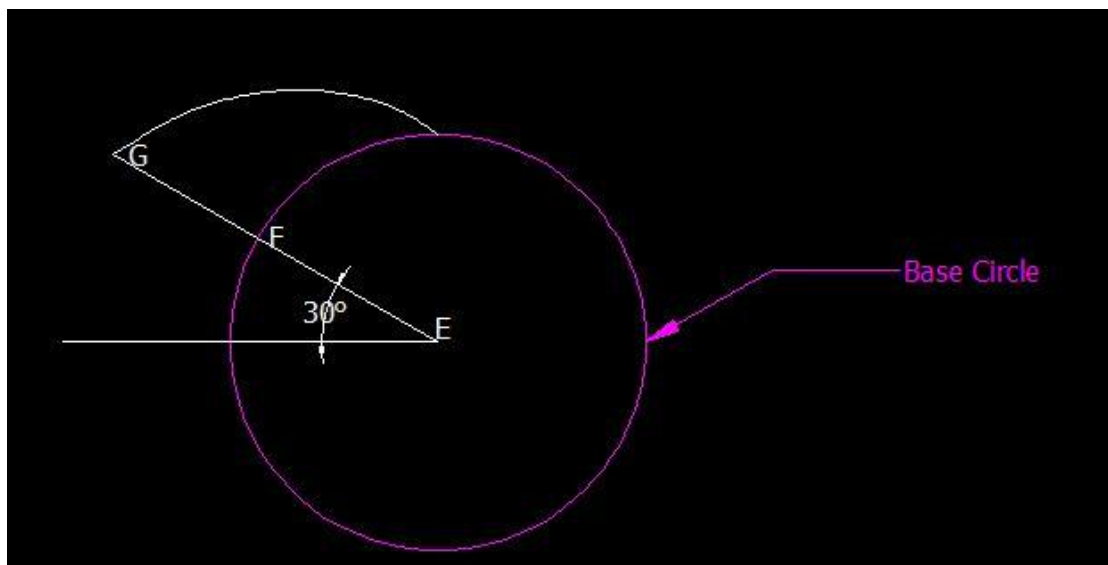9. Trim the portion above the C point.
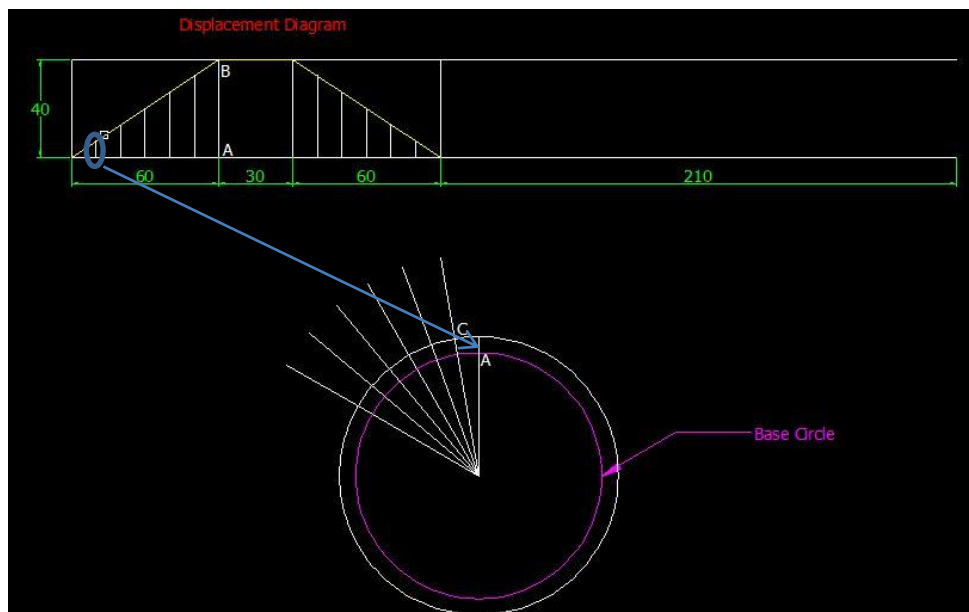
10. In a similar way draw the following.

Displacement Diagram
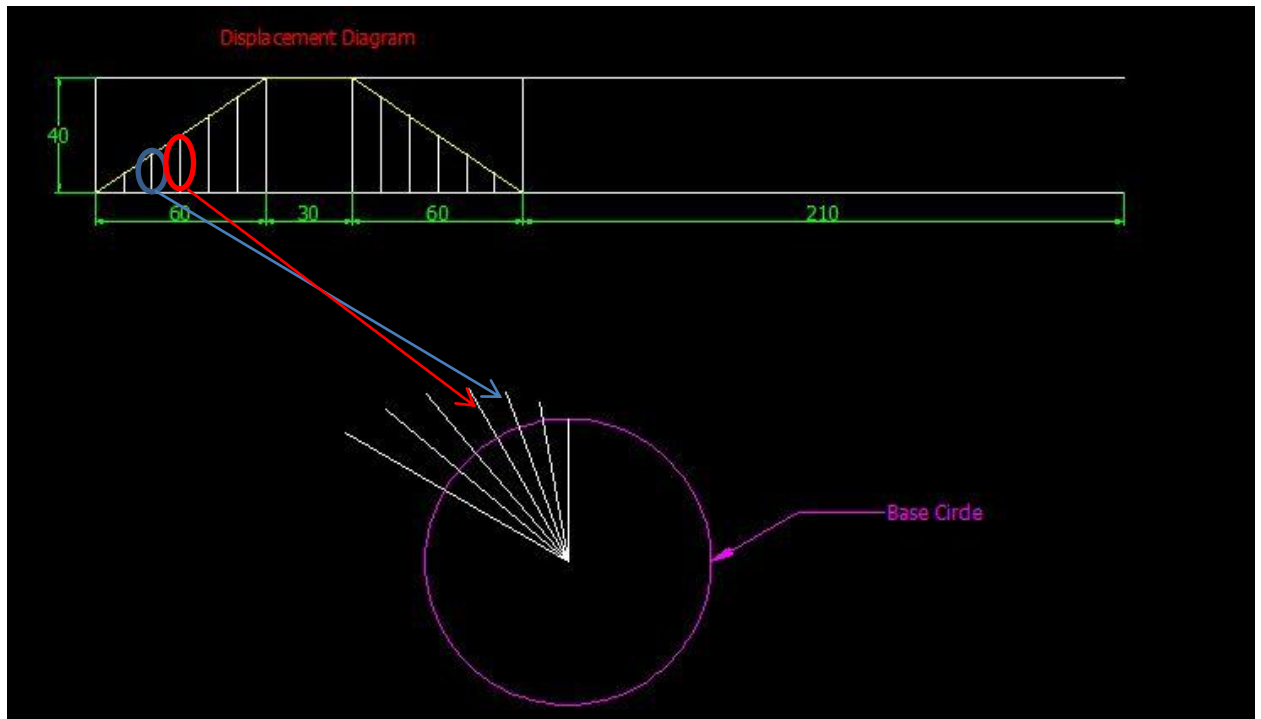
11. Connect the endpoints with a spline.
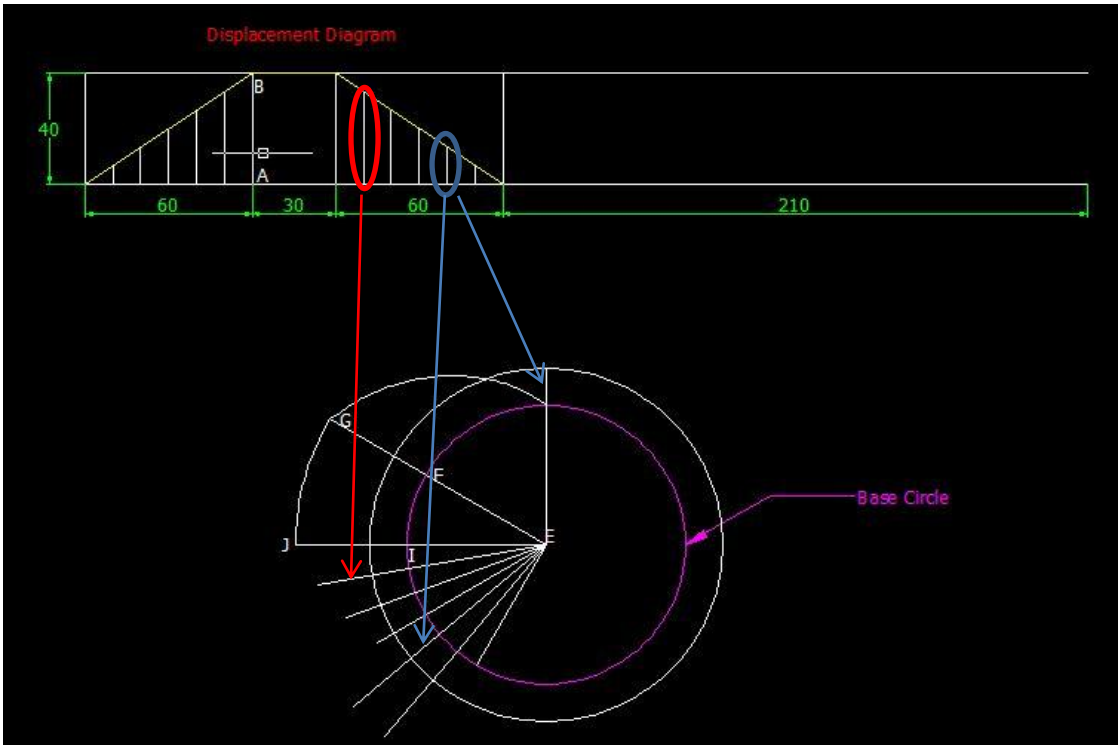12. Make a polar array of last line EFG with 2 element and 30° (Dwell).

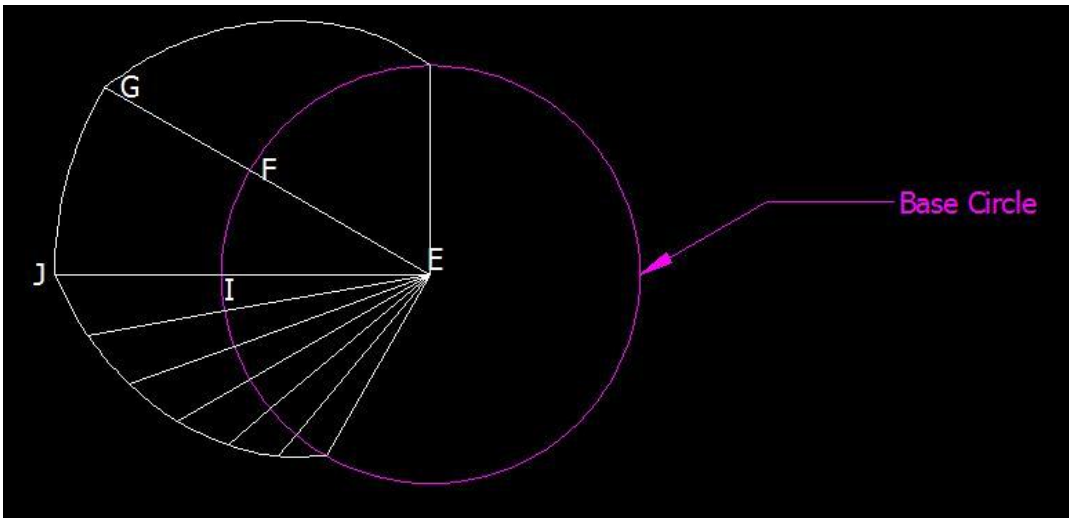13. Draw a circle of radius EG from the center E.
14. Trim the portion of the circle outside 30° angle.
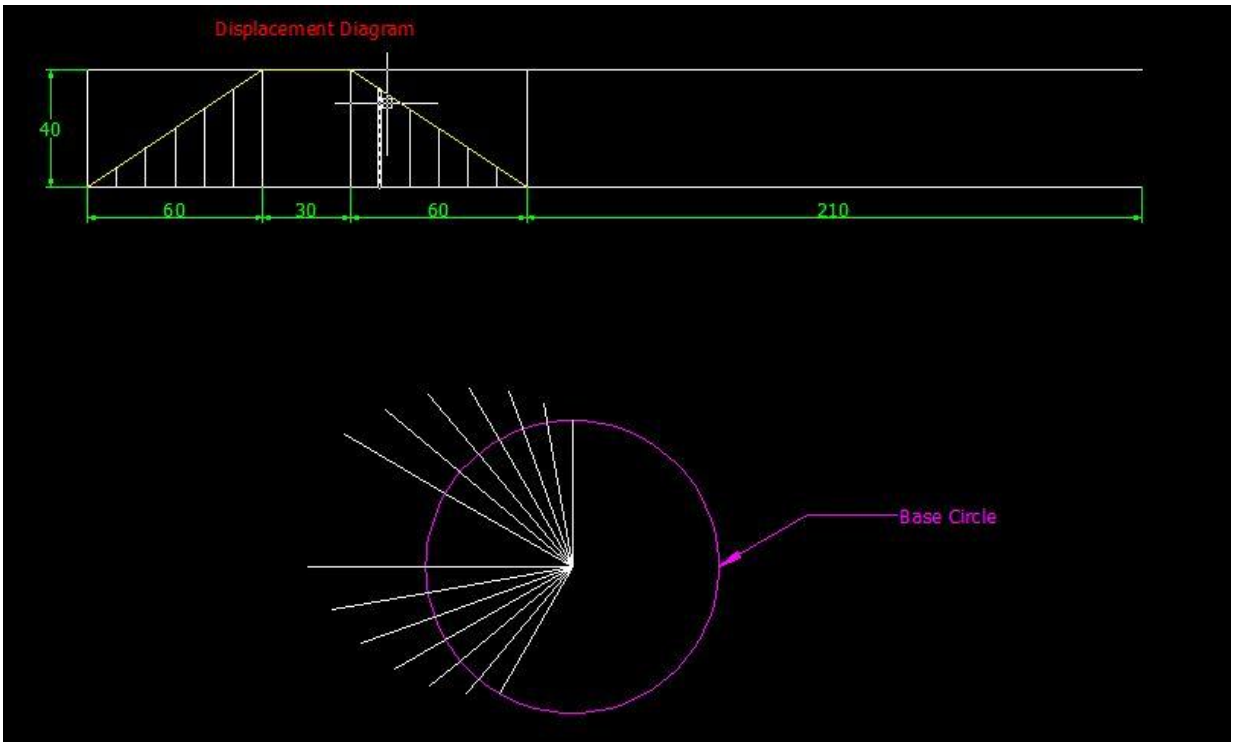15. Again make polar array of line EIJ of 7 elements and 60° angular fill (Return stroke).
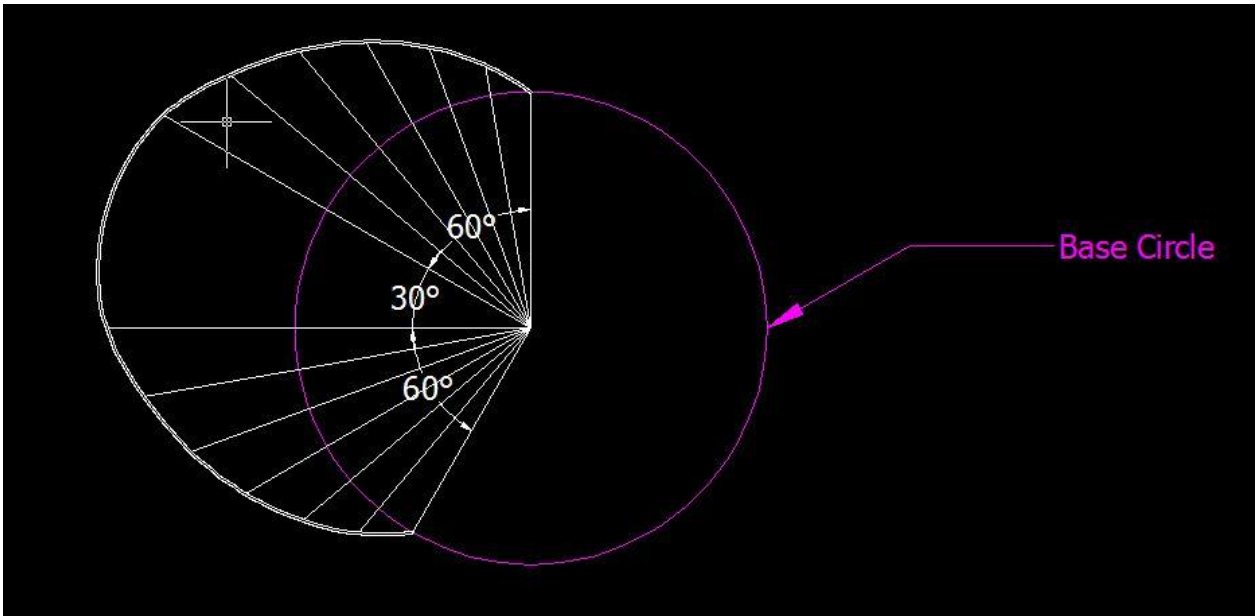16. Draw the following lines for return stroke as you have drawn for outstroke previously.
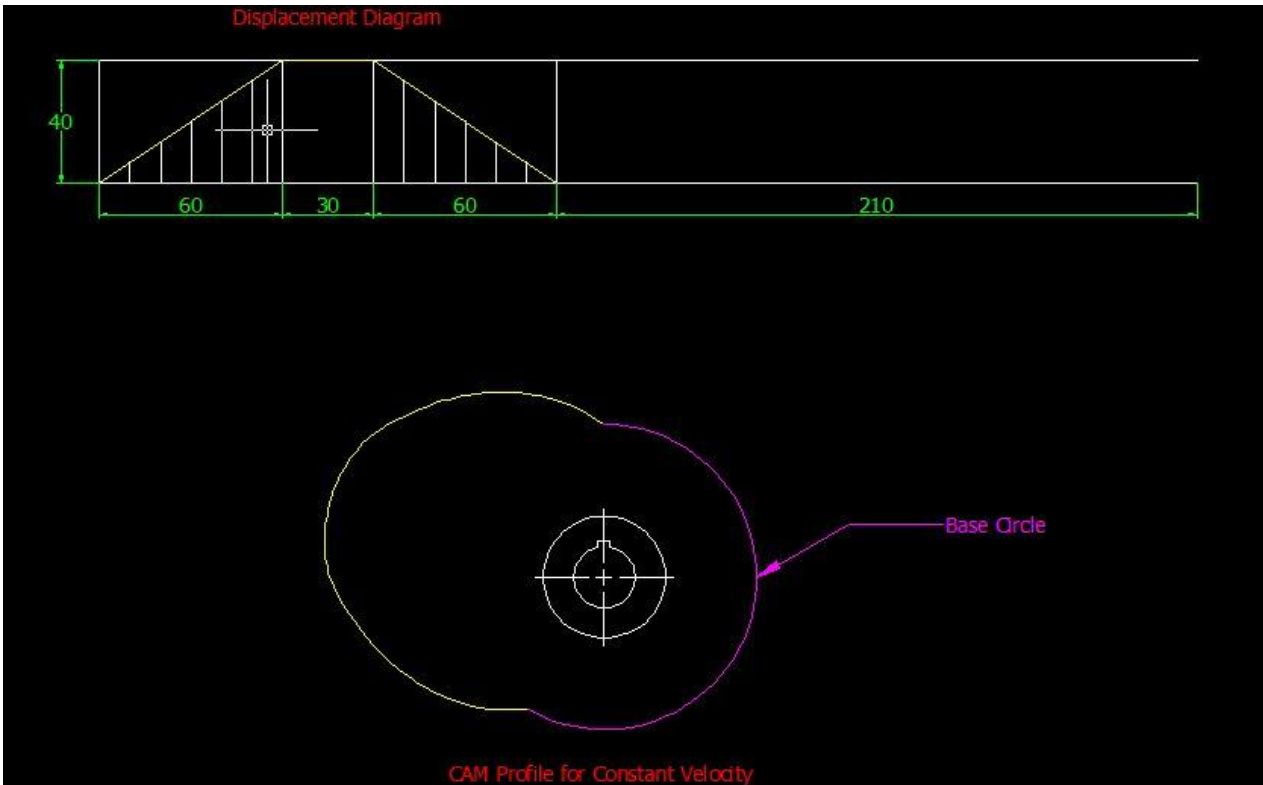
17. Draw the cam profile for return stroke by connecting the end points with spline.

18. Draw the hub and keyway as you have drawn for gear.

Base Circle

Displacement Diagram

40

60   30   60   210

Base Circle

Displacement Diagram

40

60   30   60   210

Base Circle

CAM Profile for Constant Velocity

Exercise:

♣ Draw a CAM profile of the following specification:

5. Outstroke during 100° of cam rotation
6. Dwell for the next 30° of cam rotation
7. Return stroke during next 50° of cam rotation
8. Dwell for the remaining 180° of cam rotation

The follower moves with uniform velocity both in outstroke and return stroke.