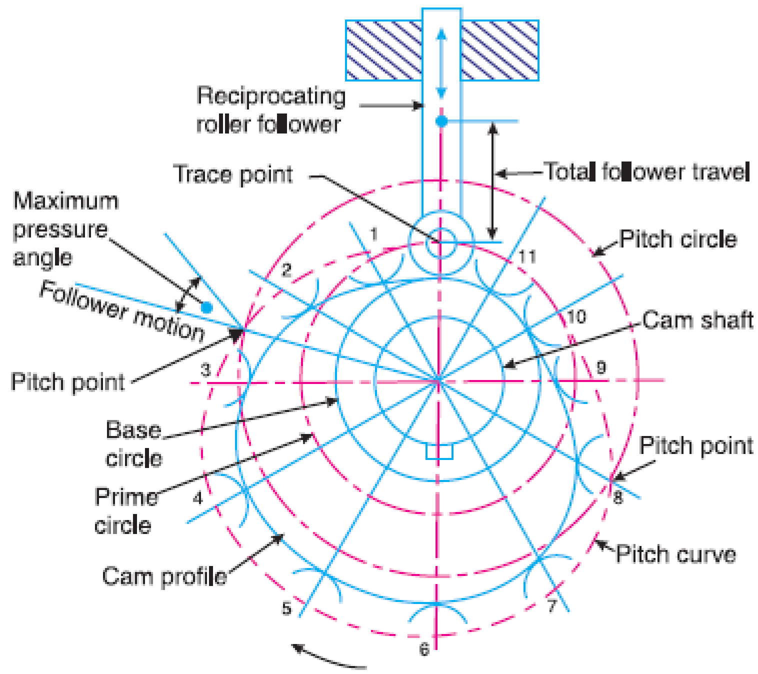


**Fig. 3.** Terms used in radial cams.

## Motion of the Follower

The follower, during its travel, may have one of the following motions.

**1.** Uniform velocity,
**2.** Simple harmonic motion,
**3.** Uniform acceleration and retardation, and
**4.** Cycloidal motion.

## Displacement, Velocity and Acceleration Diagrams when the Follower Moves with Uniform Velocity

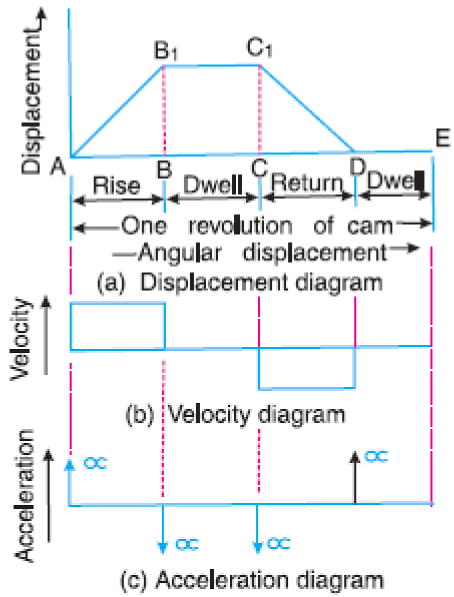


**Fig. 4.** Displacement, velocity and acceleration diagrams when the follower moves with uniform velocity

## Displacement, Velocity and Acceleration Diagrams when the Follower Moves with Simple Harmonic Motion

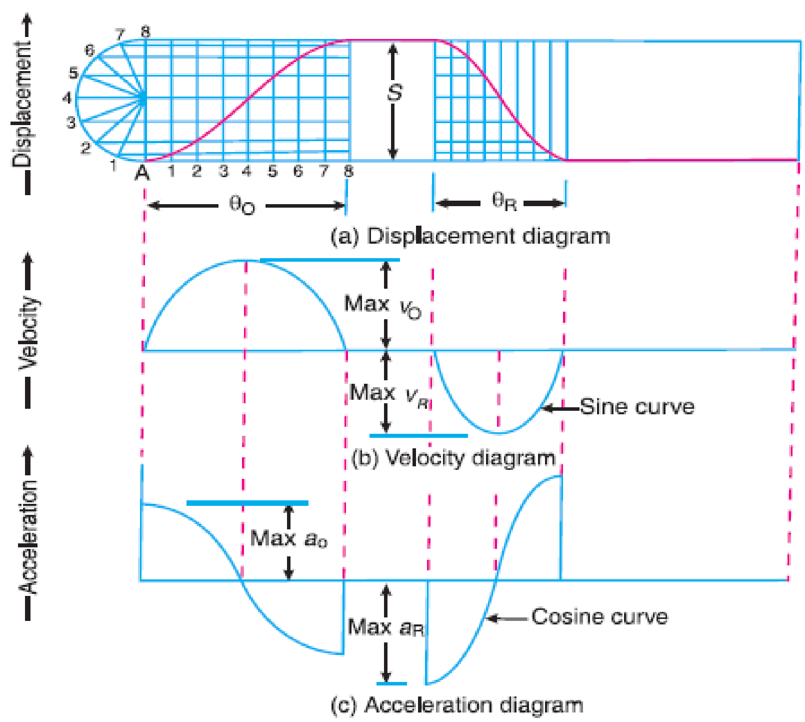


**Fig. 5.** Displacement, velocity and acceleration diagrams when the follower moves with simple harmonic motion.

$$v_O = v_P = \frac{\pi S}{2} \times \frac{\omega}{\theta_O} = \frac{\pi \omega . S}{2\theta_O}$$

$$v_R = \frac{\pi \omega . S}{2\,\theta_R}$$

$$a_O = a_P = \frac{\pi^2 \omega^2 . S}{2(\theta_O)^2}$$

$$a_R = \frac{\pi^2 \omega^2 . S}{2(\theta_R)^2}$$

## Displacement, Velocity and Acceleration Diagrams when the Follower Moves with Uniform Acceleration and Retardation

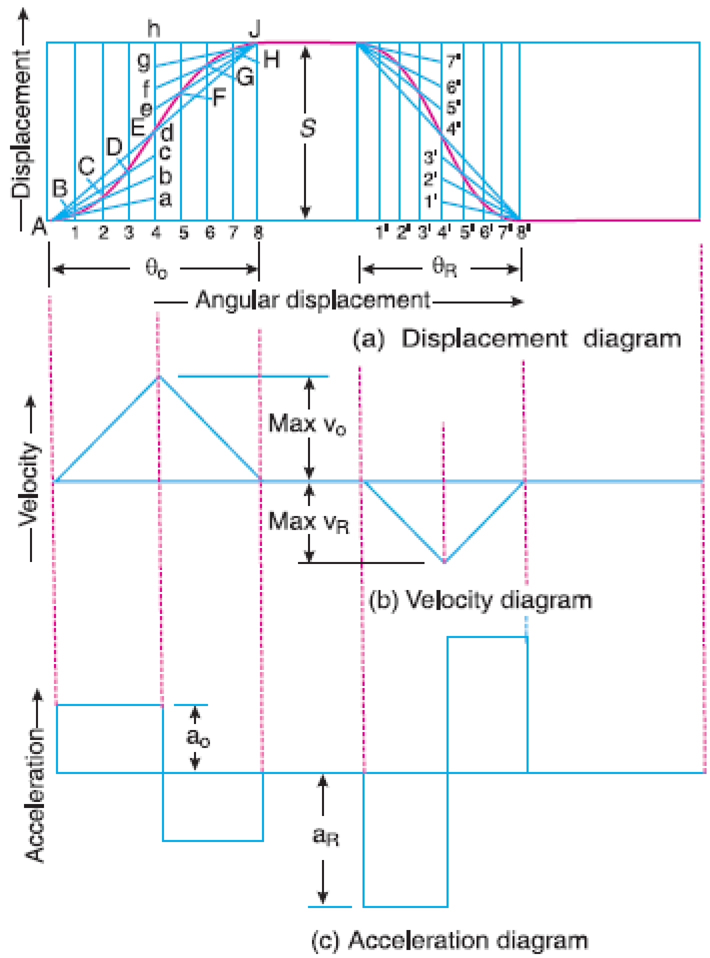


**Fig. 6.** Displacement, velocity and acceleration diagrams when the follower moves with uniform acceleration and retardation.

$$v_O = \frac{2S}{t_O} = \frac{2\omega.S}{\theta_O}$$

$$a_O = \frac{v_O}{t_O/2} = \frac{2 \times 2\omega.S}{t_O.\theta_O} = \frac{4\omega^2.S}{(\theta_O)^2}$$

$$v_R = \frac{2\omega.S}{\theta_R}$$

$$a_R = \frac{4\omega^2.S}{(\theta_R)^2}$$

## Displacement, Velocity and Acceleration Diagrams when the Follower Moves with Cycloidal Motion

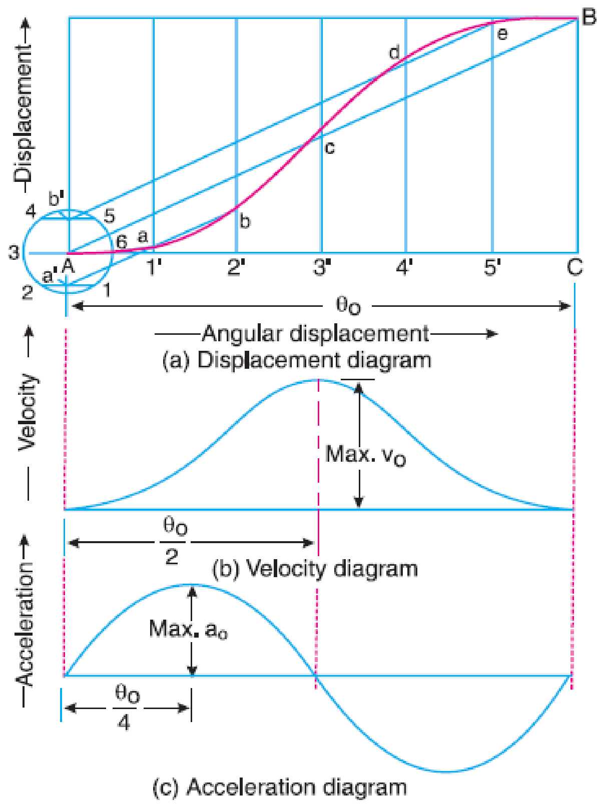


**Fig. 7.** Displacement, velocity and acceleration diagrams when the follower moves with cycloidal motion.

$$v_O = \frac{\omega.S}{\theta_O}(1+1) = \frac{2\omega.S}{\theta_O} \qquad v_R = \frac{2\omega.S}{\theta_R}$$

$$a_O = \frac{2\pi\omega^2.S}{(\theta_O)^2} \qquad a_R = \frac{2\pi\omega^2.S}{(\theta_R)^2}$$