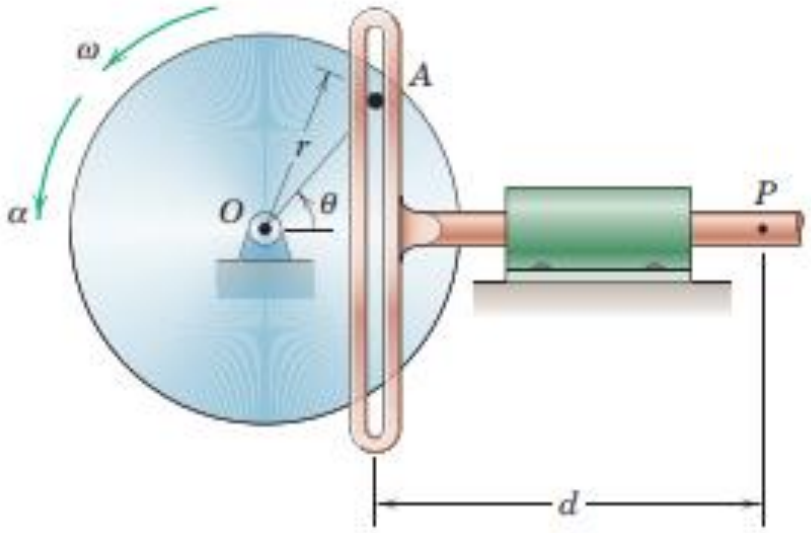
5/33 The Scotch-yoke mechanism converts rotational motion of the disk to oscillatory translation of the shaft. For given values of θ, ω, α, r, and d, determine the velocity and acceleration of point P of the shaft.



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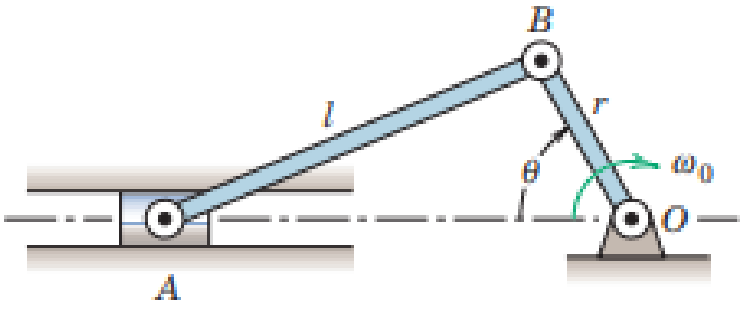
Theta (deg)	Omega (rad/s)	Alpha (rad/s^2)	R (mm)	D (mm)
65	5	8	10	45

▶5/57 One of the most common mechanisms is the slider-crank. Express the angular velocity ω_{AB} and angular acceleration α_{AB} of the connecting rod AB in terms of the crank angle θ for a given constant crank speed ω_0. Take ω_{AB} and α_{AB} to be positive counterclockwise.



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