OMNIGEAR
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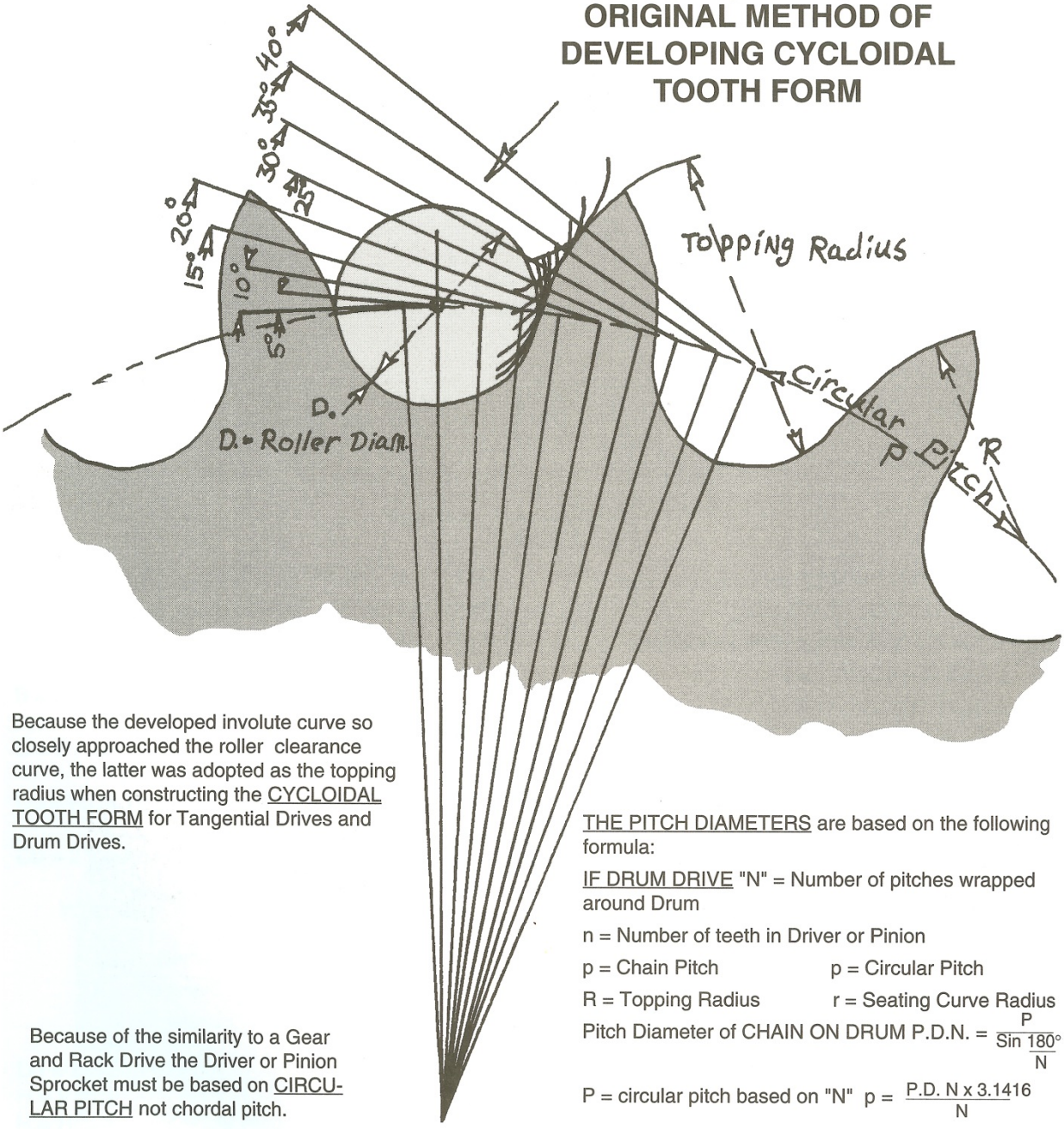
ORIGINAL METHOD OF DEVELOPING CYCLOIDAL TOOTH FORM



Because the developed involute curve so closely approached the roller clearance curve, the latter was adopted as the topping radius when constructing the CYCLOIDAL TOOTH FORM for Tangential Drives and Drum Drives.

Because of the similarity to a Gear and Rack Drive the Driver or Pinion Sprocket must be based on CIRCULAR PITCH not chordal pitch.

THE PITCH DIAMETERS are based on the following formula:

IF DRUM DRIVE "N" = Number of pitches wrapped around Drum

n = Number of teeth in Driver or Pinion

p = Chain Pitch p = Circular Pitch

R = Topping Radius r = Seating Curve Radius

Pitch Diameter of CHAIN ON DRUM P.D.N. = $\frac{P}{\text{Sin } \frac{180°}{N}}$

P = circular pitch based on "N" $p = \frac{\text{P.D. N x 3.1416}}{N}$

pitch Diameter of PINION = P. D. n. = $\frac{P \times n}{3.1416}$

ON TANGENTIAL DRIVES where chain is used as a rack, the circular pitch p = chain pitch

$r = \frac{1.005D + 0.003}{2}$ $R = (\sin \frac{180°}{n} \times \text{P.D.n}) - r$

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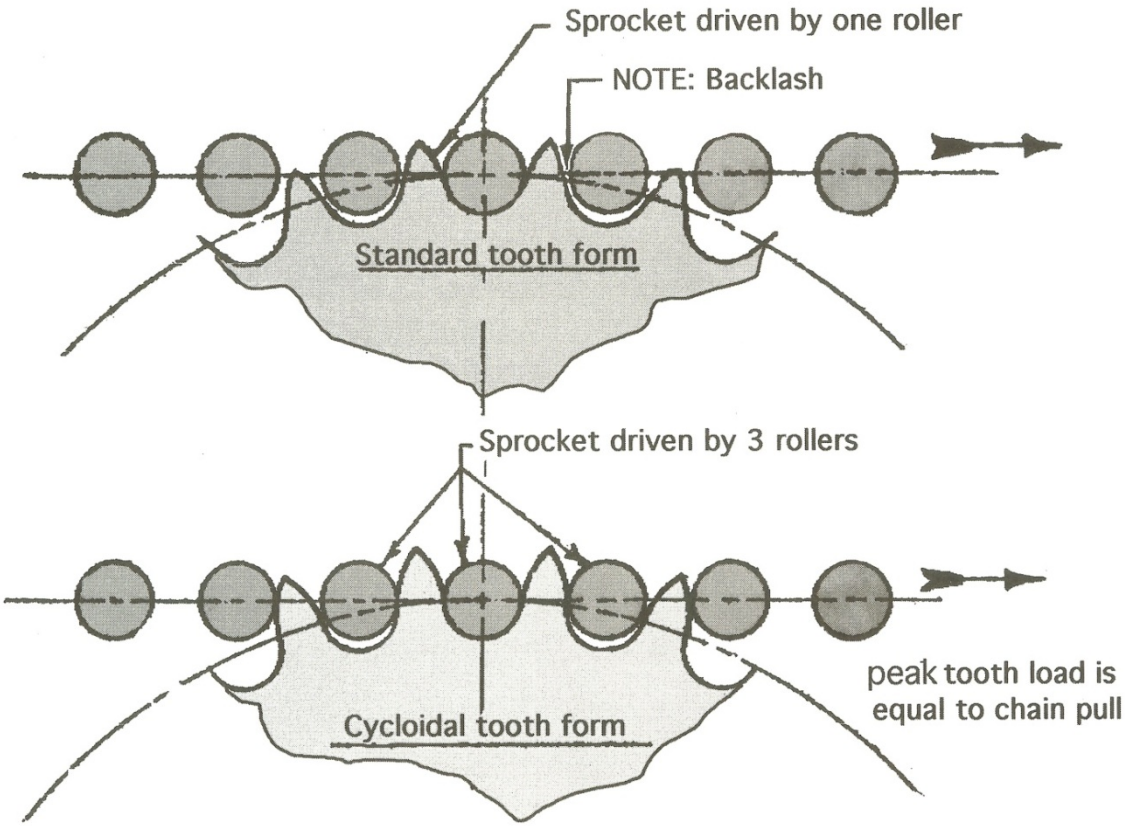
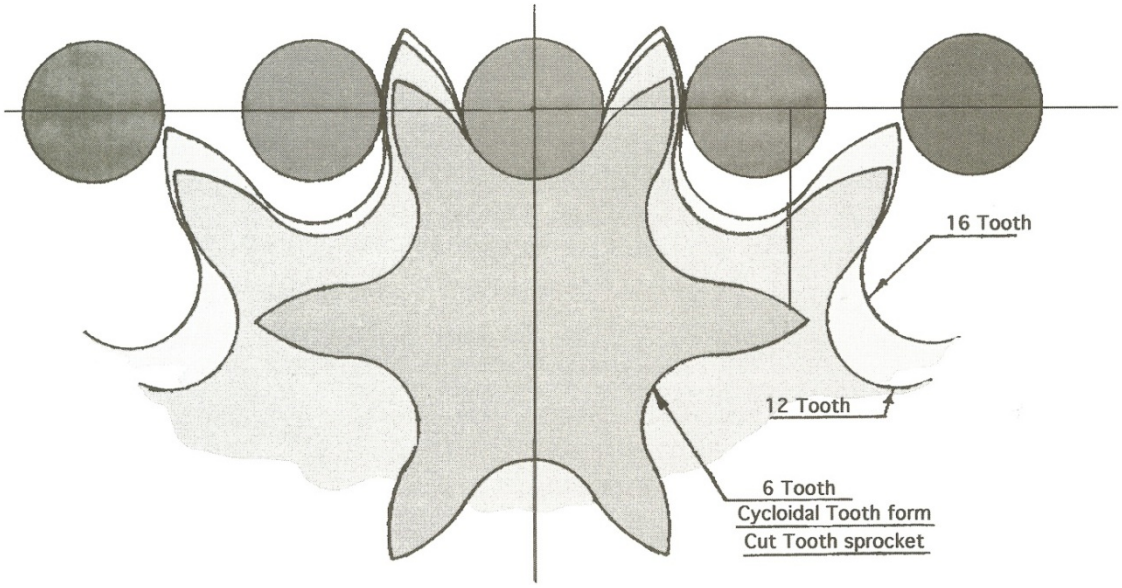


NOTE: Provides smooth action, constant speed free of backlash

12 Tooth Minimum



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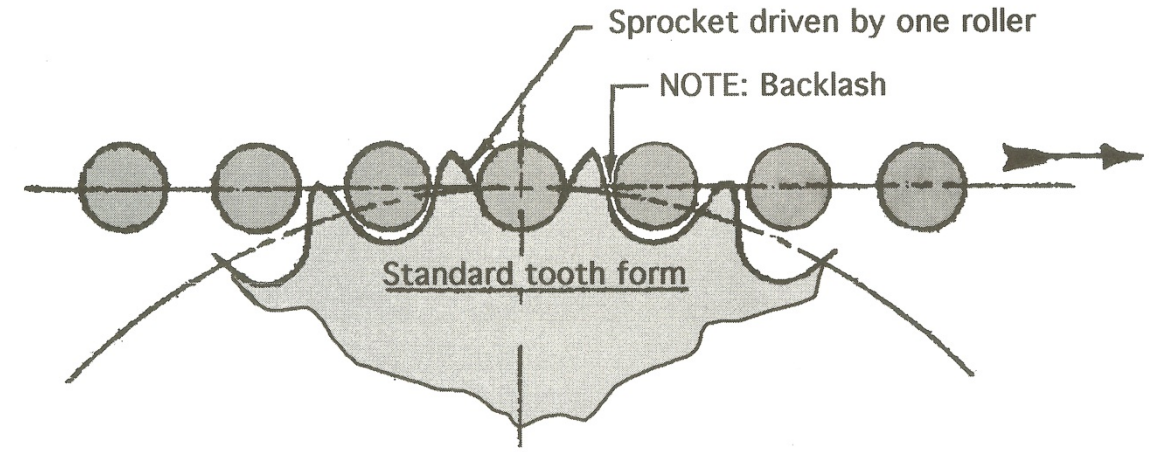

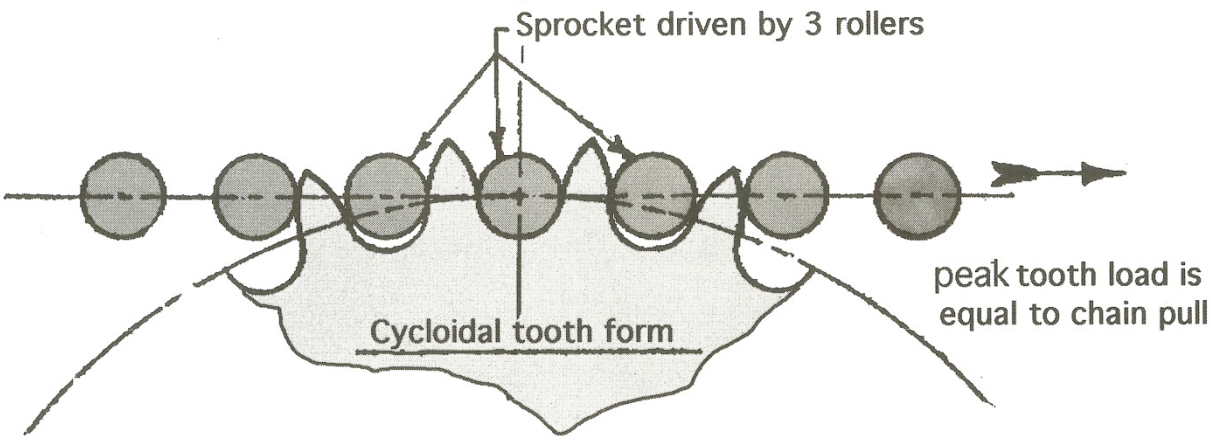

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