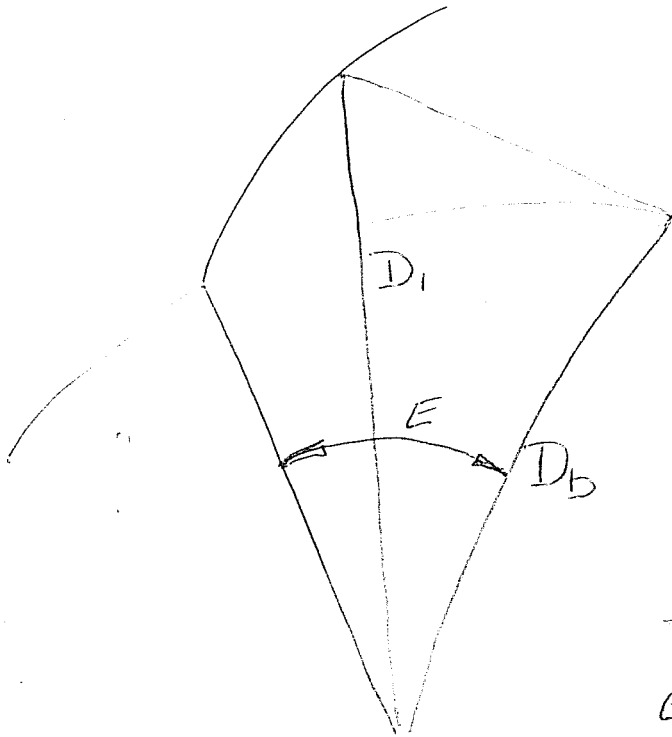


TO FIND DEGREES OF ROLL

$D_1 =$ INVOLUTE FORM DIA.



$E =$ DEGREES OF ROLL

$$E = \left(\tan \left(\arccos \frac{D_b}{D_1} \right) \right) \frac{180^\circ}{\pi}$$

$D_1 =$ FORM DIA.

$$D_1 = \frac{D_b}{\cos \arctan \frac{E \pi}{180^\circ}}$$

$$\frac{\# \text{ TEETH}}{DP} = D$$

$D =$ PITCH DIA.

$$D \times \cos \phi = D_b$$

$D_b =$ BASE DIA

D_1 CAN BE ANY DIA.
AS LONG AS IT IS
NOT BELOW D_b

$$D_1 = \frac{D_b}{\cos \arctan \frac{E \pi}{180^\circ}}$$