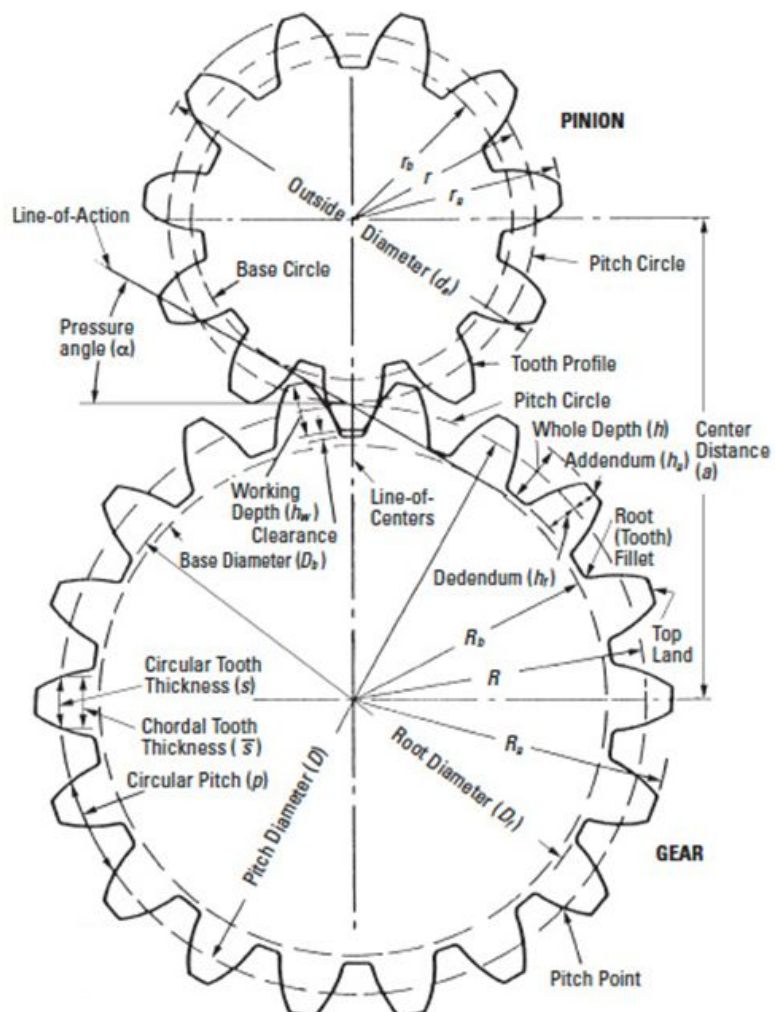


HELICAL GEARS

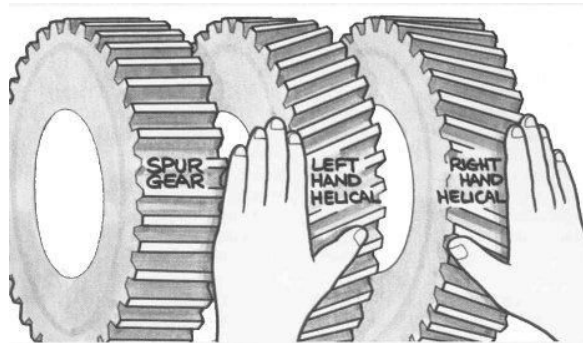


Basic Gear Geometry



The Calculation of a Profile Shifted Helical Gear

Normal Module	m_n [mm]
Normal Pressure Angle	$\alpha_n = 20^\circ$
Helix Angle	β [°]
Number of Teeth	z_i where $i=1$ or 3 for Pinion, 2 or 4 for Gear
Helical Hand	L – left of R – right



Radial Pressure Angle	α_t [°] $\tan \alpha_t = \frac{\tan \alpha_n}{\cos \beta}$
Pitch Diameter	d_i [mm], where $i=1$ or 3 for Pinion, 2 or 4 for Gear $d_1 = \frac{z_1 \cdot m_n}{\cos \beta} \quad \text{or} \quad d_2 = \frac{z_2 \cdot m_n}{\cos \beta}$
Base Diameter	d_{bi} [mm], where $i=1$ or 3 for Pinion, 2 or 4 for Gear $d_{b1} = d_1 \cdot \cos \alpha_t \quad \text{or} \quad d_{b2} = d_2 \cdot \cos \alpha_t$
Addendum	$h_a = h_a^* \cdot m_n, \text{ where } (h_a^* = 1)$
Outside Diameter	d_{ai} [mm], where $i=1$ or 3 for Pinion, 2 or 4 for Gear $d_{a1} = d_1 + 2 \cdot h_a \quad \text{or} \quad d_{a2} = d_2 + 2 \cdot h_a$
Dedendum	$h_f = (h_a^* + c_a^*) \cdot m_n, \text{ where } c_a = c_a^* \cdot m_n = 0,25 \cdot m_n$
Root diameter	d_{fi} [mm], where $i=1$ or 3 for Pinion, 2 or 4 for Gear $d_{f1} = d_1 - 2 \cdot h_f \quad \text{or} \quad d_{f2} = d_2 - 2 \cdot h_f$

