

Machin Design II

Clutch and Brake Part

Equation Sheet

$$F = 2\pi P_{max} r_i (r_o - r_i)$$

$$T = \pi f P_{max} r_i (r_o^2 - r_i^2)$$

$$F = \pi P (r_o^2 - r_i^2)$$

$$T = \frac{2\pi P f}{3} (r_o^3 - r_i^3)$$

$$M_N = \left(\frac{p_{max} b r c}{4 \sin \theta_{max}} \right) \{ 2(\theta_2 - \theta_1) - (\sin 2\theta_2 - \sin 2\theta_1) \}$$

$$M_f = \left(\frac{f p_{max} b r}{4 \sin \theta_{max}} \right) \{ 4r(\cos \theta_2 - \cos \theta_1) - c(\cos 2\theta_2 - \cos 2\theta_1) \}$$

$$T = \left(\frac{f p_{max} b r^2}{\sin \theta_{max}} \right) \{ \cos \theta_1 - \cos \theta_2 \}$$

$$F = \frac{M_N \pm M_f}{a}$$