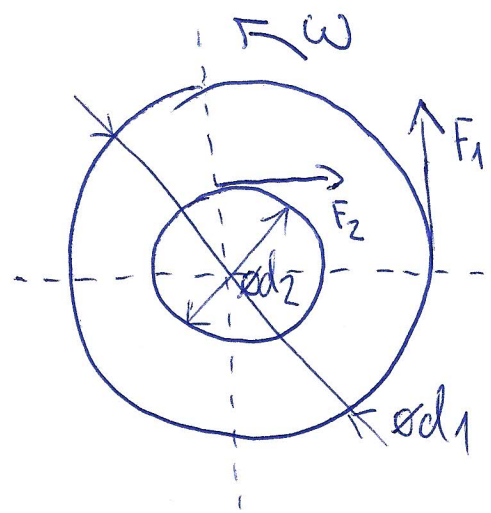
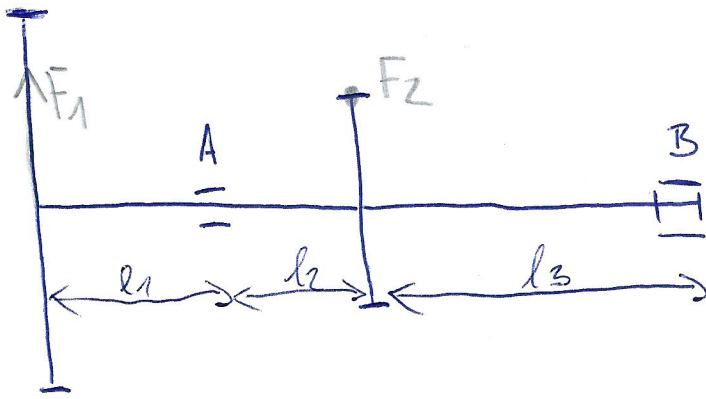




$P = 8 \text{ kW}$
 $\omega = 1000 \text{ min}^{-1}$
 $d_1 = 220 \text{ mm}$
 $d_2 = 70 \text{ mm}$
 $l_1 = 110 \text{ mm}$
 $l_2 = 90 \text{ mm}$
 $l_3 = 140 \text{ mm}$
 $\sigma_D = 150 \text{ N/mm}^2$
 $z = 2$

$$M_K = \frac{P}{\omega} = \frac{8000}{\frac{1000}{60}} = 480 \text{ N}\cdot\text{m} = 480\,000 \text{ N}\cdot\text{mm}$$

$$M_K = F_1 \cdot \frac{d_1}{2} \Rightarrow F_1 = \frac{2M_K}{d_1} = \frac{2 \cdot 480\,000}{220} = 4363,64 \text{ N}$$

$$M_K = F_2 \cdot \frac{d_2}{2} \Rightarrow F_2 = \frac{2M_K}{d_2} = \frac{2 \cdot 480\,000}{70} = 13714,29 \text{ N}$$

$$M_{RED} = \sqrt{M_{omax}^2 + \left(\frac{z}{2} M_K\right)^2}$$

$$d \geq \sqrt[3]{\frac{32 M_{RED}}{\pi \cdot \sigma_D}}$$

