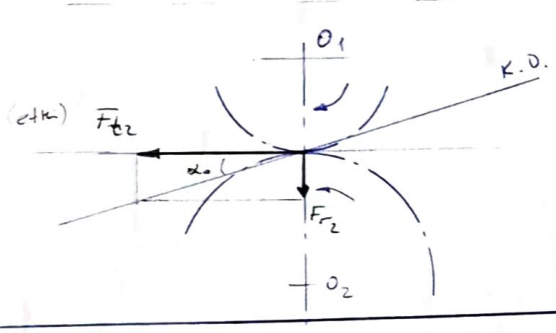
(Devamı)

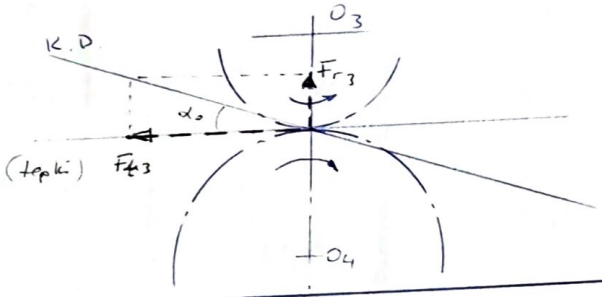
b) $d_{o1} = m_I \cdot z_1 = 2 \cdot 18 = 36$ mm $\rightarrow$ $r_{o1} = \frac{36}{2} = 18$ mm

$d_{o3} = m_{II} \cdot z_3 = 2{,}5 \cdot 25 = 62{,}5$ " $\rightarrow$ $r_{o3} = \frac{62{,}5}{2} = 31{,}25$ "

$F_{t_2} = F_{t_1} = \frac{M_{b1}}{r_{o1}} = \frac{38.2}{18} = 2{,}12$ kN $\rightarrow$ $F_{r2} = F_{t_2} \cdot \tan\alpha_0 = 2{,}12 \cdot \tan 20^\circ = 0{,}77$ kN

$F_{t_3} = \frac{M_{b3}}{r_{o3}} = \frac{74{,}87}{31{,}25} \cong 2{,}40$ " $\rightarrow$ $F_{r_3} = F_{t_3} \cdot$ " $= 2{,}40 \cdot$ " $= 0{,}87$ "





c) $\sigma_{e\,max} = K_{is} \cdot K_{dn} \cdot K_{yd} \cdot \frac{F_{t_3}}{b \cdot m_{II}} \cdot \frac{Y_F}{\varepsilon_\alpha} \leq \sigma_{em}$ olmalı $\leftarrow$ (Kırılma nes.)

$p_{H\,max} = \sqrt{\cdots \cdot \frac{0{,}35 \cdot F_{t_3} \cdot E_{es}}{b \cdot d_{o3}} \cdot \frac{i_{34}+1}{i_{34}} \cdot \frac{Y_c^2}{\varepsilon_\alpha}} \leq p_{Hem}$ " $\leftarrow$ (Ezilme nes.)

$v_{II} = \frac{\pi \cdot d_{o3} \cdot n_3}{60} = \frac{\pi \cdot 0{,}0625 \cdot 500}{60} \cong 1{,}64$ m/s $\rightarrow$ $K_{dn} = \frac{56+1{,}64}{56} \cong 1{,}033$

$\psi_m = \frac{b_{II}}{m_{II}} = \frac{30}{2{,}5} = 12 \rightarrow K_{yd} = 1{,}2$; $z_3 = 25 \rightarrow Y_F = \cancel{3{,}04}\ 2{,}72$

$z_3 = 25$; $i_{34} = \frac{45}{25} = 1{,}8 \rightarrow \varepsilon_\alpha = 1{,}67$; $Y_c = 1{,}764 \rightarrow Y_c^2 = 3{,}11$

St 70 malz $\rightarrow$ $\sigma_{em} = 200$ N/mm² ; $E_{es} = 210$ kN/mm²

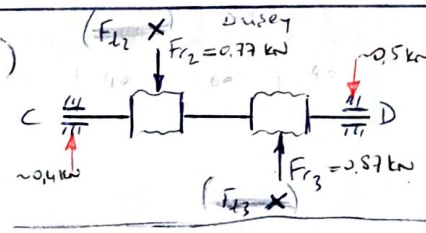
$p_{Hem} = 450$ "

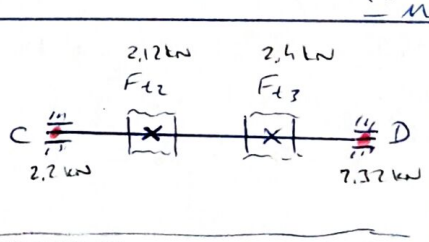
$\sigma_{e\,max} = 1.8 \cdot 1.033 \cdot 1{,}2 \cdot \frac{2{,}40 \cdot 10^3}{30 \cdot 2{,}5} \cdot \frac{2{,}72}{1.67} = 115$ N/mm² < 200 N/mm² $\rightarrow$ EM. li

$p_{H\,max} = \sqrt{1.5 \cdot 1.033 \cdot 1{,}2 \cdot \frac{0{,}35 \cdot 2{,}40 \cdot 10^3 \cdot 210 \cdot 10^3}{30 \cdot 62{,}5} \cdot \frac{2{,}8}{1{,}8} \cdot \frac{3{,}11}{1{,}67}} = 712$ N/mm² $\not<$ 450 " $\rightarrow$ EM. sız

(Yüzey sert. yapılmalı)
= Malzeme değiş.

d)





$(F_r)_C = \sqrt{(0{,}4)^2 + (2{,}2)^2} \cong 2{,}24$ kN

$(F_r)_D = \sqrt{(9{,}5)^2 + (7{,}3)^2} \cong 2{,}37$ "

$(F_a)_C = (F_a)_D = 0$

seçilen rulman $\rightarrow$ 6006 C ve D için