

"V" KAYIŞ PROB. (devamı)

Kayıt sayısı: $z \geq \frac{K_{if}}{K_B \cdot K_L} \cdot \frac{P}{P_B}$

$z \geq \frac{1,9}{1,0 \cdot 0,94} \cdot \frac{7,5}{2,7} = 5,6$

(tam sayı değer) $\Rightarrow \boxed{z = 6}$

$\cos\left(\frac{\beta_1}{2}\right) = \frac{450 - 125}{2 \cdot 782} = 0,21 \Rightarrow \begin{cases} \beta_1 = 156^\circ \\ K_B = 0,94 \end{cases}$

$L_e = 2,5 \text{ m} + \text{SPA tip:} \Rightarrow K_L = 1,0$

$n_1 = 900 \text{ d/d} + \text{SPA " } \Rightarrow P_B = 2,7 \text{ kW}$

$d_{e1} = 125 \text{ mm}$

$B_v = 2 \cdot f + (z - 1) \cdot e = 2 \cdot 10 + (6 - 1) \cdot 15 = 95 \text{ mm}$

SPA için $\begin{cases} f = 10 \text{ mm} \\ e = 15 \text{ mm} \end{cases}$

b) $B_v = 95 \text{ mm} \Rightarrow \sim \boxed{B = 100 \text{ mm}} \rightarrow \boxed{b = 90 \text{ mm}} \quad (\text{s.12})$

$P_B \geq \frac{K_{if}}{K_B} \cdot \frac{P}{b} = \frac{1,9}{0,94} \cdot \frac{7,5}{90} \approx 0,17 \frac{\text{kW}}{\text{mm}}$

$v = \frac{\pi \cdot d_1 \cdot n_1}{60} = \frac{\pi \cdot 0,125 \cdot 900}{60} \approx 6 \text{ m/s}$

(s.13) $\rightarrow$ diy. dan $\boxed{\text{Tip 28}}$ seçilir.

$M_{b1} = 9550 \cdot \frac{P_1}{n_1} = 9550 \cdot \frac{7,5}{900} = 79,6 \text{ N.m} \quad (0 \dots 100) \Rightarrow \text{I.}$

$\Rightarrow d_1 = e^{4,5 + 0,3(\ln 79,6 - 3)} \approx 136 \text{ mm} \xrightarrow{\text{st.}} \boxed{d_1 = 140 \text{ mm}}$

$i = \frac{n_1}{n_2} \approx \frac{d_2}{d_1} \Rightarrow d_2 = \frac{900}{240} \cdot 140 = 525 \text{ mm} \xrightarrow{\text{st.}} \boxed{d_2 = 500 \text{ mm}}$

$L = 2 \cdot 800 + \frac{\pi}{2} (140 + 500) + \frac{1}{4 \cdot 800} (500 - 140)^2 \approx 2645 \text{ mm} \quad \text{st. değil!}$

$\boxed{B = 90 \text{ mm}}$ alınırsa $\rightarrow \boxed{b = 80 \text{ mm}} \quad (\text{s.12})$

$P_B \geq \frac{1,9}{0,94} \cdot \frac{7,5}{80} \approx 0,19 \frac{\text{kW}}{\text{mm}}$

$v \approx 6 \text{ m/s}$

yine $\boxed{\text{Tip 28}}$ seçilir.