

سليم دكروبيج مدير عام شركة ابحاث / 2 / للعام الدراسي 2023-2024
 منزل كافي 8/7/2024 سنة رابعة صلاوات

الموتور 25 درج

$$P_5 = 3,64 \text{ Kw}$$

$$N_5 = 75 \text{ rpm}$$

$$M_{t5} = 46,46 \text{ daN}\cdot\text{m}$$

$$F_{t5} = 1052,7 \text{ daN}$$

$$F_d = \frac{(F_t + b \cdot c \cos^2 \beta) \cdot \cos \beta}{1 + \frac{0,15}{V} \cdot \sqrt{(F_t + b \cdot c \cos^2 \beta)}} \quad (5)$$

$$c = 53,5 \frac{\text{daN}}{\text{mm}}, A = 0,107$$

$$V_5 = 0,34 \frac{\text{m}}{\text{sec}}, e = 0,05$$

$$F_d = 106,384 \text{ daN}$$

$$F_t + F_d = K \cdot b \cdot \frac{d_5}{\cos^3 \beta} \cdot \frac{2 u_{5-6}}{u_{5-6} + 1}$$

$$K = 0,188 \frac{\text{daN}}{\text{mm}^2} \Rightarrow K = 0,194 \frac{\text{daN}}{\text{mm}^2}$$

$$H_{13} = 350 \Rightarrow S_{nr} = 68 \frac{\text{daN}}{\text{mm}^2}$$

$$F_t + F_d = S_{nr} \cdot \frac{b \cdot d_n \cdot m_n}{K_s}$$

$$K_s = 1,8, \quad u_n = 0,344,$$

$$S_{nr} = 37,9 \frac{\text{daN}}{\text{mm}^2} \quad (10)$$

الموتور المختار مقدر

الموتور 12 درج

$$P_{in} = \frac{P_{out}}{\eta_{be} \cdot \eta_{1-2} \cdot \eta_{Belt} \cdot \eta_{3-4} \cdot \eta_{5-6}}$$

$$P_{in} = 4,72 \text{ Kw} \quad (6)$$

$$N_m = N_{out} \cdot u_{1-2} \cdot u_{Belt} \cdot u_{3-4} \cdot u_{5-6}$$

$$u_{1-2} = 30, u_{Belt} = 1,862$$

$$u_{3-4} = 1,75, u_{5-6} = 2,5$$

$$N_{motor} = 7331,625 \text{ rpm}$$

الموتور 18 درج

$$\tan \lambda_w = \frac{m \cdot Z_g}{d_w \cdot u_{1-2}} \Rightarrow \lambda_w = 5,7105^\circ \quad (2)$$

$$L = P_a \cdot Z_w = \pi \cdot m_w \cdot Z_w \Rightarrow L = 12,56 \text{ mm} \quad (2)$$

$$L = 2c + \frac{\pi}{2} (D+d) + \frac{(D-d)^2}{4c}$$

$$L = 870,549 \text{ mm} \quad (2)$$

$$d_{e3} = 184,23 \text{ mm} \quad (2)$$

$$d_{e4} = 564,3 \text{ mm} \quad (2)$$

$$d_{e5} = 107,46 \text{ mm} \quad (2)$$

$$d_{e6} = 268,6 \text{ mm} \quad (2)$$

$$d_{m3} = 148,84 \text{ mm} \quad (2)$$

$$d_{m4} = 260,47 \text{ mm} \quad (2)$$

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الموتور 12 درج

$$R_1 = 440,63 \text{ daN}$$

$$R_2 = 48,18 \text{ daN}$$

$$R_3 = 709,2 \text{ daN}$$

$$R_4 = 22,25 \text{ daN}$$

$$M_{b\text{max}} = 58447,18 \text{ daN}\cdot\text{mm}$$

$$M_{t\text{max}} = 46461,95 \text{ daN}\cdot\text{mm}$$

$$\sigma_{\text{max}} = \frac{16}{\pi d^3} \sqrt{(k_b M_b)^2 + (k_t M_t)^2} \leq \sigma_{\text{all}}$$

$$\Rightarrow d = 42,367 \text{ mm}$$

مساحة المقطع
 في طرفه
 29/8/2024

رأسية > 15

$$M_{t4} = 46,46 \text{ daN}\cdot\text{m}$$

$$F_{t4} = 365,74 \text{ daN}$$

$$F_{r4} = 66,04 \text{ daN}$$

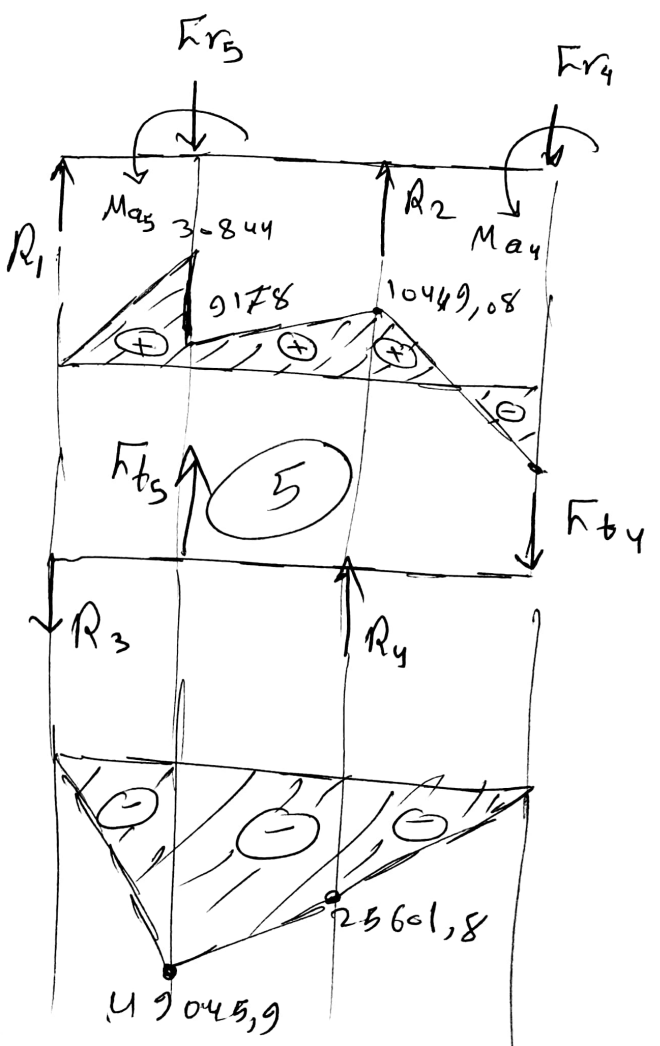
$$F_{a4} = 115,58 \text{ daN}$$

$$M_{a4} = 15052,6 \text{ daN}\cdot\text{mm}$$

$$F_{r5} = 422,767 \text{ daN}$$

$$F_{a5} = 490,89 \text{ daN}$$

$$M_{a5} = 21669,43 \text{ daN}\cdot\text{mm}$$



2 و 2 القطر