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Home > A taper roller bearing has a dynamic load capacity of 26 kN.The desired life for 90% of the bearing is 8000 hr. and speed is 300 rpm. Calculate equivalent radial load that the bearing can carry

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Question:

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Answer:

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Given:
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\begin{array}{c} \text{C=26 KN} \quad \text{,L}_{10h} = 8000 \; \text{h} \; \; , \, \text{n=300 rpm} \\ \text{Bearing life (L}_{10}) \\ \text{L10} = \frac{60 \, n (\text{L10h})}{10^6} \; \; , \; \; \text{L10} = \frac{60 \, x \; 300 \, x \; 8000}{10^6} \; = 144 \; \text{million rev.} \\ \text{Equivalent radial load} \\ \text{C= P (L}_{10}) \, ^{0.3} \; \; , \; \; \text{P =26000/(144)}^{0.3} \; = 5854.16 \; \text{N} \\ \text{Fr= P =5854.16} \; \; \text{N} \end{array}
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