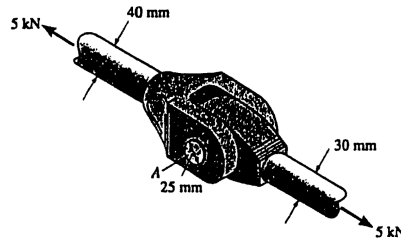


1-119 The yoke-and-rod connection is subjected to a tensile force of 5 kN. Determine the average normal stress in each rod and the average shear stress in the pin A between the members.



For the 40-mm-dia. rod :

$$\sigma_{40} = \frac{P}{A} = \frac{5 (10^3)}{\frac{\pi}{4} (0.04)^2} = 3.98 \text{ MPa} \quad \text{Ans}$$

For the 30-mm-dia. rod :

$$\sigma_{30} = \frac{V}{A} = \frac{5 (10^3)}{\frac{\pi}{4} (0.03)^2} = 7.07 \text{ MPa} \quad \text{Ans}$$



Average shear stress for pin A :

$$\tau_{\text{avg}} = \frac{P}{A} = \frac{2.5 (10^3)}{\frac{\pi}{4} (0.025)^2} = 5.09 \text{ MPa} \quad \text{Ans}$$

From *Mechanics of Materials*, Sixth Edition by R. C. Hibbeler, ISBN 0-13-191345-X.

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