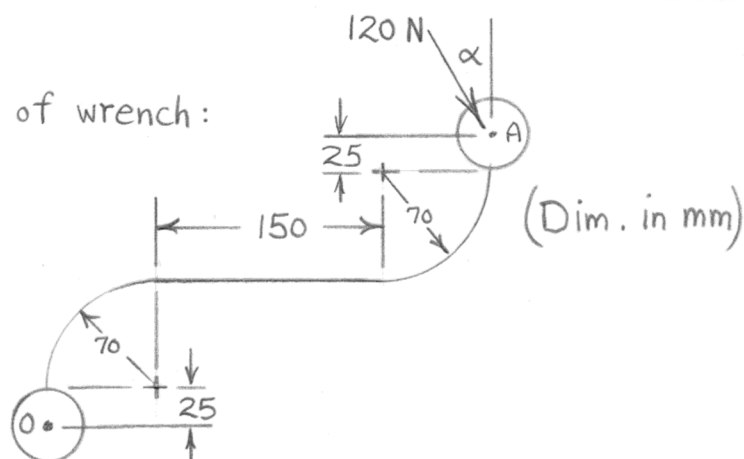


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Elements of wrench:



$$\alpha = 30^\circ:$$

$$+2 M_o = 120 \cos 30^\circ [70 + 150 + 70] + 120 \sin 30^\circ [25 + 70 + 70 + 25] = 41\,500 \text{ N}\cdot\text{mm}$$

$$\text{or } M_o = 41.5 \text{ N}\cdot\text{m CW}$$

For maximum M_o :

$$\alpha = \tan^{-1} \left[\frac{25 + 70 + 25 + 70}{70 + 150 + 70} \right] = 33.2^\circ$$

$$(M_o)_{\max} = 120 \sqrt{(25 + 70 + 25 + 70)^2 + (70 + 150 + 70)^2}$$

$$= 41\,600 \text{ N}\cdot\text{mm} \text{ or } 41.6 \text{ N}\cdot\text{m CW}$$