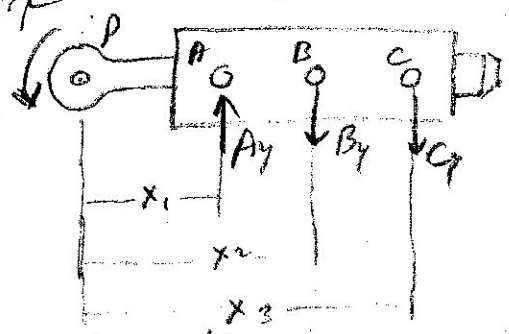
Reply to thread 404-329017

You may use the proportionality factor k method to solve this problem – Note: bar, hollow beam & bolts are rigid.

Assuming torque $\curvearrowright T$ to be an ideal torque, i.e. one not created by a force acting at endpoint "P". Also, assume pivot point acting @ bolt "A"



$$T = K\left[(x_2 - x_1)^2 + (x_3 - x_1)^2\right] \quad (\text{lbs-inch})$$

$$K = T \Big/ \left[(x_2 - x_1)^2 + (x_3 - x_1)^2\right] \quad (\text{lbs/inch})$$

$$B_y = K(x_2 - x_1), \quad C_y = K(x_3 - x_1) \quad (\text{lbs})$$

$$A_y = B_y + C_y \quad (\text{lbs})$$

If torque $\curvearrowright T$ is created by a force F acting at endpoint "P" then $F = T / x_1$