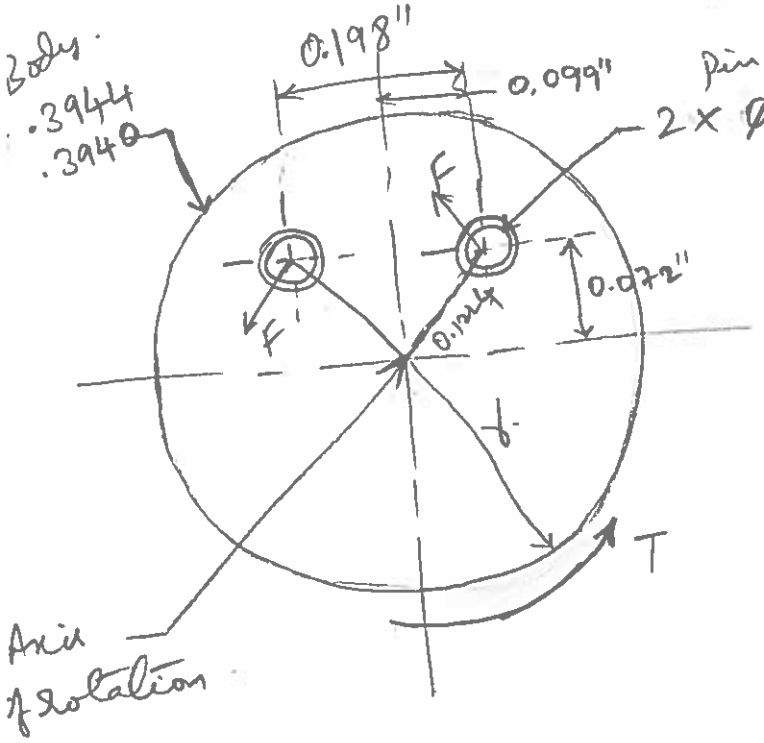


Distance, $l = 0.198"$

Material available = A286 Alloy

Diameter of pin $d = Ø.061$ min

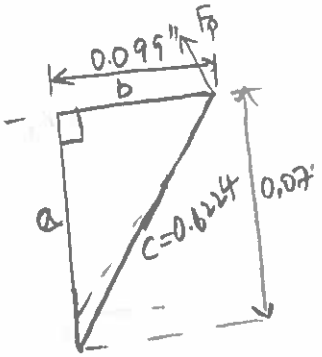
Shear modulus, $G = 11.1 \times 10^3$ KSi

σ_{shear} = 80% of material shear strength

$$= \frac{80 \times 11.1 \times 10^3}{100} = 8880 \text{ ksi}$$

$\sigma_{shear} = 8.88 \times 10^6$ psi

$$\sigma_{shear} = \frac{F_p}{2A} \qquad F_p = \sigma_{shear} \times A$$



$$F_p = 8.880 \times 10^6 \times \frac{\pi \times (0.061)^2}{4}$$

$$F_p = 25951.503 \text{ lbf}$$

Torque for pin

$$T_p = F \times l = 25951.503 \times 0.1224 = 3176.807 \text{ lbf-in.}$$

Body, $T_{applied} = 317 \times 0.1972 = 62.51$ lbf.in

1 KSi = 1000 psi

1 psi = 1 lbf/in²