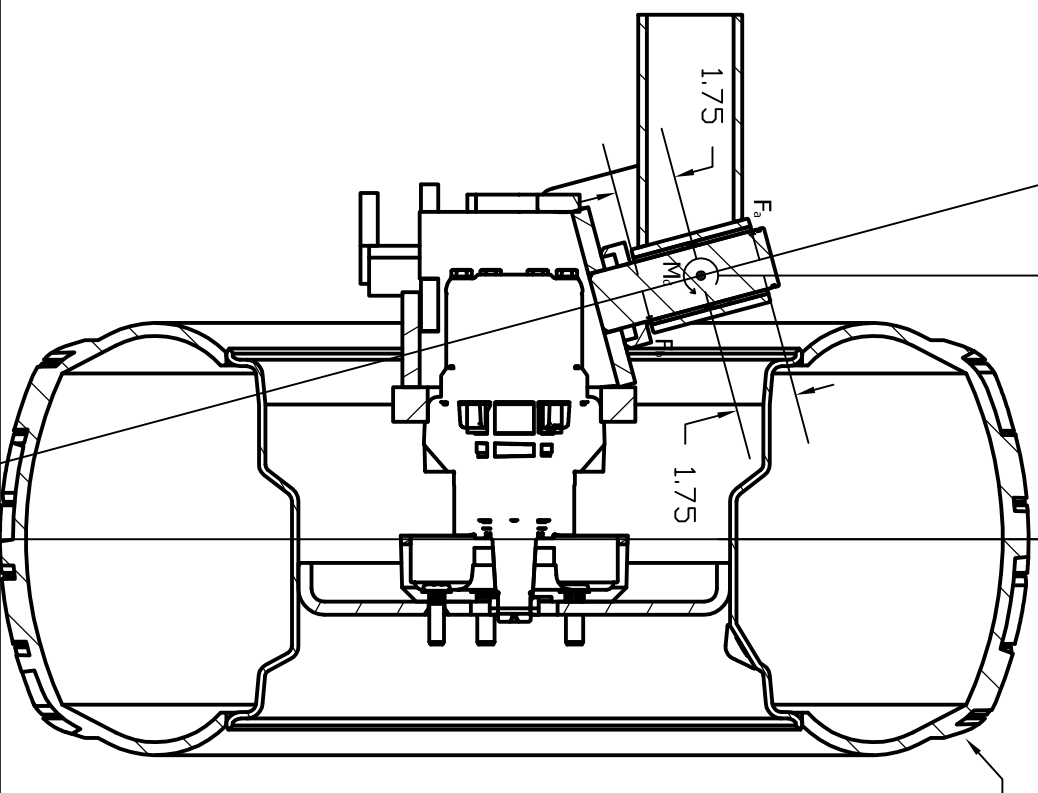


WHEEL
CENTER LINE

KING PIN
CENTER
LINE

7.62

WHEEL



Load on Bushing

$$M_d = F_c \times 7.62 \text{ in}$$

$$M_d = 700 \text{ lbf} \times 7.62 \text{ in}$$

$$M_d = 5334 \text{ in-lb}$$

$$F_a = M_d / 1.75 \text{ in}$$

$$F_a = 5334 \text{ in-lb} / 1.75 \text{ in}$$

$$F_a = 3048 \text{ lbf}$$

$$F_b = 3048 \text{ lbf}$$

Compressive Stress on Bushing

$$\text{Bushing ID} = 1.75 \text{"} \text{ Bushing height} = 3.5 \text{"} \text{}$$

$$\text{Area of Bushing} = 2 \times 3.14 \times (1.75/2) \times 3.5 \text{"} \text{}$$

$$\text{Area of Bushing} = 19.25 \text{ in}^2 \text{}$$

$$\text{Area under stress} = 19.25 \text{ in}^2 / 4 = 4.81 \text{ in}^2 \text{}$$

$$\text{Compressive Stress} = 3048 \text{ lbf} / 4.81 \text{ in}^2 \text{}$$

$$\text{Compressive Stress} = 633.68 \text{ psi}$$

GROUND

$$F_c = 700 \text{ lbf}$$