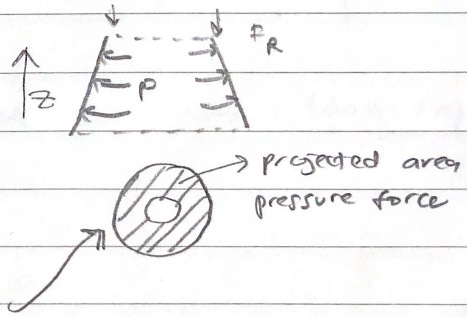
EA

Reaction in axial (Z) direction

Average gas pressure:

$$\frac{12.17 + 47.72}{2} \approx 30 \text{ psi}$$



top radius: 41.75 inches

bottom radius: 69.50 inches

projected area in Z-direction = $\pi (69.50^2 - 41.75^2) = 9699 \text{ in}^2$

net pressure force in Z-direction = $30 \text{ psi} \times 9699 = 290970 \text{ psi in}^2 = 290970 \text{ lbf}$

net pressure force in -Z direction on 1/400th model = $\frac{30 \times 9699}{400} = 720 \text{ lbf}$