



$$F_P = \frac{L_1 + L_2}{L_1} \cdot F_H$$

$$P = \frac{F}{A} \quad \therefore P = \frac{4 F_H (L_1 + L_2)}{L_1 \pi \phi_p^2} = 9.05 \text{ bar}$$

$$\text{Cylinder length} = L_c = 2L_1 \sin(\alpha) + L_p = 112.7 \text{ mm}$$

$$\text{Max espresso volume} \approx \frac{\pi \phi_p^2 (L_c - L_p)}{4} = 98 \text{ mL}$$

$$\begin{aligned} \text{Cylinder centreline to pivot offset} &= \\ &= \frac{L_1 (1 + \cos(\alpha))}{2} = 42.7 \text{ mm} \end{aligned}$$