

Peak heart rate  $\rightarrow$  120 bpm

- Stroke volume is so variable that there is no known relationship to beats per minute.

-  $\rightarrow$  \$1500 so we do not need purchase order

### ACTUATOR SPECS - FINALIZED

All air: 120 bpm  $\cdot \frac{1 \text{ min}}{60 \text{ sec}} = 2 \frac{\text{beats}}{\text{second}}$

1 beat =  $2 \times = 2(200) = 400 \text{ mm}$

$$\begin{aligned} V &= 800 \frac{\text{mm}}{\text{s}} \\ X &= 199.07 \text{ mm} \\ F &= 80.04 \text{ N} \end{aligned}$$

\* Maximum Values (Worst Case)

$\frac{3}{4}$  Water  $\frac{1}{4}$  Air

$2x = 2(87) = 174 \text{ mm}$

$$\begin{aligned} V &= 348 \frac{\text{mm}}{\text{s}} \\ X &= 87.91 \text{ mm} \\ F &= 80.04 \text{ N} \end{aligned}$$

$\frac{1}{2}, \frac{1}{2}$

$2x = 2(125 \text{ mm}) = 250 \text{ mm}$

$$\begin{aligned} V &= 500 \frac{\text{mm}}{\text{s}} \\ X &= 124.96 \text{ mm} \\ F &= 80.04 \text{ N} \end{aligned}$$