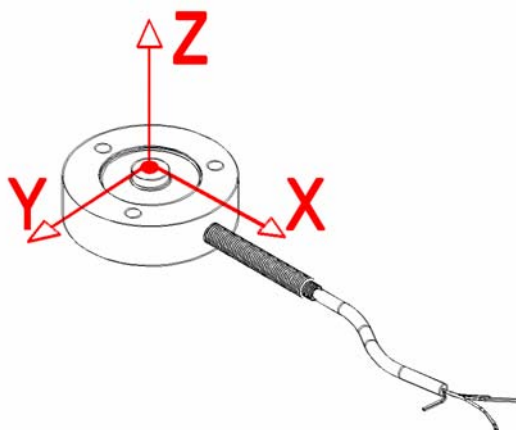


## Deflection & Natural Frequency



| Material | Capacity (lb) | Deflection (in.) | Natural Frequency (Hz) | $\beta$ |
|----------|---------------|------------------|------------------------|---------|
| (S.S.*)  | 3,000         | 0.0013           | 22,400                 | 0.0449  |
|          | 5,000         | 0.0015           | 25,000                 | 0.0513  |
|          | 10,000        | 0.0018           | 27,800                 | 0.0712  |

\*FN results are based on calculation of deflection & weight scene on Sensor arm.

### Natural Frequency & Frequency Response Equation's:

$$\text{Natural Frequency (FN)} = 3.13 \sqrt{\frac{1}{\frac{\beta}{\text{Capacity}} \cdot \text{Deflection}}} \text{ (Hz)}$$

$$\text{Frequency Response with load (FR)} = 3.13 \sqrt{\frac{1}{\frac{\beta + \text{AppliedLoad}}{\text{Capacity}} \cdot \text{Deflection}}} \text{ (Hz)}$$

\*Where  $\beta$  values are obtained by Futek Engineers

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