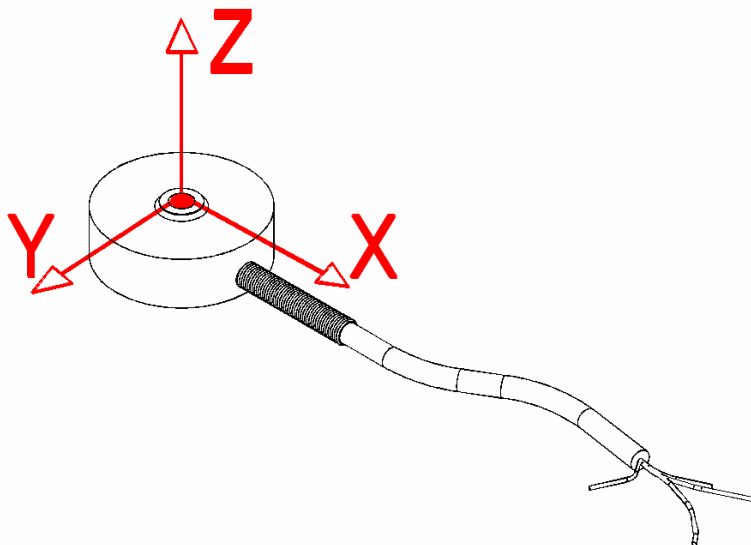


### Deflection & Natural Frequency



| Material | Capacity (lb) | Deflection (in.) | Natural Frequency (Hz) | $\beta$ |
|----------|---------------|------------------|------------------------|---------|
| (S.S.*)  | 25            | 0.0009           | 13,800                 | 0.0015  |
|          | 50            | 0.0010           | 16,000                 | 0.0019  |
|          | 100           | 0.0010           | 19,600                 | 0.0025  |
|          | 150           | 0.0010           | 21,400                 | 0.0031  |
|          | 250           | 0.0010           | 24,400                 | 0.0040  |
|          | 300           | 0.0008           | 27,300                 | 0.0050  |
|          | 500           | 0.0010           | 31,600                 | 0.0049  |
|          | 1,000         | 0.0011           | 36,800                 | 0.0068  |

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

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

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

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

This documentation was generated and completed to ~~where  $\beta$  values are obtained by Futek Engineers~~ where  $\beta$  values are obtained by Futek Engineers. Analysis, Empirical data and Multiple Testing Simulations. The information and recommendations on this document are presented in good faith and believed to be correct however, FUTEK Advanced Sensor Technology makes no representations or warranties as to the completeness or accuracy of the information.

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