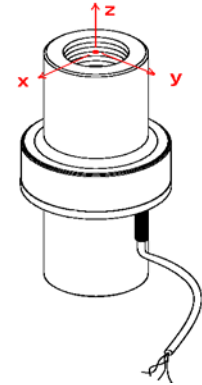


### Extraneous Load Factors



**Equation:**  $\sigma_{max} \geq (A)Fx +(B)Fy +(C)Fz +(D)Mx +(E)My +(F)Mz$

**Material:** 17-4 P.H. Stainless Steel

Model #	Capacity (lb)	A	B	C	D	E	F
LCF800	125,000	6.41	6.41	0.64	1.64	1.64	1.57

$\sigma_{max}$  **Table**

Material	Static Load (=60% Y.S.)	Fatigue (Non Reversing Loads)	Fatigue (Full Reversing Loads)
17-4PH S.S	87,000	78,000	62,000*

\*Value is 75% of Fatigue Strength based on 10-20 x 10<sup>6</sup> cycles and allow for factors that influence Fatigue such as surface finish, stress concentrations, corrosion, temperature and other variables for the production of the transducer, for infinite Fatigue Life (100 x 10<sup>6</sup>) use 75% of values shown.

### Deflection & Natural Frequency

Model #	Capacity (lb)	Deflection (in.)	Natural Frequency (Hz)	$\beta$
LCF800	125,000	0.01	5,800	3.6000

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

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

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

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

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