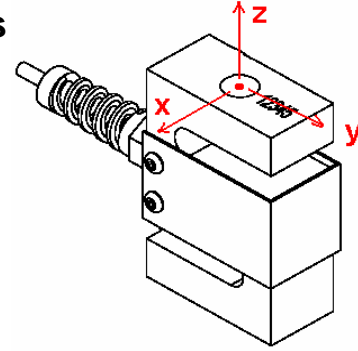


## Extraneous Load Factors



**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
LSB353 (L2362)	500	96.94	97.38	101.93	37.10	58.88	53.00
	1,000	80.11	95.39	57.76	36.91	45.87	43.14
LSB353 (L2363)	2,000	79.61	95.52	34.05	37.67	35.29	35.36
	3,000	80.56	96.47	32.24	37.82	29.73	31.01

### $\sigma_{\max}$ 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)	$\beta$
LSB353 (L2362)	500	0.009	1,000	0.5000
	1,000	0.011	1,300	0.5000
LSB353 (L2363)	2,000	0.02	1,300	0.6000
	3,000	0.02	1,600	0.6000

### 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