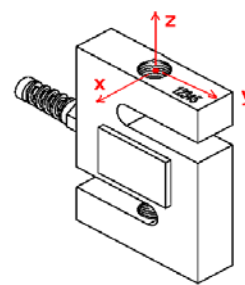


Extraneous Load Factors



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
LSB453	5,000	70.09	66.20	13.58	43.06	21.74	15.12
LSB503	10,000	67.08	58.79	10.75	16.47	13.83	11.87

σ_{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 10⁶ 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 10⁶) use 75% of values shown.

Deflection & Natural Frequency

Model #	Capacity (lb)	Deflection (in.)	Natural Frequency (Hz)	β
LSB453	5,000	0.02	1,400	1.3000
LSB503	10,000	0.02	1,700	1.8000

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 β values are obtained by Futek Engineers

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