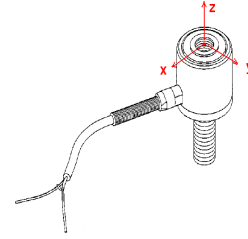


Extraneous Load Factors



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
LCB200	1,000	307.98	307.98	28.40	336.12	336.12	263
	2,000	307.98	307.98	28.40	336.12	336.12	263
	3,000	307.98	307.98	28.40	336.12	336.12	263

All force and moments to be calculated using lb & in-lb units

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
LCB200	1,000	0.0005	21,100	0.0440
	2,000	0.0010	21,100	0.0440
	3,000	0.0015	21,100	0.0440

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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