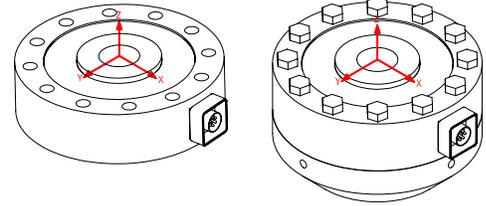


Extraneous Load Factors

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
LCF500/LCF505	25,000	6.5	6.5	2.6	3.7	3.7	3.4
	50,000	3.3	3.3	1.2	2	2	1.3
LCF501/LCF506	12,500	6.5	6.5	2.6	3.7	3.7	3.4
	25,000	3.3	3.3	1.2	2	2	1.3

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
LCF500/LCF505	25,000	0.002	7,100	2.37
	50,000	0.003	8,200	2.38
LCF501/LCF506	12,500	0.001	7,100	2.37
	25,000	0.0015	8,200	2.38

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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