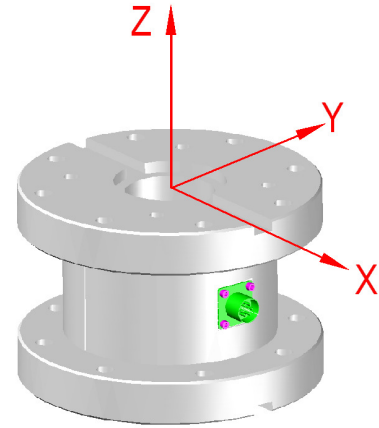


Extraneous Load Factors

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



Material: 17-4 P.H. Stainless Steel (S.S.*), 2024-T4 Aluminum (AL*)

Material	Capacity (in-lb)	A	B	C	D	E	F
(AL*)	1000	46.0	46.0	12.0	24.0	24.0	13.0
	2000	31.0	31.0	6.0	14.0	14.0	6.0
(S.S.*)	5000	34.0	34.0	5.0	14.0	14.0	4.0
	10000	19.0	19.0	4.0	9.0	9.0	2.0

σ_{max} **Table**

Material	Static Load (=60% Y.S.)	Fatigue (Non Reversing Loads)	Fatigue (Full Reversing Loads)
2024-T4/T351	28,000	18,000	15,000
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

Material	Capacity (in-lb)	Torsional Stiffness (ft-lb/rad)	Natural Frequency (Hz)
(AL*)	1000	26000	1100
	2000	45300	1600
(S.S.*)	5000	96500	1700
	10000	215000	2200

*FN results are based on calculation of deflection & weight scene on Sensor arm.

This documentation was generated and completed to the best ability of FUTEK’s Engineering Team using FEA Analysis, Empirical data and Multiple Testing Simulations. The information and recommendations on this document are presented in good faith and believed to be correct however, FUTEK Advanced Sensor Technology makes no representations or warranties as to the completeness or accuracy of the information.