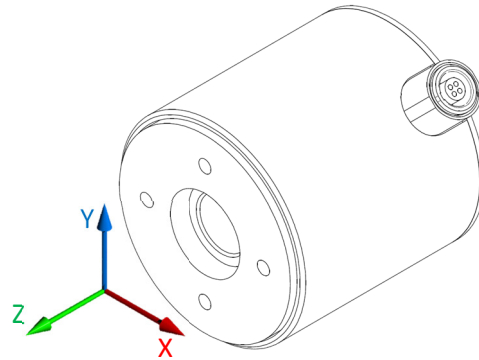


MODEL #TFF400

Extraneous Load Factors

Equation: $\sigma_{max} \geq (A)F_x + (B)F_y + (C)F_z + (D)M_x + (E)M_y + (F)M_z$



Material: Aluminum 2024-T4 (*AL)

Model #	Capacity	A [$\frac{1}{in^2}$]	B [$\frac{1}{in^2}$]	C [$\frac{1}{in^2}$]	D [$\frac{1}{in^3}$]	E [$\frac{1}{in^3}$]	F [$\frac{1}{in^3}$]
TFF400	5 in-oz*	4,030	4,030	145	740	740	34,500
	10 in-oz*	4,030	4,030	145	740	740	34,500
	50 in-oz*	1,520	1,520	58	288	288	5,500
	160 in-oz*	576	576	28	127	127	1,410
	400 in-oz*	386	386	25	83	83	535
	1000 in-oz*	208	208	20	62	62	187
	100 in-lb	141	141	18	78	78	157
	200 in-lb	108	108	15	64	64	68
	500 in-lb	71	71	10	47	47	31

* When calculating σ_{max} for capacities 5-1000 in-oz, use in-lb & lb units for moments and loads, respectively.

σ_{max} Table

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

*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.

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Torsional Stiffness & Natural Frequency

Material	Capacity	Torsional Stiffness (in-oz/rad)	Natural Frequency (Hz)
2024-T4/T351	5 in-oz	560	95
	10 in-oz	560	95
	50 in-oz	4,200	260
	160 in-oz	21,000	504
	400 in-oz	62,400	860
	1000 in-oz	211,900	1,760
	100 in-lb	36,400 in-lb/rad	2,980
	200 in-lb	61,400 in-lb/rad	3,850
	500 in-lb	122,000 in-lb/rad	5,400

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