

PLATE ENDCAP CONFIGURATION (External Pressure)

Outer Diameter : 8.6250 in
 Free Diameter : 7.9810 in
 Plate Thickness : 0.70000 in
 Edge Restraint : Simply Supported

Weight in air : 4.0080 lbs
 Weight in water: 2.4932 lbs

Failure Mode: Radial Stress Failure at 0.059464 Kbar (plate center)

Tangential Stress Failure at 0.059464 Kbar (plate center)
 Seat failure at 0.34691 Kbar

ALUMINUM, 6061-T6 Properties:

Yield Strength : 35 Ksi
 Elastic Modulus : 9.9 Mpsi
 Density : 0.098 lb/cu in
 Poisson's Ratio : 0.33
 Comments :
 Compressive Young's Modulus = 10.1 Mpsi Compressive
 Yield Strength = 34 Ksi Minimum Welded Yield Strength
 = 15 kpsi

Flat Circular Plate distortion: Table eval dia., De = plate center for Max Radial

Table eval dia., De = plate center for Max Tangential

Pressure Ksi	Depth m (sea)	De Max Radial Stress, Ksi	De Max Tan Stress, Ksi	Avg Seat Stress, Ksi	CL Deflection Inches
0.10000	68.638	4.0582	4.0582	-0.69561	-0.0050002
0.20000	137.26	8.1164	8.1164	-1.3912	-0.010000
0.30000	205.85	12.175	12.175	-2.0868	-0.015000
0.40000	274.43	16.233	16.233	-2.7824	-0.020001
0.50000	342.98	20.291	20.291	-3.4781	-0.025001
0.60000	411.52	24.349	24.349	-4.1737	-0.030001
0.70000	480.03	28.407	28.407	-4.8693	-0.035001
0.80000	548.52	32.466	32.466	-5.5649	-0.040001
0.86245*	591.29	35.000	35.000	-5.9993	-0.043124
0.90000*	616.99	36.524	36.524	-6.2605	-0.045001
1.0000*	685.44	40.582	40.582	-6.9561	-0.050002
1.1000*	753.88	44.640	44.640	-7.6517	-0.055002
1.2000*	822.28	48.698	48.698	-8.3473	-0.060002
1.3000*	890.67	52.757	52.757	-9.0430	-0.065002
1.4000*	959.04	56.815	56.815	-9.7386	-0.070002
1.5000*	1027.4	60.873	60.873	-10.434	-0.075002
1.6000*	1095.7	64.931	64.931	-11.130	-0.080002
1.7000*	1164.0	68.989	68.989	-11.825	-0.085003
1.8000*	1232.3	73.048	73.048	-12.521	-0.090003
1.9000*	1300.6	77.106	77.106	-13.217	-0.095003
2.0000*	1368.8	81.164	81.164	-13.912	-0.10000

* = after housing failure

Flat Circular Plate distortion: Table eval dia., De = plate center for Max Radial
Table eval dia., De = plate center for Max Tangential

FD Shear
Stress, Ksi
-0.28504
-0.57007
-0.85511
-1.1401
-1.4252
-1.7102
-1.9953
-2.2803
-2.4583
-2.5653
-2.8504
-3.1354
-3.4204
-3.7055
-3.9905
-4.2755
-4.5606
-4.8456
-5.1306
-5.4157
-5.7007

* = after housing failure