



SQUARE CONE® WASHERS



Two distinct washer configurations are integrated in this single stamping to provide two distinct load and deflection stages. The vertical “wall” that results from the forming of this washer is greater than the material thickness in height. This is a load bearing wall that changes the inside-outside radius relationship of the two washer configurations and significantly increases total load-to-flatten capability. The Square Cone washer provides greater spring return and tension at minimum torque tolerances and has the strength to support maximum torque loading.

Tests have shown that a Square Cone washer will achieve the same clamp load as a standard conical washer at 30% less torque.

In most applications, applied torque is used as a method of determining whether adequate clamp load has been developed in a joint. The Square Cone washer provides maximum uniformity in the torque to tension ratio. With its large deflection range, the Square Cone washer allows torque to develop gradually, eliminating the shock loading that causes installers to develop carpal tunnel syndrome.

Inch Parts

Hole Size	Inside Diameter		Outside Diameter		Free Height		Thickness	WCL Product Number
	Min.	Max.	Min.	Max.	Min.	Max.		
4	.116	.123	.244	.250	.025	.048	.015	3204-04-01
6	.142	.150	.307	.320	.039	.061	.025	3206-05-02
6	.142	.150	.433	.446	.050	.073	.025	3206-07-01
8	.168	.176	.370	.383	.050	.073	.030	3208-06-01
8	.168	.176	.495	.508	.062	.064	.032	3208-08-01
10	.195	.204	.433	.446	.054	.078	.032	3210-07-01
1/4	.256	.267	.740	.760	.100	.131	.055	3214-12-01
3/8	.366	.372	.768	.787	.717	.195	.109	3221-14-01
3/8	.394	.409	.865	.885	.169	.199	.109	3220-14-02
1/2	.512	.526	1.240	1.260	.235	.267	.150	3224-20-03

Metric Parts

Hole Size	Inside Diameter		Outside Diameter		Free Height		Thickness	WCL Product Number
	Min.	Max.	Min.	Max.	Min.	Max.		
M3	3.610	3.810	7.800	8.130	.990	1.550	.640	3206-05-02*
M4	4.270	4.470	9.400	9.730	1.270	1.850	.760	3208-06-01*
M5	4.950	5.180	11.000	11.320	1.330	1.960	.810	3210-07-01*
M6	6.400	6.780	18.800	19.300	2.540	3.330	1.400	3214-12-01*
M10	9.750	10.011	22.040	22.480	3.710	4.470	2.360	3220-14-03*