

Belleville Washers Cont.

Nominal Size	Overall Height	Inner Diameter	Thickness	Outer Diameter	Plain Part No.
13/16"	0.1240"	0.803"	0.089"	1.570"	0125806
13/16"	0.1358"	0.803"	0.098"	1.570"	0125807
13/16"	0.1378"	0.803"	0.079"	1.970"	0125811
13/16"	0.9060"	0.803"	0.039"	1.570"	0125803
7/8"	0.1122"	0.882"	0.049"	1.770"	0125808
7/8"	0.1378"	0.882"	0.098"	1.770"	0125809
1"	0.1122"	1.000"	0.049"	1.970"	0125812
1"	0.1535"	1.000"	0.098"	1.970"	0125813
1"	0.1614"	1.000"	0.118"	1.970"	0125814
1-1/8"	0.1693"	1.122"	0.118"	2.200"	0125815
1-3/16"	0.2008"	1.201"	0.118"	2.760"	0125817
1-1/4"	0.1929"	1.220"	0.138"	2.480"	0125816
1-7/16"	0.1811"	1.420"	0.079"	2.800"	0125818
1-7/16"	0.2244"	1.420"	0.118"	3.150"	0125819
2-1/4"	0.2835"	2.240"	0.157"	4.410"	0125820

Series AI Disc Springs For Bolts

AI Series springs are designed to maintain load tension in light bolted assemblies, where a constant load is required. Although this series is primarily designed for bolted applications, they may also be used in dynamic applications as long as the application does not exceed the designated stress limits. Like the AM series the AI parts are typically manufactured from High Carbon or Alloy steel; AISI C1075 or 6150 material.

Nominal Size	Overall Height	Inner Diameter	Outer Diameter	Thickness	Plain Part No.
#4	0.0170"	0.125"	0.250"	0.009"	0123986
#4	0.0200"	0.125"	0.250"	0.013"	0123987
#6	0.0250"	0.156"	0.312"	0.017"	0123989
#6	0.0320"	0.138"	0.437"	0.022"	0123990
5/32"	0.0220"	0.156"	0.312"	0.011"	0123988
3/16"	0.0270"	0.195"	0.375"	0.015"	0123991
3/16"	0.0300"	0.195"	0.375"	0.020"	0123992
1/4"	0.0340"	0.255"	0.500"	0.018"	0123993
1/4"	0.0350"	0.258"	0.500"	0.019"	0123994
1/4"	0.0380"	0.255"	0.500"	0.025"	0123995
1/4"	0.0390"	0.258"	0.500"	0.023"	33362
5/16"	0.0420"	0.317"	0.625"	0.022"	0123996
5/16"	0.0480"	0.317"	0.625"	0.032"	33363
5/16"	0.0560"	0.320"	0.750"	0.032"	0123997
3/8"	0.0440"	0.382"	0.688"	0.024"	0123998
3/8"	0.0510"	0.380"	0.750"	0.028"	0123999
3/8"	0.0520"	0.382"	0.750"	0.032"	33352
3/8"	0.0570"	0.382"	0.750"	0.035"	0124000
3/8"	0.0590"	0.382"	0.750"	0.040"	0124001
3/8"	0.0700"	0.380"	0.750"	0.056"	0124002
7/16"	0.0590"	0.442"	0.875"	0.031"	0124004
7/16"	0.0670"	0.445"	1.000"	0.035"	33353
7/16"	0.0710"	0.445"	1.000"	0.039"	0124003
1/2"	0.0670"	0.512"	1.000"	0.035"	0124005
1/2"	0.0750"	0.512"	1.000"	0.039"	33354
1/2"	0.0750"	0.512"	1.100"	0.039"	0124007
1/2"	0.0830"	0.512"	1.100"	0.049"	0124008
1/2"	0.0870"	0.512"	1.100"	0.059"	0124009
1/2"	0.0910"	0.512"	1.000"	0.073"	0124010
5/8"	0.082"	0.630"	1.250"	0.040"	0124011
5/8"	0.0920"	0.630"	1.250"	0.062"	33355
5/8"	0.0950"	0.637"	1.375"	0.049"	0124013
5/8"	0.1100"	0.637"	1.375"	0.078"	0124014
5/8"	0.1110"	0.630"	1.250"	0.089"	0124012
11/16"	0.0890"	0.692"	1.375"	0.045"	0124015
3/4"	0.0930"	0.755"	1.500"	0.045"	0124016
3/4"	0.1090"	0.755"	1.500"	0.072"	33356
3/4"	0.1140"	0.761"	1.500"	0.059"	0124017
3/4"	0.1220"	0.761"	1.500"	0.078"	0124018
3/4"	0.1340"	0.761"	1.500"	0.098"	0124019
7/8"	0.1280"	0.880"	1.750"	0.085"	33357
1"	0.1380"	1.016"	2.000"	0.078"	33358
1"	0.1570"	1.016"	2.375"	0.078"	0124022
1"	0.1580"	1.016"	2.000"	0.098"	0124020
1"	0.1650"	1.016"	2.000"	0.118"	0124021
1-1/4"	0.1600"	1.250"	2.500"	0.080"	0124023
1-1/4"	0.1800"	1.250"	2.500"	0.120"	33359

Series SP Disc Springs For Heavy Bolt Sections

SP Series are specifically designed for heavy bolted applications such as those required for bus bar and transformer applications. They are used wherever there is a need to overcome the effects of thermal expansion and contraction. The SP series are normally manufactured from High Carbon or Alloy steel; AISI C1075 or 6150 material.

Nominal Size	Inner Diameter	Outer Diameter	Thickness	Plain Part No.
#10, M5	0.209"	0.433"	0.039"	0124029
#5, M3	0.126"	0.276"	0.020"	0124026
#6, M3.5	0.146"	0.315"	0.020"	0124027
#8, M4	0.169"	0.354"	0.031"	0124028
0.748", M18	0.748"	1.850"	0.197"	0124042
1-1/8", M30	1.220"	3.031"	0.295"	0124047
1", M27	1.102"	2.756"	0.276"	0124046
1.102", M24	0.984"	2.441"	0.256"	0124045
1/2", M12	0.512"	1.142"	0.098"	0124036
1/2", M12	0.512"	1.260"	0.138"	0124037
1/4", M6	0.252"	0.551"	0.050"	0124030
3/4", M20	0.827"	2.047"	0.236"	0124043
3/8", M10	0.413"	0.906"	0.078"	0124034
3/8", M10	0.413"	0.945"	0.118"	0124035
5/16", M8	0.331"	0.709"	0.078"	0124032
5/16", M8	0.331"	0.877"	0.098"	0124033
5/8", M16	0.669"	1.535"	0.138"	0124040
5/8", M16	0.669"	1.654"	0.157"	0124041
7/8", M22	0.906"	2.205"	0.236"	0124044
9/16", M14	0.591"	1.378"	0.118"	0124038
9/16", M14	0.591"	1.535"	0.157"	0124039
M2.5	0.106"	0.236"	0.016"	0124025
M7	0.291"	0.669"	0.059"	0124031

Stainless Steel Disc Springs

Nominal Size	Overall Height	Outer Diameter	Thickness	Inner Diameter	Stainless Steel Part No.
1/4"	0.0620"	0.500"	0.030"	0.262"	71238
5/16"	0.0780"	0.625"	0.040"	0.343"	71239
3/8"	0.1000"	0.750"	0.050"	0.390"	71240
1/2"	0.1250"	1.000"	0.060"	0.531"	71241
5/8"	0.1550"	1.250"	0.078"	0.640"	71244

SCHNORR Safety Washers

The shape of the cross section ensures the locking effect is at the outside diameter which ensures the greatest resistance to loosening. High resistance to vibration due to positive locking of the serrations. The closed ring form results in a high degree of pretensioning, i.e. an excellent frictional connection. Concentric application of force eliminates bending in the bolts and sliding surfaces allow tightening without damaging the surfaces. No splitting during tightening with proper transitional radius between bolt shaft and bolt head, thus suitable for captive fitting on a wide range of bolts (combi bolts for which a range with special dimensions is available. Universal application minimizes stocks. Can be supplied in a variety of material and different finishes.

Nominal Size	Inner Diameter	Outer Diameter	Thickness	Black Part No.	Clear Zinc Part No.
1/8"	0.126"	0.217"	0.018"	0130149	0130164
5/32"	0.169"	0.276"	0.020"	0130150	0130165
3/16"	0.209"	0.354"	0.024"	0130151	0130166
1/4"	0.264"	0.374"	0.028"	0130152	0130167
5/16"	0.331"	0.512"	0.031"	0130153	0130168
3/8"	0.413"	0.630"	0.039"	0130154	0130169
7/16"	0.457"	0.626"	0.039"	0130155	0130170
1/2"	0.539"	0.748"	0.043"	0130156	0130171

Nominal Size	Inner Diameter	Outer Diameter	Thickness	Black Part No.	Clear Zinc Part No.
9/16"	0.591"	0.866"	0.047"	0130157	0130172
5/8"	0.669"	0.945"	0.051"	0130158	0130173
3/4"	0.787"	0.081"	0.059"	0130159	0130174
7/8"	0.906"	1.299"	0.059"	0130160	0130175
1"	1.008"	1.417"	0.071"	0130161	0130176
1-1/8"	1.244"	1.772"	0.079"	0130162	0130177
1-3/8"	1.496"	2.126"	0.098"	0130163	0130178

Lock Washers

Steel Nord-Lock® Vibration Resistant Washers



The Delta Protekt finished Nord-Lock® system consists of a pair of washers with a wedge-locking action, which is a unique method that uses tension instead of friction. The key is the difference in angles. Since the angle "a" is larger than the angle "B", the pair of washers expand more than the corresponding pitch of the thread. Nord-Lock® washers positively lock the fastener in a joint which is subjected to extreme vibration or dynamic loads. This unique bolt securing system uses tension to make the bolt self-locking.

Inner Diameter	Outer Diameter	Nominal Size	Nominal Thickness	Bag Packaging Part No.	Box Packaging Part No.
0.130"	0.280"	#5/M3	0.070"	0167035	0129500
0.150"	0.300"	#6/M3.5	0.070"	0184752	0184751
0.150"	0.350"	#6/M3.5	0.070"	0184759	0184758
0.170"	0.300"	#8/M4	0.070"	0184766	0129501
0.170"	0.350"	#8/M4	0.070"	0167037	0184771
0.210"	0.350"	#10/M5	0.070"	0162562	0129502
0.210"	0.430"	#10/M5	0.070"	0167038	0184781
0.260"	0.430"	M6	0.070"	0167039	0129503
0.260"	0.530"	M6	0.100"	0167040	0129504
0.280"	0.450"	1/4"	0.070"	0162563	0184787
0.280"	0.530"	1/4"	0.100"	0167041	0184789
0.340"	0.530"	5/16"/M8	0.100"	0162564	0129505
0.340"	0.650"	5/16"/M8	0.100"	0167042	0129506
0.410"	0.650"	3/8"	0.100"	0162565	0184799
0.410"	0.830"	3/8"	0.100"	0167045	0184801
0.420"	0.650"	M10	0.100"	0167043	0129507
0.420"	0.830"	M10	0.100"	0167044	0129508
0.450"	0.730"	7/16"/M11	0.100"	0167046	0129509
0.510"	0.770"	M12	0.100"	0167047	0129510
0.510"	1.000"	M12	0.130"	0167048	0129511
0.530"	0.770"	1/2"	0.100"	0162566	0184807
0.530"	1.000"	1/2"	0.130"	0167049	0184809
0.600"	0.910"	9/16"/M14	0.130"	0167050	0129512
0.600"	1.210"	9/16"/M14	0.130"	0167051	0129513
0.670"	1.000"	5/8"/M16	0.130"	0162567	0129514
0.670"	1.210"	5/8"/M16	0.130"	0167052	0129515
0.770"	1.140"	M18	0.130"	0167053	0129516
0.790"	1.210"	3/4"	0.130"	0162568	0184830
0.790"	1.540"	3/4"	0.130"	0167057	0184832
0.840"	1.210"	M20	0.130"	0167055	0129517
0.840"	1.540"	M20	0.130"	0184834	0129518
0.920"	1.360"	7/8"/M22	0.130"	0167058	0129519
0.920"	1.650"	7/8"/M22	0.180"	0167059	0129520
1.000"	1.540"	M24	0.130"	0167060	0129521
1.000"	1.910"	M24	0.180"	0167061	0129522
1.100"	1.540"	1"	0.130"	0162569	0129523
1.100"	1.910"	1"	0.180"	0167062	0129524
1.120"	1.910"	M27	0.260"	-	0129526
1.240"	1.850"	1-1/8"/M30	0.230"	0167065	0129527
1.240"	2.300"	1-1/8"/M30	0.260"	0184852	0184851
1.350"	1.910"	1-1/4"/M33	0.260"	0167066	0129528
1.470"	2.170"	1-3/8"/M36	0.260"	0167067	0129529
1.590"	2.300"	1-1/2"/M39	0.260"	0167068	0129530
1.700"	2.480"	M42	0.260"	0167069	0129531
1.820"	2.760"	1-3/4"/M45	0.280"	11121928	-
1.950"	2.950"	M48	0.280"	11121929	-
2.110"	3.150"	2"/M52	0.280"	11121930	-