

EMI/RFI Grounding Washers (2500 Series)

EMI/RFI grounding washers are manufactured from knitted wire mesh stocking that is formed into a resilient metal washer by compressing in a close-tolerance forming die. The grounding washer can be supplied in various diameters and thicknesses to satisfy the many requirements as indicated in the Applications shown in Figures 1 through 4.

By varying the weight of the stocking mesh inserted into the compression die, the density of the washers can be varied, thus increasing or decreasing unit resilience, depending on the needs of the specific application. Washers with a metal density of 15 to 20 percent will “flow” under compression and thus will fill a gap or seam under minimal pressure (10 psi).

A grounding washer with a metal density of 30 to 40 percent provides a snug fit around a shaft or rod, but when compressed against the wall of a metal enclosure (as shown in Figure 3) will act as a slip-ring thus grounding the rotating shaft to enclosure. This eliminates the possibility of the shaft acting as an antenna to radiate or pick up unwanted noises.

The all-metallic construction of the grounding washers that can be supplied in varying alloys makes them especially effective in hostile environments of temperature or chemicals.

Design Data

Applications

Figures 1 through 4 show some of the possible mounting methods for grounding washers.

Figure 1
With Washer & Jam Nut

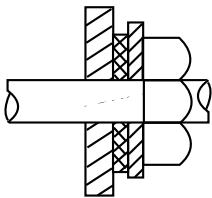


Figure 2
With Shaft Shoulder

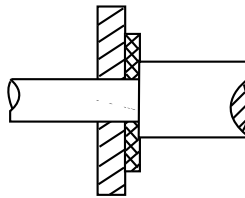


Figure 3
With Positive Stop Cup Washer

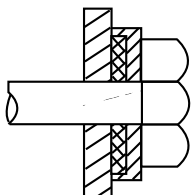
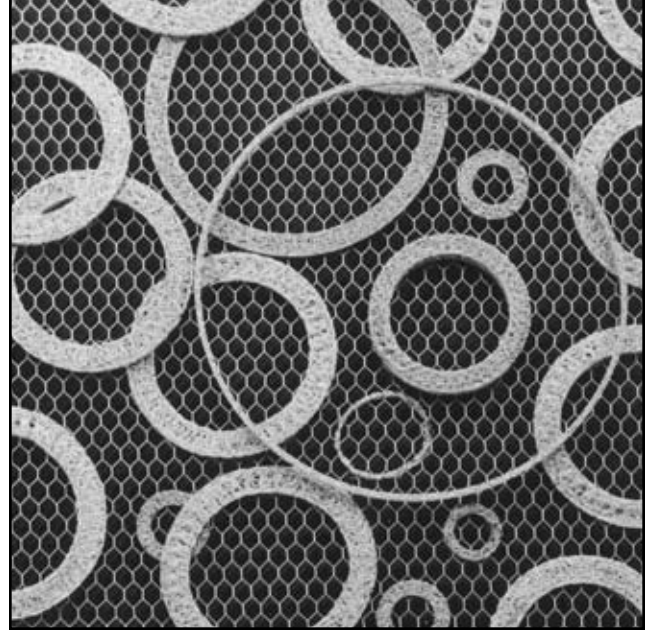
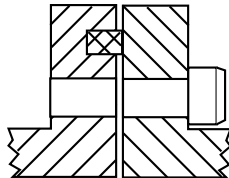


Figure 4
Mounted in Flange Groove



Features

- Resiliency:** Grounding washers, when designed into applications that require recovery after the unit has been deflected, can be supplied in a resiliency that will return to 90 to 95 percent of free height after deflection of 25 percent.
- All Metallic Construction:** For applications requiring grounding where the temperature and chemical environments are extreme, MAJR can supply grounding washers in a variety of wire types.
- Density Variations:** Grounding washers can be supplied in varying metal densities from 15 to 40 percent to satisfy the compressibility or vary the snugness of fit on a rotating shaft.
- Multiple Applications:** The compact construction of the metallic grounding washer makes the unit suitable for applications where the unit is in compression, rotating or shear, without degrading the effectiveness of unit conductivity.

Available Sizes

Table 1 — Grounding Washer Diameters

Part Number	O.D.	I.D.
2501-70005-xx	0.218	0.062
2501-70007-xx	0.375	0.250
2501-70009-xx	0.030	0.000
2501-70010-xx	1.000	0.500
2501-70015-xx	0.234	0.109
2501-70020-xx	0.500	0.250
2501-70027-xx	0.635	0.500
2501-70076-xx	1.120	0.810
2501-70078-xx	0.906	0.593
2501-70079-xx	2.322	2.202
2501-70084-xx	1.370	1.120
2501-70092-xx	0.750	0.228
2501-70094-xx	0.062	0.000
2501-70106-xx	1.425	1.043
2501-70108-xx	1.437	1.063
2501-70109-xx	1.437	1.083
2501-70110-xx	1.437	1.102
2501-70115-xx	0.255	0.150
2501-70117-xx	0.885	0.625
2501-70118-xx	0.630	0.550
2501-70119-xx	1.380	1.250
2501-70120-xx	0.380	0.250
2501-70121-xx	0.880	0.810
2501-70122-xx	0.635	0.375
2501-70134-xx	0.937	0.687
2501-70135-xx	0.625	0.469
2501-70136-xx	1.620	1.125
2501-70137-xx	2.130	1.600
2501-70138-xx	2.130	1.600
2501-70144-xx	0.875	0.375
2501-70145-xx	0.345	0.185
2501-70150-xx	2.125	1.812
2501-70158-xx	1.500	1.000
2501-70160-xx	2.950	2.875
2501-70170-xx	2.642	2.562
2501-70180-xx	0.910	0.790
2501-70200-xx	0.750	0.250
2501-70300-xx	0.225	0.130
2501-70310-xx	0.410	0.250
2501-70320-xx	0.350	0.175
2501-70350-xx	0.906	0.344
2501-70360-xx	0.550	0.200
2501-70500-xx	0.875	0.344
2501-70501-xx	0.875	0.315
2501-70502-xx	0.275	0.180
2501-70503-xx	0.300	0.150
2501-70504-xx	0.240	0.187
2501-70600-xx	1.370	0.750
2501-70650-xx	2.625	0.450
2501-70700-xx	0.500	0.200
2501-70710-xx	0.450	0.170
2501-70720-xx	1.250	0.315
2501-70730-xx	1.880	0.680
2501-70740-xx	1.000	0.300
2501-70750-xx	1.800	0.480
2501-70755-xx	1.100	0.315
2501-70756-xx	0.900	0.480
2501-70800-xx	0.394	0.323
2501-70950-xx	1.375	1.125

* xx: See Table 3 for material codes.

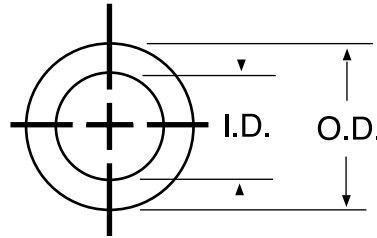


Table 2 shows washer sizes that can readily be supplied from existing tooling. Thickness can be varied from .032 to .125.

Tolerances

Table 2

Sizes	O.D.	I.D.
Up to 1 (Up to 25.40)	+0.015, -0.000 (+0.38)	+0.000, -0.015 (-0.38)
1 to 2 (25.40 to 50.80)	+0.020, -0.000 (+0.51)	+0.000, -0.020 (-0.51)
2 to 3 (50.80 to 76.20)	+0.025, -0.000 (+0.63)	+0.000, -0.025 (-0.63)
3 to 4 (76.20 to 101.60)	+0.030, -0.000 (+0.76)	+0.000, -0.030, (-0.76)
Over 4 (101.60)	+0.040, -0.000 (+1.02)	+0.000, -0.040 (-1.02)

Materials

Grounding washers can be supplied using knit wire mesh of the following materials:

Table 3

Code	Description
-31	Monel per QQ-N-281 Class A
-32	Aluminum
-33	Silver Plated Brass per QQ-W-321 (3% Silver by Weight)
-34	Tin Plated Copper Clad Steel per ASTM B520
-53	Beryllium Copper