



For applications requiring a resilient grounding medium with vibration dampening capabilities, Laird Technologies now manufactures a knitted wire washer. Designed for use in compression or rotary applications, these washers can be made in a variety of sizes and shapes.

The interlocking loop structure of the fine wire mesh in the compressed washer shape acts as a spring. The force of that spring is controlled by varying the washer material density.

The fine wire alloy materials can be varied to meet the demands of the most hostile environment—e.g., salt fog, harsh chemicals, extremes of heat or cold.

- Effective grounding combined with vibration dampening, for applications such as PC board mounting
- Spring action, provided by the wire knit mesh's interlocking loop structure. We will vary the material density to provide the spring force you specify.
- Wide choice of materials. Choose from the metal or alloy that best suits your needs: beryllium copper, Monel®, aluminum, tin plated steel or stainless steel.
- Other alloys available upon request.

#### Applications

ElectroGround™ washers can be used in compression or rotary applications. See Figures 1 through 4 below.



▲ Three variables—size, density, and the metal or alloy of the mesh—can be controlled to give you the optimum configuration of properties.

FIGURE 1.  
WITH WASHER AND JAM NUT

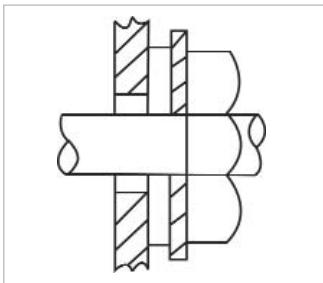


FIGURE 2.  
WITH SHAFT SHOULDER

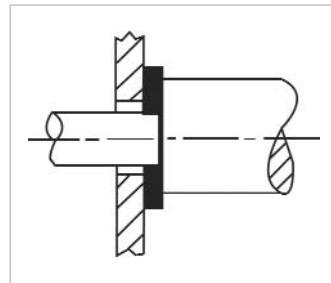


FIGURE 3.  
WITH POSITIVE STOP CUP WASHER

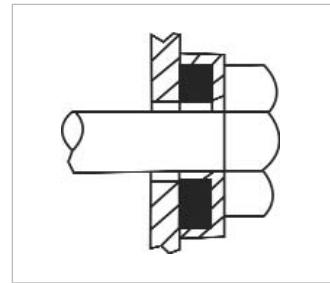
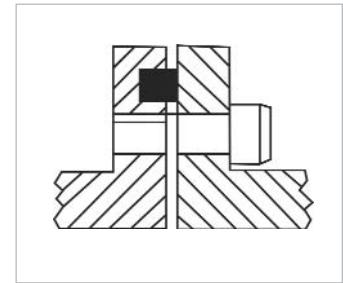


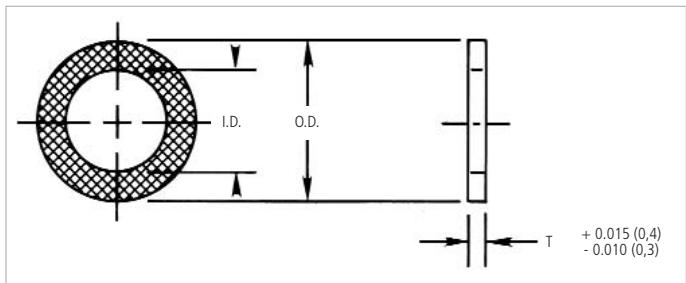
FIGURE 4.  
MOUNTED IN FLANGE GROOVE



# ELECTROGROUND® EMI WASHERS



**FIGURE 5. ELECTROGROUND WASHER DIMENSIONS**



## ELECTROGROUND WASHER SIZES, MATERIALS AND TOLERANCES

**TABLE 1. DIMENSIONS**

Laird Technologies Part No.	O.D.	I.D.	Free Height Maximum "T"
8904-0178-XX	0.200 (5,1)	0.125 (3,2)	0.032 (0,8)
8905-0178-XX	0.200 (5,1)	0.125 (3,2)	0.062 (1,6)
8906-0178-XX	0.200 (5,1)	0.125 (3,2)	0.093 (2,4)
8907-0178-XX	0.200 (5,1)	0.125 (3,2)	0.125 (3,2)
8908-0178-XX	0.200 (5,1)	0.125 (3,2)	0.156 (4,0)
8909-0178-XX	0.200 (5,1)	0.125 (3,2)	0.187 (4,7)
8910-0178-XX	0.200 (5,1)	0.125 (3,2)	0.250 (6,4)
8904-0107-XX	0.223 (5,7)	0.052 (1,3)	0.032 (0,8)
8902-0107-XX	0.223 (5,7)	0.052 (1,3)	0.062 (1,6)
8905-0107-XX	0.223 (5,7)	0.052 (1,3)	0.093 (2,4)
8901-0107-XX	0.223 (5,7)	0.052 (1,3)	0.125 (3,2)
8906-0107-XX	0.223 (5,7)	0.052 (1,3)	0.156 (4,0)
8907-0107-XX	0.223 (5,7)	0.052 (1,3)	0.187 (4,7)
8908-0107-XX	0.223 (5,7)	0.052 (1,3)	0.250 (6,4)
8902-0109-XX	0.225 (5,7)	0.120 (3,0)	0.032 (0,8)
8904-0109-XX	0.225 (5,7)	0.120 (3,0)	0.062 (1,6)
8905-0109-XX	0.225 (5,7)	0.120 (3,0)	0.093 (2,4)
8906-0109-XX	0.225 (5,7)	0.120 (3,0)	0.125 (3,2)
8907-0109-XX	0.225 (5,7)	0.120 (3,0)	0.156 (4,0)
8903-0109-XX	0.225 (5,7)	0.120 (3,0)	0.187 (4,7)
8908-0109-XX	0.225 (5,7)	0.120 (3,0)	0.250 (6,4)
8902-0118-XX	0.255 (6,5)	0.150 (3,8)	0.032 (0,8)
8906-0118-XX	0.255 (6,5)	0.150 (3,8)	0.062 (1,6)
8907-0118-XX	0.255 (6,5)	0.150 (3,8)	0.093 (2,4)
8904-0118-XX	0.255 (6,5)	0.150 (3,8)	0.125 (3,2)
8908-0118-XX	0.255 (6,5)	0.150 (3,8)	0.156 (4,0)
8901-0118-XX	0.255 (6,5)	0.150 (3,8)	0.187 (4,7)
8909-0118-XX	0.255 (6,5)	0.150 (3,8)	0.250 (6,4)
8902-0116-XX	0.375 (9,5)	0.240 (6,1)	0.032 (0,8)
8903-0116-XX	0.375 (9,5)	0.240 (6,1)	0.062 (1,6)

**TABLE 1. DIMENSIONS (continued)**

Laird Technologies Part No.	O.D.	I.D.	Free Height Maximum "T"
8901-0116-XX	0.375 (9,5)	0.240 (6,1)	0.093 (2,4)
8904-0116-XX	0.375 (9,5)	0.240 (6,1)	0.125 (3,2)
8905-0116-XX	0.375 (9,5)	0.240 (6,1)	0.156 (4,0)
8906-0116-XX	0.375 (9,5)	0.240 (6,1)	0.187 (4,7)
8907-0116-XX	0.375 (9,5)	0.240 (6,1)	0.250 (6,4)
8901-0117-XX	0.375 (9,5)	0.187 (4,8)	0.032 (0,8)
8905-0117-XX	0.375 (9,5)	0.187 (4,8)	0.062 (1,6)
8903-0117-XX	0.375 (9,5)	0.187 (4,8)	0.093 (2,4)
8902-0117-XX	0.375 (9,5)	0.187 (4,8)	0.125 (3,2)
8911-0117-XX	0.375 (9,5)	0.187 (4,8)	0.156 (4,0)
8912-0117-XX	0.375 (9,5)	0.187 (4,8)	0.187 (4,7)
8904-0117-XX	0.375 (9,5)	0.187 (4,8)	0.250 (6,4)
8909-0102-XX	0.459 (11,7)	0.335 (8,5)	0.032 (0,8)
8901-0102-XX	0.459 (11,7)	0.335 (8,5)	0.062 (1,6)
8910-0102-XX	0.459 (11,7)	0.335 (8,5)	0.093 (2,4)
8902-0102-XX	0.459 (11,7)	0.335 (8,5)	0.125 (3,3)
8911-0102-XX	0.459 (11,7)	0.335 (8,5)	0.156 (4,0)
8912-0102-XX	0.459 (11,7)	0.335 (8,5)	0.187 (4,7)
8905-0102-XX	0.459 (11,7)	0.335 (8,5)	0.250 (6,4)
8902-0110-XX	0.500 (12,7)	0.172 (4,4)	0.032 (0,8)
8903-0110-XX	0.500 (12,7)	0.172 (4,4)	0.062 (1,6)
8904-0110-XX	0.500 (12,7)	0.172 (4,4)	0.093 (2,4)
8901-0110-XX	0.500 (12,7)	0.172 (4,4)	0.125 (3,2)
8905-0110-XX	0.500 (12,7)	0.172 (4,4)	0.156 (4,0)
8906-0110-XX	0.500 (12,7)	0.172 (4,4)	0.187 (4,7)
8907-0110-XX	0.500 (12,7)	0.172 (4,4)	0.250 (6,4)
8907-0101-XX	0.500 (12,7)	0.212 (5,4)	0.032 (0,8)
8904-0101-XX	0.500 (12,7)	0.212 (5,4)	0.062 (1,6)
8901-0101-XX	0.500 (12,7)	0.212 (5,4)	0.093 (2,4)
8906-0101-XX	0.500 (12,7)	0.212 (5,4)	0.125 (3,2)
8908-0101-XX	0.500 (12,7)	0.212 (5,4)	0.156 (4,0)
8909-0101-XX	0.500 (12,7)	0.212 (5,4)	0.187 (4,7)
8902-0101-XX	0.500 (12,7)	0.212 (5,4)	0.250 (6,4)
8908-0122-XX	0.500 (12,7)	0.240 (6,1)	0.032 (0,8)
8909-0122-XX	0.500 (12,7)	0.240 (6,1)	0.062 (1,6)
8910-0122-XX	0.500 (12,7)	0.240 (6,1)	0.093 (2,4)
8903-0122-XX	0.500 (12,7)	0.240 (6,1)	0.125 (3,2)
8911-0122-XX	0.500 (12,7)	0.240 (6,1)	0.156 (4,0)
8912-0122-XX	0.500 (12,7)	0.240 (6,1)	0.187 (4,7)
8902-0122-XX	0.500 (12,7)	0.240 (6,1)	0.250 (6,4)
8904-0105-XX	0.500 (12,7)	0.312 (7,9)	0.032 (0,8)
8918-0105-XX	0.500 (12,7)	0.312 (7,9)	0.062 (1,6)
8919-0105-XX	0.500 (12,7)	0.312 (7,9)	0.093 (2,4)
8909-0105-XX	0.500 (12,7)	0.312 (7,9)	0.125 (3,2)
8903-0105-XX	0.500 (12,7)	0.312 (7,9)	0.156 (4,0)
8920-0105-XX	0.500 (12,7)	0.312 (7,9)	0.187 (4,7)
8910-0105-XX	0.500 (12,7)	0.312 (7,9)	0.250 (6,4)
8902-0108-XX	0.500 (12,7)	0.375 (9,5)	0.032 (0,8)
8907-0108-XX	0.500 (12,7)	0.375 (9,5)	0.062 (1,6)
8908-0108-XX	0.500 (12,7)	0.375 (9,5)	0.093 (2,4)
8909-0108-XX	0.500 (12,7)	0.375 (9,5)	0.125 (3,2)
8910-0108-XX	0.500 (12,7)	0.375 (9,5)	0.156 (4,0)
8906-0108-XX	0.500 (12,7)	0.375 (9,5)	0.187 (4,7)
8911-0108-XX	0.500 (12,7)	0.375 (9,5)	0.250 (6,4)

All dimensions shown are in inches (millimeters) unless otherwise specified.



TABLE 1. DIMENSIONS (continued)

Laird Technologies Part No.	O.D.	I.D.	Free Height Maximum "T"
8908-0125-XX	0.525 (13,3)	0.355 (9,0)	0.032 (0,8)
8909-0125-XX	0.525 (13,3)	0.355 (9,0)	0.062 (1,6)
8904-0125-XX	0.525 (13,3)	0.355 (9,0)	0.093 (2,4)
8910-0125-XX	0.525 (13,3)	0.355 (9,0)	0.125 (3,2)
8911-0125-XX	0.525 (13,3)	0.355 (9,0)	0.156 (4,0)
8912-0125-XX	0.525 (13,3)	0.355 (9,0)	0.187 (4,8)
8903-0125-XX	0.525 (13,3)	0.355 (9,0)	0.250 (6,4)
8902-0129-XX	0.625 (15,9)	0.250 (6,4)	0.032 (0,8)
8903-0129-XX	0.625 (15,9)	0.250 (6,4)	0.062 (1,6)
8904-0129-XX	0.625 (15,9)	0.250 (6,4)	0.093 (2,4)
8905-0129-XX	0.625 (15,9)	0.250 (6,4)	0.125 (3,2)
8906-0129-XX	0.625 (15,9)	0.250 (6,4)	0.156 (4,0)
8907-0129-XX	0.625 (15,9)	0.250 (6,4)	0.187 (4,7)
8908-0129-XX	0.625 (15,9)	0.250 (6,4)	0.250 (6,4)
8911-0130-XX	0.625 (15,9)	0.370 (9,4)	0.032 (0,8)
8914-0130-XX	0.625 (15,9)	0.370 (9,4)	0.062 (1,6)
8913-0130-XX	0.625 (15,9)	0.370 (9,4)	0.093 (2,4)
8915-0130-XX	0.625 (15,9)	0.370 (9,4)	0.125 (3,2)
8901-0130-XX	0.625 (15,9)	0.370 (9,4)	0.156 (4,0)
8917-0130-XX	0.625 (15,9)	0.370 (9,4)	0.187 (4,7)
8904-0130-XX	0.625 (15,9)	0.370 (9,4)	0.250 (6,4)
8903-0180-XX	0.625 (15,9)	0.460 (11,7)	0.032 (0,8)
8904-0180-XX	0.625 (15,9)	0.460 (11,7)	0.062 (1,6)
8905-0180-XX	0.625 (15,9)	0.460 (11,7)	0.093 (2,4)
8906-0180-XX	0.625 (15,9)	0.460 (11,7)	0.125 (3,2)
8907-0180-XX	0.625 (15,9)	0.460 (11,7)	0.156 (4,0)
8901-0180-XX	0.625 (15,9)	0.460 (11,7)	0.187 (4,7)
8908-0180-XX	0.625 (15,9)	0.460 (11,7)	0.250 (6,4)
8903-0135-XX	0.625 (15,9)	0.490 (12,4)	0.032 (0,8)
8918-0135-XX	0.625 (15,9)	0.490 (12,4)	0.062 (1,6)
8919-0135-XX	0.625 (15,9)	0.490 (12,4)	0.093 (2,4)
8911-0135-XX	0.625 (15,9)	0.490 (12,4)	0.125 (3,2)
8916-0135-XX	0.625 (15,9)	0.490 (12,4)	0.156 (4,0)
8902-0135-XX	0.625 (15,9)	0.490 (12,4)	0.187 (4,7)
8906-0135-XX	0.625 (15,9)	0.490 (12,4)	0.250 (6,4)
8902-0137-XX	0.689 (17,5)	0.374 (9,5)	0.032 (0,8)
8903-0137-XX	0.689 (17,5)	0.374 (9,5)	0.062 (1,6)
8904-0137-XX	0.689 (17,5)	0.374 (9,5)	0.093 (2,4)
8905-0137-XX	0.689 (17,5)	0.374 (9,5)	0.125 (3,2)
8901-0137-XX	0.689 (17,5)	0.374 (9,5)	0.156 (4,0)
8906-0137-XX	0.689 (17,5)	0.374 (9,5)	0.187 (4,7)
8907-0137-XX	0.689 (17,5)	0.374 (9,5)	0.250 (6,4)
8903-0177-XX	0.750 (19,1)	0.187 (4,7)	0.032 (0,8)
8901-0177-XX	0.750 (19,1)	0.187 (4,7)	0.062 (1,6)
8904-0177-XX	0.750 (19,1)	0.187 (4,7)	0.093 (2,4)
8905-0177-XX	0.750 (19,1)	0.187 (4,7)	0.125 (3,2)
8906-0177-XX	0.750 (19,1)	0.187 (4,7)	0.156 (4,0)
8907-0177-XX	0.750 (19,1)	0.187 (4,7)	0.187 (4,7)
8908-0177-XX	0.750 (19,1)	0.187 (4,7)	0.250 (6,4)
8910-0140-XX	0.750 (19,1)	0.490 (12,4)	0.032 (0,8)
8907-0140-XX	0.750 (19,1)	0.490 (12,4)	0.062 (1,6)
8911-0140-XX	0.750 (19,1)	0.490 (12,4)	0.093 (2,4)
8912-0140-XX	0.750 (19,1)	0.490 (12,4)	0.125 (3,2)
8913-0140-XX	0.750 (19,1)	0.490 (12,4)	0.156 (4,0)
8901-0140-XX	0.750 (19,1)	0.490 (12,4)	0.187 (4,7)
8902-0140-XX	0.750 (19,1)	0.490 (12,4)	0.250 (6,4)

TABLE 1. DIMENSIONS (continued)

Laird Technologies Part No.	O.D.	I.D.	Free Height Maximum "T"
8903-0145-XX	0.800 (20,3)	0.650 (16,5)	0.032 (0,8)
8909-0145-XX	0.800 (20,3)	0.650 (16,5)	0.062 (1,6)
8911-0145-XX	0.800 (20,3)	0.650 (16,5)	0.093 (2,4)
8906-0145-XX	0.800 (20,3)	0.650 (16,5)	0.125 (3,2)
8911-0145-XX	0.800 (20,3)	0.650 (16,5)	0.156 (4,0)
8912-0145-XX	0.800 (20,3)	0.650 (16,5)	0.187 (4,7)
8904-0145-XX	0.800 (20,3)	0.650 (16,5)	0.250 (6,4)
8912-0150-XX	1.000 (25,4)	0.750 (19,1)	0.032 (0,8)
8913-0150-XX	1.000 (25,4)	0.750 (19,1)	0.062 (1,6)
8914-0150-XX	1.000 (25,4)	0.750 (19,1)	0.093 (2,4)
8915-0150-XX	1.000 (25,4)	0.750 (19,1)	0.125 (3,2)
8916-0150-XX	1.000 (25,4)	0.750 (19,1)	0.156 (4,0)
8903-0150-XX	1.000 (25,4)	0.750 (19,1)	0.187 (4,7)
8902-0150-XX	1.000 (25,4)	0.750 (19,1)	0.250 (6,4)
8904-0157-XX	1.140 (29,0)	0.826 (21,0)	0.032 (0,8)
8903-0157-XX	1.140 (29,0)	0.826 (21,0)	0.062 (1,6)
8905-0157-XX	1.140 (29,0)	0.826 (21,0)	0.093 (2,4)
8906-0157-XX	1.140 (29,0)	0.826 (21,0)	0.125 (3,2)
8907-0157-XX	1.140 (29,0)	0.826 (21,0)	0.156 (4,0)
8908-0157-XX	1.140 (29,0)	0.826 (21,0)	0.187 (4,7)
8909-0157-XX	1.140 (29,0)	0.826 (21,0)	0.250 (6,4)
8902-0156-XX	1.250 (31,8)	1.000 (25,4)	0.032 (0,8)
8903-0156-XX	1.250 (31,8)	1.000 (25,4)	0.062 (1,6)
8904-0156-XX	1.250 (31,8)	1.000 (25,4)	0.093 (2,4)
8905-0156-XX	1.250 (31,8)	1.000 (25,4)	0.125 (3,2)
8906-0156-XX	1.250 (31,8)	1.000 (25,4)	0.156 (4,0)
8907-0156-XX	1.250 (31,8)	1.000 (25,4)	0.187 (4,7)
8901-0156-XX	1.250 (31,8)	1.000 (25,4)	0.250 (6,4)
8902-0171-XX	1.254 (31,9)	1.114 (28,3)	0.032 (0,8)
8903-0171-XX	1.254 (31,9)	1.114 (28,3)	0.062 (1,6)
8904-0171-XX	1.254 (31,9)	1.114 (28,3)	0.093 (2,4)
8905-0171-XX	1.254 (31,9)	1.114 (28,3)	0.125 (3,2)
8906-0171-XX	1.254 (31,9)	1.114 (28,3)	0.156 (4,0)
8907-0171-XX	1.254 (31,9)	1.114 (28,3)	0.187 (4,7)
8908-0171-XX	1.254 (31,9)	1.114 (28,3)	0.250 (6,4)
8905-0168-XX	1.375 (34,9)	0.875 (22,2)	0.032 (0,8)
8906-0168-XX	1.375 (34,9)	0.875 (22,2)	0.062 (1,6)
8907-0168-XX	1.375 (34,9)	0.875 (22,2)	0.093 (2,4)
8904-0168-XX	1.375 (34,9)	0.875 (22,2)	0.125 (3,2)
8908-0168-XX	1.375 (34,9)	0.875 (22,2)	0.156 (4,0)
8901-0168-XX	1.375 (34,9)	0.875 (22,2)	0.187 (4,7)
8909-0168-XX	1.375 (34,9)	0.875 (22,2)	0.250 (6,4)
8906-0170-XX	1.375 (34,9)	1.125 (28,6)	0.032 (0,8)
8907-0170-XX	1.375 (34,9)	1.125 (28,6)	0.062 (1,6)
8908-0170-XX	1.375 (34,9)	1.125 (28,6)	0.093 (2,4)
8901-0170-XX	1.375 (34,9)	1.125 (28,6)	0.125 (3,2)
8909-0170-XX	1.375 (34,9)	1.125 (28,6)	0.156 (4,0)
8904-0170-XX	1.375 (34,9)	1.125 (28,6)	0.187 (4,7)
8902-0170-XX	1.375 (34,9)	1.125 (28,6)	0.250 (6,4)
8906-0174-XX	1.540 (39,1)	1,340 (34,0)	0.032 (0,8)
8907-0174-XX	1.540 (39,1)	1,340 (34,0)	0.062 (1,6)
8908-0174-XX	1.540 (39,1)	1,340 (34,0)	0.093 (2,4)
8902-0174-XX	1.540 (39,1)	1,340 (34,0)	0.125 (3,2)
8909-0174-XX	1.540 (39,1)	1,340 (34,0)	0.156 (4,0)
8910-0174-XX	1.540 (39,1)	1,340 (34,0)	0.187 (4,7)
8905-0174-XX	1.540 (39,1)	1,340 (34,0)	0.250 (6,4)

All dimensions shown are in inches (millimeters) unless otherwise specified.

# ELECTROGROUND® EMI WASHERS



**TABLE 1. DIMENSIONS (continued)**

Laird Technologies Part No.	O.D.	I.D.	Free Height Maximum "T"
8903-0175-XX	1.625 (41,3)	1.125 (28,6)	0.032 (0,8)
8904-0175-XX	1.625 (41,3)	1.125 (28,6)	0.062 (1,6)
8905-0175-XX	1.625 (41,3)	1.125 (28,6)	0.093 (2,4)
8906-0175-XX	1.625 (41,3)	1.125 (28,6)	0.125 (3,2)
8907-0175-XX	1.625 (41,3)	1.125 (28,6)	0.156 (4,0)
8918-0175-XX	1.625 (41,3)	1.125 (28,6)	0.187 (4,7)
8909-0175-XX	1.625 (41,3)	1.125 (28,6)	0.250 (6,4)
8902-0176-XX	1.884 (47,9)	1.760 (44,7)	0.032 (0,8)
8901-0176-XX	1.884 (47,9)	1.760 (44,7)	0.062 (1,6)
8903-0176-XX	1.884 (47,9)	1.760 (44,7)	0.093 (2,4)
8904-0176-XX	1.884 (47,9)	1.760 (44,7)	0.125 (3,2)
8905-0176-XX	1.884 (47,9)	1.760 (44,7)	0.156 (4,0)
8916-0176-XX	1.884 (47,9)	1.760 (44,7)	0.187 (4,7)
8907-0176-XX	1.884 (47,9)	1.760 (44,7)	0.250 (6,4)

**TABLE 2. MATERIALS**

Material Code	Type	Wire Specification
40	Beryllium Copper	25 Alloy QQ-C-530
42	Mone®	QQ-N-281 Class A
43	Aluminum	5056 Alloy
44	Tin Plated Steel	ASTM B520
46	Stainless Steel	304

Other alloys available upon request.

**TABLE 3. TOLERANCES**

T Sizes	O.D.	I.D.
0.030 (0,8) to 0.062 (1,6)	± 0.010 (+0,3)	± 0.010 (+0,3)
0.062 (1,6) to 1.0 (25,4)	± 0.015 (+0,4)	± 0.015 (+0,4)
1.0 (25,4) to 2.0 (50,8)	± 0.020 (+0,5)	± 0.020 (+0,5)

## How to Specify

- From Table 1 on pages 25 to 27, determine the O.D., the I.D., and the thickness "T" of the ElectroGround washer that suits the specific application. Note: Please consult Laird Technologies sales department for sizes not shown in Table 1.
- From Table 2, insert material code in place of XX in base part number.
- For tolerances O.D. and I.D. refer to Table 3.

## Example:

- Dimensions required: O.D. = 0.200 I.D. = 0.125, and Thickness = 0.032 (from Table 1).
- Base Part Number: 8904-0178-XX (from Table 1).
- Material required is Beryllium Copper Code 40 (from Table 2).
- Full part number is 8904-0178-40.

All dimensions shown are in inches (millimeters) unless otherwise specified.