Knitted Wire Mesh Gasketing (1500 Series)

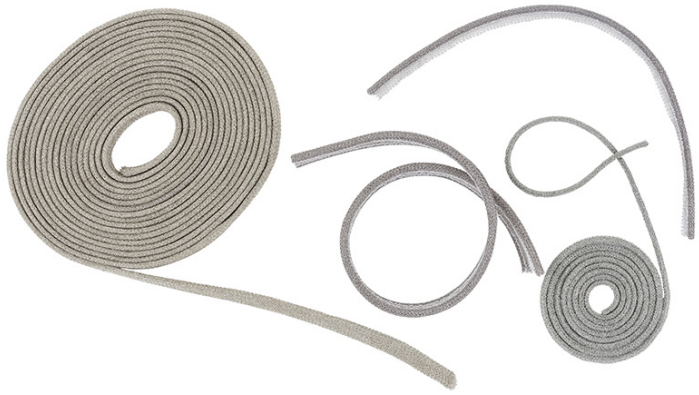
Knitted Wire Mesh Gasketing (1500 Series)

Product Summary

All Mesh EMI-RFI knitted wire gasketing is available in various cross sections to satisfy the many different requirements encountered in shielding applications. The choice between rectangular, round, round with fin or double round with fin depends on the enclosure or equipment to be shielded. Each strip has the same resiliency created by the knit construction but reacts differently dependent on material and shape. Of the most common materials used, Monel has the best spring factors while silver plated brass has the highest conductivity. All mesh gasketing which is rectangular or round is recommended for groove mounting while single round with fin or double round with fin is recommended for flat surfaces. Surface conditions must be clean and free from such contamination as paint or oil for good conductivity and there should be an even distribution of pressure continuously along the length of the gasket.

Product Application

Proven Design: EMI/RFI knitted wire gasketing has been the standard shielding product since its first use in 1944. Since that time, the product has been refined and new knit wire products have been introduced to the present state of the art products.



Versatility of Materials: MAJR provides the widest possible range of knit wire mesh materials. The standard knit wire mesh is either Monel or tin-plated ferrous. While these are standard, aluminum, silver-plated brass, and stainless steel is also available.

High EMI/RFI Attenuation Levels: The highest possible attenuation levels are achievable with MAJR's EMI/RFI knitted wire gasketing. Attenuation levels beyond 110 dB in the E-field and 60 dB in the H-field are common. Higher levels of attenuation are attainable with special materials and designs.

Resilient Gasketing Material: MAJR's knit wire gasketing material acts like thousands of tiny spring members that compress and release with each opening and closing The spring-like gaskets assure long life with consistent point-to-point contact, providing high shielding effectiveness and long life.

Mechanical & EMC Characteristics of All Mesh Strip

Shielding Effectiveness: Strip from lots are formed into gasket whose inner dimension is 12.00 x 12.00 inches (304.8 x 304.8 mm) Gasket is clamped in a test fixture with thickness deflected a minimum of 20%, EMI test is performed using MIL-STD 285 as a guide. The test is performed at frequencies from .2MHz through 10GHz. (See Table 1)

Shielding Effectiveness vs Frequency — Table 1

Shielding Effectiveness dB

Field	Material Code - 31 Monel Frequency							
	10 kHz	100 kHz	1 MHz	18 MHz	100 MHz	400 MHz	1 GHz	10 GHz
H	40	60	80	—	—	—	—	—
E	—	—	—	110	—	—	—	—
PW	—	—	—	—	110	110	110	100

Field	Material Code - 34 Ferrous Frequency							
	10 kHz	100 kHz	1 MHz	18 MHz	100 MHz	400 MHz	1 GHz	10 GHz
H	65	90	100	—	—	—	—	—
E	—	—	—	110	—	—	—	—
PW	—	—	—	—	110	110	110	100

Compression

Deflection and recovery characteristics of Knit Wire Mesh Strips are evaluated periodically in accordance with ASTM D395-61.

In order to be assured of obtaining comparable results to those shown in these curves, good design practices must be utilized.

Figure 1
For All Mesh Rectangular .12 x .25

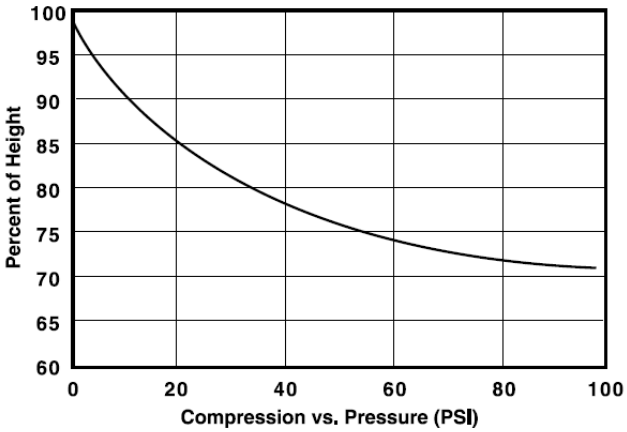


Figure 2
For All Mesh Round .25 Dia

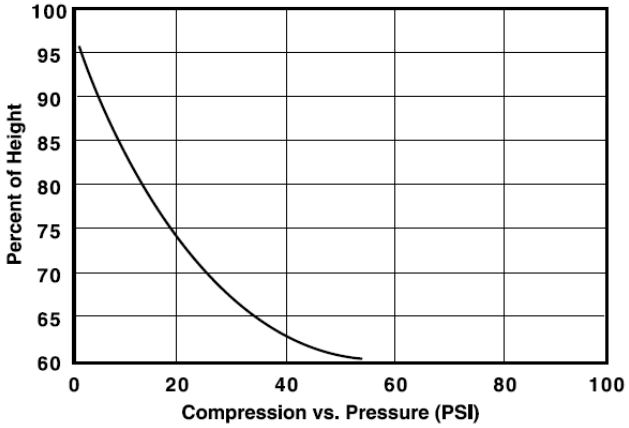
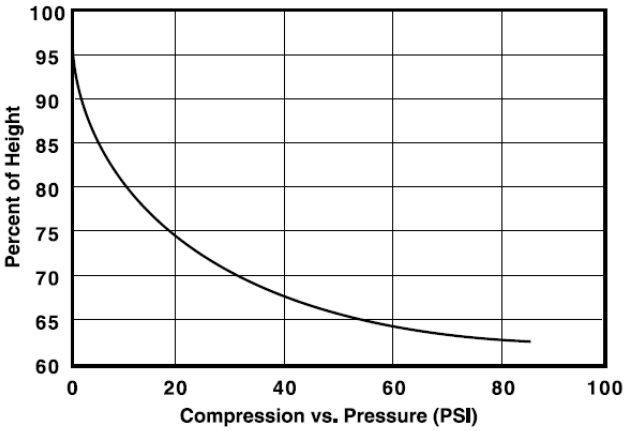
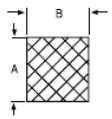
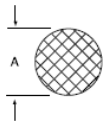
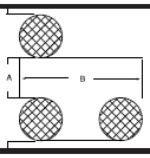


Figure 3
For All Mesh Double Round .25 x 1.00



MAJR PRODUCTS

Size vs Tolerance — Table 2

SHAPE	SIZE RANGE	TOLERANCE DIM A	TOLERANCE DIM B
	to .18 (4.57) .19 - .38 (4.83 - 9.65) .39 - .50 (9.91 - 12.70) .51 - 1.00 (!@.95 - 25.40)	+.02-0 (+.51-0) +.03-0 (+.76-0) +.046-0 (+1.17-0) +.062-0 (+1.57-0)	+.02-0 (+.51-0) +.03-0 (+.76-0) +.046-0 (+1.17-0) +.062-0 (+1.57-0)
	to .12 (3.05) .13 to .38 (3.30 - 9.65) .39 to .50 (9.91 - 12.70) .51 to 1.00 (12.95 - 25.40)	+.02-0 (+.51-0) +.03-0 (+.76-0) +.046-0 (+1.17-0) +.062-0 (+1.57-0)	— — — —
	to .18 (4.57) .19 - .38 (4.83 - 9.65) .39 - .50 (9.91 - 12.70) .51 - 1.00 (12.95 - 25.40)	+.02-0 (+.51-0) +.03-0 (+.76-0) +.046-0 (+1.17-0) +.062-0 (+1.57-0)	NA +.06-03 (+1.52-.76) + .06 (+1.52) +.09-.06 (+2.29-1.52)

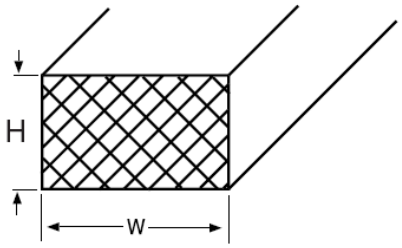
Note: Dimension A measured under 4 oz. (11.34 gms.)

Standard Knit Wire Mesh Gasketing

All mesh EMI/RFI knitted wire gasketing is provided in a great variety of metals. The two metals whose part numbers are shown in Tables 1, 2, 3, and 4 are most common. The most common shapes are rectangular and round. Both rectangular and round gasketing are recommended where a groove is provided to hold the strip. All of these EMI/RFI strips are provided by the foot and sold on spools in continuous lengths. The shape and material best suited to a set of conditions can be chosen by comparing the specifications shown. The mechanical compression and electrical shielding characteristics will assure the shielding required.

All Mesh Rectangular Strip

Table 3

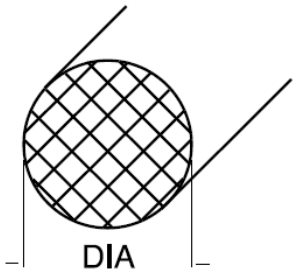


HEIGHT H	WIDTH W	Monel Part Number	Ferrous Part Number (Copper & Tin Plated)
.062 (1.57)	.062 (1.57)	1510-06006-31	1510-06006-34
.062 (1.57)	.125 (3.18)	1510-06012-31	1510-06012-34
.062 (1.57)	.187 (4.75)	1510-06018-31	1510-06018-34
.062 (1.57)	.312 (7.92)	1510-06031-31	1510-06031-34
.062 (1.57)	.375 (9.53)	1510-06038-31	1510-06038-34
.062 (1.57)	.500 (12.70)	1510-06050-31	1510-06050-34
.093 (2.36)	.093 (2.36)	1510-09009-31	1510-09009-34
.093 (2.36)	.125 (3.18)	1510-09012-31	1510-09012-34
.093 (2.36)	.187 (4.75)	1510-09018-31	1510-09018-34
.093 (2.36)	.250 (6.35)	1510-09025-31	1510-09025-34
.093 (2.36)	.375 (9.53)	1510-09038-31	1510-09038-34
.125 (3.18)	.125 (3.18)	1510-12012-31	1510-12012-34
.125 (3.18)	.187 (4.75)	1510-12018-31	1510-12018-34
.125 (3.18)	.250 (6.35)	1510-12025-31	1510-12025-34
.125 (3.18)	.312 (7.92)	1510-12031-31	1510-12031-34
.125 (3.18)	.375 (9.53)	1510-12038-31	1510-12038-34
.125 (3.18)	.500 (12.70)	1510-12050-31	1510-12050-34
.125 (3.18)	.750 (19.05)	1510-12075-31	1510-12075-34
.125 (3.18)	1.000 (25.40)	1510-12100-31	1510-12100-34
.187 (4.75)	.187 (4.75)	1510-18018-31	1510-18018-34
.187 (4.75)	.250 (6.35)	1510-18025-31	1510-18025-34
.187 (4.75)	.312 (7.92)	1510-18031-31	1510-18031-34
.250 (6.35)	.250 (6.35)	1510-25025-31	1510-25025-34
.250 (6.35)	.312 (7.92)	1510-25031-31	1510-25031-34
.250 (6.35)	.375 (9.53)	1510-25038-31	1510-25038-34
.250 (6.35)	.500 (12.70)	1510-25050-31	1510-25050-34
.375 (9.53)	.375 (9.53)	1510-38038-31	1510-38038-34

Note: Aluminum, brass (silver-plated) and other materials are available in sizes above. Other sizes are available upon request.

All Mesh Round Strip

Table 4

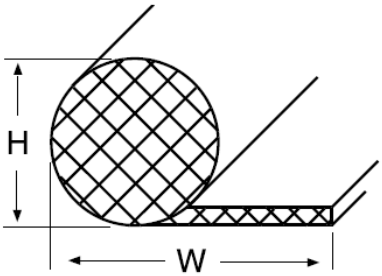


Diameter	Monel Part Number	Ferrous Part Number (Copper & Tin Plated)
.062 (1.57)	1511-06000-31	1511-06000-34
.093 (2.36)	1511-09000-31	1511-09000-34
.125 (3.18)	1511-12000-31	1511-12000-34
.156 (3.96)	1511-16000-31	1511-16000-34
.187 (4.75)	1511-18000-31	1511-18000-34
.250 (6.35)	1511-25000-31	1511-25000-34
.312 (7.92)	1511-31000-31	1511-34000-34
.375 (9.53)	1511-38000-31	1511-38000-34
.500 (12.70)	1511-50000-31	1511-50000-34

Note: Aluminum, brass (silver-plated) and other materials are available in sizes above. Other sizes are available upon request.

All Mesh Single Round with Fin Strip

Table 5

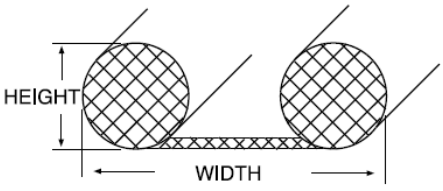


HEIGHT Round Portion	WIDTH Fin Portion	Monel Part Number	Ferrous Part Number (Copper & Tin Plated)
.062 (1.57)	.375 (9.53)	1512-06038-31	1512-06038-34
.062 (1.57)	.500 (12.70)	1512-06050-31	1512-06050-34
.093 (2.36)	.500 (12.70)	1512-09050-31	1512-09050-34
.125 (3.18)	.375 (9.53)	1512-12038-31	1512-12038-34
.125 (3.18)	.625 (15.88)	1512-12063-31	1512-12063-34
.125 (3.18)	.750 (19.05)	1512-12075-31	1512-12075-34
.156 (3.96)	.500 (12.70)	1512-16050-31	1512-16050-34
.187 (4.75)	.625 (15.88)	1512-18063-31	1512-18063-34
.250 (6.35)	.500 (12.70)	1512-25050-31	1512-25050-34
.250 (6.35)	.750 (19.05)	1512-25075-31	1512-25075-34
.250 (6.35)	1.000 (25.40)	1512-25100-31	1512-25100-34
.312 (7.92)	.625 (15.88)	1512-31063-31	1512-31063-34
.312 (7.92)	.875 (22.23)	1512-31087-31	1512-31087-34
.375 (9.53)	1.000 (25.40)	1512-38100-31	1512-38100-34
.437 (11.10)	1.000 (25.40)	1512-44100-31	1512-44100-34
.500 (12.70)	1.000 (25.40)	1512-50100-31	1512-50100-34

Note: Aluminum, brass (silver-plated) and other materials are available in sizes above. Other sizes are available upon request.

All Mesh Double Round with Fin Strip

Table 6



Round HEIGHT	Connecting WIDTH	Monel Part Number	Ferrous Part Number (Copper & Tin Plated)
.062 (1.57)	.500 (12.70)	1514-06050-31	1514-06050-34
.125 (3.18)	.500 (12.70)	1514-12050-31	1514-12050-34
.125 (3.18)	.750 (19.05)	1514-12075-31	1514-12075-34
.125 (3.18)	1.000 (25.40)	1514-12100-31	1514-12100-34
.187 (4.75)	.625 (15.88)	1514-18063-31	1514-18063-34
.187 (4.75)	1.000 (25.40)	1514-18100-31	1514-18100-34
.250 (6.35)	.750 (19.05)	1514-25075-31	1514-25075-34
.250 (6.35)	1.000 (25.40)	1514-25100-31	1514-25100-34
.375 (9.53)	1.000 (25.40)	1514-38100-31	1514-38100-34

Note: Aluminum, brass (silver-plated) and other materials are available in sizes above. Other sizes are available upon request.

Phone: (814) 763-3211 | Fax: (814) 763-2952 | email: sales@majr.com | www.majr.com