

Compressed Mesh Gaskets

DESCRIPTION

Chomerics compressed mesh gaskets provide excellent EMI shielding and grounding properties. Fabricated by seamlessly die compressing knitted wire mesh into a wide range of shapes and varied resiliencies, they are available in 7 standard metal wire choices. These choices include Monel, Ferrex® (Chomerics trade name for tin-plated, copper-clad steel wire), stainless steel, aluminum, irridited aluminum, Inconel® 600 (INCO's trade name for nickel-chromium-iron wire) and silver plated brass. Parts are normally supplied as medium density, however soft and hard densities are available by varying the volume of compressed mesh. Rubber O-rings can also be compressed inside the mesh to further change the compression/deflection. Over molding a rubber or plastic around the compressed mesh part is a Chomerics capability. An optional crimping process of the knitted mesh prior to die compressing can add further resiliency.



Compressed mesh gaskets are designed for applications requiring small round or rectangular EMI seals for applications in waveguide choke flanges, shafts or small housings. Due to their high compression set, they are not recommended where mating joints must be opened and closed. The gaskets are held in place by sidewall friction in tight slots/grooves or slipped over a shaft. Since they are compressed, the gaskets need no allowance for material flow or lateral deflection. Width and material permitting, bolt holes, recessed areas, corner radii and other features can be formed in the gasket wall.

In addition, compressed mesh gaskets are especially appropriate in the following applications:

- Where foam core gaskets don't provide sufficient shielding
- In temperature extreme environments
- When a positive DC ground is required between two metallic surfaces
- When one of the mating surfaces requires a compressed mesh gaskets' multiple contact points for "bite-through"
- Grounding washers

Examples include: SMA connectors; industrial machinery connectors to faceplates; and connectors for telecommunications, aerospace, military and consumer applications where moisture or pressure sealing is not a requirement. However, for small cross section combination EMI/environmental or pressure seals, conductive elastomer molded or extruded/spliced O-rings are recommended. Compressed mesh gaskets formed with certain alloys can be used at temperatures exceeding 800° F (427° C) with no change to their resilience.

Chomerics compressed mesh gaskets can also be used for requirements such as:

- Vibration dampening and shock absorption
- Air/liquid filtration and particle retention
- Acoustic noise reduction
- Mechanical spacers, mounts, support parts and flexible joint seals
- Flame arrestors and heat seals

Compressed mesh gaskets are used for these requirements in the automotive, industrial equipment and power tool industries and in small to medium scale internal combustion/electric engine applications. Chomerics capabilities in knitting wire together with a plastic or other nonmetallic can also enhance the desired performance characteristics for these applications.

ORDERING PROCEDURE:

Standard Washers: See the enclosed table (next page) for standard washers. Chomerics will tool (free of charge) a new standard washer or ring as long as an order for 5000 parts accompanies the drawing release.

Rectangular Gaskets: Specify outside and inside dimensions, wall width and thickness.		
	Minimum	Maximum
Length/width	.500 x .500 inches	4.250 x 2.250 inches
Thickness	.062 inches	1.000 inches
Wall Width	.062 inches	1.000 inches
Hole diameters	.062 inches	.250 inches

Custom Gaskets: For custom compressed mesh gasket design or material, consult Chomerics Applications Engineering Department.

Part Density: Specify density as heavy or light; medium will be used if not otherwise specified. General properties of the three range of densities:

1. Light Density will produce a fluffy part usually without well defined corners and edge features. Knitted wire mesh content as a percent of volume is 9 to 13%.
2. Medium Density produces a part with well defined shape and features with generally the best combination of compression/load/deflection application properties. Knitted wire mesh content as a percent of volume is 14 to 16%.
3. Heavy Density produces a part with the best geometry definition but requires more flange force to get the desired 10% compression for optimum shielding/grounding. Knitted wire mesh content as a percent of volume is 17 to 22%.

Other Design Options:

- A specifically requested part weight (tolerance range +/- 5%)
- Crimping of the wire mesh prior to die forming
- Irriditing the finished part to Mil-C-5541 class 3
- Other final part finishing such as cadmium plating
- Introduction of a nylon or other plastic fiber with wire in the knitting process to vary the application properties or create a "fused" final part structure
- Bonding the compressed mesh gasket to a die cut neoprene or silicone gasket
- Rubber O-ring compressed inside the mesh
- Over molding a rubber or plastic around the compressed mesh part



Selection Table for Compressed Mesh Grounding Washers

Outside Diameter
A

Inside Diameter
B

Maximum Thickness
C



Part Number	Nominal Dimensions (inch)			Nominal Dimensions (mm)		
	A	B	C	A	B	C
02-xxxx-5799-yy	0.301	0.215	0.110	7.65	5.46	2.79
02-xxxx-5689-yy	0.410	0.175	0.125	10.41	4.45	3.18
02-xxxx-5671-yy	0.565	0.426	0.138	14.35	10.82	3.51
02-xxxx-0527-yy	0.566	0.426	0.090	14.38	10.82	2.29
02-xxxx-E204-yy	0.625	0.375	0.250	15.88	9.53	6.35
02-xxxx-0815-yy	0.738	0.250	0.062	18.75	6.35	1.57
02-xxxx-F099-yy	0.860	0.500	0.140	21.84	12.70	3.56
02-xxxx-A093-yy	1.000	0.750	0.125	25.40	19.05	3.18
02-xxxx-5688-yy	1.045	0.765	0.063	26.54	19.43	1.60
02-xxxx-2413-yy	1.125	1.000	0.062	28.58	25.40	1.57
02-xxxx-2104-yy	1.349	1.255	0.125	34.26	31.88	3.18
02-xxxx-5805-yy	1.376	0.749	0.062	34.95	19.02	1.57
02-xxxx-0586-yy	1.380	1.218	0.060	35.05	30.94	1.52
02-xxxx-0240-yy	1.520	1.240	0.130	38.61	31.50	3.30
02-xxxx-0017-yy	1.563	1.350	0.077	39.70	34.29	1.96
02-xxxx-5744-yy	1.619	1.374	0.510	41.12	34.90	12.95
02-xxxx-0177-yy	1.625	1.375	0.188	41.28	34.93	4.78
02-xxxx-2282-yy	1.687	0.375	0.062	42.85	9.53	1.57
02-xxxx-5803-yy	2.188	2.000	0.156	55.58	50.80	3.96
02-xxxx-A152-yy	2.250	2.000	0.093	57.15	50.80	2.36
02-xxxx-0444-yy	3.438	3.188	0.094	87.33	80.98	2.39

Sizes	TOLERANCES	
	O.D.	I.D.
Up to 1.00" (Up to 25.4mm)	+0.015, -0.000 (+0.38, -0.0)	+0.000, -0.015 (+0.0, -0.38)
1.01" to 2.00" (25.7 to 50.8)	+0.020, -0.000 (+0.51, -0.0)	+0.000, -0.020 (+0.0, -0.51)
2.01" to 3.00" (51.1 to 76.2)	+0.025, -0.000 (+0.63, -0.0)	+0.000, -0.025 (+0.0, -0.63)
3.01" to 4.00" (76.5 to 101.6)	+0.030, -0.000 (+0.76, -0.0)	+0.000, -0.030 (+0.0, -0.76)
Over 4.00" (Over 101.6)	+0.040, -0.000 (+1.02, -0.0)	+0.000, -0.040 (+0.0, -1.02)
Under 1.0 inch (Under 25.4 mm)	THICKNESS +0.015, -0.000 (+0.38, -0.0)	

	MIN	MAX
OD	.062"	4.000"
ID	.000"	3.875"
Thickness	.062"	1.000"
Wall width	.062"	1.000"

WIRE SELECTION xxxx		
0101	.0045" Diameter Monel	(11-0109)
0104	.0045" Diameter Ferrex (See Note Below)	(11-0409)
0110	.0045" Diameter Stainless Steel	(11-4209)
0102	.005" Diameter Aluminum	(11-0210)
0125	.005" Diameter Irridited Aluminum	(11-0210)
0103	.005" Diameter Silver Plated Brass	(11-0310)
0105	.0045" Diameter Inconel 600 (Note Below)	(11-0509)

ALTERNATE THICKNESS, DENSITY, WEIGHT yy

Chomerics can manufacture washers from the selection table at thinner cross sections , vary the density (hard, medium, soft) or weight depending on the customers application request. If a specific weight or density is not requested, then medium density is used. Thinner cross sections will be assigned a custom suffix.

No suffix
Part number defines part made from tool at maximum thickness, medium density, no specified weight, knitted wire mesh not crimped prior to die forming.

Assigned suffix
Assigned by Chomerics for parts made less than the maximum thickness defined in the table, a part density other than medium, or a specifically requested final part weight. Optional crimping of knitted wire mesh prior to die forming.

- NOTES:
- Irriditing treatment is applied per Mil-C-5541 Class 3 specification after the compressed mesh part is formed. Other treatments are available. Contact Chomerics Applications Engineering for further details.
 - Unless otherwise requested, parts are supplied in even multiples of 25, 50 or 100 in a labeled plastic bag.
 - Alternate wire diameter constructions are available depending on application needs and requested volume. Contact Chomerics Applications Engineering for further details.
 - Ferrex is Chomerics trade name for tin-plated, copper-clad steel wire.
 - Inconel is a registered trademark of the INCO family of companies. Inconel 600 is a nickel-chromium-iron wire.

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