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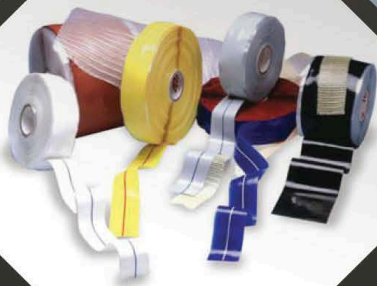
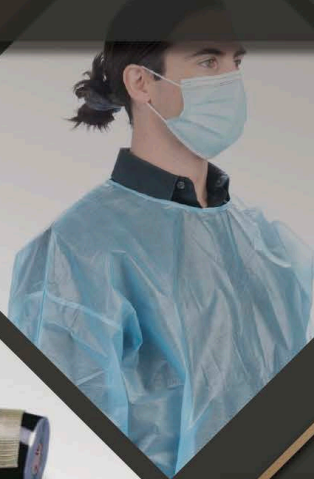
From Facility to Everyday Utility

ISO 9001 CERTIFIED | ISO | IMSG | RoHS Compliant
ISO 9001 CERTIFIED | CERTIFICATE #08-511

VERS. 05

SUPPLY CATALOG

ENGINEERING SOLUTIONS
THROUGH QUALITY PRODUCTS



OVER
FIFTEEN MILLION
INVENTORIED
ITEMS!

FORWARD

STANDARD MOLDED PARTS

This catalog represents one of the most extensive offerings of standard molded rubber small parts. Its value lies in its use. Tremendous savings in new mold and tooling charges can be accomplished if engineers and designers will use tooling that is already in existence such as illustrated in this catalog. The illustrations indicate parts as molded in a standard rubber compound, however variations from this standard can be obtained by requesting other materials, hardness or colors.

We have made some significant improvements in the usability of this book. Grommets, bumpers, and other molded parts are now listed in the order of their sizes by at least one critical dimension. We've also added metric and decimal equivalents to all standard molded parts except those of irregular design.

MOLDED SPECIAL PARTS

Where standard parts are not usable, savings in special rubber parts can result by contacting a specialist in molding of small parts. Special techniques and equipment are used which cannot be used by a general rubber manufacturer. This means lower mold costs, better piece price, with the capability of continued large volume production.

GENERAL INFORMATION

For your guidance, and quick reference, we have included a complete new section which outlines, in general, the characteristics of the most common elastomers used in the manufacturing of small molded parts. In addition there is extensive engineering information including an explanation of ASTM D-2000 and tolerance tables.

HOLD HARMLESS PROVISION

The Purchaser agrees to and does indemnify and hold the Manufacturer harmless against any claims, actions, causes of action, or other legal proceedings which might be brought against the Manufacturer by the ultimate user of the product, or others, for injury or other damages which might be occasioned by the use in any manner of the product. Such indemnity and hold harmless shall apply whether such action is based upon a theory of negligence on the part of Manufacturer, breach of warranty by the Manufacturer (whether express or implied), strict liability, or other. The Purchaser will, if requested by the Manufacturer, assume the defense of any action or other proceeding and will pay on behalf of the Manufacturer the amount of any costs, judgments or penalties entered or incurred by the Manufacturer in such action, including attorney's fees.

GLOSSARY OF RUBBER TERMS

ABRASION RESISTANCE

This property may be defined as the resistance to abrasive wear. It is very important in tire treads, soles and heels, hose, and the covers of conveyor belts and cables.

ACID RESISTANCE

The resistance to action of acid either concentrated or diluted.

ACRYLIC

Polymer for which resistance to air and hot oil at temperatures above 300°F are required.

AGING

Accelerated aging tests are run on various rubbers to find out in as short a period as possible the destructive influence of light, oxygen, heat and ozone. Natural or shelf aging requires many years for proper evaluation, so accelerated aging tests will give comparative values in short periods of time; however, there is no absolute correlation between natural aging and accelerated aging.

ATMOSPHERIC AGING RESISTANCE

The loss of physical properties due to the normal action of its surroundings (weather).

BUNA-S

See SBR.

BUTAPRENE

See Nitrite Rubber.

BUTYL

Copolymer of isobutylene and isoprene. (Commonly used for inner tubes.)

CHEMIGUM

See Nitrite Rubber.

COMPRESSION SET

This property is similar to permanent set in that it has a tendency to take a permanent deformation under application of stress. It is actually a characteristic of liquids and is sometimes referred to as hot-flow or cold-flow. It is measured (1) as the amount by which a standard test piece fails to return to its original thickness after being subjected to a standard compressive load or deflection for a fixed period of time; or (2) as the distance returned relative to the amount deflected.

CORONA RESISTANCE

The ability of rubber acting as an insulator to withstand the effects of high voltage discharge. Indication of failure appears as surface cracks.

DIELECTRIC PROPERTIES

The ability of material to resist the puncture due to electrical stress. This property is expressed in terms of volts per MIL thickness.

DUROMETER

See Hardness.

ELASTOMER

A term used to describe elastic polymers with rubber-like behavior.

ELONGATION

The term "elongation" is used to describe the ability of a rubber compound to stretch without breaking. To describe this property as measured it is more accurate to speak of "ultimate elongation" or "elongation at break" since its value, expressed as per cent of original length, is taken at the moment of rupture.

EPDM (EPT, NORDEL)

Terpolymer of ethylene - propylene - diene (noted for excellent ozone resistance).

FLAME RESISTANCE

The resistance to burning or material that will not support combustion under ordinary conditions.

FLEX CRACKING

Rubber articles subjected to repeated flexing have been found to develop small cracks on the surface.

FLUOROCARBON

A polymer designed to meet the most rigid requirements. (Viton A, Fluorel) in oils, solvents, synthetic lubricants and corrosive chemicals, at elevated temperatures.

GRS

See SBR

HARDNESS (DUROMETER)

Hardness as a property of rubber stocks is difficult to define except according to the methods used to determine it. These methods measure the resistance of the stock to indentation by the blunt point of a metal rod, ball or needle. Thus the hardness of rubber can best be described as resistance to indentation. Various instruments measure indentation. The most common instrument used on rubber is the Durometer. Several scales are used depending on the hardness range (00, 0, A, B, C, D), but the A scale, ASTM 02240, is used for most compounds. Readings on each scale are from 0 to 100. Durometer hardness is a convenient nondestructive method of testing which can also be correlated to other properties such as tensile strength, tensile modulus, plasticity, and resilience. Since indentation hardness is dependent upon elastic modulus and viscoelastic behavior of the compound, rubber compounds which are not completely elastic will "creep" during the test. This creep should be noted as the difference between the initial hardness reading after 15 seconds of engagement with the specimen. A properly noted reading: Durometer A 61, creep 4 at 15 seconds. 73°F.

HEAT RESISTANCE

The ability of rubber to retain its useful properties under the destructive influence of heat.

HYDROCARBON SOLVENTS - AROMATIC

Solvents having basic benzene structure, usually coal tar types such as benzene, toluene and xylene.

HYPALON

A polymer that is completely resistant to ozone attack under the most extreme conditions; possesses excellent color stability plus the action of acids, bases, and many other chemicals.

GLOSSARY OF RUBBER TERMS CONT.

LOW TEMPERATURE FLEXIBILITY

The temperature at which the rubber becomes too stiff to function in its intended manner.

NEOPRENE (GR-M)

A polymer of chloroprene which is prepared from coal, salt and limestone.

NITRILE RUBBER (BUNA-N)

Copolymer of butadiene and acrylonitrile. Butadiene generally is derived from petroleum and acrylonitrile from ethylene oxide and hydrogen cyanide. Names for Nitrile rubbers include: Butraprene, Chemigum, Hycar, Perbunan and Paracril.

NON-AROMATIC

Straight chain organic carbon structures such as petroleum type solvents.

OXIDATION RESISTANCE

The ability of rubber to resist the reaction of atmospheric oxygen.

PERMANENT SET

When a piece of rubber is stretched and released it does not return to its exact original length but comes to rest somewhat longer than it was before stretching. The increase in length of the rubber strip, expressed as per cent of its original length, is termed "permanent set."

PERMEABILITY

Ability or ease in which a liquid or gas can pass through a film of rubber.

PH

Determine the concentration of either an acid or base.

PLASTICITY

When subjected to sufficient shearing stress any given body will be deformed. If, after the stress is removed there is no recovery, the body is completely elastic. A proper balance between these two factors is required. The three methods most commonly used in measuring the amount of plasticity in an unvulcanized rubber stock are the Williams Plastometer and the Mooney Viscometer and the Firestone Plastometer. These machines measure the plasticity by compression, shear and extrusion respectively.

POLYMER

A term used to express the new material formed by a polymerization reaction.

POLYMERIZATION

Chemical reaction whereby simple materials, either one or more, are converted to a complex material which possesses properties entirely different than original materials used at the start of the reaction.

POLYURETHANE

An organic material noted for its high abrasion, ozone, corona and radiation characteristics.

PURE GUM STATE

A non-pigmented, translucent, basic polymer.

RESILIENCE

Capability of a material to return to its original size and shape after deformation. It is generally expressed in percentage of ratio of energy returned by rubber to the energy used in compressing rubber.

RUBBER, NATURAL

Most commonly used forms are smoked sheet and pale crepe organic material-latex.

S.A.E.

Society of Automotive Engineers.

SBR

Copolymer of Butadiene and Styrene. Butadiene is a gaseous material generally obtained from Petroleum, and Styrene is a reaction product of ethylene and benzene. SBR is an all-purpose type synthetic similar to natural rubber.

SILICONE RUBBER

A semi-organic material containing a silicone.

SPECIFIC GRAVITY

The ratio of the weight to the given bulk to that of the same bulk of water (solids and liquids).

TEAR RESISTANCE

The resistance to growth of a nick or cut when tension is applied to the cut specimen. (ASTM D-624).

TENSION MODULUS

The term "modulus" or "stress" is used to denote resistance to being stretched. It is defined as the force in pounds necessary to stretch a piece of rubber, one square inch in cross section, a specified amount. This amount of stretch is normally expressed as a percentage of original length and the "stress" as pounds per square inch at the fixed elongation.

TENSILE STRENGTH

The tensile strength of a rubber compound is in its resistance to rupture under tension. It is measured as strength at break and expressed in pounds per square inch of cross section. This property has an absolute value in some applications where the product is actually subjected to tension in service but, like the other tensile properties, it is most frequently used in evaluating compounding materials on a cooperative basis. In a series of cures with a variable time factor the tensile strength either passes through a maximum or exhibits a marked change in the slope of its curve. Therefore, the tensile strength may be considered either separately or together with the modulus and elongation in defining an optimum state of cure for any specific compound.

THIOKOL

An organic polysulfide.

ASTM D-2000

Classification System for Elastometric Materials

Example: 2BA610 A14 C12 L14

While not a part of the specification itself, the following chart presents the assigned material prefix letters and the polymer such prefix would normally call out. This is the conversion equivalent applicable under:

| | |
|--|----------------|
| D-2000 and J-200 | D-735 and J-14 |
| AA-Natural, SBR, Butyl, Isoprene..... | R |
| AK-Polysulphide..... | SA |
| BA-Ethylene-Propylene, Heat Resistant SBR and Butyl..... | - |
| BC-Chloroprene-Neoprene..... | SC |
| BE-Chloroprene-Neoprene (lower oil swell and comp.set).... | - |
| BF-Nitrile-E24-E34 Requirements..... | - |
| BG-Nitrile-E51-E61 Requirements..... | SB |
| BK-Organic Thialide (Thiokol)..... | SA |
| CA-Ethylene-Propylene..... | - |
| CE- Chlorosulfanated Polyethylene (Hypalon)..... | - |
| CH-Nitrile..... | - |
| DF-Polyacrillic (Butyl-Acrylate Type)..... | - |
| DH-Polyacrillic..... | TB |
| FC-Silicone..... | TA |
| FE-Silicone..... | - |
| FK-Fluorinated Silicone..... | - |
| GE-Silicone..... | - |
| HK-Fluorinated Elastomers (Viton TM*)..... | - |

1st Designate (2)

Grade number - used to designate supplemental requirements beyond the basic call out. Your supplier can develop this.

2nd Designate (B)

Indicative of heat resistant requirements at which polymer shall be tested. (See Table 1.)

Table 1

Basic Requirements for establishing type by temperature.

| Test Temperature Type | °C | °F | Test Temperature Type | °C | °F |
|-----------------------|-----|-----|-----------------------|-----|-----|
| A | 70 | 158 | F | 200 | 392 |
| B | 100 | 212 | G | 225 | 437 |
| C | 125 | 257 | H | 250 | 482 |
| D | 150 | 302 | J | 275 | 527 |
| E | 175 | 347 | | | |

3rd Designate (A)

Indicative of degree oil resistance as measured by volume swell under test procedures. (See Table 2.)

Table 2

Basic Requirements for establishing class by volume swell.

| Class | Volume Swell, Max. % | Class | Volume Swell, Max. % |
|-------|----------------------|-------|----------------------|
| A | No Requirement | F | 60 |
| B | 140 | G | 40 |
| C | 120 | H | 30 |
| D | 100 | J | 20 |
| E | 80 | K | 10 |

4th Designate (6)

Indicative of hardness required, as 60±5 Shore "A".

5th & 6th Designate (1 & 0)

Indicative of tensile strength required, as 1,000 PSI written in hundreds of PSI.

7th Designate

The suffix letters (A, C, L) indicate supplemental requirements for particular applications that set up more rigid test procedures - beyond the basic call out. (See Table 3.)

Table 3
Meaning of Suffix Letters

| Suffix Letter | Test Required |
|---------------|--|
| A | Heat Resistance |
| B | Compression Set |
| C | Ozone or Weather Resistance |
| D | Compression Deflection Resistance |
| E | Fluid Resistance |
| F | Low Temperature Resistance |
| G | Tear Resistance |
| H | Flex Resistance |
| J | Abrasion Resistance |
| K | Adhesion |
| L | Water Resistance |
| M | Flammability Resistance |
| N | Impact Resistance |
| P | Staining Resistance |
| R | Resilience |
| Z | Any special requirement to be specified in detail. |

8th Designate

The suffix numbers (14, 12, 14) indicate the ASTM test method applicable by the first digit.

9th Designate

The suffix numbers, (in this case 14-12-14) the second digit denotes the temperature at which the test shall be conducted. (See Table 5.)

Table 5

| For Suffix Letters A, B, C, E, G, K, & L | For Suffix Letter F |
|--|------------------------|
| | 4 = Zero Deg. F. |
| 1 = 73 Deg. F. | 5 = Minus 13 Deg. F. |
| 2 = 100 Deg. F. | 6 = Minus 31 Deg. F. |
| 3 = 158 Deg. F. | 7 = Minus 40 Deg. F. |
| 4 = 212 Deg. F. | 8 = Minus 58 Deg. F. |
| 5 = 257 Deg. F. | 9 = Minus 67 Deg. F. |
| 6 = 302 Deg. F. | 10 = Minus 85 Deg. F. |
| | 11 = Minus 103 Deg. F. |

* Viton is a registered trademark of DuPont

TABLES FOR CONVERSION FROM INCHES INTO MILLIMETERS

| DECIMALS MILLIMETERS | | | DECIMALS MILLIMETERS | | | |
|----------------------|-------------------|-------------------|----------------------|-------------------|-------------------|---------------|
| 1/8 | 1/64..... | 0.015625..... | .0397 | 33/64..... | 0.515625..... | 13.097 |
| | 1/32..... | .03125..... | 0.794 | 17/32..... | .53125..... | 13.494 |
| | 3/64..... | .046875..... | 1.191 | 35/64..... | .546875..... | 13.891 |
| | 1/16..... | .0625..... | 1.588 | 9/16..... | .5625..... | 14.288 |
| | 5/64..... | .078125..... | 1.984 | 37/64..... | .578125..... | 14.684 |
| | 3/32..... | .09375..... | 2.381 | 19/32..... | .59375..... | 15.081 |
| | 7/64..... | .109375..... | 2.778 | 39/64..... | .609375..... | 15.478 |
| | | .1250..... | 3.175 | | .6250..... | 15.875 |
| | 9/64..... | .140625..... | 3.572 | 41/64..... | .640625..... | 16.272 |
| | 5/32..... | .15625..... | 3.969 | 21/32..... | .65625..... | 16.669 |
| 11/64..... | .171875..... | 4.366 | 43/64..... | .671875..... | 17.066 | |
| 3/16..... | .1875..... | 4.763 | 11/16..... | .6875..... | 17.463 | |
| 13/64..... | .203125..... | 5.159 | 45/64..... | .703125..... | 17.859 | |
| 7/32..... | .21875..... | 5.556 | 23/32..... | .71875..... | 18.256 | |
| 15/64..... | .234375..... | 5.953 | 47/64..... | .734375..... | 18.653 | |
| | .2500..... | 6.350 | | .7500..... | 19.050 | |
| 1/4 | 17/64..... | .265625..... | 6.747 | 49/64..... | .765625..... | 19.447 |
| 9/32..... | .28125..... | 7.144 | 25/32..... | .78125..... | 19.844 | |
| 19/64..... | .296875..... | 7.541 | 51/64..... | .796875..... | 20.241 | |
| 5/16..... | .3125..... | 7.938 | 13/16..... | .8125..... | 20.638 | |
| 21/64..... | .328125..... | 8.334 | 53/64..... | .828125..... | 21.034 | |
| 11/32..... | .34375..... | 8.731 | 27/32..... | .84375..... | 21.431 | |
| 23/64..... | .359375..... | 9.128 | 55/64..... | .859375..... | 21.828 | |
| | .3750..... | 9.525 | | .8750..... | 22.225 | |
| 3/8 | 25/64..... | .390625..... | 9.922 | 57/64..... | .890625..... | 22.622 |
| 13/32..... | .40625..... | 10.319 | 29/32..... | .90625..... | 23.019 | |
| 27/64..... | .421875..... | 10.716 | 59/64..... | .921875..... | 23.416 | |
| 7/16..... | .4375..... | 11.113 | 15/16..... | .9375..... | 23.813 | |
| 29/64..... | .453125..... | 11.509 | 61/64..... | .953125..... | 24.209 | |
| 15/32..... | .46875..... | 11.906 | 31/32..... | .96875..... | 24.606 | |
| 31/64..... | .484375..... | 12.303 | 63/64..... | .984375..... | 25.003 | |
| | .5000..... | 12.700 | | 1.000..... | 25.400 | |

1 mm = .03937"

.001" = .0254 mm

| MULTIPLY BY | FROM | TO | MULTIPLY BY |
|-------------|---------------------|-------------------------|-------------|
| 0.0394 | inch | millimeter | 25.4 |
| 0.0016 | inch ² | millimeter ² | 645.16 |
| 0.061 | inch ³ | centimeter ³ | 16.3871 |
| 0.2642 | gallon (U.S.) | liter | 3.7854 |
| 0.03527 | oz. (avdp.) | gram | 28.3495 |
| 2.2044 | pound | kilogram | 0.4536 |
| 62.43 | lbs/ft ³ | g/cm ³ | 0.0160 |
| 1.8°C + 32 | °F | °C | (°F-32)/1.8 |
| 0.145 | psi | kPa | 6.8948 |
| 14.2247 | psi | kg/cm ³ | 0.0703 |

GAUGE THICKNESS CONVERSION TABLE

| Gauge | Inches | Millimeters |
|-------|--------|-------------|
| 0 | .325 | 8.26 |
| 1 | .289 | 7.35 |
| 2 | .257 | 6.54 |
| 3 | .229 | 5.83 |
| 4 | .204 | 5.19 |
| 5 | .182 | 4.62 |
| 6 | .162 | 4.12 |
| 7 | .144 | 3.66 |
| 8 | .128 | 3.26 |
| 9 | .114 | 2.91 |
| 10 | .102 | 2.59 |
| 11 | .091 | 2.30 |
| 12 | .081 | 2.05 |
| 13 | .072 | 1.83 |
| 14 | .064 | 1.63 |
| 15 | .057 | 1.45 |
| 16 | .051 | 1.29 |
| 17 | .045 | 1.15 |
| 18 | .040 | 1.02 |
| 19 | .036 | .912 |
| 20 | .032 | .812 |

| Gauge | Inches | Millimeters |
|-------|--------|-------------|
| 21 | .028 | .723 |
| 22 | .025 | .644 |
| 23 | .023 | .573 |
| 24 | .020 | .511 |
| 25 | .018 | .455 |
| 26 | .016 | .405 |
| 27 | .014 | .360 |
| 28 | .013 | .321 |
| 29 | .011 | .286 |
| 30 | .010 | .255 |
| 31 | .0089 | .2266 |
| 32 | .0080 | .2019 |
| 33 | .0071 | .1798 |
| 34 | .0063 | .1600 |
| 35 | .0056 | .1425 |
| 36 | .0050 | .1270 |
| 37 | .0045 | .1130 |
| 38 | .0040 | .1006 |
| 40 | .0031 | .0798 |

THE ELASTOMERS

Natural Rubber

Common Name.....Natural Rubber
ASTM D-2000 Classification.....AA
Military (MIL-STD 417).....RN
Chemical Definition.....Polyisoprene

General Characteristics

Durometer Range (Shore A).....20-100
Tensile Range (P.S.I.).....500-3500
Elongation(Max %)...700
Compression Set.....Excellent
Resilience - Rebound.....Excellent
Abrasion Resistance.....Excellent
Tear Resistance.....Excellent
Solvent Resistance.....Poor
Oil Resistance.....Poor
Low Temperature Usage (°F).....-20° to -60°
High Temperature Usage (°F).....to 212°
Aging Weather - Sunlight.....Poor
Adhesion to Metals.....Excellent

Comments

Natural Rubber has many good characteristics. It has high resilience, good compression set, and molding properties; very good friction surface, but not a fine smooth surface when ground; high tear strength; low crack growth; usable for ketones and alcohol; and good low temperature properties.

Natural Rubber is not recommended for oil and solvent resistance and ozone attacks it.

Neoprene

Common Name.....Neoprene®
ASTM D-2000 Classification.....BC, BE
Military (MIL-STD 417).....SC
Chemical Definition.....Polychloroprene

General Characteristics

Durometer Range (Shore A).....20-95
Tensile Range (P.S.I.).....500-3000
Elongation (Max %)...600
Compression Set.....Good
Resilience - Rebound.....Excellent
Abrasion Resistance.....Excellent
Tear Resistance.....Good
Solvent Resistance.....Fair
Oil Resistance.....Fair
Low Temperature Usage (°F).....+10° to -50°
High Temperature Usage (°F).....to 250°
Aging Weather - Sunlight.....Good
Adhesion to Metals.....Good to Excellent

Comments

Neoprene is an all purpose polymer with many desirable characteristics. It has additional plus features: high resilience with low compression set; flame resistant; compounds free of sulphur are easily made; and animal and vegetable oil resistant, generally not affected by moderate chemicals, fats, greases, and many oils and solvents.

Neoprene is generally attacked by strong oxidizing acids, esters, ketones, chlorinated aromatic and nitro hydrocarbons.

SBR

Common Name.....SBR, GRS
ASTM D-2000 Classification.....AA, BA
Military (MIL-STD 417).....RS
Chemical Definition.....Styrene Butadiene

General Characteristics

Durometer Range (Shore A).....30-100
Tensile Range (P.S.I.).....500-3000
Elongation (Max %)...600
Compression Set.....Good
Resilience - Rebound.....Good
Abrasion Resistance.....Excellent
Tear Resistance.....Fair
Solvent Resistance.....Poor
Oil Resistance.....Poor
Low Temperature Usage (°F).....0° to -50°
High Temperature Usage (°F).....to 225°
Aging Weather - Sunlight.....Poor
Adhesion to Metals.....Excellent

Comments

SBR is a low cost non-oil resistant material. It has good water resistance and resilience up to 70 durometer; compression set becomes poorer with higher durometer; generally satisfactory for most moderate chemicals and wet or dry organic acids.

SBR is not recommended for ozone, strong acids, oils, greases, fats, and most hydrocarbons.

THE ELASTOMERS

Butyl

Common Name.....Butyl
ASTM D-2000 Classification.....AA, BA
Military (MIL-STD 417).....RS
Chemical Definition.....Isobutylene Isoprene

General Characteristics

Durometer Range (Shore A).....40-90
Tensile Range (P.S.I.).....500-3000
Elongation (Max %)...850
Compression Set.....Fair to Good
Resilience - ReboundFair
Abrasion Resistance.....Fair
Tear Resistance.....Good
Solvent Resistance.....Poor
Oil Resistance.....Poor
Low Temperature Usage (°F).....10° to -60°
High Temperature Usage (°F).....to 250°
Aging Weather - Sunlight.....Excellent
Adhesion to Metals.....Good

Comments

Butyl rubber is impermeable to most common gasses and has good resistance to sunlight and ozone. Butyl is normally satisfactory when exposed to animal and vegetable oils and oxidizing chemicals.

Butyl is not recommended for use with petroleum solvent, coal tar, and aromatic hydrocarbons.

EPR

Common Name.....EPR, EPT, EPDM
ASTM D-2000 Classification.....CA
Military (MIL-STD 417).....RS
Chemical Definition.....Ethylene Propylene

General Characteristics

Durometer Range (Shore A).....30-90
Tensile Range (P.S.I.).....500-2500
Elongation (Max %)...600
Compression Set.....Good
Resilience - Rebound.....Good
Abrasion Resistance.....Good
Tear Resistance.....Fair
Solvent Resistance.....Poor
Oil Resistance.....Poor
Low Temperature Usage (°F).....20° to -60°
High Temperature Usage (°F).....to 350°
Aging Weather - Sunlight.....Excellent
Adhesion to Metals.....Fair to Good

Comments

Ethylene Propylene is a polymer with outstanding properties. It has exceptionally good weather aging and ozone resistance; excellent water and chemical resistance; excellent resistance to gas permeability, and excellent resistance to aging due to exposure to steam; and heat, resistance excellent up to 350°F. Ethylene Propylene is a polymer where oil and solvent resistance is poor, however, it is fairly good in ketones and alcohols. It is not recommended for food applications or exposure to aromatic hydrocarbons.

Buna-N

Common Name.....Buna N, Nitrile, NBR
ASTM D-2000 Classification.....BF, BG, BK
Military (MIL-STD 417).....SB
Chemical Definition.....Butadiene Acrylonitrile

General Characteristics

Durometer Range (Shore A).....20-95
Tensile Range (P.S.I.).....200-3000
Elongation (Max %)...600
Compression Set.....Good
Resilience - Rebound.....Good
Abrasion Resistance.....Excellent
Tear Resistance.....Good
Solvent Resistance.....Good to Excellent
Oil Resistance.....Good to Excellent
Low Temperature Usage (°F).....+30° to -40°
High Temperature Usage (°F).....to 250°
Aging Weather - Sunlight.....Poor
Adhesion to Metals.....Good to Excellent

Comments

Nitrile (Buna-N) is a general purpose oil resistant polymer which has good solvent, oil, water, and hydraulic fluid resistance, good compression set, abrasion resistance and tensile strength. Nitrile should not be used in highly polar solvents such as acetone, and MEK, ozone, chlorinated hydrocarbons, and nitro hydrocarbons.

THE ELASTOMERS

Silicone

Common Name.....Silicone
 ASTM D-2000 Classification.....FC, FE, GE
 Military (MIL-STD 417).....TA
 Chemical Definition.....Polysiloxane

General Characteristics

Durometer Range (Shore A).....30-90
 Tensile Range (P.S.I.).....200-1500
 Elongation (Max %).....700
 Compression Set.....Good
 Resilience - Rebound.....Good
 Abrasion Resistance.....Fair to Poor
 Tear Resistance.....Poor
 Solvent Resistance.....Poor
 Oil Resistance.....Fair to Poor
 Low Temperature Usage (°F).....60° to 150°
 High Temperature Usage (°F).....to 450°
 Aging Weather - Sunlight.....Excellent
 Adhesion to Metals.....Good

Comments

Silicone Rubber has a great many variations and can be compounded to meet any number of applications, Silicone can be compounded to have tensile in the area of 1500 PSI and tear up to 200 lbs.; low compression set and good resilience; moderate solvent resistance; excellent heat resistance; good release characteristics; extreme low temperature properties; and can be highly resistant to oxidation and ozone attack.

Silicone is generally attacked by most concentrated solvents, oils, concentrated acids, and diluted sodium hydroxide.

STANDARD TOLERANCES FOR MOLDED PARTS

Standard Dimensional Tolerance Table - Molded Solid Rubber Products
 Drawing Designation "A3" Commercial

| Size (inches) | Fixed | Closure | Size (Millimeters) | Fixed | Closure |
|---------------|--|---------|--------------------|--|---------|
| Above-Incl. | | | Above-Incl. | | |
| 0-.40 | ±.008 | ±.013 | 0-10 | ±.20 | ±.32 |
| .40-.63 | .010 | .016 | 10-16 | .25 | .40 |
| .63-1.00 | .013 | .020 | 16-25 | .32 | .50 |
| 1.00-1.60 | .016 | .025 | 25-40 | .40 | .63 |
| 1.60-2.50 | .020 | .032 | 40-63 | .50 | .80 |
| 2.50-4.00 | .025 | .040 | 63-100 | .63 | 1.00 |
| 4.00-6.30 | .032 | .050 | 100-160 | .80 | 1.25 |
| 6.30 & over - | To find fixed dimensional tolerances multiply by 0.5%. | | 160 & over - | To find fixed dimensional tolerances multiply by 0.5%. | |

Note:

- Fixed dimension tolerances apply individually to each fixed dimension by its own size.
- Closure dimension tolerances are determined by the largest closure dimension and this single tolerance is used for all other closure dimensions.

Drawing Designation "A3" tolerances indicate a "commercial" product and will normally be used for most products.

THE GENERAL CHEMICAL RESISTANCE OF VARIOUS RUBBERS & PLASTICS

| Chemical | Key | | | | | |
|----------------------------|----------------|-------|----------|--------|-------|---------|
| | Natural Rubber | S.B.R | Neoprene | Buna N | Viton | Hypalon |
| Acetic Acid - Dilute..... | U | U | U | U | U | S |
| - 30%..... | U | U | U | U | U | S |
| - Glacial..... | U | U | U | U | U | S |
| Acetone..... | U | S | U | U | U | S |
| Acrolein..... | U | U | - | - | - | - |
| Allyl Alcohol..... | S | S | S | S | S | S |
| Allyl Chloride..... | U | - | U | U | - | - |
| Alum..... | S | S | S | S | S | S |
| Ammonia Anhydrous..... | S | S | S | U | U | S |
| Ammonium Hydroxide..... | U | U | U | U | S | S |
| Ammonium Nitrate..... | S | S | S | S | S | S |
| Aniline..... | U | U | U | U | S | S |
| Asphalt..... | U | U | S | S | - | U |
| Benzene..... | U | U | U | S | U | U |
| Butyl Acetate..... | U | U | U | U | U | S |
| Butyl Carbitol..... | S | S | S | S | S | S |
| Butyl Cellosolve..... | U | U | S | S | S | S |
| Calcium Chloride..... | U | U | S | S | S | S |
| Carbital..... | S | S | S | S | S | S |
| Carbon Tetrachloride..... | U | U | S | S | - | S |
| Cellosolve..... | U | U | U | S | U | U |
| Cellosolve Acetate..... | U | U | S | S | - | S |
| Corn Syrup..... | U | U | U | U | U | - |
| Cyclohexanone..... | U | U | U | S | U | S |
| Di-Acetone Alcohol..... | U | U | U | U | - | U |
| Di-Ison Butyl Ketone..... | U | U | S | U | U | S |
| Di-Isopropyl Ether..... | U | U | U | U | U | S |
| Di-Octyl Phthalate..... | U | U | U | S | U | - |
| Epichlorohydrin..... | U | U | U | U | - | U |
| Ethyl Acetate..... | U | - | U | U | - | - |
| Ethyl Alcohol..... | U | U | U | U | U | S |
| Ethyl Amyl Ketone..... | S | S | S | S | S | S |
| Ethyl Chloride..... | U | U | U | U | - | S |
| 2-Ethyl Hexanol..... | S | S | S | S | S | U |
| Ethylene Glycol..... | U | - | U | U | - | - |
| Formaldehyde..... | S | S | S | S | S | S |
| Freon 12..... | U | S | U | U | S | S |
| Freon 13..... | S | U | S | S | S | S |
| Freon 21..... | U | U | S | S | U | U |
| Freon 22..... | U | U | U | S | U | U |
| Gasoline..... | U | U | S | S | U | S |
| Glycerine..... | S | S | S | S | S | S |
| Grease..... | U | U | S | S | S | U |
| Hexane..... | U | U | S | S | S | U |
| Hexylene Glycol..... | S | S | S | S | S | - |
| Hydrochloric Acid -10%.... | S | U | U | U | S | S |
| - 38%.... | U | U | U | U | S | S |
| Isophorone..... | U | U | U | U | - | - |

| Chemical | Key | | | | | |
|-------------------------------|----------------|-------|----------|--------|-------|---------|
| | Natural Rubber | S.B.R | Neoprene | Buna N | Viton | Hypalon |
| Jet Fuel (JP-1 to JP-5)..... | U | U | S | S | S | U |
| Kerosene..... | U | U | S | S | S | U |
| Mesital Oxide..... | U | U | U | U | - | - |
| Methyl Alcohol..... | S | S | S | S | S | S |
| Methyl Amyl Acetate..... | U | U | U | U | U | - |
| Methyl Cellosolve..... | U | U | S | - | - | - |
| Methyl Ethyl Ketone..... | U | U | U | U | U | S |
| Methyl Isobutyl Carbinol..... | S | S | S | S | S | S |
| Methyl Isobutyl Ketone..... | U | U | U | U | U | S |
| Methyl Methacrylate..... | U | U | U | U | S | U |
| Mehtylene Chloride..... | U | U | U | S | U | - |
| Milk..... | U | S | S | U | S | S |
| Molasses..... | S | U | S | U | U | S |
| Monochlorobenzene..... | U | U | U | S | U | U |
| Naptha..... | U | U | S | S | U | U |
| Nitric Acid - 10%..... | U | U | U | U | S | S |
| - 70%..... | U | U | U | U | S | S |
| - Fuming.. | U | U | U | U | U | U |
| Oil, Crude..... | U | U | S | S | S | U |
| Oil, Lubricating..... | U | U | S | S | S | U |
| Oil, Vegetable..... | U | U | S | S | S | U |
| Oleic Acid..... | U | U | S | - | U | S |
| Palmitic Acid..... | U | U | S | U | U | - |
| Phenol..... | U | - | U | S | S | - |
| Phosphoric Acid - 50%.... | S | S | S | S | S | S |
| - 80%.... | S | S | S | S | S | S |
| Propane Gas, Liquid..... | U | U | S | U | U | S |
| Propyl Acetate..... | U | U | U | U | U | S |
| Propyl Alcohol..... | S | S | S | S | S | S |
| Propylene Glycol..... | - | - | - | - | - | - |
| Sodium Hydroxide..... | U | U | U | U | U | S |
| Sodium Silicate..... | S | S | S | S | S | S |
| Stearic Acid..... | U | U | S | - | S | - |
| Styrene..... | U | U | U | S | U | U |
| Sulfur..... | U | U | S | U | S | U |
| Sulfur, Molten..... | U | U | U | U | U | U |
| Sulfuric Acid - 10%.... | S | S | S | S | S | S |
| - 70%.... | U | U | U | S | S | S |
| - Fuming.. | U | U | U | S | U | U |
| Tall Oil..... | U | U | S | S | U | U |
| Tallow..... | U | U | S | S | S | U |
| Tar..... | U | U | S | - | S | U |
| Toluene..... | U | U | U | S | U | U |
| Trichloroethane..... | - | - | - | - | - | - |
| Trichloroethylene..... | U | U | S | S | U | S |
| Urea..... | S | S | S | S | - | S |
| Wax..... | U | U | S | S | S | U |
| Xylol..... | U | U | U | S | U | S |

RUBBER PROCESSING

The primary methods for processing raw compound into cured rubber parts are compression molding, transfer molding, injection and extrusion.

These techniques are used to produce a broad range of parts, such as gaskets, grommets, sleeves, O-rings, rollers, bellows, boots, diaphragms, tape, tubing and profiles, to name a few.

The type of processing technique selected to produce a particular part is influenced by the complexity and specifications for the part, material requirements, allowable part tolerances, the number of parts to be molded and economics. Generally, as a part moves from compression to transfer molding, the cost of tooling goes up, piece price goes down, and tolerances are enhanced.

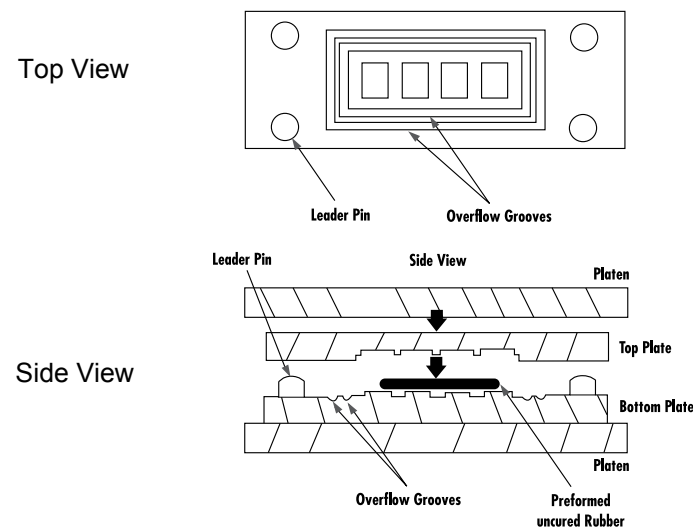
It is important to note that tolerances are more difficult to hold in molds with a large number of cavities. This is because for all molding methods, the molding pressure on a cavity varies depending on where the cavity is located. Therefore, if quality requirements are high, the number of cavities per mold may be low. ESTCO works closely with customers to determine the optimum balance between acceptable tolerances, piece part costs and tooling costs.

COMPRESSION MOLDING

Compression molding is often selected for low-volume runs because the tooling is relatively easy and inexpensive to produce. It also may be the best choice for extremely large parts with only one or two cavities per mold. However, loading and demolding, often done by hand, makes compression molding labor intensive.

In compression molding, a preform (a shaped piece of uncured rubber) is placed in one half of a heated mold (Top View). Generally, one preform is needed for each cavity. The mold is closed and pressure applied via a press, forcing the rubber to spread throughout the cavity. Excess rubber, called flash, flows into an overflow groove surrounding the cavity. (Note: Flash is stripped off the final part, but molds need to be designed to allow for its occurrence.)

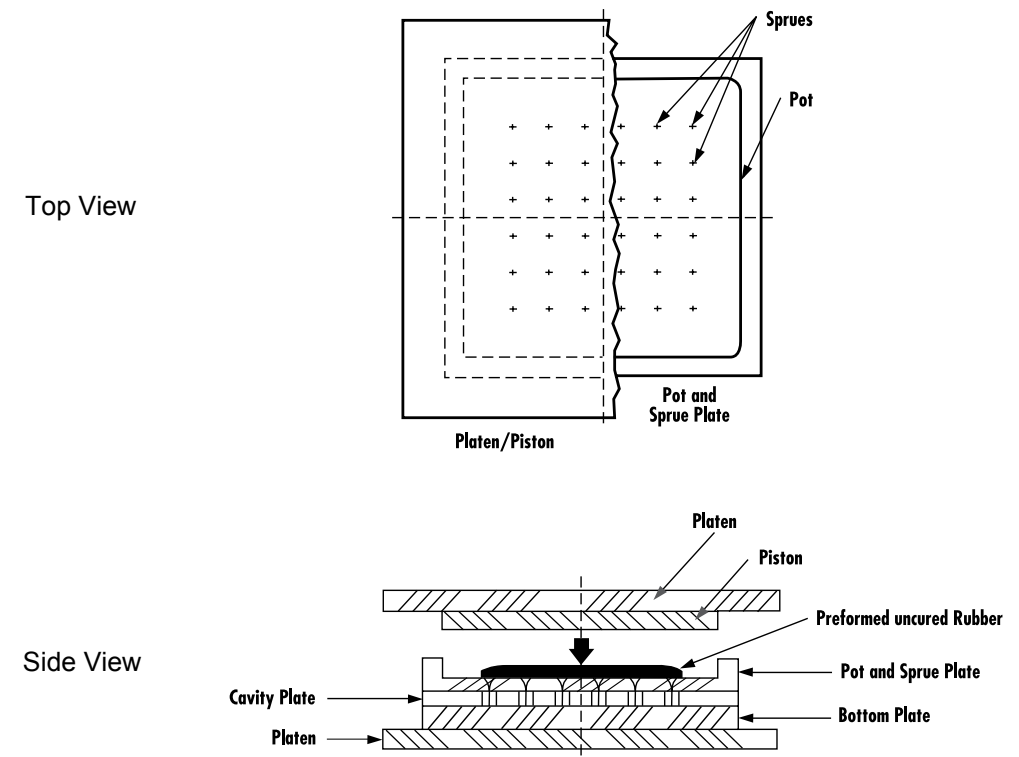
Parts commonly produced by compression molding are O-rings, gaskets, seals, diaphragms, bumpers and umbrella valves.



TRANSFER MOLDING

Transfer molding is one of the most popular molding methods. It is used when a medium to high volume of parts need to be produced, when tighter tolerances are required, when parts are more complicated, or when molding around pins and inserts.

In “pot and piston” transfer molding (Side View), a single preform is loaded into a transfer pot. A piston then forces the rubber directly through the sprues (portals), filling the cavities. The cured portion of the rubber remaining in the transfer pot, called a flash pad or cull, is then disposed of. This type of system tends to be used with larger tooling to achieve more consistent pressures across the cavity plate, producing more consistent parts.



Smaller tooling can sometimes benefit by using the “runner system” of transfer molding. Here, a piston forces the rubber through a runner (flow groove) and through a sprue to fill the cavities.

Because the mold is clamped shut before the material enters the cavities, flash can be minimized.

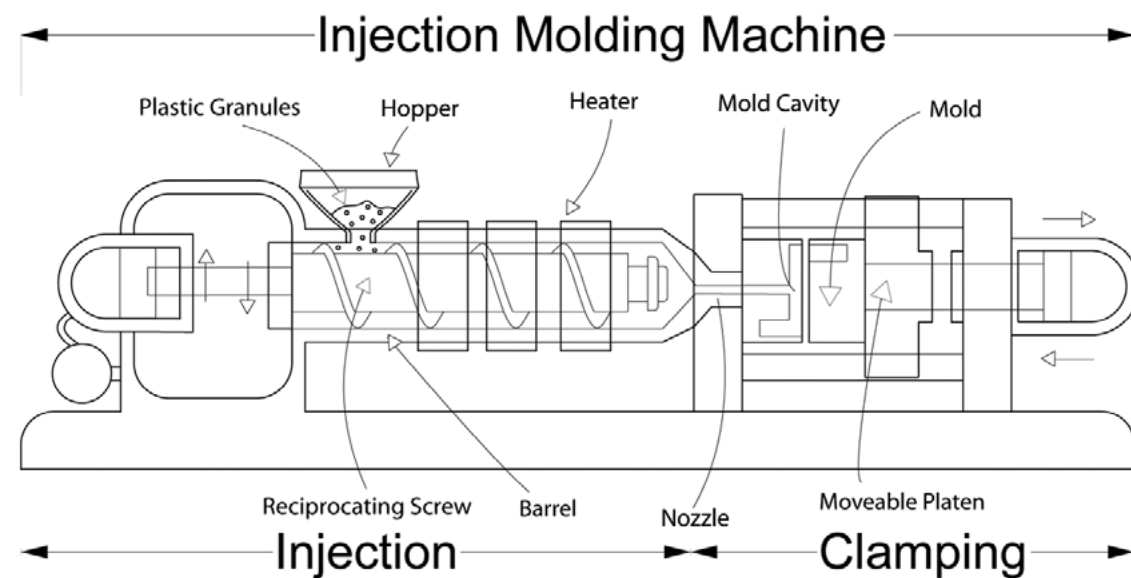
Transfer molding (both types) can produce more parts per hour than compression molding because many cavities can be filled with one (or a few) preforms, cure times can be faster, and the process can be partially automated. Piece part costs will be lower, but it requires additional tooling.

Parts commonly produced by transfer molding are rollers, grommets, bumpers, bellows, small O-rings, gaskets, sleeves and diaphragms. Compared to compression molding, transfer molding can provide tighter tolerances because little to no allowance is required for closure dimensions.

INJECTION MOLDING

Injection molding is a manufacturing process for producing parts by injecting material into a mold. Injection molding can be performed with a host of materials, including metals, glasses, elastomers, confections, and most commonly thermoplastic and thermosetting polymers. Material for the part is fed into a heated barrel, mixed, and forced into a mold cavity, where it cools and hardens to the configuration of the cavity. [1]:240 After a product is designed, usually by an industrial designer or an engineer, molds are made by a mouldmaker (or toolmaker) from metal, usually either steel or aluminum, and precision-machined to form the features of the desired part. Injection molding is widely used for manufacturing a variety of parts, from the smallest components to entire body panels of cars. Advances in 3D printing technology, using photopolymers which do not melt during the injection moulding of some lower temperature thermoplastics, can be used for some simple injection moulds.

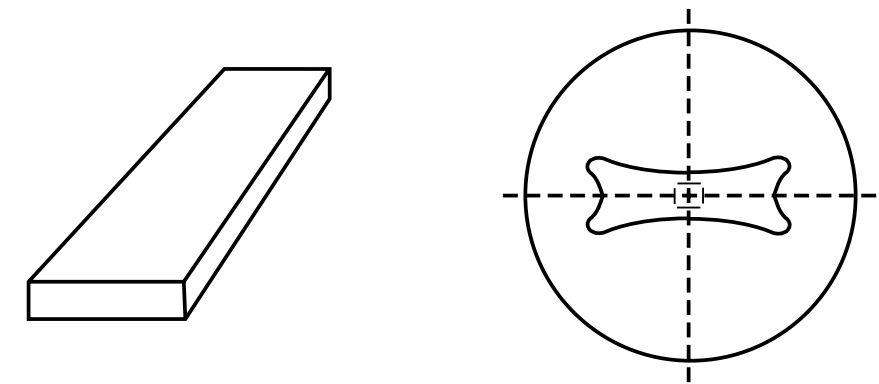
Parts to be injection moulded must be very carefully designed to facilitate the moulding process; the material used for the part, the desired shape and features of the part, the material of the mould, and the properties of the moulding machine must all be taken into account. The versatility of injection moulding is facilitated by this breadth of design considerations and possibilities.



EXTRUSION DESIGN VARIABLES

Fabricating extruded parts has been called more of an art form than a science. Because of the swell and flow characteristics of elastomeric materials, the orifice of the die is rarely identical to the cross section. Materials with different properties will have different swell and flow characteristics. A die that produces one shape with 20 durometer material will produce a different shape with a 30 durometer material. Each durometer change and material change necessitates a new die because of the differing flow characteristics.

Because of rubber's flow characteristics, the orifice of the die is rarely identical to the part's cross section.



Rectangular Finished Part

"Smile" Die Pattern to make finished part

Uncured rubber extrusions have a poor "green strength". This means the extrusion will have a tendency to sag and flatten, depending on: the hardness or softness of the compound, the tensile strength or quality of the compound, thickness or thinness of the cross sectional wall, the inner diameter of the extrusion and the rate of extrusion.

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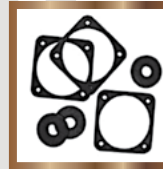
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BUMPERS

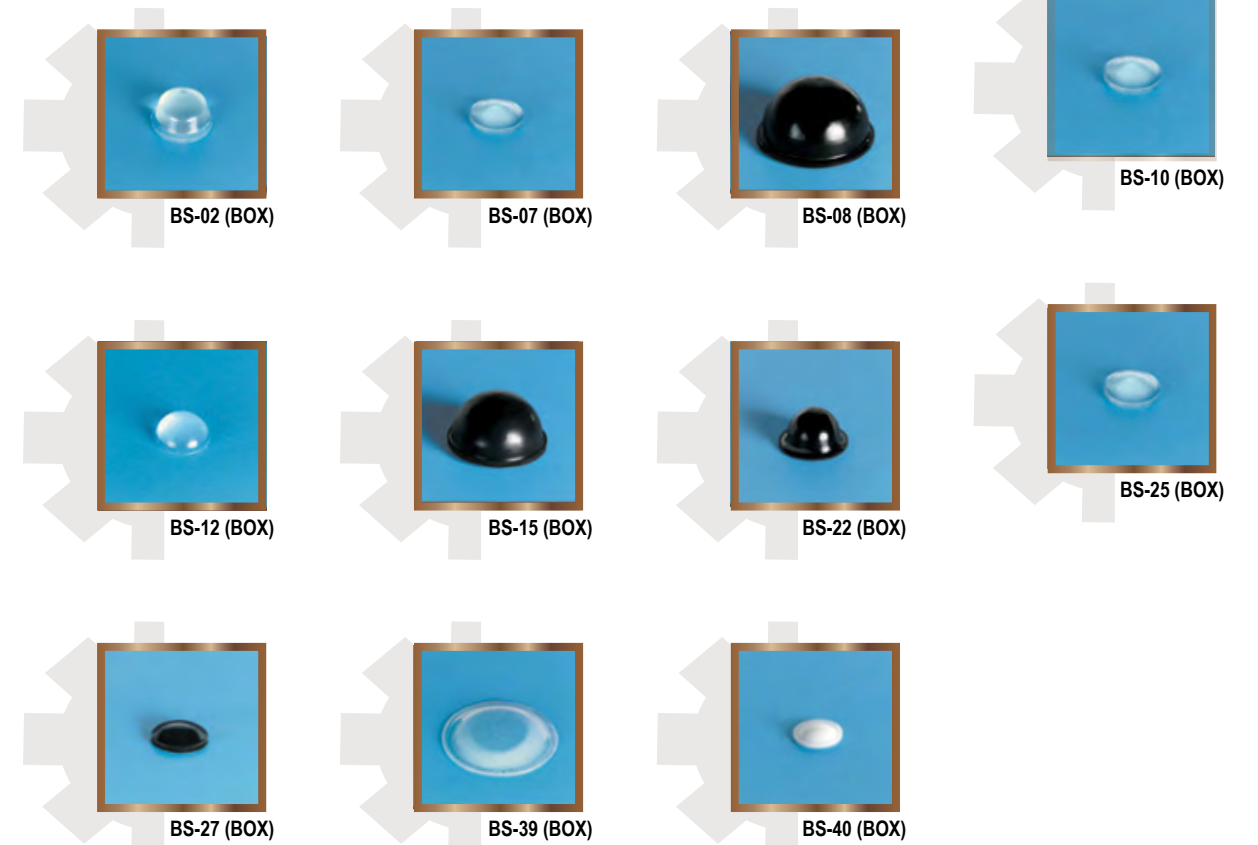
CONICAL ADHESIVE BACKED BUMPERS



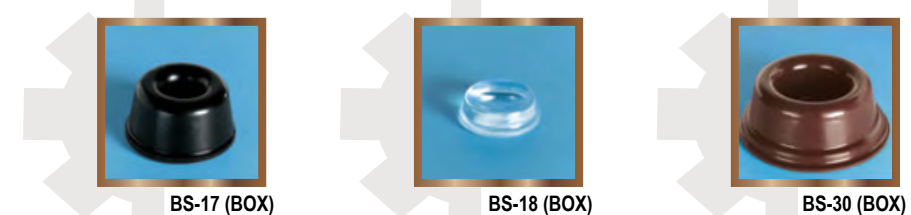
CYLINDRICAL ADHESIVE BACKED BUMPERS



HEMISPHERICAL ADHESIVE BACKED BUMPERS



RECESSED ADHESIVE BACKED BUMPERS



CONICAL

Product color options available in Clear, Black, White, Brown, and Grey



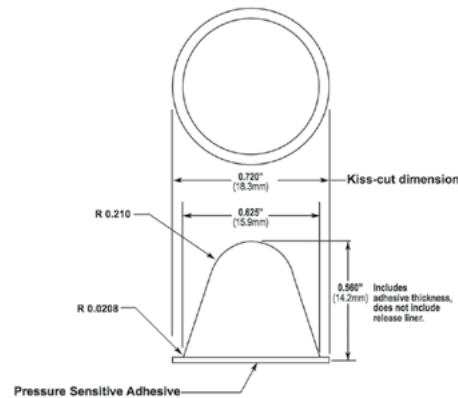
QS-BS-37 Cone Shaped Polyurethane Bumpers

Cone shaped profiles have a rounded point at the tip. They are our tallest bumpers available for applications that require extra height. Peel and stick.

Diameter (inches) .720"
Height (inches) .560"

Diameter (metric) 18.3mm
Height (metric) 14.2mm

Bumpers per Sheet 1
Bumpers per Box 1,500



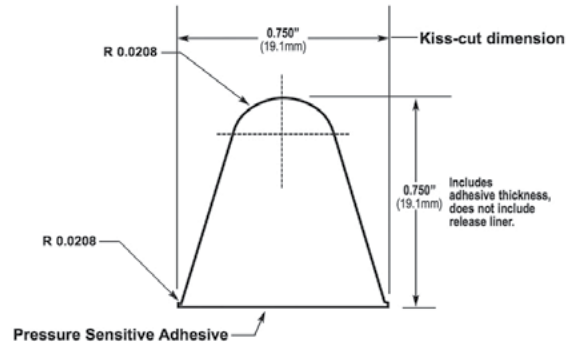
QS-BS-47 Cone Shaped Polyurethane Bumpers

Cone shaped profiles have a rounded point at the tip. They are our tallest bumpers available for applications that require extra height. Peel and stick.

Diameter (inches) .750"
Height (inches) .750"

Diameter (metric) 19.1mm
Height (metric) 19.1mm

Bumpers per Sheet 1
Bumpers per Box 1,000



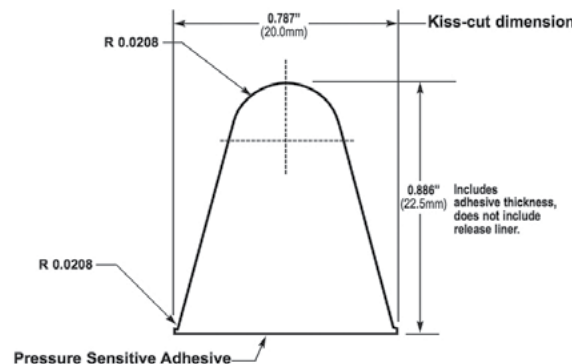
QS-BS-57 Cone Shaped Polyurethane Bumpers

Cone shaped profiles have a rounded point at the tip. They are our tallest bumpers available for applications that require extra height. Peel and stick.

Diameter (inches) .787"
Height (inches) .886"

Diameter (metric) 20.0mm
Height (metric) 22.5mm

Bumpers per Sheet 1
Bumpers per Box 1,000



CYLINDRICAL

Product color options available in Clear, Black, White, Brown, and Grey



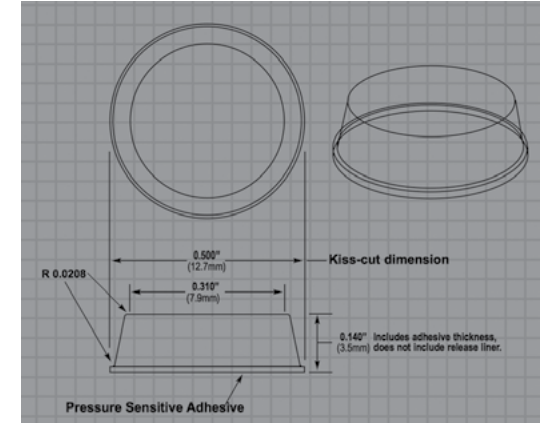
QS-BS-01 Flat Top Polyurethane Bumpers

These profiles are circular Bumpers with flat tops. The design utilizes the flat contact area for many varied applications; also, can be used in a recessed cavity for anti-skid applications

Diameter (inches) .500"
Height (inches) .140"

Diameter (metric) 12.7mm
Height (metric) 3.5mm

Bumpers per Sheet 200
Sheets per Box 25
Bumpers per Box 5,000



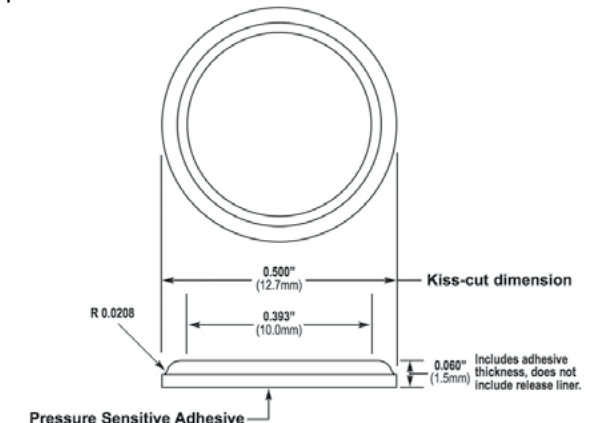
QS-BS-05 Flat Top Polyurethane Bumpers

These profiles are circular Bumpers with flat tops. The design utilizes the flat contact area for many varied applications; also, can be used in a recessed cavity for anti-skid applications

Diameter (inches) .500"
Height (inches) .060"

Diameter (metric) 12.7mm
Height (metric) 1.5mm

Bumpers per Sheet 200
Sheets per Box 25
Bumpers per Box 5,000



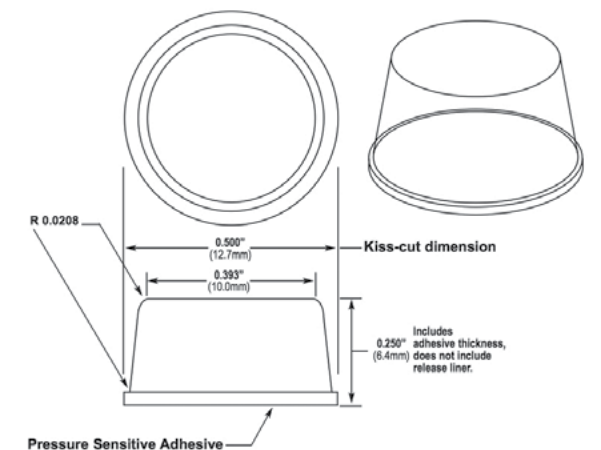
QS-BS-06 Flat Top Polyurethane Bumpers

These profiles are circular Bumpers with flat tops. The design utilizes the flat contact area for many varied applications; also, can be used in a recessed cavity for anti-skid applications

Diameter (inches) .500"
Height (inches) .250"

Diameter (metric) 12.7mm
Height (metric) 6.4mm

Bumpers per Sheet 200
Sheets per Box 25
Bumpers per Box 5,000



CYLINDRICAL

Product color options available in Clear, Black, White, Brown, and Grey



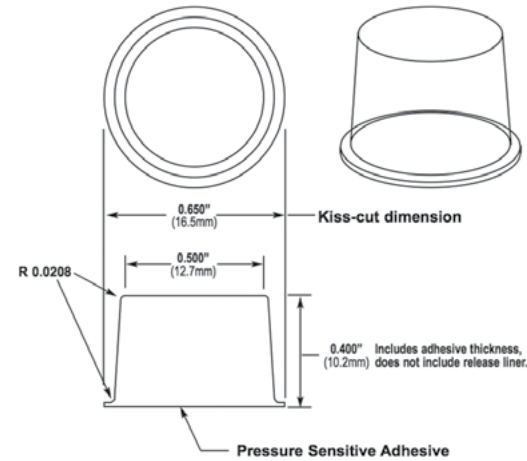
Diameter (inches) .650"
Height (inches) .400"

Diameter (metric) 16.5mm
Height (metric) 10.2mm

Bumpers per Sheet 128
Sheets per Box 20
Bumpers per Box 2,560

QS-BS-11 Flat Top Polyurethane Bumpers

These profiles are circular Bumpers with flat tops. The design utilizes the flat contact area for many varied applications; also, can be used in a recessed cavity for anti-skid applications



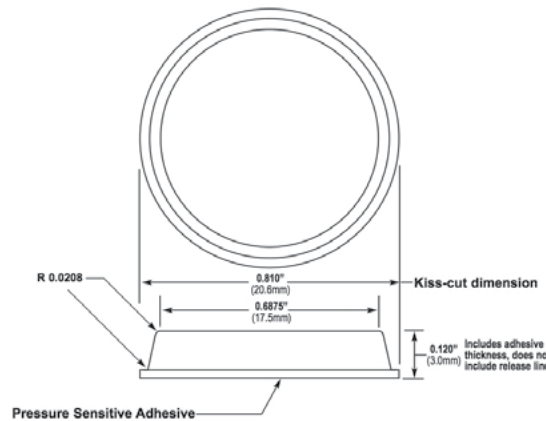
Diameter (inches) .810"
Height (inches) .120"

Diameter (metric) 20.6mm
Height (metric) 3.0mm

Bumpers per Sheet 72
Sheets per Box 35
Bumpers per Box 2,520

QS-BS-24 Flat Top Polyurethane Bumpers

These profiles are circular Bumpers with flat tops. The design utilizes the flat contact area for many varied applications; also, can be used in a recessed cavity for anti-skid applications



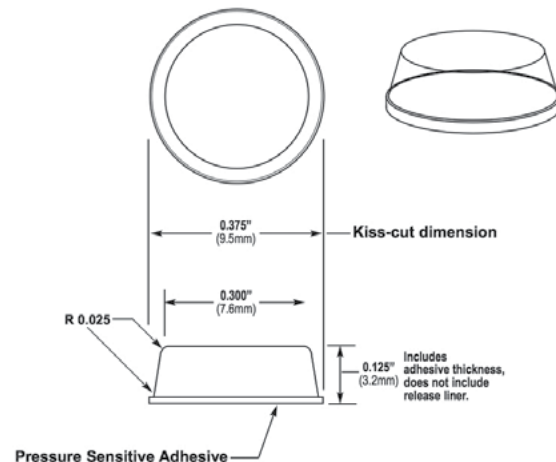
Diameter (inches) .375"
Height (inches) .125"

Diameter (metric) 9.5mm
Height (metric) 3.2mm

Bumpers per Sheet 300
Sheets per Box 20
Bumpers per Box 6,000

QS-BS-34 Flat Top Polyurethane Bumpers

These profiles are circular Bumpers with flat tops. The design utilizes the flat contact area for many varied applications; also, can be used in a recessed cavity for anti-skid applications



CYLINDRICAL

Product color options available in Clear, Black, White, Brown, and Grey



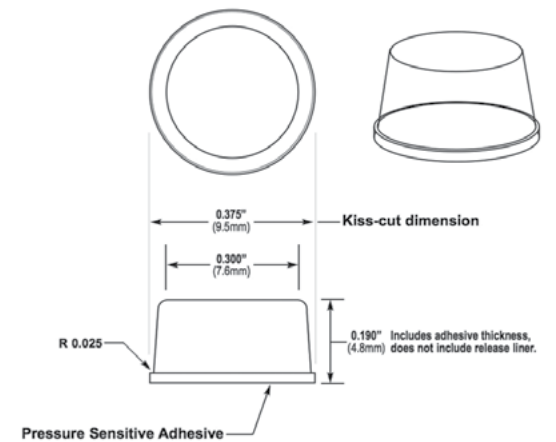
Diameter (inches) .375"
Height (inches) .190"

Diameter (metric) 9.5mm
Height (metric) 4.8mm

Bumpers per Sheet 200
Sheets per Box 25
Bumpers per Box 5,000

QS-BS-35 Flat Top Polyurethane Bumpers

These profiles are circular Bumpers with flat tops. The design utilizes the flat contact area for many varied applications; also, can be used in a recessed cavity for anti-skid applications



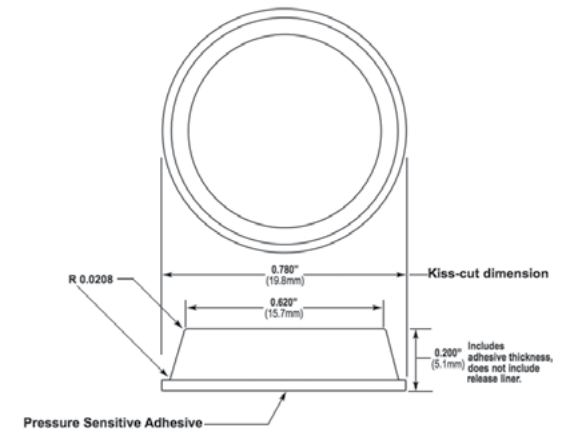
Diameter (inches) .780"
Height (inches) .200"

Diameter (metric) 19.8mm
Height (metric) 5.1mm

Bumpers per Sheet 84
Sheets per Box 40
Bumpers per Box 3,360

QS-BS-41 Flat Top Polyurethane Bumpers

These profiles are circular Bumpers with flat tops. The design utilizes the flat contact area for many varied applications; also, can be used in a recessed cavity for anti-skid applications



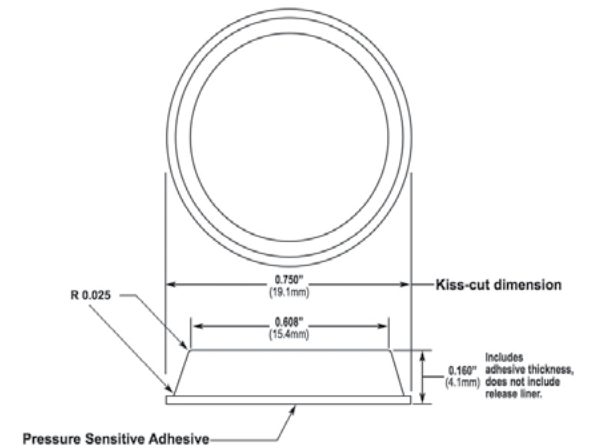
Diameter (inches) .750"
Height (inches) .160"

Diameter (metric) 19.1mm
Height (metric) 4.1mm

Bumpers per Sheet 98
Sheets per Box 25
Bumpers per Box 2,450

QS-BS-44 Flat Top Polyurethane Bumpers

These profiles are circular Bumpers with flat tops. The design utilizes the flat contact area for many varied applications; also, can be used in a recessed cavity for anti-skid applications



CYLINDRICAL

Product color options available in Clear, Black, White, Brown, and Grey



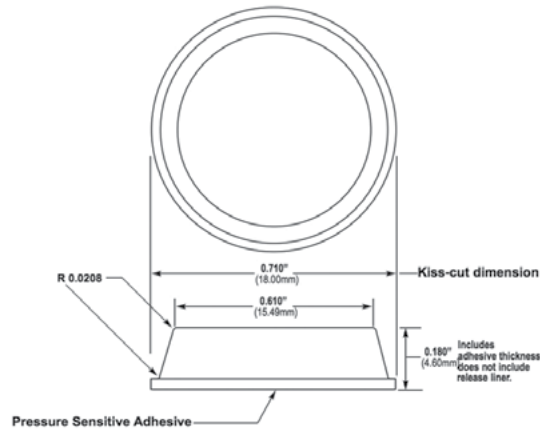
QS-BS-45 Flat Top Polyurethane Bumpers

These profiles are circular Bumpers with flat tops. The design utilizes the flat contact area for many varied applications; also, can be used in a recessed cavity for anti-skid applications

Diameter (inches) .710"
Height (inches) .180"

Diameter (metric) 18.00 mm
Height (metric) 4.60mm

Bumpers per Sheet 98
Sheets per Box 25
Bumpers per Box 2,450



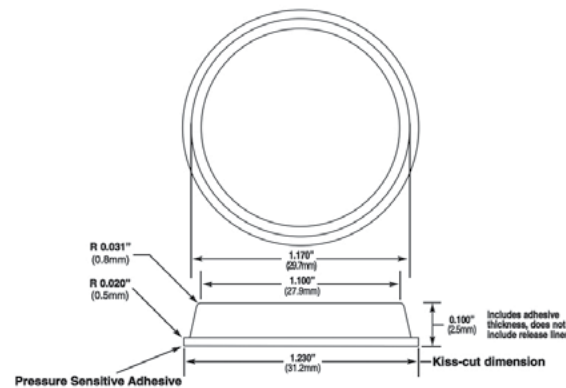
QS-BS-72 Flat Top Polyurethane Bumpers

These profiles are circular Bumpers with flat tops. The design utilizes the flat contact area for many varied applications; also, can be used in a recessed cavity for anti-skid applications

Diameter (inches) 1.230"
Height (inches) .100"

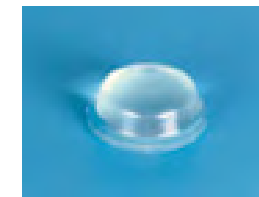
Diameter (metric) 31.24mm
Height (metric) 2.54mm

Bumpers per Sheet 32
Sheets per Box 75
Bumpers per Box 2,400



HEMISPHERICAL

Product color options available in Clear, Black, White, Brown, and Grey



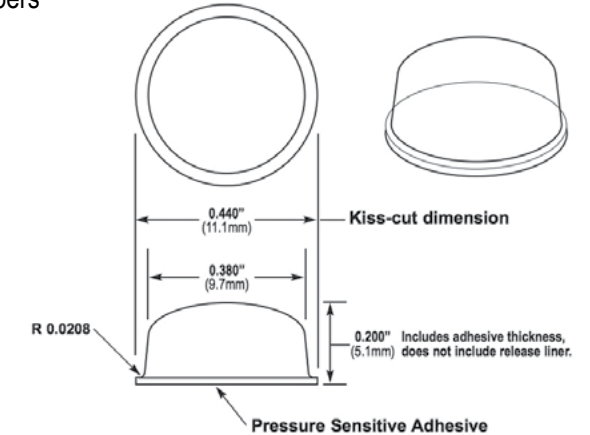
QS-BS-02 Rounded Top Polyurethane Bumpers

These parts are rounded on top and have a dome shape that absorbs impact and are ideal to prevent skidding. This category includes our smallest profiles.

Diameter (inches) .440"
Height (inches) .200"

Diameter (metric) 11.1mm
Height (metric) 5.1mm

Bumpers per Sheet 242
Sheets per Box 21
Bumpers per Box 5,082



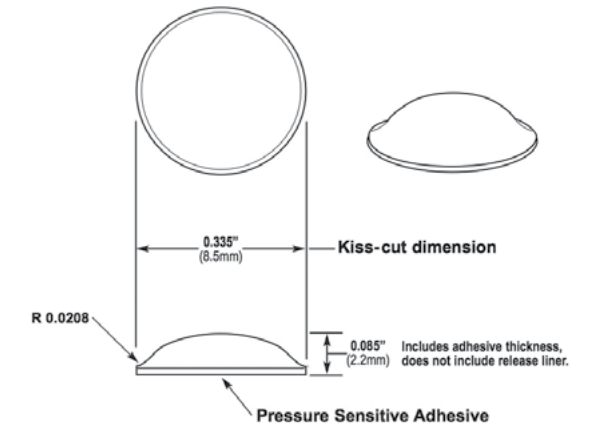
QS-BS-07 Rounded Top Polyurethane Bumpers

These parts are rounded on top and have a dome shape that absorbs impact and are ideal to prevent skidding. This category includes our smallest profiles.

Diameter (inches) .335"
Height (inches) .085"

Diameter (metric) 8.5mm
Height (metric) 2.2mm

Bumpers per Sheet 450
Sheets per Box 12
Bumpers per Box 5,400



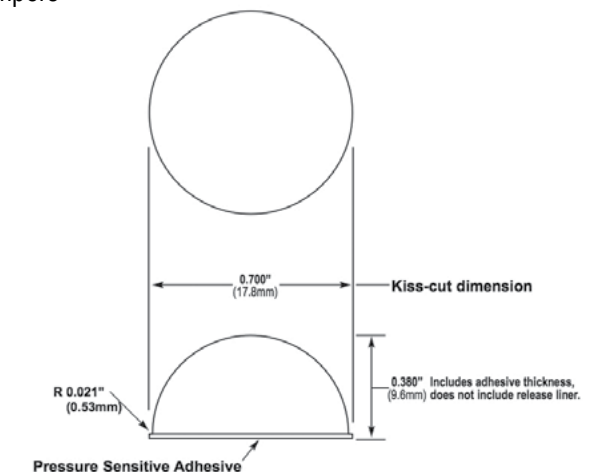
QS-BS-08 Rounded Top Polyurethane Bumpers

These parts are rounded on top and have a dome shape that absorbs impact and are ideal to prevent skidding. This category includes our smallest profiles.

Diameter (inches) .700"
Height (inches) .380"

Diameter (metric) 17.8mm
Height (metric) 9.6mm

Bumpers per Sheet 98
Sheets per Box 23
Bumpers per Box 2,254



HEMISPHERICAL

Product color options available in Clear, Black, White, Brown, and Grey



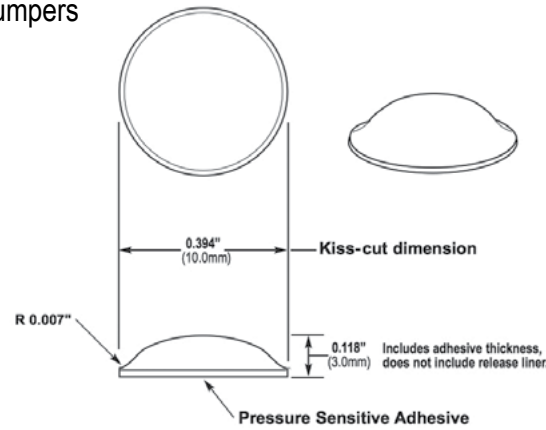
Diameter (inches) .394"
Height (inches) .118"

Diameter (metric) 10mm
Height (metric) 3mm

Bumpers per Sheet 288
Sheets per Box 25
Bumpers per Box 7,200

QS-BS-10 Rounded Top Polyurethane Bumpers

These parts are rounded on top and have a dome shape that absorbs impact and are ideal to prevent skidding. This category includes our smallest profiles.



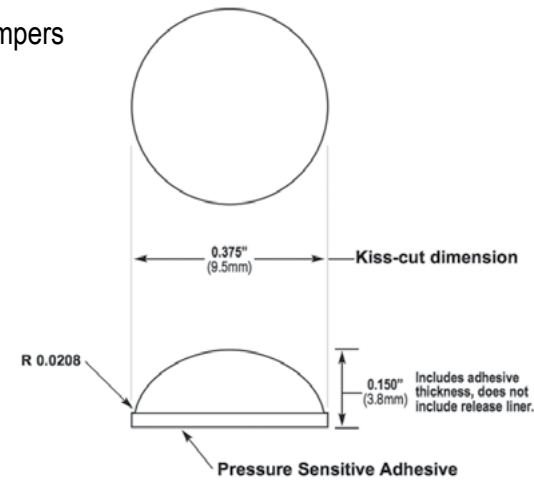
Diameter (inches) .375"
Height (inches) .150"

Diameter (metric) 9.5mm
Height (metric) 3.8mm

Bumpers per Sheet 288
Sheets per Box 25
Bumpers per Box 7,200

QS-BS-12 Rounded Top Polyurethane Bumpers

These parts are rounded on top and have a dome shape that absorbs impact and are ideal to prevent skidding. This category includes our smallest profiles.



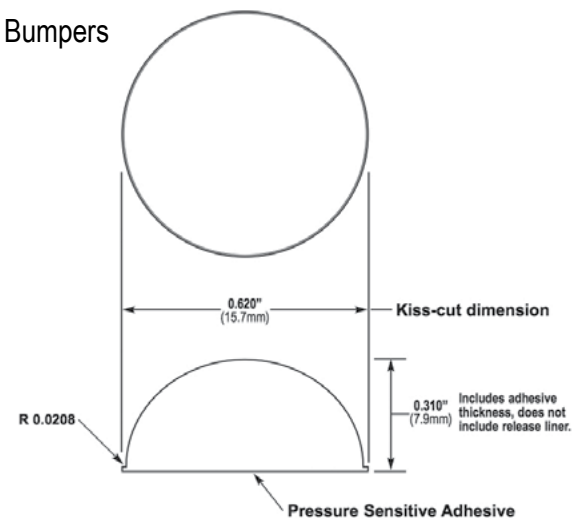
Diameter (inches) .620"
Height (inches) .310"

Diameter (metric) 15.7mm
Height (metric) 7.9mm

Bumpers per Sheet 128
Sheets per Box 25
Bumpers per Box 3,200

QS-BS-15 Rounded Top Polyurethane Bumpers

These parts are rounded on top and have a dome shape that absorbs impact and are ideal to prevent skidding. This category includes our smallest profiles.



HEMISPHERICAL

Product color options available in Clear, Black, White, Brown, and Grey



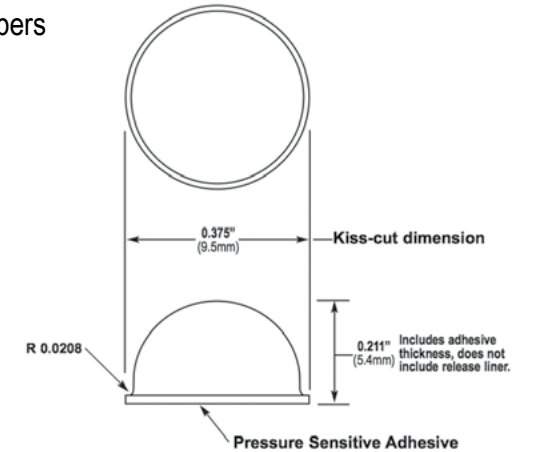
Diameter (inches) .375"
Height (inches) .211"

Diameter (metric) 9.5mm
Height (metric) 5.4mm

Bumpers per Sheet 300
Sheets per Box 20
Bumpers per Box 6,000

QS-BS-22 Rounded Top Polyurethane Bumpers

These parts are rounded on top and have a dome shape that absorbs impact and are ideal to prevent skidding. This category includes our smallest profiles.



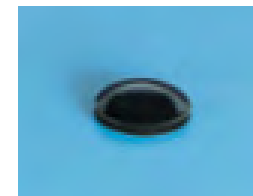
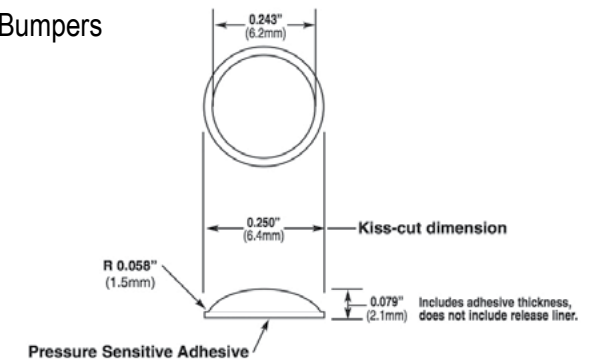
Diameter (inches) .250"
Height (inches) .079"

Diameter (metric) 6.4mm
Height (metric) 2.1mm

Bumpers per Sheet 450
Sheets per Box 12
Bumpers per Box 5,400

QS-BS-25 Rounded Top Polyurethane Bumpers

These parts are rounded on top and have a dome shape that absorbs impact and are ideal to prevent skidding. This category includes our smallest profiles.



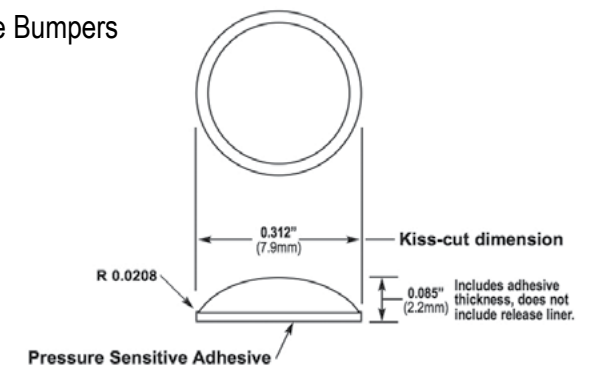
Diameter (inches) .312"
Height (inches) .085"

Diameter (metric) 7.9mm
Height (metric) 2.2mm

Bumpers per Sheet 450
Sheets per Box 12
Bumpers per Box 5,400

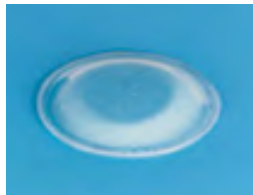
QS-BS-27 Rounded Top Polyurethane Bumpers

These parts are rounded on top and have a dome shape that absorbs impact and are ideal to prevent skidding. This category includes our smallest profiles.



HEMISPHERICAL

Product color options available in Clear, Black, White, Brown, and Grey



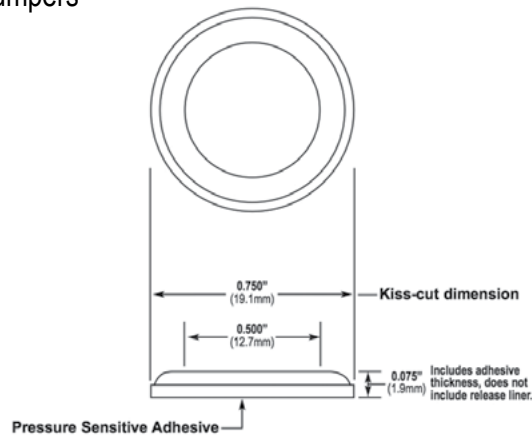
QS-BS-39 Rounded Top Polyurethane Bumpers

These parts are rounded on top and have a dome shape that absorbs impact and are ideal to prevent skidding. This category includes our smallest profiles.

Diameter (inches) .750"
Height (inches) .075"

Diameter (metric) 19.1mm
Height (metric) 1.9mm

Bumpers per Sheet 84
Sheets per Box 60
Bumpers per Box 5,040



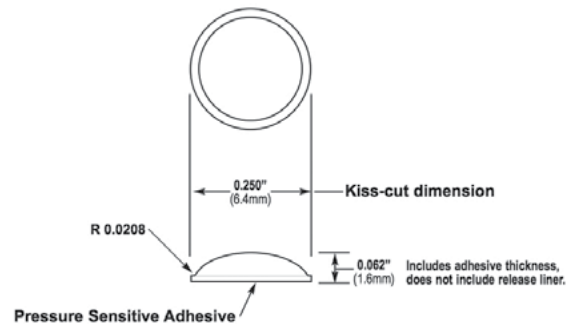
QS-BS-40 Rounded Top Polyurethane Bumpers

These parts are rounded on top and have a dome shape that absorbs impact and are ideal to prevent skidding. This category includes our smallest profiles.

Diameter (inches) .250"
Height (inches) .062"

Diameter (metric) 6.4mm
Height (metric) 1.6mm

Bumpers per Sheet 578
Sheets per Box 26
Bumpers per Box 15,028



RECESSED

Product color options available in Clear, Black, White, Brown, and Grey



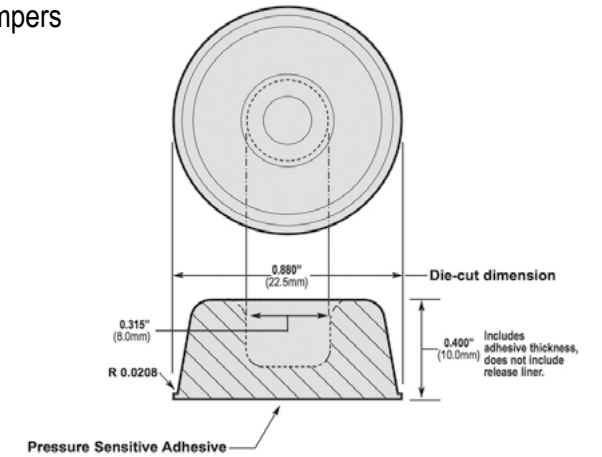
QS-BS-17 Recessed Polyurethane Bumpers

Recessed Bumpers have a hole half way through the center. The profile is adhesive backed; the use of a screw, nail, or staple may be used to fasten the Bumper for a more permanent attachment. They are also used for high impact applications such as large door enclosures.

Diameter (inches) .880"
Height (inches) .400"

Diameter (metric) 22.3mm
Height (metric) 10.2mm

Bumpers per Sheet 72
Sheets per Box 20
Bumpers per Box 1,440



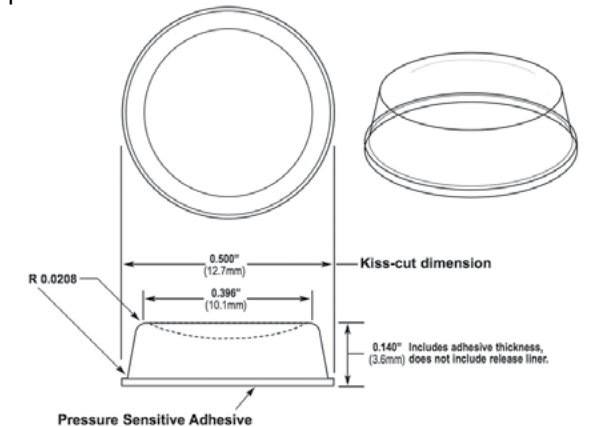
QS-BS-18 Recessed Polyurethane Bumpers

Recessed Bumpers have a hole half way through the center. The profile is adhesive backed; the use of a screw, nail, or staple may be used to fasten the Bumper for a more permanent attachment. They are also used for high impact applications such as large door enclosures.

Diameter (inches) .500"
Height (inches) .140"

Diameter (metric) 12.7mm
Height (metric) 3.5mm

Bumpers per Sheet 200
Sheets per Box 25
Bumpers per Box 5,000



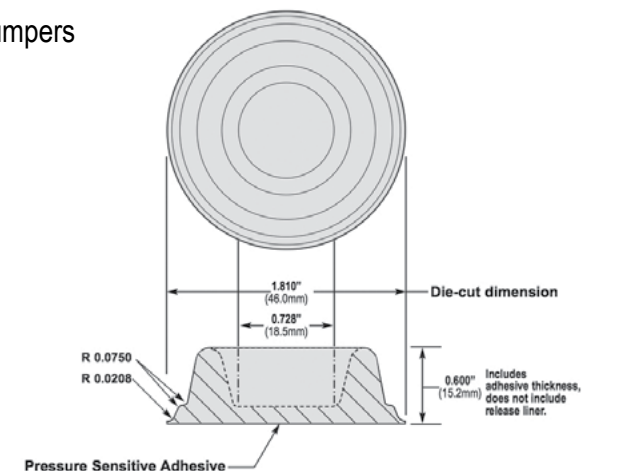
QS-BS-30 Recessed Polyurethane Bumpers

Recessed Bumpers have a hole half way through the center. The profile is adhesive backed; the use of a screw, nail, or staple may be used to fasten the Bumper for a more permanent attachment. They are also used for high impact applications such as large door enclosures.

Diameter (inches) 1.810"
Height (inches) .600"

Diameter (metric) 46.0mm
Height (metric) 15.2mm

Bumpers per Sheet 1
Bumpers per Box 500



SPECIAL SOFT

Product color options available in Clear, Black, White, Brown, and Grey



Diameter (inches) .500"
Height (inches) .140"

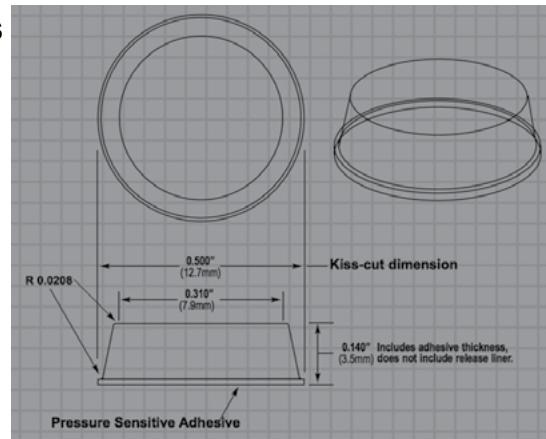
Diameter (metric) 12.7mm
Height (metric) 3.5mm

Bumpers per Sheet 200
Sheets per Box 25
Bumpers per Box 5,000

QS-BS-01SD Soft Durometer Bumpers

Our Soft Durometer (SD) Bumpers have been specifically engineered to provide the quietest closure available for any cabinet door, drawer, or enclosure. The Soft Durometer Bumpers use a device called "Flexible Softness" which absorbs the physical force of any impact by more than half. A very soft polyurethane material and varying unique designs are employed to achieve this impressive result. The Soft Durometer Bumpers were not designed for load bearing applications.

The Soft Durometer line is made exclusively out of Clear material. Colors are available upon special request.



SPECIAL SOFT

Product color options available in Clear, Black, White, Brown, and Grey



Diameter (inches) .375"
Height (inches) .150"

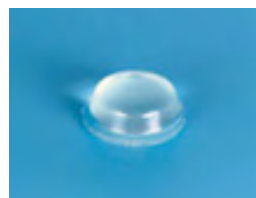
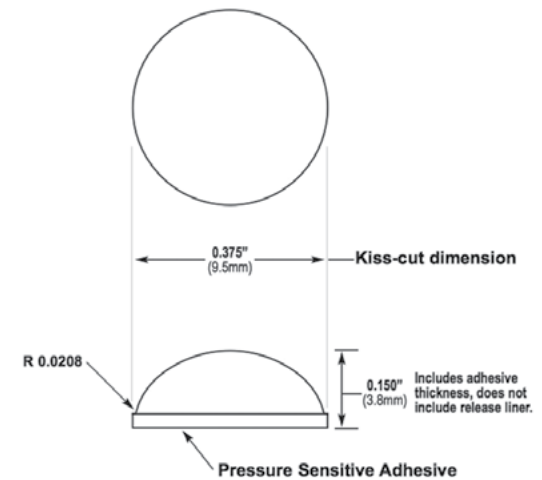
Diameter (metric) 9.5mm
Height (metric) 3.8mm

Bumpers per Sheet 288
Sheets per Box 25
Bumpers per Box 7,200

QS-BS-12SD Soft Durometer Bumpers

Our Soft Durometer (SD) Bumpers have been specifically engineered to provide the quietest closure available for any cabinet door, drawer, or enclosure. The Soft Durometer Bumpers use a device called "Flexible Softness" which absorbs the physical force of any impact by more than half. A very soft polyurethane material and varying unique designs are employed to achieve this impressive result. The Soft Durometer Bumpers were not designed for load bearing applications.

The Soft Durometer line is made exclusively out of Clear material. Colors are available upon special request.



Diameter (inches) .440"
Height (inches) .200"

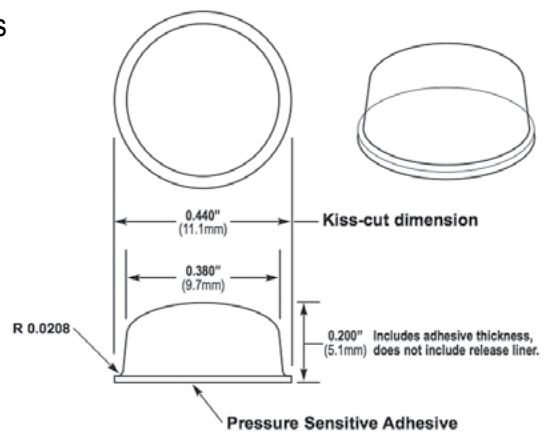
Diameter (metric) 11.1mm
Height (metric) 5.1mm

Bumpers per Sheet 55
Sheets per Box 92
Bumpers per Box 5,060

QS-BS-02SD Soft Durometer Bumpers

Our Soft Durometer (SD) Bumpers have been specifically engineered to provide the quietest closure available for any cabinet door, drawer, or enclosure. The Soft Durometer Bumpers use a device called "Flexible Softness" which absorbs the physical force of any impact by more than half. A very soft polyurethane material and varying unique designs are employed to achieve this impressive result. The Soft Durometer Bumpers were not designed for load bearing applications.

The Soft Durometer line is made exclusively out of Clear material. Colors are available upon special request.



Diameter (inches) .500"
Height (inches) .140"

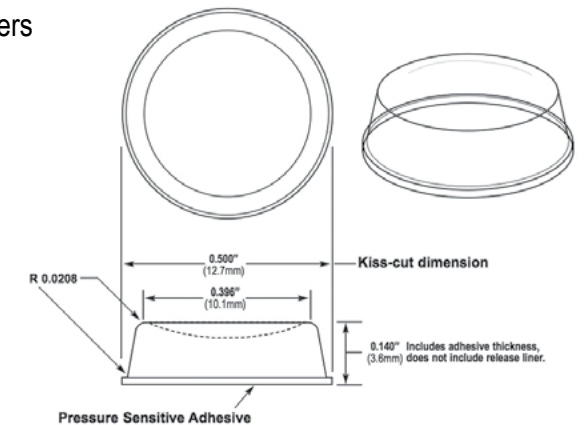
Diameter (metric) 12.7mm
Height (metric) 3.5mm

Bumpers per Sheet 200
Sheets per Box 25
Bumpers per Box 5,000

QS-BS-18SD Soft Durometer Bumpers

Our Soft Durometer (SD) Bumpers have been specifically engineered to provide the quietest closure available for any cabinet door, drawer, or enclosure. The Soft Durometer Bumpers use a device called "Flexible Softness" which absorbs the physical force of any impact by more than half. A very soft polyurethane material and varying unique designs are employed to achieve this impressive result. The Soft Durometer Bumpers were not designed for load bearing applications.

The Soft Durometer line is made exclusively out of Clear material. Colors are available upon special request.



Diameter (inches) .335"
Height (inches) .085"

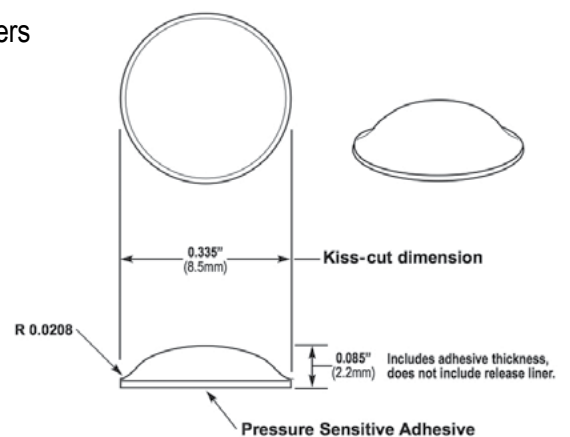
Diameter (metric) 8.5mm
Height (metric) 2.2mm

Bumpers per Sheet 450
Sheets per Box 12
Bumpers per Box 5,400

QS-BS-07SD Soft Durometer Bumpers

Our Soft Durometer (SD) Bumpers have been specifically engineered to provide the quietest closure available for any cabinet door, drawer, or enclosure. The Soft Durometer Bumpers use a device called "Flexible Softness" which absorbs the physical force of any impact by more than half. A very soft polyurethane material and varying unique designs are employed to achieve this impressive result. The Soft Durometer Bumpers were not designed for load bearing applications.

The Soft Durometer line is made exclusively out of Clear material. Colors are available upon special request.



Diameter (inches) .375"
Height (inches) .211"

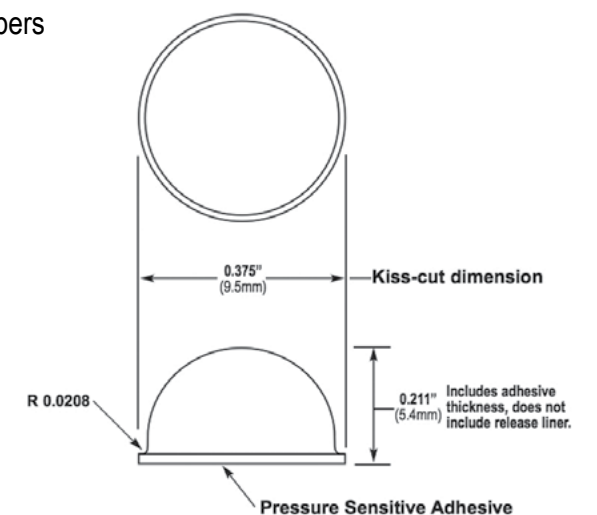
Diameter (metric) 9.5mm
Height (metric) 5.4mm

Bumpers per Sheet 300
Sheets per Box 20
Bumpers per Box 6,000

QS-BS-22SD Soft Durometer Bumpers

Our Soft Durometer (SD) Bumpers have been specifically engineered to provide the quietest closure available for any cabinet door, drawer, or enclosure. The Soft Durometer Bumpers use a device called "Flexible Softness" which absorbs the physical force of any impact by more than half. A very soft polyurethane material and varying unique designs are employed to achieve this impressive result. The Soft Durometer Bumpers were not designed for load bearing applications.

The Soft Durometer line is made exclusively out of Clear material. Colors are available upon special request.



SPECIAL SOFT

Product color options available in Clear, Black, White, Brown, and Grey



QS-BS-27SD Soft Durometer Bumpers

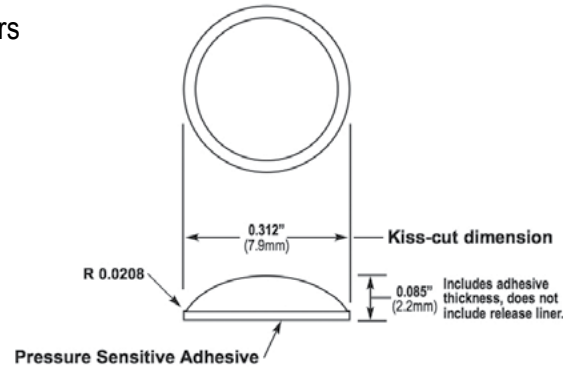
Our Soft Durometer (SD) Bumpers have been specifically engineered to provide the quietest closure available for any cabinet door, drawer, or enclosure. The Soft Durometer Bumpers use a device called "Flexible Softness" which absorbs the physical force of any impact by more than half. A very soft polyurethane material and varying unique designs are employed to achieve this impressive result. The Soft Durometer Bumpers were not designed for load bearing applications.

The Soft Durometer line is made exclusively out of Clear material. Colors are available upon special request.

Diameter (inches) .312"
Height (inches) .085"

Diameter (metric) 7.9mm
Height (metric) 2.2mm

Bumpers per Sheet 450
Sheets per Box 12
Bumpers per Box 5,400



SPECIAL SOFT

Product color options available in Clear, Black, White, Brown, and Grey



QS-BS-58SD Soft Durometer Bumpers

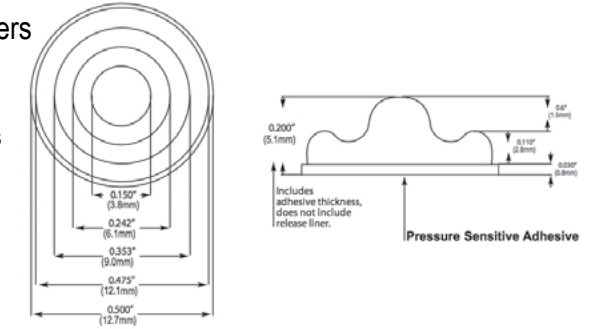
Our Soft Durometer (SD) Bumpers have been specifically engineered to provide the quietest closure available for any cabinet door, drawer, or enclosure. The Soft Durometer Bumpers use a device called "Flexible Softness" which absorbs the physical force of any impact by more than half. A very soft polyurethane material and varying unique designs are employed to achieve this impressive result. The Soft Durometer Bumpers were not designed for load bearing applications.

The Soft Durometer line is made exclusively out of Clear material. Colors are available upon special request.

Diameter (inches) .500"
Height (inches) .200"

Diameter (metric) 12.7mm
Height (metric) 5.1mm

Bumpers per Sheet 200
Sheets per Box 25
Bumpers per Box 5,000



QS-BS-33SD Soft Durometer Bumpers

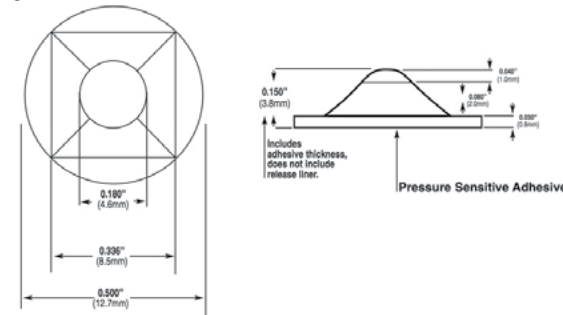
Our Soft Durometer (SD) Bumpers have been specifically engineered to provide the quietest closure available for any cabinet door, drawer, or enclosure. The Soft Durometer Bumpers use a device called "Flexible Softness" which absorbs the physical force of any impact by more than half. A very soft polyurethane material and varying unique designs are employed to achieve this impressive result. The Soft Durometer Bumpers were not designed for load bearing applications.

The Soft Durometer line is made exclusively out of Clear material. Colors are available upon special request.

Diameter (inches) .500"
Height (inches) .150"

Diameter (metric) 12.7mm
Height (metric) 3.8mm

Bumpers per Sheet 200
Sheets per Box 25
Bumpers per Box 5,000



QS-BS-67SD Soft Durometer Bumpers

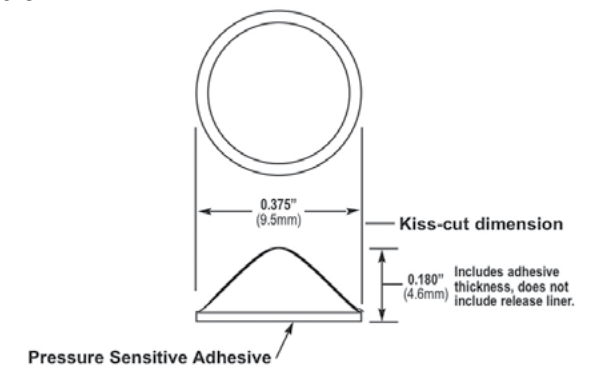
Our Soft Durometer (SD) Bumpers have been specifically engineered to provide the quietest closure available for any cabinet door, drawer, or enclosure. The Soft Durometer Bumpers use a device called "Flexible Softness" which absorbs the physical force of any impact by more than half. A very soft polyurethane material and varying unique designs are employed to achieve this impressive result. The Soft Durometer Bumpers were not designed for load bearing applications.

The Soft Durometer line is made exclusively out of Clear material. Colors are available upon special request.

Diameter (inches) .375"
Height (inches) .180"

Diameter (metric) 9.5mm
Height (metric) 4.6mm

Bumpers per Sheet 288
Sheets per Box 25
Bumpers per Box 7,200



QS-BS-34SD Soft Durometer Bumpers

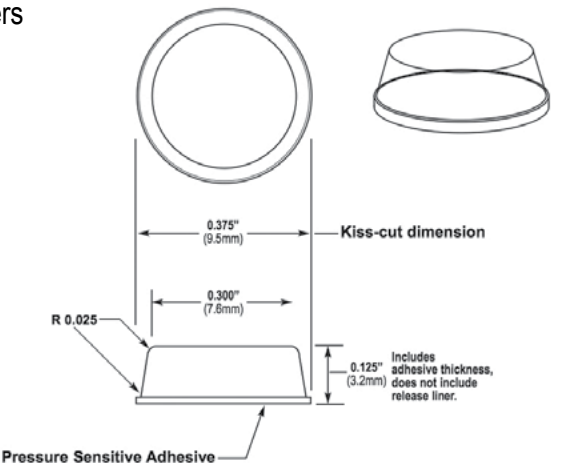
Our Soft Durometer (SD) Bumpers have been specifically engineered to provide the quietest closure available for any cabinet door, drawer, or enclosure. The Soft Durometer Bumpers use a device called "Flexible Softness" which absorbs the physical force of any impact by more than half. A very soft polyurethane material and varying unique designs are employed to achieve this impressive result. The Soft Durometer Bumpers were not designed for load bearing applications.

The Soft Durometer line is made exclusively out of Clear material. Colors are available upon special request.

Diameter (inches) .375"
Height (inches) .125"

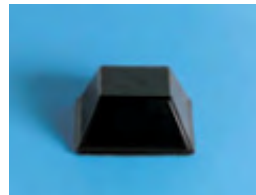
Diameter (metric) 9.5mm
Height (metric) 3.2mm

Bumpers per Sheet 300
Sheets per Box 20
Bumpers per Box 6,000



SQUARE

Product color options available in Clear, Black, White, Brown, and Grey



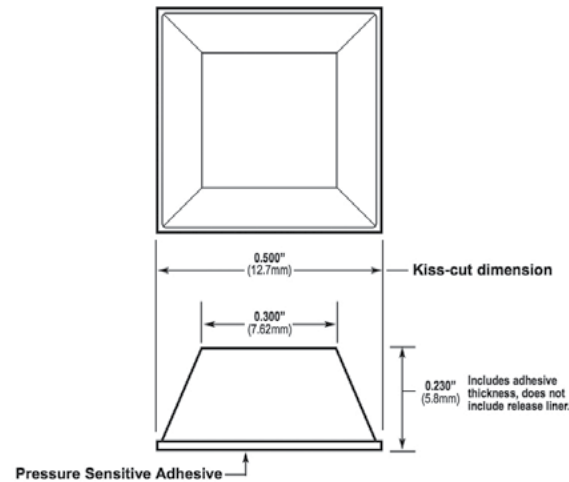
QS-BS-03 Tapered Square Bumpers

The tapered square Bumpers consist of the largest surface contact area of any of our products.

Width (inches) .500"
Height (inches) .230"

Width (metric) 12.7mm
Height (metric) 5.8mm

Bumpers per Sheet 200
Sheets per Box 25
Bumpers per Box 5,000



SQUARE

Product color options available in Clear, Black, White, Brown, and Grey



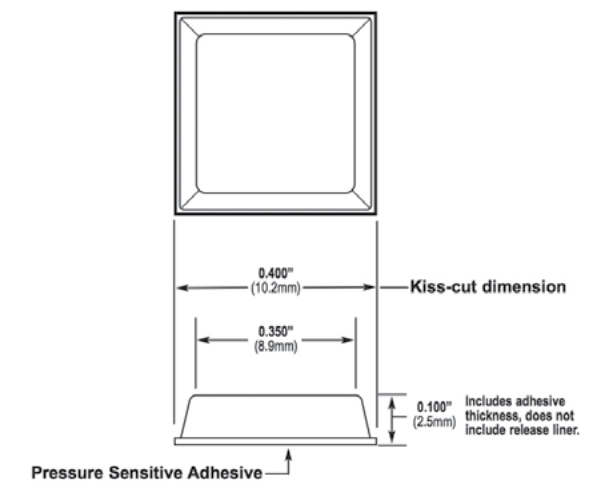
QS-BS-20 Tapered Square Bumpers

The tapered square Bumpers consist of the largest surface contact area of any of our products.

Width (inches) .400"
Height (inches) .100"

Width (metric) 10.2mm
Height (metric) 2.5mm

Bumpers per Sheet 242
Sheets per Box 21
Bumpers per Box 5,082



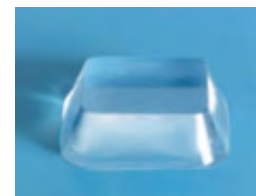
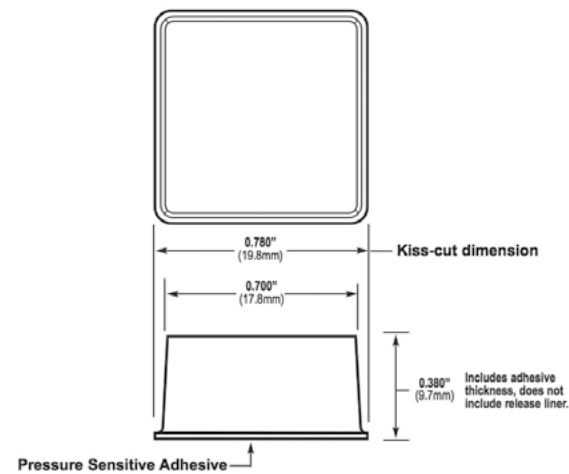
QS-BS-04 Tapered Square Bumpers

The tapered square Bumpers consist of the largest surface contact area of any of our products.

Width (inches) .780"
Height (inches) .380"

Width (metric) 19.8mm
Height (metric) 9.7mm

Bumpers per Sheet 1
Bumpers per Box 2,000



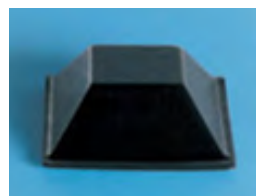
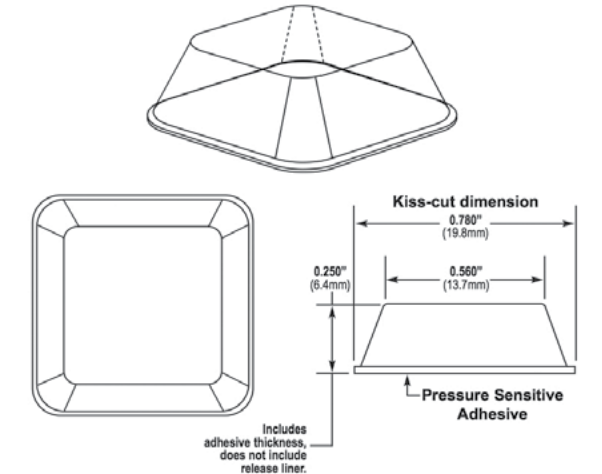
QS-BS-29 Tapered Square Bumpers

The tapered square Bumpers consist of the largest surface contact area of any of our products.

Width (inches) .780"
Height (inches) .250"

Width (metric) 19.8mm
Height (metric) 6.4mm

Bumpers per Sheet 98
Sheets per Box 30
Bumpers per Box 2,940



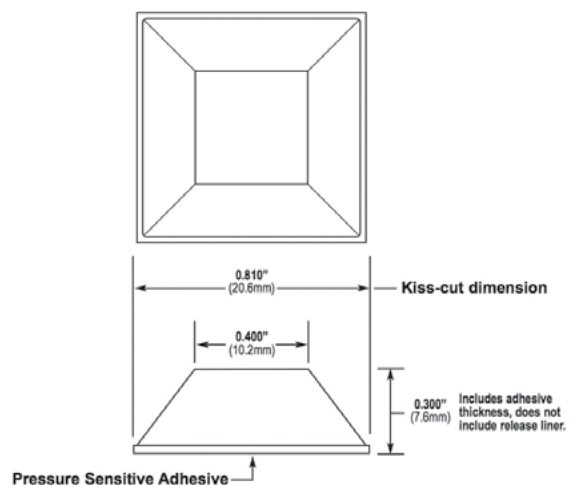
QS-BS-19 Tapered Square Bumpers

The tapered square Bumpers consist of the largest surface contact area of any of our products.

Width (inches) .810"
Height (inches) .300"

Width (metric) 20.6mm
Height (metric) 7.6mm

Bumpers per Sheet 98
Sheets per Box 27
Bumpers per Box 2,646



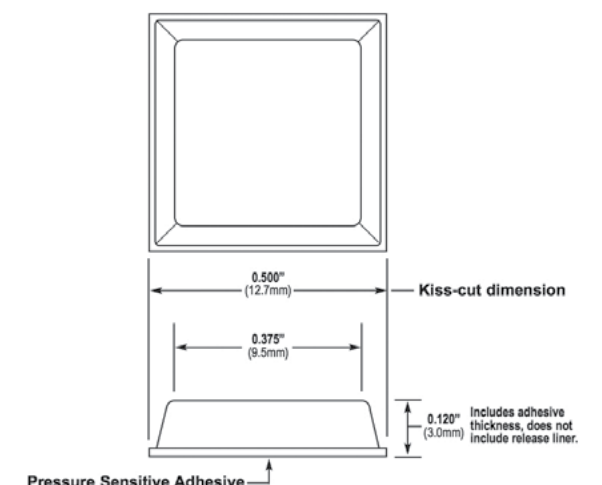
QS-BS-32 Tapered Square Bumpers

The tapered square Bumpers consist of the largest surface contact area of any of our products.

Width (inches) .500"
Height (inches) .120"

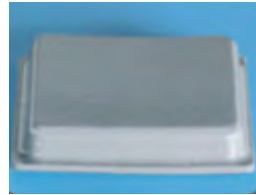
Width (metric) 12.7mm
Height (metric) 3.0mm

Bumpers per Sheet 200
Sheets per Box 25
Bumpers per Box 5,000



SQUARE

Product color options available in Clear, Black, White, Brown, and Grey



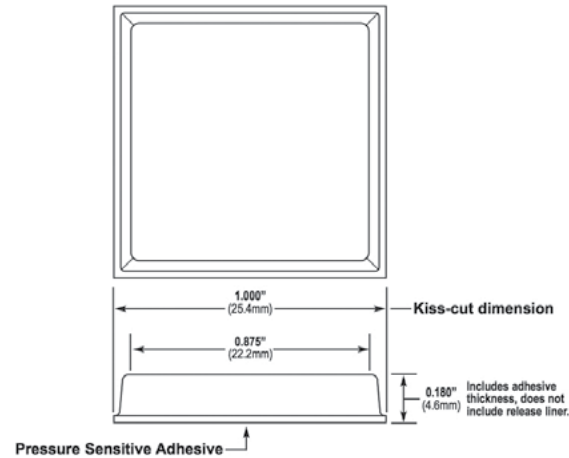
QS-BS-36 Tapered Square Bumpers

The tapered square Bumpers consist of the largest surface contact area of any of our products.

Width (inches) 1.000"
Height (inches) .180"

Width (metric) 25.4mm
Height (metric) 4.6mm

Bumpers per Sheet 55
Sheets per Box 42
Bumpers per Box 2,310



BUTTON BUMPERS

By "E" Dimension



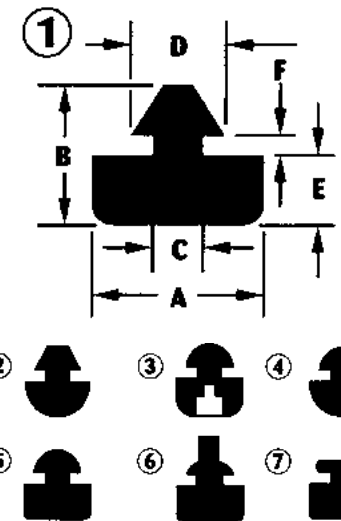
| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|----------|---------|-------|-------|------|-------|-------|------|-------|-------|-----|-------|-------|------|------|-------|-----|-------|-------|-----|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-4273 | 5 | 15/64 | 0.234 | 6.0 | 11/64 | 0.165 | 4.2 | 1/8 | 0.125 | 3.2 | 7/32 | 0.218 | 5.6 | 1/32 | 0.031 | 0.8 | 3/32 | 0.094 | 2.4 |
| E-3161 | 5 | 5/16 | 0.313 | 7.9 | 3/16 | 0.188 | 4.8 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 3/64 | 0.047 | 1.2 | 1/32 | 0.031 | 0.8 |
| E-2433 | 7 | 1/2 | 0.500 | 12.7 | 9/64 | 0.141 | 3.6 | 13/64 | 0.203 | 5.2 | 19/64 | 0.297 | 7.5 | 3/64 | 0.047 | 1.2 | 3/64 | 0.047 | 1.2 |
| E-2618 | 2 | 13/64 | 0.200 | 5.1 | 11/64 | 0.165 | 4.2 | 1/16 | 0.062 | 0.7 | 1/64 | 0.100 | 2.6 | 3/64 | 0.048 | 1.2 | 5/64 | 0.070 | 1.8 |
| E-2963 | 6 | 3/8 | 0.378 | 9.6 | 1/2 | 0.500 | 12.7 | 11/64 | 0.169 | 4.3 | 15/64 | 0.228 | 5.9 | 1/16 | 0.059 | 1.5 | 3/64 | 0.040 | 1.0 |
| E-2906 | 1 | 15/32 | 0.475 | 12.2 | 11/32 | 0.342 | 8.7 | 1/8 | 0.125 | 3.2 | 9/64 | 0.145 | 3.7 | 1/16 | 0.062 | 1.6 | 15/64 | 0.235 | 6.0 |
| E-3058 | 1 | 17/32 | 0.531 | 13.5 | 17/64 | 0.266 | 6.8 | 15/64 | 0.234 | 6.0 | 19/64 | 0.297 | 7.5 | 1/16 | 0.063 | 1.6 | 3/64 | 0.047 | 1.2 |
| E-3066 | 7 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 1/16 | 0.063 | 1.6 |
| E-3169 | 1 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 5/64 | 0.070 | 1.8 |
| E-3171 | 1 | 1/2 | 0.500 | 12.7 | 17/64 | 0.266 | 6.7 | 9/32 | 0.281 | 7.1 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 3/64 | 0.047 | 1.1 |
| E-2682 | 1 | 1/2 | 0.500 | 12.7 | 19/64 | 0.297 | 7.5 | 1/4 | 0.250 | 6.4 | 1/2 | 0.500 | 12.7 | 1/16 | 0.063 | 1.6 | 1/16 | 0.063 | 1.6 |
| E-3188 | 5 | 5/16 | 0.313 | 7.9 | 7/32 | 0.219 | 5.6 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 1/16 | 0.063 | 1.6 |
| E-3266 | 7 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 1/32 | 0.031 | 0.8 |
| E-2935 | 7 | 3/8 | 0.375 | 9.5 | 7/32 | 0.219 | 5.6 | 1/4 | 0.250 | 6.3 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.5 | 1/16 | 0.063 | 1.5 |
| E-3269 | 1 | 3/8 | 0.375 | 9.5 | 17/64 | 0.266 | 6.7 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 3/32 | 0.090 | 2.3 |
| E-4081 | 1 | 9/16 | 0.563 | 14.3 | 1/4 | 0.250 | 6.4 | 9/32 | 0.281 | 7.1 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 1/16 | 0.063 | 1.6 |
| E-4182 | 1 | 5/8 | 0.625 | 15.9 | 9/32 | 0.281 | 7.1 | 3/16 | 0.188 | 4.8 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 | 1/32 | 0.031 | 0.8 |
| E-2427 | 1 | 7/16 | 0.438 | 11.1 | 5/16 | 0.313 | 7.9 | 1/4 | 0.250 | 6.4 | 11/32 | 0.344 | 8.7 | 1/16 | 0.063 | 1.6 | 1/32 | 0.031 | 0.8 |
| E-289 | 7 | 3/8 | 0.375 | 9.5 | 7/32 | 0.219 | 5.6 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 1/16 | 0.063 | 1.6 |
| E-3307 | 6 | 31/82 | 0.378 | 9.6 | 39/74 | 0.527 | 13.4 | 8/47 | 0.170 | 4.3 | 3/13 | 0.230 | 5.8 | 1/14 | 0.072 | 1.8 | 3/79 | 0.038 | 1.0 |
| E-2668 | 2 | 1/4 | 0.250 | 6.4 | 9/64 | 0.141 | 3.6 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 5/64 | 0.077 | 2.0 | 1/32 | 0.031 | 0.8 |
| E-4267 | 6 | 1/4 | 0.250 | 6.4 | 9/32 | 0.277 | 7.0 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 5/64 | 0.077 | 2.0 | 1/32 | 0.032 | 0.8 |
| E-3070 | 7 | 3/8 | 0.375 | 9.5 | 7/32 | 0.219 | 5.6 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 5/64 | 0.078 | 2.0 | 1/16 | 0.063 | 1.6 |
| E-3174* | 1 | 5/16 | 0.313 | 7.9 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 5/64 | 0.078 | 2.0 | 1/16 | 0.063 | 1.6 |
| E-2621 | 2 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 3/16 | 0.187 | 4.8 | 3/32 | 0.093 | 2.4 | 3/32 | 0.094 | 2.4 |
| E-3301 | 1 | 1/2 | 0.500 | 12.7 | 12/35 | 0.343 | 8.7 | 3/16 | 0.187 | 4.7 | 1/4 | 0.250 | 6.4 | 3/32 | 0.093 | 2.4 | 1/16 | 0.062 | 1.6 |
| E-3062 | 1 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 3/32 | 0.094 | 2.4 | 3/64 | 0.047 | 1.2 |
| E-3064 | 2 | 7/16 | 0.438 | 11.1 | 19/64 | 0.297 | 7.5 | 15/64 | 0.234 | 6.0 | 19/64 | 0.297 | 7.5 | 3/32 | 0.094 | 2.4 | 3/64 | 0.047 | 1.2 |
| E-3069 | S | 5/16 | 0.313 | 7.9 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 3/32 | 0.094 | 2.4 | 1/32 | 0.031 | 0.8 |

* Indicates inserting hole in base and stem. ** Special Design-Inverted "A" dimension, stepped "E" dimension.

Button Bumpers (catch bumpers) are an easy way to affix cushioning to products and equipment. These bumpers are attached without need for screws or other fasteners - the one-way "catch" end of the bumper is simply inserted into an appropriately-sized hole.

Flexible shutters adjust to accommodate and support any shape from .125" (3,2 mm) to a maximum diameter of 2.470" (62,7 mm).

- Absorbs vibration and cushions and insulates cables, tubing, hoses or shafts with limited internal clearance.
- Fingertip pressure snap-locks the bumper bushing into its mounting hole.



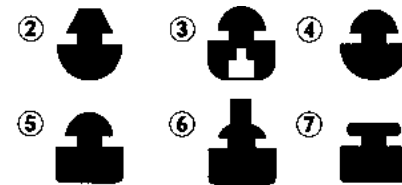
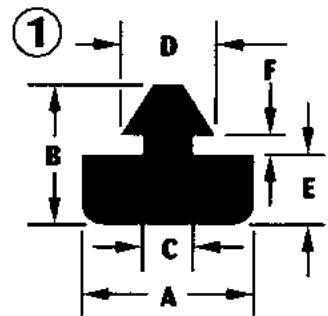
BUTTON BUMPERS

By "E" Dimension



Button Bumpers (catch bumpers) are an easy way to affix cushioning to products and equipment. These bumpers are attached without need for screws or other fasteners - the one-way "catch" end of the bumper is simply inserted into an appropriately-sized hole.

- Flexible shutters adjust to accommodate and support any shape from .125" (3,2 mm) to a maximum diameter of 2.470" (62,7 mm).
- Absorbs vibration and cushions and insulates cables, tubing, hoses or shafts with limited internal clearance.
- Fingertip pressure snap-locks the bushing into its mounting hole.



| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|----------|---------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|------|-------|-----|------|-------|-----|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-3170 | 5 | 5/16 | 0.313 | 7.9 | 23/64 | 0.354 | 9.0 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 3/32 | 0.094 | 2.4 | 5/64 | 0.075 | 1.9 |
| E-3265 | 6 | 1/4 | 0.250 | 6.4 | 15/32 | 0.469 | 11.9 | 1/8 | 0.125 | 3.2 | 7/32 | 0.219 | 5.6 | 3/32 | 0.094 | 2.4 | 3/64 | 0.040 | 1.0 |
| E-4068 | 5 | 7/16 | 0.438 | 11.1 | 17/64 | 0.266 | 6.7 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 | 5/64 | 0.078 | 2.0 |
| E-2944 | 1 | 7/16 | 0.438 | 11.1 | 17/64 | 0.266 | 6.8 | 1/4 | 0.250 | 6.3 | 5/16 | 0.313 | 7.9 | 3/32 | 0.094 | 2.4 | 3/64 | 0.047 | 1.2 |
| E-4189 | 1 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 29/64 | 0.453 | 11.5 | 3/32 | 0.094 | 2.4 | 3/64 | 0.040 | 1.0 |
| E-4266* | 1 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 17/64 | 0.266 | 6.7 | 21/64 | 0.328 | 8.3 | 3/32 | 0.094 | 2.4 | 3/32 | 0.094 | 2.4 |
| E-4288 | 1 | 3/8 | 0.375 | 9.5 | 17/64 | 0.266 | 6.8 | 5/32 | 0.156 | 4.0 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 | 1/16 | 0.063 | 1.6 |
| E-3069 | 2 | 5/16 | 0.313 | 7.9 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 3/32 | 0.094 | 2.4 | 3/16 | 0.188 | 4.8 |
| E-1178-1 | 1 | 1/2 | 0.500 | 12.7 | 11/32 | 0.344 | 8.7 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 | 1/16 | 0.063 | 1.6 |
| E-1257 | 5 | 3/8 | 0.375 | 9.5 | 15/64 | 0.234 | 6.0 | 5/32 | 0.156 | 4.0 | 7/32 | 0.219 | 5.6 | 3/32 | 0.094 | 2.4 | 1/32 | 0.031 | 0.8 |
| E-716 | 1 | 7/16 | 0.438 | 11.1 | 17/64 | 0.266 | 6.7 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 3/32 | 0.094 | 2.4 | 3/64 | 0.047 | 1.2 |
| E-4269 | 1 | 7/32 | 0.219 | 5.6 | 13/64 | 0.210 | 5.3 | 1/8 | 0.120 | 3.0 | 5/32 | 0.156 | 4.0 | 7/64 | 0.100 | 2.5 | 1/16 | 0.060 | 1.5 |
| E-2659 | 2 | 5/16 | 0.313 | 7.9 | 15/32 | 0.469 | 11.9 | 3/16 | 0.188 | 4.8 | 15/64 | 0.234 | 6.0 | 7/64 | 0.109 | 2.8 | 1/16 | 0.063 | 1.6 |
| E-1163 | 1 | 3/4 | 0.750 | 19.1 | 9/16 | 0.563 | 14.3 | 31/64 | 0.480 | 12.2 | 37/64 | 0.578 | 14.7 | 7/64 | 0.109 | 2.8 | 5/64 | 0.070 | 1.8 |
| E-3056 | 1 | 17/32 | 0.531 | 13.5 | 5/16 | 0.313 | 7.9 | 15/64 | 0.234 | 6.0 | 19/64 | 0.297 | 7.5 | 7/64 | 0.109 | 2.8 | 3/64 | 0.047 | 1.2 |
| E-4192* | 1 | 1/2 | 0.500 | 12.7 | 19/64 | 0.297 | 7.5 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 7/64 | 0.109 | 2.8 | 3/64 | 0.047 | 1.2 |
| E-1160 | 1 | 3/4 | 0.750 | 19.1 | 1/2 | 0.500 | 12.7 | 31/64 | 0.480 | 12.2 | 9/16 | 0.563 | 14.3 | 1/8 | 0.125 | 3.2 | 3/64 | 0.050 | 1.3 |
| E-1164 | 1 | 3/4 | 0.750 | 19.1 | 9/16 | 0.563 | 14.3 | 31/64 | 0.480 | 12.2 | 9/16 | 0.563 | 14.3 | 1/8 | 0.125 | 3.2 | 7/64 | 0.100 | 2.5 |
| E-2962 | 2 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 1/32 | 0.031 | 0.8 |
| E-2902 | 7 | 3/8 | 0.375 | 9.6 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 5/16 | 0.312 | 8.0 | 1/8 | 0.125 | 3.2 | 1/32 | 0.032 | 0.8 |
| E-2911 | 1 | 1 1/4 | 1.250 | 32.0 | 21/32 | 0.656 | 16.8 | 5/16 | 0.312 | 8.0 | 13/32 | 0.406 | 10.4 | 1/8 | 0.125 | 3.2 | 9/32 | 0.281 | 7.2 |
| E-3061 | 1 | 3/8 | 0.375 | 9.5 | 9/32 | 0.281 | 7.1 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 3/64 | 0.047 | 1.2 |
| E-3065 | 2 | 7/16 | 0.438 | 11.1 | 11/32 | 0.344 | 8.7 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 1/16 | 0.063 | 1.6 |
| E-3072 | 1 | 1/2 | 0.500 | 12.7 | 21/64 | 0.328 | 8.3 | 9/32 | 0.281 | 7.1 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 3/64 | 0.047 | 1.2 |
| E-3163 | 1 | 7/16 | 0.437 | 11.2 | 19/64 | 0.296 | 7.6 | 1/4 | 0.250 | 6.4 | 5/16 | 0.312 | 8.0 | 1/8 | 0.125 | 3.2 | 3/64 | 0.046 | 1.1 |
| E-3164* | S** | 7/16 | 0.437 | 11.1 | 19/64 | 0.297 | 7.5 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 1/16 | 0.063 | 1.6 |
| E-3166 | 7 | 3/8 | 0.375 | 9.5 | 5/16 | 0.313 | 8.0 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 1/8 | 0.125 | 3.2 |
| E-3173* | 1 | 1/2 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 17/64 | 0.266 | 6.8 | 1/8 | 0.125 | 3.2 | 3/64 | 0.050 | 1.3 |
| E-3175 | 7 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 1/16 | 0.063 | 1.6 |
| E-3176 | 1 | 3/8 | 0.375 | 9.5 | 13/32 | 0.406 | 10.3 | 1/4 | 0.250 | 6.4 | 9/32 | 0.281 | 7.1 | 1/8 | 0.125 | 3.2 | 3/64 | 0.047 | 1.2 |
| E-3177 | 7 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 1/32 | 0.031 | 0.8 |
| E-3178 | 1 | 3/8 | 0.375 | 9.5 | 13/32 | 0.406 | 10.3 | 1/4 | 0.250 | 6.4 | 19/64 | 0.297 | 7.5 | 1/8 | 0.125 | 3.2 | 1/16 | 0.063 | 1.6 |
| E-3179* | 1 | 3/8 | 0.375 | 9.5 | 25/64 | 0.391 | 9.9 | 11/64 | 0.172 | 4.4 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 7/64 | 0.109 | 2.8 |
| E-3264* | S** | 7/16 | 0.438 | 11.1 | 7/64 | 0.109 | 6.7 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 3/64 | 0.040 | 1.0 |
| E-4061 | 1 | 3/8 | 0.375 | 9.5 | 5/16 | 0.313 | 7.9 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 1/16 | 0.063 | 1.6 |
| E-4062 | 1 | 3/8 | 0.375 | 9.5 | 5/16 | 0.313 | 7.9 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 1/16 | 0.063 | 1.6 |
| E-4063 | 2 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 5/32 | 0.156 | 4.0 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 1/16 | 0.063 | 1.6 |
| E-4065* | 2 | 3/8 | 0.375 | 9.5 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 17/64 | 0.266 | 6.7 | 1/8 | 0.125 | 3.2 | 3/64 | 0.047 | 1.2 |

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BUTTON BUMPERS

By "E" Dimension



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- Fingertip pressure snap-locks the bushing into its mounting hole.

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|-----------|---------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|------|-------|-----|-------|-------|------|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-4066† | 5 | 7/16 | 0.438 | 11.1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 1/16 | 0.063 | 1.6 |
| E-4067 | 2 | 7/16 | 0.438 | 11.1 | 21/64 | 0.328 | 8.3 | 15/64 | 0.234 | 6.0 | 9/32 | 0.281 | 7.1 | 1/8 | 0.125 | 3.2 | 3/64 | 0.047 | 1.2 |
| E-4071 | 1 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 1/16 | 0.063 | 1.6 |
| E-4078 | 1 | 1/2 | 0.500 | 12.7 | 13/32 | 0.406 | 10.3 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 1/16 | 0.063 | 1.6 |
| E-4083 | 7 | 5/8 | 0.625 | 15.9 | 9/32 | 0.281 | 7.1 | 13/32 | 0.406 | 10.3 | 17/32 | 0.531 | 13.5 | 1/8 | 0.125 | 3.2 | 3/32 | 0.094 | 2.4 |
| E-4161 | 1 | 3/8 | 0.375 | 9.5 | 11/32 | 0.344 | 8.7 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 3/32 | 0.094 | 2.4 |
| E-2938 | 5 | 9/16 | 0.563 | 14.2 | 23/64 | 0.359 | 9.2 | 9/32 | 0.281 | 7.2 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.1 | 5/64 | 0.078 | 2.0 |
| E-4168 | 1 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 3/64 | 0.047 | 1.2 |
| E-4184 | 1 | 5/8 | 0.625 | 15.9 | 11/32 | 0.344 | 8.7 | 15/64 | 0.234 | 6.0 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 3/64 | 0.040 | 1.0 |
| E-4187 | 1 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 5/16 | 0.313 | 7.9 | 7/16 | 0.438 | 11.1 | 1/8 | 0.125 | 3.2 | 3/64 | 0.047 | 1.2 |
| E-4193 | 1 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 | 3/8 | 0.375 | 9.5 | 33/64 | 0.516 | 13.1 | 1/8 | 0.125 | 3.2 | 1/16 | 0.063 | 1.6 |
| E-4194* | 1 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 25/64 | 0.391 | 9.9 | 1/8 | 0.125 | 3.2 | 1/4 | 0.250 | 6.4 |
| E-4263 | 6 | 3/8 | 0.380 | 9.7 | 23/32 | 0.720 | 18.3 | 11/64 | 0.170 | 4.3 | 17/64 | 0.270 | 6.9 | 1/8 | 0.125 | 3.2 | 3/64 | 0.050 | 1.3 |
| E-4268*** | 1 | 1/2 | 0.500 | 12.7 | 27/32 | 0.844 | 21.4 | 11/32 | 0.348 | 8.8 | 7/16 | 0.438 | 11.1 | 1/8 | 0.125 | 3.2 | 17/32 | 0.531 | 13.5 |
| E-2949 | 5 | 1/2 | 0.500 | 12.7 | 11/32 | 0.344 | 8.8 | 1/4 | 0.250 | 6.3 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.1 | 1/8 | 0.125 | 3.1 |
| E-4271 | 1 | 1/2 | 0.500 | 12.7 | 13/32 | 0.406 | 10.3 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 3/32 | 0.094 | 2.4 |
| E-2959 | 5 | 17/32 | 0.531 | 13.6 | 13/32 | 0.406 | 10.4 | 1/4 | 0.250 | 6.3 | 11/32 | 0.344 | 8.8 | 1/8 | 0.125 | 3.1 | 1/8 | 0.125 | 3.1 |
| E-4279* | 2 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 3/32 | 0.090 | 2.3 | 11/32 | 0.344 | 8.7 | 1/8 | 0.125 | 3.2 | 1/16 | 0.063 | 1.6 |
| E-2640* | 1 | 7/8 | 0.875 | 22.2 | 1/2 | 0.500 | 12.7 | 17/32 | 0.531 | 13.6 | 11/16 | 0.688 | 17.5 | 1/8 | 0.125 | 3.2 | 3/64 | 0.047 | 1.2 |
| E-2520 | 1 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 7/32 | 0.219 | 5.6 | 1/8 | 0.125 | 3.2 | 1/16 | 0.063 | 1.6 |
| E-3347 | 1 | 3/4 | 0.750 | 19.1 | 9/16 | 0.563 | 14.3 | 1/3 | 0.330 | 8.4 | 7/1 | | | | | | | | |

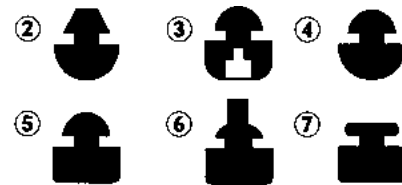
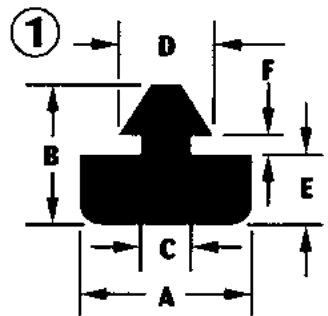
BUTTON BUMPERS

By "E" Dimension



Button Bumpers (catch bumpers) are an easy way to affix cushioning to products and equipment. These bumpers are attached without need for screws or other fasteners - the one-way "catch" end of the bumper is simply inserted into an appropriately-sized hole.

- Flexible shutters adjust to accommodate and support any shape from .125" (3,2 mm) to a maximum diameter of 2.470" (62,7 mm).
- Absorbs vibration and cushions and insulates cables, tubing, hoses or shafts with limited internal clearance.
- Fingertip pressure snap-locks the bushing into its mounting hole.



| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|----------|---------|-------|-------|------|--------|-------|------|-------|-------|-----|-------|-------|------|-------|-------|-----|-------|-------|-----|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-175 | 4 | 7/8 | 0.875 | 22.2 | 17/64 | 0.266 | 6.7 | 5/16 | 0.313 | 7.9 | 1/2 | 0.500 | 12.7 | 1/8 | 0.125 | 3.2 | 3/64 | 0.047 | 1.2 |
| E-3189* | 2 | 7/16 | 0.438 | 11.1 | 11/32 | 0.344 | 8.7 | 7/32 | 0.219 | 5.6 | 9/32 | 0.281 | 7.1 | 9/64 | 0.141 | 3.6 | 1/16 | 0.063 | 1.6 |
| E-4283 | 6 | 9/16 | 0.563 | 14.3 | 9/16 | 0.563 | 14.3 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 9/64 | 0.141 | 3.6 | 1/16 | 0.063 | 1.6 |
| E-2583 | 1 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 23/64 | 0.350 | 8.9 | 5/32 | 0.150 | 3.8 | 1/16 | 0.063 | 1.6 |
| E-2649 | 2 | 13/16 | 0.813 | 20.6 | 5/16 | 0.312 | 8.0 | 1/4 | 0.250 | 6.4 | 5/16 | 0.312 | 8.0 | 5/32 | 0.150 | 3.8 | 1/32 | 0.030 | 0.8 |
| E-3382 | 2 | 1/4 | 0.248 | 6.3 | 21/58 | 0.362 | 9.2 | 3/28 | 0.107 | 2.7 | 3/19 | 0.158 | 4.0 | 13/85 | 0.153 | 3.9 | 3/28 | 0.107 | 2.7 |
| E-306 | 3 | 3/8 | 0.375 | 9.5 | 17/64 | 0.266 | 6.7 | 3/16 | 0.188 | 4.8 | 17/64 | 0.266 | 6.7 | 5/32 | 0.156 | 4.0 | 3/64 | 0.040 | 1.0 |
| E-1166 | 1 | 3/4 | 0.750 | 19.1 | 11/32 | 0.344 | 8.7 | 23/64 | 0.365 | 9.3 | 9/16 | 0.563 | 14.3 | 5/32 | 0.156 | 4.0 | 5/64 | 0.078 | 2.0 |
| E-2607 | 6 | 1/2 | 0.500 | 12.7 | 1 1/8 | 1.125 | 28.8 | 1/4 | 0.250 | 6.4 | 11/32 | 0.344 | 8.7 | 5/32 | 0.156 | 4.0 | 1/8 | 0.125 | 3.2 |
| E-2633 | 6 | 1/2 | 0.500 | 12.7 | 1 1/8 | 1.125 | 28.8 | 1/4 | 0.250 | 6.4 | 11/32 | 0.344 | 8.7 | 5/32 | 0.156 | 4.0 | 1/8 | 0.125 | 3.2 |
| E-3074* | 1 | 1/2 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 8.0 | 5/32 | 0.156 | 4.0 | 1/32 | 0.031 | 0.8 |
| E-3167 | 2 | 5/16 | 0.313 | 8.0 | 9/16 | 0.563 | 14.3 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 5/32 | 0.156 | 4.0 | 1/32 | 0.031 | 0.8 |
| E-4077 | 6 | 1/2 | 0.500 | 12.7 | 17/32 | 0.531 | 14.5 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 | 3/32 | 0.094 | 2.4 |
| E-4085 | 1 | 9/16 | 0.563 | 14.3 | 5/16 | 0.313 | 8.0 | 11/32 | 0.344 | 8.7 | 27/64 | 0.422 | 10.7 | 5/32 | 0.156 | 4.0 | 1/16 | 0.063 | 1.6 |
| E-4086† | 6 | 5/8 | 0.625 | 15.9 | 1 1/16 | 1.063 | 27.0 | 19/64 | 0.297 | 7.5 | 3/8 | 0.375 | 9.5 | 5/32 | 0.156 | 4.0 | 3/64 | 0.047 | 1.2 |
| E-4162 | 1 | 3/8 | 0.375 | 9.5 | 11/32 | 0.344 | 8.8 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 8.0 | 5/32 | 0.156 | 4.0 | 1/16 | 0.063 | 1.6 |
| E-4177 | 6 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 | 1/32 | 0.031 | 0.8 |
| E-4188 | 6 | 5/8 | 0.625 | 15.9 | 1 1/8 | 1.125 | 28.6 | 19/64 | 0.297 | 7.5 | 3/8 | 0.375 | 9.5 | 5/32 | 0.156 | 4.0 | 1/8 | 0.125 | 3.2 |
| E-4277 | 6 | 1/2 | 0.500 | 12.7 | 5/8 | 0.625 | 15.9 | 11/64 | 0.172 | 4.4 | 1/4 | 0.250 | 6.4 | 5/32 | 0.156 | 4.0 | 1/32 | 0.031 | 0.8 |
| E-4286 | 5 | 1/2 | 0.500 | 12.7 | 11/32 | 0.344 | 8.8 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 | 1/16 | 0.063 | 1.6 |
| E-2936 | 4 | 1/2 | 0.500 | 12.7 | 11/32 | 0.344 | 8.8 | 1/4 | 0.250 | 6.3 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 | 1/16 | 0.063 | 1.5 |
| E-6112 | 2 | 13/16 | 0.813 | 20.6 | 11/32 | 0.344 | 8.8 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 | 1/16 | 0.063 | 1.6 |
| E-2930* | 1 | 5/16 | 0.310 | 7.9 | 27/64 | 0.420 | 10.8 | 11/64 | 0.170 | 4.4 | 7/32 | 0.218 | 5.6 | 5/32 | 0.156 | 4.0 | 3/16 | 0.190 | 4.9 |
| E-2987 | 5 | 1/2 | 0.500 | 12.7 | 13/32 | 0.406 | 10.3 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 5/32 | 0.156 | 4.0 | 1/16 | 0.063 | 1.6 |
| E-2481 | 6 | 7/16 | 0.438 | 11.1 | 51/64 | 0.797 | 20.2 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 5/32 | 0.156 | 4.0 | 3/64 | 0.047 | 1.2 |
| E-1561 | 5 | 1/2 | 0.500 | 12.7 | 11/32 | 0.344 | 8.7 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 | 1/16 | 0.063 | 1.6 |
| E-1178-2 | 1 | 1/2 | 0.500 | 12.7 | 13/32 | 0.406 | 10.3 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 5/32 | 0.156 | 4.0 | 1/16 | 0.063 | 1.6 |
| E-740 | 5 | 9/16 | 0.563 | 14.3 | 5/16 | 0.313 | 7.9 | 11/3 | 0.344 | 8.7 | 13/32 | 0.406 | 10.3 | 5/32 | 0.156 | 4.0 | 1/16 | 0.063 | 1.6 |
| E-2918* | 3 | 3/8 | 0.380 | 9.7 | 7/16 | 0.430 | 11.0 | 3/16 | 0.188 | 4.8 | 17/64 | 0.270 | 6.9 | 3/16 | 0.190 | 4.1 | 1/16 | 0.055 | 1.4 |
| E-3302 | 2 | 1/2 | 0.500 | 12.7 | 13/32 | 0.406 | 10.3 | 1/4 | 0.250 | 6.4 | 5/16 | 0.312 | 7.9 | 11/64 | 0.171 | 4.3 | 4/87 | 0.046 | 1.2 |
| E-3182* | 6 | 5/16 | 0.313 | 8.0 | 13/32 | 0.406 | 10.3 | 9/64 | 0.141 | 3.6 | 1/4 | 0.250 | 6.4 | 11/64 | 0.172 | 4.4 | 1/16 | 0.063 | 1.6 |
| E-4089* | 6 | 7/8 | 0.875 | 22.2 | 25/32 | 0.781 | 19.8 | 7/32 | 0.219 | 5.6 | 11/32 | 0.344 | 8.7 | 11/64 | 0.172 | 4.4 | 1/8 | 0.125 | 3.2 |
| E-4123 | 1 | 3/8 | 0.375 | 9.5 | 11/32 | 0.344 | 8.7 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 11/64 | 0.172 | 4.4 | 1/16 | 0.063 | 1.6 |
| E-2328 | 2 | 1/2 | 0.500 | 12.7 | 13/32 | 0.406 | 10.3 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 11/64 | 0.172 | 4.4 | 3/64 | 0.047 | 1.2 |
| E-3380 | 6 | 57/64 | 0.893 | 22.9 | 57/64 | 0.895 | 22.9 | 15/64 | 0.234 | 6.0 | 23/64 | 0.351 | 9.0 | 11/64 | 0.175 | 4.5 | 13/64 | 0.207 | 5.3 |
| E-3340 | 6 | 19/83 | 0.229 | 5.8 | 25/47 | 0.532 | 13.5 | 2/17 | 0.118 | 3.0 | 13/65 | 0.197 | 5.0 | 11/64 | 0.177 | 4.5 | 2/17 | 0.118 | 3.0 |
| E-2606 | 6 | 5/8 | 0.625 | 16.0 | 1 7/64 | 1.111 | 28.5 | 19/64 | 0.296 | 7.6 | 3/8 | 0.380 | 9.7 | 3/16 | 0.185 | 4.7 | 3/64 | 0.050 | 1.3 |
| E-3303 | 6 | 10/27 | 0.370 | 9.4 | 11/16 | 0.687 | 17.4 | 3/16 | 0.187 | 4.7 | 3/10 | 0.300 | 7.6 | 3/16 | 0.187 | 4.7 | 1/16 | 0.062 | 1.6 |

* Indicates inserting hole in base and stem. ** Special Design-Inverted "A" dimension, stepped "E" dimension. *** Insert hole 3/16 Dia. X 11/16 deep. † See molded parts of irregular design.

BUTTON BUMPERS

By "E" Dimension



Button Bumpers (catch bumpers) are an easy way to affix cushioning to products and equipment. These bumpers are attached without need for screws or other fasteners - the one-way "catch" end of the bumper is simply inserted into an appropriately-sized hole.

- Flexible shutters adjust to accommodate and support any shape from .125" (3,2 mm) to a maximum diameter of 2.470" (62,7 mm).
- Absorbs vibration and cushions and insulates cables, tubing, hoses or shafts with limited internal clearance.
- Fingertip pressure snap-locks the bushing into its mounting hole.

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|----------|---------|------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|------|-------|-----|------|-------|-----|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-406 | 3 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 17/64 | 0.266 | 6.7 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 |
| E-417 | 3 | 3/8 | 0.375 | 9.5 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 17/64 | 0.266 | 6.7 | 3/16 | 0.188 | 4.8 | 1/8 | 0.125 | 3.2 |
| E-1161 | 1 | 3/4 | 0.750 | 19.1 | 9/16 | 0.563 | 14.3 | 31/64 | 0.480 | 12.2 | 37/64 | 0.578 | 14.7 | 3/16 | 0.188 | 4.8 | 3/64 | 0.050 | 1.3 |
| E-1162 | 1 | 3/4 | 0.750 | 19.1 | 9/16 | 0.563 | 14.3 | 31/64 | 0.480 | 12.2 | 37/64 | 0.578 | 14.7 | 3/16 | 0.188 | 4.8 | 1/16 | 0.070 | 1.8 |
| E-3063 | 1 | 7/16 | 0.438 | 11.1 | 23/64 | 0.359 | 9.1 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 3/16 | 0.188 | 4.8 | 3/64 | 0.047 | 1.2 |
| E-3067* | 2 | 5/16 | 0.313 | 7.9 | 19/32 | 0.594 | 15.1 | 3/16 | 0.188 | 4.7 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 1/32 | 0.031 | 0.8 |
| E-3071 | 1 | 1/2 | 0.500 | 12.7 | 25/64 | 0.391 | 9.9 | 9/32 | 0.281 | 7.1 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 3/64 | 0.047 | 1.2 |
| E-3165 | 6 | 1/4 | 0.250 | 6.4 | 9/16 | 0.563 | 14.3 | 1/8 | 0.125 | 3.2 | 7/32 | 0.219 | 5.6 | 3/16 | 0.188 | 4.8 | 3/64 | 0.047 | 1.2 |
| E-3172 | 7 | 3/8 | 0.375 | 9.5 | 9/32 | 0.281 | 7.1 | 1/4 | 0.250 | 6.4 | 11/32 | 0.344 | 8.7 | 3/16 | 0.188 | 4.8 | 3/64 | 0.047 | 1.2 |
| E-3181 | 1 | 1/2 | 0.500 | 12.7 | 27/64 | 0.422 | 10.7 | 9/32 | 0.281 | 7.1 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 5/64 | 0.078 | 2.0 |
| E-3183* | 2 | 3/8 | 0.375 | 9.5 | 1/2 | 0.500 | 12.7 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 |
| E-3184* | 2 | 3/8 | 0.375 | 9.5 | 15/32 | 0.469 | 11.9 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 1/32 | 0.031 | 0.8 |
| E-3185 | 6 | 3/8 | 0.375 | 9.5 | 11/16 | 0.688 | 17.5 | 13/64 | 0.203 | 5.2 | 17/64 | 0.266 | 6.7 | 3/16 | 0.188 | 4.8 | 3/64 | 0.047 | 1.2 |
| E-3263 | 5 | 7/16 | 0.438 | 11.1 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 3/16 | 0.188 | 4.8 | 1/8 | 0.125 | 3.2 |
| E-4072 | 5 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 |
| E-4076 | 2 | 1/2 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 |
| E-4163 | 1 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 17/64 | 0.266 | 6.7 | 11/3 | 0.344 | 8.7 | 3/16 | 0.188 | 4.8 | 1/32 | 0.031 | 0.8 |
| E-4171 | 1 | 1/2 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 |
| E-4176 | 1 | 1/2 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 3/16 | 0.188 | 4.8 | 1/32 | 0.031 | 0.8 |
| E-4178* | 4 | 5/16 | 0.313 | 8.0 | 13/32 | 0.406 | 10.3 | 5/32 | 0.156 | 4.0 | 15/64 | 0.230 | 5.8 | 3/16 | 0.188 | 4.8 | 1/8 | 0.125 | 3.2 |
| E | | | | | | | | | | | | | | | | | | | |

BUTTON BUMPERS

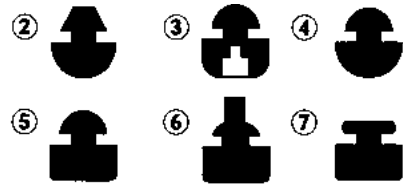
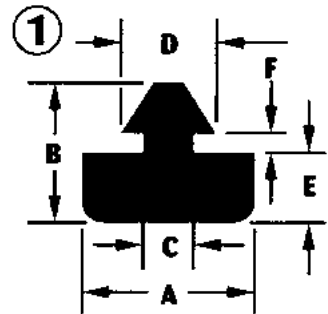
By "E" Dimension



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Flexible shutters adjust to accommodate

- and support any shape from .125" (3.2 mm) to a maximum diameter of 2.470" (62.7 mm).
- Absorbs vibration and cushions and insulates cables, tubing, hoses or shafts with limited internal clearance.
- Fingertip pressure snap-locks the bushing into its mounting hole.
- and support any shape from .125" (3.2 mm) to a maximum diameter of 2.470" (62.7 mm).
- Absorbs vibration and cushions and insulates cables, tubing, hoses or shafts with limited internal clearance.
- Fingertip pressure snap-locks the bushing into its mounting hole.



| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|----------|---------|---------|-------|------|-------|-------|------|-------|-------|------|----------|-------|------|-------|-------|-----|-------|-------|-----|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-3187 | 5 | 3/8 | 0.375 | 9.5 | 21/64 | 0.328 | 8.3 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 13/64 | 0.203 | 5.2 | 1/32 | 0.031 | 0.8 |
| E-4285 | 6 | 7/16 | 0.438 | 11.1 | 57/64 | 0.891 | 22.6 | 15/64 | 0.234 | 5.6 | 5/16 | 0.313 | 8.0 | 13/64 | 0.203 | 5.2 | 1/32 | 0.038 | 0.9 |
| E-4275 | 6 | 5/8 | 0.625 | 16.0 | 7/8 | 0.875 | 22.4 | 7/32 | 0.218 | 5.6 | 5/16 | 0.312 | 8.0 | 7/32 | 0.218 | 5.6 | 3/16 | 0.187 | 4.8 |
| E-3168 | 1 | 3/8 | 0.375 | 9.5 | 15/32 | 0.469 | 11.9 | 15/64 | 0.234 | 5.6 | 19/64 | 0.297 | 7.5 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 |
| E-4262 | 1 | 3/8 | 0.375 | 9.5 | 13/32 | 0.406 | 10.3 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 |
| E-2644* | 1 | 15/32 | 0.469 | 11.9 | 1/2 | 0.500 | 12.7 | 9/32 | 0.281 | 7.1 | 3/8 | 0.375 | 9.5 | 7/32 | 0.219 | 5.6 | 1/32 | 0.031 | 0.8 |
| E-721 | 7 | 13/32 | 0.406 | 10.3 | 13/32 | 0.406 | 10.3 | 1/4 | 0.250 | 6.4 | 11/32 | 0.344 | 8.7 | 7/32 | 0.219 | 5.6 | 1/8 | 0.125 | 3.2 |
| E-3319 | 7 | 35/66 | 0.407 | 10.3 | 35/66 | 0.407 | 10.3 | 1/4 | 0.250 | 6.4 | 11/32 | 0.344 | 8.7 | 7/32 | 0.219 | 5.6 | 1/8 | 0.125 | 3.2 |
| E-3073 | 2 | 1/2 | 0.500 | 12.7 | 25/64 | 0.391 | 9.9 | 1/4 | 0.250 | 6.4 | 11/32 | 0.344 | 8.7 | 15/64 | 0.234 | 6.0 | 1/32 | 0.031 | 0.8 |
| E-4179 | 1 | 1/2 | 0.500 | 12.7 | 37/64 | 0.578 | 14.7 | 1/4 | 0.250 | 6.4 | 23/64 | 0.359 | 9.1 | 15/64 | 0.234 | 6.0 | 1/32 | 0.031 | 0.8 |
| E-2033 | 4 | 1/2 | 0.500 | 12.7 | 25/64 | 0.391 | 9.9 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 15/64 | 0.234 | 6.0 | 1/32 | 0.031 | 0.8 |
| E-2679 | 6 | 7/32 | 0.219 | 5.6 | 7/16 | 0.447 | 11.3 | 7/64 | 0.113 | 2.9 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/16 | 0.060 | 1.5 |
| E-307 | 3 | 1/2 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 11/32 | 0.344 | 8.7 | 1/4 | 0.250 | 6.4 | 3/64 | 0.040 | 1.0 |
| E-2940 | 5 | 1/2 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.3 | 5/16 | 0.313 | 7.9 | 1/4 | 0.250 | 6.3 | 1/16 | 0.063 | 1.5 |
| E-317 | 3 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 11/32 | 0.344 | 8.7 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 |
| E-407 | 3 | 1/2 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 11/32 | 0.344 | 8.7 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 |
| E-611 | 1 | 7/8 | 0.875 | 22.2 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 | 13/32 | 0.406 | 10.3 | 1/4 | 0.250 | 6.4 | 5/64 | 0.078 | 2.0 |
| E-3068 | 1 | 3/8 5/8 | 0.375 | 9.5 | 7/16 | 0.438 | 11.1 | 5/32 | 0.156 | 4.0 | 7/32 | 0.219 | 5.6 | 1/4 | 0.250 | 6.4 | 1/32 | 0.031 | 0.8 |
| E-4082 | 1 | 5/8 | 0.625 | 15.9 | 15/32 | 0.469 | 11.9 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 1/32 | 0.025 | 0.6 |
| E-4084 | 1 | 5/8 | 0.625 | 15.9 | 15/32 | 0.469 | 11.9 | 1/4 | 0.250 | 6.0 | 5/16 | 0.313 | 7.9 | 1/4 | 0.250 | 6.4 | 3/64 | 0.040 | 1.0 |
| E-4088 | 1 | 1/2 | 0.625 | 15.9 | 15/32 | 0.469 | 11.9 | 5/16 | 0.313 | 7.9 | 25/64 | 0.391 | 9.9 | 1/4 | 0.250 | 6.4 | 3/64 | 0.047 | 1.2 |
| E-2931 | 6 | 1/2 | 0.500 | 12.7 | 13/16 | 0.813 | 20.8 | 1/4 | 0.250 | 6.3 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.3 | 1/8 | 0.125 | 3.1 |
| E-4167 | 1 | 1/2 | 0.500 | 12.7 | 27/64 | 0.422 | 10.7 | 9/32 | 0.281 | 7.1 | 13/32 | 0.406 | 10.3 | 1/4 | 0.250 | 6.4 | 3/64 | 0.047 | 1.2 |
| E-2661 | 1 | 15/32 | 0.469 | 11.9 | 53/64 | 0.828 | 21.0 | 1/4 | 0.250 | 6.4 | 11/32 | 0.344 | 8.7 | 1/4 | 0.250 | 6.4 | 5/64 | 0.078 | 2.0 |
| E-4180 | 6 | 5/8 | 0.625 | 15.9 | 27/32 | 0.844 | 21.4 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 3/64 | 0.047 | 1.2 |
| E-4185* | 1 | 7/8 | 0.875 | 22.2 | 15/16 | 0.938 | 23.8 | 1/4 | 0.250 | 6.4 | 11/32 | 0.344 | 8.7 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 |
| E-6111 | 1 | 1/2 | 0.875 | 22.2 | 45/64 | 0.703 | 17.9 | 5/16 | 0.313 | 7.9 | 13/32 | 0.406 | 10.3 | 1/4 | 0.250 | 6.4 | 9/32 | 0.281 | 7.1 |
| E-3313 | 6 | 5/8 | 0.625 | 15.9 | 7/10 | 0.700 | 17.8 | 1/4 | 0.250 | 6.4 | 7/20 | 0.350 | 8.9 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 |
| E-778 | 1 | 9/16 | 0.563 | 14.3 | 15/32 | 0.469 | 11.9 | 5/16 | 0.313 | 7.9 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 |
| E-6156 | 5 | 1/2 | 0.563 | 14.3 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 3/64 | 0.047 | 1.2 |
| E-734 | 5 | 33/64 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 |
| E-3362 | 1 | 3/16 | 0.510 | 13.0 | 41/64 | 0.635 | 16.1 | 1/4 | 0.255 | 6.5 | 11/32 | 0.351 | 8.9 | 17/64 | 0.271 | 6.9 | 1/8 | 0.125 | 3.2 |
| E-2675 | 6 | 1/2 | 0.180 | 4.6 | 29/64 | 0.447 | 11.3 | 1/8 | 0.125 | 3.2 | 3/16 | 0.180 | 4.6 | 9/32 | 0.278 | 7.1 | 3/64 | 0.045 | 1.1 |
| E-3354 | 6 | 1 | 0.500 | 12.7 | 15/16 | 0.938 | 23.8 | 1/4 | 0.250 | 6.4 | 367/1000 | 0.367 | 9.4 | 9/32 | 0.281 | 7.1 | 13/64 | 0.200 | 5.1 |
| E-4247 | 4 | 1/2 | 1.000 | 25.4 | 17/32 | 0.537 | 13.6 | 1/2 | 0.500 | 12.7 | 5/8 | 0.625 | 15.9 | 9/32 | 0.281 | 7.1 | 1/8 | 0.125 | 3.2 |
| E-4195 | 6 | 1/2 | 0.500 | 12.7 | 15/16 | 0.938 | 23.8 | 1/4 | 0.250 | 6.4 | 23/64 | 0.359 | 9.1 | 9/32 | 0.281 | 7.1 | 13/64 | 0.200 | 5.1 |
| E-4165 | 1 | 3/8 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 19/64 | 0.297 | 7.5 | 1/16 | 0.063 | 1.6 |
| E-3180 | 6 | 5/8 | 0.380 | 9.7 | 41/64 | 0.640 | 16.3 | 9/64 | 0.140 | 3.6 | 1/4 | 0.250 | 6.4 | 5/16 | 0.310 | 7.9 | 1/32 | 0.030 | 0.8 |
| E-308 | 3 | | 0.625 | 12.7 | 9/16 | 0.563 | 14.3 | 3/8 | 0.375 | 9.5 | 15/32 | 0.469 | 11.9 | 5/16 | 0.310 | 7.9 | 3/64 | 0.040 | 1.0 |

* Indicates inserting hole in base and stem. ** Special Design-Inverted "A" dimension, stepped "E" dimension. *** Insert hole 3/16 Dia. X 11/16 deep.

BUTTON BUMPERS

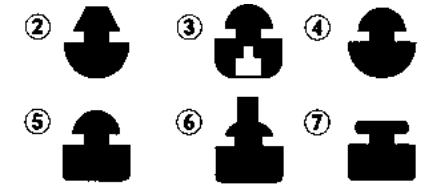
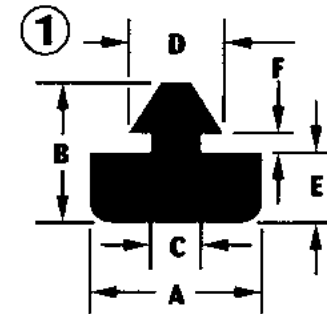
By "E" Dimension



Button Bumpers (catch bumpers) are an easy way to affix cushioning to products and equipment. These bumpers are attached without need for screws or other fasteners - the one-way "catch" end of the bumper is simply inserted into an appropriately-sized hole.

Flexible shutters adjust to accommodate

- and support any shape from .125" (3.2 mm) to a maximum diameter of 2.470" (62.7 mm).
- Absorbs vibration and cushions and insulates cables, tubing, hoses or shafts with limited internal clearance.
- Fingertip pressure snap-locks the bushing into its mounting hole.
- and support any shape from .125" (3.2 mm) to a maximum diameter of 2.470" (62.7 mm).
- Absorbs vibration and cushions and insulates cables, tubing, hoses or shafts with limited internal clearance.
- Fingertip pressure snap-locks the bushing into its mounting hole.



| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|----------|---------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|-----|-------|-------|-----|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-408 | 3 | 5/8 | 0.625 | 15.9 | 9/16 | 0.563 | 14.3 | 3/8 | 0.375 | 9.5 | 15/32 | 0.469 | 11.9 | 5/16 | 0.310 | 7.9 | 1/16 | 0.063 | 1.6 |
| E-3075 | 1 | 7/16 | 0.438 | 11.1 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 13/32 | 0.406 | 10.3 | 5/16 | 0.310 | 7.9 | 1/32 | 0.031 | 0.8 |
| E-4075 | 1 | 1/2 | 0.500 | 12.7 | 9/16 | 0.563 | 14.3 | 13/64 | 0.203 | 5.2 | 1/4 | 0.250 | 6.4 | 5/16 | 0.310 | 7.9 | 1/16 | 0.063 | 1.6 |
| E-4181 | 6 | 1/2 | 0.500 | 12.7 | 61/64 | 0.953 | 24.2 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 5/16 | 0.310 | 7.9 | 1/8 | 0.125 | 3.2 |
| E-4278 | 6 | 3/8 | 0.375 | 9.5 | 25/32 | 0.781 | 19.8 | 15/64 | 0.234 | 6.0 | 5/16 | 0.313 | 7.9 | 5/16 | 0.310 | 7.9 | 3/64 | 0.040 | 1.0 |
| E-4287 | 1 | 1/2 | 0.500 | 12.7 | 9/16 | 0.563 | 14.3 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 5/16 | 0.310 | 7.9 | 9/64 | 0.141 | 3.6 |
| E-2985 | 5 | 1 | 1.000 | 25.4 | 11/16 | 0.688 | 17.5 | 1/2 | 0.500 | 12.7 | 11/16 | 0.688 | 17.5 | 5/16 | 0.310 | 7.9 | 3/16 | 0.188 | 4.8 |
| E-2605 | 6 | 22/71 | 0.310 | 7.9 | 31/50 | 0.620 | 15.7 | 3/25 | 0.120 | 3.0 | 15/79 | 0.190 | 4.8 | 22/71 | 0.310 | 7.9 | 3/50 | 0.060 | 1.5 |
| E-740-B | 5 | 9/16 | 0.563 | 14.3 | 15/32 | 0.469 | 11.9 | 11/32 | 0.344 | 8.7 | 13/32 | 0.406 | 10.3 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 |
| E-2250 | 5 | 1 | 1.000 | 25.4 | 11/16 | 0.688 | 17.5 | 1/2 | 0.500 | 12.7 | 11/16 | 0.688 | 17.5 | 5/16 | 0.313 | 7.9 | 3/16 | 0.188 | 4.8 |
| E-3351 | 5 | 1/2 | 0.500 | 12.7 | 37/64 | 0.581 | 14.8 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 5/16 | 0.313 | 8.0 | 3/32 | 0.093 | 2.4 |
| E-3365 | 6 | 8/21 | 0.381 | 9.7 | 14/15 | 0.933 | 23.7 | 14/67 | 0.209 | 5.3 | 2/7 | 0.286 | 7.3 | 26/81 | 0.321 | 8.2 | 11/94 | 0.117 | 3.0 |
| E-1422 | 5 | 5/8 | 0.625 | 15.9 | 41/64 | 0.641 | 16.3 | 9/32 | 0.281 | 7.1 | 7/16 | 0.438 | 11.1 | 11/32 | 0.344 | 8.7 | 1/8 | 0.125 | 3.2 |
| E-2488 | 1 | 9/16 | 0.562 | 14.3 | 3/5 | 0.600 | 15.2 | 5/16 | 0.312 | 7.9 | 2/5 | 0.400 | 10.2 | 7/20 | 0.350 | 8.9 | 1/31 | 0.032 | 0.8 |
| E-3349 | 6 | 8/29 | 0.276 | 7.0 | 86/91 | 0.945 | 24.0 | 8/51 | 0.157 | 4.0 | 21/89 | 0.236 | 6.0 | 17/48 | 0.354 | 9.0 | 3/38 | 0.079 | 2.0 |
| E-4183* | 1 | 9/16 | 0.563 | 14.3 | 21/32 | 0.656 | 16.7 | 1/4 | 0.250 | 6.4 | 19/64 | 0.297 | 7.5 | 23/64 | 0.359 | 9.1 | 1/32 | 0.031 | 0.8 |
| E-4265 | 6 | 3/8 | 0.380 | 9.7 | 55/64 | 0.862 | 21.9 | 15/64 | 0.230 | 5.9 | 5/16 | 0.312 | | | | | | | |



BUTTON BUMPERS

By "E" Dimension

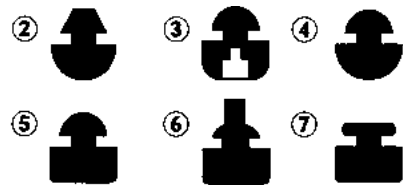
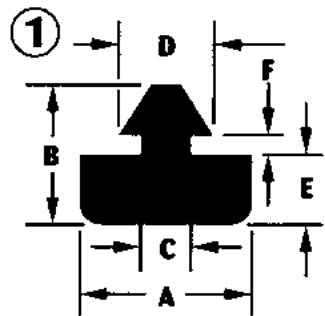
Button Bumpers (catch bumpers) are an easy way to affix cushioning to products and equipment. These bumpers are attached without need for screws or other fasteners - the one-way "catch" end of the bumper is simply inserted into an appropriately-sized hole.

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- Fingertip pressure snap-locks the bushing into its mounting hole.
- Flexible shutters adjust to accommodate and support any shape from .125" (3,2 mm) to a maximum diameter of 2.470" (62,7 mm).

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|----------|---------|-------|-------|------|---------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|------|-------|-----|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-4164 | 1 | 3/8 | 0.375 | 9.5 | 11/16 | 0.696 | 17.8 | 17/64 | 0.266 | 6.8 | 11/32 | 0.344 | 8.7 | 1/2 | 0.500 | 12.7 | 1/32 | 0.031 | 0.8 |
| E-4166 | 5 | 7/16 | 0.438 | 11.1 | 21/32 | 0.656 | 16.7 | 1/4 | 0.250 | 6.4 | 11/32 | 0.344 | 8.7 | 1/2 | 0.500 | 12.7 | 1/32 | 0.031 | 0.8 |
| E-4272* | 1 | 1 | 1.000 | 25.4 | 1 | 1.000 | 25.4 | 3/8 | 0.375 | 9.5 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 1/8 | 0.125 | 3.2 |
| E-4282 | 6 | 1 | 1.000 | 25.4 | 1 3/5 | 1.600 | 40.7 | 27/64 | 0.420 | 10.7 | 9/16 | 0.563 | 14.3 | 1/2 | 0.500 | 12.7 | 1/16 | 0.063 | 1.6 |
| E-3344 | 6-1 | 66/67 | 0.985 | 25.0 | 1 7/24 | 1.292 | 32.8 | 10/41 | 0.244 | 6.2 | 10/27 | 0.370 | 9.4 | 21/41 | 0.512 | 13.0 | 1/8 | 0.126 | 3.2 |
| E-4079 | 1 | 1/2 | 0.500 | 12.7 | 29/32 | 0.906 | 23.0 | 1/4 | 0.250 | 6.4 | 23/64 | 0.359 | 9.1 | 9/16 | 0.563 | 14.3 | 1/16 | 0.063 | 1.6 |
| E-4190 | 6 | 1/2 | 0.500 | 12.7 | 1 10/73 | 1.137 | 29.2 | 15/64 | 0.240 | 6.2 | 3/8 | 0.380 | 9.7 | 9/16 | 0.563 | 14.3 | 7/64 | 0.109 | 2.8 |
| E-4284 | 1 | 1/2 | 0.500 | 12.7 | 1 1/64 | 1.016 | 25.8 | 1/4 | 0.250 | 6.4 | 11/32 | 0.344 | 8.7 | 11/16 | 0.688 | 17.5 | 1/16 | 0.063 | 1.6 |
| E-2689 | 2 | 1/2 | 0.500 | 12.7 | 1 1/4 | 1.250 | 31.7 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 11/16 | 0.688 | 17.5 | 1/8 | 0.125 | 3.2 |
| E-2101 | 4 | 49/64 | 0.766 | 19.4 | 1 | 1.000 | 25.4 | 3/8 | 0.375 | 9.5 | 1/2 | 0.500 | 12.7 | 3/4 | 0.750 | 19.1 | 1/8 | 0.125 | 3.2 |

* Indicates inserting hole in base and stem. ** Special Design-Inverted "A" dimension, stepped "E" dimension. *** Insert hole 3/16 Dia. X 11/16 deep.



END BUMPERS

By "D" Dimension

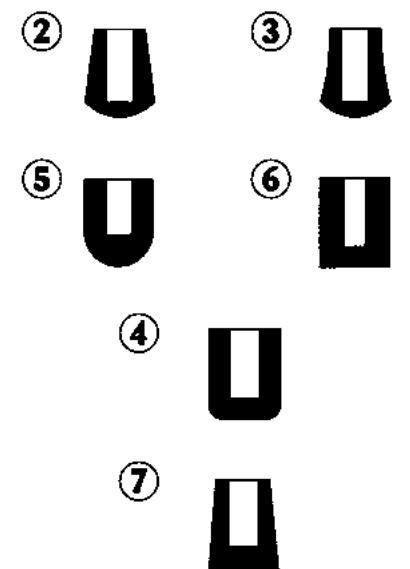
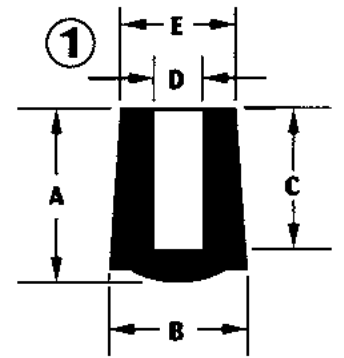


End Bumpers are used on the ends of tubes for shock and vibration reduction and the smoothing of edges.

- ABS, Buna-N, Butyl, EPDM, Neoprene, Nitrite, Natural Rubber, Santoprene, Silicone, Viton.
- Multiple sizes / applications
- Custom end bumpers available

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | |
|----------|---------|---------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-618 | 5 | 3/4 1/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 5/8 | 0.625 | 15.9 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 |
| E-627 | 4 | 3/8 7/8 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 3/32 | 0.094 | 2.4 | 1/4 | 0.250 | 6.4 |
| E-2657 | 4 | 5/16 | 0.375 | 9.5 | 1/4 | 0.240 | 6.1 | 9/32 | 0.281 | 7.1 | 3/32 | 0.094 | 2.4 | 1/4 | 0.240 | 6.1 |
| E-6182 | 5 | 9/32 | 0.875 | 22.2 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 3/32 | 0.094 | 2.4 | 1/2 | 0.500 | 12.7 |
| E-619 | 5 | 1/2 | 0.313 | 7.9 | 5/16 | 0.313 | 7.9 | 1/4 | 0.250 | 6.4 | 2/19 | 0.105 | 2.7 | 3/13 | 0.230 | 5.8 |
| E-3364 | 5 | 7/16 | 0.282 | 7.2 | 7/32 | 0.225 | 5.7 | 7/32 | 0.221 | 5.6 | 7/64 | 0.104 | 2.6 | 7/32 | 0.225 | 5.7 |
| E-6203 | 3 | 3/8 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 7/64 | 0.105 | 2.7 | 1/4 | 0.250 | 6.4 |
| E-6206 | 3 | 4/38 | 11.1 | 11/32 | 0.344 | 8.7 | 21/64 | 0.328 | 8.3 | 7/64 | 0.105 | 2.7 | 13/64 | 0.203 | 5.2 | |
| E-2997 | 5 | 7/16 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 9/32 | 0.281 | 7.1 | 7/64 | 0.115 | 2.9 | 1/4 | 0.250 | 6.4 |
| | | 7/8 | | | | | | | | | | | | | | |
| E-125 | 5 | 19/64 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 7/32 | 0.219 | 5.6 |
| E-2051 | 1 | 1/2 | 0.875 | 22.2 | 7/16 | 0.438 | 11.1 | 3/4 | 0.750 | 19.1 | 1/8 | 0.125 | 3.2 | 3/8 | 0.375 | 9.5 |
| E-6183 | 5 | 3/8 | 0.297 | 7.5 | 1/4 | 0.250 | 6.4 | 7/32 | 0.219 | 5.6 | 1/8 | 0.125 | 3.2 | 1/4 | 0.250 | 6.4 |
| E-6201 | 3 | 5/8 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 1/4 | 0.250 | 6.4 |
| E-2960 | 4 | 39/64 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 9/32 | 0.281 | 7.1 | 1/8 | 0.125 | 3.2 | 1/4 | 0.250 | 6.4 |
| E-6181 | S* | 1/4 | 0.625 | 15.9 | 9/32 | 0.281 | 7.1 | 1/2 | 0.500 | 12.7 | 1/8* | 0.125 | 3.2 | 3/8 | 0.375 | 9.5 |
| E-6205 | 3 | 1/4 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 9/64 | 0.140 | 3.6 | 1/4 | 0.250 | 6.4 |
| E-2455 | 5 | 11/16 | 0.609 | 15.5 | 39/64 | 0.609 | 15.5 | 15/32 | 0.469 | 11.9 | 9/64 | 0.141 | 3.6 | 1/4 | 0.250 | 6.4 |
| E-632 | 4 | 9/25 | 0.250 | 6.4 | 11/32 | 0.344 | 8.7 | 5/32 | 0.156 | 4.0 | 9/64 | 0.141 | 3.6 | 11/32 | 0.344 | 8.7 |
| E-624 | 6 | 9/16 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 7/32 | 0.210 | 5.3 | 9/64 | 0.146 | 3.7 | 3/16 | 0.188 | 4.8 |
| E-2623 | 5 | 7/8 | 0.687 | 22.9 | 5/16 | 0.306 | 7.8 | 9/16 | 0.562 | 14.4 | 5/32 | 0.156 | 4.0 | 5/16 | 0.306 | 7.8 |
| E-2594 | 5 | 41/64 | 0.360 | 9.1 | 17/64 | 0.265 | 6.7 | 15/79 | 0.190 | 4.8 | 5/32 | 0.156 | 4.0 | 7/25 | 0.280 | 7.1 |
| E-2943 | 5 | 1/2 | 0.563 | 14.2 | 23/64 | 0.359 | 9.2 | 7/16 | 0.438 | 11.1 | 5/32 | 0.156 | 4.0 | 23/64 | 0.359 | 9.2 |
| E-2053 | 1 | 1/2 | 0.875 | 22.2 | 7/16 | 0.438 | 11.1 | 3/4 | 0.750 | 19.1 | 5/32 | 0.161 | 4.0 | 3/8 | 0.375 | 9.5 |
| E-2602 | 5 | 1/2 | 0.635 | 16.1 | 5/16 | 0.306 | 7.8 | 9/16 | 0.563 | 14.3 | 5/32 | 0.161 | 4.0 | 5/16 | 0.306 | 7.8 |
| E-6208 | 6 | | 0.500 | 12.7 | 7/32 | 0.219 | 5.6 | 3/8 | 0.375 | 9.5 | 5/32 | 0.161 | 4.0 | 7/32 | 0.219 | 5.6 |
| E-6204 | 3 | | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 5/32 | 0.161 | 4.1 | 1/4 | 0.250 | 6.4 |
| E-6202 | 3 | | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 11/64 | 0.175 | 4.4 | 1/4 | 0.250 | 6.4 |

* 5° taper on pin.



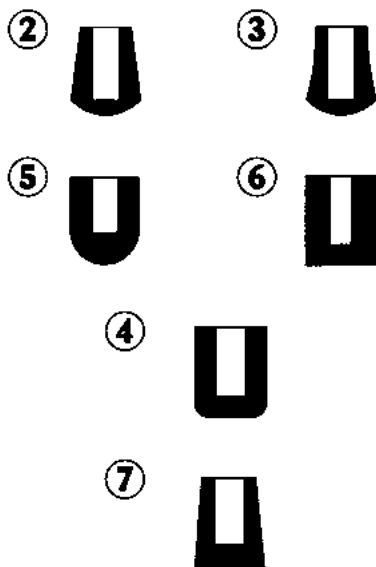
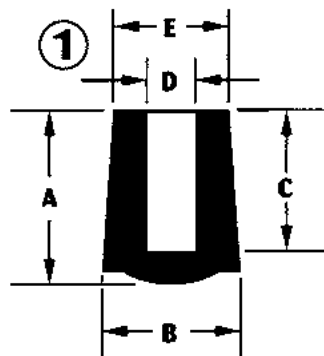


END BUMPERS

By "D" Dimension

End Bumpers are used on the ends of tubes for shock and vibration reduction and the smoothing of edges.

- ABS, Buna-N, Butyl, EPDM, Neoprene, Nitrite, Natural Rubber, Santoprene, Silicone, Viton.
- Multiple sizes / applications
- Custom end bumpers available



| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | | | |
|----------|---------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|-----|-------|-------|------|---------|--|--|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | | | |
| E-620 | 3 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | | | |
| E-621 | 6 | 3/8 | 0.375 | 9.5 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 1/2 | 0.500 | 12.7 | | | |
| E-623 | 6 | 1 1/4 | 1.250 | 31.8 | 3/8 | 0.375 | 9.5 | 1 | 1.000 | 25.4 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | | | |
| E-631 | 4 | 11/16 | 0.688 | 17.5 | 3/8 | 0.375 | 9.5 | 5/8 | 0.625 | 15.9 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | | | |
| E-6822 | 5 | 39/64 | 0.600 | 15.2 | 1/4 | 0.250 | 6.4 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | | | |
| E-2566 | 6 | 21/32 | 0.656 | 16.7 | 1/2 | 0.500 | 12.7 | 17/32 | 0.531 | 13.5 | 14/69 | 0.203 | 5.2 | 1/2 | 0.500 | 12.7 | SPECIAL | | |
| E-2461 | 6 | 21/32 | 0.656 | 16.7 | 31/64 | 0.484 | 12.3 | 19/32 | 0.594 | 15.1 | 20/93 | 0.215 | 5.5 | 31/64 | 0.484 | 12.3 | SPECIAL | | |
| E-2508 | 6 | 21/32 | 0.656 | 16.7 | 31/64 | 0.484 | 12.3 | 33/64 | 0.516 | 13.1 | 20/93 | 0.215 | 5.5 | 31/64 | 0.484 | 12.3 | SPECIAL | | |
| E-2597 | 6 | 1/2 | 0.500 | 12.7 | 27/64 | 0.422 | 10.7 | 7/16 | 0.437 | 11.1 | 17/78 | 0.218 | 5.5 | 27/64 | 0.422 | 10.7 | SPECIAL | | |
| E-6209 | 6 | 21/32 | 0.656 | 16.7 | 15/32 | 0.469 | 11.9 | 5/8 | 0.625 | 15.9 | 7/32 | 0.210 | 5.3 | 15/32 | 0.469 | 11.9 | | | |
| E-2499 | 5 | 17/32 | 0.531 | 13.5 | 15/32 | 0.469 | 11.9 | 3/8 | 0.375 | 9.5 | 7/32 | 0.219 | 5.6 | 11/32 | 0.344 | 8.7 | SPECIAL | | |
| E-1873 | 1 | 29/32 | 0.906 | 23.0 | 15/32 | 0.469 | 11.9 | 11/16 | 0.688 | 17.5 | 7/32 | 0.219 | 5.6 | 3/8 | 0.375 | 9.5 | | | |
| E-205 | 1 | 7/8 | 0.875 | 22.2 | 7/16 | 0.438 | 11.1 | 3/4 | 0.750 | 19.1 | 7/32 | 0.219 | 5.6 | 3/8 | 0.375 | 9.5 | | | |
| E-628 | 4 | 21/64 | 0.330 | 8.5 | 1/2 | 0.498 | 12.7 | 1/4 | 0.250 | 6.4 | 7/32 | 0.219 | 5.6 | 1/2 | 0.500 | 12.7 | | | |
| E-2603 | 5 | 41/64 | 0.635 | 16.2 | 3/8 | 0.369 | 9.4 | 9/16 | 0.563 | 14.3 | 7/32 | 0.219 | 5.6 | 3/8 | 0.369 | 9.4 | | | |
| E-2731 | 6 | 3/8 | 0.375 | 9.5 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 | 7/32 | 0.219 | 5.6 | 1/2 | 0.500 | 12.7 | | | |
| E-2471 | 6 | 21/32 | 0.656 | 16.7 | 31/64 | 0.484 | 12.3 | 5/8 | 0.625 | 15.9 | 11/50 | 0.220 | 5.6 | 31/64 | 0.484 | 12.3 | SPECIAL | | |
| E-2468 | 6 | 27/32 | 0.844 | 21.4 | 31/64 | 0.484 | 12.3 | 25/32 | 0.781 | 19.8 | 3/13 | 0.230 | 5.8 | 31/64 | 0.484 | 12.3 | SPECIAL | | |
| E-2610 | 5 | 7/8 | 0.875 | 22.2 | 7/8 | 0.875 | 22.2 | 9/16 | 0.563 | 14.3 | 15/64 | 0.234 | 6.0 | 1/2 | 0.500 | 12.7 | SPECIAL | | |
| E-626 | 3 | 15/32 | 0.469 | 11.9 | 13/32 | 0.406 | 10.3 | 3/8 | 0.375 | 9.5 | 15/64 | 0.234 | 6.0 | 5/16 | 0.313 | 7.9 | | | |
| E-6292 | 2 | 11/16 | 0.688 | 17.5 | 17/32 | 0.531 | 13.5 | 1/2 | 0.500 | 12.7 | 15/64 | 0.234 | 6.0 | 29/64 | 0.453 | 11.5 | | | |
| E-6261 | 2 | 5/8 | 0.625 | 15.9 | 1/2 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | 1/4 | 0.246 | 6.2 | 3/8 | 0.375 | 9.5 | | | |
| E-2958 | 6 | 17/64 | 0.266 | 6.8 | 11/32 | 0.344 | 8.8 | 7/32 | 0.219 | 5.6 | 1/4 | 0.250 | 6.3 | 11/32 | 0.344 | 8.8 | | | |
| E-1684 | 4 | 19/32 | 0.594 | 15.1 | 17/32 | 0.531 | 13.5 | 11/32 | 0.344 | 8.7 | 1/4 | 0.250 | 6.4 | 17/32 | 0.531 | 13.5 | | | |
| E-635 | 2 | 13/16 | 0.813 | 20.6 | 5/8 | 0.625 | 15.9 | 19/32 | 0.594 | 15.1 | 1/4 | 0.250 | 6.4 | 1/2 | 0.500 | 12.7 | | | |
| E-6207 | 5 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 9/32 | 0.281 | 7.1 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | | | |
| E-6293 | 2 | 11/16 | 0.688 | 17.5 | 17/32 | 0.531 | 13.5 | 1/2 | 0.500 | 12.7 | 17/64 | 0.266 | 6.7 | 29/64 | 0.453 | 11.5 | | | |
| E-2596 | 6 | 69/94 | 0.734 | 18.6 | 1/2 | 0.495 | 12.6 | 16/25 | 0.640 | 16.3 | 3/11 | 0.272 | 6.9 | 1/2 | 0.495 | 12.6 | SPECIAL | | |
| E-2624 | 5 | 63/64 | 0.980 | 25.1 | 1/2 | 0.490 | 12.6 | 7/8 | 0.880 | 22.6 | 19/64 | 0.290 | 7.4 | 1/2 | 0.500 | 12.7 | | | |
| E-2052 | 1 | 3/4 | 0.750 | 19.1 | 15/32 | 0.469 | 11.9 | 17/32 | 0.531 | 13.5 | 19/64 | 0.297 | 7.5 | 27/64 | 0.422 | 10.7 | | | |
| E-6291 | 2 | 11/16 | 0.688 | 17.5 | 17/32 | 0.531 | 13.5 | 1/2 | 0.500 | 12.7 | 19/64 | 0.297 | 7.5 | 29/64 | 0.453 | 11.5 | | | |
| E-1872 | 1 | 29/32 | 0.906 | 23.0 | 15/32 | 0.469 | 11.9 | 11/16 | 0.688 | 17.5 | 19/64 | 0.297 | 7.5 | 3/8 | 0.375 | 9.5 | | | |
| E-633 | 4 | 3/8 | 0.375 | 9.5 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 7/16 | 0.438 | 11.1 | | | |
| E-2473 | 6 | 1/2 | 0.500 | 12.7 | 7/8 | 0.875 | 22.2 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 27/32 | 0.844 | 21.4 | SPECIAL | | |
| E-629 | 2 | 11/16 | 0.688 | 17.5 | 17/32 | 0.531 | 13.5 | 1/2 | 0.500 | 12.7 | 21/64 | 0.328 | 8.3 | 29/64 | 0.453 | 11.5 | | | |
| E-6251 | 7 | 5/8 | 0.625 | 15.9 | 5/8 | 0.625 | 15.9 | 1/2 | 0.500 | 12.7 | 21/64 | 0.328 | 8.3 | 15/32 | 0.469 | 11.9 | | | |
| E-6224 | 7 | 7/16 | 0.438 | 11.1 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 21/64 | 0.328 | 8.3 | 1/2 | 0.500 | 12.7 | | | |
| E-40140 | 2 | 11/16 | 0.688 | 17.4 | 17/32 | 0.531 | 13.6 | 1/2 | 0.500 | 12.7 | 21/64 | 0.328 | 8.4 | 29/64 | 0.453 | 11.6 | | | |

* 5° taper on pin.

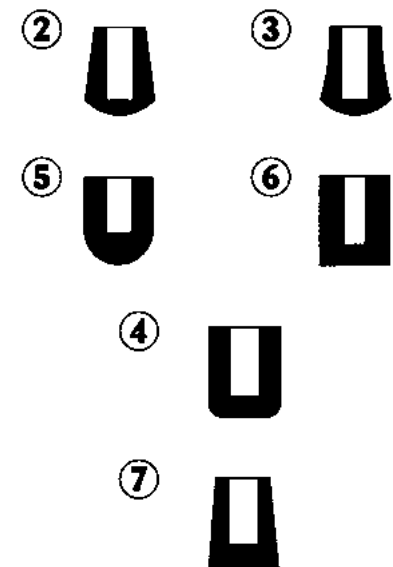
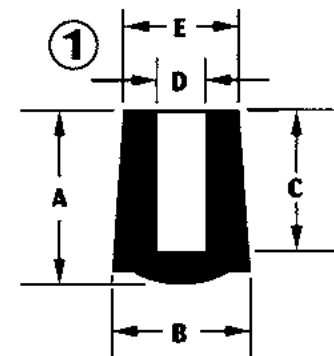


END BUMPERS

By "D" Dimension

End Bumpers are used on the ends of tubes for shock and vibration reduction and the smoothing of edges.

- ABS, Buna-N, Butyl, EPDM, Neoprene, Nitrite, Natural Rubber, Santoprene, Silicone, Viton.
- Multiple sizes / applications
- Custom end bumpers available



| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | | | |
|----------|---------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|---------|--|--|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | | | |
| E-658 | 6 | 3/10 | 0.300 | 7.6 | 5/8 | 0.625 | 15.9 | 2/9 | 0.228 | 5.8 | 1/3 | 0.335 | 8.5 | 5/8 | 0.625 | 15.9 | SPECIAL | | |
| E-636 | 7 | 1 1/8 | 1.125 | 28.6 | 9/16 | 0.563 | 14.3 | 1 | 1.000 | 25.4 | 11/32 | 0.344 | 8.7 | 1/2 | 0.500 | 12.7 | | | |
| E-6252 | 7 | 5/8 | 0.625 | 15.9 | 5/8 | 0.625 | 15.9 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 15/32 | 0.469 | 11.9 | | | |
| E-40100 | 7 | 5/8 | 0.625 | 15.8 | 5/8 | 0.625 | 15.8 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 15/32 | 0.469 | 12.0 | | | |
| E-6253 | 1 | 5/8 | 0.625 | 15.9 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 1/2 | 0.500 | 12.7 | | | |
| E-6301 | 1 | 11/16 | 0.688 | 17.5 | 19/32 | 0.594 | 15.1 | 9/16 | 0.563 | 14.3 | 13/32 | 0.400 | 10.2 | 33/64 | 0.516 | 13.1 | | | |
| E-630 | 2 | 29/32 | 0.906 | 23.0 | 19/32 | 0.594 | 15.1 | 11/16 | 0.688 | 17.5 | 13/32 | 0.406 | 10.3 | 1/2 | 0.500 | 12.7 | | | |
| E-1875 | 1 | 29/32 | 0.906 | 23.0 | 9/16 | 0.563 | 14.3 | 11/16 | 0.688 | 17.5 | 13/32 | 0.406 | 10.3 | 15/32 | 0.469 | 11.9 | | | |
| E-6222 | 2 | 3/4 | 0.750 | 19.1 | 11/16 | 0.688 | 17.5 | 1/2 | 0.500 | 12.7 | 15/32 | 0.469 | 11.9 | 19/32 | 0.594 | 15.1 | | | |
| E-622 | 2 | 3/4 | 0.750 | 19.1 | 23/32 | 0.725 | 18.5 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 5/8 | 0.625 | 15.9 | | | |
| E-6223 | 2 | 7/8 | 0.875 | 22.2 | 13/16 | 0.813 | 20.6 | 39/64 | 0.605 | 15.4 | 9/16 | 0.563 | 14.3 | 11/16 | 0.688 | 17.5 | | | |
| E-676 | 2 | 1 | 1.000 | 25.4 | 7/8 | 0.875 | 22.2 | 3/4 | 0.750 | 19.1 | 19/32 | 0.595 | 15.1 | 3/4 | 0.750 | 19.1 | | | |
| E-673 | 2 | 1 | 1.000 | 25.4 | 7/8 | 0.875 | 22.2 | 3/4 | 0.750 | 19.1 | 5/8 | 0.625 | 15.9 | 3/4 | 0.750 | 19.1 | | | |
| E-6751 | 2 | 7/8 | 0.875 | 22.2 | 1 | 1.000 | 25.4 | 5/8 | 0.625 | 15.9 | 23/32 | 0.718 | 18.2 | 7/8 | 0.875 | 22.2 | | | |
| E-682 | 2 | 1 1/8 | 1.125 | 28.6 | 11/8 | 1.125 | 28.6 | 7/8 | 0.875 | 22.2 | 13/16 | 0.813 | 20.6 | 1 | 1.000 | 25.4 | | | |
| E-6821 | 2 | 7/8 | 0.875 | 22.2 | 11/8 | 1.125 | 28.6 | 5/8 | 0.625 | 15.9 | 13/16 | 0.813 | 20.6 | 1 | 1.000 | 25.4 | | | |
| E-680 | 2 | 7/8 | 0.875 | 22.2 | 11/4 | 1.250 | 31.8 | 3/4 | 0.750 | 19.1 | 15/16 | 0.938 | 23.8 | 1 1/8 | 1.125 | 28.6 | | | |
| E-681 | 4 | 1 1/4 | 1.250 | 31.8 | 11/4 | 1.250 | 31.8 | 1 1/8 | 1.125 | 28.6 | 1 | 1.000 | 25.4 | 1 1/4 | 1.250 | 31.8 | | | |

* 5° taper on pin.





MACHINE SCREW BUMPERS

By "B" Dimension

Machine screw bumpers are used to protect doors or truck bodies from damage. They are also used as feet for large vibrating equipment.

Machine screw bumpers are a low cost way to provide a rubber break for many different applications. Great way to protect and isolate any two surfaces.

- Variety of styles, makes and models
- ABS, Acetal, Buna-N, Butyl, EPDM, Neoprene, Nitrite, Natural Rubber, Santoprene, Silicone, Viton.

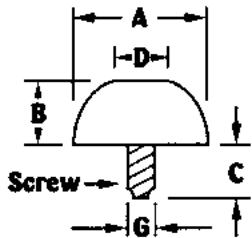


Fig. 2

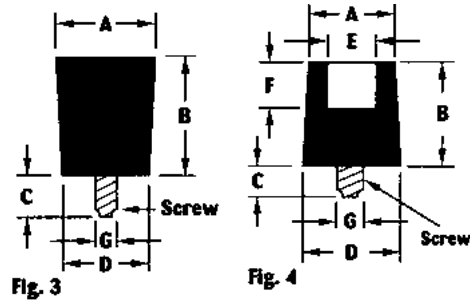


Fig. 3

Fig. 4

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | | G | | |
|----------|---------|-------|-------|------|-------|-------|------|------|-------|------|---------|-------|------|------|-------|-----|------|-------|-----|-------|----------|--|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Diam. | Screw | |
| E-1155 | 2 | 1/2 | 0.500 | 12.7 | 5/32 | 0.156 | 4.0 | 7/32 | 0.219 | 5.6 | | | | | | | | | | 0.125 | * | |
| E-MB-47 | 2 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | | | | | | | | | | 0.138 | #6-32 | |
| E-MB-50 | 2 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | | | | | | | 0.138 | #6-32 | |
| E-MB-51 | 2 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | | | | | | | 0.164 | #8-32 | |
| E-MB-62 | 2 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | | | | | | | 0.164 | #8-32 | |
| E-MB-75 | 2 | 3/4 | 0.750 | 19.1 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | | | | | | | 0.164 | #8-32 | |
| E-827-S | 2 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | | | | | | | | | | 0.138 | #6-32 | |
| E-1443 | 4 | 11/32 | 0.344 | 8.7 | 1/4 | 0.250 | 6.4 | 1/2 | 0.500 | 12.7 | 11/32 | 0.344 | 8.7 | | | | | | | 0.138 | #6-32 | |
| E-16 | 4 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 1/2 | 0.500 | 12.7 | | | | | | | 0.138 | #6-32 | |
| E-827 | 2 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 7/32 | 0.219 | 5.6 | | | | | | | | | | 0.125 | * | |
| E-3326S | 4 | 11/32 | 0.344 | 8.7 | 5/16 | 0.313 | 7.9 | 1/2 | 0.500 | 12.7 | 23/64 | 0.366 | 9.3 | 5/32 | 0.156 | 4.0 | 5/32 | 0.156 | 4.0 | 0.138 | #6-32 | |
| E-255 | 2 | 3/4 | 0.429 | 10.9 | 11/32 | 0.344 | 8.7 | 1/4 | 0.250 | 6.4 | | | | | | | | | | 0.164 | #8-32 | |
| E-3323S | 3 | 7/8 | 0.875 | 22.2 | 13/32 | 0.406 | 10.3 | 3/8 | 0.375 | 9.5 | | | | | | | | | | 0.190 | #10-32 | |
| E-MB-87 | 2 | 7/8 | 0.875 | 22.2 | 7/16 | 0.438 | 11.1 | 1/2 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | | | | | | | 0.190 | #10-32 | |
| E-165 | 2 | 3/4 | 0.750 | 19.1 | 7/16 | 0.438 | 11.1 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | | | | | | | 0.164 | #8-32 | |
| E-165-A | 2 | 3/4 | 0.750 | 19.1 | 7/16 | 0.438 | 11.1 | 3/8 | 0.375 | 9.5 | 5/16 | 0.313 | 7.9 | | | | | | | 0.164 | #8-32 | |
| E-MB-100 | 2 | 1 | 1.000 | 25.4 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | | | | | | | 0.190 | #10-32 | |
| E-MB-112 | 2 | 1 1/8 | 1.125 | 28.6 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | | | | | | | 0.190 | #10-32 | |
| E-513 | 2 | 7/8 | 0.875 | 22.2 | 1/2 | 0.500 | 12.7 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 | | | | | | | 0.164 | #8-32 | |
| E-513-A | 2 | 7/8 | 0.875 | 22.2 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 5/16 | 0.313 | 7.9 | | | | | | | 0.164 | #8-32 | |
| E-422 | 2 | 1 | 1.000 | 25.4 | 1/2 | 0.500 | 12.7 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 | | | | | | | 0.190 | #10-32 | |
| E-422-A | 2 | 1 | 1.000 | 25.4 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 5/16 | 0.313 | 7.9 | | | | | | | 0.190 | #10-32 | |
| E-MB-103 | 3 | 1 | 1.000 | 25.4 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 5/8 | 0.625 | 15.9 | | | | | | | 0.138 | #6-32 | |
| E-MB-104 | 3 | 1 | 1.000 | 25.4 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 5/8 | 0.625 | 15.9 | | | | | | | 0.166 | #8-32 | |
| E-MB-63 | 4 | 9/16 | 0.563 | 14.3 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 5/16 | 0.313 | 7.9 | 0.164 | #8-32 | |
| E-6070 | 3 | 1 5/8 | 1.625 | 41.3 | 1 | 1.000 | 25.4 | 3/4 | 0.750 | 19.1 | 1 11/32 | 1.344 | 34.1 | | | | | | | 0.310 | #5/16-18 | |
| | | | | | | | | | | | | | | | | | | | | | | |

* Knurled Stud Brass

RECESSED BUMPERS

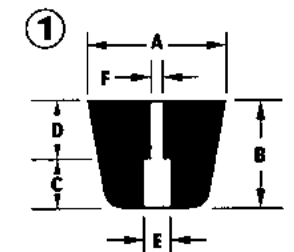
By "B" Dimension



Recessed bumpers are used in a variety of applications, from doors, rubber feet for equipment and products, car hoods and doors, and more. A recessed area in the bumper allows for easy attachment via screw or other fastener.

ESTCO carries hundreds of recessed bumpers made from multiple materials, and we provide custom recessed bumpers as well.

- Variety of styles, makes and models
- Recessed center for screw or other fastener
- ABS, Acetal, Buna-N, Butyl, EPDM, Neoprene, Nitrite, Natural Rubber, Santoprene, Silicone, Viton.



| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|----------|---------|-------|-------|------|-------|-------|-----|------|-------|-----|------|-------|-----|-------|-------|------|------|-------|-----|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-2061* | 2 | 7/16 | 0.438 | 11.1 | 5/32 | 0.156 | 4.0 | 3/32 | 0.094 | 2.4 | 1/16 | 0.063 | 1.6 | 1/4 | 0.250 | 6.4 | 5/32 | 0.156 | 4.0 |
| E-206 | 2 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 3/32 | 0.094 | 2.4 | 3/32 | 0.094 | 2.4 | 3/16 | 0.188 | 4.8 | 5/64 | 0.078 | 2.0 |
| E-2073* | 5 | 1/2 | 0.500 | 12.7 | 3/16 | 0.188 | 4.8 | 3/32 | 0.094 | 2.4 | 3/32 | 0.094 | 2.4 | 7/32 | 0.219 | 5.6 | 1/8 | 0.125 | 3.2 |
| E-1059 | 4 | 1/2 | 0.500 | 12.7 | 3/16 | 0.188 | 4.7 | 3/32 | 0.156 | 2.4 | 3/32 | 0.094 | 2.4 | 9/32 | 0.281 | 7.1 | 1/8 | 0.125 | 3.2 |
| E-2075 | 5 | 1/2 | 0.500 | 12.7 | 7/32 | 0.219 | 4.8 | 5/32 | 0.156 | 3.2 | 1/16 | 0.063 | 1.6 | 9/32 | 0.275 | 7.0 | 1/8 | 0.130 | 3.3 |
| E-164 | 3 | 15/16 | 0.938 | 23.8 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 1/8 | 0.125 | 3.2 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 |
| E-207* | 2 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 1/8 | 0.125 | 3.2 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 |
| E-2062 | 1 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 |
| E-2076* | 5 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 15/64 | 0.234 | 6.0 | 1/8 | 0.125 | 3.2 |
| E-2093* | 5 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 1/8 | 0.125 | 3.2 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 |
| E-2194 | 3 | 15/16 | 0.938 | 23.8 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 | 5/32 | 0.156 | 4.0 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 |
| E-2195 | 3 | 15/16 | 0.938 | 23.8 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 1/8 | 0.125 | 3.2 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 |
| E-2613 | 3 | 15/32 | 0.469 | 11.9 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 1/8 | 0.125 | 3.2 | 17/64 | 0.266 | 6.7 | 1/8 | 0.125 | 3.2 |
| E-366 | 1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 5/32 | 0.156 | 4.0 | 3/32 | 0.094 | 2.4 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 |
| E-852 | 5 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 5/32 | 0.156 | 4.0 | 3/32 | 0.094 | 2.4 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 |
| E-1308 | 1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 5/32 | 0.156 | 4.0 | 3/32 | 0.094 | 2.4 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 |
| E-2965* | 5 | 9/16 | 0.560 | 14.2 | 17/64 | 0.260 | 6.6 | 5/32 | 0.150 | 3.8 | 3/32 | 0.110 | 2.3 | 11/32 | 0.340 | 8.6 | 5/32 | 0.160 | 4.1 |
| E-2072 | 5 | 17/32 | 0.531 | 13.5 | 17/64 | 0.266 | 6.7 | 5/32 | 0.156 | 4.0 | 7/64 | 0.109 | 2.8 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 |
| E-2087* | 4 | 3/4 | 0.750 | 19.1 | 9/32 | 0.281 | 7.1 | 5/32 | 0.156 | 4.0 | 1/8 | 0.125 | 3.2 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 |
| E-2092* | 5 | 3/4 | 0.750 | 19.1 | 9/32 | 0.281 | 7.1 | 1/8 | 0.125 | 3.2 | 5/32 | 0.156 | 4.0 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 |
| E-2588 | 5 | 3/4 | 0.750 | 19.1 | 9/32 | 0.281 | 7.1 | 3/16 | 0.187 | 4.7 | 3/32 | 0.094 | 2.4 | 16/31 | 0.516 | 13.1 | 4/23 | 0.174 | 4.4 |
| E-2184* | 1 | 3/4 | 0.750 | 19.1 | 19/64 | 0.297 | 7.5 | 3/16 | 0.188 | 4.8 | 7/64 | 0.109 | 2.8 | 11/32 | 0.344 | 8.7 | 1/8 | 0.125 | 3.2 |
| E-2616* | 5 | 3/4 | 0.750 | 19.1 | 5/16 | 0.312 | 8.0 | 5/32 | 0.160 | 4.1 | 5/32 | 0.152 | 3.9 | 3/8 | 0.375 | 9.5 | 5/32 | 0.156 | 4.0 |
| E-208 | 2 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 3/16 | 0.188 | 4.8 | 1/8 | 0.125 | 3.2 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 |
| E-2071* | 5 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 | 3/16 | 0.188 | 4.8 | 1/8 | 0.125 | 3.2 | 1/4 | 0.250 | 6.4 | 5/3 | | |



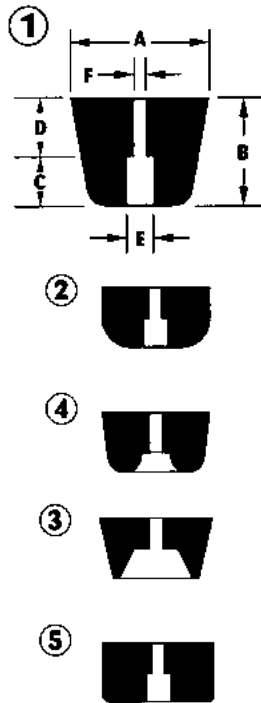
RECESSED BUMPERS

By "B" Dimension

Recessed bumpers are used in a variety of applications, from doors, rubber feet for equipment and products, car hoods and doors, and more. A recessed area in the bumper allows for easy attachment via screw or other fastener.

ESTCO carries hundreds of recessed bumpers made from multiple materials, and we provide custom recessed bumpers as well.

- Variety of styles, makes and models
- Recessed center for screw or other fastener
- ABS, Acetal, Buna-N, Butyl, EPDM, Neoprene, Nitrite, Natural Rubber, Santoprene, Silicone, Viton.



| PART No. | FIG No. | A | | | B | | | C | | | D | | | E | | | F | | |
|----------|---------|---------|-------|------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|-------|------|-------|-------|-----|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-2680* | 5 | 33/64 | 0.510 | 12.9 | 11/32 | 0.347 | 8.8 | 3/32 | 0.094 | 2.4 | 1/4 | 0.250 | 6.4 | 13/64 | 0.210 | 5.3 | 3/32 | 0.100 | 2.5 |
| E-1670* | 1 | 1/2 | 0.500 | 12.7 | 11/32 | 0.344 | 8.7 | 3/16 | 0.188 | 4.7 | 5/32 | 0.156 | 4.0 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 |
| E-3336* | 5 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 3/16 | 0.187 | 4.8 | 5/16 | 0.313 | 8.0 | 5/32 | 0.156 | 4.0 |
| E-2941* | 5 | 3/4 3/4 | 0.750 | 19.0 | 3/8 | 0.375 | 9.5 | 5/32 | 0.156 | 4.0 | 7/32 | 0.219 | 5.6 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.1 |
| E-2085* | 2 | 29/32 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 3/16 | 0.188 | 4.8 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 |
| E-2095* | 4 | 5/8 | 0.906 | 23.0 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | 5/32 | 0.156 | 4.0 |
| E-2806* | 2 | 9/16 | 0.625 | 15.9 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 |
| E-2813* | 5 | 15/16 | 0.563 | 14.3 | 3/8 | 0.375 | 9.5 | 7/32 | 0.219 | 5.6 | 5/32 | 0.156 | 4.0 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 |
| E-2988* | 4 | 3/4 | 0.938 | 23.8 | 3/8 | 0.375 | 9.5 | 7/32 | 0.219 | 5.6 | 5/32 | 0.156 | 4.0 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 |
| E-1388* | 5 | 15/16 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 5/32 | 0.156 | 4.0 | 7/32 | 0.219 | 5.6 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 |
| E-253* | 4 | 5/8 | 0.938 | 23.8 | 3/8 | 0.375 | 9.5 | 7/32 | 0.219 | 5.6 | 5/32 | 0.156 | 4.0 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.7 |
| E-381* | 1 | 7/8 | 0.625 | 15.9 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.7 | 3/16 | 0.188 | 4.7 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 |
| E-2198* | 4 | 11/16 | 0.875 | 22.2 | 13/32 | 0.406 | 10.3 | 3/16 | 0.188 | 4.8 | 7/32 | 0.219 | 5.6 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 |
| E-2083* | 5 | 3/4 | 0.688 | 17.5 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 |
| E-2084* | 1 | 23/32 | 0.750 | 19.1 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 |
| E-2086* | 5 | 5/8 | 0.719 | 18.3 | 7/16 | 0.438 | 11.1 | 7/32 | 0.219 | 5.6 | 7/32 | 0.219 | 5.6 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 |
| E-2953* | 5 | 1 | 0.625 | 15.8 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.7 | 5/16 | 0.313 | 7.9 | 13/64 | 0.199 | 5.1 |
| E-2979* | 4 | 3/4 | 1.000 | 25.4 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 |
| E-3331* | 1 | 1/2 | 0.750 | 19.1 | 7/16 | 0.437 | 11.1 | 15/64 | 0.230 | 5.8 | 13/64 | 0.207 | 5.3 | 7/16 | 0.437 | 11.1 | 1/4 | 0.255 | 6.5 |
| E-832 | 1 | 5/8 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | 7/32 | 0.219 | 5.6 | 7/32 | 0.219 | 5.6 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 |
| E-1343 | 1 | 13/16 | 0.625 | 15.9 | 7/16 | 0.438 | 11.1 | 5/32 | 0.156 | 4.0 | 9/32 | 0.281 | 7.2 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 |
| E-209 | 2 | 1/2 | 0.813 | 20.7 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 |
| E-2074* | 5 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 3/16 | 0.188 | 4.8 | 5/16 | 0.313 | 7.9 | 1/4 | 0.250 | 6.4 | 5/32 | 0.156 | 4.0 |
| E-2928* | 5 | 5/8 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 1/6 | 0.165 | 4.2 | 1/3 | 0.335 | 8.6 | 17/64 | 0.272 | 7.0 | 3/16 | 0.185 | 4.7 |
| E-2082* | 1 | 5/8 | 0.625 | 15.9 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 |
| E-2939 | 1 | 3/4 | 0.630 | 16.1 | 1/2 | 0.500 | 12.7 | 3/16 | 0.186 | 4.8 | 5/16 | 0.314 | 8.1 | 5/16 | 0.313 | 7.9 | 13/64 | 0.190 | 4.9 |
| E-2089* | 1 | 3/4 | 0.750 | 19.1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 |
| E-2091* | 5 | 15/16 | 0.750 | 19.1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 9/64 | 0.141 | 3.6 |
| E-2094* | 1 | 1 7/8 | 0.938 | 23.8 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 |
| E-2197* | 4 | 1/2 | 1.000 | 25.4 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 |
| E-2814 | 1 | 1 | 0.875 | 22.2 | 1/2 | 0.500 | 12.7 | 13/32 | 0.406 | 10.3 | 3/32 | 0.094 | 2.4 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 |
| E-2996* | 1 | 3/4 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 1/8 | 0.125 | 3.2 | 1/8 | 0.125 | 3.2 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 |
| E-638 | 1 | 1 | 1.000 | 25.4 | 1/2 | 0.500 | 12.7 | 9/32 | 0.281 | 7.2 | 7/32 | 0.219 | 5.6 | 9/32 | 0.281 | 7.2 | 5/32 | 0.156 | 4.0 |
| E-1599 | 5 | 15/32 | 0.750 | 19.1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.7 |
| E-425 | 5 | 3/4 | 1.000 | 25.4 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.7 |
| E-2658* | 5 | 1 | 0.469 | 11.9 | 17/32 | 0.531 | 13.5 | 11/32 | 0.344 | 8.7 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/8 | 0.132 | 3.5 |
| E-2950* | 1 | 3/4 | 0.750 | 19.0 | 9/16 | 0.563 | 14.2 | 1/4 | 0.250 | 6.3 | 5/16 | 0.313 | 7.9 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.7 |
| E-2977* | 5 | 1.000 | 25.4 | 9/16 | 0.563 | 14.3 | 5/16 | 0.313 | 7.9 | 1/4 | 0.250 | 6.4 | 17/32 | 0.531 | 13.5 | 9/32 | 0.281 | 7.1 | |
| E-18 | 1 | 0.750 | 19.1 | 9/16 | 0.563 | 14.3 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.7 | |

* Can be supplied with steel washer inserts.

RECESSED BUMPERS

By "B" Dimension

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|-----------|---------|---------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|-----|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-59 | 1 | 1 | 1.000 | 25.4 | 9/16 | 0.563 | 14.3 | 5/16 | 0.313 | 7.9 | 1/4 | 0.250 | 6.4 | 17/32 | 0.531 | 13.5 | 9/32 | 0.281 | 7.1 |
| E-2090* | 1 | 5/8 | 0.625 | 15.9 | 5/8 | 0.625 | 15.9 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 5/16 | 0.313 | 7.9 | 9/64 | 0.147 | 3.7 |
| E-2096* | 1 | 15/16 | 0.938 | 22.8 | 5/8 | 0.625 | 15.9 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 7/16 | 0.438 | 11.1 | 7/32 | 0.219 | 5.6 |
| E-2803* | 1 | 5/8 | 0.625 | 15.9 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 5/16 | 0.313 | 7.9 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 |
| E-2808* | 2 | 1 11/16 | 1.688 | 42.9 | 5/8 | 0.625 | 15.9 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 3/4 | 0.750 | 19.1 | 1/4 | 0.250 | 6.4 |
| E-2809* | 5 | 1 1/2 | 1.500 | 38.1 | 5/8 | 0.625 | 15.9 | 11/32 | 0.344 | 8.7 | 9/32 | 0.281 | 7.1 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 |
| E-68* | 1 | 1 3/32 | 1.094 | 27.8 | 5/8 | 0.625 | 15.9 | 13/32 | 0.406 | 10.3 | 7/32 | 0.219 | 5.6 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.7 |
| E-1019-2* | 1 | 1 1/2 | 1.500 | 38.1 | 5/8 | 0.625 | 15.9 | 11/32 | 0.344 | 8.7 | 9/32 | 0.281 | 7.1 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 |
| E-1019* | 1 | 1 1/2 | 1.500 | 38.1 | 5/8 | 0.625 | 15.9 | 11/32 | 0.344 | 8.7 | 9/32 | 0.281 | 7.1 | 1/2 | 0.500 | 12.7 | 3/16 | 0.188 | 4.7 |
| E-2801* | 5 | 5/8 | 0.625 | 15.9 | 3/4 | 0.750 | 19.1 | 15/32 | 0.469 | 11.9 | 9/32 | 0.281 | 7.1 | 11/32 | 0.344 | 8.7 | 11/64 | 0.172 | 4.4 |
| E-2802* | 1 | 5/8 | 0.625 | 15.9 | 3/4 | 0.750 | 19.1 | 1/4 | 0.250 | 6.4 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 | 11/64 | 0.165 | 4.2 |
| E-2804* | 5 | 5/8 | 0.625 | 15.9 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 | 7/16 | 0.438 | 11.1 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 |
| E-2805* | 5 | 5/8 | 0.625 | 15.9 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 | 7/16 | 0.438 | 11.1 | 5/16 | 0.313 | 7.9 | 11/64 | 0.172 | 4.4 |
| E-2807* | 5 | 5/8 | 0.625 | 15.9 | 3/4 | 0.750 | 19.1 | 1/4 | 0.250 | 6.4 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 |
| E-2815* | 4 | 3/4 | 0.750 | 19.1 | 3/4 | 0.750 | 19.1 | 17/32 | 0.531 | 13.5 | 7/32 | 0.219 | 5.6 | 13/32 | 0.406 | 10.3 | 5/32 | 0.156 | 4.0 |
| E-2816* | 5 | 5/8 | 0.625 | 15.9 | 3/4 | 0.750 | 19.1 | 9/32 | 0.281 | 7.2 | 31/64 | 0.484 | 12.4 | 21/64 | 0.328 | 8.3 | 11/64 | 0.175 | 4.4 |
| E-40180* | 5 | 5/8 | 0.625 | 15.9 | 3/4 | 0.750 | 19.0 | 15/64 | 0.234 | 5.9 | 33/64 | 0.516 | 13.1 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 |
| E-1102* | 5 | 1 1/2 | 1.500 | 38.1 | 3/4 | 0.750 | 19.1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 15/32 | 0.469 | 11.9 | 1/4 | 0.250 | 6.4 |
| E-2609* | 5 | 3/4 | 0.750 | 19.1 | 49/64 | 0.770 | 19.7 | 15/64 | 0.230 | 5.9 | 35/64 | 0.540 | 13.8 | 5/16 | 0.313 | 8.0 | 1/8 | 0.125 | 3.2 |
| E-2986* | 5 | 13/16 | 0.813 | 20.6 | 13/16 | 0.813 | 20.7 | 7/16 | 0.438 | 11.1 | 3/8 | 0.375 | 9.5 | 15/32 | 0.469 | 11.9 | 1/4 | 0.250 | 6.4 |
| E-197* | 1 | 1 | 1.000 | 25.4 | 13/16 | 0.813 | 20.7 | 7/16 | 0.438 | 11.1 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 |
| E-21* | 5 | 13/16 | 0.813 | 20.7 | 13/16 | 0.813 | 20.7 | 7/16 | | | | | | | | | | | |



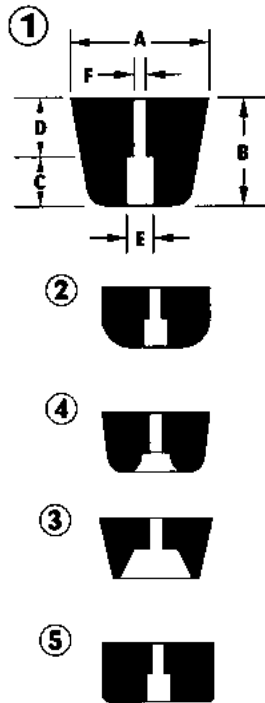
RECESSED BUMPERS

By "B" Dimension

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- Variety of styles, makes and models
- Recessed center for screw or other fastener
- ABS, Acetal, Buna-N, Butyl, EPDM, Neoprene, Nitrite, Natural Rubber, Santoprene, Silicone, Viton.



| PART NO. | Fig No. | A | | B | | C | | D | | E | | F | | | | | | | |
|----------|---------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|------|-------|-----|------|-------|-----|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | | | | | | |
| E-2812* | 5 | 1 | 1.000 | 25.4 | 1 1/4 | 1.250 | 31.8 | 5/8 | 0.625 | 15.9 | 5/8 | 0.625 | 16.0 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 |
| E-2990* | 5 | 1 1/4 | 1.250 | 31.8 | 1 1/4 | 1.250 | 31.8 | 3/4 | 0.750 | 19.1 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 |
| E-1326 | 5 | 1 1/4 | 1.250 | 31.8 | 1 1/4 | 1.250 | 31.8 | 3/4 | 0.750 | 19.1 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 |
| E-2099* | 2 | 1 | 1.000 | 25.4 | 1 1/2 | 1.500 | 38.1 | 5/8 | 0.625 | 15.9 | 7/8 | 0.875 | 22.2 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 |
| E-3311 | 5 | 1 1/4 | 1.250 | 31.8 | 1 7/8 | 1.875 | 47.6 | 3/4 | 0.750 | 19.1 | 1 1/8 | 1.125 | 28.6 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 |
| E-1487 | 5 | 1 1/4 | 1.250 | 31.8 | 1 7/8 | 1.875 | 47.6 | 3/4 | 0.750 | 19.1 | 1 1/2 | 1.500 | 38.1 | 3/8 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 |
| E-2199* | 1 | 1 | 1.000 | 25.4 | 2 1/4 | 2.250 | 57.2 | 1 3/8 | 1.375 | 34.9 | 7/8 | 0.875 | 22.2 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 |

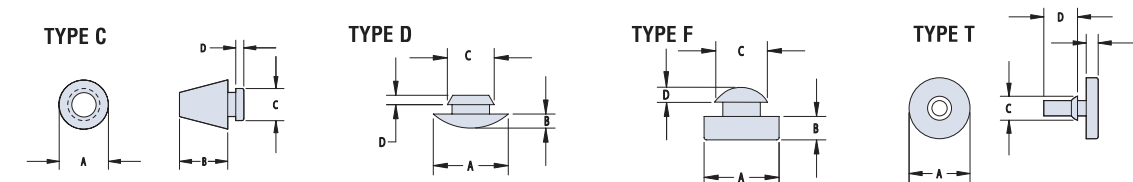
* Can be supplied with steel washer inserts.

HEYCO® RUBBER PUSH-IN BUMPERS



| PANEL DIMENSIONS | | PART NO. | DESCRIPTION | PART DIMENSIONS | | | | | | | | TYPE | | |
|-------------------|------------------------|----------|-------------|-----------------|-----------------|---------------|------|-------------------|------|-----------------|------|------|------|---|
| Maximum Thickness | Mounting Hole Diameter | | | A Base Diameter | | B Base Height | | C Insert Diameter | | D Insert Height | | | | |
| | | in. | mm. | in. | mm. | in. | mm. | in. | mm. | in. | mm. | | | |
| .098 | 2,5 | .118 | 3,0 | H-G2000 | RGB 118-236-4 | .236 | 6,0 | .118 | 3,0 | .196 | 5,0 | .472 | 12,0 | T |
| .071 | 1,8 | .125 | 3,2 | H-G2002 | RGB 125-334-6 | .334 | 8,5 | .189 | 4,9 | .295 | 7,5 | .429 | 10,9 | T |
| .031 | 0,8 | .156 | 4,0 | H-G2004 | RGB156-375-3 | .375 | 9,5 | .093 | 2,4 | .218 | 5,5 | .109 | 2,8 | F |
| .059 | 1,5 | .177 | 4,5 | H-G2006 | RGB 177-334-9 | .334 | 8,5 | .295 | 7,5 | .236 | 6,0 | .729 | 18,5 | T |
| .109 | 2,8 | .180 | 4,6 | H-G2007 | RGB 180-500-2 | .500 | 12,7 | .060 | 1,5 | .250 | 6,4 | .078 | 2,0 | F |
| .047 | 1,2 | .187 | 4,7 | H-G2009 | RGB 187-250-6 | .250 | 6,4 | .187 | 4,7 | .031 | 0,8 | .343 | 8,7 | F |
| .047 | 1,2 | .187 | 4,7 | H-G2010 | RGB 187-312-4 | .312 | 7,9 | .125 | 3,2 | .250 | 6,4 | .093 | 2,4 | F |
| .050 | 1,3 | .187 | 4,7 | H-G2011 | RGB 187-375-8 | .375 | 9,5 | .250 | 6,4 | .250 | 6,4 | .093 | 2,4 | F |
| .062 | 1,6 | .187 | 4,7 | H-G2012 | RGB 187-375-4 | .375 | 9,5 | .125 | 3,2 | .250 | 6,4 | .125 | 3,2 | F |
| .062 | 1,6 | .187 | 4,7 | H-G2013 | RGB 187-500-3 | .500 | 12,7 | .093 | 2,4 | .250 | 6,4 | .187 | 4,7 | F |
| .078 | 2,0 | .187 | 4,7 | H-G2014 | RGB 187-338-6 | .338 | 8,6 | .172 | 4,4 | .250 | 6,4 | .296 | 7,5 | F |
| .093 | 2,4 | .218 | 5,5 | H-G2016 | RGB 218-406-6 | .406 | 10,3 | .187 | 4,7 | .281 | 7,1 | .093 | 2,4 | D |
| .125 | 3,2 | .218 | 5,5 | H-G2017 | RGB 218-875-6 | .875 | 22,2 | .171 | 4,3 | .343 | 8,7 | .484 | 12,3 | T |
| .047 | 1,2 | .250 | 6,4 | H-G2019 | RGB 250-437-6 | .437 | 11,1 | .187 | 4,7 | .312 | 7,9 | .125 | 3,2 | F |
| .047 | 1,2 | .250 | 6,4 | H-G2020 | RGB 250-500-6 | .500 | 12,7 | .171 | 4,3 | .312 | 7,9 | .187 | 4,7 | D |
| .050 | 1,3 | .250 | 6,4 | H-G2021 | RGB 250-562-12 | .562 | 14,3 | .375 | 9,5 | .340 | 8,6 | .265 | 6,7 | F |
| .062 | 1,6 | .250 | 6,4 | H-G2022 | RGB 250-375-4 | .375 | 9,5 | .125 | 3,2 | .312 | 7,9 | .062 | 1,6 | F |
| .062 | 1,6 | .250 | 6,4 | H-G2023 | RGB250-375-4R | .375 | 9,5 | .125 | 3,2 | .312 | 7,9 | .062 | 1,6 | F |
| .062 | 1,6 | .250 | 6,4 | H-G2024 | RGB 250-500-5 | .500 | 12,7 | .156 | 4,0 | .312 | 7,9 | .125 | 3,2 | F |
| .062 | 1,6 | .250 | 6,4 | H-G2025 | RGB 250-500-8 | .500 | 12,7 | .250 | 6,4 | .312 | 7,9 | .125 | 3,2 | F |
| .125 | 3,2 | .250 | 6,4 | H-G2026 | RGB 250-406-7 | .406 | 10,3 | .218 | 5,5 | .343 | 8,7 | .062 | 1,6 | F |
| .125 | 3,2 | .250 | 6,4 | H-G2027 | RGB 250-562-4 | .562 | 14,3 | .125 | 3,2 | .343 | 8,7 | .125 | 3,2 | F |
| .047 | 1,2 | .281 | 7,1 | H-G2029 | RGB 281-500-2 | .500 | 12,7 | .062 | 1,6 | .375 | 9,5 | .156 | 4,0 | F |
| .047 | 1,2 | .281 | 7,1 | H-G2030 | RGB 281-500-4 | .500 | 12,7 | .125 | 3,2 | .375 | 9,5 | .156 | 4,0 | F |
| .078 | 2,0 | .281 | 7,1 | H-G2031 | RGB 281-562-4 | .562 | 14,3 | .125 | 3,2 | .375 | 9,5 | .156 | 4,0 | F |
| .125 | 3,2 | .281 | 7,1 | H-G2032 | RGB 281-625-11 | .625 | 15,9 | .343 | 8,7 | .437 | 11,1 | .171 | 4,3 | F |
| .047 | 1,2 | .312 | 7,9 | H-G2034 | RGB 312-1250-3 | .250 | 28,6 | .093 | 2,4 | .437 | 11,1 | .078 | 2,0 | F |
| .062 | 1,6 | .312 | 7,9 | H-G2035 | RGB 312-375-5 | .375 | 9,5 | .156 | 4,0 | .375 | 9,5 | .156 | 4,0 | D |
| .078 | 2,0 | .312 | 7,9 | H-G2036 | RGB 312-875-4 | .875 | 22,2 | .125 | 3,2 | .500 | 12,7 | .062 | 1,6 | F |
| .093 | 2,4 | .312 | 7,9 | H-G2037 | RGB 312-625-8 | .625 | 15,9 | .250 | 6,4 | .375 | 9,5 | .125 | 3,2 | F |
| .094 | 2,4 | .328 | 8,3 | H-G2039 | RGB 328-846-6 | .846 | 21,5 | .187 | 4,7 | .421 | 10,7 | .265 | 6,7 | D |
| .125 | 3,2 | .375 | 9,5 | H-G2041 | RGB 375-765-24 | .765 | 19,4 | .750 | 19,1 | .500 | 12,7 | .125 | 3,2 | C |
| .125 | 3,2 | .500 | 12,7 | H-G2043 | RGB 500-1000-6 | 1.000 | 25,4 | .187 | 4,7 | .625 | 15,9 | .125 | 3,2 | D |
| .188 | 4,8 | .500 | 12,7 | H-G2044 | RGB 500-1000-10 | 1.000 | 25,4 | .312 | 7,9 | .687 | 17,4 | .187 | 4,7 | F |

Standard color black.



- Rubber bumpers are designed for through hole protection.
- Designed to fit snugly into your opening and not let air, water, etc. pass through.
- Can also be used as feet.
- Rubber bumpers are constructed of SBR with an operating temperature of -40°F (-40°C) to 221°F (105°C).



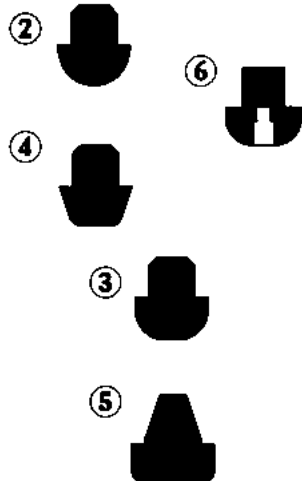
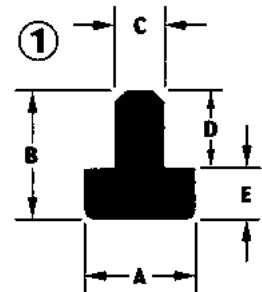
STEM BUMPERS

By "E" Dimension

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- ABS, Acetal, Buna-N, Butyl, EPDM, Neoprene, Nitrite, Natural Rubber, Santoprene, Silicone, Viton.



| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | |
|------------|---------|-------|-------|------|-------|-------|------|-------|-------|-----|-------|-------|------|------|-------|-----|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-6136 | 1 | 3/8 | 0.375 | 9.5 | 9/32 | 0.275 | 7.0 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/32 | 0.025 | 0.6 |
| E-2677** | S | 3/16 | 0.188 | 4.7 | 1/4 | 0.250 | 6.3 | 1/8 | 0.130 | 3.3 | 7/32 | 0.218 | 5.6 | 1/32 | 0.031 | 0.8 |
| E-6135 | 1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 7/32 | 0.218 | 5.6 | 1/32 | 0.031 | 0.8 |
| E-602 | 1 | 3/16 | 0.188 | 4.8 | 9/64 | 0.134 | 3.4 | 1/8 | 0.125 | 3.2 | 3/32 | 0.094 | 2.4 | 3/64 | 0.040 | 1.0 |
| E-6025 | 3 | 7/32 | 0.219 | 5.6 | 1/4 | 0.250 | 6.4 | 11/64 | 0.170 | 4.3 | 13/64 | 0.203 | 5.2 | 3/64 | 0.047 | 1.2 |
| E-3309 | 1 | 1/2 | 0.500 | 12.7 | 5/16 | 0.312 | 7.9 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/16 | 0.062 | 1.6 |
| E-2976 | 1 | 3/8 | 0.375 | 9.5 | 5/16 | 0.313 | 7.9 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 |
| E-6012 | 1 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 11/64 | 0.172 | 4.4 | 1/8 | 0.125 | 3.2 | 1/16 | 0.063 | 1.6 |
| E-6034 | 2 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 13/64 | 0.196 | 5.0 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 |
| E-6053* | 1 | 3/8 | 0.375 | 9.5 | 15/64 | 0.234 | 6.0 | 15/64 | 0.234 | 6.0 | 11/64 | 0.172 | 4.4 | 1/16 | 0.063 | 1.6 |
| E-6072 | 1 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 |
| E-6073 | 5 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 | 15/64 | 0.234 | 6.0 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 |
| E-6086 | 1 | 15/32 | 0.469 | 11.9 | 7/16 | 0.438 | 11.1 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 |
| E-6234 | 2 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 13/64 | 0.196 | 5.0 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 |
| E-2645 | 1 | 15/64 | 0.234 | 6.0 | 9/32 | 0.281 | 7.1 | 9/64 | 0.140 | 3.6 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 |
| E-6178* | 1 | 1/2 | 0.500 | 12.7 | 13/64 | 0.195 | 5.0 | 3/16 | 0.180 | 4.6 | 1/8 | 0.130 | 3.3 | 1/16 | 0.065 | 1.7 |
| E-6186 | 1 | 15/32 | 0.469 | 11.9 | 39/64 | 0.600 | 15.2 | 3/8 | 0.375 | 9.5 | 17/32 | 0.530 | 13.5 | 5/64 | 0.070 | 1.8 |
| E-6045 | 1 | 3/8 | 0.375 | 9.5 | 17/64 | 0.266 | 6.8 | 15/64 | 0.234 | 6.0 | 3/16 | 0.188 | 4.8 | 5/64 | 0.078 | 2.0 |
| E-6134 | 3 | 1/2 | 0.500 | 12.7 | 25/64 | 0.391 | 9.9 | 13/64 | 0.196 | 5.0 | 1/4 | 0.250 | 6.4 | 5/64 | 0.078 | 2.0 |
| E-6137 | 1 | 1/2 | 0.500 | 12.7 | 21/64 | 0.328 | 8.3 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 5/64 | 0.078 | 2.0 |
| E-6170 | 5 | 1/2 | 0.500 | 12.7 | 21/64 | 0.328 | 8.3 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 5/64 | 0.078 | 2.0 |
| E-6172 | 1 | 1/2 | 0.500 | 12.7 | 25/64 | 0.391 | 9.9 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 5/64 | 0.078 | 2.0 |
| E-6041 | 1 | 3/8 | 0.375 | 9.5 | 17/64 | 0.266 | 6.8 | 13/64 | 0.196 | 5.0 | 3/16 | 0.188 | 4.8 | 5/64 | 0.078 | 2.0 |
| E-2570-B** | 2 | 5/16 | 0.313 | 7.9 | 29/50 | 0.580 | 14.7 | 1/4 | 0.250 | 6.4 | 1/2 | 0.500 | 12.7 | 2/25 | 0.080 | 2.0 |
| E-6023 | 5 | 17/64 | 0.266 | 6.7 | 13/32 | 0.406 | 10.3 | 5/32 | 0.150 | 3.8 | 5/16 | 0.313 | 7.9 | 3/32 | 0.094 | 2.4 |
| E-6048 | 1 | 3/8 | 0.375 | 9.5 | 9/32 | 0.281 | 7.1 | 13/64 | 0.200 | 5.1 | 3/16 | 0.188 | 4.8 | 3/32 | 0.094 | 2.4 |
| E-6075 | 1 | 1/2 | 0.500 | 12.7 | 9/32 | 0.281 | 7.1 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 3/32 | 0.094 | 2.4 |
| E-6123 | 5 | 17/64 | 0.266 | 6.7 | 13/32 | 0.406 | 10.3 | 9/64 | 0.140 | 3.6 | 5/16 | 0.313 | 7.9 | 3/32 | 0.094 | 2.4 |
| E-6174 | 1 | 1/2 | 0.500 | 12.7 | 11/32 | 0.344 | 8.7 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 |

* Indicates inserting hole in base and stem. ** See Molded Parts of Irregular Design "Custom Molded Parts" section.

STEM BUMPERS

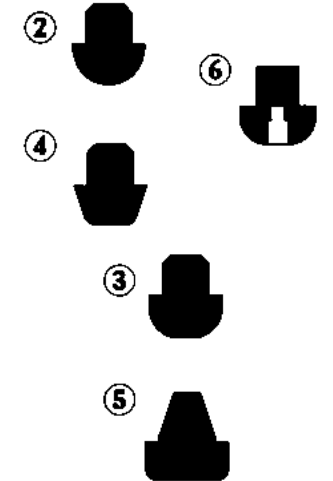
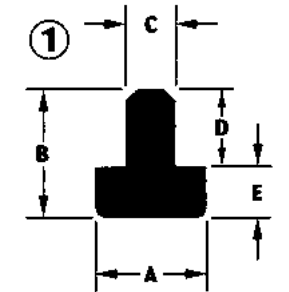
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| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | |
|----------|---------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|-----|-------|-------|-----|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-2975 | 1 | 7/16 | 0.438 | 11.1 | 11/32 | 0.344 | 8.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 |
| E-6026* | 2 | 23/64 | 0.350 | 8.9 | 15/32 | 0.470 | 11.9 | 3/16 | 0.190 | 4.8 | 3/8 | 0.370 | 9.4 | 3/32 | 0.100 | 2.5 |
| E-6092 | 1 | 5/8 | 0.625 | 15.9 | 27/64 | 0.422 | 10.7 | 31/64 | 0.483 | 12.3 | 5/16 | 0.313 | 7.9 | 7/64 | 0.109 | 2.8 |
| E-653 | 1 | 13/64 | 0.196 | 5.0 | 11/64 | 0.172 | 4.4 | 1/8 | 0.130 | 3.3 | 1/16 | 0.063 | 1.6 | 7/64 | 0.109 | 2.8 |
| E-2643 | 1 | 5/8 | 0.625 | 15.9 | 11/32 | 0.344 | 8.7 | 17/64 | 0.266 | 6.8 | 15/64 | 0.234 | 6.0 | 7/64 | 0.109 | 2.8 |
| E-3360 | 1 | 3/8 | 0.380 | 9.7 | 15/64 | 0.240 | 6.1 | 1/8 | 0.127 | 3.2 | 1/8 | 0.120 | 3.0 | 1/8 | 0.120 | 3.0 |
| E-601 | 2 | 1/4 | 0.250 | 6.4 | 7/32 | 0.219 | 5.6 | 1/8 | 0.125 | 3.2 | 3/32 | 0.094 | 2.4 | 1/8 | 0.125 | 3.2 |
| E-604 | 3 | 3/8 | 0.375 | 9.5 | 5/16 | 0.313 | 7.9 | 13/64 | 0.196 | 5.0 | 3/16 | 0.188 | 4.8 | 1/8 | 0.125 | 3.2 |
| E-607 | 1 | 1/2 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | 5/16 | 0.313 | 7.9 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 |
| E-6011 | 2 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 1/8 | 0.125 | 3.2 |
| E-6043 | 3 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 13/64 | 0.196 | 5.0 | 1/8 | 0.125 | 3.2 | 1/8 | 0.125 | 3.2 |
| E-6049 | 1 | 3/8 | 0.375 | 9.5 | 19/64 | 0.297 | 7.5 | 13/64 | 0.197 | 5.0 | 11/64 | 0.172 | 4.4 | 1/8 | 0.125 | 3.2 |
| E-6052* | 2 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 |
| E-6066* | 2 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 1/8 | 0.125 | 3.2 |
| E-6067 | 1 | 7/16 | 0.438 | 11.1 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 |
| E-6071 | 1 | 1/2 | 0.500 | 12.7 | 15/32 | 0.469 | 12.7 | 1/4 | 0.250 | 6.4 | 11/32 | 0.336 | 8.7 | 1/8 | 0.125 | 3.2 |
| E-6078 | 5 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 15/64 | 0.234 | 6.0 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 |
| E-6079 | 1 | 1/2 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | 19/64 | 0.297 | 7.5 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 |
| E-6084* | 1 | 7/16 | 0.438 | 11.1 | 11/32 | 0.344 | 8.7 | 9/32 | 0.281 | 7.1 | 7/32 | 0.219 | 5.6 | 1/8 | 0.125 | 3.2 |
| E-6085 | 1 | 27/64 | 0.422 | 10.7 | 5/16 | 0.313 | 7.9 | 17/64 | 0.260 | 6.6 | 3/16 | 0.188 | 4.8 | 1/8 | 0.125 | 3.2 |
| E-6091 | 5 | 5/8 | 0.625 | 15.9 | 1/2 | 0.500 | 12.7 | 1/2 | 0.507 | 12.9 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 |
| E-6097 | 1 | 9/16 | 0.563 | 14.3 | 27/64 | 0.422 | 10.7 | 7/16 | 0.438 | 11.1 | 19/64 | 0.297 | 7.5 | 1/8 | 0.125 | 3.2 |
| E-6171* | 1 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 |
| E-6177 | 5 | 1/2 | 0.500 | 12.7 | 15/32 | 0.469 | 11.9 | 9/32 | 0.289 | 7.3 | 11/32 | 0.344 | 8.7 | 1/8 | 0.125 | 3.2 |
| E-6179* | 1 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 | 17/64 | 0.266 | 6.8 | 3/16 | 0.188 | 4.8 | 1/8 | 0.125 | 3.2 |
| E-6076 | 1 | 15/32 | 0.469 | 11.9 | 29/64 | 0.453 | 11.5 | 5/16 | 0.313 | 7.9 | 5/16 | 0.313 | 7.9 | 9/64 | 0.141 | 3.6 |
| E-605 | 2 | 3/8 | 0.375 | 9.5 | 13/32 | 0.406 | 10.3 | 9/32 | 0.281 | 7.1 | 1/4 | 0.250 | 6.4 | 5/32 | 0.156 | 4.0 |
| E-6035* | 3 | 9/16 | 0.563 | 14.3 | 9/32 | 0.281 | 7.1 | 7/16 | 0.438 | 11.1 | 1/8 | 0.125 | 3.2 | 5/32 | 0.156 | 4.0 |
| E-6046 | 1 | 3/8 | 0.375 | 9.5 | 11/32 | 0.344 | 8.7 | 3/16 | 0.188 | 4.8 | 3/16 | 0.188 | 4.8 | 5/32 | 0.156 | 4.0 |
| E-6047* | 1 | 3/8 | 0.375 | 9.5 | 1/2 | 0.500 | 12.7 | 19/64 | 0.302 | 7.7 | 11/32 | 0.344 | 8.7 | 5/32 | 0.156 | 4.0 |
| E-6051 | 2 | 3/8 | 0.375 | 9.5 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 9/32 | 0.281 | 7.1 | 5/32 | 0.156 | 4.0 |
| E-6077 | 5 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 9/32 | 0.289 | 7.3 | 11/32 | 0.344 | 8.7 | 5/32 | 0.156 | 4.0 |
| E-6087 | 1 | 7/16 | 0.438 | 11.1 | 11/32 | 0.344 | 8.7 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 5/32 | 0.156 | 4.0 |
| E-2646 | 2 | 5/16 | 0.312 | 8.0 | 11/32 | 0.344 | 8.7 | 3/16 | 0.190 | 4.9 | 3/16 | 0.187 | 4.8 | 5/32 | 0.156 | 4.0 |
| E-6065 | 2 | 27/64 | 0.422 | 10.7 | 27/64 | 0.422 | 10.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 11/64 | 0.172 | 4.4 |
| E-506 | 6 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 3/16 | 0.188 | 4.8 | 3/16 | 0.188 | 4.8 |
| E-603 | 3 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 |
| E-606 | 2 | 7/16 | 0.438 | 11.1 | 5/16 | 0.313 | 7.9 | 3/16 | 0.188 | 4.8 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 |

* Indicates inserting hole in base and stem. ** See Molded Parts of Irregular Design "Custom Molded Parts" section.



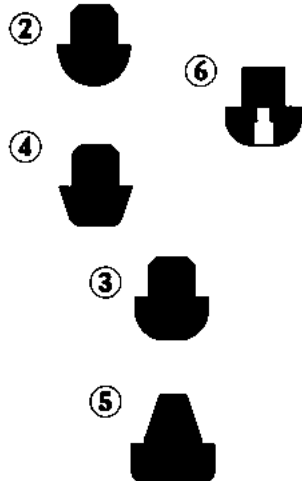
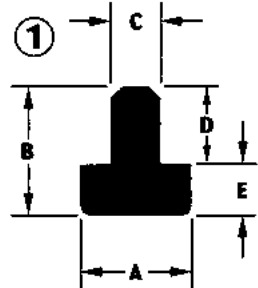
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| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | | | |
|------------|---------|-------|-------|------|-------|-------|------|--------|-------|------|-------|-------|------|------|-------|-----|--|--|--|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | | | |
| E-608* | 3 | 7/16 | 0.438 | 11.1 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 | 5/16 | 0.313 | 7.9 | 3/16 | 0.188 | 4.8 | | | |
| E-6031 | 2 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 | 13/64 | 0.203 | 5.2 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | | | |
| E-6061 | 2 | 7/16 | 0.438 | 11.1 | 5/16 | 0.313 | 7.9 | 7/32 | 0.219 | 5.6 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | | | |
| E-6062 | 2 | 7/16 | 0.438 | 11.1 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | | | |
| E-6063 | 2 | 7/16 | 0.438 | 11.1 | 5/16 | 0.313 | 7.9 | 15/64 | 0.238 | 6.0 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | | | |
| E-6064† | 2 | 7/16 | 0.438 | 11.1 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | | | |
| E-6081* | 1 | 1/2 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | | | |
| E-6082* | 1 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 3/16 | 0.188 | 4.8 | | | |
| E-6083* | 1 | 7/16 | 0.438 | 11.1 | 5/16 | 0.313 | 7.9 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | | | |
| E-6173 | 1 | 1/2 | 0.500 | 12.7 | 9/16 | 0.563 | 14.3 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | | | |
| E-2652 | 1 | 7/8 | 0.875 | 22.2 | 9/16 | 0.563 | 14.3 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 3/16 | 0.187 | 4.8 | | | |
| E-609 | 1 | 5/8 | 0.625 | 15.9 | 19/32 | 0.594 | 15.1 | 7/16 | 0.443 | 11.3 | 3/8 | 0.375 | 9.5 | 7/32 | 0.219 | 5.6 | | | |
| E-6093* | 1 | 5/8 | 0.625 | 15.9 | 19/32 | 0.594 | 15.1 | 7/16 | 0.443 | 11.3 | 3/8 | 0.375 | 9.5 | 7/32 | 0.219 | 5.6 | | | |
| E-6180 | 1 | 5/8 | 0.625 | 15.9 | 23/32 | 0.719 | 18.3 | 7/16 | 0.438 | 11.3 | 1/2 | 0.500 | 12.7 | 7/32 | 0.219 | 5.6 | | | |
| E-507 | 6 | 1/2 | 0.500 | 12.7 | 13/32 | 0.402 | 10.2 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 7/32 | 0.215 | 5.4 | | | |
| E-5071 | 6 | 1/2 | 0.500 | 12.7 | 13/32 | 0.412 | 10.4 | 9/32 | 0.281 | 7.1 | 3/16 | 0.188 | 4.8 | 7/32 | 0.215 | 5.4 | | | |
| E-610 | 3 | 11/16 | 0.688 | 17.5 | 19/32 | 0.594 | 15.9 | 17/32 | 0.531 | 13.5 | 11/32 | 0.344 | 9.5 | 1/4 | 0.250 | 6.4 | | | |
| E-671 | 4 | 15/32 | 0.469 | 11.9 | 11/16 | 0.688 | 17.5 | 3/8 | 0.375 | 9.5 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | | | |
| E-6032 | 2 | 1/2 | 0.500 | 12.7 | 11/16 | 0.688 | 17.5 | 7/16 | 0.438 | 11.1 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | | | |
| E-6033 | 2 | 1/2 | 0.500 | 12.7 | 11/16 | 0.688 | 17.5 | 13/32 | 0.406 | 10.3 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | | | |
| E-6042 | 3 | 3/8 | 0.375 | 9.5 | 7/16 | 0.438 | 11.1 | 13/64 | 0.196 | 5.0 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | | | |
| E-6044 | 4 | 3/8 | 0.375 | 9.5 | 9/16 | 0.563 | 14.3 | 13/64 | 0.196 | 5.0 | 5/16 | 0.313 | 7.9 | 1/4 | 0.250 | 6.4 | | | |
| E-6095* | 1 | 5/8 | 0.625 | 15.9 | 5/8 | 0.625 | 15.9 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | | | |
| E-6102 | 3 | 11/16 | 0.688 | 17.5 | 5/8 | 0.625 | 15.9 | 9/16 | 0.563 | 14.3 | 3/8 | 0.362 | 9.5 | 1/4 | 0.250 | 6.4 | | | |
| E-6103 | 3 | 11/16 | 0.688 | 17.5 | 5/8 | 0.625 | 15.9 | 39/64 | 0.605 | 15.4 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | | | |
| E-2570-A** | 2 | 5/16 | 0.313 | 7.9 | 3/4 | 0.750 | 19.1 | 1/4 | 0.250 | 6.4 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | | | |
| E-2656 | 4 | 3/8 | 0.375 | 9.5 | 9/16 | 0.563 | 14.3 | 3/16 | 0.188 | 4.8 | 9/32 | 0.281 | 7.1 | 9/32 | 0.281 | 7.1 | | | |
| E-613 | 3 | 5/8 | 0.625 | 15.9 | 23/32 | 0.719 | 18.3 | 7/16 | 0.438 | 11.1 | 7/16 | 0.438 | 11.1 | 9/32 | 0.281 | 7.1 | | | |
| E-6131 | 3 | 5/8 | 0.625 | 15.9 | 23/32 | 0.719 | 18.3 | Note 1 | | | 7/16 | 0.438 | 11.1 | 9/32 | 0.281 | 7.1 | | | |

* Indicates inserting hole in base and stem. ** See Molded Parts of Irregular Design "Custom Molded Parts" section. Note 1 - Tapered 400° to 435°. † Same as 6062 except 1/16" hole in shank.

STEM BUMPERS

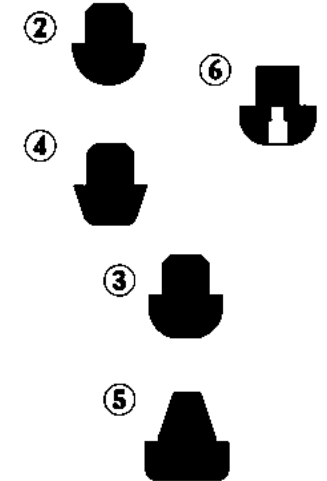
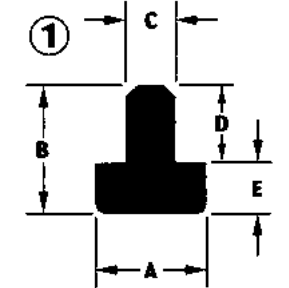
By "E" Dimension



Stem bumpers are typically used as hole plugs or insertable bumpers for vibration and noise reduction.

ESTCO carries hundreds of stem bumpers made from multiple materials, and we provide custom recessed bumpers as well.

- Push in: no screws or fasteners required.
- Used for noise reduction and vibration and shock absorption, and hole plugs.
- ABS, Acetal, Buna-N, Butyl, EPDM, Neoprene, Nitrite, Natural Rubber, Santoprene, Silicone, Viton.



| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | | | |
|----------|---------|--------|-------|------|--------|-------|------|--------|-------|------|-------|-------|------|-------|-------|------|--|--|--|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | | | |
| E-6132 | 3 | 5/8 | 0.625 | 15.9 | 23/32 | 0.719 | 18.3 | Note 2 | | | 7/16 | 0.438 | 11.1 | 9/32 | 0.281 | 7.1 | | | |
| E-614 | 2 | 5/8 | 0.625 | 15.9 | 5/8 | 0.625 | 15.9 | Note 3 | | | 5/16 | 0.313 | 7.9 | 5/16 | 0.313 | 7.9 | | | |
| E-2992 | 2 | 5/8 | 0.625 | 15.9 | 9/16 | 0.563 | 14.3 | 5/16 | 0.313 | 7.9 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | | | |
| E-6133 | 3 | 5/8 | 0.625 | 15.9 | 29/32 | 0.906 | 23.0 | 9/16 | 0.557 | 14.1 | 19/32 | 0.594 | 15.1 | 5/16 | 0.313 | 7.9 | | | |
| E-6080 | 4 | 1/2 | 0.500 | 12.7 | 41/64 | 0.641 | 16.3 | 3/16 | 0.188 | 4.8 | 5/16 | 0.313 | 7.9 | 21/64 | 0.328 | 8.3 | | | |
| E-6139 | 4 | 39/64 | 0.609 | 15.5 | 11/16 | 0.688 | 17.5 | 3/8 | 0.380 | 9.7 | 11/32 | 0.344 | 8.7 | 11/32 | 0.344 | 8.7 | | | |
| E-2451 | 1 | 2 3/16 | 2.188 | 55.6 | 1 1/16 | 1.063 | 27.0 | 1 3/4 | 1.750 | 44.5 | 23/32 | 0.719 | 18.3 | 11/32 | 0.344 | 8.7 | | | |
| E-612 | 2 | 13/16 | 0.813 | 20.6 | 7/8 | 0.875 | 22.2 | 11/16 | 0.688 | 17.5 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | | | |
| E-6101 | 3 | 11/16 | 0.688 | 17.5 | 3/4 | 0.750 | 19.1 | 17/32 | 0.531 | 13.5 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | | | |
| E-6121 | 2 | 13/16 | 0.813 | 20.6 | 1 | 1.000 | 25.4 | 9/16 | 0.563 | 14.3 | 5/8 | 0.625 | 15.9 | 3/8 | 0.375 | 9.5 | | | |
| E-6122 | 2 | 13/16 | 0.813 | 20.6 | 7/8 | 0.875 | 22.2 | 21/32 | 0.656 | 16.7 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | | | |
| E-2980 | 2 | 3/4 | 0.750 | 19.1 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | | | |
| E-3333 | 2 | 94/97 | 0.969 | 24.6 | 1 1/16 | 1.062 | 27.0 | 17/50 | 0.340 | 8.6 | 5/8 | 0.625 | 15.9 | 7/16 | 0.437 | 11.1 | | | |
| E-6088 | 1 | 5/8 | 0.625 | 15.9 | 15/16 | 0.938 | 23.8 | 7/16 | 0.438 | 11.1 | 1/2 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | | | |
| E-6089 | 1 | 7/16 | 0.438 | 11.1 | 15/16 | 0.938 | 23.8 | 5/16 | 0.313 | 7.9 | 1/2 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | | | |
| E-6167 | 1 | 7/16 | 0.438 | 11.1 | 31/32 | 0.969 | 24.6 | 1/4 | 0.250 | 6.4 | 1/2 | 0.500 | 12.7 | 15/32 | 0.469 | 11.9 | | | |
| E-6096 | 4 | 5/8 | 0.625 | 15.9 | 15/16 | 0.938 | 23.8 | 5/16 | 0.313 | 7.9 | 7/16 | 0.438 | 11.1 | 1/2 | 0.500 | 12.7 | | | |

* Indicates inserting hole in base and stem. ** See Molded Parts of Irregular Design "Custom Molded Parts" section. Note 2 - Tapered 520° to 535°. Note 3 - Tapered 27/64 to 29/64.



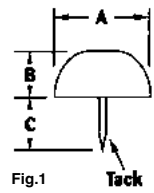


Fig.1

Tack

Standard compound is AM85 durometer SBR compound.

Volume parts can also be run in strong, durable and abrasion resistant nylon.

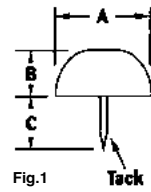


Fig.1

Tack

TACK BUMPERS

By "B" Dimension

| PART NO. | Fig No. | A | | | B | | | C | | |
|----------|---------|------|-------|------|------|-------|------|--------|---------|-----|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| TB-37 | 1 | 3/8 | 0.375 | 9.5 | 7/32 | 0.219 | 5.6 | 3/8 + | 0.375 + | 9.5 |
| TB-50 | 1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 3/8 + | 0.375 + | 9.5 |
| TB-62 | 1 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 3/8 + | 0.375 + | 9.5 |
| TB-75 | 1 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 3/8 + | 0.375 + | 9.5 |
| TB-87 | 1 | 7/8 | 0.875 | 22.2 | 7/16 | 0.438 | 11.1 | 11/32+ | 0.344 + | 8.7 |

Standard compound is AM85 durometer SBR compound.
Volume parts can also be run in strong, durable and abrasion resistant nylon.

UP NEXT...

GROMMETS



ISO 9001 Certified
CERTIFICATE # 08-511

GROMMETS

GROMMETS BY "B" DIMENSION



2-2 - 2-18

ARMY NAVY APPROVED AN931 GROMMETS BY "B" DIMENSION



2-19 - 2-23



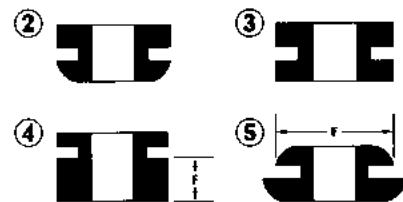
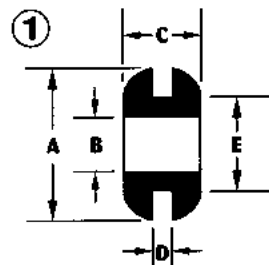
GROMMETS

By "B" Dimension

- Used to protect or cover through holes. Help eliminate sharp edges so your wires are protected and add aesthetic value to your application.
- 160 sizes available that will accommodate mounting holes ranging from .250" (6,4 mm) to holes as large as 2.50" (63,5 mm) diameter and panel thicknesses from .063" (1,6 mm) to .375" (9,5 mm).

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|-----------|---------|-------|-------|------|--------|-------|-----|-------|-------|-----|------|-------|-----|-------|-------|------|-------|-------|-----|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-2982 | 1 | 1 1/8 | 1.125 | 28.6 | Note 1 | | 0.0 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 15/16 | 0.938 | 23.8 | | | |
| E-2995 | 1 | 1 1/8 | 1.125 | 28.6 | Note 2 | | 0.0 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 15/16 | 0.938 | 23.8 | | | |
| E-902 | 5 | 11/32 | 0.344 | 8.7 | 1/16 | 0.063 | 1.6 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 3/16 | 0.188 | 4.8 | | | |
| E-2127 | 1 | 9/32 | 0.281 | 7.1 | 1/16 | 0.063 | 1.6 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 3/16 | 0.188 | 4.8 | | | |
| E-3328 | 1 | 7/32 | 0.219 | 5.6 | 2/25 | 0.080 | 2.0 | 15/79 | 0.190 | 4.8 | 3/50 | 0.060 | 1.5 | 7/50 | 0.140 | 3.6 | | | |
| E-2111 | 1 | 19/64 | 0.300 | 7.6 | 3/32 | 0.090 | 2.3 | 3/16 | 0.192 | 4.9 | 5/64 | 0.070 | 1.8 | 15/64 | 0.240 | 6.1 | | | |
| E-2469 | 5 | 5/16 | 0.313 | 7.9 | 4/43 | 0.093 | 2.4 | 20/93 | 0.215 | 5.5 | 4/87 | 0.046 | 1.2 | 11/47 | 0.234 | 5.9 | 22/83 | 0.265 | |
| E-2697 | 5 | 5/16 | 0.312 | 7.9 | 3/32 | 0.093 | 2.4 | 9/64 | 0.145 | 3.7 | 3/64 | 0.041 | 1.0 | 15/64 | 0.234 | 5.9 | 22/83 | 0.265 | 6.7 |
| E-2174 | 1 | 1/2 | 0.500 | 12.7 | 3/32 | 0.093 | 2.4 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 | 17/64 | 0.265 | 6.7 |
| E-2253 | 1 | 5/8 | 0.625 | 15.9 | 3/32 | 0.094 | 2.4 | 1/4 | 0.250 | 6.4 | 3/64 | 0.047 | 1.2 | 7/16 | 0.437 | 11.1 | | | |
| E-900 | 1 | 5/16 | 0.313 | 7.9 | 3/32 | 0.094 | 2.4 | 13/64 | 0.203 | 5.2 | 3/64 | 0.047 | 1.2 | 15/64 | 0.234 | 6.0 | | | |
| E-9061 | 1 | 5/8 | 0.625 | 15.9 | 3/32 | 0.094 | 2.4 | 13/64 | 0.203 | 5.2 | 3/64 | 0.047 | 1.2 | 7/16 | 0.438 | 11.1 | | | |
| E-2104 | 1 | 11/32 | 0.344 | 8.7 | 7/64 | 0.109 | 2.8 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 13/64 | 0.203 | 5.2 | | | |
| E-2937 | 1 | 11/16 | 0.988 | 25.1 | 7/64 | 0.109 | 2.8 | 9/32 | 0.281 | 7.1 | 3/64 | 0.046 | 1.2 | 1/2 | 0.500 | 12.7 | | | |
| E-800 | 1 | 1/4 | 0.250 | 6.4 | 7/64 | 0.109 | 2.8 | 11/64 | 0.172 | 4.4 | 3/64 | 0.047 | 1.2 | 5/32 | 0.156 | 4.0 | | | |
| E-813 | 3 | 1/4 | 0.250 | 6.4 | 7/64 | 0.109 | 2.8 | 11/64 | 0.172 | 4.4 | 3/32 | 0.094 | 2.4 | 5/32 | 0.156 | 4.0 | | | |
| E-1272 | 1 | 11/16 | 0.688 | 17.5 | 7/64 | 0.109 | 2.8 | 9/32 | 0.281 | 7.1 | 3/64 | 0.047 | 1.2 | 1/2 | 0.500 | 12.7 | | | |
| E-2110 | 1 | 3/8 | 0.375 | 9.5 | 7/64 | 0.109 | 2.8 | 3/16 | 0.188 | 4.8 | 1/16 | 0.060 | 1.5 | 1/4 | 0.250 | 6.4 | | | |
| E-2121 | 1 | 11/32 | 0.344 | 8.7 | 7/64 | 0.109 | 2.8 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 1/4 | 0.250 | 6.4 | | | |
| E-2417 | 1 | 5/8 | 0.625 | 15.9 | Solid | 0.109 | 2.8 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 7/16 | 0.437 | 11.1 | | | |
| E-2101 | 1 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 1/8 | 0.125 | 3.2 | 3/97 | 0.031 | 0.8 | 3/16 | 0.188 | 4.8 | | | |
| E-9011 | 1 | 11/32 | 0.344 | 8.7 | 1/8 | 0.125 | 3.2 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 | 3/16 | 0.188 | 4.8 | | | |
| E-901 | 1 | 11/32 | 0.344 | 8.7 | 1/8 | 0.125 | 3.2 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 | 1/4 | 0.250 | 6.4 | | | |
| E-9013 | 3 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 1/4 | 0.250 | 6.4 | 1/32 | 0.031 | 0.8 | 1/4 | 0.250 | 6.4 | | | |
| E-9014 | 1 | 11/32 | 0.344 | 8.7 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 1/32 | 0.031 | 0.8 | 1/4 | 0.250 | 6.4 | | | |
| E-949 | 1 | 5/8 | 0.625 | 15.9 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 7/16 | 0.438 | 11.1 | | | |
| E-1070-AT | 1 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 3/32 | 0.094 | 2.4 | 1/32 | 0.031 | 0.8 | 3/16 | 0.188 | 4.8 | | | |
| E-562 | 1 | 5/8 | 0.625 | 15.9 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 7/16 | 0.438 | 11.1 | | | |
| E-2297 | 1 | 1 1/4 | 1.250 | 31.8 | 1/8 | 0.125 | 3.2 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1 | 1.000 | 25.4 | | | |

* Indicates I.D. is chamfered **Other D dimensions available ***Squared corners



GROMMETS

By "B" Dimension

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|--------------|---------|-------|-------|------|-------|-------|-----|-------|-------|------|------|-------|-----|-------|-------|------|-------|-------|------|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-2425 | 1 | 1/2 | 0.500 | 12.7 | 1/8 | 0.125 | 3.2 | 5/16 | 0.313 | 7.9 | 3/32 | 0.094 | 2.4 | 3/8 | 0.375 | 9.5 | | | |
| E-2109 | 1 | 11/32 | 0.340 | 8.6 | 1/8 | 0.125 | 3.2 | 7/32 | 0.220 | 5.6 | 1/16 | 0.060 | 1.5 | 1/4 | 0.250 | 6.4 | | | |
| E-2102 | 2 | 11/32 | 0.344 | 8.7 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 3/16 | 0.188 | 4.8 | | | |
| E-2105 | 1 | 11/32 | 0.344 | 8.7 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 3/16 | 0.188 | 4.8 | | | |
| E-2113 | 1 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 3/16 | 0.188 | 4.8 | | | |
| E-2190 | 5 | 9/16 | 0.563 | 14.3 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 |
| E-210 | 1 | 11/32 | 0.344 | 8.7 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 1/4 | 0.250 | 6.4 | | | |
| E-211 | 2 | 11/32 | 0.344 | 8.7 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 1/4 | 0.250 | 6.4 | | | |
| E-2106 | 1 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 5/32 | 0.156 | 4.0 | 3/64 | 0.040 | 1.0 | 1/4 | 0.250 | 6.4 | | | |
| E-2157 | 1 | 7/16 | 0.438 | 11.1 | 1/8 | 0.125 | 3.2 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | | | |
| E-2116 | 1 | 17/32 | 0.531 | 13.5 | 1/8 | 0.125 | 3.2 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 | | | |
| AN931-2-9** | 1 | 3/4 | 0.750 | 19.1 | 1/8 | 0.125 | 3.2 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 9/16 | 0.563 | 14.3 | | | |
| AN931-2-16** | 1 | 1 1/4 | 1.250 | 31.8 | 1/8 | 0.125 | 3.2 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1 | 1.000 | 25.4 | | | |
| E-663 | 4 | 3/8 | 0.375 | 9.5 | 9/64 | 0.141 | 3.6 | 11/32 | 0.344 | 8.7 | 5/64 | 0.078 | 2.0 | 15/64 | 0.234 | 6.0 | 13/16 | 0.203 | 5.2 |
| E-661 | 4 | 3/8 | 0.375 | 9.5 | 9/64 | 0.141 | 3.6 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 1/4 | 0.250 | 6.4 | 7/32 | 0.219 | 5.6 |
| E-2151 | 1 | 15/32 | 0.469 | 11.9 | 9/64 | 0.141 | 3.6 | 9/32 | 0.281 | 7.1 | 3/32 | 0.094 | 2.4 | 5/16 | 0.313 | 7.9 | | | |
| E-2153 | 1 | 15/32 | 0.469 | 11.9 | 9/64 | 0.141 | 3.6 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | | | |
| E-2631 | 5 | 9/16 | 0.563 | 14.3 | 9/64 | 0.141 | 3.6 | 31/64 | 0.484 | 12.3 | 1/8 | 0.125 | 3.2 | 25/64 | 0.391 | 9.9 | 29/64 | 0.453 | 11.5 |
| E-2262 | 1 | 5/8 | 0.625 | 15.9 | 9/64 | 0.141 | 3.6 | 1/4 | 0.250 | 6.4 | 3/64 | 0.047 | 1.2 | 7/16 | 0.437 | 11.1 | | | |
| E-2426-AC | 5 | 1/2 | 0.500 | 12.7 | 10/69 | 0.145 | 3.7 | 11/32 | 0.344 | 8.7 | 1/16 | 0.063 | 1.6 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 |
| E-2108 | 1 | 21/64 | 0.320 | 8.1 | 5/32 | 0.156 | 4.0 | 5/32 | 0.158 | 4.0 | 1/32 | 0.031 | 0.8 | 15/64 | 0.240 | 6.1 | | | |
| E-2112 | 1 | 19/64 | 0.300 | 7.6 | 5/32 | 0.156 | 4.0 | 3/16 | 0.192 | 4.9 | 5/64 | 0.070 | 1.8 | 15/64 | 0.240 | 6.1 | | | |
| E-2103 | 3 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 | 3/16 | 0.188 | 4.8 | 3/32 | 0.094 | 2.4 | 1/4 | 0.250 | 6.4 | | | |
| E-2164 | 1 | 3/8 | 0.375 | 9.5 | 5/32 | 0.156 | 4.0 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 1/4 | 0.250 | 6.4 | | | |
| E-2961 | 1 | 7/16 | 0.438 | 11.1 | 5/32 | 0.156 | 4.0 | 3/8 | 0.375 | 9.5 | 3/32 | 0.094 | 2.4 | 1/4 | 0.250 | 6.4 | | | |
| E-414 | 1 | 13/32 | 0.406 | 10.3 | 5/32 | 0.156 | 4.0 | 3/8 | 0.375 | 9.5 | 3/32 | 0.094 | 2.4 | 17/64 | 0.266 | 6.7 | | | |
| E-2182 | 1 | 1/2 | 0.500 | 12.7 | 5/32 | 0.156 | 4.0 | 1/4 | 0.250 | 6.4 | 1/32 | 0.031 | 0.8 | 9/32 | 0.281 | 7.1 | | | |
| E-2642 | 1 | 5/8 | 0.625 | 15.9 | 5/32 | 0.156 | 4.0 | 13/64 | 0.203 | 5.2 | 3/64 | 0.047 | 1.2 | 7/16 | 0.437 | 11.1 | | | |
| E-2516 | 5 | 1/2 | 0.500 | 12.7 | 5/32 | 0.156 | 4.0 | 29/64 | 0.453 | 11.5 | 3/16 | 0.188 | 4.8 | 15/67 | 0.224 | 5.7 | 9/32 | 0.281 | 7.1 |
| E-919 | 5 | 3/8 | 0.375 | 9.5 | 5/32 | 0.156 | 4.0 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 15/64 | 0.234 | 6.0 | 9/32 | 0.281 | 7.1 |
| E-9015 | 3 | 21/64 | 0.328 | 8.3 | 5/32 | 0.156 | 4.0 | 13/64 | 0.203 | 5.2 | 7/64 | 0.109 | 2.8 | 1/4 | 0.250 | 6.4 | | | |
| E-808 | 1 | 1/2 | 0.500 | 12.7 | 5/32 | 0.156 | 4.0 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 | | | |
| E-9118 | 1 | 11/16 | 0.688 | 17.5 | 5/32 | 0.156 | 4.0 | 9/32 | 0.281 | 7.1 | 1/16 | 0.063 | 1.6 | 1/2 | 0.500 | 12.7 | | | |
| E-1259 | 1 | 3/8 | 0.375 | 9.5 | 5/32 | 0.156 | 4.0 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 1/4 | 0.250 | 6.4 | | | |
| E-374 | 1 | 7/16 | 0.438 | 11.1 | 5/32 | 0.156 | 4.0 | 3/8 | 0.375 | 9.5 | 3/32 | 0.094 | 2.4 | 1/4 | 0.250 | 6.4 | | | |
| E-2107 | 3 | 5/16 | 0.313 | 7.9 | 5/32 | 0.156 | 4.0 | 1/8 | 0.128 | 3.3 | 1/16 | 0.063 | 1.6 | 1/4 | 0.250 | 6.4 | | | |
| E-2356 | 3 | 5/8 | 0.625 | 15.9 | 11/64 | 0.172 | | | | | | | | | | | | | |



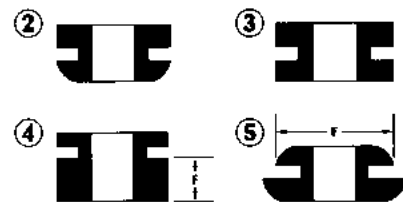
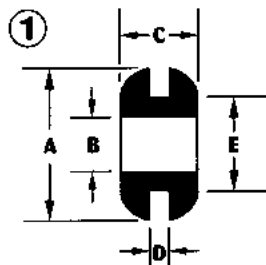
GROMMETS

By "B" Dimension

- Used to protect or cover through holes. Help eliminate sharp edges so your wires are protected and add aesthetic value to your application.
- 160 sizes available that will accommodate mounting holes ranging from .250" (6,4 mm) to holes as large as 2.50" (63,5 mm) diameter and panel thicknesses from .063" (1,6 mm) to .375" (9,5 mm).

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|-----------|---------|-------|-------|------|-------|-------|-----|-------|-------|------|-------|-------|-----|-------|-------|------|-------|-------|------|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-2165 | 1 | 7/16 | 0.440 | 11.2 | 11/64 | 0.172 | 4.4 | 3/16 | 0.184 | 4.7 | 3/64 | 0.055 | 1.4 | 1/4 | 0.250 | 6.4 | | | |
| E-90251 | 3 | 7/16 | 0.438 | 11.1 | 11/64 | 0.172 | 4.4 | 19/64 | 0.250 | 6.4 | 11/64 | 0.172 | 4.4 | 5/16 | 0.313 | 7.9 | | | |
| E-3312 | 3 | 16/41 | 0.390 | 9.9 | 15/82 | 0.183 | 4.6 | 7/24 | 0.292 | 7.4 | 8/87 | 0.092 | 2.3 | 2/9 | 0.223 | 5.7 | | | |
| E-2507 | 5 | 5/16 | 0.313 | 7.9 | 3/16 | 0.188 | 4.8 | 7/40 | 0.175 | 4.4 | 4/87 | 0.046 | 1.2 | 11/47 | 0.234 | 5.9 | 22/83 | 0.265 | 6.7 |
| E-2406-AC | 5 | 5/8 | 0.625 | 15.9 | 3/16 | 0.188 | 4.8 | 9/16 | 0.563 | 14.3 | 5/16 | 0.313 | 7.9 | 3/8 | 0.375 | 9.5 | 1/2 | 0.500 | 12.7 |
| E-2443 | 5-1 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 |
| E-90121 | 1 | 11/32 | 0.344 | 8.7 | 3/16 | 0.188 | 4.8 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 9/64 | 0.141 | 3.6 | | | |
| E-9024 | 1 | 13/32 | 0.406 | 10.3 | 3/16 | 0.188 | 4.8 | 5/16 | 0.313 | 7.9 | 3/32 | 0.094 | 2.4 | 9/32 | 0.281 | 7.1 | | | |
| E-903 | 1 | 13/32 | 0.406 | 10.3 | 3/16 | 0.188 | 4.8 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | | | |
| E-9032 | 1 | 13/32 | 0.406 | 10.3 | 3/16 | 0.188 | 4.8 | 3/16 | 0.188 | 4.8 | 1/32 | 0.031 | 0.8 | 5/16 | 0.313 | 7.9 | | | |
| E-943 | 5 | 5/8 | 0.625 | 15.9 | 3/16 | 0.188 | 4.8 | 7/32 | 0.219 | 5.6 | 1/32 | 0.031 | 0.8 | 5/16 | 0.313 | 7.9 | 7/16 | 0.438 | 11.1 |
| E-944 | 5 | 5/8 | 0.625 | 15.9 | 3/16 | 0.188 | 4.8 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | 7/16 | 0.438 | 11.1 |
| E-8051 | 1 | 1/2 | 0.500 | 12.7 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | | | |
| E-805 | 1 | 1/2 | 0.500 | 12.7 | 3/16 | 0.188 | 4.8 | 9/32 | 0.281 | 7.1 | 3/32 | 0.094 | 2.4 | 5/16 | 0.313 | 7.9 | | | |
| E-8052 | 1 | 1/2 | 0.500 | 12.7 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 23/64 | 0.359 | 9.1 | | | |
| E-912 | 1 | 5/8 | 0.625 | 15.9 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | | | |
| E-857 | 1 | 9/16 | 0.563 | 14.3 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 7/16 | 0.438 | 11.1 | | | |
| E-1390 | 1 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 7/32 | 0.219 | 5.6 | 1/32 | 0.031 | 0.8 | 5/16 | 0.313 | 7.9 | | | |
| E-2045 | 1 | 7/8 | 0.875 | 22.2 | 3/16 | 0.188 | 4.8 | 7/32 | 0.219 | 5.6 | 1/32 | 0.031 | 0.8 | 11/16 | 0.688 | 17.5 | | | |
| E-382 | 1 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 | 9/32 | 0.281 | 7.1 | | | |
| E-2286 | 1 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | | | |
| E-1453 | 1 | 1/2 | 0.500 | 12.7 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | | | |
| E-2279 | 1 | 3/4 | 0.750 | 19.1 | 3/16 | 0.188 | 4.8 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 9/16 | 0.563 | 14.3 | | | |
| E-1734 | 1 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 7/32 | 0.219 | 5.6 | 3/32 | 0.094 | 2.4 | 9/32 | 0.281 | 7.1 | | | |
| E-2537 | 1 | 5/8 | 0.625 | 15.9 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | 3/32 | 0.094 | 2.4 | 11/32 | 0.344 | 8.7 | | | |
| E-2852 | 1 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 5/16 | 0.313 | 7.9 | | | |
| E-2752 | 1 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 5/16 | 0.313 | 7.9 | 3/16 | 0.188 | 4.8 | 5/16 | 0.313 | 7.9 | | | |
| E-704 | 1 | 5/8 | 0.625 | 15.9 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | | | |
| E-2552 | 1 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | | | |

* Indicates I.D. is chamfered **Other D dimensions available ***Squared corners



GROMMETS

By "B" Dimension

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|-------------|---------|-------|-------|------|------|-------|-----|-------|-------|------|-------|-------|-----|-------|-------|------|-------|-------|------|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-3322 | 5 | 7/16 | 0.435 | 11.0 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 | 1/4 | 0.250 | 6.4 | 3/8 | 0.372 | -9.4 |
| E-2533* | 3 | 25/64 | 0.386 | 9.8 | 3/16 | 0.188 | 4.8 | 13/64 | 0.200 | 5.1 | 3/64 | 0.054 | 1.4 | 1/4 | 0.250 | 6.4 | | | |
| E-2629 | 1 | 13/32 | 0.406 | 10.3 | 3/16 | 0.188 | 4.8 | 17/64 | 0.270 | 6.9 | 7/64 | 0.102 | 2.6 | 19/64 | 0.296 | 7.5 | | | |
| E-2919 | 1 | 13/32 | 0.412 | 10.5 | 3/16 | 0.188 | 4.8 | 9/32 | 0.275 | 7.0 | 1/16 | 0.060 | 1.5 | 5/16 | 0.312 | 7.9 | | | |
| E-215 | 1 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | | | |
| E-216 | 2 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | | | |
| E-415 | 1 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 | 5/16 | 0.313 | 7.9 | | | |
| E-416 | 2 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 | 5/16 | 0.313 | 7.9 | | | |
| AN931-3-5** | 1 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 3/16 | 0.187 | 4.7 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | | | |
| E-2152 | 1 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 7/32 | 0.219 | 5.6 | 3/64 | 0.040 | 1.0 | 5/16 | 0.313 | 7.9 | | | |
| E-2156 | 1 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 3/16 | 0.187 | 4.7 | 1/32 | 0.031 | 0.8 | 5/16 | 0.313 | 7.9 | | | |
| E-2158 | 1 | 13/32 | 0.406 | 10.3 | 3/16 | 0.188 | 4.8 | 13/64 | 0.203 | 5.2 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | | | |
| E-2159 | 3 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 9/32 | 0.281 | 7.1 | 3/32 | 0.094 | 2.4 | 5/16 | 0.313 | 7.9 | | | |
| E-2173 | 1 | 1/2 | 0.500 | 12.7 | 3/16 | 0.188 | 4.8 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | | | |
| E-2180 | 3 | 1/2 | 0.500 | 12.7 | 3/16 | 0.188 | 4.8 | 15/64 | 0.234 | 6.0 | 7/64 | 0.109 | 2.8 | 5/16 | 0.313 | 7.9 | | | |
| E-2181 | 3 | 1/2 | 0.500 | 12.7 | 3/16 | 0.188 | 4.8 | 7/32 | 0.219 | 5.6 | 1/8 | 0.125 | 3.2 | 5/16 | 0.313 | 7.9 | | | |
| E-2293 | 5 | 5/8 | 0.625 | 15.9 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | 7/16 | 0.438 | 11.1 |
| E-3317 | 1 | 5/8 | 0.625 | 15.9 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | 3/32 | 0.094 | 2.4 | 11/32 | 0.344 | 8.7 | | | |
| E-2171 | 1 | 1/2 | 0.500 | 12.7 | 3/16 | 0.188 | 4.8 | 3/16 | 0.188 | 4.8 | 1/32 | 0.031 | 0.8 | 3/8 | 0.375 | 9.5 | | | |
| E-217 | 1 | 33/64 | 0.525 | 13.3 | 3/16 | 0.188 | 4.8 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 | | | |
| E-2175 | 3 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 11/64 | 0.172 | 4.4 | 3/64 | 0.047 | 1.2 | 1/4 | 0.250 | 6.4 | | | |
| E-2178 | 1 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 3/16 | 0.188 | 4.8 | 1/32 | 0.031 | 0.8 | 1/4 | 0.250 | 6.4 | | | |
| E-2179 | 3 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 1/4 | 0.250 | 6.4 | | | |
| E-2968 | 3 | 25/64 | 0.386 | 9.8 | 3/16 | 0.188 | 4.8 | 3/16 | 0.199 | 5.1 | 3/64 | 0.052 | 1.3 | 1/4 | 0.250 | 6.4 | | | |
| E-3363 | 5 | 7/16 | 0.446 | 11.3 | 3/16 | 0.188 | 4.8 | 1/4 | 0.255 | 6.5 | 3/32 | 0.095 | 2.4 | 1/4 | 0.255 | 6.5 | 25/64 | 0.383 | 9.7 |
| E-3368 | 5 | 33/64 | 0.510 | 13.0 | 3/16 | 0.188 | 4.8 | 25/64 | 0.390 | 9.9 | 13/64 | 0.196 | 5.0 | 17/64 | 0.260 | 6.6 | 21/64 | 0.326 | 8.3 |
| E-2669 | 1 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 | 9/32 | 0.281 | 7.1 | | | |
| E-3381 | 1 | 7/16 | 0.446 | 11.3 | 3/16 | 0.188 | 4.8 | 7/32 | 0.228 | 5.8 | 3/32 | 0.100 | 2.5 | 19/64 | 0.290 | 7.4 | | | |
| E-2162 | 3 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 9/32 | 0.281 | 7.1 | 3/32 | 0.094 | 2.4 | 19/64 | 0.297 | 7.5 | | | |
| E-3377 | 1 | 7/16 | 0.446 | 11.3 | 3/16 | 0.188 | 4.8 | 7/32 | 0.224 | 5.7 | 1/32 | 0.032 | 0.8 | 5/16 | 0.319 | 8.1 | | | |
| E-2351 | 1 | 5/8 | 0.625 | 15.9 | 3/16 | 0.188 | 4.8 | 11/32 | 0.344 | 8.7 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 | | | |
| E-2662*** | 5 | 3/4 | 0.750 | 19.1 | 3/16 | 0.188 | 4.8 | 5/8 | 0.625 | 15.9 | 11/64 | 0.172 | 4.4 | 3/8 | 0.375 | 9.5 | 33/64 | 0.516 | 13.1 |
| E-2981 | 1 | 5/8 | 0.625 | 15.9 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | | | |
| E-2201 | 1 | 9/16 | 0.563 | 14.3 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 7/16 | 0.437 | 11.1 | | | |
| E-2034-AC | 4 | 9/16 | 0.563 | 14.3 | 3/16 | 0.188 | 4.8 | 27/64 | 0.422 | 10.7 | 3/64 | 0.047 | 1.2 | 7/16 | 0.437 | 11.1 | 9/32 | 0.281 | 7.1 |
| E-2038 | 3 | 11/16 | 0.688 | 17.5 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | | | | | | |



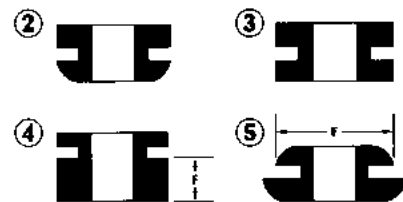
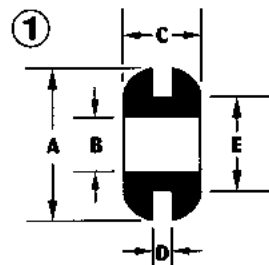
GROMMETS

By "B" Dimension

- Used to protect or cover through holes. Help eliminate sharp edges so your wires are protected and add aesthetic value to your application.
- 160 sizes available that will accommodate mounting holes ranging from .250" (6,4 mm) to holes as large as 2.50" (63,5 mm) diameter and panel thicknesses from .063" (1,6 mm) to .375" (9,5 mm).

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | | |
|------------|---------|-------|-------|------|-------|-------|-----|-------|-------|------|------|-------|-----|-------|-------|------|-------|-------|------|-----|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | |
| AN931-3-9 | 1 | 3/4 | 0.750 | 19.1 | 3/16 | 0.188 | 4.8 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 9/16 | 0.563 | 14.3 | | | | |
| AN931-3-10 | 1 | 7/8 | 0.875 | 22.2 | 3/16 | 0.188 | 4.8 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 5/8 | 0.625 | 15.9 | | | | |
| E-2119 | 1 | 27/32 | 0.844 | 21.4 | 3/16 | 0.188 | 4.8 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 21/32 | 0.656 | 16.7 | | | | |
| E-2122 | S | 1 1/4 | 1.250 | 31.8 | 3/16 | 0.188 | 4.8 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 1 | 1.000 | 25.4 | | | | |
| E-2548 | 1 | 2/5 | 0.400 | 10.2 | 1/5 | 0.201 | 5.1 | 17/50 | 0.340 | 8.6 | 5/41 | 0.122 | 3.1 | 11/40 | 0.275 | 7.0 | | | | 2.5 |
| E-2161 | 1 | 7/16 | 0.438 | 11.1 | 13/64 | 0.203 | 5.2 | 5/32 | 0.156 | 4.0 | 1/32 | 0.031 | 0.8 | 21/64 | 0.328 | 8.3 | | | | |
| E-2185 | 4 | 1/2 | 0.500 | 12.7 | 13/64 | 0.203 | 5.2 | 21/64 | 0.328 | 8.3 | 3/64 | 0.047 | 1.2 | 5/16 | 0.313 | 7.9 | 5/32 | 0.160 | 4.1 | |
| E-2115 | 3 | 47/64 | 0.734 | 18.7 | 13/64 | 0.203 | 5.2 | 31/64 | 0.484 | 12.3 | 7/64 | 0.109 | 2.8 | 33/64 | 0.516 | 13.1 | | | | |
| E-9033 | 1 | 7/16 | 0.438 | 11.1 | 13/64 | 0.203 | 5.2 | 15/64 | 0.234 | 6.0 | 3/64 | 0.047 | 1.2 | 5/16 | 0.313 | 7.9 | | | | |
| E-565 | 1 | 9/16 | 0.563 | 14.3 | 13/64 | 0.203 | 5.2 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 13/32 | 0.406 | 10.3 | | | | |
| E-2538* | 3 | 7/16 | 0.438 | 11.1 | 13/64 | 0.204 | 5.2 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 11/32 | 0.350 | 8.9 | | | | |
| E-2163 | 1 | 25/64 | 0.400 | 10.2 | 13/64 | 0.200 | 5.2 | 3/16 | 0.180 | 4.6 | 1/16 | 0.060 | 1.5 | 19/64 | 0.300 | 7.6 | | | | |
| E-2155 | 1 | 7/16 | 0.438 | 11.1 | 13/64 | 0.200 | 5.2 | 1/4 | 0.250 | 6.4 | 3/64 | 0.050 | 1.3 | 5/16 | 0.313 | 7.9 | | | | |
| E-3367 | 3 | 7/16 | 0.446 | 11.3 | 13/64 | 0.207 | 5.2 | 1/4 | 0.256 | 6.5 | 3/64 | 0.050 | 1.3 | 21/64 | 0.323 | 8.2 | | | | |
| E-2118 | 1 | 7/16 | 0.438 | 11.1 | 7/32 | 0.219 | 5.6 | 9/32 | 0.281 | 7.1 | 1/8 | 0.125 | 3.2 | 5/16 | 0.313 | 7.9 | | | | |
| E-2154 | 1 | 15/32 | 0.469 | 11.9 | 7/32 | 0.219 | 5.6 | 1/8 | 0.125 | 3.2 | 1/32 | 0.031 | 0.8 | 5/16 | 0.313 | 7.9 | | | | |
| E-2160 | 1 | 7/16 | 0.438 | 11.1 | 7/32 | 0.219 | 5.6 | 3/16 | 0.187 | 4.7 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | | | | |
| E-2189 | 4 | 1/2 | 0.500 | 12.7 | 7/32 | 0.219 | 5.6 | 5/16 | 0.313 | 7.9 | 3/64 | 0.047 | 1.2 | 5/16 | 0.313 | 7.9 | 11/64 | 0.172 | 4.4 | |
| E-3369 | 1 | 7/16 | 0.446 | 11.3 | 7/32 | 0.219 | 5.6 | 7/32 | 0.222 | 5.6 | 1/32 | 0.032 | 0.8 | 21/64 | 0.321 | 8.2 | | | | |
| E-2177 | 3 | 17/32 | 0.531 | 13.5 | 7/32 | 0.219 | 5.6 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 11/32 | 0.344 | 8.7 | | | | |
| E-2191 | 1 | 17/32 | 0.531 | 13.5 | 7/32 | 0.219 | 5.6 | 25/64 | 0.391 | 9.9 | 5/64 | 0.078 | 2.0 | 11/32 | 0.344 | 8.7 | | | | |
| E-219 | 1 | 33/64 | 0.515 | 13.1 | 7/32 | 0.219 | 5.6 | 13/32 | 0.406 | 10.3 | 3/32 | 0.094 | 2.4 | 11/32 | 0.344 | 8.7 | | | | |
| E-2186 | 3 | 1/2 | 0.500 | 12.7 | 7/32 | 0.219 | 5.6 | 1/4 | 0.250 | 6.4 | 3/64 | 0.047 | 1.2 | 3/8 | 0.380 | 9.7 | | | | |
| E-2254 | 1 | 5/8 | 0.625 | 15.9 | 7/32 | 0.219 | 5.6 | 11/64 | 0.172 | 4.4 | 3/64 | 0.047 | 1.2 | 7/16 | 0.437 | 11.1 | | | | |
| E-2678 | 4 | 3/4 | 0.750 | 19.1 | 7/32 | 0.219 | 5.6 | 5/8 | 0.625 | 15.9 | 1/16 | 0.063 | 1.6 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | |
| E-2429 | 5 | 1/2 | 0.500 | 12.7 | 7/32 | 0.219 | 5.6 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | 7/16 | 0.438 | 11.1 | |
| E-1105-LA | 4 | 1/2 | 0.500 | 12.7 | 7/32 | 0.219 | 5.6 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 11/32 | 0.344 | 8.7 | 5/32 | 0.156 | 4.0 | |
| E-1411 | 1 | 7/16 | 0.438 | 11.1 | 7/32 | 0.219 | 5.6 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | | | | |
| E-2526 | 5 | 33/50 | 0.660 | 16.8 | 11/50 | 0.220 | 5.6 | 6/25 | 0.240 | 6.1 | 4/57 | 0.070 | 1.8 | 22/71 | 0.310 | 7.9 | 16/39 | 0.410 | 10.4 | |

* Indicates I.D. is chamfered **Other D dimensions available ***Squared corners



GROMMETS

By "B" Dimension

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | | |
|-----------|---------|-------|-------|------|-------|-------|-----|-------|-------|------|------|-------|-----|-------|-------|------|-------|-------|------|--|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | |
| E-2638 | 4 | 1/2 | 0.500 | 12.7 | 7/32 | 0.220 | 5.6 | 11/32 | 0.343 | 8.7 | 1/32 | 0.032 | 0.8 | 5/16 | 0.312 | 7.9 | | | | |
| E-2126 | 4 | 7/16 | 0.443 | 11.3 | 7/32 | 0.219 | 5.6 | 19/64 | 0.295 | 7.5 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | 11/64 | 0.173 | 4.4 | |
| E-2204 | 3 | 9/16 | 0.563 | 14.3 | 7/32 | 0.219 | 5.6 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 7/16 | 0.442 | 11.2 | | | | |
| E-2192 | 3 | 17/32 | 0.531 | 13.5 | 7/32 | 0.219 | 5.6 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 11/32 | 0.344 | 8.7 | | | | |
| E-2641 | 4 | 9/16 | 0.563 | 14.3 | 7/32 | 0.219 | 5.6 | 3/8 | 0.375 | 9.5 | 3/64 | 0.047 | 1.2 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | |
| E-2537* | 3 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 11/32 | 0.350 | 8.9 | | | | |
| E-1840 | 1 | 5/8 | 0.625 | 15.9 | 15/64 | 0.234 | 6.0 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | | | | |
| E-3371 | 1 | 41/64 | 0.635 | 16.1 | 15/64 | 0.234 | 6.0 | 3/8 | 0.380 | 9.7 | 3/16 | 0.190 | 4.8 | 3/8 | 0.382 | 9.7 | | | | |
| E-3308 | 1 | 5/8 | 0.625 | 15.9 | 12/49 | 0.245 | 6.2 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 3/8 | 0.375 | 9.5 | | | | |
| E-2592 | 5 | 11/16 | 0.687 | 17.4 | 1/4 | 0.250 | 6.4 | 22/83 | 0.265 | 6.7 | 1/20 | 0.050 | 1.3 | 5/16 | 0.312 | 7.9 | 3/8 | 0.375 | 9.5 | |
| E-3316 | 1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 | 3/8 | 0.375 | 9.5 | | | | |
| E-904 | 1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 5/32 | 0.156 | 4.0 | 1/32 | 0.031 | 0.8 | 11/32 | 0.344 | 8.7 | | | | |
| E-971 | 1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 11/32 | 0.344 | 8.7 | | | | |
| E-807-LA | 1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 | | | | |
| E-809 | 5 | 9/16 | 0.563 | 14.3 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 5/64 | 0.078 | 2.0 | 3/8 | 0.375 | 9.5 | 15/32 | 0.469 | 11.9 | |
| E-9053 | 1 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 11/32 | 0.344 | 8.7 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 | | | | |
| E-916 | 4 | 9/16 | 0.563 | 14.3 | 1/4 | 0.250 | 6.4 | 7/16 | 0.438 | 11.1 | 3/64 | 0.047 | 1.2 | 3/8 | 0.375 | 9.5 | 17/64 | 0.266 | 6.8 | |
| E-8701 | 3 | 9/16 | 0.563 | 14.3 | 1/4 | 0.250 | 6.4 | 19/64 | 0.297 | 7.5 | 3/64 | 0.047 | 1.2 | 3/8 | 0.375 | 9.5 | | | | |
| E-1122 | 4 | 21/32 | 0.656 | 16.7 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 13/32 | 0.406 | 10.3 | 7/32 | 0.219 | 5.6 | |
| E-845 | 5 | 7/8 | 0.875 | 22.2 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 3/32 | 0.094 | 2.4 | 13/32 | 0.406 | 10.3 | 3/4 | 0.750 | 19.1 | |
| E-847 | 5 | 1 | 1.000 | 25.4 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 3/64 | 0.047 | 1.2 | 7/16 | 0.438 | 11.1 | 3/4 | 0.750 | 19.1 | |
| E-8702 | 3 | 9/16 | 0.563 | 14.3 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 7/16 | 0.438 | 11.1 | | | | |
| E-1111 | 3 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 7/16 | 0.438 | 11.1 | | | | |
| E-1137 | 4 | 3/4 | 0.750 | 19.1 | 1/4 | 0.250 | 6.4 | 9/16 | 0.563 | 14.3 | 1/16 | 0.063 | 1.6 | 7/16 | 0.438 | 11.1 | 3/8 | 0.375 | 9.5 | |
| E-923 | 3 | 3/4 | 0.750 | 19.1 | 1/4 | 0.250 | 6.4 | 7/16 | 0.438 | 11.1 | 1/8 | 0.125 | 3.2 | 1/2 | 0.500 | 12.7 | | | | |
| E-2902 | 1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 | | | | |
| E-97 | 1 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 7/16 | 0.438 | 11.1 | | | | |
| E-2298 | 1 | 1 1/4 | 1.250 | 31.8 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1 | 1.000 | 25.4 | | | | |
| E-2901 | 1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 | 3/8 | 0.375 | 9.5 | | | | |
| E-2903-AT | 1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 3/8 | 0.375 | 9.5 | | | | |
| E-2554 | 1 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 7/16 | 0.438 | 11.1 | | | | |
| E-696 | 1 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 15/32 | 0.469 | 11.9 | | | | |
| E-2555 | 1 | 1 1/4 | 1.250 | 31.8 | 1/4 | 0.250 | 6.4 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 1 | 1.000 | 25.4 | | | | |
| E-2684 | 5 | 9/16 | 0.563 | 14.3 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 5/16 | 0.313 | 7.9 | 3/8 | 0.375 | 9.5 | |
| E-2172 | | | | | | | | | | | | | | | | | | | | |



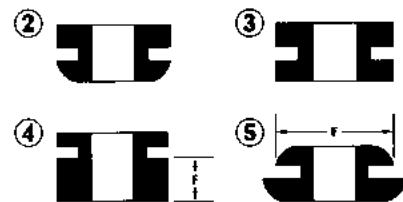
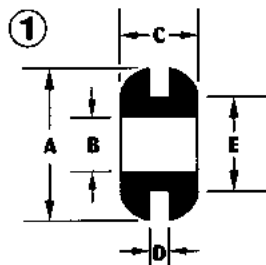
GROMMETS

By "B" Dimension

- Used to protect or cover through holes. Help eliminate sharp edges so your wires are protected and add aesthetic value to your application.
- 160 sizes available that will accommodate mounting holes ranging from .250" (6,4 mm) to holes as large as 2.50" (63,5 mm) diameter and panel thicknesses from .063" (1,6 mm) to .375" (9,5 mm).

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | | |
|------------|---------|-------|-------|------|-------|-------|-----|-------|-------|------|-------|-------|-----|--------|-------|------|------|-------|------|--|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | |
| E-222 | 2 | 9/16 | 0.563 | 14.3 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 | | | | |
| E-320 | 2 | 9/16 | 0.563 | 14.3 | 1/4 | 0.250 | 6.4 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 3/8 | 0.375 | 9.5 | | | | |
| E-2036 | 4 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 21/32 | 0.656 | 16.7 | 3/64 | 0.050 | 1.3 | 3/8 | 0.375 | 9.5 | 1/2 | 0.500 | 12.7 | |
| E-2188 | 1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 11/64 | 0.172 | 4.4 | 3/64 | 0.047 | 1.2 | 3/8 | 0.375 | 9.5 | | | | |
| E-2202 | 2 | 9/16 | 0.563 | 14.3 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 5/32 | 0.156 | 4.0 | 3/8 | 0.375 | 9.5 | | | | |
| E-2251 | 1 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 11/32 | 0.344 | 8.7 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 | | | | |
| E-2260 | 1 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 9/32 | 0.281 | 7.1 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 | | | | |
| E-3251 | 1 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 3/8 | 0.375 | 9.5 | | | | |
| E-3345 | 1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 1/16 | 0.060 | 1.5 | 3/8 | 0.374 | 9.5 | | | | |
| E-2622 | 1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 | | | | |
| E-2991 | 1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 1/8 | 0.125 | 3.2 | 3/8 | 0.375 | 9.5 | | | | |
| E-523 | 1 | 19/32 | 0.594 | 15.1 | 1/4 | 0.250 | 6.4 | 11/64 | 0.172 | 4.4 | 3/64 | 0.047 | 1.2 | 13/32 | 0.406 | 10.3 | | | | |
| E-2039 | 4 | 21/32 | 0.656 | 16.7 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 13/32 | 0.406 | 10.3 | 7/32 | 0.218 | 5.5 | |
| AN931-4-7 | 1 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 7/16 | 0.437 | 11.1 | | | | |
| E-2664 | 3 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 7/16 | 0.437 | 11.1 | | | | |
| E-2292 | 5 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 29/64 | 0.453 | 11.5 | 1/8 | 0.125 | 3.2 | 7/16 | 0.437 | 11.1 | 9/16 | 0.562 | 14.3 | |
| E-2040 | 5 | 7/8 | 0.875 | 22.2 | 1/4 | 0.250 | 6.4 | 3/8 | 0.375 | 9.5 | 4/57 | 0.070 | 1.8 | 1/2 | 0.500 | 12.7 | 3/4 | 0.750 | 19.1 | |
| E-2257 | 1 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 17/32 | 0.531 | 13.5 | 9/32 | 0.281 | 7.1 | 1/2 | 0.500 | 12.7 | | | | |
| E-2261 | 1 | 3/4 | 0.750 | 19.1 | 1/4 | 0.250 | 6.4 | 11/64 | 0.172 | 4.4 | 1/16 | 0.063 | 1.6 | 9/16 | 0.563 | 14.3 | | | | |
| E-2903-AC | 1 | 13/16 | 0.812 | 20.6 | 1/4 | 0.250 | 6.4 | 1/2 | 0.500 | 12.7 | 1/4 | 0.255 | 6.5 | 9/16 | 0.562 | 14.3 | | | | |
| AN931-4-12 | 1 | 1.000 | 25.4 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 3/4 | 0.750 | 19.1 | | | | | |
| AN931-4-16 | 1 | 1 1/4 | 1.250 | 31.8 | 1/4 | 0.250 | 6.4 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1 | 1.000 | 25.4 | | | | |
| E-1116 | 3 | 1 1/2 | 1.500 | 38.1 | 1/4 | 0.250 | 6.4 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 1 3/16 | 1.188 | 30.2 | | | | |
| E-1106 | 3 | 1 1/2 | 1.500 | 38.1 | 1/4 | 0.250 | 6.4 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 1 1/4 | 1.250 | 31.8 | | | | |
| E-2627 | 1 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 9/32 | 0.280 | 7.1 | 3/32 | 0.093 | 2.4 | 27/64 | 0.425 | 10.8 | | | | |
| E-2411 | 1 | 9/16 | 0.563 | 14.3 | 17/64 | 0.266 | 6.7 | 19/64 | 0.297 | 7.5 | 3/64 | 0.047 | 1.2 | 3/8 | 0.375 | 9.5 | 9/64 | 0.141 | 3.6 | |
| E-2255 | 1 | 5/8 | 0.625 | 15.9 | 17/64 | 0.266 | 6.7 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 7/16 | 0.437 | 11.1 | | | | |
| E-2290 | 5 | 11/16 | 0.688 | 17.5 | 17/64 | 0.266 | 6.7 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 7/16 | 0.437 | 11.1 | 9/16 | 0.562 | 14.3 | |
| E-990 | 1 | 5/8 | 0.625 | 15.9 | 17/64 | 0.266 | 6.7 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 13/32 | 0.406 | 10.3 | | | | |

* Indicates I.D. is chamfered **Other D dimensions available ***Squared corners



GROMMETS

By "B" Dimension

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | | |
|----------|---------|-------|-------|------|-------|-------|-----|-------|-------|------|--------|-------|-----|-------|-------|------|-------|-------|------|--|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | |
| E-3372-2 | 4 | 9/16 | 0.571 | 14.5 | 9/32 | 0.281 | 7.1 | 3/8 | 0.386 | 9.8 | 5/64 | 0.080 | 2.0 | 27/64 | 0.416 | 10.6 | 13/64 | 0.194 | 4.9 | |
| E-2212 | 1 | 9/16 | 0.563 | 14.3 | 9/32 | 0.281 | 7.1 | 1/4 | 0.250 | 6.4 | 1/32 | 0.031 | 0.8 | 3/8 | 0.375 | 9.5 | | | | |
| E-221 | 1 | 9/16 | 0.563 | 14.3 | 9/32 | 0.281 | 7.1 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 | | | | |
| E-321 | 1 | 9/16 | 0.563 | 14.3 | 9/32 | 0.281 | 7.1 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 3/8 | 0.375 | 9.5 | | | | |
| E-2187 | 3 | 1/2 | 0.500 | 12.7 | 9/32 | 0.281 | 7.1 | 1/4 | 0.250 | 6.4 | 3/64 | 0.047 | 1.2 | 3/8 | 0.380 | 9.7 | | | | |
| E-9051 | 1 | 19/32 | 0.594 | 15.1 | 9/32 | 0.281 | 7.1 | 13/64 | 0.203 | 5.2 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 | | | | |
| E-9052 | 1 | 9/16 | 0.563 | 14.3 | 9/32 | 0.281 | 7.1 | 7/32 | 0.219 | 5.6 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 | | | | |
| E-905 | 1 | 9/16 | 0.563 | 14.3 | 9/32 | 0.281 | 7.1 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 | | | | |
| E-921 | 1 | 5/8 | 0.625 | 15.9 | 9/32 | 0.281 | 7.1 | 11/32 | 0.344 | 8.7 | 5/32 | 0.156 | 4.0 | 3/8 | 0.375 | 9.5 | | | | |
| E-9811 | 1 | 19/32 | 0.594 | 15.1 | 9/32 | 0.281 | 7.1 | 11/64 | 0.172 | 4.4 | 3/64 | 0.047 | 1.2 | 13/32 | 0.406 | 10.3 | | | | |
| E-907 | 1 | 5/8 | 0.625 | 15.9 | 9/32 | 0.281 | 7.1 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 7/16 | 0.438 | 11.1 | | | | |
| E-908 | 1 | 37/64 | 0.578 | 14.7 | 9/32 | 0.281 | 7.1 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 15/32 | 0.469 | 11.9 | | | | |
| E-9112 | 1 | 21/32 | 0.656 | 16.7 | 9/32 | 0.281 | 7.1 | 3/8 | 0.375 | 9.5 | 3/64 | 0.047 | 1.2 | 1/2 | 0.500 | 12.7 | | | | |
| E-1019 | 1 | 1 1/8 | 1.125 | 28.6 | 9/32 | 0.281 | 7.1 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 7/8 | 0.875 | 22.2 | | | | |
| E-1028 | 1 | 1 1/8 | 1.125 | 28.6 | 9/32 | 0.281 | 7.1 | 11/32 | 0.344 | 8.7 | 3/32 | 0.094 | 2.4 | 7/8 | 0.875 | 22.2 | | | | |
| E-1017 | 1 | 1 1/8 | 1.125 | 28.6 | 9/32 | 0.281 | 7.1 | 11/32 | 0.344 | 8.7 | 3/32 | 0.094 | 2.4 | 15/16 | 0.938 | 23.8 | | | | |
| E-763 | 1 | 9/16 | 0.563 | 14.3 | 9/32 | 0.281 | 7.1 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 3/8 | 0.375 | 9.5 | | | | |
| E-190 | 1 | 11/16 | 0.688 | 17.5 | 9/32 | 0.281 | 7.1 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 15/32 | 0.469 | 11.9 | | | | |
| E-9661 | 3 | 9/16 | 0.563 | 14.3 | 9/32 | 0.281 | 7.1 | 3/8 | 0.375 | 9.5 | 5/64 | 0.078 | 2.0 | 13/32 | 0.406 | 10.3 | | | | |
| E-2203 | 1 | 37/64 | 0.578 | 14.7 | 9/32 | 0.281 | 7.1 | 5/16 | 0.313 | 7.9 | 1/16 | 0.055 | 1.4 | 25/64 | 0.391 | 9.9 | | | | |
| E-2211 | 1 | 9/16 | 0.563 | 14.3 | 9/32 | 0.281 | 7.1 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 13/32 | 0.406 | 10.3 | | | | |
| E-2213 | 1 | 37/64 | 0.578 | 14.7 | 9/32 | 0.281 | 7.1 | 5/16 | 0.313 | 7.9 | 1/16 | 0.055 | 1.4 | 7/16 | 0.437 | 11.1 | | | | |
| E-2214 | 1 | 37/64 | 0.578 | 14.7 | 9/32 | 0.281 | 7.1 | 5/16 | 0.313 | 7.9 | 1/16 | 0.055 | 1.4 | 15/32 | 0.469 | 11.9 | | | | |
| E-3305 | 3 | 39/55 | 0.709 | 18.0 | 15/49 | 0.306 | 7.8 | 21/41 | 0.512 | 13.0 | 1/18 | 0.056 | 1.4 | 21/41 | 0.512 | 13.0 | | | | |
| E-2511 | 5 | 1 | 1.000 | 25.4 | 5/16 | 0.313 | 7.9 | 19/32 | 0.594 | 15.1 | 5/32 | 0.156 | 4.0 | 7/16 | 0.438 | 11.1 | 5/8 | 0.625 | 15.9 | |
| E-837 | 1 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 27/64 | 0.422 | 10.7 | | | | |
| E-1135 | 3 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 11/32 | 0.344 | 8.7 | 1/16 | 0.063 | 1.6 | 7/16 | 0.438 | 11.1 | | | | |
| E-9138 | 5 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 9/32 | 0.281 | 7.1 | 3/16 | 0.188 | 4.8 | 29/64 | 0.453 | 11.5 | 17/32 | 0.531 | 13.5 | |
| E-909 | 1 | 9/16 | 0.563 | 14.3 | 5/16 | 0.313 | 7.9 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 15/32 | 0.469 | 11.9 | | | | |
| E-869 | 2 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 1/2 | 0.500 | 12.7 | 3/16 | 0.188 | 4.8 | 1/2 | 0.500 | 12.7 | | | | |
| E-9115 | 1 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1/2 | 0.500 | 12.7 | | | | |
| E-924 | 3 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 1/2 | 0.500 | 12.7 | | | | |
| E-1155 | 4 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | |
| E-2857 | 1 | 1 | 1.000 | 25.4 | 5/16 | 0.313 | 7.9 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 3/4 | 0.750 | 19.1 | | | | |
| E-263 | 1 | 9/16 | 0.563 | 14.3 | 5/16 | 0.313 | 7.9 | 3/16 | 0.188 | 4.8 | 1/16</ | | | | | | | | | |



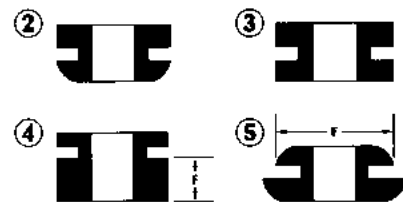
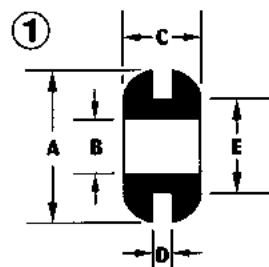
GROMMETS

By "B" Dimension

- Used to protect or cover through holes. Help eliminate sharp edges so your wires are protected and add aesthetic value to your application.
- 160 sizes available that will accommodate mounting holes ranging from .250" (6,4 mm) to holes as large as 2.50" (63,5 mm) diameter and panel thicknesses from .063" (1,6 mm) to .375" (9,5 mm).

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|------------|---------|-------|-------|------|------|-------|-----|-------|-------|------|--------|-------|------|-------|-------|------|-------|-------|------|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-2538 | 1 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 5/16 | 0.313 | 7.9 | 3/32 | 0.094 | 2.4 | 7/16 | 0.438 | 11.1 | | | |
| E-2214 | 1 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 | 11/32 | 0.344 | 8.7 | 3/32 | 0.094 | 2.4 | 15/32 | 0.469 | 11.9 | | | |
| E-2856 | 1 | 13/16 | 0.813 | 20.6 | 5/16 | 0.313 | 7.9 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 9/16 | 0.563 | 14.3 | | | |
| E-705 | 1 | 13/16 | 0.813 | 20.6 | 5/16 | 0.313 | 7.9 | 3/8 | 0.375 | 9.5 | 2 1/16 | 2.063 | 52.4 | 9/16 | 0.563 | 14.3 | | | |
| E-2756 | 1 | 13/16 | 0.813 | 20.6 | 5/16 | 0.313 | 7.9 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 9/16 | 0.563 | 14.3 | | | |
| E-2757 | 1 | 1 | 1.000 | 25.4 | 5/16 | 0.313 | 7.9 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 3/4 | 0.750 | 19.1 | | | |
| E-2556 | 1 | 13/16 | 0.813 | 20.6 | 5/16 | 0.313 | 7.9 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 9/16 | 0.563 | 14.3 | | | |
| E-2557 | 1 | 1 | 1.000 | 25.4 | 5/16 | 0.313 | 7.9 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 3/4 | 0.750 | 19.1 | | | |
| E-2472 | 5 | 1 | 1.000 | 25.4 | 5/16 | 0.313 | 7.9 | 5/8 | 0.625 | 15.9 | 3/16 | 0.188 | 4.8 | 7/16 | 0.438 | 11.1 | 5/8 | 0.625 | 15.9 |
| E-324 | 1 | 19/32 | 0.594 | 15.1 | 5/16 | 0.313 | 7.9 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 7/16 | 0.437 | 11.1 | | | |
| E-2252 | 1 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 7/16 | 0.437 | 11.1 | | | |
| E-2352 | 1 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 7/32 | 0.219 | 5.6 | 1/32 | 0.031 | 0.8 | 7/16 | 0.437 | 11.1 | | | |
| E-3241 | 1 | 19/32 | 0.594 | 15.1 | 5/16 | 0.313 | 7.9 | 11/32 | 0.344 | 8.7 | 3/32 | 0.094 | 2.4 | 7/16 | 0.437 | 11.1 | | | |
| E-3378 | 1 | 41/64 | 0.638 | 16.2 | 5/16 | 0.313 | 7.9 | 21/64 | 0.320 | 8.1 | 3/32 | 0.096 | 2.4 | 7/16 | 0.446 | 11.3 | | | |
| E-2667 | 1 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 | 11/32 | 0.344 | 8.7 | 3/32 | 0.094 | 2.4 | 15/32 | 0.469 | 11.9 | | | |
| E-2690 | 1 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 | 21/64 | 0.330 | 8.4 | 3/32 | 0.091 | 2.3 | 31/64 | 0.484 | 12.3 | | | |
| E-3370 | 5 | 49/32 | 1.530 | 38.9 | 5/16 | 0.313 | 7.9 | 23/64 | 0.357 | 9.1 | 17/64 | 0.255 | 6.5 | 1/2 | 0.495 | 12.6 | 49/64 | 0.765 | 19.4 |
| E-1223 | 5 | 7/8 | 0.875 | 22.2 | 5/16 | 0.313 | 7.9 | 7/16 | 0.438 | 11.1 | 3/32 | 0.094 | 2.4 | 1/2 | 0.500 | 12.7 | 5/8 | 0.625 | 15.9 |
| E-2033 | 4 | 11/16 | 0.688 | 17.5 | 5/16 | 0.313 | 7.9 | 27/64 | 0.422 | 10.7 | 5/64 | 0.078 | 2.0 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 |
| E-3261 | 1 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 | 9/16 | 0.563 | 14.3 | 3/16 | 0.188 | 4.8 | 17/32 | 0.531 | 13.5 | | | |
| E-3262 | 1 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 17/32 | 0.531 | 13.5 | | | |
| E-2660 | 3 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 9/16 | 0.563 | 14.3 | | | |
| AN931-5-9 | 1 | 13/16 | 0.813 | 20.6 | 5/16 | 0.313 | 7.9 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 9/16 | 0.563 | 14.3 | | | |
| E-2274-AC | 1 | 7/8 | 0.875 | 22.2 | 5/16 | 0.313 | 7.9 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 5/8 | 0.625 | 15.9 | | | |
| E-2272 | 1 | 7/8 | 0.875 | 22.2 | 5/16 | 0.313 | 7.9 | 11/32 | 0.344 | 8.7 | 3/32 | 0.094 | 2.4 | 11/16 | 0.688 | 17.5 | | | |
| E-2125 | 1 | 1 | 1.000 | 25.4 | 5/16 | 0.313 | 7.9 | 11/32 | 0.344 | 8.7 | 3/32 | 0.094 | 2.4 | 3/4 | 0.750 | 19.1 | | | |
| AN931-5-12 | 1 | 1 | 1.000 | 25.4 | 5/16 | 0.313 | 7.9 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 3/4 | 0.750 | 19.1 | | | |

* Indicates I.D. is chamfered **Other D dimensions available ***Squared corners



GROMMETS

By "B" Dimension

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|----------|---------|--------|-------|------|-------|-------|-----|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-1113 | 1 | 1 1/16 | 1.063 | 27.0 | 5/16 | 0.313 | 7.9 | 1/2 | 0.500 | 12.7 | 5/32 | 0.156 | 4.0 | 3/4 | 0.750 | 19.1 | | | |
| E-1112 | 3 | 1 1/16 | 1.063 | 27.0 | 5/16 | 0.313 | 7.9 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 13/16 | 0.813 | 20.6 | | | |
| E-226 | 1 | 23/32 | 0.719 | 18.3 | 21/64 | 0.328 | 8.3 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 9/16 | 0.563 | 14.3 | | | |
| E-2934 | 4 | 7/8 | 0.875 | 22.2 | 21/64 | 0.328 | 8.3 | 15/32 | 0.469 | 11.9 | 1/16 | 0.063 | 1.6 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 |
| E-2128 | 5 | 47/64 | 0.740 | 18.8 | 21/64 | 0.328 | 8.3 | 23/32 | 0.719 | 18.3 | 17/64 | 0.265 | 6.7 | 7/16 | 0.437 | 11.1 | 19/32 | 0.595 | 15.1 |
| E-3324 | 3 | 25/32 | 0.788 | 20.0 | 21/64 | 0.328 | 8.3 | 35/64 | 0.551 | 14.0 | 5/64 | 0.079 | 2.0 | 35/64 | 0.552 | 14.0 | | | |
| E-3359 | 3 | 15/16 | 0.937 | 23.8 | 21/64 | 0.328 | 8.3 | 17/32 | 0.531 | 13.5 | 5/32 | 0.157 | 4.0 | 5/8 | 0.626 | 15.9 | | | |
| E-2004 | 1 | 25/32 | 0.781 | 19.8 | 11/32 | 0.344 | 8.7 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 17/32 | 0.531 | 13.5 | | | |
| E-2117 | 3 | 5/8 | 0.625 | 15.9 | 11/32 | 0.344 | 8.7 | 19/64 | 0.297 | 7.5 | 3/16 | 0.188 | 4.8 | 33/64 | 0.516 | 13.1 | | | |
| E-2674 | 4 | 3/4 | 0.750 | 19.1 | 23/64 | 0.359 | 9.1 | 41/64 | 0.641 | 16.3 | 1/8 | 0.125 | 3.2 | 31/64 | 0.484 | 12.3 | 3/8 | 0.375 | 9.5 |
| E-2635 | 5 | 19/32 | 0.590 | 15.0 | 23/64 | 0.359 | 9.1 | 5/32 | 0.156 | 4.0 | 1/32 | 0.031 | 0.8 | 31/64 | 0.480 | 12.2 | 33/64 | 0.510 | 13.0 |
| E-910 | 3 | 5/8 | 0.625 | 15.9 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1/2 | 0.500 | 12.7 | | | |
| E-9116 | 1 | 13/16 | 0.813 | 20.6 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 3/32 | 0.094 | 2.4 | 1/2 | 0.500 | 12.7 | | | |
| E-925 | 3 | 11/16 | 0.688 | 17.5 | 3/8 | 0.375 | 9.5 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 1/2 | 0.500 | 12.7 | | | |
| E-929 | 1 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 3/4 | 0.750 | 19.1 | 1/2 | 0.500 | 12.7 | 9/16 | 0.563 | 14.3 | | | |
| E-814 | 1 | 7/8 | 0.875 | 22.2 | 3/8 | 0.375 | 9.5 | 11/32 | 0.344 | 8.7 | 1/16 | 0.063 | 1.6 | 5/8 | 0.625 | 15.9 | | | |
| E-8141 | 1 | 7/8 | 0.875 | 22.2 | 3/8 | 0.375 | 9.5 | 13/32 | 0.406 | 10.3 | 1/8 | 0.125 | 3.2 | 5/8 | 0.625 | 15.9 | | | |
| E-945 | 5 | 1 | 1.000 | 25.4 | 3/8 | 0.375 | 9.5 | 13/32 | 0.406 | 10.3 | 9/64 | 0.141 | 3.6 | 11/16 | 0.688 | 17.5 | 7/8 | 0.875 | 22.2 |
| E-9230 | 4 | 1 1/4 | 1.250 | 31.8 | 3/8 | 0.375 | 9.5 | 45/64 | 0.703 | 17.9 | 1/8 | 0.125 | 3.2 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 |
| E-230-AT | 1 | 5/8 | 0.625 | 15.9 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1/2 | 0.500 | 12.7 | | | |
| E-1724 | 1 | 11/16 | 0.688 | 17.5 | 3/8 | 0.375 | 9.5 | 9/32 | 0.281 | 7.1 | 1/16 | 0.063 | 1.6 | 1/2 | 0.500 | 12.7 | | | |
| E-2281 | 1 | 7/8 | 0.875 | 22.2 | 3/8 | 0.375 | 9.5 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 5/8 | 0.625 | 15.9 | | | |
| E-2264 | 1 | 7/8 | 0.875 | 22.2 | 3/8 | 0.375 | 9.5 | 11/32 | 0.344 | 8.7 | 1/16 | 0.063 | 1.6 | 5/8 | 0.625 | 15.9 | | | |
| E-2299 | 1 | 1 1/4 | 1.250 | 31.8 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1 | 1.000 | 25.4 | | | |
| E-896 | 1 | 13/16 | 0.813 | 20.6 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 9/16 | 0.563 | 14.3 | | | |
| E-828 | 1 | 3/7 | 0.429 | 10.9 | 3/8 | 0.375 | 9.5 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/2 | 0.500 | 12.7 | | | |
| E-2558 | 1 | 7/8 | 0.875 | 22.2 | 3/8 | 0.375 | 9.5 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 5/8 | 0.625 | 15.9 | | | |
| E-2596 | 1 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 9/16 | 0.563 | 14.3 | | | |
| E-224 | 2 | 5/8 | 0.625 | 15.9 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1/2 | 0.500 | 12.7 | | | |
| E-225 | 1 | 5/8 | 0.625 | 15.9 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1/2 | 0.500 | 12.7 | | | |
| E-325 | 2 | 5/8 | 0.625 | 15.9 | 3/8 | 0.375 | 9.5 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 1/2 | 0.500 | 12.7 | | | |
| AN930-1 | 1 | 11/16 | 0.688 | 17.5 | 3/8 | 0.375 | 9.5 | 9/32 | 0.281 | 7.1 | 1/16 | 0.063 | 1.6 | 1/2 | 0.500 | 12.7 | | | |
| E-2035 | 4 | 11/16 | 0.688 | 17.5 | 3/8 | 0.375 | 9.5 | 19/64 | 0.297 | 7.5 | 3/64 | 0.050 | 1.3 | 1/2 | 0.500 | 12.7 | 3/16 | 0.375 | 9.5 |
| E-2250 | 1 | 5/8 | 0.625 | 15.9 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 3/64 | 0.050 | 1.3 | 1/2 | 0.500 | 12.7 | | | |
| E-2967 | 1 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/2 | 0.500 | 12.7 | | | |
| E-3373 | 3 | 41/64 | 0.638 | 16.2 | 3/8 | 0.375 | 9.5 | 13/32 | 0.412 | 10.5 | 1/8 | 0.126 | 3.2 | 1/2 | 0.510 | 13.0 | | | |

* Indicates I.D. is chamfered **Other D dimensions available ***Squared corners



- Used to protect or cover through holes. Help eliminate sharp edges so your wires are protected and add aesthetic value to your application.
- 160 sizes available that will accommodate mounting holes ranging from .250" (6,4 mm) to holes as large as 2.50" (63,5 mm) diameter and panel thicknesses from .063" (1,6 mm) to .375" (9,5 mm).



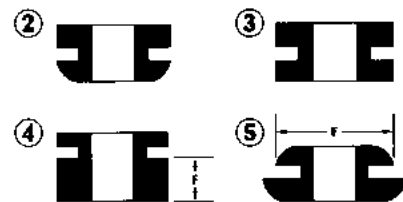
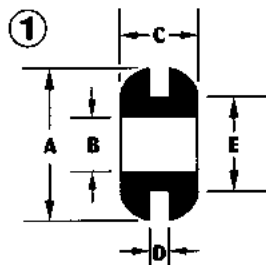
GROMMETS

By "B" Dimension

- Used to protect or cover through holes. Help eliminate sharp edges so your wires are protected and add aesthetic value to your application.
- 160 sizes available that will accommodate mounting holes ranging from .250" (6,4 mm) to holes as large as 2.50" (63,5 mm) diameter and panel thicknesses from .063" (1,6 mm) to .375" (9,5 mm).

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|------------|---------|--------|-------|------|-------|-------|------|-------|-------|------|------|-------|-----|-------|-------|------|-------|-------|------|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-1109 | S** | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 1/2 | 0.500 | 12.7 | 1/8 | 0.125 | 3.2 | 17/32 | 0.531 | 13.5 | | | |
| E-2258 | 1 | 5/8 | 0.625 | 15.9 | 3/8 | 0.375 | 9.5 | 11/32 | 0.344 | 8.7 | 1/16 | 0.063 | 1.6 | 17/32 | 0.531 | 13.5 | | | |
| E-232 | 1 | 13/16 | 0.813 | 20.6 | 3/8 | 0.375 | 9.5 | 3/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 9/16 | 0.563 | 14.3 | | | |
| AN930-2 | 1 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 9/16 | 0.563 | 14.3 | | | |
| AN930-3 | 1 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 9/16 | 0.563 | 14.3 | | | |
| E-2989 | 1 | 13/16 | 0.813 | 20.6 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 9/16 | 0.563 | 14.3 | | | |
| E-2123 | 3 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 9/16 | 0.563 | 14.3 | 3/8 | 0.375 | 9.5 | 19/32 | 0.594 | 15.1 | | | |
| E-2271 | 1 | 7/8 | 0.875 | 22.2 | 3/8 | 0.375 | 9.5 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 5/8 | 0.625 | 15.9 | | | |
| E-2273-AC | 3 | 15/16 | 0.938 | 23.8 | 3/8 | 0.375 | 9.5 | 17/32 | 0.531 | 13.5 | 5/32 | 0.156 | 4.0 | 5/8 | 0.625 | 15.9 | | | |
| E-2275 | 1 | 7/8 | 0.875 | 22.2 | 3/8 | 0.375 | 9.5 | 5/16 | 0.313 | 7.9 | 1/16 | 0.070 | 1.8 | 5/8 | 0.625 | 15.9 | | | |
| E-2994 | 1 | 15/16 | 0.938 | 23.8 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 11/16 | 0.688 | 17.5 | | | |
| AN931-6-16 | 1 | 1 1/4 | 1.250 | 31.8 | 3/8 | 0.375 | 9.5 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1 | 1.000 | 25.4 | | | |
| E-2590 | 5 | 18/25 | 0.720 | 18.3 | 2/5 | 0.400 | 10.2 | 3/13 | 0.230 | 5.8 | 1/25 | 0.040 | 1.0 | 4/9 | 0.445 | 11.3 | 44/83 | 0.530 | 13.5 |
| E-3342 | 1 | 11/16 | 0.688 | 17.5 | 13/32 | 0.406 | 10.3 | 1/4 | 0.250 | 6.4 | 3/32 | 0.094 | 2.4 | 1/2 | 0.500 | 12.7 | | | |
| E-911 | 1 | 11/16 | 0.688 | 17.5 | 13/32 | 0.406 | 10.3 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1/2 | 0.500 | 12.7 | | | |
| E-914 | 3 | 13/16 | 0.813 | 20.6 | 13/32 | 0.406 | 10.3 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 9/16 | 0.563 | 14.3 | | | |
| E-811 | 1 | 5/8 | 0.625 | 15.9 | 7/16 | 0.438 | 11.1 | 9/32 | 0.281 | 7.1 | 3/32 | 0.094 | 2.4 | 7/16 | 0.438 | 11.1 | | | |
| E-913 | 1 | 3/4 | 0.750 | 19.1 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 9/16 | 0.563 | 14.3 | | | |
| E-918 | 1 | 3/4 | 0.750 | 19.1 | 7/16 | 0.438 | 11.1 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 9/16 | 0.563 | 14.3 | | | |
| E-2282 | 1 | 15/16 | 0.938 | 23.8 | 7/16 | 0.438 | 11.1 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 11/16 | 0.688 | 17.5 | | | |
| E-1101 | 1 | 3/4 | 0.750 | 19.1 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 9/16 | 0.563 | 14.3 | | | |
| E-2037 | 4 | 3/4 | 0.750 | 19.1 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 9/16 | 0.563 | 14.3 | 5/32 | 0.156 | 4.0 |
| E-2263 | 1 | 3/4 | 0.750 | 19.1 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 5/64 | 0.080 | 2.0 | 9/16 | 0.563 | 14.3 | | | |
| E-2971 | 3 | 11/16 | 0.688 | 17.5 | 7/16 | 0.438 | 11.1 | 3/8 | 0.375 | 9.5 | 3/16 | 0.188 | 4.8 | 9/16 | 0.563 | 14.3 | | | |
| E-2114 | 1 | 3/4 | 0.750 | 19.1 | 7/16 | 0.438 | 11.1 | 3/8 | 0.375 | 9.5 | 3/64 | 0.050 | 1.3 | 19/32 | 0.594 | 15.1 | | | |
| AN931-7-11 | 1 | 15/16 | 0.938 | 23.8 | 7/16 | 0.438 | 11.1 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 11/16 | 0.688 | 17.5 | | | |
| E-917 | 1 | 1 | 1.000 | 25.4 | 1/2 | 0.500 | 12.7 | 9/32 | 0.281 | 7.1 | 3/32 | 0.094 | 2.4 | 3/4 | 0.750 | 19.1 | | | |
| E-932 | 4 | 1 1/4 | 1.250 | 31.8 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 3/32 | 0.094 | 2.4 | 3/4 | 0.750 | 19.1 | 9/32 | 0.281 | 7.1 |
| E-2283 | 1 | 1 1/16 | 1.063 | 27.0 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 13/16 | 0.813 | 20.6 | | | |

* Indicates I.D. is chamfered **Other D dimensions available ***Squared corners



GROMMETS

By "B" Dimension

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | |
|------------|---------|--------|-------|------|------|-------|------|-------|-------|------|------|-------|------|--------|-------|------|--------|-------|------|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| E-2426-AT | 1 | 1 1/4 | 1.250 | 31.8 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1 | 1.000 | 25.4 | | | |
| E-2284 | 1 | 1 1/2 | 1.500 | 38.1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1 1/4 | 1.250 | 31.8 | | | |
| E-2339 | 1 | 1 3/4 | 1.750 | 44.5 | 1/2 | 0.500 | 12.7 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 1 7/16 | 1.438 | 36.5 | | | |
| E-452 | 1 | 7/8 | 0.875 | 22.2 | 1/2 | 0.500 | 12.7 | 11/32 | 0.344 | 8.7 | 3/32 | 0.094 | 2.4 | 3/4 | 0.750 | 19.1 | | | |
| E-1862 | 1 | 31/32 | 0.969 | 24.6 | 1/2 | 0.500 | 12.7 | 9/32 | 0.281 | 7.1 | 3/32 | 0.094 | 2.4 | 3/4 | 0.750 | 19.1 | | | |
| E-653 | 1 | 1 | 1.000 | 25.4 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 1/8 | 0.125 | 3.2 | 3/4 | 0.750 | 19.1 | | | |
| E-2561 | 1 | 1 1/16 | 1.063 | 27.0 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 13/16 | 0.813 | 20.6 | | | |
| E-807-AT | 1 | 1 | 1.000 | 25.4 | 1/2 | 0.500 | 12.7 | 5/8 | 0.625 | 15.9 | 3/8 | 0.375 | 9.5 | 3/4 | 0.750 | 19.1 | | | |
| E-230-AC | 1 | 13/16 | 0.813 | 20.6 | 1/2 | 0.500 | 12.7 | 9/32 | 0.281 | 7.1 | 1/16 | 0.063 | 1.6 | 5/8 | 0.625 | 15.9 | | | |
| E-231 | 2 | 13/16 | 0.813 | 20.6 | 1/2 | 0.500 | 12.7 | 9/32 | 0.281 | 7.1 | 1/16 | 0.063 | 1.6 | 5/8 | 0.625 | 15.9 | | | |
| E-330 | 2 | 13/16 | 0.813 | 20.6 | 1/2 | 0.500 | 12.7 | 11/32 | 0.344 | 8.7 | 1/8 | 0.125 | 3.2 | 5/8 | 0.625 | 15.9 | | | |
| E-2984 | 1 | 1 | 1.000 | 25.4 | 1/2 | 0.500 | 12.7 | 1/2 | 0.500 | 12.7 | 1/8 | 0.125 | 3.2 | 3/4 | 0.750 | 19.1 | | | |
| AN930-4 | 1 | 1 | 1.000 | 25.4 | 1/2 | 0.500 | 12.7 | 9/32 | 0.281 | 7.1 | 3/32 | 0.094 | 2.4 | 3/4 | 0.750 | 19.1 | | | |
| AN930-41 | 1 | 1 | 1.000 | 25.4 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 3/4 | 0.750 | 19.1 | | | |
| AN930-42 | 1 | 1 | 1.000 | 25.4 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 3/4 | 0.750 | 19.1 | | | |
| E-2648 | 3 | 1 | 1.000 | 25.4 | 1/2 | 0.500 | 12.7 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 3/4 | 0.750 | 19.1 | | | |
| E-2933 | 1 | 1 | 1.000 | 25.4 | 1/2 | 0.500 | 12.7 | 5/8 | 0.625 | 15.9 | 3/8 | 0.375 | 9.5 | 3/4 | 0.750 | 19.1 | | | |
| E-1102 | 1 | 1 1/16 | 1.063 | 27.0 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 13/16 | 0.813 | 20.6 | | | |
| E-1110 | 1 | 1 1/16 | 1.063 | 27.0 | 1/2 | 0.500 | 12.7 | 11/32 | 0.344 | 8.7 | 1/8 | 0.125 | 3.2 | 13/16 | 0.813 | 20.6 | | | |
| E-2654 | 3 | 1 1/16 | 1.063 | 27.0 | 1/2 | 0.500 | 12.7 | 13/16 | 0.813 | 20.6 | 1/2 | 0.500 | 12.7 | 13/16 | 0.813 | 20.6 | | | |
| E-1118 | 1 | 1 1/8 | 1.125 | 28.6 | 1/2 | 0.500 | 12.7 | 5/16 | 0.302 | 7.7 | 1/16 | 0.063 | 1.6 | 7/8 | 0.875 | 22.2 | | | |
| E-1108 | 1 | 1 1/4 | 1.250 | 31.8 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1 | 1.000 | 25.4 | | | |
| E-2983 | 1 | 1 1/4 | 1.250 | 31.8 | 1/2 | 0.500 | 12.7 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 1 | 1.000 | 25.4 | | | |
| AN931-8-20 | 1 | 1 1/2 | 1.500 | 38.1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1 1/4 | 1.250 | 31.8 | | | |
| E-2917 | 1 | 1 1/4 | 1.250 | 31.8 | 9/16 | 0.563 | 14.3 | 3/8 | 0.375 | 9.5 | 5/32 | 0.156 | 4.0 | 7/8 | 0.875 | 22.2 | | | |
| E-915 | 1 | 1 | 1.000 | 25.4 | 9/16 | 0.563 | 14.3 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 3/4 | 0.750 | 19.1 | | | |
| E-2295 | 1 | 1 1/16 | 1.063 | 27.0 | 9/16 | 0.563 | 14.3 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 13/16 | 0.813 | 20.6 | | | |
| E-99 | 1 | 19/32 | 1.281 | 32.5 | 9/16 | 0.563 | 14.3 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 1 3/32 | 1.094 | 27.8 | | | |
| E-2512 | 1 | 1 1/16 | 1.063 | 27.0 | 9/16 | 0.563 | 14.3 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 7/8 | 0.875 | 22.2 | | | |
| E-2563 | 1 | 1 1/16 | 1.063 | 27.0 | 9/16 | 0.563 | 14.3 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 13/16 | 0.813 | 20.6 | | | |
| E-2513 | 1 | 1 1/16 | 1.063 | 27.0 | 9/16 | 0.563 | 14.3 | 5/8 | 0.625 | 15.9 | 3/8 | 0.375 | 9.5 | 7/8 | 0.875 | 22.2 | | | |
| E-2406-AT | 1 | 1 1/8 | 1.125 | 28.6 | 9/16 | 0.563 | 14.3 | 1 1/4 | 1.250 | 31.8 | 1 | 1.000 | 25.4 | 13/16 | 0.813 | 20.6 | | | |
| AN931-9-13 | 1 | 1 1/16 | 1.063 | 27.0 | 9/16 | 0.563 | 14.3 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 13/16 | 0.813 | 20.6 | | | |
| E-2625 | 5-1 | 1 3/16 | 1.188 | 30.2 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 8.0 | 1/16 | 0.063 | 1.6 | 7/8 | 0.875 | 22.2 | 1 3/32 | 1.094 | 27.8 |
| E-2904 | 1-1 | 15/16 | 0.938 | 23.8 | 5/8 | 0.625 | 15.9 | 9/32 | 0.281 | 7.1 | 3/32 | 0.094 | 2.4 | 3/4 | 0.750 | 19.1 | | | |
| E-3335 | 5-1 | 1 1/2 | 1.500 | 38.1 | 5/8 | 0.625 | 15.9 | 5/8 | 0.625 | 15.9 | 1/8 | 0.125 | 3.2 | 1 5/32 | 1.156 | 29.4 | 1 3/8 | 1.376 | 35. |



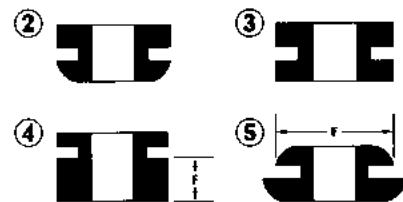
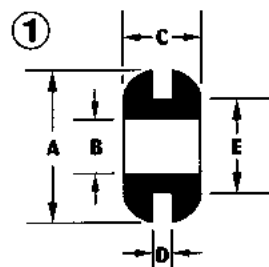
GROMMETS

By "B" Dimension

- Used to protect or cover through holes. Help eliminate sharp edges so your wires are protected and add aesthetic value to your application.
- 160 sizes available that will accommodate mounting holes ranging from .250" (6,4 mm) to holes as large as 2.50" (63,5 mm) diameter and panel thicknesses from .063" (1,6 mm) to .375" (9,5 mm).

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | | |
|-------------|---------|--------|-------|------|-------|-------|------|-------|-------|------|------|-------|-----|--------|-------|------|------|-----|----|--|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | |
| E-2296 | 1 | 1 1/2 | 1.500 | 38.1 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1 1/4 | 1.250 | 31.8 | | | | |
| E-2497 | 1 | 1 1/4 | 1.250 | 31.8 | 5/8 | 0.625 | 15.9 | 7/16 | 0.438 | 11.1 | 3/32 | 0.094 | 2.4 | 31/32 | 0.969 | 24.6 | | | | |
| E-2864 | 1 | 1 1/8 | 1.125 | 28.6 | 5/8 | 0.625 | 15.9 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 7/8 | 0.875 | 22.2 | | | | |
| E-501 | 1 | 1 1/8 | 1.125 | 28.6 | 5/8 | 0.625 | 15.9 | 7/16 | 0.438 | 11.1 | 1/8 | 0.125 | 3.2 | 29/32 | 0.906 | 23.0 | | | | |
| E-2764 | 1 | 1 1/8 | 1.125 | 28.6 | 5/8 | 0.625 | 15.9 | 7/16 | 0.438 | 11.1 | 3/16 | 0.188 | 4.8 | 7/8 | 0.875 | 22.2 | | | | |
| E-2564 | 1 | 1 1/8 | 1.125 | 28.6 | 5/8 | 0.625 | 15.9 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 7/8 | 0.875 | 22.2 | | | | |
| E-494 | 1 | 1 1/8 | 1.125 | 28.6 | 5/8 | 0.625 | 15.9 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 29/32 | 0.906 | 23.0 | | | | |
| E-1103 | 1 | 1 1/8 | 1.125 | 28.6 | 5/8 | 0.625 | 15.9 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 7/8 | 0.875 | 22.2 | | | | |
| AN931-10-20 | 1 | 1 1/2 | 1.500 | 38.1 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1 1/4 | 1.250 | 31.8 | | | | |
| E-873 | 1 | 1 1/16 | 1.063 | 27.0 | 41/64 | 0.641 | 16.3 | 23/64 | 0.359 | 9.1 | 7/64 | 0.109 | 2.8 | 57/64 | 0.891 | 22.6 | | | | |
| E-1032 | 1 | 1 5/16 | 1.313 | 33.3 | 11/16 | 0.688 | 17.5 | 3/8 | 0.375 | 9.5 | 5/64 | 0.078 | 2.0 | 1 | 1.000 | 25.4 | | | | |
| E-2273-AT | 1 | 1 5/16 | 1.313 | 33.3 | 11/16 | 0.688 | 17.5 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 1 | 1.000 | 25.4 | | | | |
| E-2866 | 1 | 1 5/16 | 1.313 | 33.3 | 11/16 | 0.688 | 17.5 | 7/16 | 0.438 | 11.1 | 1/8 | 0.125 | 3.2 | 1 | 1.000 | 25.4 | | | | |
| E-2331 | 1 | 1 5/16 | 1.313 | 33.3 | 11/16 | 0.688 | 17.5 | 1/2 | 0.500 | 12.7 | 3/16 | 0.188 | 4.8 | 1 | 1.000 | 25.4 | | | | |
| E-2566 | 1 | 1 5/16 | 1.313 | 33.3 | 11/16 | 0.688 | 17.5 | 9/16 | 0.563 | 14.3 | 1/4 | 0.250 | 6.4 | 1 | 1.000 | 25.4 | | | | |
| E-2301-AC | 1 | 1 1/16 | 1.063 | 27.0 | 11/16 | 0.688 | 17.5 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 13/16 | 0.813 | 20.6 | | | | |
| AN931-11-16 | 1 | 1 5/16 | 1.313 | 33.3 | 11/16 | 0.688 | 17.5 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 1 | 1.000 | 25.4 | | | | |
| E-2651 | 1 | 1 3/4 | 1.750 | 44.5 | 11/16 | 0.688 | 17.5 | 1/2 | 0.500 | 12.7 | 1/8 | 0.125 | 3.2 | 1 3/8 | 1.375 | 34.9 | | | | |
| E-933 | 1 | 1 9/32 | 1.281 | 32.5 | 23/32 | 0.719 | 18.3 | 3/8 | 0.375 | 9.5 | 3/32 | 0.094 | 2.4 | 1 1/16 | 1.063 | 27.0 | | | | |
| E-1018 | 1 | 1 1/8 | 1.125 | 28.6 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 7/8 | 0.875 | 22.2 | | | | |
| E-1020 | 1 | 1 1/8 | 1.125 | 28.6 | 3/4 | 0.750 | 19.1 | 11/32 | 0.344 | 8.7 | 3/32 | 0.094 | 2.4 | 7/8 | 0.875 | 22.2 | | | | |
| E-1022 | 1 | 1 1/8 | 1.125 | 28.6 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 7/8 | 0.875 | 22.2 | | | | |
| E-1029 | 1 | 1 1/8 | 1.125 | 28.6 | 3/4 | 0.750 | 19.1 | 11/32 | 0.344 | 8.7 | 3/32 | 0.094 | 2.4 | 15/16 | 0.938 | 23.8 | | | | |
| E-1027 | 1 | 1 1/8 | 1.125 | 28.6 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 | 3/32 | 0.094 | 2.4 | 15/16 | 0.938 | 23.8 | | | | |
| E-935 | 1 | 1 5/8 | 1.625 | 41.3 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 | 1/16 | 0.063 | 1.6 | 1 3/32 | 1.094 | 27.8 | | | | |
| E-936 | 1 | 1 1/2 | 1.500 | 38.1 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 | 3/32 | 0.094 | 2.4 | 1 1/8 | 1.125 | 28.6 | | | | |
| E-2196 | 1 | 1 1/8 | 1.125 | 28.6 | 3/4 | 0.750 | 19.1 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 15/16 | 0.938 | 23.8 | | | | |
| E-804 | 1 | 1 3/8 | 1.375 | 34.9 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 1 1/16 | 1.063 | 27.0 | | | | |
| E-2274-AT | 1 | 1 5/8 | 1.625 | 41.3 | 3/4 | 0.750 | 19.1 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1 1/4 | 1.250 | 31.8 | | | | |

* Indicates I.D. is chamfered **Other D dimensions available ***Squared corners



GROMMETS

By "B" Dimension

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | | |
|-------------|---------|---------|-------|------|-------|-------|------|-------|-------|------|------|-------|------|--------|-------|------|------|-----|----|--|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | |
| E-2275-AT | 1 | 1 13/16 | 1.813 | 46.0 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 1 7/16 | 1.438 | 36.5 | | | | |
| E-2867 | 1 | 1 3/8 | 1.375 | 34.9 | 3/4 | 0.750 | 19.1 | 7/16 | 0.438 | 11.1 | 1/8 | 0.125 | 3.2 | 1 1/16 | 1.063 | 27.0 | | | | |
| E-2868 | 1 | 1 5/8 | 1.625 | 41.3 | 3/4 | 0.750 | 19.1 | 5/16 | 0.313 | 7.9 | 1/8 | 0.125 | 3.2 | 1 1/4 | 1.250 | 31.8 | | | | |
| E-2767 | 1 | 1 3/8 | 1.375 | 34.9 | 3/4 | 0.750 | 19.1 | 1/2 | 0.500 | 12.7 | 3/16 | 0.188 | 4.8 | 1 1/16 | 1.063 | 27.0 | | | | |
| E-2567 | 1 | 1 3/8 | 1.375 | 34.9 | 3/4 | 0.750 | 19.1 | 9/16 | 0.563 | 14.3 | 1/4 | 0.250 | 6.4 | 1 1/16 | 1.063 | 27.0 | | | | |
| E-2568 | 1 | 1 5/8 | 1.625 | 41.3 | 3/4 | 0.750 | 19.1 | 7/16 | 0.438 | 11.1 | 1/4 | 0.250 | 6.4 | 1 1/4 | 1.250 | 31.8 | | | | |
| E-1117† | 1 | 1 1/8 | 1.125 | 28.6 | 3/4 | 0.750 | 19.1 | 9/32 | 0.281 | 7.1 | 1/16 | 0.063 | 1.6 | 7/8 | 0.875 | 22.2 | | | | |
| AN931-12-17 | 1 | 1 3/8 | 1.375 | 34.9 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 1 1/16 | 1.063 | 27.0 | | | | |
| AN931-12-20 | 1 | 1 5/8 | 1.625 | 41.3 | 3/4 | 0.750 | 19.1 | 1/4 | 0.250 | 6.4 | 1/16 | 0.063 | 1.6 | 1 1/4 | 1.250 | 31.8 | | | | |
| AN931-12-23 | 1 | 1 13/16 | 1.813 | 46.0 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 1 7/16 | 1.438 | 36.5 | | | | |
| AN931-12-26 | 1 | 2 | 2.000 | 50.8 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 1 5/8 | 1.625 | 41.3 | | | | |
| E-1107 | 1 | 1 1/8 | 1.125 | 28.6 | 25/32 | 0.775 | 19.7 | 5/16 | 0.313 | 7.9 | 3/32 | 0.094 | 2.4 | 15/16 | 0.938 | 23.8 | | | | |
| E-9400 | 1 | 1 3/16 | 1.188 | 30.2 | 51/64 | 0.797 | 20.2 | 9/32 | 0.281 | 7.1 | 1/32 | 0.031 | 0.8 | 29/32 | 0.906 | 23.0 | | | | |
| E-9401 | 1 | 1 7/64 | 1.109 | 28.2 | 51/64 | 0.797 | 20.2 | 9/32 | 0.281 | 7.1 | 1/32 | 0.031 | 0.8 | 29/32 | 0.906 | 23.0 | | | | |
| E-5632 | 1 | 1 1/4 | 1.250 | 31.8 | 13/16 | 0.813 | 20.6 | 7/8 | 0.875 | 22.2 | 9/16 | 0.563 | 14.3 | 15/16 | 0.938 | 23.8 | | | | |
| E-1105-AC | 1 | 1 5/32 | 1.160 | 29.5 | 13/16 | 0.813 | 20.6 | 1/4 | 0.250 | 6.4 | 3/64 | 0.046 | 1.2 | 15/16 | 0.938 | 23.8 | | | | |
| E-1224 | 2 | 1 3/16 | 1.188 | 30.2 | 13/16 | 0.813 | 20.6 | 25/32 | 0.781 | 19.8 | 1/2 | 0.500 | 12.7 | 15/16 | 0.938 | 23.8 | | | | |
| E-40210 | 1 | 1 1/4 | 1.250 | 31.8 | 13/16 | 0.813 | 20.6 | 7/8 | 0.875 | 22.2 | 9/16 | 0.563 | 14.3 | 15/16 | 0.938 | 23.8 | | | | |
| E-931 | 1 | 1 3/16 | 1.188 | 30.2 | 7/8 | 0.875 | 22.2 | 3/16 | 0.188 | 4.8 | 1/16 | 0.063 | 1.6 | 1 | 1.000 | 25.4 | | | | |
| E-1040 | 1 | 1 5/8 | 1.625 | 41.3 | 7/8 | 0.875 | 22.2 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 1 1/8 | 1.125 | 28.6 | | | | |
| E-2276 | 1 | 1 5/8 | 1.625 | 41.3 | 7/8 | 0.875 | 22.2 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 1 1/4 | 1.250 | 31.8 | | | | |
| E-2300 | 1 | 2 | 2.000 | 50.8 | 7/8 | 0.875 | 22.2 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 1 5/8 | 1.625 | 41.3 | | | | |
| E-1626 | 1 | 1 3/8 | 1.375 | 34.9 | 7/8 | 0.875 | 22.2 | 15/32 | 0.469 | 11.9 | 5/64 | 0.078 | 2.0 | 1 3/16 | 1.188 | 30.2 | | | | |
| E-2870 | 1 | 1 5/8 | 1.625 | 41.3 | 7/8 | 0.875 | 22.2 | 1/2 | 0.500 | 12.7 | 1/8 | 0.125 | 3.2 | 1 1/4 | 1.250 | 31.8 | | | | |
| E-1626-A | 1 | 1 3/8 | 1.375 | 34.9 | 7/8 | 0.875 | 22.2 | 15/32 | 0.469 | 11.9 | 9/64 | 0.141 | 3.6 | 1 3/16 | 1.188 | 30.2 | | | | |
| E-2770 | 1 | 1 5/8 | 1.625 | 41.3 | 7/8 | 0.875 | 22.2 | 9/16 | 0.474 | 12.0 | 3/16 | 0.188 | 4.8 | 1 1/4 | 1.250 | 31.8 | | | | |
| E-2570 | 1 | 1 5/8 | 1.625 | 41.3 | 7/8 | 0.875 | 22.2 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 1 1/4 | 1.250 | 31.8 | | | | |
| E-9658 | 1 | 1 5/8 | 1.625 | 41.3 | 7/8 | 0.875 | 22.2 | 1/2 | 0.500 | 12.7 | 1/8 | 0.125 | 3.2 | 1 1/16 | 0.063 | 1.6 | | | | |
| E-3334 | 1 | 1 3/8 | 1.375 | 34.9 | 7/8 | 0.875 | 22.2 | 1/8 | 0.133 | 3.4 | 9/64 | 0.141 | 3.6 | 1 3/16 | 1.188 | 30.2 | | | | |
| AN930-21 | 1 | 1 9/16 | 1.563 | 39.7 | 7/8 | 0.875 | 22.2 | 3/4 | 0.750 | 19.1 | 3/16 | 0.188 | 4.8 | 1 1/4 | 1.250 | 31.8 | | | | |
| E-40050 | 1 | 1 5/8 | 1.625 | 41.3 | 7/8 | 0.875 | 22.2 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 1 1/4 | 1.250 | 31.8 | | | | |
| E-40080 | 1 | 1 5/8 | 1.625 | 41.3 | 7/8 | 0.875 | 22.2 | 1/2 | 0.500 | 12.7 | 1/8 | 0.125 | 3.2 | 1 1/4 | 1.250 | 31.8 | | | | |
| AN931-14-26 | 1 | 2 | 2.000 | 50.8 | 7/8 | 0.875 | 22.2 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 1 5/8 | 1.625 | 41.3 | | | | |
| E-1045 | 3 | 1 3/4 | 1.750 | 44.5 | 31/32 | 0.969 | 24.6 | 13/32 | 0.406 | 10.3 | 7/64 | 0.109 | 2.8 | 1 3/8 | 1.375 | 34.9 | | </ | | |



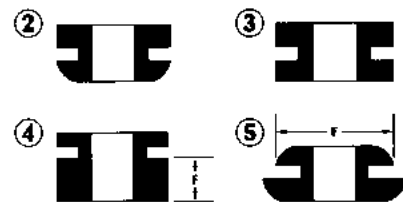
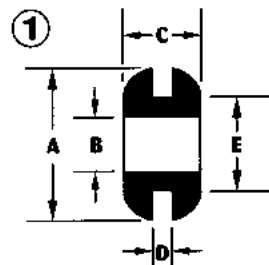
GROMMETS

By "B" Dimension

- Used to protect or cover through holes. Help eliminate sharp edges so your wires are protected and add aesthetic value to your application.
- 160 sizes available that will accommodate mounting holes ranging from .250" (6,4 mm) to holes as large as 2.50" (63,5 mm) diameter and panel thicknesses from .063" (1,6 mm) to .375" (9,5 mm).

| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | | |
|--------------|---------|---------|-------|------|---------|-------|------|-------|-------|------|-------|-------|------|---------|-------|------|------|-----|----|--|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | |
| E-2772 | 1 | 1 3/4 | 1.750 | 44.5 | 1 | 1.000 | 25.4 | 9/16 | 0.563 | 14.3 | 3/16 | 0.188 | 4.8 | 1 3/8 | 1.375 | 34.9 | | | | |
| E-2572 | 1 | 1 3/4 | 1.750 | 44.5 | 1 | 1.000 | 25.4 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 1 3/8 | 1.625 | 41.3 | | | | |
| E-2573 | 1 | 2 1/4 | 2.250 | 57.2 | 1 | 1.000 | 25.4 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 1 7/8 | 1.875 | 47.6 | | | | |
| AN931-16-22 | 1 | 1 3/4 | 1.750 | 44.5 | 1 | 1.000 | 25.4 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 1 3/8 | 1.375 | 34.9 | | | | |
| AN931-16-30 | 1 | 2 1/4 | 2.250 | 57.2 | 1 | 1.000 | 25.4 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 1 7/8 | 1.875 | 47.6 | | | | |
| E-2092 | 1 | 1 7/8 | 1.875 | 47.6 | 1 1/8 | 1.125 | 28.6 | 3/8 | 0.375 | 9.5 | 1 | 1.000 | 25.4 | 1 1/2 | 1.500 | 38.1 | | | | |
| E-40070 | 1 | 1 7/8 | 1.875 | 47.6 | 1 1/8 | 1.125 | 28.6 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 1 1/2 | 1.500 | 38.1 | | | | |
| E-40020 | 1 | 2 3/4 | 2.750 | 69.9 | 1 1/8 | 1.125 | 28.6 | 1/2 | 0.500 | 12.7 | 1/8 | 0.125 | 3.2 | 2 3/8 | 2.375 | 60.3 | | | | |
| E-1047 | 1 | 1 7/8 | 1.875 | 47.6 | 1 1/4 | 1.250 | 31.8 | 11/32 | 0.344 | 8.7 | 1/16 | 0.063 | 1.6 | 1 1/2 | 1.500 | 38.1 | | | | |
| E-994 | 1 | 1 37/64 | 1.578 | 40.1 | 1 1/4 | 1.250 | 31.8 | 63/64 | 0.984 | 25.0 | 25/32 | 0.781 | 19.8 | 1 27/64 | 1.422 | 36.1 | | | | |
| E-1048 | 1 | 1 7/8 | 1.875 | 47.6 | 1 1/4 | 1.250 | 31.8 | 3/8 | 0.375 | 9.5 | 3/32 | 0.094 | 2.4 | 1 1/2 | 1.500 | 38.1 | | | | |
| E-1049 | 1 | 1 7/8 | 1.875 | 47.6 | 1 1/4 | 1.250 | 31.8 | 13/32 | 0.406 | 10.3 | 1/8 | 0.125 | 3.2 | 1 1/2 | 1.500 | 38.1 | | | | |
| E-1056 | 1 | 2 1/8 | 2.125 | 54.0 | 1 1/4 | 1.250 | 31.8 | 3/8 | 0.375 | 9.5 | 3/32 | 0.094 | 2.4 | 1 3/4 | 1.750 | 44.5 | | | | |
| E-2302 | 1 | 2 3/4 | 2.750 | 69.9 | 1 1/4 | 1.250 | 31.8 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 2 3/8 | 2.375 | 60.3 | | | | |
| E-2574 | 1 | 2 3/4 | 2.750 | 69.9 | 1 1/4 | 1.250 | 31.8 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 2 3/8 | 2.375 | 60.3 | | | | |
| E-9668 | 1 | 2 | 2.000 | 50.8 | 1 1/4 | 1.250 | 31.8 | 9/16 | 0.563 | 14.3 | 3/16 | 0.188 | 4.8 | 1 5/8 | 1.625 | 41.3 | | | | |
| E-9669 | 1 | 2 | 2.000 | 50.8 | 1 1/4 | 1.250 | 31.8 | 3/4 | 0.750 | 19.1 | 3/8 | 0.375 | 9.5 | 1 5/8 | 1.625 | 41.3 | | | | |
| E-9681 | 1 | 2 | 2.000 | 50.8 | 1 1/4 | 1.250 | 31.8 | 9/16 | 0.563 | 14.3 | 1/4 | 0.250 | 6.4 | 1 5/8 | 1.625 | 41.3 | | | | |
| E-9649 | 1 | 2 | 2.000 | 50.8 | 1 1/4 | 1.250 | 31.8 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1 1/2 | 1.500 | 38.1 | | | | |
| E-2929 | 1 | 1 7/8 | 1.875 | 47.6 | 1 1/4 | 1.250 | 31.8 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 1 5/8 | 1.625 | 41.3 | | | | |
| AN931-A20-38 | 1 | 2 3/4 | 2.750 | 69.9 | 1 1/4 | 1.250 | 31.8 | 1/2 | 0.500 | 12.7 | 1/8 | 0.125 | 3.2 | 2 3/8 | 2.375 | 60.3 | | | | |
| AN931-A20-40 | 1 | 2 7/8 | 2.875 | 73.0 | 1 1/4 | 1.250 | 31.8 | 1/2 | 0.500 | 12.7 | 1/8 | 0.125 | 3.2 | 2 1/2 | 2.500 | 63.5 | | | | |
| E-3366 | 1 | 1 29/32 | 1.913 | 48.6 | 1 9/32 | 1.275 | 32.4 | 37/64 | 0.573 | 14.6 | 1/4 | 0.255 | 6.5 | 1 21/32 | 1.658 | 42.1 | | | | |
| E-2634 | 1 | 2 | 2.000 | 50.8 | 1 19/64 | 1.290 | 32.8 | 7/16 | 0.438 | 11.1 | 1/8 | 0.125 | 3.2 | 1 5/8 | 1.625 | 41.3 | | | | |
| E-2803 | 1 | 2 | 2.000 | 50.8 | 1 5/16 | 1.313 | 33.3 | 3/8 | 0.375 | 9.5 | 1/16 | 0.063 | 1.6 | 1 5/8 | 1.625 | 41.3 | | | | |
| E-1064 | 1 | 2 3/8 | 2.375 | 60.3 | 1 1/2 | 1.500 | 38.1 | 3/8 | 0.375 | 9.5 | 3/32 | 0.094 | 2.4 | 2 | 2.000 | 50.8 | | | | |
| E-2802 | 1 | 2 | 2.000 | 50.8 | 1 1/2 | 1.500 | 38.1 | 7/16 | 0.438 | 11.1 | 1/8 | 0.125 | 3.2 | 1 5/8 | 1.625 | 41.3 | | | | |
| E-2278 | 1 | 2 1/8 | 2.125 | 54.0 | 1 1/2 | 1.500 | 38.1 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 1 3/4 | 1.750 | 44.5 | | | | |
| E-2034-AT | 1 | 2 | 2.000 | 50.8 | 1 1/2 | 1.500 | 38.1 | 1/2 | 0.500 | 12.7 | 1/4 | 0.250 | 6.4 | 1 3/4 | 1.750 | 44.5 | | | | |

* Indicates I.D. is chamfered **Other D dimensions available ***Squared corners



GROMMETS

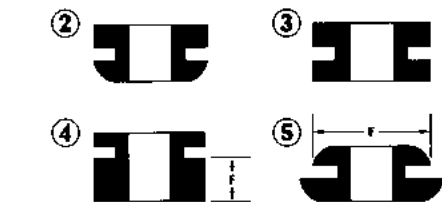
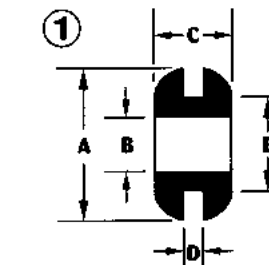
By "B" Dimension



| PART NO. | Fig No. | A | | | B | | | C | | | D | | | E | | | F | | | |
|-------------|---------|-------|-------|------|---------|-------|------|------|-------|------|------|-------|------|---------|-------|------|------|-----|----|--|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | |
| E-1104 | 1 | 2 1/8 | 2.125 | 54.0 | 1 1/2 | 1.500 | 38.1 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 1 3/4 | 1.750 | 44.5 | | | | |
| AN931-24-44 | 1 | 3 1/4 | 3.250 | 82.6 | 1 1/2 | 1.500 | 38.1 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 2 3/4 | 2.750 | 69.9 | | | | |
| E-9637 | 1 | 2 1/2 | 2.500 | 63.5 | 1 3/4 | 1.750 | 44.5 | 5/8 | 0.625 | 15.9 | 3/8 | 0.375 | 9.5 | 2 | 2.000 | 50.8 | | | | |
| E-1070-LA | 1 | 2 5/8 | 2.625 | 66.7 | 1 55/64 | 1.859 | 47.2 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 2 13/64 | 2.203 | 56.0 | | | | |
| E-9703 | 1 | 2 5/8 | 2.625 | 66.7 | 2 | 2 | 50.8 | 9/16 | 0.563 | 14.3 | 3/16 | 0.188 | 4.8 | 2 1/4 | 2.250 | 57.2 | | | | |
| E-2575 | 1 | 2 1/8 | 2.125 | 54.0 | 1 1/2 | 1.500 | 38.1 | 5/8 | 0.625 | 15.9 | 1/4 | 0.250 | 6.4 | 1 3/4 | 1.750 | 44.5 | | | | |
| E-9696 | 3 | 3 3/8 | 3.375 | 85.7 | 2 3/8 | 2.375 | 60.3 | 1/2 | 0.125 | 3.2 | 1/8 | 0.500 | 12.7 | 2 3/4 | 2.750 | 69.9 | | | | |
| E-2805 | 1 | 2 7/8 | 2.875 | 73.0 | 2 1/8 | 2.875 | 73.0 | 7/16 | 0.438 | 11.1 | 1/16 | 0.063 | 1.6 | 2 1/2 | 2.500 | 63.5 | | | | |
| E-2804 | 1 | 2 7/8 | 2.875 | 73.0 | 2 1/8 | 2.875 | 73.0 | 7/16 | 0.438 | 11.1 | 1/8 | 0.125 | 3.2 | 2 1/2 | 2.500 | 63.5 | | | | |

* Indicates I.D. is chamfered **Other D dimensions available ***Squared corners

- Used to protect or cover through holes. Help eliminate sharp edges so your wires are protected and add aesthetic value to your application.
- 160 sizes available that will accommodate mounting holes ranging from .250" (6,4 mm) to holes as large as 2.50" (63,5 mm) diameter and panel thicknesses from .063" (1,6 mm) to .375" (9,5 mm).

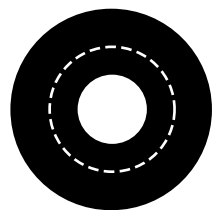
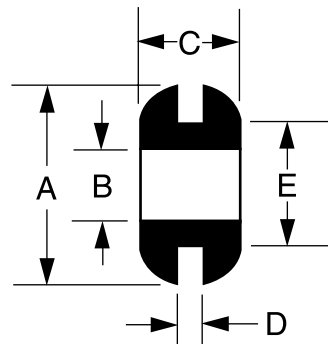




ARMY-NAVY APPROVED AN931 GROMMETS

By "B" Dimension

- AN931 TO PROCUREMENT SPECIFICATION AN-G-21
- ARMY-NAVY STANDARD GROMMETS
- RUBBER, HOT-OIL & COOLANT RESISTANT MATERIAL SPECIFICATION: MIL-G-3036
- Purchasing grommets under this specification should include a waiver of the samples test and affidavits required by revision MIL-G-3036. Our packing slip contains a certification of material with each shipment. In the event the very strict testing requirements of revision MIL-G-3036 are required, there will be an extra charge for laboratory expenses.



| MS35489 PART NO. | AN931 PART NO. | A | | | B | | | C | | | D | | | E | | | ESTCO Part No. |
|------------------|----------------|-------|-------|------|------|-------|-----|------|-------|------|------|-------|-----|------|-------|------|----------------|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | |
| MS35489-2 | AN931-2-9 | 3/4 | 0.75 | 11.1 | 1/8 | 0.125 | 3.2 | 3/16 | 0.187 | 4.7 | 1/16 | 0.062 | 1.6 | 9/16 | 0.562 | 14.3 | 3757-45009 |
| MS35489-25 | AN931-A2-9 | 3/4 | 0.75 | 11.1 | 1/8 | 0.125 | 3.2 | 1/4 | 0.25 | 6.4 | 1/8 | 0.125 | 3.2 | 9/16 | 0.562 | 14.3 | 3758-45009 |
| | AN931-B2-9 | 3/4 | 0.75 | 19.1 | 1/8 | 0.125 | 3.2 | 5/16 | 0.312 | 7.9 | 3/16 | 0.187 | 4.7 | 9/16 | 0.562 | 14.3 | |
| | AN931-C2-9 | 3/4 | 0.75 | 19.1 | 1/8 | 0.125 | 3.2 | 3/8 | 0.375 | 9.5 | 1/4 | 0.25 | 6.4 | 9/16 | 0.562 | 14.3 | |
| MS35489-27 | AN931-A3-5 | 7/16 | 0.437 | 19.1 | 3/16 | 0.187 | 4.7 | 1/4 | 0.25 | 6.4 | 1/8 | 0.125 | 3.2 | 5/16 | 0.312 | 7.9 | 2852-45009 |
| | AN931-B3-5 | 7/16 | 0.437 | 19.1 | 3/16 | 0.187 | 4.7 | 5/16 | 0.312 | 7.9 | 3/16 | 0.187 | 4.7 | 5/16 | 0.312 | 7.9 | |
| MS35489-73 | AN931-C3-5 | 7/16 | 0.437 | 25.4 | 3/16 | 0.187 | 4.7 | 3/8 | 0.375 | 9.5 | 1/4 | 0.25 | 6.4 | 5/16 | 0.312 | 7.9 | 2552-45009 |
| MS35489-134 | AN931-3-9 | 3/4 | 0.75 | 22.2 | 3/16 | 0.187 | 4.7 | 3/16 | 0.187 | 4.7 | 1/16 | 0.062 | 1.6 | 9/16 | 0.562 | 14.3 | 2279-45009 |
| MS35489-137 | AN931-A3-9 | 3/4 | 0.75 | 22.2 | 3/16 | 0.187 | 4.7 | 1/4 | 0.25 | 6.4 | 1/8 | 0.125 | 3.2 | 9/16 | 0.562 | 14.3 | 2853-45009 |
| MS35489-138 | AN931-B3-9 | 3/4 | 0.75 | 22.2 | 3/16 | 0.187 | 4.7 | 5/16 | 0.312 | 7.9 | 3/16 | 0.187 | 4.7 | 9/16 | 0.562 | 14.3 | 2753-45009 |
| | AN931-C3-9 | 3/4 | 0.75 | 15.9 | 3/16 | 0.187 | 4.7 | 3/8 | 0.37 | 9.5 | 1/4 | 0.25 | 6.4 | 9/16 | 0.56 | 14 | |
| MS35489-4 | AN931-3-5 | 7/16 | 0.437 | 17.4 | 3/16 | 0.187 | 4.7 | 3/16 | 0.187 | 4.7 | 1/16 | 0.062 | 1.6 | 5/16 | 0.312 | 7.9 | 2286-45009 |
| MS35489-5 | AN931-3-10 | 7/8 | 0.875 | 25.4 | 3/16 | 0.187 | 4.7 | 3/16 | 0.187 | 4.7 | 1/16 | 0.062 | 1.6 | 5/8 | 0.625 | 15.9 | 3759-45009 |
| MS35489-34 | AN931-A3-10 | 7/8 | 0.875 | 25.4 | 3/16 | 0.187 | 4.7 | 1/4 | 0.25 | 6.4 | 1/8 | 0.125 | 3.2 | 5/8 | 0.625 | 15.9 | 3760-45009 |
| MS35489-63 | AN931-B3-10 | 7/8 | 0.875 | 25.4 | 3/16 | 0.187 | 4.7 | 5/16 | 0.312 | 7.9 | 3/16 | 0.187 | 4.7 | 5/8 | 0.625 | 15.9 | |
| | AN931-C3-10 | 7/8 | 0.875 | 31.8 | 3/16 | 0.187 | 4.7 | 3/8 | 0.375 | 9.5 | 1/4 | 0.25 | 6.4 | 5/8 | 0.625 | 15.9 | |
| MS35489-6 | AN931-4-7 | 5/8 | 0.625 | 39.7 | 1/4 | 0.25 | 6.4 | 3/16 | 0.187 | 4.7 | 1/16 | 0.062 | 1.6 | 7/16 | 0.437 | 11.1 | 97-45009 |
| MS35489-35 | AN931-A4-7 | 5/8 | 0.625 | 19.1 | 1/4 | 0.25 | 6.4 | 1/4 | 0.25 | 6.4 | 1/8 | 0.125 | 3.2 | 7/16 | 0.437 | 11.1 | 2854-45009 |
| MS35489-64 | AN931-B4-7 | 5/8 | 0.625 | 19.1 | 1/4 | 0.25 | 6.4 | 5/16 | 0.312 | 7.9 | 3/16 | 0.187 | 4.7 | 7/16 | 0.437 | 11.1 | 2754-45009 |
| MS35489-93 | AN931-C4-7 | 5/8 | 0.625 | 31.8 | 1/4 | 0.25 | 6.4 | 3/8 | 0.375 | 9.5 | 1/4 | 0.25 | 6.4 | 7/16 | 0.437 | 11.1 | 2554-45009 |
| MS35489-9 | AN931-5-9 | 13/16 | 0.812 | 15.9 | 5/16 | 0.312 | 7.9 | 5/16 | 0.312 | 7.9 | 1/16 | 0.062 | 1.6 | 9/16 | 0.562 | 14.3 | 2113-45009 |
| MS35489-38 | AN931A-5-9 | 13/16 | 0.812 | 15.9 | 5/16 | 0.312 | 7.9 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 9/16 | 0.562 | 14.3 | 2856-45009 |
| MS35489-67 | AN931-B5-9 | 13/16 | 0.812 | 15.9 | 5/16 | 0.312 | 7.9 | 7/16 | 0.437 | 11.1 | 3/16 | 0.187 | 4.7 | 9/16 | 0.562 | 14.3 | 2756-45009 |
| MS35489-96 | AN931-C5-9 | 13/16 | 0.812 | 25.4 | 5/16 | 0.312 | 7.9 | 1/2 | 0.5 | 12.7 | 1/4 | 0.25 | 6.4 | 9/16 | 0.562 | 14.3 | 2556-45009 |
| | AN930-1 | 11/16 | 0.687 | 31.8 | 3/8 | 0.375 | 9.5 | 9/32 | 0.281 | 7.1 | 1/16 | 0.062 | 1.6 | 1/2 | 0.5 | 12.7 | |
| | AN930-2 | 3/4 | 0.75 | 11.1 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 1/16 | 0.062 | 1.6 | 9/16 | 0.562 | 14.3 | |
| | AN930-3 | 3/4 | 0.75 | 11.1 | 3/8 | 0.375 | 9.5 | 3/4 | 0.75 | 19.1 | 3/8 | 0.375 | 9.5 | 9/16 | 0.562 | 14.3 | |
| MS35489-11 | AN931-6-10 | 7/8 | 0.875 | 31.8 | 3/8 | 0.375 | 9.5 | 5/16 | 0.312 | 7.9 | 1/16 | 0.062 | 1.6 | 5/8 | 0.625 | 15.9 | 2281-45009 |
| MS35489-40 | AN931-A6-10 | 7/8 | 0.875 | 20.6 | 3/8 | 0.375 | 9.5 | 3/8 | 0.375 | 9.5 | 1/8 | 0.125 | 3.2 | 5/8 | 0.625 | 15.9 | 2858-45009 |

ARMY-NAVY APPROVED AN931 GROMMETS

By "B" Dimension



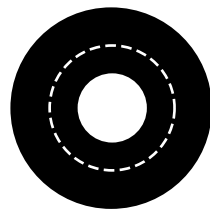
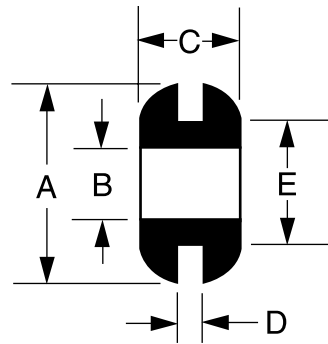
| MS35489 PART NO. | AN931 PART NO. | A | | | B | | | C | | | D | | | E | | | ESTCO Part No. |
|------------------|----------------|------|-------|------|-------|-------|------|--------|-------|------|------|-------|-----|------|-------|------|----------------|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | |
| MS35489-69 | AN931-B6-10 | 3/8 | 0.375 | 9.5 | 5/8 | 0.625 | 15.9 | 7/8 | 0.875 | 22.2 | 3/16 | 0.187 | 4.7 | 7/16 | 0.437 | 11.1 | 2758-45009 |
| MS35489-98 | AN931-C6-10 | 3/8 | 0.375 | 9.5 | 5/8 | 0.625 | 15.9 | 7/8 | 0.875 | 22.2 | 1/4 | 0.25 | 6.4 | 1/2 | 0.5 | 12.7 | 2558-45009 |
| MS35489-13 | AN931-7-11 | 7/16 | 0.437 | 11.1 | 11/16 | 0.687 | 17.4 | 15/16 | 0.937 | 23.8 | 1/16 | 0.062 | 1.6 | 5/16 | 0.312 | 7.9 | 2282-45009 |
| MS35489-42 | AN931-A7-11 | 7/16 | 0.437 | 11.1 | 11/16 | 0.687 | 17.4 | 15/16 | 0.937 | 23.8 | 1/8 | 0.125 | 3.2 | 3/8 | 0.375 | 9.5 | 2860-45009 |
| MS35489-71 | AN931-B7-11 | 7/16 | 0.437 | 11.1 | 11/16 | 0.687 | 17.4 | 15/16 | 0.937 | 23.8 | 3/16 | 0.187 | 4.7 | 7/16 | 0.437 | 11.1 | 2760-45009 |
| MS35489-100 | AN931-C7-11 | 7/16 | 0.437 | 11.1 | 11/16 | 0.687 | 17.4 | 15/16 | 0.937 | 23.8 | 1/4 | 0.25 | 6.4 | 1/2 | 0.5 | 12.7 | 2560-45009 |
| MS35489-150 | AN930-4 | 1/2 | 0.5 | 12.7 | 3/4 | 0.75 | 19.1 | 1 | 1 | 25.4 | 3/32 | 0.093 | 2.4 | 9/32 | 0.281 | 7.1 | |
| MS35489-7 | AN931-4-12 | 1/4 | 0.25 | 6.4 | 3/4 | 0.75 | 19.1 | 1 | 1 | 25.4 | 1/16 | 0.062 | 1.6 | 1/4 | 0.25 | 6.4 | 3761-45009 |
| MS35489-36 | AN931-A4-12 | 1/4 | 0.25 | 6.4 | 3/4 | 0.75 | 19.1 | 1 | 1 | 25.4 | 1/8 | 0.125 | 3.2 | 5/16 | 0.312 | 7.9 | 3762-45009 |
| MS35489-65 | AN931-B4-12 | 1/4 | 0.25 | 6.4 | 3/4 | 0.75 | 19.1 | 1 | 1 | 25.4 | 3/16 | 0.187 | 4.7 | 3/8 | 0.375 | 9.5 | |
| MS35489-94 | AN931-C4-12 | 1/4 | 0.25 | 6.4 | 3/4 | 0.75 | 19.1 | 1 | 1 | 25.4 | 1/4 | 0.25 | 6.4 | 7/16 | 0.437 | 11.1 | |
| MS35489-10 | AN931-5-12 | 5/16 | 0.312 | 7.9 | 3/4 | 0.75 | 19.1 | 1 | 1 | 25.4 | 1/16 | 0.062 | 1.6 | 5/16 | 0.312 | 7.9 | 2280-45009 |
| MS35489-39 | AN931A-5-12 | 5/16 | 0.312 | 7.9 | 3/4 | 0.75 | 19.1 | 1 | 1 | 25.4 | 1/8 | 0.125 | 3.2 | 3/8 | 0.375 | 9.5 | 2857-45009 |
| MS35489-68 | AN931-B5-12 | 5/16 | 0.312 | 7.9 | 3/4 | 0.75 | 19.1 | 1 | 1 | 25.4 | 3/16 | 0.187 | 4.7 | 7/16 | 0.437 | 11.1 | 2757-45009 |
| MS35489-97 | AN931-C5-12 | 5/16 | 0.312 | 7.9 | 3/4 | 0.75 | 19.1 | 1 | 1 | 25.4 | 1/4 | 0.25 | 6.4 | 1/2 | 0.5 | 12.7 | 2557-45009 |
| MS35489-118 | AN931-5-13 | 5/16 | 0.312 | 7.9 | 13/16 | 0.812 | 20.6 | 1 1/16 | 1.062 | 27 | 1/16 | 0.062 | 1.6 | 5/16 | 0.312 | 7.9 | 3834-45009 |
| MS35489-122 | AN931-A5-13 | 5/16 | 0.312 | 7.9 | 13/16 | 0.812 | 20.6 | 1 1/16 | 1.062 | 27 | 1/8 | 0.125 | 3.2 | 3/8 | 0.375 | 9.5 | 3835-45009 |
| | AN931-B5-13 | 5/16 | 0.312 | 7.9 | 13/16 | 0.812 | 20.6 | 1 1/16 | 1.062 | 27 | 3/16 | 0.187 | 4.7 | 7/16 | 0.437 | 11.1 | 3836-45009 |
| | AN931-C5-13 | 5/16 | 0.312 | 7.9 | 13/16 | 0.812 | 20.6 | 1 1/16 | 1.062 | 27 | 1/4 | 0.25 | 6.4 | 1/2 | 0.5 | 12.7 | 3837-45009 |
| MS35489-14 | AN931-8-13 | 1/2 | 0.5 | 12.7 | 13/16 | 0.812 | 20.6 | 1 1/16 | 1.062 | 27 | 1/16 | 0.062 | 1.6 | 5/16 | 0.312 | 7.9 | 2283-45009 |
| MS35489-43 | AN931-A8-13 | 1/2 | 0.5 | 12.7 | 13/16 | 0.812 | 20.6 | 1 1/16 | 1.062 | 27 | 1/8 | 0.125 | 3.2 | 3/8 | 0.375 | 9.5 | 2861-45009 |
| MS35489-72 | AN931-B8-13 | 1/2 | 0.5 | 12.7 | 13/16 | 0.812 | 20.6 | 1 1/16 | 1.062 | 27 | 3/16 | 0.187 | 4.7 | 7/16 | 0.437 | 11.1 | 2761-45009 |
| MS35489-83 | AN931-C8-13 | 1/2 | 0.5 | 12.7 | 13/16 | 0.812 | 20.6 | 1 1/16 | 1.062 | 27 | 1/4 | 0.25 | 6.4 | 1/2 | 0.5 | 12.7 | 2774-45009 |
| MS35489-16 | AN931-9-13 | 9/16 | 0.562 | 14.3 | 13/16 | 0.812 | 20.6 | 1 1/16 | 1.062 | 27 | 1/16 | 0.062 | 1.6 | 5/16 | 0.312 | 7.9 | 2295-45009 |
| MS35489-101 | AN931-A9-13 | 9/16 | 0.562 | 14.3 | 13/16 | 0.812 | 20.6 | 1 1/16 | 1.062 | 27 | 1/8 | 0.125 | 3.2 | 3/8 | 0.375 | 9.5 | 2561-45009 |
| MS35489-74 | AN931-B9-13 | 9/16 | 0.562 | 14.3 | 13/16 | 0.812 | 20.6 | 1 1/16 | 1.062 | 27 | 3/16 | 0.187 | 4.7 | 7/16 | 0.437 | 11.1 | 2763-45009 |
| MS35489-103 | AN931-C9-13 | 9/16 | 0.562 | 14.3 | 13/16 | 0.812 | 20.6 | 1 1/16 | 1.062 | 27 | 1/4 | 0.25 | 6.4 | 1/2 | 0.5 | 12.7 | 2563-45009 |
| MS35489-17 | AN931-10-14 | 5/8 | 0.625 | 15.9 | 7/8 | 0.875 | 22.2 | 1 1/8 | 1.125 | 28.6 | 1/16 | 0.062 | 1.6 | 5/16 | 0.312 | 7.9 | 2285-45009 |
| MS35489-46 | AN931-A10-14 | 5/8 | 0.625 | 15.9 | 7/8 | 0.875 | 22.2 | 1 1/8 | 1.125 | 28.6 | 1/8 | 0.125 | 3.2 | 3/8 | 0.375 | 9.5 | 2864-45009 |
| MS35489-75 | AN931-B10-14 | 5/8 | 0.625 | 15.9 | 7/8 | 0.875 | 22.2 | 1 1/8 | 1.125 | 28.6 | 3/16 | 0.187 | 4.7 | 7/16 | 0.437 | 11.1 | 2764-45009 |
| MS35489-104 | AN931-C10-14 | 5/8 | 0.625 | 15.9 | 7/8 | 0.875 | 22.2 | 1 1/8 | 1.125 | 28.6 | 1/4 | 0.25 | 6.4 | 1/2 | 0.5 | 12.7 | 2564-45009 |
| MS35489-3 | AN931-2-16 | 1/8 | 0.125 | 3.2 | 1 | 1 | 25.4 | 1 1/4 | 1.25 | 31.8 | 1/16 | 0.062 | 1.6 | 1/4 | 0.25 | 6.4 | 2297-45009 |
| MS35489-32 | AN931-A2-16 | 1/8 | 0.125 | 3.2 | 1 | 1 | 25.4 | 1 1/4 | 1.25 | 31.8 | 1/8 | 0.125 | 3.2 | 5/16 | 0.312 | 7.9 | 2851-45009 |
| MS35489-61 | AN931-B2-16 | 1/8 | 0.125 | 3.2 | 1 | 1 | 25.4 | 1 1/4 | 1.25 | | | | | | | | |



ARMY-NAVY APPROVED AN931 GROMMETS

By "B" Dimension

- AN931 TO PROCUREMENT SPECIFICATION AN-G-21
- ARMY-NAVY STANDARD GROMMETS
- RUBBER, HOT-OIL & COOLANT RESISTANT MATERIAL SPECIFICATION: MIL-G-3036
- Purchasing grommets under this specification should include a waiver of the samples test and affidavits required by revision MIL-G-3036. Our packing slip contains a certification of material with each shipment. In the event the very strict testing requirements of revision MIL-G-3036 are required, there will be an extra charge for laboratory expenses.



| MS35489 PART NO. | AN931 PART NO. | A | | | B | | | C | | | D | | | E | | | ESTCO Part No. |
|------------------|----------------|-------|-------|------|--------|-------|------|--------|-------|------|------|-------|-----|------|-------|------|----------------|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | |
| MS35489-12 | AN931-6-16 | 3/8 | 0.375 | 9.5 | 1 | 1 | 25.4 | 1 1/4 | 1.25 | 31.8 | 1/16 | 0.062 | 1.6 | 1/4 | 0.25 | 6.4 | 2299-45009 |
| MS35489-41 | AN931-A6-16 | 3/8 | 0.375 | 9.5 | 1 | 1 | 25.4 | 1 1/4 | 1.25 | 31.8 | 1/8 | 0.125 | 3.2 | 5/16 | 0.312 | 7.9 | 2859-45009 |
| | AN931-B6-16 | 3/8 | 0.375 | 9.5 | 1 | 1 | 25.4 | 1 1/4 | 1.25 | 31.8 | 3/16 | 0.187 | 4.7 | 3/8 | 0.375 | 9.5 | |
| MS35489-99 | AN931-C6-16 | 3/8 | 0.375 | 9.5 | 1 | 1 | 25.4 | 1 1/4 | 1.25 | 31.8 | 1/4 | 0.25 | 6.4 | 7/16 | 0.437 | 11.1 | |
| MS35489-19 | AN931-11-16 | 11/16 | 0.687 | 17.4 | 1 | 1 | 25.4 | 1 5/16 | 1.312 | 33.3 | 1/16 | 0.062 | 1.6 | 3/8 | 0.375 | 9.5 | 2273-45009 |
| MS35489-48 | AN931-A11-16 | 11/16 | 0.687 | 17.4 | 1 | 1 | 25.4 | 1 5/16 | 1.312 | 33.3 | 1/8 | 0.125 | 3.2 | 7/16 | 0.437 | 11.1 | 2866-45009 |
| MS35489-77 | AN931-B11-16 | 11/16 | 0.687 | 17.4 | 1 | 1 | 25.4 | 1 5/16 | 1.312 | 33.3 | 3/16 | 0.187 | 4.7 | 1/2 | 0.5 | 12.7 | 2766-45009 |
| MS35489-106 | AN931-C11-16 | 11/16 | 0.687 | 17.4 | 1 | 1 | 25.4 | 1 5/16 | 1.312 | 33.3 | 1/4 | 0.25 | 6.4 | 9/16 | 0.563 | 14.3 | 2566-45009 |
| MS35489-20 | AN931-12-17 | 3/4 | 0.75 | 19.1 | 1 1/16 | 1.062 | 27 | 1 3/8 | 1.375 | 34.9 | 1/16 | 0.062 | 1.6 | 3/8 | 0.375 | 9.5 | 804-45009 |
| MS35489-49 | AN931-A12-17 | 3/4 | 0.75 | 19.1 | 1 1/16 | 1.062 | 27 | 1 3/8 | 1.375 | 34.9 | 1/8 | 0.125 | 3.2 | 7/16 | 0.437 | 11.1 | 2867-45009 |
| MS35489-78 | AN931-B12-17 | 3/4 | 0.75 | 19.1 | 1 1/16 | 1.062 | 27 | 1 3/8 | 1.375 | 34.9 | 3/16 | 0.187 | 4.7 | 1/2 | 0.5 | 12.7 | 2767-45009 |
| MS35489-107 | AN931-C12-17 | 3/4 | 0.75 | 19.1 | 1 1/16 | 1.062 | 27 | 1 3/8 | 1.375 | 34.9 | 1/4 | 0.25 | 6.4 | 9/16 | 0.563 | 14.3 | 2567-45009 |
| | AN930-21 | 7/8 | 0.875 | 22.2 | 1 1/4 | 1.25 | 31.8 | 1 9/16 | 1.562 | 39.7 | 3/16 | 0.187 | 4.7 | 3/4 | 0.75 | 19.1 | |
| MS35489-15 | AN931-8-20 | 1/2 | 0.5 | 12.7 | 1 1/4 | 1.25 | 31.8 | 1 1/2 | 1.5 | 38.1 | 1/16 | 0.062 | 1.6 | 1/4 | 0.25 | 6.4 | 2284-45009 |
| MS35489-44 | AN931-A8-20 | 1/2 | 0.5 | 12.7 | 1 1/4 | 1.25 | 31.8 | 1 1/2 | 1.5 | 38.1 | 1/8 | 0.125 | 3.2 | 5/16 | 0.312 | 7.9 | 2862-45009 |
| MS35489-73 | AN931-B8-20 | 1/2 | 0.5 | 12.7 | 1 1/4 | 1.25 | 31.8 | 1 1/2 | 1.5 | 38.1 | 3/16 | 0.187 | 4.7 | 3/8 | 0.375 | 9.5 | 2762-45009 |
| MS35489-102 | AN931-C8-20 | 1/2 | 0.5 | 12.7 | 1 1/4 | 1.25 | 31.8 | 1 1/2 | 1.5 | 38.1 | 1/4 | 0.25 | 6.4 | 7/16 | 0.437 | 11.1 | |
| MS35489-18 | AN931-10-20 | 5/8 | 0.625 | 15.9 | 1 1/4 | 1.25 | 31.8 | 1 1/2 | 1.5 | 38.1 | 1/16 | 0.062 | 1.6 | 1/4 | 0.25 | 6.4 | 2296-45009 |
| MS35489-47 | AN931-A10-20 | 5/8 | 0.625 | 15.9 | 1 1/4 | 1.25 | 31.8 | 1 1/2 | 1.5 | 38.1 | 1/8 | 0.125 | 3.2 | 5/16 | 0.312 | 7.9 | |
| MS35489-76 | AN931-B10-20 | 5/8 | 0.625 | 15.9 | 1 1/4 | 1.25 | 31.8 | 1 1/2 | 1.5 | 38.1 | 3/16 | 0.187 | 4.7 | 3/8 | 0.375 | 9.5 | 2765-45009 |
| | AN931-C10-20 | 5/8 | 0.625 | 15.9 | 1 1/4 | 1.25 | 31.8 | 1 1/2 | 1.5 | 38.1 | 1/4 | 0.25 | 6.4 | 7/16 | 0.437 | 11.1 | |
| MS35489-135 | AN931-12-20 | 3/4 | 0.75 | 19.1 | 1 1/4 | 1.25 | 31.8 | 1 5/8 | 1.625 | 41.3 | 1/16 | 0.062 | 1.6 | 1/4 | 0.25 | 6.4 | 2274-45009 |
| MS35489-123 | AN931-A12-20 | 3/4 | 0.75 | 19.1 | 1 1/4 | 1.25 | 31.8 | 1 5/8 | 1.625 | 41.3 | 1/8 | 0.125 | 3.2 | 5/16 | 0.312 | 7.9 | 2868-45009 |
| MS35489-126 | AN931-B12-20 | 3/4 | 0.75 | 19.1 | 1 1/4 | 1.25 | 31.8 | 1 5/8 | 1.625 | 41.3 | 3/16 | 0.187 | 4.7 | 3/8 | 0.375 | 9.5 | 2768-45009 |
| MS35489-131 | AN931-C12-20 | 3/4 | 0.75 | 19.1 | 1 1/4 | 1.25 | 31.8 | 1 5/8 | 1.625 | 41.3 | 1/4 | 0.25 | 6.4 | 7/16 | 0.437 | 11.1 | 2568-45009 |
| MS35489-22 | AN931-14-20 | 7/8 | 0.875 | 22.2 | 1 1/4 | 1.25 | 31.8 | 1 5/8 | 1.625 | 41.3 | 1/16 | 0.062 | 1.6 | 7/16 | 0.437 | 11.1 | 2276-45009 |
| MS35489-51 | AN931-A14-20 | 7/8 | 0.875 | 22.2 | 1 1/4 | 1.25 | 31.8 | 1 5/8 | 1.625 | 41.3 | 1/8 | 0.125 | 3.2 | 1/2 | 0.5 | 12.7 | 2870-45009 |
| MS35489-80 | AN931-B14-20 | 7/8 | 0.875 | 22.2 | 1 1/4 | 1.25 | 31.8 | 1 5/8 | 1.625 | 41.3 | 3/16 | 0.187 | 4.7 | 9/16 | 0.563 | 14.3 | 2770-45009 |
| MS35489-109 | AN931-C14-20 | 7/8 | 0.875 | 22.2 | 1 1/4 | 1.25 | 31.8 | 1 5/8 | 1.625 | 41.3 | 1/4 | 0.25 | 6.4 | 5/8 | 0.625 | 15.9 | 2570-45009 |

ARMY-NAVY APPROVED AN931 GROMMETS

By "B" Dimension



| MS35489 PART NO. | AN931 PART NO. | A | | | B | | | C | | | D | | | E | | | ESTCO Part No. |
|------------------|----------------|-------|-------|------|--------|-------|------|---------|-------|------|------|-------|-----|------|-------|------|----------------|
| | | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | |
| MS35489-23 | AN931-16-22 | 1 | 1 | 25.4 | 1 3/8 | 1.375 | 34.9 | 1 3/4 | 1.75 | 44.5 | 1/16 | 0.062 | 1.6 | 7/16 | 0.437 | 11.1 | 2277-45009 |
| MS35489-52 | AN931-A16-22 | 1 | 1 | 25.4 | 1 3/8 | 1.375 | 34.9 | 1 3/4 | 1.75 | 44.5 | 1/8 | 0.125 | 3.2 | 1/2 | 0.5 | 12.7 | 2872-45009 |
| MS35489-81 | AN931-B16-22 | 1 | 1 | 25.4 | 1 3/8 | 1.375 | 34.9 | 1 3/4 | 1.75 | 44.5 | 3/16 | 0.187 | 4.7 | 9/16 | 0.563 | 14.3 | 2772-45009 |
| MS35489-110 | AN931-C16-22 | 1 | 1 | 25.4 | 1 3/8 | 1.375 | 34.9 | 1 3/4 | 1.75 | 44.5 | 1/4 | 0.25 | 6.4 | 5/8 | 0.625 | 15.9 | 2572-45009 |
| MS35489-21 | AN931-12-23 | 3/4 | 0.75 | 19.1 | 1 7/16 | 1.437 | 36.5 | 1 13/16 | 1.812 | 46 | 1/16 | 0.062 | 1.6 | 3/8 | 0.375 | 9.5 | 2275-45009 |
| MS35489-50 | AN931-A12-23 | 3/4 | 0.75 | 19.1 | 1 7/16 | 1.437 | 36.5 | 1 13/16 | 1.812 | 46 | 1/8 | 0.125 | 3.2 | 7/16 | 0.437 | 11.1 | 2869-45009 |
| | AN931-B12-23 | 3/4 | 0.75 | 19.1 | 1 7/16 | 1.437 | 36.5 | 1 13/16 | 1.812 | 46 | 3/16 | 0.187 | 4.7 | 1/2 | 0.5 | 12.7 | |
| MS35489-168 | AN931-C12-23 | 3/4 | 0.75 | 19.1 | 1 7/16 | 1.437 | 36.5 | 1 13/16 | 1.812 | 46 | 1/4 | 0.25 | 6.4 | 9/16 | 0.563 | 14.3 | |
| MS35489-120 | AN931-12-26 | 3/4 | 0.75 | 19.1 | 1 5/8 | 1.625 | 41.3 | 2 | 2 | 50.8 | 1/16 | 0.062 | 1.6 | 3/8 | 0.375 | 9.5 | |
| MS35489-124 | AN931-A12-26 | 3/4 | 0.75 | 19.1 | 1 5/8 | 1.625 | 41.3 | 2 | 2 | 50.8 | 1/8 | 0.125 | 3.2 | 7/16 | 0.437 | 11.1 | |
| | AN931-B12-26 | 3/4 | 0.75 | 19.1 | 1 5/8 | 1.625 | 41.3 | 2 | 2 | 50.8 | 3/16 | 0.187 | 4.7 | 1/2 | 0.5 | 12.7 | |
| | AN931-C12-26 | 3/4 | 0.75 | 19.1 | 1 5/8 | 1.625 | 41.3 | 2 | 2 | 50.8 | 1/4 | 0.25 | 6.4 | 9/16 | 0.563 | 14.3 | |
| MS35489-121 | AN931-14-26 | 7/8 | 0.875 | 22.2 | 1 5/8 | 1.625 | 41.3 | 2 | 2 | 50.8 | 1/16 | 0.062 | 1.6 | 7/16 | 0.437 | 11.1 | 2300-45009 |
| MS35489-125 | AN931-A14-26 | 7/8 | 0.875 | 22.2 | 1 5/8 | 1.625 | 41.3 | 2 | 2 | 50.8 | 1/8 | 0.125 | 3.2 | 1/2 | 0.5 | 12.7 | 2871-45009 |
| | AN931-B14-26 | 7/8 | 0.875 | 22.2 | 1 5/8 | 1.625 | 41.3 | 2 | 2 | 50.8 | 3/16 | 0.187 | 4.7 | 9/16 | 0.563 | 14.3 | |
| | AN931-C14-26 | 7/8 | 0.875 | 22.2 | 1 5/8 | 1.625 | 41.3 | 2 | 2 | 50.8 | 1/4 | 0.25 | 6.4 | 5/8 | 0.625 | 15.9 | |
| MS35489-27 | AN931-24-28 | 1 1/2 | 1.5 | 38.1 | 1 3/4 | 1.75 | 44.5 | 2 1/8 | 2.125 | 54 | 1/16 | 0.062 | 1.6 | 7/16 | 0.437 | 11.1 | 2278-45009 |
| MS35489-56 | AN931-A24-28 | 1 1/2 | 1.5 | 38.1 | 1 3/4 | 1.75 | 44.5 | 2 1/8 | 2.125 | 54 | 1/8 | 0.125 | 3.2 | 1/2 | 0.5 | 12.7 | 2875-45009 |
| MS35489-85 | AN931-B24-28 | 1 1/2 | 1.5 | 38.1 | 1 3/4 | 1.75 | 44.5 | 2 1/8 | 2.125 | 54 | 3/16 | 0.187 | 4.7 | 9/16 | 0.563 | 14.3 | 2775-45009 |
| MS35489-114 | AN931-C24-28 | 1 1/2 | 1.5 | 38.1 | 1 3/4 | 1.75 | 44.5 | 2 1/8 | 2.125 | 54 | 1/4 | 0.25 | 6.4 | 5/8 | 0.625 | 15.9 | 2575-45009 |
| MS35489-24 | AN931-16-30 | 1 | 1 | 25.4 | 1 7/8 | 1.875 | 47.6 | 2 1/4 | 2.25 | 57.2 | 1/16 | 0.062 | 1.6 | 7/16 | 0.437 | 11.1 | 2301-45009 |
| MS35489-53 | AN931-A16-30 | 1 | 1 | 25.4 | 1 7/8 | 1.875 | 47.6 | 2 1/4 | 2.25 | 57.2 | 1/8 | 0.125 | 3.2 | 1/2 | 0.5 | 12.7 | 2873-45009 |
| MS35489-82 | AN931-B16-30 | 1 | 1 | 25.4 | 1 7/8 | 1.875 | 47.6 | 2 1/4 | 2.25 | 57.2 | 3/16 | 0.187 | 4.7 | 9/16 | 0.563 | 14.3 | |
| MS35489-111 | AN931-C16-30 | 1 | 1 | 25.4 | 1 7/8 | 1.875 | 47.6 | 2 1/4 | 2.25 | 57.2 | 1/4 | 0.25 | 6.4 | 5/8 | 0.625 | 15.9 | 2573-45009 |
| MS35489-25 | AN931-20-38 | 1 1/4 | 1.25 | 31.8 | 2 3/8 | 2.375 | 60.3 | 2 3/4 | 2.75 | 69.9 | 1/16 | 0.062 | 1.6 | 7/16 | 0.437 | 11.1 | 2302-45009 |
| MS35489-54 | AN931-A20-38 | 1 1/4 | 1.25 | 31.8 | 2 3/8 | 2.375 | 60.3 | 2 3/4 | 2.75 | 69.9 | 1/8 | 0.125 | 3.2 | 7/16 | 0.437 | 11.1 | 2874-45009 |
| MS35489-83 | AN931-B20-38 | 1 1/4 | 1.25 | 31.8 | 2 3/8 | 2.375 | 60.3 | 2 3/4 | 2.75 | 69.9 | 3/16 | 0.187 | 4.7 | 9/16 | 0.563 | 14.3 | 2774-45009 |
| MS35489-112 | AN931-C20-38 | 1 1/4 | 1.25 | 31.8 | 2 3/8 | 2.375 | 60.3 | 2 3/4 | 2.75 | 69.9 | 1/4 | 0.25 | 6.4 | 5/8 | 0.625 | 15.9 | 2574-45009 |
| MS35489-26 | AN931-20-40 | 1 1/4 | 1.2 | 30.5 | 2 1/2 | 2.5 | 63.5 | 2 7/8 | 2.875 | 73 | 1/16 | 0.062 | 1.6 | 7/16 | 0.437 | 11.1 | |
| MS35489-55 | AN931-A20-40 | 1 1/4 | 1.25 | 31.8 | 2 1/2 | 2.5 | 63.5 | 2 7/8 | 2.875 | 73 | 1/8 | 0.125 | 3.2 | 7/16 | 0.437 | 11.1 | |
| | AN931-B20-40 | 1 1/4 | 1.25 | 31.8 | 2 1/2 | 2.5 | 63.5 | 2 7/8 | 2.875 | 73 | 3/16 | 0.187 | 4.7 | 9/16 | 0.563 | 14.3 | |
| | AN931-C20-40 | 1 1/4 | 1.25 | 31.8 | 2 1/2 | 2.5 | 63.5 | 2 7/8 | 2.875 | 73 | 1/4 | 0.25 | 6.4 | 5/8 | 0.625 | 15.9 | |
| MS35489-28 | AN931-24-44 | 1 1/2 | 1.5 | 38.1 | 2 3/4 | 2.75 | 69.9 | 3 1/4 | 3.25 | 82.6 | 1/16 | 0.062 | 1.6 | 7/16 | 0.437 | 11.1 | 3995-45009 |
| MS35489-57 | AN931-A24-44 | 1 1/ | | | | | | | | | | | | | | | |

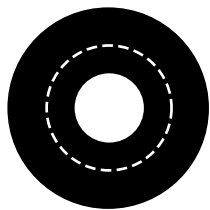
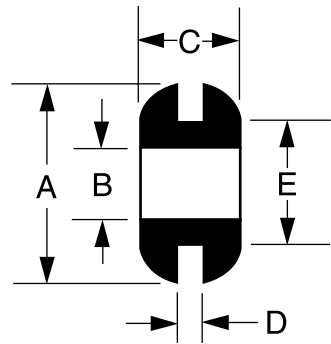


ARMY-NAVY APPROVED AN931 GROMMETS

By "B" Dimension

- AN931 TO PROCUREMENT SPECIFICATION AN-G-21
- ARMY-NAVY STANDARD GROMMETS
- RUBBER, HOT-OIL & COOLANT RESISTANT MATERIAL SPECIFICATION: MIL-G-3036
- Purchasing grommets under this specification should include a waiver of the samples test and affidavits required by revision MIL-G-3036. Our packing slip contains a certification of material with each shipment. In the event the very strict testing requirements of revision MIL-G-3036 are required, there will be an extra charge for laboratory expenses.

| PART NO. | A | | | B | | | C | | | D | | | E | | |
|--------------|-------|------|------|-------|------|------|-------|------|-------|------|-------|-----|-------|-------|------|
| | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM | Inch | Dec | MM |
| AN931-C28-52 | 1 3/4 | 1.75 | 44.5 | 3 1/4 | 3.25 | 82.6 | 3 3/4 | 3.75 | 95.3 | 1/4 | 0.25 | 6.4 | 11/16 | 0.687 | 17.4 |
| AN931-32-56 | 2 | 2 | 50.8 | 3 1/2 | 3.5 | 88.9 | 4 | 4 | 101.6 | 1/16 | 0.062 | 1.6 | 1/2 | 0.5 | 12.7 |
| AN931-A32-56 | 2 | 2 | 50.8 | 3 1/2 | 3.5 | 88.9 | 4 | 4 | 101.6 | 1/8 | 0.125 | 3.2 | 9/16 | 0.563 | 14.3 |
| AN931-B32-56 | 2 | 2 | 50.8 | 3 1/2 | 3.5 | 88.9 | 4 | 4 | 101.6 | 3/16 | 0.187 | 4.7 | 5/8 | 0.625 | 15.9 |
| AN931-C32-56 | 2 | 2 | 50.8 | 3 1/2 | 3.5 | 88.9 | 4 | 4 | 101.6 | 1/4 | 0.25 | 6.4 | 11/16 | 0.687 | 17.4 |



UP NEXT...

RUBBER FEET

RUBBER FEET



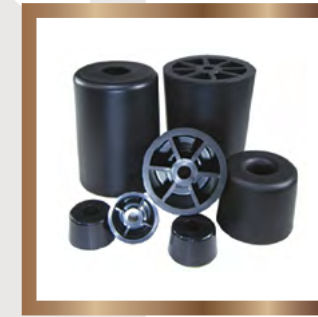
Cable Straps
3-3



Collapsible Tilt Stands
3-4



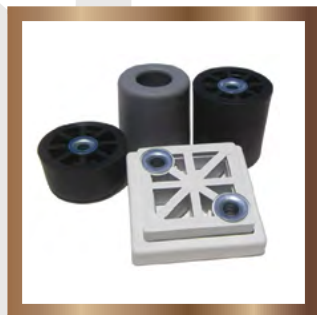
Rectangular Thermoplastic Rubber Feet
3-7



Round Polyethylene (PE) Feet
3-8



Crutch Tips
3-5



Misc. Thermoplastic Rubber Feet
3-6



Round Thermoplastic Rubber Feet
3-9



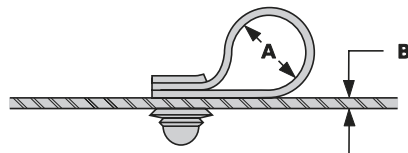
Square Thermoplastic Rubber Feet
3-10



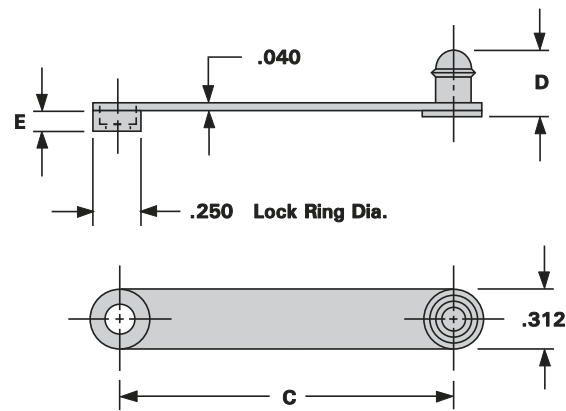
CABLE STRAPS

- Designed as a quick and efficient method for attaching small wire bundles, cable, tubing, etc. to sheet metal. Simply snap the ring end into the specified diameter hole, position wiring, fold strap over and lock in place.
- Stock Material:** Ethylene-Vinyl Acetate Copolymer
- Stock Colors:** Medium Gray
- RoHS:** Compliant

| PART NUMBER | LOOP DIAMETER A | MAXIMUM MATERIAL THICKNESS B | LENGTH BETWEEN CENTERS C | HEAD HEIGHT D | LOCK RING HEIGHT E |
|-------------|-----------------|------------------------------|--------------------------|---------------|--------------------|
| TPR-4-4-1 | 1/4 | .062 | 1-1/4 | .344 | .105 |
| TPR-4-7-1 | 3/8 | .062 | 1-3/4 | .344 | .105 |
| TPR-4-10-1 | 9/16 | .062 | 2-3/8 | .344 | .105 |
| TPR-4-10-2 | 9/16 | .093 | 2-3/8 | .375 | .136 |



4-7-1 Actual Size



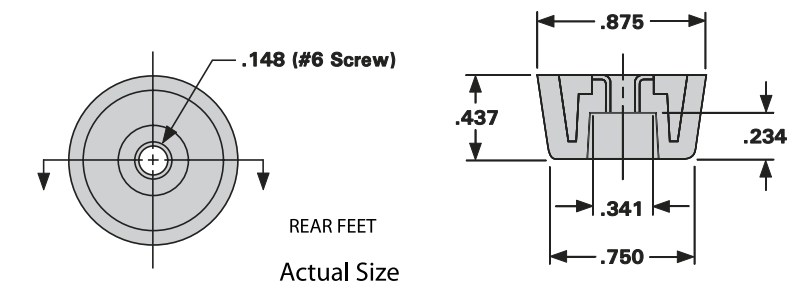
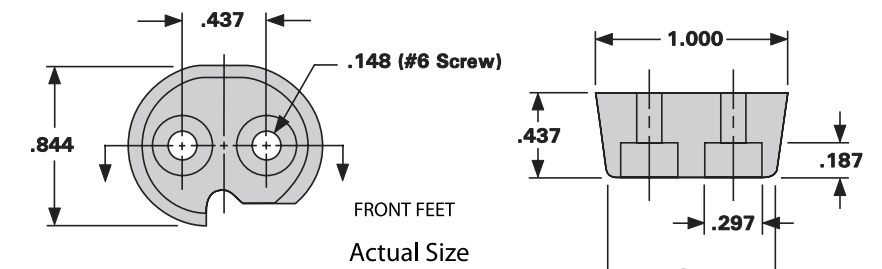
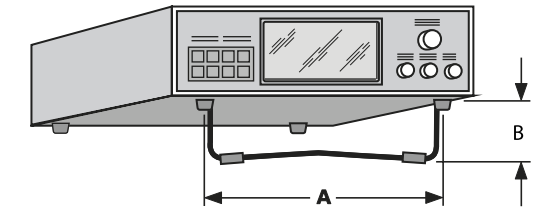
COLLAPSIBLE TILT STANDS



| PART NUMBER | FEET MOUNTING CENTERS A | Height A |
|----------------|-------------------------|----------|
| TPR-CTS 3.6 | 3 | 2 |
| TPR-CTS 5-1/2 | 5-1/2 | 1-1/2 |
| TPR-CTS 5-1/2 | 5-1/2 | 2-1/2 |
| TPR-CTS 7 | 7 | 2 |
| TPR-CTS 7 | 7 | 2-1/2 |
| TPR-CTS 7 | 7 | 3 |
| TPR-CTS 10 | 10 | 2-1/2 |
| TPR-CTS 10 | 10 | 3 |
| TPR-CTS 11-1/4 | 11-1/4 | 3 |
| TPR-CTS 12 | 12 | 2-1/2 |
| TPR-CTS 15-1/2 | 15-1/2 | 2-1/2 |



- Set consists of four low-profile molded feet and steel stand snaps into the upright position, and when not in use, the tilt stand folds flat against cabinetry, storage or stacking. Skid resistant rear feet help keep instrument in place without marking.
- Collapsible Tilt Stand includes:
 - (2) Front feet, black nylon (F-034-N-B, R & L Foot)
 - (2) Rear feet, black thermoplastic rubber (MF6-1T)
 - (1) Tilt stand, steel with black epoxy finish and two Neoprene rubber bumpers.
- RoHS:** Compliant

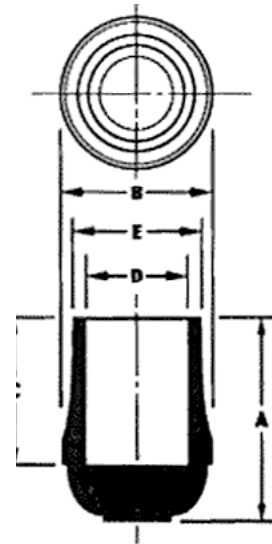


CRUTCH TIPS - TYPE CT

| PART NO. | A | B | C | D | E |
|----------|---------|-------|--------|-------|--------|
| CT-15 | 1 | 3/4 | 27/32 | 3/8 | 17/32 |
| CT-16 | 1-3/16 | 7/8 | 29/32 | 1/2 | 5/8 |
| CT-17 | 1-9/32 | 15/16 | 1 | 19/32 | 23/32 |
| CT-18 | 1-3/8 | 1-1/8 | 1 | 23/32 | 7/8 |
| CT-19 | 1-11/32 | 1-1/4 | 1-1/16 | 13/16 | 31/32 |
| CT-20 | 1-3/8 | 1-3/8 | 1 | 15/16 | 1-3/32 |



- Highly Wet-Slip Resistant Tread Greatly Reduces Slipping Especially On Wet Surfaces.
- Tips are available in six sizes to fit cane shafts that are 3/8" to 15/16" diameter.

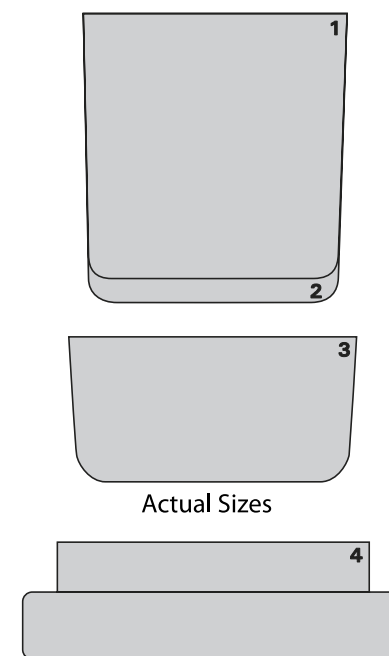


MISCELLANEOUS THERMOPLASTIC RUBBER FEET

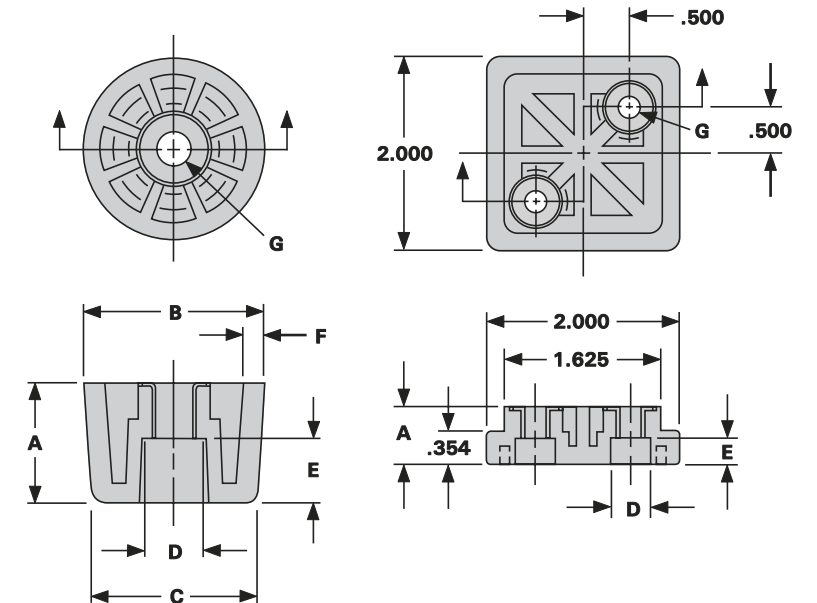
- Molded from "Thermoplastic Rubber" Cabinet Feet provide good traction, excellent shock absorbing qualities and unlike natural rubber they have good non-marking qualities and outstanding resistance to stress cracking. A Trivalent Chromate plated steel Support Bushing absorbs the total fastener load allowing the foot to be mounted using a variety of screws or rivets without causing distortion to the foot itself. Excellent resistance to ozone, aging and most chemicals. Available in any color on special order.

| PART NUMBER | DWG No. | Height A | Dia. B | Dia. C | Recess Dia. D | Recess Depth E | Outer Wall F | Insert I.D. & Screw Size T.H (Truss Head) R.H (Round Head) G | No S/B Through Hole I.D. G |
|-------------|---------|----------|--------|--------|---------------|----------------|--------------|--|----------------------------|
| TPR-F-060- | 1 | 1.375 | 1.375 | 1.303 | .594 | .890 | .150 | .211 #10 Truss Head | .252 |
| TPR-F-061- | 4 | .600 | N/A | N/A | .413 | .288 | N/A | .215 #10 Truss Head | .260 |
| TPR-F-063- | 2 | 1.500 | 1.375 | 1.297 | .594 | 1.015 | .150 | .211 #10 Truss Head | .252 |
| TPR-F-066- | N/A | .700 | .750 | .710 | .338 | .405 | .082 | .178 #8 Truss Head | .205 |
| TPR-F-067- | 3 | .648 | 1.621 | 1.553 | .518 | .336 | .130 | .202 #10 Truss Head | .201 |
| TPR-F-068- | N/A | 1.135 | 1.621 | 1.503 | .518 | .823 | .130 | .178 #8 Truss Head | .201 |

- **Stock Material:** Monsanto Santoprene (87 shore A)
- **Stock Colors:** Black or Medium Gray
- **RoHS:** Parts are RoHS Compliant.



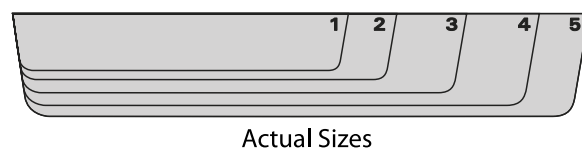
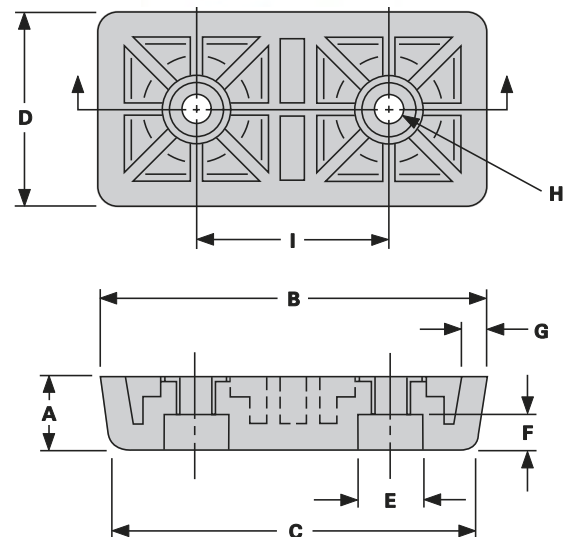
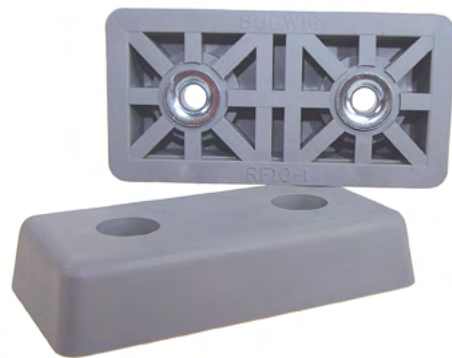
Actual Sizes



RECTANGULAR THERMOPLASTIC RUBBER FEET WITH STEEL SUPPORT BUSHING



| PART NUMBER | KEY NO. | Height A | Length B | Length C | Width D | Recess Dia. E | Recess Depth F | Outer Wall G | Insert I.D. & Screw Size H | Lug Dia. I | *Weight Capacity (per foot) |
|-------------|---------|----------|----------|----------|---------|---------------|----------------|--------------|----------------------------|------------|-----------------------------|
| TPR-RF6T | 1 | .344 | 1.768 | 1.672 | .885 | .333 | .142 | .095 | .148 #6 Truss Head | .875 | TBD |
| TPR-RF6-1 | 2 | .390 | 2.022 | 1.912 | 1.005 | .333 | .187 | .125 | .148 #6 Truss Head | 1.000 | TBD |
| TPR-RF8T | 3 | .465 | 2.380 | 2.250 | 1.187 | .409 | .176 | .142 | .178 #8 Truss Head | 1.187 | TBD |
| TPR-RF10T | 4 | .528 | 2.777 | 2.629 | 1.375 | .472 | .202 | .172 | .215 #10 Truss Head | 1.375 | TBD |
| TPR-RF10-1 | 5 | .590 | 3.000 | 2.834 | 1.510 | .472 | .280 | .190 | .215 #10 Truss Head | 1.500 | TBD |



- Molded from "Thermoplastic Rubber" Cabinet Feet provide good traction, excellent shock absorbing qualities and unlike natural rubber they have good non-marking qualities and outstanding resistance to stress cracking. A Trivalent Chromate plated steel Support Bushing absorbs the total fastener load allowing the foot to be mounted using a variety of screws or rivets without causing distortion to the foot itself. Excellent resistance to ozone, aging and most chemicals. Available in any color on special order.

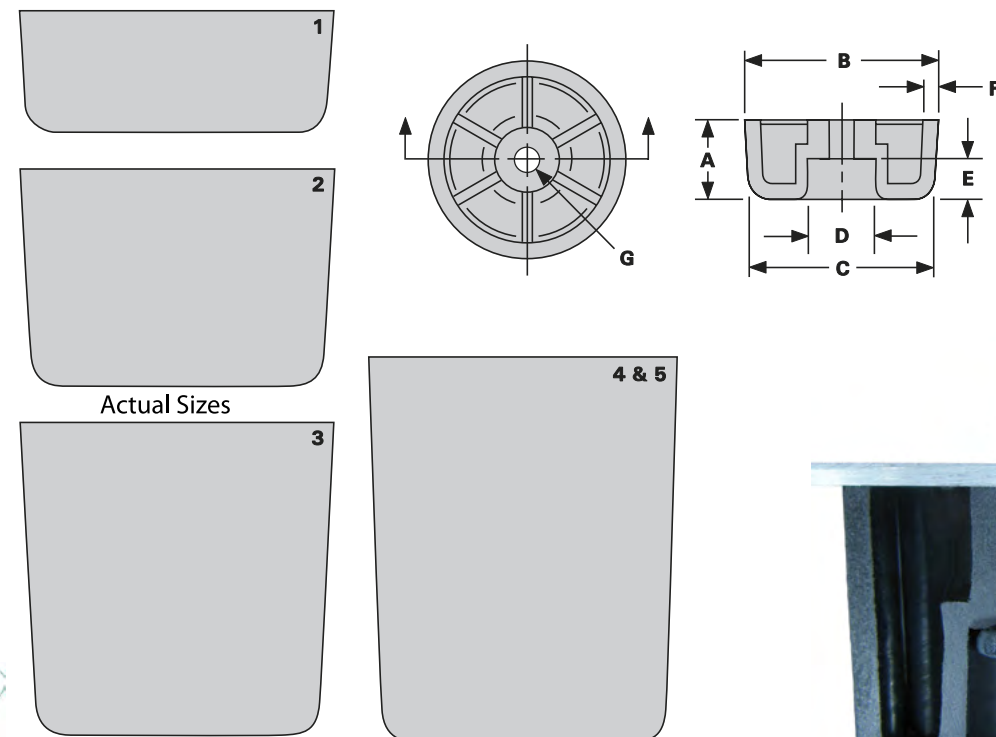
- Stock Material:** Monsanto Santoprene (87 shore A)
- Stock Colors:** Black or Medium Gray
- RoHS:** Parts are RoHS Compliant.



ROUND POLYETHYLENE RUBBER FEET (PE)

- Molded from "Thermoplastic Rubber" Cabinet Feet provide good traction, excellent shock absorbing qualities and unlike natural rubber they have good non-marking qualities and outstanding resistance to stress cracking. A Trivalent Chromate plated steel Support Bushing absorbs the total fastener load allowing the foot to be mounted using a variety of screws or rivets without causing distortion to the foot itself. Excellent resistance to ozone, aging and most chemicals. Available in any color on special order.

- Stock Material:** Monsanto Santoprene (87 shore A)
- Stock Colors:** Black or Medium Gray
- RoHS:** Parts are RoHS Compliant.



| PART NUMBER | DWG No. | Height A | Dia. B | Dia. C | Recess Dia. D | Recess Depth E | Outer Wall F | Insert I.D. & Screw Size T.H. (Truss Head) R.H. (Round Head) G | No S/B Through Hole I.D. G |
|-------------|---------|----------|--------|--------|---------------|----------------|--------------|--|----------------------------|
| TPR-F-069- | 3 | 1.621 | 1.621 | 1.451 | .518 | 1.390 | .130 | N/A | .201 |
| TPR-F-070- | N/A | 2.255 | 1.668 | 1.500 | .541 | 1.880 | .130 | N/A | .267 |
| TPR-F-071- | 4 | 2.000 | 1.625 | 1.485 | .478 | .823 | .150 | N/A | .192 |
| TPR-F-072- | 5 | 2.000 | 1.625 | 1.485 | .478 | 1.250 | .130 | N/A | .192 |
| TPR-F-073- | N/A | .980 | 1.250 | 1.160 | .391 | .500 | .093 | N/A | .194 |
| TPR-F-074- | 2 | 1.00 | 1.100 | 1.000 | .510 | .705 | .110 | #10 & .25 Truss / Round Head | .258 |
| TPR-F-075- | N/A | .419 | .625 | .585 | .345 | .250 | N/A | #8 Truss / Round Head | .200 |



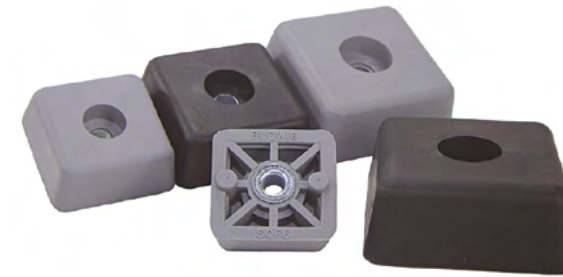
ROUND THERMOPLASTIC RUBBER FEET WITH STEEL SUPPORT BUSHING



| PART NUMBER | KEY NO. | Height A | Dia. B | Dia. C | Recess Dia. D | Recess Depth E | Outer Wall F | Insert I.D. & Screw Size T.H (Truss Head) | No S/B Through Hole I.D. G |
|-------------|---------|----------|--------|--------|---------------|----------------|--------------|---|----------------------------|
| SF6T- | 1 | .250 | .687 | .652 | .336 | .160 | .076 | .155 #6 T.H. | .172 |
| SF8T- | 2 | .312 | .875 | .831 | .399 | .187 | .096 | .186 #8 T.H. | .204 |
| SF8-1T- | 2a | .375 | .875 | .812 | .368 | .250 | .093 | .186 #8 R.H. | .204 |
| SF10T- | 3 | .437 | 1.062 | 1.000 | .468 | .229 | .115 | .201 #10 T.H. | .236 |
| SF10-1T- | 4 | .500 | 1.312 | 1.242 | .528 | .184 | .144 | .215 #10 T.H. | .261 |
| SF10-2T- | 5 | .562 | 1.625 | 1.547 | .524 | .250 | .179 | .215 #10 T.H. | .261 |
| MF4T- | 6 | .312 | .625 | .537 | .312 | .127 | .065 | .108 #4 T.H. | .135 |
| MF6T- | 7 | .375 | .750 | .644 | .334 | .177 | .090 | .148 #6 T.H. | .173 |
| MF6-1T- | 8 | .437 | .875 | .753 | .322 | .225 | .114 | .148 #6 T.H. | .173 |
| MF8T- | 9 | .531 | 1.062 | .997 | .408 | .230 | .125 | .178 #8 T.H. | .210 |
| MF10T- | 10a | .625 | 1.250 | 1.174 | .475 | .328 | .140 | .215 #10 T.H. | .261 |
| MF10-2T- | 10b | .750 | 1.500 | 1.140 | .475 | .460 | .170 | .215 #10 T.H. | .261 |
| TF4T- | 11 | .370 | .553 | .449 | .207 | .187 | .062 | .108 #4 R.H. | .136 |
| TF6T- | 12 | .437 | .750 | .628 | .272 | .237 | .085 | .148 #6 R.H. | .171 |
| TF8T- | 13 | .625 | .932 | .844 | .359 | .327 | .110 | .178 #8 R.H. | .208 |
| TF10T- | 14 | .875 | 1.125 | 1.035 | .525 | .392 | .125 | .211 #10 T.H. | .251 |
| TF10-1T- | 15 | 1.125 | 1.250 | 1.132 | .550 | .636 | .138 | .211 #10 T.H. | .251 |
| L6- | 16 | .703 | 1.010 | .760 | N/A | N/A | .078 | .150 #6 R.H. | N/A |

- Molded from "Thermoplastic Rubber" Cabinet Feet provide good traction, excellent shock absorbing qualities and unlike natural rubber they have good non-marking qualities and outstanding resistance to stress cracking. A Trivalent Chromate plated steel Support Bushing absorbs the total fastener load allowing the foot to be mounted using a variety of screws or rivets without causing distortion to the foot itself. Excellent resistance to ozone, aging and most chemicals. Available in any color on special order.

- Stock Material:** Monsanto Santoprene (87 shore A)
- Stock Colors:** Black or Medium Gray
- RoHS:** Parts are RoHS Compliant.



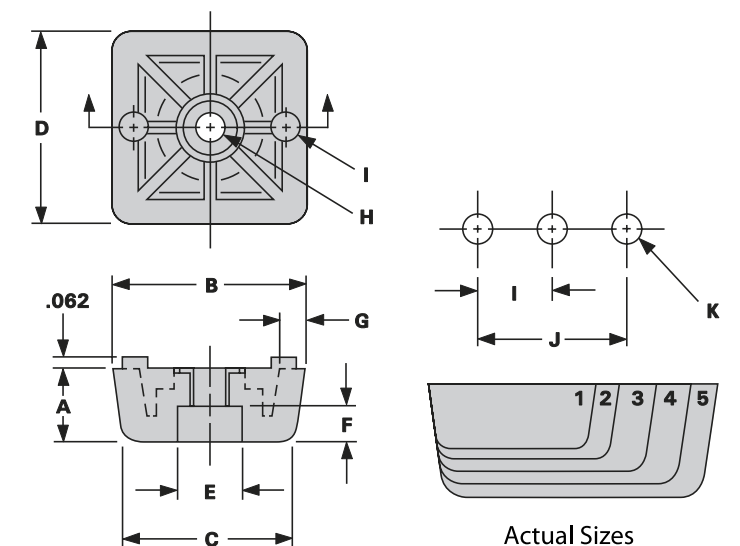
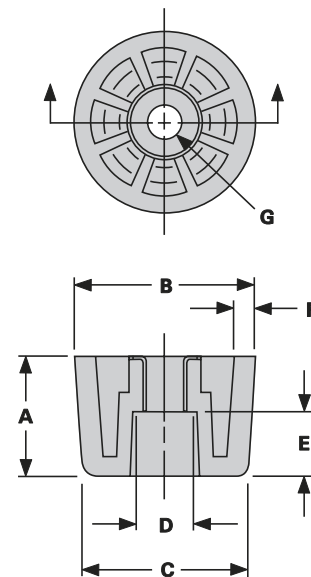
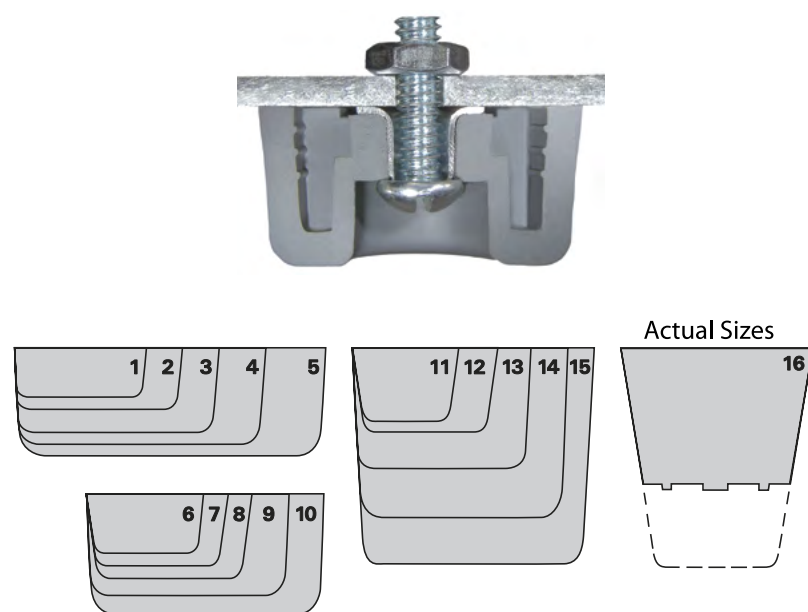
SQUARE THERMOPLASTIC RUBBER FEET WITH STEEL SUPPORT BUSHING

- Molded from "Thermoplastic Rubber" Cabinet Feet provide good traction, excellent shock absorbing qualities and unlike natural rubber they have good non-marking qualities and outstanding resistance to stress cracking. A Trivalent Chromate plated steel Support Bushing absorbs the total fastener load allowing the foot to be mounted using a variety of screws or rivets without causing distortion to the foot itself. Excellent resistance to ozone, aging and most chemicals. Available in any color on special order.

- Stock Material:** Monsanto Santoprene (87 shore A)
- Stock Colors:** Black or Medium Gray
- RoHS:** Parts are RoHS Compliant.

| PART NUMBER | KEY NO. | Height A | Width B & D | Width C | Recess Dia. E | Recess Depth F | Outer Wall G | Insert I.D. & Screw Size H | Lug Dia. I | *Weight Capacity (per foot) |
|-------------|---------|----------|-------------|---------|---------------|----------------|--------------|----------------------------|------------|-----------------------------|
| TPR-SQF6T | 1 | .344 | .890 | .794 | .333 | .142 | .095 | .148 #6 Truss Head | .150 | TBD |
| TPR-SQF6-1 | 2 | .390 | 1.000 | .890 | .333 | .187 | .125 | .148 #6 Truss Head | .150 | TBD |
| TPR-SQF8T | 3 | .460 | 1.187 | 1.059 | .409 | .168 | .145 | .178 #8 Truss Head | .180 | TBD |
| TPR-SQF10T | 4 | .522 | 1.375 | 1.229 | .472 | .202 | .172 | .215 #10 Truss Head | .210 | TBD |
| TPR-SQF10-1 | 5 | .590 | 1.500 | 1.336 | .472 | .275 | .190 | .215 #10 Truss Head | .210 | TBD |

| PART NUMBER | MOUNTING HOLES | | |
|-------------|----------------|---------|---------------------|
| | ±.008 I | ±.005 J | +.004 -.000 K |
| TPR-SQF6T | .328 | .656 | .154 (#23 Drill) |
| TPR-SQF6-1 | .390 | .781 | .154 (#23 Drill) |
| TPR-SQF8T | .453 | .906 | .185 (#13 Drill) |
| TPR-SQF10T | .531 | 1.062 | .219 (7/32 Drill) |
| TPR-SQF10-1 | .593 | 1.187 | .219 (7/32 Drill) |



SEAL, PLUG & FLASH MASTER

SEAL AND PLUG



Seal In / Seal Out Washers
4-3 - 4-4



Plug Master-Fastening, Sealing, Cushioning System
4-5

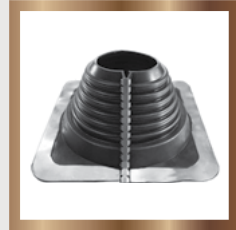
FLASH MASTER



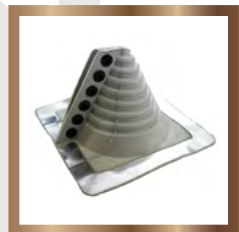
Standard Flash Master
4-6



Universal Flash Master
4-7



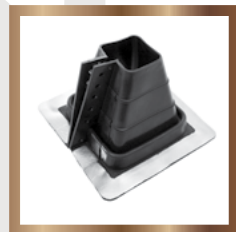
Multi-Flash Flash Master
4-8



Standard Retrofit Flash Master
4-9



Universal Retrofit Flash Master
4-10

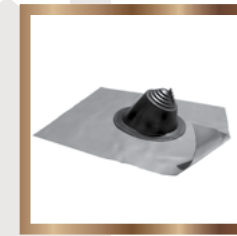


Square Vent Flash Master
4-11

FLASH MASTER CONTINUED



Residential Flash Master
4-12



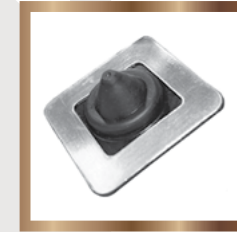
Res-Lead Flash Master
4-13



Master-Cap Flash Master
4-14



Solar-Flash Flash Master
4-15



Mini Standard Flash Master
4-15



Multi-Port Flash Master
4-16



NEW 35 YEAR Flash Master
4-17



SEAL MASTER

“Washers are More than just Washers”

- Quality elastomeric compounding to meet specifications for elasticity, memory, temperature extremes, chemical-, ozone-, and sunlight-resistance.
- Conical design directs flow of facing materials to form a seal conforming to both fastener and sealing surface.
- Full-face design cushions fragile surfaces and minimizes vibration.
- Inside diameter sizes for #4 diameter screw to 1 1/2" diameter bolts and corresponding metric range.
- Outside diameter sizes from 1/4" to 3" and corresponding metric range.
- Choice of an infinite number of backing materials.
- Choice of various colors and finishes available.
- Choice of various facing materials.

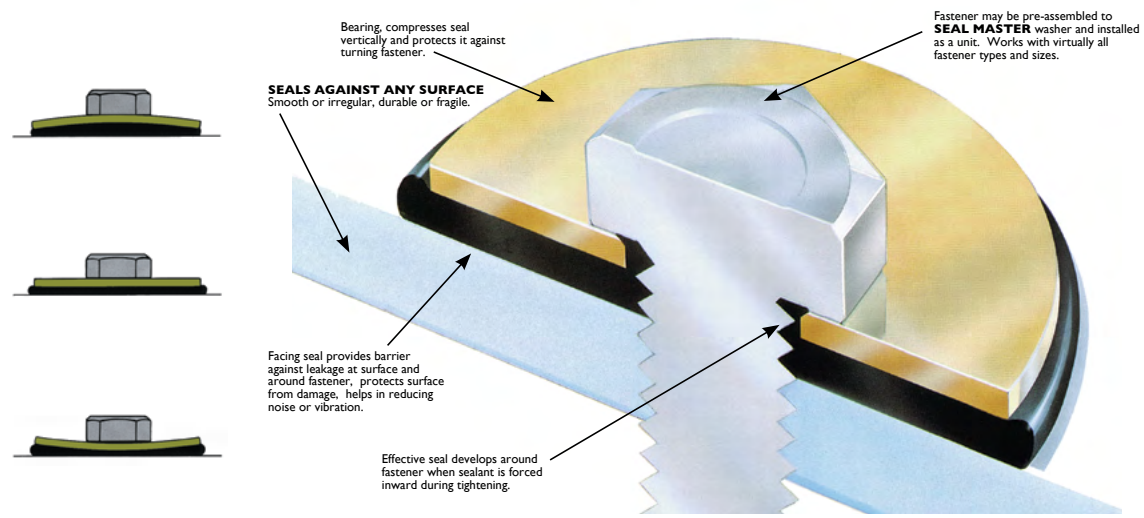
BACKING MATERIALS:

- Galvanized Steel
- Aluminum
- Stainless Steel
- 316 Stainless Steel

| SCREW & BOLT SIZE | BACKING INNER DIAMETER | OUTER DIAMETER | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|------------------------|----------------|---------------|----|---------|------|------|-------|------|------|----|--------|--------|--------|--------|--------|--------|--------|----|--------|--------|--------|----|---|---|
| | | mm | U.S. Standard | mm | Decimal | 1/4" | 3/8" | 7/16" | 1/2" | 3/4" | 1" | 1 1/8" | 1 1/4" | 1 3/8" | 1 1/2" | 1 5/8" | 1 3/4" | 1 7/8" | 2" | 2 1/4" | 2 1/2" | 2 3/4" | 3" | | |
| 2.9 | #4 | 3.3 | .120 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 3.5 | #6 | 3.8 | .150 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 4.2 | #8 | 4.6 | .180 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 4.8 | #10 | 5.1 | .200 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | X |
| 5.5 | #12 | 6.1 | .230* | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 6.3 | #14 | 7.0 | .260* | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 7.5 | #17 | 7.7 | .305 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 8.0 | 5/16" | 8.4 | .330 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 9.5 | 3/8" | 11.0 | .410* | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 11.1 | 7/16" | 12.1 | .475 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 12.7 | 1/2" | 13.5 | .532 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 14.0 | 9/16" | 15.2 | .600 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 15.9 | 5/8" | 16.5 | .650 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 17.5 | 11/16" | 18.8 | .720 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 19.0 | 3/4" | 20.6 | .810 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 22.2 | 7/8" | 23.1 | .910 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 25.4 | 1" | 26.4 | 1.050 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 27.0 | 1-1/16" | 28.0 | 1.100 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 28.6 | 1-1/8" | 29.6 | 1.150 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 30.2 | 1-3/16" | 31.0 | 1.220 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 31.8 | 1-1/4" | 32.8 | 1.275 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 40.0 | 1-9/16" | 40.6 | 1.6 | . | . | S | S | X | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | X |

* Only available from stock with this inside diameter. **We suggest standard sizes for economy and availability**

- **STANDARD OUTSIDE DIAMETERS**
- s **SPECIAL ORDER: TOOLING CHARGE AND/OR MINIMUM ORDER REQUIRED**
- x **NONSTANDARD ITEM: MINIMUM ORDER REQUIRED (TOOLING AVAILABLE)**



MORE SEAL MASTER AND PLUG MASTER INFORMATION...

SEAL IN... OR SEAL OUT
When installed in a sealing application, the materials in ESTCO's SEAL MASTER washer compress against either a flexible or an inflexible surface to permanently seal in or seal out any operating environment, whether natural or industrial. Facing materials are engineered to provide optimal resistance to weathering from ozone, ultraviolet light and/or chemical agents.

ESTCO can perform to your specifications or our experienced engineers can assist you in developing a specification for your application.

- ESTCO's unique SEAL MASTER products are designed to provide a permanent seal in a wide variety of applications, including:
- Metal roofs and siding where the expansion and contraction of metal require a permanent resilient seal.
 - Dishwashers - to avoid leaks.
 - Marine - structural and electronic.
 - Air filters - dust control.
 - Automotive - air cleaner assemblies, engine block heater, emission control equipment, body sealing.

- Other useful applications include:**
- Small and large appliances, such as vacuum cleaners and refrigerators.
 - Heating ventilation/air conditioning (HVAC) equipment.
 - Silos and tanks for liquids and solids.
 - Exhaust systems.
 - Panels and enclosures.
 - Environmentally controlled areas.

CUSHIONING AND VIBRATION CONTROL
Twenty-five years of proven experience in testing and retesting compounded formulas have led to the perfection of ESTCO's SEAL MASTER washers. Our washers possess extraordinary elasticity and memory when used in cushioning and vibration control applications.

As the washer is compressed and fastened against a substrate, the facing material serves as a permanent cushion. This feature protects the substrate from installation damage (spinning fastener and/or torque) and from vibration damage during the product's life cycle.

When utilized for cushioning, SEAL MASTER washers are especially effective on glass, plastic, fiberglass, porcelain and painted surfaces. The cushioning effect eliminates crazing, chipping and marring.

- SEAL MASTER washers solve a variety of problems in numerous applications, including:
- Archery - protects sensitive compound bow sights.
 - Motorcycles - protects fairings and components.
 - Noise Control - electro-mechanical automotive devices and motor mounts for spray paint and other equipment
 - Fragile surfaces - where cracking, cracking and chipping are problems.

- Other applications include:**
- Glass and mirror installations. Architectural panels.

SILICON-BRONZE, COPPER, COR-TEN® and other special property metals are available for use in specific industrial applications and for aesthetics in architectural exposures.

NON-METALLIC backings, from phenolics to plastics, have been used in electronic and other environments where metals cannot be used.

FACING MATERIALS
ESTCO offers a variety of facing materials to address the distinctly different operating environments to which SEAL MASTER washers are exposed.

EPDM (Ethylene Propylene Diene Terpolymer) is an excellent, low-cost, ozone and weather resistant elastomer which possesses superior aging characteristics. It is also extremely effective when application requirements dictate heat resistance up to 350°F. Although use of EPDM in direct contact with petrochemicals is not recommended for construction applications where the primary hazards are ozone, ultraviolet radiation and temperature extremes, EPDM is the consistent elastomer of choice.

NEOPRENE® (Polychloroprene), one of the earliest, and perhaps best known of the manmade elastomers, is still one of the most versatile facing materials for sealing and cushioning washers. When properly formulated, it is highly resistant to sunlight, ozone, weathering and aging, while enjoying good memory and elasticity. Although its particular strength lies in its resistance to petrochemicals and certain other chemical families, Neoprene is a generalist - performing well in a myriad of applications. When direct contact with petrochemicals is of greater concern than direct U. V., Neoprene will do the job.

SILICONE elastomers address the next tier of sealing washer applications. Temperature extremes from -115°F TO +480°F, exposures to specific chemical environments, or repeated sterilization cycles make Silicone the most economical, high-performance choice.

FLUOROSILICONES, VITONS, etc.
ESTCO works with the most current elastomeric compounds for today's most demanding rubber seal applications. These higher-cost exotics are intended to address only the most demanding and specific application criteria.

NON-ELASTOMERIC facings include asbestos substitutes, cork, fiber and malleable metals, each useful in select applications.

As each new application requires a specific combination of performance and cost factors, we cannot list specifications for all uses. Our applications engineers and chemists are prepared to discuss your requirements and to deliver years of experience, just for the asking!



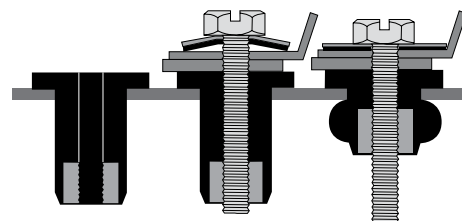
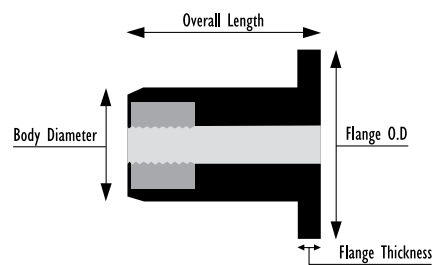
PLUG MASTER

Threaded Insert - Fastening, Sealing, Cushioning System.



PLUG MASTER SIZE CHART

| PART NUMBER | | GRIP RANGE | | BODY DIAMETER | | OVERALL LENGTH | | FLANGE O.D | | FLANGE THICKNESS | | TORQUE | TENSILE |
|--------------|----------|------------|-------|---------------|--------|----------------|--------|------------|--------|------------------|--------|----------|----------|
| U.S. | METRIC | MIN | MAX | U.S. | METRIC | U.S. | METRIC | U.S. | METRIC | U.S. | METRIC | (In-lbs) | Pull Out |
| PM-6-32 S | PM-M3S | 0.015 | 0.187 | 0.250 | 6.3mm | 0.562 | 14mm | 0.485 | 12.1mm | 0.062 | 1.6mm | 3.0 | 110.0 |
| PM-6-32 L | PM-M3L | 0.312 | 0.625 | 0.250 | 6.3 | 1.095 | 27.8 | 0.485 | 12.1 | 0.062 | 1.6 | 4.0 | 110.0 |
| PM-6-32 PDI | PM-M3PDI | 0.062 | 0.087 | 0.312 | 8 | 0.562 | 14 | 0.485 | 12.1 | 0.062 | 1.6 | 5.0 | 450.0 |
| PM-8-32 S | PM-M4S | 0.062 | 0.087 | 0.312 | 8 | 0.562 | 14 | 0.485 | 12.1 | 0.062 | 1.6 | 3.0 | 120.0 |
| PM-8-32 L | PM-M4L | 0.375 | 0.875 | 0.312 | 8 | 1.312 | 33 | 0.550 | 13.9 | 0.062 | 1.6 | 5.0 | 110.0 |
| PM-10-32 S | PM-M5S | 0.066 | 0.202 | 0.375 | 9.5 | 0.680 | 16 | 0.550 | 14 | 0.080 | 1.6 | 6.0 | 300.0 |
| PM-10-32 F | PM-M5F | 0.093 | 0.375 | 0.375 | 9.5 | 0.865 | 22 | 0.550 | 13.9 | 0.040 | 1.0 | 5.0 | 350.0 |
| PM-10-32 L | PM-M5L | 0.750 | 1.062 | 0.375 | 9.5 | 1.590 | 40 | 0.605 | 15.4 | 0.090 | 2.3 | 10.0 | 800.0 |
| PM-14-20 S | PM-M6S | 0.062 | 0.312 | 0.490 | 12.5 | 0.845 | 21 | 0.800 | 20.3 | 0.095 | 2.4 | 10.0 | 575.0 |
| PM-14-20 SX | PM-M6SX | 0.031 | 0.187 | 0.490 | 12.5 | 0.845 | 21 | 0.720 | 18.3 | 0.185 | 4.7 | 10.0 | 225.0 |
| PM-14-20 SXX | PM-M6SXX | 0.093 | 0.375 | 0.490 | 12.5 | 0.845 | 21 | 0.610 | 15.5 | 0.050 | 1.3 | 15.0 | 875.0 |
| PM-14-20 J | PM-M6J | 0.125 | 0.450 | 0.490 | 12.5 | 1.062 | 27 | 0.610 | 15.5 | 0.050 | 1.3 | 15.0 | 1250.0 |
| PM-14-20 JX | PM-M6JX | 0.125 | 0.450 | 0.490 | 12.5 | 1.260 | 32 | 0.735 | 18.7 | 0.240 | 6.1 | 15.0 | 200.0 |
| PM-14-20 R | PM-M6R | 0.375 | 0.625 | 0.490 | 12.5 | 1.275 | 32.4 | 0.835 | 21.2 | 0.100 | 2.5 | 10.0 | 425.0 |
| PM-14-20 L | PM-M6L | 0.375 | 0.750 | 0.490 | 12.5 | 1.850 | 47 | 0.970 | 24.6 | 0.110 | 2.8 | 20.0 | 950.0 |
| PM-5/16-18 S | PM-M8S | 0.024 | 0.150 | 0.610 | 15.5 | 0.840 | 21 | 0.970 | 24.6 | 0.110 | 2.8 | 25.0 | 775.0 |
| PM-5/16-18 R | PM-M8R | 0.250 | 0.750 | 0.610 | 15.5 | 1.625 | 41 | 1.200 | 30.5 | 0.125 | 3.2 | 15.0 | 425.0 |
| PM-3/8-16 S | PM-M10S | 0.024 | 0.437 | 0.740 | 18.8 | 1.062 | 27 | 1.220 | 31 | 0.125 | 3.2 | 30.0 | 1125.0 |
| PM-3/8-16 SX | PM-M10SX | 0.032 | 0.406 | 0.740 | 18.8 | 1.062 | 27 | 1.205 | 30.6 | 0.190 | 4.8 | 20.0 | 475.0 |



ADAPTABILITY...

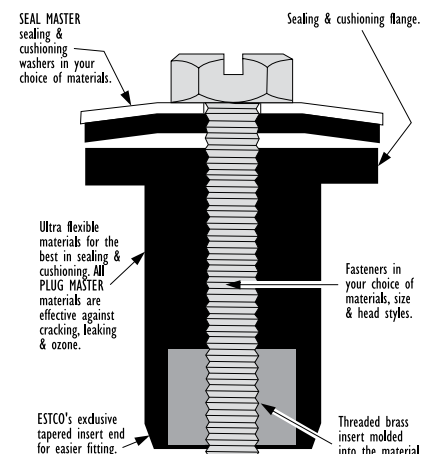
- Fastens blind holes and closed-end holes Cushions and seals similar and non-similar materials
- Absorbs vibration and seals both sides
- Tapered design enhances fastening installation
- Won't crack with ozone and ultra violet exposure

VERSATILITY...

- Removable and re-insertable
- Installs with conventional tools
- Works as a system with SEAL MASTER washers
- Flange thickness always in proportion to size
- Grip range covers all dimensions.

AVAILABILITY...

- Almost any color
- 12 Standard sizes and 6 fastener diameters
- EPDM. Custom materials may be available, please consult ESTCO.



STANDARD FLASH MASTER

ISO Quality, Price & Availability

TWO COMPOUNDS/ 11 SIZES & 10 COLORS

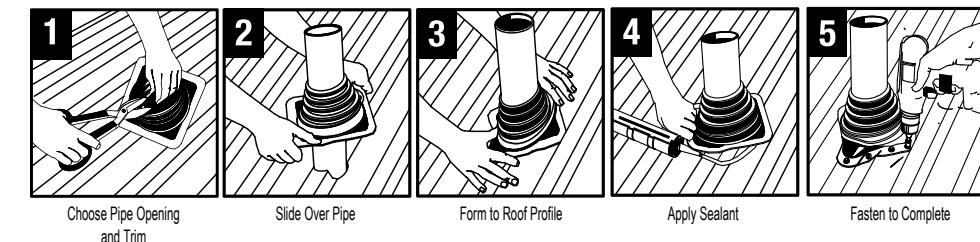


"Available in two compounds to handle virtually all job applications"

| ADVANCED OZONE RESISTANCE tested to... | EPDM 70 hour @ 500 pphm | SILICONE 70 hour @ 500 pphm |
|---|------------------------------------|------------------------------------|
| HIGH TEMPERATURE RESISTANCE Tested to Intermittent Continuous | +135°C (+275°F) +100°C (+212°F) | +260°C (+500°F) +225°C (+437°F) |
| LOW TEMPERATURE RESISTANCE tested to... | -55°C (-67°F) | -74°C (-101°F) |
| TENSILE SET maximum | 10MPa (1450 psi) | 5 MPa (700 psi) |
| COMPRESSION SET maximum... | 25% | 50% |

*Complete specification data and testing methods are available upon request.

| | PIPE SIZE | COMPOUND | PART NO. | FLASHING DETAILS | |
|-------------|---------------------------------------|------------|------------|------------------|--|
| Mini | 1/8" - 3/4" (3.2mm - 19.1mm) | BLACK EPDM | FM-SQ051BA | | A-Top opening diameter 1/16" (1.6mm) B-Cut to suit pipe size 1/8" - 3/4" (3.2-19.1mm) C-Base dimensions 2 - 1/4" (57.2mm) |
| #1 | 1/4" - 2-3/4" (6.4mm - 70mm) | BLACK EPDM | FM-SQ101BA | | A-Top opening diameter Closed B-Cut to suit pipe size 1/4" - 2-3/4" (6.4 - 70mm) C-Base dimensions 4-1/2" (114.3mm) |
| | | GREY EPDM | FM-SQ101GA | | |
| | | SILICONE | FM-SQ102RA | | |
| #2 | 7/8" - 4" (22mm - 101.5mm) | BLACK EPDM | FM-SQ201BA | | A-Top opening diameter 7/8" (22.2mm) B-Cut to suit pipe size 7/8" - 4" (25 - 101.5mm) C-Base dimensions 6" (152.4mm) |
| | | GREY EPDM | FM-SQ201GA | | |
| | | SILICONE | FM-SQ202RA | | |
| #3 | 1/4" - 5-3/4" (6.3mm - 146mm) | BLACK EPDM | FM-SQ301BA | | A-Top opening diameter Closed B-Cut to suit pipe size 1/4" - 5-3/4" (6.3 - 146mm) C-Base dimensions 8" (203.2mm) |
| | | GREY EPDM | FM-SQ301GA | | |
| | | SILICONE | FM-SQ302RA | | |
| #4 | 2-3/4" - 7" (70mm - 177.8mm) | BLACK EPDM | FM-SQ401BA | | A-Top opening diameter 2-3/4" (70mm) B-Cut to suit pipe size 2-3/4" - 7" (70 - 177.8mm) C-Base dimensions 10" (254mm) |
| | | GREY EPDM | FM-SQ401GA | | |
| | | SILICONE | FM-SQ402RA | | |
| #5 | 4" - 8-1/4" (102mm - 209.5mm) | BLACK EPDM | FM-SQ501BA | | A-Top opening diameter 4" (102mm) B-Cut to suit pipe size 4" - 8-1/4" (102 - 209.5mm) C-Base dimensions 11" (279.4mm) |
| | | GREY EPDM | FM-SQ501GA | | |
| | | SILICONE | FM-SQ502RA | | |
| #6 | 4-3/4" - 10" (121mm - 254mm) | BLACK EPDM | FM-SQ601BA | | A-Top opening diameter 4-3/4" (121mm) B-Cut to suit pipe size 4-3/4" - 10" (121 - 254mm) C-Base dimensions 12" (304.8mm) |
| | | GREY EPDM | FM-SQ601GA | | |
| | | SILICONE | FM-SQ602RA | | |
| #7 | 5-1/2" - 11-1/2" (140mm - 292mm) | BLACK EPDM | FM-SQ701BA | | A-Top opening diameter 5-1/2" (140mm) B-Cut to suit pipe size 5-1/2" - 11-1/2" (140 - 292mm) C-Base dimensions 14" (355.6mm) |
| | | GREY EPDM | FM-SQ701GA | | |
| | | SILICONE | FM-SQ702RA | | |
| #8 | 6-3/4" - 13-1/2" (171.4mm - 343mm) | BLACK EPDM | FM-SQ801BA | | A-Top opening diameter 6-3/4" (171.4mm) B-Cut to suit pipe size 6-3/4" - 13-1/2" (171.4 - 343mm) C-Base dimensions 17" (431.8mm) |
| | | GREY EPDM | FM-SQ801GA | | |
| | | SILICONE | FM-SQ802RA | | |
| #9 | 9-1/2" - 20-1/2" (241mm - 520mm) | BLACK EPDM | FM-SQ901BA | | A-Top opening diameter 9-1/2" (241mm) B-Cut to suit pipe size 9-1/2" - 20-1/2" (241-520mm) C-Base dimensions 25" (635mm) |
| | | GREY EPDM | FM-SQ901GA | | |
| | | SILICONE | FM-SQ902RA | | |
| Maxi | 12" - 28-1/2" (305mm - 724mm) | BLACK EPDM | FM-SQ951BA | | A-Top opening diameter 12" (304mm) B-Cut to suit pipe size 12" - 28-1/2" (304 - 724mm) C-Base dimensions 34" (863.6mm) |
| | | GREY EPDM | FM-SQ951GA | | |
| | | SILICONE | FM-SQ952RA | | |



- **Weather Protection**
Made of E.P.D.M. Silicone. These flashings are compounded specifically for maximum resistance to weathering due to ozone and Silicone, ultraviolet light.

- **Easy On-Site Customization**
Fast, one piece construction allows for easy on-site installation in usually 5 minutes.

- **Base Flexibility**
The base is designed to form a seal on most panel configurations and roof pitches regardless of pipe location.

- **Design Excellence**
ESTCO's flexible design meets all roofing needs. Sleeve flexibility accommodates vibration and pipe movement caused by expansion contraction. The soft aluminum base easily conforms to most metal roof profiles.





UNIVERSAL FLASH MASTER

ISO Quality, Price & Availability
TWO COMPOUNDS/ 9 SIZES & 10 COLORS












"Available in two compounds to handle virtually all job applications"

| ADVANCED OZONE RESISTANCE tested to... | EPDM 70 hour @ 500 pphm | SILICONE 70 hour @ 500 pphm |
|---|------------------------------------|------------------------------------|
| HIGH TEMPERATURE RESISTANCE Tested to Intermittent Continuous | +135°C (+275°F) +100°C (+212°F) | +260°C (+500°F) +225°C (+437°F) |
| LOW TEMPERATURE RESISTANCE tested to... | - 55°C (-67°F) | -74°C (-101°F) |
| TENSILE SET maximum | 10MPa (1450 psi) | 5 MPa (700 psi) |
| COMPRESSION SET maximum... | 25% | 50% |

*Complete specification data and testing methods are available upon request.

SIZING CHART

Check diameter of pipe. Select the appropriate Universal Flash Master for pipe or duct diameter. For extreme pitch or surface irregularity select next larger size. Choose the compound required, then refer to the part number for the Universal FlashMaster desired.

| | PIPE SIZE | COMPOUND | PART NO. | FLASHING DETAILS |
|----|------------------------------------|------------|------------|---|
| #1 | 1/4" - 2-1/2" (6.35 - 63.5mm) | BLACK EPDM | FM-RD101BE |  A-Top Opening Diameter Closed |
| | | GREY EPDM | FM-RD101GG | |
| | | SILICONE | FM-RD101RG | |
| #2 | 1-3/4" - 3" (44.5 - 76.2mm) | BLACK EPDM | FM-RD201BE |  B- Overall Height 2.77" (70.4mm) |
| | | GREY EPDM | FM-RD201GG | |
| | | SILICONE | FM-RD201RG | |
| #3 | 1/4" - 5" (6.35 - 127mm) | BLACK EPDM | FM-RD301BE |  C-Base Diameter 4.75" (120.7mm) |
| | | GREY EPDM | FM-RD301GG | |
| | | SILICONE | FM-RD301RG | |
| #4 | 3" - 6-1/4" (76.2 - 158.8mm) | BLACK EPDM | FM-RD401BE |  A-Top Opening Diameter 2.38" (60.5mm) |
| | | GREY EPDM | FM-RD401GG | |
| | | SILICONE | FM-RD401RG | |
| #5 | 4-1/4" - 7-3/4" (108 - 196.9mm) | BLACK EPDM | FM-RD501BE |  B- Overall Height 5.05" (128.3mm) |
| | | GREY EPDM | FM-RD501GG | |
| | | SILICONE | FM-RD501RG | |
| #6 | 5" - 9" (127 - 228.6mm) | BLACK EPDM | FM-RD601BE |  C-Base Diameter 9.26" (235.2mm) |
| | | GREY EPDM | FM-RD601GG | |
| | | SILICONE | FM-RD601RG | |
| #7 | 6" - 11" (152.4 - 279.4mm) | BLACK EPDM | FM-RD701BE |  A-Top Opening Diameter 3.50" (88.9mm) |
| | | GREY EPDM | FM-RD701GG | |
| | | SILICONE | FM-RD701RG | |
| #8 | 7" - 13" (177.8 - 330.2mm) | BLACK EPDM | FM-RD801BE |  B- Overall Height 4.43" (112.5mm) |
| | | GREY EPDM | FM-RD801GG | |
| | | SILICONE | FM-RD801RG | |
| #9 | 9" - 19" (228.6 - 482.6mm) | BLACK EPDM | FM-MFR9B |  C-Base Diameter 10.75" (273.1mm) |
| | | GREY EPDM | FM-MFR9G | |
| | | SILICONE | FM-MFR9S | |



- Ozone and UV Protection**
Flashings are made of E.P.D.M or Silicone, and are designed for maximum resistance to all weather conditions.

- On-Site Customization**
Pipe diameters can be seen clearly for proper fitting.

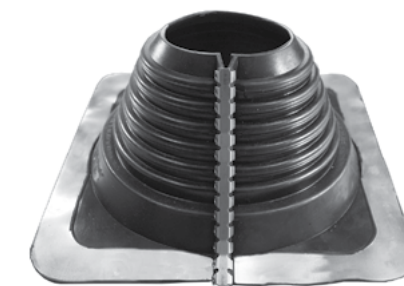
- Adaptable Base**
The base is designed to mold to most panel configurations and roof pitches regardless of pipe location.

- All Around Design Excellence**
This universal flashing has been designed to fit virtually all panel configurations. Sleeve flexibility absorbs vibration and pipe movement caused by expansion/contraction. Easy on-site customization can accommodate all normal installations.








MULTI-FLASH FLASH MASTER

"Two Flashings In One"



| ADVANCED OZONE RESISTANCE tested to... | EPDM 70 hour @ 500 pphm | SILICONE 70 hour @ 500 pphm |
|---|------------------------------------|------------------------------------|
| HIGH TEMPERATURE RESISTANCE Tested to Intermittent Continuous | +135°C (+275°F) +100°C (+212°F) | +260°C (+500°F) +225°C (+437°F) |
| LOW TEMPERATURE RESISTANCE tested to... | - 55°C (-67°F) | -74°C (-101°F) |
| TENSILE SET maximum | 10MPa (1450 psi) | 5 MPa (700 psi) |
| COMPRESSION SET maximum... | 25% | 50% |

*Complete specification data and testing methods are available upon request.

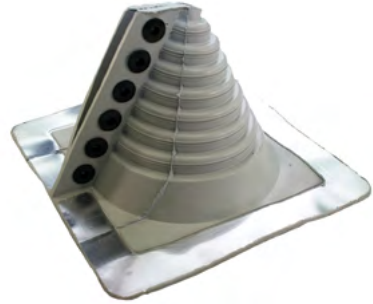
| | PIPE SIZE | COMPOUND | PART NO. | FLASHING DETAILS |
|------|--|--------------|------------|---|
| #1 | STANDARD 1/4" - 2-3/4" (6 mm to 70 mm) RETROFIT 1-1/4" - 2-1/4" (25 mm to 57 mm) | BLACK EPD | FM-MF101BA |  A - Top opening diameter CLOSED |
| | | RED SILICONE | FM-MF102RA | |
| #3 | STANDARD 1/4" - 5-3/4" (6 mm to 146 mm) RETROFIT 2" - 4-1/2" (50.8 mm to 114 mm) | BLACK EPD | FM-MF301BA |  A - Top opening diameter CLOSED |
| | | RED SILICONE | FM-MF302RA | |
| #5 | STANDARD 4" - 8-1/4" (102 mm to 209 mm) RETROFIT 3-1/2" - 6-3/4" (88.9 mm to 171.4 mm) | BLACK EPDM | FM-MF501BA |  A - Top opening diameter 3-1/2" |
| | | RED SILICONE | FM-MF502RA | |
| #8 | STANDARD 6-3/4" - 13-1/2" (171 mm to 342 mm) RETROFIT 6-1/2" - 12" (165.1 mm to 304 mm) | BLACK EPDM | FM-MF801BA |  A - Top opening diameter 6" |
| | | RED SILICONE | FM-MF802RA | |
| Maxi | STANDARD 12" - 28-1/2" (304 mm to 724 mm) RETROFIT 13" - 27" (330.2 mm to 685 mm) | BLACK EPDM | FM-MF951BA |  A - Top opening diameter 11" |
| | | RED SILICONE | FM-MF802RA | |

- Weather Protection**
Made of E.P.D.M. Silicone. These flashings are compounded specifically for maximum resistance to weathering due to ozone and Silicone, ultraviolet light.

- A "C12" ASTM**
Additional requirement was added to assure conformance to the most stringent ozone/weathering specifications available.

- Base Flexibility**
The base is designed to form a seal on most panel configurations and roof pitches regardless of pipe location.

- EASY ON SITE CUSTOMIZING**
Smooth cut is intended to eliminate use of razor blades. Stainless steel gripper to secure a retro custom fit. (GRIPPER SOLD SEPARATELY.)



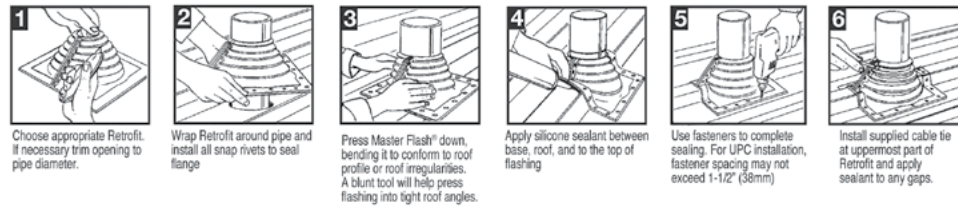
STANDARD RETROFIT FLASH MASTER

Two Compounds / 3 Sizes



- **Weather Resistance**
Designed to withstand the damaging effects of ultra violet light and ozone.
- **Modification Made Simple**
Easy to see pipe diameters make for painless on site customization.
- **Malleable Base**
Designed to conform to most panel configurations and roof pitches regardless of pipe location.
- **Easily Installed Fastener Snaps Included.**

| | PIPE SIZE | COMPOUND | PART NO. | FLASHING DETAILS | | |
|----|-------------------------------------|------------|------------|------------------|-------------------------|-----------------------------------|
| #1 | 1/2" - 4" (12.7 - 101.6mm) | BLACK EPDM | FM-RF101BP | | A-Top opening diameter | 1/2" (12.7mm) |
| | | GREY EPDM | FM-RF101GP | | B-Cut to suit pipe size | 1/2" - 4" (12.7 - 101.6mm) |
| | | SILICONE | FM-RF102RS | | C-Base dimensions | 8-3/16" (81mm) |
| #2 | 4" - 9-1/4" (101.6 - 135mm) | BLACK EPDM | FM-RF201BP | | A-Top opening diameter | 4" (101.6mm) |
| | | GREY EPDM | FM-RF201GP | | B-Cut to suit pipe size | 4" - 9-1/4" (101.6 - 235mm) |
| | | SILICONE | FM-RF202RS | | C-Base dimensions | 14-1/4" (362mm) |
| #3 | 9-1/4" - 16-1/4" (235 - 412.8mm) | BLACK EPDM | FM-RF301BP | | A-Top opening diameter | 9-1/4" (235 - 412.7mm) |
| | | GREY EPDM | FM-RF301GP | | B-Cut to suit pipe size | 9-1/4" x 16-1/4" (235 - 412.7mm) |
| | | SILICONE | FM-RF302RS | | C-Base dimensions | 21-1/2" (546.1mm) |



1 Choose appropriate Retrofit. If necessary trim opening to pipe diameter.

2 Wrap Retrofit around pipe and install all snap rivets to seal flange

3 Press Master Flash® down, bending it to conform to roof profile or roof irregularities. A blunt tool will help press flashing into tight roof angles.

4 Apply silicone sealant between base, roof, and to the top of flashing

5 Use fasteners to complete sealing. For UPC installation, fastener spacing may not exceed 1-1/2" (38mm)

6 Install supplied cable tie at uppermost part of Retrofit and apply sealant to any gaps.



UNIVERSAL RETROFIT FLASH MASTER

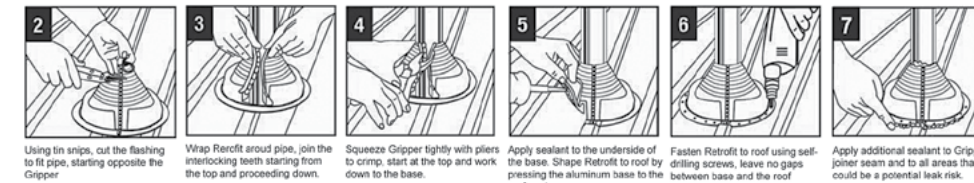
ISO Quality, Price & Availability
Two Compounds / 3 Sizes



| | PIPE SIZE | COMPOUND | PART NO. | FLASHING DETAILS | | |
|----|-------------------------------|------------|---------------|------------------|-------------------------|----------------------------|
| #1 | 3/4" - 2-3/4" (19 - 69mm) | BLACK EPDM | FM-RF101BS-RD | | A-Top opening diameter | 3/4"(19.1mm) |
| | | GREY EPDM | FM-RF101GS-RD | | B-Cut to suit pipe size | 3/4" - 2-3/4" (19 - 69mm) |
| | | SILICONE | FM-RF102RS-RD | | C-Base dimensions | 6 - 3/10" (160mm) |
| #2 | 2" - 7-1/4" (50.8 - 184mm) | BLACK EPDM | FM-RF201BS-RD | | A-Top opening diameter | 2" (50.8mm) |
| | | GREY EPDM | FM-RF201GS-RD | | B-Cut to suit pipe size | 2" - 7-1/4" (50.8 - 184mm) |
| | | SILICONE | FM-RF202RS-RD | | C-Base dimensions | 10-3/4" (273mm) |
| #3 | 3-1/4" - 10" (95 - 254mm) | BLACK EPDM | FM-RF301BS-RD | | A-Top opening diameter | 3-1/4 - 10" (50.8mm) |
| | | GREY EPDM | FM-RF301GS-RD | | B-Cut to suit pipe size | 1/4" - 5" (82.5 - 253.9mm) |
| | | SILICONE | FM-RF302RS-RD | | C-Base dimensions | 14-1/2" (368mm) |

- **Weather Protection**
Made of E.P.D.M. or Silicone,
These flashings are compounded specifically for maximum resistance to weathering due to ozone and ultraviolet light.
- **Easy On-Site Customization**
Fast, one piece construction allows for easy on-site install in usually 5 minutes.
- **Flexible Base**
Easily forms to contours of roof panel.

Step 1: For retrofit installation, cut center rubber at base of the stainless joiner and pull apart.



2 Using tin snips, cut the flashing to fit pipe, starting opposite the Gripper

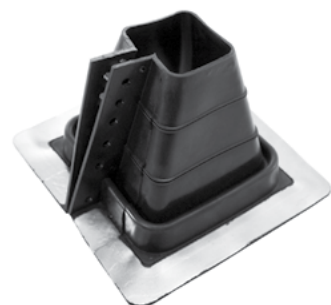
3 Wrap Retrofit around pipe, join the interlocking teeth starting from the top and proceeding down.

4 Squeeze Gripper tightly with pliers to crimp; start at the top and work down to the base.

5 Apply sealant to the underside of the base. Shape Retrofit to roof by pressing the aluminum base to the roof contours.

6 Fasten Retrofit to roof using self-drilling screws, leave no gaps between base and the roof contours.

7 Apply additional sealant to Gripper joiner seam and to all areas that could be a potential leak risk.



SQUARE VENT FLASH MASTER



- **Made for Weather Resistance**
Made to withstand the damaging effects of ultraviolet light and Ozone.
- **Roof Adaptability**
The base is designed to mold to most panel configurations and roof pitches regardless of pipe location.
- **Cut to Fit**
Easy to see pipe diameters make for painless on site customization.
- **Easy Install Snaps Included**
- **Design Excellence**
Specially designed for square vent applications, sleeve flexibility accommodates vibration and pipe movement caused by expansion/contraction. Easy on-site customization accommodates all normal installations.

| | PIPE SIZE | COMPOUND | PART NO. | FLASHING DETAILS | |
|----|---------------------------|------------|---------------|------------------|--|
| #1 | 2-1/2" - 4" (63-101mm) | BLACK EPDM | FM-RF101BP-SQ | | A-Top opening diameter 2-1/2" (63mm) B-Cut to suit pipe size 2-1/2" to 4" (63-101mm) C-Base dimensions 8" (203.2mm) |
| #2 | 2-1/4" - 5" (57-127mm) | BLACK EPDM | FM-RF201BP-SQ | | A-Top opening diameter 2-1/4" (57mm) B-Cut to suit pipe size 2-1/4" to 5" (57-127mm) C-Base dimensions 15-3/4" (400mm) |

RESIDENTIAL FLASH MASTER



| | PIPE SIZE | COMPOUND | PART NO. | FLASHING DETAILS | |
|------|-----------------------------|-------------------------------------|--|------------------|---|
| MINI | 1/4" - 3" 6.35 - 76.2mm | BLACK EPDM GREY EPDM SILICONE | FM-RS051BA FM-RS051GA FM-RS052RA | | A-Top opening diameter Closed B-Cut to suit pipe size 1/4" - 3" (6.35 - 76.2mm) C-Base dimensions 16" X 9-1/4" (410 X 490mm) |
| #1 | 3" - 8" 76.2 - 203.2mm | BLACK EPDM GREY EPDM SILICONE | FM-RS101BA FM-RS101GA FM-RS102RA | | A-Top opening diameter 2-1/2" (63.5mm) B-Cut to suit pipe size 3" - 8" (76.2 - 203.2mm) C-Base dimensions 20" X 24" (508 X 609.5mm) |
| #2 | 8" - 11" 203.1 - 279.4mm | BLACK EPDM GREY EPDM SILICONE | FM-RS201BA FM-RS201GA FM-RS202RA | | A-Top opening diameter 5-5/8" (142.875mm) B-Cut to suit pipe size 8" - 11" (203.1 - 279.4 mm) C-Base dimensions 26" X 30" (660.3 X 762mm) |
| #3 | 11" - 18" 279.4 - 457mm | BLACK EPDM GREY EPDM SILICONE | FM-RS301BA FM-RS301GA FM-RS302RA | | A-Top opening diameter 8-3/4" (222.2mm) B-Cut to suit pipe size 11" - 18" (279.4 - 457mm) C-Base dimensions 35" - 35" (889 X 889mm) |

Four Sizes Accommodate Flues & Vents From 1/4" Diameter Through 18" Diameter.

EPDM Rubber is available in black and grey or Silicone is available.



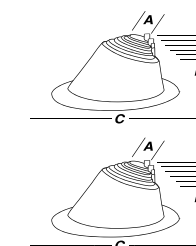
Wood Shingle



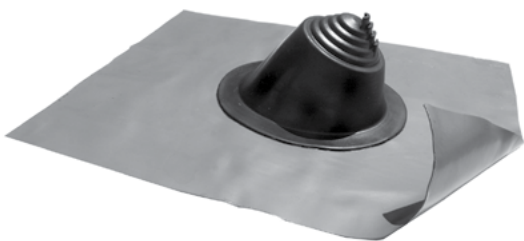
Tar Paper/Asphalt Shingles



Clay Tile



- The addition of fire retarding agents milled directly into the rubber compound creates a self extinguishing feature which enables it to be used with type "B" vents. Listed with **IAPMO certification No.3121**
- The pull tab design and easy smooth tear grooving is intended to eliminate razor knived and allow for a circular hole
- "Environmentally safe" lead free aluminum base.
- A "C20" ASTM additional requirement was added to assure conformance to the most stringent ozone/weathering specifications available. This addition allows the rubber a 20 year life.
- The built in 20° pitch allows adaptability to almost any roof pitch including 45°



RES-LEAD FLASH MASTER

“Powder Coated Safe Lead”

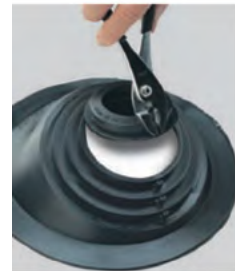


- **Weather Protection**
Made of EPDM or Silicone, these flashings are compounded specifically for maximum resistance to weathering due to ozone and ultraviolet light.
- The pull tab design and easy smooth tear grooving is intended to eliminate razor knives and allow for a circular hole.
- The built in 20° pitch allows adaptability to almost any roof pitch including 45°
- A “C20” ASTM additional requirement was added to assure conformance to the most stringent ozone/weathering specifications available. This addition allows the rubber a 20 year life.
- **“ENVIRONMENTALLY SAFE”**
Powder coated Safe-Lead metal base.

| | PIPE SIZE | COMPOUND | PART NO. | FLASHING DETAILS | | |
|-------------|-----------------------------|------------|-------------------|------------------|-------------------------|-----------------------------|
| MINI | 1/4" - 3" 6.35 - 76.2mm | BLACK EPDM | FM-RL051BA | | A-Top opening diameter | Closed |
| | | GREY EPDM | FM-RL051GA | | B-Cut to suit pipe size | 1/4" - 3" (6.35 - 76.2mm) |
| | | SILICONE | FM-RL052RA | | C-Base dimensions | 16" X 9-1/4" (410 X 490mm) |
| #1 | 3" - 8" 76.2 - 203.2mm | BLACK EPDM | FM-RL101BA | | A-Top opening diameter | 2-1/2" (63.5mm) |
| | | GREY EPDM | FM-RL101GA | | B-Cut to suit pipe size | 3" - 8" (76.2 - 203.2mm) |
| | | SILICONE | FM-RL102RA | | C-Base dimensions | 20" X 24" (508 X 609.5mm) |
| #2 | 8" - 11" 203.1 - 279.4mm | BLACK EPDM | FM-RL201BA | | A-Top opening diameter | 5-5/8" (142.875mm) |
| | | GREY EPDM | FM-RL201GA | | B-Cut to suit pipe size | 8" - 11" (203.1 - 279.4 mm) |
| | | SILICONE | FM-RL202RA | | C-Base dimensions | 26" X 30" (660.3 X 762mm) |
| #3 | 11" - 18" 279.4 - 457mm | BLACK EPDM | FM-RL301BA | | A-Top opening diameter | 8-3/4" (222.2mm) |
| | | GREY EPDM | FM-RL301GA | | B-Cut to suit pipe size | 11" - 18" (279.4 - 457mm) |
| | | SILICONE | FM-RL302RA | | C-Base dimensions | 35" - 35" (889 X 889mm) |

EPDM rubber is available in black and grey or Silicone

*Custom colors are available upon request, an additional cost may apply.



RES-LEAD FLASH MASTER RUBBER COLORS...

White, grey, black, light and dark green, light and dark blue, terra cotta (red clay appearance) and bright red. Base coloring options are available an additional cost may apply.

MASTER-CAP FLASH MASTER

ALL NEW - Standing Seam Roof End Cap Flashing



ISO Quality, Price & Availability

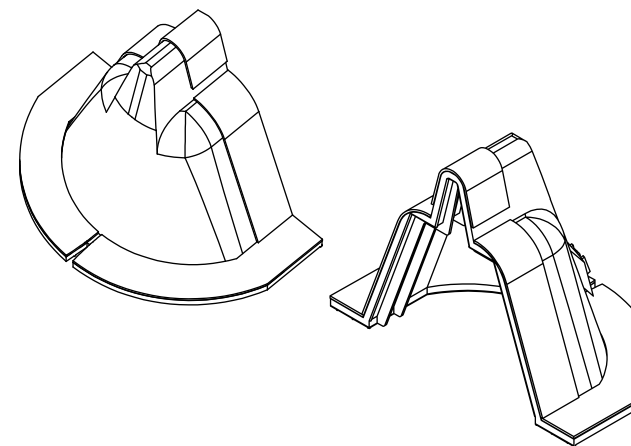
| | |
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| ADVANCED OZONE RESISTANCE tested to... | EPDM 70 hour @ 500 pphm |
| HIGH TEMPERATURE RESISTANCE Tested to | Intermittent Continuous |
| | +135°C (+275°F) +100°C (+212°F) |
| LOW TEMPERATURE RESISTANCE tested to... | - 55°C (-67°F) |
| TENSILE SET maximum | 10MPa (1450 psi) |
| COMPRESSION SET maximum... | 25% |

*Complete specification data and testing methods are available upon request.

| | COMPOUND | PART NO. | FLASHING DETAILS | | |
|-------------------|------------|-------------------|------------------|----------|----------------|
| MASTER CAP | BLACK EPDM | FM-MC101BA | | A-Width | 4" (101mm) |
| | | | | B-Height | 3-1/4" (82 mm) |

Applications:

Skylights • Metal Curbs • Ridge Applications • Jobsite Retrofit

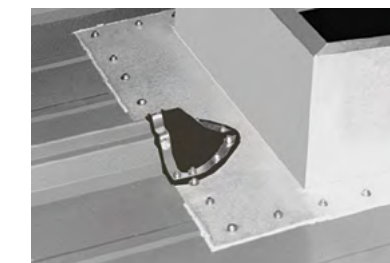


Flexibility

- Expansion feature accommodates all 3" seam heights.
- Flexible width allows for most panel configurations.

Base Features

- Allows side wall of end cap to form on roof panels.
- 3" base allows application at both terminating points of the sheeting or roofing material.
- Made of E.P.D.M., these flashings are compounded specifically for maximum resistance to weathering due to ozone and ultraviolet light.
- Available in a variety of color options.



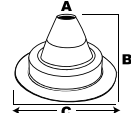


SOLAR-FLASH FLASH MASTER



- The simple round base flashing is available in EPDM and silicone with a pre-cut hole for pipe sizes 3/4" to 1" inch allowing for minimal on-site preparation and assembly.
- The pitch canal allows for maximum flexibility, easy accommodating up to a 60 degree pitch without affecting performance.
- Ozone and UV Protection Flashings are made of EPDM and Silicone, and are designed for maximum resistance to all weather conditions.

| | | |
|---|---------------------------------|--------------------------------|
| ADVANCED OZONE RESISTANCE tested to... | EPDM 70 hour @ 500 pphm | SILICONE 70 hour @ 500 pphm |
| HIGH TEMPERATURE RESISTANCE Tested to | Intermittent +135°C (+275°F) | +260°C (+500°F) |
| | Continuous +100°C (+212°F) | +225°C (+437°F) |
| LOW TEMPERATURE RESISTANCE tested to... | -55°C (-67°F) | -74°C (-101°F) |
| TENSILE SET maximum | 10MPa (1450 psi) | 5 MPa (700 psi) |
| COMPRESSION SET maximum... | 25% | 50% |

| PIPE RANGE | COMPOUND | PART NO. | FLASHING DETAILS |
|----------------------------|------------|------------|---|
| 3/4" - 1" (19 - 25.3mm) | BLACK EPDM | FM-SF101BA |  A-Top Opening Diameter .60" (15.24mm) B-Overall Height 2-1/2" (63.5mm) C-Base Diameter 4" (101.6mm) |
| | SILICONE | FM-SF101RA | |

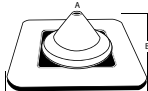


Mini Standard Flash Master

Specifically designed for solar & electrical applications

ISO Quality, Price & Availability / TWO COMPOUNDS / 10 COLORS

| | | |
|---|---------------------------------|--------------------------------|
| ADVANCED OZONE RESISTANCE tested to... | EPDM 70 hour @ 500 pphm | SILICONE 70 hour @ 500 pphm |
| HIGH TEMPERATURE RESISTANCE Tested to | Intermittent +135°C (+275°F) | +260°C (+500°F) |
| | Continuous +100°C (+212°F) | +225°C (+437°F) |
| LOW TEMPERATURE RESISTANCE tested to... | -55°C (-67°F) | -74°C (-101°F) |
| TENSILE SET maximum | 10MPa (1450 psi) | 5 MPa (700 psi) |
| COMPRESSION SET maximum... | 25% | 50% |

| PIPE RANGE | COMPOUND | PART NO. | FLASHING DETAILS |
|----------------------------------|------------|------------|---|
| (1/8" - 3/4") 3.2mm - 19.1 mm | BLACK EPDM | FM-SQ101BA |  A-Top opening diameter 1/16" (1.6mm) B-Cut to suit pipe size 3.2-19.1mm (1/8" - 3/4") C-Base dimensions 57.2mm (2 - 1/4") |
| | Grey EPDM | FM-SQ101GA | |
| | SILICONE | FM-SQ101RA | |



- **Weather Protection**
Made of E.P.D.M. or Silicone, these flashings are compounded specifically for maximum resistance to weathering due to ozone and ultraviolet light.
- **Easy On-Site Customization**
Fast, one piece construction allows for easy on-site installation in minutes.
- **Base Flexibility**
The base is designed to form a seal on most panel configurations and roof pitches regardless of pipe/wire location.
- **Nine color options available**

MULTI-PORT FLASH MASTER

Two Applications • One Design • Multiple Functions

ISO Quality, Price & Availability TWO COMPOUNDS

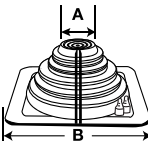


| | | |
|---|---------------------------------|--------------------------------|
| ADVANCED OZONE RESISTANCE tested to... | EPDM 70 hour @ 500 pphm | SILICONE 70 hour @ 500 pphm |
| HIGH TEMPERATURE RESISTANCE Tested to | Intermittent +135°C (+275°F) | +260°C (+500°F) |
| | Continuous +100°C (+212°F) | +225°C (+437°F) |
| LOW TEMPERATURE RESISTANCE tested to... | -55°C (-67°F) | -74°C (-101°F) |
| TENSILE SET maximum | 10MPa (1450 psi) | 5 MPa (700 psi) |
| COMPRESSION SET maximum... | 25% | 50% |

*Complete specification data and testing methods are available upon request.

Accommodates FOUR 1/4" (6mm) lines and 1 pipe 1/4" - 2-3/4" (6 - 70mm)

Up to 4 Cables or Wires per flashing.

| PIPE RANGE | COMPOUND | PART NO. | FLASHING DETAILS |
|--|------------|------------|--|
| STANDARD 1/4"-2-3/4" (6 - 70mm) | BLACK EPDM | FM-MP101BA |  A-Base Diameter Standard Only Closed B-Base Diameter 4-1/2" (114mm) |
| RETROFIT 1-1/4"-2-1/4" (25 - 57mm) | SILICONE | FM-MP101RA | |



- **Ozone and UV Protection**
Flashings are made of EPDM and Silicone, and designed for maximum resistance to all weather conditions.
- **No Hassle Gripper**
Single stainless steel gripper to secure retrofit applications only.
- **Adaptable Base**
The base is designed to mold to most panel configurations and roof pitches regardless of pipe location.



35
YEAR
WARRANTY

NEW - 35 YEAR FLASH MASTER

The only ICC listed flashing for the Metal Building Industry with a 35 year warranty

ICC & ISO Quality, Price & Availability / 9 Sizes

- 9 sizes
- Made of epdm, this flashing Resistance to all weather Conditions.
- The base is designed to fit virtually all panel configurations and roof pitches regardless of pipe location.
- On site customization.
- Ozone and uv protected.
- Designed for 1/4" to 13" diameter pipes.
- Virtually all panel configurations and roof pitches regardless of pipe location.
- Pipe diameters can be seen clearly for proper pipe fitting.
- Flexibility absorbs vibration and pipe movement.

| ADVANCED OZONE RESISTANCE tested to... | | EPDM | SILICONE |
|---|--------------|--------------------|--------------------|
| | | 70 hour @ 500 pphm | 70 hour @ 500 pphm |
| HIGH TEMPERATURE RESISTANCE | | | |
| Tested to | Intermittent | +135°C (+275°F) | +260°C (+500°F) |
| | Continuous | +100°C (+212°F) | +225°C (+437°F) |
| LOW TEMPERATURE RESISTANCE tested to... | | | |
| | | - 55°C (-67°F) | -74°C (-101°F) |
| TENSILE SET maximum | | 10MPa (1450 psi) | 5 MPa (700 psi) |
| COMPRESSION SET maximum... | | 25% | 50% |

SIZING CHART

Check diameter of pipe. Select the appropriate 35 Year Flash Master for pipe or duct diameter. Only use maximum pipe diameters on minimal roof angles. For extreme pitch or surface irregularity select next larger size. Then refer to the part number for the 35 Year Flash Master desired.

| | PIPE SIZE | COMPOUND | PART NO. | FLASHING DETAILS | |
|------|------------------------------------|------------|---------------|------------------|---|
| Mini | 1/8" - 3/4" (3.2 mm - 19.1 mm) | BLACK EPDM | FM-ICC-SQ051B | | A-Top opening diameter 1/16" (1.6mm) B-Cut to suit pipe size 1/8" - 3/4" (3.2-19.1 mm) C-Base dimensions 2 - 1/4" (57.2 mm) |
| #1 | 1/4" - 2" (6.4 mm - 50.8 mm) | BLACK EPDM | FM-ICC-SQ101B | | A-Top opening diameter Closed B-Cut to suit pipe size 1/4" - 2" (6.4 - 50.8 mm) C-Base dimensions 4-1/2" (114.3 mm) |
| #2 | 1-1/4" - 3" (31.8 mm - 76.2 mm) | BLACK EPDM | FM-ICC-SQ201B | | A-Top opening diameter 7/8" (22.2 mm) B-Cut to suit pipe size 1-1/4" - 3" (31.8 - 76.2 mm) C-Base dimensions 6" (152.4mm) |
| #3 | 1/4" - 4" (6.3 mm - 101.6 mm) | BLACK EPDM | FM-ICC-SQ301B | | A-Top opening diameter Closed B-Cut to suit pipe size 1/4" - 4" (6.3 - 101.6 mm) C-Base dimensions 8" (203.2 mm) |
| #4 | 3" - 6" (76.2 mm - 152.4 mm) | BLACK EPDM | FM-ICC-SQ401B | | A-Top opening diameter 2-1/2" (63.5 mm) B-Cut to suit pipe size 3" - 6" (76.2 - 152 mm) C-Base dimensions 10" (254 mm) |
| #5 | 4" - 7" (102 mm - 177.8 mm) | BLACK EPDM | FM-ICC-SQ501B | | A-Top opening diameter 3-1/2" (88.9 mm) B-Cut to suit pipe size 4" - 7" (102 - 177.8 mm) C-Base dimensions 11" (279.4 mm) |
| #6 | 5" - 9" (127 mm - 228.6 mm) | BLACK EPDM | FM-ICC-SQ601B | | A-Top opening diameter 4" (101.6 mm) B-Cut to suit pipe size 5" - 9" (127 - 228.6 mm) C-Base dimensions 12" (304.8 mm) |
| #7 | 6" - 11" (152.4 mm - 279.4 mm) | BLACK EPDM | FM-ICC-SQ701B | | A-Top opening diameter 5" (127 mm) B-Cut to suit pipe size 6" - 11" (152.4 - 279.4 mm) C-Base dimensions 14" (355.6 mm) |
| #8 | 7" - 13" (177.8 mm - 330.2 mm) | BLACK EPDM | FM-ICC-SQ801B | | A-Top opening diameter 6" (152.4 mm) B-Cut to suit pipe size 7" - 13" (177.8 - 330 mm) C-Base dimensions 17" (431.8 mm) |



35 Year Flash Master

Compliance with the following codes:

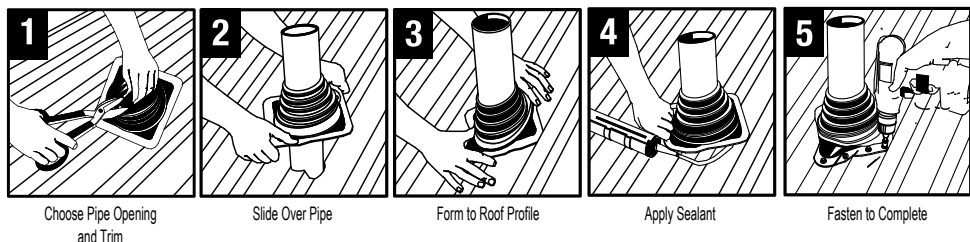
- 2006 International Building Code® (IBC)
- 2006 International Residential Code® (IRC)

ICC-ES is the United States' leading source of technical information on building products and building technology for code compliance.

ICC-ES performs technical evaluations of building products, components, methods and materials.

The evaluation process culminates with the issuance of reports on compliance with the major U.S. building codes, which are available at www.icc-es.org.

ICC-ES is a subsidiary of the International Code Council, a membership association dedicated to building safety and fire prevention that develops the codes used to construct residential and commercial buildings, including homes and schools. Most U.S. cities, counties and states that adopt codes choose the International Codes developed by the International Code Council.

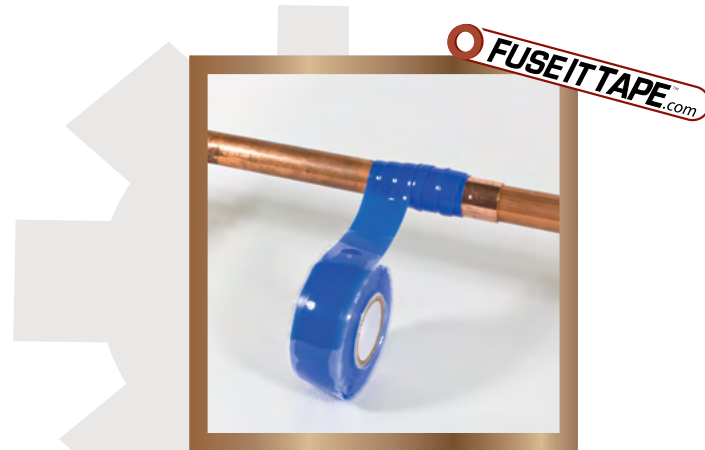


UP NEXT...

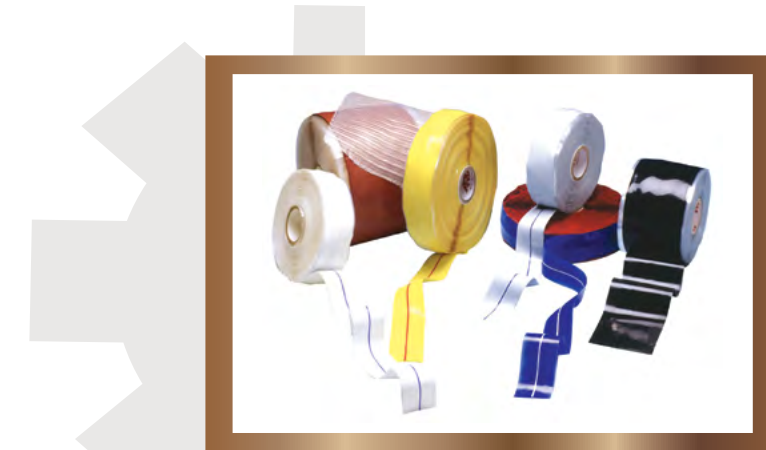
SELF-FUSING TAPES & PADS

SELF-FUSING TAPES

ESTCO'S ORIGINAL FUSEIT™ TAPE



Self-Fusing Silicone Sealing Tape
5-3



Self-Fusing Silicone Tape
5-5 - 5-6



SFT - Silicone, Self-Fusing Electrical Tape
5-4



Seal
Copper
Pipe!

ESTCO'S FUSE IT TAPE™ SILICONE SEALING TAPE

Get a tougher tape at a lower price.

Fuse It Tape™ is self-fusing silicone tape that can help you fix or seal just about anything in your life.

With a tensile strength of 1150 psi, you'll enjoy a superior, tougher tape that is up to 64% stronger than other brands.

Did we mention it's also priced lower than the other brands?

Repair, mend, and make the things in your life better.

With Fuse It Tape™, you can fix multiple things in your daily life. Make them tougher, stronger, better.



Seal
PVC
Pipe!



ZERO MESS. ZERO ADHESIVE.

Duct tape, electrical tape and other tapes can all leave a sticky mess when removed.

Fuse It Tape™ leaves no mess whatsoever because there is no adhesive involved.

Even when removed years later, no sticky residue will be left over.

For more specs visit website: fuseittape.com



SFT - SILICONE, SELF-FUSING ELECTRICAL TAPEWW



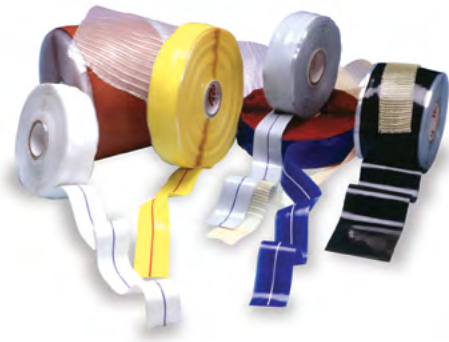
Arlon Silicone, Self-Fusing Electrical Tape® Tape

When looking for a silicone, self fusing tape, Arlon SFT is an affordable, easy to order, and highly functional, silicone, self-fusing tape. With over 30 years of in-service use in numerous highly demanding applications (such as aerospace and military) you can rely on Arlon SFT. The Arlon SFT product is gray in color and 0.012" thick x 1.0" wide x 10 yards long. The Arlon SFT product is lined with 0.001" thick x 1.1875" wide polyester liner and has electrical and mechanical properties that exceed most industry standards. By purchasing your silicone, self-fusing tape directly from ESTCO (Certified distributor of Arlon products) you will receive a high quality tape at an affordable price.

The typical properties table below can be used to compare Arlon SFT versus industry leaders like 3M™ Scotch® 70 tape:

| Property | Arlon SFT | Test Method |
|---------------------------|-----------|------------------------|
| Hardness (SAP) | 50 | ASTM D2240 |
| Tensile Strength (psi) | 1200 | ASTM D412 |
| Elongation (%) | 612 | ASTM D412 |
| Dielectric Strength (VPM) | 881 | ASTM D149 |
| Bond Strength (lbf/inch) | 2.4 | MIL-I-46852C / AA59163 |
| Water Absorption (%wt) | 0.38 | MIL-I-46852C / AA59163 |

- Gray
- 0.012" thick x 1.0" wide x 10 yards long
- A low cost alternative to industry leading, silicone, self fusing tapes
- Resists moisture, oxygen, corona, and ozone exposure to assure continuous high insulation values
- Conforms smoothly when wrapped around complex forms.
- ROHS compliant
- Shelf Life is 5 years from the DOM when stored at 70° +/- 5°F and 50% RH
- Designed for continuous operation at 180°C



SELF-FUSING SILICONE TAPES

Arlon and MOX-Tape® silicone tapes are produced from specially formulated silicone rubber. They bond irreversibly to provide an insulative barrier that is resistant to moisture, oxygen, ozone and corona over a wide temperature range (-65°F up to +500°F). Our products provide superior electrical insulation with a dielectric strength of 300VPM minimum at 356°F/180°C.

PERFORMANCE ADVANTAGES

- Resists moisture, oxygen, and ozone to assure continuous high insulation values.
- Conforms smoothly when wrapped around complex forms.
- Bonds to itself at room temperature within 24 hours.
- Remains non-tacky to the touch and does not adhere to other surfaces, or substrates.
- Insulates with single wrap, thereby reducing labor time and cost.
- Dampens vibration and resists heat and mechanical shock as well as corona.
- Inherently flame retardant and when burned forms a non-conductive ash. Meets the horizontal burn test criteria prescribed in FAR 25.853.
- SA & SB MOX-Tapes® provide a uniform thickness even around sharp edges. Fiberglass fabric, encapsulated inside the silicone rubber, prevents wicking and maintains high insulation resistance under high humidity conditions. These controlled stretch tapes provide a uniform insulation barrier.
- All tapes are protected by a special interleaved liner.

TYPICAL PROPERTIES

Thermal Stability 356°F/180°C
 Temperature Range -65°F to +500°F (-50°C to +260°C)
 Volume Resistivity 1013 ohm-cm min. (ASTM D257)
 Self Adhesion 2 p.p.i min. (ASTMD2148)
 Hardness 50±10 Shore A (ASTM D2240)
 Moisture Absorption 0.9% (46 hrs. in H2O @ 70°F)

NOTE: The above properties are published as a guide only, and should not be used for specifications without testing in your own laboratory.

APPLICATIONS

Mechanical:

- Protection of coils from vibration.
- Vibration fixture, anti-scratch, and clamping pads.
- Harness wrapping and wire bundling, including for high temperature applications.
- Applied to rollers for protection and traction.
- Plant maintenance.
- Superior, heavy duty repair tape for emergency insulating barrier.

Electrical:

- Insulation of field armature and interpole coils in large motors.
- Insulation for splicing and terminating of wire and cable.
- Insulating and sealing electrical connections.
- Insulating coil leads and bus bar connections.
- Electromagnetic coil insulation.
- Motor connections.
- Overwrapping of deteriorated insulation in reclaimed motors.

Environmental:

- On-board aviation and space applications.
- Underground cable splices.
- Insulating heated transfer lines.
- Insulating in radioactive environments.
- Masking agent utilized in manufacturing processes and powder coatings.
- Insulating, protecting, and sealing rigging hardware and power systems in marine applications.

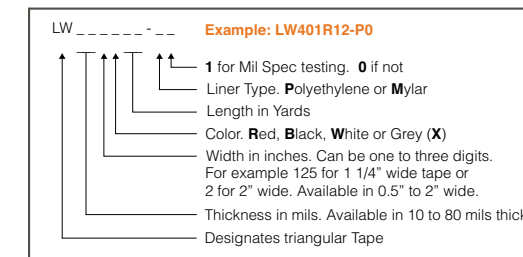
SELF-FUSING SILICONE TAPES CONTINUED...



Arlon LevelWrap® Tape



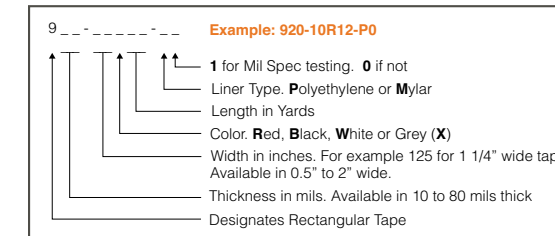
Levelwrap® has tapered edges and a colored line along its apex. The purpose of the line is to act as a guide for subsequent wraps in order to form a uniformly thick layer. MOX-Tape® 600-T series triangular unsupported tapes, which also meet various military and aerospace specifications, are also available.



Rectangular 600-R AND Triangular 600-T Series Tape



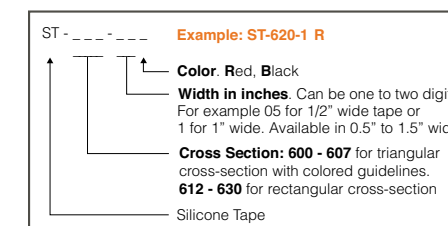
Rectangular tape is of uniform thickness and is ideal for applications where a smooth, even layer of tape is not required. Triangular tape has a center guideline for even wrapping. Arlon's MOX-Tape 600-R Rectangular and 600-T Triangular Series unsupported tapes meet various military and aerospace specifications.



Arlon MOX-Tape® Fiberglass Reinforced Tape

These self-fusing silicone rubber tapes incorporate a sinusoidal fiberglass fabric that gives a controlled elongation and increased tear resistance. The SA series has a maximum elongation of 25% and the SB series has a maximum elongation of 15%. This reinforcement provides excellent mechanical characteristics while allowing the tape to conform to irregular shapes. The table below lists a few examples of reinforced tapes that are available.

| ESTCO Enterprises, Inc. Standard Part No. | Thickness (inches) | Width (inches) | Elongation (%) | Break Strength (lbs) |
|---|--------------------|----------------|----------------|----------------------|
| ST-SA00520 | 0.02 | 1/2 | 25 | 40 |
| ST-SB00520 | 0.02 | 1/2 | 15 | 40 |
| ST-SA01015 | 0.015 | 1 | 25 | 40 |
| ST-SB01015 | 0.015 | 1 | 15 | 40 |
| ST-SA03030 | 0.03 | 3 | 25 | 40 |
| ST-SB03030 | 0.03 | 3 | 15 | 40 |



CERTIFICATIONS

- Tapes are manufactured under ISO 9001 certification. Products can also be certified to many of the following specifications upon request.
- MIL-I-46852C, Type I & Type II
- General Electric A50A493
- A-A-59163, Type I & Type II
- General Electric A50E112
- MIL-1-22444C
- General Dynamics P5384
- Boeing DMS2186 Type 1 & Type 2 & 3
- Rohr RMS315
- Lockheed Martin MMS J517
- FAR 25.853
- Lockheed Martin 5-00857
- UL listed

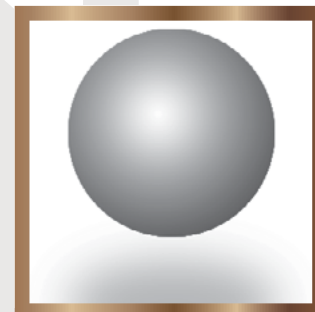
SPECIALTY & MISC. ITEMS



SunScreener Wire Mesh Clip
6-3



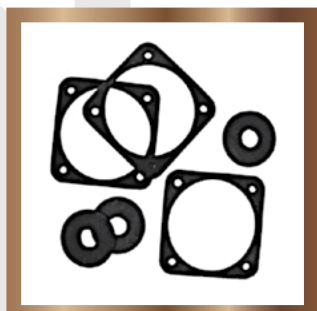
SunScreener Wire Mesh
6-4



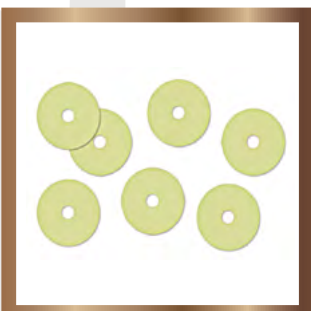
Solid Round Balls
6-8



Extrusions & Lathe Cuts
6-9 - 6-10



Gaskets
6-5 - 6-6



Latex Free Diaphragms
6-7



WELL NUT® Metric Threaded Inserts
6-11



WELL NUT® Inch Threaded Inserts
6-12

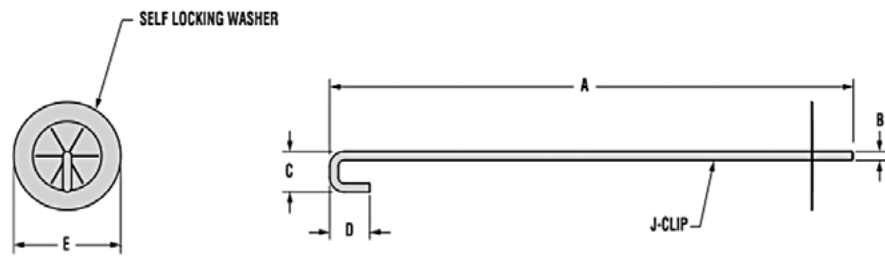
SUNSCREENER WIRE MESH CLIP



| PART NO. | PART DIMENSIONS CLIP DIMENSIONS | | | | | | | | | |
|-----------------|------------------------------------|-------|---------------|-----|------------|-----|-------------|-----|----------------------|------|
| | A Overall Length | | B Diameter | | C Width | | D Height | | E Washer Diameter | |
| | in. | mm. | in. | mm. | in. | mm. | in. | mm. | in. | mm. |
| H-S6437 H-S6438 | 4.87 | 124,0 | .08 | 2,0 | .38 | 9,7 | .38 | 9,7 | 1.00 | 25,4 |

- Helps protect solar panels from rodents and nesting birds with wire mesh screening (screening not included). See Estco Sunscreen below.
- Constructed from 303 and 304 Stainless Steel for maximum endurance to outdoor elements.
- 303 Stainless Steel J-Hook easily attaches to the solar panel frames.
- 304 Stainless Steel Washers will firmly hold wire mesh screen to the module assembly preventing squirrels and rodents from damaging the interconnection wires and birds from building nests under the solar panel.
- Does not violate panel integrity.
- The Stainless Steel J-Hook can easily be trimmed or bent after assembly.
- Installs quickly and easily with standard linesman pliers
- Black color available for those applications subject to HOA appearance restrictions.
- Stainless Steel Washers are offered in both steel color and black painted versions.
- Not for use in a marine salt water environment.

| PART NO. | PART DIMENSIONS | |
|----------|-----------------|----------------|
| | Width in. | Length feet |
| S6464 | 4 | 100' |
| S6466 | 6 | Rolls |
| S6468 | 8 | Rolls |



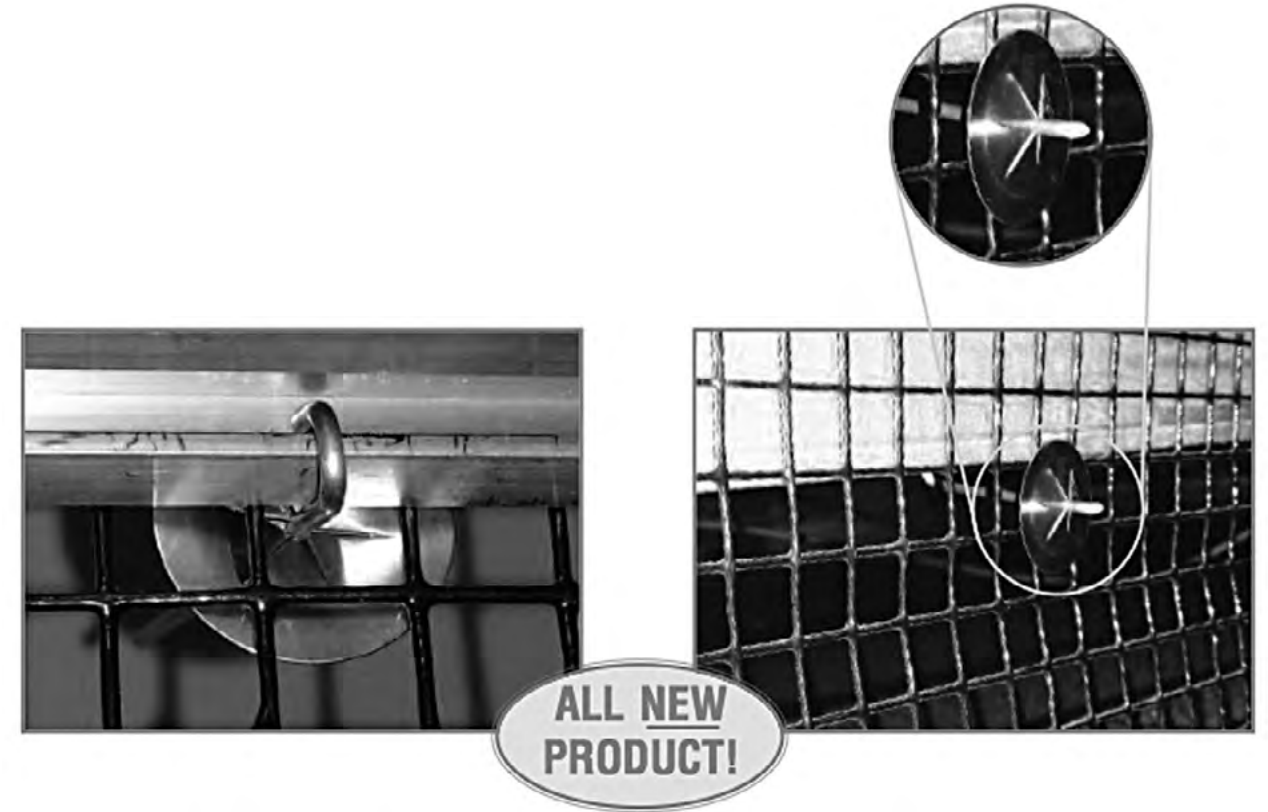
Material
SunScreener Wire Mesh Clip
J-Hook 303 Stainless steel
Washer 304 Stainless steel

*Quick
Specs*



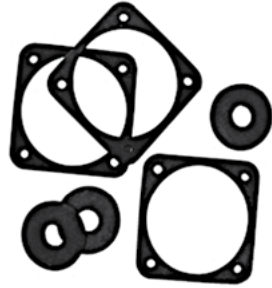
SUNSCREEN

Wire Mesh - For use with ESTCO SunScreener Clips



Material
SunScreen Wire Mesh
PVC Coated, galvanized welded steel mesh

*Quick
Specs*



GASKETS

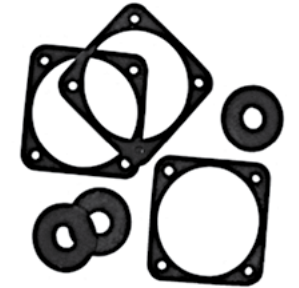
- Nitrile, Butyl, Epdm, Gum Rubber, Neoprene, Viton, Cloth Inserted, Rubber, Silicone, Nylon, Polyethylene, Polypropylene, Styrene, Santoprene, Vyram, Geoflast, Teflon.
- Custom gaskets available.
- ESTCO has thousands of gasket models in-stock. We also provide custom gaskets made to fit to your specification.
- Provide us with your print, material specs and quantities and we'd be happy to quote.



| Part Number | Part Name or Description |
|-----------------|------------------------------------|
| 1/2 ID X 1" OD" | 3/16 CUT WHTSIL WASHER (707)" |
| 10212 | LATEX FLUTTER VALVE LARGE |
| 10213 | LATEX FLUTTER VALVE SMALL |
| 10714 | LG FLUTTER VALVE LATEX FREE RE |
| 10733 | SMFLUTTER VALVE LATEX FREE REV |
| 10734 | DIAPHRAGM VALVE LATEX FREE |
| 10754 | DIAPHRAGM FLUTTER LATEX FREE R |
| 20-0220 | GASKET GAS-200220 SMALL CHEC K |
| 60172 | LARGE FLAPPER VALVE LATEX-FREE |
| 60173 | SMALL FLAPPER VALVE LATEX FREE |
| 60686 | LARGE FLAPPER LATEX FREE |
| 90799-48F-WE | DIAPHRAGM ID.041 OD.440 TK.0 14 |
| 9714-95012 | SEALING GASKET 50DURO GREY E PD |
| CR7600018 | DIAPHRAGM VALVE ZEON POLYISO PR |
| FORMEX .018 | 24 X 48" FORMEX .018SHEETS" |
| G-1000 | WASHER .197X.886X.189 70 NEO |
| G-1010 | .375OD X .080X2ID X .187 CCN S |
| G-1014-A | FOAM ADHESIVE NEOPRENE GASKET |
| G-1018 | 1.50 x 2.00 RECTANGLE ADHESIVE |
| G-1019 | 40 NEO 3OD 1/2"ID 1/8" THICK |
| G-1019-1 | GASKET 1/2IDX3ODX1/8 BUNA-NW HT |
| G-1020-1 | GASKET 5/8IDX4ODX1/8 BUNAN W HT |
| G-1036 | GASKET WASHER 9/16X1/16 |
| G-1042 | 4.65 OD .375ID .125CUT WHITE |
| G-1043 | WASHER .157IDX.500ODX.157THK |
| G-1044 | 50-8728-A REV .094 CCNS W/PSA |
| G-1045 | 12.150X.280X3/16 50-8730-1 |
| G-1046 | 8.8X.280X.187 50-8730-2 REV X3 |
| G-1047 | .600 X .094 CC/PSA50-8728-2 X2 |
| G-1048 | .600X.280X3/16<50-30120-1 RX1 |
| G-1049 | 12244 SPEC REV. 01/DWG REV.A |
| G-1051 | CHASSIS GASKET 7.75 #90003-1 |
| G-10516 W/PSA | 1-1/2 X .062 CCNS W/PSA |
| G-1052 | 3.00 DIA W/3 HOLES #22009-10 0 |
| G-1053 | CABLE CLAMP 50-30169 REV X6 PK |
| G-1055 | 1-1/8 ID 3-1/2 LENGTH 2-3/8 WI |
| G-1056 | PH-182 1 1/4OD X .312ID X1/8" GASK |
| G-1058 | PH-185 (.875X.312X.125) PSA |
| G-1059 | PH-186 (.875X.312X.250) |
| G-1060 | PH-187 (1.125X.312X.375 W/PS A) |
| G-1061 | PAD 2x5x1/2 HK-3/4 HOLE 60NE O" |
| G-1066 | CUSTOM PART 1/16 CCNS W/PSA RH |
| G-1066A | CUSTOM PART CCNS 1/16 W/PSA LH |
| G-1070 | 01855 CABLE CCNS W/PSA 1/16 " |
| G-1070-A | 01856 LG PLUG CCNS W/PSA 1/P SA |
| G-1070-B | 01857 SM PLUG CCNS W/PSA1/16" GASK |
| G-1071 | 1.75ODX.250" NEO 50 PN 608 |
| G-1071-A | 2 Disk x 3/16" Neoprene 50Sh" |

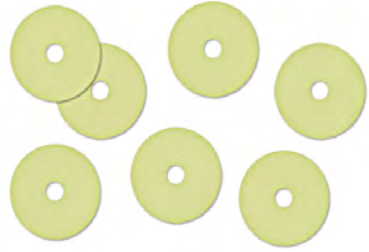
GASKETS

| Part Number | Part Name or Description |
|--------------|-------------------------------------|
| G-1072 | 1.00 X .250 NEOPRENE DISK" |
| G-1081 | 2 1/4 x 1 1/4 x 1/8" Neow/PS" |
| G-1085 | 3/4 OD X 1/4 ID X 3/16 CUT 60 N |
| G-1091 | 1.75OD x 1.625"ID x .03 1 Cut" |
| G-1101 | .88 OD x .25 ID x .062 Thick |
| G-1110 | .400 DISK CCNS W/PSA KISS CU T |
| G-1150 | .600 OD X .185 ID X .250 EPD M |
| G-1200 | 1.2 LENGTH X .560 WIDTH W/2 6" |
| G-1325 | 5 OD X .125 ID .300 HOLES (8)" |
| G-1350 | .375 X .187 DISK OPEN CELL W/P |
| G-1351 | SPACER 22-39430-000 |
| G-1352 | GASKET .955ODX.540IDX.150THK N |
| G-1353 | GASKET MYLAR .005TH 1/4ID X 1" |
| G-1354 | GASKET PER GA00272ABA |
| G-1355 | GASKET #GA00273 ABA |
| G-1356 | GASKET .453 OD X 1/8 THK SIL I" |
| G-1357 | GASKET 60 NEO CH #900-025 |
| G-1358 | GASKET 60 NEO CH #900-026 |
| G-1359 | GASKET .915 OD X 1/8" T HKSIL" |
| G-1360 | GASKET SILICONE BLK #900-029 |
| G-1361 | GASKET 70 SILICONE CH#900-02 4 |
| G-1362 BLACK | .31ID X 1.0OD X .12 THK 80 E PD |
| G-1363 | GASKET SILICONE CH# 900-028 |
| G-1364 | GASKET SILICONE CH# 900-027 |
| G-1365 | GASKET 1.375IDX1.855ODX.032T H |
| G-1366 | GASKET 1.267IDX1.855ODX.032T H |
| G-1367 | .650 OD x .125" THK NEO PRENE" |
| G-1368 | .650 OD x .3/32" THK EP DM |
| G-1369 | CCPOLY FOAM W/ADHES 6WDX25" L O" |
| G-1370 | GASKET CCNS WITH PSA KISS-CU T |
| G-1371 | GASKET, FLAT MOUNT WIPER1.78" GASK" |
| G-1373 | GASKET W/ 4 HOLES 2.05 X2.05 |
| G-1374 | CRYSTAL GASKET |
| G-1375 | GASKET CCNS W/ PSA KISS CUT |
| G-1376 | 3/16X1/2" CCNS W/ PSA " |
| G-1377 | GASKET REAR 40A BLK SILICONE . |
| G-1378 | BOTTOM GASKET 40A BLK SILICO NE |
| G-1379 | FRONT GASKET 40A BLK SILICON E |
| G-1380 | WASHER .3125ID X 1.375OD X .12 |
| G-1381 | 3/8ID X 7/8"OD X 1/16"THKDIE" |
| G-1382 | .1875 ID x 1" OD x .125 "THK" |
| G-1385 | GASKET .375IDX.875ODX.250THK 6 |
| G-1386 | FUNNEL GASKET BLACK BUNA FDA 5 |
| G-1387 | 3.5 X 3.5" X .500" THK NEOPAD" |
| GS-1050 | .250 CCNS SPONGE CORD MED DE N |
| GS-1200 | 1/16 x 1.00 CCNS W/PSA<" |
| GS-1250 | 1/16 x 1-1/2 CCNS W/PSA 50" " |
| GS-1377 | WASHER, SILICONE BUMPER W/PS A |



- Nitrile, Butyl, Epdm, Gum Rubber, Neoprene, Viton, Cloth Inserted, Rubber, Silicone, Nylon, Polyethylene, Polypropylene, Styrene, Santoprene, Vyram, Geoflast, Teflon.
- Custom gaskets available.
- ESTCO has thousands of gasket models in-stock. We also provide custom gaskets made to fit to your specification.
- Provide us with your print, material specs and quantities and we'd be happy to quote.





LATEX FREE DIAPHRAGMS

ALL SIZES MADE TO CUSTOMER SPECIFIED REQUIREMENTS & TO PRINT

- Made from Non-Allergenic, Latex-Free materials.
- ESTCO is a leading distributor of latex-free diaphragms of all types, shapes and sizes. In addition to standard model numbers, we also provide custom diaphragms.
- Save money on higher-quality, ISO-compliant parts.
- Contact us at 888-696-7826

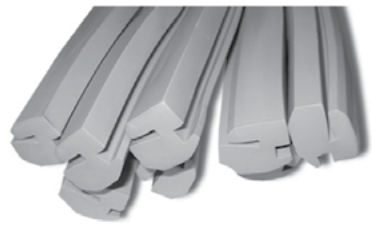


SOLID ROUND BALLS

These molds are made to commercial tolerances and will have flash around the parting line of balls.

Precision, or flashless balls, are also available in various sizes and materials. These balls are OD ground which eliminates any flash or parting line and can result in TiR tolerances of $\pm .003$. Higher production volumes are required on flashless balls as a result of the set-up of special equipment.

| PART NO. | A | | |
|----------|------|-------|------|
| | Inch | Dec | MM |
| E-664 | 1/8 | 0.125 | 3.2 |
| E-665 | 1/4 | 0.250 | 6.4 |
| E-2993 | 3/8 | 0.375 | 9.5 |
| E-2636 | 7/16 | 0.438 | 11.1 |
| E-656 | 1/2 | 0.500 | 12.7 |
| E-659 | 3/4 | 0.750 | 19.1 |

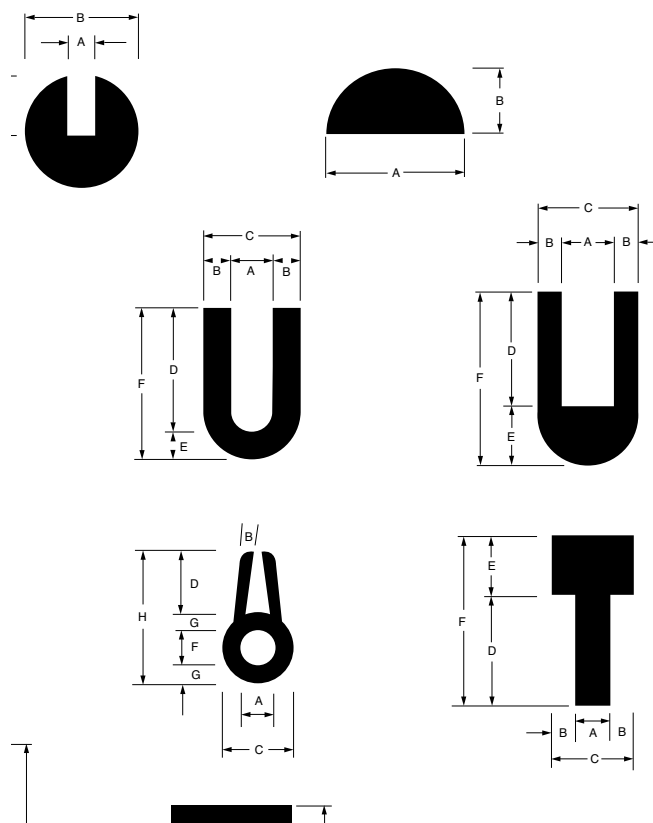


EXTRUSIONS & LATHE CUTS

Standard off-the-shelf parts don't always work. From spec to the final product, ESTCO has provided thousands of custom extruded parts for industrial use: automotive, medical, marine, toy, hardware, and many other industries.

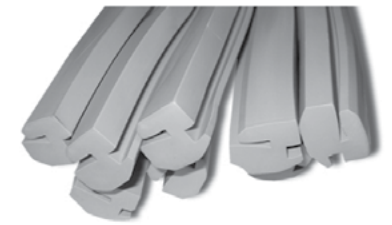
UNIQUE EXTRUSION PROGRAM:

Our unique extrusion program allows runs down to 100 feet using our in house 70 durometer EPDM compounds. Send us your print or profile sketch and we will respond within 48 hours.



Extruded materials include all organic compounds listed in this book as well as non-organics such as silicones. Cellular extrusions are also available as special runs.

CALL FOR SIZES



EXTRUSIONS & LATHE CUTS

RUBBER LATHE CUTS

What is a Lathe Cut?

A lathe cut product is manufactured from a cylindrical tube of rubber by inserting a mandrel into the cylindrical tube and cutting the finished dimensions with a knife while the mandrel is being turned at high speed in a lathe type machine.

Uses

Lathe cut products are used in many applications such as: Seals, Drive Belts, Vibration Dampeners, Bumpers, Bushings and Insulators.

Method of Manufacture

The cylindrical tube from which lathe cut products are cut may be produced by several manufacturing processes depending on design parameters such as size, quantity required, tolerances and material.

Capability

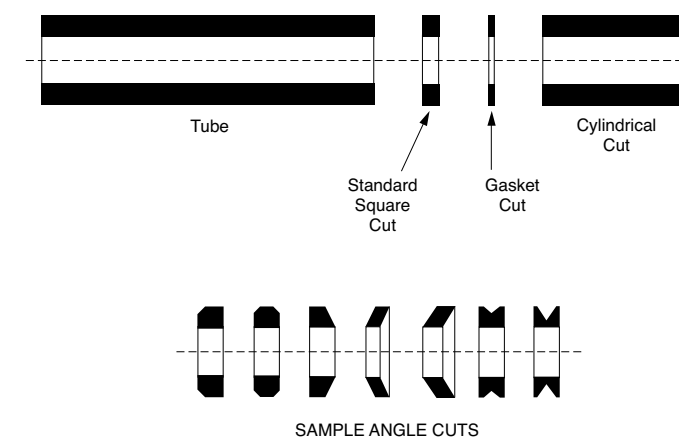
We can custom manufacture Lathe Cut Washers and Gaskets for tight tolerance applications for a wide range of markets. We can produce diameters from 1/8" to 7" ID, cut thickness starting at .020" with tolerances of plus/minus .004 with durometer ranges from 40 to 90, shore A.

Compounds

Our extensive applications experience provides you with custom compounds that respond to your need for the most cost effective materials. Our formulas use ASTM specifications and the most demanding performance testing criteria. We can offer a wide range of custom or stock compounds in Nitrile, Neoprene, EPDM, SBR, Silicone, Fluoro-elastomer, Natural Rubber and some food and water grade formulas.

Standard off-the-shelf parts don't always work. From spec to the final product, ESTCO has provided thousands of custom extruded parts for industrial use: automotive, medical, marine, toy, hardware, and many other industries.

VARIOUS CROSS SECTIONS ARE AVAILABLE FOR LATHE CUT PARTS AS SHOWN BELOW.





WELL NUT® Metric Threaded Inserts

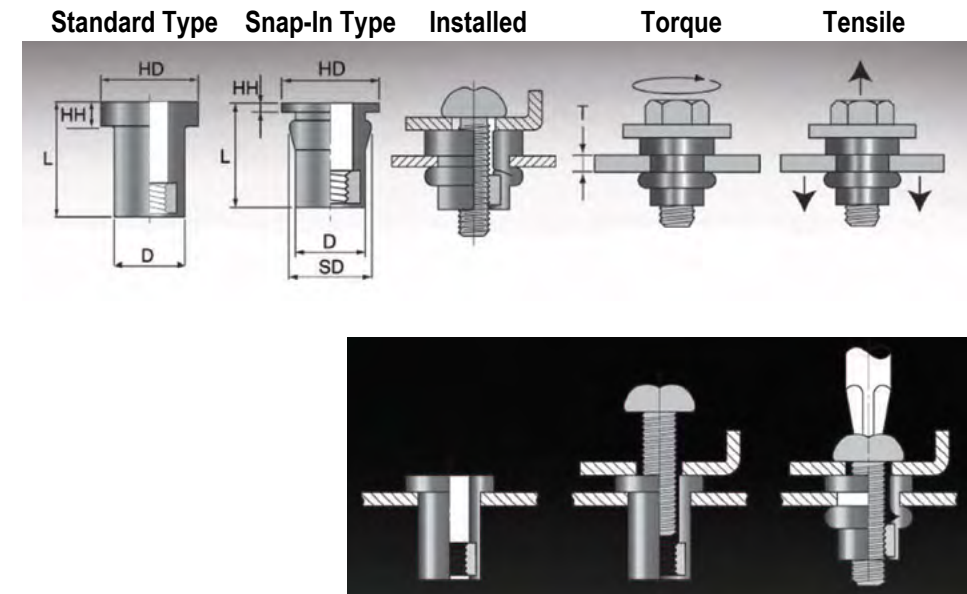
Standard and Snap-In Well Nut Installation

1. Place WELL NUT Insert all the way into predrilled hole until flange is firmly against mounting surface.
2. Pass machine screw through part to be fastened.
3. Tighten until snug.

| Dimensions & Specifications (Metric) | | | | | | | | | | Test Results @ Plate Thickness (T) | | |
|--------------------------------------|-------------|-------------|-----------------|---------------|----------------------|----------|----------------|------------------|------------------|------------------------------------|-----------------------|--------------------|
| Catalog Number | Part Number | Thread Size | Body Diameter D | Hole Size nom | Grip Range min - max | Length L | Head Height HH | Head Diameter HD | Snap Diameter SD | Plate Thickness mm | Tightening Torque N-m | Ultimate Tensile N |
| STANDARD | | | | | | | | | | | | |
| C632 | 347017 | M3 x 0.5 | 6.10 | 6.35 | 9.53 - 15.42 | 24.92 | 0.89 | 14.07 | - | 12.7 | 0.34 | 512 |
| E632 | 347043 | M3 x 0.5 | 7.92 | 7.92 | 0.38 - 3.96 | 12.67 | 1.57 | 11.48 | - | 1.57 | 0.45 | 507 |
| B632 | 347011 | M4 x 0.7 | 7.92 | 7.92 | 0.38 - 3.96 | 12.67 | 1.32 | 11.13 | - | 1.57 | 0.34 | 649 |
| C832* | 347026 | M4 x 0.7 | 6.10 | 7.92 | 0.38 - 4.37 | 14.22 | 1.52 | 19.05 | - | 1.60 | 0.34 | 578 |
| L1024* | 347089 | M5 x 0.8 | 9.53 | 9.53 | 0.76 - 5.77 | 19.48 | 4.75 | 14.27 | - | 3.18 | 0.56 | 423 |
| 10S | 347107 | M5 x 0.8 | 9.58 | 9.58 | 0.38 - 4.88 | 14.07 | 0.91 | 12.70 | - | 3.18 | 0.56 | 1023 |
| 10SL | 347111 | M5 x 0.8 | 9.53 | 9.53 | 7.92 - 16.33 | 26.70 | 1.30 | 14.27 | - | 12.7 | 0.34 | 1401 |
| 10XL* | 347141 | M5 x 0.8 | 9.53 | 9.53 | 20.62 - 29.03 | 39.40 | 1.30 | 14.27 | - | 26.67 | 1.13 | 1650 |
| G1032 | 347049 | M5 x 0.8 | 9.58 | 9.58 | 0.76 - 5.77 | 20.50 | 4.75 | 19.05 | - | 3.18 | 0.56 | 1232 |
| H1032 | 347051 | M5 x 0.8 | 9.58 | 9.58 | 7.92 - 11.43 | 21.51 | 0.89 | 14.07 | - | 9.53 | 0.34 | 1156 |
| J1032 | 347063 | M5 x 0.8 | 9.58 | 9.58 | 0.76 - 5.77 | 17.78 | 2.03 | 19.05 | - | 3.18 | 0.56 | 1001 |
| Q1032 | 347087 | M5 x 0.8 | 9.58 | 9.58 | 0.89 - 5.89 | 16.89 | 1.02 | 14.27 | - | 3.18 | 0.56 | 1179 |
| HSCM6X1 | 347261 | M6 x 1.0 | 12.50 | 12.70 | 0.38 - 2.39 | 16.00 | 1.52 | 14.73 | - | 1.91 | 1.13 | 1001 |
| EM6X1* | 347247* | M6 x 1.0 | 12.50 | 12.70 | 0.38 - 2.39 | 16.00 | 1.30 | 17.25 | - | 0.79 | 1.58 | 534 |
| ADM6X1* | 347258* | M6 x 1.0 | 12.50 | 12.70 | 0.38 - 1.57 | 16.00 | 1.30 | 19.99 | - | 1.57 | 1.13 | 1308 |
| 1/4A* | 347256 | M6 x 1.0 | 12.70 | 12.70 | 0.38 - 1.27 | 15.98 | 2.82 | 15.98 | - | 1.91 | 1.13 | 1290 |
| 1/4S | 347103 | M6 x 1.0 | 12.70 | 12.70 | 0.38 - 2.82 | 16.00 | 1.30 | 16.00 | - | 1.91 | 1.13 | 1023 |
| D1420 | 347031 | M6 x 1.0 | 12.70 | 12.70 | 0.79 - 4.75 | 21.06 | 4.75 | 18.80 | - | 4.75 | 1.69 | 1245 |
| J1420 | 347067 | M6 x 1.0 | 12.70 | 12.70 | 6.35 - 11.61 | 26.70 | 1.30 | 16.13 | - | 6.35 | 1.13 | 1979 |
| M6X1* | 347254* | M6 x 1.0 | 12.70 | 12.70 | 0.38 - 2.39 | 16.00 | 1.30 | 19.99 | - | 1.91 | 1.13 | 992 |
| MDM6X1* | 347248 | M6 x 1.0 | 12.70 | 12.70 | 0.79 - 4.75 | 21.06 | 4.75 | 18.80 | - | 4.75 | 1.69 | 1379 |
| W1420 | 347093 | M6 x 1.0 | 12.70 | 12.70 | 4.75 - 8.71 | 20.35 | 1.30 | 16.13 | - | 4.75 | 1.13 | 1601 |
| E51618 | 347035 | M8 x 1.25 | 15.88 | 15.88 | 0.38 - 3.96 | 18.42 | 3.18 | 22.23 | - | 3.84 | 2.82 | 2033 |
| F51618* | 347470 | M8 x 1.25 | 15.75 | 15.88 | 3.96 - 9.53 | 27.94 | 5.71 | 22.22 | - | 9.53 | 1.69 | 2462 |
| A51618* | 347252 | M8 x 1.25 | 19.00 | 19.00 | 0.38 - 6.02 | 27.00 | 5.00 | 32.00 | - | 4.75 | 2.26 | 1962 |
| A3816* | 347009 | M8 x 1.25 | 19.05 | 19.05 | 0.38 - 11.10 | 26.97 | 4.75 | 31.75 | - | 11.10 | 2.26 | 6672 |
| SNAP-IN | | | | | | | | | | | | |
| 2D832* | 347027 | M4 x 0.7 | 7.87 | 7.92 | 0.38 - 1.27 | 10.92 | 1.27 | 12.70 | 9.53 | 0.79 | 0.56 | 405 |
| A1024* | 347006 | M5 x 0.8 | 9.53 | 9.53 | 0.38 - 1.27 | 14.27 | 3.18 | 14.27 | 10.34 | 0.79 | 0.56 | 694 |
| NP1032 | 347266 | M5 x 0.8 | 9.53 | 9.53 | 0.38 - 1.27 | 10.16 | 1.50 | 12.95 | 10.34 | 1.27 | 0.56 | 1023 |
| W0811JS* | 347410 | M6 x 1.0 | 12.47 | 12.47 | 0.76 - 5.77 | 17.53 | 2.82 | 16.00 | 13.47 | 3.18 | 0.56 | 1023 |
| ET51618* | 347360 | M8 x 1.25 | 15.88 | 15.88 | 0.38 - 3.00 | 27.99 | 8.48 | 22.20 | 17.25 | 3.18 | 0.9 | 1717 |

*Requires 25,000 minimum order. **Refer to factory. • Material is EPDM

Specifications
Body Material: Chloroprene and EPDM
Nut Material: Brass
Thread Class: 2B (in); 6H (mm)

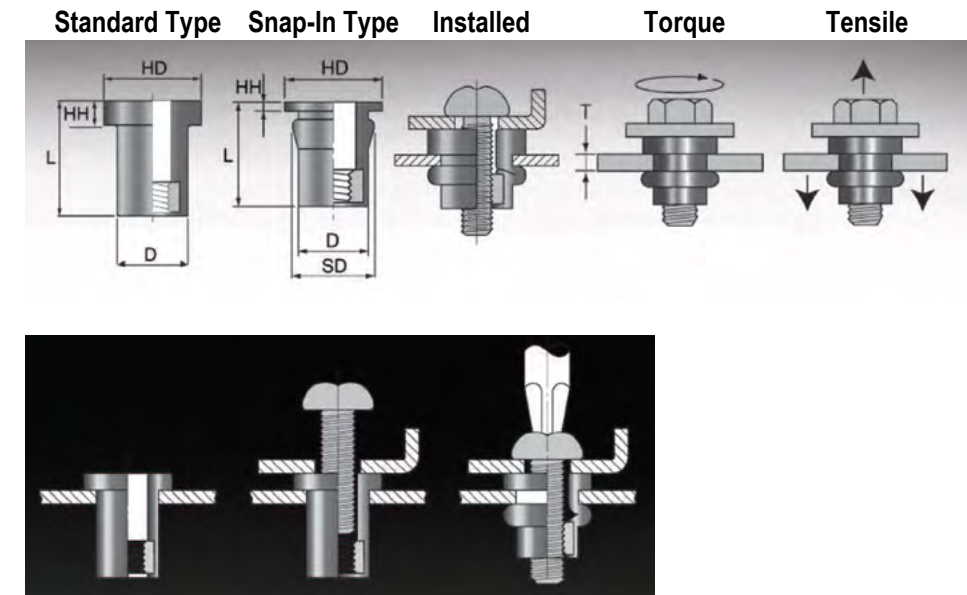


WELL NUT® Inch Threaded Inserts



| Dimensions & Specifications (Inch) | | | | | | | | | | Test Results @ Plate Thickness (T) | | |
|------------------------------------|-------------|-------------|-----------------|---------------|--------------------|----------|----------------|------------------|------------------|------------------------------------|-------------------------|---------------------|
| Catalog Number | Part Number | Thread Size | Body Diameter D | Hole Size nom | Grip Range min-max | Length L | Head Height HH | Head Diameter HD | Snap Diameter SD | Plate Thickness in | Tightening Torque in-lb | Ultimate Tensile lb |
| STANDARD | | | | | | | | | | | | |
| C632 | 347024 | 6-32 | 0.240 | 0.250 | 0.375 - 0.607 | 0.981 | 0.035 | 0.554 | - | 0.500 | 3 | 115 |
| E632 | 347042 | 6-32 | 0.312 | 0.312 | 0.015 - 0.156 | 0.499 | 0.062 | 0.452 | - | 0.062 | 4 | 114 |
| B832 | 347012 | 8-32 | 0.312 | 0.312 | 0.015 - 0.156 | 0.499 | 0.052 | 0.438 | - | 0.062 | 3 | 146 |
| C832* | 347025 | 8-32 | 0.312 | 0.312 | 0.015 - 0.172 | 0.560 | 0.060 | 0.750 | - | 0.063 | 3 | 130 |
| L1024* | 347233 | 10-24 | 0.375 | 0.375 | 0.030 - 0.277 | 0.767 | 0.187 | 0.562 | - | 0.125 | 5 | 95 |
| 10S | 347108 | 10-32 | 0.377 | 0.377 | 0.015 - 0.192 | 0.554 | 0.036 | 0.500 | - | 0.125 | 5 | 230 |
| 10SL | 347112 | 10-32 | 0.375 | 0.375 | 0.312 - 0.643 | 1.051 | 0.051 | 0.562 | - | 0.500 | 3 | 315 |
| 10XL* | 347198 | 10-32 | 0.375 | 0.375 | 0.812 - 1.143 | 1.551 | 0.051 | 0.562 | - | 1.050 | 10 | 371 |
| G1032 | 347048 | 10-32 | 0.377 | 0.377 | 0.030 - 0.227 | 0.807 | 0.187 | 0.750 | - | 0.125 | 5 | 277 |
| H1032 | 347054 | 10-32 | 0.377 | 0.377 | 0.312 - 0.450 | 0.847 | 0.035 | 0.554 | - | 0.375 | 3 | 260 |
| J1032 | 347064 | 10-32 | 0.377 | 0.377 | 0.030 - 0.227 | 0.700 | 0.080 | 0.750 | - | 0.125 | 5 | 225 |
| Q1032 | 347088 | 10-32 | 0.377 | 0.377 | 0.035 - 0.232 | 0.665 | 0.040 | 0.562 | - | 0.125 | 5 | 265 |
| 1/4S | 347102 | ¼-20 | 0.500 | 0.500 | 0.015 - 0.111 | 0.630 | 0.051 | 0.630 | - | 0.075 | 10 | 230 |
| D1420 | 347030 | ¼-20 | 0.500 | 0.500 | 0.031 - 0.187 | 0.829 | 0.187 | 0.740 | - | 0.187 | 15 | 280 |
| J1420 | 347068 | ¼-20 | 0.500 | 0.500 | 0.250 - 0.457 | 1.051 | 0.051 | 0.635 | - | 0.250 | 10 | 140 |
| JL1420 | 347355 | ¼-20 | 0.500 | 0.500 | 0.625 - 0.830 | 1.432 | 0.422 | 0.625 | - | 0.375 | 10 | 445 |
| JM1420* | 347440 | ¼-20 | 0.500 | 0.500 | 0.215 - 0.422 | 1.440 | 0.440 | 0.650 | - | 0.250 | 10 | 445 |
| W1420 | 347095 | ¼-20 | 0.500 | 0.500 | 0.197 - 0.342 | 0.801 | 0.051 | 0.635 | - | 0.187 | 10 | 360 |
| AC1420* | 347000 | ¼-20 | 0.562 | 0.562 | 0.280 - 0.500 | 1.301 | 0.051 | 0.635 | - | 0.397 | 20 | 251 |
| E51618 | 347034 | ½-18 | 0.620 | 0.625 | 0.015 - 0.156 | 0.725 | 0.125 | 0.875 | - | 0.151 | 25 | 457 |
| F51618* | 347033 | ½-18 | 0.620 | 0.625 | 0.156 - 0.375 | 1.100 | 0.225 | 0.875 | - | 0.375 | 15 | 558 |
| A3816 | 347008 | ¾-16 | 0.750 | 0.750 | 0.015 - 0.437 | 1.062 | 0.187 | 1.250 | - | 0.437 | 20 | 1500 |
| Z3816* | 347098 | ¾-16 | 0.750 | 0.750 | 0.015 - 0.125 | 1.050 | 0.350 | 1.750 | - | 0.125 | 30 | 1125 |
| SNAP-IN | | | | | | | | | | | | |
| 2D832* | 347029 | 8-32 | 0.310 | 0.312 | 0.015 - 0.050 | 0.430 | 0.050 | 0.500 | 0.375 | 0.031 | 5 | 91 |
| A1024* | 347004 | 10-24 | 0.375 | 0.375 | 0.015 - 0.050 | 0.562 | 0.125 | 0.562 | 0.407 | 0.031 | 5 | 156 |
| NP1032 | 347280 | 10-32 | 0.375 | 0.375 | 0.015 - 0.050 | 0.400 | 0.059 | 0.510 | 0.407 | 0.050 | 5 | 230 |

*Requires 25,000 minimum order.



Specifications
Body Material: Chloroprene and EPDM
Nut Material: Brass
Thread Class: 2B (in); 6H (mm)

VIBRATION & SHOCK MOUNTS



Series 300 Cylindrical Mountings
7-3 - 7-19



Series 540 Rectangular Mountings
7-20



Series 5000 Bonded Bushing and Snubber
7-27



Series 9000 Cylindrical Mounting Pads
7-28 - 7-30



Series 600 Heavy-Duty Center-Bolt Safety Mountings
7-21 - 7-25



Series 1000 Custom Molded Mounting Feet
7-26



SERIES 300 CYLINDRICAL MOUNTINGS

Styles: **MM300/317**

For loads to 79 pounds in compression; 40 pounds in shear

SELECTION GUIDE

| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 850 | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 3000 | 3600 |
| A | 33 | | | | 29 | 21 | 16 | 12.5 | 10.5 | 7.0 | 5.0 |
| B | 40 | | | | 39.5 | 28.5 | 21.5 | 17.0 | 14.0 | 9.5 | 7.0 |
| C | 60 | | | | | 49 | 37 | 29.5 | 24.0 | 17.0 | 11.5 |
| D | 79 | | | | | 72.5 | 55 | 43.5 | 36 | 24.5 | 17.0 |

| SHEAR | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 850 | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 3000 | 3600 |
| A | 18 | 16.0 | 9.3 | 7.2 | 5.0 | 3.8 | 2.8 | 2.3 | 1.8 | 1.2 | * |
| B | 21 | | 13.0 | 10.2 | 7.0 | 5.3 | 4.0 | 3.2 | 2.6 | 1.8 | * |
| C | 34 | | 24.5 | 20 | 14.7 | 11.2 | 9.0 | 7.5 | 6.2 | 4.5 | 3.5 |
| D | 40 | | 32 | 26 | 19.0 | 14.8 | 12.0 | 10.0 | 8.3 | 6.0 | 5.0 |

* At these forcing frequencies lesser loads will yield 81% isolation.

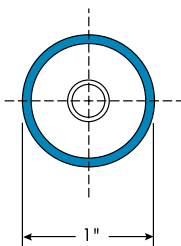
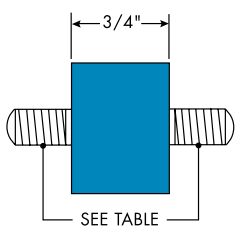
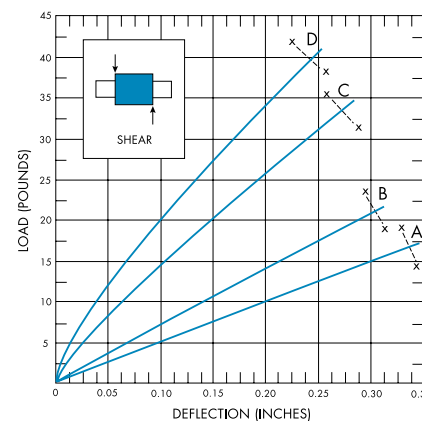
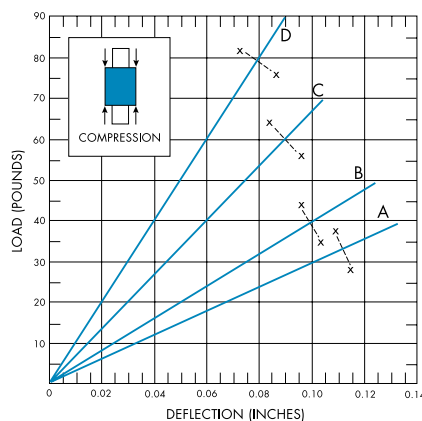
DIMENSIONS

| LEFT STUD (IN.) | | RIGHT STUD (IN.) | | SUFFIX |
|-----------------|--------|------------------|--------|--------|
| THREAD | LENGTH | THREAD | LENGTH | |
| 1/4 - 20 | 1/4 | 1/4 - 20 | 1/4 | 52 |
| 1/4 - 20 | 1/2 | 1/4 - 20 | * | 59 |
| 1/4 - 20 | 1/2 | 1/4 - 20 | 13/32 | 57 |
| 1/4 - 20 | 1/2 | 1/4 - 20 | 1/2 | * 58 |
| 1/4 - 20 | 1/2 | 1/4 - 20 | 5/8 | 43 |
| 1/4 - 20 | 1/2 | 1/4 - 20 | 3/4 | 45 |
| 1/4 - 20 | 1/2 | 1/4 - 20 | 1 | 55 |
| 1/4 - 20 | 5/8 | 1/4 - 20 | 5/8 | 42 |
| 5/16 - 18 | 9/16 | 5/16 - 18 | 9/16 | * 76 |

* standard stud * tapped hole

LOAD DEFLECTION GRAPH

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



SERIES 300 CYLINDRICAL MOUNTINGS

Style: **MM301**

For loads to 25 pounds in compression; 12.5 pounds in shear

SELECTION GUIDE

| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 2750 | 3000 | 3600 |
| A | 8 | | | | | 6.2 | 4.8 | 4.0 | 3.2 | 2.7 | 2.0 |
| B | 12 | | | | | 10.2 | 8.0 | 6.5 | 5.4 | 4.5 | 3.2 |
| C | 16 | | | | | | | 14.0 | 11.6 | 9.6 | 6.8 |
| D | 25 | | | | | | | 22.0 | 18.2 | 15.2 | 10.4 |

| SHEAR | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 2750 | 3000 | 3600 |
| A | 4.4 | 4.0 | 3.1 | 2.2 | 1.7 | 1.3 | * | * | * | * | * |
| B | 6.7 | 6.5 | 5.2 | 3.7 | 2.8 | 2.3 | 1.8 | * | * | * | * |
| C | 9.0 | | 9.0 | 6.3 | 4.6 | 3.6 | 2.9 | 2.3 | 1.9 | * | * |
| D | 12.5 | | | 11.2 | 8.2 | 6.3 | 5.1 | 4.0 | 3.3 | 2.8 | 2.0 |

* At these forcing frequencies lesser loads will yield 81% isolation.

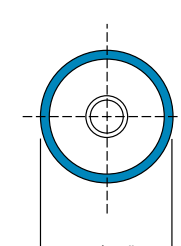
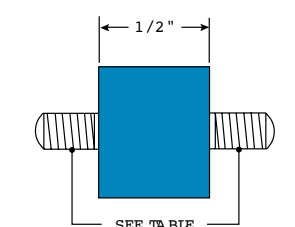
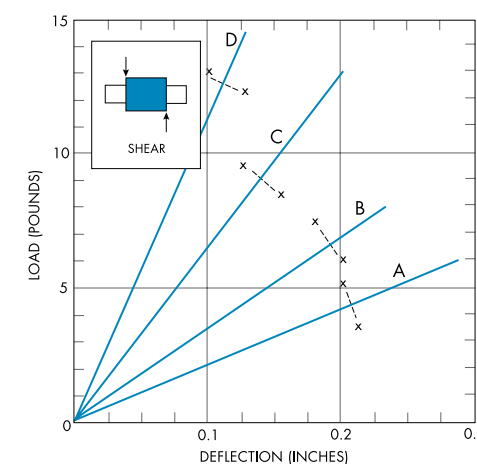
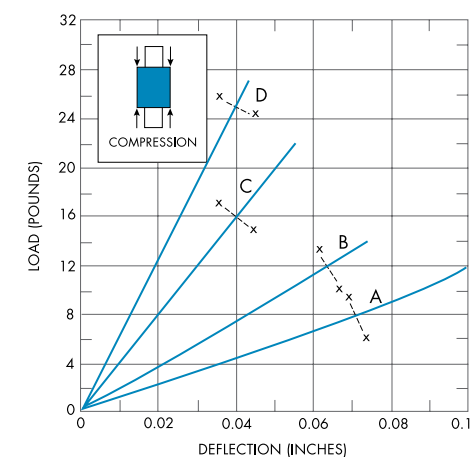
DIMENSIONS

| LEFT STUD (IN.) | | RIGHT STUD (IN.) | | SUFFIX |
|-----------------|--------|------------------|--------|--------|
| THREAD | LENGTH | THREAD | LENGTH | |
| 8-32 | 1/4 | 8-32 | * | 19 |
| 8-32 | 1/4 | 8-32 | 1/4 | 12 |
| 8-32 | 1/4 | 8-32 | 3/8 | 15 |
| 8-32 | 3/8 | 8-32 | * | 13 |
| 8-32 | 3/8 | 8-32 | 3/8 | * 10 |

* standard stud * tapped hole

LOAD DEFLECTION GRAPH

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads





SERIES 300 CYLINDRICAL MOUNTINGS

Style: **MM302**

For loads to 13.3 pounds in compression; 6.4 pounds in shear

SELECTION GUIDE

| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 1000 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 2750 | 3000 | 3600 |
| A | 4.9 | | | | | 3.9 | 3.0 | 2.4 | 2.0 | 1.8 | 1.0 |
| B | 6.4 | | | | | 5.3 | 4.2 | 3.4 | 2.9 | 2.5 | 1.5 |
| C | 10.4 | | | | | 9.8 | 7.7 | 6.3 | 5.2 | 4.3 | 2.6 |
| D | 13.3 | | | | | 13.1 | 10.4 | 8.5 | 7.0 | 5.8 | 4.2 |

| SHEAR | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 1000 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 2750 | 3000 | 3600 |
| A | 2.7 | 2.6 | 1.7 | 1.2 | 1.0 | .7 | .5 | * | * | * | * |
| B | 3.6 | | 2.6 | 1.9 | 1.4 | 1.1 | .8 | .7 | .6 | * | * |
| C | 5.6 | | 4.7 | 3.2 | 2.5 | 1.9 | 1.5 | 1.3 | 1.1 | .9 | .7 |
| D | 6.4 | | 6.1 | 4.4 | 3.4 | 2.7 | 2.2 | 1.8 | 1.6 | 1.4 | 1.0 |

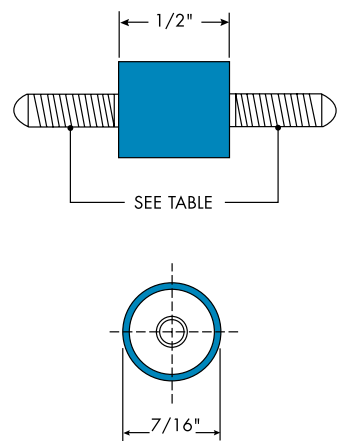
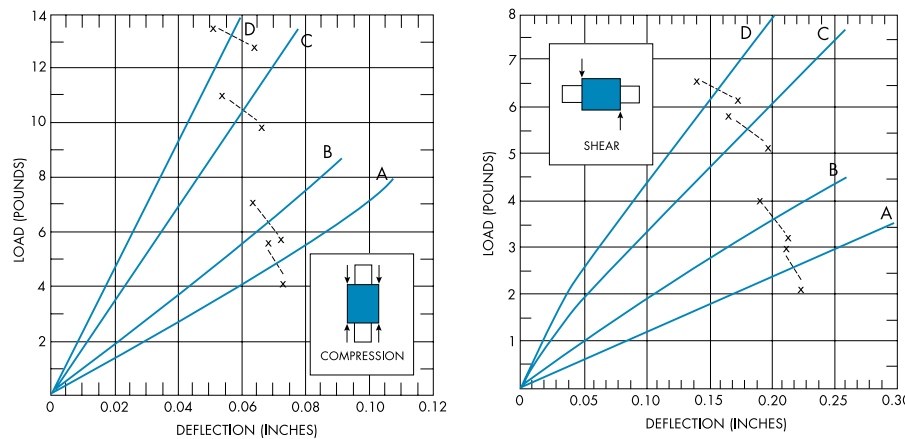
* At these forcing frequencies lesser loads will yield 81% isolation.

DIMENSIONS

| LEFT STUD (IN.) | | RIGHT STUD (IN.) | | SUFFIX |
|-----------------|--------|------------------|--------|--------|
| THREAD | LENGTH | THREAD | LENGTH | |
| 8-32 | 3/8 | 8-32 | 3/8 | 20 |

LOAD DEFLECTION GRAPH

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



SERIES 300 CYLINDRICAL MOUNTINGS

Style: **MM304**

For loads to 75 pounds in compression; 42 pounds in shear

SELECTION GUIDE

| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 850 | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 3000 | 3600 |
| A | 24 | | | | 29 | 21 | 16 | 12.5 | 10.5 | 7.0 | 5.0 |
| B | 32 | | | | 39.5 | 28.5 | 21.5 | 17.0 | 14.0 | 9.5 | 7.0 |
| C | 38 | | | | 49 | 37 | 29.5 | 24.0 | 17.0 | 11.5 | |
| D | 45 | | | | 72.5 | 55 | 43.5 | 36 | 24.5 | 17.0 | |

| SHEAR | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 850 | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 3000 | 3600 |
| A | 9 | 16.0 | 9.3 | 7.2 | 5.0 | 3.8 | 2.8 | 2.3 | 1.8 | 1.2 | * |
| B | 14 | | 13.0 | 10.2 | 7.0 | 5.3 | 4.0 | 3.2 | 2.6 | 1.8 | * |
| C | 18 | | 24.5 | 20 | 14.7 | 11.2 | 9.0 | 7.5 | 6.2 | 4.5 | 3.5 |
| D | 21 | | 32 | 26 | 19.0 | 14.8 | 12.0 | 10.0 | 8.3 | 6.0 | 5.0 |

* At these forcing frequencies lesser loads will yield 81% isolation.

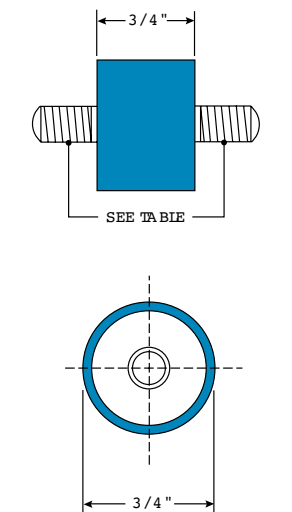
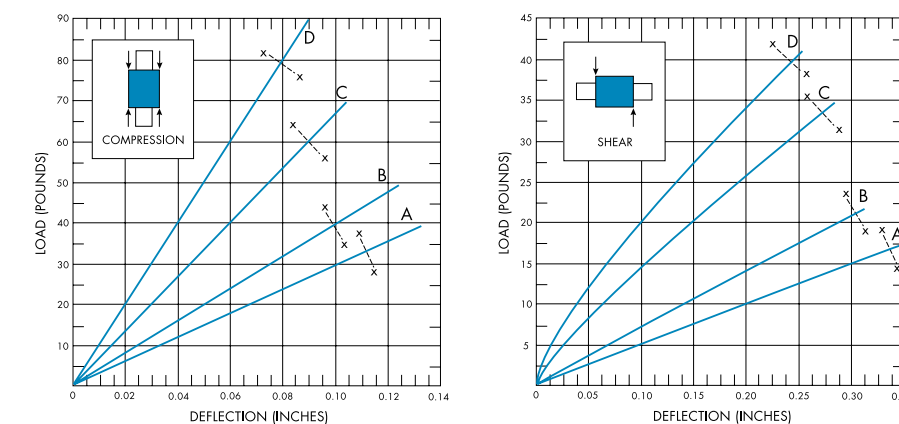
DIMENSIONS

| LEFT STUD (IN.) | | RIGHT STUD (IN.) | | SUFFIX |
|-----------------|--------|------------------|--------|--------|
| THREAD | LENGTH | THREAD | LENGTH | |
| 1/4 - 20 | 1/4 | 1/4 - 20 | 1/4 | 52 |
| 1/4 - 20 | 1/2 | 1/4 - 20 | * | 59 |
| 1/4 - 20 | 1/2 | 1/4 - 20 | 13/32 | 57 |
| 1/4 - 20 | 1/2 | 1/4 - 20 | 1/2 | * 58 |
| 1/4 - 20 | 1/2 | 1/4 - 20 | 5/8 | 43 |
| 1/4 - 20 | 1/2 | 1/4 - 20 | 3/4 | 45 |
| 1/4 - 20 | 1/2 | 1/4 - 20 | 1 | 55 |
| 1/4 - 20 | 5/8 | 1/4 - 20 | 5/8 | 42 |

* standard stud * tapped hole

LOAD DEFLECTION GRAPH

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



• The small, yet rugged design and the broad range of sizes make ESTCO cylindrical mountings ideal for a wide range of applications. They have been used on electric motors and generators, fans and blowers, relays and control panels, business machines timing devices and air handling equipment. ESTCO cylindrical mountings can be loaded in compression, in shear, or in combination compression and shear. Additional standard stud combinations have been added to the line to allow wider applications of these mountings to a customer's design requirements. All engineering data herein apply to mountings with a studded or tapped insert at each end. The maximum unthreaded portion of the stud does not exceed 1/16-inch.



SERIES 300 CYLINDRICAL MOUNTINGS

Style: **MM305**

For loads to 75 pounds in compression; 42 pounds in shear

SELECTION GUIDE

| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 2750 | 3000 | 3600 |
| A | 40 | | | | | 30.5 | 24.0 | 19.5 | 16.0 | 13.5 | 10.0 |
| B | 43 | | | | | 38 | 30 | 24.8 | 20.5 | 17.5 | 12.5 |
| C | 74 | | | | | 74 | 58.5 | 47.5 | 39.5 | 33 | 23.5 |
| D | 75 | | | | | | 67.5 | 55.5 | 45.5 | 38.5 | 27.5 |

| SHEAR | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 2750 | 3000 | 3600 |
| A | 19 | 15.7 | 12.5 | 8.3 | 6.3 | * | * | * | * | * | * |
| B | 21 | 19.0 | 15.5 | 10.6 | 8.0 | 6.3 | 5.0 | * | * | * | * |
| C | 37 | | 31.5 | 22.5 | 17.0 | 14 | 11.5 | 9.5 | * | * | * |
| D | 42 | | 40 | 29.2 | 22.0 | 18.5 | 15.8 | 13 | 11.0 | 9.5 | * |

* At these forcing frequencies lesser loads will yield 81% isolation.

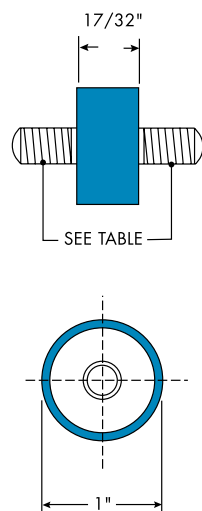
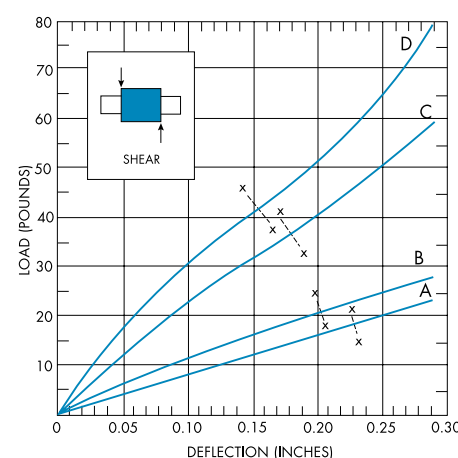
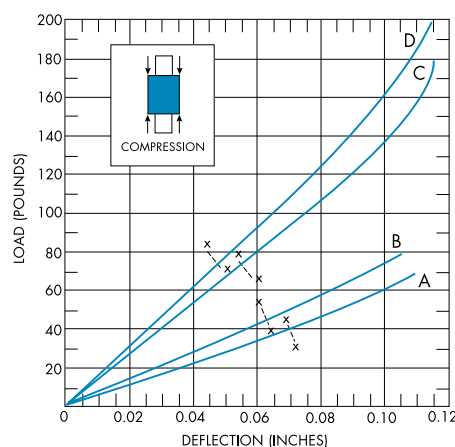
DIMENSIONS

| LEFT STUD (IN.) | | RIGHT STUD (IN.) | | SUFFIX |
|-----------------|--------|------------------|--------|--------|
| THREAD | LENGTH | THREAD | LENGTH | |
| 10-24 | 3/8 | 10-24 | 3/8 | 32 |
| 10-24 | 3/8 | 10-24 | 1/2 | 33 |
| 10-24 | 1/2 | 10-24 | 1/2 | 34 |
| 1/4 - 20 | 1/2 | 1/4 - 20 | 1/2 | * 58 |
| 1/4 - 20 | 1/2 | 1/4 - 20 | 5/8 | 43 |
| 1/4 - 20 | 1/2 | 1/4 - 20 | 3/4 | 45 |
| 1/4 - 20 | 3/4 | 1/4 - 20 | 3/4 | 46 |

* standard stud

LOAD DEFLECTION GRAPH

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



SERIES 300 CYLINDRICAL MOUNTINGS

Style: **MM307**

For loads to 28.5 pounds in compression; 11.9 pounds in shear

SELECTION GUIDE

| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | |
| | | 1500 | 1750 | 2000 | 2250 | 2500 | 3000 | 3600 |
| A | 22.0 | | | | 21.5 | 16.5 | 10.5 | 6.5 |
| B | 28.5 | | | | | 25.5 | 17.0 | 12.0 |

| SHEAR | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | |
| | | 1500 | 1750 | 2000 | 2250 | 2500 | 3000 | 3600 |
| A | 8.4 | 6.2 | 4.7 | 3.7 | 3.0 | 2.4 | * | * |
| B | 11.9 | 9.9 | 7.3 | 5.6 | 4.4 | 3.6 | 2.5 | * |

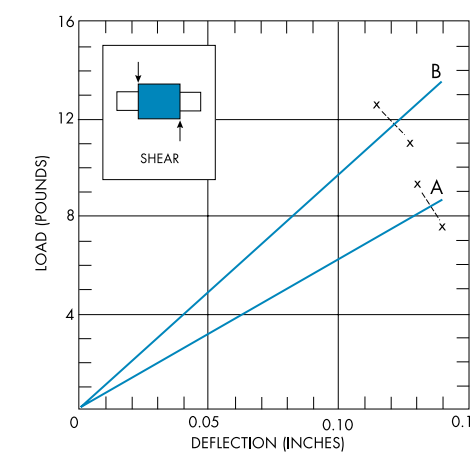
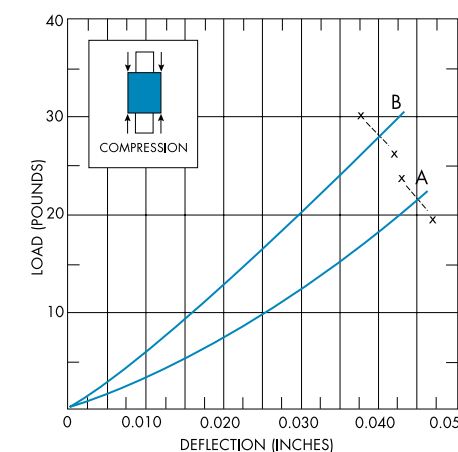
* At these forcing frequencies lesser loads will yield 81% isolation.

DIMENSIONS

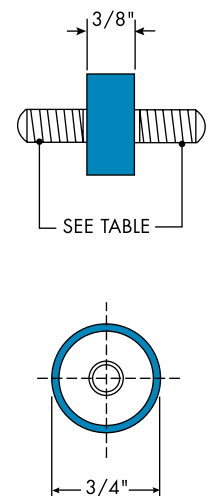
| LEFT STUD (IN.) | | RIGHT STUD (IN.) | | SUFFIX |
|-----------------|--------|------------------|--------|--------|
| THREAD | LENGTH | THREAD | LENGTH | |
| 1/4-20 | .410 | 1/4 - 20 | .410 | 60 |

LOAD DEFLECTION GRAPH

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



The small, yet rugged design and the broad range of sizes make ESTCO cylindrical mountings ideal for a wide range of applications. They have been used on electric motors and generators, fans and blowers, relays and control panels, business machines timing devices and air handling equipment. ESTCO cylindrical mountings can be loaded in compression, in shear, or in combination compression and shear. Additional standard stud combinations have been added to the line to allow wider applications of these mountings to a customer's design requirements. All engineering data herein apply to mountings with a studed or tapped insert at each end. The maximum unthreaded portion of the stud does not exceed 1/16-inch.





SERIES 300 CYLINDRICAL MOUNTINGS

Style: **MM308**

For loads to 210 pounds in compression; not recommended for static loads in shear

SELECTION GUIDE

| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | |
| | | 1150 | 1250 | 1500 | 1750 | 2000 | 2750 | 3500 |
| A | 95 | 95 | 80 | 55 | 40 | 30 | 15 | |
| B | 135 | | 125 | 85 | 60 | 45 | 22 | |
| C | 185 | | | 140 | 100 | 75 | 40 | 25 |
| D | 210 | | | 185 | 135 | 105 | 55 | 35 |

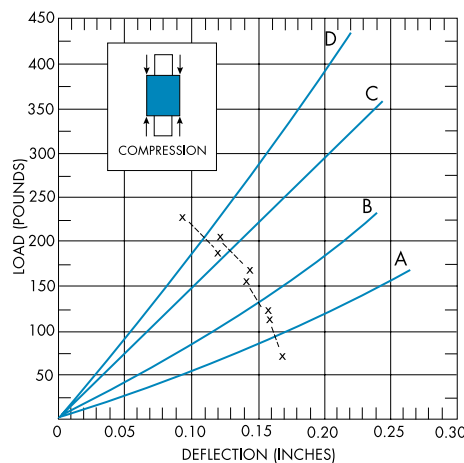
DIMENSIONS

| LEFT STUD (IN.) | | RIGHT STUD (IN.) | | |
|-----------------|--------|------------------|--------|--------|
| THREAD | LENGTH | THREAD | LENGTH | SUFFIX |
| 5/16 - 18 | 9/16 | 5/16 - 18 | * | • 87 |
| 5/16 - 18 | 7/8 | 5/16 - 18 | * | 85 |

* tapped hole • standard stud

LOAD DEFLECTION GRAPH

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



GENERAL INFORMATION

Compression:

When specified as a direction for loading a rubber pad - A deformation caused by squeezing the layers of the object in a direction perpendicular to the layers.

Shear:

When specified as a direction for loading a rubber pad - A deformation caused by sliding layers of an object past each-other in a direction parallel to the layers.

SERIES 300 CYLINDRICAL MOUNTINGS

Style: **MM310**

For loads to 120 pounds in compression; 63 pounds in shear

SELECTION GUIDE

| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|-----|-----|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 700 | 850 | 950 | 1100 | 1250 | 1500 | 1750 | 2000 | 2500 | 3000 |
| A | 41 | | | | 34.5 | 27.5 | 19 | 14 | 10 | 7 | |
| B | 64 | | | | | 48 | 32 | 24 | 17.5 | 12 | 8.5 |
| C | 90 | | | | | 80 | 55 | 41.5 | 30 | 20 | 14 |
| D | 120 | | | | | | 89 | 70.5 | 53 | 38.5 | 26.5 |

| SHEAR | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|-----|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 700 | 850 | 950 | 1100 | 1250 | 1500 | 1750 | 2000 | 2500 | 3000 |
| A | 21 | 20 | 11.0 | 8.5 | 6.7 | 5.5 | * | * | * | * | * |
| B | 31 | | 18 | 14 | 10.5 | 8 | 5.5 | * | * | * | * |
| C | 48 | | 31.5 | 25 | 19.5 | 15.5 | 11 | 8.5 | * | * | * |
| D | 63 | | 50 | 41 | 32.6 | 27.5 | 20.5 | 16 | 14 | 8 | * |

* At these forcing frequencies lesser loads will yield 81% isolation.

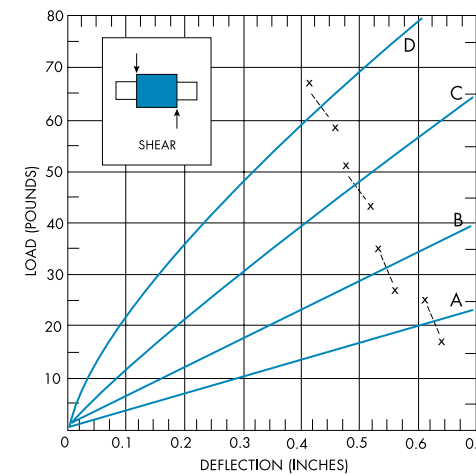
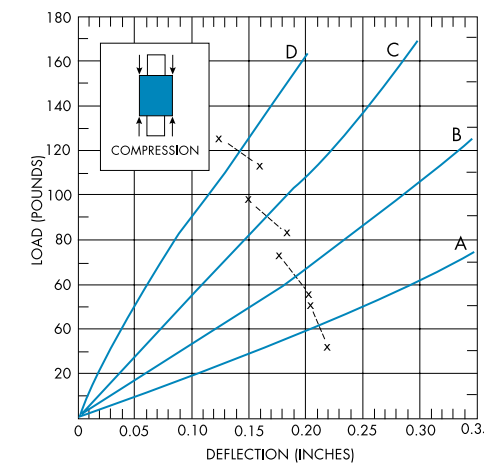
DIMENSIONS

| LEFT STUD (IN.) | | RIGHT STUD (IN.) | | |
|-----------------|--------|------------------|--------|--------|
| THREAD | LENGTH | THREAD | LENGTH | SUFFIX |
| 5/16 - 18 | 1/2 | 5/16 - 18 | 1/2 | 68 |
| 5/16 - 18 | 9/16 | 5/16 - 18 | 9/16 | • 76 |
| 5/16 - 18 | 9/16 | 5/16 - 18 | 3/4 | 75 |
| 185/16 - 18 | 3/4 | 5/16 - 18 | 3/4 | 70 |
| 5/16 - 18 | 7/8 | 5/16 - 18 | 7/8 | 80 |

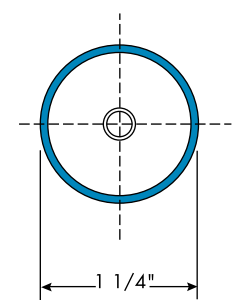
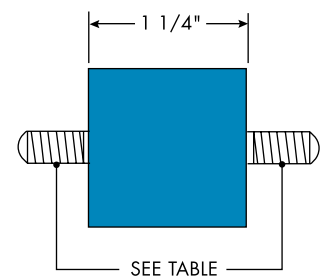
• standard stud

LOAD DEFLECTION GRAPH

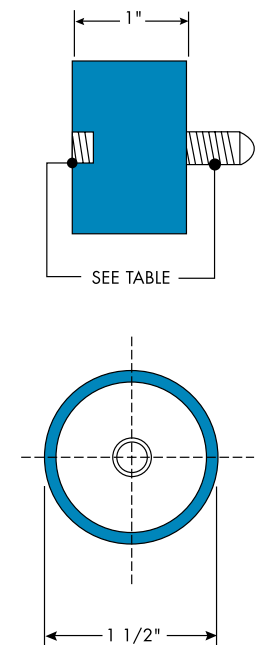
Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



The small, yet rugged design and the broad range of sizes make ESTCO cylindrical mountings ideal for a wide range of applications. They have been used on electric motors and generators, fans and blowers, relays and control panels, business machines timing devices and air handling equipment. ESTCO cylindrical mountings can be loaded in compression, in shear, or in combination compression and shear. Additional standard stud combinations have been added to the line to allow wider applications of these mountings to a customer's design requirements. All engineering data herein apply to mountings with a studded or tapped insert at each end. The maximum unthreaded portion of the stud does not exceed 1/16-inch.



The small, yet rugged design and the broad range of sizes make ESTCO cylindrical mountings ideal for a wide range of applications. They have been used on electric motors and generators, fans and blowers, relays and control panels, business machines timing devices and air handling equipment. ESTCO cylindrical mountings can be loaded in compression, in shear, or in combination compression and shear. Additional standard stud combinations have been added to the line to allow wider applications of these mountings to a customer's design requirements. All engineering data herein apply to mountings with a studded or tapped insert at each end. The maximum unthreaded portion of the stud does not exceed 1/16-inch.





SERIES 300 CYLINDRICAL MOUNTINGS

Style: **MM311**

For loads to 105 pounds in compression; 66 pounds in shear

SELECTION GUIDE

| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|-----|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 700 | 850 | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 3000 |
| A | 47 | | | | 44.5 | 30 | 22 | 18 | 13.5 | 11 | |
| B | 74 | | | | 72.5 | 48.5 | 35.5 | 27 | 21 | 17.5 | 12.5 |
| C | 96 | | | | | 75.7 | 55.5 | 43 | 34 | 28 | 19.5 |
| D | 105 | | | | | 100 | 73 | 56.5 | 45 | 38 | 25.5 |

| SHEAR | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 700 | 850 | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 3000 |
| A | 27 | 27 | 19.5 | 11.5 | 9 | 6 | * | * | * | * | * |
| B | 41 | | 31 | 19 | 14.5 | 10.5 | 8 | * | * | * | * |
| C | 66 | | 53.5 | 33 | 26.5 | 19 | 14 | 11.5 | 9 | * | * |
| D | 66 | | 61 | 38 | 30.5 | 22 | 19.5 | 13 | 10.5 | 8.5 | * |

* At these forcing frequencies lesser loads will yield 81% isolation.

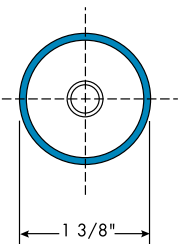
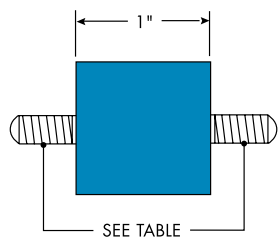
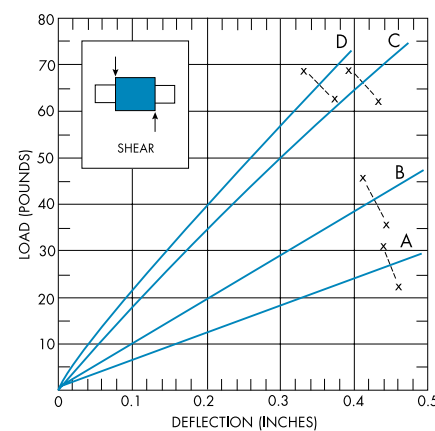
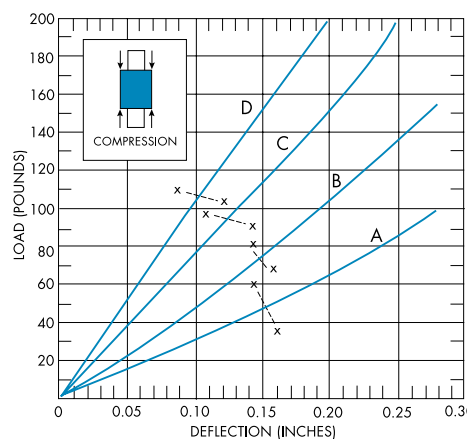
DIMENSIONS

| LEFT STUD (IN.) | | RIGHT STUD (IN.) | | SUFFIX |
|-----------------|--------|------------------|--------|--------|
| THREAD | LENGTH | THREAD | LENGTH | |
| 5/16 - 18 | 1/2 | 5/16 - 18 | 7/8 | 71 |
| 5/16 - 18 | 9/16 | 5/16 - 18 | 9/16 | • 76 |
| 5/16 - | 9/16 | 5/16 - 18 | 3/4 | 75 |
| 185/16 - 18 | 3/4 | 5/16 - 18 | 3/4 | 70 |
| 5/16 - 18 | 7/8 | 5/16 - 18 | 7/8 | 80 |

• standard stud

LOAD DEFLECTION GRAPH

Deflections below the line X—X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



SERIES 300 CYLINDRICAL MOUNTINGS

Style: **MM312**

For loads to 185 pounds in compression; 67 pounds in shear

SELECTION GUIDE

| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 950 | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 3000 | 3600 |
| A | 93 | | | | | 71 | 51 | 39 | 31 | 25 | |
| B | 118 | | | | | 106 | 81 | 64 | 52 | 43 | 35 |
| C | 158 | | | | | | 121 | 96 | 79 | 65 | 54 |
| D | 185 | | | | | | 164 | 131 | 109 | 90 | 74 |

| SHEAR | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 950 | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 3000 | 3600 |
| A | 36 | 34 | 25 | 19 | 13.5 | 10 | * | * | * | * | * |
| B | 46 | | 38 | 30 | 21 | 16 | 12 | 9.5 | * | * | * |
| C | 57 | | | 50 | 35 | 26 | 20 | 16 | 13 | * | * |
| D | 67 | | | 66 | 46 | 34 | 26 | 21 | 18 | 14 | * |

* At these forcing frequencies lesser loads will yield 81% isolation

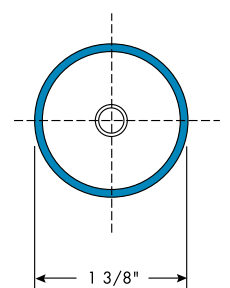
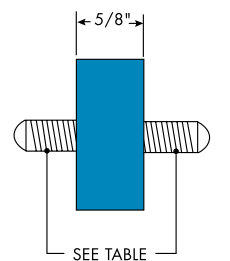
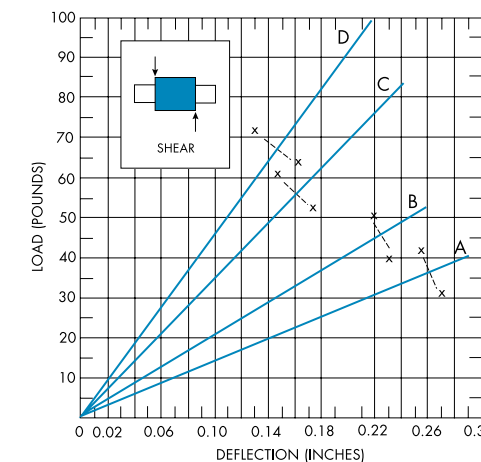
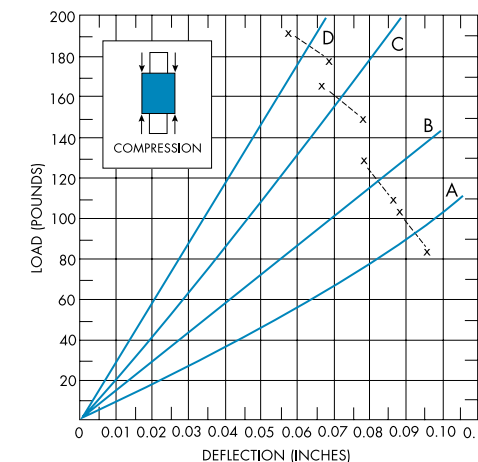
DIMENSIONS

| LEFT STUD (IN.) | | RIGHT STUD (IN.) | | SUFFIX |
|-----------------|--------|------------------|--------|--------|
| THREAD | LENGTH | THREAD | LENGTH | |
| 5/16 - 18 | 1/2 | 5/16 - 18 | 1/2 | 68 |
| 5/16 - 18 | 1/2 | 5/16 - 18 | 3/4 | 69 |
| 5/16 - | 9/16 | 5/16 - 18 | 9/16 | • 76 |
| 185/16 - 18 | 5/8 | 5/16 - 18 | 5/8 | 72 |

• standard stud

LOAD DEFLECTION GRAPH

Deflections below the line X—X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads





SERIES 300 CYLINDRICAL MOUNTINGS

Style: **MM314**

For loads to 142 pounds in compression; 64 pounds in shear

SELECTION GUIDE

| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 950 | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 3000 | 3600 |
| A | 56 | | | | 50 | 38 | 28.5 | 22.5 | 18 | 12.5 | |
| B | 73 | | | | 73 | 51 | 39 | 30.5 | 24.5 | 16.5 | 12 |
| C | 109 | | | | | 85 | 63.5 | 50 | 41 | 28 | 20 |
| D | 142 | | | | | 129 | 99 | 78 | 64 | 44 | 30 |

| SHEAR | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 950 | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 3000 | 3600 |
| A | 32 | 23 | 18 | 14.5 | 10 | 7.5 | * | * | * | * | * |
| B | 38 | 32 | 24.5 | 19 | 13 | 9.5 | 7 | * | * | * | * |
| C | 51 | | 44.5 | 36 | 26 | 19.5 | 14 | 12 | 10 | * | * |
| D | 64 | | 58 | 46.5 | 34 | 27 | 20.5 | 17 | 14 | 9.5 | * |

* At these forcing frequencies lesser loads will yield 81% isolation.

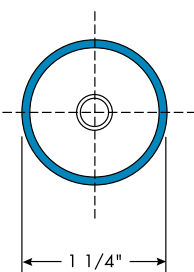
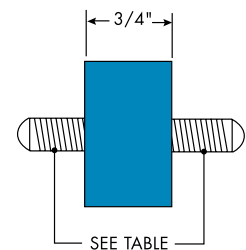
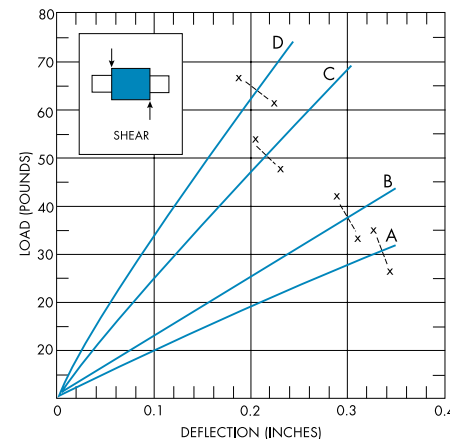
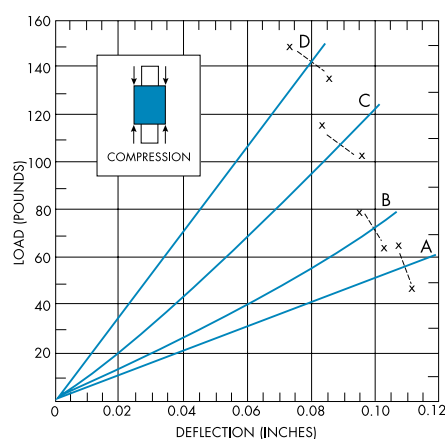
DIMENSIONS

| LEFT STUD (IN.) | | RIGHT STUD (IN.) | | SUFFIX |
|-----------------|--------|------------------|--------|--------|
| THREAD | LENGTH | THREAD | LENGTH | |
| 5/16 - 18 | 1/2 | 5/16 - 18 | 1/2 | 68 |
| 5/16 - 18 | 1/2 | 5/16 - 18 | 3/4 | 69 |
| 5/16 - | 9/16 | 5/16 - 18 | 9/16 | • 76 |
| 185/16 - 18 | 9/16 | 5/16 - 18 | 3/4 | 75 |
| 5/16 - 18 | 3/4 | 5/16 - 18 | 3/4 | 70 |

• standard stud

LOAD DEFLECTION GRAPH

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



SERIES 300 CYLINDRICAL MOUNTINGS

Style: **MM315**

For loads to 123 pounds in compression; 63 pounds in shear

SELECTION GUIDE

| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|-----|-----|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 750 | 850 | 950 | 1100 | 1250 | 1500 | 1750 | 2000 | 2500 | 3000 |
| A | 56 | | | | | | 40 | 28 | 21 | 13 | |
| B | 82 | | | | | | 68.5 | 50 | 35 | 23 | 17 |
| C | 115 | | | | | | 107 | 77.5 | 57 | 27.5 | 22 |
| D | 123 | | | | | | 92 | 67.5 | 43 | 32 | |

| SHEAR | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|-----|-----|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 750 | 850 | 950 | 1100 | 1250 | 1500 | 1750 | 2000 | 2500 | 3000 |
| A | 32 | 31 | 24 | 19 | 14 | 11 | 8 | 5.6 | * | * | * |
| B | 37 | | 32 | 26 | 19 | 15 | 10 | 7.6 | 5.7 | * | * |
| C | 48 | | 45 | 38 | 29 | 24 | 17 | 13 | 10 | 6.5 | * |
| D | 63 | | | 56 | 45 | 38 | 27 | 21 | 17 | 11 | 8 |

* At these forcing frequencies lesser loads will yield 81% isolation

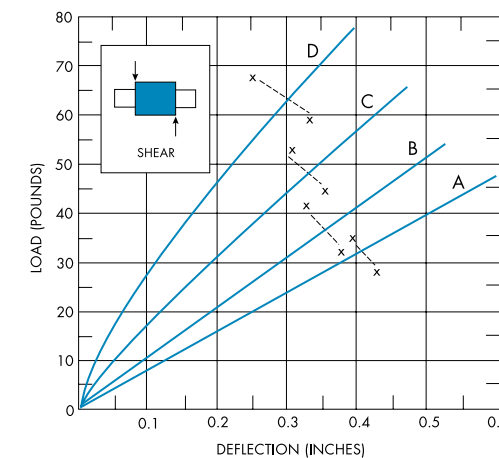
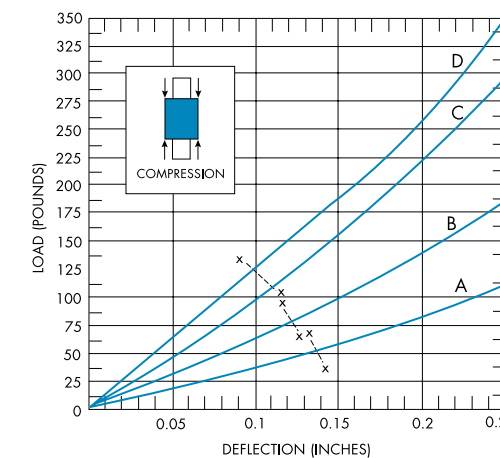
DIMENSIONS

| LEFT STUD (IN.) | | RIGHT STUD (IN.) | | SUFFIX |
|-----------------|--------|------------------|--------|--------|
| THREAD | LENGTH | THREAD | LENGTH | |
| 5/16 - 18 | 1/2 | 5/16 - 18 | 3/4 | 69 |
| 5/16 - 18 | 1/2 | 5/16 - 18 | 7/8 | 71 |
| 5/16 - | 9/16 | 5/16 - 18 | 9/16 | • 76 |
| 185/16 - 18 | 5/8 | 5/16 - 18 | 5/8 | 72 |
| 5/16 - 18 | 3/4 | 5/16 - 18 | 3/4 | 70 |

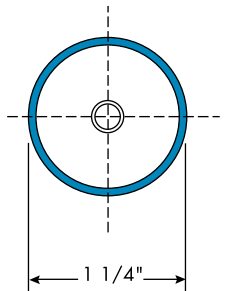
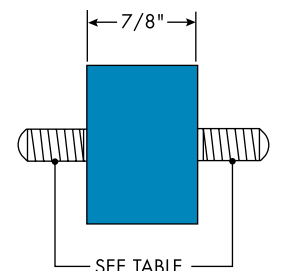
• standard stud

LOAD DEFLECTION GRAPH

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



The small, yet rugged design and the broad range of sizes make ESTCO cylindrical mountings ideal for a wide range of applications. They have been used on electric motors and generators, fans and blowers, relays and control panels, business machines timing devices and air handling equipment. ESTCO cylindrical mountings can be loaded in compression, in shear, or in combination compression and shear. Additional standard stud combinations have been added to the line to allow wider applications of these mountings to a customer's design requirements. All engineering data herein apply to mountings with a studded or tapped insert at each end. The maximum unthreaded portion of the stud does not exceed 1/16-inch.





SERIES 300 CYLINDRICAL MOUNTINGS

Styles: **MM316/319**

For loads to 86 pounds in compression; 43 pounds in shear

SELECTION GUIDE

| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|-----|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 700 | 950 | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 3000 |
| A | 37 | | | | 35 | 24 | 18 | 13.5 | 11 | | |
| B | 48 | | | | | 34 | 26 | 20.5 | 16 | 13 | |
| C | 57 | | | | | 46 | 32.5 | 26.5 | 20 | 16 | |
| D | 86 | | | | | 80 | 59 | 48 | 36 | 30 | 21 |

| SHEAR | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 700 | 950 | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 3000 |
| A | 16 | 16 | 8 | 6.5 | 5.0 | 3.5 | * | * | * | * | * |
| B | 21 | | 12.5 | 9.5 | 7.5 | 5.5 | 4 | * | * | * | * |
| C | 35 | | 23.5 | 18 | 14 | 10 | 7.5 | 6 | * | * | * |
| D | 43 | | 32 | 24.5 | 19 | 13 | 9.5 | 7.5 | * | * | * |

* At these forcing frequencies lesser loads will yield 81% isolation.

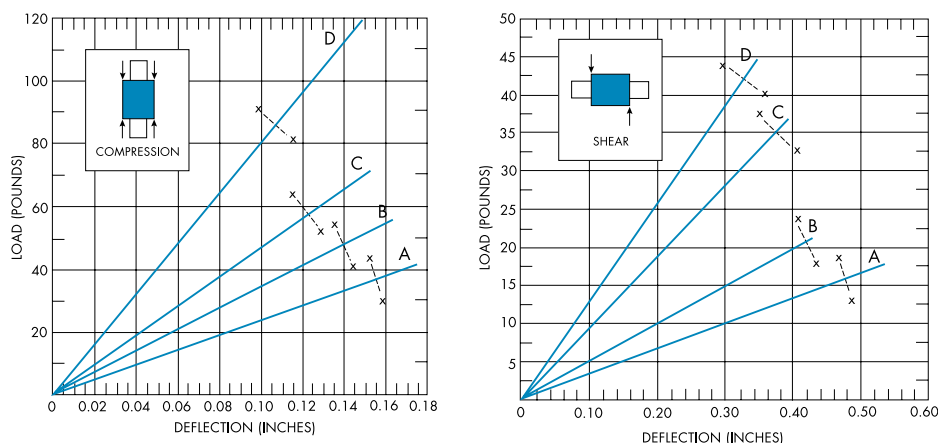
DIMENSIONS

| LEFT STUD (IN.) | | RIGHT STUD (IN.) | | SUFFIX | (style 319) |
|-----------------|--------|------------------|--------|--------|-------------|
| THREAD | LENGTH | THREAD | LENGTH | | |
| 5/16 - 18 | * | 5/16 - 18 | * | ≈ 66 | |
| 5/16 - 18 | 1/2 | 5/16 - 18 | 3/4 | 69 | |
| 5/16 - | 9/16 | 5/16 - 18 | 9/16 | • 76 | |
| 185/16 - 18 | 5/8 | 5/16 - 18 | 5/8 | 72 | |
| 5/16 - 18 | 3/4 | 5/16 - 18 | 3/4 | 70 | |

* tapped hole • standard stud ≈ style 319

LOAD DEFLECTION GRAPH

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



SERIES 300 CYLINDRICAL MOUNTINGS

Style: **MM321**

For loads to 13.8 pounds in compression; 7.1 pounds in shear

SELECTION GUIDE

| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 2750 | 3000 | 3600 |
| A | 5.1 | | | | 5.1 | 3.9 | 3.1 | 2.6 | 2.1 | 1.8 | |
| B | 6.4 | | | | | 5.5 | 4.3 | 3.4 | 2.8 | 2.4 | 1.8 |
| C | 11.1 | | | | | 11.0 | 8.7 | 7.1 | 6.0 | 5.1 | 3.8 |
| D | 13.8 | | | | | | 12.3 | 10.3 | 8.9 | 7.7 | 5.9 |

| SHEAR | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | | |
| | | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | 2750 | 3000 | 3600 |
| A | 2.6 | 2.4 | 1.8 | 1.3 | .9 | .7 | .6 | * | * | * | * |
| B | 3.6 | 3.4 | 2.8 | 1.9 | 1.4 | 1.0 | .8 | .7 | .6 | * | * |
| C | 5.7 | | 4.9 | 3.6 | 2.9 | 2.2 | 1.8 | 1.5 | 1.3 | 1.1 | .9 |
| D | 7.1 | | 7.0 | 5.1 | 3.9 | 3.1 | 2.6 | 2.1 | 1.8 | 1.6 | 1.2 |

* At these forcing frequencies lesser loads will yield 81% isolation

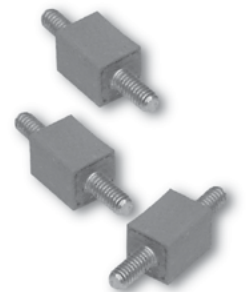
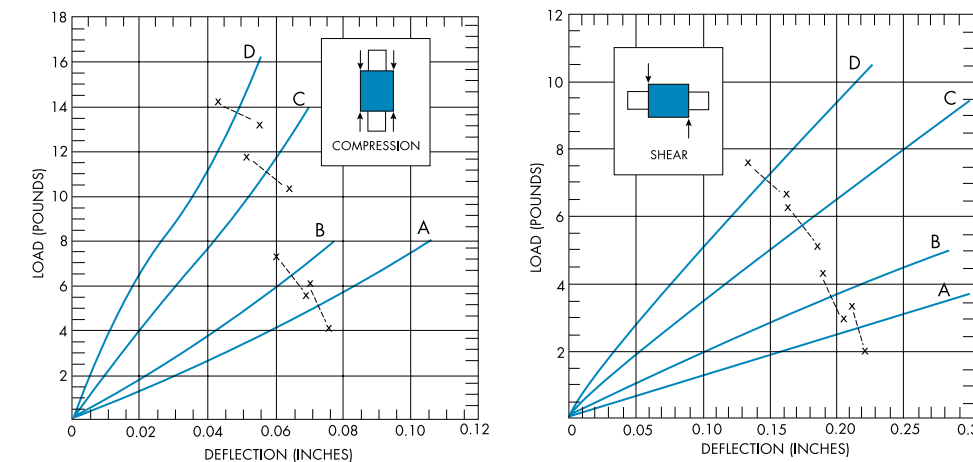
DIMENSIONS

| LEFT STUD (IN.) | | RIGHT STUD (IN.) | | SUFFIX |
|-----------------|--------|------------------|--------|--------|
| THREAD | LENGTH | THREAD | LENGTH | |
| 8-32 | 7/32 | 8-32 | 7/32 | 22 |
| 8-32 | 7/32 | 8-32 | 9/16 | 23 |
| 8-32 | 3/8 | 8-32 | 3/8 | • 14 |
| 8-32 | 3/8 | 8-32 | 9/16 | 21 |
| 8-32 | 9/16 | 8-32 | 9/16 | 26 |

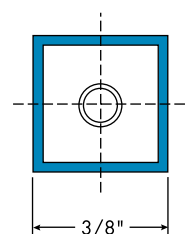
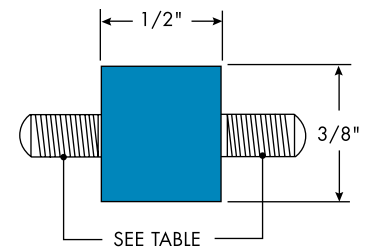
• standard stud

LOAD DEFLECTION GRAPH

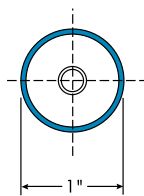
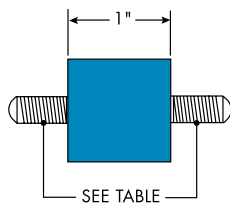
Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads

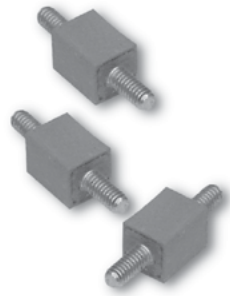


The small, yet rugged design and the broad range of sizes make ESTCO cylindrical mountings ideal for a wide range of applications. They have been used on electric motors and generators, fans and blowers, relays and control panels, business machines timing devices and air handling equipment. ESTCO cylindrical mountings can be loaded in compression, in shear, or in combination compression and shear. Additional standard stud combinations have been added to the line to allow wider applications of these mountings to a customer's design requirements. All engineering data herein apply to mountings with a studded or tapped insert at each end. The maximum unthreaded portion of the stud does not exceed 1/16-inch.



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SERIES 300 CYLINDRICAL MOUNTINGS

Style: **MM322**

For loads to 15.4 pounds in compression; 9.9 pounds in shear

SELECTION GUIDE

| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | |
| | | 1500 | 1750 | 2000 | 2250 | 2500 | 2750 | 3000 | 3600 |
| A | 6.6 | | | | | | 5.4 | 4.5 | 3.2 |
| B | 8.7 | | | | | | 8.5 | 6.9 | 4.8 |
| C | 12.0 | | | | | | | 11.5 | 8.0 |
| D | 15.4 | | | | | | | | 11.8 |

| SHEAR | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | |
| | | 1500 | 1750 | 2000 | 2250 | 2500 | 2750 | 3000 | 3600 |
| A | 4.4 | 3.3 | 2.4 | 1.9 | 1.5 | 1.3 | 1.1 | * | * |
| B | 5.6 | 4.8 | 3.6 | 2.8 | 2.2 | 1.9 | 1.6 | * | * |
| C | 7.8 | 7.7 | 6.0 | 4.9 | 4.0 | 3.5 | 3.1 | * | * |
| D | 9.9 | | 8.2 | 6.7 | 5.6 | 4.7 | 4.1 | * | * |

* At these forcing frequencies lesser loads will yield 81% isolation.

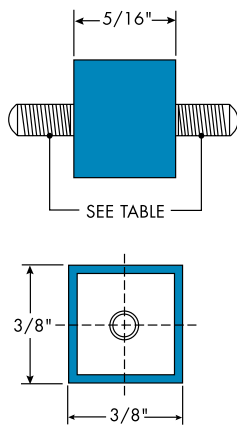
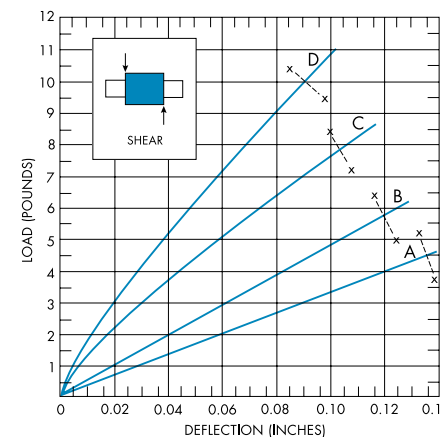
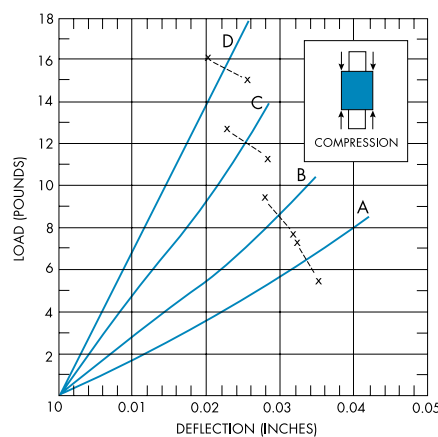
DIMENSIONS

| LEFT STUD (IN.) | | RIGHT STUD (IN.) | | SUFFIX |
|-----------------|--------|------------------|--------|--------|
| THREAD | LENGTH | THREAD | LENGTH | |
| 8-32 | 7/32 | 8-32 | 7/32 | • 22 |
| 8-32 | 7/32 | 8-32 | 9/16 | 23 |
| 8-32 | 3/8 | 8-32 | 3/8 | 14 |
| 8-32 | 3/8 | 8-32 | 9/16 | 21 |
| 8-32 | 9/16 | 8-32 | 9/16 | 26 |

• standard stud

LOAD DEFLECTION GRAPH

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



SERIES 300 CYLINDRICAL MOUNTINGS

Style: **MM323**

For loads to 14.5 pounds in compression; 7.3 pounds in shear

SELECTION GUIDE

| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | |
|-------------|--------------------|--|------|-----|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | |
| | | 950 | 1100 | 250 | 1500 | 1750 | 2000 | 2250 | 2500 |
| A | 6.8 | | | | | 5.5 | 3.8 | 3.0 | 2.5 |
| B | 8.5 | | | | | 8.0 | 6.0 | 4.5 | 3.5 |
| C | 12.0 | | | | | | 10.1 | 8.5 | 6.5 |
| D | 14.5 | | | | | | 14.5 | 11.5 | 9.0 |

| SHEAR | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | |
|-------------|--------------------|--|------|-----|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | |
| | | 950 | 1100 | 250 | 1500 | 1750 | 2000 | 2250 | 2500 |
| A | 2.8 | 2.8 | 2.2 | 1.6 | 1.1 | .9 | .7 | * | * |
| B | 3.3 | | 2.8 | 2.1 | 1.6 | 1.2 | .9 | * | * |
| C | 5.3 | | 5.0 | 4.0 | 2.9 | 2.3 | 1.9 | 1.6 | * |
| D | 7.3 | | | 6.2 | 4.6 | 3.6 | 2.9 | 2.5 | 2.2 |

* At these forcing frequencies lesser loads will yield 81% isolation

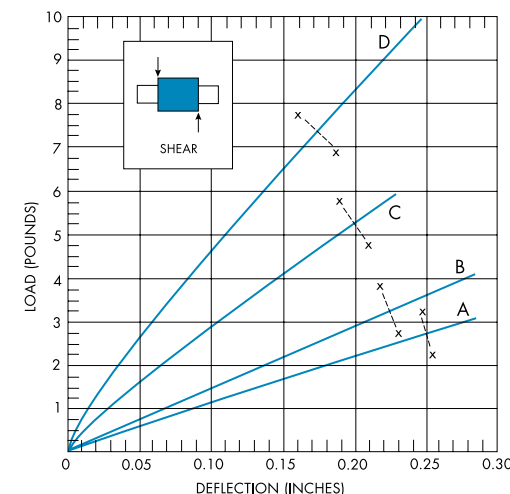
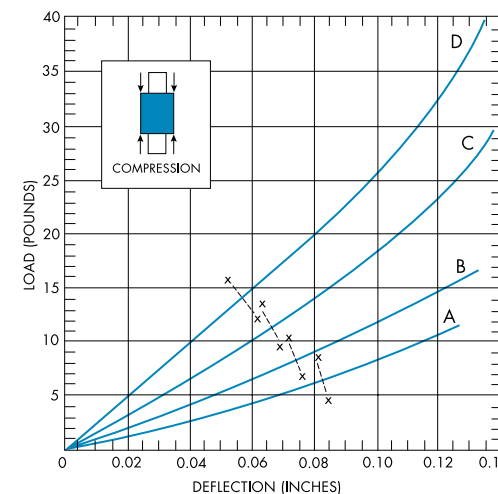
DIMENSIONS

| LEFT STUD (IN.) | | RIGHT STUD (IN.) | | SUFFIX |
|-----------------|--------|------------------|--------|--------|
| THREAD | LENGTH | THREAD | LENGTH | |
| 8-32 | 3/8 | 8-32 | 3/8 | 14 |
| 8-32 | 3/8 | 8-32 | 3/8 | 17 |
| 8-32 | 9/16 | 8-32 | 9/16 | • 28 |

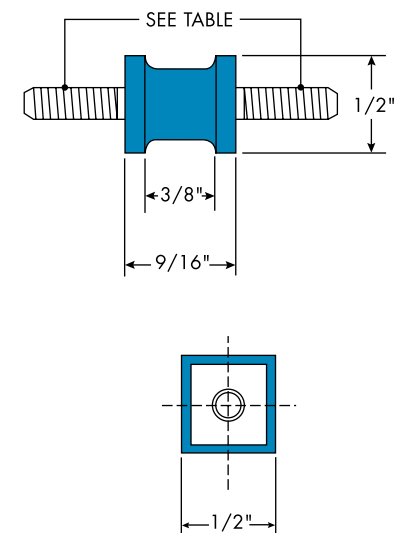
• standard stud

LOAD DEFLECTION GRAPH

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



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SERIES 300 CYLINDRICAL MOUNTINGS

Style: **MM330**

For loads to 330 pounds in compression; 140 pounds in shear

SELECTION GUIDE

| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | |
|-------------|--------------------|--|-----|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | |
| | | 700 | 850 | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 |
| B | 330 | | | | | 255 | 190 | 150 | 120 | 90 |

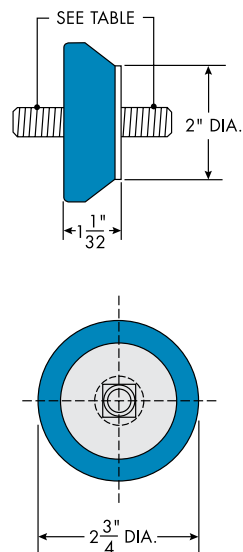
| SHEAR | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | | | |
|-------------|--------------------|--|-----|------|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | | | |
| | | 700 | 850 | 1100 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 |
| B | 140 | 140 | 105 | 65 | 52 | 38 | 32 | * | * | * |

* At these forcing frequencies lesser loads will yield 81% isolation.

DIMENSIONS

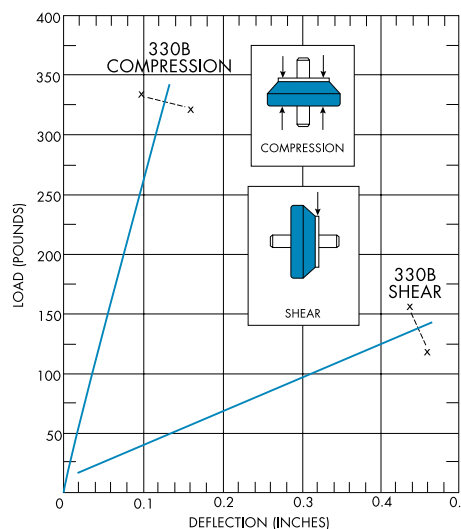
| LEFT STUD (IN.) | | RIGHT STUD (IN.) | | SUFFIX |
|-----------------|--------|------------------|--------|--------|
| THREAD | LENGTH | THREAD | LENGTH | |
| 1/2 - 13 | 1 1/4 | 1/2 - 13 | 1 1/4 | 38 |
| 1/2 - 20 | 1 1/16 | 1/2 - 20 | 1 1/16 | 44 |
| 1/2 - 20 | 29/32 | 1/2 - 20 | 29/32 | • 40 |

• standard stud



LOAD DEFLECTION GRAPH

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



Load ratings in the SELECTION GUIDE charts correspond to various durometers (or hardness) of the rubber formula used...

"A" corresponds to a 30 durometer;
"B" corresponds to a 40 durometer;
"C" corresponds to a 50 durometer;
"D" corresponds to a 60 durometer

SERIES 540 RECTANGULAR MOUNTINGS

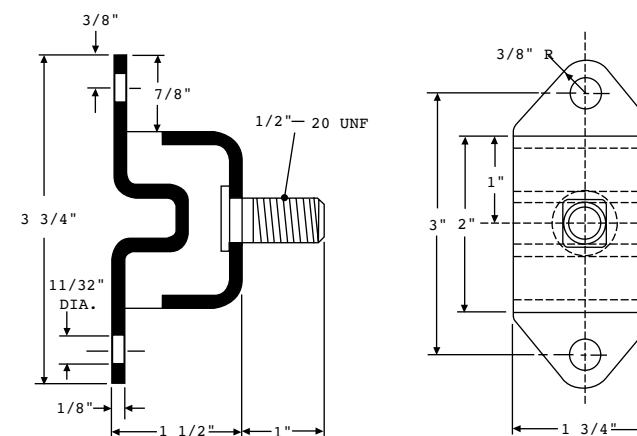
Style: **MM540**

For loads to 320 pounds in compression; Not recommended for shear load applications

SELECTION GUIDE

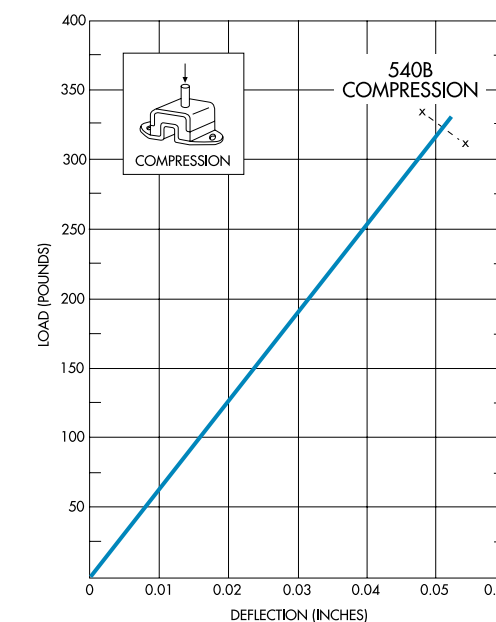
| COMPRESSION | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | |
|-------------|--------------------|--|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | |
| | | 2000 | 2250 | 2500 | 2750 | 3000 |
| B | 320 | 320 | 280 | 230 | 185 | 160 |

DIMENSIONS



LOAD DEFLECTION GRAPH

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



• These compact and rugged ESTCO rectangular mountings are built to support heavy machinery such as large blowers and compressors, engines, motors, presses and rock crushers. In addition to supporting loads in compression, they can isolate vibration occurring in a horizontal direction. Steel plates are chemically bonded to the top and bottom surfaces of the rubber to assure long operating life.



SERIES 600 HEAVY-DUTY CENTER-BOLT SAFETY MOUNTINGS

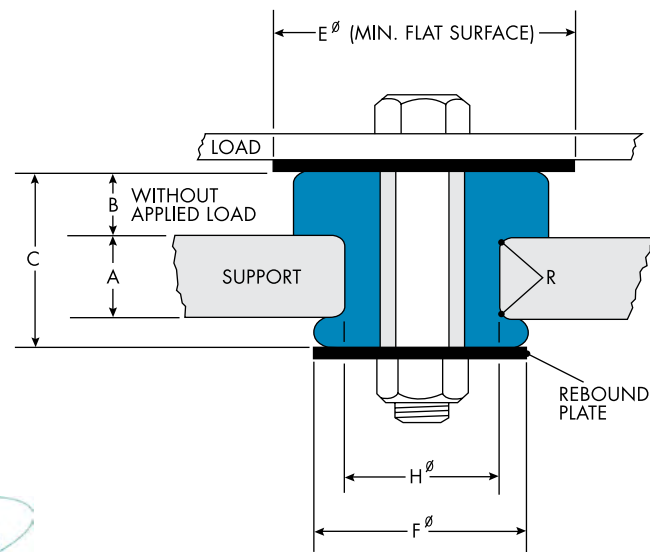
- This ESTCO Heavy-Duty Center-Bolt Safety Mounting Series is a versatile group of one-piece, low-deflection safety mountings designed for multidirectional isolation in heavy-duty applications. The mountings are rated by static load in the axial direction and dynamic loads up to three times the rated load can be handled. Although static loads in the radial direction are not recommended, dynamic radial loads are acceptable. The resilient element compressed during installation spreads at one end to form a self-contained rebound member. It features a bonded steel bushing that acts as a positive spacer. To install, lubricate the end of the mounting lightly with soapy water and, with an arbor press, push on the bushing to seat the mounting in the bore of the supporting member. Tightening the bolt until stopped by the integral spacer completes the installation.

SELECTION GUIDE

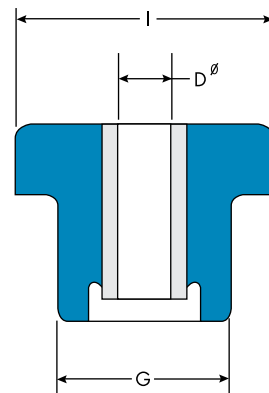
| MOUNTING STYLE | LOAD RANGE (LBS) |
|----------------|------------------|
| 620 | 20-140 |
| 630 | 50-520 |
| 640 | 100-720 |
| 641 | 100-720 |
| 645 | 150-1100 |
| 650 | 200-1500 |
| 660 | 300-2400 |

DIMENSIONS

| MOUNTING STYLE | DIMENSIONS (IN.) | | | | | | | | | |
|----------------|------------------|-----|------|-----|---------|---------|------|------|------|---------|
| | A | B | C | D | E (MIN) | F (MIN) | G | H | I | R (MIN) |
| 620 | .31 | .19 | .69 | .40 | 1.25 | 1.10 | .81 | .75 | 1.09 | .06 |
| 630 | .38 | .38 | 1.00 | .47 | 2.00 | 1.50 | 1.24 | 1.12 | 1.75 | .06 |
| 640 | .62 | .45 | 1.38 | .53 | 2.25 | 1.70 | 1.35 | 1.25 | 2.00 | .06 |
| 641 | .62 | .45 | 1.38 | .64 | 2.25 | 1.70 | 1.35 | 1.25 | 2.00 | .06 |
| 645 | .75 | .56 | 1.75 | .64 | 2.85 | 2.20 | 1.61 | 1.50 | 2.50 | .06 |
| 650 | .93 | .71 | 2.00 | .64 | 3.50 | 2.50 | 1.96 | 1.81 | 2.97 | .12 |
| 660 | .75 | .94 | 2.12 | .77 | 4.25 | 2.70 | 2.20 | 2.00 | 3.68 | .12 |



TYPICAL INSTALLATION



SERIES 600 HEAVY-DUTY CENTER-BOLT SAFETY MOUNTINGS

Styles: **MM620/630** For loads to 520 pounds

SELECTION GUIDE

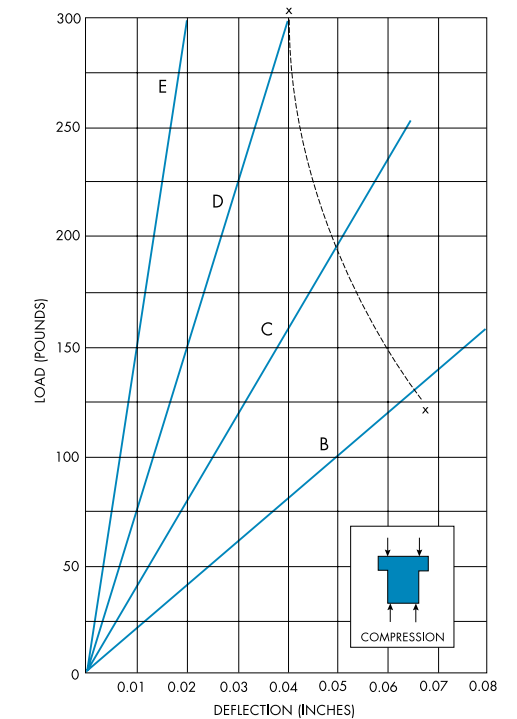
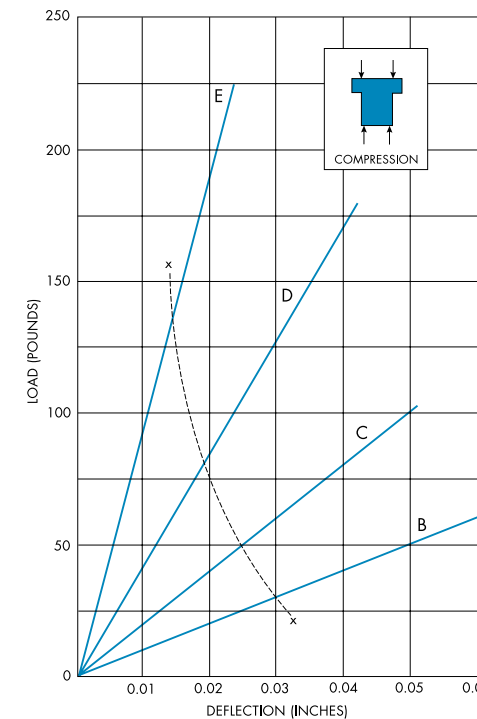
| STYLE 620 | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | |
|-------------|--------------------|--|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | |
| | | 1500 | 2000 | 2250 | 2500 |
| B | 30 | | 25 | 20 | 15 |
| C | 50 | | 50 | 35 | 30 |
| D | 80 | | | 75 | 60 |
| E | 140 | | | | 130 |

SELECTION GUIDE

| STYLE 630 | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | |
|-------------|--------------------|--|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | |
| | | 1500 | 2000 | 2250 | 2500 |
| B | 130 | 110 | 70 | 50 | 40 |
| C | 190 | | 140 | 100 | 70 |
| D | 300 | | 260 | 190 | 130 |
| E | 520 | | 520 | 380 | 260 |

LOAD DEFLECTION GRAPHS

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads





SERIES 600
HEAVY-DUTY CENTER-BOLT
SAFETY MOUNTINGS

Styles: **MM640/645** For loads to 1100 pounds

SELECTION GUIDE

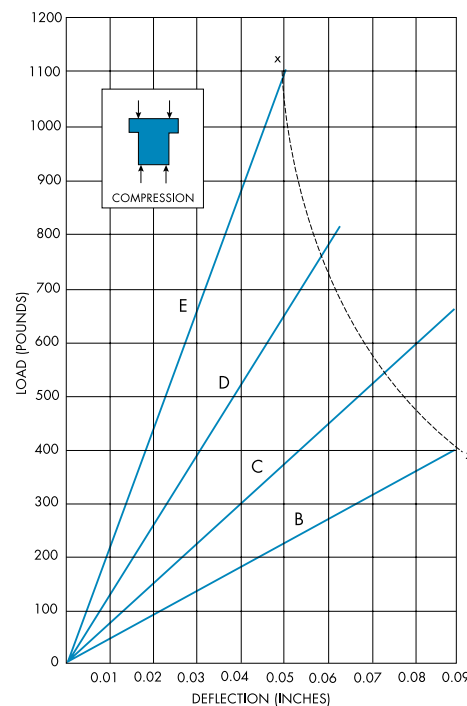
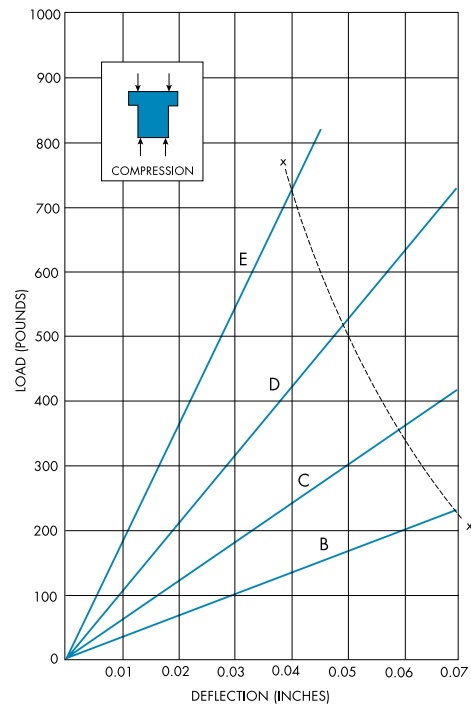
| STYLE 640/641 | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | |
|---------------|--------------------|--|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | |
| | | 2000 | 2500 | 3000 | 3600 |
| B | 230 | 190 | 120 | 90 | 60 |
| C | 360 | 330 | 200 | 150 | 100 |
| D | 520 | | 370 | 260 | 180 |
| E | 720 | | 630 | 450 | 300 |

SELECTION GUIDE

| STYLE 645 | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | |
|-------------|--------------------|--|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | |
| | | 1750 | 2000 | 2500 | 3000 | 3600 |
| B | 400 | 320 | 250 | 160 | 110 | 80 |
| C | 540 | 540 | 410 | 260 | 190 | 130 |
| D | 750 | | 710 | 450 | 320 | 220 |
| E | 1100 | | | 780 | 560 | 380 |

LOAD DEFLECTION GRAPHS

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



SERIES 600
HEAVY-DUTY CENTER-BOLT
SAFETY MOUNTINGS

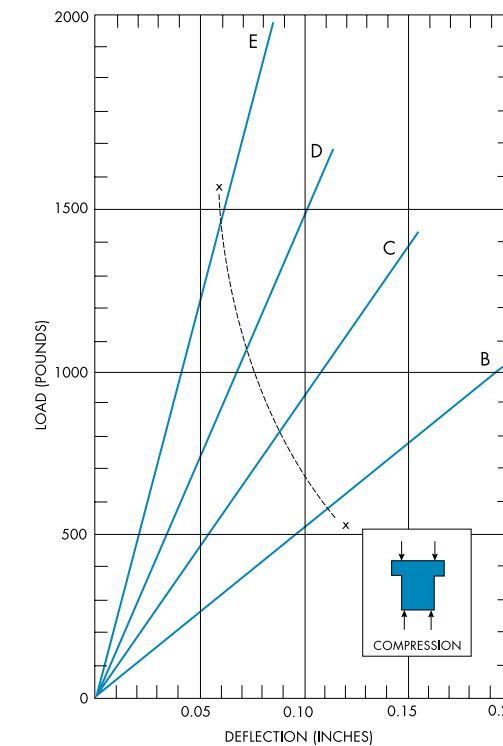
Style: **MM650** For loads to 1500 pounds

SELECTION GUIDE

| STYLE 650 | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | |
|-------------|--------------------|--|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | |
| | | 1500 | 1750 | 2000 | 2500 | 3000 | 3600 |
| B | 600 | 520 | 380 | 300 | 200 | 130 | 100 |
| C | 800 | | 650 | 500 | 320 | 230 | 150 |
| D | 1100 | | 1100 | 830 | 530 | 380 | 260 |
| E | 1500 | | | 1400 | 900 | 630 | 430 |

LOAD DEFLECTION GRAPH

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



- This ESTCO Heavy-Duty Center-Bolt Safety Mounting Series is a versatile group of one-piece, low-deflection safety mountings designed for multidirectional isolation in heavy-duty applications. The mountings are rated by static load in the axial direction and dynamic loads up to three times the rated load can be handled. Although static loads in the radial direction are not recommended, dynamic radial loads are acceptable. The resilient element compressed during installation spreads at one end to form a self-contained rebound member. It features a bonded steel bushing that acts as a positive spacer. To install, lubricate the end of the mounting lightly with soapy water and, with an arbor press, push on the bushing to seat the mounting in the bore of the supporting member. Tightening the bolt until stopped by the integral spacer completes the installation.



SERIES 600 HEAVY-DUTY CENTER-BOLT SAFETY MOUNTINGS

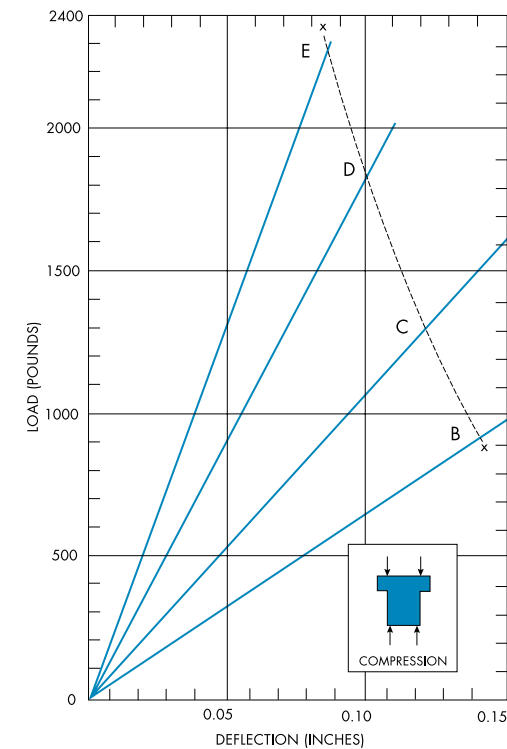
Style: **MM660** For loads to 2400 pounds

SELECTION GUIDE

| STYLE 660 | | MINIMUM LOAD FOR 81% ISOLATION (LBS) | | | | | | |
|-------------|--------------------|--|------|------|------|------|------|------|
| LOAD RATING | MAXIMUM LOAD (LBS) | FORCING FREQUENCY IN CYCLES PER MINUTE | | | | | | |
| | | 1250 | 1500 | 1750 | 2000 | 2500 | 3000 | 3600 |
| B | 950 | 950 | 670 | 500 | 500 | 240 | 170 | 120 |
| C | 1300 | | 1050 | 800 | 600 | 400 | 270 | 180 |
| D | 1850 | | 1800 | 1350 | 1000 | 650 | 450 | 300 |
| E | 2400 | | | 2000 | 1550 | 1000 | 700 | 500 |

LOAD DEFLECTION GRAPH

Deflections below the line X---X are considered safe practice for static loads; data above that line are useful for calculating deflections under dynamic loads



- This ESTCO Heavy-Duty Center-Bolt Safety Mounting Series is a versatile group of one-piece, low-deflection safety mountings designed for multidirectional isolation in heavy-duty applications. The mountings are rated by static load in the axial direction and dynamic loads up to three times the rated load can be handled. Although static loads in the radial direction are not recommended, dynamic radial loads are acceptable. The resilient element compressed during installation spreads at one end to form a self-contained rebound member. It features a bonded steel bushing that acts as a positive spacer. To install, lubricate the end of the mounting lightly with soapy water and, with an arbor press, push on the bushing to seat the mounting in the bore of the supporting member. Tightening the bolt until stopped by the integral spacer completes the installation.

SERIES 1000 CUSTOM MOLDED MOUNTING FEET

Styles: **MM1020/9624/9690**

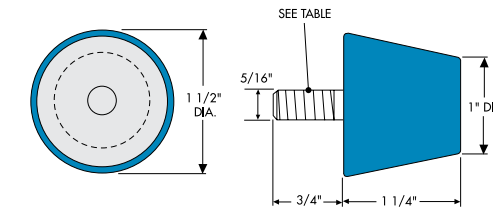
For loads to 62 pounds (1020), 100 pounds (9624), 130 pounds (9690)



MM1020 - RUBBER BUMPERS SELECTION GUIDE

| MOUNTING STYLE | STATIC LOAD (LBS) | OCCASIONAL DYNAMIC LOAD (LBS) |
|----------------|-------------------|-------------------------------|
| 1020A | 44 | 80 |
| 1020B | 49 | 100 |
| 1020C | 56 | 122 |
| 1020D | 62 | 145 |

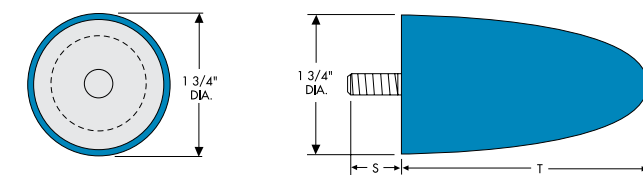
| END STUD (IN.) | | |
|----------------|--------|--------|
| THREAD | LENGTH | SUFFIX |
| 5/16-18 | 9/16 | 76 |
| 5/16-18 | 1/2 | 68 |
| 5/16-18 | 3/4 | 70 |
| 5/16-18 | 1 1/8 | 74 |
| 5/16-24 | 3/4 | 94 |
| 5/16-24 | 1 3/4 | 92 |



- Custom molded mounting feet are an excellent and efficient way to reduce vibration and movement on industrial equipment and machinery. They are ideal for equipment which is "walking" on solid floors or concrete due to machinery vibration.

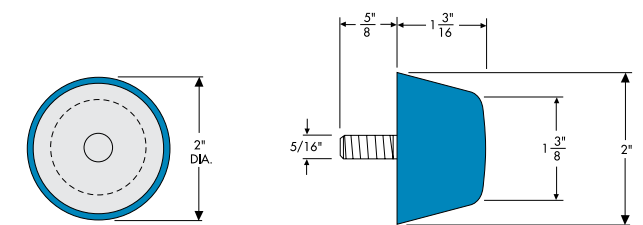
MM9624 - RUBBER BUMPERS SELECTION GUIDE

| PART # | DIA (in.) | T (in.) | THREAD | S (in.) |
|----------|-----------|---------|---------|---------|
| 9624-155 | 1 3/4" | 3 | 5/16-18 | 5/8" |



MM9690 - RUBBER BUMPERS SELECTION GUIDE

| MOUNTING STYLE | STATIC LOAD (LBS) | OCCASIONAL DYNAMIC LOAD (LBS) |
|----------------|-------------------|-------------------------------|
| 9690 A | 92 | 168 |
| 9690 B | 102 | 210 |
| 9690 C | 117 | 256 |
| 9690 D | 130 | 304 |





SERIES 5000 BONDED BUSHING AND SNUBBER

Style: **MM5000**

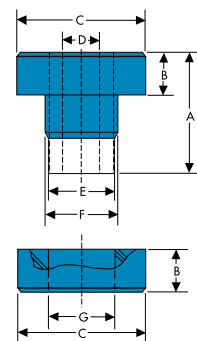
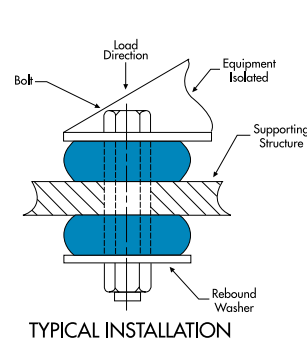
For loads to 580 pounds

SELECTION GUIDE

| PART NUMBER | RATED (lbs) AXIAL LOAD | RATED (lbs) RADIAL LOAD | A | B | C | D | E (REF) | F | G (REF) | H |
|---|---------------------------------|---------------------------------|------|-----|------|-----|------------|------|------------|------|
| 5001-01 5001-02 5001-03 5001-04 5001-05 | 35 80 103 235 280 | 18 27 36 45 55 | 1.25 | .50 | 1.25 | .39 | .52 | .78 | .53 | .37 |
| 5002-01 5002-02 5002-03 5002-04 5002-05 | 65 125 170 275 390 | 45 80 125 190 290 | 1.94 | .78 | 1.87 | .53 | .77 | 1.31 | .78 | .50 |
| 5003-01 5003-02 5003-03 5003-04 5003-05 | 100 180 250 350 500 | 80 120 175 265 370 | 2.50 | .90 | 2.53 | .64 | .89 | 1.54 | .90 | .75 |
| 5004-01 5004-02 5004-03 5004-04 5004-05 | 150 300 400 500 600 | 110 220 300 400 580 | 2.88 | 1.0 | 3.5 | .94 | 1.35 | 2.30 | 1.36 | 1.00 |
| 5006-01 5006-02 5006-03 5006-04 5006-05 | 35 80 103 235 280 | 18 27 36 45 55 | 1.00 | .50 | 1.25 | .39 | .52 | .78 | .53 | .125 |
| 5007-01 5007-02 5007-03 5007-04 | 35 80 103 235 | 18 27 36 45 | 1.00 | .50 | 1.25 | .32 | .52 | .78 | .53 | .125 |

- ESTCO's 5000 Series Bonded Bushings and snubber Mounts are designed to absorb extreme static and dynamic forces. This system also absorbs forces in the rebound mode. These mounts are designed for engines, cabs, and auxiliary equipment for the on and off highway, military, farm, and construction vehicles.

- Typical applications:**
- Engines
- Vehicular Cabs
- Vehicular Electronics.
- Radiators
- Gas tanks
- Transmission Cases



SERIES 9000 CYLINDRICAL MOUNTING PADS

Style: **MM9000**

SELECTION GUIDE

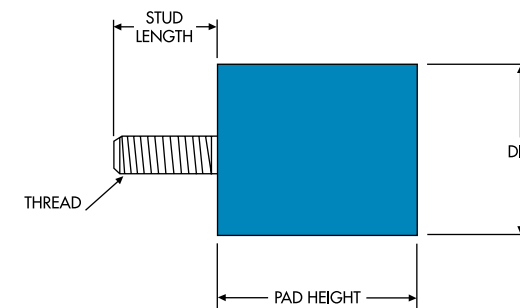
| PART NUMBER | DIAMETER | PAD HEIGHT | STUD LENGTH | THREAD | STATIC LOAD |
|-------------|----------|------------|-------------|--------|-------------|
| mm9801 | 3/8 | 5/16 | 3/8 | 6..32 | 5 |
| mm9803 | 3/8 | 3/8 | 3/8 | 6..32 | 7 |
| mm9805 | 7/16 | 7/16 | 3/8 | 6..32 | 9 |
| mm9807 | 7/16 | 1/2 | 3/8 | 6..32 | 10 |
| mm9809 | 3/8 | 1/4 | 3/8 | 8..32 | 5 |
| mm9811 | 3/8 | 5/32 | 3/8 | 8..32 | 5 |
| mm9813 | 3/8 | 1/2 | 3/8 | 8..32 | 8 |
| mm9815 | 3/8 | 5/16 | 3/8 | 8..32 | 6 |
| mm9817 | 7/16 | 1/2 | 3/8 | 8..32 | 11 |
| mm9819 | 1/2 | 3/4 | 3/8 | 8..32 | 35 |
| mm9821 | 9/16 | 1/2 | 3/8 | 8..32 | 16 |
| mm9823 | 9/16 | 3/4 | 3/8 | 8..32 | 35 |
| mm9825 | 5/8 | 1/2 | 3/8 | 8..32 | 17 |
| mm9827 | 3/4 | 1/2 | 3/8 | 8..32 | 35 |
| mm9829 | 3/4 | 1 | 3/8 | 8..32 | 39 |
| mm9831 | 9/16 | 1/2 | 3/8 | 10..32 | 16 |
| mm9833 | 9/16 | 5/16 | 3/8 | 10..32 | 12 |
| mm9835 | 5/8 | 15/16 | 3/8 | 10..32 | 20 |
| mm9837 | 3/4 | 5/8 | 3/8 | 10..32 | 37 |
| mm9839 | 1 | 3/8 | 3/8 | 10..32 | 37 |
| mm9841 | 1 | 3/4 | 3/8 | 10..32 | 60 |

- ESTCO's 9000 series bumper pads are an easy and economical method to absorb energy and isolate mechanical vibration on equipment or instrumentation. They are available in a variety of compounds and durometers to meet your specifications. Most are also available with threaded female inserts.



* Most parts also available with female inserts.

continued/next page





SERIES 9000
CYLINDRICAL MOUNTING PADS

Style: **MM9000**

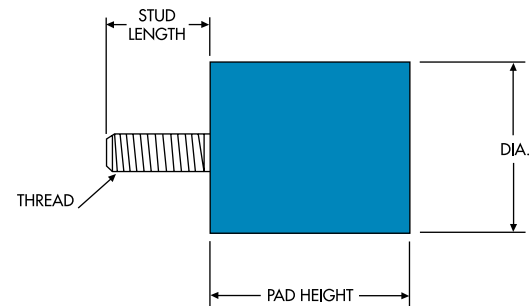
- ESTCO's 9000 series bumper pads are an easy and economical method to absorb energy and isolate mechanical vibration on equipment or instrumentation. They are available in a variety of compounds and durometers to meet your specifications. Most are also available with threaded female inserts.

SELECTION GUIDE

| PART NUMBER | DIAMETER | PAD HEIGHT | STUD LENGTH | THREAD | STATIC LOAD |
|-------------|----------|------------|-------------|----------|-------------|
| mm9843 | 5/8 | 5/8 | 1/2 | 1/4..20 | 17 |
| mm9845 | 3/4 | 3/8 | 1/2 | 1/4..20 | 35 |
| mm9847 | 3/4 | 1/2 | 1/2 | 1/4..20 | 36 |
| mm9849 | 1 | 3/8 | 1/2 | 1/4..20 | 35 |
| mm9851 | 3/4 | 5/8 | 1/2 | 1/4..20 | 37 |
| mm9853 | 3/4 | 3/4 | 1/2 | 1/4..20 | 38 |
| mm9855 | 1 | 17/32 | 1/2 | 1/4..20 | 54 |
| mm9857 | 1 | 3/4 | 1/2 | 1/4..20 | 60 |
| mm9859 | 1 | 5/8 | 1/2 | 1/4..20 | 57 |
| mm9861 | 1 | 1 | 1/2 | 1/4..20 | 62 |
| mm9863 | 1 1/4 | 3/4 | 1/2 | 1/4..20 | 100 |
| mm9865 | 1 1/4 | 1 | 1/2 | 1/4..20 | 115 |
| mm9867 | 1 | 5/8 | 1/2 | 5/16..18 | 56 |
| mm9869 | 1 | 17/32 | 1/2 | 5/16..18 | 54 |
| mm9871 | 1 | 3/4 | 1/2 | 5/16..18 | 60 |
| mm9873 | 1 | 3/8 | 1/2 | 5/16..18 | 35 |
| mm9875 | 1 | 1 | 1/2 | 5/16..18 | 62 |
| mm9877 | 3/4 | 3/4 | 1/2 | 5/16..18 | 38 |
| mm9879 | 1 | 1 1/4 | 5/8 | 5/16..18 | 63 |
| mm9881 | 1 | 1 1/2 | 5/8 | 5/16..18 | 65 |
| mm9883 | 1 1/4 | 3/4 | 9/16 | 5/16..18 | 100 |
| mm9885 | 1 1/4 | 1 | 9/16 | 5/16..18 | 112 |
| mm9887 | 1 1/4 | 1 1/4 | 9/16 | 5/16..18 | 90 |
| mm9889 | 1 3/8 | 5/8 | 9/16 | 5/16..18 | 158 |
| mm9891 | 1 3/8 | 1 | 9/16 | 5/16..18 | 110 |
| mm9893 | 1 3/8 | 1 1/2 | 9/16 | 5/16..18 | 148 |
| mm9895 | 1 1/2 | 1 | 9/16 | 5/16..18 | 100 |
| mm9897 | 2 | 1 3/4 | 9/16 | 5/16..18 | 250 |
| mm9899 | 2 | 1 | 9/16 | 5/16..18 | 175 |
| mm9901 | 2 | 1 3/16 | 9/16 | 5/16..18 | 195 |

* Most parts also available with female inserts.

continued/next page



SERIES 9000
CYLINDRICAL MOUNTING PADS

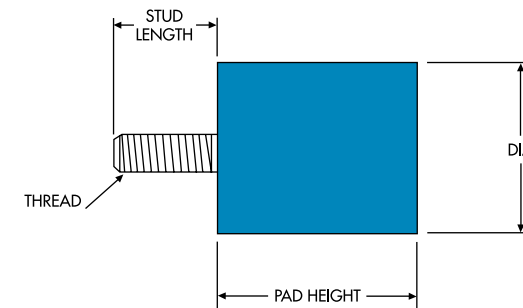
Style: **MM9000**



SELECTION GUIDE

| PART NUMBER | DIAMETER | PAD HEIGHT | STUD LENGTH | THREAD | STATIC LOAD |
|-------------|----------|------------|-------------|---------|-------------|
| mm9903 | 1 | 3/4 | 3/4 | 3/8..16 | 60 |
| mm9905 | 1 | 1 | 3/8 | 3/8..16 | 62 |
| mm9907 | 1 1/2 | 1 | 3/4 | 3/8..16 | 100 |
| mm9909 | 1 3/8 | 1 | 3/4 | 3/8..16 | 110 |
| mm9911 | 1 1/2 | 3/4 | 1 5/16 | 3/8..16 | 90 |
| mm9913 | 2 | 1 1/2 | 3/4 | 3/8..16 | 165 |
| mm9915 | 2 | 1 3/4 | 3/4 | 3/8..16 | 280 |
| mm9917 | 2 | 2 1/8 | 3/4 | 3/8..16 | 325 |

* Most parts also available with female inserts.



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WIRE PROTECTION & POWER COMPONENTS



Cable Clamps, Push & Snap Lock



Cable Ties



Cable Wrap



Nylon Rivets, Arrow Clips & Push-in Fasteners 4-6



Push Mount Wire Clips



Push Mount Wire Clips



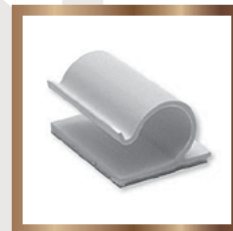
Lockit Hose Clamps



Nylon Cable Clamps



Nylon Hose Clamps & Nylon Strap Mates



“J” & “C” Style Wire Clips



“P” Style Wire and Cable Holder & Lockit Loops



“U” Style Wire Clips

CONTACT ESTCO FOR MORE PRODUCT INFORMATION

CONTACT ESTCO FOR MORE PRODUCT INFORMATION

SAFETY GEAR



Apparel & Hi-Viz Wear



Barricade Tape



Confined Space



Emergency Response



Jobsite Safety



Lighting



Lockout/Tagout



Marking Tapes



Ergonomics



Eye Protection



Fall Protection



First Aid



Outdoor



Printer



Protective Clothing



Respiratory



Footwear



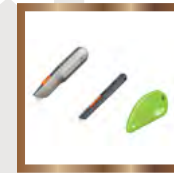
Hand Protection



Hazardous Storage



Head & Face Protection



Safety Cutters



Showers & Eyewash



Signs



Sorbents



Hearing Protection



Heat Stress



Industrial Markers



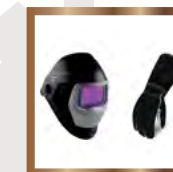
Instrumentation



Tapes & Adhesives



Water Safety



Welding & FR Safety



Wipes & Cleaners

CALL OR VISIT OUR WEBSITE TO LEARN MORE

CALL OR VISIT OUR WEBSITE TO LEARN MORE

SAFETY GEAR CONTINUED: GLOVES



Gloveworks Blue Latex Exam Powder Free Disposable Gloves (500 Gloves Case)



Ammex Professional Ivory Latex Exam Powder Free Disposable Gloves (1000 Gloves/Case)



Gloveworks Hd Ivory Latex Industrial Powder Free Disposable Gloves (1000 Gloves/Case)



Ammex Lx3 Ivory Latex Industrial Powder Free Disposable Gloves (1000 Gloves/Case)



Gloveworks Ivory Latex Industrial Powdered Disposable Gloves (1000 Gloves/Case)



Ammex Gpx3 Clear Vinyl Industrial Latex Free Disposable Gloves (1000 Gloves/Case)



Gloveworks Black Synthetic Vinyl Disposable Gloves (1000 Gloves/Case)



Gloveworks Black Vinyl Powder Free Industrial Gloves (1000 Gloves/Case)



Gloveworks Clear Vinyl Industrial Powdered Disposable Gloves (1000 Gloves/Case)



Gloveworks Ivory Latex Industrial Powder Free Disposable Gloves (1000 Gloves/Case)



Gloveworks Clear Vinyl Industrial Latex Free Disposable Gloves (1000 Gloves/Case)



Gloveworks Blue Vinyl Industrial Latex Free Disposable Gloves (1000 Gloves/Case)



Ammex Clear Vinyl Exam Latex Free Disposable Gloves (1000 Gloves/Case)



Ammex Stretch Synthetic Blue Vinyl Pf Exam Gloves (1000 Gloves/Case)



Ammex Ivory Stretch Vinyl Exam Latex Free Disposable Gloves (1000 Gloves/Case)



Ammex Black Medical Nitrile Exam Latex Free Disposable Gloves (1000 Gloves/Case)



Ammex Indigo Nitrile Exam Latex Free Disposable Gloves (1000 Gloves/Case)



Ammex Blue Nitrile Exam Latex Free Disposable Gloves (1000 Gloves/Case)



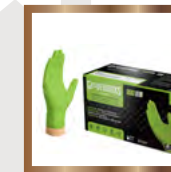
Gloveworks Black Nitrile Industrial Latex Free Disposable Gloves (1000 Gloves/Case)



Gloveworks Blue Nitrile Exam Latex Free Disposable Gloves (1000 Gloves/Case)



Gloveworks Black Nitrile Exam Latex Free Disposable Glove (1000 Gloves/Case)



Gloveworks Hd Green Nitrile Industrial Latex Free Disposable Gloves (1000 Gloves/Case)



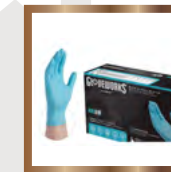
Gloveworks Hd Black Nitrile Industrial Latex Free Disposable Gloves (1000 Gloves/Case)



Gloveworks Hd Royal Blue Nitrile Latex Free Disposable Gloves (1000 Gloves/Case)



Gloveworks Hd Orange Nitrile Industrial Disposable Gloves (1000 Gloves/Case)



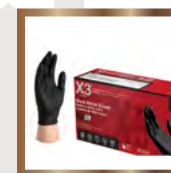
Gloveworks Blue Nitrile Industrial Latex Free Disposable Gloves (1000 Gloves/Case)



Ammex X3 Blue Nitrile Industrial Latex Free Disposable Gloves (1000 Gloves/Case)



X3 Ultra Nitrile Powder Free Disposable Gloves (1000 Gloves/Case)



Bx3 (1000 Gloves/Case)



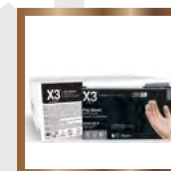
Ammex Exam Blue Nitrile Pf Disposable Gloves (1000 Gloves/Case)



X3 Clear Poly Disposable Gloves (100 Gloves/Box)



X3 Clear Poly Disposable Gloves (500 Gloves/Box)

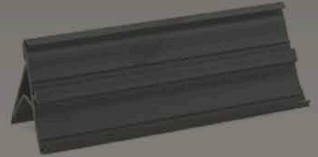


X3 Stretch Hybrid Poly Disposable Gloves (1000 Gloves/Case)

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