

TECH PRODUCTS

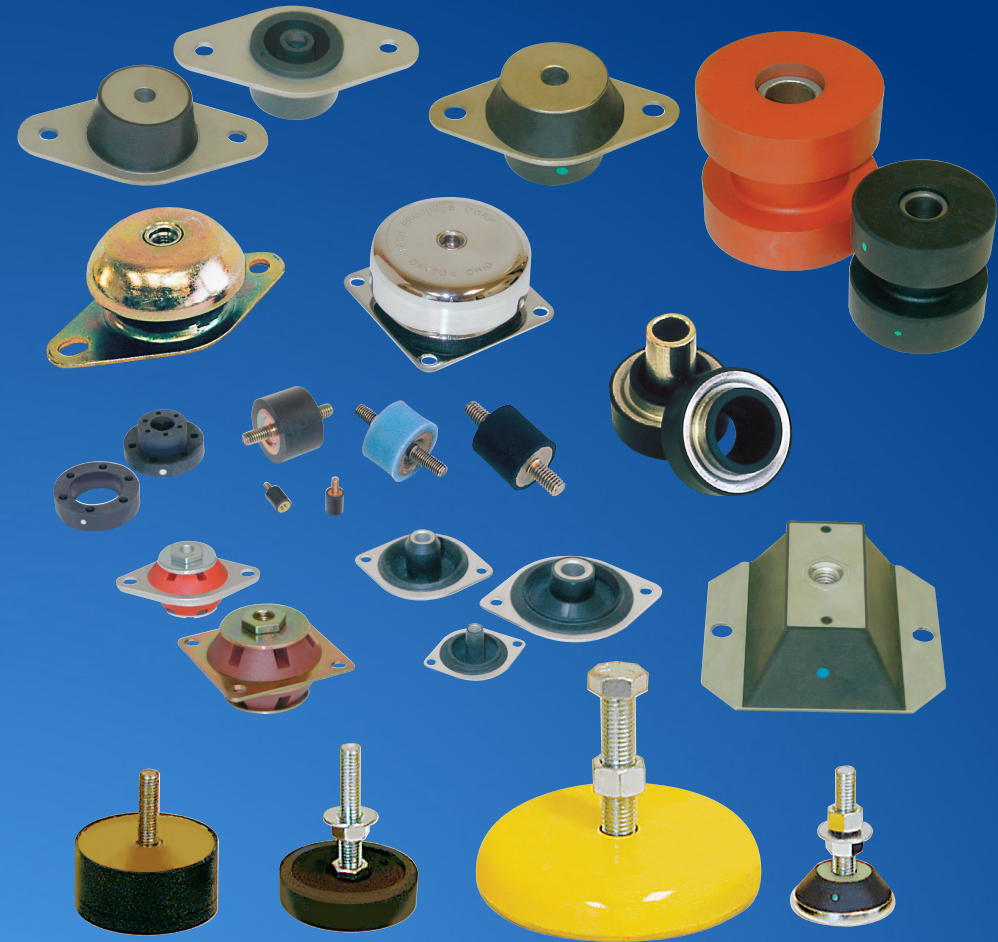
Vibration and Noise Control

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TECH PRODUCTS

Vibration and Noise Control

Tech Products Corporation - Vibration and Shock Isolation Products



Vibration and Shock Isolation Products

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Vibration/Shock Terminology

Amplitude—The magnitude of a force, displacement or acceleration from some reference point.

Damping—The dissipation of energy. Two types of damping are: Coulomb or friction damping, and Hysteretic or inherent damping.

Frequency—The number of oscillations that occur in a given time period. It is measured in cycles per second (CPS) or Hertz (Hz), cycles per minute (CPM) or strokes per minute (SPM).

Natural Frequency—The frequency of vibration that occurs if a system is moved from its normal position and allowed to vibrate freely.

Resonance—A condition that occurs when the forcing frequency coincides with the natural frequency of a suspension system. Avoid this at all costs.

Shock—A transient event defined by a sudden change of motion, force or velocity.

Spring Rate—A measurement of stiffness. It is a constant defined by the ratio of force to the corresponding deflection and is expressed in pounds/ inch.

Structural Damping—Damping which reduces the vibration of resonating surfaces that radiate noise. Damping is accomplished by affixing a material directly to the vibrating surface. This material converts the mechanical vibration to a minimal amount of heat energy.

Transmissibility—A dimensionless ratio of the dynamic output to the dynamic input.

Vibration—An oscillation in a mechanical system about some reference point. Frequency and amplitude are used to define that oscillation.

Vibration

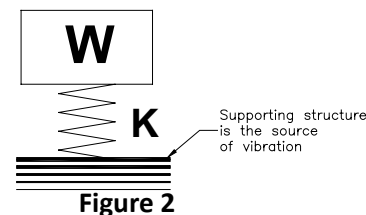
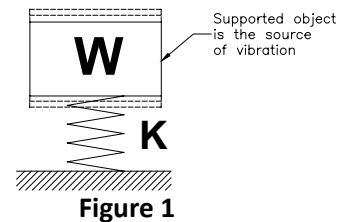
This outline of basic vibration theory is intended to present a simplified approach to application and sizing of isolators. It will enable the design engineer to select the proper isolator to reduce the harmful effects of vibration. Obviously, real life situations are more complex than this simplified approach indicates.

Vibration is defined as a magnitude (force, displacement, or acceleration) which oscillates about a reference point. Vibration is commonly expressed in terms of frequency, cycles per second or Hertz (Hz).

Vibration problems generally fall into two classes.

1. Force excitation: The isolator is used to protect the supporting structure from forces generated by the supported mass (see Figure 1). An example is the use of motor mounts in an automobile.

2. Motion excitation: The isolator is used to protect the supported mass from disturbances of the supporting structure (see Figure 2). An example is the use of mounts under a coordinate measuring machine.



Natural Frequency is the frequency of vibration that will occur if a system is disturbed from its normal position and allowed to vibrate freely. For our purposes the natural frequency can be defined as a function of mass and stiffness or spring rate. If the spring rate is linear, the load vs. deflection curve is a straight line (Figure 3). For instance, a load of 100 pounds will cause a deflection of .20 inches. This spring will have a stiffness of:

$$K = \frac{W}{D} = \frac{100}{.20} = 500 \frac{lbs}{inch}$$

Where: K = Stiffness (pounds per inch)
W = Weight of load (pounds)
D = Deflection (inches)

If we assume the supported item is a rigid body, the system will have a well-defined Natural Frequency (fn).

$$f_n = \frac{1}{2\pi} \sqrt{\frac{Kg}{W}}$$

or removing the constants:

$$f_n = 3.13 \sqrt{\frac{K}{W}}$$

Where: W = Weight of load (pounds)
g = Acceleration due to gravity (386 in./sec.2)

$$\pi = 3.1416$$

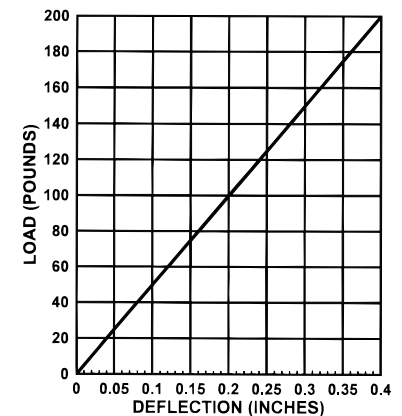


Figure 3

If the frequency of the input that we are isolating from (the forcing frequency) is defined as f_f , it can be shown that if the spring has been selected so that:

$$\frac{f_f}{f_n} > \sqrt{2}$$

the displacement of the isolated item will be less than that of the input. This is the basis for vibration isolation (Figure 4).

However, if:

$$\frac{f_f}{f_n} < \sqrt{2}$$

the displacement of the isolated item will be greater than that of the input. This is the region of amplification (Figure 4).

Since Transmissibility (T) is defined as the ratio of the output to the input:

$$T = \frac{\text{output}}{\text{input}}$$

maximum transmissibility always occurs when the forcing frequency (f_f) and the natural frequency (f_n) coincide. This is commonly called the resonant point.

If T is greater than one, amplification is occurring. If T is less than one, isolation is occurring.

Figure 4 depicts typical transmissibility curves for various damping conditions. Damping (d) is defined as the dissipation of energy by conversion to heat. Note that damping affects the magnitude of the response; it has little effect on the frequency of the response. Figure 5 gives damping factors for some typical materials.

Figure 4 indicates that while the maximum transmissibility varies with damping, for lower damping values the crossover point is always:

$$f_n \sqrt{2}$$

Typical Transmissibility For Viscous Damping

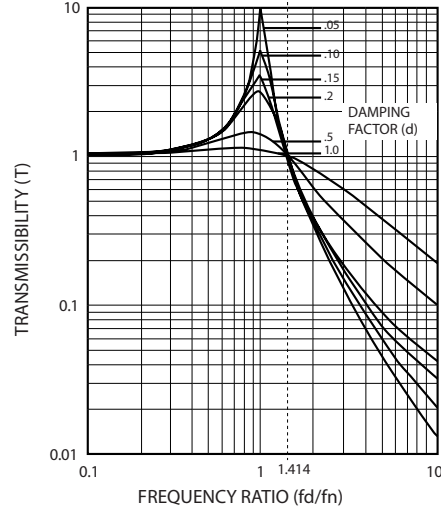


Figure 4

Typical Damping Factors

Material	d
Natural Rubber	.05
Neoprene	.05
Felt and Cork	.06
Butyl	.10
High Damped Silicone	.15+
Friction Damped Spring	.30+

Figure 5

The three types of damping usually encountered are friction (Coulomb), hysteretic and viscous.

Friction damping is characterized by sliding surfaces. Hysteretic damping is the damping that is inherent in a material. Viscous (or fluid) damping is characterized by proportional relationships between forces and velocities, e.g. an object moving through a liquid.

Transmissibility (T) is the ratio of the output to the input. If the input amplitude is .10 inches, and the output is .025 inches, the transmissibility will be:

$$T = \frac{\text{output}}{\text{input}} = \frac{.025}{.100} = .25$$

The percent of isolation can be expressed as:

$$\% \text{ Isolation} = (1 - T) \times 100$$

or in this case:

$$\% \text{ Isolation} = (1 - .25) \times 100 = 75\%$$

Quite often the magnitude of amplification at resonance is important. This point of maximum transmissibility is solely determined by the amount of damping (d) in the isolator. For isolators, d is typically .06 to .20. A simplified expression for maximum amplification (Q) for lower damping values is given by:

$$Q = \frac{1}{2d}$$

If d = .15 (typical of a high damped silicone)

$$Q = \frac{1}{2(.15)} = 3.33$$

The amplification factor at resonance for most isolators varies between 2.5 and 8.0.

While damping is desirable to control the response at resonance, it actually decreases the isolation at higher frequencies. As Figure 4 indicates, the more damping in a system, the less isolation at frequencies above $f_n \sqrt{2}$.

If the forcing frequency (f_f) and the desired transmissibility are known, the required system natural frequency is calculated by:

$$f_n = \frac{f_f}{\sqrt{\frac{1}{T} + 1}}$$

For instance, if f_f is 20 Hz and T is .25, then the maximum acceptable f_n is 8.9 Hz.

This equation is presented in nomograph form as Figure 8 on page 7.

EXAMPLE

A unit with a weight of 800 pounds is to be mounted on four isolators. The center of gravity is located at the center of the unit. The forcing frequency is 30 Hz and 80% isolation, or a transmissibility of .20 is desired.

With four isolators, the load supported by each will be 200 pounds. If the unit's center of gravity is eccentric, a load distribution analysis must be made to determine the load at each mounting point.

Loads versus natural frequency curves are available for most Tech Products isolators. Often several isolators can be selected using these curves. The load versus frequency curves for the 515 Series may result in a proper isolator selection; however, there are always other conditions to consider. These may be: shock requirements, available space, mounting orientation or environmental conditions.

First the required system natural frequency is determined:

$$f_n = \frac{f_f}{\sqrt{\frac{1}{T} + 1}} = \frac{30}{\sqrt{\frac{1}{.20} + 1}} = 12.2 \text{ Hz}$$

Next, choose a load versus natural frequency curve where the supported weight is about in the middle of the load range. If, after the calculations are made, desirable results are not obtained, go to the curves of the next larger or smaller mount and repeat the calculations.

Figures 6 and 7 show the curves for a typical mount that has been selected for this application. Draw a horizontal line across Figure 7 at 200 pounds on the load axis. Then draw a vertical line across Figure 7 from 12.2 Hz on the natural frequency axis. The intersection of the two lines is slightly to the left of curve -4 on Figure 7.

Technical Section

If a vertical line is drawn to the frequency axis from the point where the 200 pound line intersects curve -4, the natural frequency value is 12.5 Hz. This is slightly higher than the 12.2 Hz calculated. However, it is close enough so that the -4 could be selected.

If $f_n = 12.5$ Hz is put into the transmissibility equation

$$T = \frac{1}{\left(\frac{f}{f_n}\right)^2 - 1}$$

$T = .21$ or approximately 79% isolation.

One should note that the magnitude of the input would affect the system's natural frequency. The modulus of elastomeric materials is strain sensitive, so at very small inputs the natural frequency will be slightly more than calculated and slightly less at very high inputs.

"Shortcuts"

The preceding transmissibility equation is graphically produced in Figure 8.

Using the previous example, where the forcing frequency is 30 Hz and 80% isolation is desired: Draw a horizontal line across Figure 8 located at 30 Hz on the forcing frequency axis to the intersection of the 80% isolation line. Draw a vertical line down to the natural frequency axis. This point defines the required system's natural frequency to be approximately 12 Hz.

From the natural frequency equation given on page 6, it can be shown that the natural frequency is a function of the isolator static deflection (ΔS). That is:

$$\text{if } f_n = 3.13 \sqrt{\frac{K}{W}}$$

$$\text{and } K = \frac{W}{\Delta S} \text{ then } f_n = 3.13 \sqrt{\frac{1}{\Delta S}}$$

If load vs. frequency curves are not available, then Figure 9 can be used to help select an isolator. The desired natural frequency is determined as in the example previously discussed (12.2 Hz). Draw a horizontal line from 12.2 Hz on the natural frequency axis to the intersection of the dark diagonal line. Draw a vertical line down to the intersection of the static deflection axis. This point, approximately .065 inches, is the static deflection required of the isolator to produce a natural frequency of 12.2 Hz. Load deflection curves can now be used to determine what isolator will produce .065 inches deflection at the given load.

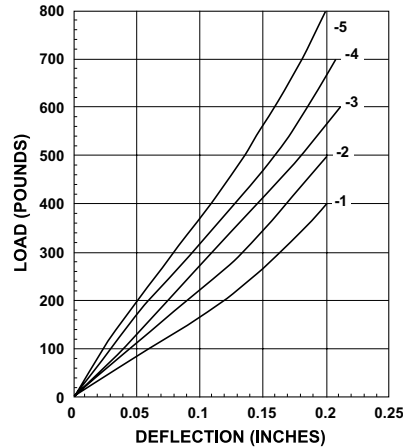


Figure 6

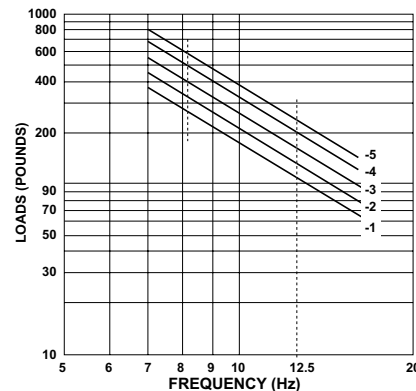


Figure 7

Technical Section

Vibration Mount Effectivity

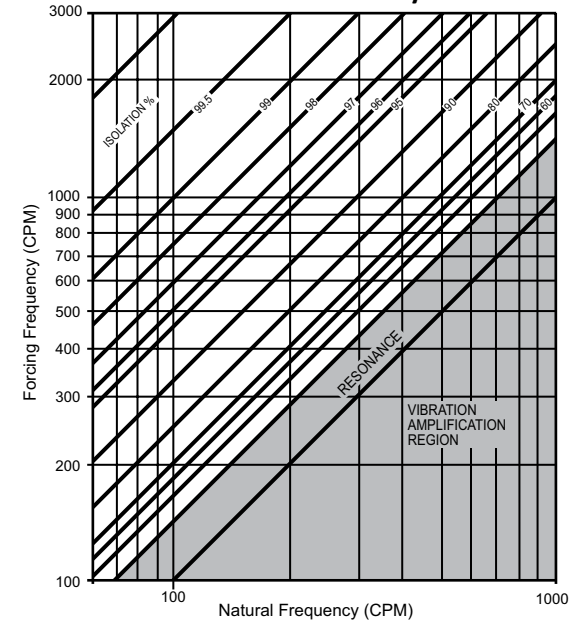


Figure 8

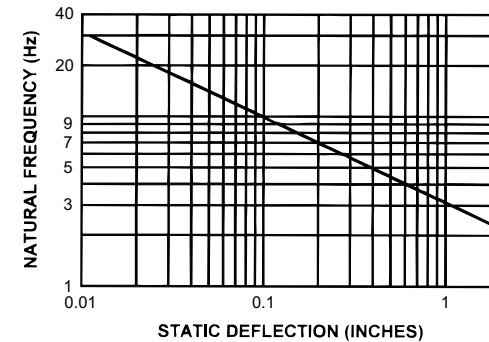


Figure 9

Shock

Shock is normally classified as a transient phenomenon in contrast to vibration that is normally a steady-state phenomenon.

Shock isolation is considerably different from vibration isolation. A shock isolator is an energy storage device that stores the input energy by deflecting and then releasing that energy over a longer period of time. The energy is released at the natural frequency of the shock isolation system.

Shock is normally defined by a pulse or a free-fall impact. Some typical pulse shapes are half-sine, triangular, rectangular and versed-sine.

A convenient way to analyze shock problems is to use the velocity change method. Figure 10 gives equations to calculate the velocity change (V) for various shock excitations.

The transmitted shock (G_t) is given by:

$$G_t = \frac{V(2\pi f_n)}{g} = \frac{V(f_n)}{61.4}$$

The associated dynamic deflection (Δd) can be determined by:

$$\Delta d = \frac{V}{2\pi f_n}$$

EXAMPLE

A piece of equipment is subjected to a 24-inch (h) free-fall drop. It is known that the equipment cannot withstand more than 25 g's, i.e. the fragility level is 25 g's. The equipment weighs 400 pounds.

Using the transmitted shock (G_t) equation and setting G_t to 25 and solving for f_n :

$$G_t = \frac{V(f_n)}{61.4}$$

$$\text{or } f_n = \frac{G_t(61.4)}{V} = \frac{25(61.4)}{V}$$

From Figure 10, $V = \sqrt{2gh}$

where: h = drop height in inches
g = acceleration due to gravity
(386 in/sec²)

$$\text{or } V = \sqrt{2(386)(24)} = 136 \text{ in/sec}$$

The required natural frequency is:

$$f_n = \frac{25(61.4)}{136} = 11.3 \text{ Hz}$$

The required dynamic deflection (Δd) is:

$$\Delta d = \frac{V}{2\pi f_n} = \frac{136}{2\pi(11.3)} = 1.92 \text{ inches}$$

Now calculate the required dynamic stiffness (K) for the system.

$$\text{Since } f_n = 3.13 \sqrt{\frac{K}{W}}$$

$$K = \frac{(f_n)^2 W}{(3.13)^2} = \frac{(11.3)^2 W}{(3.13)^2}$$

$$\text{or } K = 5213 \text{ lbs/inch}$$

We have now found that to protect the equipment from the 24-inch drop we need"

1. A system natural frequency of 11.3 Hz
2. A dynamic deflection of 1.92 inches
3. A dynamic system stiffness of 5213 lbs/inch.

All three of these conditions must be met to assure that no more than 25 g's is transmitted to the equipment.

Typical Shock Excitations

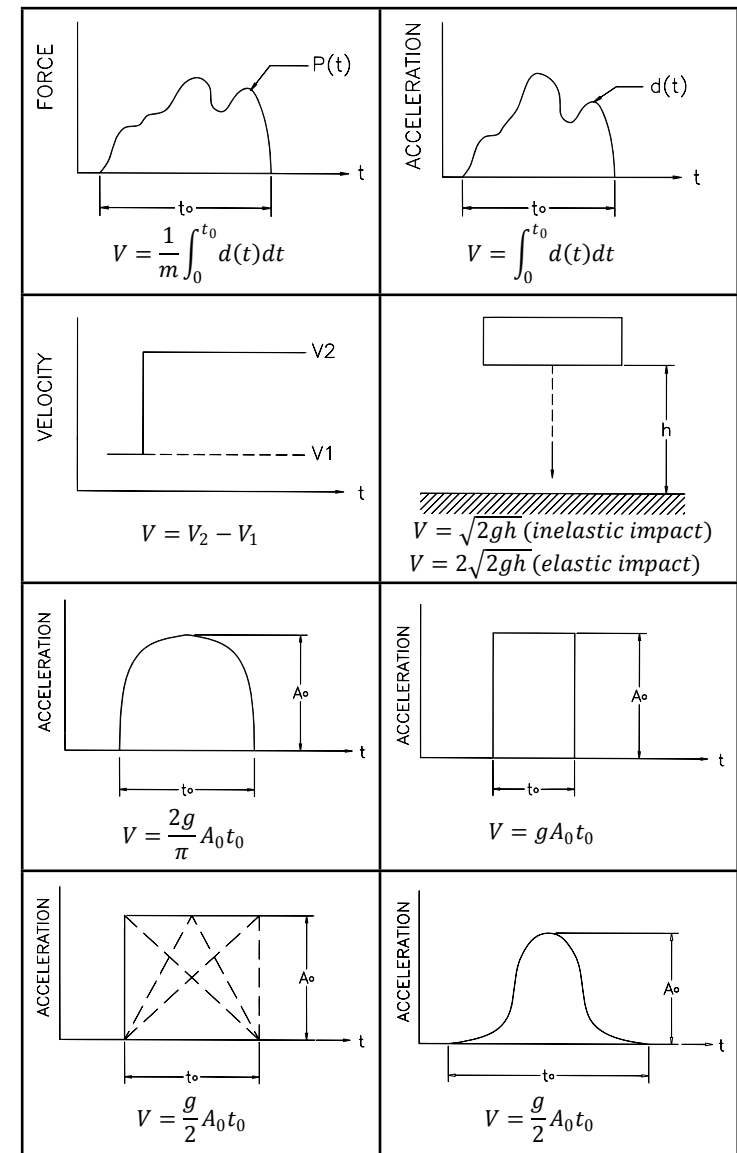


Figure 10

Elastomer Properties

Tech Products offers a variety of standard elastomers for all types of isolators. Proper selection of elastomer based on mechanical properties, temperature range, and chemical resistance is crucial to optimizing the life of the isolators. Following is basic information for Tech Products standard elastomer options. Other elastomers and custom compounds are also available.

<p>Neoprene:</p> <p>Adhesion to Metal: Excellent</p> <p>Tensile Strength: Excellent</p> <p>Compression Set: Fair</p> <p>Damping Factor (C/Cc): 0.05</p> <p>Operating Temperature: -20 to 180°F</p> <p>Oil Resistance: Good</p> <p>Ozone Resistance: Good</p> <p>Weather / Sunlight Aging: Good</p> <p>Heat Aging: Good</p>	<p>Butyl:</p> <p>Adhesion to Metal: Good</p> <p>Tensile Strength: Excellent</p> <p>Compression Set: Fair</p> <p>Damping Factor (C/Cc): 0.15</p> <p>Operating Temperature: -20 to 200°F</p> <p>Oil Resistance: Fair</p> <p>Ozone Resistance: Good</p> <p>Weather / Sunlight Aging: Good</p> <p>Heat Aging: Good</p>
<p>Natural Rubber:</p> <p>Adhesion to Metal: Excellent</p> <p>Tensile Strength: Excellent</p> <p>Compression Set: Good</p> <p>Damping Factor (C/Cc): 0.05</p> <p>Operating Temperature: -20 to 180°F</p> <p>Oil Resistance: Poor</p> <p>Ozone Resistance: Poor</p> <p>Weather / Sunlight Aging: Poor</p> <p>Heat Aging: Fair</p>	<p>Silicone:</p> <p>Adhesion to Metal: Good</p> <p>Tensile Strength: Good</p> <p>Compression Set: Fair</p> <p>Damping Factor (C/Cc): 0.05 - 0.08</p> <p>Operating Temperature: -80 to 400°F</p> <p>Oil Resistance: Fair</p> <p>Ozone Resistance: Excellent</p> <p>Weather / Sunlight Aging: Excellent</p> <p>Heat Aging: Excellent</p>
<p>Nitrile:</p> <p>Adhesion to Metal: Excellent</p> <p>Tensile Strength: Excellent</p> <p>Compression Set: Good</p> <p>Damping Factor (C/Cc): 0.05</p> <p>Operating Temperature: -20 to 180°F</p> <p>Oil Resistance: Excellent</p> <p>Ozone Resistance: Fair</p> <p>Weather / Sunlight Aging: Fair</p> <p>Heat Aging: Good</p>	<p>High Damped Silicone:</p> <p>Adhesion to Metal: Good</p> <p>Tensile Strength: Good</p> <p>Compression Set: Fair</p> <p>Damping Factor (C/Cc): 0.15 - 0.20</p> <p>Operating Temperature: -80 to 350°F</p> <p>Oil Resistance: Fair</p> <p>Ozone Resistance: Excellent</p> <p>Weather / Sunlight Aging: Excellent</p> <p>Heat Aging: Excellent</p>

Engineering Analysis

Tech Products offers complete engineering analysis for all types of applications. The information below is required for a full six degree of freedom analysis of engine isolation applications. For other applications, please contact Tech Products at enr@novibes.com. Forms are also available at <http://www.novibes.com/Services>.

Customer Information

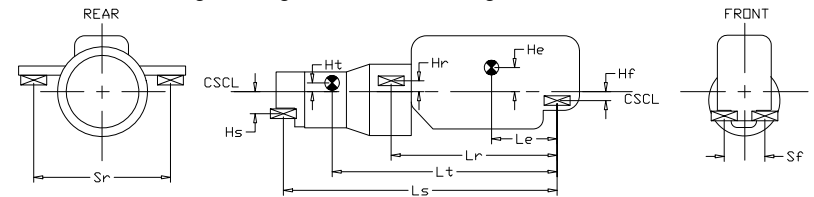
Company _____ Contact _____
 Phone _____ Fax _____ Email _____
 Project Name _____

Engine Data

Engine Model & Manufacturer _____
 Engine Operating Speed (rpm) _____
 Engine Idle Speed (rpm) _____
 Engine Weight with accessories (lb or Kg) _____
 Engine Rated Power (Hp or KW) _____
 Number of Cylinders _____
 Stroke (Two or Four) _____
 Output Torque (If Available) (N-m or ft-lb) _____
 Make and Model of Power Take-Off Equipment* _____
 Weight of Power Take-Off Equipment* (lb or Kg) _____

Mounting Location

*Reference the following drawings to fill out remaining data - Please note units



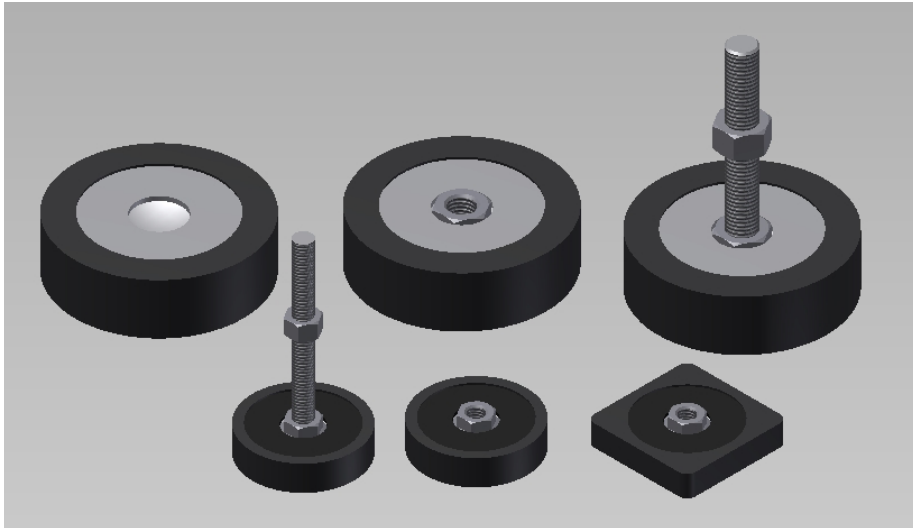
Distance from Engine C.G. to CSCL (He) _____
 Distance from Engine C.G. to Front Mount (Le) _____
 Distance from Front Mount to CSCL (Hf) _____
 Distance from Rear Mount to CSCL (Hr) _____
 Distance from Front Mount to Rear Mount (Lr) _____
 Front Mounting Spread (Sf) _____
 Rear Mounting Spread (Sr) _____
 Distance from Power Take-Off C.G. to CSCL (Ht) _____
 Distance from Power Take-Off C.G. to Front Mount (Lt) _____
 Distance from Tail Support (if any) to Front Mount (Ls) _____
 Distance from Tail Support to CSCL (Hs) _____

General Dimensions (Equipment Moments of Inertia may be given in place of this info.)

Height of Engine _____
 Width of Engine _____
 Length of Engine _____
 Height of Power Take-Off Equipment* _____
 Width of Power Take-Off Equipment* _____
 Length of Power Take-Off Equipment* _____

*Note: Power Take-Off Equipment includes transmissions, compressors, generators etc.

Pivotal Levelers

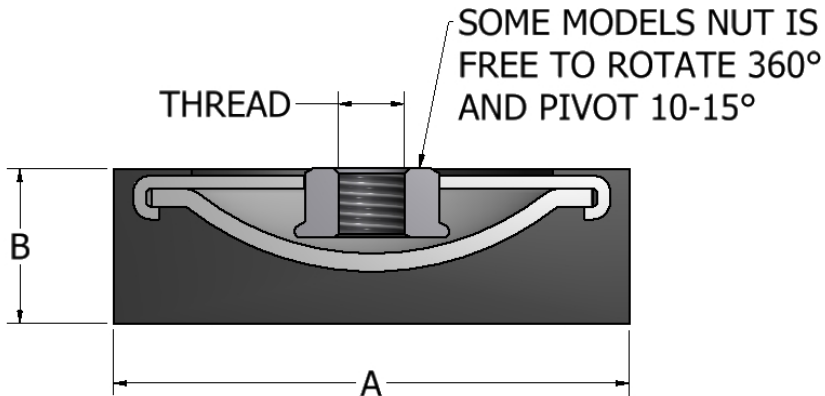


Patented Pivotal Levelers keep equipment level and isolate noise and vibration for about one-third to one-half the cost of ordinary machine mounts.

You can quickly and easily attach Pivotal Levelers to everything from computers and compressors to presses and pumps. These self-aligning, self-contained units handle

equipment up to 8,000 lbs., providing stability, isolation and shock protection while allowing complete portability. They permit 1/4" or more of leveling, depending on the attachment hardware used.

Pivotal Levelers are made of bonded neoprene/steel for long service life and resistance to ozone and oils.

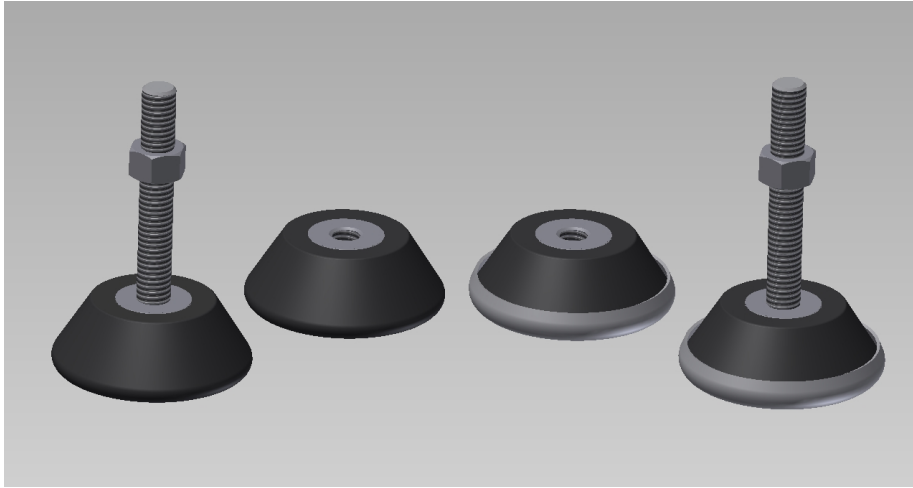


Pivotal Levelers

Part No.	Color Code	Max. Load (lbs)	Configuration	Description	A	B	Thread
50510	Green	350		Square, with round hole and hex nut; free to rotate. *Available in stainless steel.	3"	5/8"	1/2-13
50520	White	700					
50530	Green	500		Round hole with hex nut; free to rotate. *Available in stainless steel.	3	3/4	1/2-13
50540	White	1000					
50531	Green	500		Pad type; no hex nut (1" diameter alignment hole)	3	3/4	N/A
50541	White	1000					
50532	Green	500		Hex Hole with hex nut, no rotation	3	3/4	1/2-13
50542	White	1000					
50534	Green	3700		Pad type; no hex nut (1" diameter alignment hole)	5	1 1/2	N/A
50544	White	8000					
50535	Green	3700		Round hole with hex nut; free to rotate.	5	1 1/2	3/4-10
50545	White	8000					
50536	Green	3700		Hex Hole with hex nut, no rotation	5	1 1/2	3/4-10
50546	White	8000					

Add -A to part number for 5" long epoxied stud and hex nut

Mounting Feet



Tech Products Mounting Feet let you isolate all types of machinery and equipment from vibration and floor motion. They are made of neoprene bonded to a steel insert. All models are available with zinc-plated steel glides.

Multi-use Mounting Feet are used on business machines, light manufacturing machinery, precision equipment in fields such as optics, and almost anywhere else vibration presents a problem.

- Load capacity from 6 to 1000 lbs.
- Neoprene elastomer resistant to most oils, fuels, and solvents
- Steel Glide bottom available
- Available with attachment hardware
- **Add -A to Part Numbers for 2.5" epoxied stud and hex nut**

Without Glide		With Glide	
Part No.		Color Code	
3/8-16 Thread Without Glide	3/8-16 Thread With Glide		
50553	50563	Yellow	
50555	50565	Green	
50557	50567	White	
Approx. Deflection at Load Indicated		SPREAD LOAD RANGE	POINT LOAD RANGE
		30-125 lbs.	6-35 lbs.
		75-250	20-65
		150-400	50-130
Approx. Deflection at Load Indicated		0.1-0.3"	0.05-0.25"

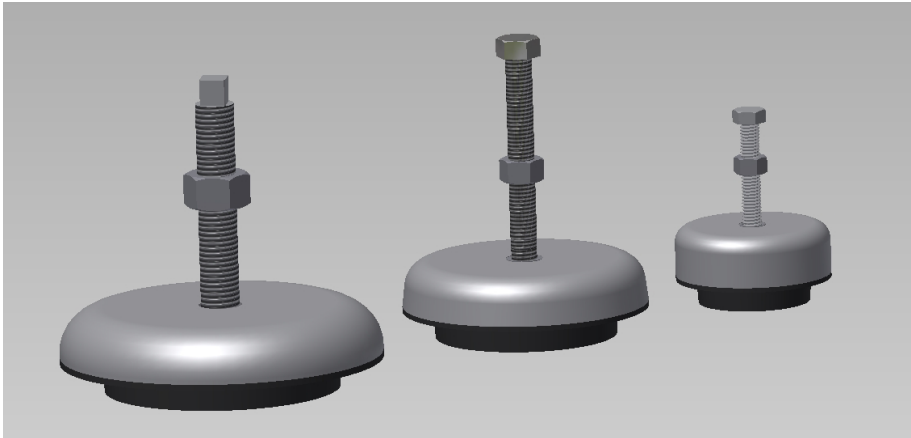
Mounting Feet

Without Glide		With Glide	
Part No.		Color Code	
1/2-13 Thread Without Glide	1/2-13 Thread With Glide		
50601	50604	Yellow	
50602	50605	Green	
50603	50606	White	
Approx. Deflection at Load Indicated		SPREAD LOAD RANGE	POINT LOAD RANGE
		40-135 lbs.	10-40 lbs.
		80-250	30-80
		200-450	70-180
Approx. Deflection at Load Indicated		0.1-0.3"	0.08-0.2"

Heavy Duty Mounting Feet

Without Glide		With Glide	
Part No.		Color Code	
1/2-13 Thread Without Glide	1/2-13 Thread With Glide		
50607	50617	Yellow	
50608	50618	Green	
50609	50619	White	
Approx. Deflection at Load Indicated		SPREAD LOAD RANGE	POINT LOAD RANGE
		60-250 lbs.	20-80 lbs.
		90-450	60-300
		225-1000	150-600
Approx. Deflection at Load Indicated		0.05-0.2"	0.05-0.2"

Machine Leveling Mounts



Whenever you need to protect heavy production equipment from shock and vibration, this rugged series of Leveling Mounts will do the job to your full satisfaction.

Their no-walk, no-creep performance lets you place your equipment wherever you wish without bolting it to the floor and to move it easily without re-anchoring or re-shimming.

Even when immersed in oil, water or other hazards, the high strength steel housing and neoprene base resist failure for years of daily punishment.

We offer six standard load ranges to closely match your weight and dimensional requirements. Punch presses, milling machines, injection molding equipment, lathes, compressors, mixers...any equipment that generates motion internally or is affected by external vibration can be economically mounted for top performance plus complete portability.

Leveling is simple and quick with internal adjustment capability up to 1/2 inch above loaded height, just by a few turns of the leveling bolt. Then the locknut is tightened on the machine foot for a permanent, precise mount.

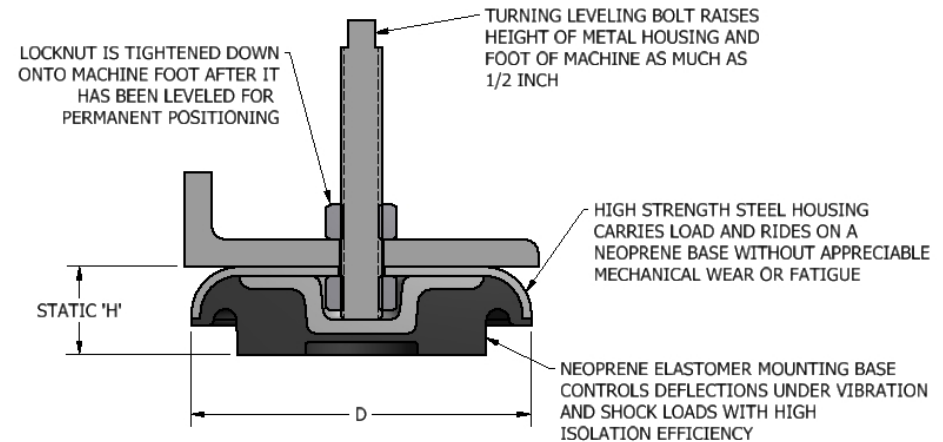
Features and Benefits:

- Easy Leveling
- Reduce Installation and Relocation Costs
- No Special Foundations
- Isolate Shock and Vibration
- Reduce Noise Levels
- Meets OSHA anchoring Standards
- Reduce Maintenance Costs
- Improve Production Efficiency
- Approximately 8-12 Hz Natural Frequency at Max. Load
- Special Bolt Lengths, Diameters, and Reducer Bushings Available

Applications:

- Injection Molding Machines
- Die Casting Machines
- Punch Presses
- Lathes
- Grinders
- Jig Borers
- Screw Machines
- Milling, Machines
- Brakes
- Four Slides
- And many others.

Machine Leveling Mounts



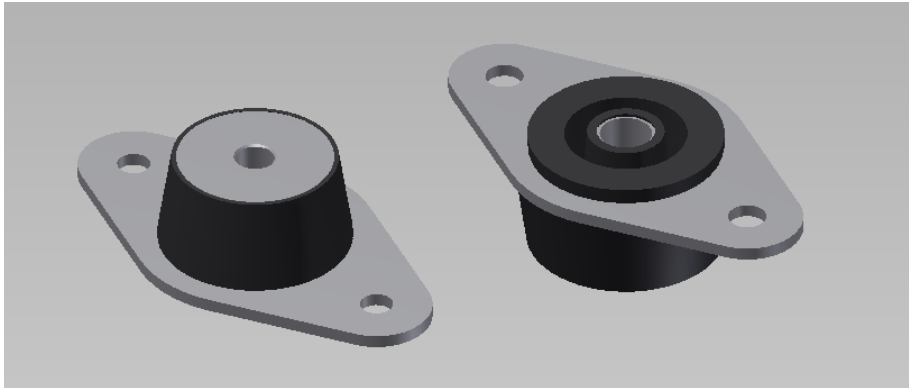
Part No.	Min. Load (lbs.)	Max. Load (lbs.)	Bolt Size x Length (in.)	D (in.)	Static Height (in.)
52220	30	150	3/8-16 x 3	3.13	1.50
52221	55	250	3/8-16 x 3	3.13	1.50
52221-1	100	500	3/8-24 x 3	3.13	1.50
52222	100	500	3/8-16 x 3	3.13	1.50
52223*	300	1000	1/2-13 x 5	4.75	1.50
52224	300	1000	1/2-13 x 5	4.75	1.50
52225*	500	4500	3/4-10 x 5	6.25	1.63
52226	500	4500	3/4-10 x 5	6.25	1.63
52227*	4000	13000	1-14 x 8	9	2.50
52229*	4000	13000	1-14 x 8	9	2.25
52231	4000	13000	3/4-10 x 4	9	2.25
52232	4000	13000	3/4-10 x 8	9	2.25

Metric Series

Part No.	Min. Load (kgs.)	Max. Load (kgs.)	Bolt Size x Length (mm)	D (mm)	Static Height (mm.)
52221-1-M10	45	230	M10x1.5 x 80	80	38
52224-M12	135	450	M12x1.75 x 130	120	38
52226-M20	230	2040	M20x2.5 x 130	160	41
52229-M24	1815	5900	M24x3.0 x 180	230	57

Normally Supplied with hex head bolt. (*) indicates square head bolts

Fail-Safe Compression Mounts

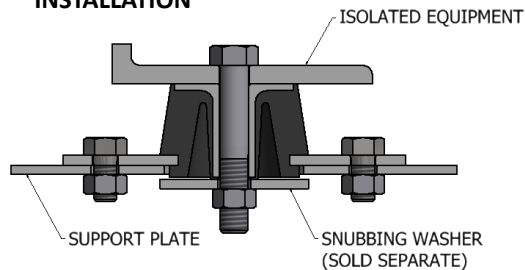


These fail-safe isolators are ideal for isolation of diesel engines and generators used in construction equipment, recreational vehicles and off-road equipment. The low natural frequency allows them to be used for computer and electronic equipment when there is a need for a "ruggedized" installation. They are also excellent isolators for compressors, motors, pumps and other machinery when skid mounted.

- Three sizes available for load ranges of 50 to 550 lbs.,
- High stiffness ratio of 6:1, axial-to-radial.
- Standard elastomer is neoprene,
- Resistant to ozone, fuel and oils.
- Temperature range of -20°F to $+180^{\circ}\text{F}$.
- Optional materials such as nitrile, butyl, silicone and others are available to meet your environmental conditions or military specifications.
- These mounts are fail-safe when used with snubbing washers and installed as shown. **See page 75 for snubbing washers.**

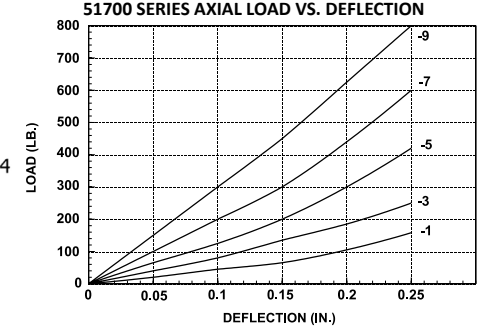
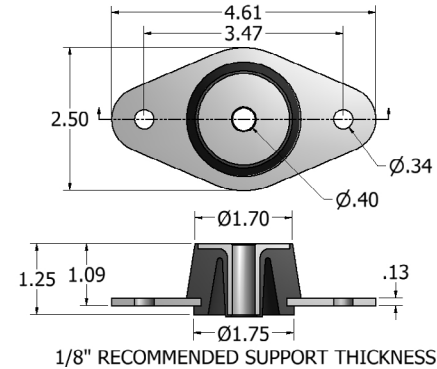
Part No.	Axial Static Load Rating: Nominal (lbs)	Color Code
51700-1	50	Yellow/Gold
51700-3	90	Red/Gold
51700-5	150	Green/Gold
51700-7	215	Blue/Gold
51700-9	300	White/Gold
51641-2	100	Yellow/Gold
51641-4	155	Red/Gold
51641-6	230	Green/Gold
51641-8	320	Blue/Gold
51641-10	420	White/Gold
51716-2	120	Yellow/Gold
51716-4	185	Red/Gold
51716-6	250	Green/Gold
51716-8	400	Blue/Gold
51716-10	550	White/Gold

INSTALLATION

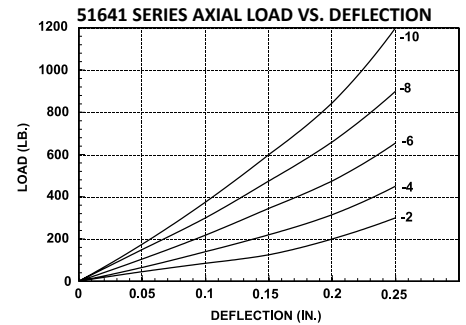
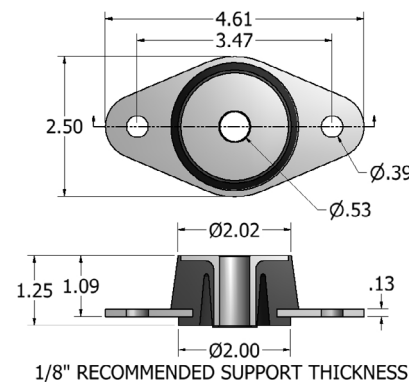


Fail-Safe Compression Mounts

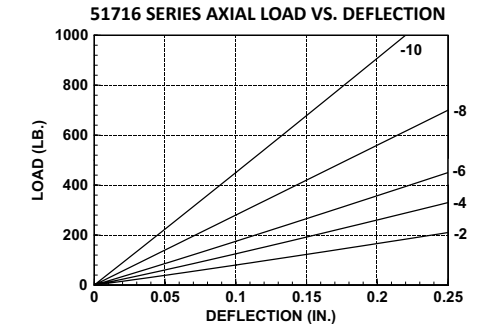
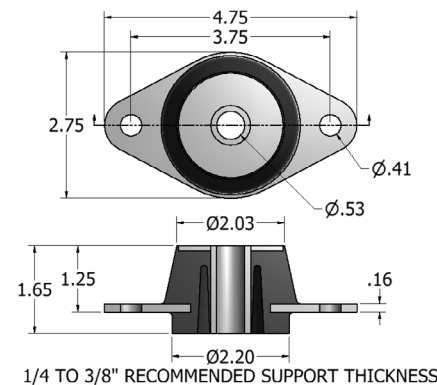
51700 Series



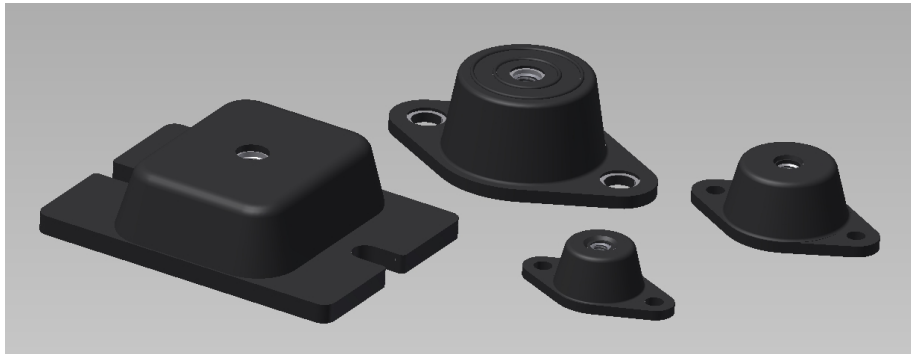
51641 Series



51716 Series



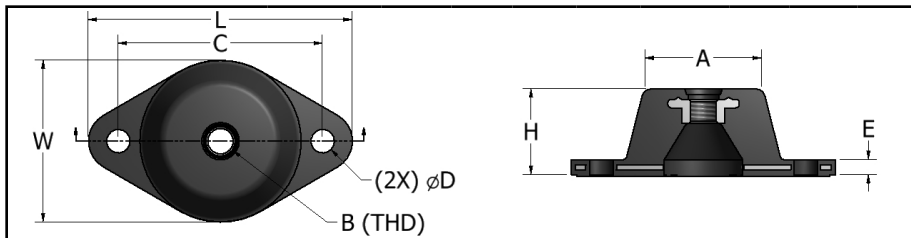
Compression Mounts



Standard Deflection

- Natural Frequencies as low as 6 Hz at maximum loads
- Constructed of Neoprene and steel
- Metric threads available

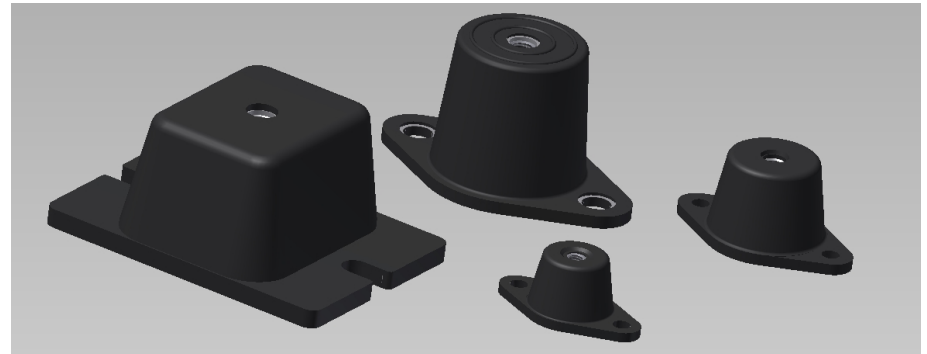
Part Numbers 52501 thru 52544 are also available in Silicone for an operating temperature range of -80° to 300°F. Add -S to part number for silicone.



Part No.	Color Code	Max. Load (lbs)	Max. Deflection (in)	L (in)	W (in)	H (in)	A (in)	B	C (in)	D (in)	E (in)
52501	Blue	35	0.20"	3 ³ / ₈	1 ³ / ₄	1	1 ¹ / ₄	5/16-18	2 ³ / ₈	1 ¹ / ₃₂	3/16
52502	Black	45									
52503	Red	70									
52504	Green	120									
52521	Blue	135	0.25	3 ³ / ₈	2 ³ / ₈	1 ¹ / ₄	1 ³ / ₄	3/8-16	3	1 ¹ / ₃₂	7/32
52522	Black	170									
52523	Red	240									
52524	Green	380									
52525	Gray	550									
52541	Black	250	0.25	5 ¹ / ₂	3 ³ / ₈	1 ³ / ₄	2 ¹ / ₂	1/2-13	4 ¹ / ₈	9/16	1/4
52542	Red	525									
52543	Green	750									
52544	Gray	1100									
52561-2	Black	1500	0.25	6 ¹ / ₄	4 ³ / ₈	1 ⁵ / ₈	3 ³ / ₄	1/2-13	5	9/16	3/8
52562-2	Red	2250									
52563-2	Green	3000									
52564-2	Gray	4000									

Note: 52561-2 through 52564-2 have a rectangular base

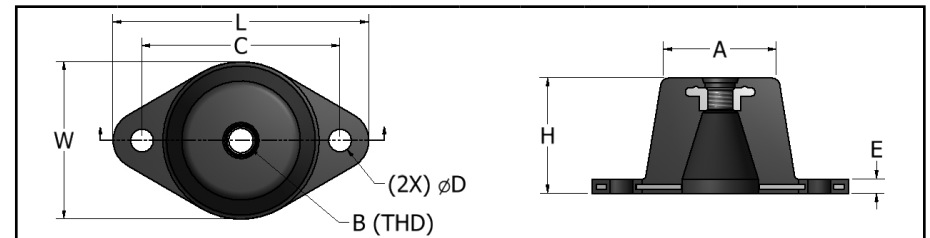
Compression Mounts



Double Deflection

- Natural Frequencies as low as 4.5 Hz at maximum loads
- Constructed of Neoprene and steel
- Metric threads available

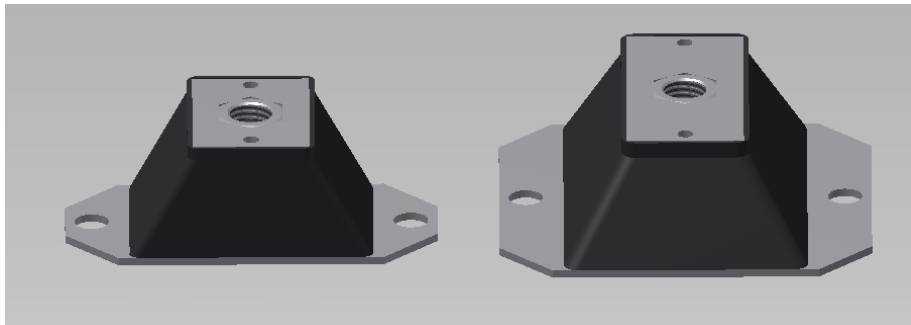
Part Numbers 52511 thru 52554 are also available in Silicone for an operating temperature range of -80° to 300°F. Add -S to part number for silicone.



Part No.	Color Code	Max. Load (lbs)	Max. Deflection (in)	L (in)	W (in)	H (in)	A (in)	B	C (in)	D (in)	E (in)
52511	Blue	35	0.40"	3 ³ / ₈	1 ³ / ₄	1 ¹ / ₄	1 ¹ / ₄	5/16-18	2 ³ / ₈	1 ¹ / ₃₂	3/16
52512	Black	45									
52513	Red	70									
52514	Green	120									
52531	Blue	135	0.50	3 ³ / ₈	2 ³ / ₈	1 ³ / ₄	1 ³ / ₄	3/8-16	3	1 ¹ / ₃₂	7/32
52532	Black	170									
52533	Red	240									
52534	Green	380									
52535	Gray	550									
52551	Black	250	0.50	5 ¹ / ₂	3 ³ / ₈	2 ⁷ / ₈	2 ¹ / ₂	1/2-13	4 ¹ / ₈	9/16	1/4
52552	Red	525									
52553	Green	750									
52554	Gray	1100									
52571-2	Black	1500	0.50	6 ¹ / ₄	4 ³ / ₈	2 ³ / ₄	3 ³ / ₄	1/2-13	5	9/16	3/8
52572-2	Red	2250									
52573-2	Green	3000									
52574-2	Gray	4000									

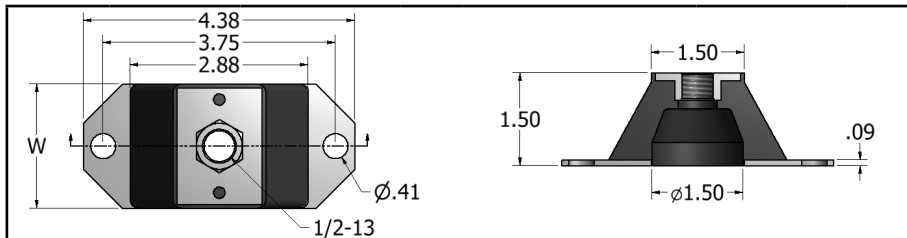
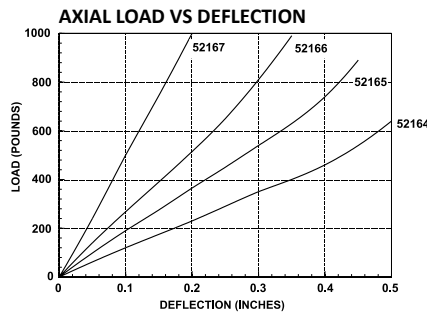
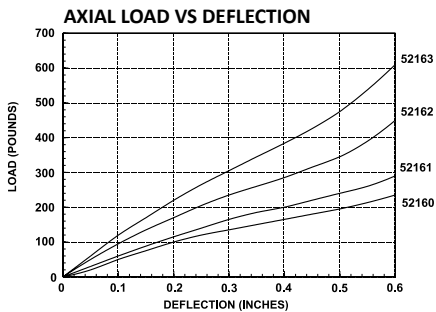
Note: 52571-2 through 52574-2 have a rectangular base

Compression Mounts



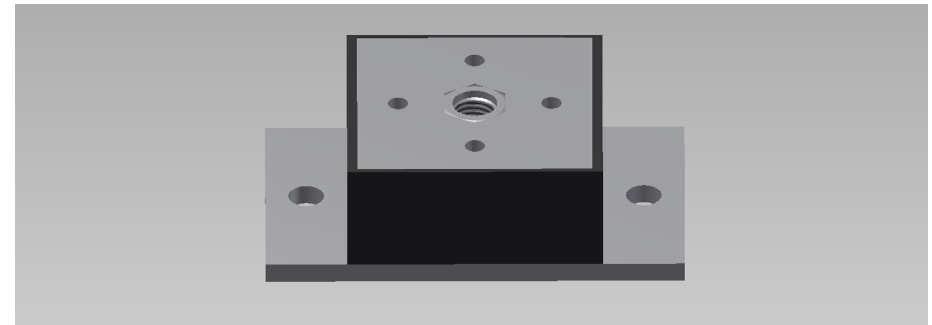
These rugged, high performance mounts are normally used for vertically applied loads to prevent the transmission of noise and vibration caused by the rotation of unbalanced equipment such as centrifuges, blowers, pumps, vibrators and air handling systems.

- Isolation of disturbing frequencies as low as 15 Hz
- Neoprene elastomer resistant to oil, fuel, and ozone
- -20° to +180°F operating temperature range



Part No.	Color Code	Load Range (lbs.)	W (in.)	Part No.	Color Code	Load Range (lbs.)	W (in.)
52160	Yellow	20-60	2	52164	Red	70-200	4
52161	Red	40-100	2	52165	Green	140-280	4
52162	Green	60-150	2	52166	Blue	240-500	4
52163	Blue	80-200	2	52167	White	450-700	4

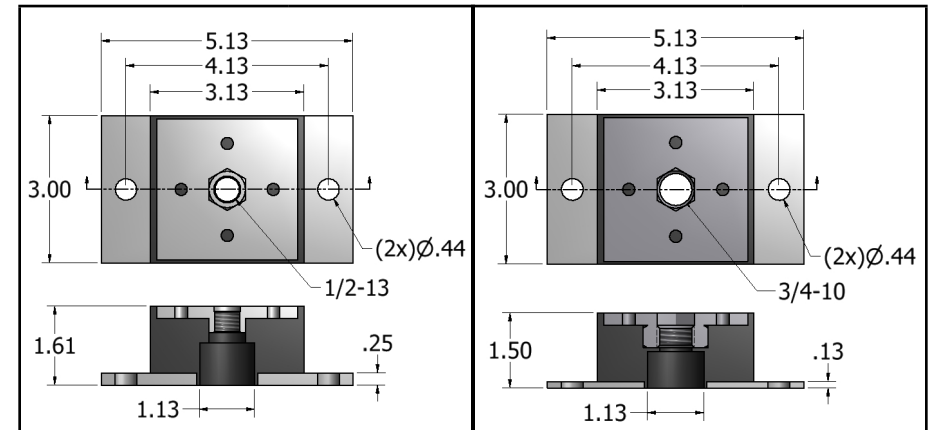
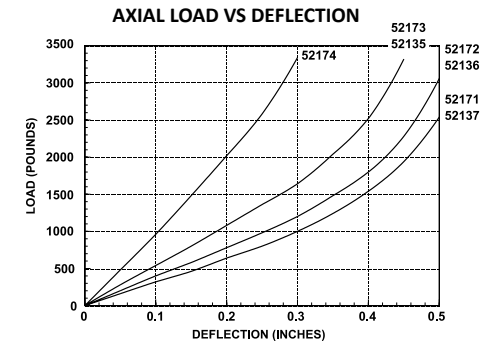
Compression Mounts



Heavy Duty

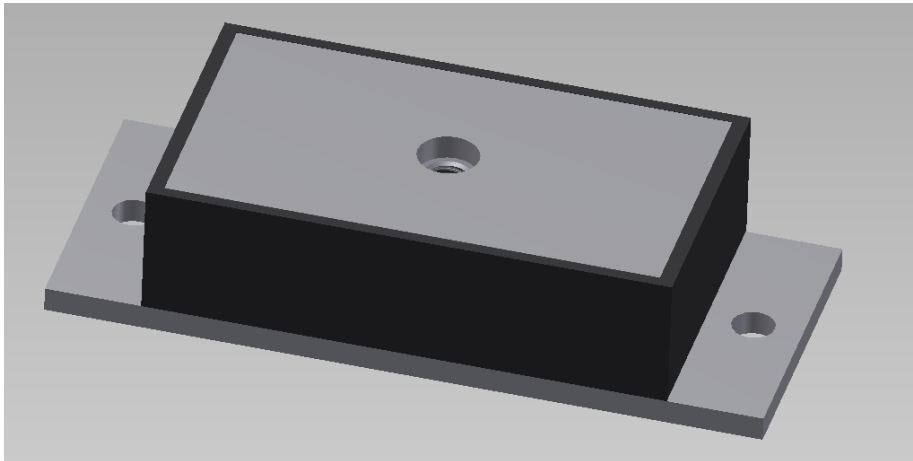
This compression mount design is for applications under heavy industrial machinery requiring efficient vibration, noise, and shock isolation. Typical applications include pumps, compressors, and generators.

- Low natural frequency of 8-15 Hz
- Can be mounted in pairs for lower natural frequencies (6-10 Hz)
- Constructed of cold-rolled steel and oil resistant neoprene



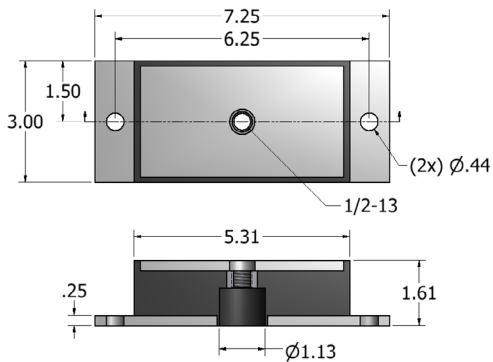
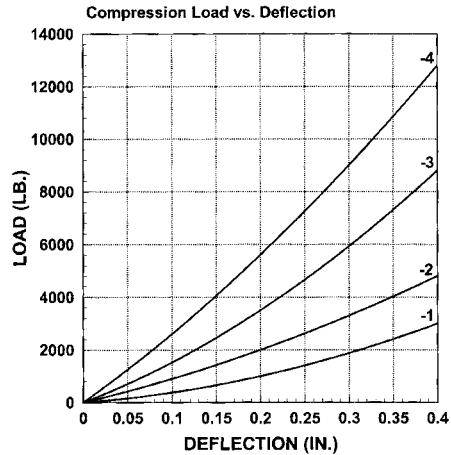
Part No.	Color Code	Max. Load (lbs.)	Part No.	Color Code	Max. Load (lbs.)
52171	Red	700	52135	White	1500
52172	Green	1000	52136	Green	1000
52173	Blue	1500	52137	Red	700
52174	White	2500			

Heavy Duty Compression Mounts



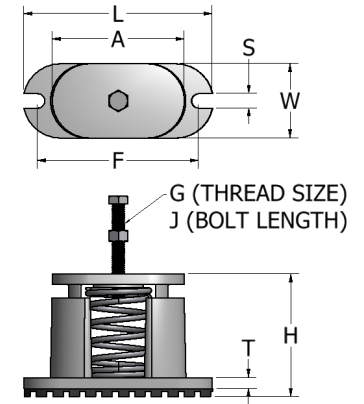
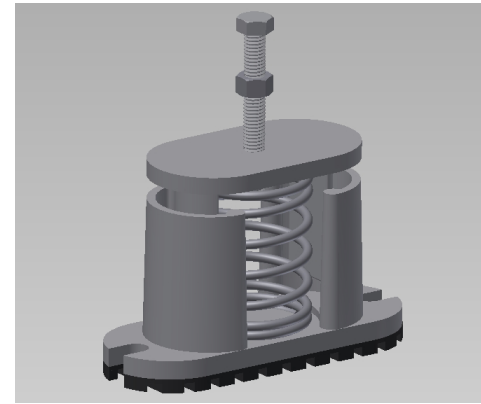
Features:

- High Load Capacity
- Approx. 8 Hz Natural Frequency at rated load
- Low Maintenance
- Constructed of steel and neoprene
- Resistant to most oils, solvents, and ozone
- 5:1 vertical to horizontal stiffness ratio



Part No.	Color Code	Max. Load (lbs.)
52054-1	Green	1500
52054-2	Blue	2000
52054-3	White	3000
52054-4	Purple	4400

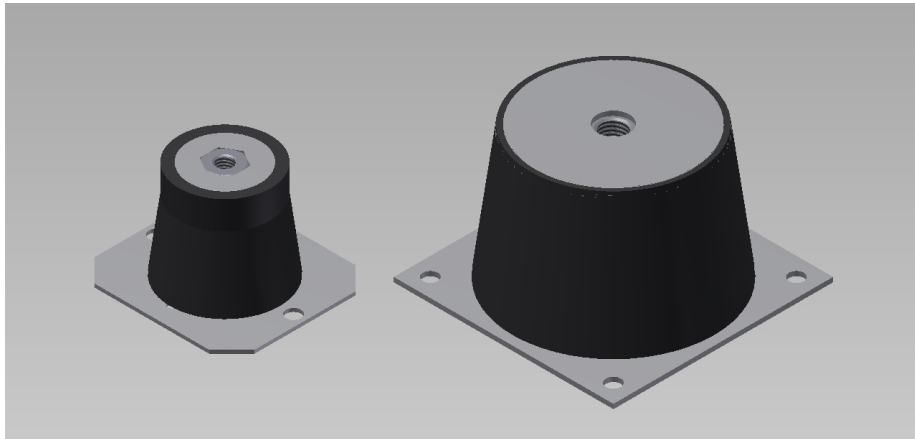
Spring Mounts



Tech Products' spring mounts with aluminum housings are durable enough to handle most of the applications where steel housings are used. The aluminum housing is more weather resistant and lighter. The cast aluminum allows for higher quality thread integrity. The ribbed neoprene pad provides a non-skid base, and neoprene stabilizer pads are included in the housing to control lateral motion. All aluminum housed mounts include one spring with load ratings as high as 1300 lbs.

Part No.	Spring Color	Max. Load (lbs)	Static Defl.	L	W	H	A	F	G	J	S	T
52811	Purple	40	1.3"	5.69	2.25	3.88	4.00	5.00	3/8-16	3.00	0.44	0.31
52812	Blue	60	1.3"									
52813	Orange	100	1.3"									
52814	Brown	165	1.2"									
52815	Black	260	1.0"									
52816	Yellow	370	0.8"									
52817	Red	450	0.5"									
52818	Green	700	0.5"									
52841	Pink	85	1.36"	7.75	2.63	5.06	5.13	6.56	1/2-13	3.50	0.56	0.38
52842	Black	115	1.31"									
52843	Blue	170	1.28"									
52844	Yellow	225	1.26"									
52845	Brown	325	1.23"									
52846	Red	450	1.22"									
52847	Purple	600	1.17"									
52848	Orange	750	1.06"									
52849	Green	900	1.02"									
52850	Gray	1100	0.83"									
52851	White	1300	0.74"									

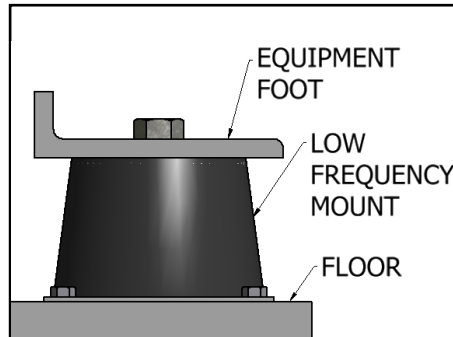
Low Frequency Mounts



Low Frequency Mounts' unique design bonds a steel spring inside a matrix of oil/ ozone-resistant neoprene. The springs absorb low frequency vibrations, slowing and passing them on to the resilient neoprene. This material—made even more stable by the springs—interrupts the sound path, prevents noise amplification caused by sounding board effects, and stops vibrations from being transmitted to the floor or work surface.

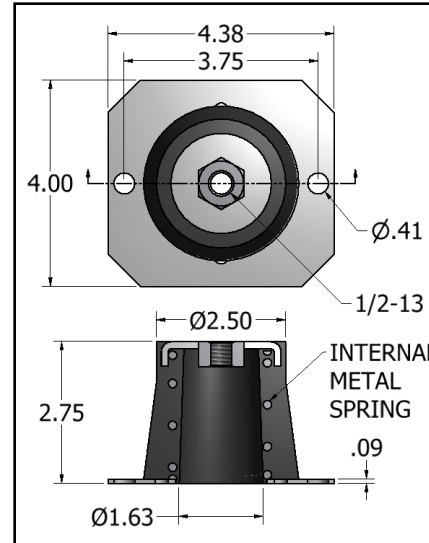
Low Frequency Mounts are made for your toughest vibration applications. They tame the effects of paint mixers, air conditioning units, air compressors and more, indoors and out. There are models for loads from 50 to 4,700 lbs. which exhibit 3.5 Hz natural frequency at maximum load.

Typical Mounting Application

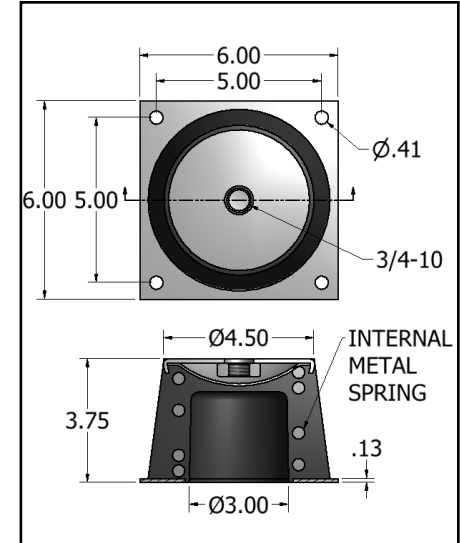
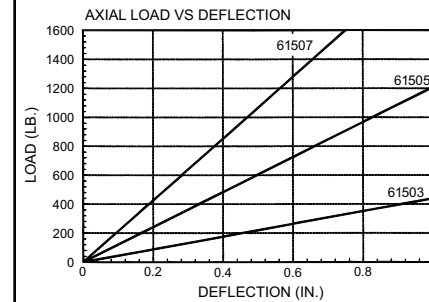


Low Frequency Mounts

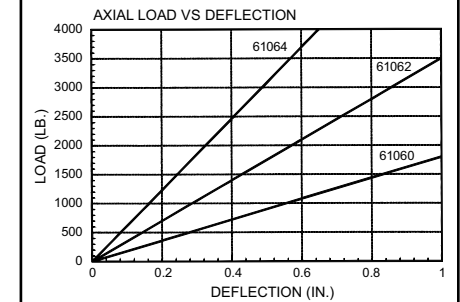
Dimensions and Specifications



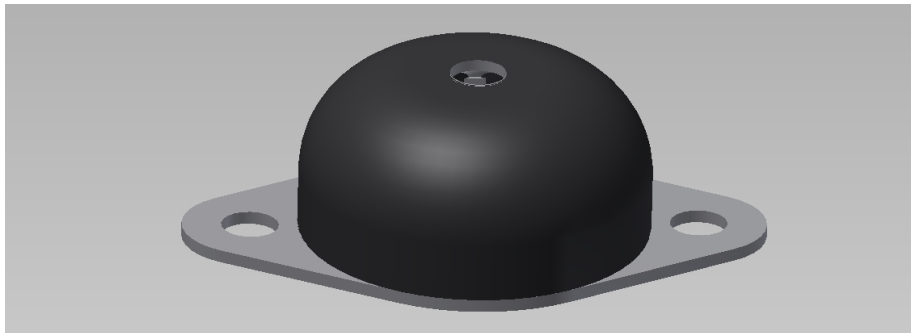
Part No.	Color Code	Min. Load (lbs)	Approx. Defl.	Max. Load (lbs)	Approx. Defl.
61503	Yellow	50	0.1"	400	0.9"
61505	Green	100	0.1	1100	0.9
61507	White	250	0.1	2600	0.9



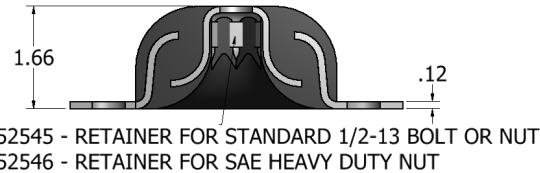
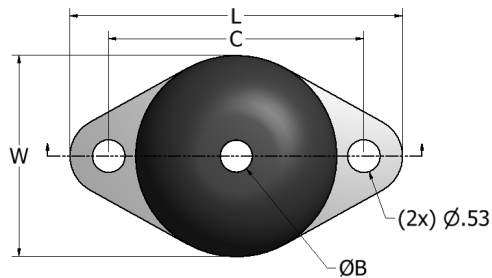
Part No.	Color Code	Min. Load (lbs)	Approx. Defl.	Max. Load (lbs)	Approx. Defl.
61060	Yellow	150	0.1"	1800	1"
61062	Green	500	0.15	3100	0.9
61064	White	1200	0.2	4700	0.8



Dome Mounts



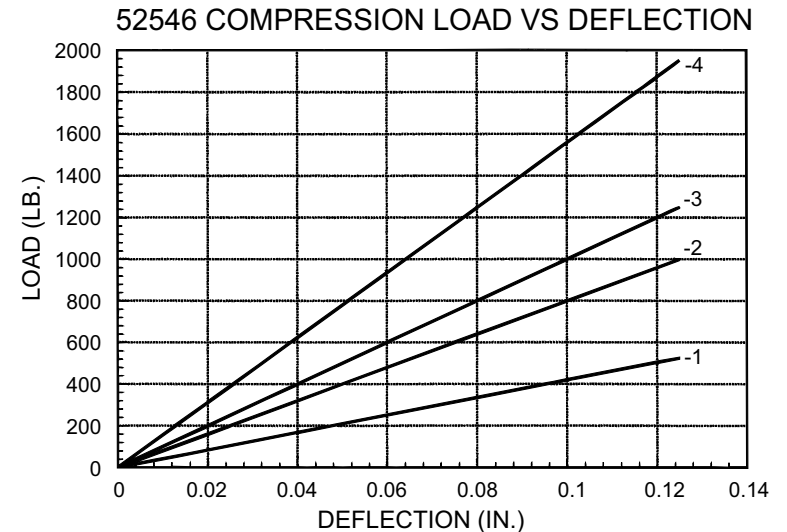
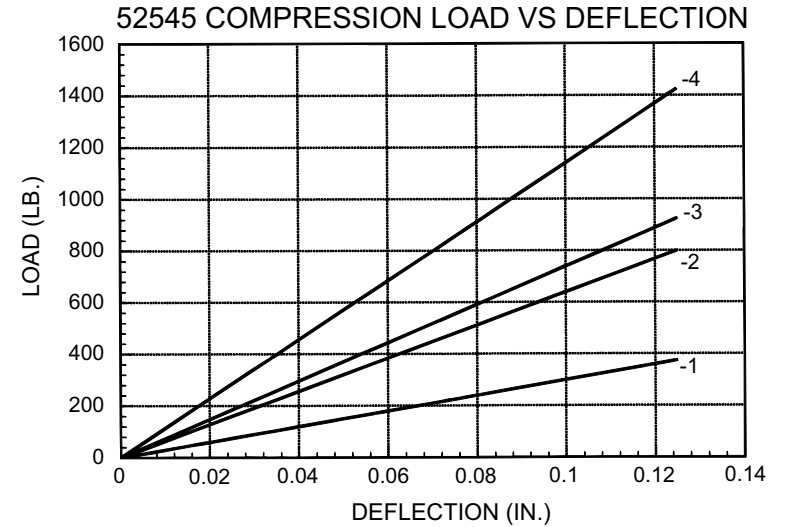
The interlocking metals of the Dome Mount series result in a fail-safe mount. This feature and low stiffness make them ideal for isolating medium to large size engines as well as fans, blowers, pumps and air handling equipment. They have an approximate natural frequency of 9Hz at maximum load.



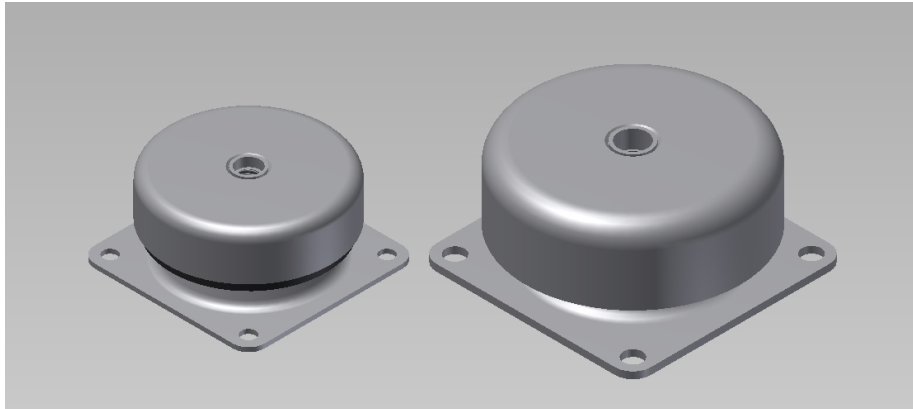
- Internal metal components provide fail-safe design
- Standard neoprene elastomer resistant to oil, fuel, and solvents
- 9 Hz natural frequency at rated loads

Part No.	Color Code	Max. Load (lbs.)	Spring Rate (lbs/in.)	L	W	C	B
52545-1	Red	375	3000	5.38	3.25	4.12	0.53
52545-2	Green	800	6400				
52545-3	Blue	925	7400				
52545-4	White	1425	11500				
52546-1	Red	525	4150	6.25	3.94	5.00	0.78
52546-2	Green	1000	8300				
52546-3	Blue	1250	10000				
52546-4	White	1950	15600				

Dome Mounts



Cupmounts



Three Way Protection:

Help your sensitive equipment defend itself against high-impact shocks by installing Tech Products Cupmounts. These rugged and versatile mounts also control vibration and interrupt structure-borne noise. Under normal loading conditions, they exhibit natural frequencies of approximately 25 Hz and isolate disturbing frequencies above 35 Hz.

Fail-safe Construction:

Available in four basic sizes, these compact, low-profile isolators have interlocking components of steel (other metals available) and standard neoprene or high damped silicone elastomers. They can be used to mount your equipment in compression, tension and shear applications. No matter how the mount is oriented or the load is directed, the elastomer is in compression.

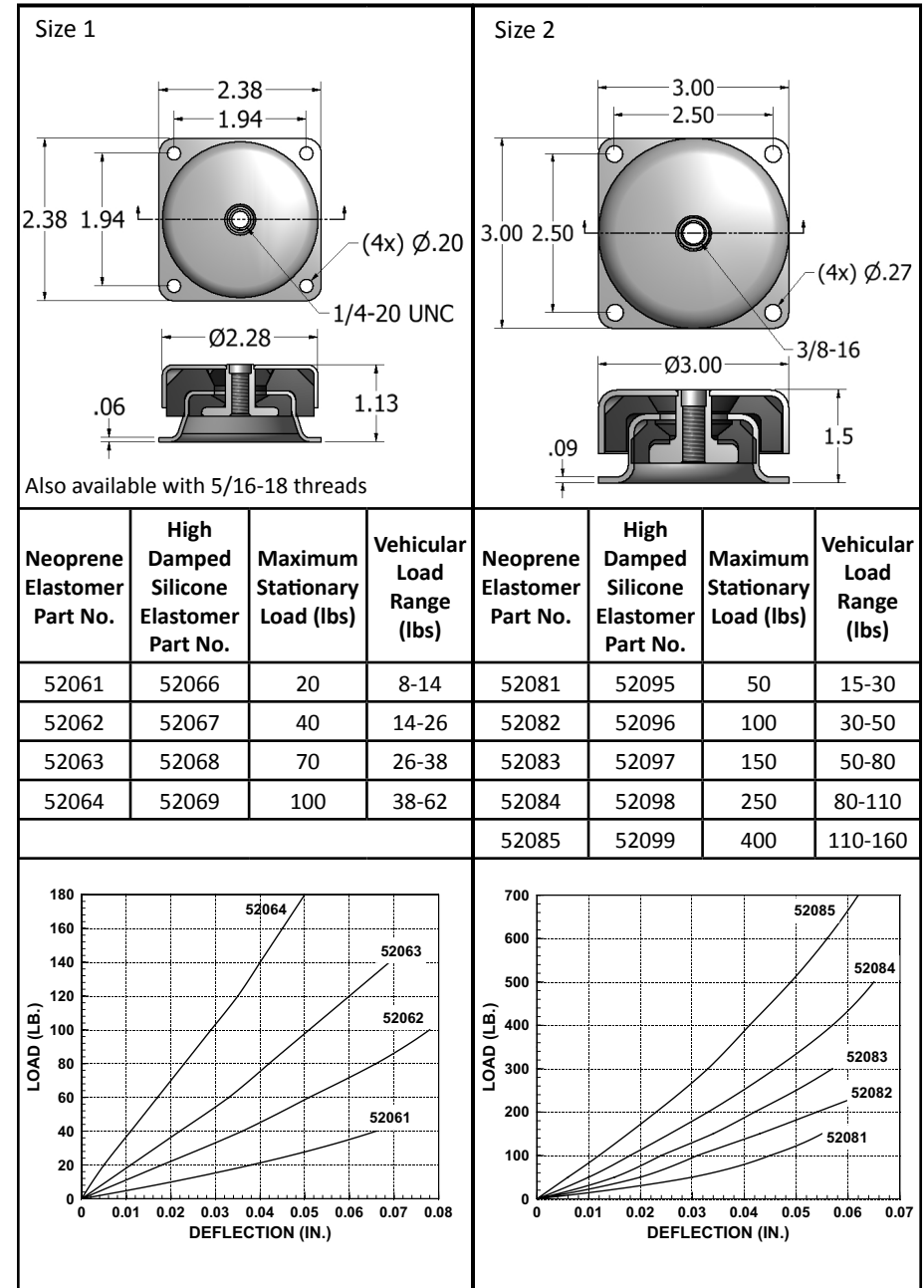
Land, Sea and Air Uses:

Land, Sea and Air Uses: Great resistance to severe shock makes cupmounts ideal for protecting sensitive equipment on rough-terrain vehicles or railroad cars. Factories of all types use them for everything from numerically controlled machinery or electronic control panels to blowers. And they stand guard against shock on shipboard equipment, shipping containers, and both aircraft and missile electronics.

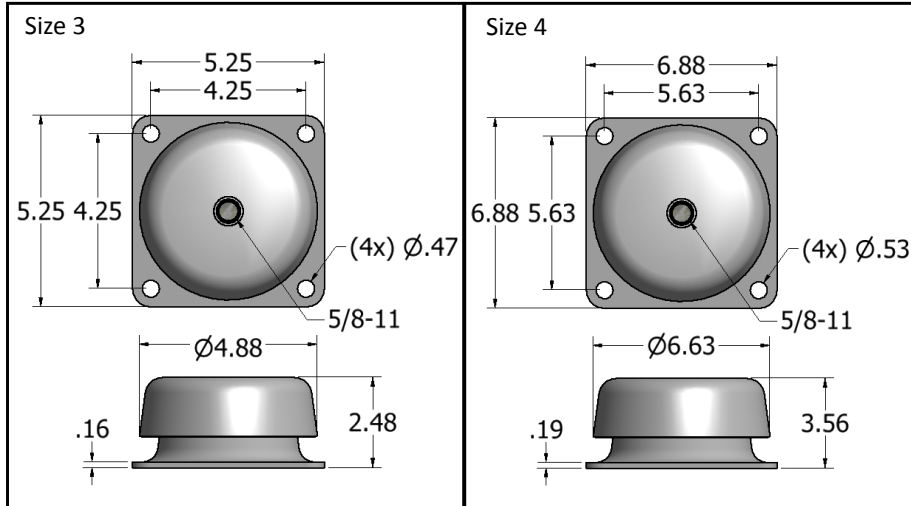
Features:

- Compact Fail-Safe Design
- Capable of mounting in any orientation (compression, shear, tension)
- Standard Neoprene elastomer for -20°F to 180°F
- Optional High Damped Silicone elastomer for -80°F to 300°F
- Available with standard threads, metric threads, or through-hole cores
- Zinc Plated steel cap, base, and core

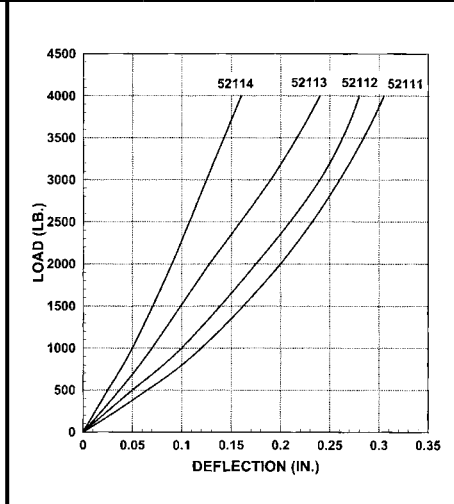
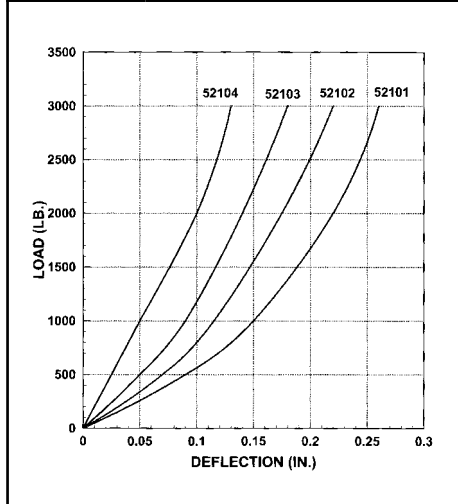
Cupmounts



Cupmounts

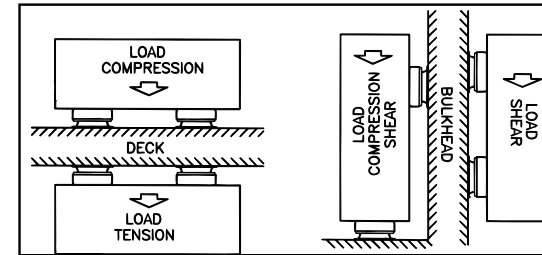


Neoprene Elastomer Part No.	Maximum Stationary Load (lbs)	Vehicular Load Range (lbs)	Neoprene Elastomer Part No.	Maximum Stationary Load (lbs)	Vehicular Load Range (lbs)
52101	250	65-100	52111	600	80-120
52102	400	100-150	52112	800	120-185
52103	650	155-200	52113	1400	185-285
52104	900	200-285	52114	1800	285-530



Cupmounts

Mounting Configurations



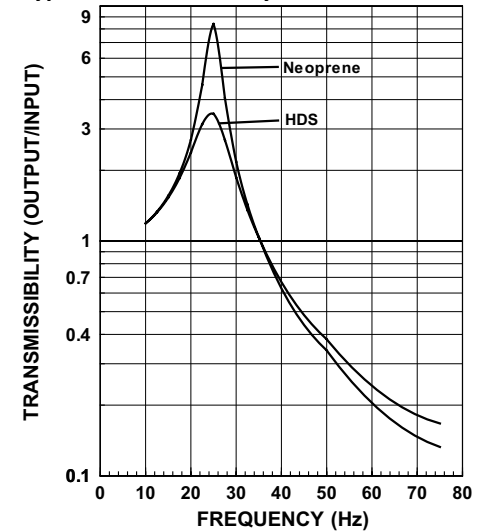
Since the elastomer is always in compression, cupmounts operate with equal efficiency in upright, inverted or bulk-head mounting positions, regardless of how the mount is oriented or the load directed.

Tech Products Cupmounts

Preferred for:

- Protection against vibration, shock and noise
- Multi-directional loading
- Fail-Safe construction
- Rugged, compact design
- Load range to 1800 pounds
- Choice of elastomers

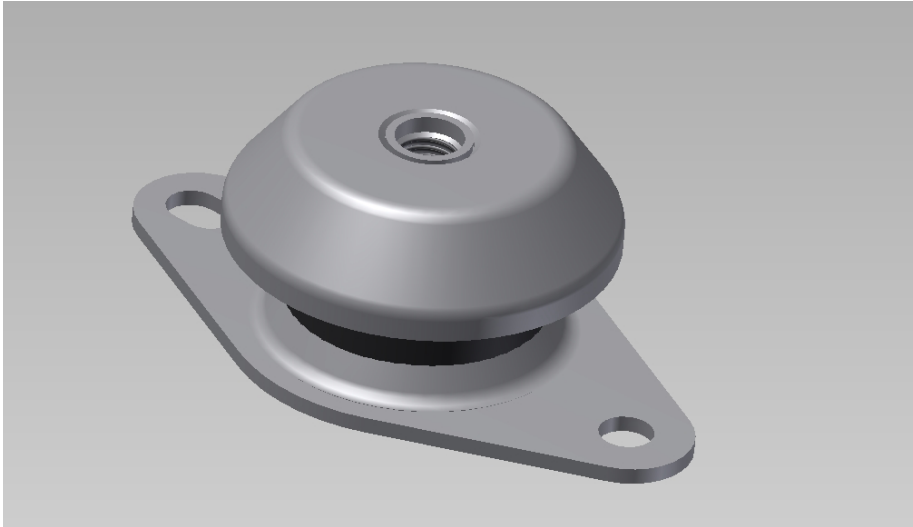
Typical Transmissibility



Elastomer Data

Environment	Neoprene	Silicone
Temperature	-20° to +180°F	-80° to +300°F
Ozone Resistance	Good	Excellent
Oil Resistance	Excellent	Good
Heat Aging	Good	Excellent

Stable-Flex Mounts

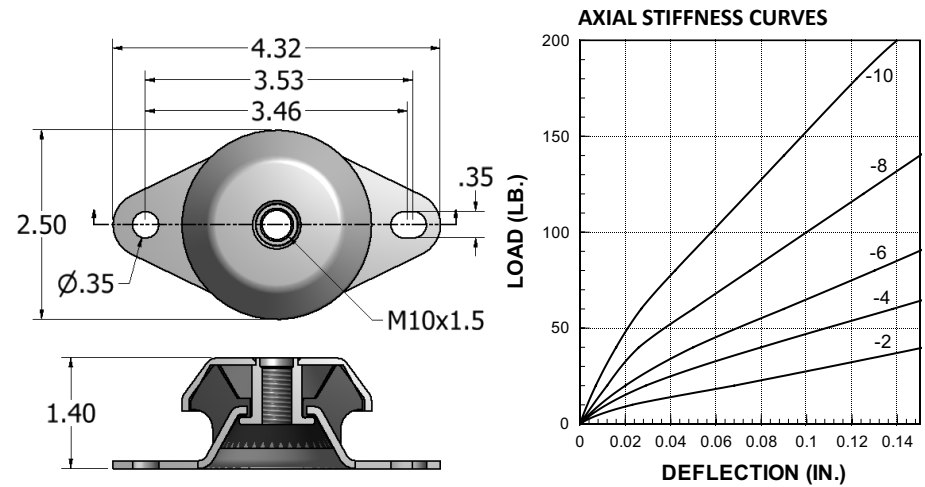


Tech Products' Stable Flex Mounts have been specifically engineered to isolate light weight, low speed equipment. The complex geometry of the elastomer element in the mount provides a low axial stiffness and excellent lateral stability. Common Applications include: Small Engines, Generators, Compressors, Pumps, Other Industrial Equipment, and Various Mobile Applications.

Features:

- Fail-Safe Captive Design
- 8 Hz Natural Frequency at rated loads
- Load range from 30 to 180 lbs.
- Neoprene elastomer resistant to oil, fuel, and solvents
- Standard zinc plated steel components
- Specialty elastomers available including High Damped Silicone

Stable-Flex Mounts

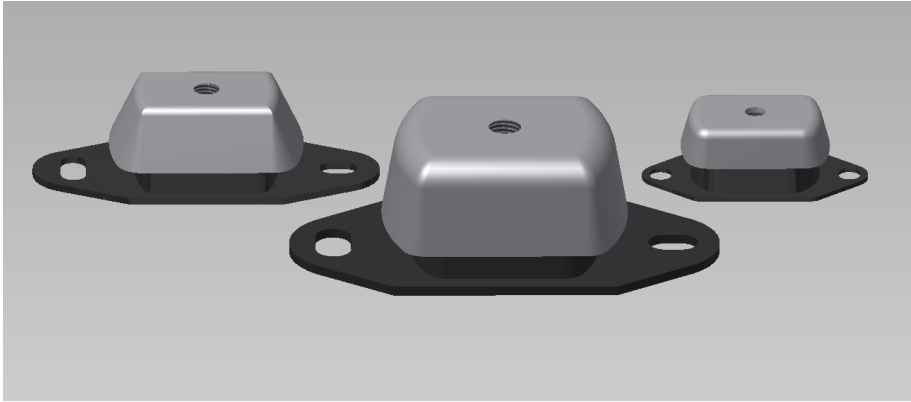


Zinc Plated Part No.	Stainless Steel Part No.	Rated Axial Load (lbs.)	Color Code
52045-2	52045-2SS	30	Yellow
52045-4	52045-4SS	55	Red
52045-6	52045-6SS	75	Green
52045-8	52045-8SS	120	Blue
52045-10	52045-10SS	180	White

Notes:

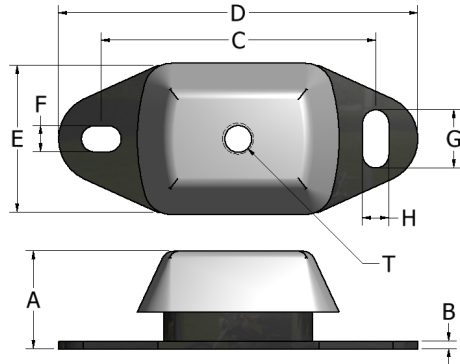
Add 'A' to part number for 3/8-16 Thread
Stainless Steel parts have two slotted base holes

Heavy Duty Stable-Flex Mounts



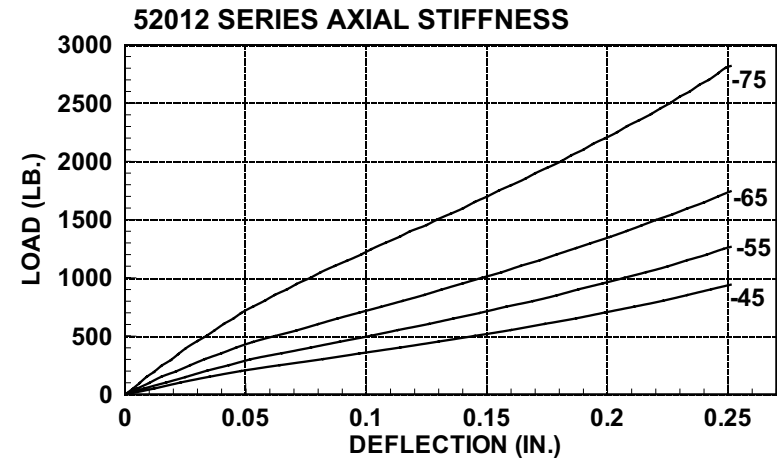
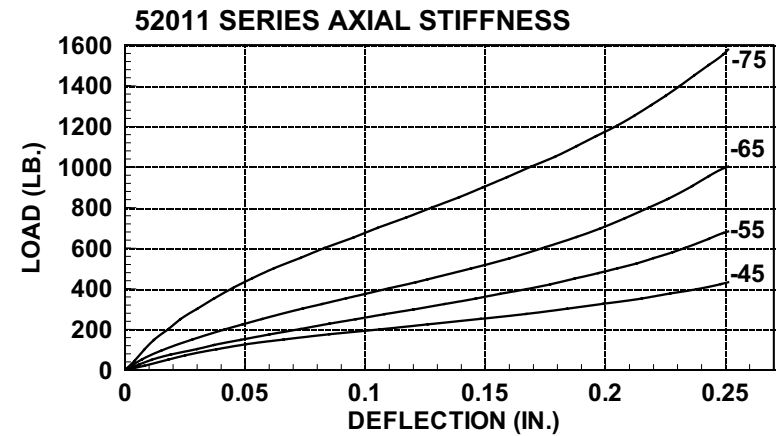
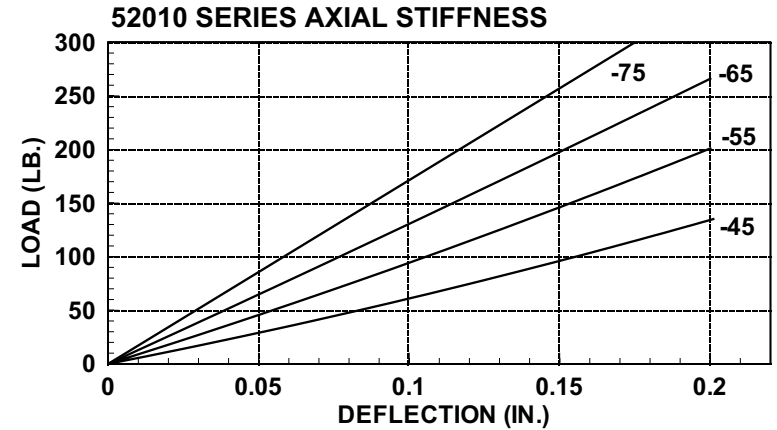
The Heavy Duty Stable Flex Mounts Series includes three sizes of captive isolators for rugged applications. The mounts are constructed of zinc plated steel and neoprene. Typical applications include diesel generator sets and marine engines.

The mounts offer a low vertical natural frequency of 8 Hz at rated load. Axial stiffness curves are included on the following page. Horizontal stiffness in the long direction is 2.5 times the axial stiffness and in the short direction it is 0.75 times the axial stiffness.

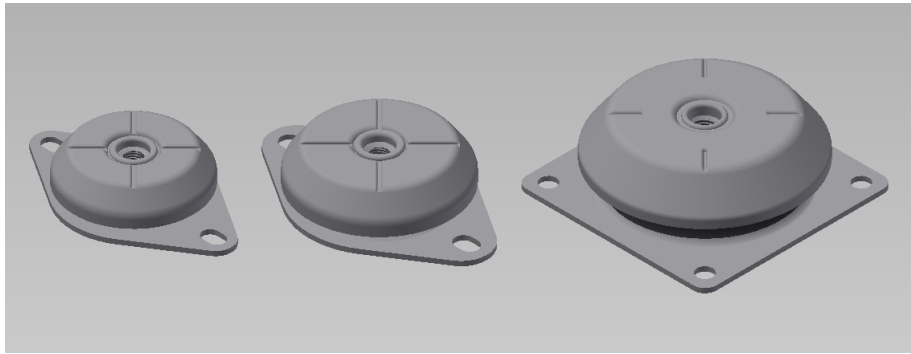


Part No.	A	B	C	D	E	F	G	H	T	Max. Load (lbs)
52010-45	1.52	0.09	3.94	4.72	2.36	0.56	0.55	0.43	M12	110
52010-55										145
52010-65										220
52010-75										265
52011-45	1.97	0.15	5.51	7.20	2.95	0.51	1.18	0.51	M16	330
52011-55										465
52011-65										660
52011-75										990
52012-45	2.86	0.20	7.17	8.98	4.41	0.71	1.34	0.71	M20	770
52012-55										1145
52012-65										1550
52012-75										2200

Heavy Duty Stable-Flex Mounts



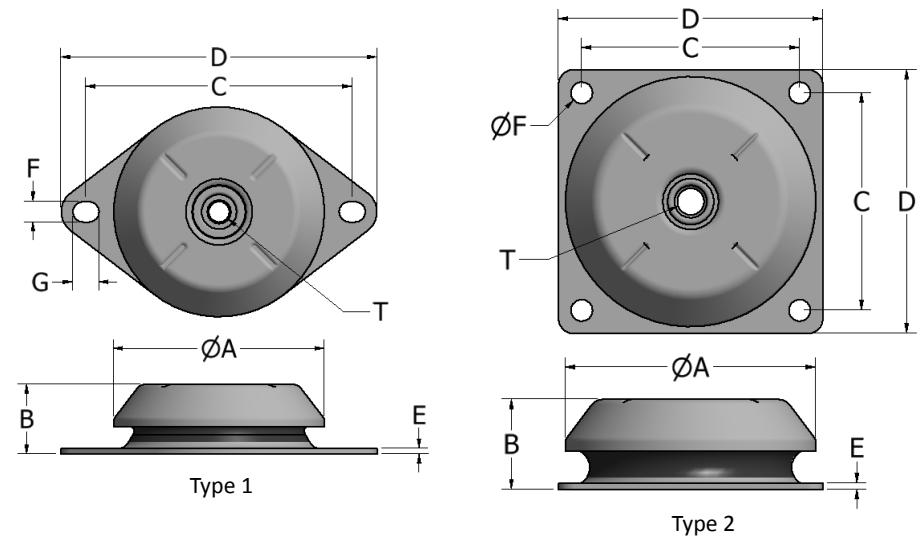
Standard Bell Mounts



Standard Bell Mounts provide a high level of isolation especially when used on generators, engines and systems with an operating frequency at around 25 Hz (1500 rpm). Standard bell mounts are designed with a fail-safe function making it an ideal solution for rugged applications.

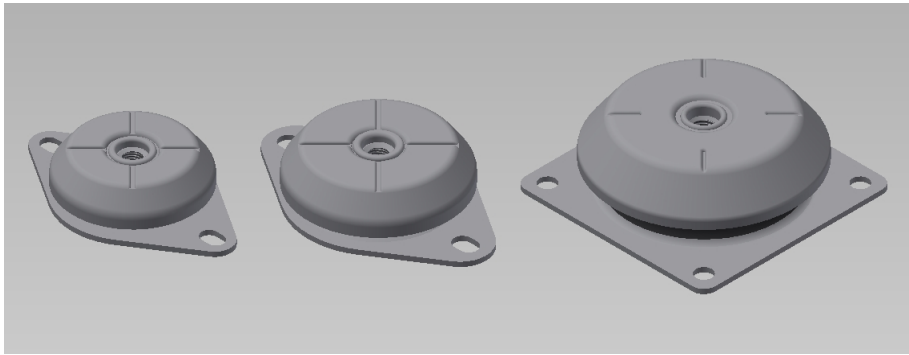
Part No.	Durometer	Load Rating (lbs)	Spring Rate (lbs/in)	Type
CFMBH783010W	45	240	2685	1
CFMBH783010M	60	600	6625	
CFBMH783012W	45	240	2685	1
CFBMH783012M	60	600	6625	
CFBMH923510W	45	390	2855	1
CFBMH923510M	60	700	5140	
CFBMH923512W	45	390	2855	1
CFBMH923512M	60	700	5140	
CFBMH1063812W	45	560	4000	1
CFBMH1063812M	60	1000	8565	
CFBMH1063816W	45	560	4000	1
CFBMH1063816M	60	1000	8565	
CFBMH1254316W	45	790	5025	1
CFBMH1254316M	60	1650	10565	
CFBMH1444816W	45	1575	5710	1
CFBMH1444816M	60	3000	11420	
CFBMH1605820W	45	1850	6850	2
CFBMH1605820M	60	3450	12560	
CFBMH1806620W	45	2500	9135	2
CFBMH1806620M	60	5000	18270	

Standard Bell Mounts



Part No.	A	B	C	D	E	F	G	T
CFMBH783010	3.07	1.18	4.33	5.31	.10	.35	.47	M10
CFBMH783012	3.07	1.18	4.33	5.31	.10	.35	.47	M12
CFBMH923510	3.62	1.38	4.86	5.91	.12	.39	.59	M10
CFBMH923512	3.62	1.38	4.86	5.91	.12	.39	.59	M12
CFBMH1063812	4.17	1.50	5.63	6.89	.16	.51	.75	M12
CFBMH1063816	4.17	1.50	5.63	6.89	.16	.51	.75	M16
CFBMH1254316	4.92	1.69	6.14	7.56	.16	.57	.79	M16
CFBMH1444816	5.67	1.89	7.16	8.46	.19	.57	.71	M16
CFBMH1605820	6.30	2.28	5.51	6.69	.19	.57	-	M20
CFBMH1806620	7.09	2.60	6.30	7.48	.19	.57	-	M20

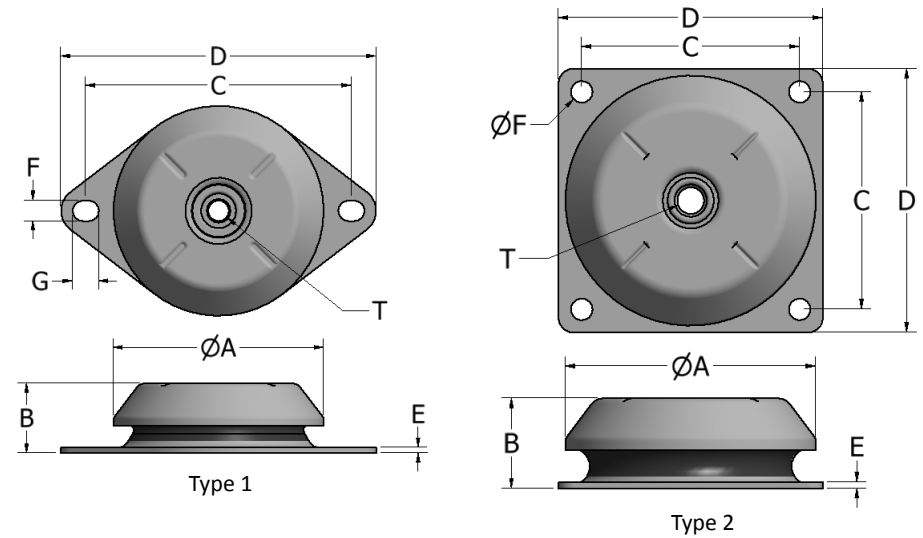
High Deflection Bell Mounts



High Deflection Bell Mounts provide a very high level of isolation when used on generators, engines and systems with operating frequency as low as 15 Hz (900 rpm). High Deflection bell mounts are designed with a fail-safe function making it an ideal solution for rugged applications.

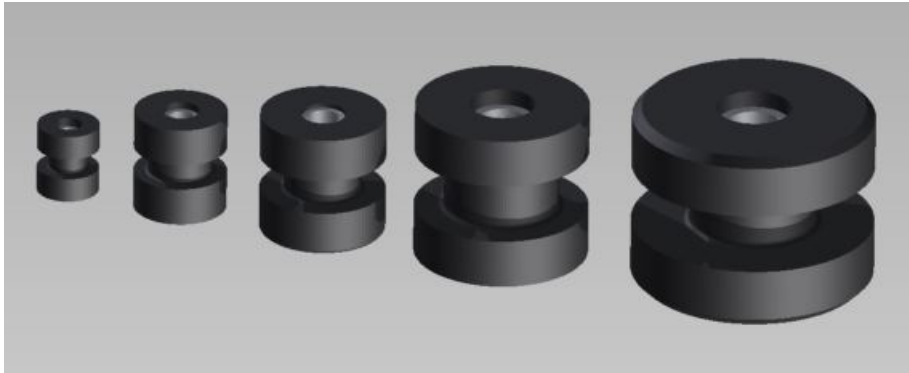
Part No.	Durometer	Load Rating (lbs)	Spring Rate (lbs/in)	Type
CFBMS833510W	45	180	1015	1
CFBMS833510M	60	400	2550	
CFBMS833512W	45	180	1015	1
CFBMS833512M	60	400	2550	
CFBMS1064212W	45	375	1900	1
CFBMS1064212M	60	750	3825	
CFBMS1064216W	45	375	1900	1
CFBMS1064216M	60	750	3825	
CFBMS1505416W	45	1000	2150	1
CFBMS1505416M	60	1800	4500	
CFBMS1808620W	45	2000	3380	2
CFBMS1808620M	60	3800	7250	
CFBMS22010524W	45	3800	5425	2
CFBMS22010524M	60	7650	11000	

High Deflection Bell Mounts



Part No.	A	B	C	D	E	F	G	T
CFBMS833510	3.27	1.38	4.33	5.31	.12	.45	.59	M10
CFBMS833512	3.27	1.38	4.33	5.31	.12	.45	.59	M12
CFBMS1064212	4.17	1.65	5.63	6.89	.16	.51	.75	M12
CFBMS1064216	4.17	1.65	5.63	6.89	.16	.51	.75	M16
CFBMS1505416	5.91	2.13	7.16	8.58	.16	.55	.71	M16
CFBMS1808620	7.09	3.39	5.75	7.48	.19	.57	-	M20
CFBMS22010524	8.66	4.13	7.09	8.66	.19	.69	-	M24

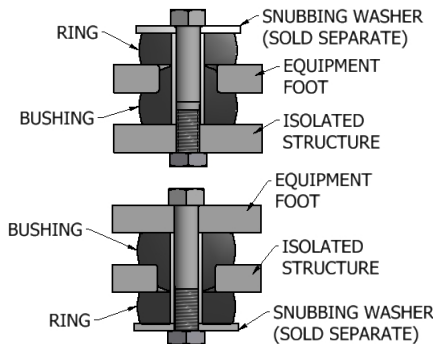
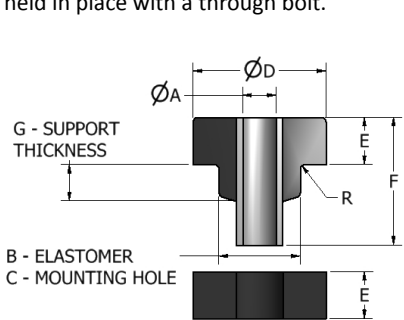
Universal Mounts



Low-cost, easy-to-install Universal Mounts provide fail-safe, all-attitude isolation for vehicle cabs, engines, transmissions and other equipment up to 4550 lbs. in mobile applications. Consisting of two parts—an elastomeric ring and an elastomeric bushing bonded to a center metal spacer—Universal Mounts are held in place with a through bolt.

Features:

- Fail-Safe Installation when proper snubbing washers (Page 75) are used
- Excellent rebound protection
- Standard Neoprene elastomer resistant to oil, fuel, and solvents
- Optional elastomers available including High Damped Silicone

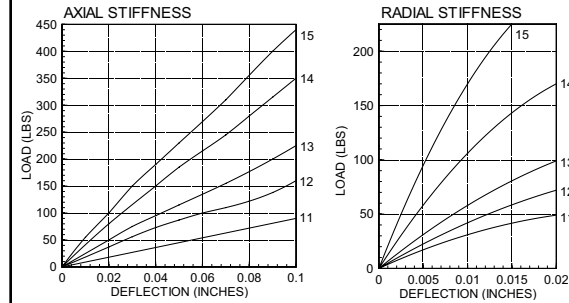


NOTE: RADIUS (R) IS REQUIRED ON MOUNTING HOLE

Part No.	A	B	C	D	E	F	G		R
							Thin Support	Thick Support	
60011 thru 15	0.39	0.78	0.75	1.25	0.50	1.25	0.37	N/A	0.03
60021 thru 25	0.53	1.31	1.25	1.87	0.78	1.94	0.50	0.56	0.06
60031 thru 35	0.64	1.55	1.50	2.53	0.90	2.45	0.75	0.88	0.08
60041 thru 45	0.94	2.30	2.25	3.50	1.00	2.88	1.00	1.12	0.12
60051 thru 55	1.06	2.55	2.50	4.88	1.25	3.38	1.00	1.25	0.12
60165-1 thru 5	0.64	1.55	1.50	2.53	0.90	1.83	0.25	N/A	0.08
60166-1 thru 5	0.39	0.78	0.75	1.25	0.50	1.06	0.19	N/A	0.03

Universal Mounts

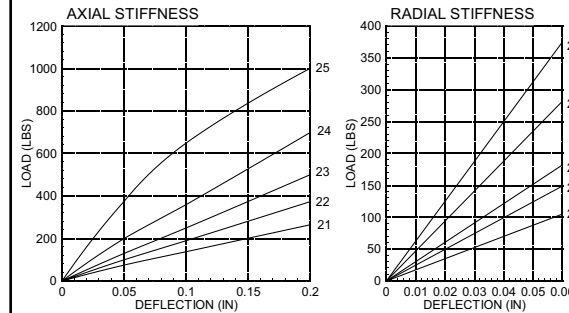
60011 thru 15 Series



Static Load Rating (lbs.)

Part No.	Color Code	Thin Support	
		Axial	Radial
60011	Yellow	35	18
60012	Red	80	27
60013	Green	130	36
60014	Blue	235	45
60015	White	280	55

60021 thru 25 Series

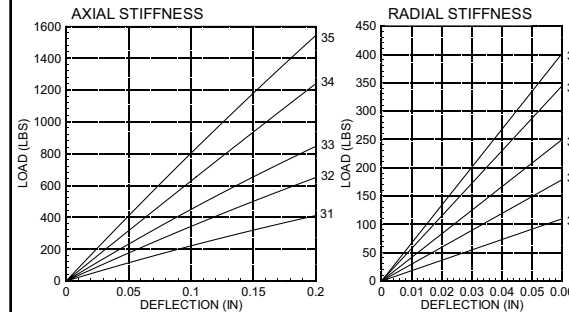


Static Load Rating (lbs.)

Part No.	Color Code	Thin Support	
		Axial	Radial
60021	Yellow	65	45
60022	Red	125	80
60023	Green	170	125
60024	Blue	275	190
60025	White	390	290
Part No.	Color Code	Thick Support	
		Axial	Radial
60021	Yellow	135	55
60022	Red	180	85
60023	Green	240	130
60024	Blue	380	190
60025	White	630	290

Curves are for recommended THICK support. Consult Tech Products for thin support information

60031 thru 35 Series



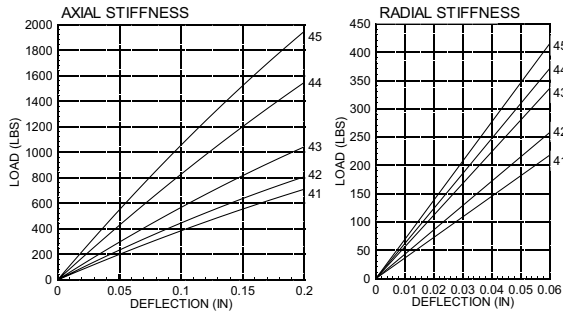
Static Load Rating (lbs.)

Part No.	Color Code	Thin Support	
		Axial	Radial
60031	Yellow	100	80
60032	Red	180	120
60033	Green	250	175
60034	Blue	350	265
60035	White	500	370
Part No.	Color Code	Thick Support	
		Axial	Radial
60031	Yellow	215	90
60032	Red	360	140
60033	Green	490	225
60034	Blue	860	385
60035	White	1330	690

Curves are for recommended THICK support. Consult Tech Products for thin support information

Universal Mounts

60041 thru 45 Series

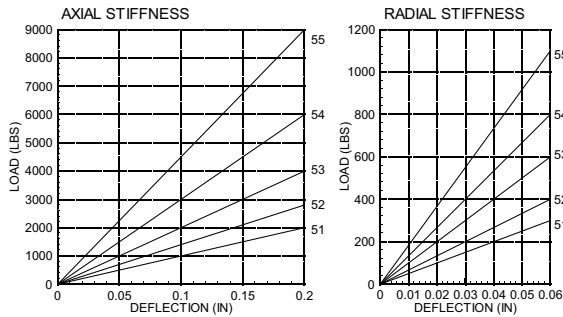


Static Load Rating (lbs.)

Part No.	Color Code	Thin Support	
		Axial	Radial
60041	Yellow	160	100
60042	Red	300	200
60043	Green	410	310
60044	Blue	520	420
60045	White	610	570
Part No.	Color Code	Thick Support	
		Axial	Radial
60041	Yellow	270	130
60042	Red	500	210
60043	Green	760	330
60044	Blue	1150	550
60045	White	2070	955

Curves are for recommended THICK support.
Consult Tech Products for thin support information

60051 thru 55 Series



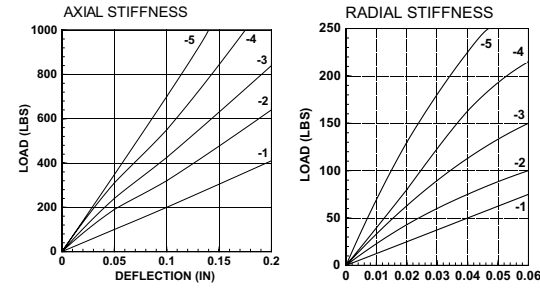
Static Load Rating (lbs.)

Part No.	Color Code	Thin Support	
		Axial	Radial
60051	Yellow	300	150
60052	Red	500	220
60053	Green	700	300
60054	Blue	900	470
60055	White	1200	660
Part No.	Color Code	Thick Support	
		Axial	Radial
60051	Yellow	1150	250
60052	Red	1925	350
60053	Green	2575	600
60054	Blue	3550	900
60055	White	4550	1400

Curves are for recommended THICK support.
Consult Tech Products for thin support information

Universal Mounts

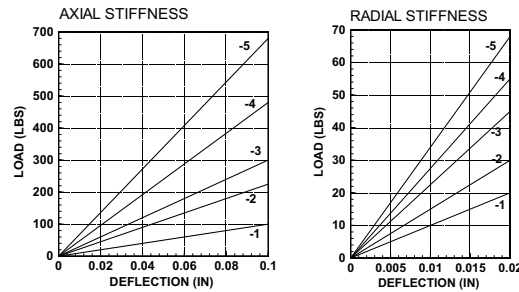
60165-1 thru -5 Series



Static Load Rating (lbs.)

Part No.	Color Code	Thin Support	
		Axial	Radial
60165-1	Yellow	215	40
60165-2	Red	360	60
60165-3	Green	490	88
60165-4	Blue	860	133
60165-5	White	1330	185

60166-1 thru -5 Series

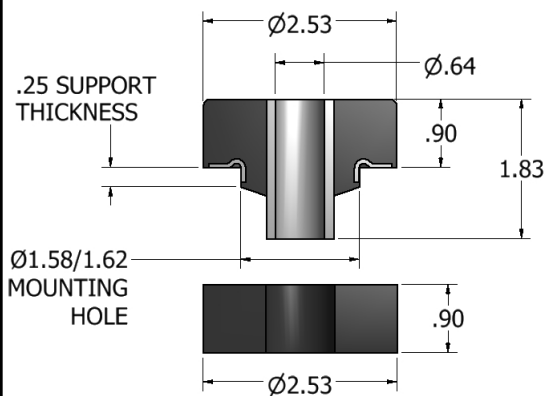


Static Load Rating (lbs.)

Part No.	Color Code	Thin Support	
		Axial	Radial
60166-1	Yellow	35	9
60166-2	Red	80	14
60166-3	Green	130	18
60166-4	Blue	235	23
60166-5	White	280	28

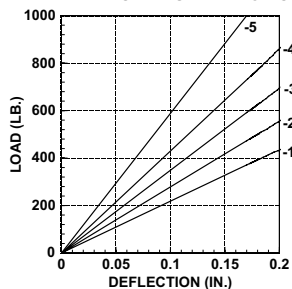
Wear Plate Universal Mounts

60272 Series

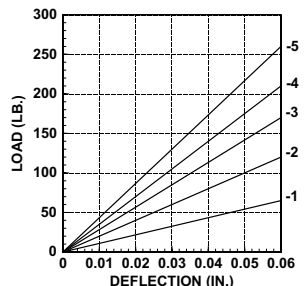


Part No.	Max. Axial Load (lbs.)	Max. Radial Load (lbs.)	Color Code
60272-1	215	40	Yellow
60272-2	360	60	Red
60272-3	490	88	Green
60272-4	860	133	Blue
60272-5	1330	185	White

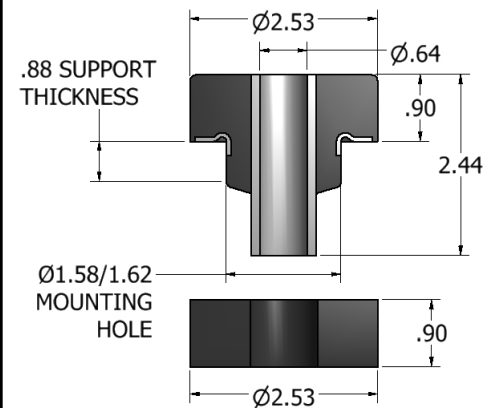
AXIAL LOAD VS DEFLECTION



RADIAL LOAD VS DEFLECTION

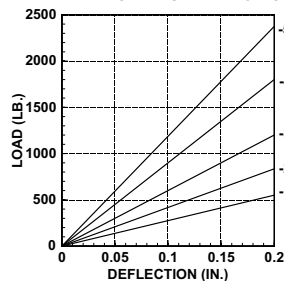


60278 Series

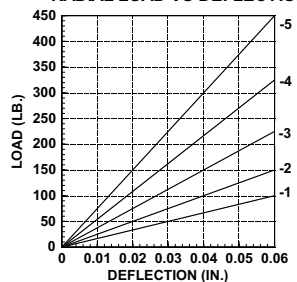


Part No.	Max. Axial Load (lbs.)	Max. Radial Load (lbs.)	Color Code
60278-1	215	80	Yellow
60278-2	360	120	Red
60278-3	490	175	Green
60278-4	860	265	Blue
60278-5	1330	370	White

AXIAL LOAD VS DEFLECTION

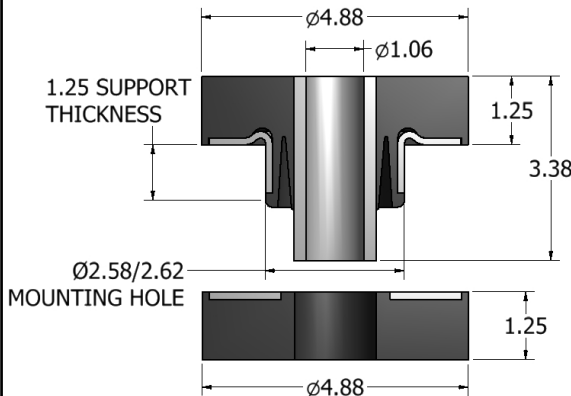


RADIAL LOAD VS DEFLECTION



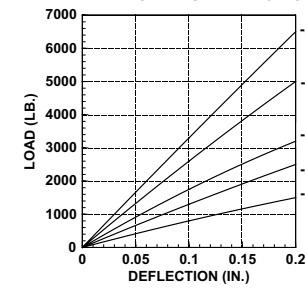
Wear Plate Universal Mounts

60285 Series

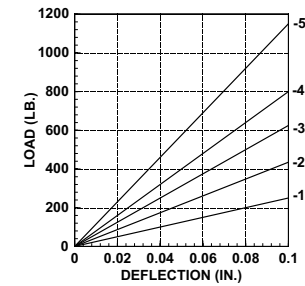


Part No.	Max. Axial Load (lbs.)	Max. Radial Load (lbs.)	Color Code
60285-1	1000	180	Yellow
60285-2	1750	275	Red
60285-3	2250	400	Green
60285-4	3200	500	Blue
60285-5	4200	700	White

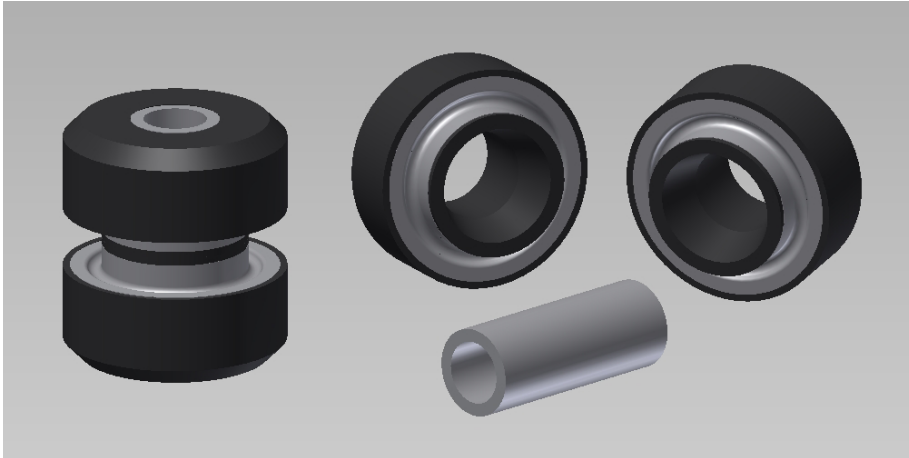
AXIAL LOAD VS DEFLECTION



RADIAL LOAD VS DEFLECTION



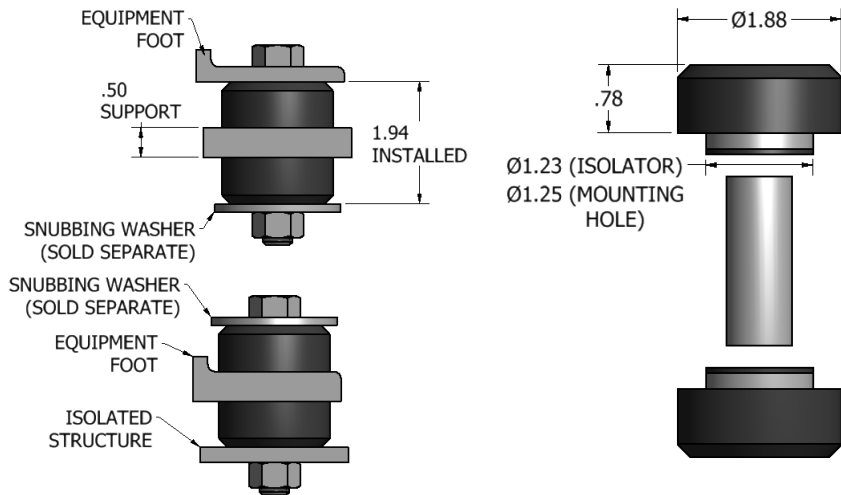
Armor Plated Universal Mounts



The Armor Plated Universal Mount can be used in the same applications as the standard Universal Mounts. But since it has bonded-in steel wear surfaces, it can be used in more extreme environments. These steel wear surfaces eliminate the need for machining a radius in the support structure.

- Fail-Safe installation when snubbing washers (Page 75) are used
- 8-10 Hz natural frequency at rated load
- Oil, Fuel, and Solvent resistant Neoprene elastomer
- -20°F to 180°F operating temperature range

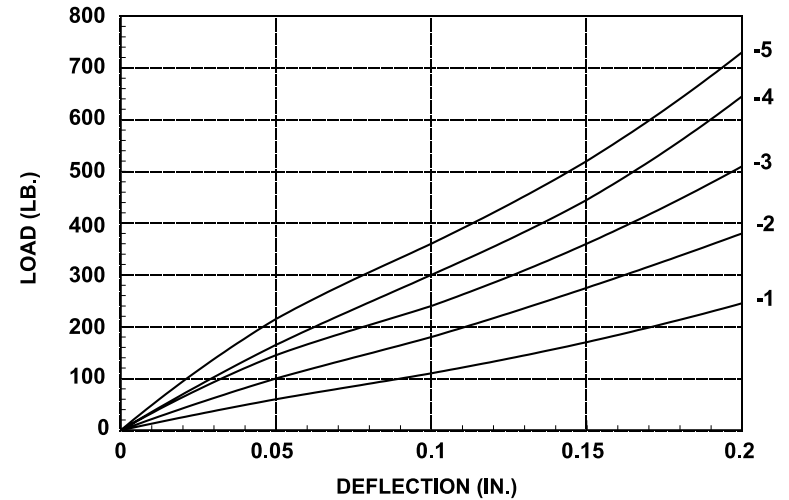
Part No.	Color Code	Max. Radial Load (lbs.)	Max. Axial Load (lbs.)
60270-1	Yellow	35	100
60270-2	Red	45	150
60270-3	Green	55	200
60270-4	Blue	65	250
60270-5	White	80	300



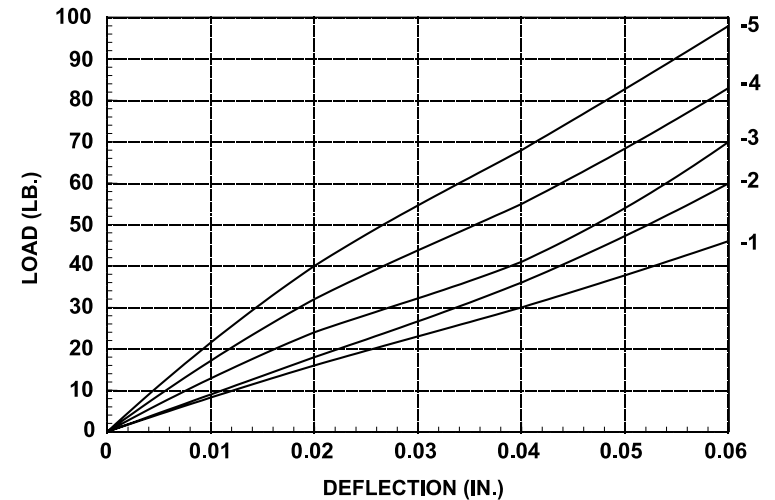
ALTERNATE INSTALLATION

Armor Plated Universal Mounts

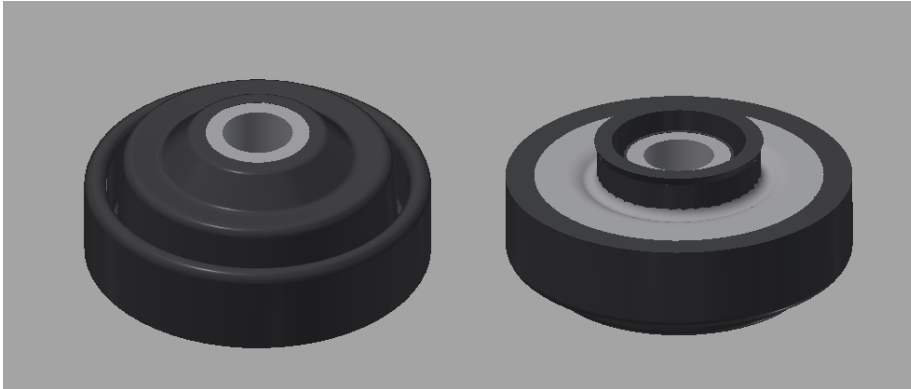
60270 SERIES AXIAL LOAD VS DEFLECTION



60270 SERIES RADIAL LOAD VS DEFLECTION

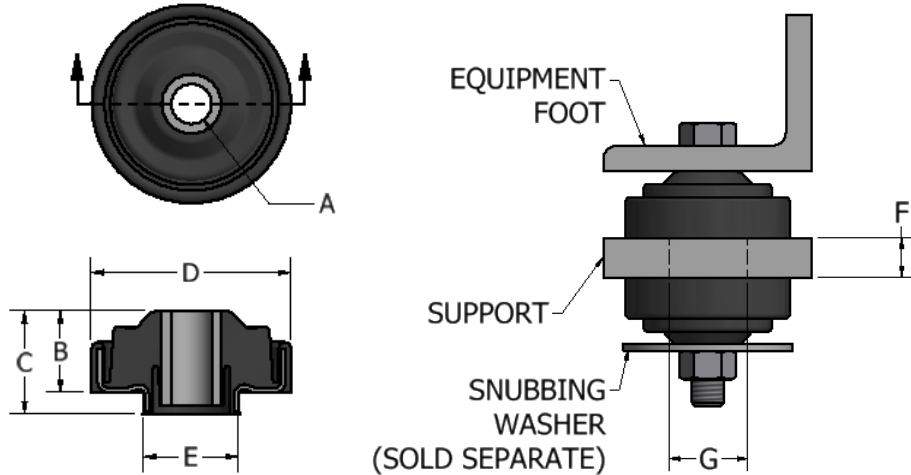


Self-Snubbing Universal Mounts



Self-Snubbing Universal Mounts include an internal metal cup that acts as an overload protection. This design protects the isolator from excessive compression in applications where high torque forces or shock inputs are expected. Typical applications include diesel engines, transmissions, and operator cabs.

- Fail-Safe installation when snubbing washers (Page 75) are used
- 8-10 Hz natural frequency at rated load
- Oil, Fuel, and Solvent resistant Neoprene elastomer
- -20°F to 180°F operating temperature range



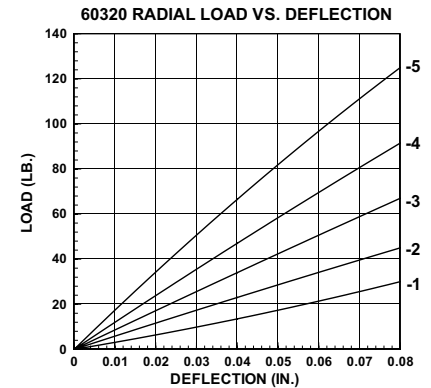
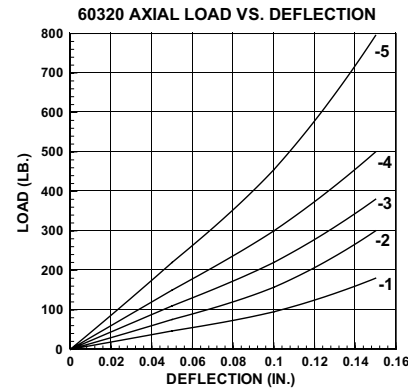
NOTE: Part numbers are for individual bushings. Bushings should be ordered and installed in pairs

Part No.	A	B	C	D	E	F	G
60320 Series	0.74	1.12	1.50	2.60	1.57	0.75	1.59
60330 Series	0.64	1.29	1.63	3.15	1.49	0.75	1.52

Self-Snubbing Universal Mounts

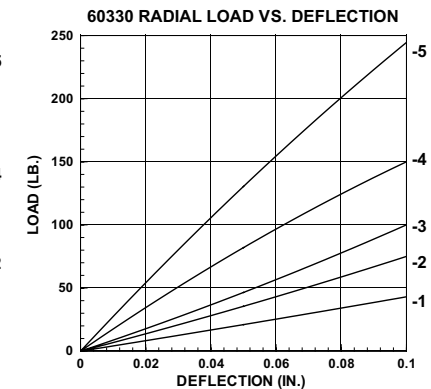
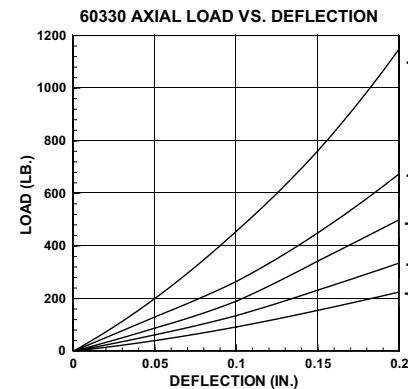
60320 Series

Part No.	Color Code	Max. Axial Load (lbs.)
60320-1	Yellow	90
60320-2	Red	150
60320-3	Green	210
60320-4	Blue	300
60320-5	White	400

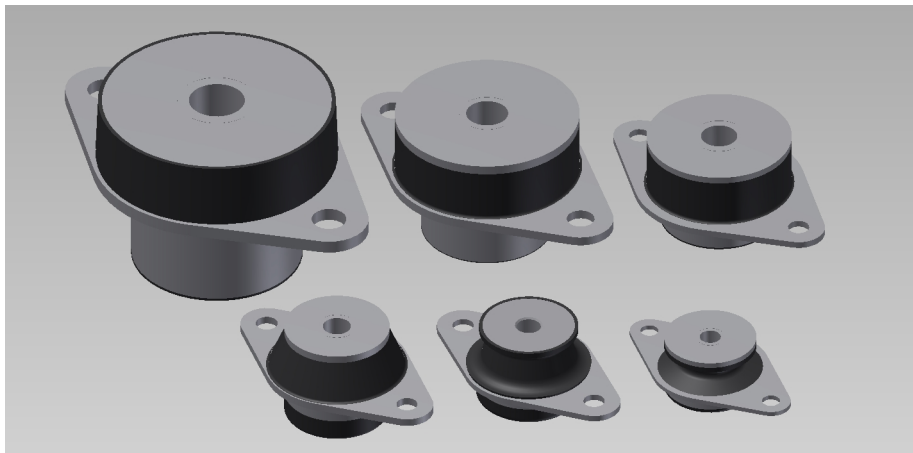


60330 Series

Part No.	Color Code	Max. Axial Load (lbs.)
60330-1	Yellow	125
60330-2	Red	200
60330-3	Green	300
60330-4	Blue	400
60330-5	White	550



515 Series Mounts



Compact 515 Series all-attitude mounts are a money-saving way to protect equipment from vibration and shock. High load capacity, stability, and the ability to be installed at any mounting angle make them ideal for a wide variety of applications, including vehicle cabs; truck, bus and marine engines; generators; air conditioning units; motors and electronic equipment.

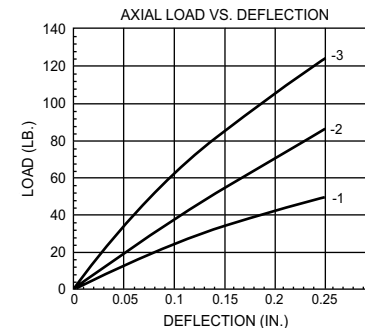
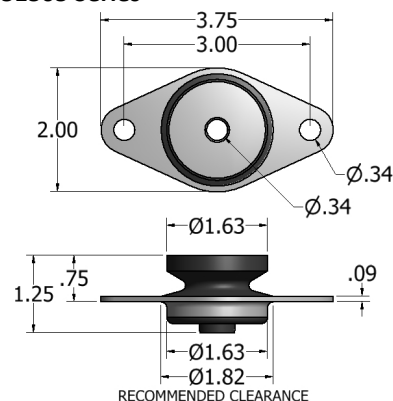
Features

- All-Attitude design allows for mounting at any angle
- Fail-Safe Installation when proper snubbing washers (Page 75) are used
- 1:1 Axial to Radial Stiffness Ratio
- 8.5 Hz Natural Frequency at maximum load
- Oil, fuel, and solvent resistant Neoprene
- Temperature Range: -20° to $+180^{\circ}\text{F}$

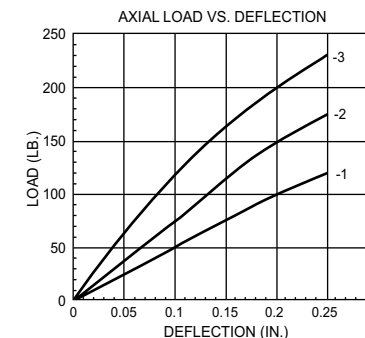
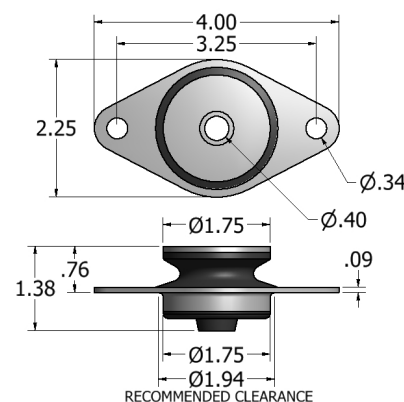
Part No.	Color Code	Max. Axial Load (lbs.)	Max Radial Load (lbs.)
51505-1	Yellow	38	N/A
51505-2	Red	60	N/A
51505-3	Green	90	N/A
51506-1	Yellow	75	N/A
51506-2	Red	105	N/A
51506-3	Green	150	N/A
51507-1	Red	150	100
51507-2	Green	200	150
51507-3	Blue	270	180
51507-4	White	330	220
51508-1	Yellow	270	180
51508-2	Red	330	220
51508-3	Green	390	260
51508-4	Blue	480	320
51508-5	White	570	380
51510-1	Yellow	480	320
51510-2	Red	570	380
51510-3	Green	690	460
51510-4	Blue	840	560
51510-5	White	1020	680
51512-1	Yellow	690	460
51512-2	Red	840	560
51512-3	Green	1020	680
51512-4	Blue	1245	830
51512-5	White	1500	1000
51516-1	Red	1350	800
51516-2	Green	1600	1000
51516-3	Blue	1900	1400
51516-4	White	2600	1800

515 Series Mounts

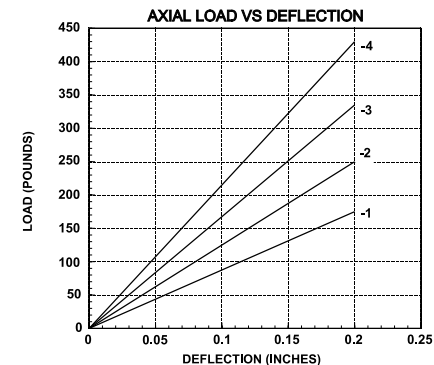
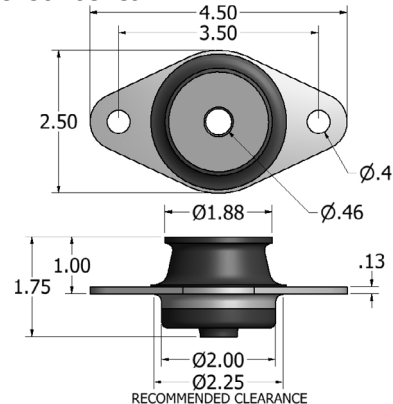
51505 Series



51506 Series

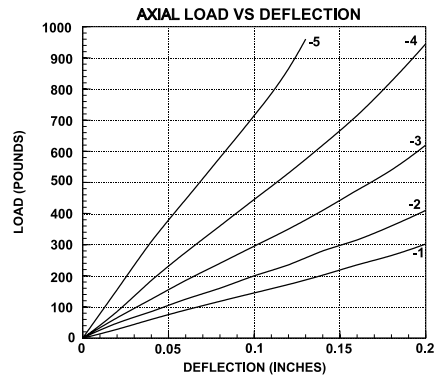
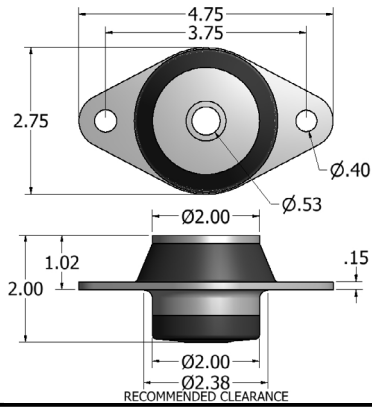


51507 Series

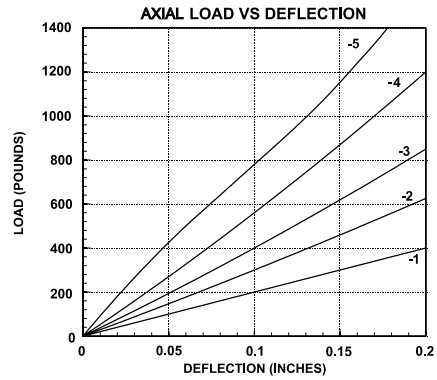
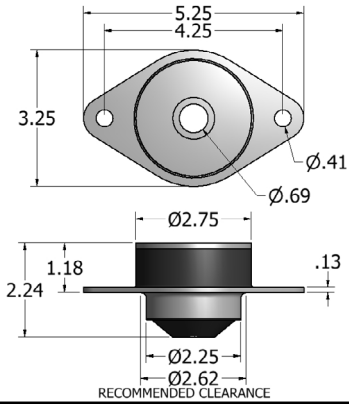


515 Series Mounts

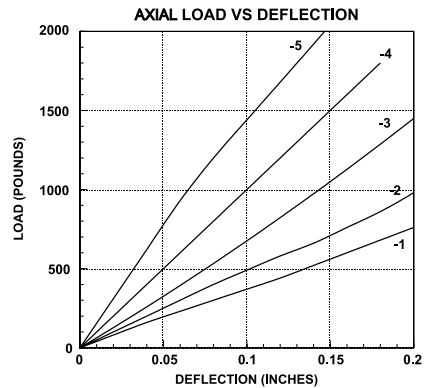
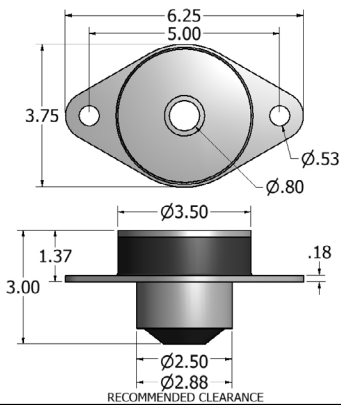
51508 Series



51510 Series

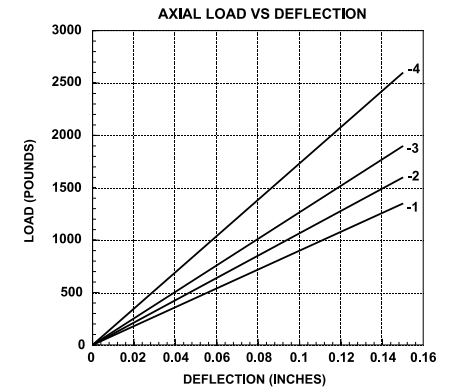
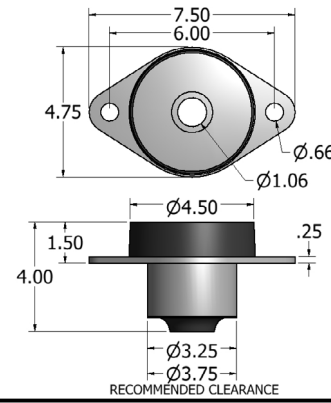


51512 Series

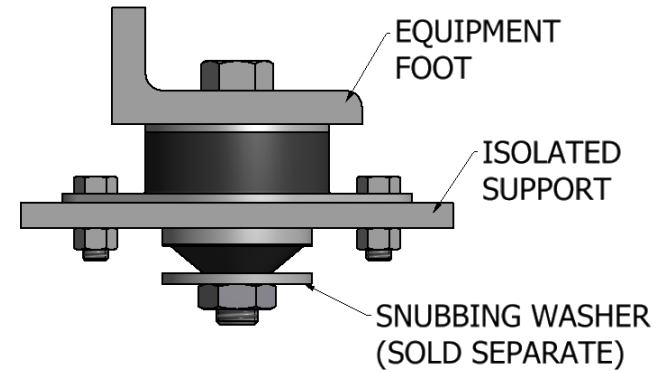


515 Series Mounts

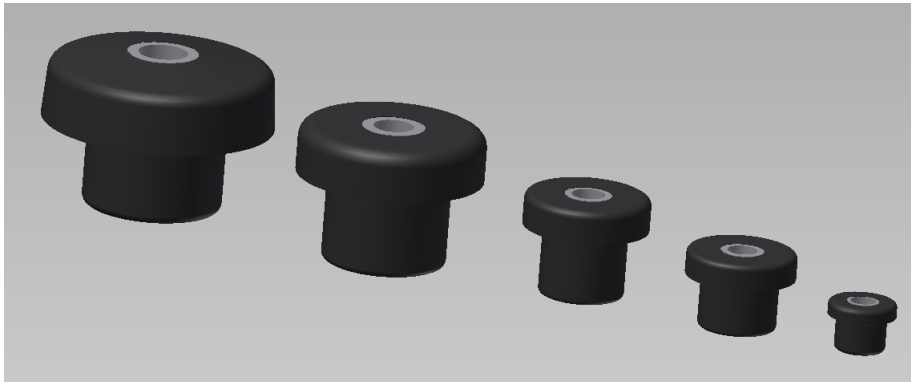
51516 Series



Typical Installation



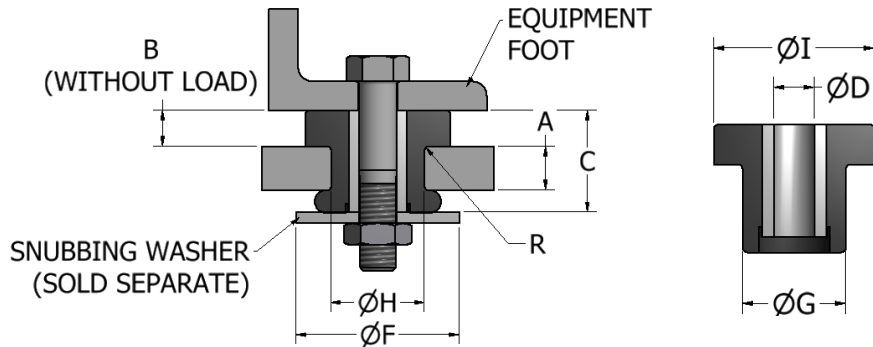
Center Bushing Mounts



Tech Products' Center Bushing Mounts are fail-safe, multi-direction isolators for a variety of heavy duty applications. During Installation, a self-contained rebound is formed when the mounts resilient element spreads under compression. An internal sleeve serves as a positive spacer to control pre-loading.

Features

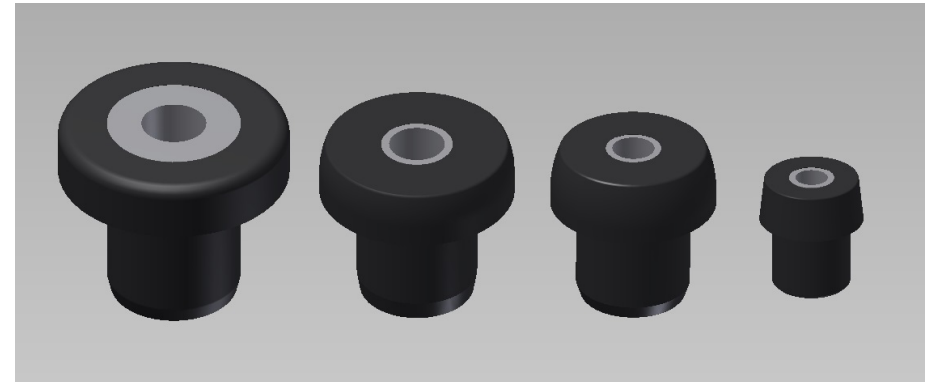
- Single piece design for easy installation
- Fail-Safe Installation when proper snubbing washers (Page 75) are used
- Oil, Fuel, and Solvent resistant neoprene elastomer
- -20°F to 180°F operating temperature range



Standard Series

Part No.	A	B	C	D	F(min.)	G	H	I	R(min.)
60220 thru 23	0.31	0.23	0.69	0.40	1.10	0.81	0.75	1.09	0.06
60230 thru 33	0.38	0.41	1.00	0.47	1.50	1.24	1.12	1.75	0.06
60235 thru 38	0.62	0.53	1.38	0.53	1.70	1.35	1.25	2.00	0.06
60240 thru 43	0.62	0.53	1.38	0.64	1.70	1.35	1.25	2.00	0.06
60245 thru 48	0.75	0.62	1.75	0.64	2.20	1.61	1.50	2.50	0.06
60250 thru 53	0.93	0.80	2.00	0.64	2.50	1.96	1.81	2.97	0.12
60260 thru 63	0.75	1.13	2.12	0.77	2.70	2.20	2.00	3.68	0.12

Center Bushing Mounts



This series of Center Bushing Mounts is designed with more rubber underneath the mounting structure for more rebound protection. They also offer higher deflection than the standard series for better isolation of lower frequency vibration.

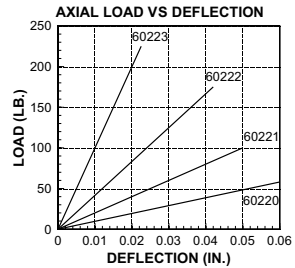
Large Rebound Series

Part No.	A	B	C	D	F(min.)	G	H	I	R(min.)
T3027	0.38	0.55	1.07	0.40	1.50	0.95	0.89	1.25	0.06
T5137	0.50	0.75	1.45	0.51	2.13	1.38	1.25	2.00	0.06
T6038	0.62	0.67	1.54	0.67	2.50	1.46	1.38	2.35	0.06
63006	0.75	0.69	1.63	0.79	3.00	1.62	1.50	2.80	0.06

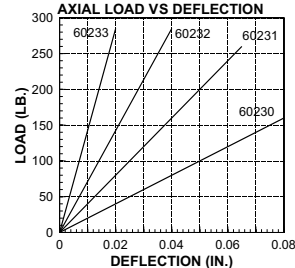
Load ratings and Stiffness Curves for Center Bushing Mounts are on the next two pages.

Center Bushing Mounts

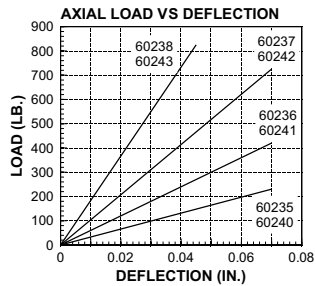
Part No.	Color Code	Max. Load (lbs.)
60220	Red	30
60221	Green	50
60222	Blue	80
60223	White	140



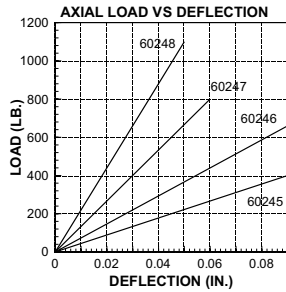
Part No.	Color Code	Max. Load (lbs.)
60230	Red	130
60231	Green	190
60232	Blue	300
60233	White	520



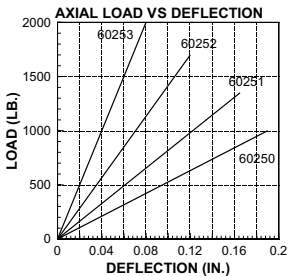
Part No.	Color Code	Max. Load (lbs.)
60235/60240	Red	230
60236/60241	Green	360
60237/60242	Blue	520
60238/60243	White	720



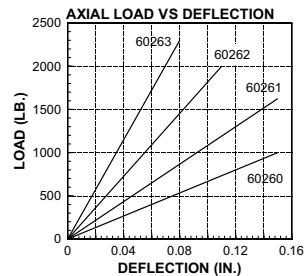
Part No.	Color Code	Max. Load (lbs.)
60245	Red	400
60246	Green	540
60247	Blue	750
60248	White	1100



Part No.	Color Code	Max. Load (lbs.)
60250	Red	600
60251	Green	800
60252	Blue	1100
60253	White	1500

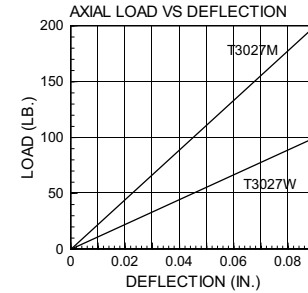


Part No.	Color Code	Max. Load (lbs.)
60260	Red	950
60261	Green	1300
60262	Blue	1850
60263	White	2400

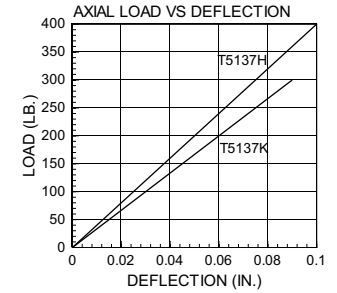


Center Bushing Mounts

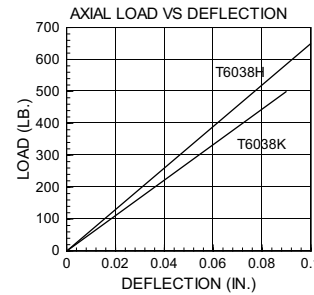
Part No.	Color Code	Max. Load (lbs.)
T3027W	Blue	100
T3027M	None	200



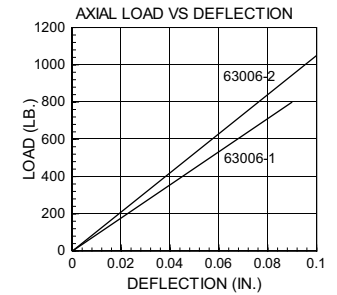
Part No.	Color Code	Max. Load (lbs.)
T5137K	None	300
T5137H	White	400



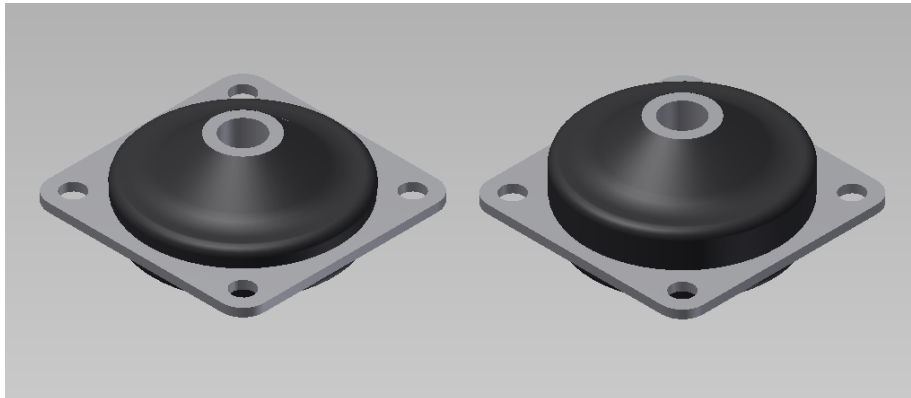
Part No.	Color Code	Max. Load (lbs.)
T6038K	None	500
T6038H	Orange	650



Part No.	Color Code	Max. Load (lbs.)
63006-1	Orange	800
63006-2	Yellow	1050



Heavy Duty Platemounts



Tech Products' Heavy Duty Plate Mounts provide excellent vibration isolation for applications where a low natural frequency is required. At rated loads, these mounts provide a natural frequency below 7 Hz. Typical applications include gas and diesel engines, generator sets, pumps, compressors, and many other types of mobile equipment.

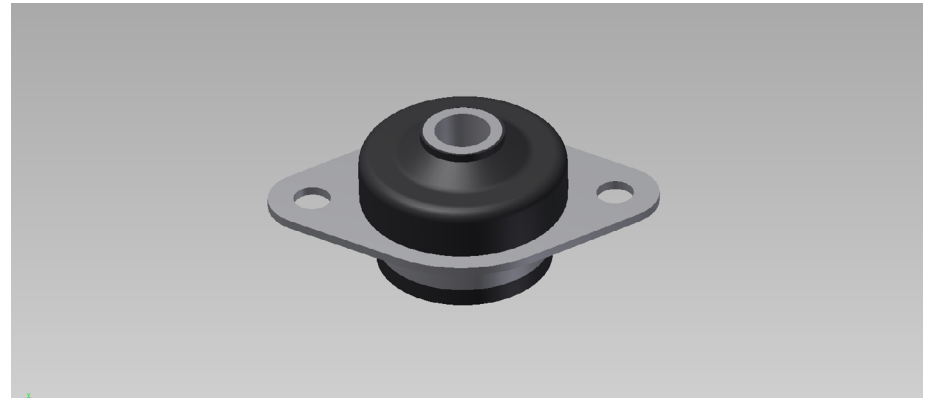
- Fail-safe when installed with snubbing washers (Page 75)
- Standard neoprene elastomer resistant to oil, fuel, and most solvents
- Two sizes available for loads ranging from 85 to 425 lbs.
- Natural Frequency below 7 Hz at rated loads
- 2.5 Radial to Axial Stiffness ratio

61591 Series			61592 Series		
Part No.	Max. Axial Load (lbs.)	Color Code	Part No.	Max. Axial Load (lbs.)	Color Code
61591-1	85	Yellow	61592-1	150	Red
61591-2	120	Red	61592-2	185	Green
61591-3	155	Green	61592-3	320	Blue
61591-4	275	Blue	61592-4	425	White

Deflection at Maximum Load = 0.25"

Radial Stiffness = 2.5 x Axial Stiffness

Heavy Duty Platemounts

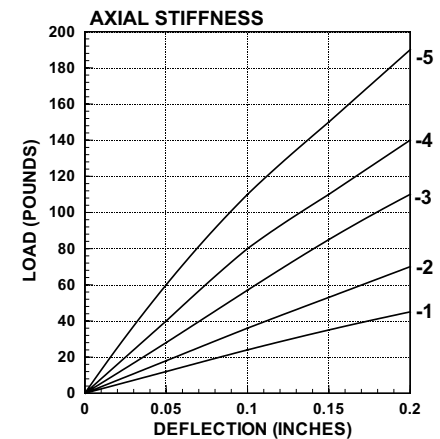
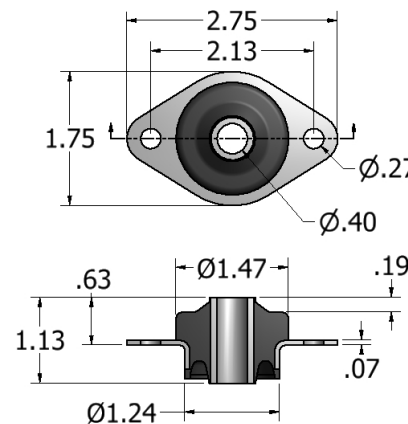


Tech Products' 61597 Series isolators provide excellent vibration and shock protection for a variety of applications including small engines, generators, compressors, pumps, and other mobile equipment.

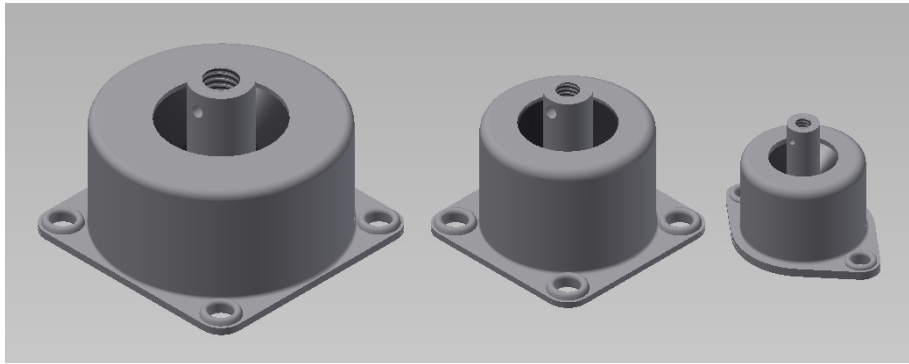
Features:

- Compact Fail-Safe Design (see Page 75 for Snubbing Washers)
- Oil and ozone resistant neoprene
- 8-10 Hz natural frequency

Part No.	Axial Load Rating (lbs.)	Color Code
61597-1	25	Yellow
61597-2	40	Red
61597-3	60	Green
61597-4	80	Blue
61597-5	110	White



507 Series Mounts

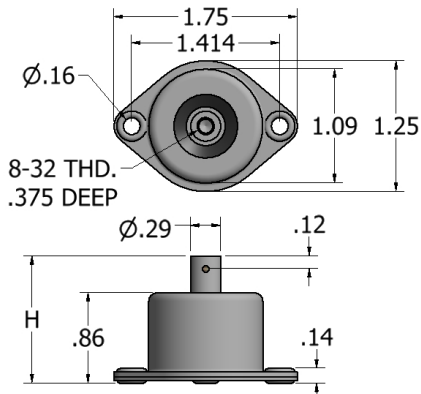


Tech Products' 507 Series Mounts are general purpose isolators for equipment mounted in aircraft, shipboard, or vehicular applications.

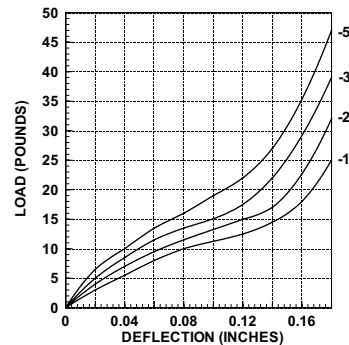
These mounts are designed to isolate high frequency vibration and the high damped silicone elastomer provides good shock attenuation and low resonant amplification. The three different sizes are designed to support load ranges from 1 to 80 lbs.

- Fail-Safe, All-Attitude Design
- 1:1 Axial to Radial Stiffness
- Isolation of Vibration over 40 Hz
- 4.0 Max. Transmissibility at Resonance
- High Damped Silicone Elastomer
- -80°F to 300°F Temperature Range

50722 Series



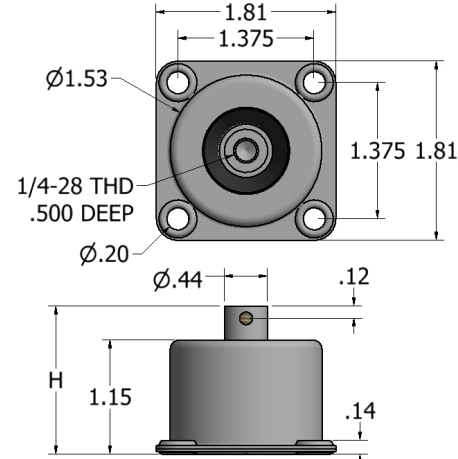
Part Number	Max. Load (lbs.)
50722-1	1
50722-2	2
50722-3	3
50722-5	5



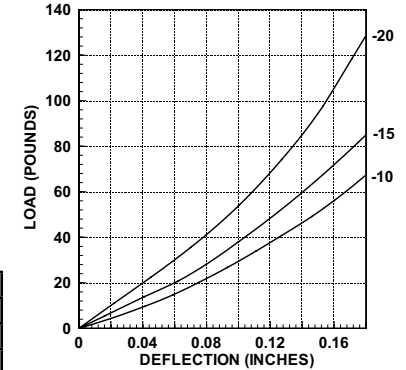
	Height (H)
Compressed	0.91
Approx. Free	1.22
Max. Extended	1.56

507 Series Mounts

50744 Series

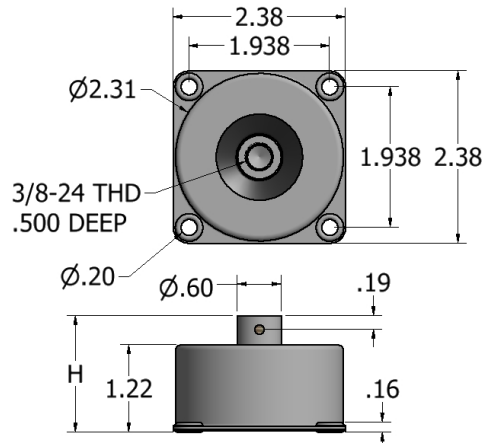


Part Number	Max. Load (lbs.)
50744-10	10
50744-15	15
50744-20	20

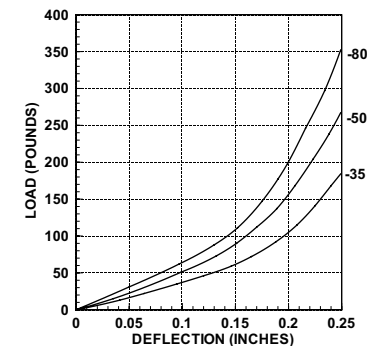


	Height (H)
Compressed	1.19
Approx. Free	1.50
Max. Extended	1.88

50764 Series

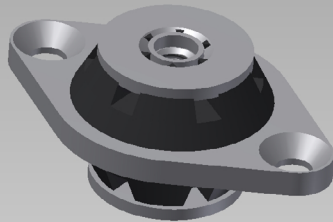


Part Number	Max. Load (lbs.)
50764-35	35
50764-50	50
50764-80	80



	Height (H)
Compressed	1.25
Approx. Free	1.62
Max. Extended	1.94

All-Attitude Mounts

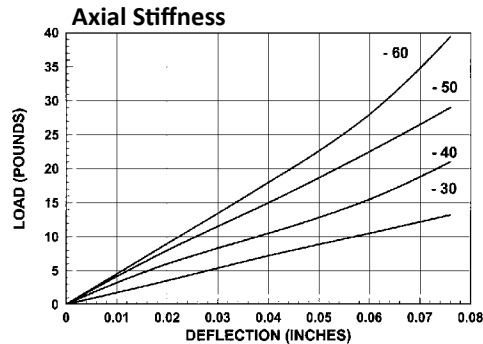
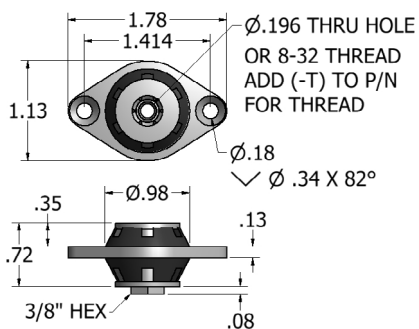


Tech Products' 56421 Series elastomeric mounts have an aluminum center plate suited for built-in electronics. The 56422 Series is a holder style for applications where a base mounted configuration is needed. The elastomer in compression design assures effective isolation in all directions.

The highly damped silicone elastomer provides optimum vibration isolation over a temperature range of -80° to 300°F. The radial to axial stiffness ratio is approximately 0.6.

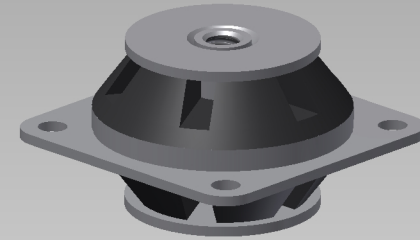
Features

- All-Attitude design for mounting in any orientation
- Capable of withstanding 30g, 11 millisecond shock loads
- High Damped Silicone elastomer
- Holder style available for base mounting installation



Part No.	Color Code	Max. Stationary Load (lbs.)
56421-30	Gray	3.0
56421-40	Red	4.5
56421-50	Yellow	7.0
56421-60	Green	10.0

All-Attitude Mounts

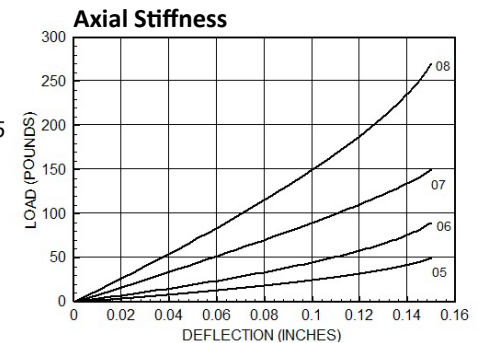
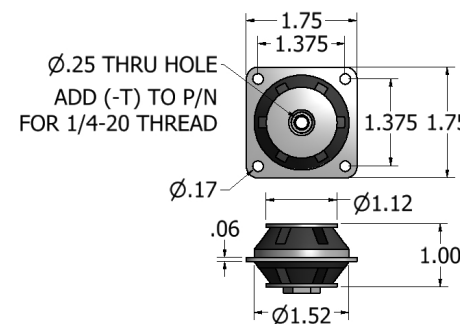


522 Series All-Attitude isolators protect stationary loads of 15-50 lbs. and vehicular loads up to 30 lbs. from vibration, shock and noise.

Neoprene elastomer is standard, but High Damped Silicone (HDS) is also available to meet application needs. Neoprene models have a temperature range of -20° to 180° F with excellent resistance to oil and ozone. The HDS models have a temperature range of -80° to 300° F and a maximum transmissibility of about 3.5.

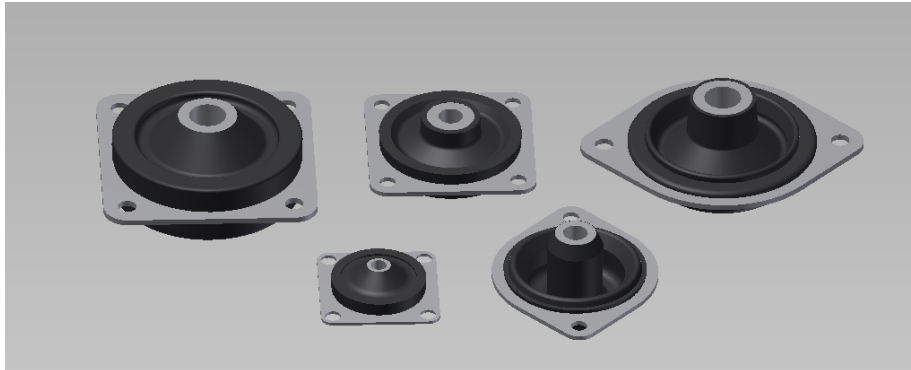
Features

- Elastomer in compression design for multi-axis loading
- Standard neoprene elastomer
- High Damped Silicone Available
- Capable of withstanding high shock loads (see vehicular load ratings)



Part No.	Color Code	Max. Stationary Load (lbs.)
52205	Red	15
52206	Green	25
52207	Yellow	35
52208	Blue	50

Platemounts

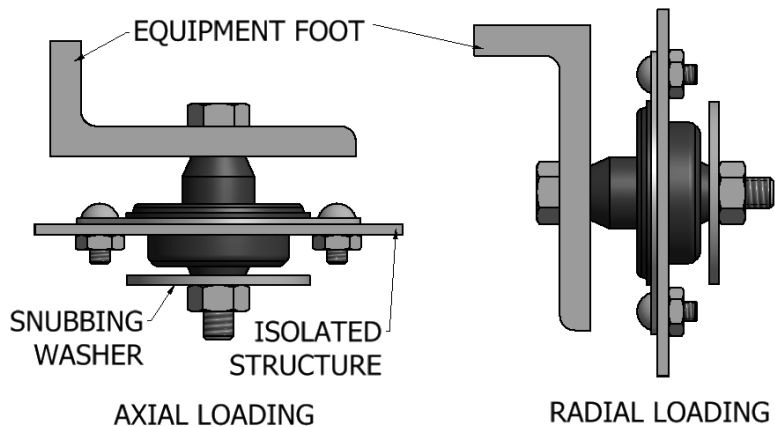


Fail-safe operation of electronic and electro-mechanical equipment, appliances, office machines and transportation equipment are typical applications for Tech Products Plate Mounts.

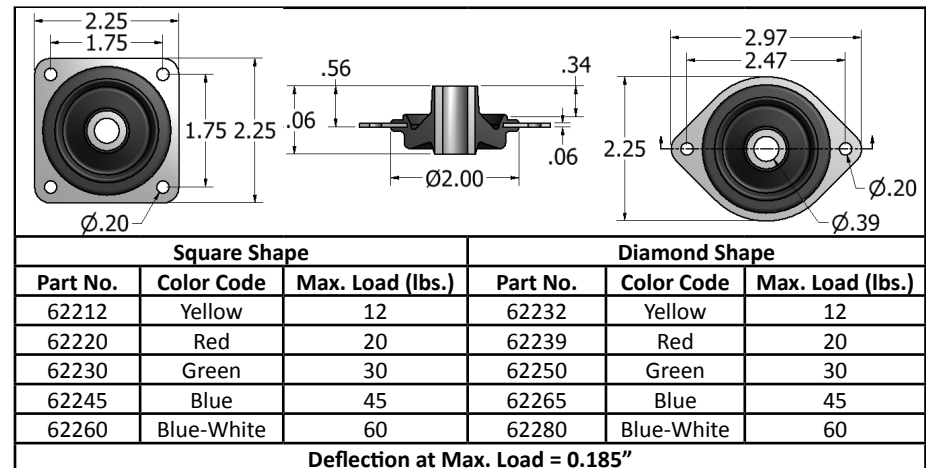
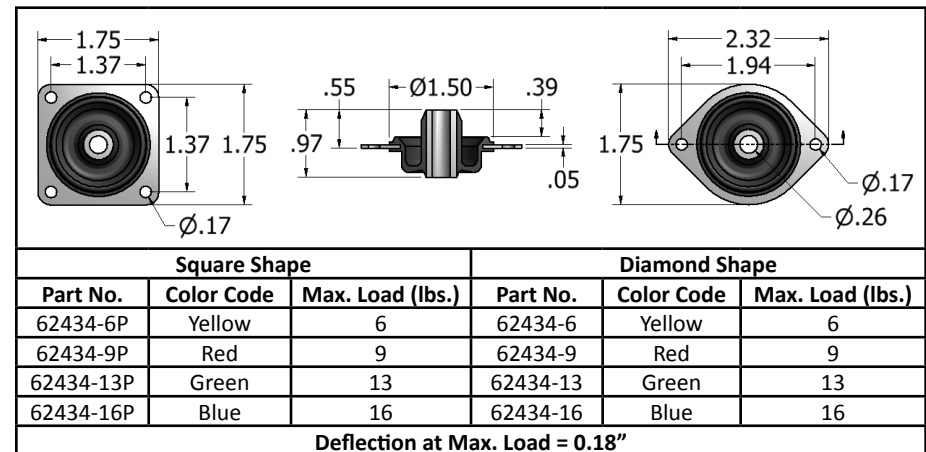
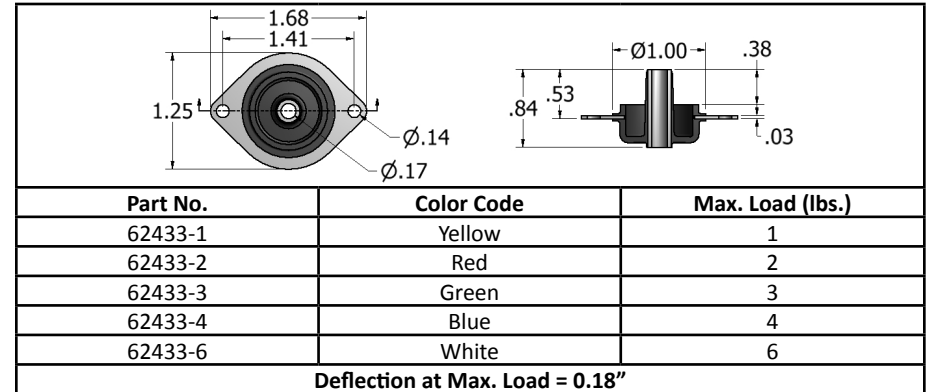
Designed for light to medium loads, they isolate mounted equipment from external vibration and/or isolate vibration produced by the mounted equipment itself.

Plate Mounts feature steel and natural rubber which operate at temperatures of -20° to 180° F.

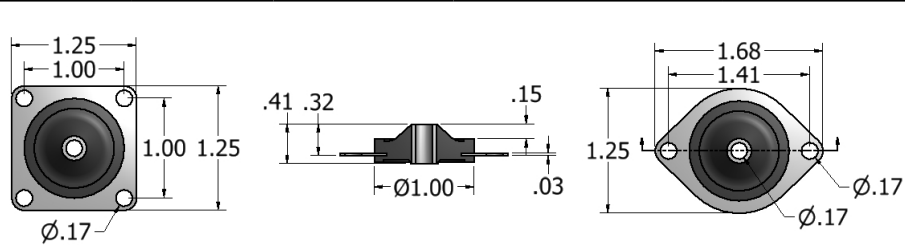
Part numbers are shown for steel plates. Aluminum plates and neoprene elastomer are available options.



Platemounts

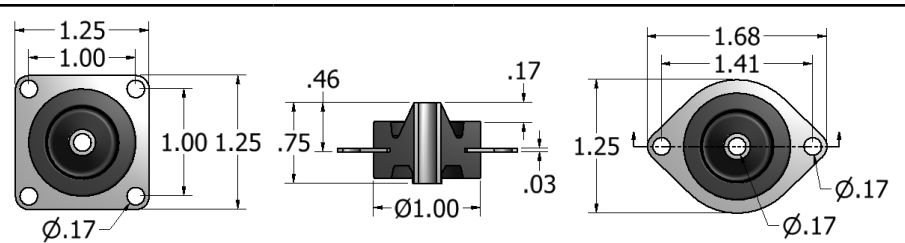


Platemounts



Square Shape			Diamond Shape		
Part No.	Color Code	Max. Load (lbs.)	Part No.	Color Code	Max. Load (lbs.)
62490-A	Yellow	0.5	62491-A	Yellow	0.5
62490-1	Red	1	62491-1	Red	1
62490-2	Green	2	62491-2	Green	2
62490-4	Blue	4	62491-4	Blue	4
62490-6	White	6	62491-6	White	6

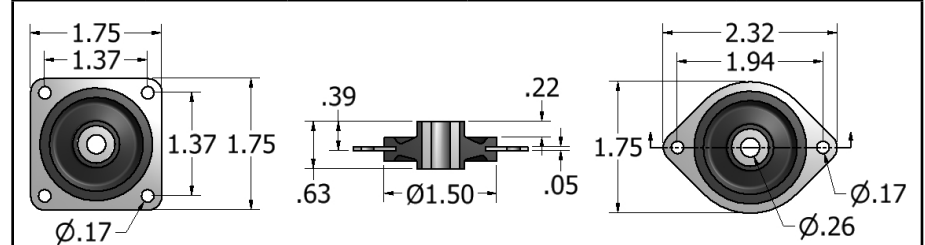
Deflection at Max. Load = 0.06"



Square Shape			Diamond Shape		
Part No.	Color Code	Max. Load (lbs.)	Part No.	Color Code	Max. Load (lbs.)
62004	Yellow	4	62024	Yellow	4
62008	Red	8	62028	Red	8
62012	Green	12	62032	Green	12
62020	Blue	20	62040	Blue	20

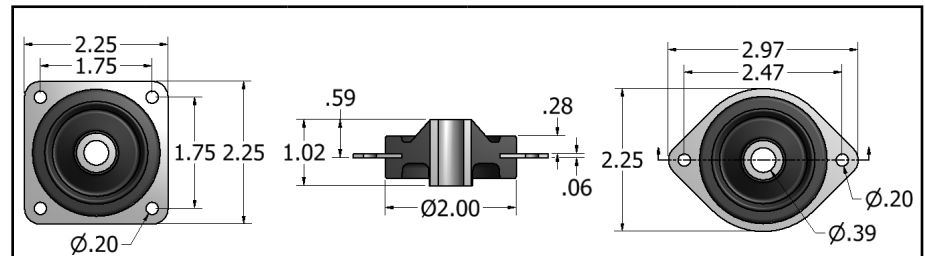
Deflection at Max. Load = 0.06"

Platemounts



Square Shape			Diamond Shape		
Part No.	Color Code	Max. Load (lbs.)	Part No.	Color Code	Max. Load (lbs.)
62103	Yellow	3	62123	Yellow	3
62106	Red	6	62166	Red	6
62109	Red-Green	9	62129	Red-Green	9
62112	Green	12	62132	Green	12
62114	Green-Blue	14	62134	Green-Blue	14
62117	Blue	17	62137	Blue	17
62120	Blue-White	20	62140	Blue-White	20
62126	Blue-Yellow	26	62146	Blue-Yellow	26

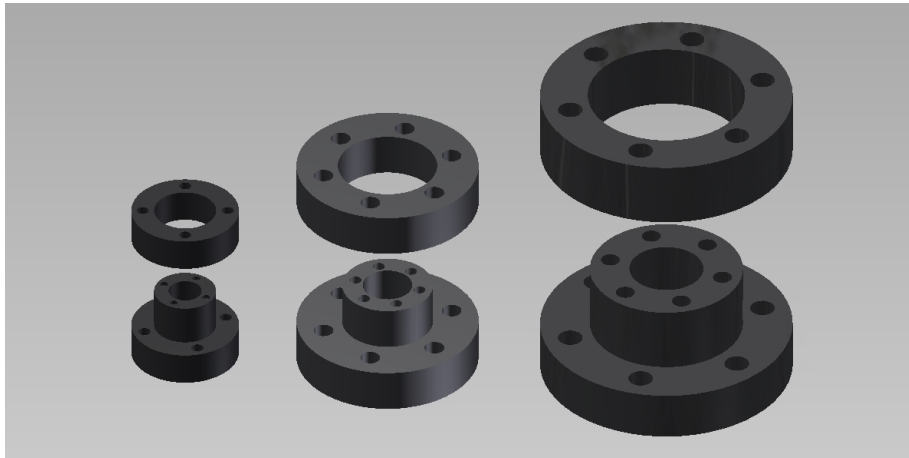
Deflection at Max. Load = 0.09"



Square Shape			Diamond Shape		
Part No.	Color Code	Max. Load (lbs.)	Part No.	Color Code	Max. Load (lbs.)
62330	Red	30	62332	Red	30
62340	Red-Green	40	62342	Red-Green	40
62350	Green	50	62352	Green	50
62370	Green-Blue	70	62372	Green-Blue	70
62390	Blue	90	62392	Blue	90

Deflection at Max. Load = 0.13"
Available with 3/8-16 threaded core

Ring and Bushing Mounts



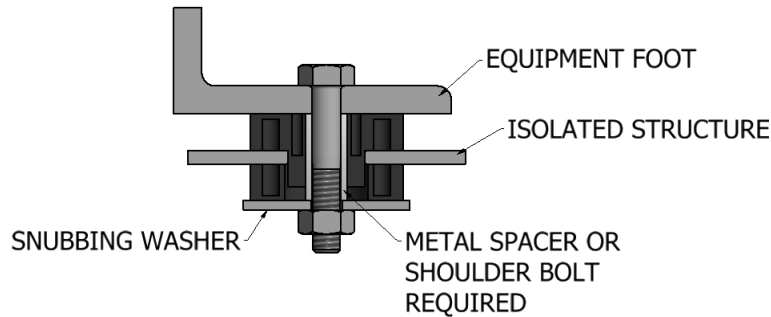
Neoprene Ring and Bushing Mounts are incorporated directly into the structural components of equipment such as office machines, motors and pumps, as well as air conditioning, electronic and scientific equipment. They offer fail-safe operation when installed in pairs.

Opposing holes in the elastomer provide excellent low-frequency isolation. The location of the holes cushions shock and isolates vibration parallel to the mount axis. The bushing's holes isolate vibration perpendicular to its axis.

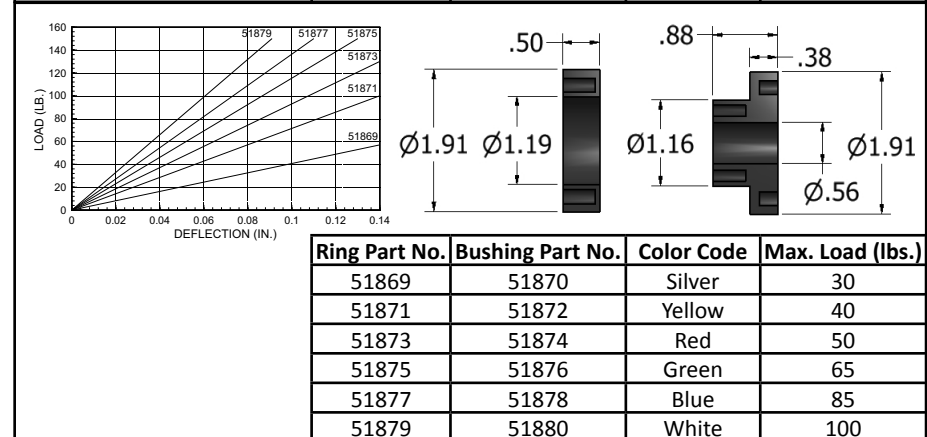
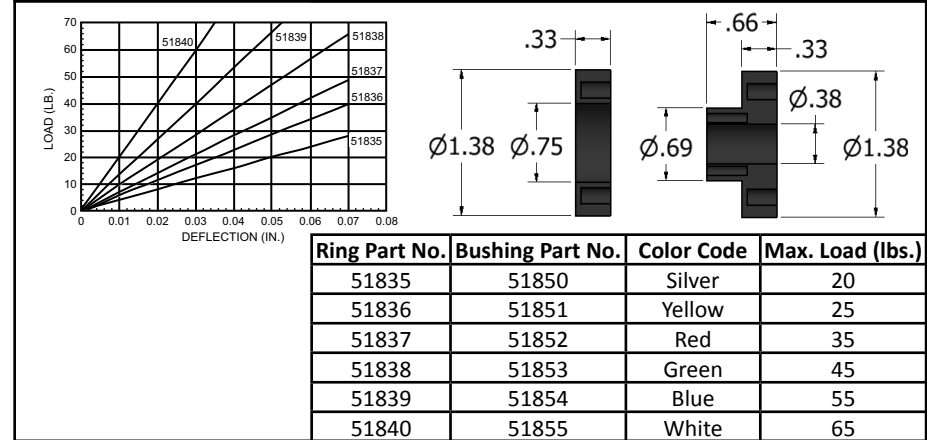
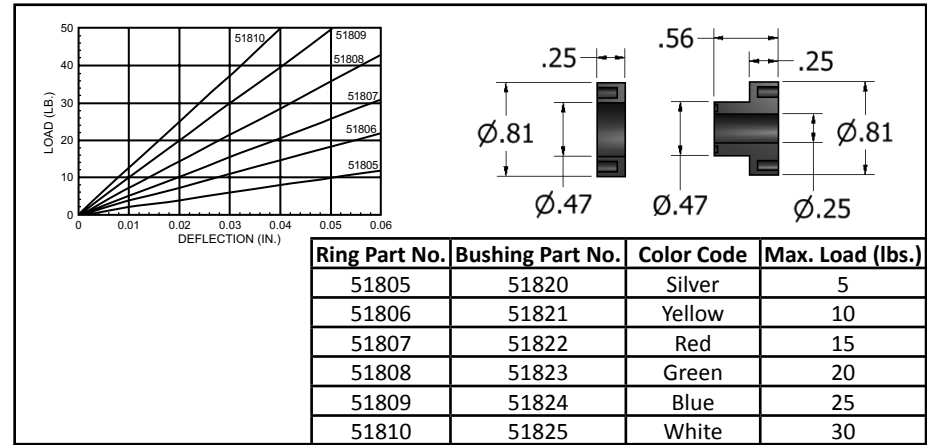
Features

- Fail-Safe installation when proper snubbing washers and spacers are used
- Neoprene elastomer resistant to oil, fuel, and solvents
- Three sizes for loads ranging from 1 to 100 lbs.
- Operating temperature range of -20°F to 180°F

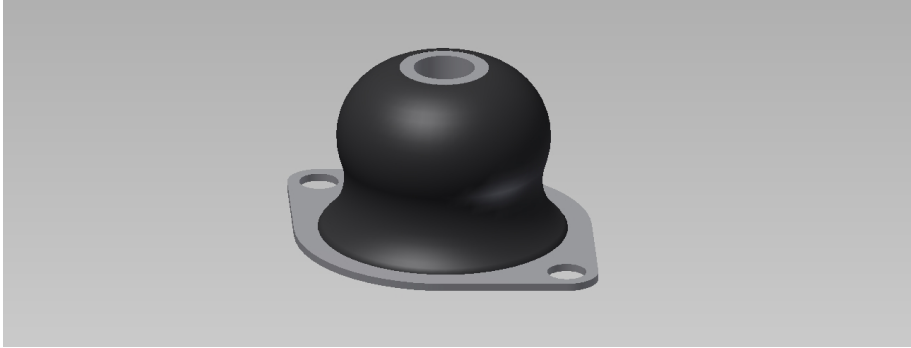
Typical Mounting Application



Ring and Bushing Mounts



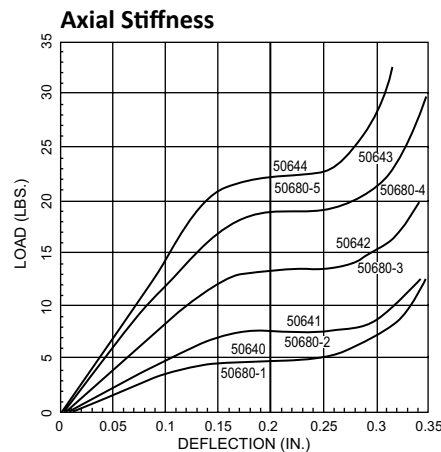
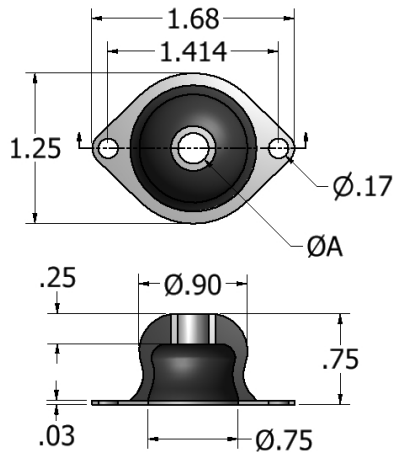
Bubble Mounts



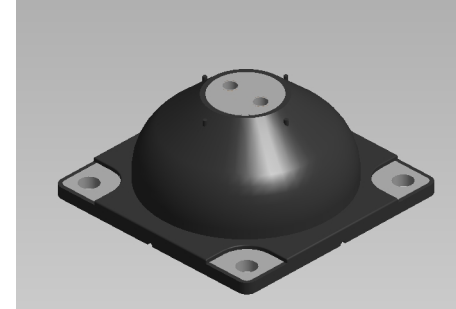
Low-frequency Bubble Mounts isolate electronic or medical equipment, avionics, computers, small pumps and compressors, and more from shock and vibration. Easy-to-install Bubble Mounts are primarily recommended for compression loads.

- Small compact design
- Excellent isolation of light loads
- 8 Hz Natural Frequency at rated loads
- Standard Neoprene elastomer resists oil, ozone, and most solvents
- Optional silicone elastomer available for extreme high or low temperatures

Part No.	Color Code	Max. Load (lbs.)	A
50640	Yellow	4.0	0.170
50641	Red	6.5	
50642	Green	11.0	
50643	Blue	15.0	
50644	White	18.0	
50680-1	Yellow	4.0	0.256
50680-2	Red	6.5	
50680-3	Green	11.0	
50680-4	Blue	15.0	
50680-5	White	18.0	



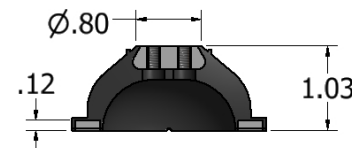
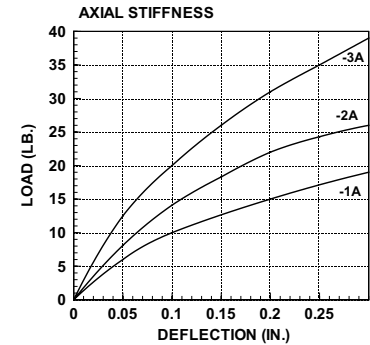
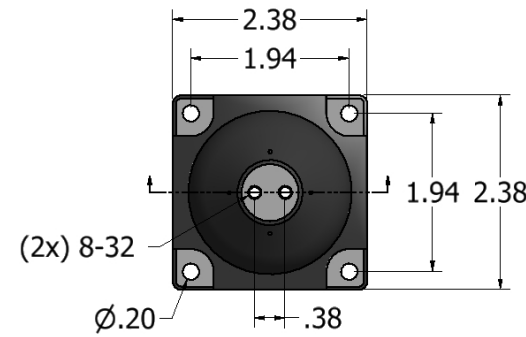
High Deflection Silicone Mounts



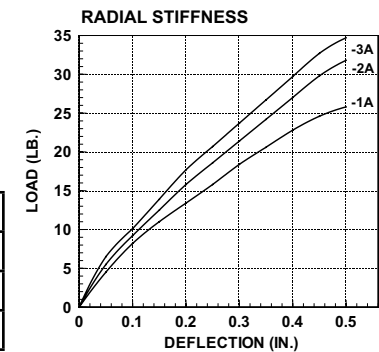
Features:

- High Damped Silicone Elastomer
- Lightweight Aluminum metal components
- 1:1 Axial to Radial stiffness ratio
- -80°F to 300°F operating temperature range

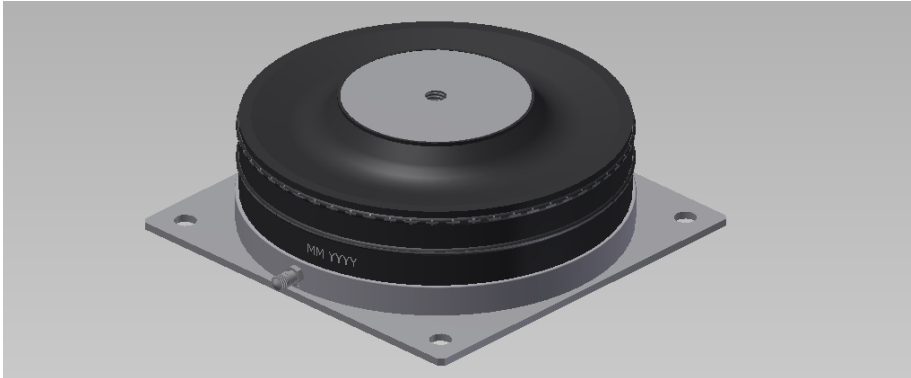
The High Deflection Silicone mounts are low profile isolators that have large deflection capability for shock and vibration attenuation. The mounts are designed to support loads ranging from 5 to 15 lbs. Retaining straps are available for fail-safe installation. Typical applications include ruggedized electronics and computer equipment.



Part Number	Load Range (lbs.)
61829-1A	5-7
61829-2A	7-10
61829-3A	10-15



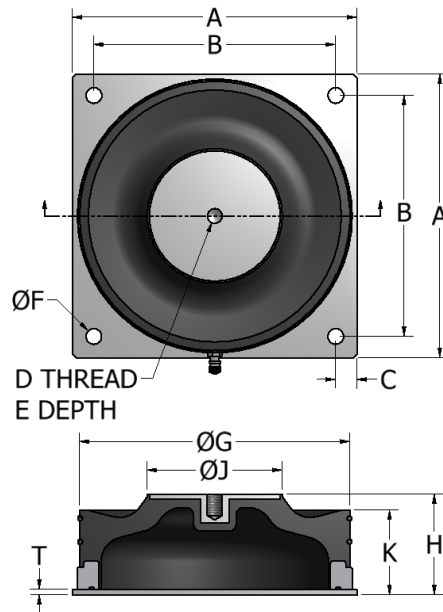
Pneumatic Spring Mounts



Tech Products Pneumatic series are air spring mounts particularly well suited for situations requiring high deflection and natural frequencies as low as 2.75 Hz. The high stability and reliability of this mount is ideal for use in mounting vibrators, shakers, vacuum pumps, optical comparators, HVAC equipment and equipment subjected to low frequency shock and/or vibration.

Features:

- Thick walled elastomeric construction
- Dynamic overload capacity of up to ten times maximum rated static load in compression
- Designed for air pressures of 20-85 psi
- Low Natural Frequency

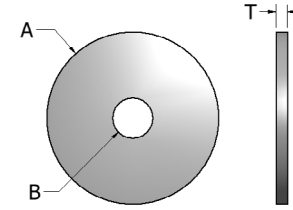


Part No.	Load (lbs.)		A	B	C	D	E	F	G	H*	J	K	T
	Min.	Max.											
52001	20	100	3.00	2.38	0.31	3/8-16	0.47	0.27	2.89	2.50	1.09	1.94	0.12
52002	100	300	4.19	3.50	0.34	1/2-13	0.54	0.29	4.14	2.50	2.06	1.94	0.12
52003	300	550	5.13	4.25	0.44	1/2-13	0.54	0.29	4.99	3.50	2.38	2.94	0.12
52004	500	1200	6.88	6.00	0.44	1/2-13	0.54	0.29	6.74	3.50	3.75	2.94	0.12
52005	1200	2400	10.00	8.50	0.75	5/8-11	0.75	0.56	9.66	3.50	5.44	2.94	0.19
52006	1200	4800	13.50	12.00	0.75	5/8-11	0.75	0.56	13.31	3.50	8.00	2.94	0.19

* H = Free Height; H+1/4" = nominal loaded height for steady force applications

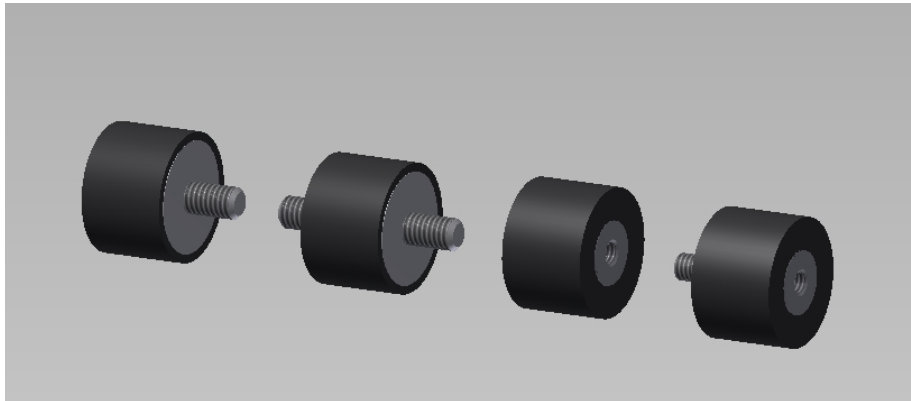
Snubbing Washers

Material: Steel
Finish: Zinc Plating



Product	Washer P/N	A	B	T
51505-(-)	00181	1.56	0.391	.090
51506-(-)	00181-1	2.00	0.450	.125
51507-(-)	00181-1	2.00	0.450	.125
51508-(-)	00308-1	2.00	0.510	.130
51510-(-)	00308-2	2.25	0.635	.150
51512-(-)	00308-3	2.50	0.760	.190
51516-(-)	00185	5.06	1.10	.250
51641-(-)	00182	2.13	0.532	.134
51700-(-)	00181-1	2.00	0.450	.125
51716-(-)	00182	2.13	0.532	.134
60011 to 15	00181	1.56	0.391	.090
60021 to 25	00182	2.13	0.532	.134
60031 to 35	00183	2.81	0.657	.188
60041 to 45	00184	3.88	0.938	.250
60051 to 55	00185	5.06	1.10	.250
60165-(-)	00183	2.81	0.657	.188
60166-(-)	00181	1.56	0.391	.090
60220 to 23	00181	1.56	0.391	.090
60230 to 33	00182	2.13	0.532	.134
60235 to 38	00182	2.13	0.532	.134
60240 to 43	00183	2.81	0.657	.188
60245 to 48	00183	2.81	0.657	.188
60250 to 53	00183	2.81	0.657	.188
60260 to 63	00184	3.88	0.938	.250
60270-(-)	00182	2.13	0.532	.134
60272-(-)	00183	2.81	0.657	.188
60278-(-)	00183	2.81	0.657	.188
60285-(-)	00185	5.06	1.10	.250
60320-(-)	00308-3	2.50	0.76	.190
60330-(-)	00187	3.25	0.657	.188
61591-(-)	00183	2.81	0.657	.188
61592-(-)	00183	2.81	0.657	.188
61597-(-)	00181	1.56	0.391	.090
63006-(-)	00308-3	2.50	0.76	.190
T3027(-)	00181	1.56	0.391	.090
T5137(-)	00182	2.13	0.532	.134
T6038(-)	00183	2.81	0.657	.188

Stud/Plate Mounts



Tech Products offers one of the industry's largest selections of these multi-purpose mounts.

Stud/Plate mounts are known throughout the industry by several names including: bumpers, snubbers, feet, sandwich mounts, shockmounts, shearmounts, cylindrical mounts, isolators, levelers, and insulators.

Tech Products' offers other sizes of mounts which may not be shown. Please contact us if you cannot find a specific size needed or if you need assistance selecting the proper mount.

Features:

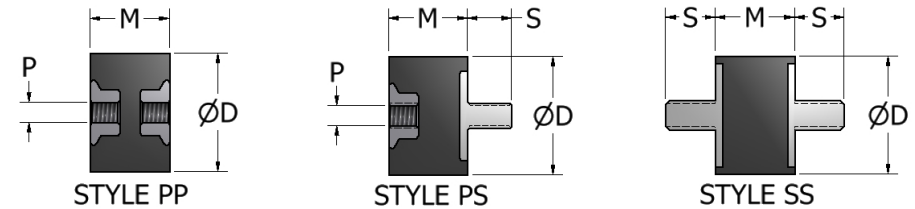
- Many sizes available from stock
- Standard and metric thread sizes available
- Elastomer options include natural rubber, neoprene, silicone and more
- Corrosion resistant zinc plated inserts
- Available in load ratings from 1 to 1200 lbs.

Visit www.novibes.com for a searchable database of Tech Products Stud/Plate Mounts.

Maximum Tightening Torque	
UNC Thread	lbs-inch
6-32	10
8-32	15
10-32	25
1/4-20	53
5/16-18	105
3/8-16	192
1/2-13	600

Note: Do not twist elastomer during installation

Stud/Plate Mounts (6-32)



Style PP

Part No.	D	M	P (Depth)	Max. Shear (lbs.)	Max. Comp. (lbs.)
50908	3/8	1/2	6-32 (1/8)	3.5	4
50903*	9/16	1/2	6-32 (1/8)	4.5	9.5
50905*	9/16	1/2	6-32 (1/8)	6	18
50907*	9/16	1/2	6-32 (1/8)	9	26

Standard elastomer is Natural Rubber, (*) indicates Neoprene

Style PS

Part No.	D	M	6-32 x S	P (Depth)	Max. Shear (lbs.)	Max. Comp. (lbs.)
50168*	3/8	3/8	1/4	6-32 (5/32)#	3.4	4.4
50169*	3/8	5/16	1/4	6-32 (5/32)	3	4
50172*	3/8	5/16	3/16	6-32 (5/32)	3	4
50177*	3/8	5/16	3/8	6-32 (5/32)	4	5
50181	7/16	13/32	1/4	6-32 (1/8)	2.5	3.8
50184*	7/16	13/32	1/4	6-32 (1/8)	3.4	4.4
50194*	7/16	13/32	1/4	6-32 (1/8)	6.5	14.5
50171*	7/16	1/2	3/8	6-32 (5/32)#	3.5	4.5
50170*	7/16	1/2	3/8	6-32 (5/32)#	4.4	6
50176*	7/16	1/2	1/4	6-32 (5/32)#	4.4	6
50986*	7/16	1/2	1/4	6-32 (1/8)#	3.5	4.5
65021*	7/16	5/8	1/4	6-32 (1/8)	3	4
50838*	7/16	3/4	1/4	6-32 (1/8)	2.5	3.5

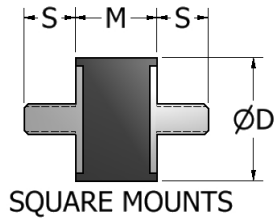
Standard elastomer is Natural Rubber, (*) indicates Neoprene

(#) indicates blind insert

Style SS

Part No.	D	M	6-32 x S	Max. Shear (lbs.)	Max. Comp. (lbs.)
50178	7/16	13/32	1/4	3	4
50179	7/16	13/32	1/4	3.2	5
50196	7/16	13/32	3/8 - 1/4	3	4

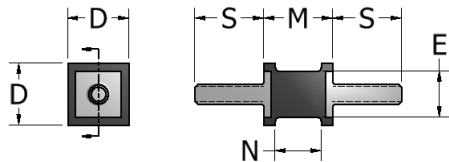
Stud/Plate Mounts (8-32)



SQUARE MOUNTS

Part No.	D (Square)	M	8-32 x S	Max. Shear (lbs.)	Max. Comp. (lbs.)
51007*	3/8	5/16	3/8	4	6.2
51010	3/8	5/16	7/32	9	13
51011	3/8	5/16	7/32	3	4.5
51013	3/8	5/16	7/32	4	6.2
51014*	3/8	5/16	3/8 - 9/16	8	11.8
51015*	3/8	5/16	7/32	3	4.5
51017	3/8	5/16	3/8	3.5	5.2
51019	3/8	5/16	3/8	3	4.5
51025*	3/8	5/16	7/32	4	6.2
51026	3/8	5/16	7/32 - 9/16	8	11.8
51407	3/8	1/2	7/32	3	5
51001	3/8	1/2	3/8	3	5
51002	3/8	1/2	3/8	3.6	6.2
51003	3/8	1/2	3/8	5.7	10
51004	3/8	1/2	3/8	7	13.5

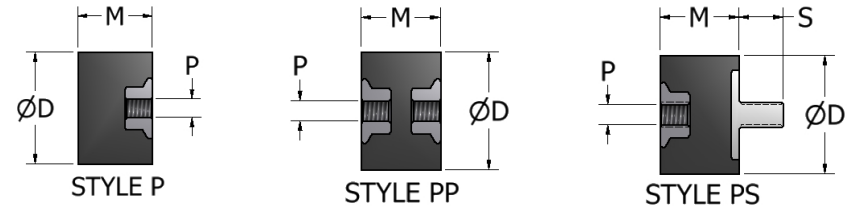
Standard elastomer is Natural Rubber, (*) indicates Neoprene



Part No.	D (Square)	E (Dia.)	M	N	8-32 x S	Max. Shear (lbs.)	Max. Comp. (lbs.)
51021	1/2	3/8	9/16	3/8	9/16	2.8	6.8
51022	1/2	3/8	9/16	3/8	9/16	3.3	8.5
51023*	1/2	3/8	9/16	3/8	9/16	5.3	12
51024*	1/2	3/8	9/16	3/8	9/16	7.5	14.5

Standard elastomer is Natural Rubber, (*) indicates Neoprene

Stud/Plate Mounts (8-32)



Style P

Part No.	D	M	P	Max. Shear (lbs.)	Max. Comp. (lbs.)
51110	7/16	1/2	8-32	-	4.5
51112	7/16	1/2	8-32	-	8
51060	9/16	1/2	8-32	-	9.5
51062	9/16	1/2	8-32	-	18

P thread depth is minimum one thread diameter

Style PP

Part No.	D	M	P	Max. Shear (lbs.)	Max. Comp. (lbs.)
51100	7/16	1/2	8-32	3.3	4.5
51102	7/16	1/2	8-32	4.8	8
51050	9/16	1/2	8-32	4.5	9.5
51051	9/16	1/2	8-32	5	14
51052	9/16	1/2	8-32	6	18
51053	9/16	1/2	8-32	7	22
65024*	9/16	1/2	8-32	8	25

P thread depth is minimum one thread diameter

Style PS

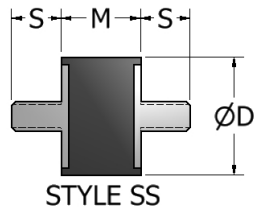
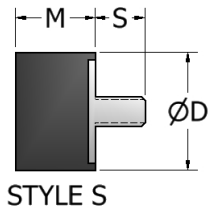
Part No.	D	M	8-32 x S	P	Max. Shear (lbs.)	Max. Comp. (lbs.)
51090	7/16	1/2	3/8	8-32	3.3	4.5
51092	7/16	1/2	3/8	8-32	4.8	8
51040	9/16	1/2	1/4	8-32	4.5	9.5
51041	9/16	1/2	1/4	8-32	5.4	14
51042	9/16	1/2	3/8	8-32	6	18
51044	9/16	1/2	3/8	8-32	4.5	9.5
51056*	9/16	1/2	3/8	8-32	6	18
51058	9/16	1/2	3/8	8-32#	4.5	9.5
51067	9/16	1/2	3/8	8-32	4.5	9.5

Standard elastomer is Natural Rubber, (*) indicates Neoprene

P thread depth is minimum one thread diameter

(#) indicates blind insert

Stud/Plate Mounts (8-32)



Style S

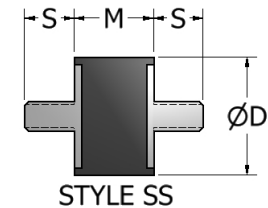
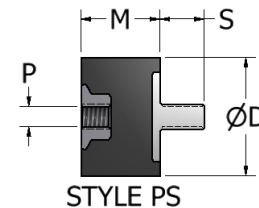
Part No.	D	M	8-32 x S	Max. Shear (lbs.)	Max. Comp. (lbs.)
51120	7/16	1/2	3/8	-	4.5
51122	7/16	1/2	3/8	-	8
51070	9/16	1/2	3/8	-	9.5
51072	9/16	1/2	3/8	-	18

Style SS

Part No.	D	M	8-32 x S	Max. Shear (lbs.)	Max. Comp. (lbs.)
50912	3/8	1/2	3/8	1.5	10
50913	3/8	1/2	3/8	3	17
50914	3/8	1/2	3/8	2	13
50915	3/8	1/2	3/8	1	7
50916*	3/8	1/2	3/8	0.5	4
50917*	3/8	1/2	3/8	1	7
50918*	3/8	1/2	3/8	1.5	10
50919*	3/8	1/2	3/8	3	17
50920*	3/8	1/2	3/8	4.5	23
51081	7/16	1/2	3/8	3.3	4.5
51082	7/16	1/2	3/8	3.9	6.4
51083*	7/16	1/2	3/8	4.8	8
51084*	7/16	1/2	3/8	3.3	4.5
51031	9/16	1/2	3/8	4.5	9.5
51032	9/16	1/2	3/8	5.2	13
51033*	9/16	1/2	3/8	6	18
51034*	9/16	1/2	3/8	13	25
51036	9/16	1/2	1/2	4.5	9.5
51055*	9/16	1/2	1/2	13	25

Standard elastomer is Natural Rubber, (*) indicates Neoprene

Stud/Plate Mounts (10-32)



Style PS

Part No.	D	M	S	P	Max. Shear (lbs.)	Max. Comp. (lbs.)
51045	9/16	1/2	8-32 x 3/8	10-32	4.5	9.5
51047	9/16	1/2	10-32 x 3/8	10-32	6	18
51059*	9/16	1/2	10-32 x 3/8	10-32	5	16
51066	9/16	1/2	10-32 x 3/8	8-32	4.5	9.5
51068	9/16	1/2	10-32 x 3/8	8-32	6	18
51136	1	3/4	10-32 x 3/8	10-32	24	55

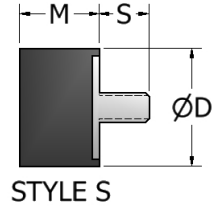
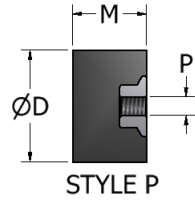
P thread depth is minimum one thread diameter

Style SS

Part No.	D	M	10-32 x S	Max. Shear (lbs.)	Max. Comp. (lbs.)
51037*	9/16	1/2	3/8	6	18
51048	9/16	1/2	3/8 - 3/16	6	18
51057	9/16	1/2	3/8	5	16
51135	1	3/4	3/8	15	44

Standard elastomer is Natural Rubber, (*) indicates Neoprene

Stud/Plate Mounts (1/4-20)



Style P

Part No.	D	M	P	Max. Shear (lbs.)	Max. Comp. (lbs.)
51205*	3/4	1/2	1/4-20	-	34
50938*	1	17/32	1/4-20	-	70
51181	1	3/4	1/4-20	-	45

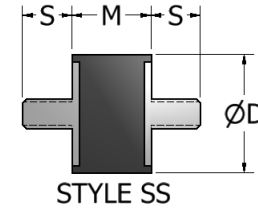
P thread depth is minimum one thread diameter

Style S

Part No.	D	M	1/4-20 x S	Max. Shear (lbs.)	Max. Comp. (lbs.)
51494*	3/4	1/2	3/4	-	30
51138	1	17/32	3/8	-	40
51139	1	17/32	3/8	-	70
51140	1	17/32	3/8	-	100
51581	1	41/64	1/2	-	35
51185	1	3/4	1/2	-	44
51187	1	3/4	1/2	-	55
51191*	1	3/4	7/8	-	55
50783*	1	27/32	3/4	-	50
51195*	1	1	1/2	-	50
51196	1	1	3/8	-	70
51197	1	1	1/4	-	70
50889*	1	1	3/4	-	70
50828*	1 1/4	3/4	5/8	-	120
51176*	1 1/4	1	1/4	-	70

Standard elastomer is Natural Rubber, (*) indicates Neoprene

Stud/Plate Mounts (1/4-20)



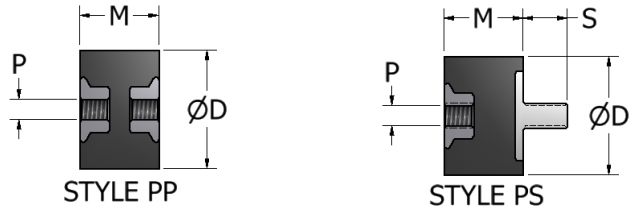
Style SS

Part No.	D	M	1/4-20 x S	Max. Shear (lbs.)	Max. Comp. (lbs.)
50820*	3/4	1/2	1/2	12	28
50859*	1	3/8	1/2	30	60
51123*	1	17/32	1/2	30	45
51127	1	17/32	3/8	30	45
51128	1	17/32	3/8	34	70
51130	1	17/32	1/2 - 1/4	32	45
51131	1	17/32	1/2	15	44
51132	1	17/32	1/2	30	45
51133	1	17/32	1/2	34	70
50965*	1	1/2	1/2	35	70
51154*	1	3/4	3/8	21	55
51186*	1	3/4	3/8	25	60
51141	1	3/4	1/2	15	44
51142	1	3/4	1/2	18	50
51143	1	3/4	1/2	21	55
51144*	1	3/4	1/2	18	50
51146*	1	3/4	1/2	21	55
50855*	1	3/4	1/2	25	60
51173*	1	3/4	1/2	15	44
51147	1	3/4	5/8	18	50
51148*	1	3/4	5/8	25	60
51150*	1	3/4	3/4	15	44
51152	1	3/4	3/4	21	55
51153*	1	3/4	3/4	21	55
51158	1	3/4	3/4	18	50
51160*	1	3/4	3/4	25	60
51155*	1	3/4	1/4 - 5/8	25	60
51289	1	3/4	3/8 - 1/2	30	70
51157*	1	3/4	1/2 - 3/4	25	60
50888*	1	3/4	1/2 - 3/4	21	55
51184*	1	3/4	1/2 - 3/4	15	44
51159	1	3/4	1/2 - 1	30	70
51164*	1	1	1/2	12	35
51290*	1 1/8	1 1/2	5/8	10	20
50773	1 1/4	1 1/4	5/8	30	80

Standard elastomer is Natural Rubber, (*) indicates Neoprene

Standard inserts are zinc plated

Stud/Plate Mounts (1/4-20)



Style PP

Part No.	D	M	P	Max. Shear (lbs.)	Max. Comp. (lbs.)
50924	1	3/4	1/4-20	25	65
51172	1	3/4	1/4-20	20	55

P thread depth is minimum one thread diameter

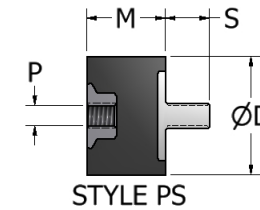
Style PS

Part No.	D	M	1/4-20 x S	P	Max. Shear (lbs.)	Max. Comp. (lbs.)
50823*	5/8	5/8	1/2	1/4-20	5	15
51201*	3/4	1/2	1/2	1/4-20	8	21
51202*	3/4	1/2	1/2	1/4-20	12	28
51203*	3/4	1/2	1/2	1/4-20	16	34
51204*	3/4	1/2	1/2	1/4-20	20	40
50839*	1	1/2	1/2	1/4-20	35	70
51129*	1	17/32	1/2	1/4-20	32	45
51145*	1	3/4	1/2	1/4-20	18	50
51151*	1	3/4	3/8	1/4-20	24	55
51156*	1	3/4	3/8	1/4-20	28	65
51161	1	3/4	1/2	1/4-20	18	45
51162	1	3/4	1/2	1/4-20	20	50
51163	1	3/4	1/2	1/4-20	21	55
51166*	1	3/4	1/2	1/4-20	35	75
51188*	1	3/4	1/2	1/4-20	30	65
51582	1	3/4	3/4	1/4-20	18	45
51137	1	1	1/2	1/4-20	10	30
51198*	1	1	1/2	1/4-20	20	50
50782*	1	1	3/4	1/4-20	15	40

Standard elastomer is Natural Rubber, (*) indicates Neoprene

P thread depth is minimum one thread diameter

Stud/Plate Mounts (5/16-18)



Style PS

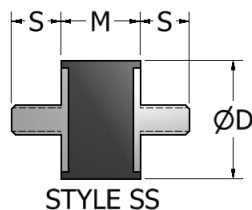
Part No.	D	M	5/16-18 x S	P	Max. Shear (lbs.)	Max. Comp. (lbs.)
51283*	1	1/2	9/16	5/16-18	16	40
51284*	1	1/2	9/16	5/16-18	22	45
51285*	1	1/2	9/16	5/16-18	35	70
51286*	1	1/2	9/16	5/16-18	40	78
50835*^	1	3/4	3/8	5/16-18	40	80
51234	1	3/4	1/2	5/16-18	16	45
51258	1	3/4	9/16	5/16-18	40	80
51276*	1	3/4	5/16	5/16-18	16	45
51277*	1	3/4	5/16	5/16-18	19	52
51278*	1	3/4	5/16	5/16-18	25	62
51279*	1	3/4	5/16	5/16-18	31	70
51313*	1 1/4	1	3/4	5/16-18	25	72
51314*	1 1/4	1	3/4	5/16-18	38	92
51327*	1 1/4	1 1/4	9/16	5/16-18	21	41
51328*	1 1/4	1 1/4	9/16	5/16-18	31	64
51329*	1 1/4	1 1/4	9/16	5/16-18	45	86
51330*	1 1/4	1 1/4	9/16	5/16-18	63	120
50780*	1 1/4	1 1/4	3/4	5/16-18	63	120
50817*	1 1/4	1 1/4	3/4	5/16-18	85	175
51352	1 3/8	1	9/16	5/16-18	66	96
65007*^	1 3/8	1	9/16	5/16-18	66	96
50928*	1 3/8	1 1/2	5/8	5/16-18	55	100
50975*	1 3/8	1 1/2	5/8	5/16-18	65	125
51376	1 1/2	1	9/16	5/16-18	30	95
51377	1 1/2	1	9/16	5/16-18	40	135
51378	1 1/2	1	9/16	5/16-18	50	185
51379	1 1/2	1	9/16	5/16-18	65	210
51400*	1 1/2	1	5/8	5/16-18	45	185
51542*	1 1/2	1	9/16	5/16-18	40	135

Standard elastomer is Natural Rubber, (*) indicates Neoprene

P thread depth is minimum one thread diameter

Standard inserts are zinc plated, (^) indicates phosphate finish

Stud/Plate Mounts (5/16-18)

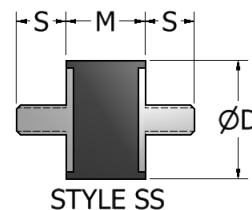


Style SS

Part No.	D	M	5/16-18 x S	Max. Shear (lbs.)	Max. Comp. (lbs.)
50852*^	1	1/2	5/8	45	90
51239	1	3/4	3/8	22	55
51240*	1	3/4	3/8	22	58
51241	1	3/4	9/16	15	44
51242	1	3/4	9/16	18	50
51243	1	3/4	9/16	22	58
51247	1	3/4	5/8	15	44
51251	1	3/4	3/4	15	44
51252	1	3/4	3/4	18	50
51253	1	3/4	3/4	22	58
51257*	1	3/4	9/16	22	58
51260*	1	3/4	1/2 - 7/8	22	50
51280*	1	3/4	1/2 - 7/8	18	50
51282*	1	3/4	1/2 - 7/8	25	60
51262*	1	1	9/16	12	35
51263	1	1	9/16	16	42
51265	1	1	3/4	35	70
51266	1	1	3/4	8	25
51267	1	1	3/4	12	35
51270	1	1	1/2 - 3/4	12	35
50825	1	1	1/2	30	70
51296	1	1 1/2	5/8	20	45
51296-1	1	1 1/2	5/8	28	60
50798*	1 1/4	3/4	9/16	25	60
51301	1 1/4	3/4	9/16	36	87
51302	1 1/4	3/4	9/16	43	98
51303	1 1/4	3/4	9/16	52	120
51304	1 1/4	3/4	9/16	45	93
51305*	1 1/4	3/4	1/2 - 3/4	45	93
51306	1 1/4	3/4	3/4	36	87
51307	1 1/4	3/4	3/4	43	98
51308	1 1/4	3/4	3/4	52	120
51310	1 1/4	3/4	5/8	43	98
51311	1 1/4	1	9/16	31	81
51312	1 1/4	1	9/16	38	92

Standard elastomer is Natural Rubber, (*) indicates Neoprene
Standard inserts are zinc plated, (^) indicates phosphate finish

Stud/Plate Mounts (5/16-18)

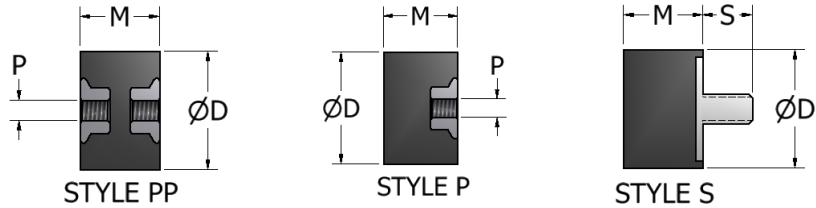


Style SS

Part No.	D	M	5/16-18 x S	Max. Shear (lbs.)	Max. Comp. (lbs.)
51315	1 1/4	1	3/4	31	81
51316	1 1/4	1	3/4	38	92
51297*	1 1/4	1 1/4	5/8	27	76
51298*	1 1/4	1 1/4	5/8	34	86
51299*	1 1/4	1 1/4	5/8	60	120
51320	1 1/4	1 1/4	9/16	21	42
51321	1 1/4	1 1/4	9/16	27	76
51322	1 1/4	1 1/4	9/16	34	86
51325	1 1/4	1 1/4	3/4	27	76
51326	1 1/4	1 1/4	3/4	34	86
51337*	1 1/4	1 1/4	9/16	60	120
51344*	1 1/4	1 1/4	7/8	27	47
51345	1 1/4	1 1/4	7/8	34	86
51349	1 1/4	1 1/4	3/4	60	120
51480*	1 3/8	5/8	5/8	35	85
51481*	1 3/8	5/8	5/8	45	120
51482*	1 3/8	5/8	5/8	55	155
51483*	1 3/8	5/8	5/8	65	185
51484*	1 3/8	5/8	5/8	75	225
50136*	1 3/8	1	1 1/4	87	125
51340	1 3/8	1	9/16	27	47
51341	1 3/8	1	9/16	41	74
51342	1 3/8	1	9/16	66	96
51343	1 3/8	1	9/16	76	105
51348	1 3/8	1	7/8 - 1	66	96
51353*	1 3/8	1	3/4	27	47
51354*	1 3/8	1	3/4	41	74
51355*	1 3/8	1	3/4	66	96
51356*	1 3/8	1	3/4	76	105
51357*	1 3/8	1	3/4	87	125
51358	1 3/8	1	3/4	76	105
65028*^	1 3/8	1	3/4	76	105
51401*	1 1/2	1	5/8	45	185
51460*	2	1 1/4	5/8	50	150
51462*	2	1 1/4	5/8	100	250

Standard elastomer is Natural Rubber, (*) indicates Neoprene
Standard inserts are zinc plated, (^) indicates phosphate finish

Stud/Plate Mounts (5/16-18)



Style PP

Part No.	D	M	P	Max. Shear (lbs.)	Max. Comp. (lbs.)
51272*	1	1	5/16-18	10	25
51275*	1	1	5/16-18	28	65
51318	1 ¼	1 ¼	5/16-18	24	42
51323	1 ¼	1 ¼	5/16-18	27	76
51324	1 ¼	1 ¼	5/16-18	34	86
50137*	1 ¾	1	5/16-18	90	125

P thread depth is minimum one thread diameter

Style P

Part No.	D	M	P	Max. Shear (lbs.)	Max. Comp. (lbs.)
51254	1	3/4	5/16-18	-	44
51335	1 ¼	3/4	5/16-18	-	120

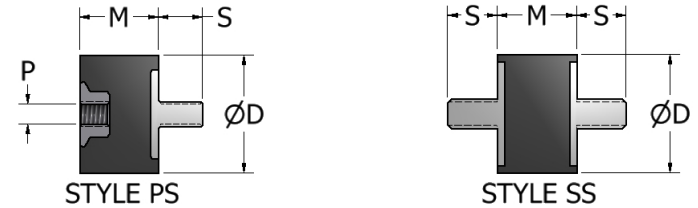
P thread depth is minimum one thread diameter

Style S

Part No.	D	M	5/16-18 x S	Max. Shear (lbs.)	Max. Comp. (lbs.)
50983^	1	3/8	1 1/4	-	50
51255	1	17/32	9/16	-	50
51244	1	3/4	5/8	-	58
50840^	1	3/4	1 1/4	-	58
50818	1	1	5/8	-	42
51331	1 ¼	3/4	3/4	-	100
51332	1 ¼	3/4	3/4	-	120
51334*	1 ¼	3/4	9/16	-	120
51336*	1 ¼	3/4	1/2	-	120
51319*	1 ¼	1	9/16	-	120
51466	2	1 ¾	3/4	-	150
51467	2	1 ¾	3/4	-	200
51468	2	1 ¾	3/4	-	250
51469	2	1 ¾	3/4	-	290
51470	2	1 ¾	3/4	-	325

Standard elastomer is Natural Rubber, (*) indicates Neoprene
Standard inserts are zinc plated, (^) indicates phosphate finish

Stud/Plate Mounts (3/8-16)



Style PS

Part No.	D	M	3/8-16 x S	P	Max. Shear (lbs.)	Max. Comp. (lbs.)
51588*	1 ½	7/8	5/8	3/8-16	70	250
51380	1 ½	1	5/8	3/8-16	30	95
51381	1 ½	1	5/8	3/8-16	40	135
51382	1 ½	1	5/8	3/8-16	50	185
51383	1 ½	1	5/8	3/8-16	65	210
51384	1 ½	1	5/8	3/8-16	80	270
50868-1*	2 ½	1	7/8	3/8-16	85	200
50868-2*	2 ½	1	7/8	3/8-16	110	250
50868-3*	2 ½	1	7/8	3/8-16	150	325
50868-4*	2 ½	1	7/8	3/8-16	190	425
50868-5*	2 ½	1	7/8	3/8-16	220	500

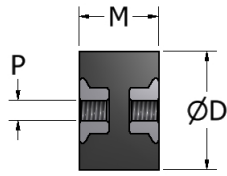
P thread depth is minimum one thread diameter

Style SS

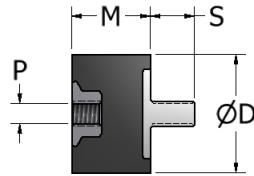
Part No.	D	M	3/8-16 x S	Max. Shear (lbs.)	Max. Comp. (lbs.)
51390	1 ½	1	5/8	30	95
51391	1 ½	1	5/8	40	135
51392	1 ½	1	5/8	50	185
51393	1 ½	1	5/8	65	210
51394	1 ½	1	5/8	80	270
51395	1 ½	1	3/4	30	95
51396	1 ½	1	3/4	40	135
51397	1 ½	1	3/4	50	185
51398*	1 ½	1	3/4	65	210
51399*	1 ½	1	3/4	80	270
51620-1	2 ½	1	7/8	85	200
51620-2	2 ½	1	7/8	110	250
51620-3	2 ½	1	7/8	150	325
51620-4	2 ½	1	7/8	190	425
51620-5	2 ½	1	7/8	220	500

Standard elastomer is Natural Rubber, (*) indicates Neoprene

Stud/Plate Mounts (1/2-13)



STYLE PP



STYLE PS

Style PP

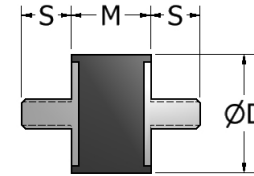
Part No.	D	M	P (Depth)	Max. Shear (lbs.)	Max. Comp. (lbs.)
51415*	2	1 11/16	1/2-13 (1/2)#	80	180
51416*	2	1 11/16	1/2-13 (1/2)#	100	210
51417*	2	1 11/16	1/2-13 (1/2)#	150	275
51418*	2	1 11/16	1/2-13 (1/2)#	200	340
51419*	2	1 11/16	1/2-13 (1/2)#	240	420
51553-1*	3 1/8	1 1/2	1/2-13 (1/2)	60	450
51553-2*	3 1/8	1 1/2	1/2-13 (1/2)	90	660
51553-3*	3 1/8	1 1/2	1/2-13 (1/2)	130	950
51553-4*	3 1/8	1 1/2	1/2-13 (1/2)	175	1260
51553-5*	3 1/8	1 1/2	1/2-13 (1/2)	220	1550
51555-1*	3 1/8	3	1/2-13 (1/2)	38	250
51555-2*	3 1/8	3	1/2-13 (1/2)	65	410
51555-3*	3 1/8	3	1/2-13 (1/2)	105	690
51555-4*	3 1/8	3	1/2-13 (1/2)	140	910
51555-5*	3 1/8	3	1/2-13 (1/2)	185	1190

Style PS

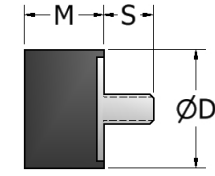
Part No.	D	M	1/2-13 x S	P	Max. Shear	Max. Comp.
51386*	1 1/4	1 1/4	3/4	1/2-13 (3/8)	38	80
51388*	1 1/4	1 1/4	3/4	1/2-13 (3/8)	72	130
51420*	2	1 11/16	1 1/8	1/2-13 (1/2)#	70	160
51421*	2	1 11/16	1 1/8	1/2-13 (1/2)#	90	200
51422*	2	1 11/16	1 1/8	1/2-13 (1/2)#	140	260
51423*	2	1 11/16	1 1/8	1/2-13 (1/2)#	185	340
51424*	2	1 11/16	1 1/8	1/2-13 (1/2)#	225	410
51551-1*	3 1/8	1 1/2	1 1/8	1/2-13 (1/2)	80	360
51551-2*	3 1/8	1 1/2	1 1/8	1/2-13 (1/2)	110	540
51551-3*	3 1/8	1 1/2	1 1/8	1/2-13 (1/2)	145	760
51551-4*	3 1/8	1 1/2	1 1/8	1/2-13 (1/2)	215	980
51551-5*	3 1/8	1 1/2	1 1/8	1/2-13 (1/2)	285	1815
51557-1*	3 1/8	3	1 1/8	1/2-13 (1/2)	38	250
51557-2*	3 1/8	3	1 1/8	1/2-13 (1/2)	65	410
51557-3*	3 1/8	3	1 1/8	1/2-13 (1/2)	105	690
51557-4*	3 1/8	3	1 1/8	1/2-13 (1/2)	140	910
51557-5*	3 1/8	3	1 1/8	1/2-13 (1/2)	185	1190

Standard elastomer is Natural Rubber, (*) indicates Neoprene, (#) indicates blind insert

Stud/Plate Mounts (1/2-13)



STYLE SS



STYLE S

Style SS

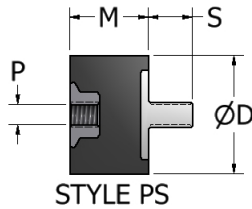
Part No.	D	M	1/2-13 x S	Max. Shear (lbs.)	Max. Comp. (lbs.)
51385	1 1/4	1 1/4	3/4	29	76
51387*	1 1/4	1 1/4	3/4	63	120
51410*	2	1 11/16	1 1/8	60	160
51411*	2	1 11/16	1 1/8	80	200
51412*	2	1 11/16	1 1/8	125	260
51413*	2	1 11/16	1 1/8	175	335
51414*	2	1 11/16	1 1/8	210	400
51552-1*	3 1/8	1 1/2	1 1/8	90	360
51552-2*	3 1/8	1 1/2	1 1/8	120	540
51552-3*	3 1/8	1 1/2	1 1/8	155	760
51552-4*	3 1/8	1 1/2	1 1/8	225	980
51552-5*	3 1/8	1 1/2	1 1/8	295	1815
51556-1*	3 1/8	3	1 1/8	38	250
51556-2*	3 1/8	3	1 1/8	65	410
51556-3*	3 1/8	3	1 1/8	105	690
51556-4*	3 1/8	3	1 1/8	140	910
51556-5*	3 1/8	3	1 1/8	185	1190

Style S

Part No.	D	M	1/2-13 x S	Max. Shear (lbs.)	Max. Comp. (lbs.)
50121*	1 1/4	3/4	3/4	-	90
50122*	1 1/4	3/4	3/4	-	150

Standard elastomer is Natural Rubber, (*) indicates Neoprene

Stud/Plate Mounts (Metric)

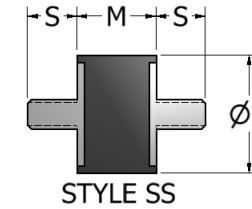


Style PS

Part No.	D	M	S	P	Max. Shear (lbs.)	Max. Comp. (lbs.)
50197*	9.5	8	M3x0.5 x 4	6-32	3	4.5
50198*	9.5	9.5	M3x0.5 x 4	6-32	3	4.5
51095	11	13	M4x0.7 x 6	M4x0.7	5	8
51095-1	11	13	M4x0.7 x 4	M4x0.7	5	8
51453*	19	16	M4x0.7 x 10	M4x0.7	25	50
65026-2*	25	13	M6x1.0 x 13	M6x1.0	32	45
51447*	25	19	M6x1.0 x 13	M6x1.0	22	58
50805*	25	19	M6x1.0 x 13	M6x1.0	40	80
50926*	25	25	M6x1.0 x 11.5	M6x1.0	12	35
50842*	25	25	M6x1.0 x 19	M6x1.0	8	25
50942*	25	25	M6x1.0 x 19	M6x1.0	12	35
50952*	25	25	M6x1.0 x 11.5	M6x1.0	35	70
65011*	25	19	M8x1.25 x 16	M8x1.25	25	60
51259	25	19	M8x1.25 x 14	M8x1.25	40	80
50947-1*	32	32	M8x1.25 x 14	M8x1.25	35	70
50947-2*	32	32	M8x1.25 x 14	M8x1.25	50	92
50947-3*	32	32	M8x1.25 x 14	M8x1.25	65	125
50898*^	38	25	M8x1.25 x 14	M8x1.25	80	270
51550-1*	79	38	M12x1.75 x 41	M12x1.75	80	360
51550-2*	79	38	M12x1.75 x 41	M12x1.75	110	540
51550-3*	79	38	M12x1.75 x 41	M12x1.75	145	760
51550-4*	79	38	M12x1.75 x 41	M12x1.75	215	980
51550-5*	79	38	M12x1.75 x 41	M12x1.75	285	1815
51554-1*	79	76	M12x1.75 x 41	M12x1.75	38	250
51554-2*	79	76	M12x1.75 x 41	M12x1.75	65	410
51554-3*	79	76	M12x1.75 x 41	M12x1.75	105	690
51554-4*	79	76	M12x1.75 x 41	M12x1.75	140	910
51554-5*	79	76	M12x1.75 x 41	M12x1.75	185	1190

Standard elastomer is Natural Rubber, (*) indicates Neoprene
 P thread depth is minimum one thread diameter
 Standard inserts are zinc plated, (^) indicates phospho finish

Stud/Plate Mounts (Metric)

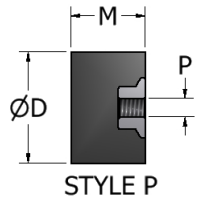


Style SS

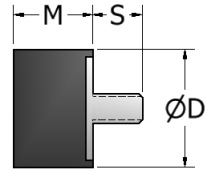
Part No.	D	M	S	S'	Max. Shear (lbs.)	Max. Comp. (lbs.)
50957*	11	10	M3x0.5 x 6	M3x0.5 x 6	3	5
51098	11	13	M4x0.7 x 6	M4x0.7 x 6	5	8
51487**	19	13	M6x1.0 x 14	M6x1.0 x 14	12	28
50956*	25	13	M6x1.0 x 19	M6x1.0 x 19	22	45
50959-1*	25	19	M6x1.0 x 12	M6x1.0 x 12	15	44
50959-2*	25	19	M6x1.0 x 12	M6x1.0 x 12	18	50
50959-3*	25	19	M6x1.0 x 12	M6x1.0 x 12	21	55
50959-4*	25	19	M6x1.0 x 12	M6x1.0 x 12	25	60
50959-5*	25	19	M6x1.0 x 12	M6x1.0 x 12	30	70
50845-40*	19	13	M6x1.0 x 22	M6x1.0 x 14	18	50
50819*	25	19	M8x1.25 x 13	M8x1.25 x 13	21	55
51445*	25	19	M8x1.25 x 14	M8x1.25 x 14	40	80
51281*	25	19	M8x1.25 x 20	M8x1.25 x 20	20	54
65005*	25	19	M8x1.25 x 16	M8x1.25 x 10	25	60
50787*	25	19	M8x1.25 x 20	M8x1.25 x 10	40	80
50988*	32	32	M8x1.25 x 25	M8x1.25 x 25	27	76
50785*	35	25	M8x1.25 x 20	M8x1.25 x 20	41	74
50900*	64	25	M10x1.5 x 23	M10x1.5 x 23	110	250
51549-1*	79	38	M12x1.75 x 41	M12x1.75 x 41	90	360
51549-2*	79	38	M12x1.75 x 41	M12x1.75 x 41	120	540
51549-3*	79	38	M12x1.75 x 41	M12x1.75 x 41	155	760
51549-4*	79	38	M12x1.75 x 41	M12x1.75 x 41	225	980
51549-5*	79	38	M12x1.75 x 41	M12x1.75 x 41	295	1815
51561-1*	79	76	M12x1.75 x 41	M12x1.75 x 41	38	250
51561-2*	79	76	M12x1.75 x 41	M12x1.75 x 41	65	410
51561-3*	79	76	M12x1.75 x 41	M12x1.75 x 41	105	690
51561-4*	79	76	M12x1.75 x 41	M12x1.75 x 41	140	910
51561-5*	79	76	M12x1.75 x 41	M12x1.75 x 41	185	1190

Standard elastomer is Natural Rubber, (*) indicates Neoprene, (**) indicates Nitrile

Stud/Plate Mounts (Metric)



STYLE P



STYLE S

Style P

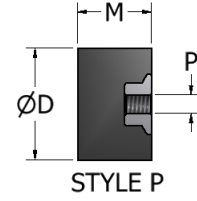
Part No.	D	M	P	Max. Shear (lbs.)	Max. Comp. (lbs.)
51075	19	13	M5 x 0.8	-	35
50955*	19	13	M6 x 1.0	-	35

Style S

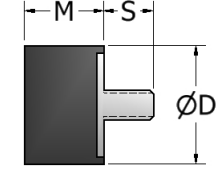
Part No.	D	M	S	Max. Shear (lbs.)	Max. Comp. (lbs.)
50833*	25	9.5	M6x1.0 x 13	-	35
50841*	25	21.5	M6x1.0 x 19	-	40
50941*	25	21.5	M6x1.0 x 19	-	55
50834	38	25	M8x1.25 x 14	-	270

Standard elastomer is Natural Rubber, (*) indicates Neoprene

Silicone Stud/Plate Mounts



STYLE P



STYLE S

Style P

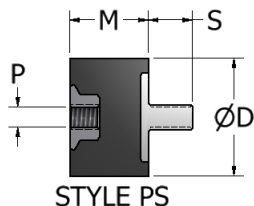
Part No.	D	M	P	Max. Shear (lbs.)	Max. Comp. (lbs.)
50790-1	1	3/4	1/4-20	-	25
50790-5	1	3/4	1/4-20	-	90
50792-1	1 ½	1	5/16-18	-	60
50792-5	1 ½	1	5/16-18	-	225

Style S

Part No.	D	M	S	Max. Shear (lbs.)	Max. Comp. (lbs.)
50789-1	1	3/4	1/4-20 x 1/2	-	25
50789-5	1	3/4	1/4-20 x 1/2	-	90
50791-1	1 ½	1	5/16-18 x 5/8	-	60
50791-5	1 ½	1	5/16-18 x 5/8	-	225

Note: Operating temperature range for Silicone mounts is -80° to 300°F

Silicone Stud/Plate Mounts



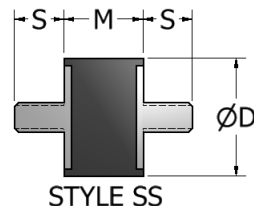
STYLE PS

Style PS

Part No.	D	M	S	P	Max. Shear (lbs.)	Max. Comp. (lbs.)
50861-1	1	3/4	1/4-20 x 1/2	1/4-20	8	25
50861-2	1	3/4	1/4-20 x 1/2	1/4-20	12	35
50861-3	1	3/4	1/4-20 x 1/2	1/4-20	16	50
50861-4	1	3/4	1/4-20 x 1/2	1/4-20	22	65
50861-5	1	3/4	1/4-20 x 1/2	1/4-20	30	90
50862-1	1 ¼	3/4	5/16-18 x 5/8	5/16-18	12	50
50862-2	1 ¼	3/4	5/16-18 x 5/8	5/16-18	22	75
50862-3	1 ¼	3/4	5/16-18 x 5/8	5/16-18	30	100
50862-4	1 ¼	3/4	5/16-18 x 5/8	5/16-18	40	150
50862-5	1 ¼	3/4	5/16-18 x 5/8	5/16-18	55	180
50863-1	1 ½	1	5/16-18 x 5/8	5/16-18	15	60
50863-2	1 ½	1	5/16-18 x 5/8	5/16-18	20	90
50863-3	1 ½	1	5/16-18 x 5/8	5/16-18	30	125
50863-4	1 ½	1	5/16-18 x 5/8	5/16-18	45	175
50863-5	1 ½	1	5/16-18 x 5/8	5/16-18	55	225
50860-1	1	3/4	M6x1.0 x 12mm	M6x1.0	8	25
50860-2	1	3/4	M6x1.0 x 12mm	M6x1.0	12	35
50860-3	1	3/4	M6x1.0 x 12mm	M6x1.0	16	50
50860-4	1	3/4	M6x1.0 x 12mm	M6x1.0	22	65
50860-5	1	3/4	M6x1.0 x 12mm	M6x1.0	30	90
65012-1	1 ¼	3/4	M8x1.25 x 16mm	M8x1.25	12	50
65012-2	1 ¼	3/4	M8x1.25 x 16mm	M8x1.25	22	75
65012-3	1 ¼	3/4	M8x1.25 x 16mm	M8x1.25	30	100
65012-4	1 ¼	3/4	M8x1.25 x 16mm	M8x1.25	40	150
65012-5	1 ¼	3/4	M8x1.25 x 16mm	M8x1.25	55	180
65013-1	1 ½	1	M8x1.25 x 16mm	M8x1.25	15	60
65013-2	1 ½	1	M8x1.25 x 16mm	M8x1.25	20	90
65013-3	1 ½	1	M8x1.25 x 16mm	M8x1.25	30	125
65013-4	1 ½	1	M8x1.25 x 16mm	M8x1.25	45	175
65013-5	1 ½	1	M8x1.25 x 16mm	M8x1.25	55	225

Note: Operating temperature range for Silicone mounts is -80° to 300°F

Silicone Stud/Plate Mounts



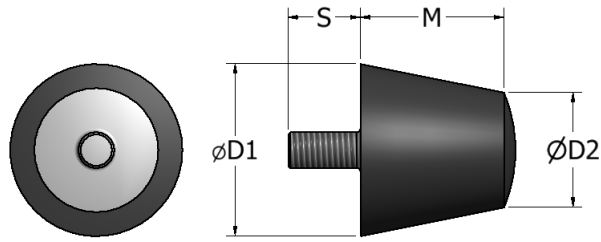
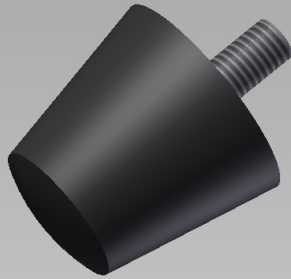
STYLE SS

Style SS

Part No.	D	M	S	Max. Shear (lbs.)	Max. Comp. (lbs.)
50869-1	1	1/2	1/4-20 x 1/2	8	40
50869-2	1	1/2	1/4-20 x 1/2	12	60
50869-3	1	1/2	1/4-20 x 1/2	16	80
50869-4	1	1/2	1/4-20 x 1/2	20	100
50869-5	1	1/2	1/4-20 x 1/2	28	140
50870-1	1	3/4	1/4-20 x 1/2	8	25
50870-2	1	3/4	1/4-20 x 1/2	12	35
50870-3	1	3/4	1/4-20 x 1/2	16	50
50870-4	1	3/4	1/4-20 x 1/2	22	65
50870-5	1	3/4	1/4-20 x 1/2	30	90
50871-1	1 ¼	3/4	5/16-18 x 5/8	12	50
50871-2	1 ¼	3/4	5/16-18 x 5/8	22	75
50871-3	1 ¼	3/4	5/16-18 x 5/8	30	100
50871-4	1 ¼	3/4	5/16-18 x 5/8	40	150
50871-5	1 ¼	3/4	5/16-18 x 5/8	55	180
50872-1	1 ½	1	5/16-18 x 5/8	15	60
50872-2	1 ½	1	5/16-18 x 5/8	20	90
50872-3	1 ½	1	5/16-18 x 5/8	30	125
50872-4	1 ½	1	5/16-18 x 5/8	45	175
50872-5	1 ½	1	5/16-18 x 5/8	55	225
50873-1	1	3/4	M6x1.0 x 12mm	8	25
50873-2	1	3/4	M6x1.0 x 12mm	12	35
50873-3	1	3/4	M6x1.0 x 12mm	16	50
50873-4	1	3/4	M6x1.0 x 12mm	22	65
50873-5	1	3/4	M6x1.0 x 12mm	30	90
65016-1	1 ¼	3/4	M8x1.25 x 16mm	12	50
65016-2	1 ¼	3/4	M8x1.25 x 16mm	22	75
65016-3	1 ¼	3/4	M8x1.25 x 16mm	30	100
65016-4	1 ¼	3/4	M8x1.25 x 16mm	40	150
65016-5	1 ¼	3/4	M8x1.25 x 16mm	55	180
65017-1	1 ½	1	M8x1.25 x 16mm	15	60
65017-2	1 ½	1	M8x1.25 x 16mm	20	90
65017-3	1 ½	1	M8x1.25 x 16mm	30	125
65017-4	1 ½	1	M8x1.25 x 16mm	45	175
65017-5	1 ½	1	M8x1.25 x 16mm	55	225

Note: Operating temperature range for Silicone mounts is -80° to 300°F

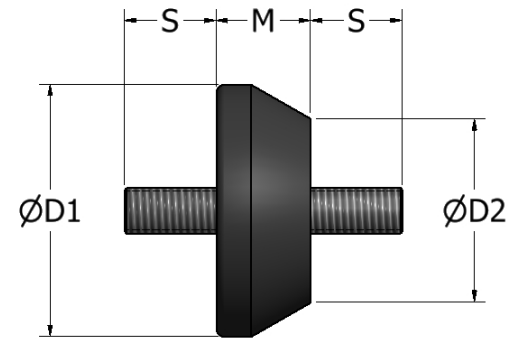
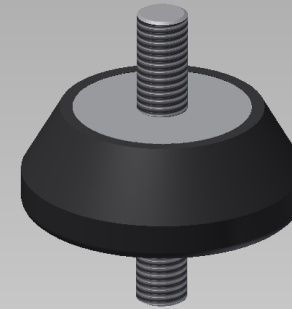
Conical Bumpers



Part No.	D1	D2	M	5/16-18 x S	Max. Shear (lbs.)	Max. Comp. (lbs.)
51360*	1 ½	1	1 ¼	9/16	44	90
51361				9/16	49	100
51362				9/16	56	125
51363*				9/16	62	150
51364*				¾	45	95
51365*				¾	62	150
51366*				1 ⅛	56	125
51367*				1 ⅛	44	90
50799-N				M8x1.25 x 16mm	44	90
50799-S [†]				M8x1.25 x 16mm	44	90

Standard elastomer is Natural Rubber, (*) indicates Neoprene, (†) indicates Silicone

Conical Stud/Plate Mounts



1/2-13

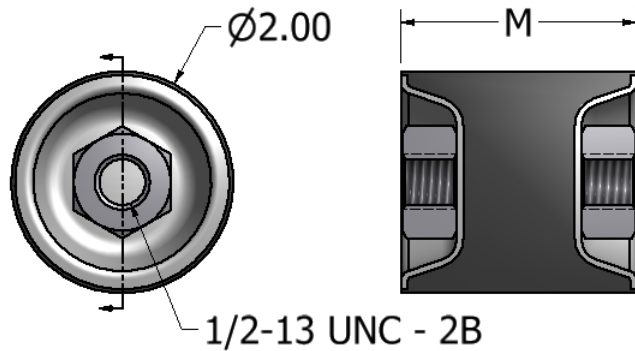
Part No.	D1	D2	M	S	Max. Shear (lbs.)	Max. Comp. (lbs.)
50144*	2 ¾	2	1 ⅓	1 ¼	140	260
50145*				1 ¼	165	340
50146*				1 ¼	190	430
50151				1	140	260
50152				1	165	340
50153				1	190	430

Standard elastomer is Natural Rubber, (*) indicates Neoprene

1/2-20

Part No.	D1	D2	M	S	Max. Shear (lbs.)	Max. Comp. (lbs.)
50148	2 ¾	2	1 ⅓	29/32	140	260
50149				29/32	165	340
50150				29/32	190	430

Dish End Plate/Plate Mounts

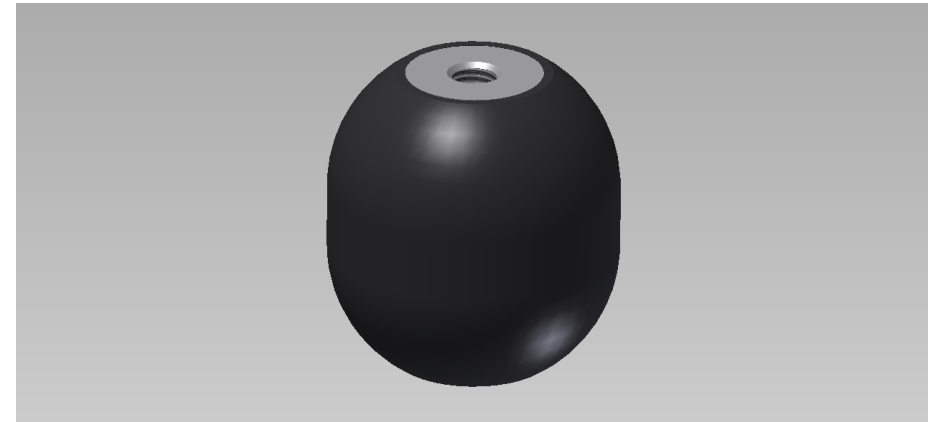


Part No.	M	Max. Shear (lbs.)	Shear Stiffness (lbs./in.)	Max. Comp. (lbs.)	Comp. Stiffness (lbs./in.)
51496-1N	1 ¾	45	210	95	1200
51496-2N	1 ¾	55	280	130	1625
51496-3N	1 ¾	85	420	190	2375
51496-4N	1 ¾	130	650	290	3625
51497-1N	2 ½	30	150	90	735
51497-2N	2 ½	45	220	115	960
51497-3N	2 ½	60	290	165	1375
51497-4N	2 ½	100	485	265	2200
51498-1N	2 ⅝	20	100	85	520
51498-2N	2 ⅝	27	135	110	675
51498-3N	2 ⅝	37	180	170	1050
51498-4N	2 ⅝	65	315	260	1625

Elastomer = Neoprene

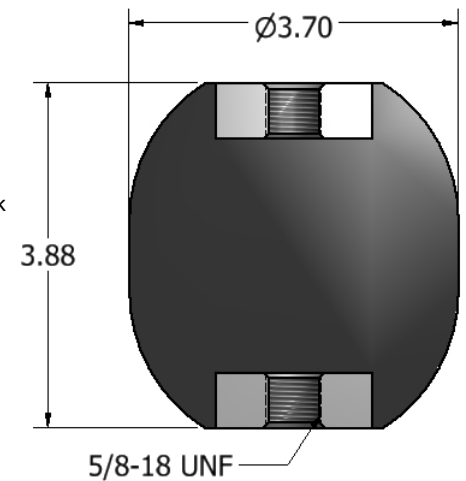
Inserts = Low Carbon Steel (Optional Stainless Steel Available)

Isosphere Mounts



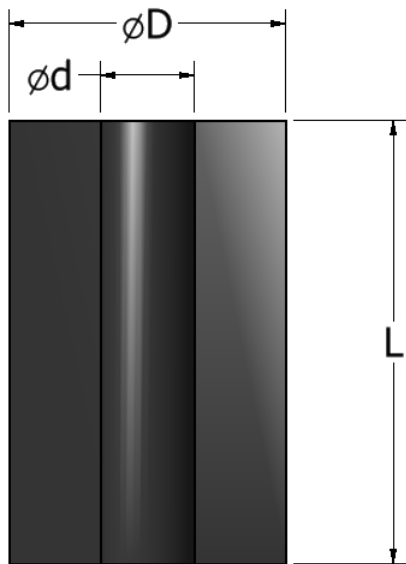
Isosphere mounts are designed to carry loads in compression. A near spherical shape is formed when the load is applied. The distinguishing non-linear stiffness characteristics make these mounts ideal for vibration isolation over a broad range of frequencies. Shock loads are isolated equally as well. Internal snubbing of a shock load occurs as deflection increases the stiffness of the mount. Applications include suspension systems spring elements, shock mounts, shaker screen springs, bumpers, and snubbers.

- Neoprene and zinc plated steel construction
- Non-Linear Stiffness characteristics
- Excellent Shock attenuation



Part No.	Color Code	Max. Static Load (lbs)	Max Dynamic Load (lbs)	Dynamic Spring Rate (lbs/in)
61549-2	Black	500	2000	1500
61549-3	Green	750	3000	2000
61549-4	Red	1000	4000	3000
61549-5	Gray	2000	8000	5500

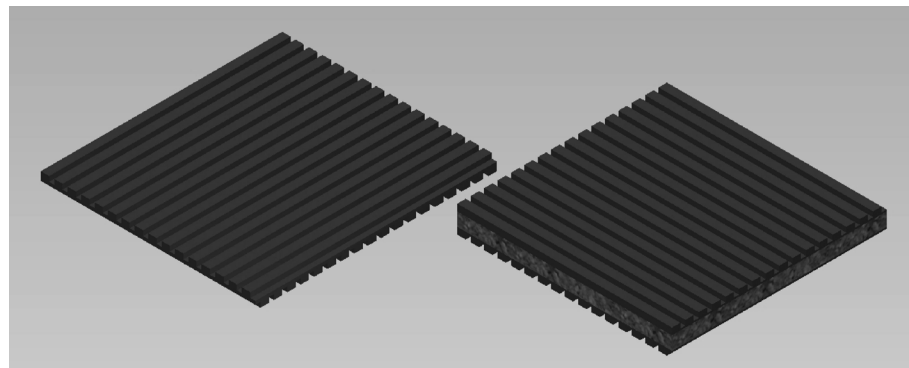
Elastomer Springs



Part No.	D	d	L	Max. Load (lbs.)
71612	0.63	0.25	0.47	72
71616	0.63	0.25	0.63	77
71620	0.63	0.25	0.79	80
71625	0.63	0.25	1.00	83
72016	0.79	0.33	0.63	133
72020	0.79	0.33	0.79	132
72025	0.79	0.33	1.00	133
72032	0.79	0.33	1.25	126
72520	1.00	0.41	0.79	215
72525	1.00	0.41	1.00	209
72532	1.00	0.41	1.25	229
72540	1.00	0.41	1.56	241
73232	1.25	0.53	1.25	451
73240	1.25	0.53	1.56	471
73250	1.25	0.53	2.00	456
73263	1.25	0.53	2.50	452
74032	1.56	0.53	1.25	783
74040	1.56	0.53	1.56	816
74050	1.56	0.53	2.00	804
74063	1.56	0.53	2.50	815
74080	1.56	0.53	3.15	830
75063	2.00	0.66	2.50	1297
76363	2.50	0.66	2.50	2000
78063	3.15	0.83	2.50	4000
79063	3.94	0.83	2.50	5631

- Max. Load in pounds
- Deflection at Max. Load = 35%L
- Material: Neoprene
- Hardness: 70 Shore A (durometer)
- All Dimensions in inches

Anti-Vibration Pad



The ribbed configuration of our Neoprene Pads provides firm footing to both floor and equipment, yet they allow mounted equipment to be relocated quickly and easily. Recommended for maximum loads of 50 psi.

Neoprene-Cork Pads accept a maximum load of 50 psi.

Natural Frequency approximately 10-15 Hz at maximum load.

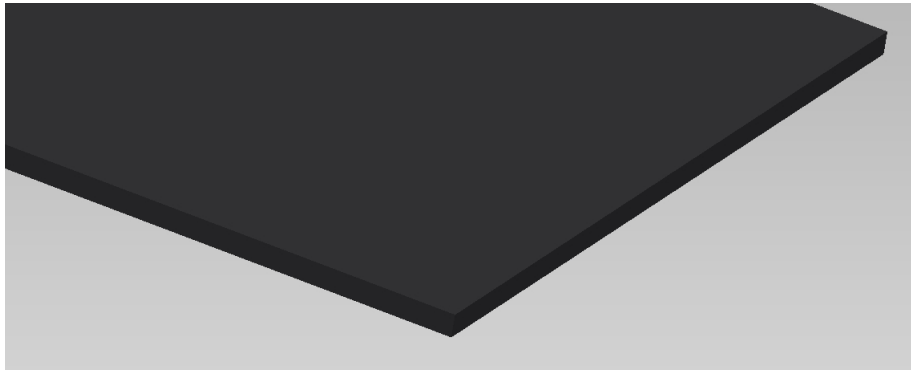
Neoprene (Load Range 20-50 psi)

Part Number	Size (in.)
52347 Ribbed both sides	18 x 18 x 3/8
52348 Ribbed both sides	18 x 36 x 3/8
56780 Ribbed both sides	18 x 18 x 1/2

Neoprene-Cork (Load Range 20-50 psi)

Part Number	Size (in.)
56803 Ribbed both sides	12 x 12 x 1
52337 Ribbed both sides	18 x 18 x 1
56779 Ribbed both sides	18 x 36 x 1

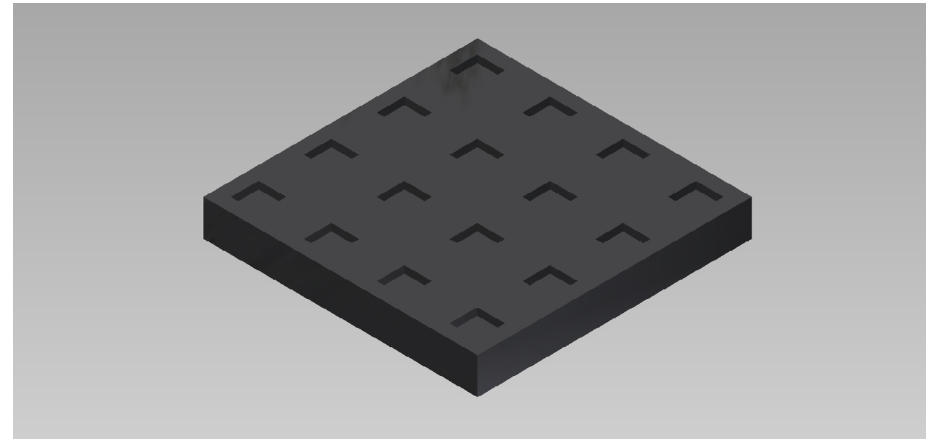
Compression Pad



Multi-purpose neoprene isolation pads are used to eliminate vibration and transmitted noise. They offer good physical strength and high energy-absorbing characteristics.

Part Number	Color Code	Size (in.)	Max. Load (psi)
50100	Red	24 x 24 x 1/2	100
52330	Green	24 x 24 x 1/2	200
52331	White	24 x 24 x 1/2	300
52332	Green	12 x 12 x 1/2	200
52333	White	12 x 12 x 1/2	300
52334	Green	12 x 24 x 1/2	200
52335	White	12 x 24 x 1/2	300
52355	Blue-White	36 x 36 x 1/2	300
52746	Black	48 x 48 x 1/2	300

Fabcel Pad



Fabcel vibration isolation pad is manufactured using the same nitrile compound developed in 1962. The properties of the Fabcel pad are designed to provide low frequency vibration isolation and reduction of impact shock.

Fabcel pad has been used for over 40 years for mounting machinery and sensitive equipment where absorption of impact shock or isolation of transmitted vibration is desired. Fabcel pads may be bonded together ("layered") to achieve the desired isolation efficiency for any application.

Features:

- Fabcel pad can withstand loads up to 300 psi.
- Fabcel pad can have a vertical natural frequency as low as 5.0 Hz and a horizontal natural frequency as low as 3.0 Hz.
- Fabcel pad has a high energy storage rate per unit volume which makes it ideal for certain shock isolation applications.

Part No.	Max. Load (psi)	Size (in.)
Fabcel 25	25	18 x 18 x 5/16
Fabcel 50	50	18 x 18 x 5/16
Fabcel 100	100	18 x 18 x 5/16
Fabcel 200	200	18 x 18 x 1/2
Fabcel 300	300	18 x 18 x 1/2

Warranty and Disclaimer

Tech Products Corporation agrees to correct any defect in workmanship or material in products sold which may develop under proper and normal use, by repair or replacement at Tech Products Corporation's option, F.O.B. our plant, of the defective part or parts, provided written notice of any such

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