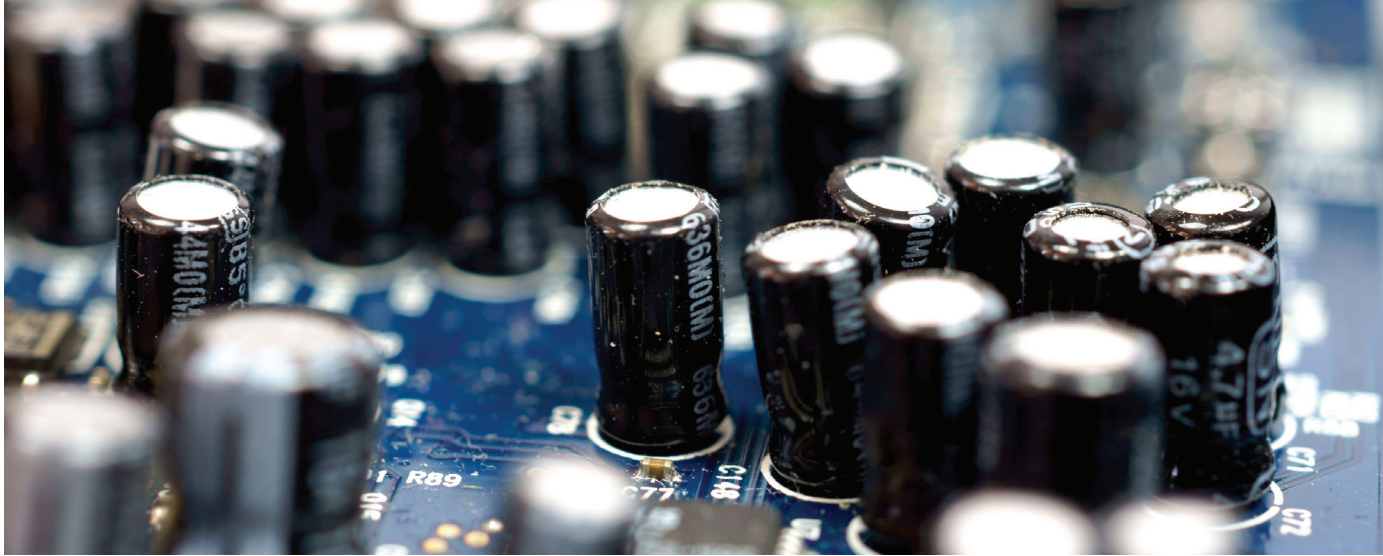




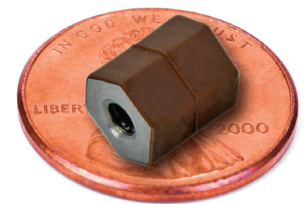
LORD® Micro-Mounts™ for Oil & Gas Applications

PRODUCT BROCHURE

LORD
AskUsHow™



Creating Solutions to Your Most Demanding Challenges



Are your electronic circuit boards suffering from excessive shock and vibration?

A COLLABORATIVE PARTNERSHIP

Look to LORD Corporation for the solution to your demanding challenges. The need for a solution capable of isolating electronic components and other light-weight electronic equipment from shock and vibration led us to apply our aerospace isolator knowledge to address the needs of downhole and surface systems. With our isolators, you no longer compromise between reliability, performance and durability – we offer you the solution to isolation.

The unique Micro-Mount Series are high-performance isolators small enough and soft enough to protect individual electronic components allowing isolation at the circuit board level. Micro-Mounts can be used as a stand-alone solution or to augment performance of a LORD full-system isolation solution. These small, flexible mounts are used successfully on GPS oscillators in satellites, military aircraft, and downhole equipment. Typical downhole

applications include wireline tools, MWD electronics, and well tractor electronics including perforation guns.

Made of BTR® (Broad Temperature Range) silicone bonded to stainless-steel, these mounts are ideal for applications requiring consistent performance at extreme temperatures. And, the combination of this unique, high-end silicone with stainless-steel components assures easy installation in a wide range of applications.

Our Micro-Mount isolators can be designed to meet your unique downhole conditions:

- Individual mounts support 0.1 lb
- Standard hardware
- Easy installation; available in Nut/Nut, Post/Nut, and Post/Post configurations in many common threads (#2-56, #4-40, M3)
- Temperature rated to 350°F continuous operation (400°F peak)

NUT/NUT		POST/NUT		POST/POST	
LORD Part Number	Thread Count	LORD Part Number	Thread Count	LORD Part Number	Thread Count
J-28509-1	#2-56	J-28420-1	M3 x 0.5	J-28418-1/-3	M3 x 0.5
		J-28421-1	#4-40	J-28419-1	#4-40
		J-28472-1	#2-56	J-28473-1	#2-56

Micro-Mount Interface Options

Micro-Mounts Series

- Rated static load per mount: 0.1 lb (46 g)
- Maximum static load per mount: 0.2 lb (92 g)
- Maximum dynamic input at resonance and rated load: 0.02 in (0.507 mm) double amplitude
- Materials: Hex nuts – 303 stainless steel, passivated; Elastomer – LORD MEA Silicone**

RATED SHOCK LOADS*				
STATIC LOAD PER MOUNT				
lbs.	0.20	0.10	0.05	0.01
max g's	125	185	276	768


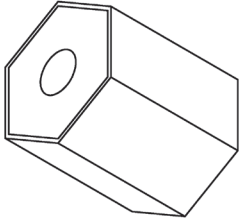
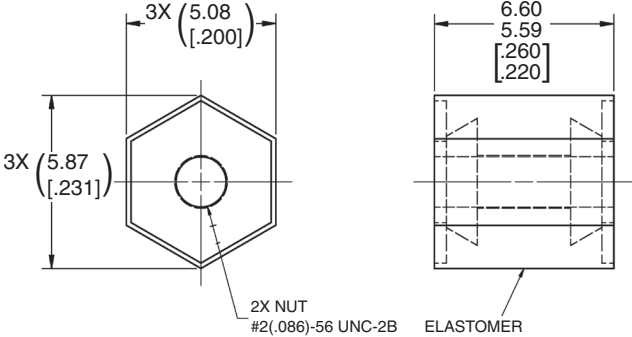
*with 0.5 millisecond pulse width

**MEA Silicone is chosen from the BTR® Silicone family

NUT/NUT MICRO-MOUNT

All dimensions in millimeters [inches]

J-28509-1

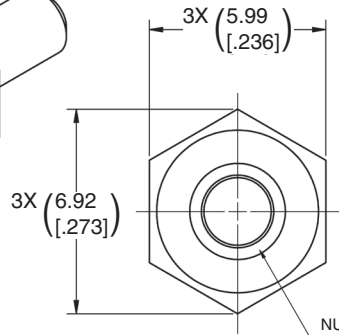
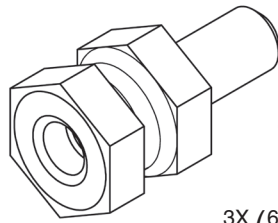
2X NUT #2(.086)-56 UNC-2B

ELASTOMER

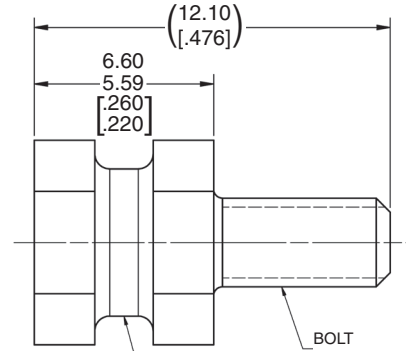


POST/NUT MICRO-MOUNT

J-28420-1



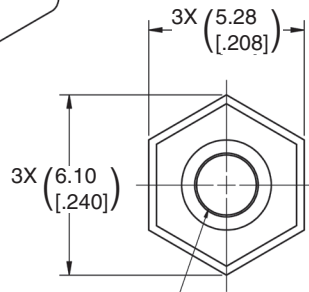
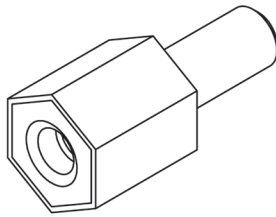
NUT
M3x0.5-6H THREAD



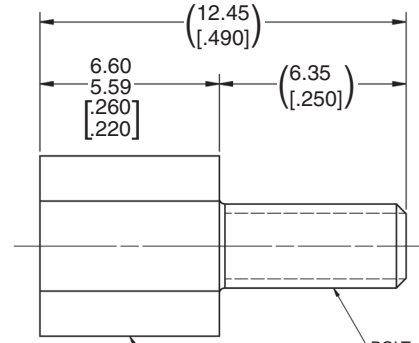
BOLT
M3x0.5-6g THREAD

ELASTOMER

J-28421-1



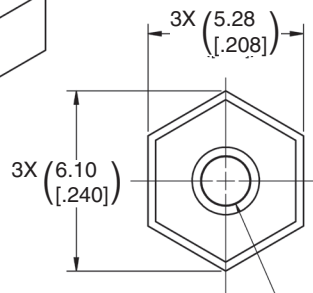
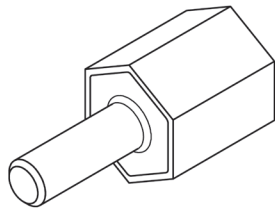
NUT
#4 (.112)-40 UNC THREAD



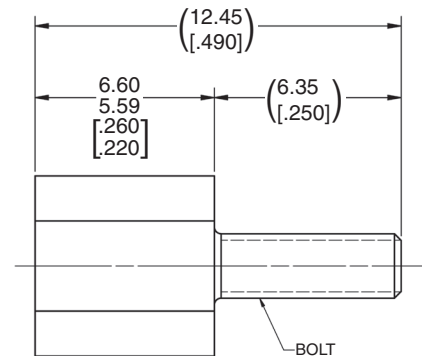
BOLT
#4 (.112)-40 UNC
THREAD

ELASTOMER

J-28472-1



NUT
#2 (.086)-56 UNC-2B THREAD

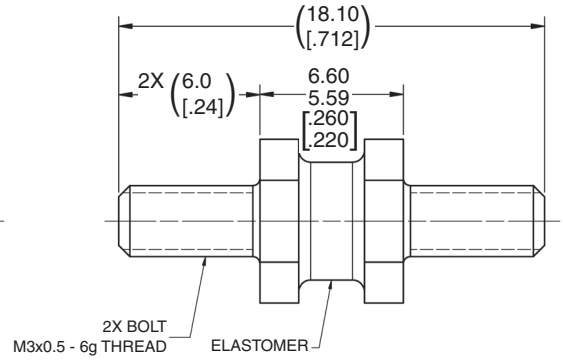
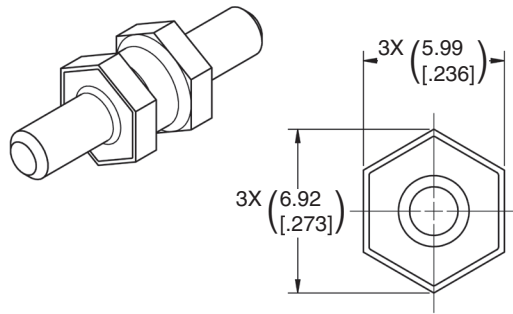


BOLT
#2 (.086)-56 UNC-2A THREAD

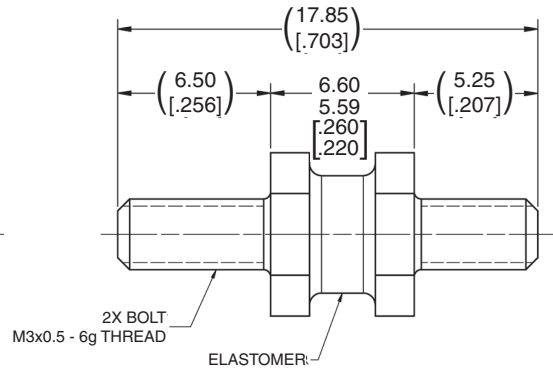
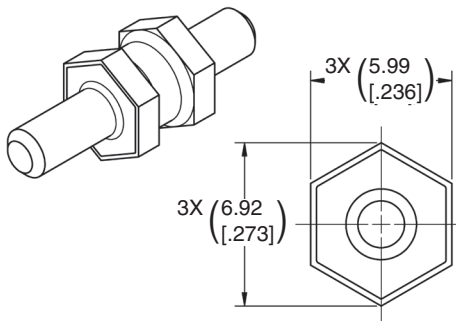
ELASTOMER

POST/POST MICRO-MOUNT

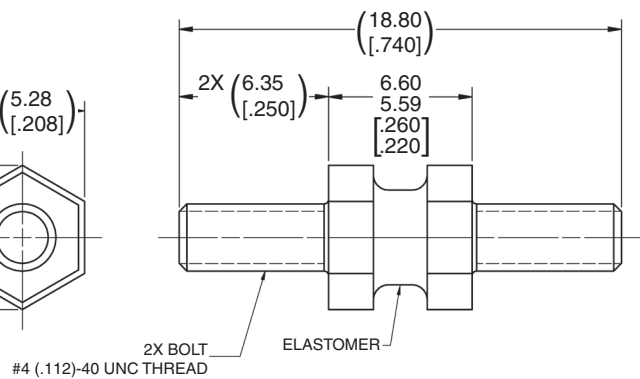
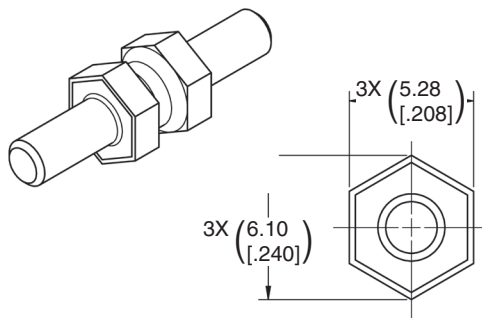
J-28418-1



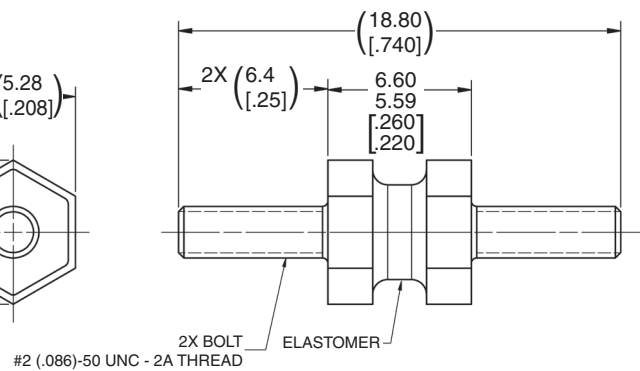
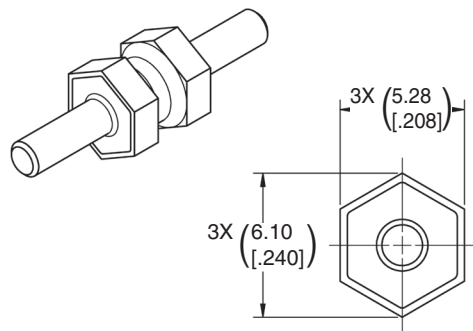
J-28418-3



J-28419-1



J-28473-1



LORD Micro-Mounts - Installation Guide

PART NUMBER	THREAD	CONFIGURATION	TOOL SIZE*	INSTALLATION TORQUE		MAXIMUM THREAD ENGAGEMENT NUT	
J-28509-1	#2-56	Nut/Nut	3/16 in.	4 in-lbf	0.5 N-m	0.125 in.	3 mm
J-28420-1	M3 x 0.5	Post/Nut	5.5 mm	4 in-lbf	0.5 N-m	0.125 in.	3 mm
J-28421-1	#4-40	Post/Nut	3/16 in.	4 in-lbf	0.5 N-m	0.125 in.	3 mm
J-28472-1	#2-56	Post/Nut	3/16 in.	4 in-lbf	0.5 N-m	0.125 in.	3 mm
J-28418-1	M3 x 0.5	Post/Post	5.5 mm	4 in-lbf	0.5 N-m	-	-
J-28418-3	M3 x 0.5	Post/Post	5.5 mm	4 in-lbf	0.5 N-m	-	-
J-28419-1	#4-40	Post/Post	3/16 in.	4 in-lbf	0.5 N-m	-	-
J-28473-1	#2-56	Post/Post	3/16 in.	4 in-lbf	0.5 N-m	-	-

*Tool size required to apply/react full torque

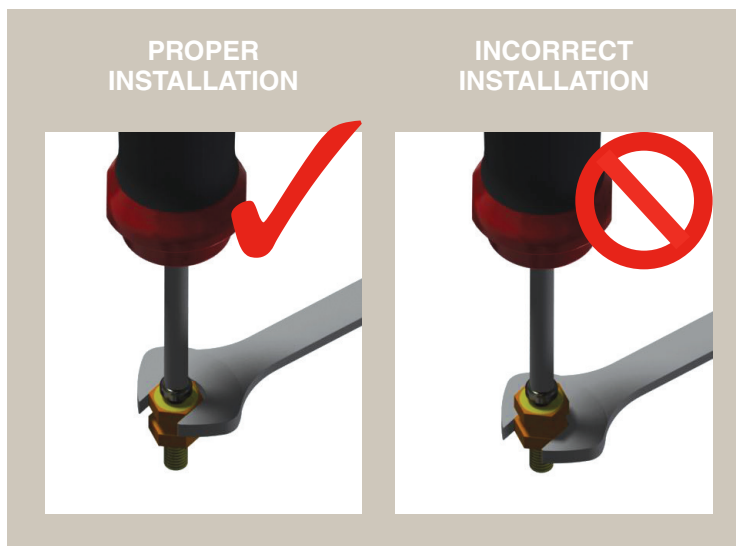
INSTALLATION TIPS

- Recommended Installation Torque is a maximum torque; lesser torque may be appropriate depending on specific application and configuration.
- Tool size represents the open end wrench size to be used, and may vary. Select tool size that best fits mounts and provides proper torsion support during installation to prevent applying torque across elastomer section.
- Use liquid thread-locker when installing Micro-Mounts.

INSTALLATION TECHNIQUES

During installation, be careful not to torque across the elastomer section. Rather, when installing a fastener, support the Micro-Mount with an appropriately sized open-ended wrench (Figure 1). On the post/nut and nut/nut versions, be mindful of thread engagement so that the isolator does not bottom out prior to maximum deflection (Figure 2).

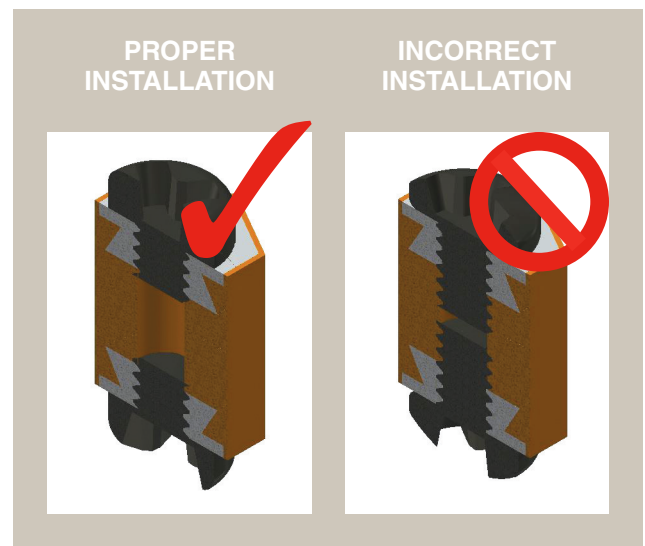
FIGURE 1



Support the top nut when installing a fastener

Do not hold the bottom nut fixed when installing a fastener in the top nut

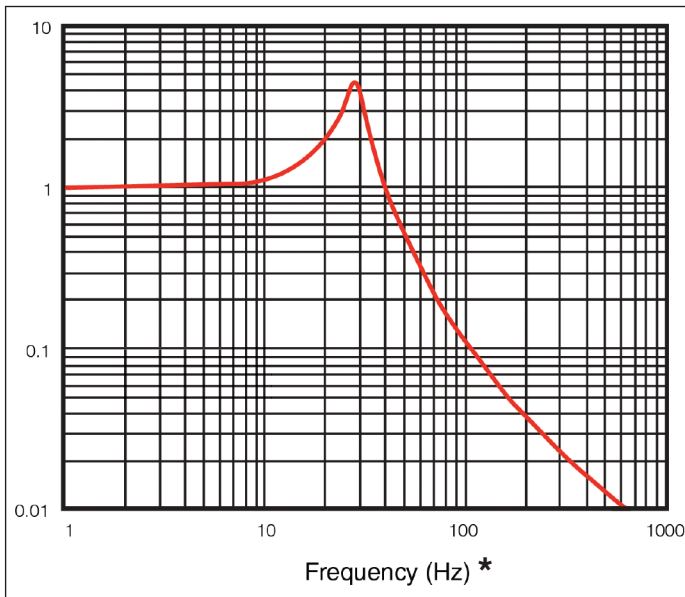
FIGURE 2





TYPICAL PERFORMANCE CHARACTERISTICS**

Dynamic Shear Spring Rate		Dynamic Axial Spring Rate		Natural Frequency* – f_n (Hz)	
lb/in	N/mm	lb/in	N/mm	Shear	Axial
7.4	1.3	32	5.5	27	56



Micro-Mount Vibration Isolation Curve

*Natural Frequency at rated load and rated input (0.1 lb and 0.02 inch double amplitude sine vibration).

**Performance is dependent on specific application conditions; consult LORD for detailed evaluation.

NEED FURTHER ASSISTANCE?

- If further analysis is required, please gather as much of the following information as possible:
Dimension of electronic board, Board weight, Board center of gravity, Board mass moments of inertia, Board material properties (Young’s modulus and Poisson’s ratio), Disturbing frequencies & amplitudes, Operating temperatures
- After you have gathered this info, please call +1 877 ASK LORD (275 5673) or email OilAndGas@lord.com for assistance with a recommended configuration.
- The best assessment is often to just replace the current installation method (hard standoffs, potting material, etc.) with Micro-Mounts and perform a downhole test

LORD, Micro-Mounts, BTR and “Ask Us How” are trademarks of LORD Corporation or one of its subsidiaries.

LORD provides valuable expertise in adhesives and coatings, vibration and motion control, and magnetically responsive technologies. Our people work in collaboration with our customers to help them increase the value of their products. Innovative and responsive in an ever-changing marketplace, we are focused on providing solutions for our customers worldwide ... Ask Us How.

LORD Corporation

World Headquarters

111 Lord Drive
Cary, NC 27511-7923
USA

Houston Area Office

2455 FM 2920, Suite B
Spring, TX 77388-3418

Customer Support Center (in United States & Canada)

+1 877 ASK LORD (275 5673)

www.lord.com/OilandGas | OilAndGas@lord.com

For a listing of our worldwide locations, visit LORD.com.

