

BARRY CONTROLS



DEFENSE & INDUSTRY
Antivibration



Question: What is the significance of the bolt torques listed for some of the Barry Mounts (e.g. – Barry 500 Series Bonded Tube Mounts)?

Answer: The bolt torques listed for mounts without threads are the maximum recommended levels that can be applied without collapsing, crushing, or permanently deforming the center tubes. Where specific bolt torque is not listed, assume the application of Grade 2 limits and guidelines. This should prevent tube damage mentioned above or thread pull-out for those tubes or cores where internal threads are used.

Following are Grade 2 torque guidelines for common Barry Mount fastener sizes:

Size	Dry Torque (in-lb)	Lubed Torque (in-lb)	Size	Dry Torque (ft-lb)	Lubed Torque (ft-lb)
#6-32	10	8	Ø.312-18	11	8
#8-32	19	14	Ø.312-24	12	9
#10-32	31	23	Ø.375-16	20	15
Ø.250-20	66	49	Ø.375-24	23	17
Ø.250-28	76	56	Ø.500-20	55	40
			Ø.625-11	90	70

Most Barry Controls isolators include metal structures that accept the attachment bolts or other threaded fasteners. In those designs, the entire fastener preload is taken by these structures. It is a common misconception that the fastener preload is important to isolator performance. It is not. The main concern with the preload is the prevention of loosening and development of optimal fastener strength.

Care should be taken to insure that mating interfaces with the isolator are suitable for good bolted joint integrity. Thick paint, coatings, or other compliant materials in the joint should be avoided or minimized. Oversized or slotted holes in mating components can reduce the bearing area on the isolator’s compression limiting tube, sleeve, or core and may require adjustments in material, design, or bolt torque to maintain joint integrity.

The recommended bolt torques correspond to the amount of preload or clamp load the isolator can withstand, but do not necessarily guarantee that the preload will be suitable for the dynamic loading conditions of the application. Barry Controls recommends that customers perform their own bolted joint analysis, based on their knowledge of the expected loading conditions, to determine the appropriate bolt torque and preload needed for the application. If needed, alternate tube materials or designs can be considered to meet special requirements.

Considering that isolators almost always operate in vibratory environments, it is always good practice to incorporate a thread locking mechanism. Barry Controls recommends liquid thread locking compound, lock washers (there are several varieties), safety wire, or other such mechanisms. Interfering patches or upset threads should be avoided when used with internally threaded designs since the high installation torques associated with them can cause tube or core spinning during assembly. The recommended styles don’t require high torque until the assembly is secure, and “securing” friction or clamp can assist in preventing core spin.