

Bolt Isolation

Tico Anti-Vibration pads are used in a wide variety of applications ranging from machinery mounting to large structural bearing supports. They provide a vibration 'barrier' that prevents the transmission of structural borne vibration from one element of a construction/installation to another.

The performance of an isolation system involving Tico Pads can be severely impaired if precautions are not taken to isolate alternative vibration pathways. Bolts used to fix machinery or connect parts of a structure are a common cause of problems if not installed correctly.

Figure 1 shows an installation where a bolt has been used to fix a machine with a Tico Anti-Vibration pad to a floor. The Tico pad is designed to prevent the transmission of any vibration from the machine into the surrounding structure. However, as the bolt has not been isolated, vibrations from the machine are transmitted through the machine base into the bolt and through the bolt into the floor – the Tico pad has effectively been short-circuited.

Figure 2 shows the same installation as Diagram 1 but in this instance the bolt has been isolated from the machine base using Tico resilient collars and washers. Vibration is prevented from being transmitted into the main shaft of the bolt by the Tico S/CO Collar and through the head of the bolt by the Tico S/WA Washer. A Tico MS/WA mild steel washer is used under the holding nut to tighten against. With this arrangement, the main Tico pad works effectively and performance is not reduced by transmission of the vibration through the bolt.

Figure 1:
Bolt not isolated

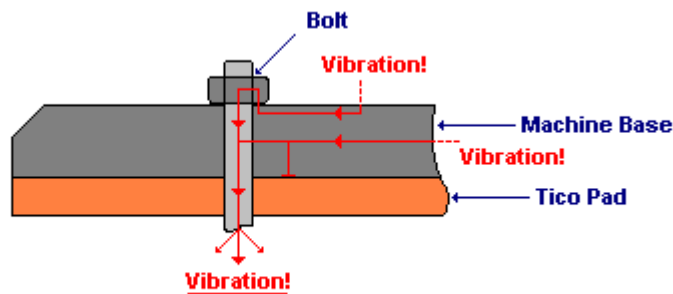
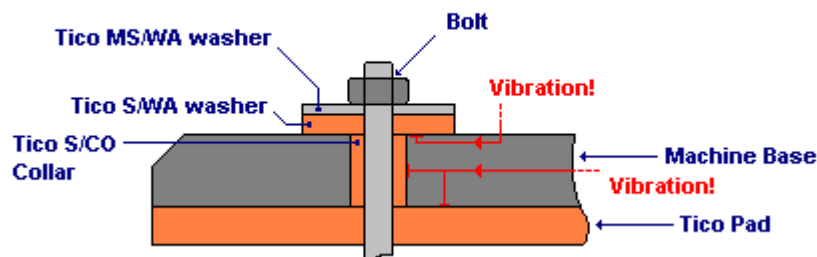


Figure 2:
Bolt isolated using Tico Collars and Washers



In all installations where Tico pads are bolted through, isolating collars and washers should be used!

<p>Installation guidelines</p>	<p>The general arrangement for isolating a bolt using Tico Collars and Washers is as in diagram 2. The same general principles apply in other types of installation, e.g. where Tico pads are used between steel beam connections and bolted through.</p> <p>Where the bolt penetrates through the machine base or structure, a Tico collar should be used. The Tico collar should be cut to a length which suits the application – in the case of diagram 2 it is the depth of the machine base. Tico collars are tube shaped with a wall thickness of 3mm. It will be necessary to ensure that the hole in the base is large enough to accommodate the OD of the collar. The collar is inserted into the hole – no adhesive is required.</p> <p>A Tico S/WA resilient washer and a Tico MS/WA mild steel washer should be used under the head of the bolt or holding nut. Again, these do not need to be fixed with adhesive.</p> <p>Care should be taken not to over-compress the main Tico pad by applying too much torque to the bolt. Over-compressing the Tico pad can result in reduced performance. It is recommended that the bolt is tightened hand tight and then given an additional full turn.</p>
<p>Technical Support</p>	<p>If you require any assistance or information please do not hesitate to contact our dedicated Technical Services Department who will be pleased to help wherever possible.</p>
<p>Standard Sizes for Tico Collars and Washers</p>	<p>Tico Collars and Washers are available in a range of standard sizes to suit standard bolt diameters.</p> <p>TICO S/CO COLLARS</p> <p>3mm wall thickness Pack of 6</p> <p>M10 M12 M14 M16 M18 M20 M24 M26</p> <p>ID 10mm OD 16mm, 50mm length ID 12mm OD 18mm, 50mm length ID 14mm OD 20mm, 50mm length ID 16mm OD 22mm, 50mm length ID 18mm OD 24mm, 50mm length ID 20mm OD 26mm, 50mm length ID 24mm OD 30mm, 50mm length ID 26mm OD 32mm, 50mm length</p> <p>TICO S/WA RESILIENT WASHERS</p> <p>M10 M12 M14 M16 M18</p>

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M20
M24
M26

ID 10mm OD 30mm, 6mm thick
ID 12mm OD 36mm, 6mm thick
ID 14mm OD 42mm, 6mm thick
ID 16mm OD 48mm, 6mm thick
ID 18mm OD 54mm, 6mm thick
ID 20mm OD 60mm, 6mm thick
ID 24mm OD 72mm, 6mm thick
ID 26mm OD 78mm, 6mm thick

TICO MSWA MILD STEEL WASHERS

M10
M12
M14
M16
M18
M20
M24
M26

ID 10mm OD 30mm, 3mm thick
ID 12mm OD 36mm, 3mm thick
ID 14mm OD 42mm, 3mm thick
ID 16mm OD 48mm, 3mm thick
ID 18mm OD 54mm, 3mm thick
ID 20mm OD 60mm, 3mm thick
ID 24mm OD 72mm, 3mm thick
ID 26mm OD 78mm, 3mm thick

All Tico materials are manufactured in accordance with BS EN ISO 9001: Part 2: 1994.