



HEICO-LOCK® REACTION WASHERS



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EFFECTIVE PROTECTION AGAINST SELF-LOOSENING OF LARGE BOLTED JOINTS

Large bolted joints with a nominal size \geq M24 (1") can only be tightened by hand with great effort. The torque required to tighten the connection is simply too high, so electrically, pneumatically or hydraulically operated torque tools must be used.

However, the use of a high-torque tool, which traditionally transfers the reaction torque that occurs when tightening via a supporting reaction arm, represents a major safety risk even for experienced operators. HEICO-LOCK® Reaction Washers enable safe and convenient tightening of large bolted joints with commercially available electric, pneumatic and hydraulic torque tools – without requiring an additional reaction arm resp. other awkward mounts on the tool or component.

The reaction torque of the torque tool is supported by a special dual socket that interlocks with the gear-shaped outer contour of the HEICO-LOCK® Reaction Washers. As a result, the tightening torque is introduced axially without an additional bending moment acting on the bolt during tightening. At the same time, the reaction washers, like all locking devices in the HEICO-LOCK® product range, offer an effective and permanent protection against self-loosening due to vibration and dynamic loads that often occur in machines and systems during operation.

ADVANTAGES

- Easy and quick assembly – HEICO-LOCK® Reaction Washers are already glued in pairs
- Precise tightening due to low friction coefficient variation
- Reliable and permanent protection against self-loosening of the bolt or nut
- No need for additional reaction arms or mounts
 - Prevention of accidents at work (e.g. pinching/crushing of the fingers, injuries caused by the tool slipping, etc.)
 - No damage to adjacent surfaces caused by the reaction arm (e.g. damage to the anti-corrosive coating, deformations or breakages due to high contact forces)
- The tightening torque is applied axially. No harmful bending moments.
- Dual sockets adapted to easily fit powered tools from most well-known tool manufacturers

FIELDS OF APPLICATION



(PETRO-)CHEMICALS



RENEWABLES



HEAVY INDUSTRY



PLANT CONSTRUCTION

DESIGN AND FUNCTION

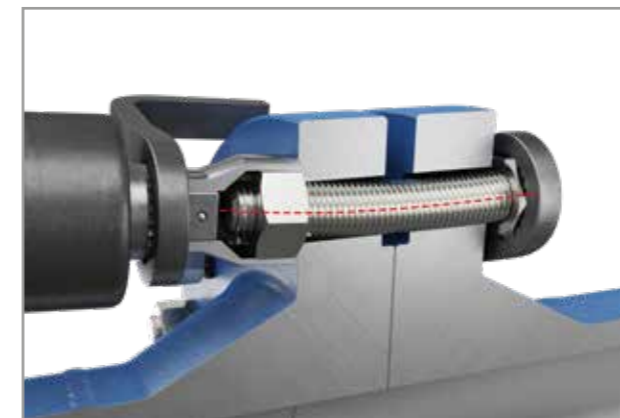
HEICO-LOCK® is a 2-washer locking system based on tension force, which prevents bolted joints from self-loosening according to the wedge locking principle. External radial ribs, which imprint into the bearing surface and into the bolt head and/or nut along with the engaged internal wedges ensure that the required preload force is maintained under extreme operating conditions. The HEICO-LOCK® Reaction Washers are unique in their design and are characterized by a gear-shaped contour of the bottom washer. This contour, in combination with a special dual socket, enables tightening of the bolted joint with conventional electrically, pneumatically or hydraulically operated tools from existing manufacturers. In this way, large bolted joints can be assembled and disassembled quickly and easily - especially when an application contains numerous bolted joints of the same size.

USE WITH HEICO-ONE SAFETY-WASHER

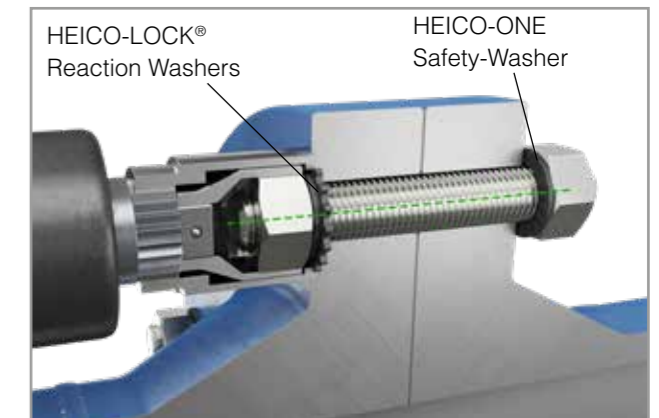
In order to use HEICO-LOCK® Reaction Washers with through-bolt connections, without physically securing/counter-holding the passive side, we recommend also using the innovative HEICO-ONE Safety-Washer. The HEICO-ONE Safety-Washer is a friction-based, securing backup washer with wave-shaped locking ribs on both sides. It is mounted on the passive side between the nut/bolt head and the bearing surface. This effectively prevents the bolt or nut from rotating while tightening.



Find out more about our HEICO-ONE Safety-Washer!



Initiation of damaging bending moments with conventional tightening methods using a reaction arm/counterholder



Use of HEICO-LOCK® Reaction Washers and HEICO-ONE Safety-Washer in a through-hole

HEICO-LOCK® REACTION WASHERS

TECHNICAL DATA

- Anti-loosening device based on the HEICO-LOCK® Wedge Locking System certified according to DIN 25201
- The gear-shaped contour of the lower washer in combination with a special dual socket ensures a reaction-arm free tightening
- Material: 1.1191 (C45E) with black zinc flake coating (flZnnc)
- Hardness: 485±25 HV 0,3
- Corrosion resistance: min. 1,000 h in NSS-test according to ISO 9227
- Suitable for high-strength bolts and nuts up to strength class 12.9 or 12
- Bending moment and reaction arm free tightening method
- Available dimensions: M16 - M48 (5/8" - 1 3/4")
- Other nominal sizes, materials and coatings available on request



Scan the QR code to be redirected to the HEICO-LOCK® Reaction Washers **Video**.

ACCESSORIES

We can provide you with the appropriate dual socket to fit your torque tool and the HEICO-LOCK® Reaction Washers. The sockets are compatible with bolting tools from well-known manufacturers and are connected to the tools via individual adapters.



DISCOVER OUR HEICO-TEC® TENSIONING SYSTEM!

With the products of our HEICO-TEC® Tensioning System, large bolted joints can be easily pre-tensioned by hand. A unique feature of the HEICO-TEC® Tensioning System is the distribution of the pre-tensioning force of a large main thread to many smaller pressure bolts. These are tightened one after the other, for example with a standard torque wrench. As a result of the purely axial, torsion-free pre-tensioning, the yield point of the bolt can be optimally utilized to achieve the maximum pre-tensioning force.

For further information about the HEICO-TEC® Tensioning System visit www.heico-group.com.



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