

Wedge Lock Washers

WEDGE LOCKING SYSTEMS DOUBLE SECURITY

To ensure the integrity of fastener thread systems, Evo-lock security system works by using tension rather than friction, which has been the basis for most traditional fastening methods. This ensures the securing of threaded systems. Evo-Lock security system consists of two identical flat washers which have a set of cams on one side and radial teeth on the other side.

Evo-Lock washers secure bolted joints with tension instead of friction. The system is comprised of a pair of washers that has cams on one side and radial teeth on the opposite side. Since the cam angle ' α ' is greater than the thread pitch ' β ' a wedge effect is created by the cams, preventing the bolt from rotating loose.

PERFORMANCE

The Evo-Lock washers ensure proper fastening performance for joints under extreme vibrations or dynamic loads. The exceptional securing performances of Evo-Lock washers are guaranteed by the following technical features:

- The unique cam angle α of the washer is larger than the pitch angle β of the screw thread.
- The friction coefficient of the radial teeth surface of the washer is much higher than the friction coefficient of the cam surface.
- The hardness of Evo-Lock washers is higher than the strength of all classes of bolt/nut (8.8, 10.9 and 12.9).
- This unique cam system uses tension to create high force in a fastened joint that is subjected to vibrations.

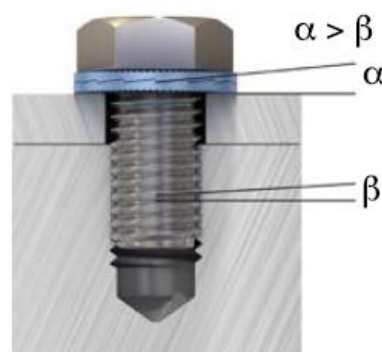
The test showed that the washers safely lock screws/bolt connections: the clamp force stays almost constant after 2000 cycles and just a minimal amount of tension dissipates at the beginning of the test due to the normal settlement of the fastened joint.

APPLICATIONS

Evo-Lock washers are used in industries such as: energy, transportation, offshore, mining and quarrying, construction and bridge building, manufacturing and processing, ship building, forestry and agriculture, heavy vehicles, and military. The number of industries that use washers are continuously growing. Often joints do not start to loosen until an application is in regular use, therefore Our washers are commonly retrofitted during maintenance, repair and overhaul procedures.

FUNCTIONAL PRINCIPLE

The angle of inclination α of the washer cam is bigger than the pitch β of the screw thread. When the fastener is tightened, the radial teeth surfaces grip both the bearing surface of the fastener and the material into which the screw is being fastened. The larger angle of the cam α , compared to the smaller angle of the screw thread β , will not allow the screw to loosen because of the tension caused by the cam lifting.



Wedge locking technology

