

PERFORMANCES

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

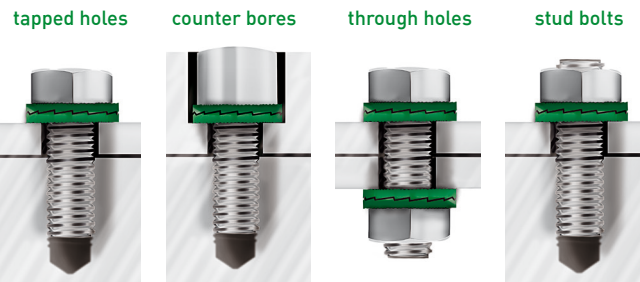
- The cam angle of the washer α is greater than the angle of the pitch of the thread β
- The Twin-Lock washers can be used with nuts and bolts of class 8.8, 10.9 and 12.9
- This cam system uses tension to create high force in a fastened joint that is subjected to vibrations

ADVANTAGES

Using Twin-Lock washers gives you the following advantages:

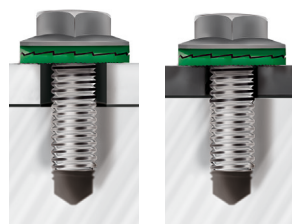
- Best locking performance in the presence of vibrations and dynamic loads
- As Twin-Lock uses tension rather than friction when locking a bolted joint lubricating has no detrimental effect. We recommend using a lubricant in all bolted joints to keep torsional stress to a minimum
- Reusable - depending on application and environment
- Twin-Lock can be used where bolted joints have high as well as low preload
- No retightening required
- Easy to use as Twin-Lock is supplied as glued pairs (cam face to cam face)

USING TWIN-LOCK



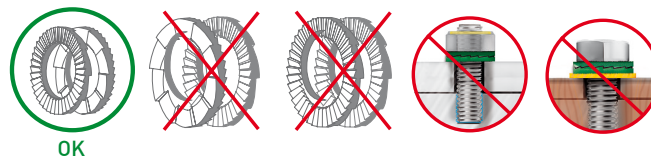
SLOTTED HOLES/SOFT MATERIALS

For these two application types we recommend to use Twin-Lock large series with a flanged nut.



HOW TO USE

Twin-Lock washers are supplied as glued pairs to prevent mistakes during assembly. In case of reuse the washers need to be reassembled cam face to cam face.



BÖLLHOFF

Böllhoff GmbH
Archimedesstr. 1-4 • 33649 Bielefeld
Tel.: +49 (5 21) 44 82-03 (-168) • Fax: +49 (5 21) 44 93 64
E-Mail: dienstleister@boellhoff.com
www.boellhoff.com

TWIN LOCK®
G R O W E R
DOUBLE SECURITY

GROWER TWIN-LOCK® SECURITY SYSTEM DOUBLE SECURITY

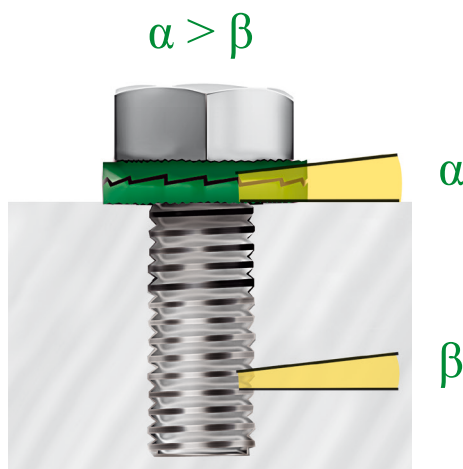
Traditional fasteners use friction to prevent bolted joints from coming lose. The Twin-Lock washer security systems uses tension rather than friction to ensure threaded bolted joints stay secure.

PRINCIPLE

Twin-Lock security system consists of 2 identical washers which have a set of cams on one side and serrations on the other.

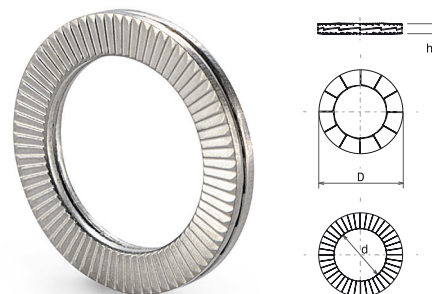
When the fastener is tightened the serrations grip into the substrate and under the head of the fastener locking the top and bottom of the joint.

As the angle on the cam face α is greater than the angle on the pitch of the thread of the bolt β , in order for loosening to occur, sliding must happen across the cam faces meaning you have to stretch the thread of the bolt by applying an external tool before the joint will come undone.

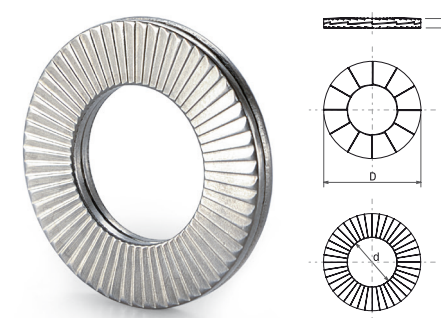


DIMENSIONS

The Twin-Lock securing system is available in two versions:



Standard external diameter (normal series) suitable also for counter-sunk bolts. Dimensions M6-M20 available from stock.



Enlarged external diameter (large series) suitable for slotted holes and soft materials. We recommend to use Twin-Lock large series with a flanged nut. Dimensions M6-M20 available from stock.

MATERIALS

Carbon steel, hardness 465-550 HV 10 after hardening and tempering

Stainless Steel AISI 316L according to EN 10088-1.4404, surface hardness ≥ 550 HV 0.05 after surface hardening (Kolsterising®)

SURFACE TREATMENTS

Delta Protekt® KL100 + VH301 Cr6 free, red corrosion resistance min. 600 hours (salt spray corrosion test according to ISO 9227)

