



ALCA TOOLS LIMITED

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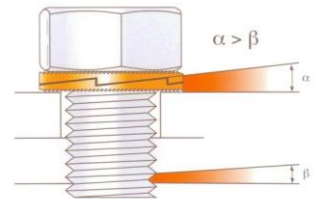


CAM LOCKING WASHERS

Exceptional Value

Cam locking washers offer a safe bolt locking system that does not rely on traditional techniques to secure the fastener. This system utilizes tension instead of friction to secure bolted joints. The proven wedge-locking method, meeting DIN 25201, is superior to any traditional method.

The cam locking bolt securing system incorporates a pair of washers that have cam faces on one side with a cam angle "a" greater than the thread angle "B". In addition, there are radial teeth on the opposite side. The pre-assembled washers are installed in pairs, cam face to cam face.



When the bolt and/or nut is tightened the teeth of the cam lock washers grip and lock the mating surfaces allowing movement only across the cam faces. Any rotation of the bolt/nut is blocked by the wedge effect of the cams.

Advantages

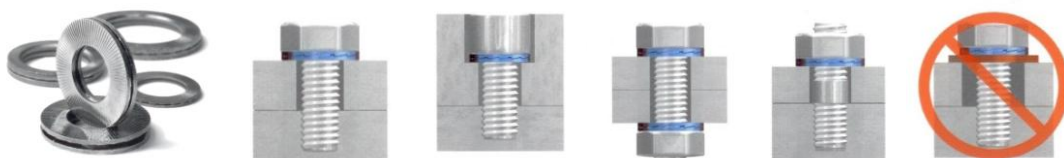
- Prevents loosening caused by vibration and dynamic loads
- Ease of assembly and disassembly
- Locking function not affected by lubrication
- No special tools required
- Controllable preload
- Same temperature characteristics as bolt/nut of corresponding quality
- Re-usable

Significant Range and Variety

- Steel, zinc flake coated with Delta Protekt M3 - M130
- Stainless steel (A4), M3 – M80
- Special alloys for high temperatures or highly corrosive environments (upon request)

Assembly Examples

Cam-locking washers can be used with standard and high grade bolts and are available with enlarged outer diameter for use on slotted holes, soft materials or painted surfaces.



- Cam-locking washers for tapped holes
- Cam-locking washers are sized for counter-bored holes.
- Through holes require two pairs of cam-locking washers.
- For stud bolts cam-locking washers lock the nut, and eliminate the need for adhesives.
- Cam-locking washers must not be used on washers that are not captivated in place.