

A new member of the safety washer family

Growermetal's R&D department has developed the Grower Tenkeep® safety washer family. Launched at this year's Fastener Fair Stuttgart, the washers have two surfaces with knurls of different geometry, specifically designed in order to ensure maximum performance against loosening of the bolted joints – even in the presence of extreme vibrations and dynamic loads.

The Grower Tenkeep® family of washers is the first innovation to come out of Growermetal's own R&D internal process. "In our kind of work, it's very difficult to find something new. We have been active in the automotive industry for many years and so have developed experience and know-how about safety washers and our new Grower Tenkeep has been the fruit of all of this. That is why we are extremely proud of the Grower Tenkeep - yes it's a member of the already large safety washer family, but it is working very well based on a friction principle with many advantages," explains Paolo Cattaneo, managing director at Growermetal Srl.

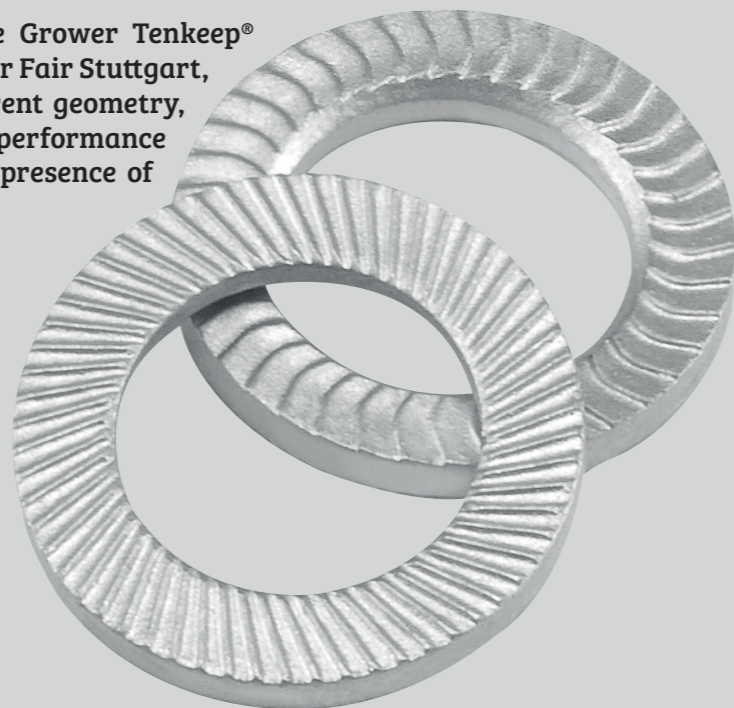
The washer has two sides with different serration geometry. The side of the washer on the head of the screw/nut side (side A) slides against the surface of the underhead of the screw/nut when tightening the bolted joint. The advanced serration geometry of this side instead counteracts very efficiently the loosening of the bolted joint connection. This side of the washer also has a chamfer on the hole, which provides the dual function of avoiding any interference with the radius under the screw head and allows the user to orientate the washer correctly.

The side of the washer that is in contact with the bearing surface (side B) becomes immediately solid to the bearing surface when the bolted joint is tightened, thanks to the exceptional grip of its knurling. The washer then remains permanently solid to the bearing surface.

"We've had some really positive feedback from our customers on a technical viewpoint so far and our initial test results are looking very positive – we know we've created a quality product. We also won 3rd place in the Route to Fastener Innovation Competition at this year's Fastener Fair Stuttgart – which had its highest ever number of innovations entered," proudly states Paolo.

Growermetal points out that there are three main technical advantages to the Grower Tenkeep washer:

- + The friction conditions are defined and uniform – not depending on the material or on the mechanical characteristics of the bearing surface. As a consequence, the tightening torque to be applied in order to achieve the desired screw preload is always the same.
- + During tightening and untightening of the bolted joint, the Grower Tenkeep washer does not damage the bearing surface, even on galvanised, painted or soft surfaces.
- + The untightening torque is significantly higher (+40% minimum) than the tightening torque.



Grower Tenkeep safety washers are manufactured in three different versions – medium series (ideal for hexagonal head bolts), large series (ideal for flange headed bolts and for bearing surfaces made of soft materials such as aluminium, plastics, etc), and the cylindrical series (ideal for cylindrical head bolts). All three versions can be used with bolts of all strength classes up to 12.9.

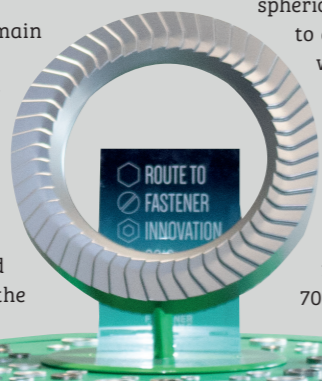
Another recent addition to Growermetal's portfolio is the family of spherical washers and conical seats, according to DIN 6319. "After Fastener Fair Stuttgart we had quite a lot of demand to produce this standard product," commented Paolo.

The spherical washer, used in combination with the conical seat, guarantees a safe locking function on non-parallel bearing surfaces – when the hole and bolt are not perfectly aligned. Working together, the spherical washer and conical seat will compensate each other to a maximum of 3 degrees. These washers are available with surface treatments such as burnishing with light oil film protection, phosphating and others on request.

For many years Growermetal has been able to offer heat treatment due to its modern on-site heat treatment plant, with two new fully bespoke heat treatment lines being added this, and next, year to its site in Calco, Italy. "We decided it was time to expand our heat treatment facility and we aim to increase our capacity by almost 70% to better serve our customers. These new lines are fully bespoke to us and are built and engineered on-site," mentioned Paolo.

The first line is due to be fully operational by the end of this year. +

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