Boosting railway safety with innovative washer solutions

With an extensive product portfolio, state of the art coatings, and a constant focus on industry trends, Growermetal aims to meet the evolving demands of railway systems, ensuring safe and efficient operations for customers.

Fasteners are an important part of rail systems, being used both in infrastructures, such as tracks and in the means of transport itself. With the evolution of railway engineering, the demand for precision and reliability has grown, leading to constant research for parts in-line with the highest industry standards.

While the sector is experiencing the development of new technologies, the introduction of more specific materials, and the necessity of lighter and faster trains, means manufacturers of fastening products need to meet these unique requirements and the related challenges.

This is the case for Growermetal SpA, the Italian safety washer manufacturer, which has achieved high-levels of expertise in the creation of solutions for the railway sector. Guided by its 70 year long history, one of the main strengths of the company lies in the balance between its comprehensive production model and its range of designs and geometries, suitable for a great number of uses.

A complete portfolio for railway needs

Railway washers are classified into different types and geometries, according to the specific application and function to be performed. Growermetal offers an extensive array of safety washers and coiled spring washers – available in various designs, materials, and dimensions – which can be further optimised with specialised surface treatments and coatings, such as the zinc flake coating DELTA PROTEKT® KL120.

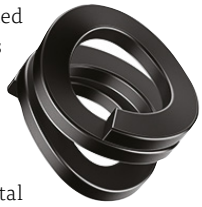
The latter is particularly suitable for railway applications, even in environments with the presence of water and humidity, for example in railway tunnels, as the washer provides outstanding quality with a complete line of base and top coats available.

In this way, customers from the rail industry can count on high performance and high-quality coatings, with a process performed entirely in-house on a fully automated line – eliminating the risk of hydrogen embrittlement, whilst ensuring the mechanical integrity and longevity of the washers.

Coiled spring washers

Among the solutions offered by Growermetal, single, double or triple coiled spring washers are essential for mitigating dynamic heavy loads resulting from train movements.

The company produces single and double coiled spring washers meeting the UIC 864 standards for European markets and the A.R.E.A. 1967 standards for the USA. These washers are available in stainless steel AISI 316, which is particularly suitable for corrosive environments.



In addition to the wide range of sizes, Growermetal also offers spring washers with ribbed bearing surfaces, in order to improve the product's fastening performance and eliminate the risk of breakage; as well as many standard coatings including burnishing with light oil film protection, mechanical zinc plating, zinc flake coating DELTA-PROTEKT®, hot dip galvanisation and other solutions upon customer request.

Grower TenKeep®

Introduced in 2019, Grower TenKeep® is a flat washer that results from Growermetal's investment in research and development. This commitment led to the innovative patented design of the safety washer, characterised by two surfaces of differentiated knurls that create a greater locking performance – even in presence of extreme vibrations and dynamic loads.

While the product prevents the loosening of the bolted joints, at the same time its exclusive geometry ensures the protection of the bearing surface, so that no damage occurs during the tightening and untightening procedures – even on galvanised, painted or soft surfaces.

Other solutions for railroad tracks

In addition to single, double and triple coiled spring washers, and to the flagship product Grower TenKeep®, Growermetal's range for railroad tracks includes many other solutions that provide even more flexibility to customers. Among these products there are conical contact washers and conical elastic Sperrkant washers, designed to create an elastic pre-load in a bolted joint connection and reduce the risk of unwanted loosening. The combination of the conical geometry and radial ribs on the washer's upper surface provides high resistance to loosening of the bolted connection, whilst avoiding damage to the bearing surface. Characteristics that make contact washers the ideal choice for railway and electromechanical applications, where parts are subject to temperature variation or high vibrations.

Conical elastic washers for bolts are another important item to maintain secure assemblies, as they compensate for thermal expansion and contraction, eliminating play. Their elastic properties ensure a reliable connection in dynamic conditions.

Finally, for versatile applications flat washers for bolts come into play, protecting surfaces from damage and enabling a more even distribution of loads, as they increase the load-bearing surface – safeguarding the integrity of the assembly.

Efficiency on show at InnoTrans

Participating in trade shows is a strategic priority for Growermetal, as events offer a platform to showcase its comprehensive range of solutions. One of the most prominent events in the calendar is InnoTrans, the international trade fair for transport technology, held biennially in Berlin, Germany.

"From 24th – 27th September the Growermetal team will present our product line and services at booth 415, hall 8.2 of the Berlin Exhibition Grounds – with the show a unique opportunity to connect with global industry leaders and extend our dedication to international customers from the railway industry," highlights Paolo Cattaneo, CEO at Growermetal SpA +

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