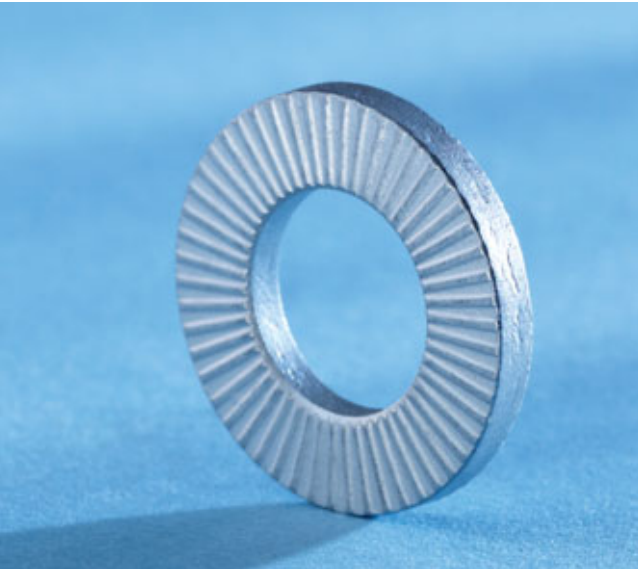


# SUCCESS STORY



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# BÖLLHOFF

# Truck crane – Optimisation of a slew



## Klaas Alu-Kranbau GmbH

Already in 1933 Theodor Klaas – father of the current company owner Ludger Klaas – founded the business. One of the milestones in the history was set by the development of the first truck crane, which was made of aluminium. At the beginning people were smiling at Ludger Klaas because of the featherweight of aluminium, but in the year 1993 the engineering company achieved its international breakthrough with the new invention.

Today their innovative products are manufactured mainly for roofer, moving furniture companies, carpentry as well as firefighters. Seven several types of aluminium truck cranes are built by Klaas – depending on the customers requirement on smaller trucks till 7,5 t as well as 12-t-truck or trailer chassis.

Thanks to the technical sophisticated products the family company in Ascheberg with 200 employers has got a reputation, which goes for beyond the national frontiers. Ca. 50% of the truck crane production is exported. Die main buyer countries are in Europe, but the business contacts increase in quantity all over the world.



## Initial situation

The task was to optimise the bolt connections of the live ring of a truck crane. Therefore it was crucial to consider the screw locking and the corrosion resistance.

## The solution with RIPP LOCK®

The RIPP LOCK® safety washers are used in a slew ring of a truck crane.

The former steel fasteners had corrosion problems, because they were made of blanked steel.

Furthermore Klaas used distance spacers in the length 2xd to get the necessary shaft length and to reach a self-locking effect, because there are a lot of forces and dynamics in the bolted connection.

RIPP LOCK® screw lock made the spacers redundant. As a connected element between the bolted part and screw head the friction factor is regulated and the necessary preload force is reached reliably and is hold due to the securing effect also under dynamic stresses.

Because of the high quality zinc flake coating on the RIPP LOCK® washers –and also on the hexagon bolt and nut- an efficient corrosion resistance with 480 h against red rust in the salt spray test is given.



## RIPP LOCK® screw lock

If bolted connections, which are subjected to movements, fail it is very often caused by self-loosening. To prevent this RIPP LOCK® screw lock helps.

The technology behind this belongs to the group of mechanical unscrewing prevention elements.

RIPP LOCK® screw lock is provided with radial ribs and replaces such locking elements as spring washers or external tooth lock washers, whose standards have been retracted, and enables a standardization of parts. RIPP LOCK® is an excellent and economic alternative.

RIPP LOCK® lock washers have radial ribs on both sides. The contact angle at the foot of the ribs is obviously larger than the gradient angle of the metric thread. Because of the preload force the ribs of the RIPP LOCK® washers are embossed into the counter surface during assembly.

The resulting form lock prevents self-loosening of the connection reliably, even under extreme vibrations or high dynamic stresses.

The RIPP LOCK® lock washer combines many individual advantages of existing locking screws and washers and meets the highest requirements regarding safety. As a universal product – the bigger outside diameter is the same as the standard DIN 125/ISO 7089 – it can be used in almost every application. For joints with a counterbored cheese head washers with a smaller external diameter are available. Particularly where high demands are made on the safety and/or the reduction of parts, the RIPP LOCK® washer is an excellent alternative. They are available in the materials steel and stainless steel A4.

## Customers benefit

- Excellent locking against self-unscrewing
- Corrosion resistance
- Abrasion-proof
- Increased quality

## Product characteristics

- Screw lockings
- Corrosion and temperature resistant
- Possible to use with all property classes up to 12.9
- Easy assembly and removal
- Multiple re-use
- Gentle to contact surface



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