



**TIGER-TIGHT LOCKWASHER**  
**A NEW JOINT LOCKING DEVICE**

# TIGER-TIGHT PRODUCT PROFILE

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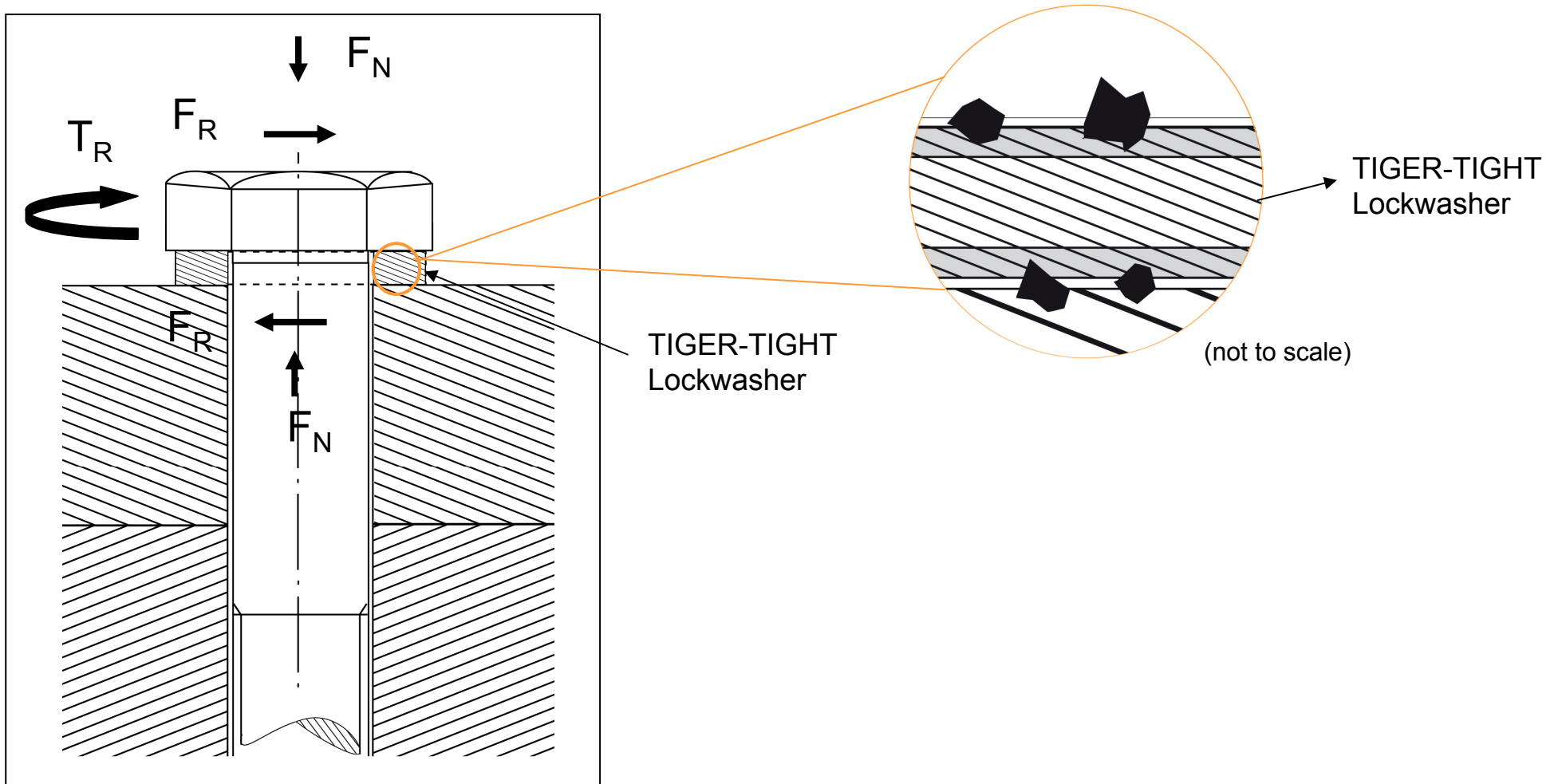


- TIGER-TIGHT is a proprietary product patented by ESK Ceramics GmbH & Co KG, a global technology company
- TIGER-TIGHT is manufactured in North America
- Exclusive distribution in North America by TIGER-TIGHT
- Quality certification of TIGER-TIGHT

# TIGER-TIGHT FRICTION ENHANCING COATING TRIBOLOGICAL SYSTEM

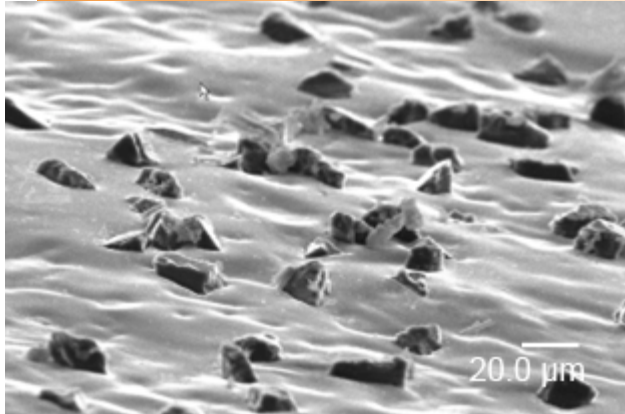


- Microscale interlock after penetration of diamonds into the counter body's surface

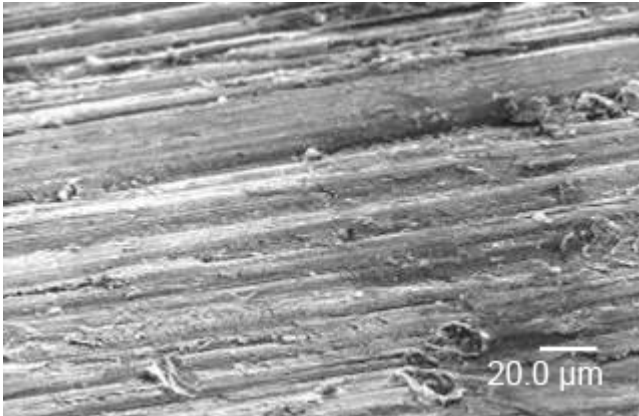


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# TIGER-TIGHT SURFACES AFTER JOINING



- TIGER-TIGHT surface topography



- Counter surface after joining and release of the assembly:  
No surface damages – easily reusable

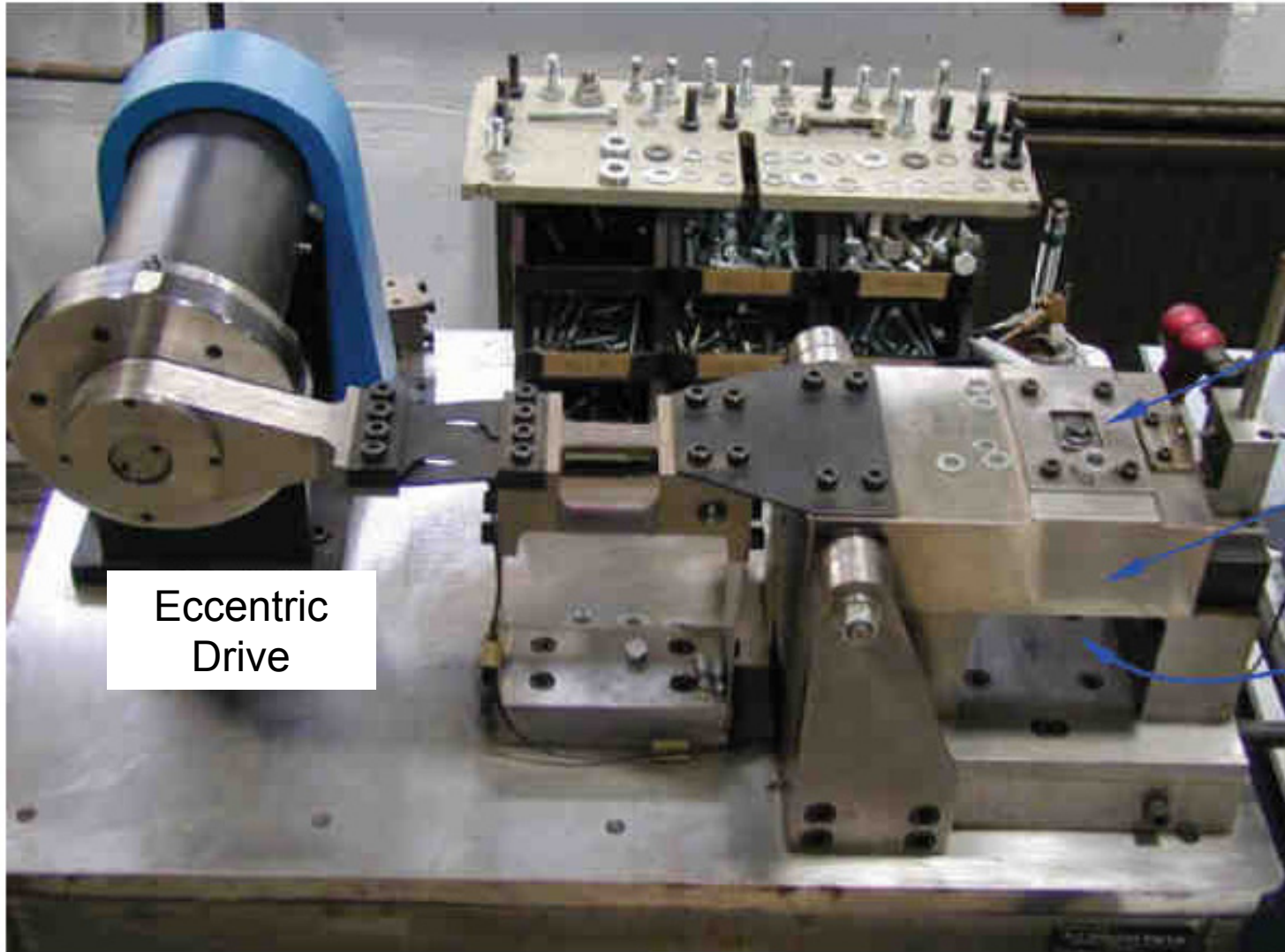
# JUNKER VIBRATION TEST – TEST CONDITIONS

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- Vibration test according to DIN 65151 (dynamic shear force loading with  $f = 12.5$  Hz; recording of preload force as function of load alternation –  $s_0 \geq$  threshold 10%)
- Self-loosening threshold determined on unsecured bolt
- Bolt dimension M10 according to DIN EN ISO 4017, black, property class 10.9 (according to ISO 898-1)
- Bolt surfaces standard delivery conditions
- Tightening with torque key, preload controlled
- Preload  $F_v$  generally 40 kN

# JUNKER VIBRATION TEST BENCH - SETUP



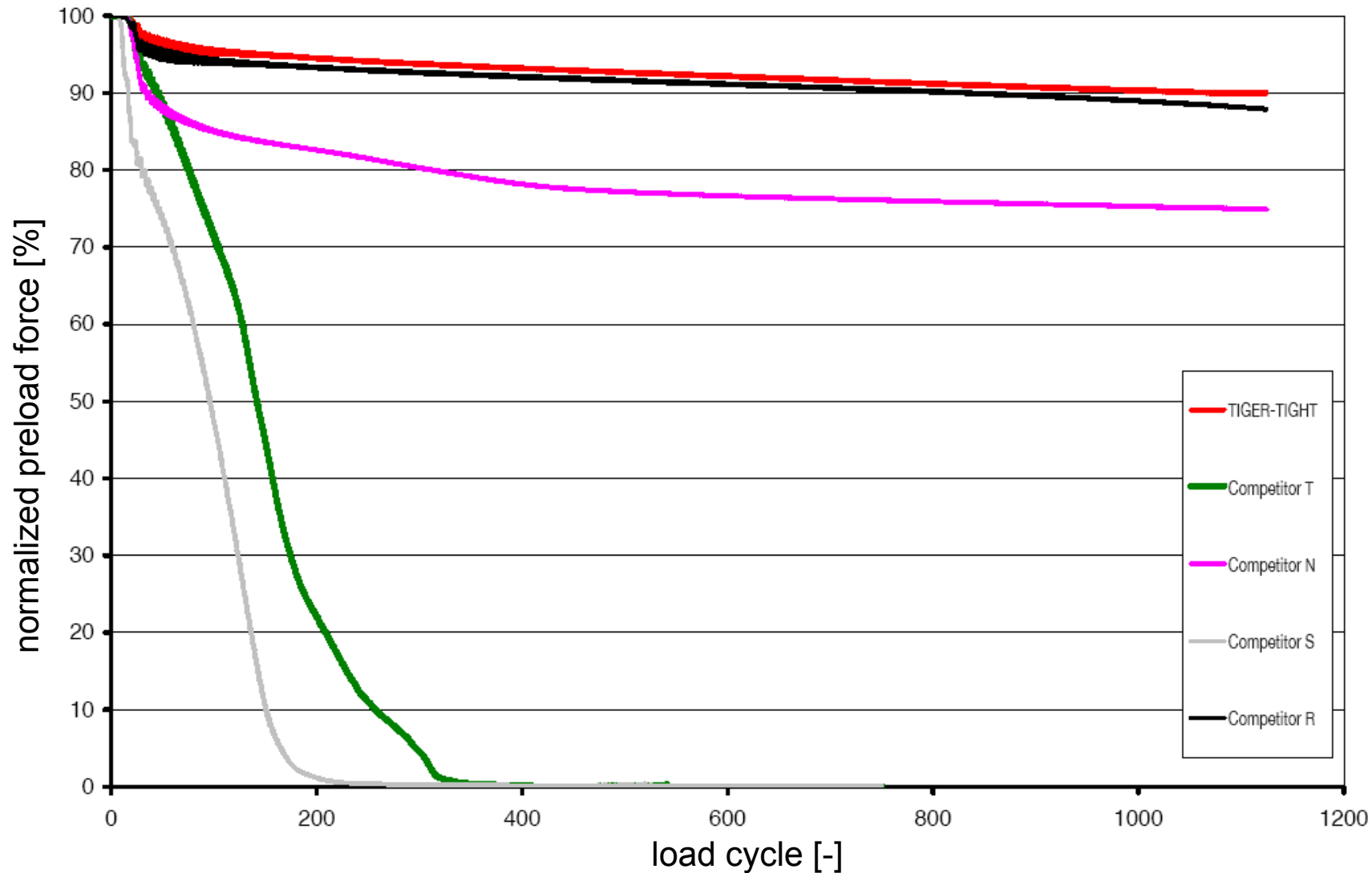
Eccentric  
Drive

Testing bolt

Upper sliding carriage

Load cell

# JUNKER VIBRATION TEST – SUBSTRATE MATERIAL ALUMINIUM ALLOY (AlMgSi1)



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# SUMMARY

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- Superior performance compared to all other lock washer devices tested
- Prevents self loosening and unintentional tightening
- High corrosion resistance with stainless steel substrate material
- No additional settling of joint observed
- Easily reusable : no significant damages of counter surfaces