

MARYLAND METRICS

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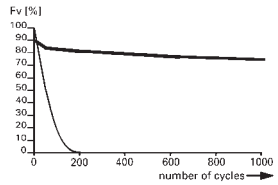
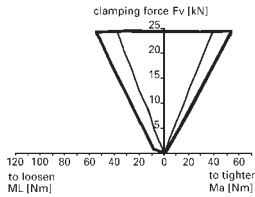
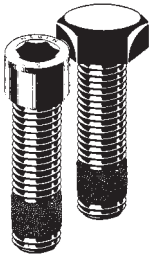
TECHNICAL INFORMATION and DATA

Static and dynamic tests of various locking elements

chart key:

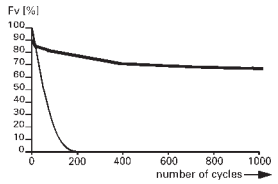
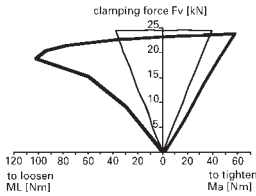
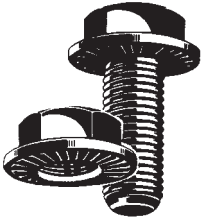
_____ regular hex bolts DIN 931-8.8 / hex nuts DIN 934-8 M 10 × 35
 _____ with locking element

Frequency: 12,5 Hz
 Amplitude in idle motion ± 1,0 mm
 100% Fv: 25 kN



Anaerobic adhesives have excellent locking features after final curing. In the test the loss of preload was less than 15% even after 75000 cycles.

omniFIT®
 PRECOTE®

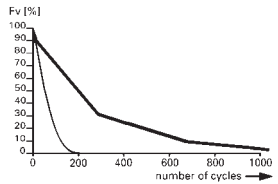
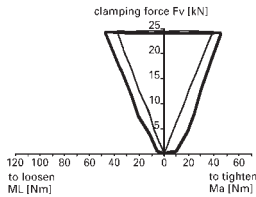


Serrated or ribbed screws and nuts are very good locking elements. They can be re-used and do not have a limit regarding reasonable temperatures. At sufficient hardness of the connected parts, the loss on preload was less than 20% after 50000 cycles.

DURLOK®
 Serrated screws
 and serrated nuts



Prevailing torque nuts
 DIN 980V/ISO 7042



Prevailing torque nuts [with polyamid (nylon®) insert or all metallic] could not prevent complete loosening of the joint. The final preload dropped to 0 after only about 1000 cycles. However, there remained a prevailing torque which prevented the fasteners from falling apart.

Spring lock washers
 Toothed lock washers
 Tab washers

Spring lock washers, toothed or serrated lock washers, tab washers do not show a locking attribute if used together with fasteners of property class 8.8 or higher. Sometimes loss on preload occurred as fast as on joints with regular hex bolts and nuts without locking elements. In any case after 300 cycles there was no preload left in the joint and the fasteners fall apart.