

**FTPublicity Client:** CROSS MANUFACTURING CO (1938) LTD.  
**Ref:** 2006/050/S  
**Dated:** 12 September 2006

## Heat test cooks up gripping results for Spirallock® wire thread inserts

An arduous programme of high temperature and vibration testing has proved that the Spirallock® wire thread insert manufactured by Cross can withstand repeated exposure to these conditions with virtually no deterioration in its free running and thread locking performance. By comparison, a conventional prevailing torque insert failed completely after the very first heating and vibrating test cycle. The results are all the more remarkable since the Spirallock® insert used was a standard stainless steel version whilst the prevailing torque insert was made of expensive Nimonic 90 and silver plated. This version is specifically sold for high temperature applications.

For the test a ¼ UNFx1.5D insert was first fitted with an Inconel 718 bolt, tightened and vibrated on a Junkers transverse vibration rig for three minutes. After confirming that the bolt was still locked, it was then removed and the breaking torque recorded, after which the bolt was re-tightened and the assembly heated to 650°C for six hours. The assembly was allowed to cool, the bolt removed and the breaking torque recorded as before. The complete procedure was repeated five times. Throughout the five test cycles the bolt remained locked in the Spirallock® insert whilst the breaking torque increased to approximately twice the initial value before levelling out, thus proving that the bolt was not seizing-up.

In a subsequent test, an identical Spirallock® insert and bolt assembly was heated to 650°C and cooled five times without disassembly until the end of the test cycle. Comparison of the breaking torque once again confirmed that the locking performance of the insert was virtually unaffected by the repeated heat cycles.

The Spirallock® wire thread insert manufactured by Cross is already used in various high temperature applications, including turbo chargers for petrol and diesel engines. It is hoped that these test results will give confidence to potential users in other engineering “hot spots” who may be experiencing problems with prevailing torque insert performance.

**END**

Issued on behalf of:  
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