

**FTPublicity Client:
CROSS MANUFACTURING CO. (1938) LTD**

29th APRIL 2002

Spirallock® thread inserts from Cross secure reliability for very high pressure compressor systems

Spirallock® high performance wire thread inserts manufactured by Cross have made a crucial contribution to the successful development of a specialised very high pressure pure air compressor designed for military aircraft applications.

Known as HiPPAG 500, the compact and lightweight electrically driven unit generates a pressure of more than 5000 psi to operate pneumatic ejection racks that launch bombs from high speed aircraft. The use of a compressor for this application offers many operational and logistic advantages over traditional gas bottle or pyrotechnic methods, including more precise control of ejection velocity, improved aircraft deployment capability and reduced maintenance.

Manufactured by Ultra Electronics Ltd in the UK, the innovative new unit has been developed from a similar range of compressors, operating at up to 3500 psi, that are used for thermal imaging and missile guidance applications.

Mike Taylor, Ultra Electronics' Chief Design Engineer, explains some of the challenges presented by the increased pressure requirement:

“Increasing to over 5000 psi meant moving to a new design of cylinder head gasket. Its use could only be considered if we were confident that the aluminium compressor components could not only be successfully assembled with adequate torque, but would also withstand the high temperature and vibration conditions inherent in the operational environment without any loss of bolt tension. The tiniest leak would render the unit useless, making this a crucial area for reliability.

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“In the event, the adoption of Spirallock® thread inserts from Cross proved to be helpful during the product development stage as well as successful in achieving the operational reliability demanded. Unlike other inserts, the Spirallock® is a free running design that doesn't rely on distortion for grip. Consequently we were able to dismantle and reassemble prototypes knowing that the inserts' performance would not deteriorate. Also, the insert's ability to provide an even load distribution on the entire length of the thread minimises the risk of any fatigue failures caused by high stress concentrations on the first few engaged threads. These features will make a major contribution to the product's successful introduction.”

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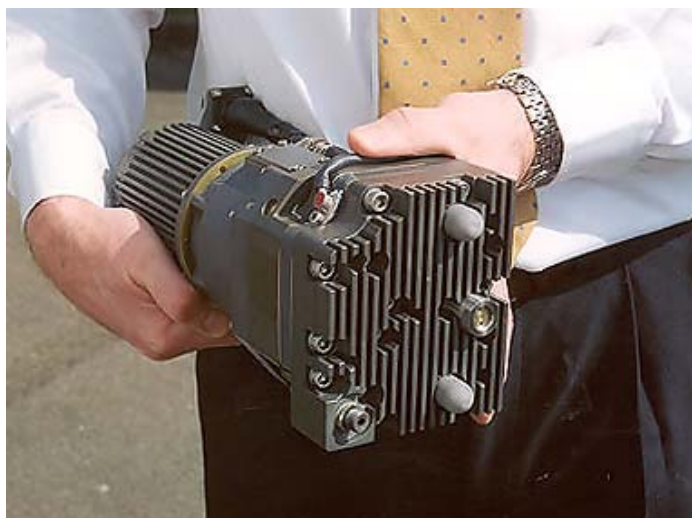
**Issued on behalf of:
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