

## **The 100% inspected Koenig Expander from B&T reduces operation time and waste**

More frequently you hear the words 'we must reduce machining time' or 'we must decrease the number of operations'. Though the Koenig Expander sealing plug has been represented by Boneham & Turner Ltd since the 1970's, its relevance in the market place has never been so significant. Manufacturers in the automotive and aerospace markets are continuously considering methods and products for reducing cycle times or minimizing contact with work pieces, in order to retain competitive advantage and focus on innovation. Originally designed for the hydraulics industry, the Koenig Expander's principle is synonymous with its name, using an expanding method; the Koenig Expander is based around two variants. The MB series of plug utilizes a punch to press a ball bearing into an outer sleeve, thus anchoring the plug into the hole. The SK, LK and HK variants all use a pull principle. Using a setting tool, the mandrel is retracted expanding the main body of the plug into the sleeve, again securing the plug into the hole. This mechanism provides a high pressure seal for air and liquid.

Globally the Koenig Expander is used in automotive applications such as sealing drilled holes left in transmission housings after machining oil ways. Automotive manufacturers are benefiting from the one piece solution provided by the Expander. For example, replacing non-standard threaded plugs and industrial adhesives which, as with ball bearings, are deemed, incorrectly, as an inexpensive alternative for sealing holes. The Expander requires no special machining or second operation on the transmission unit, with no threading of the hole required. The expanding principle means no adhesive is required, removing another operation and the need for cleaning material stocks. Using adhesives on threaded plugs or ball bearings also creates problems with contamination in the transmission and solvent waste during assembly, unlike the expander. The Koenig plug also prevents human error associated with multi operation assemblies, offering a zero defect proposition that is 100% inspected throughout its production, utilizing optical, mechanical, human and Eddy-current inspection techniques. Emphasis is placed on quality with the Expander, from the mechanical design to the installation.

Boneham & Turner representatives work closely with production engineers to provide, not only the best plug for the application, but the installation tools and processes to reduce operation and assembly times, whilst providing a stocking and logistics solution designed to minimize stocking at customer locations.