MATERION

CASE STUDY

TorcUP was able to replace a rolling element bearing (needle rollers) with a simple-to-assemble, more durable, one-piece sleeve bushing in ToughMet®.

TOUGHMET APPLICATION:

INDUSTRIAL TOOLS

Profile: TorcUP, Inc.

.TorcUP, Inc., headquartered in Easton, PA, is the fastest growing Hydraulic and Pneumatic Torque Wrench manufacturer in the world, with direct representation and distribution worldwide.

TorcUP's Raptor Series Wrenches are used in heavy industries such as Power Generation, Oil and Gas Production, and Windmill Applications, where high accuracy and torque values must be applied to various fasteners. After experiencing premature wear of needle rollers due to the extreme side loading associated with the 6,000 Ft/Lb Raptor Series Torque Wrenches, TorcUP looked for an alternative material that would withstand the high torsion loads to which the planetary gear sets were subjected.

SOLUTION:

Using Materion Performance Alloys' ToughMet 3 TS160U, TorcUP replaced all needle rollers and needle roller cages throughout the Raptor Series gear stages.

Pneumatic torque wrenches utilize a series of planetary gear sets to increase the output of an air motor. Because TorcUP's line of Raptor Series Pneumatic Torque Wrenches are non-impacting, unlike common impact wrenches, the Raptor design is subjected to extreme loads during operation.

There was no question that ToughMet® could withstand the high loads of the tool; bearing wear, however, was the concern. In the end, ToughMet® prevailed. Not only was the initial .0005" of wear during the first 500-600 cycles acceptable, any additional wear became non-existent to over 5000 cycles. Furthermore, overall efficiency of the tools improved.

Through the use of ToughMet®, TorcUP eliminated the worry of premature wear within their Raptor Series Tools, and has now incorporated ToughMet® throughout its tool line. The Raptor Series Torque Wrench was a finalist in Plant Engineering Magazine's "2008 Product of the Year."

TOUGHMET®

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