



## DO YOU KNOW YOUR IN-PLACE ASSEMBLY COSTS?

**By Alan Pritchard**

As I start to write this paper, I can already hear the readers general reaction of, "Oh, no, not again". I make no excuses for continuing to ask this question as I believe that all who are interested in saving their company's money should ask this question whenever they sit down to discuss new projects and/or methods of assembly.

In my previous articles, I have indicated that no one person should have the sole responsibility for determining assembly costs.

For the exercise to be meaningful there is a need for various fractions, within and outside of the organization, to be drawn into the equation for developing true and meaningful, IN-PLACE-ASSEMBLY-COST data. (DESIGN, BUYING & ACCOUNTING, PRODUCTION ENGINEERING and, yes, even the COMPONENT SUPPLIER, if he is aware of the component manufacturing processes, can all add positive input in the exercise of developing knowledge on what consists of IN-PLACE-ASSEMBLY-COSTS).

Question: Why do I need to know these costs?

Answer: If you don't there is no way that your company can produce an end product or assembly in an economical and productive manner.

Furthermore, unless you can show the actual cost of an assembly, you cannot make knowledgeable changes in an attempt to reduce your companies overall and often unnecessary assembly costs.

There comes a time when the trend toward reducing the individual component costs in an effort to reduce the cost of an assembled end product will be neither practical or possible.

It is then that the companies who have shown foresight in developing their knowledge of assembly costs will continue to thrive at the expense of their less knowledgeable competitors. *(cont. on page 3)*

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### SPOTLIGHT ON PETER EGGER



Peter Egger is a European Market Development Engineer at REMINC's sister company CONTI. Mr. Egger holds a Bachelor of Science Degree in Mechanical Engineering from the University of Applied Sciences in Lucerne, Switzerland. He has over 32 years working experience in the mechanical engineering field involving several key job functions. Prior to joining CONTI in 2005, he worked as a project engineer for a major global fastener distributor for over 10 years. His engineering specialty is thread forming technology in the fastener industry. His major assignments include licensee marketing and application engineering support, end-user education in TRILOBULAR™ technology and overall market development.



## PRESIDENT'S PERSPECTIVE

### "LEADERS LOWERING THE COST OF ASSEMBLY"

Slogans such as: Coca Cola's, "Make It Real"; DaimlerChrysler's, "Discover the World of Mercedes-Benz" and Sony's "Cybershot – One and Only", are valuable and effective marketing tools to promote products and services globally. These slogans typically change from time to time in order to remain fresh and contemporary as new products are introduced. By contrast, REMINC's slogan, "Leaders Lowering the Cost of Assembly", has never changed in 44 years.

Why is this? What is different about the REMINC slogan? "Leaders Lowering the Cost of Assembly" is different because it is as applicable and appropriate today as it has been in the past; therefore, it has never changed.

REMINC is a leader, offering authorized manufacturers a broad range of thread-forming fasteners for use in various steels, aluminum alloys, magnesium alloys and plastics. To be sure, our newer products, such as TAPTITE 2000<sup>®</sup>, FASTITE<sup>®</sup> 2000<sup>™</sup> and REMFORM<sup>®</sup>, provide improved performance in modern component materials. In fact, as assembly costs have increased over time, due to inflated costs of labor and automation equipment, the cost-savings benefits of newly-introduced TRILOBULAR<sup>™</sup> and REMFORM<sup>®</sup> fasteners become even more significant than in the past.

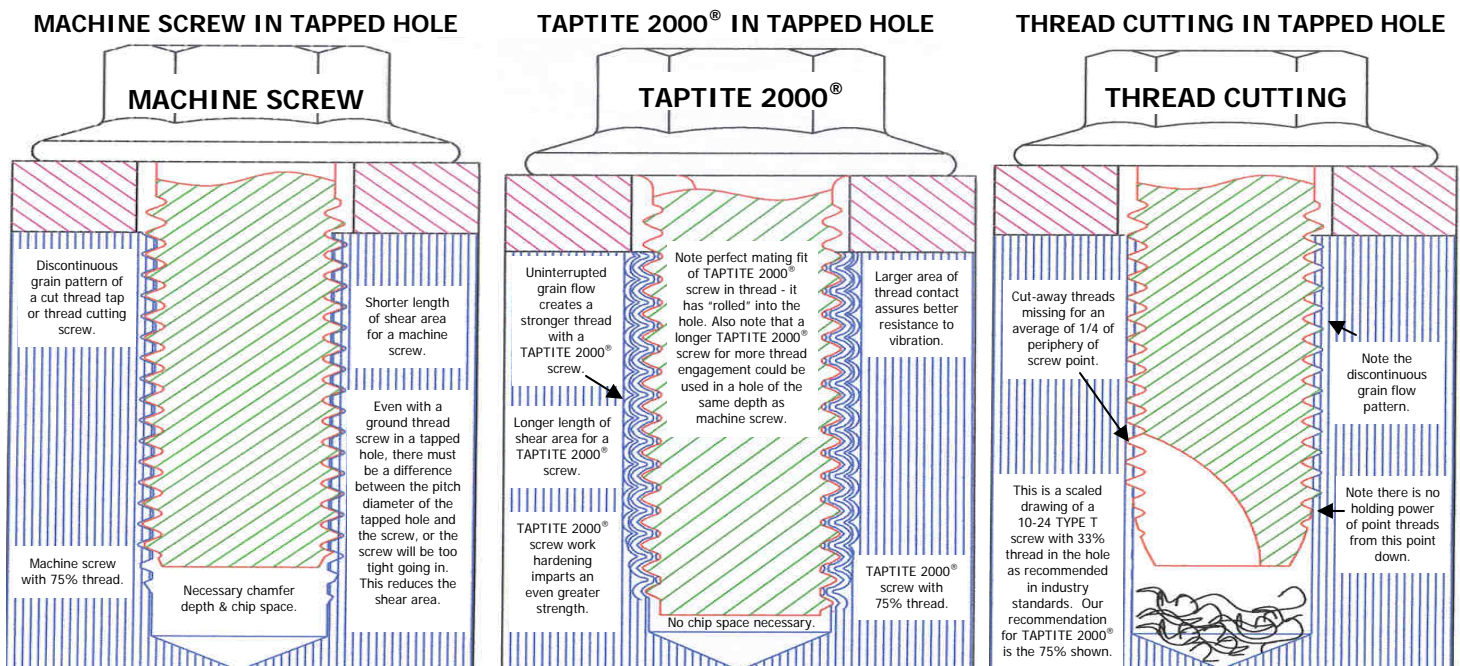
When designing a new assembly or trouble shooting a current problem joint, always consider thread-forming technology as a possible alternative to conventional fastening techniques. We can prove that there are as many as 54 ways to reduce the cost of assembly by utilizing TRILOBULAR<sup>™</sup> and REMFORM<sup>®</sup> fasteners. We suggest you contact REMINC and allow our engineering staff to review your assembly designs, as we might be able to offer cost-savings solutions. Give us the opportunity to work for your benefit. Experience the reality that REMINC are still, after 44 years, "Leaders Lowering the Cost of Assembly"!



## APPLICATION COMPARISON OF TAPTITE 2000<sup>®</sup>, MACHINE

### AND THREAD CUTTING SCREWS

We are frequently asked about the difference between TAPTITE<sup>®</sup> fasteners and thread cutting screws. The drawings below present the basic advantages and disadvantages of the two designs as compared to machine screws. We believe these sketches are a simple, but extremely effective, way of showing the dominant advantages of TAPTITE 2000<sup>®</sup> fasteners!



# DO YOU KNOW YOUR IN-PLACE ASSEMBLY COSTS?

By Alan Pritchard (cont. from page 1)

The business of fasteners and, more importantly, FASTENER SYSTEMS has been that which the REMINC organization have strived to understand for many years. The inventive nature with which they develop designs has been and continues to be that of reducing in-place-assembly-costs.

Unless assembly costs are known and documented, fastener system developments become the pastime of the rich. This complication can only be overcome in complete and meaningful analyses being undertaken between the technology supplier and the end user.

REMINC engineers do not design fasteners. They develop product on the basis of REDUCING OVERALL ASSEMBLY COSTS. Such developments come about because of a need.

- A NEED TO RESOLVE A PROBLEM
- A NEED TO SIMPLIFY AN ASSEMBLY
- A NEED TO REDUCE UNIT ASSEMBLY COSTS.

The follow-up to this paper and in conjunction with my colleagues at REMINC, I propose to look at some of the development areas where the 'resolution of needs' has led to the design and development of innovative product that is made available, worldwide, from the WORLD'S REPUTABLE FASTENER MANUFACTURING AND SUPPLY COMPANIES.



## REMINC Responds! Fielding the Questions

Q) On page 8 of the REMINC TAPTITE 2000® fastener brochure you state:

*"The minimum length of thread engagement should be equal to twice the diameter of the screw (to approach utilizing the available screw strength). The hole diameter, to ensure optimum performance, should provide for 65% to 75% thread engagement".*

*What are the advantages & disadvantages of using 2.5D (2.5 times screw diameter) thread engagement depth in aluminum? (thread stripping / fastener breakage / assembly time, etc.).*

A) The 2D engagement depth is based on creating an internal thread that will typically be strong enough to result in bolt fracture, as opposed to internal thread stripping, if a fastener is over-tightened. The bolt fracture failure mode is preferred by manufacturers, since this failure mode does not destroy the assembly component – a costly option – and only the bolt has to be replaced.

The disadvantage of using an engagement depth greater than what is necessary to break the fastener, is that the thread-forming torque will rise with the increased engagement depth, while the failure torque will not increase by any substantial amount. The net result is the failure-to-drive torque ratio (and the failure-to-drive torque differential) will decrease with the increased engagement depth resulting in a narrower window from which one can choose a proper assembly torque.

Q) Also on page 8 of the REMINC TAPTITE 2000® fastener brochure, the "F hole diameter as drilled" column for the TAPTITE 2000® "SP"™ fastener appears to quote dimensions that would achieve a 70% thread. Can one also use the TAPTITE 2000® percentage thread chart for TAPTITE 2000® "SP"™ products?

Thus, for optimum performance, drilled holes should be:

	<u>65% thread</u>	<u>75% thread</u>
M6	5.58mm	5.51mm
M8	7.47mm	7.39mm

A) Yes, the TAPTITE 2000® hole size chart on page 4 works for all REMINC TRILOBULAR™ bodied fasteners. Therefore, the above thread percent figures are correct. But, please remember that the variable parameters involved in the actual application are never the same for every application. Thus, our brochure values are "starting point" guidelines and not necessarily the optimum values for your specific application. REMINC's engineers are always available to assist you to determine your specific value, so feel free to contact us.

REMINC Training / Brochure Request Form

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- Contact me regarding a training visit
- REMINC General Products Catalog
- TAPTITE 2000® Products Application Guide
- TAPTITE 2000® Product Brochure
- REMFORM® Product Brochure
- TRU-START® Product Brochure
- FASTITE® 2000™ Product Brochure
- "54 Ways TAPTITE 2000® Fasteners Lower the Cost of Assembly" Request Form

Mail this form to REMINC at 25 Enterprise Center, Middletown, RI 02842 USA or fax it to fax #: (401) 841-5008

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Manufacturing Inc.  
25 Enterprise Center  
Middletown, RI 02842, U.S.A.  
Tel: (401) 841-8880  
Fax: (401) 841-5008  
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**1958 - 2005**  
**Celebrating 47 Years Lowering**  
**the Cost of Assembly**

