



**ERGONOMIC AND DESIGN ADVANTAGE OF
TAPTITE 2000® BOLTS**

When TAPTITE® screws were first developed many years ago, the tapered lead threads were not sharp. This was not a detriment to ease of use, unless the application required screw sizes 1/4" (M6) diameter or larger. To improve the ergonomic situation, the sharp-crested Type W point was developed.

The development of the TAPTITE II® screw point further improved performance; however, some end-users still experienced hard driving and difficult starting using large size (1/4" (M6) and larger) TAPTITE II® screws.

The ultimate point configuration was achieved when the TAPTITE 2000® screw was developed. An extremely important ergonomic feature of our TAPTITE 2000® bolt design is that minimal axial end-load is required to initiate thread forming and provide good axial alignment in the pilot hole, actually superior to any other thread rolling screw in today's marketplace!

The key attribute of the TAPTITE 2000® point design is what we refer to as the "stabilizing threads". These threads are designed and sized to the dimensions of the pilot hole and cause the TAPTITE 2000® bolt to stand-up straight in the hole. Since the bolt can enter on the axis of the hole, the amount of end-load required to initiate thread forming is minimal, often much less than the actual weight of the hand-held driver used to drive the TAPTITE 2000® bolt into the hole!

Another benefit of the stabilizing thread design of TAPTITE 2000® bolts is that the efficient end-load and axial alignment attributes are achieved without the need for a typical dog or pilot point on the fastener. The TAPTITE 2000® stabilizing thread feature actually functions as a "threaded pilot point" on the TAPTITE 2000® fastener. This threaded pilot point is also an important assembly feature, as it allows TAPTITE 2000® fasteners to be successfully used in automated and robotic assemblies at several automotive manufacturers.

A standard pilot point does not function as efficiently on a thread rolling fastener as it does on a machine screw. A typical pilot point has a diameter equal to the minor diameter of the intended assembly bolt. This design creates a loose fit between the bolt and the pilot hole, which allows misalignment to occur during the assembly process. Also, a pilot point is typically designed to be one bolt diameter in length, which causes the bolt to be longer and heavier than desired. The increased length and weight can cause packaging problems, design length issues and re-design concerns, as well as increased bolt costs! (cont. on pg. 3)

REMINC STAFF

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Tim Egan	President & COO
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Suzanne Lilly	Administrator - Intellectual Properties
Beth Rondeau	Director - Financial Administration
Kelli Russ	Executive Assistant
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Ken Gomes	Associate
Bill St. Angelo	Associate

LICENSEE FOCUS

QST International Corp.

Tainan, Taiwan
www.qst.com.tw



QST International Corp., a unit of the Boltun Corporation, is a world-class manufacturer of automotive fasteners and metal parts. QST has manufacturing and logistics centers in Taiwan and China, producing TRILOBULAR® and REMFORM® fasteners.

Cold Heading Company

Warren, MI, USA
www.coldheading.com



Established in 1912, Cold Heading Company is a family-owned vertically integrated manufacturing organization, offering high quality automotive fasteners and logistics services. Cold Heading is licensed to manufacture and sell a wide range of TRILOBULAR® products.

Welcome New Licensee

ESKA Automotive GmbH

Chemnitz, Germany
www.eska.net



ESKA Automotive GmbH, with two manufacturing locations, was acquired by our licensee Boltun Corporation (QST) in 2014. ESKA has multi-stage cold forming competency for the manufacture of high-strength automotive fasteners and metal components. ESKA was recently added as a TRILOBULAR®, REMFORM® and TRU-START® licensee as a result of the above acquisition.

R E G I S T E R

PRESIDENT'S PERSPECTIVE - Robotic Fears - Will Machines Take Over?, by Tim Egan



Numerous articles have been written about how computerized devices employing artificial intelligence (AI) are becoming more sophisticated and before long may gradually replace humans. We read daily about advances in the capabilities of AI, the ever expanding use of sophisticated robots, drones, driverless vehicles, etc.. One recent magazine article described situations where computer-controlled devices can control a person's daily activities from sun-up to bed time. There seems to be no limit to the potential for supplementing or replacing human actions by employing AI. Some academics and tech gurus are discussing situations where AI computerized systems are self-programmed, self-aware, self-correcting and completely autonomous, effectively eliminating humans.

The future of computer-human interaction will surely be dramatic and remains to be seen. A more poignant problem now being discussed is the potential disruption caused by the displacement of workers by robots and AI. Concern is warranted but it is important to examine our history in order to put the current situation in perspective. Witness the transition from manual labor to mechanization during the Industrial Revolution. Following this era was a gradual transition from mechanization to automation, soon followed by computerized robots. At first, robots performed simple repetitive tasks, then progressed to those which were more complex. Now, "smart" robots have less reliance on human interface due to AI. This rapid progress suggests that robots could replace humans altogether, as smart devices become advanced.

I fully expect that computers with AI will improve fastener design and function, and robotic machines will produce fasteners more accurately and quickly. Assembly methods, too, will improve by adopting robotic techniques, which in turn will improve overall product quality. All of this will happen in time; however, I don't think these changes threaten jobs or represent a long-term threat to our industry. We have witnessed many revolutionary innovations, which are initially disruptive but over time become the norm. I believe that AI and robotics should have a positive impact in our industry. I am confident that proactive companies will invest in AI and robotic machines which will substantially improve productivity, enhancing their competitiveness globally and creating new employment opportunities. The greater challenge here will be to train enough people, sufficiently skilled and capable of filling the vacancies being created by innovation.

TRILOBULAR[®] and REMFORM[®] fasteners and others yet to be designed will continue to be used to join components, even when robotic assembly methods are implemented. The benefits of our proprietary fasteners will continue to save costs, as we have always stated. Today's machines and equipment will surely become obsolete over time and replaced with improved designs, but cost-savings will always play a significant role in component assembly decisions. Cost-savings can't be ignored. I have no fear of robots; in fact, I welcome their use. I believe that our future is sound and secure.

EDUCATION OUTREACH

During 2016, we announced a new phase of our REMINC Education and Training Outreach Program. We provided two training sessions, one held in the greater Detroit area and the other in the greater Chicago area. Both sessions were well attended by end-user customers, licensees and distributors. (See www.taptite.com/upload/REMINC%202017-1.pdf for details)

Because of the good response to last year's sessions, we have decided to do it again this year. We will explain the latest updates to our major products, TAPTITE 2000[®], POWERLOK[®] II[™] and REMFORM[®] II[™] screws, and introduce you to our new TRI-PRESS[®] fasteners. The in-place cost savings that can be obtained by using these fastener designs will be explained.

The greater Chicago training session will be held in the Chicago Marriott-Schaumburg on October 3. The greater Detroit session will be held at the Detroit Marriott-Troy on October 6. Please fill out the form below; being sure to select your preferred location.

All current and potential end-users, distributors and our licensees are invited. The seminar will have an open forum approach where we will field your questions and discuss potential applications. Ken Gomes and Don Fosmoen will be present at both sessions. We will make them educational, enjoyable and well worth your time.

Please fill out the form below and return by e-mail to kgomes@reminc.net:

Coffee 9:00AM, Presentation 9:30 – 11:30AM, Lunch 11:30AM – 2:00PM

I am interested in the October 3 seminar in Chicago: YES NO **# of Attendees** _____
I am interested in the October 6 seminar in Detroit: YES NO **# of Attendees** _____

Name: _____ **Position:** _____

Company: _____

E-mail Address: _____

Staying for lunch? Yes **No**

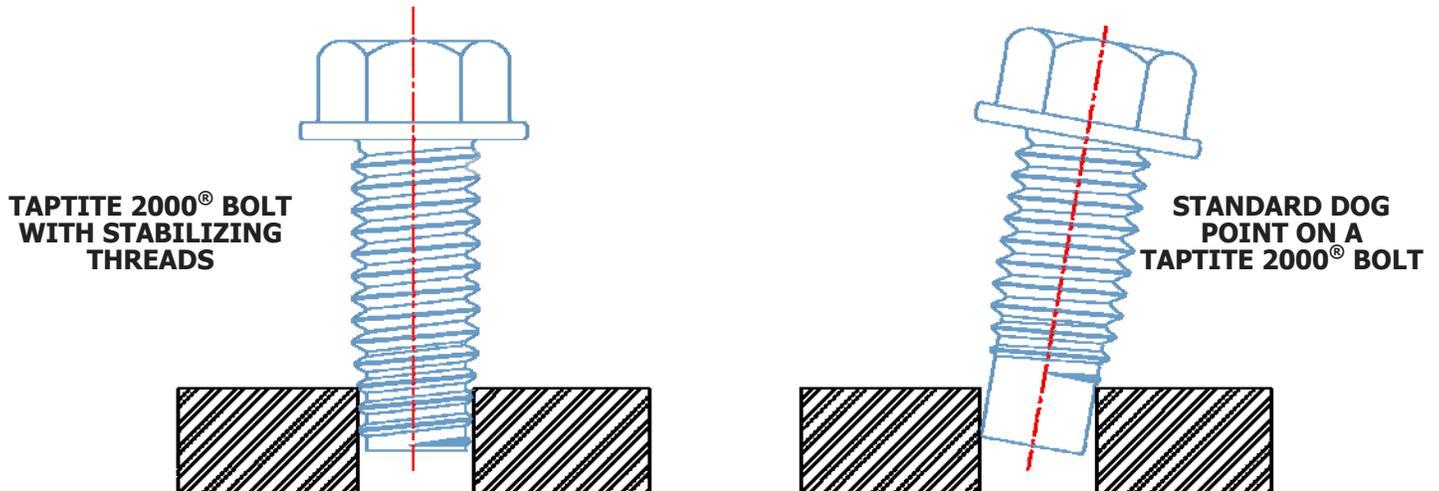
Brochures, reports and samples will be available. Coffee and pastries will be served between 9:00AM - 9:30AM, prior to the session. Luncheon will be served following the seminar.

Please let us know of your interest as soon as possible as attendance is limited to 30 participants.

We look forward to seeing you. Feel free to share a copy of this invitation with your colleagues.

ERGONOMIC AND DESIGN ADVANTAGE OF TAPTITE 2000® BOLTS (cont. from Pg. 1)

Some international fastener standards specify that the maximum point length on thread forming screws cannot exceed 4 pitches. The TAPTITE 2000® point on screw sizes M6 and larger have 3 tapered lead threads and 2 stabilizing threads for a total of 5 pitches. The TAPTITE 2000® total point length can be interpreted as not meeting these standards. However, these standards do not take into account the starting efficiency of the TAPTITE 2000® screw, M6 and larger. Thus, in summary, the stabilizing threads of a TAPTITE 2000® bolt align the fastener more effectively than a pilot point and provide improved bolt dimensions and characteristics. Therefore, we do not recommend the use of pilot points on TAPTITE 2000® fasteners, since the TAPTITE 2000® fastener has an inherent threaded pilot point and adding a standard pilot point would only add unnecessary fastener length, weight and cost.



LICENSED PRODUCTS QUALITY CONTROL

Product quality is the foundation upon which our logo “Leaders Lowering the Cost of Assembly” is based. Our thread forming fasteners positively have to function as designed, 100% of the time, without exception. Every TAPTITE® and REMFORM® screw or bolt validates its worth when it is driven into an untapped nut member, forming perfect threads and creating a joint that will reliably resist vibrational loosening. TAPTITE® and REMFORM® fasteners, in a variety of application-specific designs, are available from dozens of authorized manufacturers globally. These products, despite being produced in different locations, are all manufactured to our specifications. It is however important to specify and procure only Genuine Trademarked fasteners, to be sure you are obtaining the degree of quality your application requires, guarding against unauthorized copies that may not perform as expected. We have a well established quality control program, implemented by our lab staff at REMINC to provide this performance assurance to end-users.

As an integral component of that program, all REMINC licensees are periodically audited for quality, to verify the licensed products being produced and sold are in strict conformance with our technical specifications. Each licensee is requested to submit a sufficient number of randomly selected fasteners or production tools to be properly checked for material, dimensional compliance, hardness and workmanship, plus tested for drivability. In each category, a REMINC engineer measures the submitted samples against the specifications in our Confidential Technical Manuals. Once inspection and testing are completed, a report is sent to the licensee stating whether or not the samples are within specification. If not, the discrepancy is communicated and licensee is advised to what must be corrected and that further sample submission is necessary. This process continues until we are satisfied the products being offered to end-users are fully compliant with our specifications and worthy of bearing our registered trademarks. Upon successful completion of the quality audit, the licensee receives a Quality Certificate indicating it is a certified authorized producer of the specific licensed product(s).

Our auditing process is an important component of the licensing program that assures REMINC and the licensee that all trademarked products are within technical conformance. It also ensures end-users receive acceptable functional parts when ordered as trademarked fasteners from any authorized licensee. This quality assurance of TAPTITE® and REMFORM® fasteners allows REMINC to confidently state we are “Leaders Lowering the Cost of Assembly”.

“COMPANY NAME”

is certified as an authorized licensee of Research Engineering & Manufacturing Inc. for the production and sale of genuine TRILOBULAR® fasteners, meeting the manufacturing specifications and quality standards set forth in our Confidential Technical Manuals.

**TAPTITE® & DUO-TAPTITE®
FAMILY OF FASTENERS**



TAPTITE 2000® fasteners
TAPTITE 2000® “CA”™ fasteners
TAPTITE 2000® “SP”™ fasteners
FASTITE® 2000™ fasteners
TAPTITE II® fasteners
DUO-TAPTITE® fasteners
TAPTITE II® studs
TWIN-TITE™ studs



Valid until
Issue date + 3 years

Tim Egan
Tim Egan
President

Mmmm dd, yyyy
Issue Date



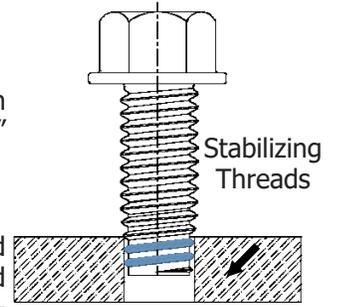
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Lowering the Cost of Assembly

REMINC RESPONDS!

Q. What is the main ergonomic advantage of TAPTITE 2000® bolts?

A. The stabilizing threads function as a threaded dog point sized just smaller than typical pilot holes to ensure good axial alignment and reduce the "end load" required to initiate thread forming.



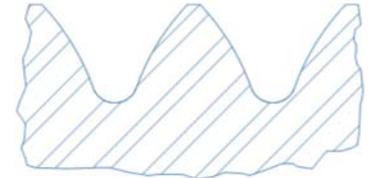
Q. What is the purpose of the TRILOBULAR® shape on the fastener?

A. The combination of the optimum point lobulation and the unique Radius Profile™ thread design, generates lower thread forming torque than previous TRILOBULAR® designs and the reduced lobular body thread geometry provides efficient torque-tension relationships, enhanced resistance to vibrational loosening and high pull-out resistance.



Enhanced dual lobulation TRILOBULAR® technology

Radius Profile™ thread design



Q. Why did FORD choose TAPTITE 2000® products to secure their truck beds on the FORD F-Series pickup trucks?

A. When using machine bolts in the floating threaded nut assembly, costly cross threading problems occurred. By changing this assembly to use unthreaded nuts in the assembly with TAPTITE 2000® bolts, the problem was solved.

Q. For what reason does REMINC choose to perform Quality Audit checks from their licensed manufacturers?

A. So that the licensed products being manufactured are in strict conformance to REMINC's technical specifications.

The following are patented products and/or trademarks licensed by REMINC: TAPTITE®, TAPTITE II®, TYPE-TT®, REMFORM®, CORFLEX®, PLASTITE®, POWERLOK®, TRILOBULAR®, KLEERTITE®, KLEERLOK®, EXTRUDE-TITE®, MAGTITE®, TAPTITE 2000®, DUO-TAPTITE®, FASTITE® 2000™, ENGINEERED FASTENINGS®, THE CONTROLLABLE PRODUCT®, TAPTITE 2K®, TYPE TT 2000®, TYPE TT 2K®, TAPTITE 2000 & DESIGN®



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1958 - 2017
Celebrating 59 Years Lowering the Cost of Assembly

