



**NEW MCI ULTRASONIC TESTING CAPABILITY, by Ken Gomes**

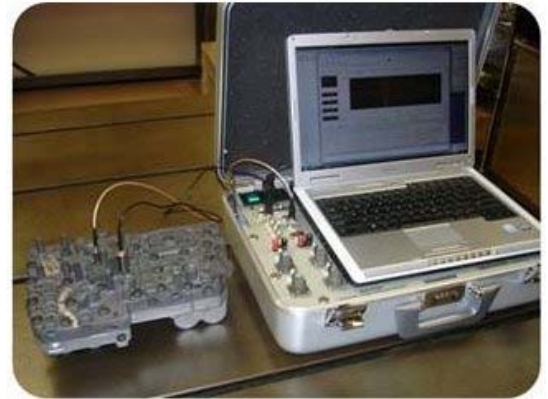
Many licensees and end-user customers take advantage of the REMINC/CONTI application test lab located in our REMINC office in Middletown, Rhode Island, USA. Licensees and customers regularly send us and we test applications that can potentially benefit by using REMINC/CONTI products.

Licensees and end-user customers often send small and large castings as well as stampings and forgings for us to perform tests utilizing TAPTITE 2000®, REMFORM® II™, and POWERLOK® screws or one of the many other REMINC/CONTI proprietary designs.

Like many other fastener application laboratories, we often use a bench-mounted torque-tension test unit. The main component of the test unit consists of a large load cell which uses hardened steel holding cups. One cup is considered to be the screw head cup and the other cup holds the nut member. When testing screws into hex or square nuts, these holding cups are easily adaptable. However, when testing a TAPTITE 2000® thread-forming screw, the nut member may be part of a large stamping or casting. In such cases the nut member and laminate being assembled must be cut and shaped to fit the holding cups. Making this adaptation is typically a time consuming and difficult aspect of the test preparation process.

The torque-tension monitoring equipment load cell and torque transducer are both accurate and precise. However, sometimes the generated data does not reflect the actual joint conditions. The holding cups and fixtures, which are made of hardened steel, add stiffness and require extra space, conditions that do not exist in the application being tested. And quite often, the actual application screw length is not long enough to test because of the added thickness of the holding cups.

When testing bolts used in a bolt pattern, like a wheel application, the tension of each bolt can be affected by the sequence of tightening. If each fastening site must be tested individually on a bench-top test unit, the effect of the sequence of tightening cannot be studied.



**MCI 900 Test Equipment**

**REMINC STAFF**

Laurie Mandly	Chairman & CEO
Tim Egan	President
Ken Gomes	VP - Engineering / Product Development
John Reynolds	Manager - Fastener Engineering
Dennis Boyer	Senior Project Engineer
Bill St. Angelo	Director - Marketing and Licensing
Bob Budziszek	Lab Technician
Suzanne Lilly	Administrator - Intellectual Properties
Beth Rondeau	Director of Financial Administration
Marena Boyadjian	Executive Assistant
Ralph Barton	Associate



**SPOTLIGHT ON KEN GOMES**

Ken Gomes is REMINC's Vice President of Engineering & Product Development. Ken has been with REMINC for 25 years and employed in the fastener industry for more than 30 years. His vast experience includes Engineering, Quality Assurance, Sales and Marketing. Ken has two patents in his name, written a book on fasteners, and authored many articles featured in several fastener publications. Ken's principal duties at REMINC include engineering management, new product development and licensee support.

R E G I S T E R

## **CHAIRMAN'S CORNER - 2012 Summer Olympic Games by Laurie Mandly**

This past summer I had the pleasure of watching several of the sports competition events held at the 2012 London Summer Olympic Games on television. Although it may seem a bit strange, I sensed that there are several characteristics of modern Olympic Athletes similar to those of our TRILOBULAR® and REMFORM® Licensees. How could this be? I'll try to explain.

The Ancient Olympic Games have their mysterious and mythological origins but historians believe the first human competition, a foot race, occurred in Greece in about 776 BC. It is believed representatives from various Greek states came together on peaceful terms and tested their athletic and combative skills in an open forum. After being dormant for centuries, the Modern Olympic Games revived the ancient ritual in 1896. In the summer of 2012 about 10,500 athletes from over 200 nations arrived in London, England, to test their skills. An estimated 15 billion U.S. dollars was spent building the athletic facilities and hosting the two-week long extravaganza.

I had the opportunity to watch many athletes and learn about their lifestyle and preparations for this global competition. It was clear that most of them had thoughts and dreams early in life to enter the Olympic Games and win a Gold, Silver or Bronze Medal. With this mindset, these individuals learned various sports and then focused on one in particular, whether it be swimming, running, football, cycling, archery or any of the other Olympic sports offerings. Once the ultimate goal was established, these athletes began a never-ending training schedule for years. One's best efforts were engaged to continue to practice the sport of their choice until they improved and achieved near perfection.

Hour after hour, day after day and year after year, with no let up. Dedication and perseverance were the themes on the road to the Olympic competition. But in many cases, injury and disappointments interfered with the original plan and time frame. And once qualified to enter the Games, some still encountered challenges from a few that might have used drug enhancements or engaged in other non-sportsmanlike strategy. There again, persistence was the only solution; as without it there would be no chance of attaining the original goal, winning Gold, Silver or Bronze.

Most TRILOBULAR® and REMFORM® Licensees travel the same route as Olympic medal winners, albeit in a different discipline. Those companies which join our Program aspire to something better than they are, to set them apart and above the rest. In our case, financial success in marketing a proprietary technology is the ultimate goal, and our Trade-marked family of fasteners provides the means to this end. Once the goal is established and a license to manufacture is awarded, work still needs to be done. Finding applications, making samples, attaining quality benchmarks, testing, and succeeding with on-line trials are all steps along the route to success. There can be delays and disappointments along the way as well, but persistence is the solution in those cases. But given time and a lot of hard work, success can be accomplished, and Licensee distinction and recognition can be achieved, albeit in the form of profits, not medals. Parallels do exist between the Olympic Games and our Licensing Program; get involved, perfect your performance and you will earn your reward!

### **A PERSONAL STORY FROM OUR CHAIRMAN, Laurie Mandly**

It was supposed to have been a day to celebrate a young man's educational achievement. Instead, it nearly became a parent's worst nightmare.

"I've been in a car accident. Please hurry and get here."

It was June, 1st, 2012. My son, Ryan, had been on his way to his high school graduation. Fortunately, he made it clear to me that no one had been hurt in the accident. I was very relieved to hear this news and my mindset changed from one of disaster to probably just a "fender bender". But upon arrival, it was clear that this was no minor accident. The sight of the crash was shocking. The entire front end of Ryan's car was gone, replaced by a mangled mess of steel. How could anyone have possibly survived this horrible accident? Ryan stood alongside the wreckage, surprisingly composed, but clearly upset.

Ryan had been driving in the right hand lane of a two-lane road, when the car to his left unexpectedly veered to the right into his lane. Ryan's Mercury Mariner was struck on the left rear quarter, sending him into a spin. The Mariner SUV spun around twice, went over the curb on the right side of the road and went airborne before landing head first into a telephone pole. The car then ricocheted off the telephone pole and spun around one hundred eighty degrees before finally coming to a stop.

The police were already at the scene when I arrived. The officer explained how very fortunate it was that Ryan had been wearing his seat belt. He made it clear the results would have been tragically different had Ryan not been wearing his seat restraint.

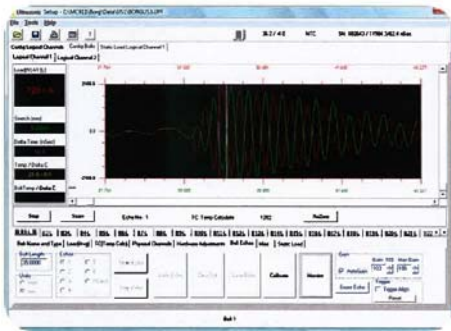
Pictured above, is the actual seatbelt Ryan wore that day. Ryan owes his life to this seatbelt. With close examination, one can see the bolt is a TAPTITE 2000® design. A TAPTITE 2000® bolt helped to save my son's life! My father and Ryan's grandfather, Art Bancroft, always told me TAPTITE® fasteners saved lives everyday. He was correct, my son is living proof of his conviction.

Please remember to always wear your seatbelt and rest assured that if you are driving the proper vehicle, you can have confidence that the seat belt, anchored by its bolt, will help save your life in the event of an accident.

As a final thought, I'd like to say thank you to the kind person who witnessed the accident, stopped her vehicle and took the time to offer assistance to my son. Thank you Kendall!



## **NEW MCI ULTRASONIC TESTING CAPABILITY (cont. from Page 1)**



***Screenshot of Ultrasonic Wave Using MCI Software***

“Ultrasonic testing” is an alternative method used to establish torque-tension replacing the more commonly used method described above. Ultrasonic testing has the advantage of providing torque-tension data in an actual joint without altering any joint characteristics.

In developing torque-plus-angle strategies, bench-top torque-tension test machines are not a suitable tool to use. Torque-plus-angle strategy, using a bench-top torque-tension machine, will not produce the same tension on an actual joint. Stiffness of the load cell components alters the joint. However, using ultrasonic testing to measure the tension of the actual bolted joint allows development of torque-plus-angle strategy with a high degree of accuracy.

REMINC/CONTI has joined forces with Micro Control, Inc. (MCI) ([www.mcrt.com](http://www.mcrt.com)). REMINC/CONTI has acquired three MCI 900 Transient Recording Analyzer units.

The MCI 900 Transient Recording Analyzer is a complete system for fastener testing, recording and analysis. It can measure the torque, tension, elongation, and angle of rotation of a threaded fastener without altering any joint characteristics.

Here is a brief explanation of how ultrasonic tension measurement functions:

An ultrasonic transducer is placed against the head of a bolt. The MCI 900 delivers a voltage pulse to the transducer, which emits a brief burst of ultrasound. The burst travels along the bolt, echoes off the end of the bolt, and returns to the transducer. The MCI 900 precisely measures the “time of flight”, the amount of time required for this burst of sound to make a round trip in the bolt. As the bolt is tightened, the time of flight increases for two reasons:

The bolt stretches as it is tightened; therefore the path length increases.

The average velocity of the sound within the bolt decreases because the average stress level has increased.

Both of these changes are proportional to tension in the bolt.



***Aluminum Die Cast AC Compressor Being Tested Using Ultrasonic Torque Tension Transducer***



***4-Wheel Drive Power Transfer Unit Ready for Ultrasonic Testing***

The MCI 900 unit provides us with the capability to measure the torque-tension performance of TAPTITE 2000® bolts in actual applications. Occasionally, engineers fear that using TAPTITE 2000® screws might not provide tension in a joint to the level of an equivalent machine screw. We have demonstrated through comparative testing using our bench top torque-tension equipment that TAPTITE 2000® screws can develop tension similar to machine screws. By using ultrasonic testing, torque-tension comparisons can be made in actual applications without altering joint characteristics. We invite you to take advantage of our newly-acquired ultrasonic-testing capability.

The use of TAPTITE 2000® screws can lower the in-place cost of assembly. The assembly also benefits from TAPTITE 2000® screws' inherent resistance to vibrational loosening. The level of clamp load achieved using conventional machine screws can be achieved using TAPTITE 2000® screws.

Call or email us, and our application engineers will be happy to discuss your application and the benefits of ultrasonic torque-tension testing. You can then simply send to us the components you wish to have tested along with the required application joint parameters. We will do the rest.

For more information or questions and comments, please feel free to contact us.



REMINC Training / Brochure Request Form

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Please Check:

- 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
- Receive Newsletter by e-mail

Mail this form to REMINC at 55 Hammarlund Way, Tech II, Middletown, RI 02842 USA or fax it to (401) 841-5008

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Research Engineering & Manufacturing Inc.

55 Hammarlund Way, Tech II  
Middletown, RI 02842, U.S.A.

Tel: (401) 841-8880

Fax: (401) 841-5008

E-mail: reminc@reminc.net

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